GEORGIA
DEPARTMENT of
NATURAL RESOURCES

ENHANCED
INSPECTION/MAINTENANCE
TEST EQUIPMENT,
TEST PROCEDURES,
AND SPECIFICATIONS

PHASE V

Version 3.6

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Section 1 - General Specifications

1.00 Definitions

Terms and phrases defined in the Enhanced Inspection and Maintenance (I/M) Rules are adopted by reference.

ASM SPECIFIC TERMS:

$HPxxxx_{yy}$ = The ASM actual horsepower value contained in the look up table for a vehicle being tested (using the ASM 2525) on a dynamometer with yy inch diameter rollers. The actual horsepower is the sum of the indicated horsepower and the parasitic losses ($PLHP_{zz-yy}$).

$IHPxxxx_{yy}$ = the "indicated" ASM horsepower value set on the dynamometer.

THPxxxx = the "total" horsepower for an ASM test includes indicated, tire losses, and parasitic loses. This value is independent of roll size.

ETW = Equivalent Test Weight. Weight class of vehicle for testing, defined as curb weight plus 300 pounds. For ASM testing, it is rounded to the nearest 125-pound increment.

$GTRL_{@zz\ mph\ -\ yy}$ = Generic tire/roll interface horsepower losses at zz mph on a dynamometer with yy inch diameter rollers.

$PLHP_{zz-yy}$ = Parasitic losses (horsepower) due to internal dynamometer friction. A value is specific to each individual dynamometer and speed.

A_t = 1st curve coefficient used to characterize tire/roll losses. (Value depends on dyno roller diameter).

B_t = 2nd curve coefficient used to characterize tire/roll losses. (Value depends on dyno roller diameter).

C_t = 3rd curve coefficient used to characterize tire/roll losses. (Value depends on dyno roller diameter).

XXXX = Placeholder for ASM test mode, ASM 2525/ASM5015.

yy = Placeholder for dynamometer roll diameter. (In Georgia 8.6 inches).

zz = Placeholder for dynamometer speed. (In Georgia, 25 mph or 15mph).

OBD II TERMS:

CAL ID = Calibration ID

CVN = Calibration Verification Number

DLC = The DLC is the connector where diagnostic scan tools interface with the vehicle's on-board computer. Under OBD II the DLC is a standardized 16-cavity connector and has a

standardized location. The DLC is found inside the vehicle in any of 9 locations as defined in an OBD Locator Grid

DTC = Diagnostic Trouble Code: is a five digit alpha-numeric code that is associated with a specific test run by the On Board Diagnostic system indicating a failure or out of bounds condition.

E-VIN = VIN returned electronically from the vehicle under test during the OBD II test sequence.

ECT = Engine Coolant Temperature

KOEO = Key On Engine Off, a specific state of the ignition key where power is applied to the on board computer and other circuits without allowing the engine to run.

KOER = Key On Engine Running, a state of the ignition key where the engine has been turned on and allowed to run. This test is not performed during the Georgia OBD test sequence.

PCM = Powertrain Control Module, the main computer of the vehicle and the heart of the OBD system. The PCM monitors engine functions or both engine and transmission/transaxle functions.

PCMID = Powertrain Control Module Identification: The address of the module that communicates with the GAS during an OBD testing sequence.

PID = Parameter Identification, a number returned by the OBD PCM that is make and model specific.

PID Count = the count of parameter IDs that are communicating with the PCM in an OBD II vehicle.

STFT B1 = Short Term Fuel Trim Bank 1 of the vehicle under test. The measure of how much or how little fuel is needed to keep the engine fuel. All vehicles have a bank 1.

TPS = Throttle Position Sensor: the device that measures the angle of the throttle.

COMMON TERMS:

Advisory Period = The time period prior to when mandatory OBD/ASM2 testing starts.

Bar Code Reader = a device able to read barcodes to better accurately and efficiently enter data into the inspection equipment.

Biometric reader = an electronic device that can uniquely identify an individual based upon a physical trait of that individual.

CO = Carbon Monoxide is a gas that is a result of partial combustion of fossil fuels.

CO_2 = Carbon Dioxide is a gas that is a byproduct of the combustion process.

HC = Hydrocarbon(s) which is the basis of fossil fuels.

M.Y. = Model Year or production year of the vehicle as determined usually by the 10^{th} digit of the VIN of the vehicle.

Nonconforming Vehicle = a vehicle designated by EPD or authorized personnel to be unable to be tested using the normal or expected testing methods. These vehicles include Grey Market, Hot Rod, and Kit Cars.

NO_x = The term used for any one of the Oxides of Nitrogen that is a byproduct of the combustion process when a vehicle's engine is operating under loaded mode conditions.

O_2 = Oxygen gas that is emitted as a byproduct of the combustion process.

RTSI = Random Two Speed Idle, a TSI tailpipe reading taken after an OBD II inspection to gather CO and HC readings on the vehicle being tested.

VID = Vehicle Inspection Database, the database containing the Georgia Enhanced I/M test results.

VIN = Vehicle Identification Number, the number associated with each vehicle used to identify it. This number is usually located on the driver's side of the dashboard.

VIR = Vehicle Inspection Report, the report given to the motorist indicating the results of the test just performed on the vehicle tested.

1.01 General Information

The State of Georgia implemented an enhanced inspection/maintenance (I/M) program on October 1, 1996. The primary goals of the Georgia Enhanced I/M Program are:

To produce a significant reduction in the automotive emissions which contribute heavily to Atlanta's ozone air quality problem,

To provide maximum consumer convenience by allowing a large number of stations to perform testing; and

To preserve business opportunities for local businesses.

To accomplish these goals, the Georgia Enhanced I/M Program is fully decentralized and utilizes relatively inexpensive ASM/TSI/OBD test equipment to facilitate small business participation. The basic features of the program are:

Testing by decentralized facilities, with no distinction between test-only and test-and-repair locations.

A hybrid of test types – for all vehicles covered by the Rules of Georgia Department of Natural Resources Environmental Division Chapter 391-3-20 Enhanced Inspection and Maintenance, an Acceleration Simulation Mode (ASM2525 and ASM 5015 or ASM2) test for older vehicles - those older than 1996, a two-speed idle (TSI) test for vehicles, that cannot be tested using ASM testing procedures, and an On Board Diagnostic (OBD) test for M.Y. 1996 and newer vehicles. A tampering inspection for catalytic converters is required on all vehicles. A fuel cap pressure check for evaporative emissions is also required for all covered vehicles.

Phase I of the program began in October 1996 and consisted of a TSI inspection followed with manual entry of fuel cap results.

Phase II of the program began ASM testing in 1998. The test consisted of an ASM 25/25 or a TSI emissions test based upon age of vehicle. Also, the fuel cap equipment was required to be electronically connected to the GAS to automatically capture the PASS/FAIL of the fuel cap inspection.

Commencing in May 2002, vehicles older than the 1996 model year were inspected at stations equipped and certified to perform the ASM2 inspection procedure designated as "All Vehicle Welcome Stations". Vehicles 1996 and newer were able to be tested at “All Vehicles Welcome” and “Newer Vehicles Only”.

PHASE III began in 2002 and required the analyzer portion of GAS to perform an OBD II inspection on newer vehicles and ASM2 50/15 was added.

Phase IV began in 2008 and required an upgrade to all equipment to perform enhanced OBD II testing of CAN equipped vehicles and added software enhancements.

Phase V is being implemented primarily to provide:

-More security in the way inspections are accessed to be accomplished by using a biometric device that will positively identify the individual that starts the inspection. Also, 2-D bar code scanners are being added because vehicles are using these types of bar codes for coding the VIN.

-Barcodes will also be required to be used for entering calibration gas values read directly from the tank(s). Barcodes will also be used to identify those accessing the QA and Service menus.

-Require the use of barcoded badges for non-inspectors to access the GAS software.

-Revised and enhanced data records which are found in Appendix C.

The number of vehicles covered by the program in 2013 was nearly 3 million. The program boundaries include the counties that cover the 13 county ozone non-attainment area. All 24year old and newer model year vehicles will be inspected that are 8500 GVWR (or the value of MAXGVWR) or less and are fueled by gasoline, or other vehicles as required or defined in the "Act", or Rules for the Enhanced I/M Program O.C.G.A. 391-3-20.

Testing will be performed on a schedule defined in the Rules for the Enhanced I/M Program O.C.G.A. 391-3-20. Currently the renewal process is annual.

This document describes the test equipment to be used, the test procedures, software requirements, quality control procedures, and other features of the program. This document is based substantially on the Georgia Phase IV Specification documentation.

The PHASE V document incorporates additional features needed to add improvements and enhancements to the ASM2, TSI, and OBD testing. It also includes miscellaneous changes that the State has determined are needed based on the operation of the program in Phase IV. A listing of the specific changes in the Phase IV document can be found in Section 1.02, Changes from the Final Phase IV Document.

1.02 Changes from the Phase IV Document

This document contains changes needed to implement Phase V and other enhancements of the Georgia program. These are primarily changes needed to improve or enhance the Phase IV testing procedure. There are changes related to the data system specification and collection. Minor changes have also been made to the existing software

specification to implement changes that the State has determined are needed to improve the operation of the program, based on experience from the implementation of Phases I, Phase II, and Phase III, Phase IV, or in anticipation of changes in the near future.

This Phase V document has been reorganized in an attempt to improve the readability and flow of the specification. This has been done primarily by consolidating and renumbering related topics such as software requirements into one section of the document.

Specific changes and additions include:

Added the requirement for a 2-D barcode reader. The barcode reader is used for entering:

- VINs from the barcode on the vehicle for initial tests, and
- After repairs tests information from the repair form, and
- Inspector ID from their badge, and
- EPD personnel ID from their badge, and
- Field Service Representative ID, and
- QA/QC Auditor ID via their badge, and
- Cal Gas bottle readings

Revisions to miscellaneous data records to reflect changes to the OBD II test and other changes (Appendix C) and,

Requirement to have biometric security (see 1.07) to gain access to the GAS unit program, and

Require a printer able to produce a barcode on the VIR/Repair form for retests, and

Requirement to have a check-sum verification routine executable from the manager menu, Q/A State menu, and service menu. This checksum is to provide a checksum of all executable files and data files required by the GAS program (3.01 (15) (vi)), and

Require field service and QA personnel to use a barcode ID just like inspectors (3.01), and

Require that the GAS automatically contact the VID after each test and calibration (3.01) and

Require the GAS to read RPM on newer vehicles using the DLC during RTSI events (Appendix R), and

Keyboard buffering shall continue to be allowed, however when a warning screen is displayed, the only way to advance shall be through the pressing of a Function Key as noted in the displayed screen prompt. To that end, throughout this document the designation <Fx> is used to indicate that a keyboard function key must be used to advance the program instead of the "enter key" or, "any key", or other non-function key. The "x" is a function key. Where more than one selection is offered the "Fy" has been used for clarification (Fx, Fy).

When a warning message (where indicated) is displayed the screen attributes shall indicate to the inspector that his attention is needed by using any or all of the following methods:

1. The size of the text displayed (double font),

2. The color of the screen (ex: red background),

3. The attributes of the text (ex: blink or flash)

Added more program “switches” in the PROGRAM, and

Added a BEGIN TEST TIMER to monitor inactivity of the inspector and automatically abort the test if inactivity exceeds a time limit, and

Do not remove the description of the DTC from failing VIRs resulting in only the DTC being printed on the VIR.

Added the requirement to identify ISO 14230-4 Fast and Slow initialization.

Remove the requirement to input GVWR for OBD II inspections.

Only ask about dual exhaust if the body style is not a passenger vehicle or wagon.

Only ask about dual exhaust for tailpipe inspections.

Require communicating with the VID using TCP/IP. Current com spec will be utilized as in the past to set up files and com messaging, EMs will need to provide the comm layer that communicates/file transfers/ to the VID. VID provider is working on a final revised Phase V com spec which is a slight modification to ESP-SP10019 currently in use

Require that the GAS have a generic TECHNICIAN file incorporated to allow QA and service reps access to a new Gas unit, one where there are no inspectors or station information due to not having communicated with the VID for the first time. The TECHNICIAN file to be created at the initial software loading shall have generic “default’ QA, DN, and FS entries as noted.

1.03 High Throughput Testing Capability

The emission testing sequence has been designed so that it is capable of testing at least six OBD II vehicles per hour without experiencing excessive hang-up or other deleterious effects. A study shall be submitted to the EPD indicating the maximum number of tests per hour that were achieved using the analyzer submitted for certification. A brief description of the study methodology used by the manufacturer to make the throughput determination shall be included in the study. This evaluation shall include the time required to enter vehicle identification data.

1.04 Manufacturer’s Assurance

The manufacturer shall certify to the EPD that the exhaust emission analyzer meets or exceeds the performance specifications of this document.

1.05 Applicable Codes

The manufacturer shall certify that the GAS submitted for certification complies with all applicable Georgia and Federal administrative, safety, ergonomic, licensing, and certification requirements.

Manufacturers shall utilize a testing laboratory or laboratories approved by the State. Representation by the management contractor during the certification process is mandatory. Manufacturers may propose to use in-house facilities to perform portions of

the certification for which they have capabilities. Approval for in-house testing must be obtained prior to commencement of any such testing. The Certification requirements are established in Appendix B. The manufacturers shall supply the State with the following specific information before submitting their application for certification:

Certification Laboratory

1. Description of the laboratory's capabilities, including the type of testing commonly performed there,

2. Description of the laboratory's facilities, including size, location, and specialized facilities, such as EMI rooms,

3. Description of the laboratory's test instrumentation, including manufacturer, model number, accuracy, and frequency of calibration;

4. Description of the laboratory's testing and follow-up procedures.

Functional Testing Laboratory: In addition to the requirements of 1.a, b, and c, above, the following information must be provided:

1. Credentials of the staff that will be performing the tests at the selected laboratory;

2. A statement from the person in charge of testing at the lab and the manufacturer's representative witnessing the tests, certifying that all tests were performed and that they were performed in the manner required in the specifications; and

3. A description (i.e., brand names, model numbers and list of specifications) of the equipment used to perform the tests contained in the Appendix B specifications.

Approved Testing Laboratories: The following companies are approved (listed alphabetically). Manufacturers may propose other qualified companies.

- ERG
- de la Torre Klausmeier Consulting
- Revecorp
- Sierra Research
- Testcom, Inc.

1.06 Tamper Resistance

HARDWARE – PC: Controlled access design shall be the responsibility of the manufacturer and is subject to approval by the State. Manufacturers shall utilize special BIOS partitions (or equivalent approved by the State), as well as other appropriate software and hardware provisions deemed necessary by the State to protect the I/M files and programs. File and program protection may consist of mechanical systems in combination with electronic/software systems. The protection features shall prevent access to the secured data back-up device and portions of the hard disk containing I/M programs and test data. The "control" key, or its functional equivalent giving access to the OS, shall not be activated except by a special password and a "blind" entry on the QA/State Representatives menu *or Service Menu*. The password algorithm shall be approved by the State at the time of certification testing. Other security or protection alternatives, including more sophisticated BIOS limitations, may be proposed by the analyzer manufacturer for approval by the State.

HARDWARE – Cabinet: At a minimum, the manufacturer shall develop tamper-resistant features to prevent unauthorized access through the cabinet. Microswitches, keyed locks, software-controlled locks, and software algorithms requiring the use of an access code shall all be utilized where appropriate. Access codes for State/QA function must be changed on a daily basis based on an algorithm provided by the State. Service access codes must be changed on a daily basis based on a unique algorithm provided by the manufacturer.

Manufacturer may utilize a combination type lock on the door securing the floppy disk drives as long as the locks are built-in, good quality, and authorized personnel can easily change the combination when a security problem is identified. The following examples illustrate ineffective - and therefore unacceptable - security measures: A mercury switch would not be effective if the analyzer can be tipped over to one side to trigger the switch. A keyed lock would not be effective if it is placed in a position that allows the analyzer cabinet to be flexed slightly to bypass the lock.

A solenoid lock may be used instead of, or in addition to, any key or combination lock that may be provided. All GAS units, existing or future, shall have sensors, such as micro switches, to detect the open/closed state of the doors, as well as other secured areas of the GAS. The GAS shall monitor these sensors, and shall define an inappropriate state as a tamper (e.g., a tamper switch that always indicates that the floppy disk door is closed).

The use of micro-switches to detect unauthorized entry is acceptable. However, unauthorized access to the secured areas of the analyzer shall be detected even when the power is off. The analyzer shall record the type and location of each tamper. The tamper attempts shall be recorded in a tamper file that includes the date of the tamper-caused lockout, the type and location of the lockout, the date the lockout was cleared, and who cleared the tamper (State/QA or manufacturer's service representative). The specific tamper type and location shall be accessible through the QA/STATE MENU- "LOCKOUT GAS" option or service screen.

If tampering occurs, a software lockout algorithm shall be activated which aborts any existing test sequence and prevents further I/M testing until the lockout is cleared by a State field representative or other authorized representative. Software obtained independently by the inspector shall not be bootable from the optional floppy/USB/CD/DVD disk. In addition, manufacturers must describe, to the State's satisfaction, what security measures will be taken to prevent the unauthorized use of access codes, keys, and combinations to the secured areas of the analyzer under each of the following circumstances:

1. Tampering has occurred.

2. A manufacturer's service technician quits or is fired

3. A combination, key, or critical access code is obtained by an unauthorized person(s) such as a Georgia Emission Test inspector.

HARDWARE: Sample System: In addition, the emission analyzer and the sampling system shall be made tamper-resistant to the State's satisfaction.

SOFTWARE: At no point shall inspectors have access to either the OS or the BIOS.

Analyzer operators shall be prohibited from creating or changing any test results, EPD programs or EPD data files contained in the GAS. Access to the OS shall not be available to the manufacturer's service technicians except as provided for in item 6 of this section.

Access codes used by the service representatives shall be changed automatically by the GAS on a daily basis. The formula must not be available to field service personnel. The daily service access codes may only be given to authorized field service representatives, and may not be provided more than one week in advance.

LOCKOUT: The lockout system shall be designed so that it can be activated by a management contractor field representative from the State menu. Only management contractor field representatives, or other representatives with specific written or oral authorization from the State, may remove lockouts put in place from the QA/State Representative Menu. Manufacturers shall develop a system by which their service technicians shall be prevented, by some method approved by the State, from clearing State installed lockouts.

In particular, the following policies shall apply to the manufacturers' field representatives:

1. They shall not:

   (i) Clear a State/QA-installed lockout unless directed to do so by a GCAF representative, or

   (ii) Clear a lockout due to a requirement for a three-day GAS calibration/leak check without performing a three-day calibration.

2. They shall not add, delete, or modify the Inspector Number except in cases in which a complete crash of the hard disk and/or back-up data device prevents the transfer of information to and from the affected GAS unit. Field service representatives may enter station numbers, county numbers, and GAS/Station ID numbers.

3. If the test record or calibration records are lost due to a crash of the hard disk and/or back-up data they shall notify the EPD prior to leaving the location that the information is lost, the cause, and what repairs were made to correct the problem.

4. They shall not be capable of altering the calibration gas values to any values other than those approved by the State.

5. They shall not clear a lockout when there is evidence of physical tampering. Furthermore, they shall report this or any other type of lockout to a management contractor auditor by the end of the working day of discovering the lockout.

6. They shall not have access to the operating system (OS) except as needed to install EPD-approved software updates or to provide required service.

OPTIONAL PACKAGES: Manufacturers may offer analyzers with additional floppy and/or hard disk drives that can run optional software application programs.

Optional software packages supplied by the manufacturer shall not interfere with the normal operation of the I/M inspection and testing software. Optional packages shall not compromise the tamper-resistance of the analyzer (such as give the inspector access to the OS), must be certified by the manufacturer to not interfere in any way with the operation of the State test program, or cause any violation of the State rules.

Access to and from all required and mandatory-option programs shall be "seamless". These programs shall be accessed from the Main Menu or a submenu from which they were accessed, without requiring the GAS to reboot.

1.07 Microcomputer Specifications

A standard microcomputer must be included in the analyzer and is to be used to control all analyzer functions. Each vendor is required to develop the required executable programs for all required functions. The specifications detailed in this section are to be considered a minimum requirement. Vendors are suggested to evaluate current technology offerings with respect to industry levels of support (in the long term) for both hardware and operating systems. These programs shall:

Control the specified analyzer functions and timing of functions.

Examine and obtain data from all of the analyzer sensors and fuel cap tester.

Read and write information to a back- up data device in standard DOS format.

Copy the analyzer and inspection station identification information from the hard disk onto each new back-up data device when formatted

Allow access to all Georgia Program Administration functions and be capable of performing these functions via remote communication through the VID such as

-Tampering, lock-out checks
-Responses to queries
-Report downloading

Broadcast any site-specific messages, etc.

Georgia EPD reserves the right to add additional programs and functional performance requirements, up to the technical limits of the hardware and software to improve the I/M program.

Sufficient flexibility shall be provided in the design of the microprocessor system to allow expansion of the analyzer to include but not limited to the following additional capabilities:

Connect and retrieve data from vehicle on-board diagnostic systems (OBD) meeting EPA/SAE specifications when they become available

Monitor vehicle recall data: identify, record, and process data as required when an official EPA/SAE format is defined

Accommodate additional input channels in both analog and digital form. At least one free ISA slot and/or one free PCI slot shall be provided.

Accommodate additional data of vehicle information and test results

Future revisions for emissions repair monitoring and reporting

All equipment and software submitted for certification must be full and current configuration proposed for sale. Partial, dated or incomplete configurations are not acceptable. All upgraded equipment shall contain complete software, hardware, and program documentation.

The proposed hardware configuration must be fully supported by all software and/or operating systems listed in the acceptance requirements 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.

Standard Hardware: Minimum Required

Operating System: A vendor supported version Operating System (OS) with safeguards to limit access to OS. The software program will neither exit to OS, provide a "shell to OS", nor be bootable from any unsecured floppy, nor from an unsecured CD drive or other removable memory device by the end user. The vendor shall disable the option to boot from any unsecured memory device. The vendor shall use a BIOS Boot password to further secure the PC from un-authorized OS access.

Processor: The microprocessor must be upgradeable to be fully compatible with the Intel Pentium microprocessor or better.

RAM Memory: The system must contain a minimum of 2GB of user available RAM.

Power up Sequence: The system must include a power up sequence that provides a self-diagnostic routine to check the on-line presence of critical PC components, including at a minimum:

Video: The video display must be at least a 14" diagonal screen with dot pitch of no more than .28 mm. The display shall be driven with a color graphics adapter with a minimum of 2 MB on-board memory (upgradeable) and capable of displaying, at a minimum, 256 simultaneous colors at 640x480 resolution. The display should be energy star compliant.

Back-up Data Storage on the designated USB memory storage device. A USB drive with a minimum 4 Gigabyte (GB) memory. The USB device must be located in a secured area accessible only to Georgia Program officials and/or authorized service representatives. That secured device must also include an approved method to limit logical access. The Program Administration will test the system for device security. It shall not provide access to the USB device except through the approved security procedure. The secured USB storage device shall be designated the "A" drive. The PC BIOS should accommodate disabling the ability of booting from a floppy, USB storage device, or a CD ROM drive.

Data Storage: Hard Disk (if equipped): Each unit must have at least one hard disk or main memory with a minimum size of ten GB (non compressed). Compact Flash/Memory card (if equipped): one GB (non- compressed). The vendor must ensure that a minimum of 4GB of storage is available for the Georgia Program data 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/memory device must also include a Georgia Program Administration approved method of limiting access to data and programs. The hard disk containing programs and data files shall be designated the "C" drive.

Input/Output (I/O) Ports: The unit must include sufficient I/O ports of proper configuration to allow the connection of all required hardware devices and the capability to add additional I/O boards. The unit must include at least one MS-DOS/IBM PC standard compatible parallel or USB printer port.

Keyboard: The 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 the microcomputer, with a minimum of 101 keys should be provided. The 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 keyboard.

Bar Code Scanner: A 2d bar code scanner for reading Vehicle Identification Numbers (VINs) directly from the vehicle is required. The bar code scanner must be able to read a 1-d or 2-d bar code through a windshield, 6 to 8 inches from the windshield. The bar code scanner shall be able to with stand multiple drops to concrete covering a distance of at least a 4 feet, and be environmentally sealed to withstand the normal operating conditions of an automotive testing/repair environment. The scanner shall be locally programmable to allow for in-field updating as necessary.

Hard Disk/Memory Card Expansion: Each system must include a hard disk interface that will fully support a second internal disk drive or memory card of the same type as the original type drive or a functional equivalent approved by the Georgia Program Administration. Tamper-resistance shall not be compromised by the use of the second disk drive and/or the hard disk interface. The vendor shall ensure that there is adequate space and brackets to accommodate the addition of the second hard drive.

Additional Storage USB Thumb Drive, IBM Optical disk drive, CD/DVD ROM reader, memory card etc. These options would be for manufacturer offered look up tables, service information or other options requiring additional storage capability and software upgrade capabilities accessible to the manager and/or inspector.

NOTE: An unsecured drive or drive portal is required for all new equipment manufacturers entering the Georgia I/M program during PHASE V and after to implement (l) above.

Communications: GAS units must communicate using standard TCP/IP network technology in use at the time of the update.

The analyzer shall be programmed to automatically lock-out, if a software program update does not load properly via the diskette, back-up data device, remote memory device, or by remote access.

Clock/Calendar

1. The analyzer shall be equipped with an internal clock that operates independently from the power source and will provide accurate and automatic date and time information for the following functions:

    - Each test performed
    - Automatic gas calibration and pressure test check (as defined)
    - Automatic leak check (as defined)
    - Audit sequence
    - Dynamometer calibration where applicable

2. The real time clock/calendar 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. The Program

system host computer shall update both time and date during each transfer of data at the beginning of a test (i.e., at certificate or VIN/license entry).

3. If the clock/calendar fails or becomes unstable (as referenced to the program host system during data transfer), the analyzer unit shall be locked out from I/M testing and a message shall be displayed indicating that service is required. Any other clocks installed by the manufacturer shall be synchronized with the VID clock.

4. The date/time, along with the test start and end times 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.

Biometric Identification Device: The biometric device used to identify inspectors shall use Finger-Vein identification technology. The device shall be designed to be easily cleaned and maintained.

The biometric device shall:

- Have a False Acceptance Rate (FAR) of =< 0.0001%
- Have a False Reject Rate (FRR) of =< 0.01%
- Have a Failure to Enroll (FTE) of = 0%
- Have a resolution of 500dpi at a minimum
- Have an operating temperature of at least 5^0C to 35^0C (41^0F to 140^0F)
- Have an operating humidity of at least 20% - 80% (non-condensing)
- Use a drop-in SDK for minimal software design
- Be replaceable without the need to enter the secure area of the cabinet
- Be securely attached to the GAS using a cable or by other means to prohibit unauthorized removal or dropping
- Shall produce a FV template as a base 64 string padded to the right with spaces to fill the allocated field in the designated record.

Each GAS unit shall contain a virus/malware detection program, subject to EPD approval, which shall verify the integrity (i.e. check for infection/corruption). The virus detection program shall be updateable and selection to run the program shall, at a minimum, be available to the station manager, Q/A, EPD, and field service representative. In prior phases the GAS unit connected directly with the VID which provided a measure of security of the systems at both ends. Since the GAS will now be connecting via the internet methods of identifying potential threats to the GAS and the VID must be employed. Each vendor must identify the method of protection planned for the detection and removal of viruses and malware if identified during a system scan.

1.08 Directory and File Structure

The hard disk designated as "C:" will have the appropriate subdirectories existing off the root directory:

The manufacturer may name directories for use of the GAS software but must provide the appropriate directories for state administration use. The computer path (If required by the OS) must include

C:\
C:\DOS or C :\(required system file location) based upon OS used.

In addition, the path should also contain the directory from which the manufacturer's GAS

software will run.

Some of the files used in the system are required by the state to be stored in two distinct media locations for redundancy purposes. Three acceptable methods of performing this are:

At the time of storing the information, files denoted as requiring redundancy are written to the designated USB memory device of the GAS unit directly after the data has been written first to the hard disk (C).

At the time of storing the information, files denoted as requiring redundancy are written to a second hard disk (D:) or other partition of hard drive, or other approved memory device of the GAS unit directly after the data has been written to the first hard disk (C:).

Any other media accepted by the state administration

Below is a list of files along with their redundancy requirements:

FILES	STATE REDUNDANCY REQUIRED
ACCESS	YES
CAL	YES
CAL	NO
CERTNUM	NO
FEE	YES
GAS	YES
INVENTRY	YES
STATION	YES
TAMPER	YES
TECH	YES
TOKEN	NO
VIDCOMM	NO

At the conclusion of each test or gas calibration, the test or calibration record (including aborted tests) shall be placed in the appropriate file:

1. "GAS" This file will contain test records, from the start of any test, which have not been collected by the state. If the file does not exist then the GAS shall create it.

2. "GAS History" This file will contain archived test records that have been sent to the VID. The record shall store the last 2000 records

3. "CALIBRATION" This file shall contain gas calibration results. The software must test for the existence of the file before writing to the file. If the file does not exist then the GAS shall create it.

4. "TAMPER" This ASCII file shall store the current lockout and tamper status of the GAS unit. Status of the all tamper/ lockout areas shall be stored in the file and displayed as "Clear" or "Locked - MMDDYYYY". If the status area shows "locked", the date shall follow the locked condition. See Section 4.02 for a list of the lockouts used in TAMPER file.

5. “VRT” This file shall be stored in the designated directory. This file is updatable by VID connection and shall contain the current VRT ONLY.

6. “ACCESS” This file stores the auditor(QA), FSR(FS), or EPD(DN) ID used to access

the QA/State menu. The record shall store the ID and the date and time the access code was used. This file shall store the last 2000 (MINIMUM) uses of the QA/State password.

Duplication of Files on the State Drive

In order to limit GAS down-time after serious hard disk malfunctions which may require a new or reformatted hard disk, the manufacturer shall store duplicate files on the back-up USB device.

Each time the files are modified, the changes must be written to both the file contained on the hard disk as well as the USB back-up data device. This will mean less down-time for the station in restoring access codes and station information. The GAS must write these files to the USB drive after state personnel, the QA inspector, or a service representative makes a disk USB change.

NOTE: ** See the QA Menu CLOSEOUT function for more details.

1.09 Required Printer

The printer must be sufficiently rugged to operate in the diverse operating conditions at the station. A minimum print speed of 240 cps is required (draft mode). The analyzer's printer shall be interchangeable with a locally purchased, off-the-shelf, compatible printer and be attached using an industry standard cable. Each equipment supplier shall maintain an updated list of compatible printers with EPD and the management contractor. Printer drivers for the approved printers shall be made available to the operator. The printer must be capable of producing a barcode as required in this specification (VIR and, Repair form in Section 5).

1.10 Capability To Access OBD Fault Codes

Analyzer manufacturers will be required to develop provisions for reading fault codes contained in vehicle on-board computer systems using the SAE Standardized Link for 1996 and newer vehicles so equipped for the PHASE V program. The GAS shall prompt the inspector to access the vehicle’s OBD port, decode the fault codes and display the results on the screen, print a short description of the codes on the VIR and record the fault codes on the test record.

The RS232 port for the "SAE Link" shall meet the requirements of SAE J1962.

1.11 Vehicle Reference Table

The Vehicle Reference Table will be supplied by EPD or other authorized agent on a disk or USB drive in an agreed format or via the VID. This table provides emissions application and test sequence selection information to help the inspector perform the inspection/test more accurately. The format and field lengths of the VRT table will be provided separately.

Manufacturers are required to integrate the information from the table into the analyzer software so that emission standards and testing parameters are properly utilized (in accordance with the specifications) during inspection process.

Sufficient memory/disk space shall be provided to accommodate the reference table. A procedure has been added to allow periodic partial updates of the VRT through the VID or full/periodic updates through a floppy disk/CD/DVD/USB port from the QA/State menu or Service Menu (Item 10). In addition the GAS manufacturer may provide for VRT updating via an approved method (local or remote) by the station manager.

The GAS will send the VRT version date to the VID on every communication transaction as part of the security login, with the exception of diagnostic transactions. The software shall record the VRT version in the STATION file in the allotted field and in each GAS record as a part of the test record. The VID will compare the transmitted VRT version date on the GAS to the current version date of the VRT on the VID. If they do not match, the VID will prepare a differential update to be sent to the GAS at a subsequent transaction. The differential update shall consist of each VRT Row that has been revised since the date of the VRT version transmitted. At the next transaction, the VRT shall be updated on the GAS before any emission test occurs. The GAS unit will update the VRT Table or Default VRT Table by replacing any affected row (as identified by its VRT Row Number) in the GAS unit's VRT with the row contained in the update. If a row number in the update is not already in the VRT, the VRT row from the update will be added to the GAS unit VRT. After the update, the VRT version date on the GAS shall be changed to the version date as transmitted from the VID. The GAS unit shall also allow the upload of a complete VRT table from a floppy disk, CD/DVD, or other data device through the QA/State menu or Service Menu. EPD will provide complete VRT table(s) to the management contractor after each annual update revision of the VRT and will allow equipment manufacturer’s field service representatives to perform VRT updates.

1.12 Upgrades

Analyzer manufacturers will be required to establish an upgrade path for the Phase V and later Georgia program. The Phase V upgrade will include all hardware and software needed to perform ASM2, TSI, and OBDII testing as specified by this document. This will include the test software needed to collect required test data as described in this document. ALL stations will be required to implement a software upgrade to allow any changes EPD determines are necessary to effectively implement its enhanced I/M program. Because of the need to make changes to the existing GAS specifications, the Phase V upgrade may also include changes in the test sequence, prompts and data collection which were not feasible for Phase IV.

EPD will not include a specific requirement for annual or other periodic upgrades. EPD may require subsequent upgrades to add functionality based upon changes in the Rules §391-3-20 as determined by the board of the Department of Natural Resources, changes in Federal Rules, or required by needs of the program.

1.13 Bar Code Readers

Manufacturers are required to include/support a barcode reader for reading calibration GAS values from the labels on each tank, inspector/FSR/QA id barcodes from ID badges, and VINs from the vehicle’s inspection report document and from the vehicle’s bar codes in addition to manual entry to allow entry of vehicle data by test stations. The bar code reader must be able to read the barcode from a Repair form to initiate an after repairs test.

1.14 Training Function

The analyzer shall contain a feature that will allow an inspector to perform the complete inspection procedure without generating a certificate or an official inspection record. The manufacturers will use this capability for training new purchasers of analyzers or by analyzer owners to train new employees. The training application shall not require the use of an inspector's access code or allow access to secured areas of hardware of software. The display shall show a message throughout the inspection that this is a training exercise and not a test for certification. Vehicle inspection reports shall indicate to the satisfaction of the State that they are for training only and cannot be used for certification. See Section 5 for example printouts.

1.15 State/QA Rep Access To Test/Calibration Records

There shall be a menu item on the QA/State Representative Menu that allows a record search to be performed. The search shall locate, display, and printout test and calibration records based on vehicle license number, VIN, date/time or certificate number information entered by a state representative. Once a test record is located, the QA/State Representative shall be allowed to review the previous test records as well as those that follow the target record.

Note: See Section 3.01, Menus - Main 6- QA/State Menu.

1.16 Lockout Notification

The analyzer shall alert the Operator of any lockout situation by prominently displaying a message on the display.

The GAS shall be prohibited from performing a Georgia Emission Test for any of the following reasons:

- Warm up in progress
- Warm up failure
- GAS calibration required
- GAS calibration failure
- GAS analyzer failure
- Dynamometer calibration required (ASM only) (see Note 4)
- Dynamometer calibration failure (ASM only) (see Note 4)
- Dynamometer failure (ASM only) (see Note 4)
- Fuel cap tester communications failure
- Fuel cap tester calibration required
- Fuel cap tester fails calibration check
- Leak check required
- Leak check failure
- GAS tampering
- Out of certificates
- Backup USB drive is full
- Hard disk is full
- Drive mechanism failure
- Hard disk or disk mechanism failure
- Real-time clock failure
- QA/State GAS lockout(s)
- Analyzer initialization data missing, incorrect, or incomplete

- Exceeded the No-Transmit Count Limit (see note 1)
- Exceeded the No-Transmit Hour Limit (see note 2)
- Station license has been suspended, revoked or is expired (see note 3)
- Station information is missing (see Note 6)
- Failure to pay for certificate numbers purchased
- OBD hardware failure (see Note 5)

Notes: 1. This lockout shall be set whenever the no contact limit has been exceeded (5 = default) (The VID shall set the "NO TRANSMIT Count LIMIT") Georgia Emission Tests (running total) have been performed without transmission to the network. The GAS shall maintain a count of how many test records have not been transmitted to the VID and display that number on the GAS Status screen. This count shall be reset at the successful transmitting of records to the VID. This lockout, once set by the GAS (counter => 5), shall be reset automatically by the GAS after all records have been transmitted to the VID by performing a DATA FILE REFRESH or TRANSMIT TEST DATA function.

2. This lockout shall be set by the GAS whenever the oldest stored test record (i.e., not transmitted to the VID) on the GAS has been stored longer than X hours (1 hours = default). The number of No Contact hours shall be determined by calculating the difference between the current time and the completion time associated with the oldest test record stored on the GAS. The current time shall be determined at the start of each official Georgia Enhanced I/M inspection at the time the inspector inputs his/her access code. If there are no stored test records on the GAS (i.e., all test records have been successfully transmitted to the VID), the GAS shall not conduct this elapsed time check. The elapsed time check is conducted only when a test has been completed and the record is stored on the Gas pending transmission to the VID.

3. Lockout(s) are established by the VID and the lockout status shall be refreshed through communication to the VID by performing a "Lockout Status Request" from the GAS.

4. Dynamometer hardware failure shall not prohibit TSI or OBD testing or require field service representative to modify system parameters to allow TSI/OBD testing.

5. OBD hardware failure shall not prohibit older vehicle testing.

6. Station information that is missing, but required to be in the STATION file shall cause an automatic local lockout. See Section 2.02 below. This shall be self-resetting/clearing once the required information has been entered by the station manager, field service rep, auditor, or other authorized person and is present in the STATION.

1.17 Manual Testing Mode

The GAS shall be capable of being switched to an operations mode that will allow the unit to be used as an ordinary garage emission analyzer for general automotive repair work and diagnostics. Q/A lockouts shall not prohibit manual mode operation.

The GAS shall not be able to be switched to the manual mode while an official test is in progress.

The GAS shall not provide PID, PCMID, or E-VIN information to the operator while providing OBD II readiness or monitor information during the Official Georgia inspection except

that during ATP (if there is a function for debugging) these types of indications may be provided.

1.18 Software Loading

The inspector shall not have to load the microcomputer's operating or applications software to operate the GAS. On each POWER ON of the GAS, the GAS shall automatically do all microcomputer component self-diagnostics, memory checking, and loading of all necessary operating software without inspector intervention. Upon satisfactory computer component check out, the applications software is to present a menu of available GAS 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 single keystroke.

Software updates shall be performed by either contacting a remote database to download the update, or via an unsecured data point such as a CD, DVD, or USB connection. The owner/inspector shall have the ability to update software using an unsecured drive/port without the requirement of a field service representative being on-site.

1.19 Documentation

The analyzer software shall be fully documented. One copy of the documentation listed below shall be submitted to EPD unless otherwise requested. Manufacturers shall agree, in writing (signed by the CEO of the company), to submit copies of the program listings to EPD upon request, within a time frame satisfactory to the management contractor, or whenever a decision is made by the manufacturer to voluntarily suspend or terminate production of the GAS. EPD does not expect to ever have a need to review the items a. to f. listed below and, therefore, will not require that they be included with the application for certification. However, EPD reserves the right to require that copies be provided, if the need does arise. Software documentation shall include at least the following:

Complete program listings, including the source code as well as the object code in both machine-readable and paper form, shall be provided upon request. These listings are not required to be submitted with the application for certification.

Functional specifications.

Functional flowcharts of the manufacturer's software.

Sample inputs and outputs from all processes.

Detailed interface information on the optical bench including the identification of protocol and output specifications.

All 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 State provided such material is clearly marked as confidential. Gross marking of all material as confidential is not acceptable. Mark only that material which is proprietary.

These requirements are imposed to permit EPD to both operate and check out the GAS units.

Doing so requires full file descriptions and either the detailed code or a full set of routines with all necessary protocol to perform the GAS functions.

The purpose of the requirement for detailed code is to provide the State with a mechanism to assure continued performance of the inspection stations in the event that a major supplier should fail. The State is not interested in any disclosure of proprietary information or in the detailed inner workings of vendor code. However, it is essential that all of the necessary working code, schematics, drawings, and so forth be available in case of such demise.

1.20 Availability of Circuitry

All integrated circuits used in the GAS shall be types and brands that are presently in common usage. Custom ROM programs developed by the manufacturer for building the analyzer are allowed.

1.21 State Access

The State field representatives must have access to update certain portions of the analyzer software. The software shall be designed to include a QA and State Representative Menu as indicated in Section 3. Access to the QA/State Representative Menu will require the entry of the access code and scanning of an ID. The analyzer will change the access code on a daily basis by using an algorithm that will be provided by the State during the certification process. Upon the delivery and set-up of an analyzer, the analyzer shall have the state "LOCK OUT" function preset to the "ON" position to prevent the analyzer from being used in the I/M inspection mode until it has been initialized by a State or QA representative. Information contained in the files associated with the QA and State Representative Menu shall be hidden in software to the States' satisfaction. The access code shall consist of five alphanumeric characters.

GAS manufacturers shall provide training for field personnel of the State and of the QA contractor in accessing and using the State/QA Menu functions. Manufacturers shall prepare an instruction manual approved by the State for the QA/State Representatives in adequate quantities and perform on-site training using the manual at locations, and on dates, designated by the State. In addition, the manufacturer shall provide an adequate number of keys within 15 days of certification, required for EPD/QA personnel to perform their respective functions.

1.22 Data and File Transfer

Calibration Records: All calibration, vehicle test records, and other GAS files shall be capable of being transferred from the GAS in at least one of the following ways:

Via a network using TCP/IP, DSL, or other high-speed data transfer method over a secure connection to the VID.

Via USB drive, or other approved back-up data device.

EPD/Contractor GAS Message Capability: The GAS will download EPD and Contractor-generated GAS messages only during VID contacts. The file name where the message

will be held will be called BARMSG.REC. If more than one page is to be displayed, the inspector shall be instructed to "strike any key to continue". When the entire GAS message has been displayed, a menu shall be displayed as follows:

Display Prompt:

ENTER ONE OF THE FOLLOWING NUMBERS:

1. PRINT A COPY OF THE EPD OR CONTRACTOR (GAS) MESSAGE
2. READ THE GAS MESSAGE AGAIN
3. EXIT

Display [1.22]

When the inspector selects "EXIT", the GAS message shall be stored. If the inspector selects #1, the GAS message shall be printed. If the inspector selects #2 the GAS message shall be displayed again. If the inspector selects #3, the analyzer shall return to the previous screen displayed prior to the GAS message.

The GAS shall store at least the last 2000 messages sent down from the VID by the management contractor. The GAS messages shall be stored and recalled by DATE and TIME. The DATE and TIME stamp shall be made at the time the download occurs by the GAS. The first GAS message displayed shall be the most recent GAS message sent (last in first read). A menu item for GAS message recall shall be listed on the MAIN MENU and not require pass-code protection. The GAS shall allow the inspector to scroll through the list of GAS messages and select a single GAS message based on DATE and TIME. The file format and location is up to the GAS manufacturer. Once a message is located, the GAS shall allow the inspector to view or print that GAS message. See Display [1.22] above. The GAS shall automatically purge “old” GAS messages ex: older than 2000.

The USB memory device designated as state drive 'A' must be removable and show full compatibility with existent State or contractor microcomputers. The USB drive must be secured logically and physically to permit only authorized state and manufacturer access. Vendor methodology to restrict such access shall be approved by the Program Administration.

Manufacturers will be responsible to demonstrate full system compatibility as well as TCP/IP transfer of files to the State or management contractor.

1.23 Test Record Storage Capacity

The GAS hard disk drive or main memory storage device shall have the capability to store the number of records indicated in Section 3.01(14)(a) below, not counting those on backup waiting to be transmitted to the VID. Storage shall be maintained with power off.

Section 2 - Software Functions

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

1. Inspector identification/verification;
2. Vehicle identification;
3. Contact the VID with vehicle data,
4. Conduct a tampering inspection and enter the results; if required
5. Conduct an emissions test (OBD, ASM, or TSI), if required,
6. Conduct the Fuel Cap inspection;
7. Enter the repair data if applicable;
8. Contact the VID after the inspection,
9. Print the repair form when the inspection is complete prior to the VIR; if required;
10. Print the required test report when the inspection is complete.

A detailed description of these tasks follows:

2.01 GAS Initialization

The following analyzer data must be entered by a QA/State representative for the GAS to be ready to perform Georgia Emission Test inspections:

- Station Number
- GAS Number
- Primary Network Phone Number
- At least one Inspector License Number (via VID only)
- Calibration GAS values
- Station information (see 2.02(6) below)
- Inspector biometric information (enroll if necessary)

Note: Inspector information is not required to initialize a GAS unit. Refer to Section 3.01 for additional information regarding Network Initialization and Update Network Communication Data. After the required data have been entered into the GAS, the QA/State representative shall establish initial network communications to the VID using the "Network Initialization/Update Communication Data" function.

2.02 Station Number and Access Codes

The GAS shall be designed to require enhanced security methods to gain access to the inspection menu, QA menu, service menu, and calibration menu the entry of a special access code by the inspector before a Georgia Emission Test inspection can begin. The access code shall neither be displayed nor printed on the test report. This special access code number shall be linked to the inspector license number. Five types of licenses will be issued restricting the model years of vehicles that they can inspect or access to different areas of the software. The inspector license number will reflect which type of license an inspector possesses.

The license number will begin with "BA" for inspectors that are limited to 1996 and newer model

year vehicles.

The number will begin with "AA" for inspectors whose license allows them to test all vehicles. The analyzer software shall be designed to automatically abort the inspection if the inspector has not been authorized to perform the test selected based on the model year (M.Y.) of the vehicle. A message shall be displayed indicating that the test has been aborted because the inspector has not obtained the proper license from the State.

The number will begin with "FS" for field service personnel whose access code allows access to the respective “SERVICE MENU” and “QA/STATE MENU”.

The number will begin with “QA” for GCAF auditors whose access code allows access to the “QA/STATE MENU”.

The number will begin with DN for EPD associates whose access code allows access to the “SERVICE MENU” and “QA/STATE MENU”.

The GAS shall have the capacity for storage of a minimum of 200 inspector records.

The microcomputer shall be designed to allow the inspector’s license number and each inspector’s access code to be changed only by the VID. The Station Number will be automatically recorded on the test report along with the Inspector’s License Number.

The station and the inspector license numbers and names shall be printed on the VIR.

Station and inspector license numbers must all begin with two alpha characters followed by six numeric characters. Certificate numbers must be two alpha followed by six numeric characters. The analyzer shall not be allowed to go into the Georgia Emission Test inspection mode unless the analyzer has a valid station number, GAS number, PEF value, GAS values, e-Certs, at least one licensed inspector in the analyzer, and has passed a complete three-day calibrations.

From the pass coded Station menu, Service menu, and QA AUDIT Menus, there shall be a selection for entry of the station information required for printing on the VIR. This menu item must be secured by password. Fields required for entry of this information shall be as follows:

- Station Name -25 alphanumeric characters
- Address -20 alphanumeric characters
- City -13 alphanumeric characters
- Zip - 10 characters the first 5 must be numeric
- Station Telephone Number - 12 numeric characters
- County Code - 3 numeric

The GAS shall not allow inspections to start if the station information required to be printed on the VIR is missing from the STATION file. If the required fields are not populated, the GAS shall set the appropriate lockout, prohibit the test from proceeding and display a warning message.

2.03 Applicable Model Years

The GAS shall accept any covered model year vehicle for performing a training test as it would for the certified emissions inspection. The GAS shall read the current M.Y. exemptions in a file

to be updateable by the VID. Currently the newest three model years are exempt from needing an inspection; however the GAS shall have the ability to override this exemption based on the motorist request. Any vehicle attempted to be tested that is older than the allowed oldest model year vehicle is not to be tested, the GAS shall abort the test (free abort) and note that the vehicle is not subject to testing, but may only be tested in manual mode. See section 3.11.

2.04 Gross Vehicle Weight

For the case where the operator tells the GAS that the "Vehicle Standards Type" is a "T" (Truck), the GAS shall then request the Gross Vehicle Weight Rating (GVWR) to be entered. If the GVWR of the vehicle is greater than the value in the MAX GVWR , the vehicle is exempt from testing. If the GVWR is equal to or less than the value in MAX GVWR, the appropriate ESC Table or VRT Row will be used to select testing standards. See section 3.18 for more information.

2.05 Vehicle Make Entries

The analyzer software shall be designed to accommodate all of the vehicle make names going back to 1975 as contained on the VRT (maximum 17 characters). The full names of each vehicle make must be displayed and printed on the original VIR and on any VIR reprints, and shall be recorded in the test record. The software shall be designed to first display a list of vehicle makes. The inspector shall then be instructed to select a make using the cursor and scrolling through the list or by typing in the first letter or two of the make so that the cursor goes directly to the first make with that letter in it, or a combination thereof.

Once a make is selected, a table of corresponding models only pertaining to the M.Y. and Make entered must be displayed and the inspector instructed to choose one.

When a make or model name is not contained in the reference table, the inspector shall be instructed to enter the names (no abbreviations) through the keyboard.

2.06 Safe-To-Test Inspection

Prior to commencing the emissions inspection, the inspector shall be prompted to examine the vehicle to ensure that it is safe-to-test and properly prepared for testing. See Section 3.

2.07 SPECIAL TESTING STANDARDS

The VID may apply special standards to targeted vehicles by assigning non-conforming standards through the waiver application. These non-conforming standards are designated by characters provided by the VID.

2.08 Test Information

The analyzer software shall be designed to utilize the State’s Vehicle Reference Table for most 1975 and newer model year vehicles. Emission standards, dilution thresholds, and maximum RPM limits will be determined from the emission standards categories table. The software shall

be designed to immediately initiate a search through the Vehicle Reference Table (VRT) as soon as enough information is entered to determine the appropriate VRT row number to obtain test parameter information (vehicle test weight and test horsepower for ASM, and emission standards or OBD II requirements for newer vehicles).

2.09 Visual Tampering Inspection

All vehicles, unless otherwise exempted (i.e., non-conforming without a catalytic converter), shall receive a tampering inspection. The tampering inspection shall consist of either a direct visual observation of the catalytic converter(s), or indirect visual observation of the catalytic converter(s) using a mirror, video camera, or other visual aid. While conducting the visual observation of the catalytic converter(s), the inspector shall make a determination as to whether the catalytic converter(s) is/are present, appears to be properly connected, appears to be the correct type for the vehicle, and appears to have no external damage that would prevent the device from operating.

2.10 OBD Test – Newer Vehicles

Vehicles M.Y. 1996 and newer shall receive an OBD II evaluation as outlined in Appendix-F OBD Test Sequence in place of a tailpipe test to determine if the vehicle passed or failed the test unless the vehicle is identified as being non-conforming (see 2.07 above).

2.11 Emissions Test – ASM2/TSI Test Procedures

The ASM2 test procedure will be performed on vehicles M.Y. 1995 and older unless otherwise exempted (i.e. four wheel drive, traction control, or by software). The ASM2 test sequence is described in Appendix ASM2 TESTING SEQUENCE AND TEST STANDARDS. Non-conforming older vehicles and vehicles identified as not able to receive an ASM test shall receive a TSI test.

2.12 Functional Fuel Cap Inspection

All vehicles subject to be tested shall have the fuel cap(s) on those vehicles inspected. The fuel cap inspection will require the inspector to evaluate the fuel cap(s) as prompted by the GAS to determine if it/they are missing or operating properly. The fuel cap test, if performed, will be a determination of the fuel cap(s) to retain pressure. See Appendix I, FUEL CAP TEST PROCEDURE, for the Fuel Cap test sequence.

The program will prompt for, and test up to two fuel caps if present and testable as prompted by the program software.

2.13 Pre-Inspection Repairs

Initial tests on vehicles in Georgia shall ask the inspector if pre-inspection repairs were performed. See section 3.31.

2.14 Repair Action Information (ALL Tests)

On all tests conducted after repairs have been made ("A" tests), or on vehicles that have had pre-inspection repairs, the inspector is required to enter information regarding the repairs that were accomplished to reduce the emissions. The analyzer shall display all of the major repair categories and prompt the inspector to select the category of the system(s) that were checked, repaired, replaced, or adjusted.

The categories will consist of the items contained in Section 3.32, Repair Action Categories.

A separate repair information form will be printed and provided to motorists who fail the test. Motorists will be required to complete the form, or have the repair shop complete the form, when repairs are completed. Information contained on this form will be entered at the time of the after repairs test.

2.15 Escape Command

An ESCAPE command shall abort an I/M test. A printout and a test record (for the hard disk) shall be produced which includes as much of the vehicle identification and test data as possible that was entered before the abort key was pressed. See Section 2.17 below for criteria for saving records and printing VIRs. The ESCAPE mode shall be capable of being entered with the pressing of one key maximum. If the inspector or GAS aborts the test sequence during the test (prior to completing all sections of the test), the remainder of the test shall not be completed. For example, if the inspector aborts an ASM test sequence then the GAS shall not perform a fuel cap test. The fuel cap test shall indicate a fail since this test was not performed.

2.16 Data Storage and Recall Capability

The analyzer shall have the capability to recall and display previous test histories and GAS messages sent down from the VID to give updated information to inspectors. See section 3.01(14)(a) for previous test recall and 3.01(14)(b) and 3.13(15) for GAS message recall criteria.

2.17 Decision Criteria

The GAS shall be programmed to print the VIR and record the test results for all complete tests, and most aborted or incomplete tests, i.e., those for which a test record is written. If the test results are PASS for all test sequences required (or for the test sections which are required to be retested in the case of retests), the VIR will indicate that the vehicle has an overall passing result and that the Certificate can be used for registration.

Section 3 - Display Prompts and Programming Criteria

(1) Section 3 describes the display prompts and programming criteria for the I/M inspection/test sequence. These items shall be standardized to facilitate training of licensed inspectors. Manufacturers may propose, for State approval, 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. The GAS manufacturers shall utilize one or more of the following options to make the analyzer user-friendlier:

Direct cursor addressing or first letter selection versus a scrolling display;
Data entry using the bar code scanner on bar-coded information in the ECS guides, bar-coded VIN, and emission control labels;
Method of displaying DATA ENTRY ERROR MESSAGES; and
Development of HELP screens to assist inspectors with data entry

NOTE: Other options may be proposed for approval by the State.

(2) Data entry from one item to another shall not proceed until a valid entry has been made.

(a) Once the tampering inspection sequences have been initiated, the inspector shall be prohibited from editing any vehicle identification information.
(b) Once the emissions inspection sequence has been initiated, the inspector shall be prohibited from editing any tampering inspection information.
(c) Once the functional inspection sequence has been initiated; the inspector shall be prohibited from editing any OBD or emission inspection information.
(d) Once the functional test has been completed, the inspector shall not be able to issue an aborted test.

NOTE: Where editing is allowed, the inspector shall have the ability to return to a previous display prompt without depressing more than three keys. 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.

3.01 Menus

The following consists of menus manufacturers are required to provide.

Main Menu: The main menu shall display the following options:

1 TRANSMIT TEST DATA
2 GEORGIA EMISSION TEST{DEFAULT}
3 MANUAL TESTING MODE
4 THREE-DAY CALIBRATIONS AND LEAK CHECK
5 STATUS SCREEN
6 QA/ STATE MENU
7 OPERATOR TRAINING

8 RECALL PREVIOUS VEHICLE TESTS
9 NETWORK COMMUNICATION DIAGNOSTICS
10 STATION MANAGER MENU
11 GAS MESSAGE SEARCH AND RECALL
***12 RUN VIRUS SCAN ON SYSTEM**

[Display 3.01(1)]

*Optional selection from MAIN MENU

The Main Menu shall also have the ability to indicate to the inspector that the GAS is fully functional, or has one or more lockout/tamper set, or has some other issue that will prevent the GAS from performing a Georgia Emissions inspection such as, but not limited to: no e-certs, disconnected/out of paper printer, bench calibration error, dynamometer error).

Inspector Information: Each inspector ID number consists of two alpha characters followed by six digits. Valid combinations of alpha characters are as follows (nnnnnn represents the numeric portion):

The following are valid inspector ID number formats:

- AAnnnnnn Regular inspector license (ASM / OBD / TSI)
- BAnnnnnn Newer vehicle inspector (OBD / TSI)
- DNnnnnnn DNR Employee(ASM/OBD/TSI/QA/Service/Referee)
- FSnnnnnn Field Service repair personnel (QA/Service Mode)
- QAnnnnnn QA/QC Auditor personnel (QA/Referee)

The VID shall determine who is allowed to perform inspections on a given age of vehicle by updating the TECH file during a DATA FILE REFRESH, or a TRANSMIT TEST DATA action.

Associated with each inspector ID number, in addition to inspector name and access code, is a license expiration date in the MMDDYYYY numeric format.

(i) The GAS shall prevent an inspector whose license has expired, has been suspended, or has been revoked from performing a Georgia Emission Test based upon the data stored in the TECH file.

(ii) Authorized inspector(AA, BA)/QA/DN/FS ID numbers, names and information will be retained by the GAS in the TECH file.

The inspector shall initiate an I/M inspection/test by entering the number "2", the manual testing mode by entering the number "3", and so forth. A brief description of each item in the menu follows.

Default Values: The following entries will be allowed to have the indicated default responses.

VEHICLE INSPECTION

Field	Default
Test Type	Initial {default }
Vehicle Type	Passenger
Fuel Type	Gasoline
Dual or Single Exhaust?	Single

Vehicle Make (manufacturer's choice)

The VIR is to be printed on white paper with a finished size of 8.5 by 11 inches. Stations may print a second copy, or utilize two-copy paper, for their records. Printing of the official VIR shall be in black ink only.

Main 1 - Transmit Test Data: This is the **default** selection on the Main Menu. This selection shall initiate a data upload by performing a "Request Lockout Status" VID communication sequence. This selection is intended to upload any stored records if not uploaded previously.

Main 2 - Georgia Emission Test: The analyzer shall initiate, run, and terminate the I/M inspection/test sequence in accordance with the specifications. Detailed Georgia Emission Test procedures begin with Section 3.10, Inspector Access.

Main 3- Manual Testing Mode: The GAS shall allow the operator to use the equipment in a manual mode. The manual mode shall be available without the need for an access code.

For tailpipe readings (TSI, or ASM testing): As soon as the analyzer meets the warm-up criteria, selection of the Manual Testing Mode shall cause the analyzer to conduct an automated electronic zero and span and then begin taking emission readings. The emission 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:

For TSI testing Display:

EMISSION	**READING**
HC	**XXXX**
CO	**XX.XX**
CO_2	**XX.X**
O_2 (optional)	**XX.X**
RPM	**XXXXX**

[Display 3.01(2a)]

For ASM testing Display:

EMISSION	**READING**
HC	**XXXX**
CO	**XX.XX**
CO_2	**XX.X**
O_2 (optional)	**XX.X**
NO	**XXXX**
Horsepower (optional)	**XX.X**
RPM	**XXXXX**
MPH	**XX.X**

[Display 3.01(2b)]

For OBD II testing: The GAS shall display the MIL command status, and the status of available readiness monitors. The GAS shall not display protocol, E-VIN, PCMID, calculated PID count, CVN, or Calibration ID(CID). A suggested display offering the OBD II information is shown below.

Display Prompt:

MIL COMMAND STATUS: {ON/OFF}
Misfire Monitor: {Not Supported/Ready/Not Ready}
Fuel System Monitor: {Not Supported/Ready/Not Ready}
Component Monitor: {Not Supported/Ready/Not Ready}
Catalyst Monitor: {Not Supported/Ready/Not Ready}
Heated Catalyst: {Not Supported/Ready/Not Ready}
Evaporative Monitor: {Not Supported/Ready/Not Ready}
Secondary Air Monitor: {Not Supported/Ready/Not Ready}
Oxygen Monitor: {Not Supported/Ready/Not Ready}
EGR Monitor: {Not Supported/Ready/Not Ready}

[Display 3.01(3)]

Main 4- Three-day Calibration and Leak Check

A three-day GAS calibration consisting of, bench calibration, leak check, and fuel cap calibration is required every 72 hours for all GAS units. A dynamometer calibration is also required for ASM systems. Selection of this item shall bring up a set of calibration and leak check procedures. The procedures shall be user-friendly and shall indicate every step needed to properly perform the required calibrations and leak check (including when it is necessary to turn the gas cylinder valve on and off for the gas calibration). Procedures shall be approved by the State.

Results of the leak check and the calibrations shall be displayed and recorded.

The GAS shall prompt the calibrator to scan their badge in order to begin any calibration routine.

Display Prompt

ENTER YOUR EIGHT DIGIT BADGE NUMBER
PRESS ENTER TO PROCEED

[Display 3.01(30)]

Alternatively:

SCAN YOUR ID BADGE, or
ENTER YOUR ID USING THE KEYBOARD
TO BEGIN THE CALIBRATION

[Display 3.01(3a)]

The system shall preclude I/M testing after a maximum of 72 hours if a leak check and all required calibrations are not performed and passed. If the analyzer fails the three-day calibrations or the leak check, a message shall be displayed indicating that it failed and shall suggest possible inspector fixable causes for the failure; e.g.,

Display Prompt:

CHECK GAS CYLINDERS SHUT OFF/EMPTY/CONNECTED TO WRONG PORTS.

TRY AGAIN.

IF NONE OF THESE APPLY, CALL SERVICE.

[Display 3.01(4)]

Provisions shall be made to allow an inspector to perform each calibration separately, i

Change Gas Cylinders

1. When this submenu item is selected, the calibration lockout shall be set until a successful calibration is performed and. The operator shall be instructed to enter the new gas cylinder values using the required barcode scanner.

Display Prompt:

SELECT THE GAS BOTTLE TO BE CHANGED:

HIGH RANGE SPAN GAS
CERTIFIEED ZERO GAS

BOTH

[Display 3.01(5)]

2. After the selection is made, the operator shall be required to enter the bottle values, the operator shall be prompted by one of the following displays:

Display Prompts:

USE THE BAR CODE READER TO SCAN THE BOTTLE VALUES INTO THE SYSTEM.

[Display 3.01(6)]

THE VALUES ENTERED ARE NOT WITHIN THE ALLOWABLE RANGE. REENTER THE GAS VALUES.

[Display 3.01(7)]

THE VALUES ENTERED ARE PAST THE ALLOWABLE DATE RANGE. YOU MUST USE A TANK THAT HAS NOT EXPIRED.

[Display 3.01(8)]

IF THE BAR CODE IS NOT READABLE OR IS INCORRECT MANUALLY ENTER THE CORRECT VALUES

[Display 3.01(9)]

3. The operator must re-enter values within the tolerance before being allowed to proceed.

4. The unit shall be locked out until the calibration is performed and passed.

5. The GAS shall not be locked out due to Oxygen sensor failure.

Main 5- Status Screen: Selection of this item shall cause the CRT to display a status screen containing GAS Unit information.

Main 6 - QA/State Menu

When this menu is selected the manufacturer shall display the following menu options for the QA inspectors and State field representatives:

1. LEAK CHECK
2. GAS AUDIT
3. UPDATE STATION INFORMATION
4. INSTALL NEW BACKUP DATA DEVICE
5. LOCKOUT GAS
6. PERFORM SOFTWARE UPDATE
7. TEST RECORD SEARCH AND RETRIEVAL
8. REFEREE TEST
9. NETWORK INITIALIZATION/ *UPDATE NETWORK COMMUNICATIONS DATA
10. VIEW INSPECTOR INFORMATION
11. GAS CLOSEOUT
12. RESET MANAGER ACCESS CODE
13. ENROLL INSPECTOR BIOMETRIC
14. VIEW GAS ACCESS
***15. RUN VIRUS SCAN**

*Optional selection from MAIN MENU

*NOTE: This selection may be provided as an option. See 3.01(9)(d)10 below.

Access to the QA and State Representative Menu will require scanning of their ID badge, and biometric identification as required. Information contained in the files associated with the QA and State Representative

(i) After the QA/State Menu has been selected, the GAS shall display:

SCAN YOUR BADGE TO ENTER QA/QC MENU or
PRESS ESC TO ABORT

[Display 3.01(11)]

(ii) The GAS shall only allow a badge ID that begins with QA, DN, or FS to access the QA menus.

(iii) After the badge has been successfully scanned the scanned ID shall be stored, then

(iv) The software shall append the ACCESS file then proceed to the QA Audit screens. Or

(v) If the scanned badge does not begin with a QA, or DN, or an FS the Gas shall return to the MAIN MENU after displaying the following message FOR 30 SECONDS or after a key is pressed to return to the main menu:

YOU DO NOT HAVE ACCESS TO THIS SECTION OF THE GAS

[Display 3.01(12)]

1. Request the auditor to be recognized by the use of biometrics. Access to the QA Menu will only be achieved after successful identification.

Display Prompt:

USE THE BIOMETRIC DEVICE TO ENTER THE AUDIT MENU

[Display 3.10(8)]

I. If the biometric identification is successful the GAS shall proceed to the QA Audit Menu, or

II. If the biometric device does not recognize the inspector, the following message will be displayed:

Display Prompt:

BIOMETRIC RECOGNITION IS NOT SUCCESSFUL

PRESS <FX> TO TRY AGAIN OR
PRESS ESC TO EXIT

[Display 3.10(9)]

III. If <FX> is pressed the biometric will be attempted again, or

IV. If ESC is pressed, the GAS shall return to the MAIN MENU.

B. If the value of the BIOMETRIC REQUIRED field the PROGRAM file is an ”N” then the GAS shall only require the auditor to manually input their PIN and scan their ID badge to proceed.

C. If the biometric identification is successful or the entered access code is valid the GAS shall display the identified name from the TECHNICIAN file on the screen.

Display Prompt:

{first name last name} HAS BEEN IDENTIFIED.
PRESS <Fx> TO PROCEED,
PRESS ESC TO EXIT

[Display 3.10(11)]

(i) If Fx is pressed the GAS shall proceed to the QA Menu, or

(ii) If ESC is pressed the GAS shall return to the MAIN MENU.

1. QA 1 - Leak Check: Instructions for conducting a leak check shall be displayed:

Display Prompt:

HIT THE SPACE BAR TO START A LEAK CHECK

[Display 3.01(13)]

2. QA 2 - GAS Audit: The GAS shall default to propane and no dilution correction factor (DCF) but shall give the auditor the option to specify otherwise:

Display Prompt:

PROPANE OR HEXANE? (Default is Propane)

[Display 3.01(14)]

(i) After a response is entered:

Display Prompt:

WITH OR WITHOUT DCF? (Default is without DCF)

[Display 3.01(15)]

(ii) After a response, follow the same instructions indicated under "Manual Mode Testing" above.

(iii) GAS units with weather stations shall display weather information on the screen during the GAS audit process.

Display Prompt:

WEATHER STATION READINGS

Temp: xxx^{0}F
Relative Humidity: xxx%
Barometric pressure: xx.x in Hg

[Display 3.01(16)]

3. QA 3 - Update Station Information: Selecting this item will cause the analyzer to display a table showing the station license numbers and other required station information for editing.

4. QA 4 - Install New Data Device: The manufacturer shall display instructions, on a single screen, for changing the memory device approved by EPD.

5. QA 5 - Lockout GAS: The GAS shall display lockouts set by the VID:

6. QA 6 - Perform Software Update: Any software updates shall be performed by manufacturer representatives, or other method approved by EPD.

(I) The VRT Update file may appear to be corrupted if any of the following conditions exists:

I. The version date sent by the GAS does not match any dates stored in the "VRT Update History" table in the VID (second consecutive occurrence).

II. The number of records in the GAS' VRT does not match the appropriate number of records for that version date (determined at the VID).

III. If possible, corruption is detected by the VID; the VID will send a response bit to the GAS. The GAS, upon receiving the response bit, shall display the following warning message:

Display Prompt:

THE VRT DATABASE IS CORRUPT. CALL SERVICE.

[Display 3.01(18)]

IV. If the VRT file has not been replaced, a lockout shall be set. This lockout can be cleared by the VID or upon replacing the file providing the VID has verified that the VRT data has been replaced.

7. QA 7 - Search and Retrieve Test Records: The search shall locate, display and printout test and calibration records based on knowledge of the vehicle license number, VIN, date/time or certificate number
8. QA 8 - Referee Test: The QA/State Representative menu shall also allow the QA or State representative to perform a referee test from the GAS.

9. QA 9 - Network Initialization/*Update Communications Data: A "Network Initialization/Update Communications Data" menu item shall be part of the QA/State menu.

(i) The GAS may provide space for vendor names and telephone numbers within the "Update Communications Data" function. The data will be stored on both hard and floppy disks.

(ii) The QA/State representative shall establish first time network communications between the GAS and the VID after a GAS unit has been initialized.

*NOTE: Software vendors may provide for the ability to contact third party information providers to gain access to TSB and recall information as an option.

10. QA 10 - View Tech Information: This menu selection will allow the auditor to view the inspector information data file. The inspectors shall be listed showing their Inspector ID number. There shall be the ability to select a specific inspector and, if FX is pressed, ONLY the selected inspector access code shall be displayed for a period of two seconds.

11. QA 11-GAS Closeout: This menu selection allows the auditor to close out a GAS unit without the need for a FSR.
12. QA-12- Reset Manager Access Code: The auditor will be able to reset the station manager access code to the equipment manufacturer default setting when this item is selected.

13. QA-13 Enroll Inspector Biometric. When this item is accessed the biometric enrollment routine shall be initiated.

14. QA-14- View GAS ACCESS: This selection shall allow the auditor to view (ONLY) the contents of the ACCESS file and print the contents.

15. QA-15 RUN VIRUS SCAN (optional): This selection will cause the GAS to perform a scan for viruses.

Main 7- Operator Training: Operator Training Prompts shall be provided to allow the operator to perform a practice Inspection in accordance with the requirements specified in Section 1.14, Training. The GAS shall indicate that it is a training test on the VIR.

Main 8- Recall Previous Vehicle Tests: Prompts shall be provided so that the operator is allowed to review previous vehicle test records in accordance with the requirements specified in Section 2.17, Data Storage, and Recall Capability

The GAS shall be able to recall and display all test records that are stored on the GAS unit, and to reprint a copy of the VIR for those stored vehicle test records.

The GAS shall transfer only the vehicle identification information so that it can be used for subsequent tests. The inspector shall be required to re-enter the odometer and test type for subsequent tests.

Main 9- Network Communications Diagnostics: "Network Communications Diagnostics" shall be included in the "Main Menu" and shall be used to diagnose communication related

problems. The following diagnostic tests shall be provided:

Display Prompt:

COMMUNICATION DIAGNOSTICS
NETWORK DIAGNOSTICS

[Display 3.01(19)]

Communication diagnostics shall be manufacturer provided pursuant to manufacturer-specific hardware configurations.

The GAS shall provide the data needed to conduct network diagnostics . Each individual GAS manufacturer determines the size and characters within the communications protocol limits. The GAS shall display the following message:

Display Prompt:

TRANSMITTING DATA PLEASE WAIT.

[Display 3.01(20)]

1. If, upon completion of network access, the data transmitted by the GAS to the VID is the same as the data received by the GAS from the VID, then the GAS shall display the following message:

Display Prompt:

NETWORK COMMUNICATIONS PASSED.

[Display 3.01(21)]

or,

2. If, upon completion of network access, the data transmitted by the GAS to the VID is not the same as the data received by the GAS from the VID, then the GAS shall display the following message:

Display Prompt:

NETWORK COMMUNICATIONS FAILED.

[Display 3.01(22)]

or,

3. If network communications access is not achieved, the GAS shall display the following warning message:

Display Prompt:

CANNOT ACCESS NETWORK. CALL HELP LINE

[Display 3.01(23)]

Main 10- Station Manager Menu

The manufacturer shall display the following menu options for the Station Manager:

1. **NETWORK COMMUNICATIONS**
2. **REQUEST LOCKOUT STATUS**
3. **REVIEW CERTIFICATE INVENTORY**
4. **DATA FILE REFRESH**
5. **STATION FEE MAINTENANCE**
6. **CERTIFICATE STATUS REPORT**
7. **RUN VIRUS SCAN**

Station Manager 1 - **NETWORK COMMUNICATIONS DATA**. The GAS shall have a "Network Communications Data" selection in the "Station Menu".

Station Manager 2 - **REQUEST LOCKOUT STATUS**. A feature, "Request Lockout Status", shall be made available as a station manager function which will allow the station manager to request that the VID clear a state installed lockout.

1. Upon selection, network access shall be attempted and, if successful, the VID shall return the revised lockout status even though the lockout might not have been removed.

Display Prompt:

TRANSMITTING DATA PLEASE WAIT.

[Display 3.01(24)]

(i) If, upon completion of network access, the VID indicates that a lockout(s) has been cleared, then the GAS shall clear the appropriate lockout flag(s). Or,

(ii) If, network access to the VID is not achieved, the GAS shall display the following warning message:

Display Prompt:

CANNOT ACCESS THE NETWORK.

IF THIS MESSAGE PERSISTS,
PERFORM COMMUNICATION DIAGNOSTICS, OR
CALL YOUR SERVICE REPRESENTATIVE.

[Display 3.01(25]

Station Manager 3 - **REVIEW CERTIFICATE INVENTORY** A feature, "Review Certificate Inventory", shall be made available as a station manager function in the "Station Manager" menu. This feature shall display the number of certificates currently residing in the inventory.

1. The variable length ASCII text format inventory file is required to be backed up as defined above.

2. Start certificate number becomes "next" certificate number as certificate numbers are issued. Certificate numbers are to be used by using the first characters and then the numeric value (not by numeric only). Example: use FN34712 before FO11234.

Station Manager 4- **Data File Refresh.** The GAS shall have a "Data File Refresh" as a station manager function in the "Station Manager" menu. This feature shall allow the station manager or other authorized station personnel to place a request to the VID to update certificate numbers (that the GAS currently uses and those, if any, that are stored in the inventory), inspector's information, ESC Tables, any VRT updates and the PROGRAM file.

1. The GAS shall overwrite the existing tables with the refreshed data received from the VID.

2. Whenever the "Data File Refresh" item is selected and before performing the data refresh procedure, the GAS shall display the following message:

Display Prompt:

THE VID WILL UPDATE THE INSPECTOR INFORMATION FILE AND THE CERTIFICATE NUMBER INVENTORY.

YOU SHOULD PRINT THE CURRENT INSPECTOR INFORMATION AND CERTIFICATE NUMBER INVENTORY.

[Display 3.01(26)]

3. Prior to proceeding, the "Data File Refresh" the GAS shall display a list of inspector license numbers and certificate number inventory that currently exist in the GAS and shall provide an option to print, if desired. Then the GAS shall prompt the inspector to perform the refresh procedure.

4. Upon completion of the "Data File Refresh" procedure the GAS shall display the following message:

Display Prompt:

THE INSPECTOR INFORMATION AND CERTIFICATE NUMBERS HAVE BEEN UPDATED BY THE VID.
PLEASE VERIFY, AND IF THERE ARE PROBLEMS CONTACT THE HELP LINE 1-800-449-2471 OPTION 2

PRESS <FZ> TO PRINT OR PRESS <FX> TO CONTINUE

[Display 3.01(27)]

NOTE: pressing <FZ> shall cause the GAS to print the names (only) of the inspectors and a listing of e-certs on the GAS. Pressing <FX> shall continue.

5. The GAS shall display the updated list of inspector license numbers and certificate number inventory. The GAS shall not display or print the actual inspector access codes so that unauthorized person(s) may not view them.

6. The VID shall transmit the PROGRAM file during each communication session to ensure the local GAS has the most current program information.

Station Manager 5 - **STATION FEE MAINTENANCE**

1. This menu option will bring forth a screen that will allow the station manager to set the paid test fee that will be charged for emission tests at that station. The number will be less than or equal to the ‘Max paid test fee’, or greater or equal to the 'Min paid test fee' in the FEE file. The "Max paid test fee" and "Min paid test fee" for both OBD/TSI and ASM will be VID adjustable. The fee limits will be transmitted in the PROGRAM file.

2. Immediately after entering the paid test fee, the newly entered paid test fee will be displayed for verification. The station manager will have the option of accepting or canceling the operation. If accepted, the value in the FEE file will be changed immediately. If canceled the file will not be updated and will retain whatever value existed previously as long as the previous value is valid.

Station Manager 6 - **CERTIFICATE STATUS REPORT**: This menu will allow station operators to order a standard report on:

- The number of certificates ordered,
- The number of certificates used,
- The current inventory of certificates held by the station, and

- Other information needed by the operator to perform accounting and other business functions at the station.

1. If selected by the manager the request for this report will be sent to the VID. .

2. The first page of the two-page report will contain the deposits, certificate purchase. The second page will show certificates purchased and inventory of the previous month.

3. The report will be prepared overnight and transmitted as an EPD message during the next VID contact.

Station Manager 7- **RUN VIRUS SCAN** (optional): This selection will cause the GAS to perform a complete system scan for viruses.

Main 11- Gas Message Search and Recall: This function shall allow the inspector to search and view the GAS messages stored on the analyzer. The analyzer shall have the capability to recall and display all GAS messages that are stored on the GAS unit (last 2000), and to reprint a copy of any selected GAS message. Recall shall be initiated by typing in a date, a message number, or by cursor selection from a list of stored GAS messages displayed on the screen.

Main 12- Run Virus Scan on system: (optional on the main menu). If selected this menu item will run a scan of the system for virus/malware. See 3.01

Service Access – When a Field Service Representative (FSR) accesses the SERVICE MENU the GAS SHALL require the FSR to scan his GCAF issued ID badge for security reasons after entering the daily service password.

ENTER THE SERVICE ACCESS CODE

[Display 3.01(28)]

After the service access code has been successfully entered, the GAS shall:" store the current date into the STATION file and display:

SCAN YOUR BADGE TO ENTER THE SERVICE MENU

[Display 3.01(29)]

(ii) The GAS shall only accept a badge ID to enter the SERVICE menu that begins with FS or DN. The GAS shall store a "B" in ID ENTRY field of the ACCESS file, and

(iii) After the ID badge has been successfully scanned the GAS shall store the ID in the STATION file, then

(iv) If the barcode reader is inoperative and/or the service representative is unable to successfully scan their badge after three attempts the GAS shall allow for manual entry of the ID.

Display:

ENTER YOUR EIGHT DIGIT BADGE NUMBER
PRESS ENTER TO PROCEED

[Display 3.01(30)]

Once the FSR presses the enter key the GAS shall:

A. store the date and ID the of the STATION file and
B. Append the ACCESS file with the date and ID.
C. Store an “M” in ID ENTRY
C. Allow access to the Service Menu.

Display Prompt:

{first name last name} HAS BEEN IDENTIFIED.
PRESS <Fx> TO PROCEED,
PRESS ESC TO EXIT

[Display 3.10(11)]

(i) If Fx is pressed the GAS shall proceed to the Service Menu, or

(ii) If ESC is pressed the GAS shall return to the MAIN MENU.

(v) The service menu shall have:

(A) a selection to verify program integrity by running a check sum routine on the main executable program files (at a minimum). The checksum(s) of the executable program(s) shall be made available to field service personnel and EPD (B) a selection to run a virus scan on the entire system and/or system files only.

(C) a selection or ability to update the virus definitions/software.

3.02 Print Screen Capability

The GAS shall have a print screen feature that prints any current text screen by depressing no more than three keys, not required during active testing sequences.

3.03 Display During Testing

During a certified Georgia emissions test, the word "**TESTING**" shall be displayed on the monitor.

During a training mode test, the word "**TRAINING**" shall be displayed on the monitor

During a certified or Training Georgia emissions test, no indication shall be displayed on the monitor as to what step(s) are being performed ex: READING CODES, CHECKING VIN, etc. See 3.05 below for more information.

3.04 Messages Displayed During Testing

The analyzer shall display messages indicating if excessive exhaust dilution, low flow or out of range engine speed, or other test invalidating conditions occur during the test. If any of these conditions occur, testing shall be interrupted, the timer reset to the beginning of the current

inspection mode (e.g., 2500 rpm, idle rpm, ASM1, or ASM2, or non-communication for OBD), and the testing not restarted until the condition has been corrected. See respective test sequences for messages.

Displays of a warning message on the GAS which are designed to pause the testing process. Messages displaying a warning shall use a non-buffered Function Key as noted in the displayed screen prompt by <FY>, or <FZ>. The specific "F" key allowing the program to proceed is defined in the specification.

3.05 Information Not Permitted During Testing

The analyzer shall not display the interim gas readings, interim results, PASS, or FAIL, during the emissions test.

The GAS may only display interim procedure calls or internal program information messages during the ATP process, which is encouraged for debugging during ATP.

The GAS shall default to NOT displaying debug “routine calls” or messages after a reboot.

3.06 Readability of Display

The display prompts and any other information necessary, when in the test mode, shall be readable at a distance of eight feet in a building, which meets OSHA lighting standards for a garage environment. Contrast shall be adjustable.

3.07 Engine RPM

The analyzer shall have the capability to display the engine speed up to four significant digits during the emissions test for the operator to properly conduct a Georgia Emission Test inspection.

The GAS shall use the OBD II DLC as the PRIMARY [only] pick up of RPM on 1996 and newer vehicles during an OBD inspection to facilitate operation of the GAS during RTSI events.

3.08 Test Results

At the end of the visual tampering check the GAS may display:

VISUAL INSPECTION COMPLETE

[Display 3.08(1)]

At the end of the emissions test ASM, OBD, or TSI, the GAS may display,

EMISSIONS INSPECTION COMPLETE

[Display 3.08(2)]

At the end of the evaporative emissions (fuel cap) test, the display may display:

EVAPORATIVE INSPECTION COMPLETE

[Display 3.08(3)]

At the end of the complete emissions testing process the display shall display:

OVERALL INSPECTION RESULTS {Pass/Fail}

[Display 3.08(4)]

The GAS shall not indicate interim inspection results PASS/FAIL. Final results shall be displayed only at the end of the inspection process.

3.09 Hard Disk Warning Message

When data is being stored or accessed, a message may be displayed indicating that the hard disk drive (if equipped) is in operation and the analyzer should not be moved or otherwise disturbed.
Display prompt:

DISK ACCESS IN PROGRESS, DO NOT MOVE ANALYZER

HARDWARE DAMAGE MAY OCCUR

[Display 3.09(1)]

3.10 Inspector Access

Each inspector, GCAF auditor, field service representative, and EPD employee is issued an identification (ID) badge with a bar code on it.

Phase V requires that the use of security passwords be tracked and recorded
Since Phase V incorporates biometrics as soon as the software is loaded identification will be used as soon as the update is installed.

Inspector IDs are only printed as certification or recertification occurs over a two year period the GAS program must allow for a phase-in of the IDs over the two year inspector license renewal process. Consequently the PROGRAM file contains switches to accomplish changing requirements (see Appendix C).

The inspector IDs have two alpha characters, followed by six numeric characters.

AAnnnnnn Regular inspector license (ASM, TSI, OBD)
BAnnnnnn New car only license (OBD, TSI)

Access to the emissions inspection sequence will only be achieved by successful biometric identification or entry of an access code. Once the inspector has been verified, the GAS shall proceed to the next section.
The validity of the inspector's license number will be determined by the VID at the time the GAS

makes contact with the VID. If contact is not made with the VID, the validity of the inspector's license number and access code will reside with the GAS as stored in the TECHNICIAN file.

The GAS shall prompt the inspector to use the biometric device at the start of each inspection for identification

Display Prompt:

USE THE BIOMETRIC DEVICE TO BEGIN
THE INSPECTION PRESS F1

TO USE YOUR PIN TO BEGIN THE INSPECTION PRESS F3

OR PRESS ESC TO ABORT.

[Display 3.10(8)]

1. If the inspector presses <F3> the GAS shall proceed. Or,

2. If the inspector presses <F1> the GAS shall direct the inspector to use the biometric device to gain access to the inspection routine by proceeding to the biometric identification screen prompts.

(i) If the biometric device does not recognize the inspector, the following message will be displayed:

Display Prompt:

BIOMETRIC RECOGNITION IS NOT SUCCESSFUL

PRESS <FX> TO TRY AGAIN OR
PRESS ESC TO EXIT

[Display 3.10(9)]

(iii) If <FX> is pressed the biometric will be attempted again, or

(iv) If ESC is pressed, the GAS shall return to the MAIN MENU, no record shall be written.

(b) The GAS may require the inspector to manually input his or her personal access code at the start of each test by using the keyboard;

Display Prompt:

ENTER YOUR ACCESS CODE.

[Display 3.10(6)]

(I) If the access code matches an entry in the TECHNICIAN file the GAS shall proceed to (v) below. Or,

(ii) If the entered inspector's access code does not MATCH an entry in the TECHNICIAN file the following message will be displayed:

Display Prompt:

THE ID IS NOT IN THE GAS OR IS NOT RECOGNIZED.
CONTACT THE HELP LINE. (1-800-449-2471)
PRESS <FX> TO TRY AGAIN,
PRESS ESC TO EXIT

[Display 3.10(7)]

(iii) If ESC is pressed, the GAS shall return to the MAIN MENU, no record shall be written, or

(iv) If <FX> is pressed the GAS will allow the inspector to re-enter the access code. The GAS shall allow for a maximum of **three attempts** after which the GAS shall return to the Main Menu.

(vii) The GAS may display the following message:
Display Prompt:

YOU ARE NOT AUTHORIZED TO USE A PIN.
YOU MUST USE THE BIOMETRIC DEVICE.
PRESS ANY KEY TO CONTINUE

[Display 3.10(12)]

(viii) After the inspector presses any key to proceed the GAS shall return to (3)(a) above to prompt for the biometric identification.

(ix) The GAS may proceed to (c).

If the identification is successful the GAS shall display the identified name and allow the inspector to proceed to the next section.

Display Prompt:

{first name last name} HAS BEEN IDENTIFIED.
PRESS <Fx> TO PROCEED,
PRESS ESC TO EXIT

[Display 3.10(11)]

(i) If Fx is pressed the GAS shall initiate a GAS record and write the inspector number into the appropriate fields and proceed, or

(ii) If ESC is pressed the GAS shall return to the MAIN MENU, no record shall be written.

The GAS may require the inspector to scan his/her inspector ID badge as prompted and display the following prompt.

Display Prompt:

SCAN THE BARCODE ON YOUR ID BADGE TO BEGIN THE INSPECTION.

[Display 3.10(2)]

The GAS shall compare the scanned ID to the identified inspector to verify it is the same authorized inspector.

The GAS may display one of the following messages:

Display Prompt:

THE INSPECTOR LICENSE NUMBER IS NOT IN THE GAS.
CONTACT THE HELP LINE. (1-800-449-2471)

[Display 3.10(3)]

Display Prompt:

THE INSPECTOR LICENSE HAS EXPIRED.
YOU CANNOT PERFORM A GEORGIA EMISSION TEST.
CONTACT THE HELP LINE (1-800-449 2471)
PRESS ESC TO ABORT

[Display 3.10(4)]

Display Prompt:

THE INSPECTOR LICENSE NUMBER HAS BEEN SUSPENDED OR REVOKED.
YOU CANNOT PERFORM A GEORGIA EMISSION TEST.
CONTACT THE HELP LINE. (1-800-449-2471)
PRESS ESC TO ABORT

[Display 3.10(5)]

NOTE; If the inspector presses ESC key here the GAS shall abort the test, return to the MAIN MENU and no record shall be made and no e-cert used.

Display Prompt:

WAITING FOR INSPECTOR INPUT
THE PROCESS WILL END IF TOO MUCH TIME ELAPSES

[Display 3.10(13)]

Display Prompt:

THE INSPECTION PROCESS HAS BEEN SUSPENDED
DUE TO TIME LIMITATIONS of {xxx}

DO NOT BEGIN THE INSPECTION UNTIL YOU ARE READY
TO COMPLETE THE PROCESS

[Display [3.10(6)]

Once the inspector has been verified, the GAS shall proceed to the next section.

3.11 Model Year Entry and Test Procedure Determination

The following procedures are to be used to determine the type of inspection procedure, based on model year.

The GAS will prompt the inspector to enter the model year of the vehicle.
Display Prompt:

ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

WAITING FOR INSPECTOR INPUT

THE PROCESS WILL END IF TOO MUCH TIME ELAPSES

[Display 3.11(1)]

If no model year is entered, display:
Display Prompt:

NO NUMBER HAS BEEN ENTERED - TRY AGAIN

[Display 3.11(2)]

The GAS shall require the inspector to enter the last two digits of the model year of the vehicle. The GAS shall determine automatically what the first two digits of the model year is

based upon the last two digits entered for the model year.

Display Prompt:

ENTER ONLY THE LAST TWO NUMBERS OF THE MODEL YEAR - TRY AGAIN

[Display 3.11(3)]

Model year entries newer than the current calendar year plus one, shall not be allowed (i.e.: in 2014, Model Year 2016 is not allowed). If the model year entered is newer than the current year plus one, display the warning message,

Display Prompt:

MODEL YEAR IS NOT VALID - TRY AGAIN

[Display 3.11(4)]

The GAS shall check the M.Y. of the vehicle entered and determine which test sequence will be used. The appropriate inspection sequence shall be selected according to the model year of the vehicle.

If the M.Y. entered is newer than the value found in the NEWEST YEAR TESTABLE field of the PROGRAM file but not in violation of the above, the inspector shall be notified that the vehicle does not need testing. The GAS shall display the following warning message upon the pressing of the enter key

Display Prompt:

THIS VEHICLE DOES NOT NEED TO BE TESTED.

IF A TEST IS STILL DESIRED THE REASON: "NON-SCHEDULED INSPECTION AT MOTORIST'S REQUEST" SHALL BE SELECTED.

PRESS <FX> TO CONTINUE OR <ESC> TO ABORT.

[Display 3.11(5)]

NOTE; If the inspector presses ESC key here the GAS shall abort the test, return to the MAIN MENU and no record shall be made and no e-cert used.

If the inspector presses FX to continue, the GAS shall store test reason in the test record.

If the M.Y. entered is older than the OLDEST VEHICLE TESTABLE the vehicle shall not be subjected to an official Georgia I/M Test. The inspector shall be informed by displaying the following warning message that the vehicle may only be tested in manual mode. The test shall be aborted at this point; no record shall be retained in the GAS.

Display Prompt:

THIS VEHICLE MAY NOT BE TESTED IN AN OFFICIAL TEST MODE.
IF A TEST IS STILL DESIRED, USE MANUAL MODE.
PRESS ENTER TO ABORT.

[Display 3.11(6)]

Vehicles with non-conforming status may be TSI tested or ASM tested,.

If the vehicle is of an age where it would be tested using ASM, the inspector shall be prompted:

Display Prompt:

DOES THIS VEHICLE HAVE FULL-TIME FOUR-WHEEL-DRIVE OR NON-

DISENGAGEABLE TRACTION CONTROL THAT MAKES IT NOT ASM TESTABLE?

ENTER THE APPROPRIATE CODE:

(1) FULL-TIME FOUR WHEEL DRIVE
(3) TRACTION CONTROL
(4) OTHER

[Display 3.11(7)]

The inspector will be allowed to override the ASM inspection by selecting 1, 3, 0r 4 only

At this point, a determination of whether the inspector is qualified to perform an ASM or TSI test has been made.

(i) An inspector who has a BA license shall be able to inspect “NEWER” vehicles and certain vehicles that have been designated as non-conforming, OR

(ii) An inspector who has an AA license is licensed to perform ASM, OBD, and TSI tests and all vehicles that have been designated as non-conforming.

The GAS shall start a “TEST TIMER” once the inspector ID has been verified.

The GAS may display the following message:
Display Prompt:

THE INSPECTION PROCESS HAS BEEN SUSPENDED DUE TO TIME LIMITATIONS.

DO NOT BEGIN THE INSPECTION UNTIL YOU ARE READY TO COMPLETE THE PROCESS.

PRESS <FX> TO CONTINUE

[Display [3.11(8)]

The GAS shall abort the process and return to the MAIN MENU after <FX> has been pressed

Two determinations of the test type will be made: one at the beginning of the test sequence, and a second immediately prior to the emissions test.

If, during the first determination of test type, the GAS determines an ASM test is required but the inspector does not have an ASM license, the GAS will issue the following warning message:
Display Prompt:

ASM TESTING HAS BEEN DETERMINED.

YOU DO NOT HAVE THE PROPER LICENSE.

DO YOU WISH TO CONTINUE? Y/N

PRESS <Y> for YES, PRESS <N> for NO

[Display 3.11(9]

If, during the second determination of test type, either the VID or the GAS determines an ASM test is required but the inspector does not have an ASM license, the GAS will issue the following message:

Display Prompt:

INSPECTOR IS NOT LICENSED TO PERFORM THE REQUIRED TEST.

THE GEORGIA EMISSION TEST WILL BE ABORTED.

[Display 3.11(10)]

NOTE; The GAS shall abort the test, return to the MAIN MENU and no record shall be made and no e-cert used.

3.12 Test Type Code and Retest Entry

All tests shall be either an initial test, an after-repairs test, or a referee test

After repairs tests:

The GAS shall prompt the inspector for the "Test Type" by displaying:

Display Prompt:

ENTER TEST TYPE CODE:
SELECT THE APPROPRIATE TEST TYPE CODE FROM THE LIST BELOW

CODE	TEST TYPE
I	INITIAL INSPECTION
A	AFTER REPAIRS TEST

[Display 3.12(1)]

If "I" is entered, the inspection will proceed to initial regular vehicle data entry, the GAS shall display the following prompt:

Display Prompt:

WHY IS THE VEHICLE BEING INSPECTED?
(SELECT ONE OF THE FOLLOWING)

(4) REGULAR INSPECTION {DEFAULT}
(2) INITIAL REGISTRATION (OUT OF STATE)
(3) SALE /TRANSFER INTO I/M AREA
(5) TO CORRECT VEHICLE DESCRIPTION ERROR ON PREVIOUS TEST
(6) NON-SCHEDULED INSPECTION AT MOTORIST'S REQUEST
(1) OTHER INSPECTION REASON

[Display 3.12(2)]

The inspector's entry shall be stored.

NOTE: Possible Error Messages:

Display Prompt:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.12(3)]

TEST TYPE CODE IS NOT VALID - TRY AGAIN

[Display 3.12(4)]

If "A" is selected by the inspector, the GAS may display:
Display Prompt:

IS THIS A PAID RETEST Y OR N?

PRESS <Y> for YES, PRESS <N> for NO

[Display 3.12(5)]

Display Prompt:

THIS IS AN AFTER REPAIRS TEST. THE MOTORIST MUST PRESENT A COMPLETED REPAIR FORM TO OBTAIN A TEST.

ENTER THE CERTIFICATE NUMBER FROM THE PREVIOUS TEST

VERIFY THAT THE VIN ON THE VEHICLE MATCHES THE CERTIFICATE

IF NO REPAIR FORM IS AVAILABLE, PRESS "ESCAPE" TO ABORT THIS TEST.

PROCEEDING WITHOUT A COMPLETED REPAIR FORM IS A VIOLATION AND MAY RESULT IN AN ENFORCEMENT ACTION AGAINST THE STATION

ERRORS MADE HERE WILL BE CORRECTED AT STATION EXPENSE AND MAY PROMPT AN ENFORCEMENT ACTION

[Display 3.12(6)]

Display Prompt:

THIS IS AN AFTER REPAIRS TEST. THE MOTORIST MUST PRESENT A COMPLETED REPAIR FORM TO OBTAIN A TEST.

SCAN THE BARCODE ON THE REPAIR FORM

VERIFY THAT THE VIN ON THE VEHICLE MATCHES THE CERTIFICATE

IF NO REPAIR FORM IS AVAILABLE, PRESS "ESCAPE" TO ABORT THIS TEST.

PROCEEDING WITHOUT A COMPLETED REPAIR FORM IS A VIOLATION AND MAY RESULT IN AN ENFORCEMENT ACTION AGAINST THE STATION

ERRORS MADE HERE WILL BE CORRECTED AT STATION EXPENSE AND MAY PROMPT AN ENFORCEMENT ACTION

[Display 3.12(7)]

Possible Display Prompts(s):

ENTER THE PREVIOUS CERTIFICATE NUMBER.

ENTERING THE WRONG CERTIFICATE NUMBER IS A VIOLATION AND WILL RESULT IN AN ENFORCEMENT ACTION

[Display 3.12(8)]

Warning Message:

THE CERTIFICATE NUMBER IS NOT VALID.
VERIFY THE CERTIFICATE NUMBER BEFORE PROCEEDING
PRESS <FY> TO CONTINUE

[Display 3.12(9)]

Display Prompt:

NO INSPECTION DATA WAS FOUND.
PROCEED WITH MANUAL DATA ENTRY.

[Display 3.12(10)]

(x) If the VIN is incorrect, the inspector will be prompted to proceed with manual data entry.

Display Prompt(s):

CHECK VEHICLE DATA AND MAKE ALL CHANGES AS NEEDED, THEN PRESS "ENTER".

NO CHANGES ARE ALLOWED TO THE VIN.

IF THE VIN IS NOT CORRECT, PRESS "M" AND PROCEED TO MANUAL ENTRY.

IF THE CERTIFICATE NUMBER OR OTHER TEST DATA DISPLAYED DO NOT MATCH THE DATA ON THE VIR
USE THE DATA FROM THE PREVIOUS TEST.

[Display 3.12(11)]

3.13 License Plate Entry

The GAS shall prompt for the inspector to enter the license plate number and issuing state.

Display Prompt:

ENTER LICENSE PLATE NUMBER

IF THE VEHICLE HAS AN "OUT-OF-STATE" LICENSE PLATE,
ENTER THE LICENSE PLATE NUMBER,

SELECT THE "ISSUING STATE" FROM THE LIST.

IF THE VEHICLE HAS NO LICENSE PLATE PRESS <FY>

[Display 3.13(1)]

Display Prompt:

TOO FEW CHARACTERS WERE ENTERED FOR THE LICENSE PLATE.
IF THERE IS NO PLATE PRESS <FY>, OR

PRESS <FZ> TO ACCEPT

[Display 3.13(2)]

Display Prompt:

SELECT AND ENTER THE "ISSUING STATE" OF THE LICENSE PLATE.

[Display 3.13(7)]

3.14 VIN Entry

The GAS shall allow the VIN to be entered manually. The GAS may display the following:

Display Prompt:

ENTER VIN

NOTE: ENTERING AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

[Display 3.14(1)]

Display Prompt:

VERIFY THE SCANNED VIN IS CORRECT IF NOT SCANNED FROM THE DASHBOARD VIN PLATE.

ENTERING AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

Press <FY> to continue

[Display 3.14(2)]

For VIN entry:

The GAS shall verify the VIN check digit for all entered VINs.

The GAS may display the following warning message:

Display Prompt:

THE LETTERS "I", "O" and "Q" ARE NOT VALID ENTRIES FOR 1981 AND LATER NORTH AMERICAN VINs.
CHECK AND RE-ENTER THE VIN.

PROCEEDING WITH AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

[Display 3.14(3)]

Display Prompt:

CHECK DIGIT IS NOT VALID

PROCEEDING WITH AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

DO YOU WISH TO EDIT THE VIN Y/N

PRESS <FY> FOR YES OR PRESS <FZ> TO CONTINUE
PRESS ESC TO ABORT

[Display 3.14(4)]

Display Prompt:

VIN INDICATES MODEL YEAR IS XXXX, IS THIS CORRECT? Y/N

PRESS <FY> FOR YES OR PRESS <FZ> TO CHANGE
PRESS ESC TO ABORT

[Display 3.14(5)]

Display Prompt:

THE VIN ENTERED HAS FEWER THAN 17 CHARACTERS.
VERIFY THAT THE VIN ENTERED MATCHES THE VEHICLE'S ACTUAL VIN.

ENTERING AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

PRESS <FY> TO CONTINUE OR PRESS ESC TO ABORT

[Display 3.14(6)]

Display Prompt:

THE VIN ENTERED EXCEEDS 17 CHARACTERS.
CHECK THE VEHICLE REGISTRATION AGAINST
THE ACTUAL VIN AND ENTER THE CORRECT VIN.
ENTER THE LAST 17 CHARACTERS OF THE VIN

ENTERING AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

PRESS <FY> TO CONTINUE OR PRESS ESC TO ABORT

[Display 3.14(7)]

Display Prompt:

NO VALUE HAS BEEN ENTERED
AT LEAST 3 CHARACTERS MUST BE ENTERED -
TRY AGAIN.

ENTERING AN INCORRECT VIN WILL REQUIRE A RETEST AT STATION EXPENSE TO CORRECT ERRORS AND MAY RESULT IN AN ENFORCEMENT ACTION.

PRESS <FY TO REENTER THE VIN, OR PRESS <FZ> TO EDIT
PRESS ESC TO ABORT

[Display 3.14(8)]

Display Prompt:

PERFORMING NETWORK ACCESS, PLEASE WAIT.

[Display 3.14(9)]

Display Prompt:

CANNOT ACCESS THE NETWORK, PROCEED WITH THE GEORGIA EMISSION TEST.

[Display 3.13(10)]

Display Prompt:

PRESS <F Key> TO RETRY VID CONTACT OR ENTER TO PROCEED.

[Display 3.14(11)]

The GAS may display the following warning message:

Display Prompt:

THE GAS IS LOCKED OUT OF GEORGIA EMISSION TESTING.

THE GAS HAS PERFORMED TOO MANY GEORGIA EMISSION TESTS WITHOUT TRANSMITTING THEM TO THE VID.

PERFORM A DATA FILE REFRESH or TRANSMIT TEST DATA FUNCTION BEFORE CONTACTING THE HELP LINE.

PRESS ANY KEY TO ABORT

[Display 3.14(12)]

Display Prompt:

COMMUNICATION SECURITY VIOLATION
INVALID GAS UNIT

CHECK TO BE SURE THAT THE GAS CAN BE CONNECTED TO THE VID.

[Display 3.14(13)]

MAKE THE NECESSARY CORRECTIONS AND PRESS A <Function Key> TO CONNECT TO THE VID.

[Display 3.14(14)]

Display Prompt:

COMMUNICATION SECURITY VIOLATION
INVALID GAS UNIT PHONE NUMBER.

CHECK TO BE SURE THAT THE GAS IS CONNECTED TO THE VID.

THE INSPECTION CANNOT PROCEED. CONTACT THE NETWORK "HELP DESK."

[Display 3.14(15)]

Display Prompt:

COMMUNICATION SECURITY VIOLATION
INCORRECT IDENTIFICATION

CONTACT THE NETWORK "HELP DESK" IF THIS PROBLEM PERSISTS.

[Display 3.14(16)]

Display Prompt:

SEARCHING FOR VEHICLE INFORMATION, PLEASE WAIT.

[Display 3.14(17)]

Display Prompt:

NO VEHICLE MATCH HAS BEEN FOUND. VERIFY THAT THE VIN AND LICENSE PLATE HAVE BEEN ENTERED CORRECTLY. MAKE ANY NECESSARY CHANGES AND PRESS <FY> TO PROCEED.

[Display 3.14(18)]

Display Prompt:

NO MATCH HAS BEEN FOUND. PLEASE PROCEED WITH THE GEORGIA EMISSION TEST.

[Display 3.14(19)]

NOTE; If the inspector presses ESC key here the GAS shall abort the test, return to the MAIN MENU and no record shall be made and no e-cert used.

Receive Vehicle Data

The following vehicle data in the proper test record format, if available, shall be transmitted by the VID to the GAS and shall overwrite existing vehicle data in the GAS test record. The programming criteria outlined in Section 3.1 shall then be reapplied. This data is to be verified and confirmed/changed by the inspector on the vehicle data review screen.

The following vehicle data shall have to be entered during each Georgia Emission Test as applicable:

- ODOMETER READING
- TEST TYPE

Receive Failed Test Data with VIN

1. The GAS may display the following selected failed test result information relative to a vehicle that has failed a previous Georgia Emission Test inspection on the screen and may provide an option to print.

Display Prompt:

PREVIOUS CERTIFICATE NUMBER	**AANNNNNN**
DATE OF PREVIOUS TEST	**MMDDYYYY**
FAILED TAMPERING INSPECTION	**YES/NO**
FAILED OBD or TAILPIPE EMISSIONS	**YES/NO**
FAILED FUNCTIONAL CHECKS	**YES/NO**

[Display 3.14(20)]

2. If the previous test data shows all “NO” results (i.e., the vehicle passed all portions of the previous test), then the GAS shall display the following message:

Display Prompt:

NO ADDITIONAL TESTS REQUIRED.

[Display 3.14(21)]

Display Prompt:

ENTER RESULTS FROM THE VIR OF THE MOST RECENT FAILED INSPECTION

WARNING: ENTERING FALSE DATA HERE WILL RESULT IN REVOCATION OF YOUR INSPECTOR LICENSE.

DATE OF PREVIOUS TEST	
FUNCTIONAL TEST- FUEL CAP	**P/F**
OBD or EMISSION TEST	**P/F**
VISUAL-CATALYTIC CONVERTER	**P/F**

[Display 3.14(22)]

Receive Recall Information

The GAS may display the emission-related recall information in the following format at the conclusion of the inspection, i.e., prior to the printing of the VIR:

Example:

*** *EMISSIONS RECALL* ***

Model Year: 1982 Engine Family: FAD1.6V6FBC2
Make: AUDI Recall Initiated: 06/01/90
Engine Size: 1.6L Recall #: GL
Model: 4000 Source: MFG/CARB
Class: PC

Affected Vehicles:
ALL

Defects: AIR/FUEL CHECKING PROCEDURES ON EMISSION LABEL ARE NOT CONSISTENT WITH INSTRUCTIONS IN THE REPAIR MANUAL.

Fix:
REPLACE LABEL. NEW LABEL SHOULD BE WHITE WITH BLACK LETTERS AND SHOULD NOT HAVE AIR/FUEL MIXTURE CHECKING PROCEDURE.

For vehicles that fail the emission inspection, a summary of the recall information consisting of the first line of the recall message, may be printed. The GAS shall provide the option to print the complete text of the emissions recall information.

Receive Emissions Standards Category (ESC) Tables The GAS shall receive the entire ESC Tables (not individual records) if applicable, from the VID for use during a Georgia

Emission Test inspection. If the GAS receives ESC Tables, the ESC Tables shall remain in use by the GAS until a subsequent version is received.

NOTE: It is anticipated that this table shall not be frequently changed and/or updated.

Receive Updates to the Vehicle Reference Table (VRT) and Default VRT. Description of update procedure contained in Section 1.11, Vehicle Reference Table (VRT).

Receive System Date/Time Update: The communication software resets the current GAS date/time settings when the GAS transmits the VIN and license plate number information to the VID.

Receive Lockout Status: If a lockout has been set based upon the response bits from the VID, then the GAS shall display one or more of the warning messages shown below:

Display Prompt(s):

THE GEORGIA EMISSION TEST WILL BE ABORTED DUE TO A QA/STATE LOCKOUT BEING SET.

CONTACT HELP LINE FOR FURTHER INSTRUCTIONS.

[Display 3.14(23)]

THE GEORGIA EMISSION TEST WILL BE ABORTED SINCE STATION LICENSE HAS EXPIRED.

CONTACT HELP LINE FOR FURTHER INSTRUCTIONS.

[Display 3.14(24)]

THE GEORGIA EMISSION TEST WILL BE ABORTED SINCE STATION LICENSE HAS BEEN REVOKED OR SUSPENDED.

CONTACT HELP LINE FOR FURTHER INSTRUCTIONS.

[Display 3.14(25)]

THE GEORGIA EMISSION TEST WILL BE ABORTED SINCE A LOCKOUT HAS BEEN SET DUE TO FAILURE TO PAY FOR CERTIFICATE NUMBERS PURCHASED.

CONTACT HELP LINE FOR FURTHER INSTRUCTIONS.

[Display 3.14(26)]

THE EMISSION STANDARDS DATABASE IS CORRUPT, CALL SERVICE

[Display 3.14(27)]

Receive Inspector(s) Data: When a technician table is updated, the complete updated technician table shall be transmitted by the VID to the GAS. The GAS shall display the following message:

Display Prompt:

THE INSPECTOR LICENSE NUMBERS AND ACCESS CODES HAVE BEEN UPDATED BY THE VID.
PLEASE VERIFY FOR CORRECT INFORMATION AND IF THERE ARE PROBLEMS. CONTACT THE HELP LINE.

PRESS ANY KEY TO CONTINUE

[Display 3.14(28)]

Receive Certificate Numbers: The GAS shall display a "Certificate Received" message and shall automatically display a message as shown below:

Display Prompt:

ELECTRONIC CERTIFICATE NUMBER PURCHASE RECEIPT

DATE: MMDDYYYY TIME: HH:MM
STATION: STATION LICENSE #
GAS ID: GAS LICENSE #

CERTIFICATE NUMBERS HAVE BEEN ISSUED TO THIS STATION VIA ELECTRONIC TRANSFER.

CERT. RANGE	TOTAL CERT.	COST/CERT.	TOTAL COST
JJ000001-JJ000050	50	$4.02	$201.00
JL101201-JL101350	150	$4.02	$603.00

[Display 3.14(29)]

Receive EPD GAS Messages: EPD GAS messages shall be transmitted by the VID to the GAS. All EPD GAS messages will be in a text file format and shall be displayed. These GAS messages shall be able to be recalled by the station manager or inspector and printed individually.

Receive Communications Transaction: The communications data stream, as received from the network, shall contain the command response status such as "No Match", "Previous Failed Test Result", etc. Data that may be received by the GAS, in addition to the aforementioned, is defined in subsequent sections.

If, as result of the VID response, the vehicle is identified as having a "Previous Failed Test Result", the GAS shall alert the inspector of the failed test results.

For the following data entries, the inspector shall have the option of accepting the data received through the VID, modifying the data, or manually entering the data if no match occurs.

If the GAS is sent a new PROGRAM file from the VID the GAS shall display:

Display Prompt:

Received Maximum Program Fees

[Display 3.14(30)]

If the GAS is sent a new emissions standards file from the VID the GAS shall display:

Display Prompt:

Received Updates to ESC_ASM Table

[Display 3.14(31)]

If the GAS is sent a new default horsepower file from the VID the GAS shall display:

Display Prompt:

Received Horsepower Default Table (HP_DFLT)

[Display 3.14(32)]

Paid Test Determination

The last entry prior to continuing with entry of vehicle information is the test fee.

If the test type is entered as an "I", the fee will automatically be entered as paid ("Y").

If the previous test was performed more than 30 days but less than 91 days from the current (re) test date, the test fee will default to “paid”. If the previous test was performed less than 31 days from the current test date, the inspector will be asked to determine if the test is free or paid.

For a test begun as an after-repairs test, if the previous test was performed more than 90 days from the current (re) test date, display:

Display Prompt:

MORE THAN 90 DAYS SINCE LAST TEST
PERFORM TEST AS INITIAL TEST

[Display 3.14(33)]

End the test. The inspector will have to restart the test sequence, from "Enter Access Code", as an initial test.

The VID will pass a test fee flag to the GAS in the RESPONSE file. A “P” flag will indicate the test is a paid test. Either a “U” flag or an “F” flag will indicate the test fee is unknown.

If a “P” flag is returned by the VID the test fee ~~is~~ will be paid and a new certificate number will be used (assigned at the end of the test as noted above).

If either a “F” or a “U” flag is returned by the VID, the GAS will ask the inspector to determine if more than 30 days since the last test:

Display Prompt:

MORE THAN 30 DAYS SINCE LAST TEST? Y/N

[Display 3.14(34)]

If the response is Y, the test fee will be paid and a new certificate number will be used. If the response is N, display:

Display Prompt:

IS THIS A PAID TEST? Y/N

[Display 3.14(35)]

If the response is Y, the test fee will be paid and a new certificate number will be used (assigned at the end of the test as noted above). If the response is N, it is a free test.

Received Random TSI Bit: This bit is part of the PROGRAM file and flags the GAS to run a TSI test on an OBD vehicle for the purpose of data collection and test verification.

3.15 Vehicle Make

The GAS shall prompt the inspector for the vehicle make.

Display Prompt:

ENTER THE VEHICLE MAKE

SELECT THE APPROPRIATE MAKE FROM THE LIST.

IF THE MAKE IS NOT LISTED, TYPE IN THE FULL NAME OF THE MANUFACTURER.

DATA ENTRY ERRORS WILL BE CORRECTED AT STATION EXPENSE AND MAY TRIGGER ENFORCEMENT ACTIONS

PRESS <FY> TO CONTINUE OR PRESS ESC TO ABORT

[Display 3.15(1)]

The GAS unit will display the complete list of vehicles as contained in the VRT for the model year chosen.

The following display may appear whenever the vehicle make entered is not displayed:

Display Prompt:

IF THE VEHICLE BEING TESTED IS NOT DISPLAYED,
TYPE IN THE FULL NAME OF THE MAKE

DATA ENTRY ERRORS WILL BE CORRECTED AT STATION EXPENSE AND MAY TRIGGER ENFORCEMENT ACTIONS

PRESS <FY> TO CONTINUE OR PRESS ESC TO ABORT

[Display 3.15(2)]

A list of applicable model names shall be displayed and the inspector instructed to select from the list.

Display Prompt:

SELECT {ITEM} FROM THE LIST. DO NOT TYPE IN AN ITEM UNLESS THERE ARE NO CORRECT ENTRIES ON THE LIST.

DATA ENTRY ERRORS WILL BE CORRECTED AT STATION EXPENSE AND MAY TRIGGER ENFORCEMENT ACTIONS

PRESS <FY> TO CONTINUE OR PRESS ESC TO ABORT

[Display 3.15(3)]

If a model match is not made, display the following message:

Display Prompt:

THE MODEL ENTERED DOES NOT APPEAR IN OUR RECORDS FOR THIS VEHICLE TYPE, MAKE, AND YEAR. VERIFY THE VEHICLE INFORMATION AND RE-ENTER THE YEAR, MAKE AND MODEL AS NEEDED.

USE THE DROP-DOWN MENU TO SELECT THE VEHICLE FROM THE LIST IF POSSIBLE.

DATA ENTRY ERRORS WILL BE CORRECTED AT STATION EXPENSE

PROCEEDING TO TEST WITHOUT A MATCH FROM THE REFERENCE TABLE MAY CAUSE AN INCORRECT TEST TO BE PERFORMED.

ENFORCEMENT ACTIONS MAY BE TRIGGERED.

PRESS <FY> TO CONTINUE OR PRESS ESC TO ABORT

[Display 3.15(4)]

The inspector shall be allowed to make changes to any of the previous entries.

3.16 Vehicle Fuel Type Code

The GAS shall prompt the inspector to enter the fuel type of the vehicle being tested and store the response. The following prompts may be displayed:

Display Prompt:

ENTER THE FUEL TYPE CODE FROM THE LIST BELOW:

CODE	**FUEL TYPE**
G	**GASOLINE{Default}**
B	**BI-FUELED (alternate fuel and gasoline)**
F	**Flex-Fuel**
H	**Hybrid**
D	**Diesel** {1998 and newer}

[Display 3.16(1)]

Display Prompt:

BI-FUEL VEHICLES ARE TO BE TESTED ON GASOLINE.
YOU INDICATED THIS IS A BI-FUELED POWERED VEHICLE.
IS THIS CORRECT?

PRESS <FY> FOR YES OR PRESS <FZ> FOR NO

[Display 3.16(2)]

Display Prompt:

INVALID ENTRY - TRY AGAIN

[Display 3.16(3)]

Display Prompt:

YOU INDICATED THIS IS A DIESEL POWERED VEHICLE.
IS THIS A DIESEL VEHICLE?
PRESS <FY> FOR YES OR PRESS <FZ> FOR NO

[Display 3.16(4)]

Display Prompt:

YOU INDICATED THIS IS A DIESEL POWERED VEHICLE.
THIS VEHICLE SHOULD ONLY BE TESTED AT MOTORIST REQUEST

IS THIS A DIESEL VEHICLE?
PRESS <FY> for YES, PRESS <FZ> for NO

[Display 3.16(5)]

3.17 Vehicle Body Type, Test Standards, and Special Standards

The GAS shall prompt the inspector to select a vehicle body type
Display Prompt:

ENTER THE VEHICLE TYPE:

SELECT THE APPROPRIATE VEHICLE BODY TYPE FROM THE LIST:

CODE	VEHICLE BODY TYPE
1	SEDAN
2	STATION WAGON
3	PICKUP
4	SPORT/UTILITY VEHICLE
5	MINIVAN
6	FULL-SIZE VAN

[Display 3.17(1)]

The inspector shall be required to enter the gross vehicle weight rating (GVWR) only if the vehicle type is "T".

The Special Standards code, if sent by the VID, will be used for determining the appropriate test standards to be used. The GAS may display one of the following prompts.

Display Prompt:

THIS VEHICLE DOES NOT REQUIRE A CATALYTIC CONVERTER INSPECTION. A TSI TEST HAS BEEN DETERMINED FOR THIS VEHICLE.

PRESS <FY> TO CONTINUE

[Display 3.17(2)]

Display Prompt:

THIS VEHICLE MUST BE INSPECTED FOR A CATALYTIC CONVERTER.
A TSI TEST HAS BEEN DETERMINED FOR THIS VEHICLE.

A "P" OR "F" MUST BE ENTERED.

PRESS <FY> TO CONTINUE

[Display 3.17(3)]

Display Prompt:

THIS VEHICLE DOES NOT REQUIRE A CATALYTIC CONVERTER

INSPECTION.

PRESS <FY> TO CONTINUE

[Display 3.17(4)]

Display Prompt:

THIS VEHICLE MUST BE INSPECTED FOR CATALYTIC CONVERTER.

A "P" OR "F" MUST BE ENTERED.

IF A CONVERTER IS PRESENT PRESS “P”

IF A CONVERTER IS MISSING PRESS ”F”

[Display 3.17(5)]

Display Prompt:

THIS VEHICLE IS BEING BLOCKED FROM TESTING.

PROVIDE THE OWNER WITH THE PRINTOUT AND HAVE THEM CONTACT EPD ENFORCEMENT AT (800) 449-2471.

THE INSPECTION PROCESS WILL NOW TERMINATE.

PRESS ANY KEY TO CONTINUE.

[Display 3.17(7)]

The GAS shall proceed to Section 3.18 Number of Cylinders.

3.18 Number of Cylinders

The GAS shall prompt the inspector to enter the number of cylinders of the engine and may provide the following prompts.

Display Prompt:

ENTER THE NUMBER OF CYLINDERS.
FOR ROTARY ENGINES, ENTER "R".

[Display 3.18(1)]

Display Prompt:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.18(3)]

Display Prompt:

NUMBER OF CYLINDERS ENTRY IS NOT VALID - TRY AGAIN

[Display 3.18(2)]

After the number of cylinders has been successfully entered the program shall proceed to Section 3.19 Vehicle Engine Size.

3.19 Vehicle Engine Size

The GAS shall prompt the inspector to enter the size of the engine and may provide the following prompt(s).

.

Display Prompt:

ENTER THE VEHICLE'S ENGINE SIZE:
ENTER THE ENGINE SIZE FOLLOWED BY ONE OF THE FOLLOWING CODES.

CODE DESCRIPTION
I CUBIC INCHES
L LITERS
C CUBIC CENTIMETERS

[Display 3.19(1)]

Display Prompt:

ENGINE SIZE IS GREATER THAN 649 CID (l0.65 LITERS).
ARE YOU SURE THIS IS CORRECT?
PRESS <FY> for YES, PRESS <FZ> for NO

[Display 3.19(2)]

Display Prompt:

ENGINE SIZE IS LESS THAN 30.5 CID (0.5 LITERS).
ARE YOU SURE THIS IS CORRECT?
PRESS <FY> for YES, PRESS <FZ> for NO

[Display 3.19(5)]

Warning Message:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.19(4)]

Warning Message:

ENGINE SIZE OR UNIT DESIGNATION (I, L, or C) IS NOT VALID FOR THIS YEAR, MAKE, AND MODEL OF VEHICLE- TRY AGAIN.

[Display 3.19(3)]

The GAS shall proceed to Section 3.20.

3.20 Transmission Type

The GAS shall prompt the inspector to enter the transmission type of the vehicle if not returned from the VID or found in the VRT

.

Display Prompt:

INDICATE THE TYPE OF TRANSMISSION:
ENTER AN "M" IF IT IS A MANUAL
ENTER AN "A" IF IT IS AN AUTOMATIC

[Display 3.20(1)]

(b) Warning Message:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.20(2)]

The GAS shall proceed to Section 3.21

3.21 Gross Vehicle Weight Rating

The GAS may display the following prompts:
Display Prompt:

IS THE GROSS VEHICLE RATING (GVWR) OF THIS VEHICLE OVER <MAX {Gasoline*} GVWR > FOR GASOLINE OR, OVER <MAX {Diesel*} GVWR*> FOR DIESEL?

PRESS <F1> FOR NO, PRESS <F3> FOR YES

[Display 3.21(8)]

THE GVWR IS OVER THE MAXIMUM ALLOWED AND DOES NOT NEED TO BE INSPECTED!

PRESS ANY KEY TO PROCEED

[Display 3.21(9)]

ENTER THE GROSS VEHICLE WEIGHT RATING (GVWR) IN LBS, IF GVWR IS NOT AVAILABLE, ENTER "NONE".

[Display 3.21(1)]

IF THE VEHICLE IS A SMALL PICKUP, SPORT/UTILITY VEHICLE OR MINIVAN OR IS A FULL-SIZE PICKUP OR VAN RATED AS A ½ TON (FOR EXAMPLE: GM 10 OR 15 SERIES, FORD OR DODGE 100 OR 150 SERIES) ENTER 5999 FOR GVWR.

IF THE VEHICLE IS RATED AS A 3/4 TON OR 1 TON (FOR EXAMPLE: GM 20, 25, OR 30 SERIES OR DODGE 250 OR 350 SERIES) ENTER 8499 FOR GVWR.

[Display 3.21(2)]

Error Messages:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.21(3)]

TOO MANY CHARACTERS HAVE BEEN ENTERED - TRY AGAIN

[Display 3.21(4)]

WEIGHT RATING MUST BE AT LEAST 2500 LBS. - TRY AGAIN

[Display 3.21 (5)]

THE GVWR ENTERED EXCEEDS THE MAXIMUM FOR THIS VEHICLE.
PRESS <FY> TO ABORT, OR
PRESS <FZ> TO REENTER THE GVWR.

[Display 3.21(6)]

The Gas shall continue to Section 3.22 Number of Cylinders.

3.22 Vehicle Odometer Reading

The GAS shall prompt the inspector to input the odometer reading

Display Prompt:

ENTER THE VEHICLE'S ODOMETER READING:
A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED.
DO NOT ENTER TRIP ODOMETER MILEAGE,
ENTRY IS ONLY FROM THE MAIN ODOMETER.
DO NOT ENTER THE TENTHS DIGIT.

INCORRECT ENTRY WILL BE CORRECTED AT STATION EXPENSE AND MAY TRIGGER AN ENFORCEMENT ACTION

[Display 3.22(1)]

The GAS may display the following warning messages:
Display Prompt:

ODOMETER READING ERROR PLEASE VERIFY AND REENTER.
IF ODOMETER READING IS CORRECT,
PRESS <FY> TO CONTINUE, OR
PRESS <FZ> to REENTER THE MILEAGE

[Display 3.22(2)]

MILEAGE ENTERED SEEMS HIGH FOR THE AGE OF THIS VEHICLE.

INCORRECT ENTRY WILL BE CORRECTED AT STATION EXPENSE AND MAY TRIGGER AN ENFORCEMENT ACTION

REENTER THE MILEAGE. DO NOT ENTER THE TENTHS DIGIT.

IF THE MILEAGE IS CORRECT, Press <FY> TO CONTINUE.

PRESS <FZ> to REENTER THE MILEAGE

[Display 3.22(3)]

MILEAGE ENTERED SEEMS LOW FOR THE AGE OF THE VEHICLE.

INCORRECT ENTRY WILL BE CORRECTED AT STATION EXPENSE AND MAY TRIGGER AN ENFORCEMENT ACTION

CHECK THE MILEAGE AND TRY AGAIN.

IF THE ENTRY IS CORRECT, Press <FY> TO CONTINUE.

PRESS <FZ> to REENTER THE MILEAGE

[Display 3.22(4)]

Warning Messages:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.22(5)]

ODOMETER READING IS NOT VALID - TRY AGAIN

[Display 3.22(6)]

The GAS shall proceed to 3.23 Tampering Inspection.

3.23 Tampering Inspection

For all tests, the tampering inspection will be limited to a visual check of the catalytic converter. No data entry screening via matching with the VRT will be required or allowed.

The GAS may prompt the inspector to look for the existence of a catalytic:

Display Prompt:

PERFORM THE INSPECTION FOR THE PRESENCE OF A CATALYTIC CONVERTER.

ENTER ONE OF THE FOLLOWING CODES FOR THE INSPECTION:

P PRESENT
F MISSING/FAIL {Default}
N NOT APPLICABLE

Display [3.23 (1)]

If the vehicle has been provided SPECIAL STANDARDS the GAS may display one of the following message:

Display Prompt:

THIS VEHICLE DOES NOT REQUIRE A CATALYTIC CONVERTER INSPECTION.

PRESS <FY> TO CONTINUE

[Display 3.23(2)]

Display Prompt:

THIS VEHICLE MUST BE INSPECTED FOR CATALYTIC CONVERTER.

A "P" OR "F" MUST BE ENTERED.

The GAS shall proceed to the next section.

3.24 OBD Test Procedure

If the M.Y. entered is for a 1996 or newer vehicle the inspector shall be prompted to perform an OBD test sequence. The GAS shall check the status of the OBD hardware prior to proceeding to the OBD test sequence.

If there is OBD hardware problems the GAS shall inform the operator of the problem by showing the following display

Display Prompt:

A PROBLEM EXISTS WITH THE OBD TEST SYSTEM, CHECK CONNECTIONS TO CORRECT THE PROBLEM, OR CALL FOR SERVICE

PRESS <FX> TO RECHECK THE SYSTEM AND CONTINUE, or PRESS ESC TO ABORT

[Display 3.24(1)]

The GAS may Display the following message(s).

Display Prompt:

OBD TESTING HAS BEEN DETERMINED FOR THIS VEHICLE BASED ON THE MODEL YEAR. PRESS ENTER TO PERFORM THE OBD TEST SEQUENCE,

ENSURE THE FUEL CAP IS SECURELY IN PLACE PRIOR TO PROCEEDING, OR

PRESS <FY> TO PERFORM A TSI TEST

[Display 3.24(2)]

(Display Prompt:

OBD TESTING HAS BEEN DETERMINED FOR THIS VEHICLE BASED ON THE MODEL YEAR.
ENSURE THE FUEL CAP IS SECURELY IN PLACE PRIOR TO PROCEEDING,

PRESS <FY> to CONTINUE, OR

PRESS ESC TO ABORT THE TEST

[Display 3.24(3)]

If the inspector presses <FY> then the GAS shall prompt the inspector through an OBD test sequence as outlined in Appendix-OBD.

If the inspector presses ESC key here the GAS shall abort the test, and return to the MAIN MENU.

Programming Criteria

The GAS shall display all previous entries and allow the inspector to edit, the information. The software shall be designed to require the inspector to confirm that previous entries are correct before allowing the emissions test to be initiated. The software shall not allow a change to the VIN at this point in the process.

If the M.Y. entered is for a 1995 or older vehicle, or is a newer vehicle receiving a non-conforming TSI or ASM inspection the inspector shall be prompted to proceed to the next section 3.25 Dual Exhaust.

3.25 Dual Exhaust

The GAS shall prompt the inspector for the type of exhaust system when an ASM or TSI test will be performed.

Display

DOES THE VEHICLE HAVE DUAL EXHAUST?

Y = YES
N = NO {Default}

PRESS <FX> FOR YES, OR PRESS <FZ> FOR NO

[Display 3.25(1)]

(b) If the operator answers, "YES", then the manufacturer shall display instructions to the inspector to install the second probe and insert both probes into the tailpipes. The instructional screens shall be approved by EPD.

If the operator answers, "NO", the analyzer shall automatically proceed to the next section 3.26 Emission Test.

Warning Message:

INVALID ENTRY - TRY AGAIN

3.26 Emission Test

For ASM and TSI tests, the inspector shall be able to edit the ASM/TSI test type. The inspector is ultimately responsible for performing the correct emissions test.

Display Prompt:

REVIEW THE VEHICLE IDENTIFICATION AND TAMPERING INSPECTION ENTRIES FOR ACCURACY.

IF THE INFORMATION IS CORRECT, PRESS <FX> TO CONTINUE

IF NOT, MAKE THE NECESSARY CORRECTIONS THEN PROCEED WITH TEST

[Display 3.26(1)]

Manufacturers shall display all previous entries on a review screen or screens and allow the inspector to edit, the information. The software shall be designed to require the inspector to confirm that previous entries are correct before allowing the emissions test to be initiated. The software shall not allow a change to the VIN at this point in the process.

Emission Test: The inspector shall be prompted by the analyzer to:

- attach the RPM pickup,
- start the engine,
- insert the exhaust probe, and
- perform the appropriate test sequence.

3.27 ASM Emission Test Sequence

Test Sequence: The test sequence shall consist of an ASM2 two-mode test as described in Appendix- ASM2 Test Sequence.

Start of test - The software shall prompt the inspector to perform any safety procedures or checks required by the equipment manufacturer, and then to drive the vehicle on the dynamometer, laterally stabilize, restrain and chock the wheels of the vehicle. The prompts shall include tire drying, where required, and the positioning of the cooling fan when the ambient temperature exceeds the temperature set in the specification section elsewhere in this document.

Display Prompt:

DRIVE THE VEHICLE ONTO THE DYNAMOMETER AND LATERALLY STABILIZE.
RESTRAIN THE VEHICLE.
CHOCK WHEELS.
SET THE REAR PARKING BRAKE FOR FRONT WHEEL DRIVE VEHICLES.

[Display 3.27(1)]

Display Prompts:

TURN OFF ALL ACCESSORIES.

[Display 3.27(2)]

IF THE TIRES ARE WET, DRIVE AT 15 MPH UNTIL DRY.

[Display 3.27(3)]

Display Prompt:

THE AMBIENT TEMPERATURE IS: {ttt}^{o} F

YOU MUST POSITION THE COOLING FAN DIRECTLY IN FRONT OF THE VEHICLE'S RADIATOR.

THE FAN MUST NOT BE PLACED MORE THAN THE DIAMETER OF THE FAN FROM THE VEHICLE'S RADIATOR

NOT USING THE FAN WILL TRIGGER AN ENFORCEMENT ACTION

PRESS <FY> TO CONTINUE ONLY AFTER PLACEMENT OF THE FAN

[Display 3.27(4)]

Vehicle test horsepower and test weight selection. The test horsepower and test weight shall be selected from the VRT row number chosen in the vehicle information entry

process. If a specific VRT cannot be matched, the default VRT test horsepower and test weight values based on the vehicle year, type, number of cylinders, etc., shall be used.

Gear selection -

Automatic transmission - The inspector shall be prompted to place the transmission in Drive.

Display Prompt:

PLACE THE TRANSMISSION IN DRIVE. IF THE ENGINE RPM EXCEEDS _____, PLACE THE TRANSMISSION IN OVERDRIVE.

[Display 3.27(5)]

Manual transmission - The inspector shall be prompted to place the transmission in second gear

Display Prompt:

PLACE THE TRANSMISSION IN SECOND GEAR. KEEP THE ENGINE BETWEEN _____ AND _____ RPM.

[Display 3.27(6)]

RPM limits

Engine of 3.0 liters or less - 1500 to 3000 RPM
Engine of greater than 3.0 liters - 1250 to 2500 RPM

Pre-test conditions: The following conditions must be met before the ASM test will be allowed to proceed.

(i) The dilution threshold limits must be met.

(ii) The GAS unit must not detect a low-flow condition.

(iii) The idle speed must be between 400 and 1250 RPM.

(iv) The dynamometer rolls shall not be turning (speed less than 1 mph).

(v) Once these conditions are met, the inspector can be prompted to begin the preconditioning sequence

Display prompts during the test: If at any time during the emission averaging portion of the ASM test, the vehicle speed, engine RPM, dynamometer loading or dilution fall outside the allowable range, the software shall display the appropriate warning message below to prompt the inspector to correct the problem.

Display Prompts:

OUTSIDE TEST SPEED LIMIT

[Display 3.27(7)]

OUTSIDE ENGINE RPM RANGE

[Display 3.27(8)]

DYNO LOADING ERROR

[Display 3.27(9)]

OUTSIDE DILUTION LIMITS

[Display 3.27(10)]

OUTSIDE THE MAXIMUM ACCELERATION LIMIT

[Display 3.27(11)]

Restart Procedures: Bring the rollers to a full stop. Reset the test timer to zero. The software shall prohibit the restart of the test until the vehicle has idled.

Conditions causing test mode restart:

- Vehicle or equipment unable to stabilize within the required stabilization time.
- Acceleration violation exceeding the limits listed above.
- Dynamometer loading outside specification for at least two consecutive seconds.
- Sample dilution
- Engine or vehicle speed out of range for more than two consecutive seconds or more than five seconds cumulative
- Inadequate number of ten-second averages

3.28 Vehicle Preconditioning Procedure (TSI)

If the vehicle under test has failed the first attempt at a TSI test then it shall go through preconditioning. After the preconditioning, the vehicle shall receive a second chance at passing the TSI test. First attempt and second chance readings are to be stored in the appropriate fields record.

The preconditioning sequence is found in Appendix-Preconditioning.

3.29 Functional Checks

The GAS shall prompt the inspector to perform a functional check of the fuel cap(s) on the vehicle under test. The GAS shall allow the operator to bypass the fuel cap test if there is no adapter available to test the fuel cap. The GAS shall allow the inspector to test up to two fuel caps per vehicle. See Appendix-Fuel Cap for the Functional fuel cap test sequence.

3.30 Pre-inspection Repairs

If the Test Type field is "I" and the vehicle under test is a NEWER vehicle, the GAS shall prompt the inspector for repair information after the Fuel Cap inspection and prior to the completion of the Georgia I/M test sequence to record any pre-inspection repairs by using the Display below but not for referee tests (test type = R), or

If the “TEST TYPE” field of the GAS file is an “A”, the GAS shall prompt the inspector for repair information after the Fuel Cap inspection and prior to the completion of the Georgia I/M test sequence on all vehicles, but not for referee tests (test type = R).

Display Prompt:

PRIOR TO THE START OF THIS INSPECTION, WERE ANY REPAIRS MADE TO THE EMISSION CONTROL COMPONENTS OF THIS VEHICLE?

ENTER "Y"{default} FOR YES OR "N" FOR NO

[Display 3.30 (1)]

An entry of "YES" will cause the "Repair Action Categories" to be displayed and an entry on that menu will be required prior to allowing the inspector to proceed to the next item. See section 3.31 Repair Action Categories. or,

An entry of "NO" shall cause the GAS to bypass further displays in this section and proceed to the section 3.33 below.

Possible warning messages:
Display Prompts:

NO ENTRY HAS BEEN MADE - TRY AGAIN

[Display 3.30 (2)]

INVALID ENTRY - TRY AGAIN

[Display 3.30(3)]

3.31 Repair Action Categories

The GAS shall prompt the inspector to enter the ten (10) digit repair facility telephone number. The inspector shall be prompted to note which items were repaired on the vehicle prior to being tested.
Display Prompt:

ENTER THE 10-DIGIT REPAIR FACILITY PHONE NUMBER

Enter <FY> for UNKNOWN shop or <FZ> for OWNER repair.

ENTER "Y" FOR EACH REPAIR TYPE PERFORMED

[Display 3.31(1)]

Repair Facility Number: The repair facility number is based on the 3-digit area code and the 7-digit telephone number. The GAS must verify all 10 digits have been entered. If less than 10 digits have been entered, the inspector shall be prompted to reenter the number. The GAS shall store the entered.

Repair Action Categories: The software will display the repair action categories (listed below). The inspector shall not be required to make an entry for each item, only the items selected by scrolling the cursor (or whatever selection system is used).

1. The default entry for each category is "N".

2. Only the letter "Y" shall be entered for each applicable menu item. No other entries are acceptable.

3. It is permissible to make entries in none of the categories.

REPAIR CATEGORIES

1. Ignition System Repairs	6. Sensors, Switches and Computer
2. Intake/Fuel Induction System	7. Fuel Fill Pipe or Exhaust System
3. Engine Diagnostics	8. Air Injection System Repair
4. Fuel Cap/Tank/Evaporative Control	9. Internal Engine Repairs
5. EGR System	10. Other ASM or OBD Related Repairs

If the inspector attempts to enter a non-valid repair action category letter the GAS shall display one of the following messages:

Display Prompts:

THE REPAIR ACTION CODE IS NOT VALID - TRY AGAIN

[Display 3.31(2)]

After the repair category entries are made, the inspector shall be prompted:

Display Prompt:

WERE ANY OTHER EMISSION RELATED REPAIRS RECOMMENDED, BUT NOT PERFORMED? (IS BOX CHECKED? Y/N)

[Display 3.31(3)]

The inspector may enter "Y". The default entry is "N", the inspector's response shall be stored in the corresponding field of the GAS file.

3.32 Parts and Labor Cost

The GAS shall prompt the inspector to enter Parts and Labor cost data:

For Initial tests (Test Type I) on NEWER vehicles receiving and OBD inspection using display 3.32(1) below, or

For all "After Repair Tests" (Test Type A) where the inspector indicated pre-inspection repairs were performed, the GAS shall require the inspector to enter repair cost information (parts and labor) after the functional check results have been entered. The GAS shall not allow the inspector to conclude the Georgia Emission Test inspection process without entering repair cost information.

The repair cost information to be entered shall include repairs that have been performed to correct tampered (missing, modified or disconnected) emission control systems and emission-related repairs.

After the appropriate repair categories have been entered, the GAS shall require entrance of the repair cost information. The GAS shall display the following message:

Display Prompt:

IF THIS IS AN AFTER REPAIRS TEST, A REPAIR FORM MUST BE SUBMITTED BY MOTORIST.

FROM THE "EMISSION REPAIR FORM" ENTER THE TOTAL AMOUNT OF MONEY CHARGED THE CONSUMER FOR PARTS AND LABOR TO

PERFORM EMISSION-RELATED REPAIRS.

ENTER $0 FOR LABOR IF OWNER/SELF REPAIR.

ENTER THE DOLLAR AMOUNT ONLY, DO NOT ENTER CENTS. TOTAL PARTS COST $ ____.00
TOTAL LABOR COST $ ____.00

EXAMPLE: $23.84 IS ENTERED AS $23

[Display 3.32(1)]

If no repair categories have been entered or if no repair fee was charged, the inspector shall be allowed to enter $0 for parts and/or labor. The GAS shall display the inspector's entry but shall disregard any portion less than a whole dollar amount. The GAS shall store the repair parts and labor cost information.

If the inspector enters a value of over $500 in either the PARTS category or the LABOR category above, the GAS shall display the following warning message:

Display Prompt:

COST ENTERED APPEARS HIGH, PLEASE VERIFY AND REENTER IF NEEDED,

DO NOT ENTER CENTS,

ENTER WHOLE DOLLARS ONLY,

EXAMPLE: $23.84 IS ENTERED AS $23

OR PRESS F<2> TO ACCEPT AND CONTINUE.

[Display 3.32(2)]

3.33 Display Test Results

At the conclusion of the inspection/test, the analyzer shall display a summary of the results. This shall include a list of inspection items not passed, all emission readings or OBD II items with a Pass/Fail reading beside each, and the results of any functional inspection.

3.34 Test Fee Entry

At the conclusion of each paid test, the inspector will be prompted to enter the inspection fee charged. For paid tests, the appropriate value in the FEE file (Paid Test Fee OBD/TSI or Paid Test Fee -ASM) will be displayed. The inspector will be allowed to modify the value displayed within the range of MIN-to-Max Paid Test Fee OBD/TSI or Min-to-Max Paid Test Fee - ASM in the FEE file. This fee will be stored and printed on the VIR. For free retests the fee will automatically be entered on the VIR as "FREE".

Display Prompt:

ENTER THE TEST FEE CHARGED.

PRESS<FY> FOR MINIMUM OR <FZ> FOR MAXIMUM

[Display 3.34(1)]

The GAS can use the FEE default values either minimum <FY>, or maximum <FZ>, or the GAS may be programmed to automatically use a station selected test fee. The GAS shall allow the operator to verify the test fee, or change the default fee for each test as long as fee is equal to or between the minimum and maximum values.

NOTE: The minimum/maximum program fees reside in the PROGRAM file.

3.35 Abort Codes

If a testing sequence was aborted either by the inspector or automatically by the GAS then the following message and codes shall be displayed. The inspector shall be allowed to cancel an abort if not done automatically by the GAS. Aborted tests due to automatic equipment-caused aborts are not to allow a paid abort code to be entered.

Display Prompt:

ENTER THE CODE THAT BEST DESCRIBES THE REASON THE TEST WAS ABORTED:

THESE ABORT CODES RESULT IN A TEST FAILURE - FEE IS DUE

$-01 OIL SYSTEM LEAK/ WARNING LIGHT
$-02 TRANSMISSION LEAKS
$-03 COOLANT SYSTEM LEAKS/OVERHEAT
$-04 FUEL LEAK
$-05 SAMPLE DILUTION
$-06 RPM TOO HIGH
$-07 RPM TOO LOW
$-08 EXCESSIVE ENGINE NOISE
$-09 OTHER SAFETY PROBLEM

THESE CODES ABORT THE TEST - NO FEE IS DUE

87 OBD DIAGNOSTIC LINK CONNECTOR NOT FOUND
88 INCORRECT EMISSIONS TEST TYPE
89 ASM RESTART VIOLATION
90 BMW/PEUGEOT/VOLVO TRANSMISSION
91 INSPECTOR DOES NOT HAVE PROPER LICENSE
92 VEHICLE DOES NOT REQUIRE INSPECTION
93 UNABLE TO OBTAIN RPM READING
94 NO REPAIR FORM COMPLETED
95 LOW FLOW RATE
96 RPM TOO LOW
97 RPM TOO HIGH
98 DILUTION LIMIT NOT MET
99 OTHER - INDICATE REASON ON VIR: _____{add underline for description}

[Display 3.35(1)]

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, he/she shall be allowed to do so prior to the abort confirmation. The inspector shall be returned to the beginning of the test sequence where they were 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.

(4) Data entry errors will be displayed as the following warning message(s):
Display Prompt:

NO VALUE HAS BEEN ENTERED - TRY AGAIN

[Display 3.35(2)]

Or,

ONLY ONE ABORT CODE MAY BE ENTERED - TRY AGAIN

[Display 3.35(3)]

3.36 Post Test Logic

The GAS shall check for flags set after the inspection process. The action taken will depend on the status of the several program check flags in the PROGRAM file.

The GAS shall check the value in several fields of the PROGRAM file and then proceed.

If the Special Standards “X” was set in the GAS record the GAS shall automatically send the record to the VID if one was created and print the VIR with the following Print Message at the top of the page in place of the "Public Awareness Statement" statement:

THIS VEHICLE IS BEING BLOCKED FROM FURTHER TESTING.
PROVIDE THE OWNER WITH THIS PRINTOUT AND HAVE THEM
CONTACT EPD ENFORCEMENT AT (800) 449-2471.

Print Message {6}{VIRBLOCK}

then the GAS shall display the following message,
Display Prompt:

THIS VEHICLE IS BEING BLOCKED FROM FURTHER TESTING.
PROVIDE THE OWNER WITH THIS PRINTOUT AND HAVE THEM
CONTACT EPD ENFORCEMENT AT (800) 449-2471.
THE INSPECTION PROCESS WILL NOW TERMINATE.

PRESS ANY KEY TO PRINT AND CONTINUE.

[Display 3.36(1)]

When the inspector presses the “any” key the GAS shall print the screen message 3.36(1) then end the test and return to the welcome screen.

Section 4 - Test Records

4.01 Vehicle Test Record

The test record shall document all of the vehicle identification and test data information gathered during the inspection and emissions test.

The test record shall be written in steps.

GAS Number: The leftmost two characters shall be alphas denoting the manufacturer's initials. The right most six numeric characters shall be right justified, with zeros for unused spaces on the left, i.e., GAS number 23 shall be AA000023 for manufacturer AA.

Analyzers shall store the current test record number in the test record.

4.02 Calibration and Other Data

The CALIBRATION file shall be created during the end of any calibration routine.

Results of the leak check shall reside in the CALIBRATION file.

Results of the Dynamometer calibration shall be stored in the CALIBRATION file.

Results of the fuel cap calibration tester shall be stored in the CALIBRATION file.

Results of a GAS bench calibration shall be stored in the CALIBRATION file.

The TAMPER file will be used by the communications software to create a LOCKOUT file. The GAS shall allow this file to be transferred to the VID

Section 5 - Vehicle Inspection Report and Printer Functions

5.01 Vehicle Inspection Report (VIR)

The VIR shall be generated after "end-of-test" contact with the VID:

The Vehicle Inspection Report (VIR) shall display the information shown in the following samples.

The following title shall be printed on the

"GEORGIA VEHICLE EMISSION INSPECTION REPORT"

The "Public Awareness Statement" shall be printed as shown below and shall be printed on the VIR:

“The Georgia Emission Test Program is helping to clean up Metro Atlanta’s air - and you are doing your part. Motor vehicles are driven over 128 million miles each day in Metro Atlanta and are responsible for half of the pollutants in Metro Atlanta’s air. Keeping your vehicle tuned up and in good operating condition is the most important thing you can do to keep our air clean and protect the health of all our citizens".

The Overall Test Results Section of the VIR shall be formatted as shown in the example VIRs shown in section 5.02. It is EPD’s intention to have VIRs appear as similar as possible regardless of analyzer manufacturer and test type. A single horizontal line shall divide each section of the report.

Under the "Overall Test Result" heading, the following items will be printed.

(i) Test result - "**Passed**", "**Failed**", or "**Aborted**". For aborted tests, the abort code and a brief description shall be displayed.

(ii) Certificate number - A certificate number shall be displayed for all passed tests, paid aborts, and paid failed tests. For unpaid retests, the certificate number will be followed by the notation "**RETEST**".

(iii) An information message:

(I) For passed vehicles - " **Keep a copy for your records**".

(II) For failed vehicles –

"**Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a reinspection within 30 days. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle**. **EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report."**

(III) For aborted tests –

"**The inspection was not completed for the reason listed. Present this report when a new test is performed**"

(iv) Test time - date in MMDDYYYY format, followed by time in hh:mm format on a 24-hour

clock printed in bold. Seconds shall not be printed.

(v) Test type - "**Initial**", "**After Repairs**", or "**Referee**" printed in bold.

(vi) Test fee - Dollar amount "**$XX.XX**" or "**FREE**" printed in bold.

Vehicle Information Section

The following information shall be printed as shown in the examples.

Vehicle License Plate	Engine size	GAS Test Record number
State	Cylinders	Test ID*
Vehicle Identification Number	Transmission	Test Weight
Model year	GVW Rating	VRT Record Number
Make	Odometer reading	Dilution Correction Factor
Model	Body Type	

Test Standards Type (PASSENGER, TRUCK, or NONCONFORMING)

The emission test results shall be printed in the "Test Results" Section as follows.
For the two-speed idle test -

For both the 2500 rpm test and the idle portions of the test, for HC, CO, RPM and CO+CO_2 levels, the dilution corrected reading, the allowable and a "Pass" or "Fail" result shall be displayed for all tests except as noted:

For the ASM test -

The HC, CO, NO, RPM, and CO + CO_2 corrected reading, allowable readings and a "PASS" or "FAIL" result, except as noted below:

For after repairs tests where the previous test was failed due to a only missing catalytic converter or leaking fuel cap (i.e., the tailpipe results were passing), the HC, CO, RPM and CO+CO_2 results will be shown as "previous pass",

Results of the catalytic converter inspection shall be printed as "Present", "Fail", or "Not applicable".

Results of the fuel cap leak test shall be printed as "Pass", "Fail" or “Not Tested”, (N/A, -, or Not Applicable).

For after repair tests, the results from the previous test will be used for the catalytic converter and fuel cap test, unless the vehicle failed those tests. In that case, the results of this re-inspection will be displayed.

The GAS shall print on the VIR station information in the station information section the information contained in the STATION file. The GAS shall not allow a test to start if the STATION file fields listed below are blank.

Station information shall contain the following station information:

• Station number • Station name • Station address • Station phone	• Inspector name* • Inspector number* • Software Version • GAS Unit Number • GAS Test Record Number

The inspector signature section shall contain the following certification statement:

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines or imprisonment, or both, under O.C.G.A. § 16-10-20.", and an inspector's Signature line as indicated in the examples provided in Section 5.02..

The inspector number shall be printed on the VIR

The OBD Test Results section for all 1996 and newer model vehicles shall print the results of the OBD check as shown in the examples of Section 5.02. The VIR shall include a listing of up to a maximum of five emission related fault code numbers and the short description of the fault. For vehicles with no fault codes found, the space after the "DTC" shall be left blank as indicated in the examples.

For vehicles that fail the emission portion of the inspection, a listing of any recall notices transmitted for the vehicle may be printed on a second sheet of paper.

A vehicle inspection report shall be printed every time a test is performed regardless of the test result.

VIRs issued when the analyzer is in the training mode shall print the following at the top and bottom of the report as indicated in the example in Section 5.02.

TRAINING MODE: NOT A VALID REPORT

For all VIRs that are reprinted from recalled vehicle information, the VIR shall be identical to the original VIR, except that a notation "REPRINT" shall be printed immediately above the Certificate number line

The GAS test record number shall be printed on the VIR.

A barcode shall be printed on the repair form for failing inspections to access an after repairs test. However, no barcode shall be printed on TRAINING MODE test reports since no certificate number is used.

5.02 Example Vehicle Inspection Reports

The following pages show examples of Georgia Vehicle Inspection Reports (VIRs). These VIRs are shown for the purpose of visually understanding what information is required on the document given to the motorist. Following is a sample VIR format showing font size of each line of the VIR. As laid out, this form will always fit on one 8.5" X 11" page. Variable print messages will always be in the "Message Section" and will always fit when printed in the prescribed size.

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

The Georgia Emission Test Program is helping to clean up Metro Atlanta's air - and you are doing your part. Motor vehicles are driven over 115 million miles each day in Metro Atlanta and are responsible for half of the pollutants in Metro Atlanta's air. Keeping your vehicle tuned up and in good running condition is the most important thing you can do to keep our air clean and protect the health of all our citizens.

OVERALL TEST RESULT: FAIL **CERTIFICATE NUMBER: FL000001**

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a re-inspection. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle. EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report.

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $20.00**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999	Make:	CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2.1 L	Tran:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	40158		

TEST RESULTS

	25/25 Test				50/15 Test		
Reading	**Allowed**	**Result**		**Reading**	**Allowed**	**Result**	
HC ppm	122	74	**Fail**		198	120	**Fail**
CO %	0.33	0.49	**Pass**		0.10	0.51	**Pass**
NO_x ppm	70	861	**Pass**		85	1001	**Pass**
RPM	1200	2750	**max**		1179	1200	**max**
$CO+CO_2$%	10.8	6.0	**min**		9.9	6.0	**min**

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Fail**
Fuel Cap 2 Test = None

Station Number: GA000000	Inspector Name: Joe Emission
Joe's Emission Test	Inspector Number: AA692586
2500 Roswell Road	Software Version: GA004.3
Alpharetta, GA 30044	GAS Unit Number: XX000000
Telephone Number: 770-356-7894	Test Record Number: 999999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: PASS **CERTIFICATE NUMBER: PA000002 RETEST**

Keep a copy for your records.

Test Date/Time: 09/17/2008 @ 09:25 **Test Type: After Repairs** **Test Fee: Free**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999	Make:	CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2.1 L	Tran:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR:	N/A	VRT:	40158	Test ID:	204669575

TEST RESULTS

	25/25 Test Reading	Allowed	Result	50/15 Test Reading	Allowed	Result
HC ppm	52	74	**Pass**	88	120	**Pass**
CO %	0.33	0.49	**Pass**	0.10	0.51	**Pass**
NO_x ppm	70	861	**Pass**	85	1001	**Pass**
RPM	1200	2750	**max**	1179	1200	**max**
$CO+CO_2$ %	10.8	6.0	**min**	9.9	6.0	**min**

Catalytic Converter = **Present**

Fuel Cap 1 Test = **NOT TESTED**
Fuel Cap 2 Test = None

Station Number: GA000000	Inspector Name: Joe Emission
Joe's Emission Test	Inspector Number: AA692586
2500 Roswell Road	Software Version: GA004.3
Alpharetta, GA 30044	GAS Unit Number: XX000000
Telephone Number: 770-356-7894	Test Record Number: 99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: PASS **CERTIFICATE NUMBER: RT000003 RETEST**

Keep a copy for your records.

Test Date/Time: 08/17/2008 @ 10:25 **Test Type: After Repairs** **Test Fee: Free**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	2GNEK18K6XJ311925
Year:	1999	Make:	GMC	Model:	SAFARI
Cylinders:	4	Eng:	2.1 L	Tran:	AUTOMATIC
Odometer:	37122	Body:	MINIVAN	Stds:	TRUCK
GVWR:	5250	VRT:	40158	Test ID:	507869575

TEST RESULTS

	2500 RPM Test			IDLE RPM Test		
	Reading	**Allowed**	**Result**	**Reading**	**Allowed**	**Result**
HC ppm	52	74	**Pass**	88	120	**Pass**
CO %	0.33	0.49	**Pass**	0.10	0.51	**Pass**
RPM	2485	2750	**max**	989	1200	**max**
$CO+CO_2$%	10.8	6.0	**min**	9.9	6.0	**min**

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Pass**
Fuel Cap 2 Test = None

Station Number: GA000000
Joe's Emission Test
2500 Roswell Road
Alpharetta, GA 30044
Telephone Number: 770-356-7894

Inspector Name: Joe Emission
Inspector Number: AA692586
Software Version: GA004.3
GAS Unit Number: XX000000
Test Record Number: 99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

The Georgia Emission Test Program is helping to clean up Metro Atlanta's air - and you are doing your part. Motor vehicles are driven over 115 million miles each day in Metro Atlanta and are responsible for half of the pollutants in Metro Atlanta's air. Keeping your vehicle tuned up and in good running condition is the most important thing you can do to keep our air clean and protect the health of all our citizens.

OVERALL TEST RESULT: PASS **CERTIFICATE NUMBER: EL000004**

Keep a copy for your records.

Test Date/Time: 09/17/2008 @ 09:25 **Test Type: Initial** **Test Fee: $21.50**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	3MNEK18K6XJ311925
Year:	1989	Make:	MERCEDES BENZ	Model:	450SL
Cylinders:	6	Eng:	3.0 L	Tran:	AUTOMATIC
Odometer:	98201	Body:	SEDAN	Stds:	NONCONFORMING
GVWR:		VRT:	35026	Test ID:	597969888

TEST RESULTS

	2500 RPM Test			IDLE RPM Test		
	Reading	**Allowed**	**Result**	**Reading**	**Allowed**	**Result**
HC ppm	52	74	**Pass**	88	120	**Pass**
CO %	0.33	0.49	**Pass**	0.10	0.51	**Pass**
RPM	2485	2750	**max**	989	1200	**max**
$CO+CO_2$%	10.8	6.0	**min**	9.9	6.0	**min**

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Pass**
Fuel Cap 2 Test = None

Station Number: GA000000
Joe's Emission Test
2500 Roswell Road
Alpharetta, GA 30044
Telephone Number: 770-356-7894

Inspector Name: Joe Emission
Inspector Number: AA692586
Software Version: GA004.3
GAS Unit Number: XX000000
Test Record Number: 99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

The Georgia Emission Test Program is helping to clean up Metro Atlanta's air - and you are doing your part. Motor vehicles are driven over 115 million miles each day in Metro Atlanta and are responsible for half of the pollutants in Metro Atlanta's air. Keeping your vehicle tuned up and in good running condition is the most important thing you can do to keep our air clean and protect the health of all our citizens.

OVERALL TEST RESULT: PASS **CERTIFICATE NUMBER: OD000005 RETEST**

Keep a copy for your records.

Test Date/Time: 10/03/2008 @ 09:53 Test Type: After Repairs Test Fee: Free

---

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1BNEK18K6XJ311925
Year:	1998	Make:	DODGE	Model:	NEON
Cylinders:	4	Eng:	2.4 L	Trans:	AUTOMATIC
Odometer:	77122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	40158	Test ID:	393069575

TEST RESULTS

RPM =	923	DTC1=	
KOEO =	**Pass**	DTC2=	
READINESS =	**Pass**	DTC3=	
MIL CMD =	**Pass**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	**Pass**		
KOER =	**Pass**		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Pass**
Fuel Cap 2 Test = None

Station Number: GA000000	Inspector Name: Joe Emission
Joe's Emission Test	Inspector Number: AA123456
2500 Roswell Road	Software Version: GA004.3
Alpharetta, GA 30044	GAS Unit Number: XX000000
Telephone Number: 770-356-7894	Test Record Number: 9999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

The Georgia Emission Test Program is helping to clean up Metro Atlanta's air - and you are doing your part. Motor vehicles are driven over 115 million miles each day in Metro Atlanta and are responsible for half of the pollutants in Metro Atlanta's air. Keeping your vehicle tuned up and in good running condition is the most important thing you can do to keep our air clean and protect the health of all our citizens.

OVERALL TEST RESULT: FAIL **CERTIFICATE NUMBER: OD00006 RETEST**

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a re-inspection. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle. EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report.
Your vehicle did not pass inspection because the on-board computer is "Not Ready" to determine the status of the pollution control systems on the vehicle. Drive your vehicle for 1-2 weeks under normal conditions, including some highway driving. You may also contact your vehicle manufacturer for detailed information regarding completing the "drive cycle" on your vehicle. **NO REPAIRS OR DIAGNOSTIC ANALYSIS MAY BE NEEDED AT THIS TIME.**

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $20.00**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999	Make:	CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2.1 L	Trans:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	40158		[No Test ID printed on Fails]

TEST RESULTS

RPM =	923	DTC1=	
KOEO =	**Pass**	DTC2=	
READINESS =	**Fail 3**	DTC3=	
MIL CMD =	**Pass**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	**Pass**		
KOER =	Pass		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **PASS**
Fuel Cap 2 Test = None

Station Number: GA000000 Inspector Name: Joe Emission
Joe's Emission Test Inspector Number: AA692586
2500 Roswell Road Software Version: GA004.3
Alpharetta, GA 30044 GAS Unit Number: XX000000
Telephone Number: 770-356-7894 Test Record Number : 99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: FAIL **CERTIFICATE NUMBER: OD140007 RETEST**

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a re-inspection. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle. EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report.
Your vehicle did not pass inspection because the Diagnostic Link Connector (DLC) was NOT ACCESSIBLE. Ask the inspector to show you the problem. The problem or obstruction will need to be corrected prior to retest. If the vehicle's on-board computer is cleared or the battery disconnected during repairs, remember to drive the vehicle for 1-2 weeks under normal conditions, including some highway driving. This will allow the vehicle time to complete its drive cycle and become "Ready" for retest.

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $19.00**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999	Make:	CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2.1 L	Trans:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	40158		[No Test ID printed on Fails]

TEST RESULTS

RPM =	998	DTC1=	
KOEO =	**Pass**	DTC2=	
READINESS =	**Fail**	DTC3=	
MIL CMD =	**Fail**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	No Signal		
KOER =	Fail		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **PASS**
Fuel Cap 2 Test = None

Station Number:	GA000000	Inspector Name:	Joe Emission
Joe's Emission Test		Inspector Number:	AA692586
2500 Roswell Road		Software Version:	GA004.3
Alpharetta, GA 30044		GAS Unit Number:	XX000000
Telephone Number:	770-356-7894	Test Record Number:	99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: FAIL **CERTIFICATE NUMBER: OD15008**

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a re-inspection. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle. EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report.
Your vehicle did not pass inspection because the on-board computer indicated there is a problem with the emission control system. The nature of the problem is indicated by the Diagnostic Trouble Codes listed below. The problem(s) will need to be repaired prior to retest. If the vehicle's on-board computer is cleared or the battery disconnected during repairs, drive the vehicle for 1-2 weeks under normal conditions, including some highway driving. This will allow the vehicle time to complete its drive cycle becoming "Ready" for retest

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $20.01**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999	Make:	CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2.1 L	Trans:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	40158		[No Test ID printed on Fails]

TEST RESULTS

RPM =	923	DTC1=	P0300 General Misfire
KOEO =	**Fail**	DTC2=	P0500 Vehicle Speed Sensor Malfunction
READINESS =	**Fail 3**	DTC3=	P0401 EGR Insufficient Flow Detected
MIL CMD =	**Fail**	DTC4=	P0171 System Too Lean Bank1
CODES READ =	**7**	DTC5=	P1304 Vehicle specific
DLC =	**Pass**		
KOER =	Fail		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **PASS**
Fuel Cap 2 Test = **Fail**

Station Number:	GA000000	Inspector Name:	Joe Emission
Joe's Emission Test		Inspector Number:	AA692586
2500 Roswell Road		Software Version:	GA004.3
Alpharetta, GA 30044		GAS Unit Number:	XX000000
Telephone Number:	770-356-7894	Test Record Number:	99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: ABORT **CERTIFICATE NUMBER: AB99999**

This test was aborted due to code. **99***
The inspection was not completed for the reason listed below.
Reason: _____
Present this report when a new test is performed.

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $00.00**

VEHICLE INFORMATION

License:	BRC123	State:	GEORGIA	VIN:	4A3AA46G73E17999
Year:	2003	Make:	MITSUBISHI	Model:	GALLANT
Cylinders:	4	Eng:	2400	Trans:	AUTOMATIC
Odometer:	87122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	60158		[No Test ID printed on aborts]

TEST RESULTS

RPM =		DTC1=	
KOEO =	**Fail**	DTC2=	
READINESS =	**Fail**	DTC3=	
MIL CMD =	**Fail**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	**No Signal**		
KOER =	Fail		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Fail**
Fuel Cap 2 Test = **Fail**

Station Number:	GA000000	Inspector Name:	Joe Emission
Joe's Emission Test		Inspector Number:	AA692586
2500 Roswell Road		Software Version:	GA004.3
Alpharetta, GA 30044		GAS Unit Number:	XX000000
Telephone Number:	770-356-7894	Test Record Number:	99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: ABORT **CERTIFICATE NUMBER: AB8510**

This test was aborted due to code. 85 RANDOM TSI TEST ABORTED BY INSPECTOR
Present this report when a new test is performed.

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $00.00**

VEHICLE INFORMATION

License:	BRC123	State:	GEORGIA	VIN:	4A3AA46G73E17999
Year:	2003	Make:	MITSUBISHI	Model:	GALLANT
Cylinders:	4	Eng Size:	2400	Trans:	AUTOMATIC
Odometer:	87122	Body Type:	SEDAN	Stds:	PASSENGER
GVWR:		VRT Record:	60158		[No Test ID printed on aborts]

TEST RESULTS

RPM =		DTC1=	
KOEO =	**Fail**	DTC2=	
READINESS =	**Fail**	DTC3=	
MIL CMD =	**Fail**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	**No Signal**		
KOER =	Fail		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Fail**
Fuel Cap 2 Test = **Fail**

Station Number:	GA000000	Inspector Name:	Joe Emission
Joe's Emission Test		Inspector Number:	AA692586
2500 Roswell Road		Software Version:	GA004.3
Alpharetta, GA 30044		GAS Unit Number:	XX000000
Telephone Number:	770-356-7894	Test Record Number:	99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: ABORT **CERTIFICATE NUMBER: AB831122**

This test was aborted due to code. **83 VEHICLE INSPECTION BLOCKED, CALL EPD ENFORCEMENT (800) 449-2471**

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $00.00**

VEHICLE INFORMATION

License:	BRC666	State:	GEORGIA	VIN:	3A3BA46G73E17999
Year:	2004	Make:	HONDA	Model:	INTEGRA
Cylinders:	6	Eng:	3600 cc	Trans:	MANUAL
Odometer:	87122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	51158		[No Test ID printed on aborts]

TEST RESULTS

RPM =		DTC1=	
KOEO =	**Fail**	DTC2=	
READINESS =	**Fail**	DTC3=	
MIL CMD =	**Fail**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	No Signal		
KOER =	Fail		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **Fail**
Fuel Cap 2 Test = **Fail**

Station Number: GA000000 Inspector Name: Joe Emission
Joe's Emission Test Inspector Number: AA692586
2500 Roswell Road Software Version: GA004.3
Alpharetta, GA 30044 GAS Unit Number: XX000000
Telephone Number: 770-356-7894 Test Record Number: 99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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REPRINT

OVERALL TEST RESULT: FAIL **CERTIFICATE NUMBER: RP000012**

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a re-inspection. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle. EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report.
Your vehicle did not pass inspection because the on-board computer is "Not Ready" to determine the status of the pollution control systems on the vehicle. Drive your vehicle for 1-2 weeks under normal conditions, including some highway driving. You may also contact your vehicle manufacturer for detailed information regarding completing the "drive cycle" on your vehicle. **NO REPAIRS OR DIAGNOSTIC ANALYSIS MAY BE NEEDED AT THIS TIME.**

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $20.00**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999	Make:	CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2100 cc	Trans:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR:		VRT:	40158		[No Test ID printed on Fails]

TEST RESULTS

RPM =	923	DTC1=	
KOEO =	**Pass**	DTC2=	
READINESS =	**Fail 3**	DTC3=	
MIL CMD =	**Pass**	DTC4=	
CODES READ =	0	DTC5=	
DLC =	**Pass**		
KOER =	Fail		

Catalytic Converter = **Present**

Fuel Cap 1 Test = **PASS**
Fuel Cap 2 Test = None

Station Number:	GA000000	Inspector Name:	Joe Emission
Joe's Emission Test		Inspector Number:	AA692586
2500 Roswell Road		Software Version:	GA004.3
Alpharetta, GA 30044		GAS Unit Number:	XX000000
Telephone Number:	770-356-7894	Test Record Number:	99999

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

TRAINING MODE: NOT A VALID REPORT

GEORGIA VEHICLE EMISSIONS INSPECTION REPORT

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OVERALL TEST RESULT: FAIL **CERTIFICATE NUMBER: _____**

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a re-inspection. Read the "Q/A" pamphlet for information on repairs and possible warranty coverage for your vehicle. EFFECTIVE EMISSIONS REPAIRS ALWAYS BEGIN WITH A GOOD DIAGNOSIS BY A QUALIFIED REPAIR TECHNICIAN. Review the RepairWatch Public Report.

Test Date/Time: 09/17/2008 @ 16:50 **Test Type: Initial** **Test Fee: $20.00**

VEHICLE INFORMATION

License:	ABC123	State:	GEORGIA	VIN:	1GNEK18K6XJ311925
Year:	1999		Make: CHEVROLET	Model:	CAVALIER
Cylinders:	4	Eng:	2100 cc	Tran:	AUTOMATIC
Odometer:	37122	Body:	SEDAN	Stds:	PASSENGER
GVWR :		VRT:	40158		[No Test ID printed on Fails]

TEST RESULTS

25/25 Test Reading	**Allowed**	**Result**		**50/15 Test Reading**	**Allowed**	**Result**	
HC ppm	122	74	**Fail**		198	120	**Fail**
CO %	0.33	0.49	**Pass**		0.10	0.51	**Pass**
NO_x ppm	70	861	**Pass**		85	1001	**Pass**
RPM	1200	2750	**max**		1179	1200	**max**
$CO+CO_2$%	10.8	6.0	**min**		9.9	6.0	**min**

Catalytic Converter: **Present**

Fuel Cap 1 Test = **Fail**
Fuel Cap 2 Test = None

Station Number: GA000000
Joe's Emission Test
2500 Roswell Road
Alpharetta, GA 30044
Telephone Number: 770-356-7894

Inspector Name: Joe Emission
Inspector Number: AA692586
Software Version: GA004.3
GAS Unit Number: XX000000
Test Record Number:

I hereby certify and represent, under penalty of law, that this test was conducted in accordance with all applicable Georgia test requirements. I understand and acknowledge that submitting false or fraudulent statements or writings in a matter under the jurisdiction of a state agency is a crime and can result in fines, imprisonment, or both, under O.C.G.A. 16-10-20.

Inspector's Signature: _____

TRAINING MODE: NOT A VALID REPORT

5.03 Transmit Test Record

Any test record that the GAS has created in accordance with "Vehicle Test Record Format" shall be transmitted to the VID.

The GAS shall display the following message:
Display Prompt:

TRANSMITTING DATA PLEASE WAIT.

[Display 5.03 (1)]

If successful communications cannot be achieved and the GAS has not exceeded the number of inspections allowed without VID communication, the GAS shall proceed with the Georgia Emission Test.
Display Prompt:

CANNOT ACCESS NETWORK. YOU MAY PROCEED WITH THE GEORGIA EMISSIONS TEST.

YOU MUST PERFORM A COMMUNICATION DIAGNOSTIC AFTER THIS TEST TO DETERMINE WHY NO CONNECTION WAS MADE

TOO MANY OFF-LINE TESTS MAY RESULT IN AN ENFORCEMENT ACTION.

[Display 5.03 (2)]

If successful communication/transmission cannot be achieved and the GAS has not exceeded the number of inspections allowed without VID communication, the GAS shall proceed with the Georgia Emission Test inspection. The GAS shall display the following message:
Display Prompt:

CANNOT ACCESS NETWORK. YOU MAY PROCEED WITH THE GEORGIA EMISSION TEST.

YOU MUST PERFORM A COMMUNICATION DIAGNOSTIC AFTER THIS TEST TO DETERMINE WHY NO CONNECTION WAS MADE.

[Display 5.03 (3)]

5.04 Abort Code Entry

The inspector shall be required to enter the appropriate abort code when it is needed. The explanation for the code shall be included with the TEST RESULTS. The abort code and its description shall be printed on the VIR. See Section 3.36 for abort codes and descriptions.

5.05 Emission Repair Form

The GAS shall print a repair form if the vehicle fails the Georgia Enhanced I/M inspection prior to printing the Georgia VIR. The following information shall be populated by the GAS: test date, certification number, station name, station ID, license, state, VIN, year, make, model, cylinders, engine size, transmission, odometer reading, body type, stds type, GVWR, VRT record, and test weight. See attached example EMISSION REPAIR FORM.

THIS EMISSION REPAIR FORM MUST BE COMPLETED BEFORE RETESTING

In order to have your vehicle re-inspected (free or paid), this Emission Repair form MUST be completed and presented to the inspector. Under no circumstance is a vehicle to be re-inspected without a completed form. It is a violation for the inspector to re-inspect vehicles without a completed form.

Before any repairs are paid for, you should make certain your mechanic will complete this form so you can receive your re-inspection.

For each paid inspection performed on your vehicle you are entitled to one FREE re-inspection, if you return to the same inspection station within 30 days.
Note: The initial test date is day 1.

EMISSION STATION OWNERS MUST RETAIN THIS COMPLETED FORM AND SUBMIT TO GCAF.
VEHICLE OWNERS ARE TO RETAIN REPAIR RECEIPTS.

Test Date: 09/17/2001 @ 16:50 AA1027756

Station Name: ABC Emissions			Station Number: GA123456
License: ABC1234	State: GEORGIA	VIN:	1GNEK18K6XJ311925
Year: 1999	Make: CHEVROLET	Model:	CAVALIER
Cylinders: 4	Engine Size: 2.1 L	Transmission:	AUTOMATIC
Odometer: 123456	Body Type: SEDAN	Stds Type:	PASSENGER
GVWR: ……	VRT Record: 40158	Test Weight:	4321

Section A: REPAIR SHOP INFORMATION

The Repair Shop Technician is to complete Sections A & B.

Repair Shop Phone #: ____ ____ ____ - ____ ____ ____ - ____ ____ ____ ____

Total Cost of PARTS:$_____.00 (**enter whole dollars only**)

Total Cost of Labor:$_____.00 (**enter whole dollars only**)

Check if other emission related repairs were recommended but not performed.

Repair Technician Signature:_____

Repair Center/Technician E-Mail: _____

Section B: REPAIR CATEGORIES (Date and circle all that apply)

Repair Date:_____

Repair Categories	
1 Ignition Repairs	6 Sensors, Switches and Computer
2 Intake/Fuel Induction System Repair	7 Catalytic Converter / Exhaust System
3 Engine Diagnostics	8 Air Injection System Repair
4 Fuel - Cap/Tank/Evaporative System	9 Internal Engine Repairs
5 EGR System 10	Other ASM or OBD related repairs

Section C: OWNER SELF-REPAIR

For self-repairs, the Owner is to complete Sections B & C.

Total Cost of PARTS ONLY $_____.00 (**enter whole dollars, NO labor allowed**)

Vehicle Owners Signature:_____

I choose to have my vehicle re-inspected WITHOUT making any repairs.

Georgia's Clean Air Force Consumer Hot Line #1-800-449-2471

Section 6 - Hardware and Test Standards

6.01 ASM Short Test Standards and Calculations

ASM Emissions Standards: STANDARDS BASED ON EPA

ASM Test Score Calculation

Exhaust gas measurement calculation are to be done in accordance with EPA guidelines.

6.02 ASM Short Test Procedure

General Requirements follow EPA guidance documentation.

Vehicle Characterization.

1. Vehicle type: LDGV, LDGT1, LDGT2, and others as needed;
2. Chassis model year;
3. Make;
4. Model;
5. Number of cylinders;
6. Cubic inch or liter displacement of the engine;
7. Transmission type; and
8. Equivalent Test Weight.

Ambient Conditions: The ambient temperature, relative humidity, and barometric pressure shall be recorded continuously during the test cycle or as a single set of readings up to 4 minutes before the start of the driving cycle.

Restart: If shut off, the vehicle shall be restarted as soon as possible before the test and shall be running at least 30 seconds prior to the start of the ASM driving cycle.

Void Test Conditions: The test shall immediately end and any exhaust gas measurements shall be voided if the vehicle's engine stalls at any time during the test sequence.

Test Time Limit: The test shall end upon reaching the overall maximum test time.

Pre-inspection and Preparation

Emission Sample System Purge/Hang-Up: While a lane is in operation, the sample system shall be continuously purged after each test for at least 15 minutes if not taking measurements. Note: The emission sample system purge and HC hang-up procedure is to be used for TSI testing also.

Roller Rotation: Prior to restraining the vehicle and test initiation, the rolls shall be rotated until the vehicle laterally stabilizes on the dynamometer. Vehicles that cannot be stabilized on the dynamometer shall be rejected from testing. Drive wheel tires shall be dried if necessary to prevent slippage.

Cooling System: When ambient temperatures exceed 50°F, testing shall not begin until the cooling system is positioned and activated.

Dynamometer Warm-Up: The dynamometer shall be in a warmed-up in accordance with the manufacturer's recommended procedure. This procedure may include temperature correcting compensation circuits for all ambient temperature conditions.

Analyzer Warm-Up: The analyzer shall reach stability in less than 30 minutes at 41 degrees F from startup. An emissions test shall not begin before the analyzer has been adequately warmed up. The analyzer will be considered warmed-up when the zero and span readings for all pollutants have stabilized within the required accuracy range for 5 minutes without adjustment.

6.03 ASM Short Test Equipment

Dynamometer Specifications.

General Requirements

Capacity: The dynamometer structure (e.g., bearings, rollers, pit plates, etc.) shall accommodate all light-duty vehicles and light-duty trucks up to 8,500 pounds GVWR.

ASM Load: Dynamometer ASM2 load horsepower shall be automatically selected based on the vehicle parameters in the test record.

Power Absorption.

Vehicle Loading: The vehicle loading used during the ASM driving cycles shall follow EPA guidance documentation.

Range of Power Absorber: The range of the power absorber shall be sufficient to test all light-duty vehicles and light-duty trucks up to 8,500 pounds GVWR, using ASM2525 and ASM5015. The absorption shall be adjustable in 0.1 hp increments at 15 MPH and 25 MPH.

Parasitic Losses: The parasitic losses (PLHP) in each dynamometer system (such as windage, bearing friction, and system drive friction) shall be characterized at 25 and 15 mph upon initial acceptance and during each dynamometer calibration if required.

Power Absorber Accuracy: The accuracy of the power absorber shall not exceed 3.75 pounds of wheel force at 25 mph or ±2% of required wheel force, whichever is greater, in direction of rotation.

Rollers

Size and Type: The dynamometer shall be equipped with twin rolls. The rolls shall be coupled side-to-side. In addition, the front and rear rolls shall be coupled. The

dynamometer roll diameter shall be 8.65 inches (±.25") and comply with EPA guidance documents. . Alternative coupling methods, track widths, roll sizes, and number of rolls may be used if approved by the State and the Administrator.

Roll Spacing: Roll Spacing = (24.375+D) * Sin 31.5153. D = dynamometer roll diameter. Roll spacing and roll diameter are expressed in inches.

Design: The roll size, surface finish, and hardness shall be such that tire slippage is minimized under all weather conditions; that water removal is maximized; that the specified accuracy of the distance and speed measurements are maintained; and that tire wear and noise are minimized.

Inertia: The dynamometer shall have a total test inertia weight of 2000 pounds ±40 pounds. Any deviation from the 2000-pound base inertia shall be quantified and the coast-down time shall be corrected accordingly. Any deviation from the stated inertia shall be quantified and the inertia simulation shall be corrected accordingly.

Electrical Inertia Simulation: Electrical inertia-simulation may be used provided the performance of the electrically simulated inertia complies with the following specifications. Exceptions to these specifications may be allowed upon a determination by the Administrator that such exceptions would not significantly increase vehicle loading or emissions for the purpose of properly conducting an approved short test.

(i) System Response. The torque response to a step change shall be at least 90% of the requested change within 300 milliseconds after a step change is commanded by the dynamometer control system, and shall be within 2% of the commanded torque by 300 milliseconds after the command is issued. Any overshoot of the commanded torque value shall not exceed 25% of the torque value.

(ii) Simulation Error. An inertia simulation error (ISE) shall be continuously calculated any time the actual dynamometer speed is between 10 mph and 60 mph. The ISE shall be calculated by the equation below, and shall not exceed 3% of the inertia weight selected (IWS) for the vehicle under test.

(I) $ISE = [(IW_s - I_t) / (IW_s)] * 100$

(II) $I_t = I_m + 1/V \int_0^t (Fm – Frt)\, dt$

Where:

I_t = Total inertia being simulated by the dynamometer (kg)

I_t (lb force) = I_t (kg) * 2.2046

I_m = Base (mechanical inertia of the dynamometer (kg)

V = Measured roll speed (m/s)

F_m = Force measured by the load cell (translated to the roll surface) (N)

F_{rl} = Road load force (N) required by IHP$xxxx_{yy}$ at the measured

roll speed (V)

t = Time (sec)

Other Requirements.

1. Vehicle Speed and Speed Response: The measurement of roll speed shall be accurate within 0.1 mph between speeds of 10 and 30 mph. The dynamometer controller shall be able to detect and resolve speed variations in less than 500 milliseconds to 0.10 mph/sec accuracy.

2. Vehicle Restraint: The vehicle shall be restrained during the ASM driving cycle. The restraint system shall be designed to insure that vertical and horizontal force on the drive wheels does not significantly affect emission levels. The restraint system shall allow unobstructed vehicle ingress and egress and shall be capable of safely restraining the vehicle under all reasonable operating conditions.

3. Vehicle Cooling: The test system shall prompt the inspector to use a cooling fan so not to overheat the vehicle under test when the ambient temperature exceeds 50°F.

4. Installation: In all cases, installation must be performed so that the test vehicle is approximately level (± 7°) while on the dynamometer during testing.

Emission Sampling System

Materials and Design: The sampling system shall be designed to insure durable, leak-free operation and be easily maintained. Materials that are in contact with the gases sampled shall not contaminate or change the character of the gases to be analyzed, including gases from vehicles not fueled by gasoline. The system shall be designed to be corrosion-resistant and be able to withstand typical vehicle exhaust temperatures when the vehicle is driven through the test cycle for 180 seconds.

Sampling System: The sampling system shall draw exhaust gas from the vehicle, shall remove particulate matter and aerosols from the sampled gas, shall drain condensed water from the sample if necessary, and shall deliver the resultant gas sample to the analyzers/sensors for analysis and then deliver the analyzed sample outside the building. The sampling system shall, at a minimum, consist of a tailpipe probe, flexible sample line, water removal system, a particulate trap, sample pump, and flow control components.

Sample Probe(s).

1.Insertion: The sample probe(s) shall allow for at least a 16-inch insertion depth of the sample point into the vehicle's exhaust, and be made out of a flexible material for the first 12 inches, as well as have a positive means of retention to secure the probe(s) in the tailpipe of vehicles. In addition, the probe(s) shall be inserted at least 10 inches into the vehicle's exhaust when testing vehicles. All GAS units will be equipped with dual anti dilution probes, to sample exhaust systems that utilize exhaust baffles. Use of a tailpipe extension is permitted as long as the extension does not change the exhaust backpressure by more than one inch of water pressure.

2. Retention: The probe(s) shall incorporate a positive means of retention to prevent slipping out of the tailpipe during use.

3. Flexibility: The probe(s) shall be designed so that the tip extends at least 10 inches

into the tailpipe.

4. Probe Tip: Probe tips shall be designed and constructed to prevent sample dilution. The probe tip(s) shall be shielded so that debris is not scooped up by the probe(s) when it is inserted into the tailpipe.

5. Materials: All materials in contact with exhaust gas prior to and throughout the measurement portion of the system shall be unaffected by and shall not affect the sample (i.e., the materials shall not react with the sample, and they shall not taint the sample). Acceptable materials include stainless steel, Teflon, silicon rubber, and Tedlar®. Dissimilar metals with thermal expansion factors of more than 5% shall not be used in either the construction of probes or connectors. The sample probes shall be constructed of stainless steel or other non-corrosive, non-reactive material that can withstand exhaust GAS temperatures at the probe tip of up to 1,100°F.

6. System Hoses and Connections: Hoses and all other sample handling components must be constructed of, or plated with a non-reactive, non-corrosive, high temperature material which will not affect, or be affected by, the exhaust constituents and tracer gases.

7. Dual Exhaust: The sample system shall provide for the testing of dual exhaust equipped vehicles. When testing a vehicle with functional dual exhaust pipes, a dual sample probe identical in design (as verified by the management contractor during the certification process) will be provided by the analyzer manufacturer and must be used in the inspection of all dual exhaust vehicles. Probes shall be designed to provide equal flow in each leg. The equal flow design requirement is met if the flow rate in each leg of the probe has been measured using two sample pump flow rates (the normal rate and a rate equal to the onset of low flow). If the flow rates in each of the legs are found to be equal to each other (within 15% of the flow rate in the leg having lower flow).

Particulate Filter: The particulate filter shall be capable of trapping 97% of all particulate and aerosols 5 microns or larger. The filter element shall not absorb or adsorb hydrocarbons. The filter housing shall be transparent or translucent to allow the operator to observe the filter element's condition without removing the housing. The filter element shall be easily replaceable and shall provide for reliable sealing after filter element changes.

Water Trap: The water trap shall be sized to remove exhaust sample water from vehicles fueled with gasoline, reformulated Gasoline, alcohol blends or neat, and oxygenated fuels. The filter element, filter bowl, and housing shall be inert to these fuels as well as to the exhaust gases from vehicles burning these fuels. The condensed water shall be continuously drained from the water trap's bowl. Sufficient water shall be trapped, regardless of fuel, to prevent condensation in the sample system or in the optical bench's sample cell.

Low Flow Indication: The analyzer shall be prevented from performing an emissions test when the sample flow is below the acceptable level. The sampling system shall be equipped with a flow meter (or equivalent) that shall indicate sample flow degradation when measurement error exceeds 3% of the gas value used for checking, or causes the system response time to exceed 13 seconds to 90 percent of a step change in input (excluding NO), whichever is less.

Analytical Instruments.

General Requirements.

1. Analyzers: The analyzer system shall consist of analyzers for HC, CO, NO, and CO_2, and digital displays for exhaust concentrations of HC, CO, NO, and CO_2, and for vehicle speed.

2. Alternative Analytical Equipment: Alternative analytic equipment specification, materials, designs, or detection methods may be allowed upon a determination by the Administrator, that for the purpose of properly conducting an approved short test, the evidence supporting such deviations will not significantly affect the proper measurement of emissions.

3. Sample rate: The analyzer shall be capable of measuring exhaust concentrations of gases specified in this section at a minimum rate of once per second.

Performance Requirements.

1. Temperature Operating Range: The analyzer system and all associated hardware, including fuel cap testers, dynamometers, and OBD code scan tools, shall operate within the performance specifications described in Section 6.02 of this subpart at ambient air temperatures ranging from 41°F to 110°F. Analyzers shall be designed so that adequate airflow is provided around critical components to prevent overheating (and automatic shutdown) and to prevent the condensation of water vapor that could reduce the reliability and durability of the analyzer. The analyzer system shall otherwise include necessary features to keep the sampling system within the specified range.

2. Humidity Operating Range: The analyzer system and all associated hardware, including fuel cap testers, dynamometers, and OBD code scan tools, shall operate within the performance specifications described in Section 6.02 of this subpart at a minimum of 85% relative humidity throughout the required temperature range.

3. Interference Effects: The interference effects for non-interest gases shall not exceed ±4 ppm for hydrocarbons, ±0.02% for carbon monoxide, ±0.20% for carbon dioxide, and ±20 ppm for nitric oxide when using the procedure specified in Section 06.04(4)(f)(iv). Corrections for collision broadening effects of combined high CO and CO_2 concentrations shall be taken into account in developing the factory calibration curves, and are included in the accuracy specifications.

4. Barometric Pressure Compensation: Barometric pressure compensation shall be provided. Compensation shall be made for elevations up to 6000 feet (above mean sea level). At any given altitude and ambient conditions specified in (iv) and (v), errors due to barometric pressure changes of ±2 inches of mercury shall not exceed the accuracy limits specified in paragraph (2).

5. System Lockout During Warm-up: Functional operation of the GAS-sampling unit shall remain disabled through a system lockout preventing the system from performing emission tests until the instrument meets stability and warm-up requirements. The instrument shall be considered "warmed up" when the zero and span readings for HC, CO, NO, and CO_2 have stabilized, within the accuracy values specified in Section 6.03(3)(b) for five minutes without adjustment.

6. Zero Drift Lockout: If zero or span drift cause the optical bench signal levels to move

beyond the adjustment range of the analyzer, the system shall be prevented from performing an emissions test.

7. Electromagnetic Isolation and Interference: Electromagnetic signals found in an automotive service environment shall not cause malfunctions or changes in the accuracy in the electronics of the analyzer system. The instrument design shall ensure that readings do not vary as a result of electromagnetic radiation and induction devices normally found in the automotive service environment, including high energy vehicle ignition systems, radio frequency transmission radiation sources, and building electrical systems. Certification acceptance test described in Appendix B.

8. Vibration and Shock Protection: System operation shall be unaffected by the vibration and shock encountered under the normal operating conditions encountered in an automotive service environment.

9. Propane Equivalency Factor: The PEF range shall be between 0.470 and 0.560. For each audit/calibration point, the nominal PEF shall be conveniently displayed for the quality assurance inspector and other authorized personnel, in a manner acceptable to the program. If an optical bench must be replaced in the field, the manufacturer's Field Service Representative (FSR) shall change any external labels to correspond to the nominal PEF of the new bench. The analyzer shall incorporate an algorithm relating PEF to HC concentration. Corrections shall be made automatically.

10. System Response Requirements: The response time from the probe to the display for HC, CO, and CO_2 analyzers shall not exceed 8 seconds for 90% of a step change in input. The response time for a step change in O_2 from 20.9% O_2 to 0.1% O_2 shall be no longer than 40 seconds. For NO analyzers, the response time shall not exceed 12 seconds for 90% of a step change in input. The response time for a step change in NO from a stabilized reading to 10% of that reading shall be no longer than 12 seconds.

Detection Methods, Instrument Ranges, Accuracy, and Repeatability.

1. Hydrocarbon Analysis: Hydrocarbon (HC) analysis shall be determined by non-dispersive infrared (NDIR) analyzer. The analyzer shall cover at least the range of 0 ppm HC to 2000 ppm HC, where ppm HC is parts per million of hydrocarbon volume as hexane. The accuracy of the instrument between 1400 ppm HC and 2000 ppm HC shall be at least 5.0% of point. The accuracy of the instrument from 0-1400 ppm HC shall be ±4 ppm C6 or 3% of point, whichever is greater. The calibration curve must comply with the quality control specifications in Section 6.04(4)(b) for calibration curve verification.

2. Carbon Monoxide Analysis: Carbon monoxide (CO) analysis shall be determined by non-dispersive infrared (NDIR) analyzer. The analyzer shall cover at least the range of 0.00 % CO to 9.99% CO, where % CO is % volume CO. The accuracy of the instrument between 0.01% and 7.00% CO shall be ±3% or 0.02% CO, whichever is greater. The accuracy of the instrument between 7.01% and 10.00% shall be at least 5.0% of point. The calibration curve must comply with the quality control specifications in Section 6.04(4)(b) for calibration curve generation.

3. Carbon Dioxide Analysis: Carbon dioxide (CO_2) analysis shall be determined by non-dispersive infrared (NDIR) analyzer. The analyzer shall cover at least the range of 0.0 % CO_2 to 16.0% CO_2. The accuracy of the instrument between 0.01% and

16% CO_2 shall be at least ±0.3% CO_2 or 3% of point whichever is greater. The accuracy of the instrument between 16.01% and 18% shall be at least 5.0% of point. The calibration curve must comply with the quality control specifications in 4(d)(2) for calibration curve generation.

4. Nitric Oxide Analysis: The analyzer shall cover at least the range of 0 ppm NO to 5000 ppm NO, where ppm NO is parts per million nitric oxide. The accuracy of the instrument between 0 and 4000 ppm shall be at least ±4.0 % of point or 25 ppm NO, whichever is greater. The accuracy of the instrument between 4001 and 5000 ppm shall be ±5.0%. The calibration curve must comply with the quality control specifications in Section 6.04(4)(b) for calibration curve generation.

5. Oxygen Analysis (optional): If an oxygen analyzer is included, the analyzer shall cover at least the range of 0.0% O_2 to 25.0% O_2. The accuracy of the instrument over this range shall be at least 5% of point or ±0.1% O_2, whichever is greater. The calibration curve must comply with the quality control specifications in Section 6.04(4)(b) for calibration curve generation. Failure of the oxygen measuring system shall not cause the GAS to be locked out from performing a certified emission test.

6. Repeatability: The repeatability for the HC analyzer in the range of 0-1400 ppm HC shall be 2% of point or 3 ppm HC absolute, whichever is greater. In the range of 1400-2000 ppm HC, the repeatability shall be 3% of point. The repeatability for the CO analyzer in the range of 0-7.00% CO shall be 2% of point or 0.02% CO absolute, whichever is greater. In the range of 7.00% to 10.00% CO, the repeatability shall be 3% of point. The repeatability for the CO_2 analyzer in the range of 0-10.0% CO_2 shall be 2% of point or 0.1% CO absolute, whichever is greater. In the range of 10.0% to 16.0% CO_2 , the repeatability shall be 3% of point. The repeatability of the NO analyzer shall be 3% of point or 20 ppm NO, whichever is greater. The repeatability of the O_2 analyzer shall be 3% of point or 0.1% O_2 , whichever is greater.

Ambient Conditions: The current relative humidity, dry-bulb temperature, and barometric pressure shall be measured and recorded prior to the start of every inspection in order to calculate Kh (nitric oxide correction factor, see Section 6.01(2)(a)(v)).

1. Relative Humidity: The relative humidity measurement device shall cover the range from 5% to 95% Rh, and 35°F - 110°F, with a minimum accuracy of °5% Rh. Wet bulb thermometers shall not be used.

2. Dry-bulb Temperature: The dry-bulb temperature device shall cover the range from 35°F - 110°F with a minimum accuracy of ±3°F.

3. Barometric Pressure: The barometric pressure measurement device shall cover the range from 610 mm Hg - 810 mm Hg, and 35°F - 110°F, with a minimum accuracy of ±3% of point.

Automated Test Process Software and Displays.

Software: The testing process, data collection, and quality control features of the analyzer system shall be automated to the greatest degree possible. The software shall automatically select the emission standards and set the vehicle load based on a State-provided or approved look-up table. Vehicle identification information may be derived from a database accessed over a real-time data system to a host computer

system. Entry of the VIN shall be sufficient to access the vehicle record. Provision shall be made for manual entry of data for vehicles not in the host computer system.

Test and mode timers: The analyzer shall be capable of simultaneously determining the amount of time elapsed in a test, and in a mode within that test.

Clocks and Timers: The clock used to check the coast-down time shall be accurate to within 0.1% of reading between 0.5 and 100 seconds, with a resolution of 0.001 seconds. The ASM test mode timers used shall be accurate to within 0.1% of reading between 10 and 1000 seconds with a resolution of 0.1 seconds.

Display Refresh Rate: Dynamic information being displayed shall be refreshed at a minimum rate of twice per second.

Minimum Analyzer Display Resolution: The analyzer electronics shall have sufficient resolution to achieve the following:

HC	1	ppm HC as hexane
NO	1	ppm NO
C	0.01	% CO
CO_2	0.1	% CO_2
O_2	0.1	% O_2
RPM	10	RPM
Speed	0.1	mph
Wheel Force	0.1	lb
Relative Humidity	1	% Rh
Dry Bulb Temperature	1	°F
Barometric Pressure	1	mm HG

Engine Speed Detection: The system shall be capable of detecting engine speed in revolutions per minute (rpm) with a 0.5 second response time and an accuracy of ±3% of the true rpm.

Display during testing: The display during testing shall read "Test in Progress" and shall digitally display the vehicle's speed in mph. Emissions values shall not be displayed during official testing.

6.04 ASM Quality Control Requirements

General Requirements

Minimums: The frequency and standards for quality control specified here are minimum requirements, unless modified as specified below. Greater frequency or tighter standards may be used as needed.

Dynamometer

Coast down Check.

1. Coast Down Frequency: The calibration of each dynamometer shall be automatically checked every 72 hours, when the dynamometer is in active service, by a dynamometer coast-down procedure equivalent to Section 86.118-78 of the US EPA regulations (for reference see EOD test procedure TP-302A and TP-202) between

the speeds of 30-20 mph. All rotating dynamometer components shall be included in the coast-down check. Speed windows smaller than ± 5 mph may be used provided they show the same calibration capabilities.

2. Coast Down HP Settings: The base dynamometer inertia (2000 pounds) shall be checked at two random horsepower settings for the speed range 30 to 20 mph. The two random horsepower settings shall be between 8.0 to 18.0 horsepower. Use of a shunt resistor for a load cell performance check is not permissible because it does not verify the performance of the actual load cell, only the signal-processing portion of the system.

(i) If either the first or the second HP setting causes the dynamometer to fail the coast down audit, record the HP and other audit data in the appropriate fields of the CALIBRATION file.

(ii) If both randomly selected HP setting cause the dynamometer to pass the coast down audit, or both settings cause the dynamometer to fail the coast down audit, record the audit data associated with the second randomly selected HP setting in the appropriate fields of the CALIBRATION file.

3. Coast Down Procedure: Each dynamometer's calibration shall be checked every 72 hours by means of an automated dynamometer coast-down check procedure approved by BAR. An integral motor, while recommended, is not required. The coast-down performance check shall be conducted between the speeds of 30-20 mph and 20-10 mph. All rotating dynamometer components shall be included in the coast-down check. If either the measured 30-20 mph coast-down time or the 20-10 coast-down time is outside the window bounded by Calculated Coast-down Time (CCDT)(seconds) ±7%, then it shall be locked out for official inspection purposes until recalibration indicates a passing value.

(i) Randomly select an IHP2525 value that is between 8.0 hp and 18.0 hp and set dynamometer PAU to this value. Coast-down dynamometer from 30-20 mph.

Where:

DIW = Dynamometer Inertia Weight. Total "inertia" weight of all rotating components in dynamometer.

V_{30} = Velocity in feet/sec at 30 mph.

V_{20} = Velocity in feet/sec at 20 mph.

$IHP2525_{yy}$ = Randomly selected ASM2525 indicated horsepower.

$PLHP_{25\text{-}yy}$ = Parasitic Horsepower for specific dynamometer at 25 mph.

4. Parasitic Value Calculations: If the coast-down values do not verify in Section 6.02(2)(k), parasitic losses shall be calculated using the following equations at 25 mph. The indicated horsepower shall be set to zero for these tests.

(i) Parasitic losses at 25 mph for a dynamometer with yy diameter rollers.

Where:

DIW = Dynamometer Inertia Weight. Total "inertia" weight of all rotating components in the dynamometer.

V_{30} = Velocity in feet/sec at 30 mph.

V_{20} = Velocity in feet/sec at 20 mph.

CDT = Coast-down time required for dynamometer to coast from 30 to 20 mph.

Roll Speed: Roll speed shall be check in conjunction with the coast down check. A missing roll speed or roll count signal shall cause the coast down check to fail.

Emission Sampling System

Leak Check: The entire sample system shall be checked for vacuum leaks on a daily basis and for proper flow on a continuous basis. The sample system leak check shall be performed on all sample probes using the manufacturer's recommended procedure. The allowed maximum leak rate and minimum flow rate shall be those determined in the equipment certification procedure.

Dilution: The flow rate on the analyzer shall not cause dilution of the exhaust gas sample.

Analytic Instruments

General Requirements: The analyzer shall, to the extent possible, maintain accuracy between gas calibrations taking into account all errors, including noise, repeatability, drift, linearity, temperature, and barometric pressure.

Two-Point gas Calibration.

1. Calibration Method: Analyzers shall automatically require a two-point gas calibration for HC, CO, CO_2, and NO. Gas calibration shall be accomplished by introducing span gases that meets the requirements of in this section into the calibration port. The pressure in the sample cell shall be the same with the calibration gas flowing as with the sample gas flowing during sampling. When a calibration is initiated, the analyzer channels shall be adjusted to the center of the allowable tolerance range.

2. Calibration Frequency: Analyzers shall be calibrated within 72 hours before each official test. The state may adjust the calibration check frequency as necessary based on a statistical process control algorithm approved by the Administrator. If the system does not calibrate or is not calibrated the analyzer shall lock out from testing until corrective action is taken.

3. Working Zero and Span gases: The following gases shall be used for the calibration check

(i) Zero gas

O_2	=	20.7%
HC	<	3 ppm THC as C-1
CO	<	3 ppm
CO_2	<	400 ppm
NO	<	1 ppm

N_2 = Balance 99.99 % pure

(ii) Working span gas – ASM Analyzers

HC = 3200 ppm propane
CO = 8.0%
CO2 = 12.0%
NO = 3000 ppm
N2 = Balance 99.99% pure

(iii) Working span gas – TSI Analyzers

HC = 3200 ppm propane
CO = 8.0%
CO2 = 12.0%
N2 = Balance 99.99% pure

Traceability: The zero and span gases used for the gas calibration shall be supplied by a BAR certified blender and in accordance with BAR approved procedures. The zero and span gases shall be blended to an accuracy of ±1% of the specified values and have a blend tolerance of ±2%.

Change of Calibration Gas: When a GAS bottle is changed the new bottle values will be entered into the station data.

Low Range Calibration: The analyzer shall contain provisions for the installation of a second, low range gas cylinder. The low range audit would compare the measured concentration, after calibration using the working span gas, to the cylinder value. If the measured value differs from the cylinder value by more than 3% of the cylinder value, the analyzer would be locked out and the operator notified of the reason for the lockout. The installation of the second cylinder was not required as part of the Phase I system or during Phase II.

Five-Point GAS Audit.

1. Audit Frequency: Analyzers shall successfully pass a five-point gas audit for HC, CO, NO, and CO_2. Analyzers shall undergo the audit procedure minimally every six months. The analyzer shall be adjusted or repaired if the requirements of this section are not met.

2. Audit Method: Gas calibration audit shall be accomplished by introducing span gas that meets the requirements in this section. The pressure in the sample cell shall be the same with the calibration audit gas flowing as with the sample gas flowing during sampling.

3. Audit gases: The following gases shall be used for the calibration check. Other calibration gas values may be acceptable when a "gas blender" apparatus is used if approved by the Administrator. Oxygen-free nitrogen will be used as the balance gas.

Zero Gas	Bottle Value	Georgia Phase II and later
Total HC*	<0.1 ppm THC	0 ppm +/- 2 ppm
Carbon Monoxide	<0.5 ppm	0.00% +/- 0.01 %
Carbon Dioxide	<0.1 ppm	0.00% +/- 0.1 %
Nitric Oxide	<0.1 ppm	0 ppm +/- 10 ppm

* (Read as propane)
Note: Zero bottle tolerances assume auto-zero prior to readings and reflect noise.

Low Bottle	Bottle Value	Georgia Phase II and later
Propane	200 ppm	200 ppm +/- 12 ppm
Carbon Monoxide	0.5 %	0.5% +/- 0.03 %
Carbon Dioxide	6.0%	6.0% +/- 0.3 %
Nitric Oxide	300 ppm	300 ppm +/- 30 ppm

Low Middle Bottle	Bottle Value	Georgia Phase II and later
Propane	960 ppm	960 ppm +/- 48 ppm
Carbon Monoxide	2.40 %	2.40% +/- 0.12 %
Carbon Dioxide	3.6%	3.6% +/- 0.3 %
Nitric Oxide	900 ppm	900 ppm +/- 45 ppm

High Middle Bottle	Bottle Value	Georgia Phase II and later
Propane	1920 ppm	1920 ppm +/- 96 ppm
Carbon Monoxide	4.80 %	4.80% +/- 0.24 %
Carbon Dioxide	7.2%	7.2% +/- 0.4 %
Nitric Oxide	1800 ppm	1800 ppm +/- 90 ppm

High Bottle	Bottle Value	Georgia Phase II and later
Propane	3200 ppm	3200 ppm +/- 160 ppm
Carbon Monoxide	8.00%	8.00% +/- 0.40 %
Carbon Dioxide	12.0%	12.0% +/- 0.6 %
Nitric Oxide	3000 ppm	3000 ppm +/- 150 ppm

4. Traceability: The span gases used for the GAS calibration and the gas audit shall be traceable to National Institute of Standards and Technology (NIST) standards ±1%, and shall have a 5% blend tolerance.

5. Audit Specifications: The analytical system shall read the audit gas within 5% of labeled value. The analyzer shall be adjusted or repaired if the accuracy specifications are not met. The audit readings shall be obtained by introducing the audit gas through the analyzer probe. The gas shall be introduced in a manner that will not result in pressurizing the sample cell.

Service and Repair Calibration

1. In-field Calibration: Each time an analyzer's emissions measurement bench or NO cell is repaired or replaced, a minimum of a five-point gas audit shall be performed by the management contractor. When a manufacturer field service representative replaces a bench or NO cell, the FSR shall notify the management contractor using established procedures. An audit of the analyzer will be performed promptly thereafter. It is expected that the FSR performing service should insure that the gas will pass a five-gas audit by the management contractor.

2. Serial numbers for the analyzer benches shall be recorded in the CALIBRATION record during each gas calibration routine automatically.

3. Leak Check: Each time the sample line integrity is broken; a leak check shall be performed prior to testing.

6.05 ASM Test Record Information

Test Data: In addition to the information required to uniquely identify the testing station, inspector, and vehicle, the following data shall also be recorded.

6.06 Reserved

6.07 Other ASM Hardware Requirements

Restraint System: The test system shall include a vehicle restraint system. The system shall be capable of restraining vehicles under all reasonable operating conditions. It shall not impart significant vertical or horizontal force on the vehicle being tested. The system shall not restrict access to the vehicle’s doors for ingress and egress.

Cooling Fan The system shall incorporate a cooling fan that can be used by the inspector when prompted by the GAS. The fan shall have a minimum capacity of 3000SCFM. The fan shall be placed within as directed by software in front of the radiator to cool the vehicle but not placed to cool the catalytic converter.

6.08 Other Fuel Cap Test Hardware Requirements

The system shall include an EPA-approved system for testing the integrity of the seal and pressure retention of the vehicle’s fuel cap.

Fuel Cap Tester specifications

1. The cap tester shall identify fuel caps that leak more than 60 cc/min at 30 inches of water pressure.

2. The flow standard shall be a square edged circular orifice sized to produce a leak rate of 60 cc/min of air at a pressure of 30 inches of water.

3. The supply pressure may be obtained using ambient air and any convenient low-pressure source. The cap tester shall control the supply pressure and prevent over-pressurization.

4. The cap tester shall provide a visual and/or digital signal that the air pressure is within the acceptable range and the flow comparison 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 or calibration tool of 52-56 cc/min and a reference failing cap or calibration tool of 64-68 cc/min shall be supplied for accuracy verification.

Fuel cap adapters:

1. Adapters shall be supplied which will allow testing of at least 95% of the fuel caps that are used on 1975 and later U.S. model cars and light trucks.

2. Varying internal volumes of the fuel caps and adapter assemblies shall not affect the accuracy y of the test results.

3. Adapters shall be made available within two years of the introduction of new model year vehicles.

An application guide indicating the proper fuel cap adapter to be used during the testing of a fuel cap shall be kept current.

Operating range:

1. The tester shall be accurate at all elevations.

2. The tester shall be accurate within a temperature range of 41 degrees F to 110 degrees F ambient.

Accuracy: Leak rate measurements shall be accurate within + 3%.

Output: The device shall provide a visual signal for the inspector and digital signal for the GAS unit to indicate pass or fail status.

The leak test shall not last more than 45 seconds.

Quality Control: The flow tester accuracy shall be verified daily by testing the two reference caps or calibration tool and correctly identifying the passing and failing leak rates. Failure to pass this verification shall result in the GAS being locked out from official testing until repairs are made and the tester passes the verification.

The GAS shall test the passing cap first, then the failing cap during the fuel cap calibration routine.

At the conclusion of the cap tester verification, the results will be placed in the CAL file.

Flow calibrations of the reference caps shall be performed before initial usage and thereafter as required by the software.

Section 7 - Documentation, Logistics and Warranty Requirements

7.01 General

The following items shall be included with each instrument submitted for certification or delivered to stations:

Instruction manual, securely held in a binder (or other suitable container) made of a material that is resistant to most petroleum-based products used in the garage environment.

An easily understood explanation of warranty provisions (including limitations and restrictions) and a listing of components covered and not covered, signed by a company representative and the purchaser, contained in the instruction manual.

All special adjustment and calibration tools, to include all apparatus for gas calibration (internal/integral), and probe tip caps that are required for conducting all leak checks on the analyzer probes and the anti-dilution probes, will be provided by the GAS equipment manufacturer.

Attached placard denoting operating procedures, gas checking/calibrating steps, maintenance items, and local service contact with phone number and address.

The manufacturer shall supply upon delivery to the purchaser the following: four sets of filters, at least 2500 sheets of fan-fold paper or equivalent plain sheet paper, two extra printer ribbons or an extra toner cartridge, and one extra set of gas cylinders (if required for calibration). Manufacturers are not required to deliver spare parts to stations if the station operator agrees to accept a voucher, good for the full price of the spare parts, provided when the analyzer is purchased.

7.02 Instruction Manual

The instruction manual accompanying each analyzer shall contain the following minimum information:

Background information describing how emissions are formed during the combustion process, the general types of controls that are used on vehicles and what negative health impacts can result from vehicle emissions;

Functional diagrams (inspectoral and electrical);

Accessories and options (included and/or available);

Model number and identification markings and locations;

Maintenance procedures and frequencies recommended by the manufacturer. The services that should be performed only by the manufacturer shall be clearly identified;

Gas calibration/leak check procedures;

Brief description of the inspection/test procedures with a subject index;

Brief description of emission analyzer operating principles;

A listing and easily understood explanation of warranty provisions (including the extended warranty), signed by a company representative and the purchaser, contained in the instruction manual. Information provided shall include a listing of warranty repair stations by name, address and phone number; and

Name, address and phone number of the manufacturer's representative in charge of sales and service personnel for the company in Georgia. In addition, information shall be provided indicating the name, address and phone number for the company's Vice President of service (or equivalent) who reports directly to the Chief Executive Officer. The names of these representatives shall be verified, or updated as needed, every time a service technician visits a station.

7.03 Instrument Warranty

The cost of the analyzer shall include a three-year transferable warranty covering parts and labor. This warranty may consist of one year of a mandatory warranty, plus two optional years of warranty coverage purchased at the option of the instrument purchaser. Warranty of the emissions analyzer shall commence not earlier than the date the emission analyzer receives the first “Final Inspection” from GCAF. Warranty of the dynamometer GAS analyzer components shall commence not earlier than the date production software is installed.

The warranty shall cover all items that are located inside the secured area(s) of the analyzer. The manufacturer shall provide instructions to the purchaser describing the procedures needed to repair, replace, or adjust components that are not covered by the warranty and can be accessed without compromising the security of the analyzer. The manufacturer shall provide the purchaser with the information necessary to properly select replacement parts not covered by the warranty to prevent degradation of analyzer performance. The manufacturer shall supply a list of acceptable replacement parts for user replaceable parts. This shall include, at a minimum, the monitor, the printer, keyboard and any other parts determined by the manufacturer.

An adequate number of qualified repair technicians shall be retained by the manufacturer to perform repairs on analyzers.

Preventive maintenance is not required by the State. However, if the manufacturer feels that preventive maintenance is required or feels that it will reduce the warranty costs, it shall be included in the price of the analyzer. The terms and conditions of the warranty shall not be contingent on the purchase of any additional warranties or entering into a service agreement or maintenance agreement. Any preventive maintenance options shall be identified to prospective purchasers in order for them to understand the prospective costs.

Warranty Provisions

Warranty provisions protecting the interest of the buyer shall include:

Location, phone number and address of the repair centers throughout the state. The repair technicians shall be of an adequate number and located to efficiently and timely meet service needs. The response time established by the manufacturer may be long for a

lower analyzer purchase price or short if the analyzer price is higher. All response time and cost provisions shall be clearly indicated in the warranty provisions. The maximum response time shall be two (2) business days (Monday - Friday) from the time of call. Shorter response times may be provided as an option

Name of the manufacturer's representative

Coverage of at least all of the I/M hardware and software contained inside the tamper resistant cabinet. A description of specific parts and labor covered by the provisions of the warranty shall be permanently provided to the purchaser- In addition, the warranty shall itemize the parts and labor which are not covered by the warranty.

To ensure that purchasers are properly notified regarding the cost and provisions of the warranty, the GAS shall not be delivered until a copy of the warranty has been signed by the purchaser and a company representative. Service response time and loaner provisions shall be initialed by the purchaser. A copy of the signed warranty shall be provided to the purchaser, a copy forwarded to the State and a copy filed by the company.

The analyzer owner shall be provided a cost estimate prior to the performance of any service or maintenance unless the work will be covered by the warranty. Regardless of whether or not the work is covered by the warranty, the owner shall be provided a detailed description of the work performed when the job is completed. In addition, the description of the work performed, the owner shall include a toll free telephone number for the owner of the analyzer to call if he/she wants to complain about the work performed the courtesy or competency of the manufacturer's technician, or any other aspect of the warranty.

Manufacturers shall provide stations with loaner instruments if they are unable to repair analyzers within the specified time indicated in the warranty. Loaner instruments shall be gas-calibrated, provided with new filters, printers shall be full of paper and shall contain the latest version of I/M testing software. The manufacturer's technician shall set up the loaned GAS, install all necessary access codes, a fresh data device and any other tasks necessary to allow the station to immediately begin work. The manufacturer's technician shall mail or deliver in person any data device removed because of repairs, to the management contractor. The technician shall transfer the station copies of certificates stored in the analyzer cabinet to the loaner. Care shall be taken by the technician to maintain the sequence of the certificates.

Loaner Unit Procedure

In lieu of the loaner requirement, EPD must review and approve a "written alternative loaner unit procedure" submitted by the GAS manufacturer that provides sufficient protection to maintain the integrity of electronic transmission. This alternative procedure should clearly illustrate the methods used to initialize and establish the personality of the "loaner unit". The procedure should be capable of automatically retrieving personality information of the "old unit" from its hard drive or data device, whichever is operational, and transfer that information to the "loaner unit" without manufacturer service technicians performing manual key entry.

The GAS shall contain a loaner unit procedure, to be available to manufacturer field service personnel, which will perform the following functions:

The personalized data files shall be deleted from the hard disk of unit being replaced:

The loaner unit shall use the data device of the unit being replaced.

The personalizing data shall be copied from the data device the new hard disk (which will be a clean disk)

Manufacturer specific data such as station name, address, etc. and unit configuration data such as OBD scanner type, etc. may be copied from the data device to the hard disk of the loaner unit.

All software updates ordered by the State as part of the Phase upgrade.

7.04 Spare Parts

The instrument manufacturer shall maintain an adequate supply of spare parts and accessories to fulfill the service requirements of the instrument warranty/extended warranty.

7.05 Service Centers

The analyzer manufacturer shall provide or contract for warranty repairs within the Atlanta area.

7.06 Workmanship

Each manufacturer or his agent shall guarantee the repairs made for a period of 90 days.

7.07 Parts Removed

All parts removed from an instrument to accomplish repairs will be accounted for and given to the instrument owner when the instrument is returned to service except for parts covered under warranty.

Parts that can be rebuilt and returned to service shall be listed on the completed work order.

7.08 Noncompliance with Any Portion of the GAS Specifications

The initial certification of the original test systems expired on July 1, 1997. The conditional certification will be extended upon approval of the PHASE V software and hardware upgrade package.

The manufacturer's GAS certification will not be renewed, or may be conditionally revoked if the State determines that an analyzer does not fully comply with all portions of the analyzer specifications and/or any of the following conditions exist:

Software updates are not performed within the time frame specified by the State or do not meet the requirements specified by the State;

Analyzers in the field are found to be in violation of the GAS specifications and the manufacturer is unwilling to resolve the matter in the time frame requested either by the State or in a way that is satisfactory to the State. Revocation of the manufacturer's certificate may be

limited to future sales of analyzers. However, existing analyzers, which do not conform to analyzer and update specifications, will be locked out until they are brought into compliance. If problems identified are not corrected within the time specified by the State, certification may be permanently revoked. If a certificate is conditionally or permanently revoked, the State will notify all licensed stations and representatives of the repair industry that we will no longer license new stations purchasing affected analyzers.

Section 8 - Other Program Requirements

8.01 Test Procedures

The inspection test procedure is designed to be as automated as possible. Inspectors shall conduct inspections in the sequence prompted by the test systems. One of the primary goals of the enhanced I/M program is to minimize the manual entry of vehicle and test data by inspectors. This will both reduce data entry errors and reduce the amount of time needed to perform the inspection. Therefore, whenever access to the Vehicle Inspection Database (VID) is available through the data transmission line, manual data entry should be limited to only those fields needed to access and search the VID. Manual entry of complete vehicle information is permitted only if the VID is not available or the vehicle to be inspected is not found in the VID.

Prior to the commencement of an inspection, the motorist shall be instructed to turn off all switchable accessories, or the inspector may turn them off.

In addition to the general requirements for conducting the test contained in Sections 3.10 through 3.35 of Georgia Department of Natural Resources Enhanced Inspection/Maintenance Test Equipment, Procedures, and Specifications-Phase V, the following criteria must also be met when conducting inspections.

Tests can be aborted by the inspector and the vehicle fails if the vehicle experiences a mechanical or safety problem once the test has begun. The vehicle should be checked prior to the beginning of the inspection and the vehicle rejected prior to beginning entry of vehicle data if there is an obvious mechanical or safety problem. Once the test has begun, the inspector may abort the test, and enter the appropriate code, if a problem then occurs. (See codes 01, 02, 03, 04, 08, and 09). If during the test, a vehicle has an RPM reading outside the allowed range or does not meet the minimum CO + CO_2 level, the test will be stopped and the inspector will have the option of restarting the test or aborting the test. If the test is aborted by the inspector (the inspector enters code 96, 97 or 98), the test will end and will not be considered an official test. The inspector may restart the test three times. If on the third restart the vehicle still does not meet the RPM or CO+CO_2 limits, the test will automatically be ended and the test result recorded by the GAS unit as an abort-fail (code 05, 06 or 07, as appropriate). EPD recommends that tests be aborted (and no fee charged) prior to obtaining the automatic abort-fail (which requires that a test fee be paid) for vehicles that have problems meeting the RPM or dilution limits. Because the meeting the high RPM (2500 RPM) limit is within the control of the inspector, inspectors should never allow vehicles to fail for this reason, i.e., tests should be aborted if the inspector cannot keep the vehicle within the 2500±300 RPM window.

The inspector may end the test by entering any of the abort codes beginning with an "8" or a "9". In addition to the three listed above for RPM or dilution problems, these include: 90 if the inspector decides not to test BMW, Peugeot or Volvo vehicles that may have transmission problems if tested; 91 if the inspector does not have the required license, i.e.: inspectors who do not have a license to perform ASM tests will not be allowed to test older vehicles which are subject to this test; 92 if it determined that an inspection is not required for that vehicle; 93 if the inspector is unable to obtain an RPM reading for the vehicle; and 94 if the motorist does not present completed repair form for any after-repairs test. If the test is aborted for any other reason, the inspector shall enter code 99 and the reason written on the vehicle inspection report. Inspections may also

be aborted automatically by the GAS unit if a low flow condition is encountered during the test (code 95), or if there is an equipment malfunction. If the equipment causes an abort during the test the GAS shall print FREE on the VIR, the motorist is not to be charged for automatic aborts.

80.2 Emission Standards

For two-speed idle inspections, the following emission standards will be utilized for all tests. The standards apply to all vehicles of each model year listed regardless of whether the vehicle tested is a car or truck. The same standards will be used for both the 2500-RPM and idle portions of the test.

MODEL YEARS	HYDROCARBONS - PPM Hexane	CARBON MONOXIDE - %
1984 and newer	220 ppm	1.2%
1981 - 1983	250 ppm	1.5%
1980	350 ppm	3.5%
1978 - 1979	500 ppm	5.0%
1977 and Earlier	600 ppm	6.0%

For ASM inspections, the emission standards are described below and in Appendix O of this document.

ASM Emissions Standards

1. ASM2525/5015 Standards. Start-up standards shall be used through the effective date of the final standards. The exhaust emissions standards for the following model years are cross-referenced by the number in the column in (a)(3) below of the ASM2525/5015 tables. The ASM2 emission tables are found in Appendix EMISSOINS TABLES once the test weight is known and the row number is located below.

(i) Light Duty Vehicles.

Model Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1996+ Tier 1	2	15	29
1991-1995	3	16	30
1983-1990	5	17	31
1981-1982	5	20	31
1980	5	20	36
1977-1979	12	24	36
1975-1976	12	24	38

(ii) Light Duty Trucks 1 (less than 6000 pounds GVWR).

Model Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1996+ Tier 1			
(<3750 LVW)	2	15	29
(>3750 LVW)	3	16	30
1991-1995	6	20	31

1988-1990	8	23	32
1984-1987	8	23	37
1979-1983	12	25	37
1975-1978	13	26	38

(iii) Light Duty Trucks 2 (greater than 6000 pounds GVWR).

Model Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1996+ Tier 1			
(<5750 LVW)	3	16	30
(>5750 LVW)	6	20	33
1991-1995	6	20	34
1988-1990	8	23	35
1984-1987	8	23	37
1979-1983	12	25	37
1975-1978	13	26	38

ASM2525/5015 Final Standards. Subject to confirmation of the stringency of these final standards by the U.S. Environmental Protection Agency the following ETW-based exhaust emissions standards or newly developed engine displacement exhaust emissions standards shall be used.

The ETW-Based exhaust emissions standards for the following model years are cross-referenced by the number in the column in (a)(3) below. The ASM2 emission tables are found in Appendix EMISSOINS TABLES once the test weight is known and the row number is located below.

(i) Light Duty Vehicles

Model Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1996+ Tier 1	2	15	29
1983-1995	2	15	29
1981-1982	2	17	29
1980	2	17	33
1977-1979	7	21	33
1975-1976	7	21	36

(ii) Light Duty Trucks 1 (less than 6000 pounds GVWR).

Model Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1996+ Tier 1	2	15	29
1988-1995	4	18	30
1984-1987	4	18	34
1979-1983	9	22	34
1975-1978	10	23	36

(iii) Light Duty Trucks 2 (greater than 6000 pounds GVWR).

Model Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1996+ Tier 1	2	15	29
1988-1995	4	18	32
1984-1987	4	18	34

1979-1983	9	22	34
1975-1978	10	23	36

The U.S. EPA has developed a set of revised FINAL ASM cut-points based upon the vehicle engine displacement versus estimate test weight (ETW). The calculations and table are included in Appendix Final ASM Standards of this document.

Emissions Table

The ASM2 emission tables are found in Appendix ASM. These tables contain the actual emission values used to evaluate the tailpipe test. The values in Table (a)-are parts per million for HC (columns 2-14), percent for CO (columns 15-28), and ppm for NO (columns 29-39). Column 1 contains vehicle test weights.

NOTE: The DATA in this chart is the same as the Federal ASM2 PDF formatted documents and will be supplied as a convenience to those reading this document.

8.03 Service Requirements

(1) It shall be a requirement that service personnel shall document all repairs performed on certified GAS units. Documentation of service should include dates, times, and parts used and service performed. This documentation may be needed and requested at a later date for enforcement and audit requirements.

(2) Service personnel shall ensure the GAS is fully functional prior to leaving the station. This includes:

(a) Ensuring the required station information is present and correct. This information includes, Station Number, GAS ID, Station Name, Address, Phone, if data is missing it shall be entered before leaving the site.

(b) Ensuring that the Station, GAS ID, and county of inspection numbers are entered and correct, if data is missing it shall be entered prior to leaving the site.

(c) Ensuring the appropriate calibrations have been performed.

(d) Ensuring the OBD firmware number reported on the STATUS SCREEN is correct.

8.04 Records and Record Keeping }

Service records shall be maintained on individual GAS units by the equipment vendors.

Service records of individual GAS units shall be made available upon request by the department.

Appendix A - Microcomputer Specifications

Microcomputer Specifications

See 1.07, Microcomputer Specifications, in text for most of these specifications.

EXPANSION: The State is interested in insuring that the GAS will have expansion capability to add functions beyond those defined in this specification. For example, the GAS unit may need to be updated to provide for additional support for diagnostic and repair capability that might include on-line maintenance manuals using new technology such as CD-ROM or OPTICAL DISK storage devices.

DOCUMENTATION (TO BE PROVIDED ONLY TO THE STATE)

HARDWARE: For the microcomputer portion of each GAS system delivered, the vendor must provide complete technical/operational manuals covering installation and operation.

SOFTWARE: All prepackaged applications software deliveries (including but not limited to Operating Systems and BASIC if offered) must include manuals that fully explain all installation and operating procedures.

All such software deliveries must include a warranty, a licensing agreement, and (except for operating systems) a means for registration that provides for future updates.

All software deliveries must include the version or release number.

MANUALS: All manuals must be commercially printed and show title, manufacturer's name, address, and copyright date.

FILES: All files utilized must include a full record layout. This layout must identify file name, security, and each field. For each field the delimiters, contents, definition, and editing rules are to be provided in the form of a data dictionary.

EXTERNAL HARDWARE: Phase V requires a bar code reader to input calibration gas bottle values, inspector ID number from their badge, and retest information from the VIR/Repair form.

Appendix B - GAS Certification Procedures

GAS Certification Procedures

EPD will require that all test systems meet the requirements contained in the version of the California BAR 97 procedures dated January 2, 1997. Certain procedures related to features in BAR 97 that are not in the Georgia specification, e.g., vehicle weight scale, may be ignored. EPD expects that hardware certification will be based almost entirely on certification of the analyzer, dynamometer and other equipment by BAR. Certification of the analyzer and test application software will be performed by EPD's management contractor. If a manufacturer intends to supply equipment for the Georgia program that will not undergo BAR certification, the manufacturer may propose alternative hardware certification procedures which will allow a demonstration that the system meets all Georgia specifications, but without the need to perform each acceptance testing procedure required by California on the Georgia unit. One example is the requirement for testing at temperatures at the extremes of the required range. A manufacturer may propose to substitute extreme temperature testing from a similar BAR-approved unit to satisfy this requirement for Georgia. Manufacturers are also allowed to propose using manufacturer-performed testing where feasible.

Any proposal to use alternative certification procedures must be approved by EPD, in consultation with its management contractor, prior to seeking certification. EPD will expect all relevant BAR certification requirements to be met and documentation supplied to the State whenever a Georgia unit is nominally the same as a BAR-certified unit. The acceptance of any alternative certification procedures by the State will not relieve the manufacturer of the requirement to meet all Georgia specifications.

Leak Rate Acceptance Criteria: A needle valve teed into the line upstream of the sample pump inlet shall be used to induce a leak that reduces the readings by 3%. The unit under test shall fail the leak check and prevent further testing until corrective action is performed.

The analyzer shall not allow a deviation of more than 3% of readings obtained using the low-middle-range span GAS described in the table in Section 6.04, ASM Quality control Requirements.

Ambient Conditions Instruments Acceptance Criteria: Upon installation and every six months, the performance of the ambient conditions weather instruments shall be crosschecked against a master weather station.

Acceptance Criteria: The individual instruments shall be within the tolerance specified in Section 6.03.

Installation of Revised Software - The PHASE V software or any other revised test software must be approved prior to installation of the software on any GAS unit operating in a licensed test station. In most cases, upon verification of software by the management contractor, the manufacturer will be authorized to install the software in a limited number of beta sites for further evaluation. Upon successful demonstration of the operation of the revised software, EPD will authorize its installation on all Georgia certified units. Revised software may not be installed in operating units unless specifically authorized by EPD. Under no circumstances is software to be installed prior to beta testing without the express, written authorization of EPD. The following procedures are to be used.

Software Modifications and Software Update Certification: Beyond the PHASE V update, periodic software updates may be necessary. EPD or the manufacturer may require them. In either case, the manufacturer is responsible for installing the software in its GAS units. The cost of any software update is the responsibility of the unit owner if the software update is required by the EPD, and is the responsibility of the manufacturer if they require the update.

Updates to the software specifications will be provided to the manufacturers by EPD. The software version number is to be indicated on the GAS status screen, on each vehicle test , each calibration , and the VIR. The version number shall consist of a four digit numeric code to be made up of the last two digits of the year, followed by a two-digit version number.

All software updates shall cause the software version number to change. There will be a separate field in the test record and calibration record indicating the software version currently in use. This will permit the EPD to search the VID to determine how many units have been updated by looking at the version number field.

Areas in the software where changes or additions might be required include: preconditioning procedures and emission test sequences (as applicable for OBD, ASM2 and two-speed idle tests), various lookup tables, functional inspections, diagnostic and repair procedures, data communication procedures, criteria affecting emission standards selection, vehicle exemptions, capability to read on-board diagnostics fault codes and vehicle pass/fail criteria. Other areas not specifically mentioned may also be impacted at some point, but we do not expect to request changes in all these areas at once.

To maintain the integrity of Georgia's I/M program, QA personnel will be instructed to lock out GAS units that have unauthorized modifications or are running unapproved software versions. The following criteria apply to software and software updates:

1. Only EPD-approved software shall be used in GAS units on the secured drive.

2. All proposed software updates must be thoroughly tested by the manufacturer before being submitted to the EPD. Update disks as well as electronically transmitted updates shall be encrypted in a manner approved by EPD. The GAS shall be capable of accepting software updates via floppy disk, CD ROM, or via modem, or remote communication.

3. All proposed software updates generated by the manufacturer shall be submitted to EPD with a written description of the reason for the update, such as the problem that the update corrects.

4. All proposed software updates, including manufacturer-generated updates, must be submitted to EPD for testing and approval as follows:

   (i) Software updates must be submitted on a mutually agreed upon medium.

   (ii) Each new software version submitted to the EPD, including minor revisions, must have a new and unique software version number.

   (iii) All proposed software updates must be accompanied by a cover letter with the following information:

(iv) A description of all of the changes contained in the proposed software update, including manufacturer-initiated modifications.

(v) A timeline of when the update is expected to be installed (start to finish) and how many units will be updated.

(vi) If any hardware modifications or special procedures are needed to perform the software update, describe the procedures for performing the update.

(vii) All proposed software updates for the unit may require an accompanying data disk containing test records for OBD, ASM, and Two-Speed Idle tests, in a form determined by EPD or its contractor.

(I) The data disks may also be required to contain complete calibration records - three-day, dynamometer, and fuel cap tester calibration records.

(II) Depending on the type and number of changes contained in the proposed software update, EPD may require testing at EPD-approved beta sites prior to release of the software. EPD will perform a preliminary review of the proposed software prior to releasing it for beta site testing.

Appendix - List of Abbreviations

List of Abbreviations

ASM	Acceleration Simulation Mode
BAR	California Bureau of Automotive Repair
BIOS	Basic Input Output System
CAN	Controller Area Network
CARB	California Air Resources Board
CAT	Catalytic Converter
cc	cubic centimeter
cm	Centimeters
CO	Carbon Monoxide
CO_2	Carbon Dioxide
Cyl	Cylinder
DCF	Dilution Correction Factor
DLC	Diagnostic Link Connector
DTC	Diagnostic Trouble Code
ECS	Emission Control System
EPA	Environmental Protection Agency
EPD	Environmental Protection Division
ESC	Emission Standards Category
F	Fahrenheit or Fail
FC	Fuel Cap
Fed	Federal
GVWR	Gross Vehicle Weight Rating
GAS	Georgia Analyzer System
HC	Hydrocarbon
Hp	Horsepower
HTR	Heater
I/M	Inspection/Maintenance
K	Emission Reduction Factor
KOEO	Key On Engine Off
KOER	Key On Engine Running
l	Liters
LIC	License
lpm	Liters per minute
MIL	Malfunction Indicator Light
N	None
NIST	National Institute for Standards and Technology
NO	Nitric Oxide
NOx	Oxides of Nitrogen
OBD	On-board Diagnostics
OEM	Original Equipment Manufacturer
OS	Operating system
O_2	Oxygen
P	Pass
PPM	Parts Per Million
RPM	Revolution Per Minute
TSI	Two Speed Idle
VEC	Vehicle Emission Control label
VID	Vehicle Inspection Database
VIN	Vehicle Identification Number
VIR	Vehicle Inspection Report
VRT	Vehicle Reference Table
#	Number

Appendix - License Plates Issuing States and Abbreviations

Issuing States and Abbreviations

AA	**Armed Forces** - Americas
AE	**Armed Forces** - Europe, Middle East, Africa, Canada
AK	**Alaska**
AL	**Alabama**
AP	**Armed Forces** – Pacific
AR	**Arkansas**
AS	**American Samoa**
AZ	**Arizona**
CA	**California**
CN	**Canada**
CO	**Colorado**
CT	**Connecticut**
DC	**District of Columbia**
DE	**Delaware**
FL	**Florida**
FM	**Federated States of Micronesia**
GA	**Georgia**
GU	**Guam**
HI	**Hawaii**
IA	**Iowa**
ID	**Idaho**
IL	**Illinois**
IN	**Indiana**
KS	**Kansas**
KY	**Kentucky**
LA	**Louisiana**
MA	**Massachusetts**
MD	**Maryland**
ME	**Maine**
MH	**Marshall Isl**ands
MI	**Michigan**
MN	**Minnesota**
MO	**Missouri**
MP	**Northern Mariana Islands**
MS	**Mississippi**
MT	**Montana**
MX	**Mexico**
NC	**North Carolina**
ND	**North Dakota**
NE	**Nebraska**
NH	**New Hampshire**
NJ	**New Jersey**
NM	**New Mexico**
NV	**Nevada**
NY	**N**ew **Y**ork
OH	**Ohio**
OK	**Oklahoma**
OR	**Oregon**
PA	**Pennsylvania**
PR	**Puerto Rico**
PW	**Palau**
RI	**Rhode Island**
SC	**South Carolina**
SD	**South Dakota**
TN	**Tennessee**
TX	**Texas**
US	**United States Government**
UT	**Utah**
VA	**Virginia**
VI	**Virgin Islands**
VT	**Vermont**
WA	**Washington**
WI	**Wisconsin**
WV	**West Virginia**
WY	**Wyoming**
XX	All Other Locations

NOTE: Bold letters indicate suggested names to print on VIR if the two letter U.S.P.S. abbreviation is not printed.

Appendix OBD II Test Requirements

Use the WARNING message(s) below if at any time during the OBD II testing process the DLC cable loses power unexpectedly or is connected when it should not be connected.

DLC DISCONNECTED WARNING DISPLAY

THE DATA LINK CONNECTOR HAS COME LOOSE OR THERE IS NO POWER TO THE DLC

CHECK THE OBD LEAD AND FUSE POWERING THE DLC

PRESS <FY> TO RESTART THE TEST SEQUENCE or
PRESS ESCAPE TO ABORT

[Display OBD (00)]

If the DLC is CONNECTED when it should not be, display the following warning message:

DLC CONNECTED WARNING DISPLAY

THE DATA LINK CONNECTOR IS CONNECTED TO THE VEHICLE

ENSURE THE OBD LEAD HAS BEEN DISCONNECTED FROM THE DLC

PRESS <FY> TO CONTINUE THE TEST SEQUENCE or ESCAPE TO ABORT
[Display OBD (01)]

(1) OBD TEST START and DLC CONNECTION

The GAS shall prompt for an OBD diagnostic link connection for M.Y. 1996 and newer passenger vehicles and light-duty trucks requiring an OBD inspection as determined in the Rules for Enhanced Inspection and Maintenance Chapter 391-3-20. The GAS shall prompt the inspector to turn the ignition key to the off position prior to connecting the OBD lead to the DLC.

Display Prompt:

TURN THE IGNITION KEY TO THE OFF POSITION

LEAVE THE KEY OFF FOR A MINIMUM OF 20 SECONDS BEFORE CONTINUING TO PREVENT POSSIBLE DAMAGE TO THE OBD SYSTEM.

DO NOT CONNECT TO THE DLC AT THIS TIME

PRESS <FX> TO CONTINUE OR ESC TO ABORT

[Display OBD (10)]

The GAS may display a message to wait 20 seconds on a new screen.

Display Prompt:

WAIT XX SECONDS,

DO NOT CONNECT TO THE DLC

[DISPLAY OBD (11)]

The GAS may display the following:
Display Prompt:

THIS TEST WILL BE ABORTED AT THIS TIME

YOU MUST FOLLOW THE PROMPTS TO PERFORM A VALID TEST

PRESS ANY KEY TO PROCEED

[DISPLAY OBD (14)]

The GAS shall prompt the inspector to connect the DLC cable to the vehicle by displaying the following prompt:

Display Prompt:

LOCATE THE VEHICLE'S OBD DIAGNOSTIC LINK CONNECTOR (DLC).

THE DLC MAY BE COVERED.

CHECK YOUR DLC LOCATOR GUIDE or THE VEHICLE OWNERS MANUAL FOR THE EXACT LOCATION.

ATTACH THE ANALYZER OBD LEAD TO THE VEHICLE CONNECTOR.

PRESS <FY> IF CONNECTION IS NOT POSSIBLE

PRESS ENTER TO CONTINUE OR ESC TO ABORT

[Display OBD (16)]

If the inspector presses "ENTER" to indicate the key is off and the OBD lead is connected the program shall proceed to the Section 2, or

If the inspector presses <FY> from Display OBD(16) indicating a missing, damaged, tampered, obstructed, or inaccessible connector a message box shall be displayed as follows:
Display Prompt:

SELECT THE REASON THAT CAUSES THE DIAGNOSTIC LINK CONNECTOR (DLC) NOT TO BE CONNECTED.

1 THE DLC CANNOT BE LOCATED BY THE I/M INSPECTOR. {*UNPAID/ ABORT}

2 THE DLC IS DAMAGED OR TAMPERED AND CONNECTION IS NOT POSSIBLE. {*PAID/ FAIL}

3 THE DLC IS OBSTRUCTED OR INACCESSIBLE AND CONNECTION IS NOT POSSIBLE. {*PAID/ FAIL}

4 RETURN TO PREVIOUS SCREEN. {DEFAULT}**

[Display OBD (17)]

The GAS shall proceed to Section 3.29 Functional Checks

(2) K.O.E.O. MIL BULB CHECK

The GAS shall prompt the operator to turn the key to the ON position, observe the MIL for illumination, and store the results.

1. The GAS shall prompt the inspector about Keyless ignition. The GAS shall display the following prompt(s).

Display Prompt:

IS THIS VEHICLE EQUIPPED WITH KEYLESS IGNITION?

PRESS "ENTER" TO PROCEED if NO, OR PRESS "Y" if YES.

[Display OBD (20)]

:

Display Prompt:

THIS VEHICLE IS EQUIPPED WITH KEYLESS IGNITION,
YOU MUST FOLLOW THE MANUFACTURER'S RECOMMENDATIONS TO PERFORM THE K.O.E.O. MIL BULB CHECK CORRECTLY.
REFER TO OWNER'S MANUAL.

PRESS <FY> TO PROCEED

[Display OBD (21)]

(iii) When the <FY> key is pressed the GAS shall continue.

The GAS shall prompt the inspector to turn the key to the on position to have the inspector verify MIL functionality. The GAS shall display the following prompt(s).

Display Prompt:

TURN THE IGNITION KEY TO THE ON POSITION.

DO NOT START ENGINE.

PRESS ENTER TO PROCEED.

[Display OBD (23)]

DISPLAY PROMPT

TURN THE KEY TO THE ENGINE OFF POSITION

PROCESSING DATA FILES

YOU MUST WAIT {ss} SECONDS BEFORE CONTINUING

[Display OBD (24)]

Display Prompt:

DID THE MALFUNCTION INDICATOR LIGHT (MIL) ILLUMINATE?

PRESS <FY > for YES, OR PRESS <FZ> for NO

NOTE: MIL ILLUMINATION MAY BE CONTINUOUS, OR ONLY LAST A FEW SECONDS.

[Display OBD (25)]

The program shall continue to the next Section 3

(3) PROTOCOL and OBD DATA COLLECTION

The GAS shall communicate with the OBD system in the vehicle under test to determine if the OBD system has commanded the MIL to illuminate. This step is to evaluate the MIL command status of the OBD system with the engine running. Programming must take into account that if the DLC is disconnected during the OBD testing process.

The GAS shall prompt the inspector to start the vehicle and check for communication with the OBD computer.

Display Prompt:

TURN THE IGNITION KEY TO START THE ENGINE
ALLOW THE ENGINE TO IDLE.

PRESS ENTER TO PROCEED.

[Display OBD (31)]

When the GAS senses communication with the OBD system, it shall automatically display the following message ON A NEW SCREEN:

Display Prompt:

COMMUNICATION IN PROGRESS, PLEASE WAIT

[Display OBD (32)]

The GAS shall proceed, or

If the GAS is not able to establish communication the following prompt shall be displayed:

Display Prompt:

OBD COMMUNICATION CANNOT BE CONFIRMED.

TURN THE KEY TO THE OFF POSITION.

READJUST THE CONNECTOR AND TRY AGAIN.
PRESS <FY> WHEN READY TO TRY AGAIN, OR.
PRESS <FZ> To CONTINUE THE OBD TEST.

[Display OBD (33)]

The GAS shall communicate with the OBD system in the vehicle under test to determine the status of several parameters. The GAS shall continue to the next section (4) OBD READINESS.

(4) OBD READINESS EVALUATION

The GAS shall communicate with the OBD system in the vehicle under test to determine the status of the supported readiness monitors to allow for an evaluation of the OBD system. This step stores the status of the READINESS MONITORS reported by the OBD system with the engine running and will evaluate the stored results. Programming must take into account that if the DLC is disconnected during the OBD testing process at this time then the all OBD results to that point shall be cleared and the OBD routine started at the beginning The program shall keep track of supported monitors.

If the vehicle under test is a diesel the GAS may display message OBD (40) below on a fresh screen, or the Gas shall continue to the next Section (5) MIL CMD and DTC Check.

Display Prompt:

THIS VEHICLE DOES NOT REQUIRE A GEORGIA INSPECTION.

PROCEEDING MAY PROMPT AN ENFORCEMENT ACTION

PRESS <FX> TO ABORT OR <FY> TO PROCEED

[Display OBD (40)]

(5) MIL CMD and DTC CHECK

The GAS shall communicate with the OBD system in the vehicle under test to determine if there are DTCs stored in the computer of the vehicle under test. This step is to count all DTCs that are causing the OBD MIL to illuminate with the engine running and retrieve and store the first five that are returned.

The GAS shall determine the MIL CMD status then it shall proceed to the next Section (6) K.O.E.R Bulb Check Evaluation 1

(6) K.O.E.R. Bulb Check Evaluation 1

The GAS shall prompt the inspector to locate the MIL on the dashboard of the vehicle under test to perform a visual check of the MIL while the engine is running, a K.O.E.R. inspection. Programming now takes into account that some early OBD II vehicles may illuminate the MIL when the DLC is connected and communicating with the GAS. Programming must take into account that if the DLC is disconnected during the OBD testing process then all of the OBD results to that point shall be cleared and the OBD routine started at the beginning {loss of power to the DLC}.

The GAS shall prompt the inspector to observe the MIL for illumination with the engine running and store the results. The following prompt shall be displayed:

Display Prompt:

IS THE MALFUNCTION INDICATOR LIGHT (MIL) ILLUMINATED WHILE THE ENGINE IS RUNNING?

PRESS <FY > for YES, PRESS <FZ> for NO, OR ESC TO ABORT

[Display OBD (61)]

The GAS shall proceed to the next Section (7) OBD DATA Collection 2, or

If <FY KEY > for YES is pressed indicating the MIL is illuminated, the program shall continue to the next Section (7) OBD DATA Collection 2.

(7) OBD Data COLLECTION 2

The GAS shall communicate with the OBD system in the vehicle under test to determine the status of several parameters of the vehicle under test. If the number of non-continuous monitors reported as being supported is less than four “4” the GAS shall continue.

The GAS may display the following prompt:

Display Prompt:

INCREASE THE ENGINE RPM TO BETWEEN 1200 RPM AND 1500 RPM AND HOLD STEADY

THE RPM MUST RISE ABOVE 1200

IF THE RPM CAN NOT BE RAISED PRESS <FX>

[Display OBD (71)]

The GAS may also display the following prompts:

Display Prompt:

INCREASE THE ENGINE RPM TO BETWEEN 1500 RPM AND 2000 RPM AND HOLD STEADY

THE RPM MUST RISE ABOVE 1500

IF THE RPM CAN NOT BE RAISED PRESS <FX>

[Display OBD (72)]

Display Prompt:

ALLOW THE ENGINE TO IDLE

[Display OBD (73)]

The GAS shall proceed to the next Section (8) OBD High Mileage Option.

(8) OBD High Mileage Option

At some time during the life of the program a “High Mileage Option” may be offered to afford qualifying OBD II vehicles a chance at passing a tailpipe test if they fail an OBD II inspection. If the Hi Mileage Option is applied the GAS shall display the following prompt:

THIS VEHICLE HAS BEEN SELECTED TO RECEIVE A TAILPIPE TEST.

Press <F Key> to Continue.

[DISPLAY OBD (81)]

The program shall continue to the next section (9) RTSI DATA COLLECTION.

(9) RTSI DATA COLLECTION

The GAS may perform a Random Two Speed Idle RTSI test following the OBD data. The vehicle will not pass or fail based upon normal RTSI testing.

The GAS may display the following prompt to inform the inspector that a tailpipe test is about to be done on the vehicle being tested.

Display Prompt:

THIS VEHICLE HAS BEEN SELECTED TO RECEIVE A TAILPIPE TEST.

DO NOT ABORT THIS TEST,

THE TAILPIPE TEST THAT IS ABOUT TO BE RUN IS A CRITICAL PART OF THIS TESTING SEQUENCE.

Press <F 3> to Continue.

[DISPLAY OBD (91)]

When the inspector presses <F 3> to continue the GAS shall proceed to perform an RTSI tailpipe test as defined in Appendix RTSI.

Once the RTSI readings have completed the GAS shall proceed to the next Section (10) K.O.E.R Bulb Check 2.

(10) K.O.E.R. BULB CHECK 2

The GAS shall prompt the inspector to locate the MIL on the dashboard of the vehicle under test to perform a visual check of the MIL while the engine is running.

Once the OBD data collection sequence has been completed, the GAS shall display the following message:

Display Prompt:

TURN THE IGNITION KEY TO THE OFF POSITION.

WAIT 10 SECONDS BEFORE YOU DISCONNECT THE OBD LEAD FROM THE DLC TO ALLOW THE OBD SYSTEM TO POWER DOWN AND PREVENT DAMMAGE TO THE ON BOARD COMPUTER

[Display OBD (100)]

The GAS may display the following prompt on a NEW SCREEN:

Display Prompt:

TURN THE IGNITION KEY TO THE ON POSITION AND START THE ENGINE

LET THE ENGINE IDLE AND OBSERVE THE MIL.

PRESS <FY> TO PROCEED

[Display OBD (102)]

The GAS shall prompt the inspector to observe the MIL for illumination with the engine running with the DLC. The following prompt shall be displayed on a NEW SCREEN:

Display Prompt:

IS THE MALFUNCTION INDICATOR LIGHT (MIL) ILLUMINATED

WHILE THE ENGINE IS RUNNING

PRESS <FY > for YES,
PRESS <FZ> for NO, or
ESC to ABORT

[Display OBD (103)]

The GAS shall proceed to section 3.30 Functional Check.

Appendix ASM2 Testing Sequence and Test Standards

ASM2 Testing Sequence

The GAS shall look at the MANDATORY ASM2 field of the PROGRAM file to determine if the ASM2 test sequence is followed, an ASM1 (ASM2525) test sequence only (MODE 1 of ASM2) is performed, or no ASM testing will be done. If there is an "N" in the MANDATORY ASM2 field then the ASM2525 test shall be performed only. When the MANDATORY ASM2 field of the PROGRAM file is set to "Y" then the ASM2 mode shall be used. The GAS shall store an "A" in the Test Type field of the GAS record to indicate an ASM test was started. When the MANDATORY ASM2 field of the PROGRAM file is set to "X" the GAS shall perform a TSI sequence only as outlined in Appendix H.

The test sequence shall consist of an ASM2525 first mode as described followed by an ASM5015 second mode as described. Vehicles that fail the mode1 test shall receive a second chance (continuation of the mode1 test). Vehicles that fail the mode1 portion of the ASM test sequence shall not receive a second chance in mode2 (no continuation of mode 2). Vehicles that pass mode1 but failing mode2 shall receive a second chance at passing mode2 (continuation of mode2). Vehicles without catalytic converters (visual inspection result = "F" or "N") shall not receive a second chance for either mode1 or mode2 (mt1 shall not go past 60 seconds, mt2 shall not go past 60 seconds).

Overall ASM2 Test Procedure: The test timer shall start (tt=0) when the conditions specified in this section are met, the dynamometer rolls reach 1.0 mph due to the test vehicle's initial acceleration for testing purposes, and the mode timer initiates as specified in this section.

Preconditioning Cycle. Vehicle preconditioning shall be performed prior to start of an official test. The following preconditioning cycle is to be used:

The preconditioning timer shall start once the dynamometer has reached a speed of 25 mph. The vehicle will continue to be operated for a maximum of 30 seconds at this speed within ±5 mph and within ±10% of the wheel force tolerance specified in this section. If operation of the vehicle falls outside the tolerances for speed and wheel force, the timer shall stop until the vehicle is back within tolerances. The duration of the preconditioning cycle may be adjusted if it is determined using statistical process control methods that alternative preconditioning cycle duration is adequate to ensure that vehicles are fully warmed up prior to testing. If the speed or wheel force falls above or below the tolerance, the preconditioning timer will reset to zero. Preconditioning time shall not be included in the overall maximum test time.

ASM2525 Mode 1 shall start when the dynamometer speed (and corresponding wheel force) are maintained within 25±1.0 miles per hour for 5 continuous seconds. The dynamometer power shall be automatically selected from, the VRT based upon the vehicle-specific information or on default vehicle information from the VRT

NOTE: If the dynamometer speed or wheel force falls outside the speed or wheel force tolerance for more than two consecutive seconds, or for more than 5 seconds total, the mode timer shall reset to zero and resume timing once the dynamometer speed or

wheel force return within limits.

Pass / Fail Determination. The pass/fail analysis shall begin after an elapsed time of 22 seconds (mt_1 = 22). A pass or fail determination shall be made for the vehicle and the mode shall be terminated as follows:

Fast Pass/Passing ASM2525. The vehicle shall (fast) pass the ASM2525 mode if, at any point between an elapsed time of 22 seconds and 150 seconds , the 10-second running average measured values for each pollutant are simultaneously less than or equal to the applicable test standards. If the vehicle fast passes the standards prior to mt=90 the GAS shall store a "P" in the Gross Polluter/Fast Pass Mode 1 field.

Gross Polluter ASM2525. The vehicle shall be considered a Gross Polluter of the ASM2525 mode if, at an elapsed time of 90 seconds, the 10-second running average measured values for any pollutant is greater than 150% of the applicable test standards. If the 10-second running average measured value of any pollutant is over 150% of the standard for the vehicle being tested the GAS shall store a "G" in the Gross Polluter/Fast Pass Mode 1 field.

Failing ASM2525. If the vehicle is failing at the end of the first mode but is not a gross polluter, then the test mode shall not end at 90 seconds but shall continue for up to an additional 60 seconds as long as the measured emissions values for HC, CO and NO are not greater than 150% of the applicable standard. The ending test results of the first mode shall be recorded.

ASM5015 Mode 2 timer shall start when the dynamometer speed (and corresponding wheel force) are maintained within 15±1.0 miles per hour for 5 continuous seconds. The dynamometer shall apply the correct wheel force based on the required ASM horsepower load at 15 mph across the testing speed window of 15±1.0 miles per hour. The wheel force tolerance shall be ± 5% of the correct wheel force at 15 mph.

The dynamometer power shall be automatically selected from, the VRT based upon the vehicle-specific information contained in one VRT Row or on default vehicle information from the VRT.

NOTE: If the dynamometer speed or wheel force falls outside the speed or wheel force tolerance for more than two consecutive seconds, or for more than 5 seconds total, the mode timer shall reset to zero and resume timing. The minimum mode length shall be determined as described in paragraph (c)(4)(i) or (c)(4)(ii) of this section. The maximum mode length shall be 90 seconds elapsed time (mt_2 = 90) or limited to 60 seconds elapsed time (mt_2 = 60) if there is no catalytic converter.

If the RPM reading of the stabilized MODE2 equals the final (stored) MODE1 RPM, the GAS shall display a warning message to the inspector that the RPM is inaccurate.

Display Prompt:

THE TEST WILL ABORT DUE TO INACCURATE RPM READINGS

PRESS THE <FY> KEY

[Display ASM2 (1)]

Pass / Fail Determination. The pass/fail analysis shall begin after an elapsed time of 22 seconds (mt_2 = 22). A pass or fail determination shall be made for the vehicle and the mode shall be terminated as follows:

Fast Pass/Passing ASM5015. The vehicle shall (fast) pass the ASM5015 mode if, at any point between an elapsed time of 22 seconds and 60 seconds, the 10-second running average measured values for each pollutant are simultaneously less than or equal to the applicable test standards. If the vehicle fast passes the standards prior to mt_2= 60 the GAS shall store a "P" in the Gross Polluter/Fast Pass Mode 2 field.

Gross Polluter ASM5015. The vehicle shall be considered a Gross Polluter of the ASM5015 mode if, at an elapsed time of 60 seconds (mt_2 = 60), the 10-second running average of measured values for any pollutant is greater than 150% of the applicable test standards. If the 10-second running average measured value of any pollutant is over 150% (at mt_2 = 60) of the standard for the vehicle being tested the GAS shall store a "G" in the Gross Polluter/Fast Pass Mode 2 field and mode 2 shall stop (no continuation of mode 2).

Failing ASM5015. If the vehicle is failing at the end of the second mode but is not a gross polluter as defined in (ii) above, then the test mode shall not end at 60 seconds but,

(I) If the 10-second running average measured value of any pollutant is over 100% of the standard for the vehicle being tested (at mt_2 = 60) but less than 150%, and the vehicle PASSED mode 1, the GAS shall allow the mode 2 to continue for up to an additional 90 seconds (mt_2=150).

(II) If the 10-second running average measured value of any pollutant is over 100% of the standard for the vehicle being tested (at mt_2 = 60) and the vehicle FAILED mode 1, the GAS shall not proceed. The GAS shall end the test and store the ending values in the appropriate fields of the GAS record.

The vehicle shall fail the ASM5015 mode if the standards of this section are not satisfied by an elapsed time of 150 seconds.

Appendix TSI Preconditioning and Testing Sequence

Emissions Test - Two-Speed Idle Procedures

The following TSI test sequences shall be used by the GAS to test covered vehicles that have been determined by a licensed ASM inspector not to be ASM testable, or which have been selected by the GAS to receive a TSI test, or to test all older vehicles when the Mandatory ASM field flag of the PROGRAM file is set to an "X". The GAS shall store a "T" in Test Type field if a TSI test is the only test performed (do not overwrite a "O" with a "T" if this is a random TSI). Test sequences shall be determined from the year, make, model, and transmission. When the vehicle has met RPM, flow rate, and dilution conditions, the emissions test sequence shall begin and the display shall show the word "**TESTING**" and time remaining in the test sequence. The analyzer shall record the emission reading at the end of the "**TESTING**" period, for each test mode.

Note: 2500 rpm standards exist for all vehicles. The following rules shall apply:

(a) If the vehicle being tested is:

1. A 1981-84 Ford Motor Company passenger car with a 5.8 Liter (351 CID) engine it shall be tested using Sequence # 2. See (c) below.

2. A 1984 Jeep with a 2.5 Liter (150 CID) light duty tuck it shall be tested using test sequence # 3. See (d) below.

3. A 1984-87 BMWs with an automatic transmission, 1983 -88 Volvo with an automatic transmission or a 1986- 92 Peugeot with an automatic transmission it shall be tested using test Sequence #5. No test results will be displayed on the VIR for the 2500 RPM portion of the test. See (f) below.

4. A 1985 Ford ranger with a 2.3 Liter (140 CID) engine light duty truck or a 1986 Ford Ranger or Aerostar with a 2.3 L (140 CID) engine light duty tuck it shall be tested using test sequence #6. See (g) below.

5. If the vehicle being tested does not meet any of the previous criteria it shall be tested using Sequence # 1 See (b) below.

6. Model Year vehicles 1996 and newer receiving a random TSI test after an OBD II test are to populate the Reason TSI Tested field with a "7" to indicate this special test reason.

(b) SEQUENCE #1: Testing period: 30 seconds for each stage

First stage: 2500 RPM (± 10 %)

Second stage: Idle RPM

Basis for test results: Average of last 5 seconds of each sampling period.

Units of test results: Concentration measurements: ppm HC, % CO, % O2 (optional) and % CO_2

(c) SEQUENCE #2: Testing period: 30 seconds for each stage

Note: Prior to initiating the test, the inspector shall be informed that the vehicle they will be testing will require special test procedures and that it is important to follow directions carefully. The inspector shall then be prompted to turn the key off for 10 seconds.

Display Prompt:

TURN THE ENGINE OFF FOR 10 SECONDS

[Display TSI(1.1)]

or, if the engine is not turned off for ten seconds the following warning message shall be displayed:

Display Prompt:

THE ENGINE WAS NOT TURNED OFF FOR 10 SECONDS, TURN KEY TO THE OFF POSITION

[Display TSI(1.2)]

At the end of 10 seconds, the analyzer shall prompt the inspector to restart the engine and begin the 2500 RPM test. The analyzer shall ensure that there is no RPM signal for 10 seconds prior to starting the 2500 RPM test.

Display Prompt:

START THE ENGINE AND RAISE THE RPM TO 2500 TO START THE TEST

[Display TSI(1.3)]

First stage: 2500 RPM (± 10 %)

Note: between the test stages the inspector shall be prompted to turn the ignition off for 10 seconds. The analyzer shall ensure that there is no engine RPM signal for at least 10 seconds. At the end of 10 seconds, the analyzer shall prompt the inspector to restart the engine and begin the idle test.

Display Prompt:

ALLOW THE ENGINE TO IDLE

[Display TSI(1.4)]

Second stage: Idle RPM (see standards for max.)

Basis for test results: After the first 15 seconds of each stage, and passing reading (averaged over 5 consecutive seconds) collected during each sampling period or if none, over the last 5 seconds.

Units of test results: Concentration measurements: ppm HC, % CO, % O2 (optional) and % CO_2

Each test stage of test sequence #2 could take as little as 20 seconds if test conditions are satisfied and the vehicle meets the standards. If the emissions are not within the standards for any 5-second period (following the initial 15-second period), the test shall run the full 30 seconds.

(d) SEQUENCE #3: Testing period: 30 seconds for each stage

Note: Before the 2500 RPM test starts, the analyzer shall display a message to the inspector indicating that the engine RPM cannot exceed 2650 for this vehicle.

Display Prompt:

ENGINE RPM MUST NOT EXCEED 2650 DURING THE TEST

[Display TSI(1.5)]

First stage: 2500 RPM (+ 6 %, - 10 %)

Second stage: Idle RPM (see standards for max.)

Basis for test results: Average of the last 5 seconds of each sampling period.

(e) SEQUENCE of test results: Concentration measurements: PPM HC, % CO, % O2 (optional) and % CO_2

Test sequence #4 is not used.

(f) SEQUENCE #5:

Given the problems with the ZF automatic transmission, the State 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 criteria, the GAS shall display the following message:

Display Prompt:

BECAUSE OF THE POSSIBILITY OF TRANSMISSION DAMAGE TO THIS VEHICLE, DO NOT RAISE THE ENGINE SPEED ABOVE IDLE. PRESS "ENTER" TO CONTINUE. IF NOT, PRESS "ESC" TO ABORT THE TEST.

[Display TSI(1.6)]

If the inspector wishes to abort the test and presses the ESC key, the GAS shall automatically select Abort Code 90 (BMW/PEUGEOT/VOLVO AUTO TRANS) and shall issue a VIR.

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

Display Prompt:

BEFORE BEGINNING THE EMISSIONS TEST, MAKE SURE THE ENGINE IS AT 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.

[Display TSI(1.7)]

Testing period: 30 seconds for each stage

Engine Speed: Idle RPM [Note: one stage only]

Basis for test results: Average of the last 5 seconds of the sampling period.

Units of test results: Concentration measurements: PPM HC, % CO, % O2 (optional) and % CO_2

(g) SEQUENCE #6: Testing period: 30 seconds for each stage

First stage: 2500 RPM (±10%)

Second stage: Idle RPM

Basis for test results:

Stage 1: Average of last 5 seconds of sampling period.

Stage 2: Same as stage 1; however, if the emissions are not within the standards and the idle RPM was below 900, then the inspector shall be prompted to rev the engine so that the idle speed is a minimum of 900 RPM (but not to exceed the manufacturer's specifications), and to continue the test for another 30-Second-Stage Idle Test. After the first 15 seconds of the repeated second stage, any passing reading (averaged over 5 consecutive seconds) collected during the sampling period, or, if none, the average reading over the last 5 seconds of the stage.

Units of test results: Concentration measurements: PPM HC, % CO, % O2 (optional) and % CO_2

(h) Accommodations shall be made to allow for additional test sequences and sampling periods, which can be added at a later date.

(2) Commencement of the Emissions Sampling Period -Two-Speed Idle

(a) Immediately before starting the emissions test, manufacturers shall require the operator to verify that the type of ignition system entered is correct and allow the inspector to change it if it is incorrect. The sampling period shall commence as soon as stability is achieved. Stability is achieved when all of the following conditions are satisfied:

1. Readings averaged over a period of two seconds for CO+CO_2 meet the dilution thresholds;
2. Engine RPM has been within specified thresholds for at least one second; and
3. Sample flow rate is adequate to prevent triggering the low flow lockout.

(b) After stability has been achieved and sampling has been initiated, if any of the following conditions occur, the test mode must be restarted:

1. The dilution level is below the specified threshold.
2. Engine RPM is outside the specified thresholds.
3. Sample flow rate is not adequate to prevent triggering the low flow lockout.

(c) Exceeding the RPM limits, not reaching the dilution threshold or a low flow rate during the testing period shall automatically cause the testing period to restart for that mode. The GAS shall display one of the following warning messages (exact words do not have to be used):

Display Prompts:

DO YOU WISH TO ABORT THE TEST? YES/NO

[Display TSI(1.8)]

1. If the first message is displayed, the inspector must respond to the question prior to proceeding. If the second, third, or fourth message is displayed, the message will remain displayed until the sample dilution, RPM limits, and low flow conditions are within specifications, or the operator has manually aborted the test.

2. 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". Emission readings shall be taken during all tailpipe-testing modes and the "final" reading shall be recorded on the test record and the VIR, except that no emission readings or pass/fail result shall be displayed on the VIR if any portion of a test which is aborted

due to improper RPM, excessive dilution or low flow (i.e., display test results only if it is a valid test). Valid results from the 2500 RPM portion of a test shall be displayed, even if the test is aborted during the idle portion.

SAMPLE DILUTION EXCEEDED
[Display TSI(1.9)]

RPM LIMITS EXCEEDED
[Display TSI(1.10)]

LOW FLOW RATE LIMITS EXCEEDED
[Display TSI(1.11)]

(d) If the inspector aborts a RANDOM TSI test following an OBD test, the TSI test shall end. Gas readings shall be stored in the appropriate fields as outlined in (2)(c)2 below. Random TSI tests are not to be used for PASS/FAIL criteria after an OBD test and are for program evaluation only. The abort code stored shall be #85 RANDOM TSI ABORTED BY INSPECTOR.

(e) Dilution Correction Factor - Two-Speed Idle: The emission results on the VIR and stored in the test record shall be the measured results multiplied by the calculated dilution correction factor as described under the ASM test procedure.

(4) Vehicle Preconditioning - Two-Speed Idle:

(a) If a vehicle fails any of the emission tests and if it is a 1975 or newer model year vehicle, the analyzer shall instruct the inspector to precondition the vehicle and run a second test.

(b) Preconditioning is not required if the tampering inspection result for the catalytic converter is entered as an “F” since it is designed to activate a catalytic converter that may not have had enough flow just prior to the test. Based on studies conducted on suspected pattern failures by the EPA, 1975 and later model vehicles failing an initial test should be preconditioned in the following manner, and retested:

Vehicle Preconditioning Procedure (Two-Speed Idle)

The analyzer shall automatically instruct the inspector to initiate the preconditioning sequence whenever a 1975 or newer model year vehicle fails the emissions test before the test can proceed. The analyzer software shall select and display only the appropriate preconditioning procedure based on the vehicle make and model year information entered by the inspector.

If the vehicle is a 1975 or newer model, a message shall be displayed instructing the inspector to remove the exhaust probe and increase the engine RPM to 2500 (+300) and hold it there for 3 minutes. The analyzer shall detect a signal in the proper range for 3 minutes within a 3-minute and 30-second period. A message shall be displayed instructing the inspector to adjust the engine RPM, restart the test or abort the test as appropriate if the RPM is outside of the specified limits. The preconditioning period shall begin as soon as the engine RPM is stable (for a period of 1 second) and in the proper range. To avoid loading the sample system with vehicle exhaust during the preconditioning process, the analyzer shall either back purge during the preconditioning sequence or prevent preconditioning if the probe is in the tailpipe. Preconditioning prevention could be determined by checking for emissions prior to or during the preconditioning sequence.

(a) At the start of the preconditioning sequence, the inspector shall be prompted to remove the probe(s) from the tailpipe(s). The GAS shall monitor the probe to ensure the probe(s) has been removed.

Display Prompt:

REMOVE THE PROBE FROM THE TAILPIPE.

[Display TSI (2.1)]

1. Procedure #1:

For 1981-86, ford MOTOR COMPANY VEHICLES and 1984-85 Honda Preludes:

Display Prompt:

OPERATE THE VEHICLE AT 2500 +300 RPM FOR 3 MINUTES WITH THE TRANSMISSION IN "PARK" OR "NEUTRAL".

AT THE END OF THE 3-MINUTE PERIOD, ALLOW THE VEHICLE TO RETURN TO IDLE AND IMMEDIATELY TURN THE IGNITION OFF.

INSERT THE PROBE INTO THE TAIL PIPE.
LEAVE THE IGNITION OFF FOR 10 SECONDS THEN RESTART THE ENGINE AND PROCEED IMMEDIATELY WITH THE EMISSIONS TEST.
[Display TSI (2.2)]

2. Procedure #2:

For All Other 1975 and Newer Model Year Vehicles

Display Prompt:

OPERATE THE VEHICLE AT 2500 + 300 RPM FOR 3 MINUTES WITH THE TRANSMISSION IN "PARK" OR "NEUTRAL".

AT THE END OF THE 3-MINUTE PERIOD, ALLOW THE VEHICLE TO RETURN TO IDLE AND STABILIZE FOR 10 SECONDS, BUT DO NOT TURN THE IGNITION SWITCH OFF.

INSERT THE PROBE INTO THE TAILPIPE.

AT THE END OF THE 10 SECOND PERIOD, IMMEDIATELY BEGIN THE EMISSIONS TEST.

[Display TSI (2.3)]

3. Procedure #3:

For all 1984-87 BMWs with automatic, 1986- 92 Peugeots with automatic, and 1983-88 Volvos with automatic

If the vehicle fails the first chance test, display the following message:

Display Prompt:

DUE TO POSSIBLE TRANSMISSION DAMAGE, DO NOT RAISE THE ENGINE SPEED ABOVE IDLE RPM WHILE THE TRANSMISSION IS IN NEUTRAL OR PARK. IF THE VEHICLE NEEDS TO BE PRECONDITIONED, DRIVE IT UNTIL IT HAS REACHED OPERATING TEMPERATURE.

[Display TSI (2.4)]

The analyzer shall start the second chance test immediately after the vehicle has reached

operating TEMPERATURE and as soon as the GAS detects engine RPM within the idle RPM range. The GAS shall perform the emissions measurement at idle for 30 seconds. After the second chance, the GAS shall allow the inspector to continue with the remainder of the inspection.

The manufacturer shall provide for the capability to utilize as many different preconditioning procedures as can be contained in the analyzer. The preconditioning procedure number shall be documented on the test record.

Programming Criteria

NOTE: In the following two paragraphs, the 30-second period referred to below may be extended to 60 seconds, at the option of the manufacturer.

When the preconditioning period is complete, the inspector shall be instructed to allow the vehicle to return to idle and the analyzer shall ensure that the engine speed is reduced for at least 10 seconds, but no more than 30 (60) seconds. If the engine speed is reduced for less than 10 seconds or more than 30 (60) seconds, a message shall be displayed instructing the inspector to either restart the preconditioning sequence or abort the test. Messages indicating the appropriate ignition key on/off and retest instructions shall be displayed at the end of the 10-second idle period. The inspector shall be instructed to strike the "ENTER" key as soon as possible after 10 seconds of idling has occurred.

Following the 10 to 30 (or 60)-second idling period (terminated when the inspector strikes the "ENTER" key), the inspector shall be allowed an additional 30 (60) seconds maximum to perform the ignition key off/on sequence (if appropriate), insert the probe in the tailpipe and increase the engine RPM to 2500 +250. A message shall be displayed advising the operator of the allowable time remaining before the emissions test has to be initiated (indicated by the analyzer detecting the key off/on procedure, where appropriate, an engine RPM of 2500 +250 and meeting dilution requirements) or the preconditioning sequence shall be performed again or the test aborted.

The analyzer shall display the engine speed and the time remaining during each stage of the preconditioning sequence. The number of the preconditioning sequence shall be recorded on the test record automatically by the analyzer. If no preconditioning sequence was used (vehicle passed the emissions portion of the test the first time, was pre-75, or the test was aborted), this record should be filled with a zero.

Warning Messages:

NO RPM SIGNAL - MAKE SURE THE TACH LEAD IS CONNECTED
[Display TSI (2.5)]

ENGINE SPEED DROPPED BELOW 2200 RPM - RAISE THE ENGINE SPEED TO 2500 AND HOLD FOR 3 MINUTES
[Display TSI (2.6)]

ENGINE SPEED INCREASED ABOVE 2800 RPM - REDUCE ENGINE SPEED TO 2500 AND HOLD FOR 3 MINUTES
[Display TSI (2.7)]

PROBE IS IN THE TAILPIPE, REMOVE THE PROBE TO CONTINUE.
[Display TSI (2.8)]

Appendix - Fuel Cap Test Procedure

Fuel Cap Test Procedure

NOTE: After the GAS finishes the Fuel Cap Test Procedure the ESC function shall not be allowed. The inspector must complete the functional inspection by passing or failing the fuel cap(s) on the vehicle, or indicating the cap(s) is not testable (pass).

The Phase V program may request a second inspector identification prior to the fuel cap inspection based upon the value in the ID2 Required field of the PROGRAM file. A value of N {default} indicates no second ID is requested while a Y will require a second ID to be made as outlined in Appendix – ID2 Inspector Verification.

The GAS shall initiate a fuel cap testing procedure and guide the inspector through testing up to two fuel caps. Fuel caps on the designated testable fleet will undergo a pressure test unless the Fuel Cap Mandatory flag of the PROGRAM file is set to "N". The acceptable final test results for the fuel cap test entered into the test record shall be "P" for an initial pass "T" for caps that are tested again and passed, "F" for fail, "R" for replaced during the test and passed, "M" for missing and not replaced (fail), and "N" for Not-tested (pass). The fuel cap results for fuel cap #2 may be left blank which indicates there was no test of a second fuel cap. Phase V allows for bypassing the second fuel cap on passenger and station wagon vehicles. This is to shorten the inspection time for most inspections.

The GAS may prompt the inspector with the appropriate adapter based on the letter supplied in the FUEL CAP ADAPTER field of the VRT, or indicate that the fuel cap is untestable, but must indicate that the inspector should refer to the most recent fuel cap testing application chart. If the inspector does not find a match in the VRT, the GAS shall prompt the inspector to use the latest fuel cap adaptor application chart.

Fuel Adapter letters Based on Stant and Waekon color-coded adaptors currently are:

A = Dark Blue,
B = Yellow,
C = Red,
D = Brown
E = Green,
F = Black,
G = Gray,
H = Threaded,
J = Tan,
K = Purple,
L = Light Blue,
M = Cream,
N = unknown or no adapter required
O = Orange,
P = PINK
S = Light Green,
Z = Varies,
U = Untestable

NOTE: The state shall supply a FUEL_CAP file to reside on the GAS units. This file provides the color description based upon the letter found in the VRT. Alternately the GAS may have an updateable table that can be modified (added to) using a secure password.

The tester shall automatically pressurize or prompt the inspector to pressurize the fuel cap, and indicate when the test has commenced and when it has ended. The fuel cap tester shall indicate whether the fuel cap has passed or failed, and automatically enter the test result into the GAS record. The fuel cap tester shall allow the inspector to test caps that are attached or tethered to vehicles without having to remove the tether.

The GAS shall prompt the inspector to check for the presence of a Fuel Cap only, or check for the presence of a Fuel Cap and also perform a pressure test on that fuel cap depending on the Fuel Cap Test Mandatory flag. The GAS may display the following prompt(s):

Display Prompt:

PERFORM FUEL CAP INSPECTION,

IF THE FUEL CAP IS PRESENT PRESS <FY>,

IF FUEL CAP IS MISSING PRESS <FZ>.

[Display FC(0)]

Display Prompt:

REFER TO THE MOST RECENT FUEL CAP APPLICATION CHART AND PERFORM FUEL CAP INSPECTION Or,

IF NO FUEL CAP ADAPTOR IS AVAILABLE OR IF THE FUEL CAP IS NOT TESTABLE, PRESS <FY>,

IF FUEL CAP IS MISSING PRESS <FZ>.

PRESS "ENTER" TO PROCEED.

[Display FC(1)]

Display Prompt:

PASSED FUEL CAP TEST, PRESS, "ENTER" TO PROCEED.

[Display FC(2)]

Display Prompt:

FAILED FUEL CAP TEST!
PRESS <FY> TO RETEST THIS FUEL CAP.

DOES THE CUSTOMER WISH TO REPLACE THE CAP?
ENTER "Y" FOR YES OR "N" FOR NO.

[Display FC(3)]

Display Prompt:

INSERT NEW FUEL CAP IN ADAPTOR AND PRESS "ENTER" TO PROCEED.

[Display FC(4)]

Display Prompt:

REPLACEMENT FUEL CAP FAILED. DO YOU WANT TO RETEST?
ENTER "Y" OR "N".

[Display FC(5)]

Display Prompt:

DOES THE VEHICLE HAVE A SECOND FUEL CAP?

ENTER "Y" OR "N"

[Display FC(6)]

Appendix – New Final ASM Test Standards

New Final ASM Test Standards

The values in Appendix N, are parts per million for HC (columns 2-14), percent for CO (columns 15-28), and ppm for NO (columns 29-39). Column 1 contains vehicle test weights. There are no Light Duty Truck 2 (6000-8500 lbs GVWR) Revised Final Standards available using the new calculations at this time so the tables in Appendix EMISSOINS TABLES shall be used.

New "engine-based" final cut points are to be used for the Pass/Fail criteria for light duty vehicles and light duty trucks (GVWR less than 6000lbs) when the "PHASE-IN OVER" in the PROGRAM file is set to "Y" indicating EPD requires the GAS units to use final cut points versus the phase-in cut points. These new calculations were developed by the EPA to simplify the Pass/Fail calculation and move away from cumbersome and complicated reference tables used in previous software versions.

GEORGIA REVISED FINAL STANDARDS

The following exhaust emission standards are designed to achieve the emission reduction credits issued by EPA. The revised final standards are of the form depicted below:

Vehicle Engine Displacement (liters)* Avg Emission <= Revised Standard

Example: a 1989 light duty vehicle with a 4.3 Liter engine having measured HC emissions of 203ppm, NOx emissions of 356ppm, and CO emissions of 0.34% would have the following standards for the ASM25/25:

(4.3)(203)<=**500**, or 872.9<=**500** = FAIL
(4.3)(0.34)<=**1.6**, or 1.46<=**1.6** = PASS
(4.3)(356)<=**3500**, or 1531<=**3500** = PASS

Same readings for the ASM5015:
(4.3)(203)<=**275**, or 872.9<=**275** = FAIL
(4.3)(0.34)<=**1.1**, or 1.46<=**1.1** = FAIL
(4.3)(356)<=**3600**, or 1531<=**3600** = PASS

The units of the Revised Standard are (ppm*liter) for HC and NO, and (%*liter) for CO.

The Avg Emission is defined in Appendix ASM2 TESTING SEQUENCE AND TEST STANDARDS of this document and the vehicle shall pass the appropriate ASM test if the product of Engine Displacement and the respective Avg Emission is less than or equal to the Revised Standard for all three pollutants (CO, HC, NO).

NOTE 1: The only exception to the form described above is for the ASM2525 LDT1 HC standards. In this one case, the standards listed for HC below, are to be compared directly to the Avg HC readings as defined in Appendix ASM2 TESTING SEQUENCE AND TEST STANDARDS of this document. If the Avg HC measurement is LESS THAN the Revised Standard, the vehicle's HC emissions are to receive a passing grade. This deviation from the newly prescribed procedure is to be used ONLY for HC

ASM2525 LDT1 Revised Standards.

NOTE 2: There are no Light Duty Truck 2 (6000-8500 lbs GVWR) Revised Final Standards available using the new calculations at this time.

ASM2525 Light Duty Vehicles

Pollutant	MY	Revised Standard
HC	1980-1989	500
	1990+	300
CO	1980-1982	2.3
	1983+	1.6
NO	1980	4,750
	1981+	3,500

ASM5015 Light Duty Vehicles

Pollutant	MY	Revised Standard
HC	1980+	275
CO	1980-1982	1.3
	1983+	1.1
NO	1980	8,500
	1981+	3,600

ASM2525 LDT1 Light Duty Trucks (<6000 lbs GVWR)

Pollutant	MY	Revised Standard
HC (see Note1)	1980-1983	340
	1984-1995	160
	1996+	82
CO	1980-1983	23.28
	1984-1995	12.96
	1996+	4.4
NO	1980-1987	32,200
	1988-1995	16,800
	1996+	14,000

ASM5015 LDT1 Light Duty Trucks (<6000 lbs GVWR)

Pollutant	MY	Revised Standard
HC	1980-1983	1,140
	1984+1995	537
	1996+	275
CO	1980-1983	9.7
	1984-1995	5.4
	1996+	1.1
NO	1980-1987	14,145
	1988-1995	7,380
	1996+	6,150

For trucks with a GVWR of 6000lbs and higher the tables in Appendix EMISSOINS TABLES shall be used:

When field 5 of the PROGRAM file "Phase-In Over" bit is set to "Y" indicating that the above final cut-points are to be used the GAS shall populate the ESC field with all 9s eg: 99999.

Appendix – GAS Print Messages

The following text messages shall be updateable via the VID and are all subject to change as needed.

K(1) Emission Repair Form

Below is the text message that shall be printed as the header on the EMISSION REPAIR FORM. This header is to be printed between the heading "EMISSION REPAIR FORM" and the vehicle information block. See section 5.05.

In order to have your vehicle re-inspected (free or paid), this form MUST be completed and presented to the inspector. Under no circumstance is a vehicle to be re-inspected without a completed form. It is a violation for the inspector to re-inspect vehicles without a completed form.

VIR Message[RFM(1)]{VIRRFM01}

Before any repairs are paid for, you should make certain your mechanic will complete this form so you can receive your re-inspection.

For each paid inspection performed on your vehicle you are entitled to one FREE re-inspection, if you return to the same inspection station within 30 days. Note: The initial test date is day 1.

VIR Message[RFM(2)]{VIRRFM02}

EMISSION STATION OWNERS MUST RETAIN THIS COMPLETED FORM AND SUBMIT TO GCAF. VEHICLE OWNERS ARE TO RETAIN REPAIR RECEIPTS.

VIR Message[RFM(3){VIRRFM03}]

K(2) OBD VIR Messages

In an attempt to perform an On-Board Diagnostic (OBD) test on your vehicle's On-Board computer the INSPECTOR was not able to locate the Diagnostic Link Connector (DLC) for the OBD system. This vehicle must have the DLC available to conduct the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test, or your service professional.

OBD PRINT MESSAGE (10){OBDPMF10}

Your vehicle did not pass inspection because the on-board computer is "Not Ready" to determine the status of the pollution control systems on the vehicle. Drive your vehicle for 1-2 weeks under normal conditions, including some highway driving. You may also contact your vehicle manufacturer for detailed information regarding completing the "drive cycle" on your vehicle. **NO REPAIRS OR DIAGNOSTIC ANALYSIS MAY BE NEEDED AT THIS TIME**.

OBD PRINT MESSAGE (11){OBDPMF11}

Your vehicle did not pass inspection because the Malfunction Indicator Light (MIL) did not illuminate during the Key-On/Engine-Off (KOEO) portion of the test. The problem will need to be repaired prior to retest. If the vehicle's on-board computer is cleared or the battery disconnected during repairs, remember to drive the vehicle for 1-2 weeks under normal conditions, including some highway driving. This will allow the vehicle time to complete its drive cycle and become "Ready" for retest.

OBD PRINT MESSAGE (12){OBDPMF04}

Your vehicle did not pass inspection because the Diagnostic Link Connector (DLC) was found to be damaged or the on-board computer is NOT COMMUNICATING with the test system. The problem will

need to be repaired prior to retest. If the vehicle's on-board computer is cleared or the battery disconnected during repairs, remember to drive the vehicle for 1-2 weeks under normal conditions, including some highway driving. This will allow the vehicle time to complete its drive cycle and become "Ready" for retest.

OBD PRINT MESSAGE (13){OBDPMF13}

Your vehicle did not pass inspection because the Diagnostic Link Connector (DLC) was NOT ACCESSIBLE. Ask the inspector to show you the problem. The problem or obstruction will need to be corrected prior to retest. If the vehicle's on-board computer is cleared or the battery disconnected during repairs, remember to drive the vehicle for 1-2 weeks under normal conditions, including some highway driving. This will allow the vehicle time to complete its drive cycle and become "Ready" for retest.

OBD PRINT MESSAGE (14){OBDPMF14}

Your vehicle did not pass inspection because the on-board computer indicated there is a problem with the emission control system. The nature of the problem is indicated by the Diagnostic Trouble Codes listed below. The problem(s) will need to be repaired prior to retest. If the vehicle's on-board computer is cleared or the battery disconnected during repairs, drive the vehicle for 1-2 weeks under normal conditions, including some highway driving. This will allow the vehicle time to complete its drive cycle becoming "Ready" for retest.

OBD PRINT MESSAGE (15){OBDPMF15}

Your vehicle did not pass inspection because the Malfunction Indicator Light (MIL) was illuminated while the engine was running. This problem will need to be repaired prior to the retest in order to PASS.

OBD PRINT MESSAGE (16){OBDPMF16}

K(3) ASM VIR Messages

The Georgia Emission Test Program is helping to clean up Metro Atlanta's air - and you are doing your part. Motor vehicles are driven over 128 million miles each day in Metro Atlanta and are responsible for half of the pollutants in Metro Atlanta's air. Keeping your vehicle tuned up and in good running condition is the most important thing you can do to keep our air clean and protect the health of all our citizens.

VIR PRINT MESSAGE (1){VIRPMA01}

Your vehicle failed the inspection. Repairs are needed to reduce emissions. You MUST present a completed repair form and this report to obtain a free re-inspection within 30 days.

VIR PRINT MESSAGE (2){VIRPMF02}

Read the "Failed Vehicle" section of the Q/A pamphlet for information on repairs and possible warranty coverage for your vehicle.

VIR PRINT MESSAGE (3){VIRPMF03}

This test was aborted due to code. xx*
The inspection was not completed for the reason listed below.
Reason:_____
Present this report when a new test is performed.
* xx indicates ABORT CODE, except ABORT 50

VIR PRINT MESSAGE (4){VIRPMF04}

Review the REPAIR WATCH PUBLIC REPORT at the inspection station or on line at http://www.cleanairforce.com/docs/REPAIR_WATCH_PUBLIC_REPORT.pdf.

VIR PRINT MESSAGE (5){VIRPMF05}

THIS VEHICLE IS BEING BLOCKED FROM FURTHER TESTING. PROVIDE THE OWNER WITH THIS PRINTOUT AND HAVE THEM CONTACT EPD ENFORCEMENT AT (800) 449-2471.

Appendix ASM –Emissions Tables

Column	2	3	4	5	6	7	8	9	10	11	12	13	14
ETW	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC
1750	136	216	249	282	315	364	381	397	447	694	761	828	1098
1875	129	205	236	266	297	344	359	375	421	653	717	780	1034
2000	123	194	223	252	281	325	339	354	398	616	676	736	975
2125	116	184	212	239	267	308	321	335	376	582	638	695	921
2250	111	175	201	227	253	292	305	318	357	551	604	658	872
2375	106	167	192	216	241	277	290	302	339	522	573	624	827
2500	101	160	183	206	230	264	276	288	322	496	544	593	786
2625	97	153	175	197	219	252	263	274	307	472	518	564	748
2750	93	147	168	189	210	241	252	262	294	451	495	539	714
2875	89	141	161	181	201	231	241	251	281	431	473	515	683
3000	86	136	155	174	194	222	232	241	270	413	453	493	654
3125	83	132	150	168	186	214	223	232	260	397	435	474	628
3250	80	127	145	162	180	206	215	224	250	382	419	456	604
3375	78	123	140	157	174	199	208	216	241	368	404	440	583
3500	76	120	136	152	169	193	201	209	234	355	390	424	563
3625	74	117	132	148	164	187	195	203	226	344	377	411	544
3750	72	114	129	144	159	182	189	197	220	333	365	398	527
3875	70	111	125	140	155	177	184	191	213	323	355	386	512
4000	68	108	122	137	151	172	179	186	208	314	345	375	497
4125	67	106	119	133	147	168	175	181	202	305	335	365	484
4250	65	103	117	130	143	164	170	177	197	297	326	355	471
4375	64	101	114	127	140	160	166	173	192	290	318	346	459
4500	63	99	112	124	137	156	162	169	188	282	310	337	447
4625	61	97	109	122	134	152	159	165	183	275	302	329	436
4750	60	95	107	119	131	149	155	161	179	269	295	321	425
4875	59	93	105	117	128	146	152	157	175	262	288	313	415
5000	58	92	103	114	126	143	148	154	171	256	281	305	405
5125	57	90	101	112	123	139	145	150	167	250	274	298	395
5250	56	88	99	110	120	136	142	147	163	244	267	291	386
5375	55	86	97	107	118	133	139	144	159	238	261	284	376
5500	54	85	95	105	115	130	136	141	156	232	255	277	367
5625	53	83	93	103	113	128	133	138	152	226	248	271	359
5750	52	82	91	101	111	125	130	135	149	221	243	264	350
5875	51	80	90	99	108	122	127	132	146	216	237	258	342
6000	50	79	88	97	106	120	124	129	143	211	232	252	334
6125	49	78	86	95	104	118	122	126	140	206	227	247	327
6250	48	76	85	94	102	115	120	124	137	202	222	242	320
6375	48	75	84	92	101	113	118	122	135	198	218	237	314
6500	47	74	83	91	99	112	116	120	133	195	214	233	309
6625	46	74	82	90	98	110	114	119	131	192	211	230	304
6750	46	73	81	89	97	109	113	117	129	190	209	227	301
6875	46	73	81	89	97	109	113	117	129	189	207	225	299
7000	46	72	80	88	96	108	112	116	128	188	207	225	298
7125	46	72	80	88	96	108	112	116	128	188	206	225	298
7250	46	72	80	88	96	108	112	116	128	188	206	225	298
7375	46	72	80	88	96	108	112	116	128	188	206	225	298
7500	46	72	80	88	96	108	112	116	128	188	206	225	298

Column	15	16	17	18	19	20	21	22	23	24	25	26	27	28
ETW	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
1750	0.77	1.22	1.83	2.43	2.73	3.64	3.94	4.24	4.85	5.45	6.06	7.26	7.44	9.90
1875	0.73	1.16	1.72	2.29	2.58	3.43	3.71	4.00	4.57	5.14	5.70	6.84	7.05	9.90
2000	0.69	1.09	1.63	2.17	2.43	3.24	3.51	3.77	4.31	4.85	5.38	6.45	6.68	9.90
2125	0.66	1.04	1.54	2.05	2.30	3.06	3.32	3.57	4.08	4.58	5.09	6.10	6.34	9.66
2250	0.62	0.99	1.47	1.94	2.18	2.90	3.14	3.38	3.86	4.34	4.82	5.78	6.00	9.14
2375	0.59	0.94	1.39	1.85	2.07	2.76	2.98	3.21	3.66	4.12	4.57	5.48	5.69	8.67
2500	0.57	0.90	1.33	1.76	1.97	2.62	2.84	3.05	3.48	3.91	4.35	5.21	5.41	8.25
2625	0.54	0.86	1.27	1.68	1.88	2.50	2.70	2.91	3.32	3.73	4.14	4.96	5.15	7.85
2750	0.52	0.82	1.21	1.60	1.80	2.39	2.58	2.78	3.17	3.56	3.95	4.73	4.92	7.50
2875	0.50	0.79	1.16	1.54	1.72	2.29	2.47	2.66	3.03	3.41	3.78	4.53	4.70	7.17
3000	0.48	0.76	1.12	1.48	1.66	2.19	2.37	2.55	2.91	3.27	3.62	4.34	4.51	6.87
3125	0.46	0.73	1.08	1.42	1.59	2.11	2.28	2.45	2.79	3.14	3.48	4.17	4.33	6.60
3250	0.45	0.71	1.04	1.37	1.53	2.03	2.20	2.36	2.69	3.02	3.35	4.01	4.17	6.35
3375	0.43	0.69	1.00	1.32	1.48	1.96	2.12	2.28	2.60	2.91	3.23	3.87	4.02	6.13
3500	0.42	0.67	0.97	1.28	1.43	1.89	2.05	2.20	2.51	2.82	3.12	3.74	3.88	5.92
3625	0.41	0.65	0.94	1.24	1.39	1.84	1.98	2.13	2.43	2.73	3.02	3.62	3.76	5.73
3750	0.40	0.63	0.92	1.20	1.35	1.78	1.92	2.07	2.36	2.64	2.93	3.51	3.64	5.55
3875	0.39	0.61	0.89	1.17	1.31	1.73	1.87	2.01	2.29	2.57	2.85	3.40	3.54	5.39
4000	0.38	0.60	0.87	1.14	1.28	1.68	1.82	1.95	2.22	2.49	2.77	3.31	3.44	5.24
4125	0.37	0.58	0.85	1.11	1.24	1.64	1.77	1.9	2.16	2.43	2.69	3.22	3.34	5.09
4250	0.36	0.57	0.83	1.08	1.21	1.60	1.72	1.85	2.11	2.36	2.62	3.13	3.25	4.96
4375	0.35	0.56	0.81	1.06	1.18	1.56	1.68	1.81	2.06	2.31	2.55	3.05	3.17	4.83
4500	0.35	0.55	0.79	1.03	1.16	1.52	1.64	1.76	2.01	2.25	2.49	2.98	3.09	4.71
4625	0.34	0.54	0.77	1.01	1.13	1.48	1.60	1.72	1.96	2.19	2.43	2.90	3.02	4.60
4750	0.33	0.53	0.76	0.99	1.10	1.45	1.57	1.68	1.91	2.14	2.37	2.83	2.95	4.49
4875	0.33	0.52	0.74	0.97	1.08	1.42	1.53	1.64	1.87	2.09	2.32	2.77	2.87	4.38
5000	0.32	0.51	0.73	0.95	1.05	1.38	1.49	1.60	1.82	2.04	2.26	2.70	2.81	4.28
5125	0.31	0.50	0.71	0.92	1.03	1.35	1.46	1.57	1.78	2.00	2.21	2.64	2.74	4.18
5250	0.31	0.49	0.70	0.90	1.01	1.32	1.43	1.53	1.74	1.95	2.16	2.58	2.68	4.08
5375	0.30	0.48	0.68	0.89	0.99	1.29	1.39	1.50	1.70	1.90	2.11	2.51	2.61	3.98
5500	0.30	0.47	0.67	0.87	0.97	1.26	1.36	1.46	1.66	1.86	2.06	2.46	2.55	3.89
5625	0.29	0.46	0.65	0.85	0.94	1.24	1.33	1.43	1.62	1.82	2.01	2.40	2.49	3.80
5750	0.29	0.45	0.64	0.83	0.92	1.21	1.30	1.40	1.59	1.78	1.96	2.34	2.43	3.71
5875	0.28	0.44	0.63	0.81	0.91	1.18	1.27	1.37	1.55	1.74	1.92	2.29	2.38	3.62
6000	0.28	0.44	0.62	0.80	0.89	1.16	1.25	1.34	1.52	1.70	1.88	2.24	2.33	3.54
6125	0.27	0.43	0.61	0.78	0.87	1.13	1.22	1.31	1.49	1.66	1.84	2.19	2.28	3.47
6250	0.27	0.42	0.60	0.77	0.85	1.11	1.20	1.28	1.46	1.63	1.80	2.15	2.23	3.40
6375	0.26	0.42	0.59	0.76	0.84	1.09	1.18	1.26	1.43	1.60	1.77	2.11	2.19	3.34
6500	0.26	0.41	0.58	0.74	0.83	1.08	1.16	1.24	1.41	1.57	1.74	2.07	2.15	3.28
6625	0.26	0.41	0.57	0.73	0.82	1.06	1.14	1.23	1.39	1.55	1.72	2.04	2.12	3.23
6750	0.26	0.41	0.57	0.73	0.81	1.05	1.13	1.21	1.37	1.54	1.70	2.02	2.10	3.20
6875	0.25	0.40	0.56	0.72	0.80	1.04	1.12	1.20	1.36	1.52	1.68	2.00	2.08	3.17
7000	0.25	0.40	0.56	0.72	0.80	1.04	1.12	1.20	1.36	1.52	1.68	2.00	2.08	3.17
7125	0.25	0.40	0.56	0.72	0.80	1.04	1.12	1.20	1.36	1.52	1.68	2.00	2.08	3.17
7250	0.25	0.40	0.56	0.72	0.80	1.04	1.12	1.20	1.36	1.52	1.68	2.00	2.08	3.17
7375	0.25	0.40	0.56	0.72	0.80	1.04	1.12	1.20	1.36	1.52	1.68	2.00	2.08	3.17
7500	0.25	0.40	0.56	0.72	0.80	1.04	1.12	1.20	1.36	1.52	1.68	2.00	2.08	3.17

Column	29	30	31	32	33	34	35	36	37	38	39
ETW	Nox	Nox	Nox	Nox	Nox	Nox	Nox	Nox	Nox	Nox	Nox
1750	1095	1642	2114	2587	3060	3532	4005	4950	4960	4980	4990
1875	1031	1547	1991	2435	2879	3323	3767	4655	4738	4906	4990
2000	973	1460	1877	2295	2713	3131	3548	4384	4535	4838	4990
2125	920	1380	1774	2167	2561	2955	3348	4136	4349	4776	4990
2250	871	1307	1678	2050	2422	2794	3165	3909	4179	4720	4990
2375	827	1240	1592	1943	2295	2646	2998	3701	4024	4668	4990
2500	786	1179	1512	1845	2179	2512	2845	3512	3881	4620	4990
2625	749	1123	1440	1756	2073	2389	2706	3339	3752	4577	4990
2750	715	1072	1374	1675	1976	2277	2579	3181	3579	4374	4772
2875	684	1026	1313	1601	1888	2175	2463	3037	3417	4176	4556
3000	656	984	1258	1533	1808	2082	2357	2906	3270	3996	4359
3125	630	945	1208	1471	1734	1997	2260	2787	3135	3832	4180
3250	607	910	1163	1415	1667	1920	2172	2677	3012	3681	4016
3375	585	878	1121	1363	1606	1849	2092	2577	2899	3544	3866
3500	566	848	1082	1316	1550	1784	2018	2486	2796	3418	3728
3625	547	821	1047	1273	1498	1724	1950	2401	2701	3302	3602
3750	531	796	1014	1233	1451	1669	1887	2323	2614	3195	3485
3875	515	773	984	1195	1407	1618	1829	2251	2533	3096	3377
4000	501	751	956	1161	1365	1570	1775	2184	2457	3003	3276
4125	487	731	930	1128	1327	1526	1724	2122	2387	2917	3182
4250	475	712	905	1098	1291	1484	1677	2063	2320	2836	3094
4375	463	694	882	1069	1257	1444	1632	2007	2258	2759	3010
4500	451	677	859	1042	1224	1406	1589	1953	2198	2686	2930
4625	440	661	838	1015	1193	1370	1548	1903	2140	2616	2854
4750	430	645	818	990	1163	1336	1508	1854	2085	2549	2780
4875	420	630	798	966	1134	1302	1470	1806	2032	2483	2709
5000	410	615	778	942	1106	1269	1433	1760	1980	2420	2640
5125	400	600	760	919	1078	1237	1397	1715	1930	2359	2573
5250	391	586	741	896	1051	1206	1362	1672	1881	2298	2507
5375	382	573	723	874	1025	1176	1327	1629	1833	2240	2443
5500	373	559	706	853	1000	1147	1294	1587	1786	2183	2381
5625	364	546	689	832	975	1118	1261	1547	1740	2127	2321
5750	356	534	673	812	951	1090	1230	1508	1697	2074	2262
5875	348	522	657	793	928	1064	1199	1471	1654	2022	2206
6000	340	510	642	774	906	1039	1171	1435	1614	1973	2152
6125	333	499	628	757	886	1015	1144	1401	1577	1927	2102
6250	326	489	615	741	867	993	1119	1371	1542	1884	2056
6375	320	480	604	727	850	973	1096	1343	1510	1846	2014
6500	315	473	593	714	835	956	1077	1318	1483	1813	1977
6625	311	466	585	704	823	941	1060	1298	1460	1785	1947
6750	307	461	578	696	813	931	1048	1283	1443	1764	1924
6875	305	458	574	691	807	924	1040	1273	1432	1750	1909
7000	305	457	573	689	805	921	1037	1269	1428	1745	1904
7125	305	457	573	689	805	921	1037	1269	1428	1745	1904
7250	305	457	573	689	805	921	1037	1269	1428	1745	1904
7375	305	457	573	689	805	921	1037	1269	1428	1745	1904
7500	305	457	573	689	805	921	1037	1269	1428	1745	1904

Appendix– OBD Message Hierarchy

OBD Message Hierarchy.

For the FAILING OBD VIR the chart below indicates which message to print given different PASS/FAIL scenarios.

OBD II Test Results					Message to Print
KOEO	KOER	Readiness	MIL Command	Connector	
P	P	P	P	P	Pass
F	P	P	P	P	KOEO MIL Bulb
P	F	P	P	P	KOER MIL Bulb
F	F	P	P	P	BOTH MIL messages
P	P	1	1	F	Appropriate Connector Message
F	F	1	1	F	
P	P	F	P	P	Readiness
F	F	F	P	P	
P	P	P	F	P	MIL Command Status
F	F	F	F	P	

Note1: If the inspector cannot find the connector, or the connector is damaged, or there is no communication between the GAS and the OBD system, the only message that needs to be printed is the appropriate connector/connection message. The appropriate message will depend upon the letter stored in the DLC TEST RESULT field of the GAS record. Since no communication was established, no other OBD systems could be evaluated.

Table of OBD Failure Results and Messages				Mandatory OBD Testing
	FIELD 117	Reason		
Appropriate Connector Message	C	Can't Find Connector		OBDPMF10
	D	Damaged Connector		OBDPMF13
	I	Inaccessible Connector		OBDPMF14
	N	No OBD Signal		OBDPMF13
Readiness		Too Few Monitors Ready		OBDPMF11
Mil Commanded Status		MIL Commanded On		OBDPMF15
MIL Bulb		MIL Bulb Failure		OBDPMF12, OBDPMF16

Appendix Biometric Enrollment/Use

Biometric Enrollment/Use

Inspectors shall be able to be enrolled during training, an audit visit, a visit by EPD, or an FSR. The TECH file will be able to store the biometric templates for the inspector. The VID shall be able to transmit to the GAS the new inspector file for use by the GAS. During the enrollment process the GAS unit shall:

The GAS shall display a screen allowing the enroller to select an individuals listed in the GAS. The listing shall show the first name and last name of individuals residing on the unit:

DISPLAY PROMPT:

SELECT THE INDIVIDUAL TO BE ENROLLED FROM THE LIST

PRESS <FX> TO CONTINUE OR <FZ> TO RETURN TO THE PREVIOUS PAGE OR ESC TO CANCEL AND RETURN TO THE MAIN PAGE.

[Display P(1)]

If the enroller presses the ESC key the GAS shall return to the MAIN MENU, or

If the enroller presses the <Fz> key the GAS shall return to the previous screen, or

If the enroller presses the <Fx> key the GAS shall begin the biometric enrollment process. The enrolment process shall capture two biometric IDs from the selected inspector.

Appendix – Access Code Tracking

Access Code Tracking

Phase V requires that any time a secure area of software is accessed that a record of who did the access, and when the access was made is created.

Appendix RTSI Testing Sequence

RTSI Testing Sequence

The GAS shall perform a Random Two Speed Idle RTSI test following the OBD data collection depending on the status of the RTSI in the PROGRAM file.

The following RTSI test sequences shall be used by the GAS to test newer vehicles that have been selected by the GAS to receive a Random TSI test (RTSI).

At the end of the “high” RPM mode the inspector shall be prompted to reduce the engine RPM to normal idle. Once the RTSI readings have completed the GAS shall proceed to the next Section.

The GAS shall display the following prompt(s) to inform the inspector that a tailpipe test is about to be done on the vehicle being tested.

Display Prompt:

THIS VEHICLE HAS BEEN SELECTED TO RECEIVE A TAILPIPE TEST.

DO NOT ABORT THIS TEST,

THE TAILPIPE TEST THAT IS ABOUT TO BE RUN IS A CRITICAL PART OF THIS TESTING SEQUENCE.

Press <F 3> to Continue.

[DISPLAY OBD (91)]

If the RANDOM Tailpipe test (RTSI) is aborted by the inspector by pressing the escape (ESC) key, the following message shall be displayed.

DISPLAY PROMPT

YOU HAVE CHOSEN TO ABORT THE RANDOM TSI TESTING SEQUENCE.

THIS DECISION WILL BE STORED IN THE TEST .

ARE YOU SURE? THIS MAY PROMPT AN ENFORCEMENT ACTION

PRESS <F 3> TO PERFORM THE RTSI TEST, OR

PRESS <F 5> TO ABORT

[DISPLAY OBD (92)]

The GAS shall provide the following prompt for the first stage of the RTSI test:

Display Prompt:

INCREASE THE ENGINE SPEED ABOVE 1,800 RPM

DO NOT EXCEED 3,000 RPM

HOLD FOR 15 SECONDS

[Display RTSI(1)]

At the end of 15 seconds the following message shall be displayed;

The GAS shall provide the following prompt for the second stage of the RTSI test:
Display Prompt:

ALLOW THE ENGINE TO IDLE

HOLD FOR 15 SECONDS

[Display RTSI(2)]

At the end of the RTSI sequence, the inspector shall be prompted to remove the probe(s) from the tailpipe(s).
Display Prompt:

REMOVE THE PROBE FROM THE TAILPIPE.

[Display TSI (2.1)]

Once the gas readings are low enough to ensure the probe has been removed the GAS shall proceed to Appendix OBD (10) K.O.E.R Bulb Check 2.

The GAS may display one of the following warning messages:
Display Prompts:

SAMPLE DILUTION EXCEEDED

[Display TSI(1.9)]

RPM LIMITS EXCEEDED

[Display TSI(1.10)]

LOW FLOW RATE LIMITS EXCEEDED

[Display TSI(1.11)]

Appendix ID2 Inspector Verification

ID2 Inspector Verification

The GAS shall verify the identity of the inspector prior to entering the Functional fuel cap inspection based upon PROGRAM file.

The GAS shall prompt the inspector to use the biometric device for identification
Display Prompt:

To USE THE BIOMETRIC DEVICE TO BEGIN
THE INSPECTION Press F1

To USE YOU PIN TO BEGIN THE INSPECTION PRESS F3

OR PRESS ESC TO ABORT.

[Display 3.10(8)]

If the biometric device does not recognize the inspector, the following message will be displayed:
Display Prompt:

BIOMETRIC RECOGNITION IS NOT SUCCESSFUL

PRESS <FX> TO TRY AGAIN OR
PRESS ESC TO EXIT

[Display 3.10(9)]

The GAS shall require the inspector to manually input his or her personal access code by using the keyboard;
Display Prompt:

ENTER YOUR ACCESS CODE.

[Display 3.10(6)]

If the entered inspector's access code does not MATCH the following message will be displayed:
Display Prompt:

THE ID IS NOT IN THE GAS OR IS NOT RECOGNIZED.
CONTACT THE HELP LINE. (1-800-449-2471)
PRESS <FX> TO TRY AGAIN,
PRESS ESC TO EXIT

[Display 3.10(7)]

If ESC is pressed, the GAS shall display the following message:
Display Prompt

INSPECTOR VERIFICATION FAILED

THIS INSPECTION WILL NOW TERMINATE AND USE A CERT

[DISPLAY ID2 (3)]

The GAS may display the following message:
Display Prompt**:**

YOU ARE NOT AUTHORIZED TO USE A PIN.
YOU MUST USE THE BIOMETRIC DEVICE.
PRESS ANY KEY TO CONTINUE

[Display 3.10(12)]

If the biometric identification is successful or the entered access code is valid the GAS shall display the identified name and allow the inspector to proceed to the next section.
Display Prompt:

{first name last name} HAS BEEN IDENTIFIED.
PRESS <Fx> TO PROCEED,
PRESS ESC TO EXIT

[Display 3.10(11)]

The GAS may require the inspector to scan his/her inspector ID

Display Prompt:

SCAN THE BARCODE ON YOUR ID BADGE TO BEGIN THE INSPECTION.

[Display 3.10(2)]

If an inspector scans an ID that is not in the GAS, the GAS shall display the following message:
Display Prompt:

THE INSPECTOR LICENSE NUMBER IS NOT IN THE GAS.
CONTACT THE HELP LINE. (1-800-449-2471)

[Display 3.10(3)]

If the inspector's license has expired, the GAS shall prohibit the inspector from performing a Georgia Emission Test inspection. The GAS shall not allow performing the inspection and the GAS shall display the following warning message:
Display Prompt:

THE INSPECTOR LICENSE HAS EXPIRED.
YOU CANNOT PERFORM A GEORGIA EMISSION TEST.
CONTACT THE HELP LINE (1-800-449 2471)
PRESS ESC TO ABORT

[Display 3.10(4)]

If the inspector's license has been revoked or suspended, the GAS shall prohibit the inspector from performing a Georgia Emission Test inspection. The GAS shall display the following warning message:
Display Prompt:

THE INSPECTOR LICENSE NUMBER HAS BEEN SUSPENDED OR REVOKED.
YOU CANNOT PERFORM A GEORGIA EMISSION TEST.
CONTACT THE HELP LINE. (1-800-449-2471)
PRESS ESC TO ABORT

[Display 3.10(5)]

The GAS shall proceed to perform the functional fuel cap inspection procedure as found in Section 3.30.