THE NEVADA CLEAN AIR BULLETIN

A NEVADA I/M PROGRAM INFORMATIONAL NEWSLETTER

State of Nevada Department of Motor Vehicles

Compliance Enforcement Division Emission Control Program



555 Wright Way Carson City, NV. 89711

VEHICLE INFORMATION DATABASE (VID) UPDATE

Testing of the new DMV Vehicle Information Database is being conducted at the Emission Control Test Labs in Reno and Las Vegas. A number of emission stations in Reno are beta testing the new system. Beta testing of the system at emission stations in the Las Vegas area will begin in the very near future.

A summary of the new Web Portal and changes to the emission testing procedure can be found in this newsletter.

We will keep you informed on how Beta testing at emission stations progresses.

2007 LEGISLATIVE SESSION

Two new bills passed during the 2007 Legislative Session and have been signed into law:

Senate Bill 161: Exempts hybrid vehicles until the model year of the vehicle is 6 year old. This bill becomes effective 10/1/2007.

Assembly Bill 321: Exempts "Replica Vehicles" from emission testing. One hundred "Replica Vehicles" may be registered each year by the Department. This bill became effective 07/01/2007.

The language of the above bills is in this newsletter.

For bill history please visit:

http://leg.state.nv.us/74th/Reports/history.cfm?ID=413 (S.B. 161) http://leg.state.nv.us/74th/Reports/history.cfm?ID=702 (A.B. 321)

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. (Deleted by amendment.)

- **Sec. 2.** NRS 445B.825 is hereby amended to read as follows:
- 445B.825 1. The Commission may provide for exemption from the provisions of NRS 445B.770 to 445B.815, inclusive, of designated classes of motor vehicles, including, *without limitation*, classes based upon the year of manufacture of motor vehicles.
- 2. A hybrid electric vehicle, as defined in 40 C.F.R. § 86.1702-99, is exempt from the provisions of NRS 445B.770 to 445B.815, inclusive, until the model year of the vehicle is 6 years old.
- 3. The Commission shall provide for a waiver from the provisions of NRS 445B.770 to 445B.815, inclusive, if compliance involves repair and equipment costs which exceed the limits established by the Commission. The Commission shall establish the limits in a manner which avoids unnecessary financial hardship to motor vehicle owners.
 - Sec. 3. (Deleted by amendment.)

Assembly Bill No. 321

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

- **Section 1.** Chapter 482 of NRS is hereby amended by adding thereto a new section to read as follows:
- 1. The Department may not issue a certificate of registration for more than 100 replica vehicles each year. The fact that the vehicle is to be registered as a replica vehicle must be stated in the application for registration.
- 2. For purposes of this section, "replica vehicle" has the meaning ascribed to it in NRS 445B.759.
 - **Sec. 2.** NRS 445B.759 is hereby amended to read as follows:
- 445B.759 1. The provisions of NRS 445B.700 to 445B.845, inclusive, do not apply to [military]:
 - (a) Military tactical vehicles [.]; or
 - (b) Replica vehicles.
 - 2. As used in this section [, "military tactical vehicle"]:
 - (a) "Military tactical vehicle" means a motor vehicle that is:
- [(a)] (1) Owned or controlled by the United States Department of Defense or by a branch of the Armed Forces of the United States; and
- [(b)] (2) Used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.
 - (b) "Replica vehicle" means any passenger car or light-duty motor vehicle which:
- (1) Has a body manufactured after 1968 which is made to resemble a vehicle of a model manufactured before 1968;
- (2) Has been altered from the original design of the manufacturer or has a body constructed from materials which are not original to the vehicle;

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- (3) Is maintained solely for occasional transportation, including exhibitions, club activities, parades, tours or other similar uses; and
 - (4) Is not used for daily transportation.

The term does not include a vehicle which has been restored to its original design by replacing parts.

Sec. 3. This act becomes effective on July 1, 2007.

TRAINING FOR CHANGE

By Kevin S. McCartney Edited for Nevada by Hal Greene

Shops that wait until obvious problems force them to change are always overlooking real profit potential. They are easy to spot. They are the shops that are losing business to both dealerships and independent shops. You often hear them saying "I haven't had any problems" whenever confronted with questions about:

- Oxygen sensor diagnosis & replacement.
- Catalytic converter diagnosis & replacement.
- The way emission testing is performed.
- The training that is available.
- New car warranty requirements.
- The oil products they use.

Dealerships and independent shops both need to seek a variety of training. Manufacturers training programs and other sources of vehicle specific training are rarely enough for emission repair technicians. Generic training that addresses theory of operation and the differences between car lines is often required. Important points like dilution correction and the difference between dual element and single element current managed sensing are not covered by manufacturers training programs.

The current trend of dealerships gaining market share is a symptom of decreased consumer confidence. When consumers become concerned about the competence of automotive service providers, they tend to avoid needed services. Less service means less profit for the service industry. It also reduces vehicle reliability and durability. And it increases air pollution. There are several very important areas of training that many shops and technicians are overlooking. In many cases, they falsely assume that they already know "enough" training in these areas. I've identified the following training topics as special needs for most shops.

WIDE BAND OXYGEN SENSORS

Some wide band oxygen sensors look very much like standard oxygen sensors. This new generation of sensors requires special training to understand. Some are dual element current managed sensors. Others are single element current managed sensors. If you don't understand the difference, you may have already fallen behind the best shops. Understanding this new generation of oxygen sensors will also dramatically improve your understanding of MAF sensors. When you break them down to a very basic level, they operate the same.

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CONVENTIONAL ZERCONIUM AND TITANIUM OXYGEN SENSORS

An increasing number of new cars operate under a very wide range of air/fuel mixtures. Many use a biased fuel control strategy along with what appears to be a standard zirconium dioxide oxygen sensor. But, replacing these sensors with a universal sensor will often change the air/fuel mixture. Technicians need to understand how biased fuel control allows non-stoichiometric mixture ratios during closed loop and open loop operation. You also need to understand how titanium dioxide sensors work in both "pull-up" and "pull-down" circuits. Again, this will also improve your understanding of other sensing circuits.

CATALYTIC CONVERTERS

OEM catalyst reduction efficiency has increased over the years. It can now be 99% or better. At least one OEM claims that 99.3% reduction efficiency is their MINIMUM standard. But, EPA approval still only requires 30% reduction efficiency for aftermarket replacement catalysts.

Anyone who fails to understand the difference between CARB approval and CARB certification will be easily confused by the claims made in catalytic converter catalogs and application guides. Aftermarket catalytic converters can often provide very acceptable results. But, extra training is often required to sort out the claims and select a catalytic converter that will pass state emission tailpipe tests and OBDII tests for any given application.

Lean air/fuel mixtures require different catalytic converters. This is a huge problem for wide band fuel control systems. Some newer cars have improved catalytic converters with increased ability to reduce emissions under lean conditions. EPA and CARB approval do not address the increased efficiency requirements of these cars.

DILUTION CORRECTION

State emission inspection programs use a dilution correction factor (DCF) calculation to adjust for air injection and other sources of exhaust dilution. The DCF is not printed on vehicle inspection reports, but it is used to adjust the reported CO, HC and NOx values. Most technicians assume that the reported values are the actual measured values. This misunderstanding occasionally causes significant diagnostic difficulties.

Gasoline Direct Injection (GDI) and wide band fuel control can dramatically increase the negative impact of DCF on diagnosis. Understand DCF and how it affects diagnosis, emission testing and lambda calculations have always been important for the best efficiency and accuracy. But it is suddenly essential for a rapidly growing number of cars!

MAINTENANCE SERVICES & NEW CAR WARRANTY REQUIREMENTS

Replacing the catalytic converters on some newer cars can cost as much as \$6,000. The new generation of current managed wide band oxygen sensors are also incredibly expensive.

Modern cars have increasingly specialized maintenance requirements to insure proper operation and protection of:

- Variable Valve Timing (VVT)
- Cylinder deactivation
- Variable Displacement
- Catalytic Converters
- Oxygen sensors
- Fuel Injection Hydraulics

The new generation of automatic transmission fluids and hybrid coolants are forcing technicians and shop owners to acknowledge that universal transmission fluids and coolants are a thing of the past. But, many still fail to acknowledge the many special engine lubrication needs of newer cars. All of the following oil service ratings indicate special oil requirements of modern automobiles.

- GM 6094M, 4718M, LL-A-025, LL-B-025
- VW 502, 503, 503.01, 505, 505.01
- BMW LL-98, LL-01, LL-04
- MB 229.1, 229.3, 229.31, 229.5, 229.51
- ACEA A1/B1, A3/B3, A3/B4, C1, C2, C3
- Honda HTO-06

This has become far more complicated than Automatic transmission fluid or coolant. If you think you understand how to select oil that meets OEM warranty requirements, consider this: A GM 6094M approved SAE 5W-30 is required to be thinner than other SAE 5W-30 products. And an ACEA A3/B3 approved SAE 5W-30 is required to be thicker at 150° C than an SAE 10W-40 is required to be.

ILSAC GF-4 approval indicates that an oil product has appropriate sulfur, sulfated ash and phosphorous levels to allow longer catalytic converter and oxygen sensor life. But, ILSAG GF-4 approval does not always insure adequate engine protection.

Consumers increasingly believe that they must have their oil changes performed by the OEM dealership to maintain their warranty coverage. If you don't understand the above listed oil service ratings, you won't be able to insure meeting their warranty obligations. And, even some OEM dealerships fail to use oil that meets OEM requirements.

Technicians and shop owners need to recognize the following:

- Changes in engine design have dramatically changed lubrication requirements
- Changes in emission systems and emissions warranties have dramatically changed lubrication requirements.
- Typical SAE 5W-30 oil fails to meet the minimum requirements of many cars that require SAE 5W-30 oil.
- Repeat camshaft failure is a rapidly growing problem.
- Extreme sludge related damage still occurs with 3,000 mile oil changes when OEM oil requirements are ignored.
- The correct oil changed at 7,500 miles can protect many engines better than ANY conventional oil changed at 3,000 miles.
- API and ILSAC approval is NOT enough to protect many new engines.

Most technicians and shop owners will find that they need update training to understand recent changes in lubrication systems, transmission fluids, engine oil and cooling.

FUEL, FUEL PUMPS, FUEL DELIVERY & EVAP

Evaporative emission systems are among the most common OBDII monitor failures. Vehicle

manufacturers have rapidly transitioned to a variety of OBDII EVAP monitoring strategies that technicians must understand. Some of the changes made to the fuel delivery system to enhance EVAP monitor reliability, have decreased fuel pump reliability.

Fuel pump failures and repeat fuel pump failures are increasing rapidly. Most repeat failures are preventable. Pumps and pump control circuits have changed significantly. The new systems are less forgiving and the learning curve is simply lagging behind. Update training that addresses new electrical testing procedures, electrical repair procedures and fuel system contamination are recommended.

OBDII Mode 6, Computer Area Networks (CAN) and PCM reprogramming are getting a lot of attention. But training in these subjects is premature if a technician fails to understand that there are now five very different types of oxygen sensors and what type of oil is required to meet warranty requirements.

Most shops should include the following subjects as their highest priority for training:

- Wide Band Fuel Control & Wide Band Sensors
- EVAP, Fuel, Fuel Delivery and Fuel Pumps
- Dilution Correction and Modern Catalytic Converters
- Oil Service Ratings and Modern Lubrication

Kevin McCartney has over 30 years of experience as a working technician, supervisor, manager, engineer, trainer, consultant, technical writer and editor. He has served as a consultant for numerous industry organizations and state emission testing programs. His work has earned numerous awards and recognition from SAE, NARSA, ASC-CA, Ford, AASP and has been displayed at the Smithsonian Institution. He provides training throughout the United States and can be reached at crashh@prodigy.net or (209) 873-1155.

BMW WITH ZF SMG TRANSMISSIONS ANALYZER TO VEHICLE COMMUNICATION INTERRUPTION

BMW has released a Technical Service Message covering model year 2004, 2005, 2006 & 2007 E60, E63 & E64 models equipped with a ZF SMG transmission. Software issue in these vehicles sometimes prevents communication with emission analyzers.

BMW plans to release an update for these vehicles during September of 2007. A Service Campaign with notification letters sent to their customers will be initiated.

Please refer any of your customers that have one of the affected BMW vehicles to the DMV Emission Test Lab for assistance if the BMW will not communicate with your analyzer.

If you have any questions regarding the affected BMW vehicles please contact your local DMV Emission Test Lab.

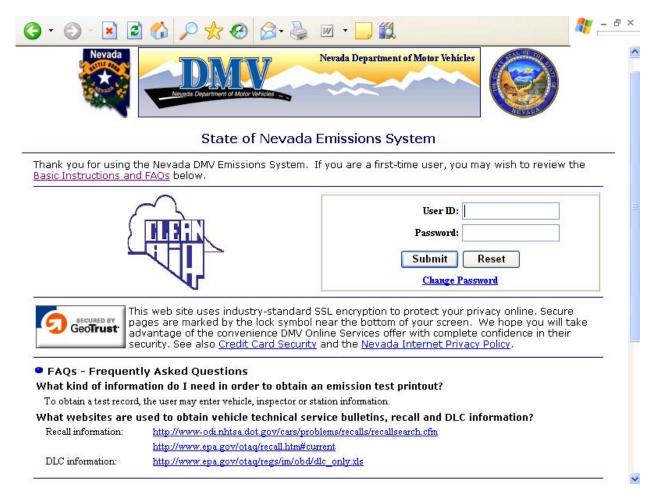
Your assistance with this issue would be greatly appreciated.



Existing stations will keep their same license numbers. Emission stations that come into business after the new system is up and running will have a 12 digit license number. Note the bold expiration date



Existing inspectors will keep their same license numbers. Emission inspectors that are licensed after the new system is up and running will have a 12 digit number. Note the bold expiration date. The emission inspector's birth-date has been deleted.

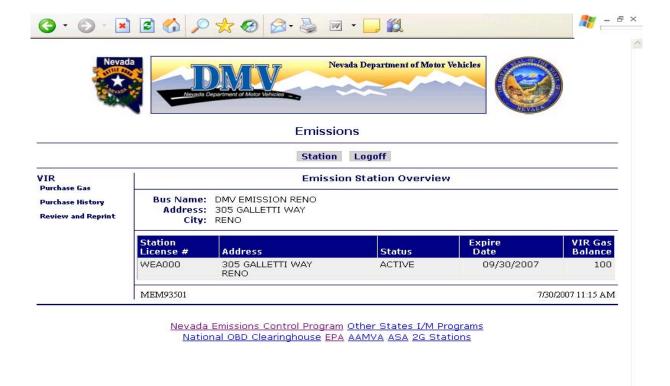


WEB PORTAL LOG ON: Station representatives authorized to access the Web Portal will be provided Login ID and access codes by Department of Motor Vehicles emission staff. Authorized station representatives may obtain their Login ID from Department Emission Control Technicians either during a monthly site audit or by going to the local Department Emission Test Lab. The above screen (Station Manager Login Screen) is the first screen used by station representatives to enter the Web Portal. The Login ID will be MEM with five numeric digits, such as MEM12345. The Password is set by the Station Manager and is 8 digits with one upper case letter and one special character (I.e. @)) or number. Examples = Checker@

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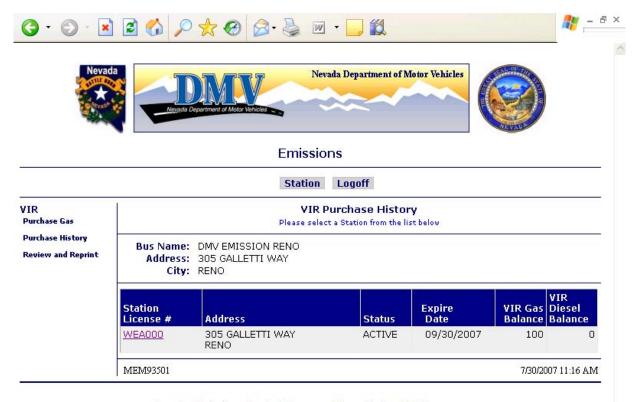
DMV online services are available during the following hours:

- Mondays 24 hours
- Tuesday thru Friday 2 a.m. to midnight
- Saturdays 2 a.m. to 7 p.m.
- Sundays & holidays midnight to 9 p.m.



AVAILABLE FUNCTIONS: The above screen is used by station representatives to perform any activity available to them. At this time activities available through the Web Portal include:

- -- Purchase of Vehicle Inspection Reports using a Credit or Debit Card
- -- Review current stock of unused Vehicle Inspection Reports
- -- Review and reprint completed emission tests and other related reports
- -- Accessing a number of popular emission related websites using the above links



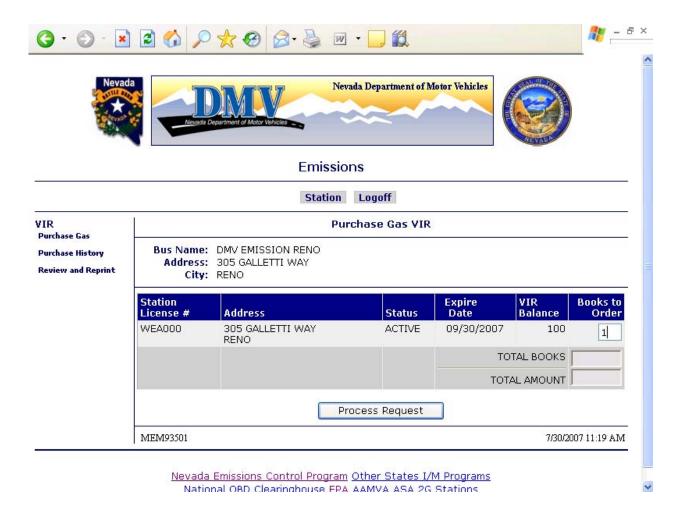
Nevada Emissions Control Program Other States I/M Programs
National OBD Clearinghouse EPA AAMVA ASA 2G Stations

REVIEW UNUSED VIR STOCK: Station representatives can view important station information and VIR unused stock by selecting the VIR Purchase History icon. Please note that a station representative may view the below information for all station locations he is assigned to, regardless of the number of locations! As you can see, this location has no unused VIR'S in stock for the light duty diesel program, but has 100 VIR'S in stock for the gasoline testing program.

The group (or book) of VIR'S still comes in numbers of 25, at \$6.00 each, which totals \$150.00 per group.

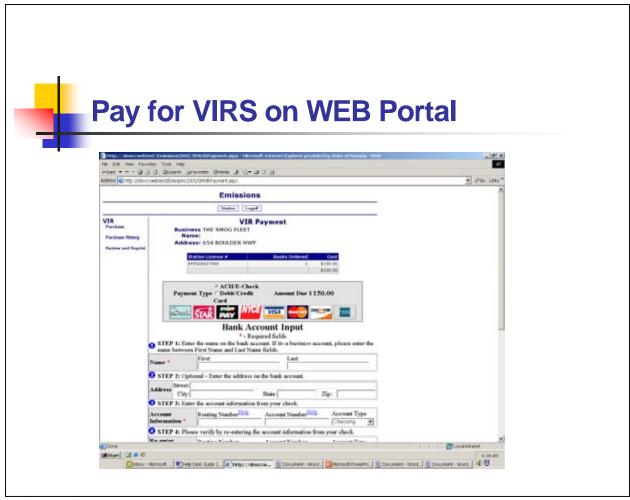
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The DMV – VID assigned VIR'S to the emission station, not individual analyzers



PURCHASE NEW VIRS: By selecting the "Purchase VIR" icon, station representatives may purchase VIRS from the Internet Web Portal. The first screen gives a station representative the station(s) they are assigned to conduct business for. As you can see, ordering new VIRS is simple. Just enter the number of books desired and then click on the "Make Payment", or "Process Request" icon.

The next screen shows how to "Make Payment"



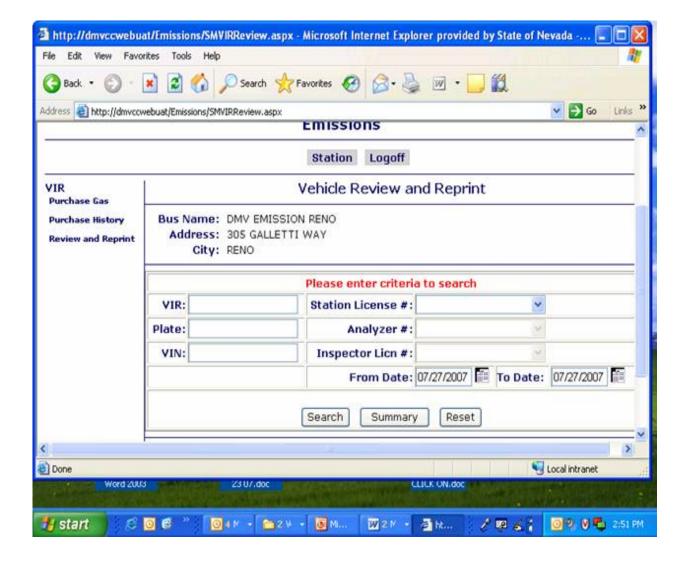
MAKE PAYMENT: Station representatives use this screen to pay for the new book(s) of VIRS. A number of popular credit and debit cards may be used. Should the payment of choice be e-check the USER will enter information from their check and submit payment. This payment method has been used quite successfully over the past few years by motorists renewing their vehicle registration online. Station representatives that have renewed a vehicle registration online will be familiar with this screen.

A receipt will be sent in e-mail form to the station upon successful order of VIRS.

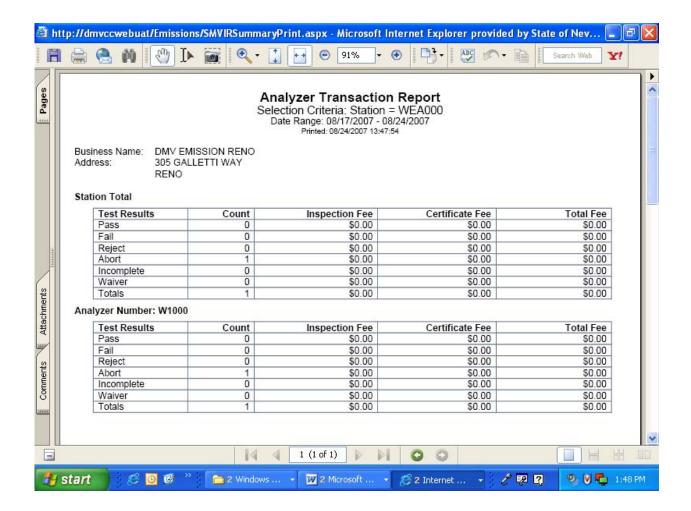
Station representatives still can purchase VIRS at their local DMV – OBL Office.



The report screen is displayed as shown above to re-print individual VIRS. The station representative may retrieve the emission test specifics by clicking onto the VIR number icon. A PDF report may be printed for the specific emission test selected.



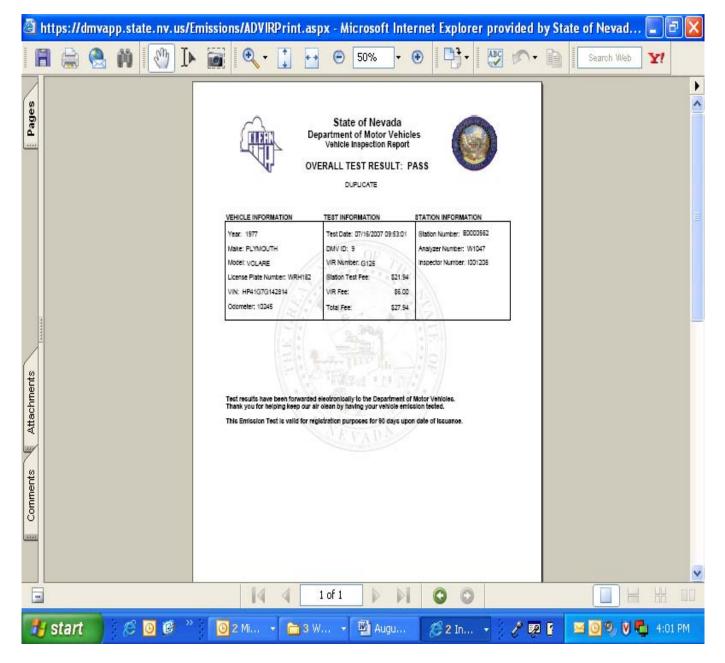
Managers have the ability to search for test data by VIR, License Plate, VIN, Analyzer & Inspector using a "From Date" & "To Date". Then just click "Summary and the report will be displayed on the screen.



This is how the "Summary Report" appears on the screen of your computer. The report can be printed in a PDF document.

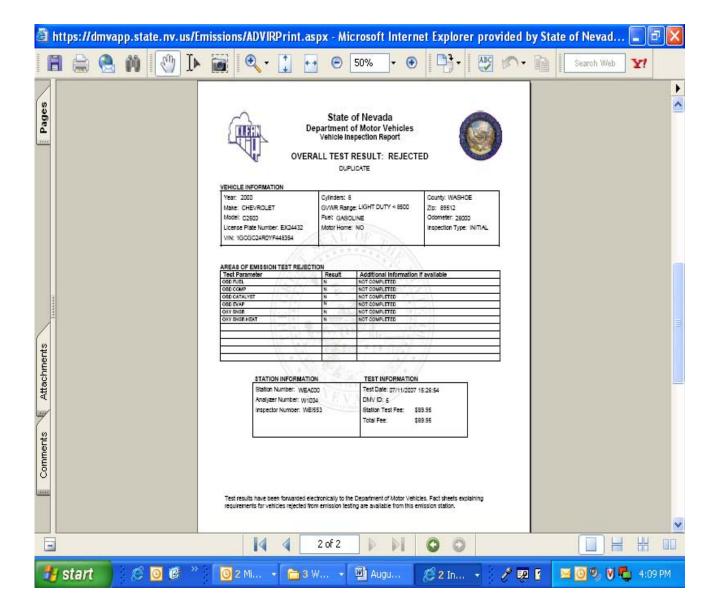
Field Name	Optional or Mandatory Entry	Type Entry	Special Notations
Vehicle ID Number	Mandatory	Alpha Numeric	Inspector enters Vehicle Identification Number two times using analyzer keypad, or uses analyzer Bar Code Scanner to enter Vehicle Identification Number.
License Plate Number	N/A	Alpha Numeric	Inspector enters the license plate number, if available.
Reason for no Plate	Mandatory if no plate number entered	Numeric	Determination choices for the emission inspector:Dealer saleOperating PermitOut of State PlateOther
State where plate was issued	Mandatory if plate number is entered	Alpha	
Odometer	Mandatory	Numeric	
Zip Code	Optional	Numeric	Only needed if vehicle not in registration database
County vehicle based	Optional	Alpha	Only needed if vehicle not in registration database
Motor Home indicator	Mandatory defaults to "N"	Alpha	Yes or No. A Motor Home is still tested using heavy duty standards
Gross Weight	Mandatory	Numeric	Two choices 1) Less than 8,500 pounds 2) 8,500 pounds or more This will determine test procedure values

The above vehicle data is entered by the emission inspector as part of the "first call" to the VID. If the vehicle can't be found in certain VID tables inspectors will have to enter a bit more information, this in not expected to occur very often. Most of the remaining test items look very similar to previous screens.

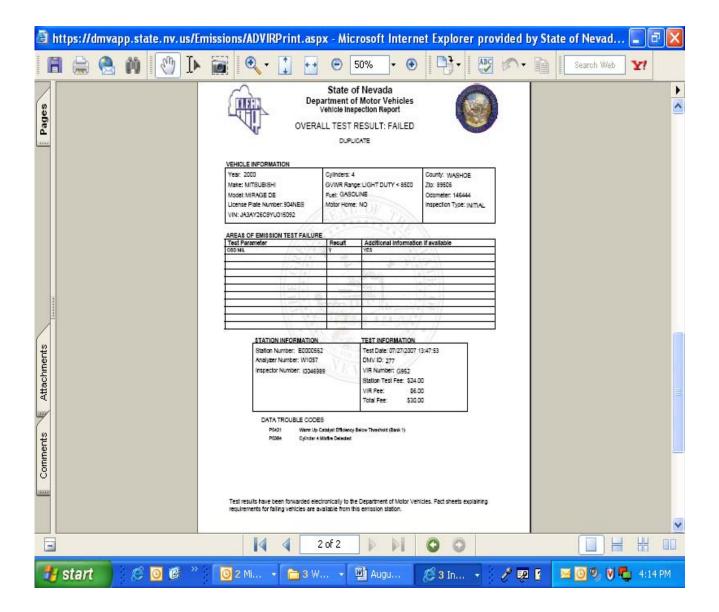


The above screen is a passing Vehicle Inspection Report. This will be printed as a PDF document from the emissions analyzer. Note the minimal information on a passing VIR. The VIR has been changed to try and reduce the amount of fraudulent attempts to pass off scanned copies of old tests which have had the dates changed.

Offline testing will not be part of the new VID. All test data is sent immediately and is placed into the vehicle's registration record.



This is a screen example of a "Rejected" emission test due to excessive unset monitors. There will be no VIR issued to a Rejected emission test. Therefore, there will not be a \$6.00 VIR fee. Stations may only charge for their inspection fee. A new motorist fact sheet explaining how to deal with a vehicle that has been "Rejected" also prints from the analyzer in a PDF format.



This is a screen example of a "Failed" emission test. Note the new "Area of Failure" section where items causing the failure are noted. A new motorist fact sheet explaining what to with a vehicle that has been "Failed" also prints from the analyzer. A PDF document will print from the analyzer for your customer. DMV staff intends for sometime in the future to have the list of 2G stations print for all failed tests.