



TECH TIP

DX3 NOX SENSOR MONITOR

SUPERSEDES TECHTIP 22-025

GROUP: 0-GENERAL

TECH TIP NO: 23-019

DATE: 4/21/23

SUBJECT VEHICLES

11MY-21MY Conventional Trucks equipped with a J08 engine or Cab Over Engine (COE) equipped with a J05 engine.

OVERVIEW:

The purpose of this procedure is to provide instructions in how to properly record Nox Sensors using DX3

Note: This technical tip is provided as technical information and is not authorization for a warrantable repair.

REPAIR PROCEDURE:

Note: Be sure to change Unit Settings in DX3. Click **Settings** (gear in the upper right) > **Unit Setting** and then mirror the settings below, click **OK**. Log out of DX3, then Log back in to hold new settings for future DX3 connections and data monitoring.

[B1014]

Unit Setting

Distance	Mile(mile)	▼
Speed	Mile per hour(mph)	▼
Acceleration	Mph/sec(mph/sec)	▼
Capacity	US Gallon(gal)	▼
Fuel consumption rate	Mile per US Gallon(mpg)	▼
Fuel consumption rat...	Mileage per Liter(km/L)	▼
Temperature	Fahrenheit(° F)	▼
Horsepower	Horsepower(hp)	▼
Torque	Foot pounds (lb-ft)	▼
Pressure	Pound per Square Inch(PSI)	▼
Pressure (Mp)	Pound per Square Inch(PSI)	▼

OK Cancel



Note: Exhaust temperatures MUST be at ambient temperature prior to performing this test.

1. Connect DX3 and allow **Read Out** to complete. Click **Customization**, in System select **Engine CAN**, and scroll to locate **DPF Soot Amount Piling Up**. Set the soot level to **3.5g/L** for a manual regen, and click **Write**, follow DX3 to complete writing of soot level

Note: Key must be ON with the Engine OFF to write or change any value. Ignition must then be turned off for 60 seconds to finalize writing of value, and turned back on

Customization

System: 01 Engine Serial(K line)

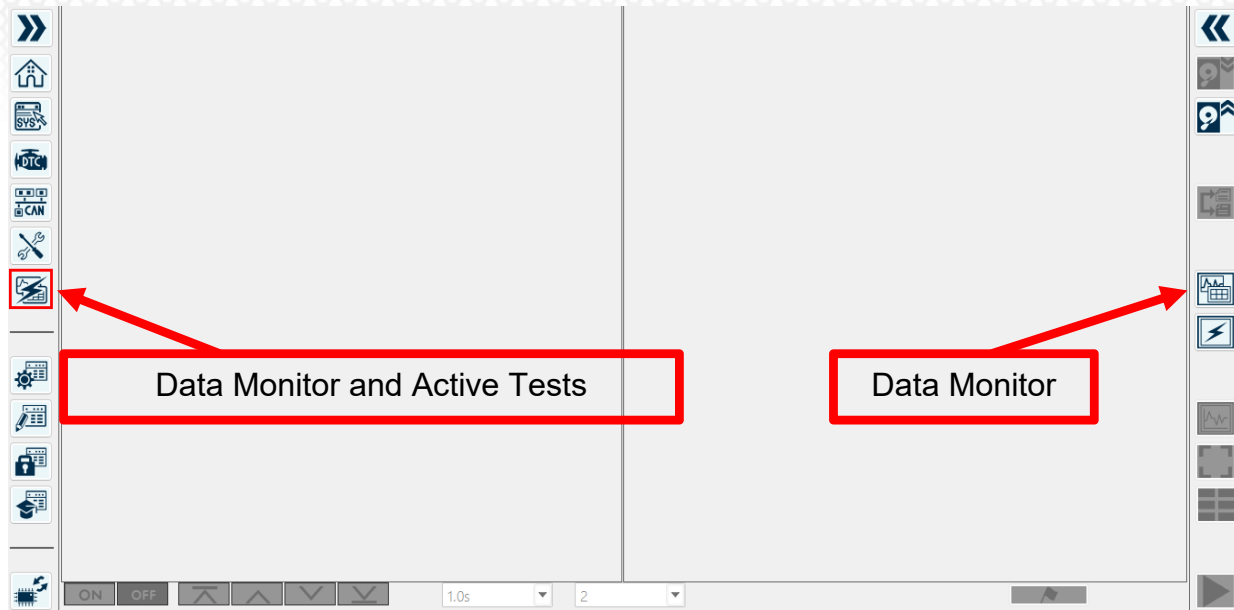
No.	Items	Initial value	Set value	Unit	Write to ECU
439	Idle Shutdown Active Minimum Coolant Temperature	-40	-40	°F	
440	Idle Shutdown Active Minimum Ambient Temperature	-40	-40	°F	
449	Setting of economy running intensity	Low	Low		
451	Setting start idle up mode changeover	Always	Always		
453	Setting of actuation time for hill start gear change assi...	0.0	0.0	Seconds	
456	Long idling control RPM	0	0	rpm	
474	Customized Backup (data 2 byte 6 digits) 1	0	0		
534	DPF Soot Amount Piling Up	0.000	3.5	g/L	
543	PM deposit volume 1 (A09C)	0.000	0.000	g/L	
544	PM deposit volume 2	0.000	0.000	g/L	
580	Total idle fuel injection	0.0	0.0	gal	
581	Trip idle injection quantity	0.0	0.0	gal	
582	Total fuel injection quantity	0.0	0.0	gal	

Write Value

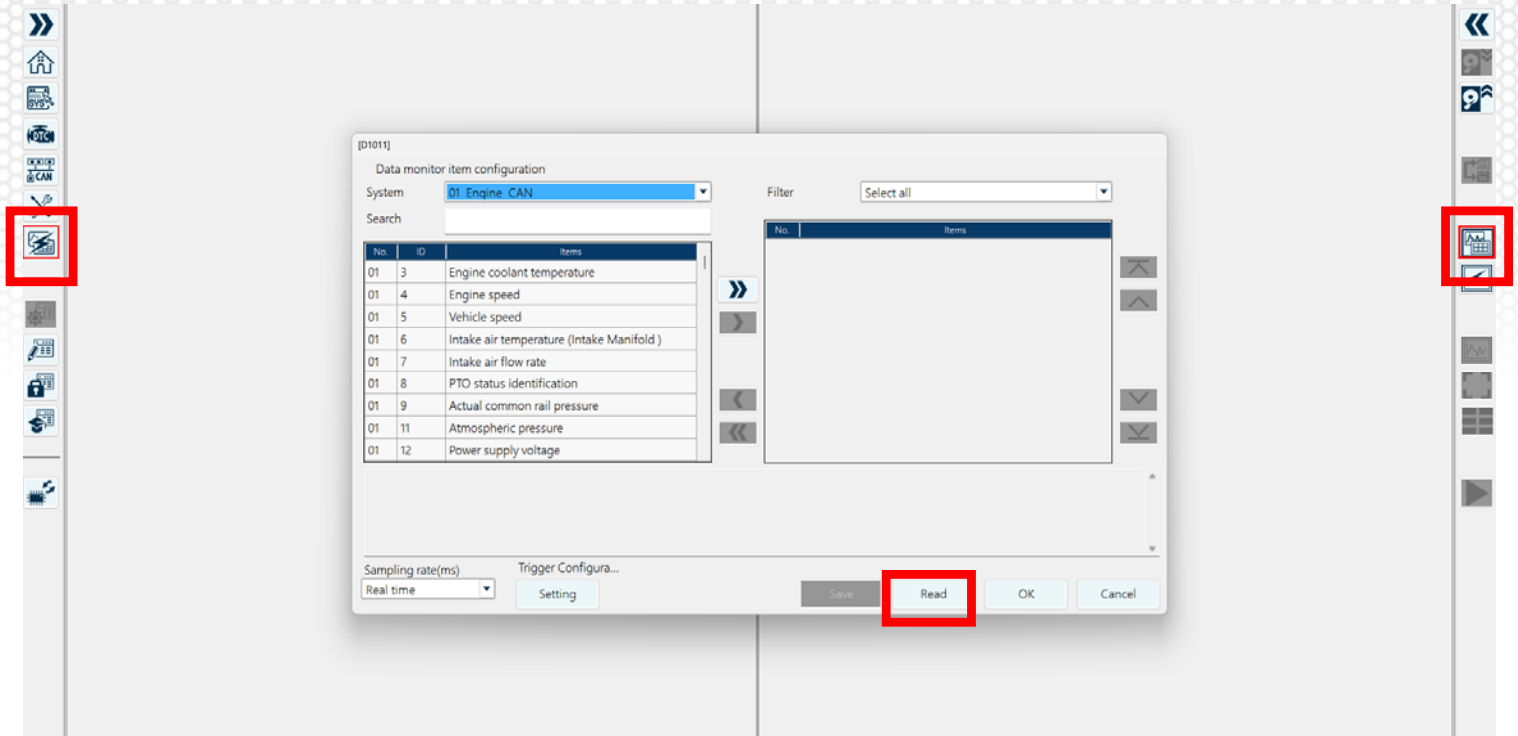
Type Soot Level 3.5g/L

Customization

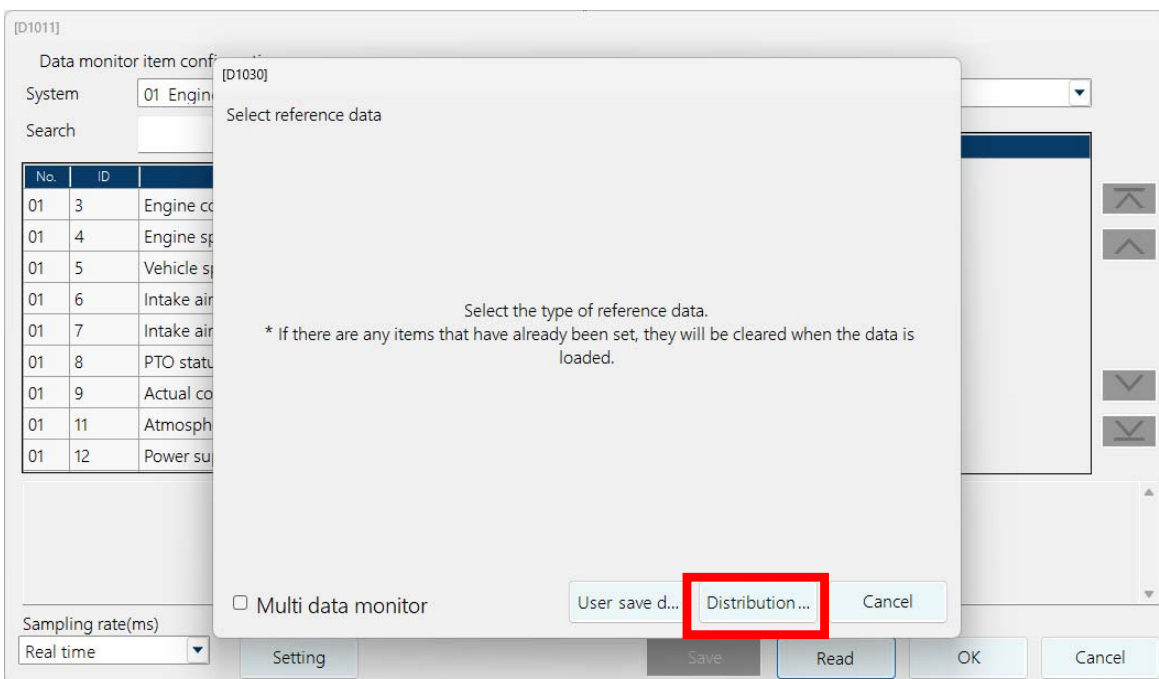
2. Select “*Data Monitor and Active Tests*” then select “*Data Monitor*”



3. Select **Inspection Menu** on the left, **Data Monitor** on the right, and then **Read** from the parameter list



4. Select **Distribution**



5. Select the correct template for NOx and then select **Open**

[D1024]

Data monitor item configuration file list

File Name	Work Date	VIN	User ID
Official Injection Quantity Test Template 2011-2020 Co...	2022/10/18/11:48	sim	USAHMS010029
Official Engine Performance Template 2015-2020 Conv...	2022/10/18/15:03	sim	USAHMS010029
Official Engine Performance and NOx Template...	2022/10/18/15:18	sim	USAHMS010029
Official Aftertreatment Template 2015-2020 Conv and ...	2022/10/18/11:56	sim	USAHMS010029

Vehicle classification:600 series(Conventional)
Area:North America
System:Engine

Import Export **Open** Cancel

6. Select **OK** to confirm pre-selected parameters and start recording

[D1011]

Data monitor item configuration

System: 01 Engine CAN Filter: Select all

Search:

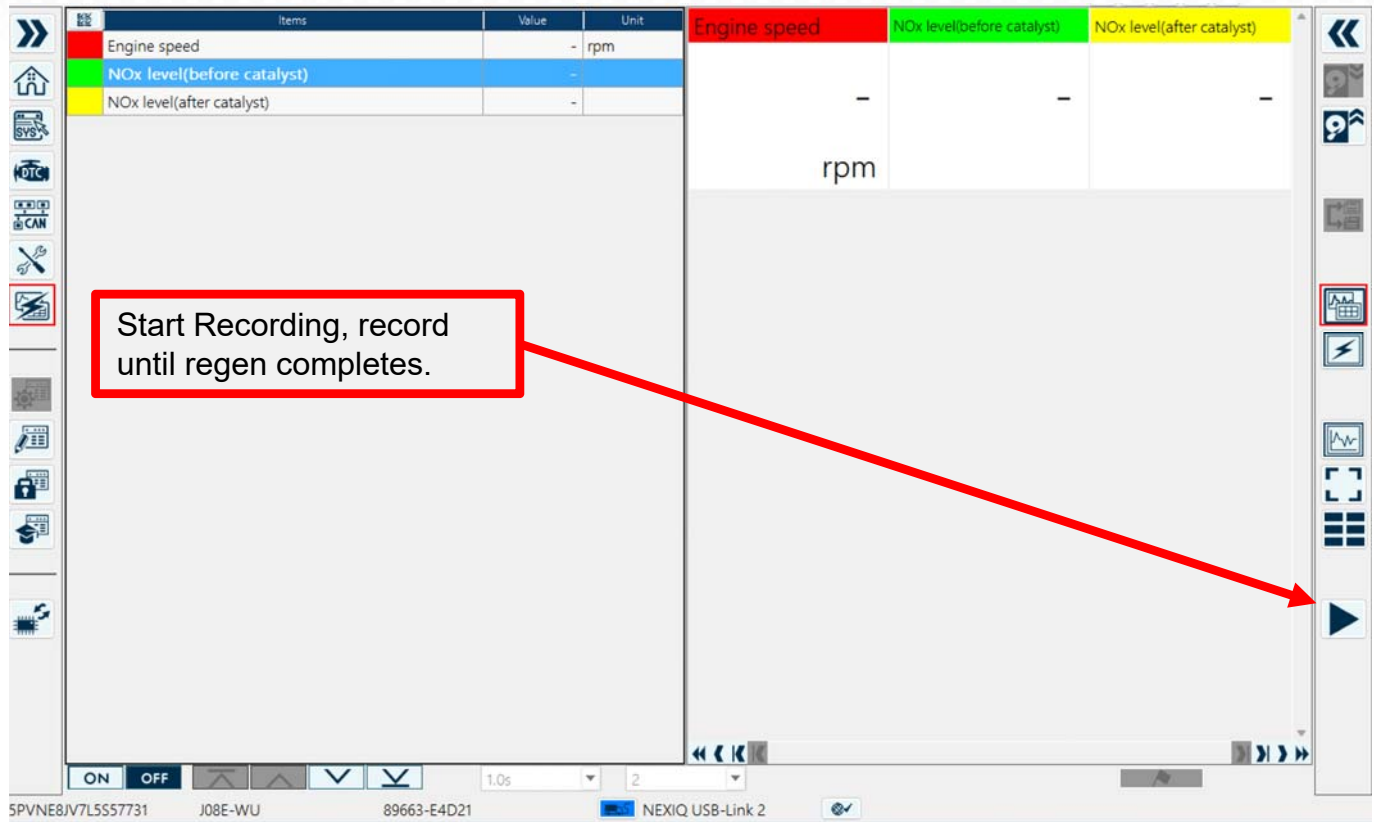
No.	ID	Items
01	7	Intake air flow rate
01	8	PTO status identification
01	11	Atmospheric pressure
01	12	Power supply voltage
01	13	Intake air temperature (Air flow)
01	14	Accelerator pedal position sensor 1
01	15	Accelerator pedal position sensor 2
01	18	Parking switch (CAN reception)
01	37	Target engine speed

No.	Items
01	Target VNT opening
01	Actual VNT opening
01	Target boost pressure
01	Actual boost pressure
01	Intake air pressure
01	NOx level(after catalyst)
01	NOx level(before catalyst)
01	Target opening of intake throttle valve (%)
01	Actual opening of intake throttle valve (%)
01	DPF Soot Amount Piling Up

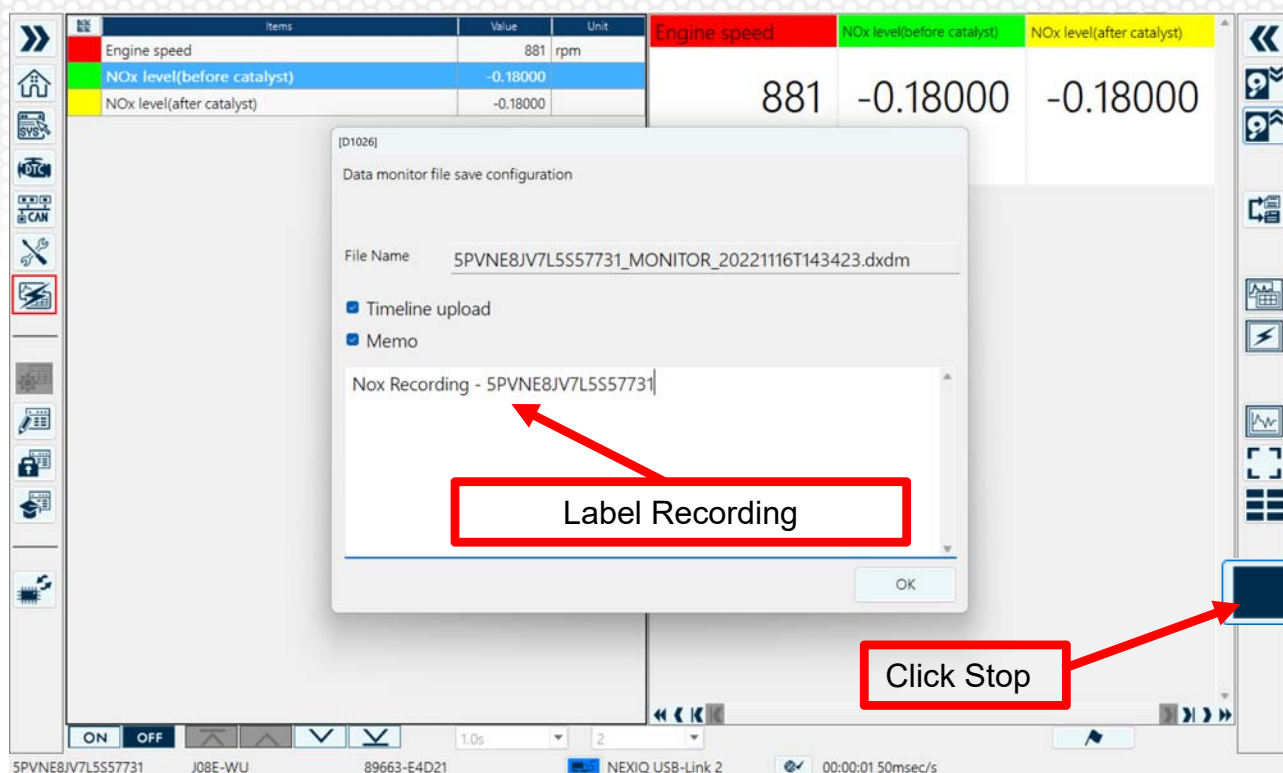
Sampling rate(ms): Real time Trigger Configura... Setting

Save Read **OK** Cancel

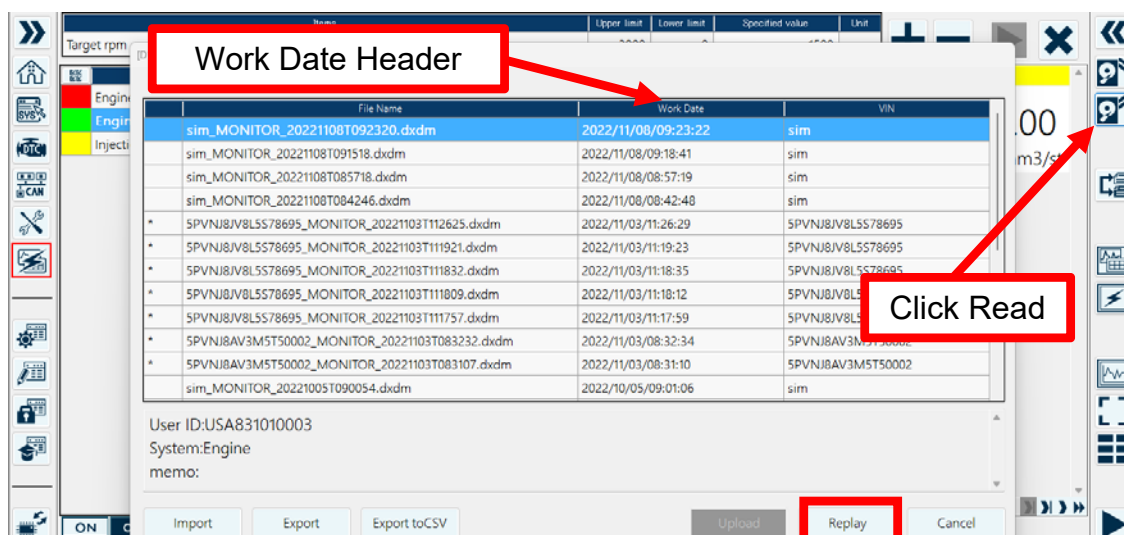
7. Start the truck, start the DX recording and then press the Manual Regen switch on the dash to start manual regen. Record until manual regen has completed.



8. Click the **Stop** in the lower right of DX3 to stop the recording. In the save box, **label the recording**, be sure to include the test name and VIN or TechAssist Case number, click **OK**



9. Click **Read**, click on the **Work Date** header a couple times to sort recordings by work date, highlight the recording and click **Replay**

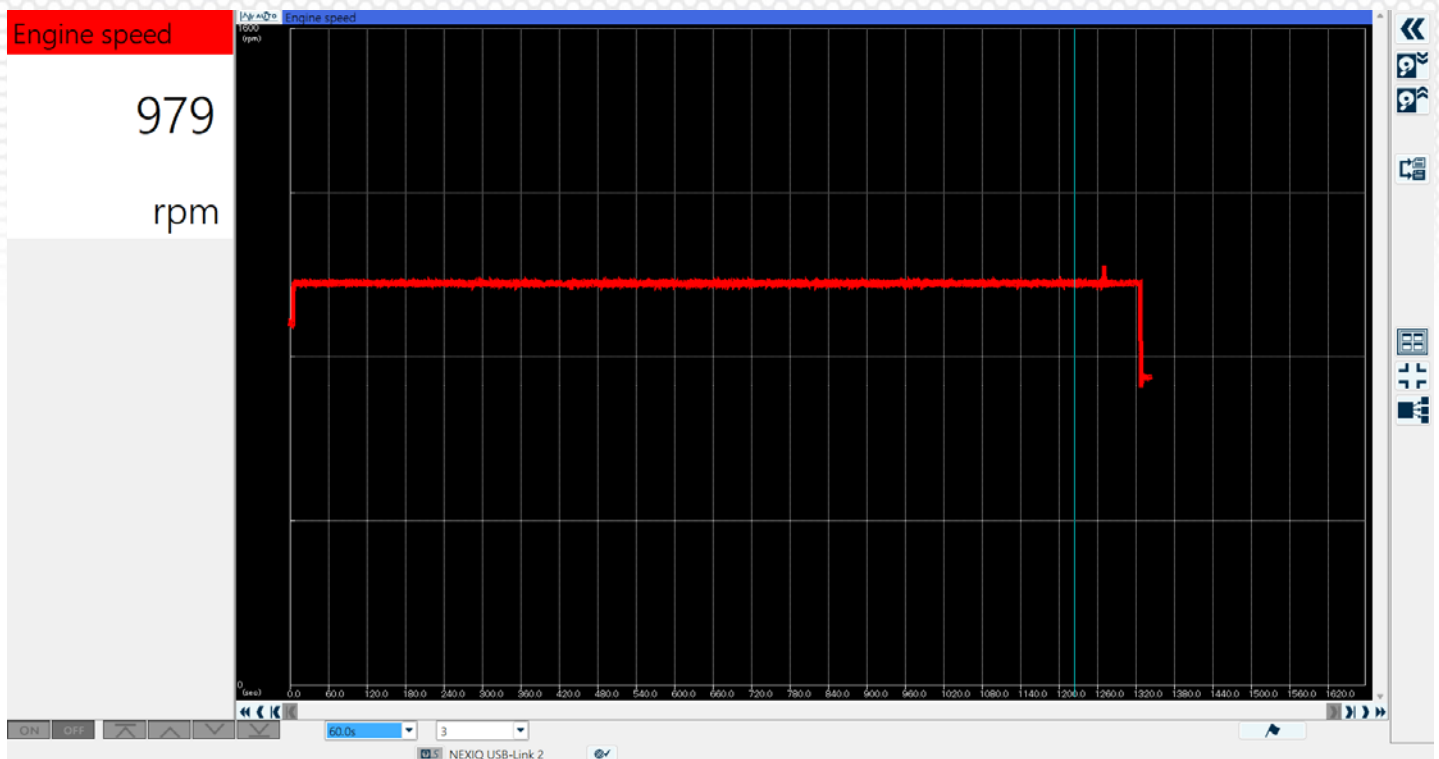


10. Graph data to review. Graph both Nox Sensors in the same graph.

Note: Please review our DX3 training course as needed for any graphing questions



11. Graph Engine RPMs separately



Note: If you are not able to determine judgment, please follow **TechTip #22-019 Sending DX3 Files to TechAssist**. Create a TechAssist case outlining the customers concern, diagnosis performed and related DTC's, then attach file(s) for review.