



A Program of ASTM International

# ***Test Monitoring Center***

<http://astmtmc.cmu.edu>

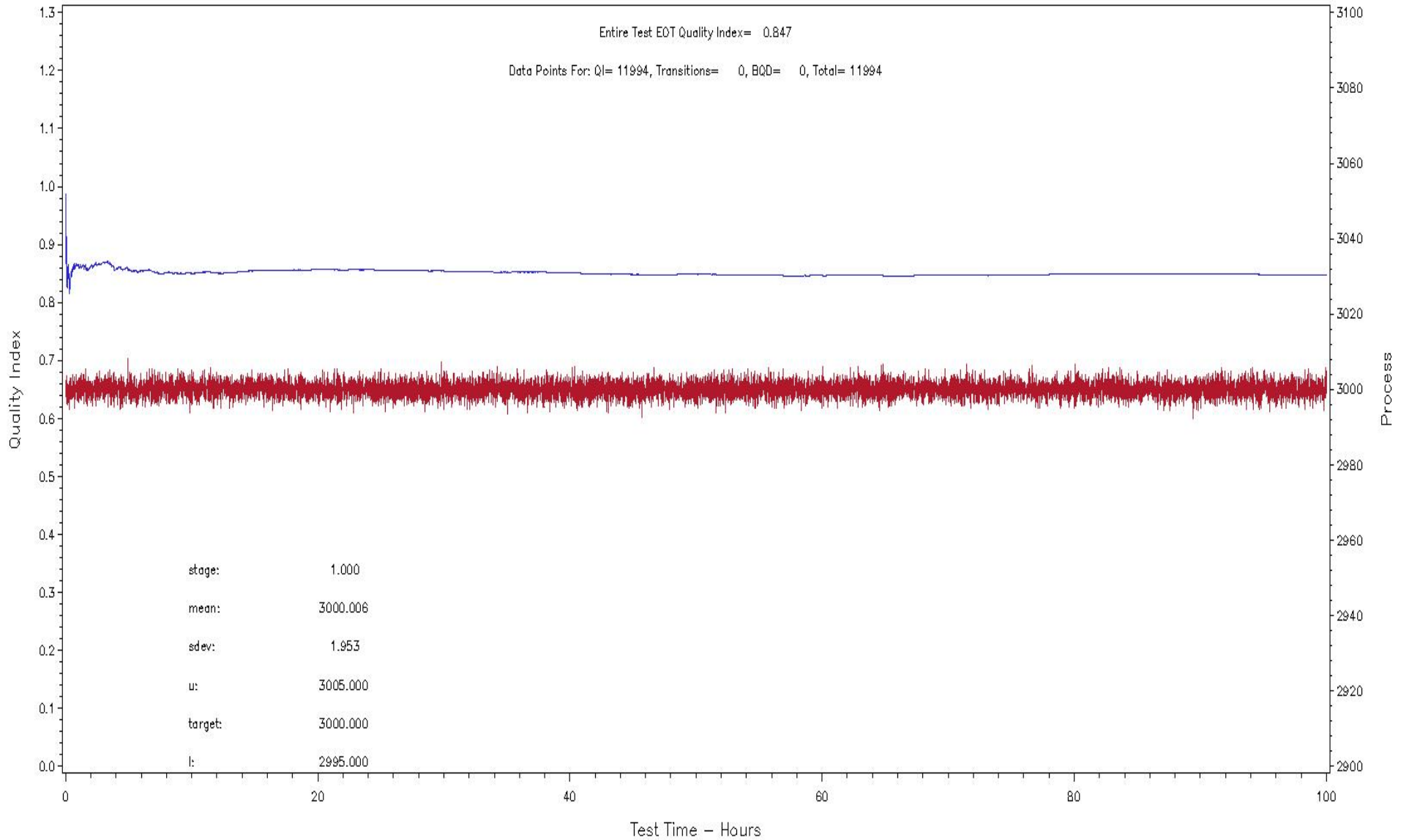
## QI Plots of Prove out Test

Only Parameters which had IIG  
U and L's

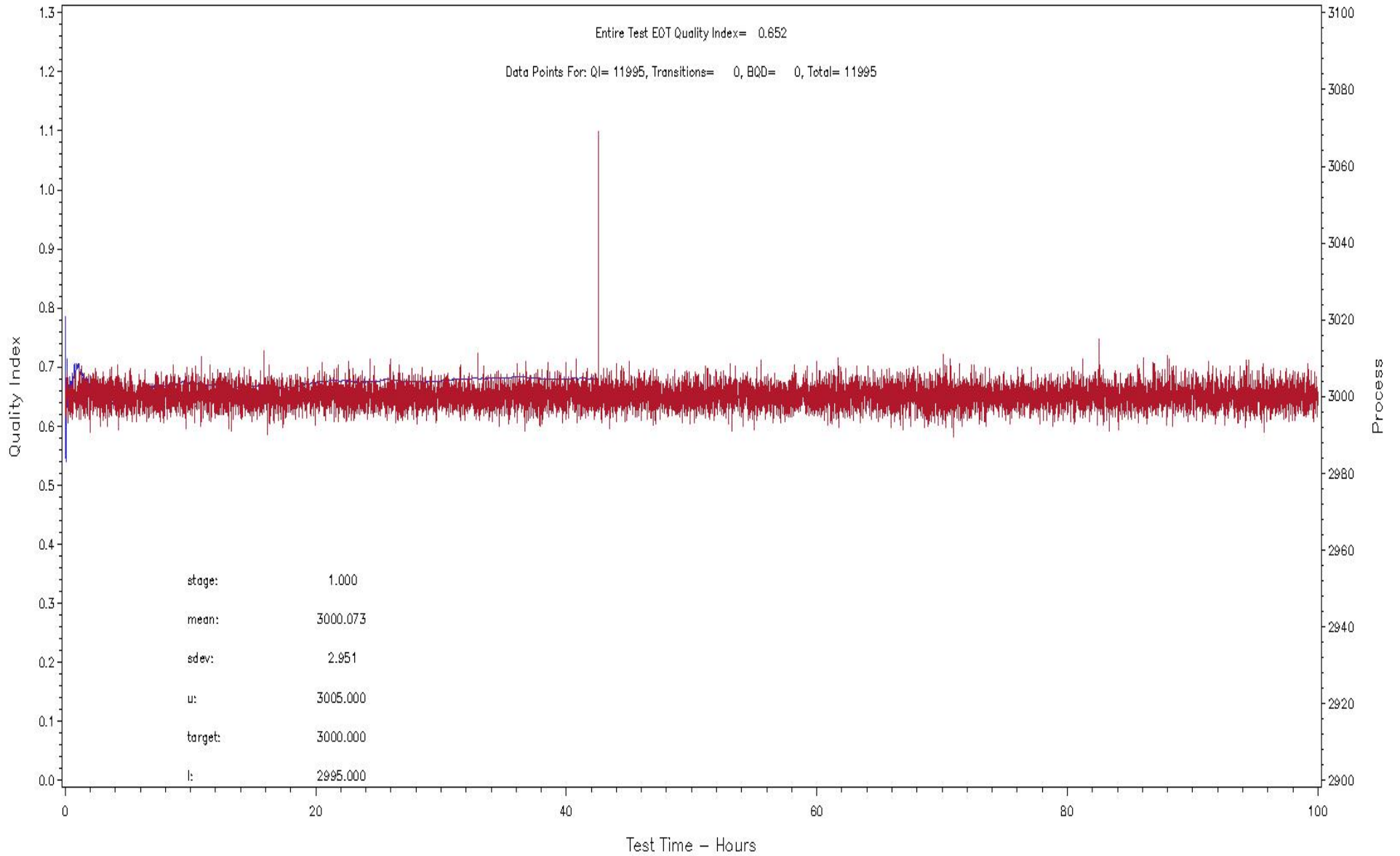
# Speed

- NO TEST Below Zero Using IIIG U & L Values

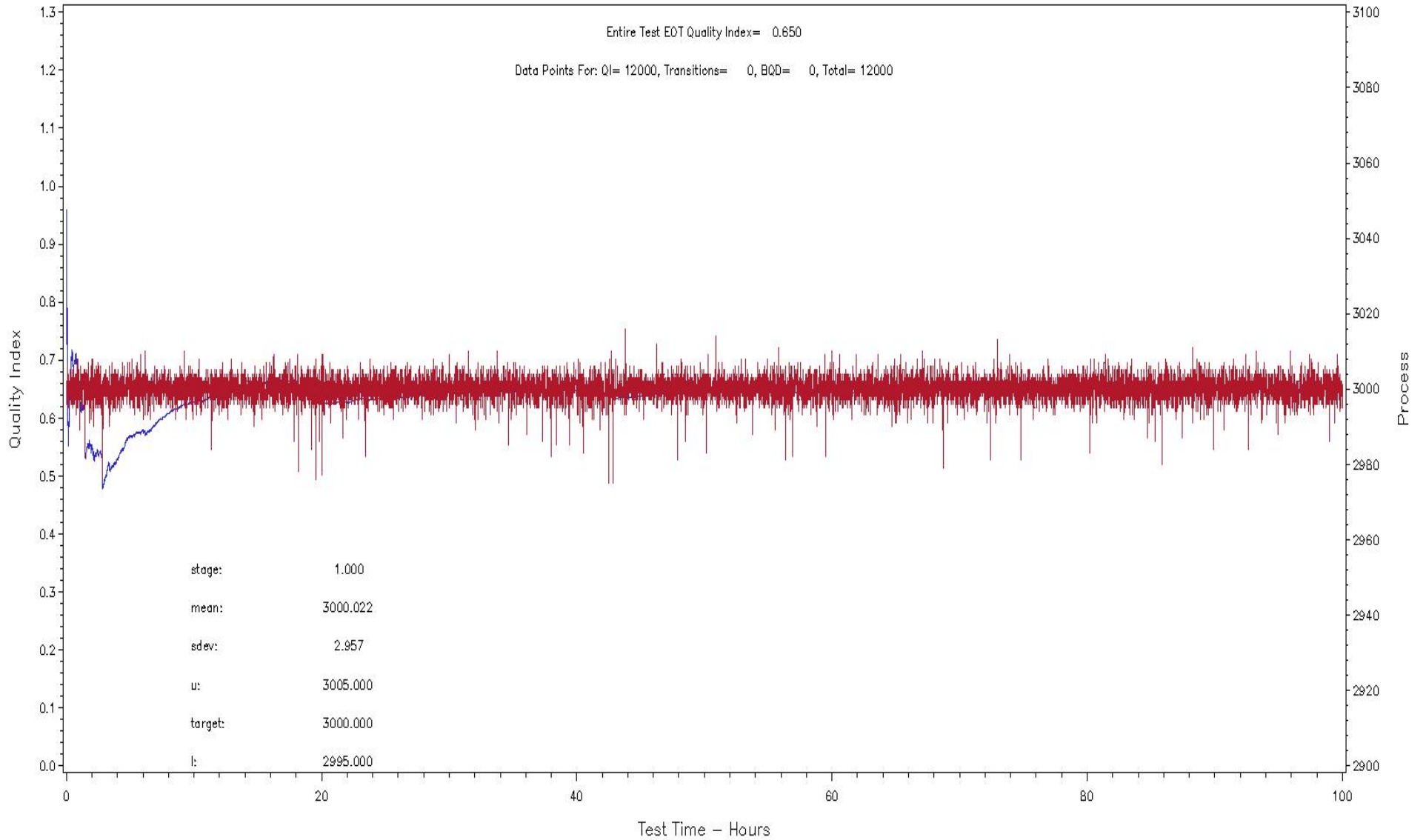
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= B Stand= 333 CMR= 77827



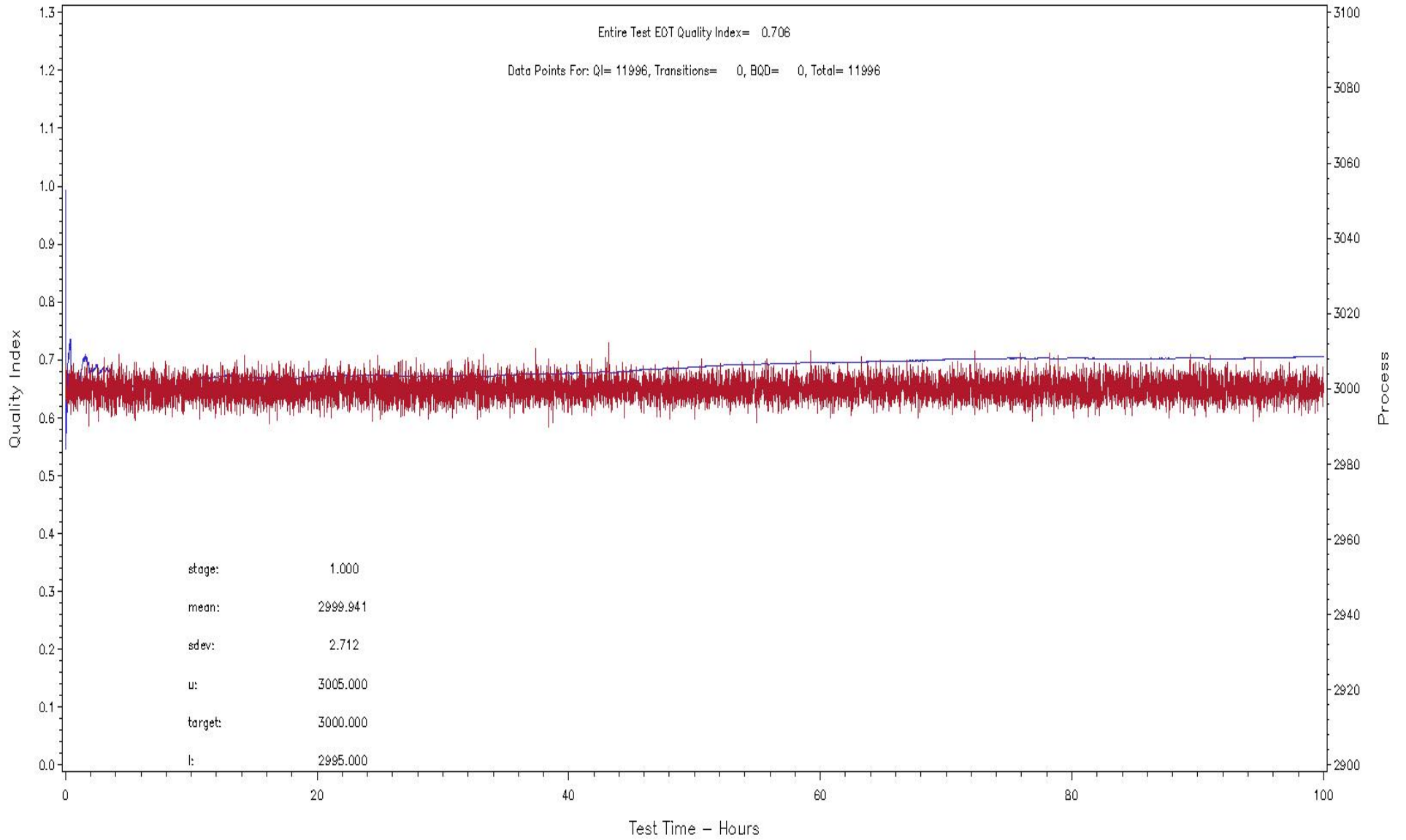
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= GStand= 180 CMR= 106020



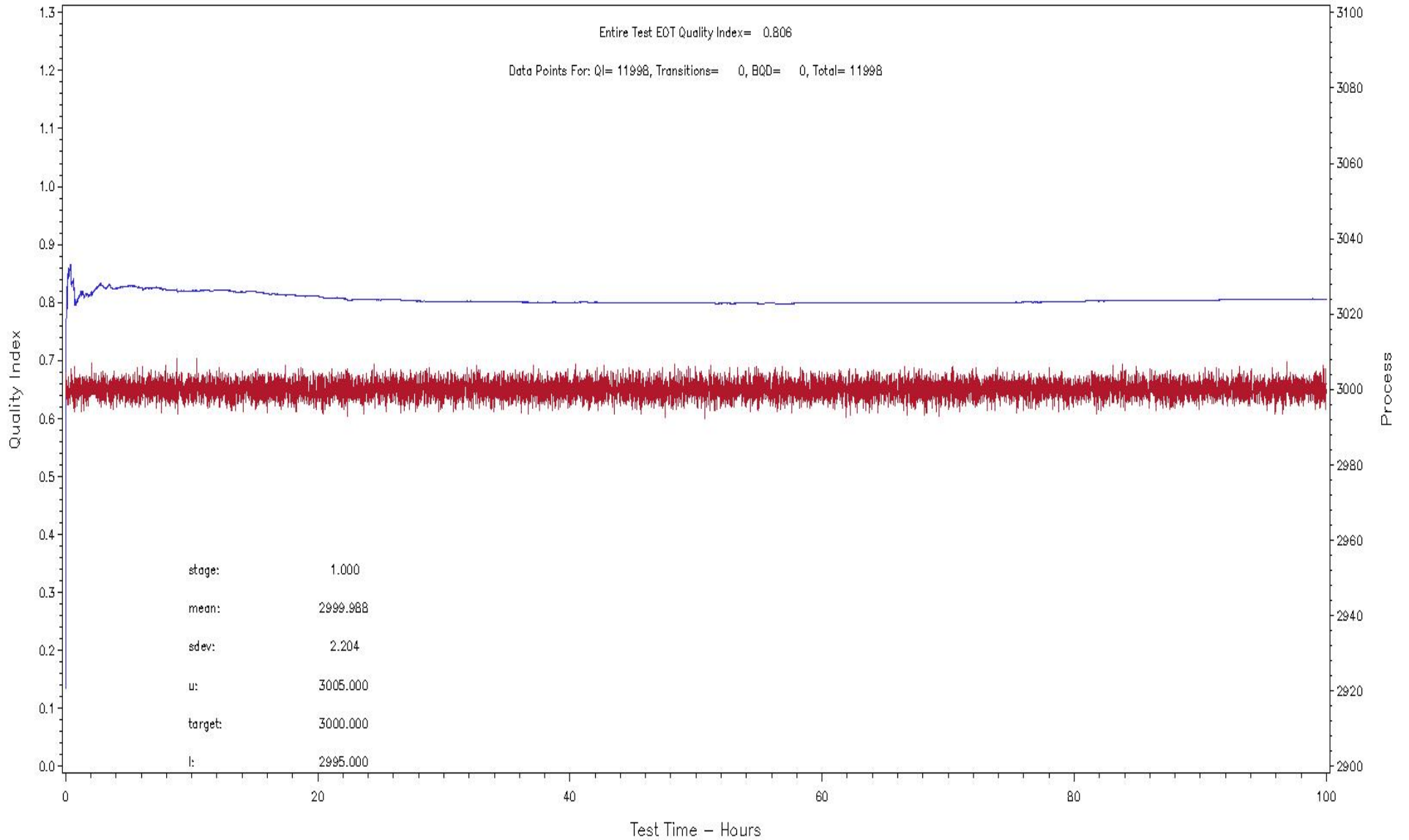
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= A Stand= 71 CMR= 107863



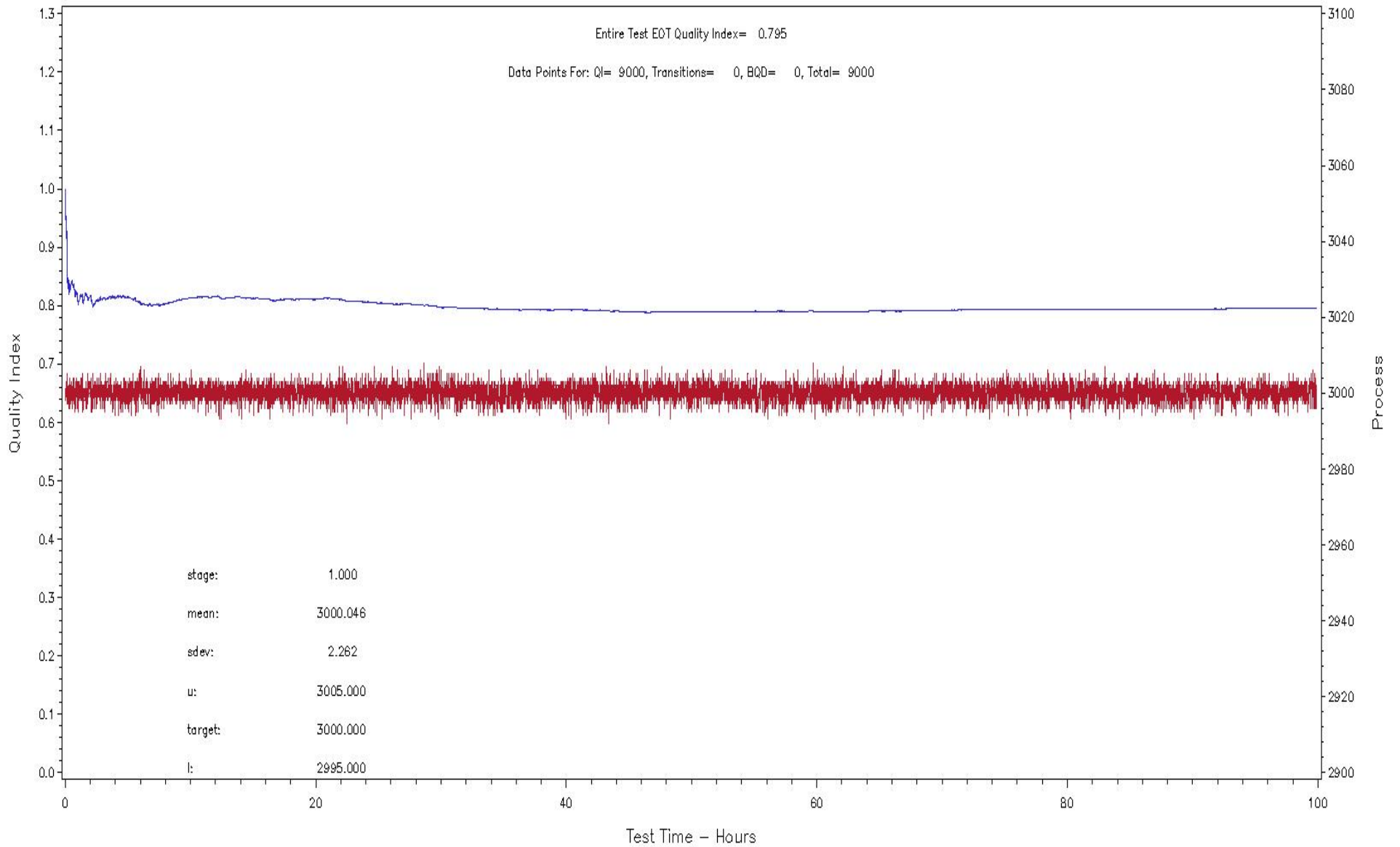
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= GStand= 180 CMR= 107885



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= BStand= 333 CMR= 107867

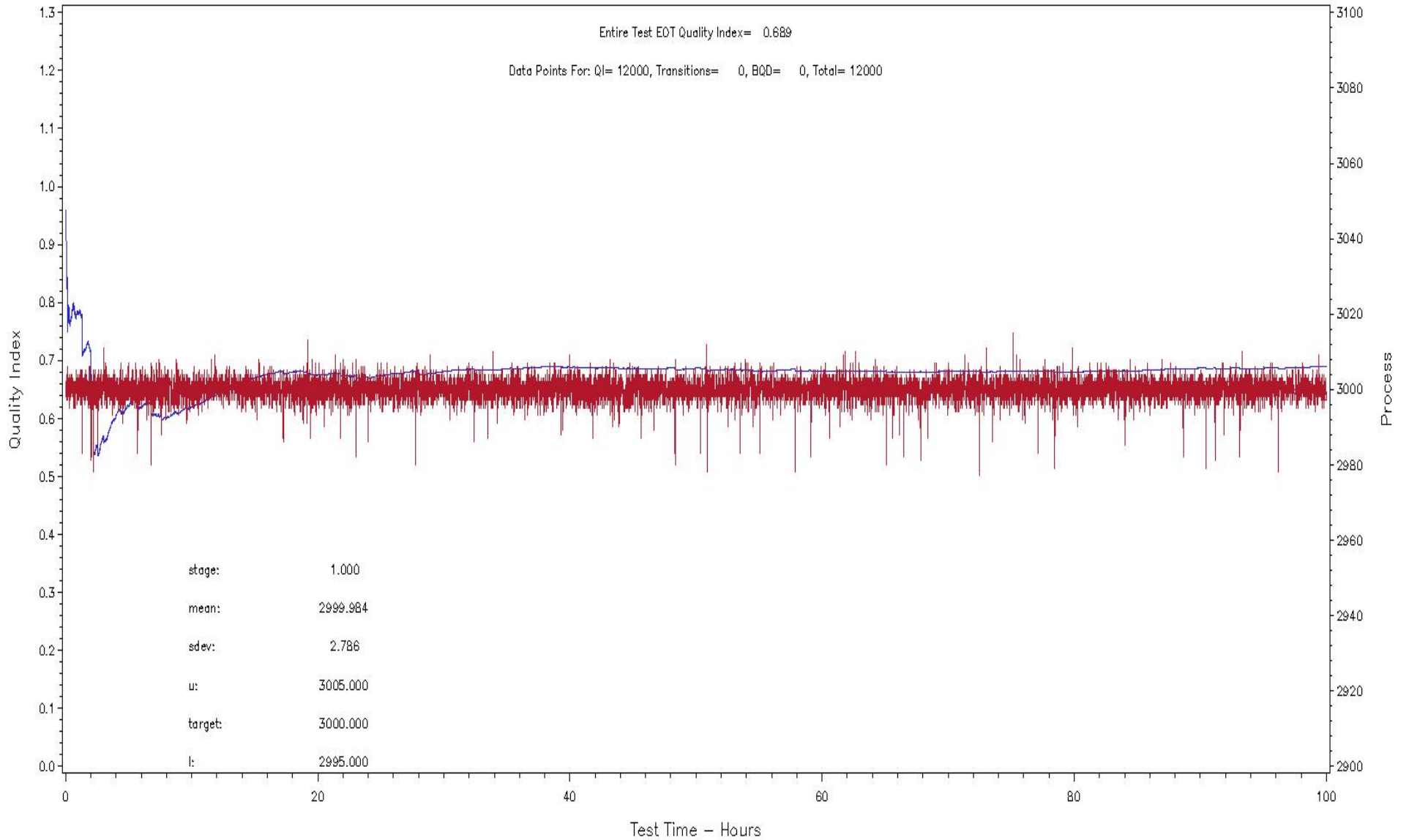


GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= D Stand= DB114 CMIR= 107880

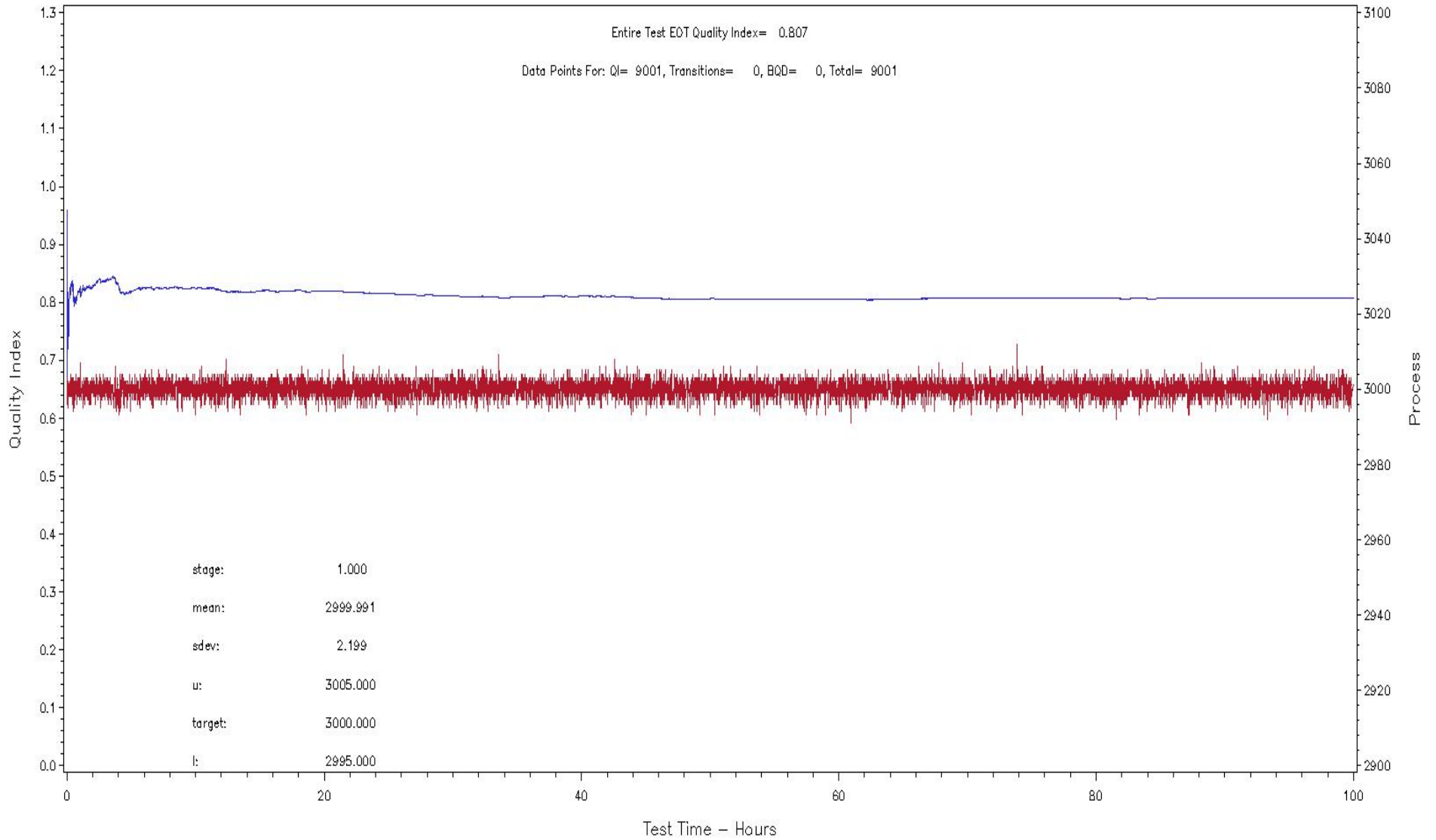




GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= A Stand= 71 CMIR= 108825



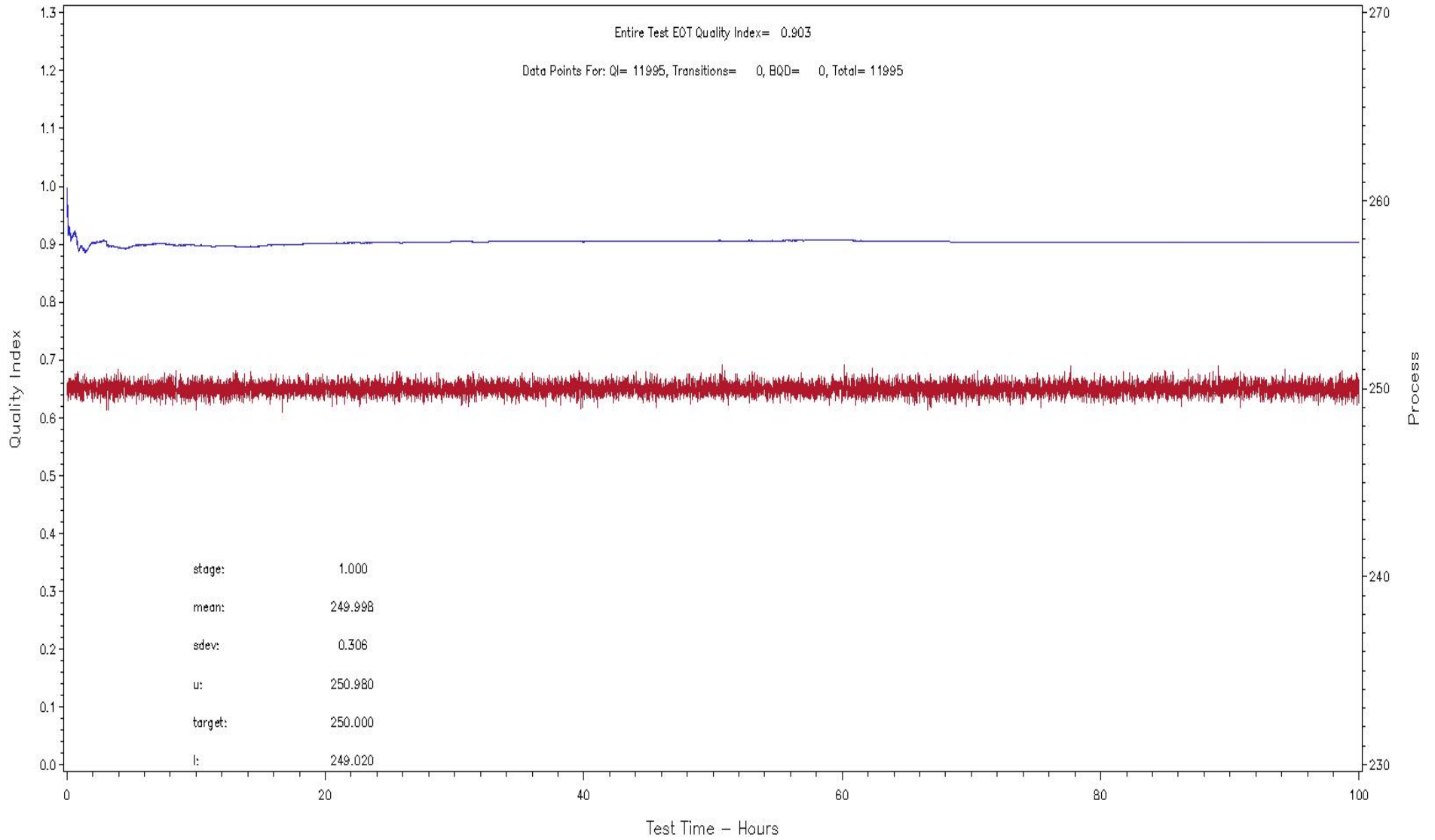
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= D Stand= DB114 CMR= 108597



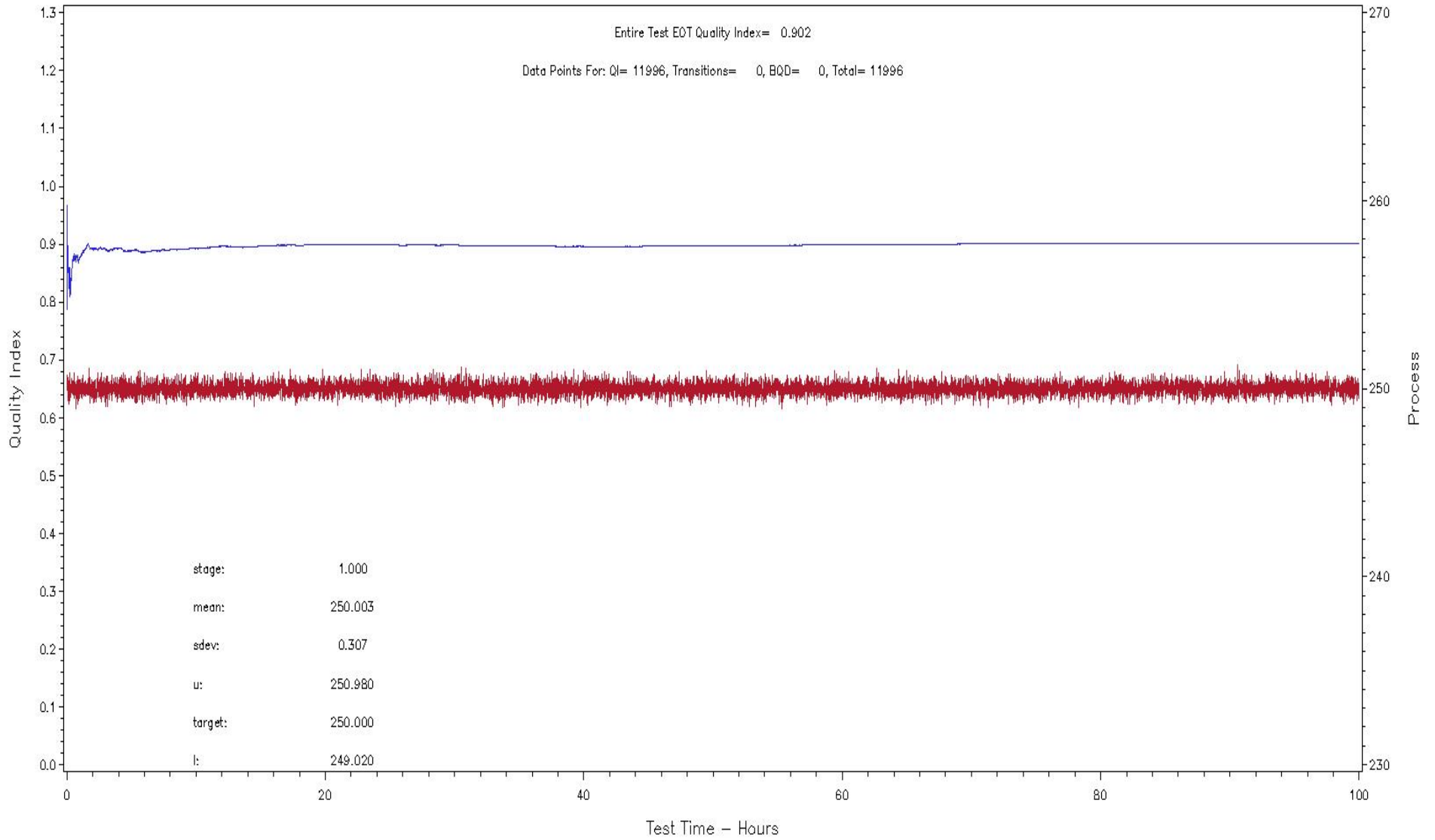
# Load

- No QI Values below Zero using IIG  
U and L's

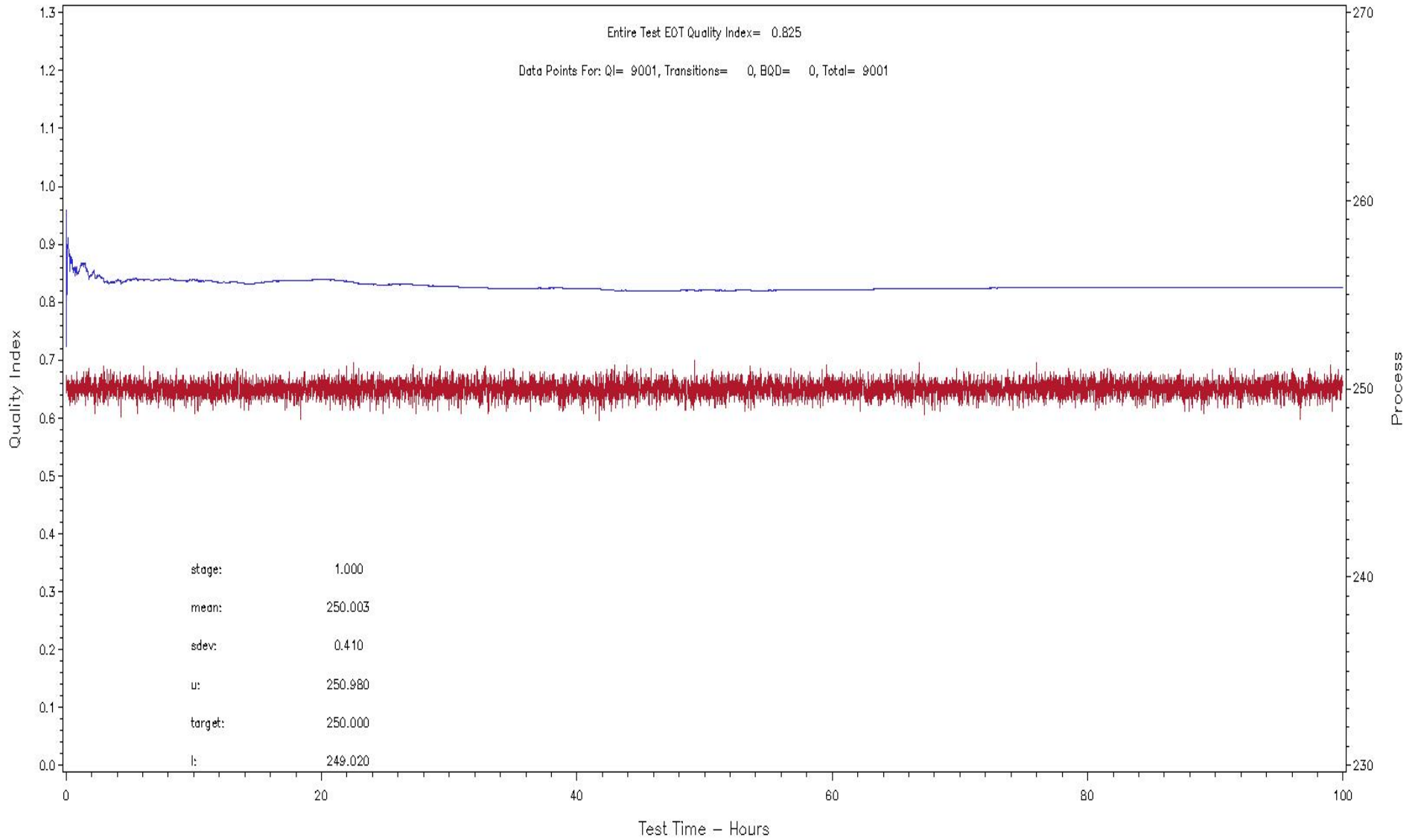
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= GStand= 180 CMR= 108020



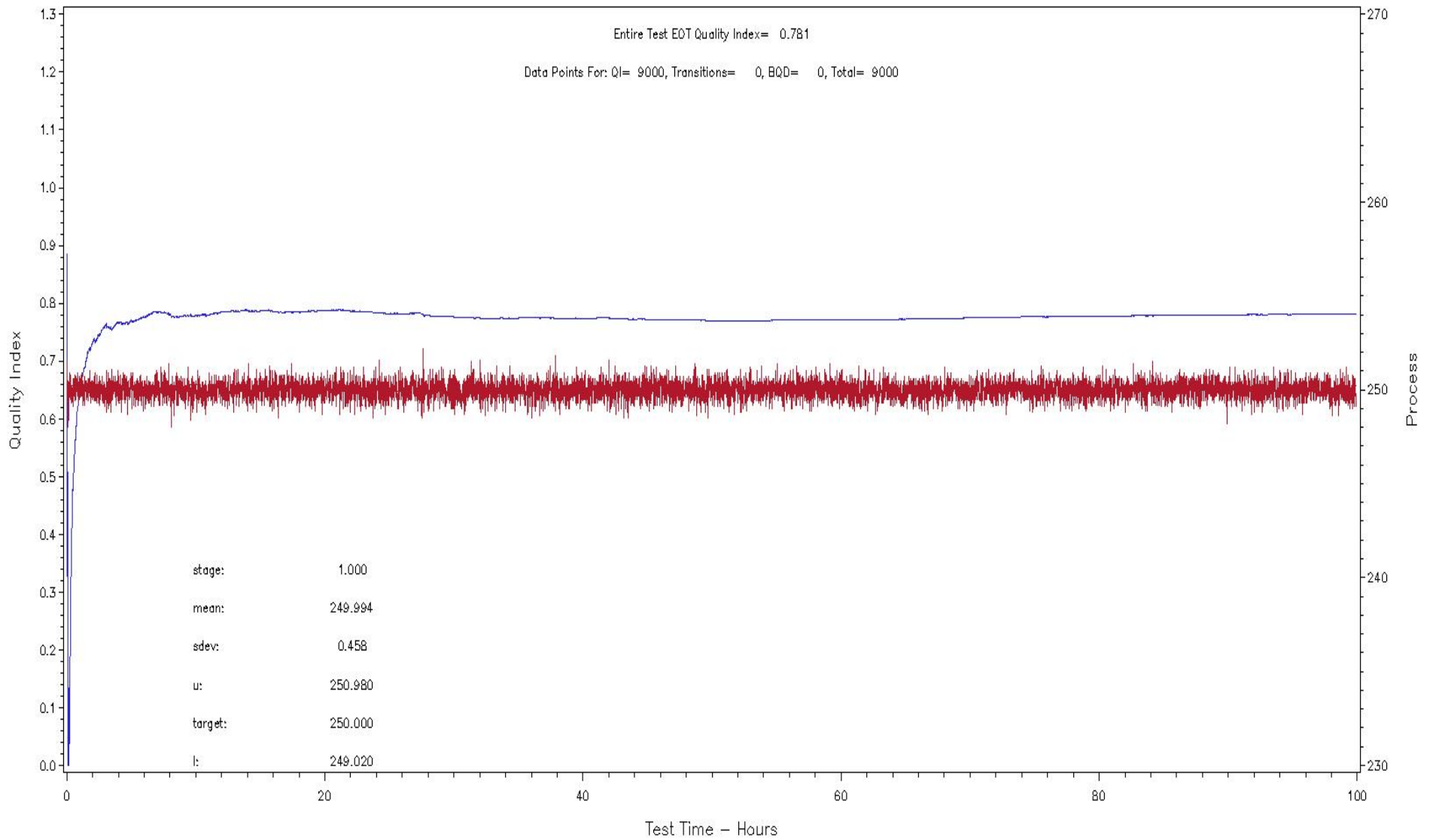
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= GStand= 180 CMR= 107885



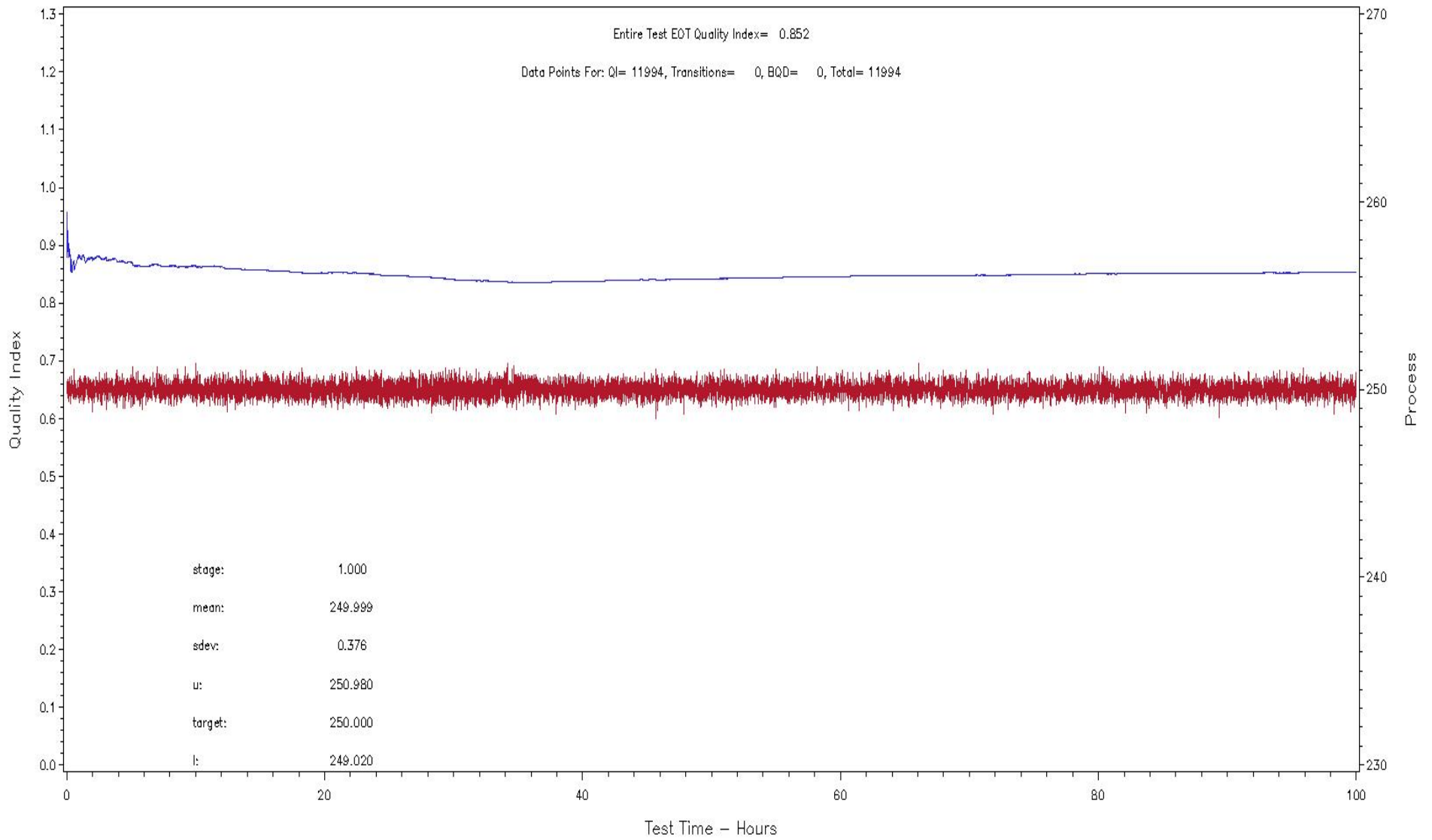
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= 0 Stand= DB114 CMR= 108597



GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= D Stand= DB114 CMR= 107880

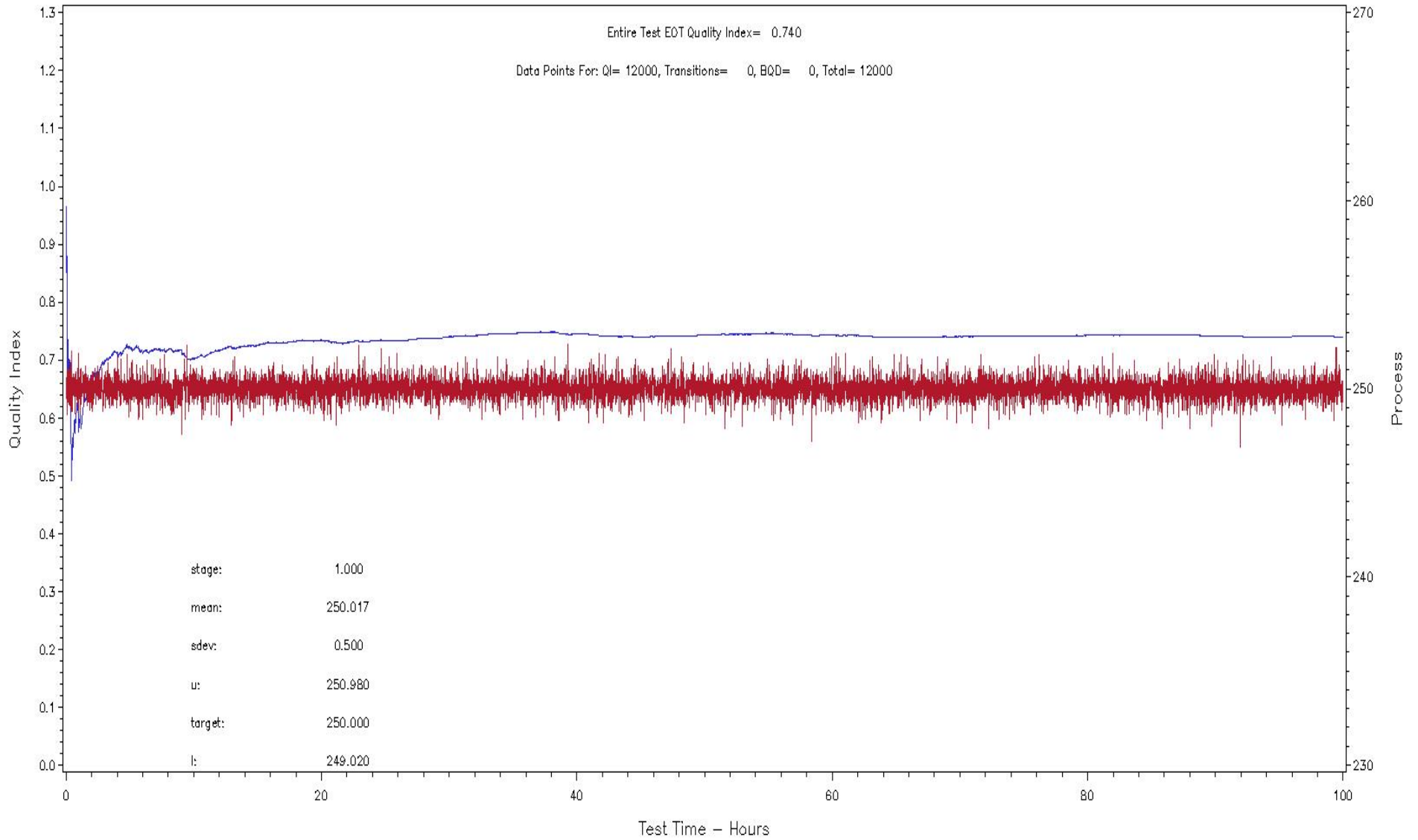


GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= BStand= 333 CMIR= 77827

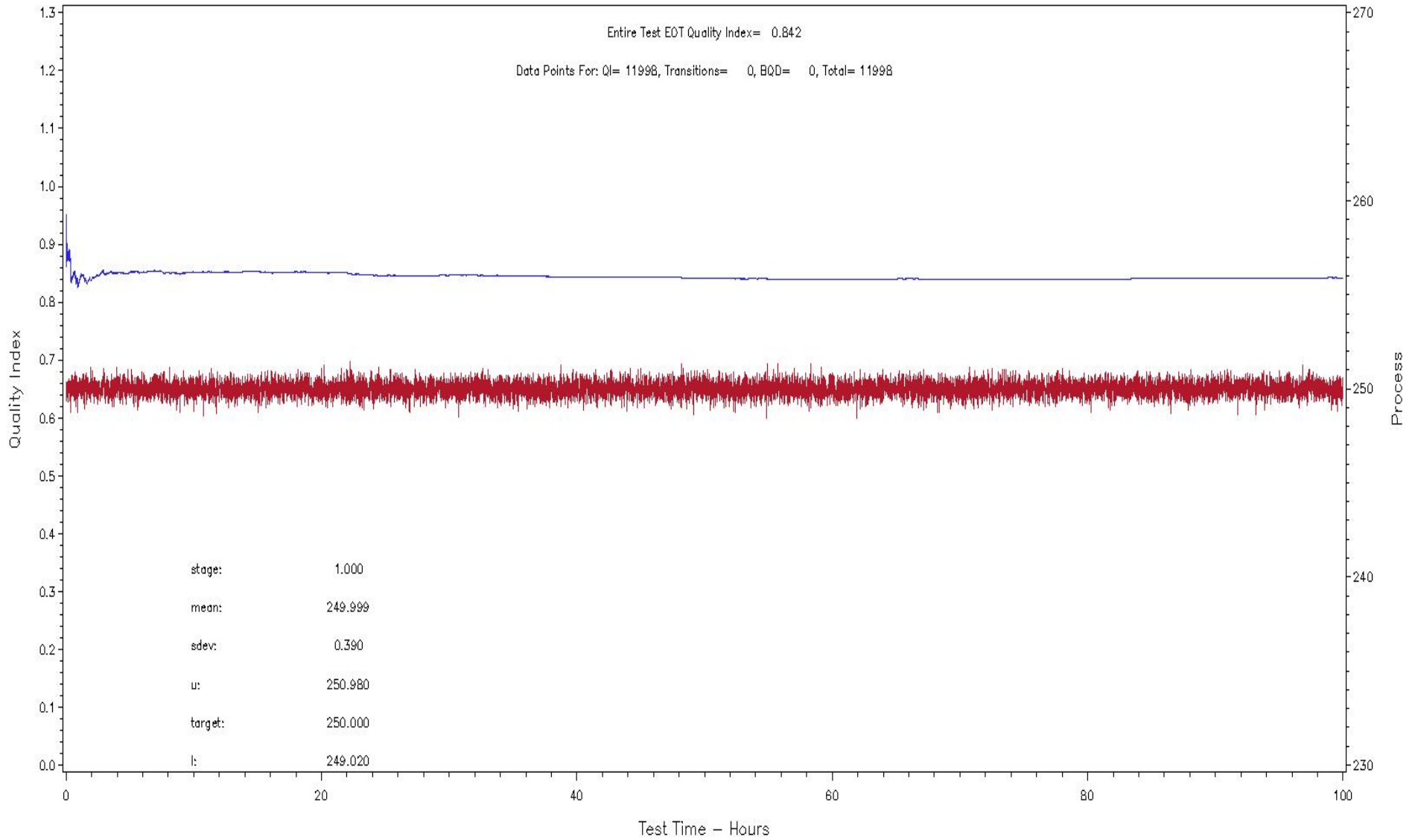




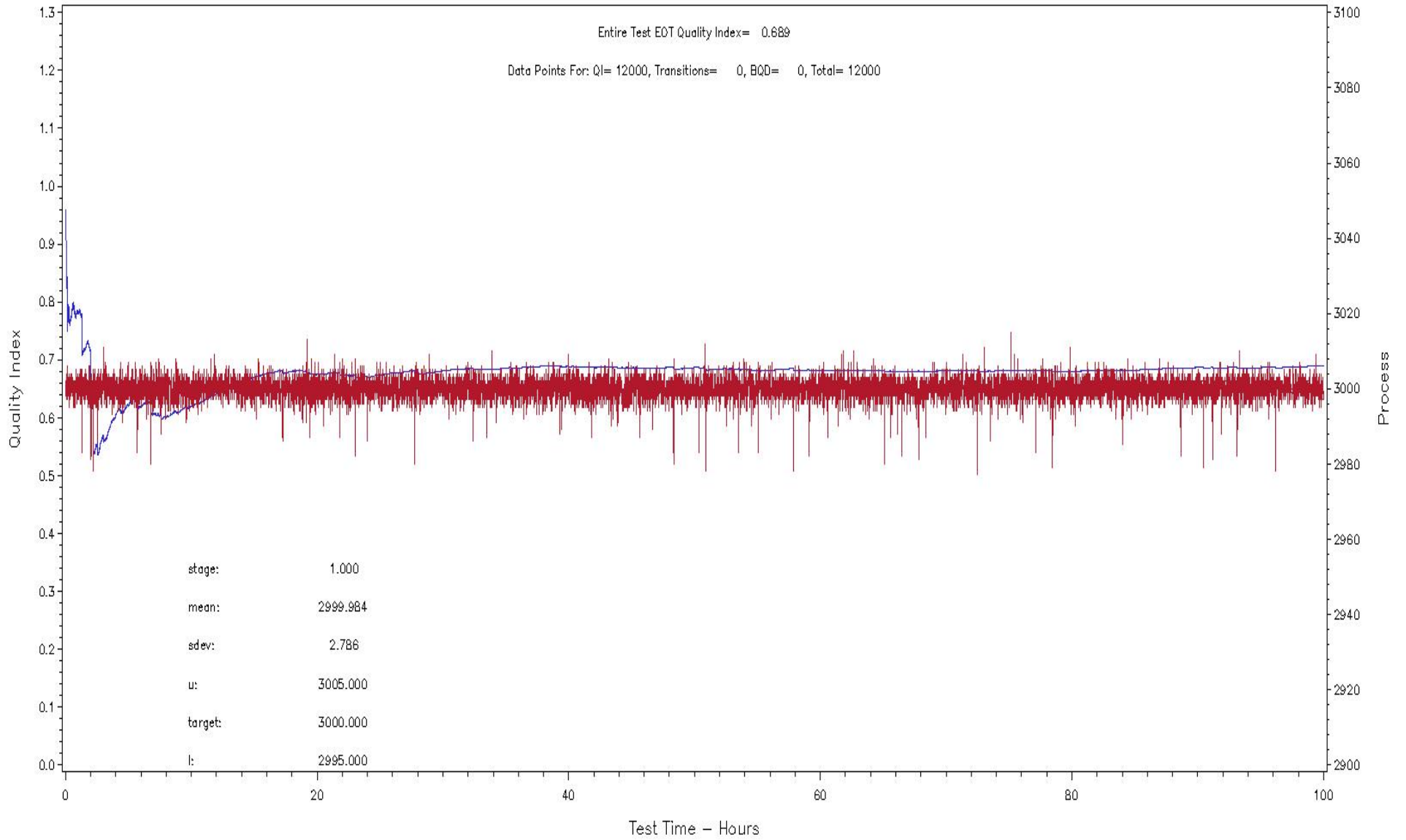
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= A Stand= 71 CMIR= 107883



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Torque - Nm (CONTROL)  
LAB= BStand= 333 CMR= 107867



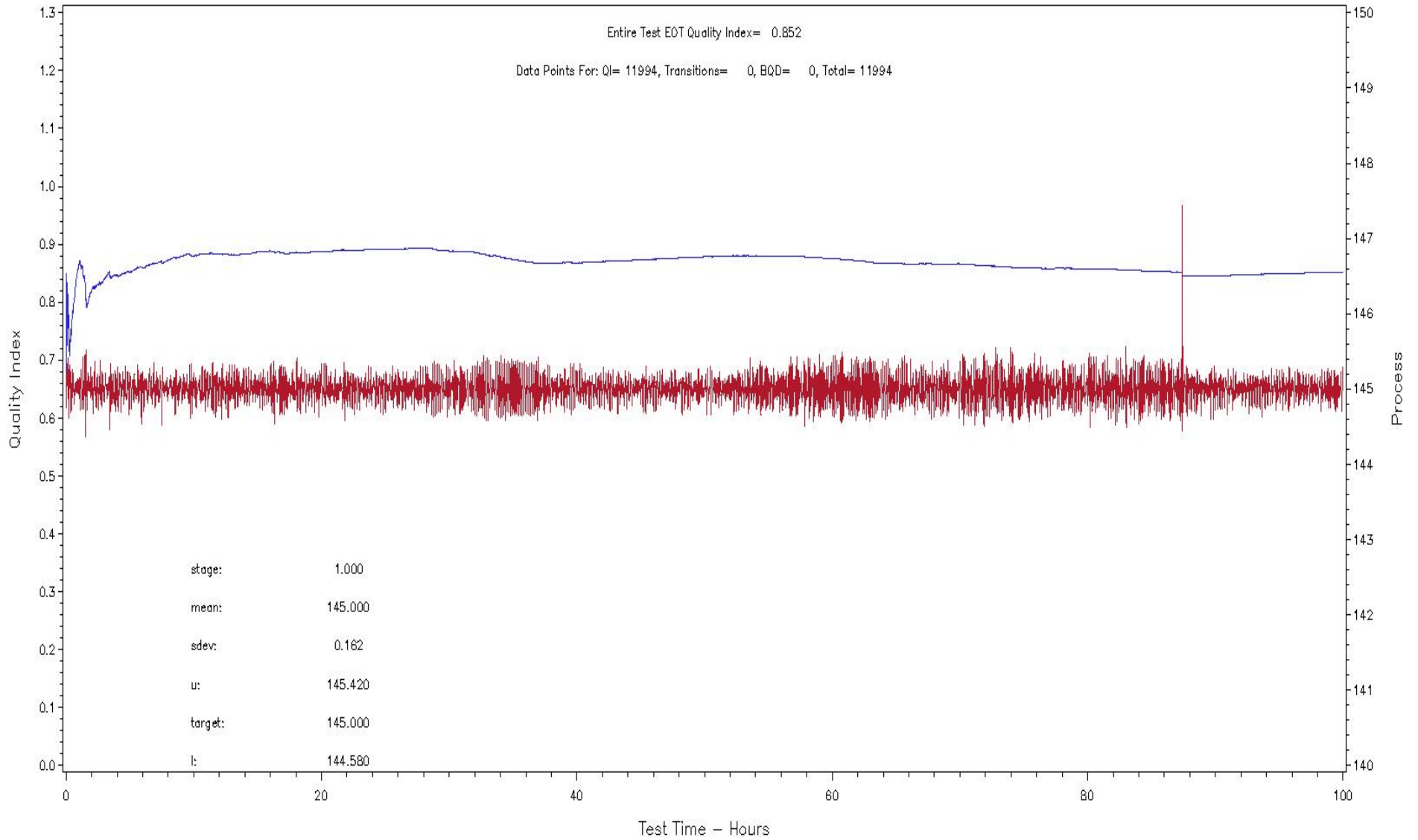
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Speed - r/min (CONTROL)  
LAB= A Stand= 71 CMIR= 108825



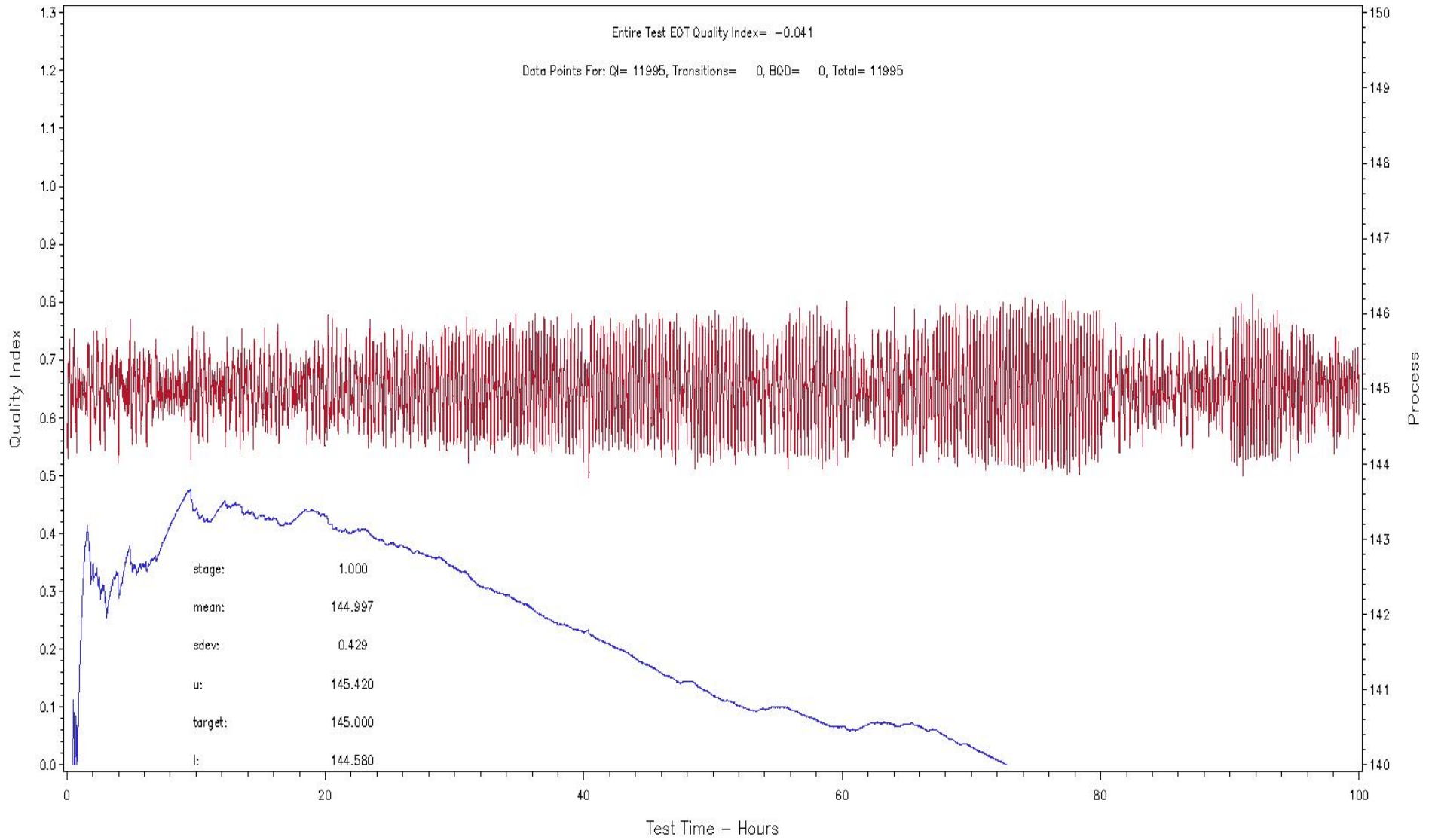
# Oil Filter Return

- One test below 0 for Oil Filter temp using III G oil Block U and L's (-0.041)
- One test slightly positive, all others appear to be well above 0

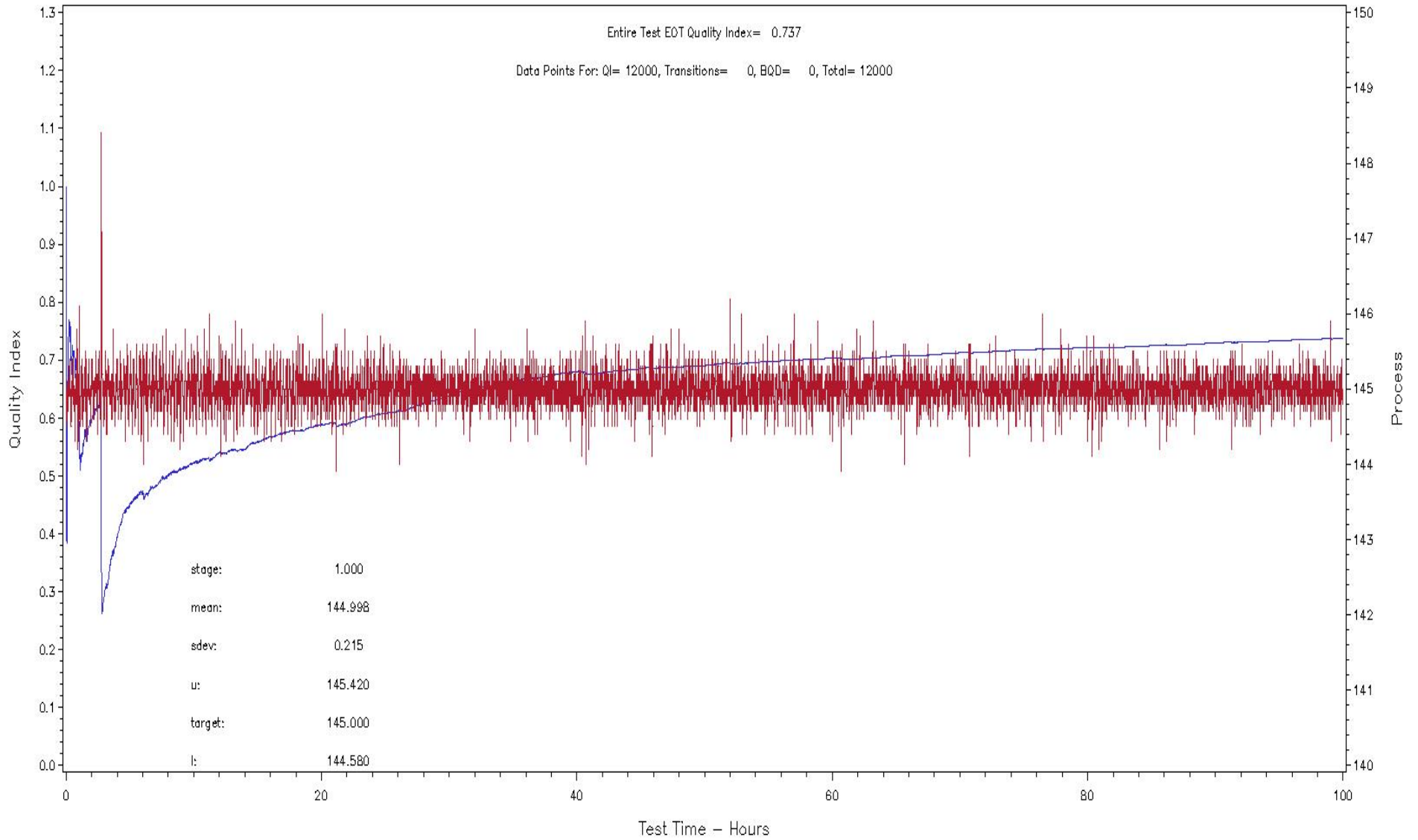
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature – Degrees C (CONTROL)  
LAB= BStand= 333 CMIR= 77827



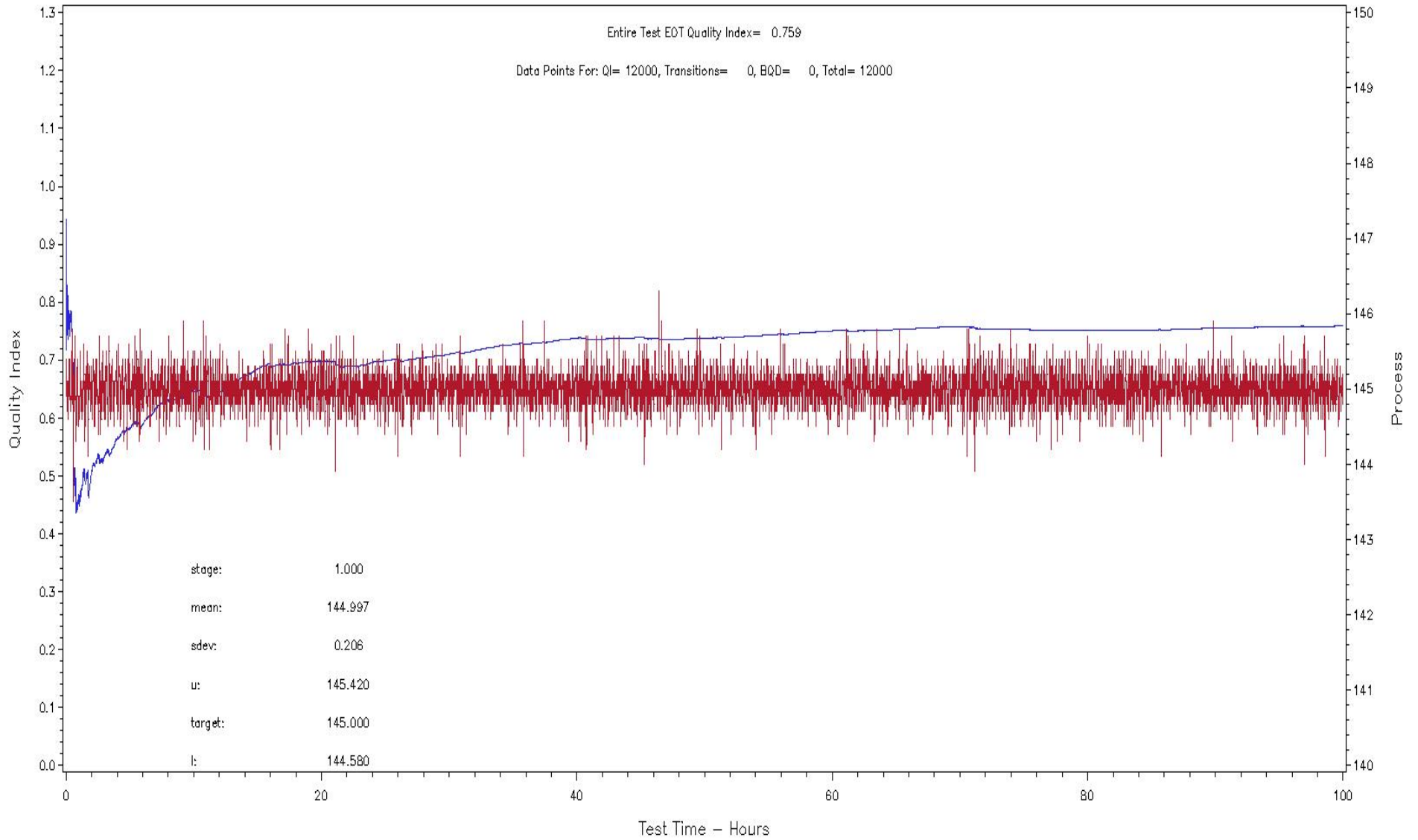
GMDD QUALITY INDEX OPERATIONAL REVIEW  
 Oil Filter Block Temperature - Degrees C (CONTROL)  
 LAB= GStand= 180 CMR= 108020



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature – Degrees C (CONTROL)  
LAB= A Stand= 71 CMIR= 108825

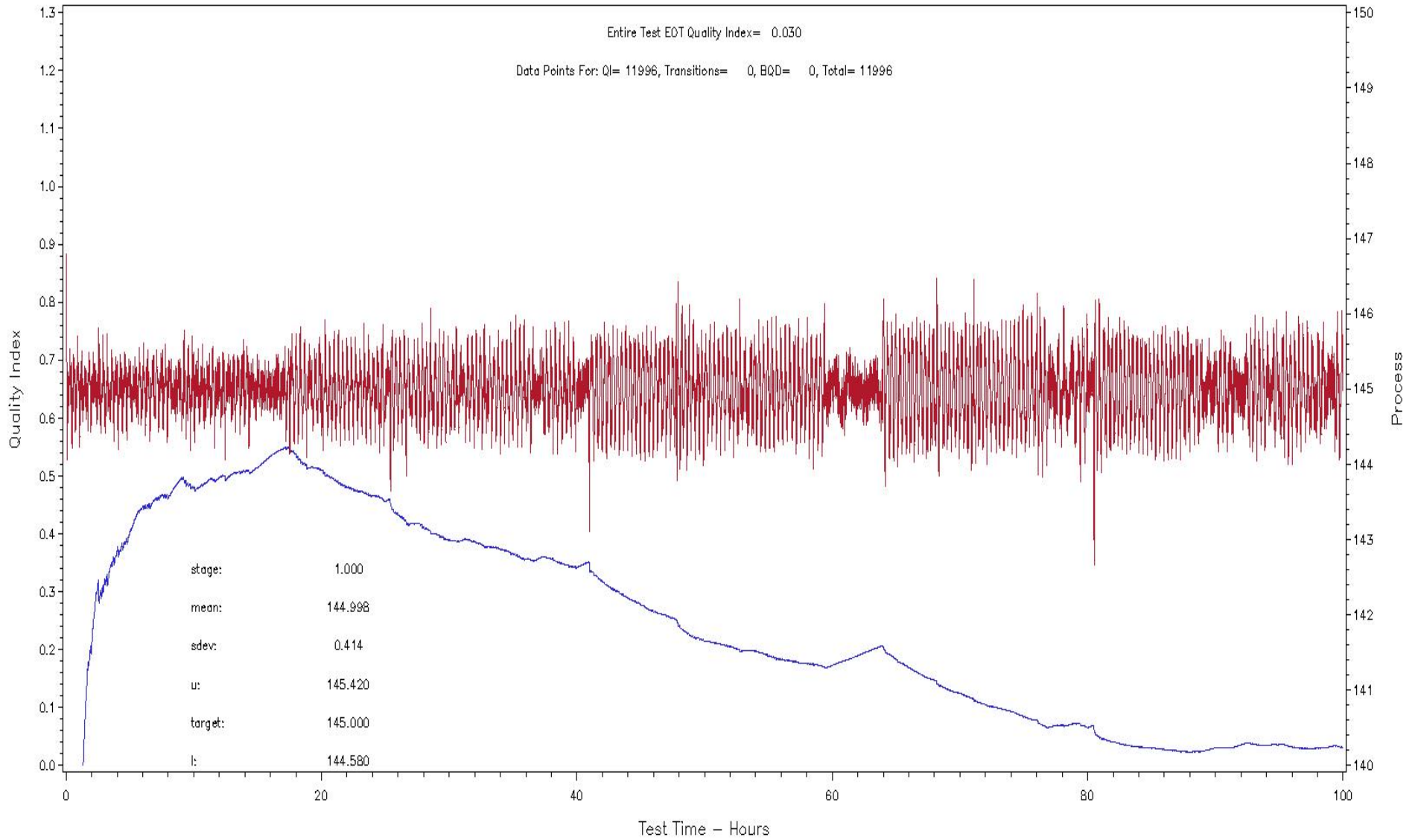


GMD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature – Degrees C (CONTROL)  
LAB= A Stand= 71 CMIR= 107883

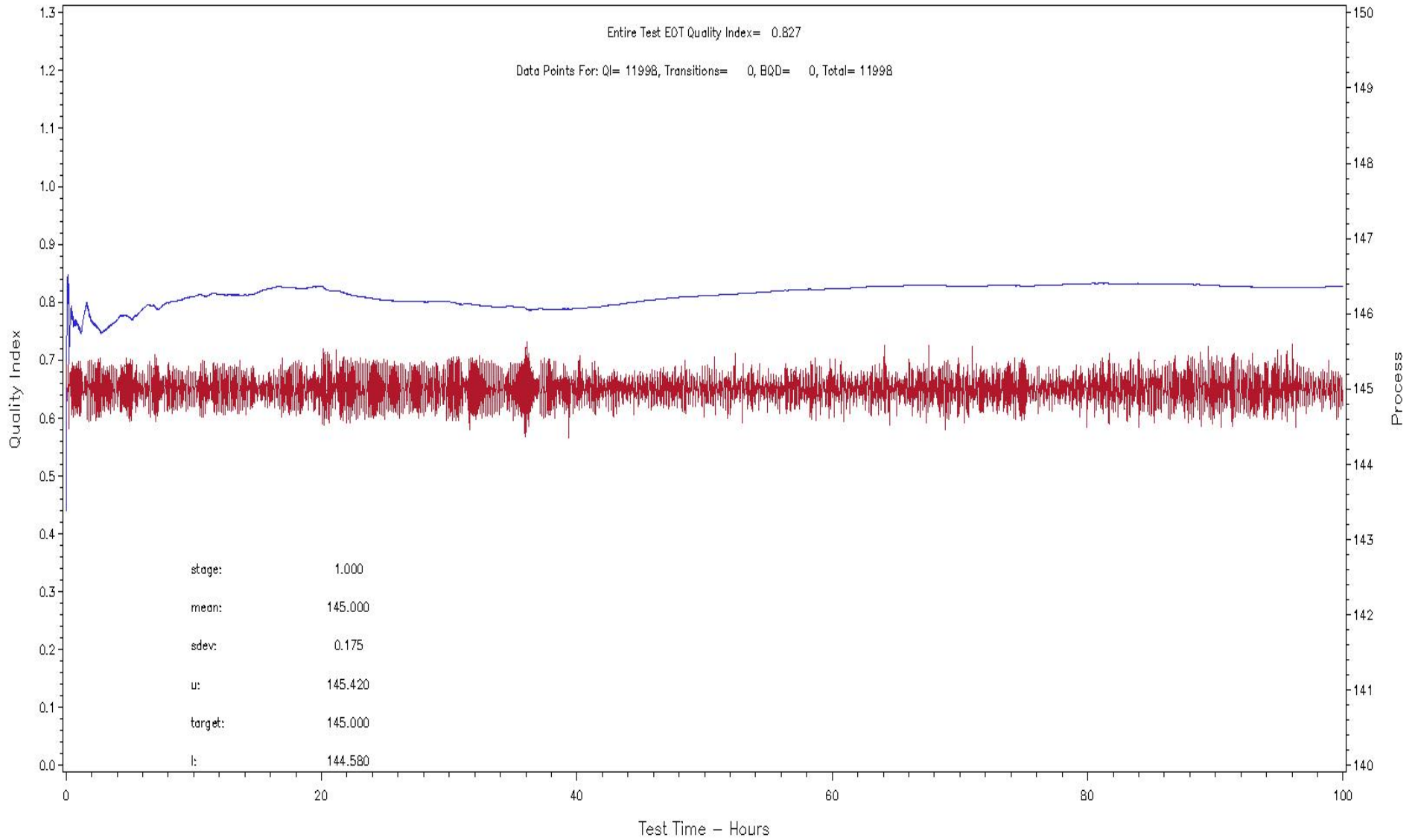




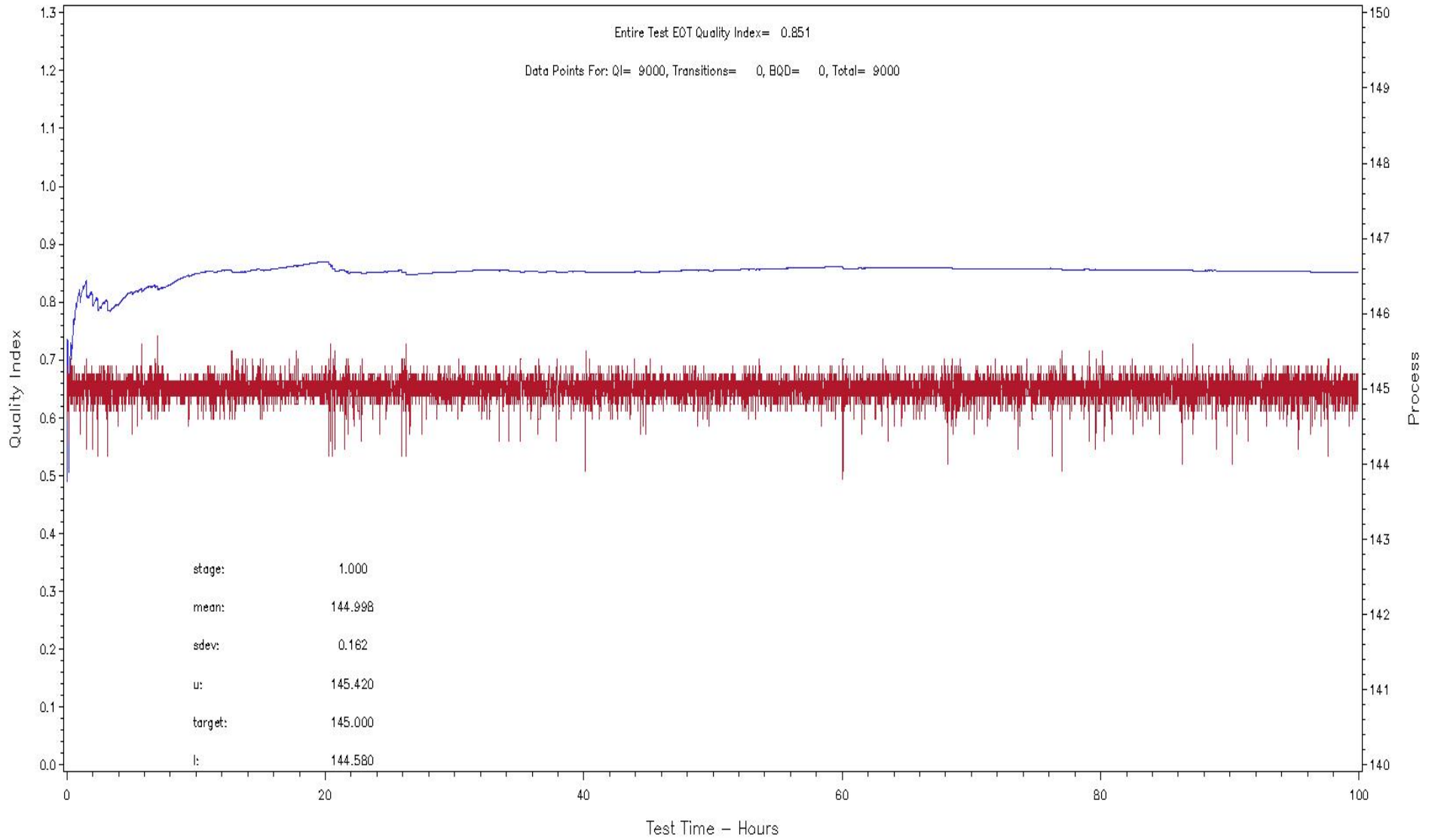
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature – Degrees C (CONTROL)  
LAB= GStand= 180 CMR= 107865



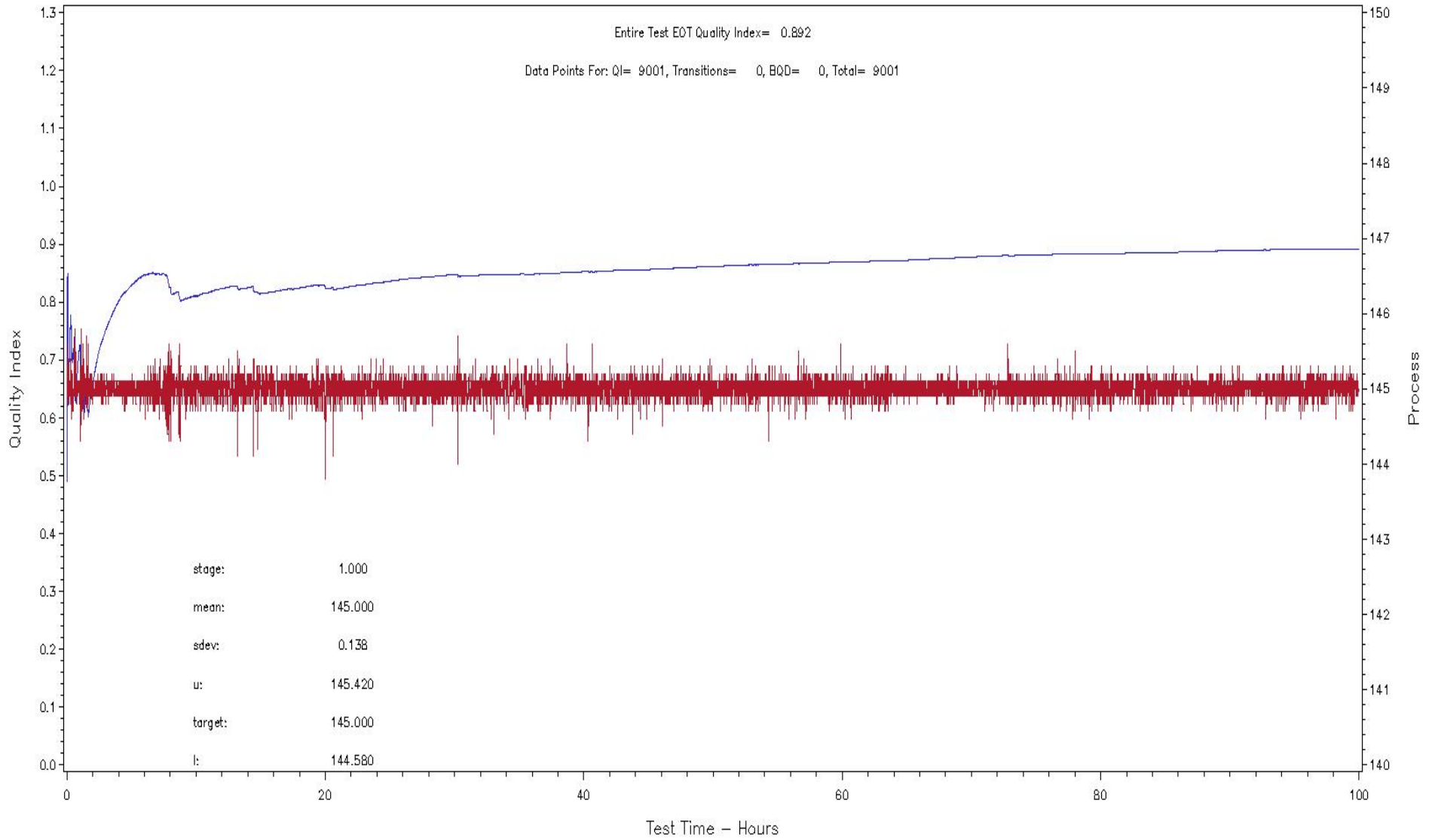
GMD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature – Degrees C (CONTROL)  
LAB= BStand= 333 CMR= 107867



GMDD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature - Degrees C (CONTROL)  
LAB= D Stand= DB114 CMR= 107880



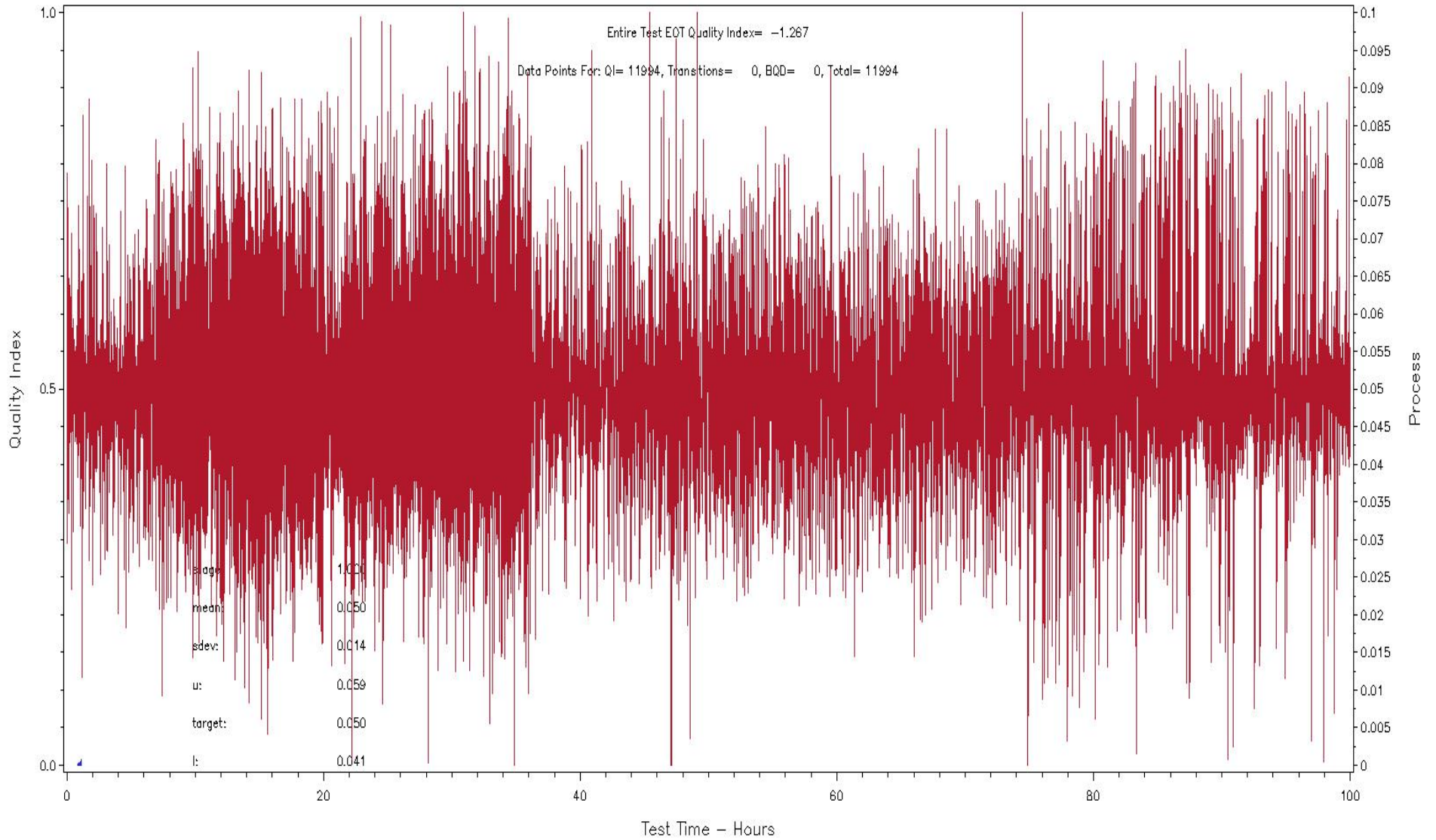
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Oil Filter Block Temperature - Degrees C (CONTROL)  
LAB= D Stand= DB114 CMR= 108597



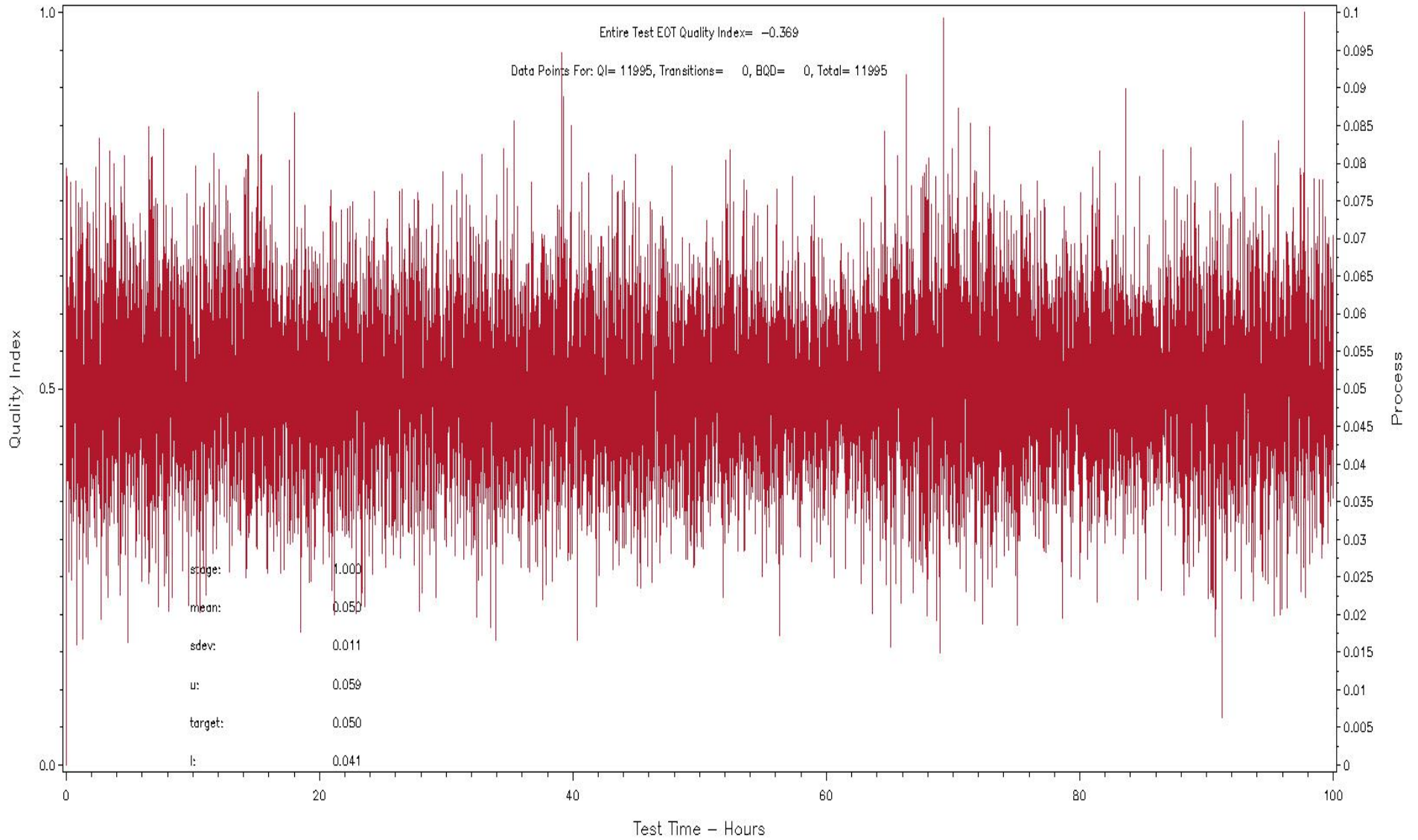
# Intake Air Pressure

- Five of Eight tests had negative QI's when using IIG Intake air U and L's
- Remaining three were all  $> 0.500$  or better

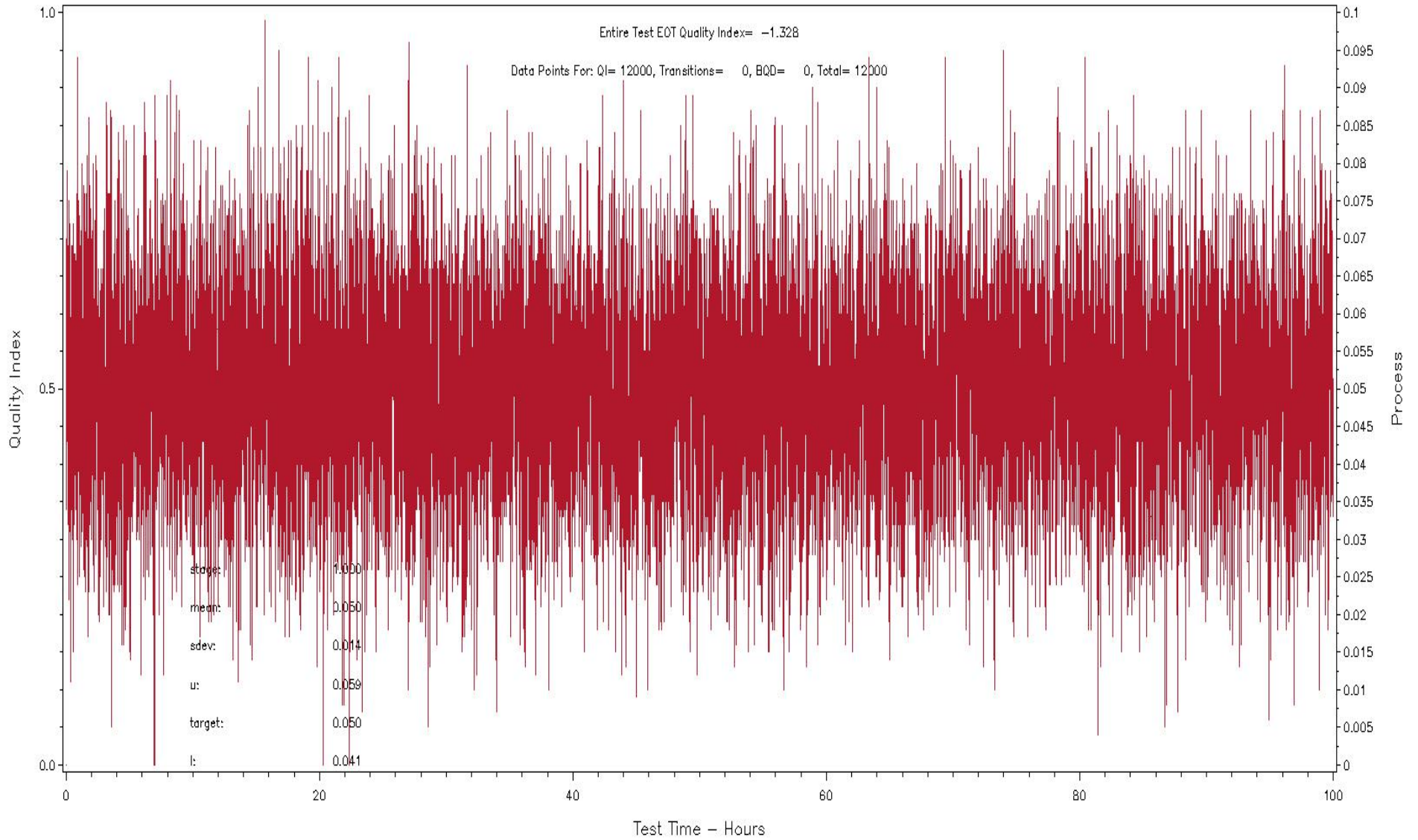
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure - kPa (CONTROL)  
LAB= BStand= 333 CMIR= 77827



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure - kPa (CONTROL)  
LAB= G Stand= 180 CMR= 108020

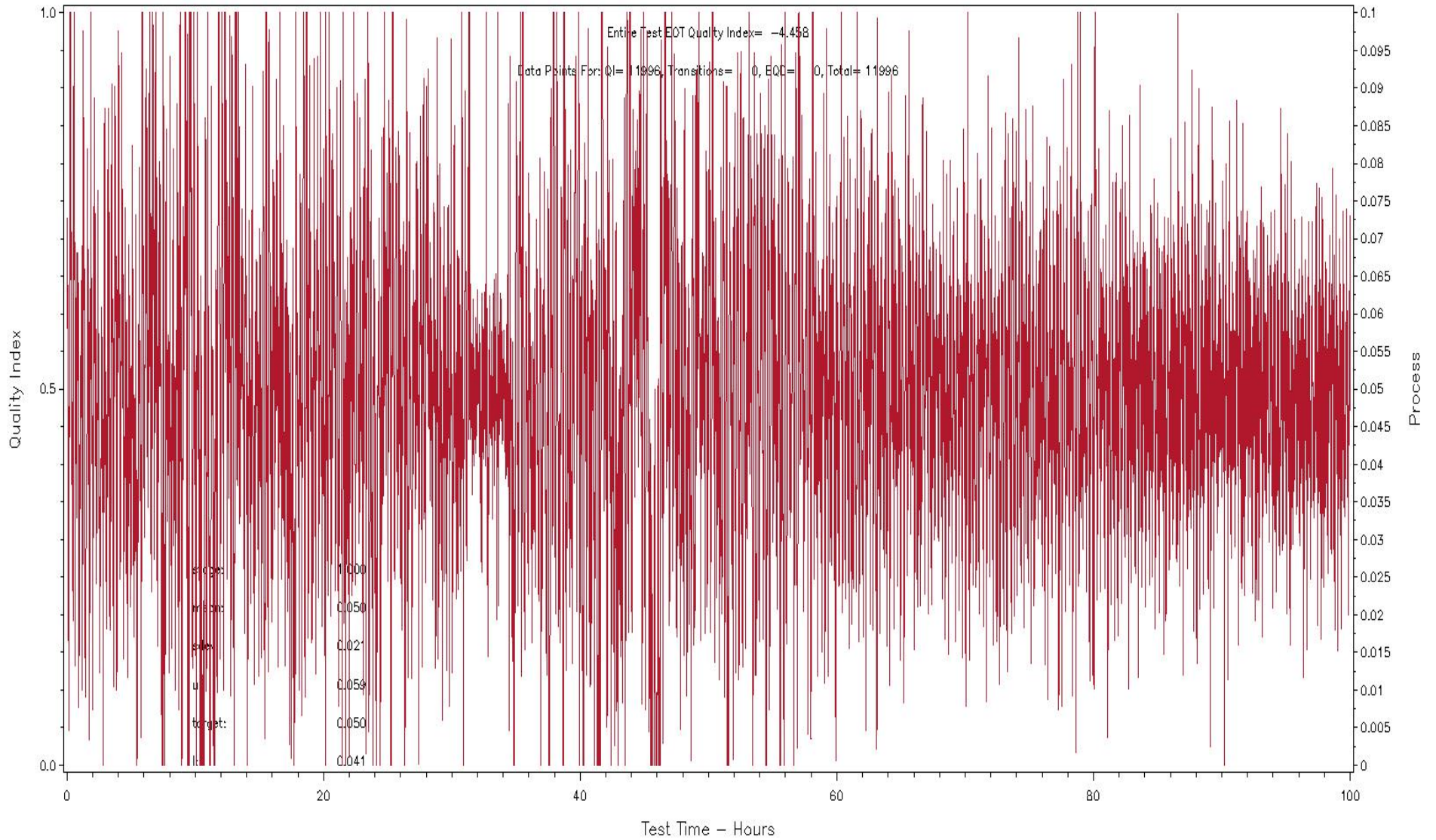


GMOD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure – kPa (CONTROL)  
LAB= A Stand= 71 CMIR= 107883

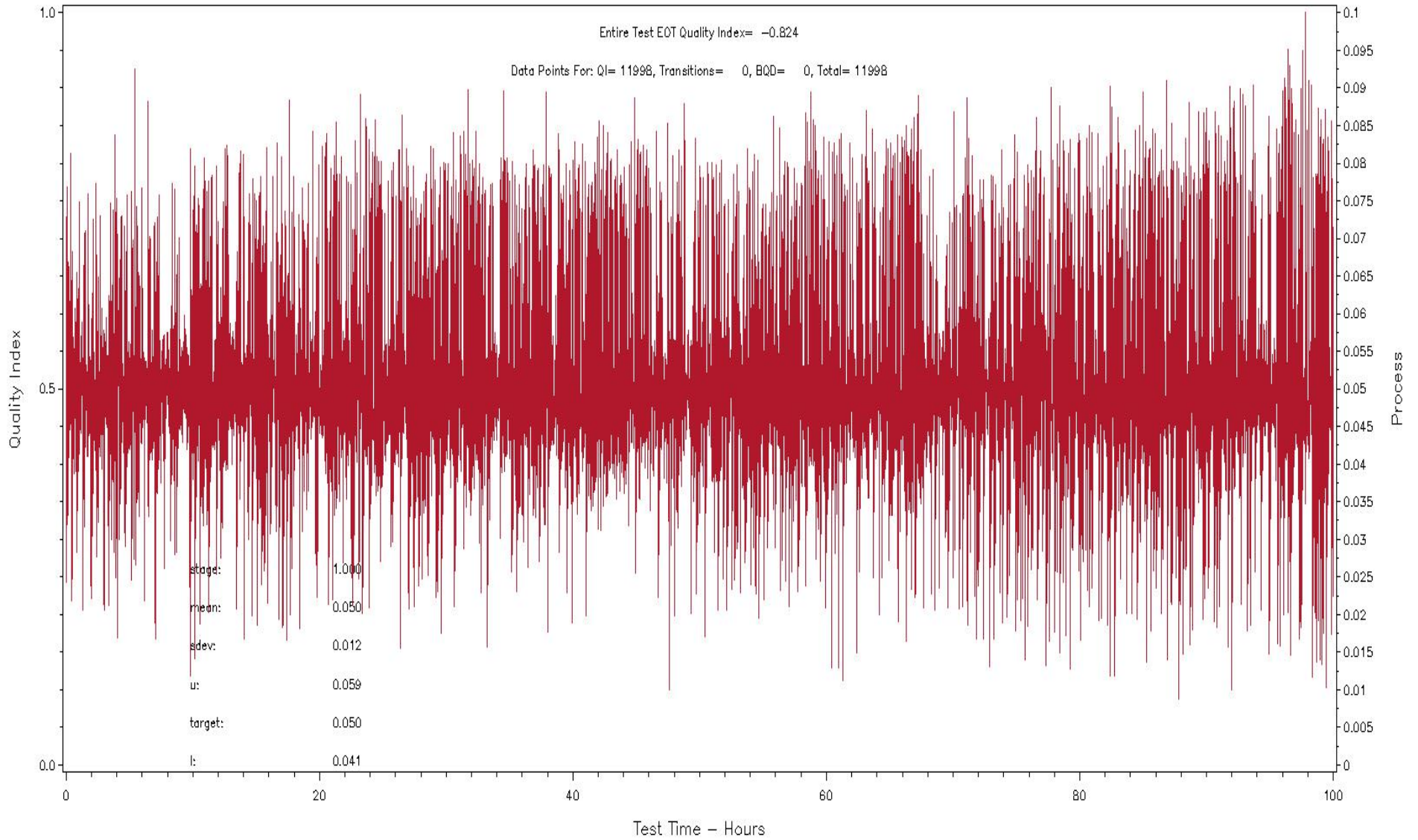




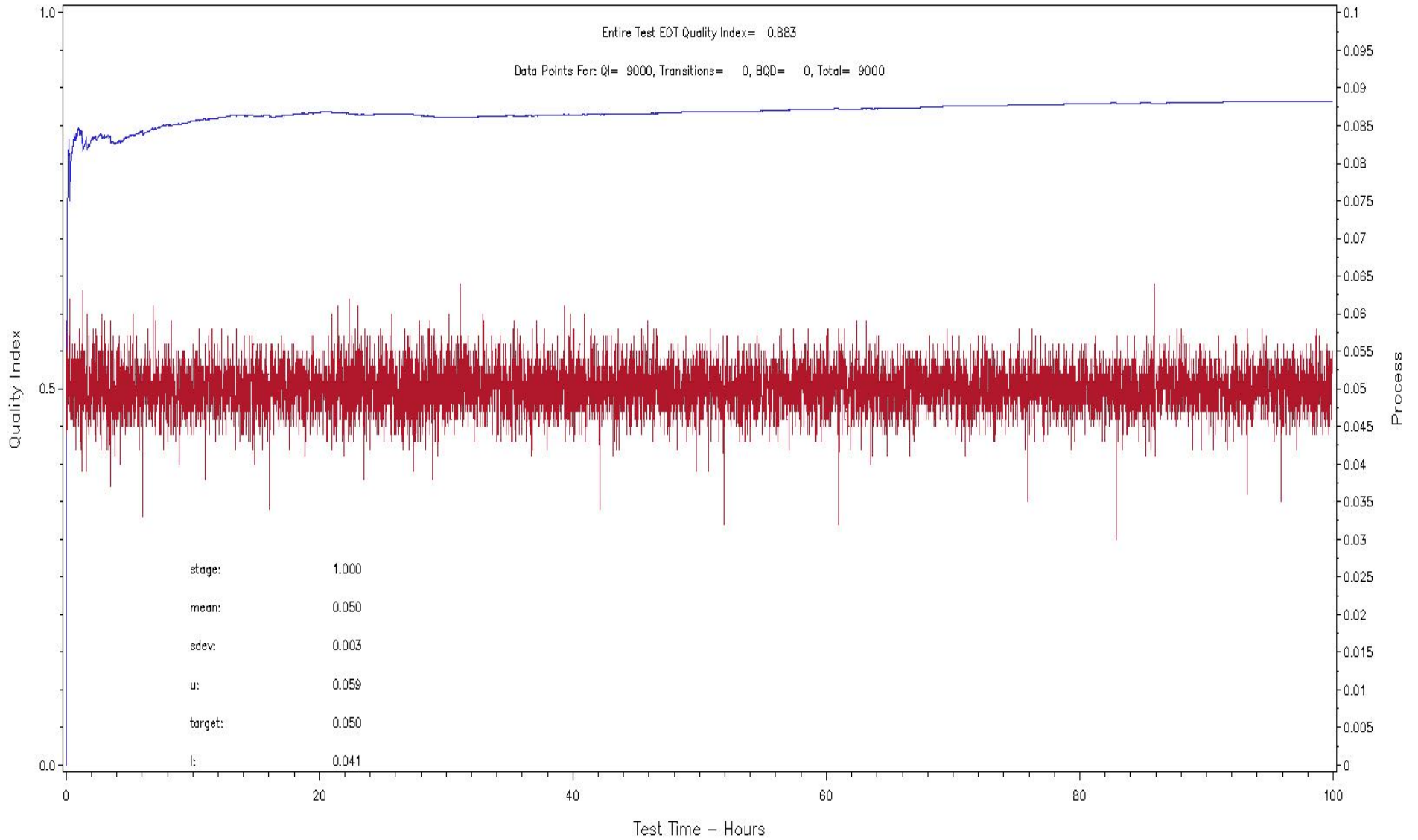
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure - kPa (CONTROL)  
LAB= G Stand= 180 CMR= 107885



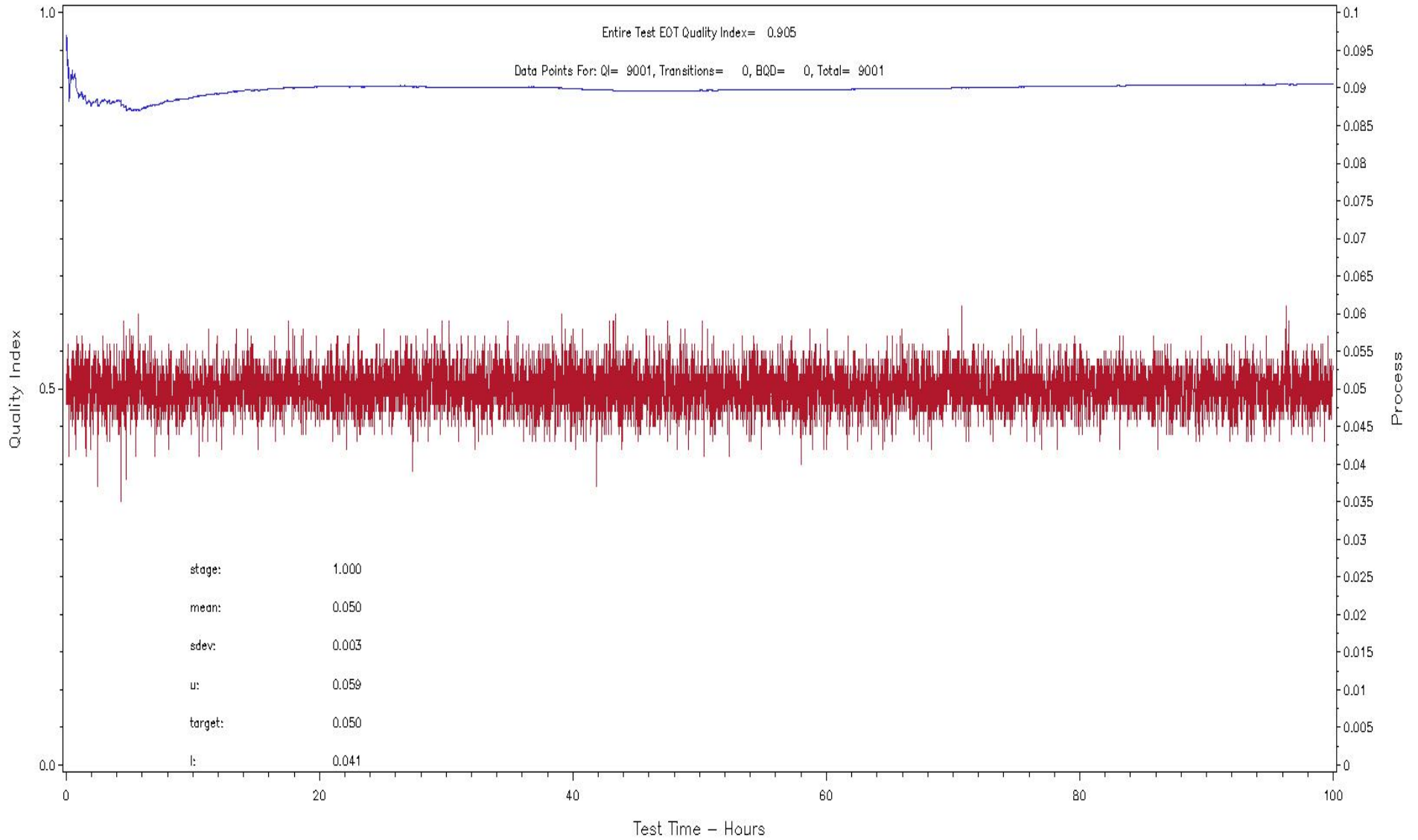
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure - kPa (CONTROL)  
LAB= BStand= 333 CMR= 107867



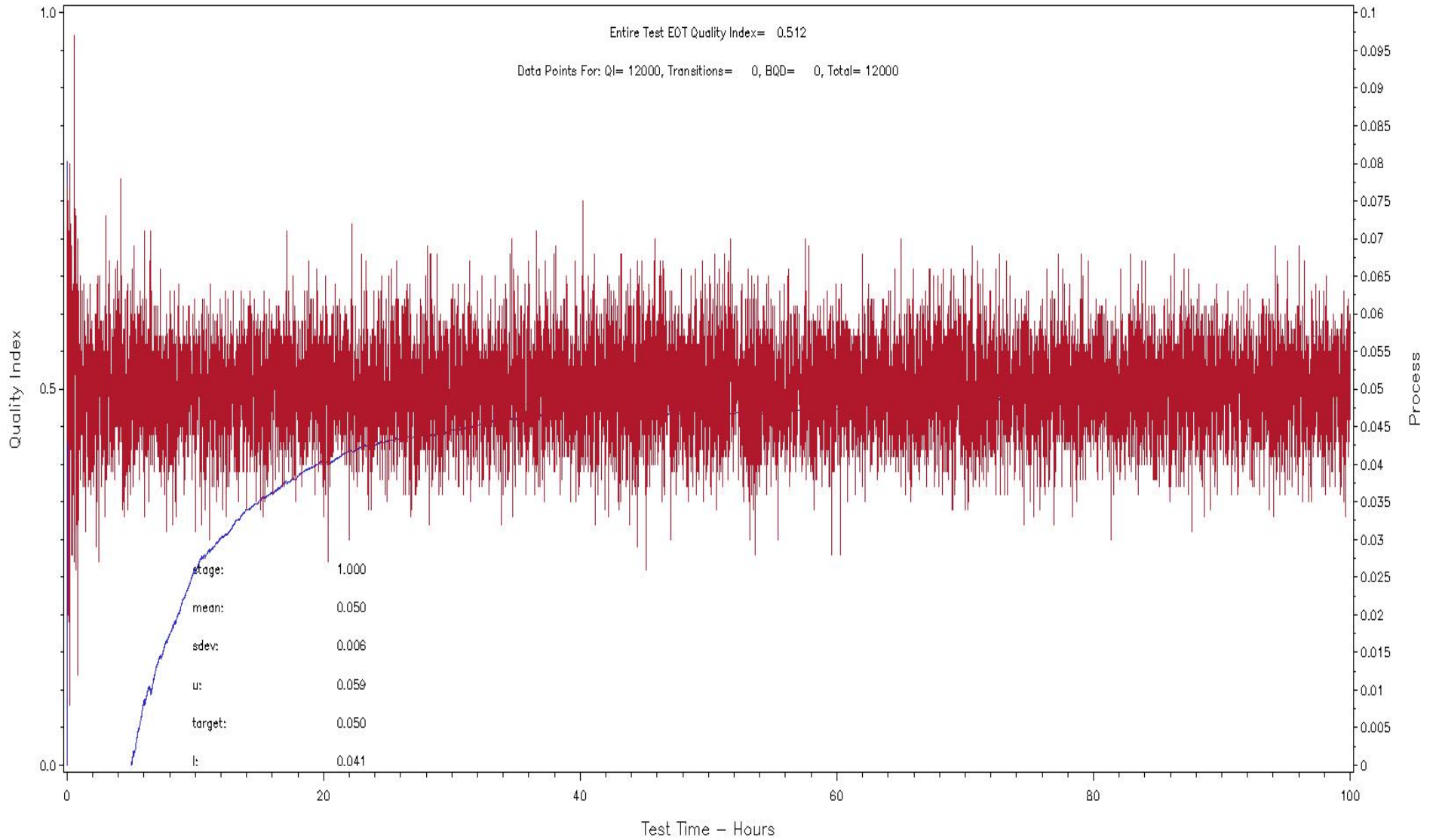
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure - kPa (CONTROL)  
LAB= 0 Stand= DB114 CMR= 107880



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure – kPa (CONTROL)  
LAB= 0 Stand= DB114 CMR= 108597



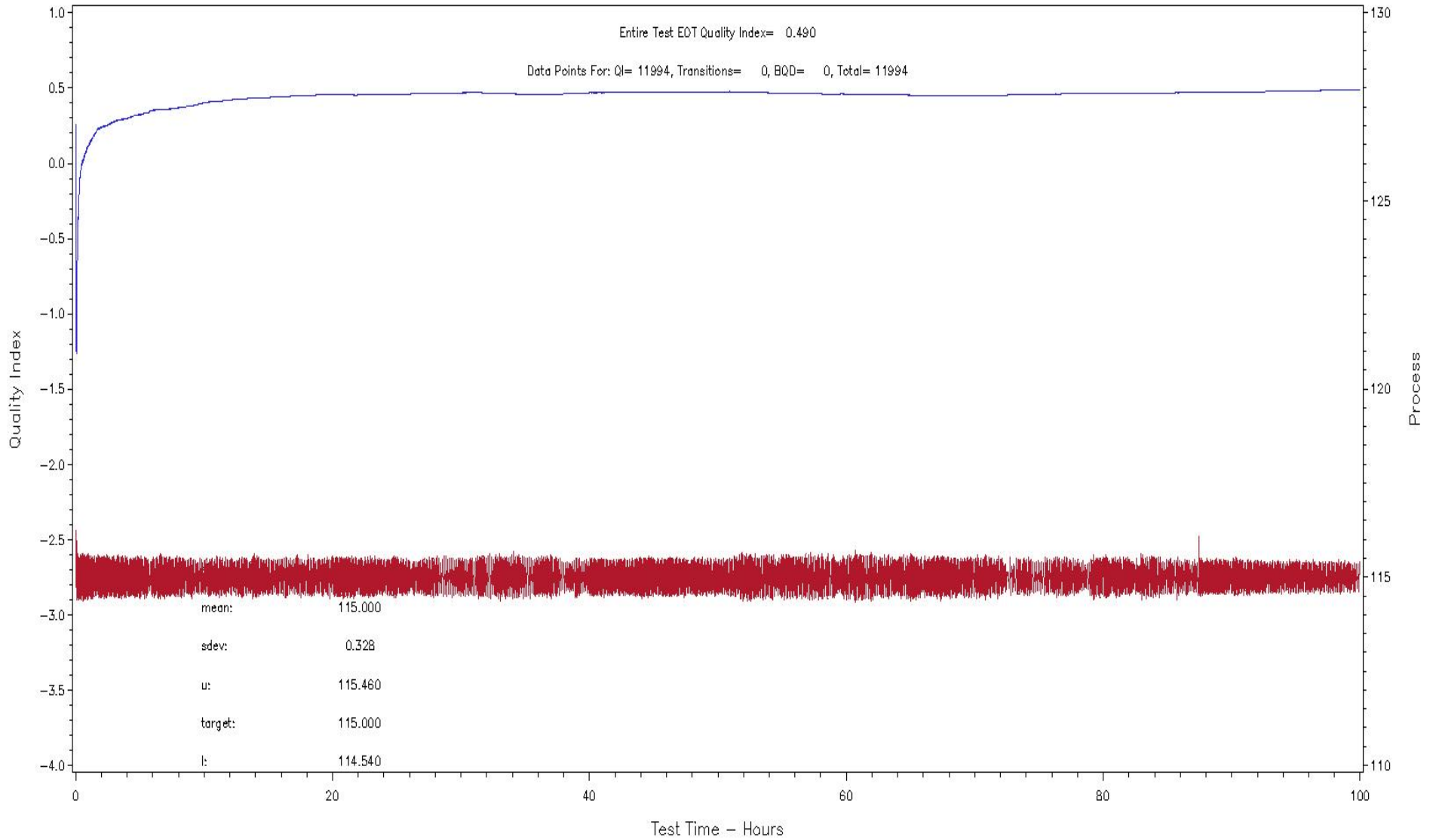
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Intake Air Pressure - kPa (CONTROL)  
LAB= A Stand= 71 CMIR= 108825



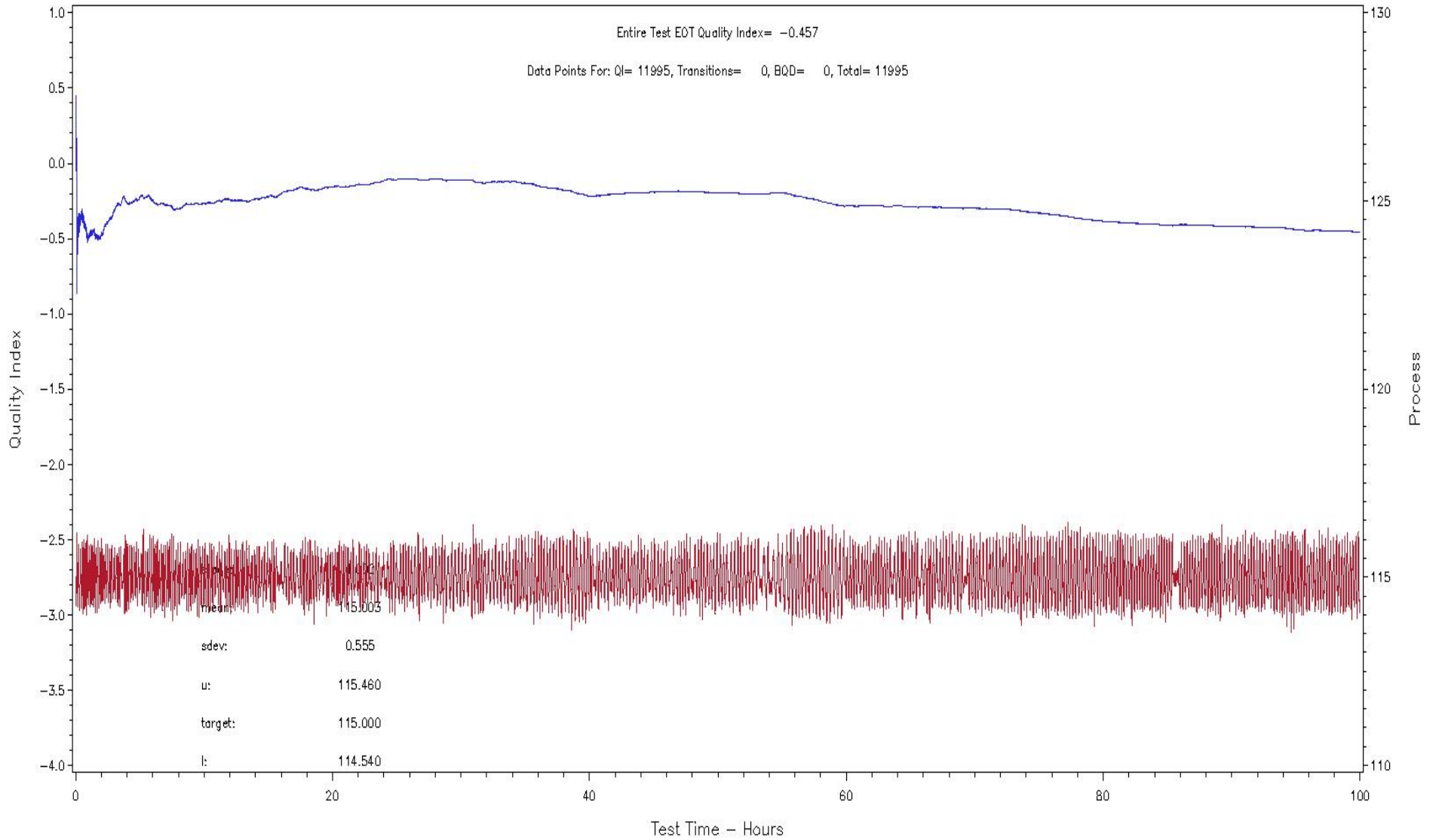
# Coolant Out Temperature

- Two tests from one lab slightly negative when using IIIG Limits
- All others  $>0.400$  or better

GMDD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature - Degrees C (CONTROL)  
LAB= BStand= 333 CMIR= 77827

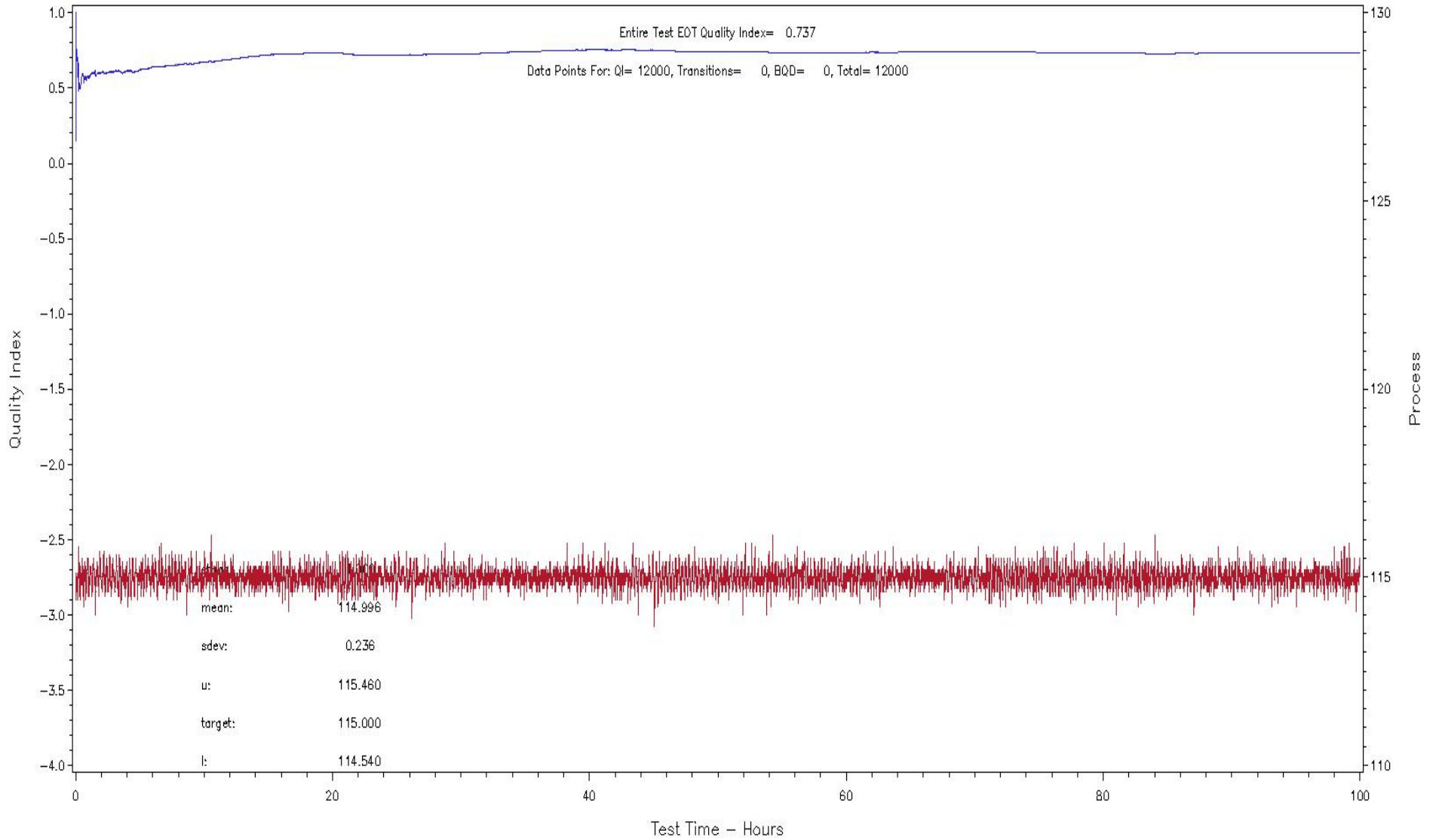


GMDD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature - Degrees C (CONTROL)  
LAB= GStand= 180 CMR= 10B020

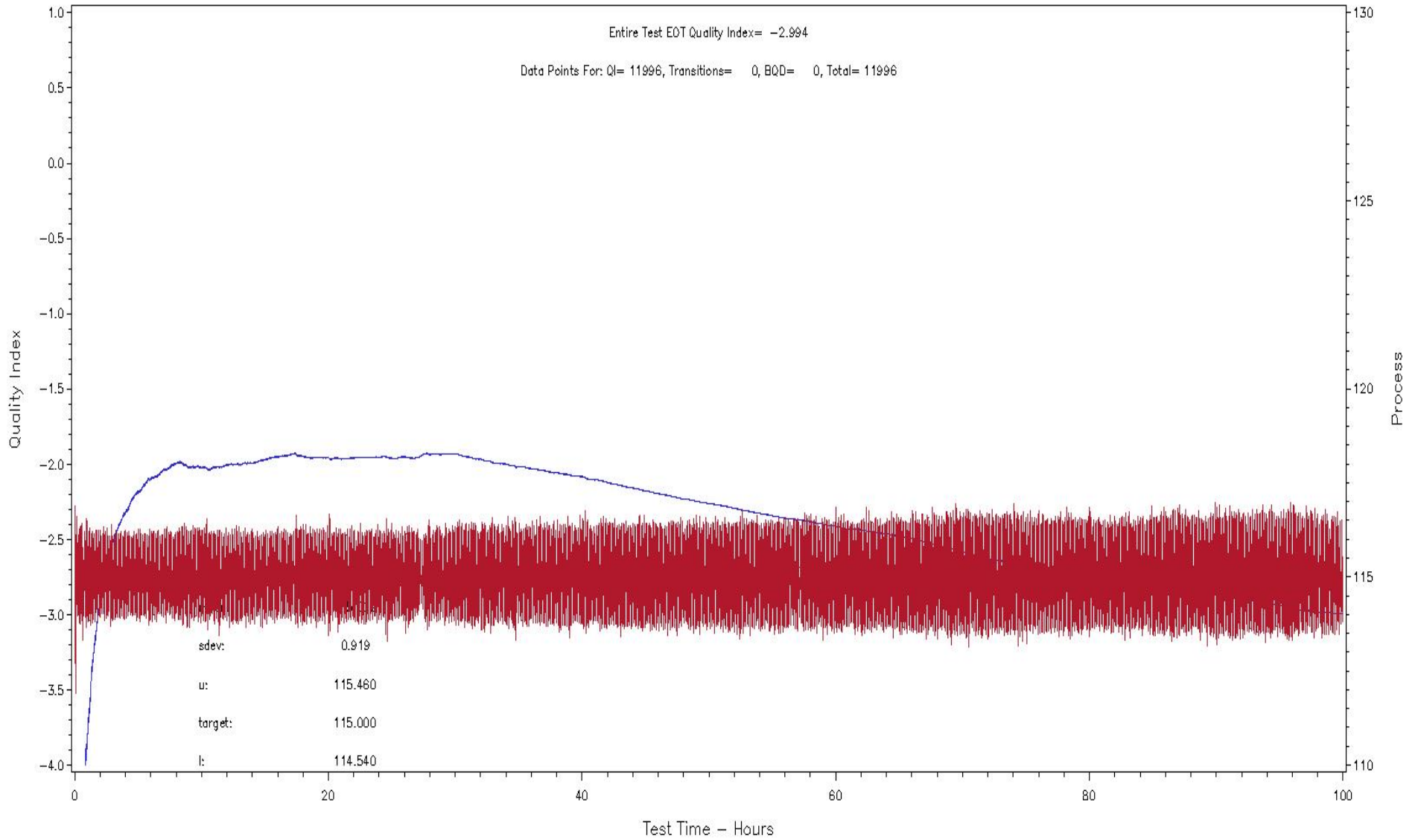




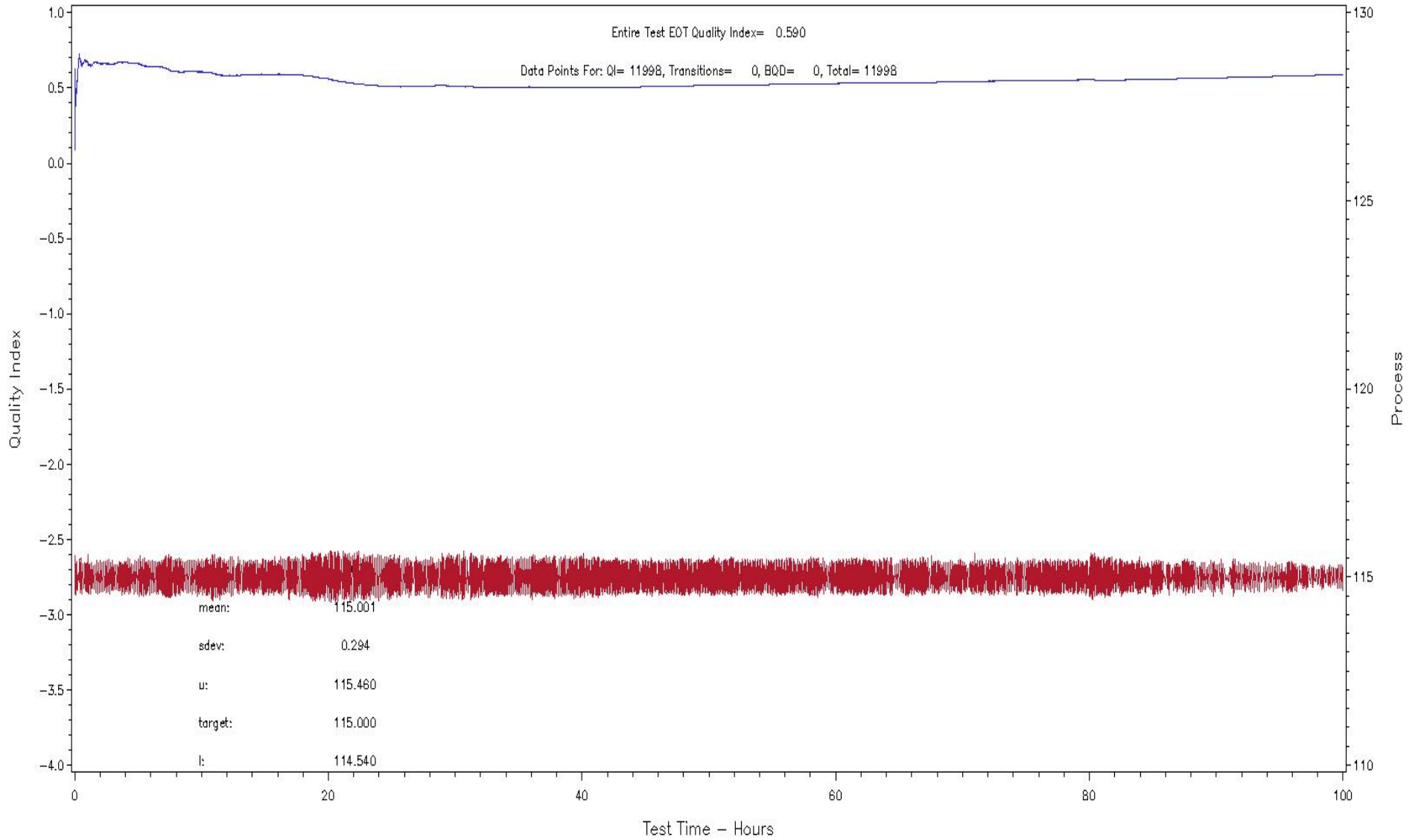
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature – Degrees C (CONTROL)  
LAB= A Stand= 71 CMR= 107863



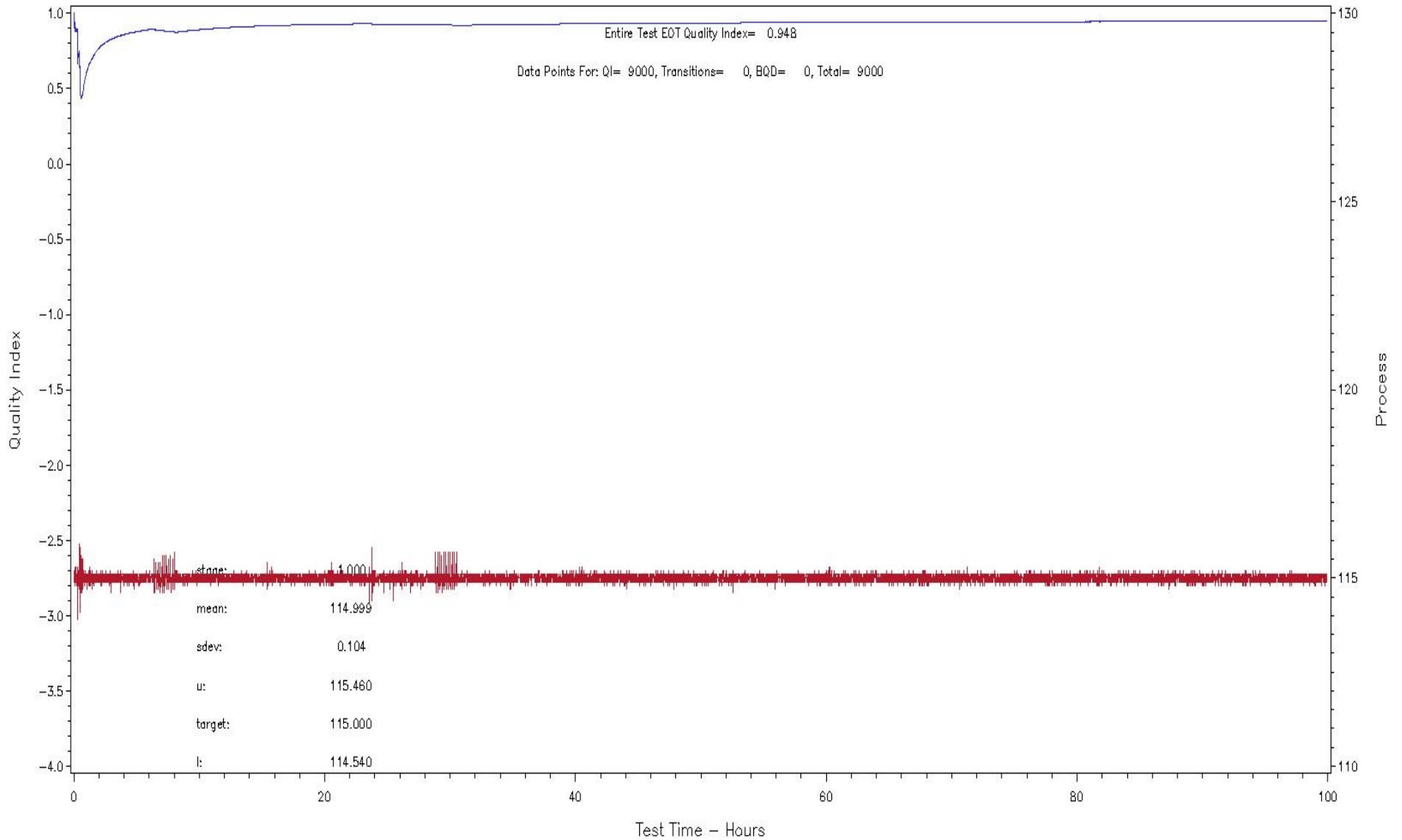
GMO QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature – Degrees C (CONTROL)  
LAB= GStand= 180 CMR= 107865



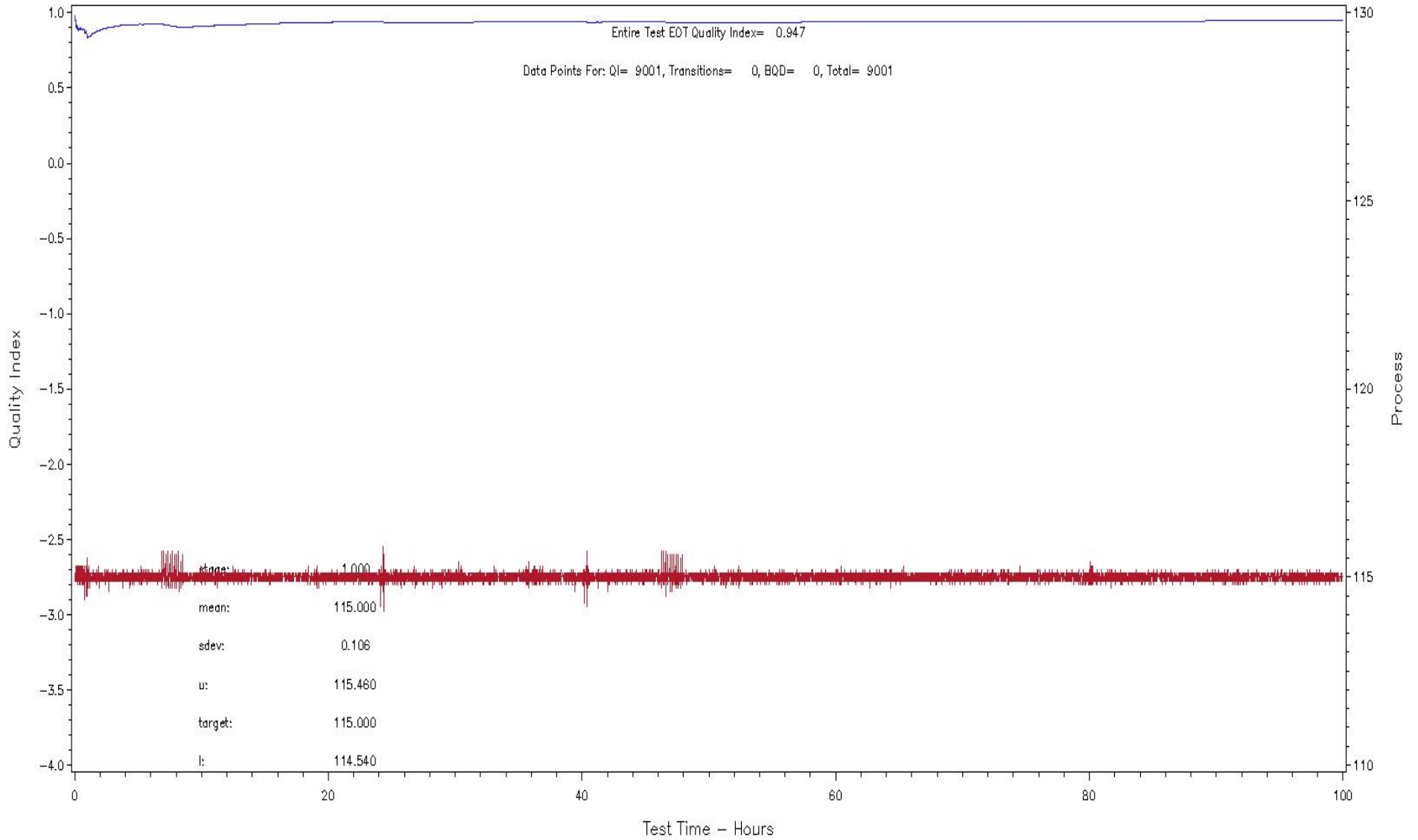
GMD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature – Degrees C (CONTROL)  
LAB= BStand= 333 CMR= 107867



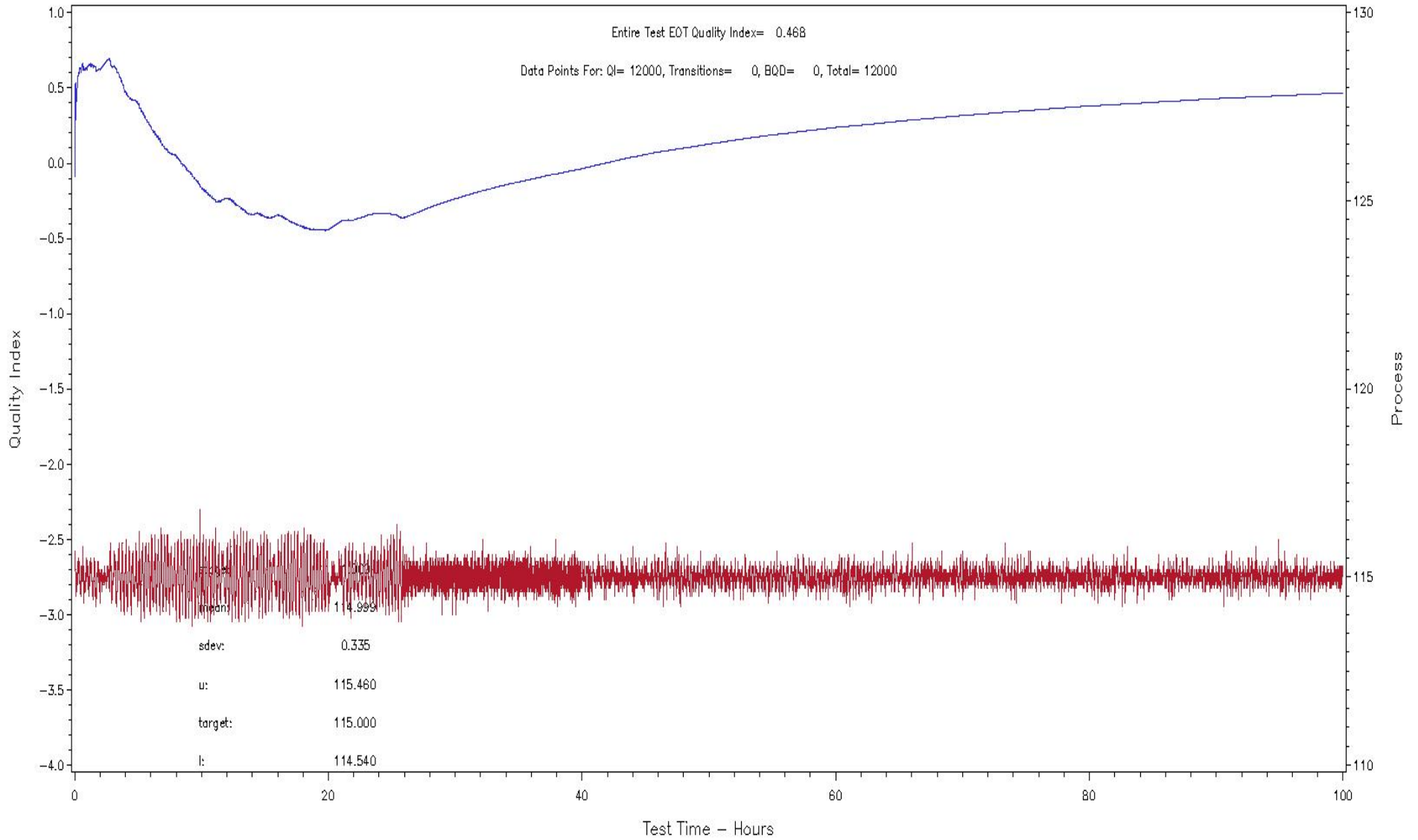
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature – Degrees C (CONTROL)  
LAB= 0 Stand= DB114 CMR= 107880



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature – Degrees C (CONTROL)  
LAB= D Stand= DB114 CMR= 108597



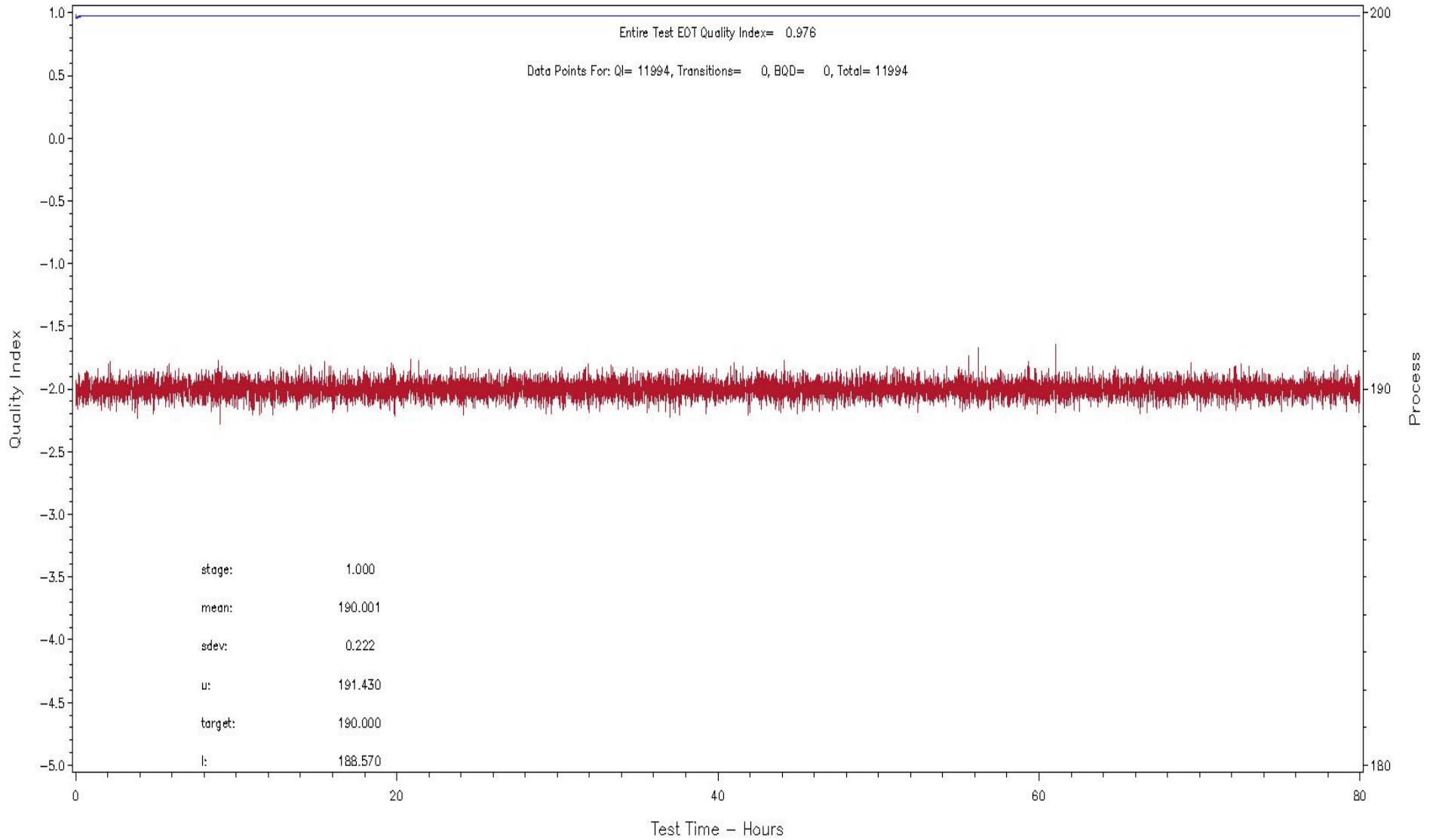
GMD QUALITY INDEX OPERATIONAL REVIEW  
Coolant Out Temperature – Degrees C (CONTROL)  
LAB= A Stand= 71 CMIR= 108825



# Engine Coolant Flow

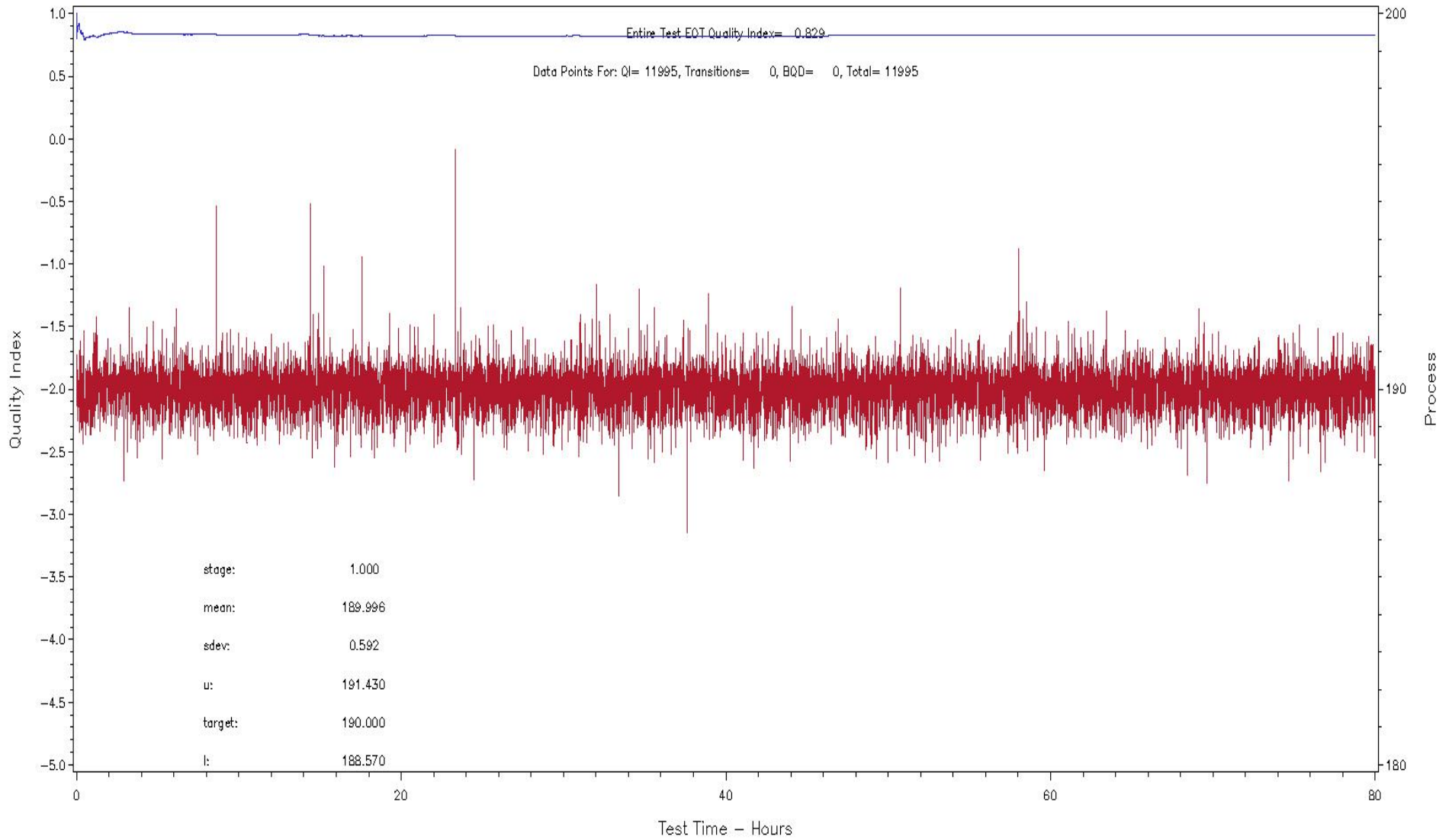
- No issues with coolant flow. All QI values well above Zero with IIIG Limits

GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= BStand= 333 CMIR= 77827

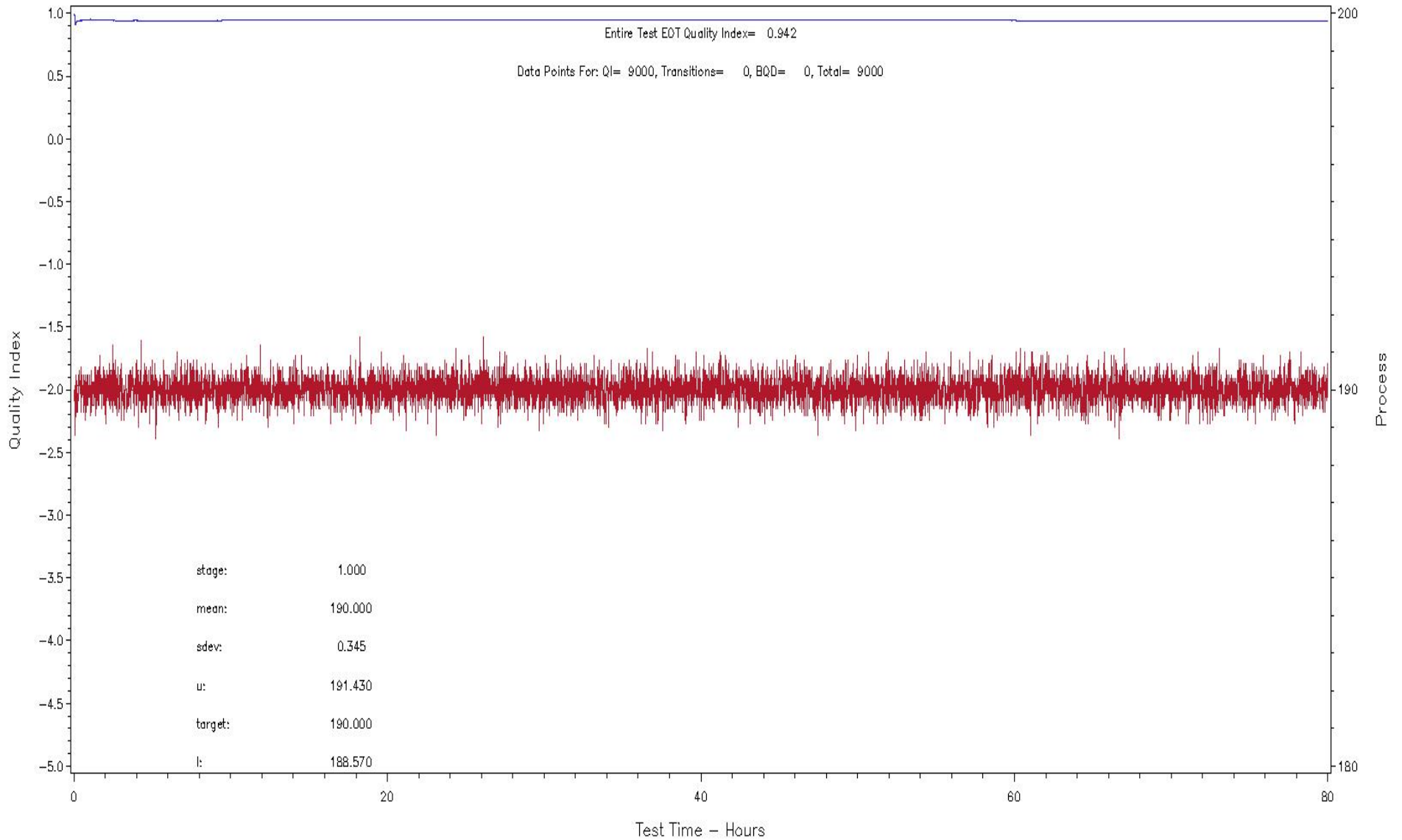




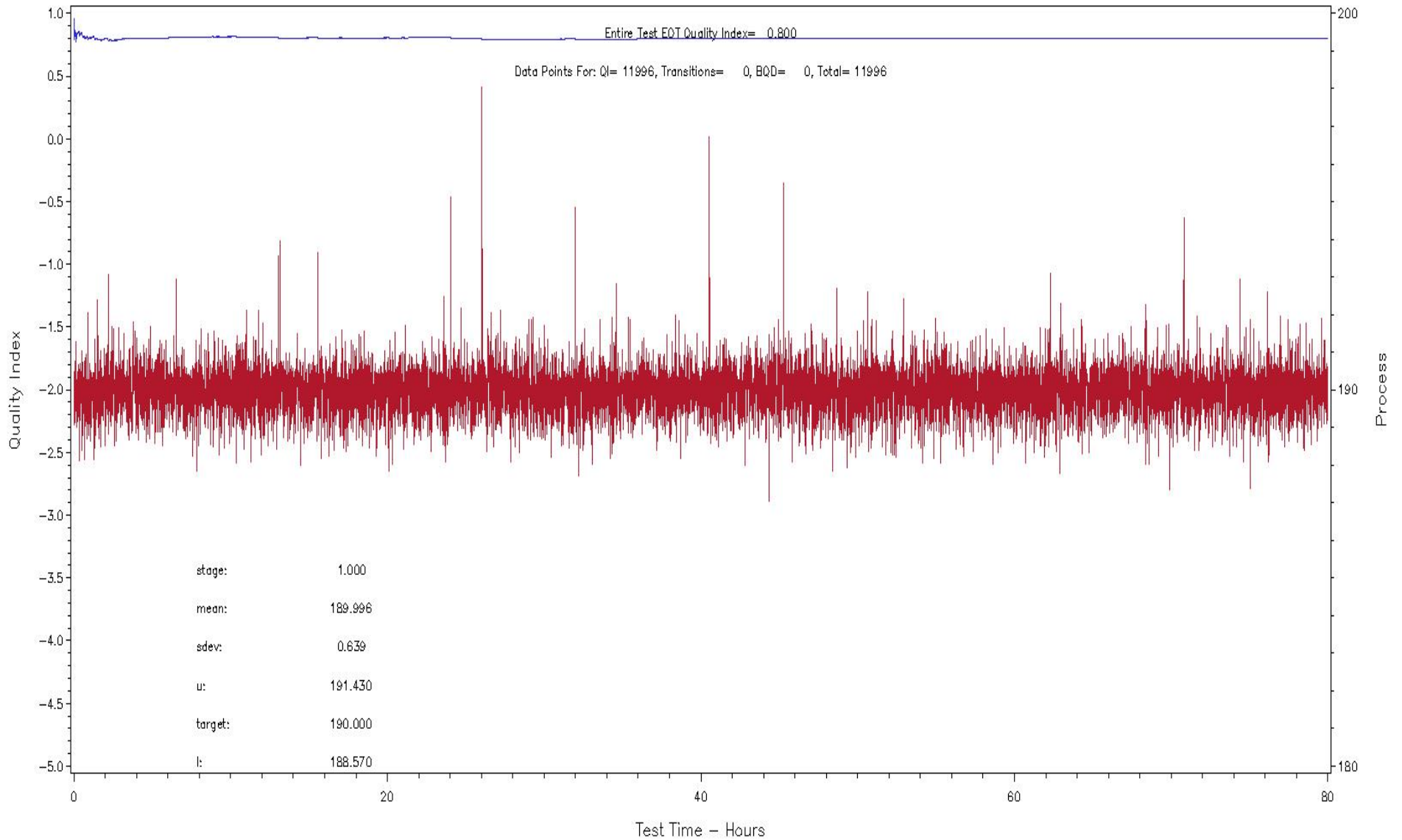
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= G Stand= 180 CMR= 106020



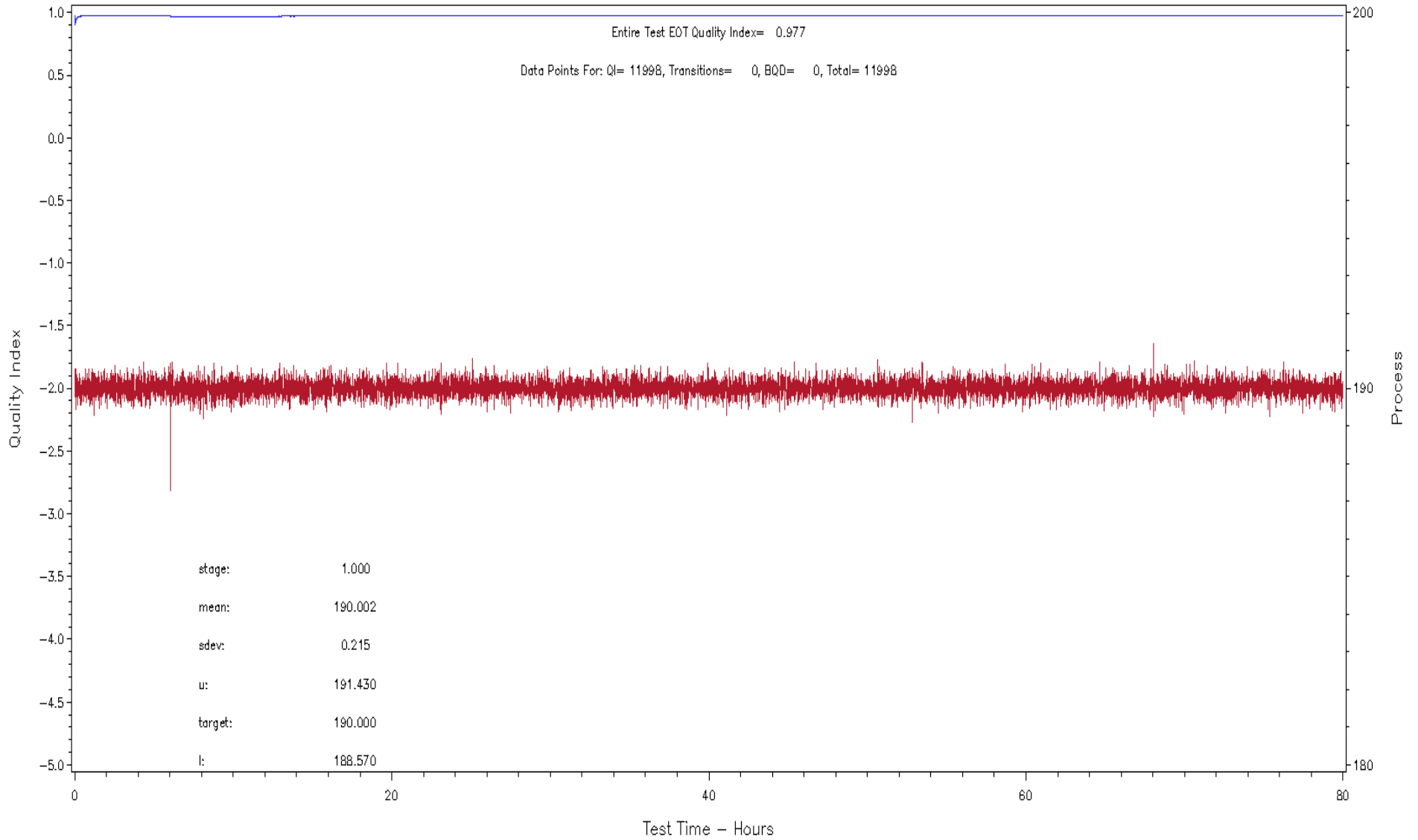
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= 0 Stand= DB114 CMR= 107880



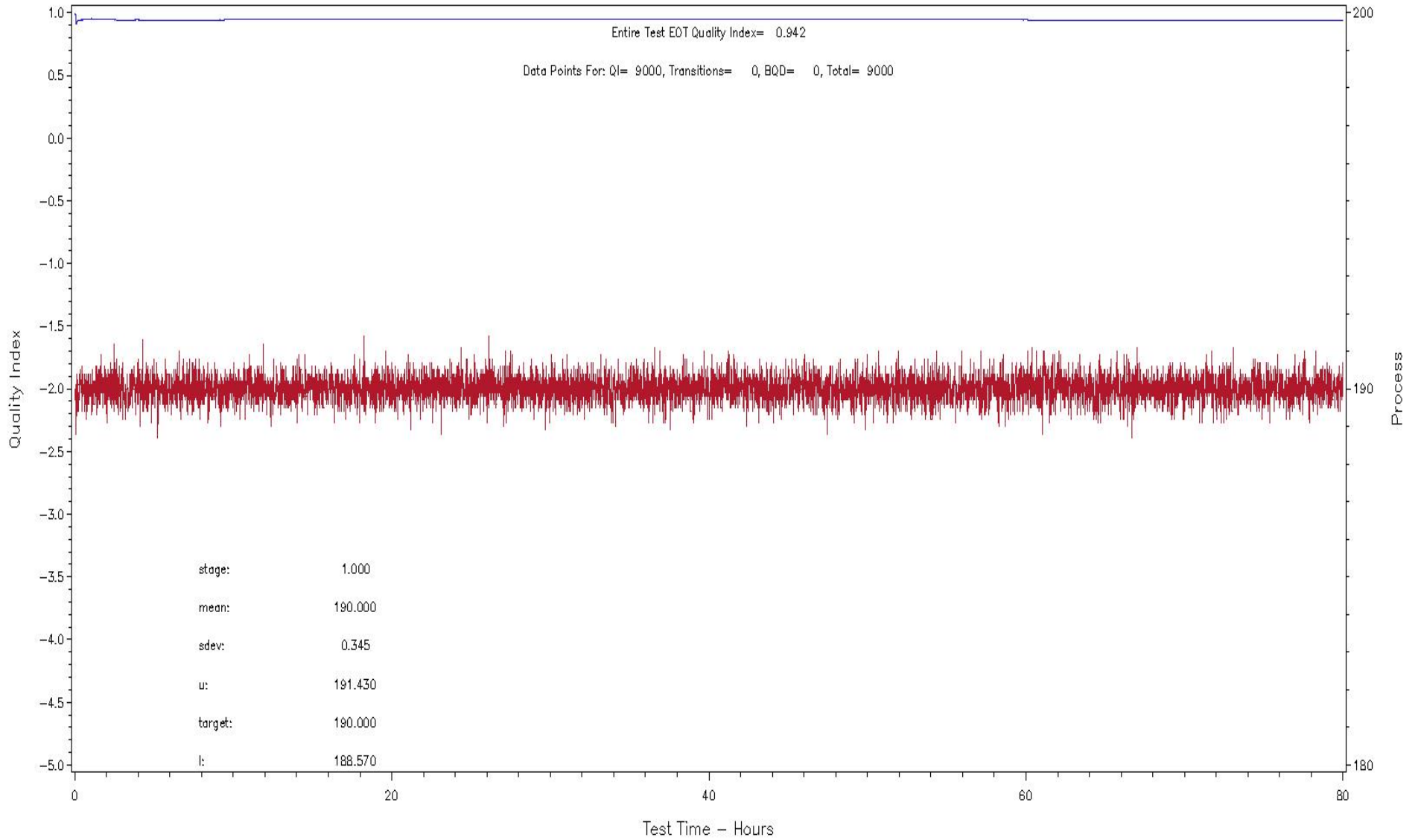
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= G Stand= 180 CMR= 107865



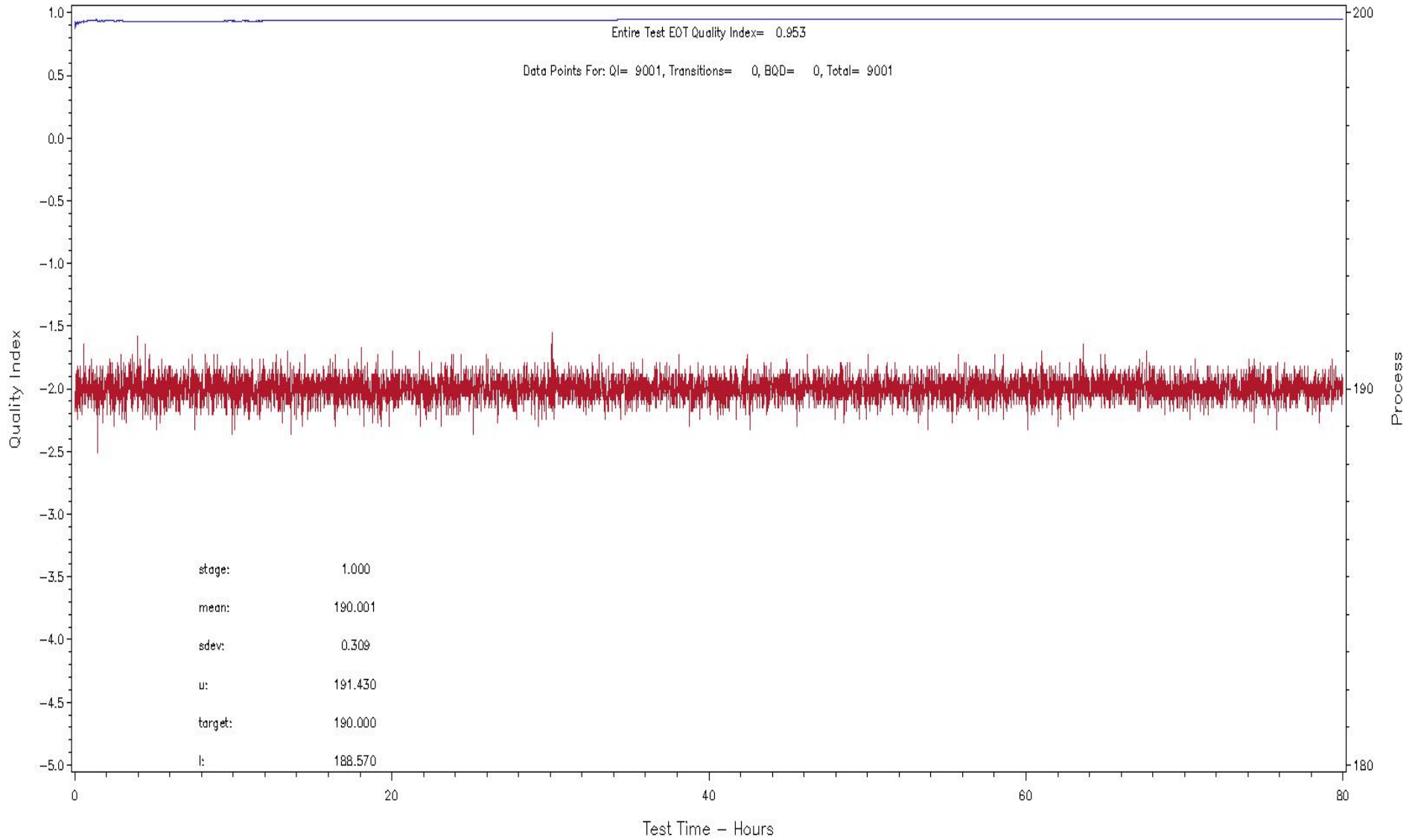
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= BStand= 333 CMR= 107867



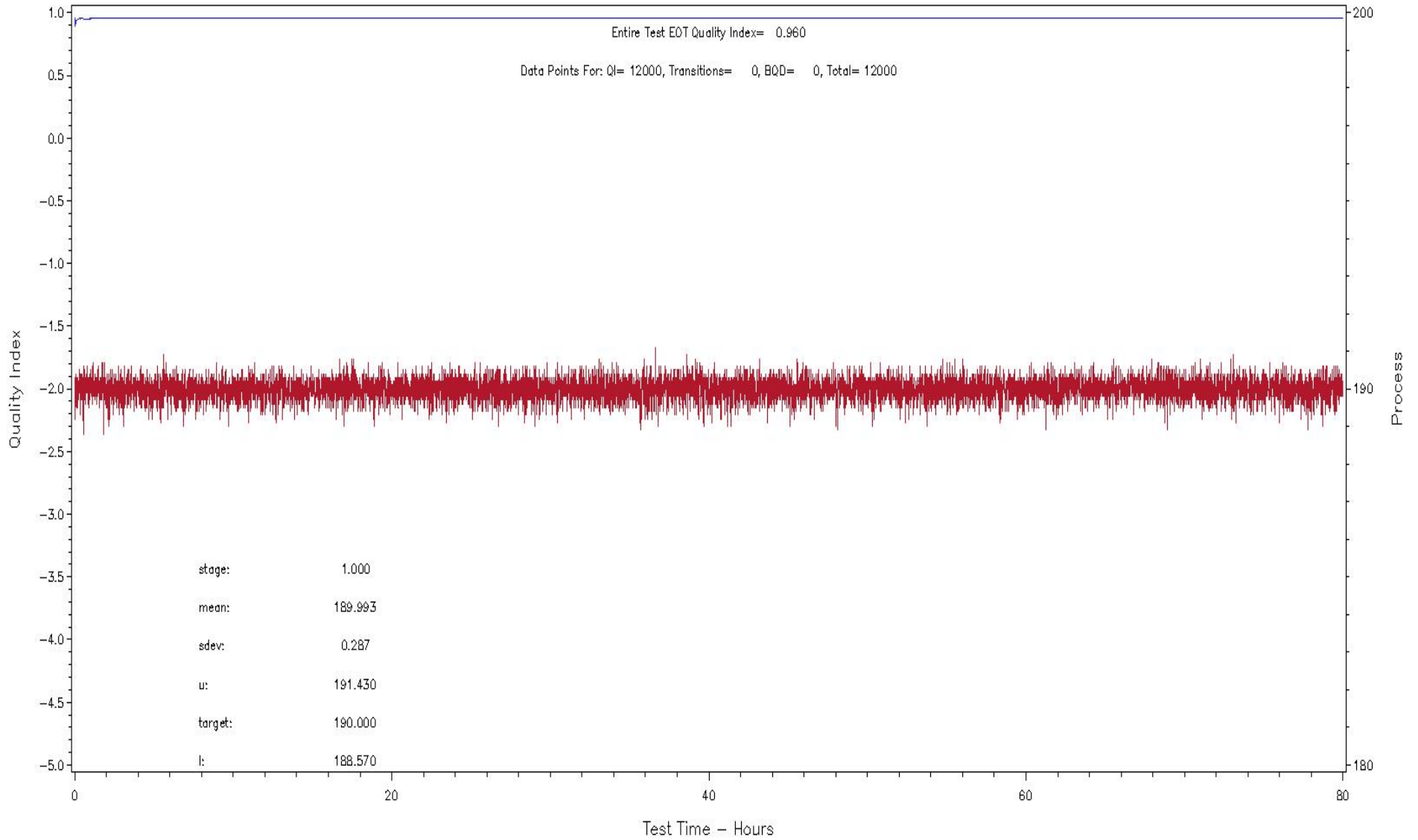
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= D Stand= DB114 CMR= 107880



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= D Stand= DB114 CMR= 108597



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Engine Coolant Flow - L/min (CONTROL)  
LAB= A Stand= 71 CMIR= 108825

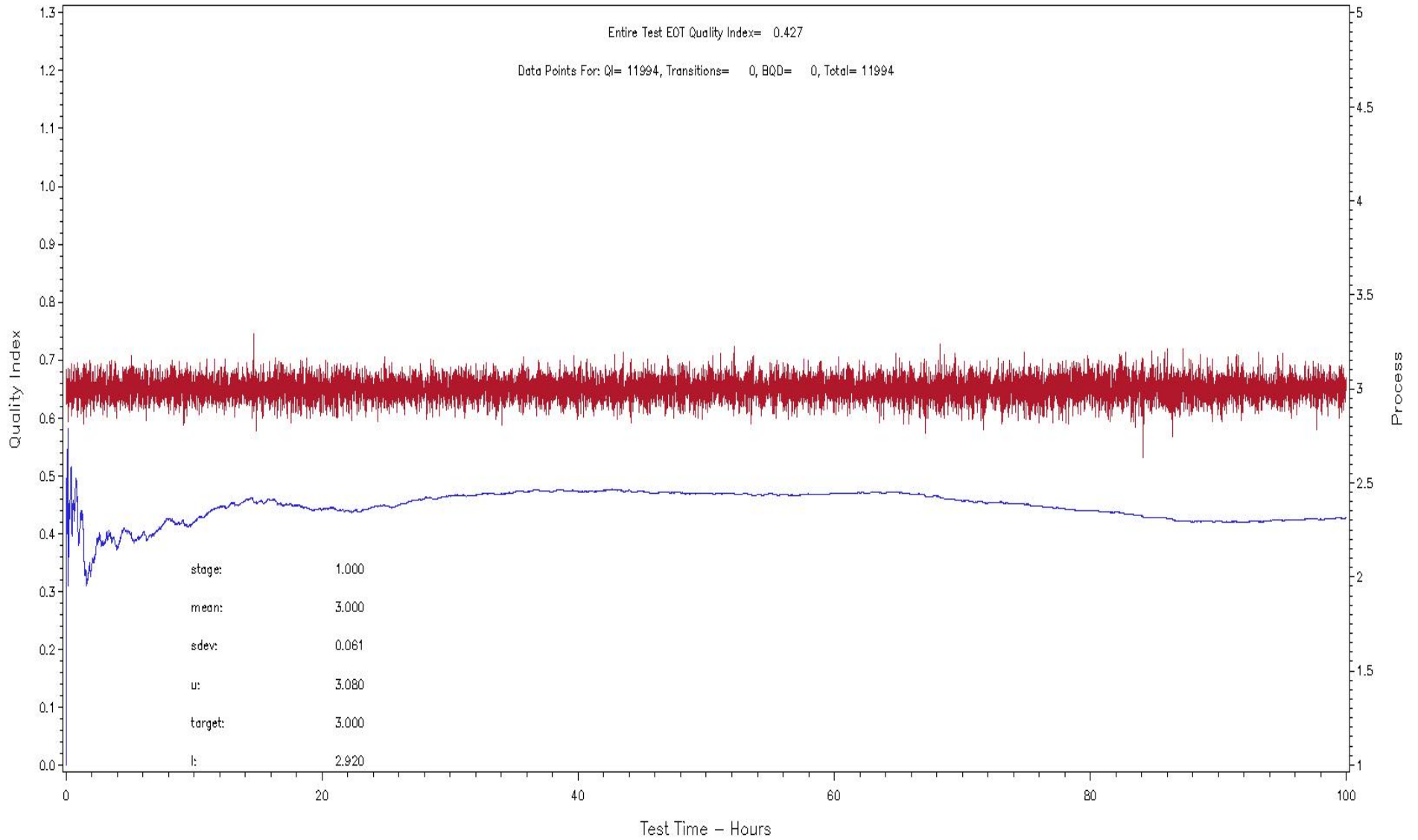


# Left Exhaust Backpressure

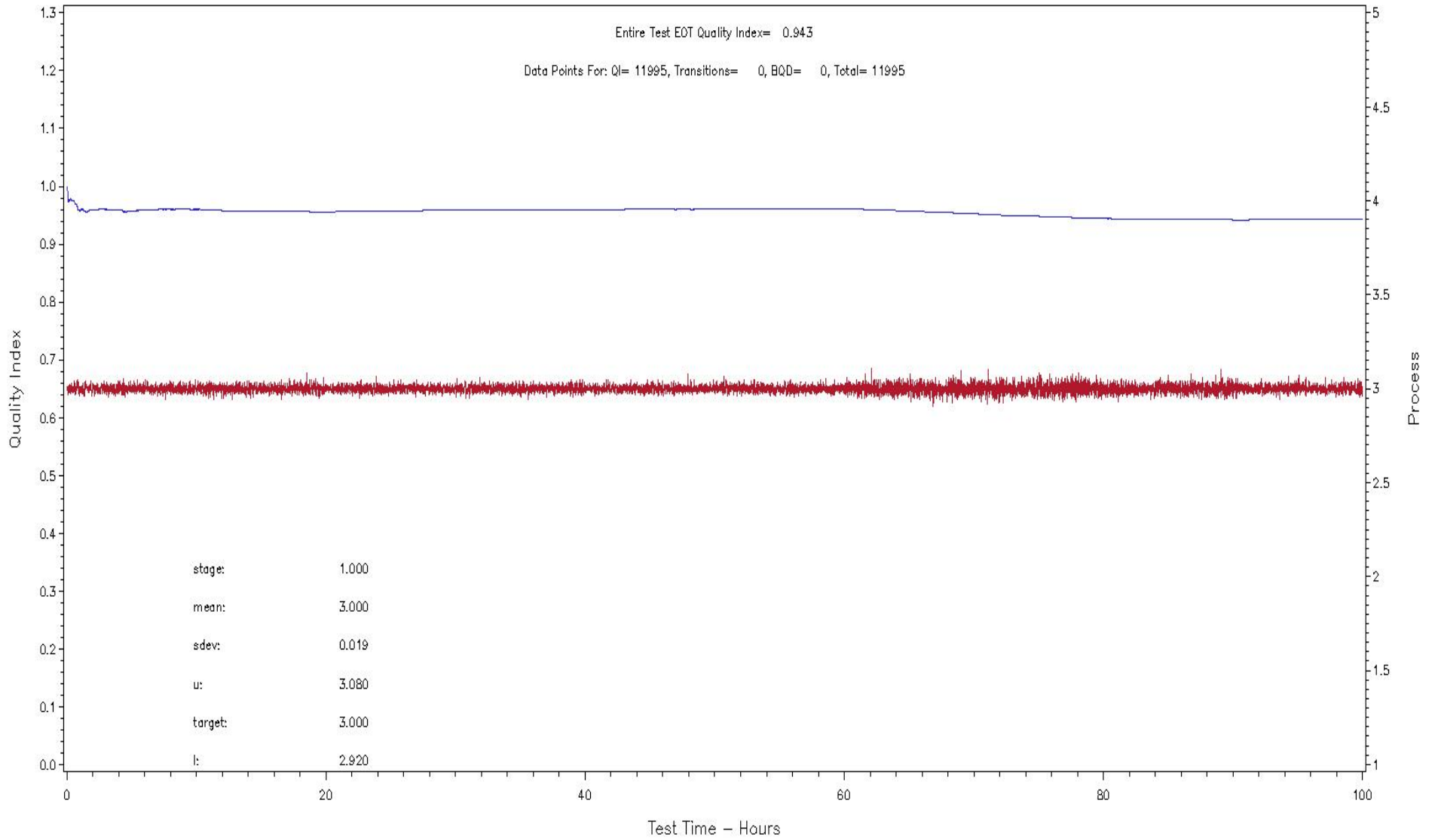
- No negative QI values with IIIG limitss
- One lab provided a 0.178 and a 0.4, but all others were greater than 0.6



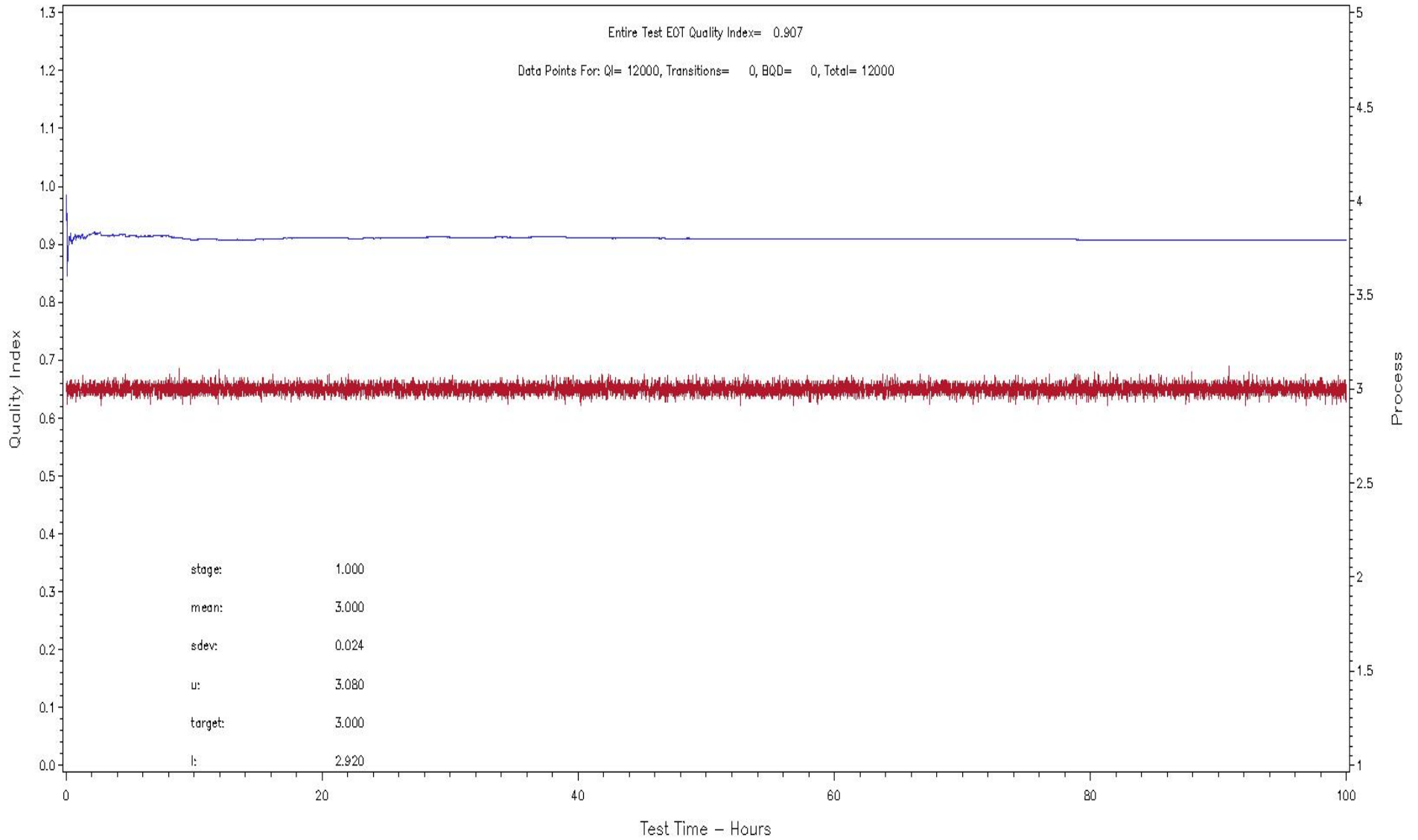
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= BStand= 333 CMIR= 77827



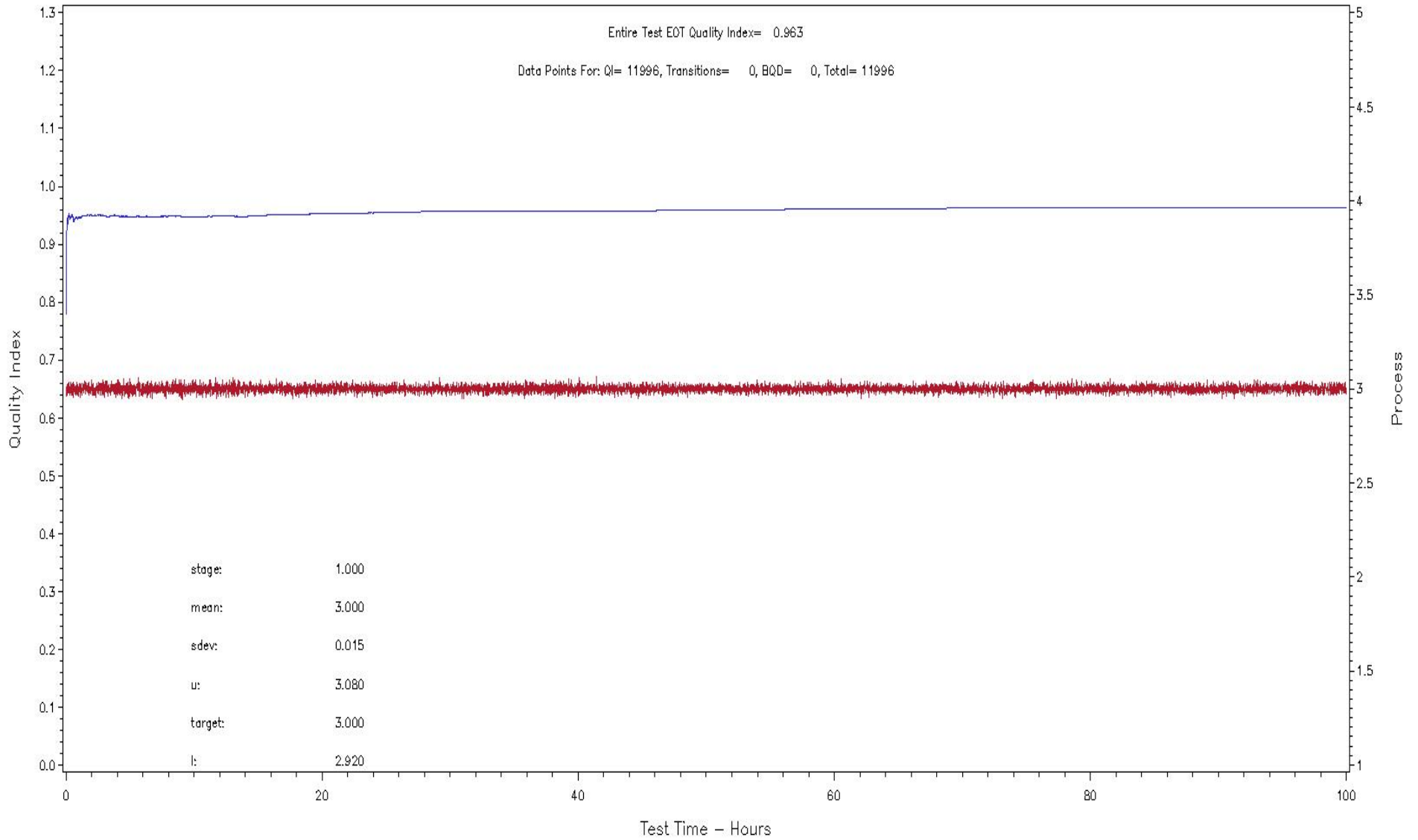
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= G Stand= 180 CMR= 108020



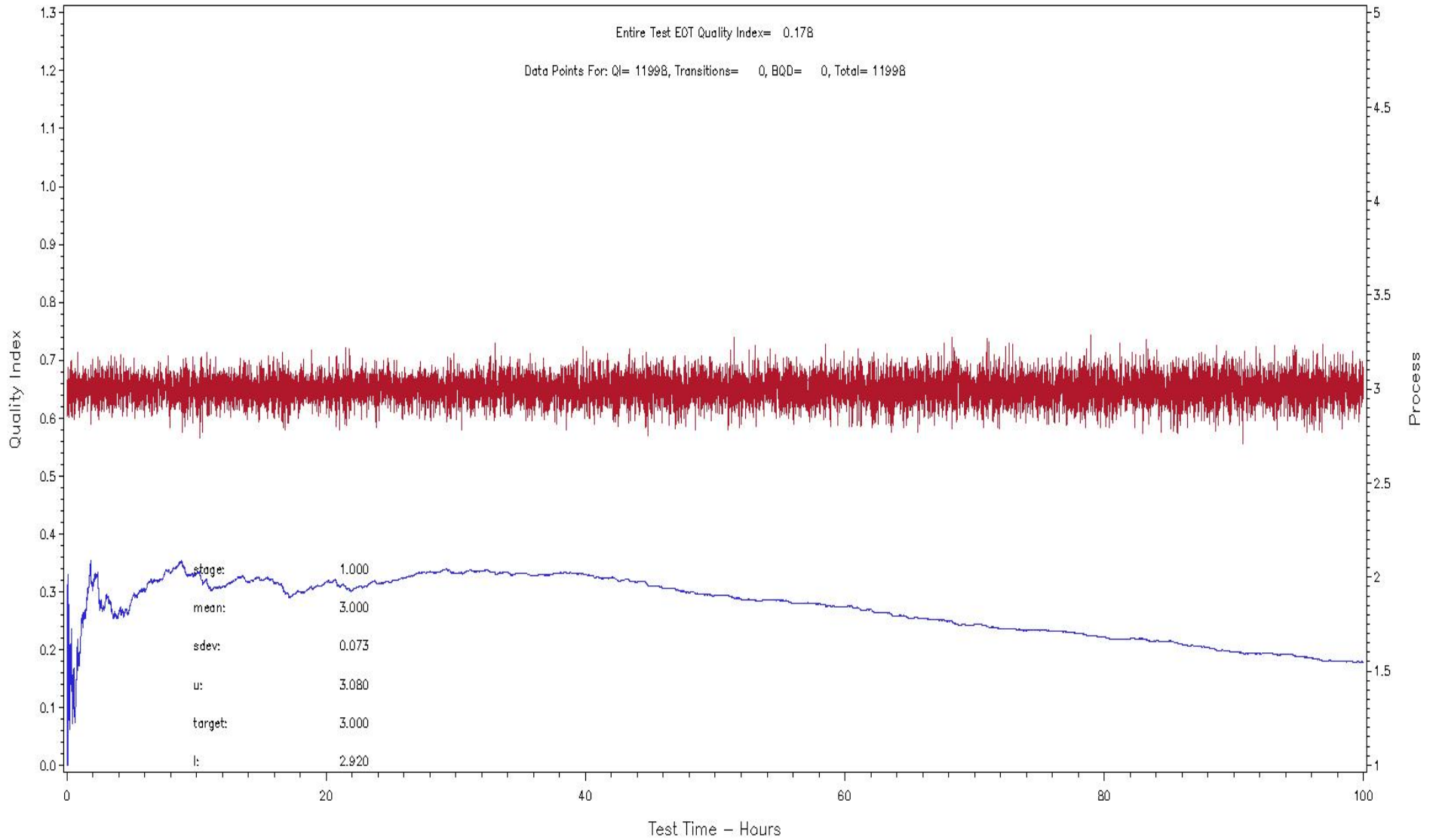
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= A Stand= 71 CMIR= 107883



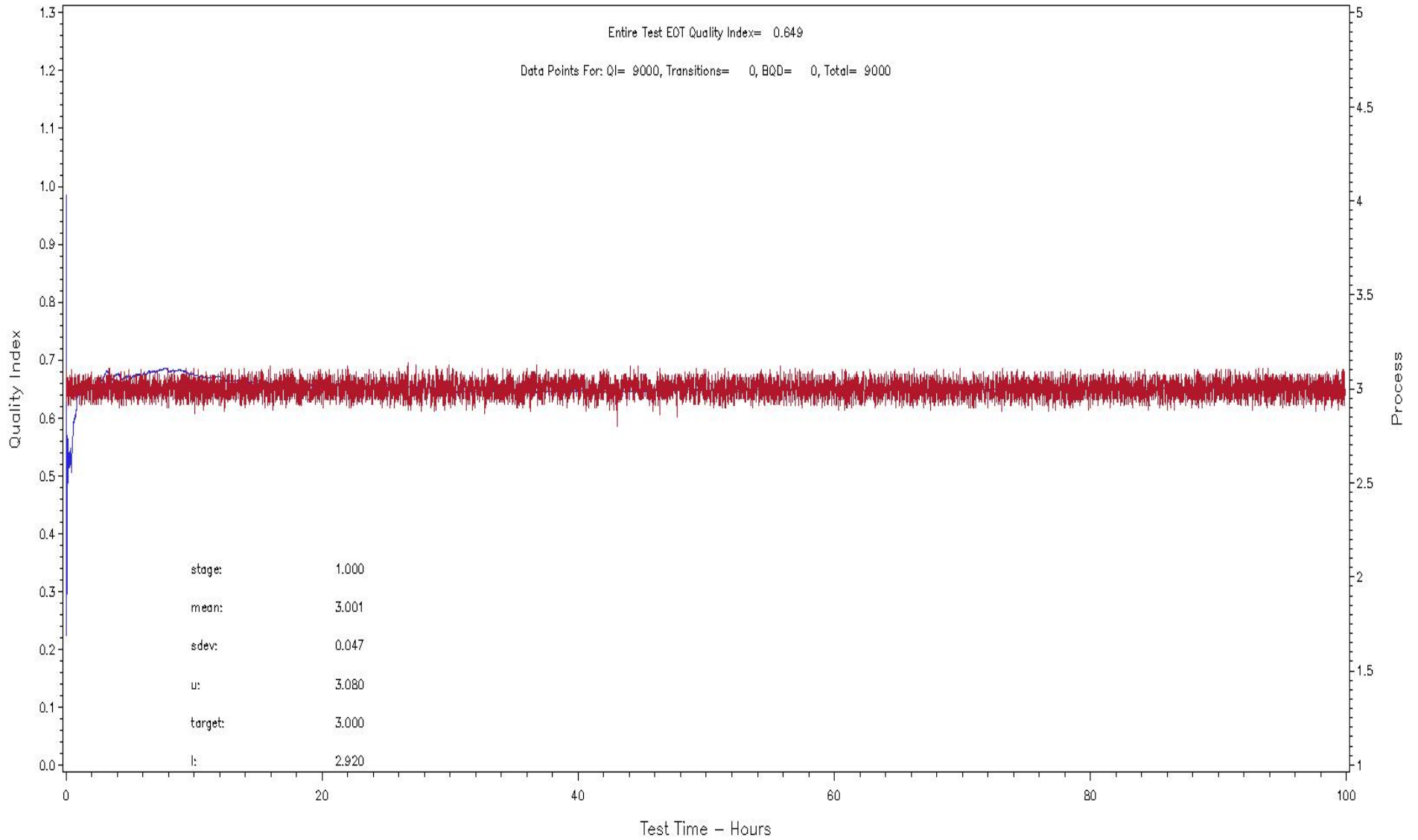
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= GStand= 180 CMR= 107865



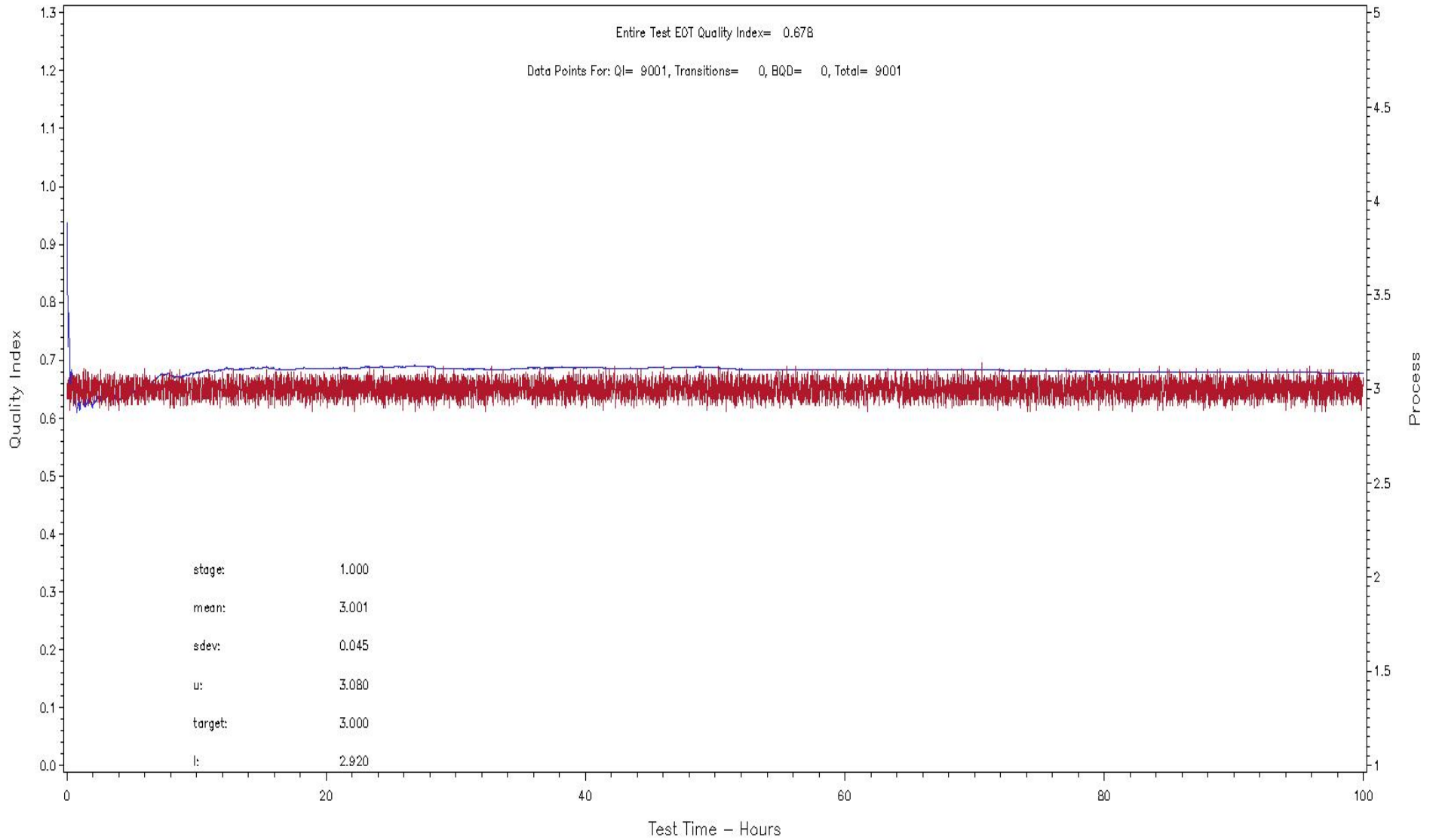
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= BStand= 333 CMR= 107867



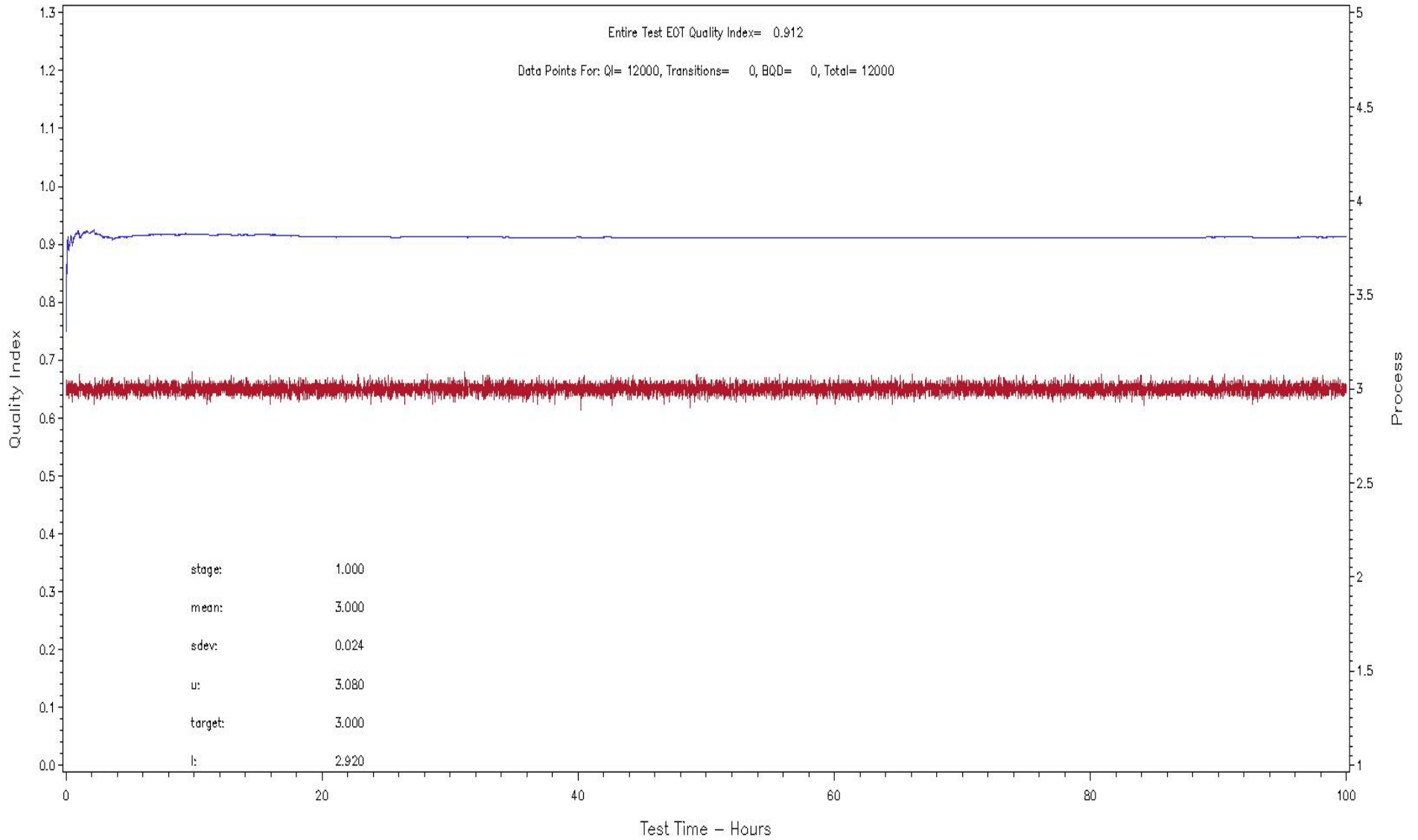
GMDD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= D Stand= DB114 CMR= 107880



GMDD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= 0 Stand= DB114 CMR= 108597



GMDD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Left - kPa (CONTROL)  
LAB= A Stand= 71 CMIR= 108825

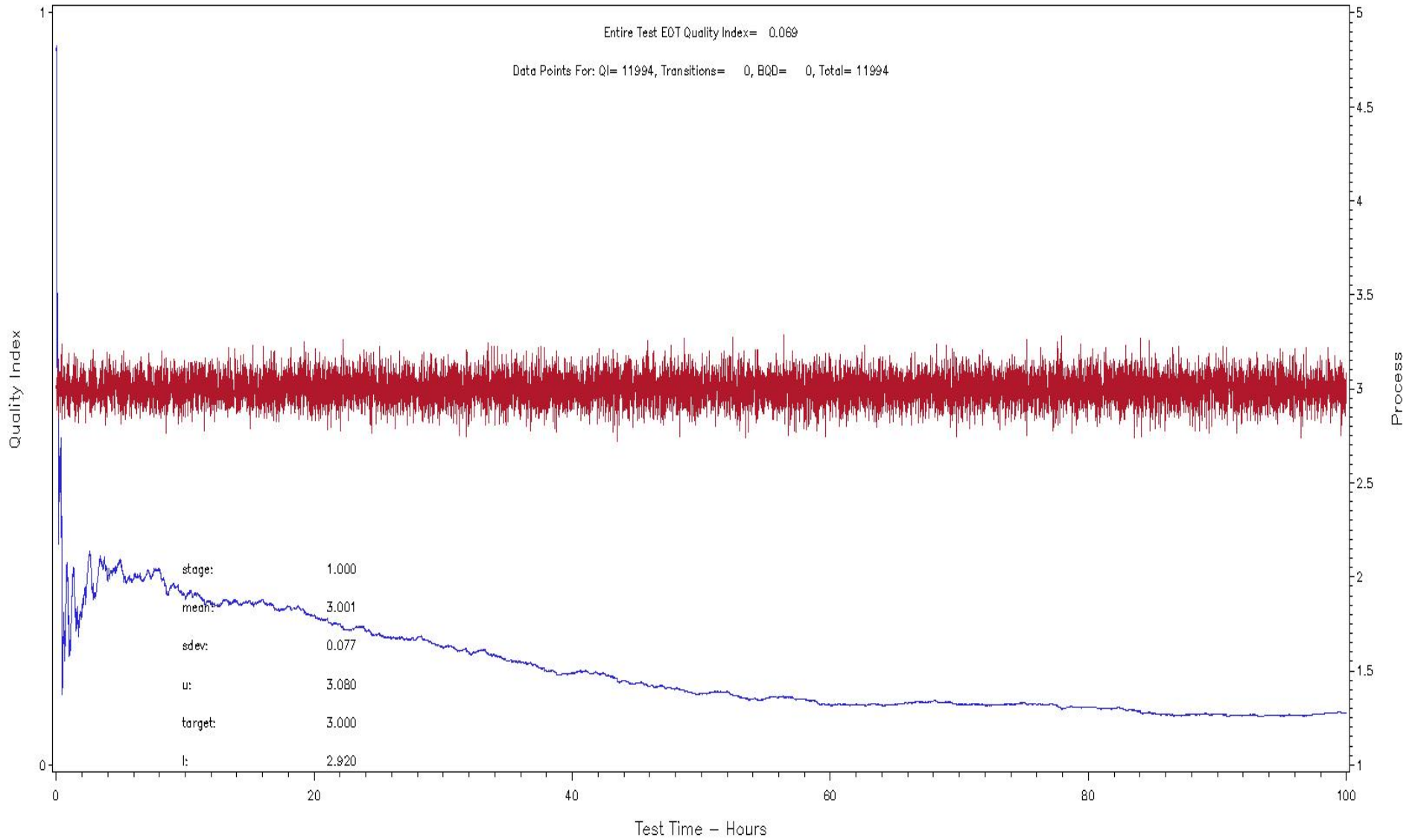




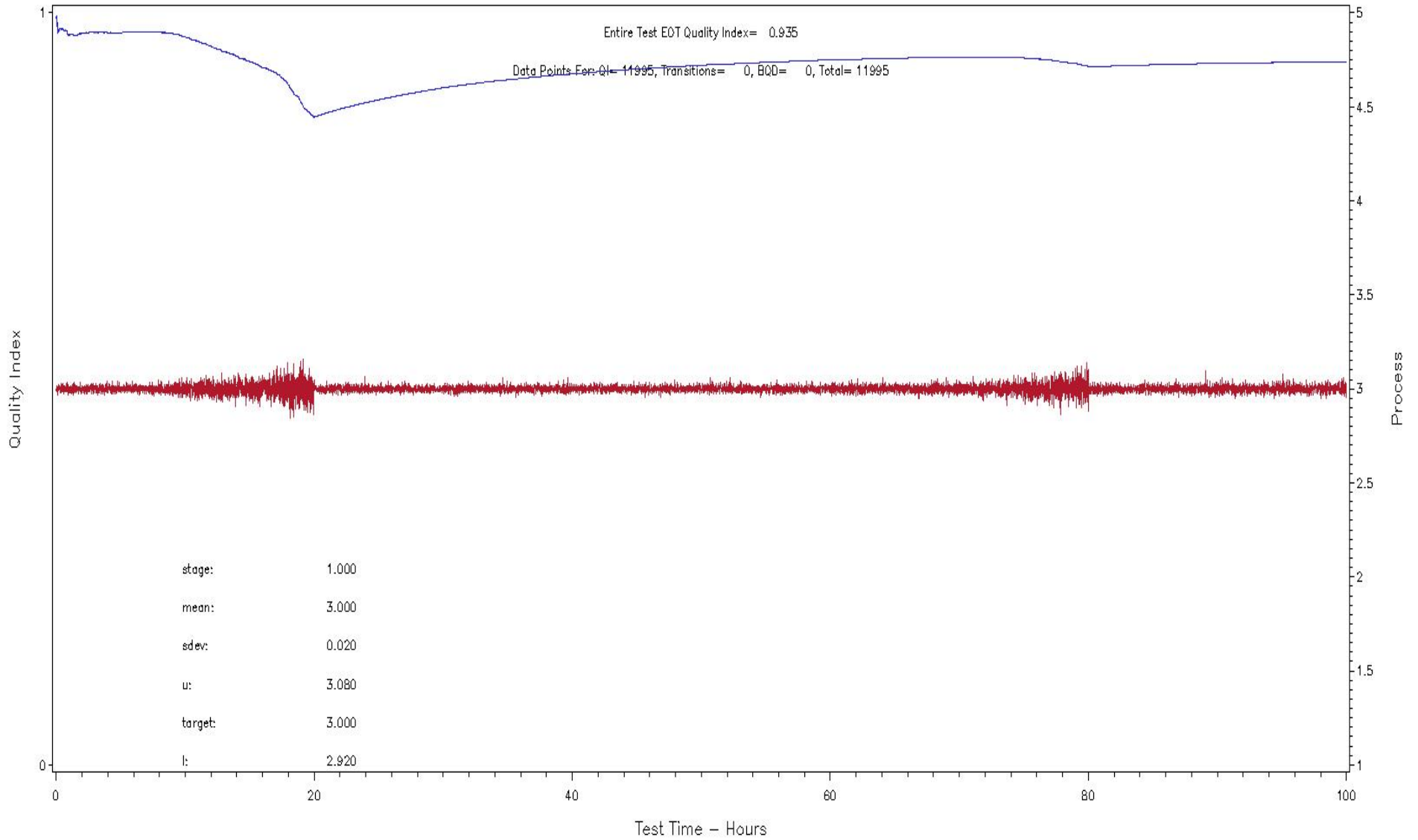
# Right Exhaust Backpressure

- All Values above Zero with one test slightly positive

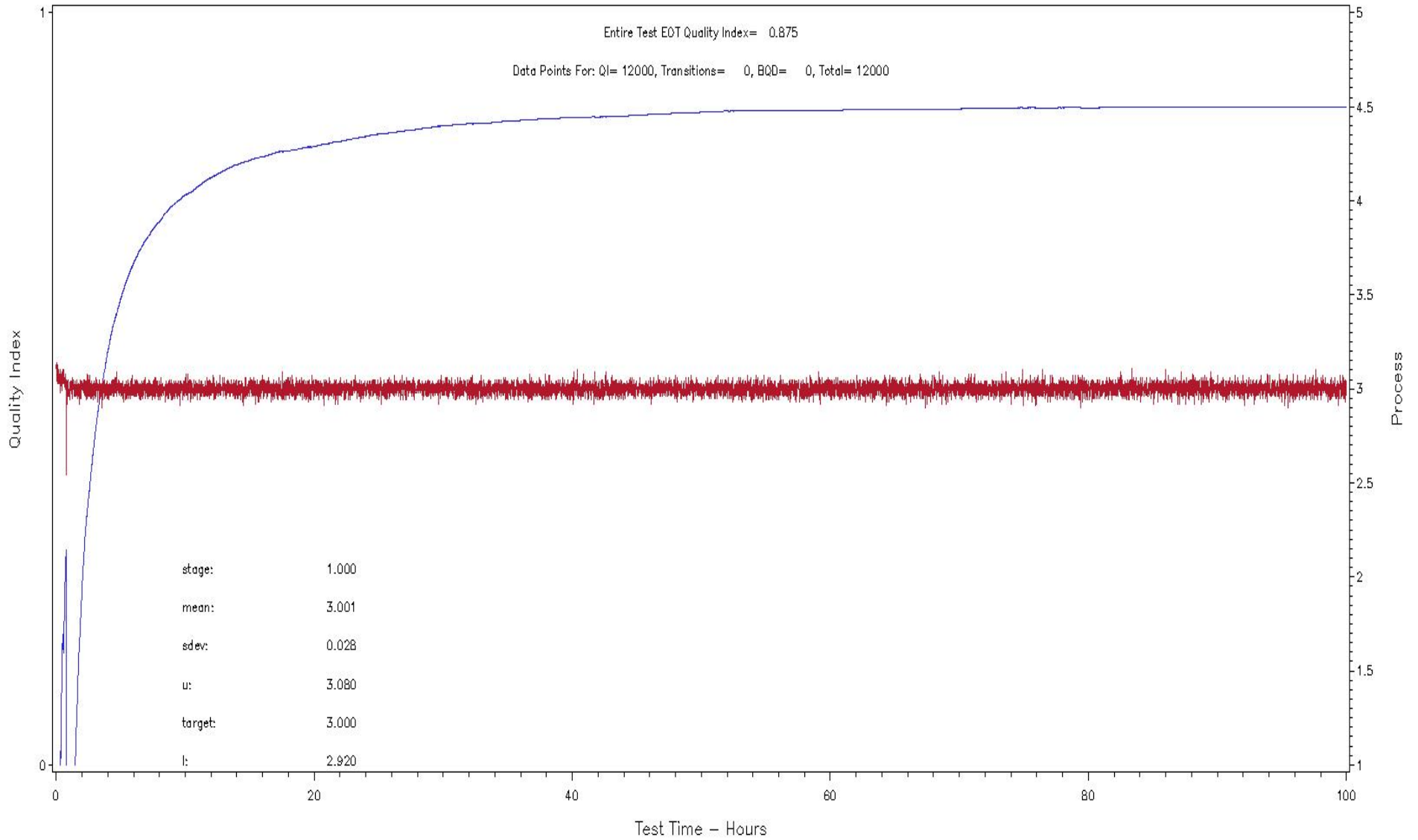
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= BStand= 333 CMIR= 77827



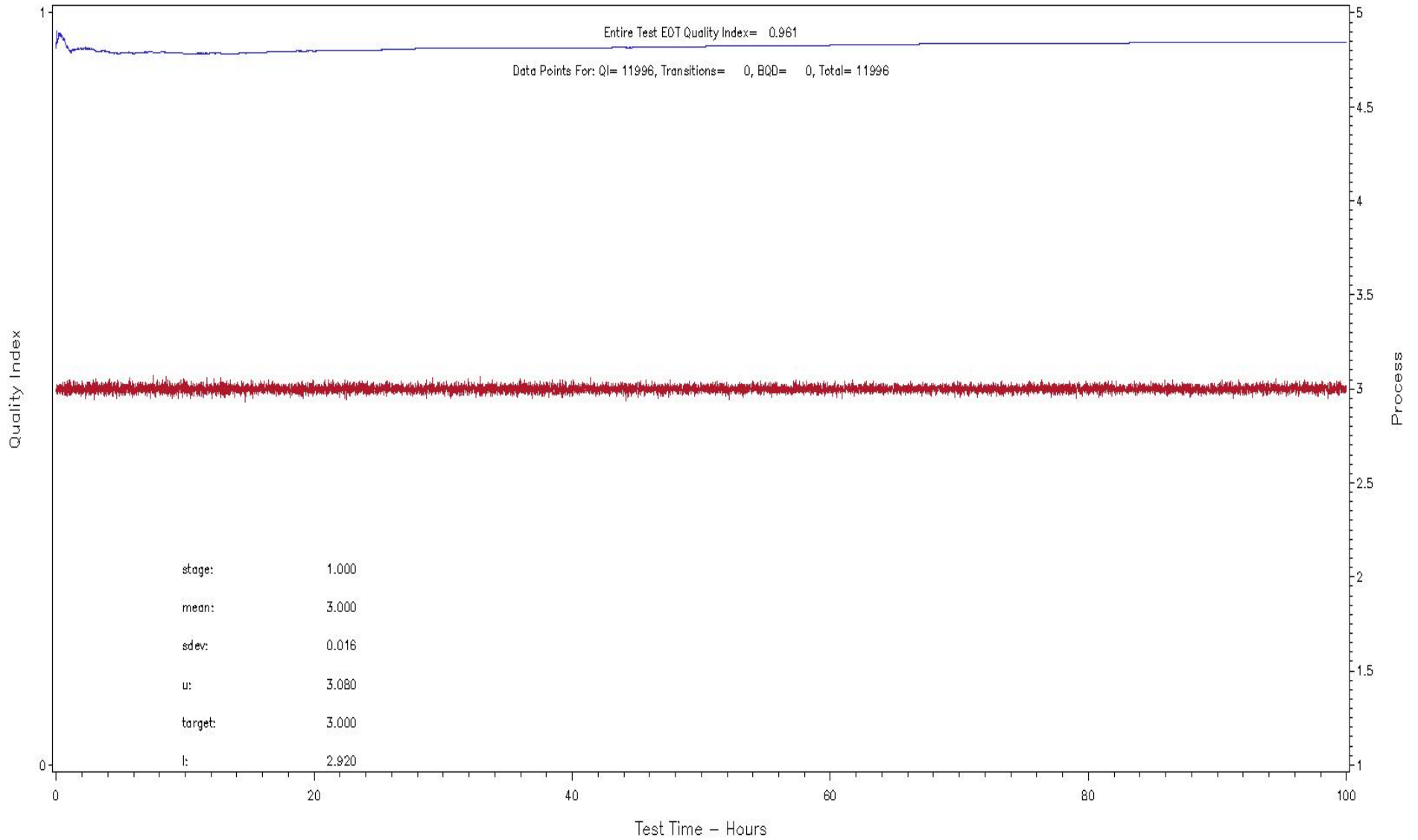
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= G Stand= 180 CMR= 108020



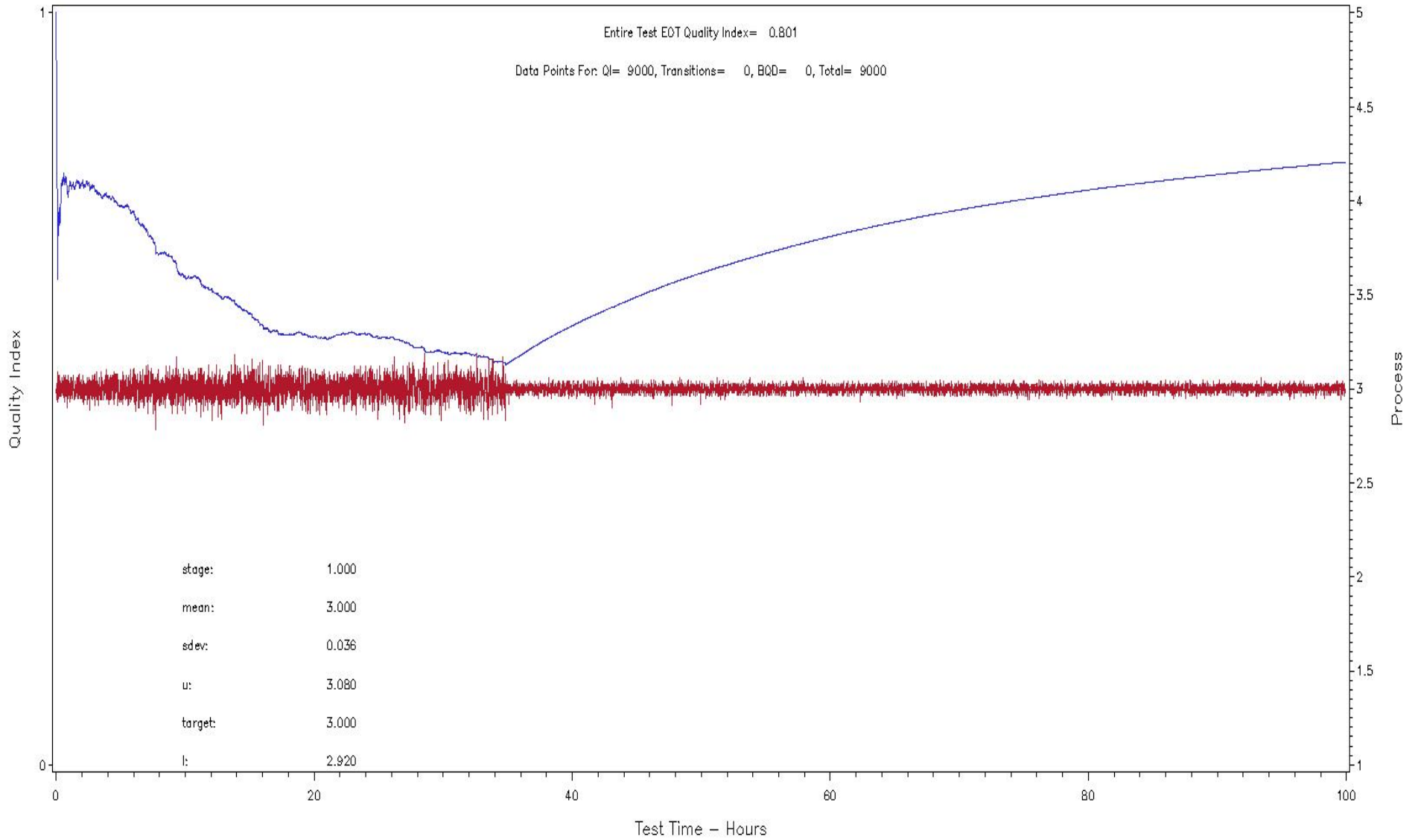
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= A Stand= 71 CMIR= 107883



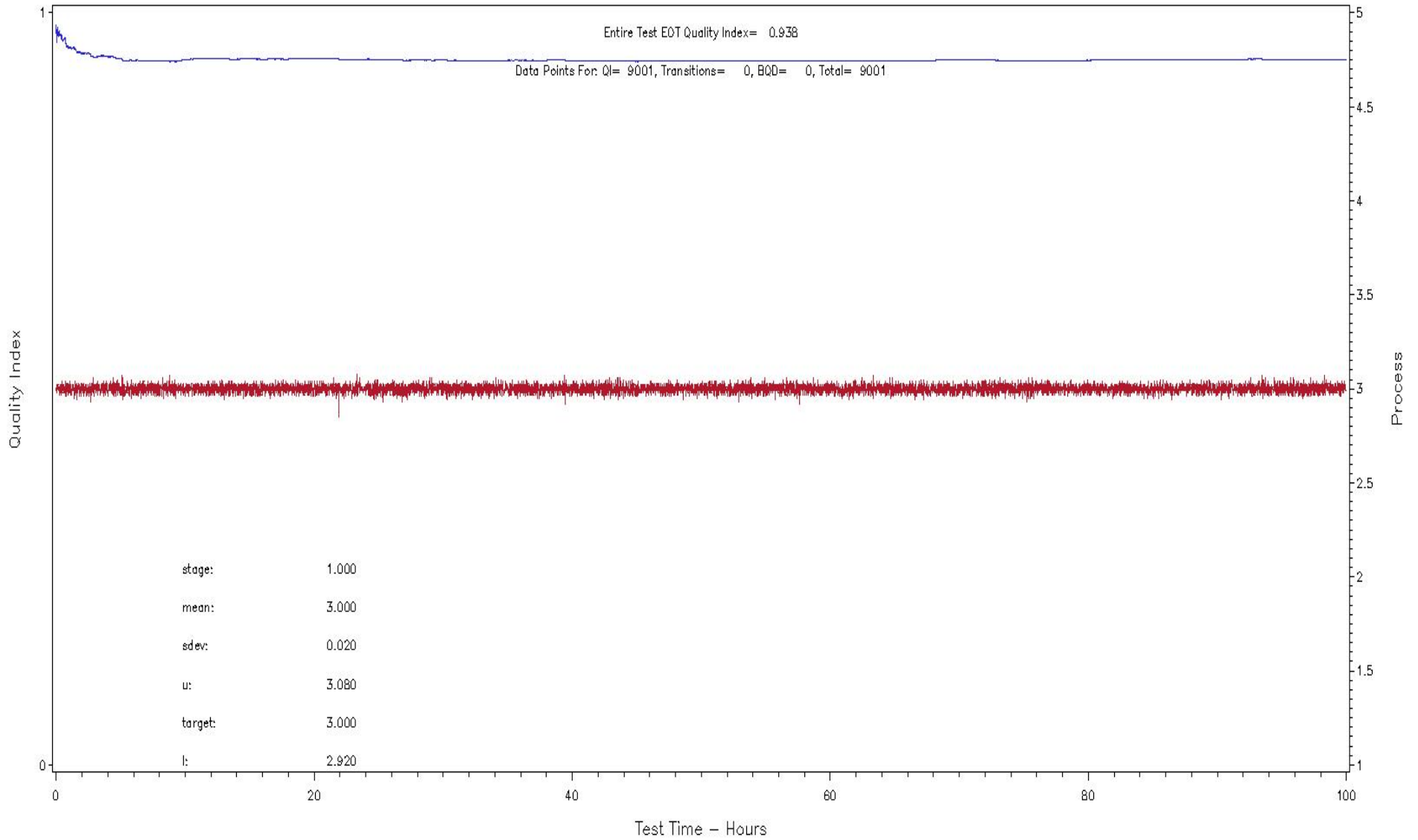
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= G Stand= 180 CMR= 107865



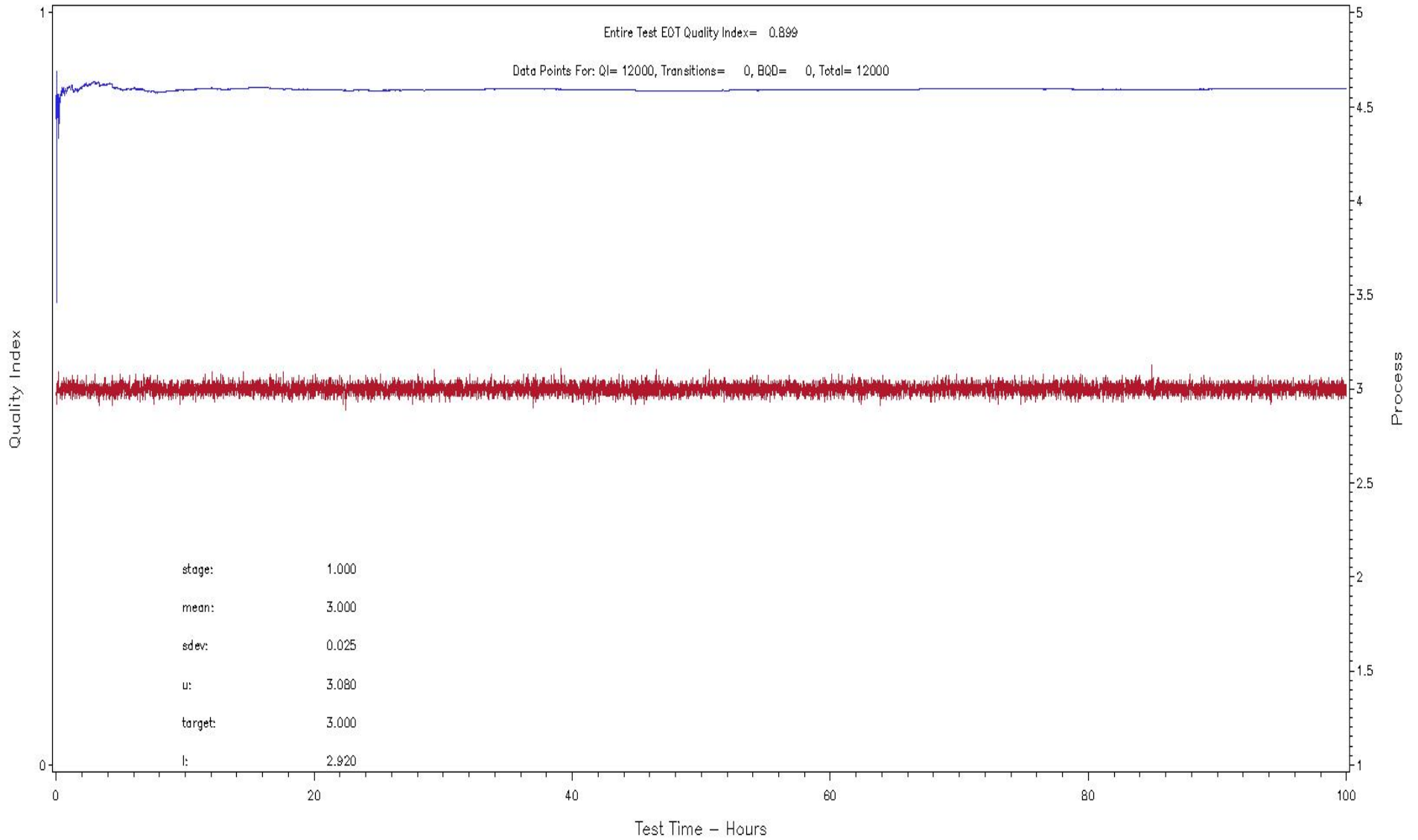
GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= D Stand= DB114 CMIR= 107880



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= D Stand= DB114 CMR= 108597



GMOD QUALITY INDEX OPERATIONAL REVIEW  
Exhaust Back Pressure Right - kPa (CONTROL)  
LAB= A Stand= 71 CMIR= 108825







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