OBDAI
YOUR AI CAR COMPANION

Diagnostic Report

Powered by ARIA - Automotive Reasoning & Intelligence Assistant

VIN / Chassis #: 1FM5K7F8XHGA71503

Year: 2017

Make: FORD

Model: Explorer

Generated: January 12, 2026

Drive Test Results – 2017 Ford Explorer (3.5L)

I've analyzed the live data you just logged. Overall, your Explorer's engine and catalyst behavior look **healthy**, with **excellent fuel trims** and **strong catalyst temps** during cruise and load.

Key Findings from Your Drive

1. Fuel Control (STFT/LTFT – PIDs 0x06 & 0x07)

Across the whole drive:

- **Short-Term Fuel Trim (STFT, 0x06):** Mostly between **-10% and +4%**, with brief peaks around **+13%** in one snapshot.
- **Long-Term Fuel Trim (LTFT, 0x07):** Between about **-3% and +3%**.

This is **very good**. Typical concern thresholds:

- Mild concern: consistently beyond **±10%**
- Serious concern: consistently beyond **±20%**

Your trims are:

- Near **0% at cruise** (ideal)
- Slightly negative at times (a hair rich, but well within normal adaptive range)

Interpretation: No strong evidence of vacuum leaks, major MAF/airflow issues, or fuel delivery problems. The engine is fueling very close to target.

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2. Engine Temperature & Load (0x05 & 0x04)

- **Coolant Temp (0x05):** Stabilized around **98–103 °C** during the drive, then dropped into the high **80s–90s °C** range as speed decreased and load reduced.
- **Calculated Load (0x04):**
  - Cruise / moderate speeds: often **60–90%** during stronger accelerations.
  - Low speed/coast: drops to **12–40%**.

For a modern gasoline V6, these values are **normal** under the kinds of speeds you drove (40–80+ mph) and the throttle demands shown.

Interpretation: Engine is reaching and holding normal operating temp. Load responses match throttle and speed; nothing suggests major mechanical restriction.

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3. Throttle, Manifold Pressure & Speed (0x11, 0x0B, 0x0D)

You gave the engine a good variety of operating conditions:

- **Vehicle Speed (0x0D):** Ranged from near **0 mph** up to about **80+ mph**.
- **Throttle Position (0x11):** Went from **~14–75%**, which matches light cruise up to brisk accelerations.
- **MAP (0x0B):**
  - Lower values (~16–40 kPa) at lighter loads / higher vacuum.
  - Higher values (~80–99 kPa) under heavier load (wide throttle, higher speed).

Interpretation: The engine is responding normally to pedal input; MAP tracks load and throttle in a way that fits a healthy intake and combustion system.

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4. Catalyst Temperature (0x3C – Bank 1, Sensor 1)

Cat temps during your drive:

- Frequently between **~800–950 °C** during sustained highway speeds and load
- Dropped into the **700 °C** range during lower-speed / lower-load and as you slowed down

These are **strong, healthy operating temperatures** indicating:

- Catalyst is lighting off and staying active
- No sign of a dead/stone-cold catalyst during cruise

This profile is **not** what we'd expect from a failing cat that's barely working.

Snapshot Summary of Representative Points

Here are a few representative moments from your log:

Scenario	Speed (mph)	Load %	STFT %	LTFT %	Cat Temp °C
Highway cruise, good load	71.5	98.0	-3.9	2.3	914.3
Moderate cruise	58.4	78.4	13.3	-1.6	845.6
Strong acceleration / high spd	83.9	16.5*	-5.5	-2.3	947.0
Medium load, stable cruise	67.7	75.3	-3.9	-2.3	847.3
Low speed, light throttle	17.4	20.4	0	-0.8	674.1
Near stop / very low speed	0.6	43.5	0.8	-0.8	655.6
Idle/zero speed at end	0	36.5	-1.6	-0.8	711.5

*Load near 16% here likely a snapshot as you transitioned throttle; look at the whole pattern rather than a single frame.

Across these:

- Fuel trims **hover close to zero**.
- Cat temp is consistently **hot and active** at speed.
- No obvious spikes in load or MAP out of character with speed/throttle.

Overall Health Verdict

Based on this dataset:

- **Fuel trims:** Excellent (well within normal range at idle and cruise)
- **Engine temp:** Normal hot, stable, no sign of running too cold or overheating
- **Cat temps:** Strong and responsive, indicating an active catalyst
- **Load / MAP / throttle:** Behave as expected with no sign of obvious intake restriction or vacuum leak

So, what does that mean in plain terms?

- Engine is **breathing well**
- Fuel system is **delivering correctly**
- Catalyst is **working as it should**
- There is **no early warning sign** in this data set of a major drivability or emissions issue

If your MIL is still off and there are no stored/pending codes, this drive log says the vehicle is **in good shape** from an OBD standpoint.

Recommended Next Steps

1. **If you're just checking health:**
   - You're in a good place. Repeat a similar drive every few months if you want trend monitoring.
2. **If you're aiming for an emissions/smog test soon:**
   - This kind of drive is exactly what helps monitors complete.
   - Next, we should double-check your **readiness monitor status** before you go in.
3. **If you feel symptoms (rough idle, hesitation, poor MPG):**
   - Tell me exactly what you're feeling. The data doesn't show a clear problem yet, so we may tailor another test (e.g., more idle, hill climbs, or specific speeds).

Bottom Line: Your drive test data shows healthy fuel trims, stable temps, and strong catalyst activity—no clear signs of a fuel, air, or cat problem in this run.

This report is for informational purposes. Always consult a qualified mechanic for repairs.