



# CATERPILLAR 1N TEST RESULTS

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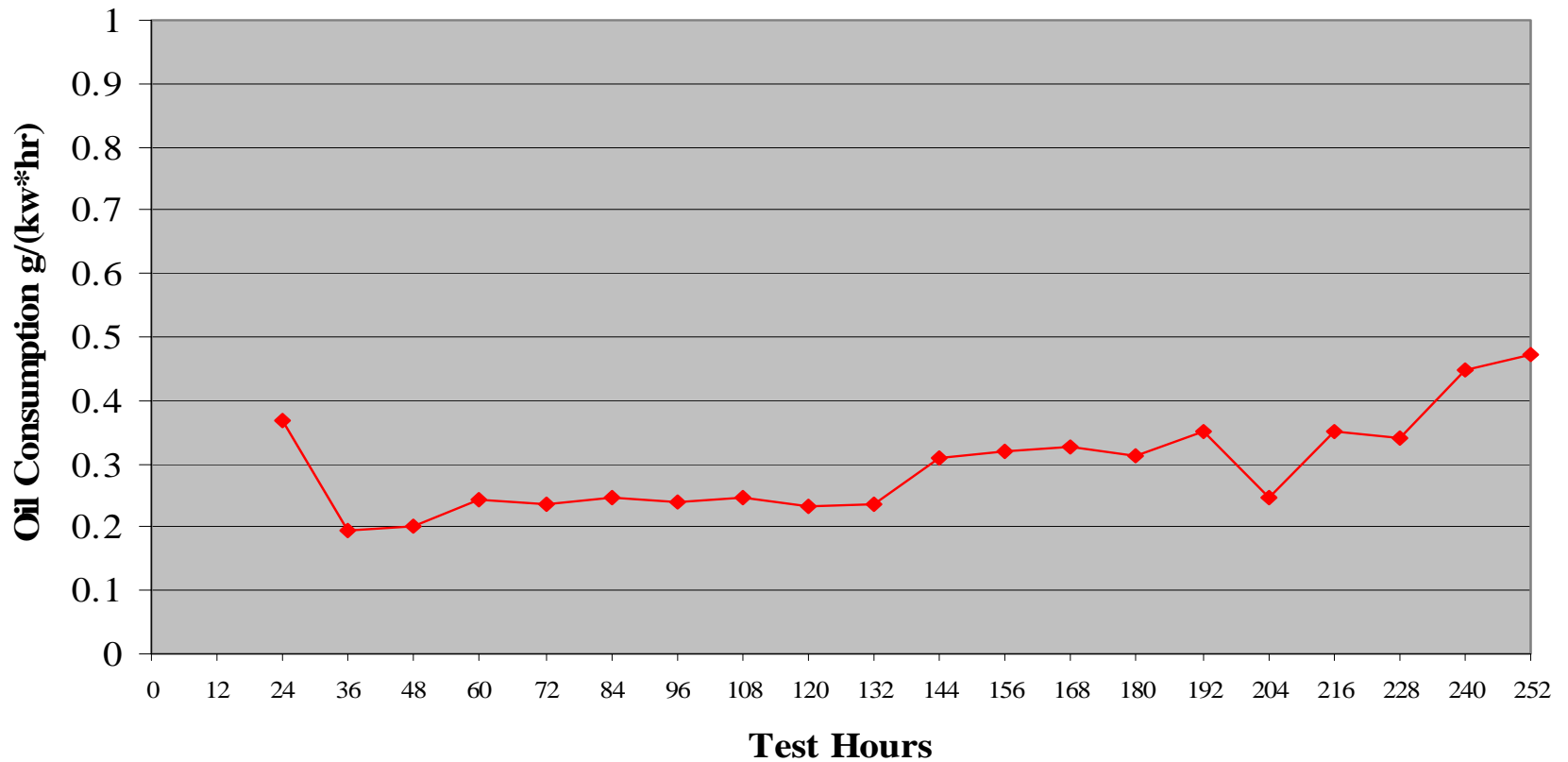


- A Caterpillar 1N test was run on Matrix Oil PC-9A
  - Feature oil, Mack T-10 Matrix
  - One of the Feature oils, Caterpillar 1R Matrix
- Caterpillar 1N results (API CG-4 one-test limits)
  - WDN, 236.6 demerits (286.2 max)
  - TGF, **25%** (20% max)
  - TLHC, 0% (3% max)
  - Oil Consumption, 0.296 g/kW-hr (0.5 max)

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1N Oil Consumption Graph



# CATERPILLAR 1N TEST RESULTS



- A Caterpillar 1N test was run on an Ethyl PC-9 development oil number 1 (Group I)
- Caterpillar 1N results (API CG-4 one-test limits)
  - WDN, 208.3 demerits (286.2 max)
  - TGF, **26%** (20% max)
  - TLHC, 0% (3% max)
  - Oil Consumption, 0.140 g/kW-hr (0.5 max)

# CATERPILLAR 1N TEST RESULTS



- A Caterpillar 1N test was run on an Ethyl PC-9 development oil number 2 (Group II)
- Caterpillar 1N results (API CG-4 one-test limits)
  - WDN, 271.5 demerits (286.2 max)
  - TGF, **25%** (20% max)
  - TLHC, 0% (3% max)
  - Oil Consumption, 0.190 g/kW-hr (0.5 max)

# SUMMARY



- Three Caterpillar 1N tests on PC-9-quality oils give acceptable API CG-4-level WDN and TLHC performance
- However, these oils do not meet the one-test API CG-4 limit for TGF (results are at or near the three-test limit)
- Without relief, we believe multiple Cat 1N tests will be required on PC-9 oils -- to what effect??
- Ethyl would like to see relief on TGF (25-30%)