2530 Smuth Bircin Sivegi - Santu Ana, CA 92707

March 26, 2009

Jolin,
This is to verify that the CEE cata on the "Proof of Concept" testing using a propietary liquid vil catalyst, Projeil 年: CEE-ML-1104, was acoomplished at and by CEE. The data results as indicated by the July 8,2005 test leter is beth authentio and accurate as reflected in Figure 1, comparative results. The Lesis were acoumplished at the CEE test facility locateal in Sanfa Ana, Californias. Reduetions in tailpipe tmissons and improvement in fuel economy were notuble threughnut the lest sequence da rolleuled by the comparative tesults.

Regards,


Revearch Divazar

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# CEE, LLC <br> 2530 S. Birch Street <br> Santa Ana, CA 92707 <br> (714) 545-9822 - FAX (714) 545-7667 

July 8, 2005

Motor Life CTD, Inc.
Combustion Technologies Division
12515 Ccrise Ave.
Hawthorne, Ca 90250

Attn: Charlie Stewart

RE: Proof of Concept testing using a Proprietary Liquid Oil Catalyst, Project \# CEE-ML-1.04

This report summarizes a light-duty gasoline vehicle test series conducted at the California Environmental Engineering (CEE) center for environmental research in Santa Ana, California. The program was designed to measure and compare exhaust (tailpipe) emissions and fuel consumption before and after use of an oil catalyst. A CVS (FTP)-75 test protocol was selected to obtain accurate, repeatable and verifiable comparative data validating the effect of the liquid oil catalyst on measured emissions and fuel consumption.

The CVS-75 test is a "three bag", "cold" test accomplished on a dual roll transient dynamometer. The test protocol is accepted to be a very reliable procedure for establishing a gasoline vehicle engine's emissions characteristics and fuel consumption.

A 1988 model year Jeep Cherokec was iclentified and selected as the candidate test vehicje. The single-owner, well-maintained vehicle had accumulated in excess of 100,000 miles. The test vehicle's existing fuel supply was drained and a $40 \%$ tank capacity of "indolene" test fuel was introduced. Additionally, the oil and filter were changed. The vehicle was driven 106 miles on a prescribed test route to allow it to adapt to the test fuel characteristics. Preceded by preconditioning cycles, two baseline tests were conducted. After introducing the oil catalyst to the oil reservoir, an additional 106 miles were accumulated, the vehicle was preconditioned and two tests conducted with the Liquid Oil Catalyst. The baseline test(s) average was compared to the average figure(s) obtaincd with the oil catalyst. The results are shown in Figure \#1.

|  |  | Grams / Mi. |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | HC | CO | Nox | MPG |
| Baseline | 1.561 | 35.140 | 0.505 | 16.504 |
| With Catalyst | 0.424 | 2.828 | 0.346 | 17.265 |
| \% Difference | -72.8 | -92.0 | -31.5 | 4.4 |
|  | FIGURE 1 | COMPARATIVE | RESULTS |  |

July 8, 2005
Charlie Stewart
Motor Life CTD, Inc.
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The results are both noteworthy and significant with respect to lowering tailpipe emissions and improving fuel cconoray. While the data considered is based on a singlc vehicle the detailed testing with time provided a positive statistical pattern.


# PROOF OF CONCEPT TESTING USING A PROPRIETARY ENGINE LIQUID OIL CATALYST 

GASOLINE VEHICLES<br>CHASSIS DYNO<br>TEST PARAMETERS (HC, CO, NOx, FC)

DRAIN EXISTING FUEL
FILL TANK TO 40\% WITH TEST FUEL (Indolene, Phase II)

## CHANGE OIL

RUN DOUBLE PREP CYCLE(S) $(1) 23$ minne test/Computer softarue for wimm.
12-HOUR CONTROLLED SOAK $\rightarrow 68-86^{\circ} \mathrm{F}$
RUN TWO (2) BACK-TO-BACK CVS/FTP TESTS FOR BASELINE
CVS-78 EACH TEST MUST BE $10 \%$ in Rarge
ADD LIQUID OIL CATALYST
PUT 100 MILES ON VEHICLE USING AMA-ROUTE
RE-CONSTITUTE TEST FUEL TO 40\%
RUN DOUBLE PREP CYCLE(S)
12-HOUR CONTROLLED SOAK
RUN TWO BACK-TO-BACK CVS/FTP TESTS

California Environmental Engineering 3231 S. Standard Ave. Santa Ana California
TEST NUMBER
VEHICLE REF
V.I. N .
OPERATOR
DRIVER
MAKE
MODEL
YEAR
TANK CAP
ODOMETER
TRANS
REMARKS
REMARKS
REMARKS
START TIME
$V 5025450$
79590
$1 J C N U 7448 J T 07959$
MIKE CARTER
RAZ
JEFP
CHEROKEE
1988
$40 \%=$
173440
AUTO
BASELINE 2
$08: 56: 14$



California Envirommental Engineering
3231 S. Standard Ave Santa Ana California

V5025452
79590
1JCMU C7448JT07959
MTKE CARTER
RAZ
JEEP
CHEROKEE
1988
$40 \%=$
173483
AUTO
BASELINE 3
$08: 59: 47$

| $\begin{aligned} & \text { DATE } \\ & \text { A.C. } \end{aligned}$ | $\begin{aligned} & 09-30-2004 \\ & \text { YES } \end{aligned}$ | $\begin{aligned} & \text { RANGE } \\ & \text { FUEL TYPE } \end{aligned}$ | $\begin{aligned} & 443278 \\ & \text { INDOLENE } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| ENGINE FAM. | JAM242T5LND7 | DENSITY | 16.33 |
| EVAP. FAM. | JT-242H-1S | SPECIF。CO2 | 13.4 |
| TEST TYPE | EPAAM_8S.IA4 | Grech Fraide | 2420 |
| SHIFT FILE | AUTO .I_4 | SP。 GRAVITY | . 743 |
| INERTIA WGT | 3500 - | NoH.V. | 18491 |
| ACTUAL HP | 13.6 | WT FACTOR | . 43 |
| INDIC. HP | 11.2 | WT FACTOR |  |
| HP Spd/Sec | EPA $2 / 0$ | WT FACTOR | .57 |
| END TIME | 09:41:12 | FINAL ODO. | 173494.0 |





## California Environmental Engineering 2530 S. Birch Street. Santa Ana California 



V5025466
79590
1JCMU77448JT07959
MIKE CARTER
RAZ
JEEP
CHEROKEE
1988
$40 \%=$
173781
AUTO
POST TEST 1
$10: 20: 35$

| $\begin{aligned} & \text { DATE } \\ & \text { A.C. } \\ & \text { ENGINE FAM. } \\ & \text { EVAP.FAM. } \end{aligned}$ | $\begin{aligned} & 10-07-2004 \\ & \text { YESS } \\ & \text { JAM242T5LND7 } \\ & \text { JT-242H-1S } \end{aligned}$ |
| :---: | :---: |
| TEST TYPE | EPAAM_8S.IA4 |
| SHIFT FILE | AUTO .L |
| INERTIA WGT | 3500 |
| ACTUAI HP | 13.6 |
| INDIC. HP | 2 |
| HP Spd/Sec | EPA $2 / 0$ |

END TIME |11:01:49

RANGE
FUEL TYPE
DENSITY
Gr.C/gal FUEL Fract. SP。 GRAVITY N.H.V. FACTOR

WT FACTOR
WT FACTOR

443278
INDOIENE
16.33
13.4 2420
.8629
.743
18491
.43
.57

FINAI ODO. 1173792.0

| \# EVENT | MIIES | Km | TTME | TIME trace | HOLD | TIME | race | ERROR |  | Gretrl |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 CRANK | 0.000 | 0.000 | 2.9 | 0.0 for | 0.0 | 115.0 | for | -0.4 |  | 2835 |
| 2 phase 1 | 3.591 | 5.771 | 505.0 | 0.0 for | 0.0 | 119.4 | for | 0.2 |  | 2835 |
| 3 phase 2 | 3.864 | 6.211 | 864.0 | 0.0 for | 0.0 | 119.8 | for | 0.1 |  | 3875 |
| 4 eng off | 0.000 | 0.000 | 1.8 | 0.0 for | 0.0 | 120.9 | for | -0.4 |  | 3883 |
| 5 phase 2 | 0.000 | 0.000 | 5.0 | 0.0 for | 0.0 | 123.4 | for | 0.8 |  | 20259 |
| 6 soak+bl | 0.000 | 0.000 | 15.0 | 0.0 for | 0.0 | 427.6 | for | 0.6 |  | 2051 |
| 7 soak | 0.000 | 0.000 | 525.0 | 0.0 for | 0.0 | 678.4 | for | -0.4 |  | 4 |
| 8 ready | 0.000 | 0.000 | 31.8 | 0.0 for | 0.0 | 724.7 | for | $-1.3$ |  | 9 |
| 9 crank 3 | 0.000 | 0.000 | 2.2 | 0.0 for | 0.0 | 1097.0 | for | $-1.2$ |  | 2883 |
| 10 phase 3 | 3.587 | 5.765 | 505.0 | 0.0 for | 0.0 | 1241.4 | for | -0.8 |  | 2883 |
| 11 delay15 | 0.000 | 0.000 | 15.0 | 0.0 for | 0.0 | 1312.1 | for | 0.1 |  | 2051 |
| 12 bags | 0.000 | 0.000 | 1.0 | 0.0 for | 0.0 | 1497.7 | for | 0.6 |  |  |
| 13 end | 0.000 | 0.000 | 0.0 | 0.0 for | 0.0 | 0.0 | for | 0.0 |  | 0 |
| 14 end | 0.000 | 0.000 | 0.0 | 0.0 for | 0.0 | 0.0 | for | 0.0 |  | 0 |
| 15 end | 0.000 | 0.000 | 0.0 | 0.0 for | 0.0 | 0.0 | for | 0.0 |  | 0 |
| TEST CO | $\mathrm{EDC}_{\operatorname{THC}} 247$ | 8 CO SECO |  |  |  | Tdry= |  | Tdo |  |  |
| SAMPLE | 43.1 | 165.1 | 10.0 | 0.779 |  | BARO. $=$ | 764. | 50 SEC | $=$ | 507.9 |
| MODAL | 48.7 | 162.1 | 10.9 | 0.795 |  | TQavg= | 11. | 79 A -H | $=$ | 68.3 |
| AMBIENT | 4.2 | 6.5 | 0.1 | 0.047 |  | NOxKI= | 0.9 | 69 VOI | $=$ | 5006.0 |
| GRAMS | 3.200 | 26.241 | 2.602 | 1907.27 |  | M.P.G. | 16. | 25 DF | $=$ | 16.754 |
| GMS/MI | 0.891 | 7.307 | 0.725 | 531.12 |  | MPGnhV | 16 | 33 MI | $=$ | 3.591 |
| G/Mwgt | 0.185 | 1.514 | 0.150 | 110.01 |  | $\mathrm{R}-\mathrm{H}=$ | 57 | 0 KM | $=$ | 5.772 |
| PHASE 2 | THC | CO | NOX | CO 2 |  | Tdry= | , | Tdp | $=$ | 56.9 |
| SAMPLE | 9.3 | 10.5 | 2.2 | 0.507 |  | BARO. $=$ | 764. | 50 SEC | $=$ | 870.8 |
| MODAL | 10.0 | 10.6 | 2.4 | 0.530 |  | TQavg= |  | 77 A-H |  | 68.5 |
| AMBIENT | 4.0 | 4.7 | 0.1 | 0.047 |  | NoxK5 $=$ |  | 70 VOL |  | 8626.1 |
| GRAMS | 0.768 | 1.700 | 0.953 | 2065.40 |  | M.P.G。 |  | 54 DF | $=$ | 26.327 |
| GMS/MI | 0.199 | 0.440 | 0.247 | 534.52 |  | MPGnhy | 16. | 55 MI | $=$ | 3.864 |
| G/MWgt | 0.099 | 0.220 | 0.123 | 267.26 |  | $\mathrm{R}-\mathrm{H}=$ | 54. | 0 KM | $=$ | 6.211 |
| PHASE 3 | THC | CO | NOx | $\mathrm{CO}_{2}$ |  | Tary= | 75 | Tdp |  | 56.8 |
| SAMPLE | 26.4 | 75.9 | 6.0 | 0.691 |  | BARO. $=$ | 764 |  |  | $507 \cdot 2$ |
| MODAI | 29.0 | 77.8 | 6.6 | 0.715 |  | TQavg= | 11. | 80 A-H |  | 68.3 |
| AMBIENT | 4.0 | 3.8 | 0.1 | 0.046 |  | NoxKI= | 0.9 | 69 VOL | $=$ | 5016.9 |
| GRAMS | 1.852 | 11.959 | 1.555 | 1684.08 |  | M.P.G. | 18. | 61 DF | $=$ | 19.109 |
| GMS/MI | 0.516 | 3.334 | 0.433 | 469.49 |  | MPGnhv | 18. | 66 MI | $=$ | 3.587 |
| G/Mwgt | 0.142 | 0.915 | 0.119 | 128.83 |  | R-H | 53. | 20 KM | $=$ | 5.765 |



