Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/17/2014 7:57:53 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]

Subject: FE discussion with Ford
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/22/2014 5:00:00 PM
End: 4/22/2014 6:00:00 PM
Show Time As: Busy

Meeting to discuss status of Ford FE and coastdown testing

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/9/2014 3:12:27 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]

Subject: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Busy

Meeting with Bob Holycross, Glenn Heiser, and Mark Guenther to discuss coastdown results and plans for fuel economy testing.

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/1/2014 5:14:48 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]

Subject: Ford Fusion HEV Discussion
Location: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE

Start: 4/3/2014 6:00:00 PM
End: 4/3/2014 8:00:00 PM
Show Time As: Busy

Meet with Ford to discuss status of coastdown testing on new Ford hybrids.

Message

Sent: 6/4/2014 2:43:49 PM
To: Bochenek, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d9456788ef034b79a06044ce4afa910a-Bochenek, David]
Subject: FW: VERIFY

Hi Dave,

We will need the fuel properties for Ford to enter the results into verify.

Vehicle# EM10006
Test # 2014—0188-002

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 10:28 AM
To: Ball, Joel
Subject: VERIFY

Joel,
We are attempting to submit the EPA data for the 1.6L M/T Fiesta test into VERIFY. There are fields for test fuel properties, which we don't have. Any advice?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 5/20/2014 1:27:12 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: Ford Vehicle Derivation Procedure

Joel,
I was told that on the dashboard/windshield area of the test car is a printed sheet with special canister load and fuel tank instructions. Please confirm.

I will email you the ETW/target load terms shortly.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, May 20, 2014 8:58 AM
To: Szajner, David (D.J.); Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Fuher, Michael (M.J.)
Subject: RE: Ford Vehicle Derivation Procedure

Hi David,

The road load and prep are scheduled for 2:30 pm today.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 3:59 PM
To: Ball, Joel; Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.)
Subject: Ford Vehicle Derivation Procedure

Joel,

The attached testing procedure file can be used for the Derivation Procedure on Ford vehicle **DL500090, 2013 CMAX PHEV**.

Please note:

Do not use Augmented Braking.

PRNDL should be in park and key off when not in use.

Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, May 19, 2014 2:57 PM
To: Szajner, David (D.J.); Mazaitis, Vincent
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: RE: Ford Vehicle Delivery

Hi David,

Could you please email me the test information normally submitted in the supplemental info and the instructions for setting dyno mode and running the road-load derivation. Also will you be providing a charger or will we use the generic one? Will you be providing a voltage stabilizer? What mode (normal, eco...) will the testing be performed in?

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 2:16 PM
To: Mazaitis, Vincent; Ball, Joel
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery this afternoon of Ford vehicle **DL500090, 2013 CMAX PHEV** for EPA Testing.

During this duration of Ford HEV vehicle Testing at EPA, a Ford representative would like be present for both the Roadload and Test.

The primary Ford Engineers would be Jimmy Kapadia (jkapadia@ford.com) 313-805-0732, or T.J. Cusumano (tcusuma@ford.com) 313-806-6083.

Please include them in all updates with the current EPA testing schedule.

If you have any questions or concerns, please contact me. Thanks again.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Szajner, David (D.J.) [dszajner@ford.com]
Sent: 4/23/2014 2:07:31 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: Derivation Procedure
Attachments: Fusion-CMAX.txt; MKZ.txt

Joel,

Below is the Derivation Procedures for Ford vehicles. Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Szajner, David (D.J.)
Sent: Wednesday, April 23, 2014 8:30 AM
To: Mazaitis.vincent@epa.gov
Cc: Kapadia, Jimmy (J.H.) (jkapadia@ford.com); Cusumano, Thomas (T.J.) (tcusuma1@ford.com); Dabbs, John (J.P.) (jdabbs1@ford.com); Graham, Brennan (B.K.) (bgraha45@ford.com)
Subject: Derivation Procedure

Hey Vince,

Here is the Derivation Procedure for the Fusion/CMAX/MKZ Ford vehicles.

If able, please place a copy in Ford vehicles EL510048 & ER317196 currently testing at EPA. Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Fusion/CMAX Key and Push Button Start Derivation Procedure

- Check that F-terms and inertia are loaded correctly in VETS.
- Check that tire pressures are correct.
- Run a double-highway warm-up cycle.
- Bring vehicle to a stop after the double-highway.
- Put the car in Neutral.
- Key OFF vehicle or Power Down vehicle by pushing Start Button once.
- Open and close the driver's door.
- Ensure vehicle is still in Neutral.
- Begin dyno coastdown procedure.

MKZ Push Button Start and Push Button Shift Derivation Procedure

- Check that F-terms and inertia are loaded correctly in VETS.
- Check that tire pressures are correct.
- Run a double-highway warm-up cycle.
- Bring vehicle to a stop after the double-highway.
- Put the car in Neutral by pressing the "N" button twice (look for flashing "N" light).
- Key OFF vehicle.
- Open and close the driver's door.
- Ensure vehicle is still in Neutral (look for flashing "N" light).
- Begin dyno coastdown procedure.

Message

From: Mazaitis, Vincent [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3852485D8AC641D8AD91035A5DE7C82B-MAZAITIS, VINCENT]
Sent: 5/20/2014 12:50:43 PM
To: jkapadia@ford.com; Tom Cusumano (tcusuma1@ford.com.) [tcusuma1@ford.com.]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: DL500090

Hello Gentlemen,

The Subject vehicle was drained and fueled at 8:30 am this morning (5/20/14). The Road Load Derivation and prep will not begin until after 2:30 pm this afternoon. If you wish to be present, please arrive before then and contact Joel Ball when you arrive, as I will not be here.
Thank you,

Vince Mazaitis

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/11/2014 7:09:54 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]
Subject: FW: As Requested: Ford April 10th TRLHP Update Slides
Attachments: TRLHP EPA UPDATE 041014 CBI.pdf

Sensitivity: Company Confidential

Here is the presentation from yesterday's meeting. It is the exact same as what they presented to us. It does not mention or address the issue of CBI / Ex. 4

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Heiser, Glen (G.A.) [mailto:gheiser@ford.com]
Sent: Friday, April 11, 2014 3:02 PM
To: Wehrly, Linc
Cc: Holycross, Bob (R.T.)
Subject: As Requested: Ford April 10th TRLHP Update Slides
Sensitivity: Confidential

Linc,

CBI / Ex. 4

CBI / Ex. 4

Kind regards,

Glen A. Heiser

Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 5/29/2014 9:07:28 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: Dyno Load Derivation

Hi Joel,
This is a follow-up to my voicemail. SAE J2264 calls for a minimum 4-hour soak before doing a dyno load derivation. So, if that soak can be accommodated on Tuesday, then that's fine. If not, then a Friday derivation for the SFE configuration might be an alternative plan.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Spieth, John [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7A48EF6030334C91BC8B660A14054AA0-SPIETH, JOHN]
Sent: 5/29/2014 7:51:56 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
Subject: RE: EPA Request: 1.6L M/T

Thank you, Joel

John

From: Ball, Joel
Sent: Thursday, May 29, 2014 12:39 PM
To: Spieth, John; Haynes, Ben; Mazaitis, Vincent
Subject: FW: EPA Request: 1.6L M/T

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Thursday, May 29, 2014 11:04 AM
To: Ball, Joel
Subject: FW: EPA Request: 1.6L M/T

Joel, below are test specs for the manual transmission vehicle delivered this morning.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Graham, Brennan (B.K.)
Sent: Thursday, May 29, 2014 10:56 AM
To: Fuher, Michael (M.J.)
Cc: Cusumano, Jacob (J.J.)
Subject: RE: EPA Request: 1.6L M/T

Vehicle: EM100006
ETW: 2875
TRLHP: 10.9

Track Force Coefficient f0: 22.82
Track Force Coefficient f1: 0.2127
Track Force Coefficient f2: 0.01937
Canister Working Capacity: 105 g
Canister Volume: 1.8 L
Fuel Tank 40% Fill: 5 gal

Please let me know if there is any additional information that you require.

Thank You,
Brennan Graham
Fuel Economy Programs
Allen Park Test Laboratory (APTL) 3BH09
Bgraha45@ford.com | 313-322-5623

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 6/4/2014 4:44:47 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: C-Max PHEV test results for Vehicle DL500090

Thank you, Joel. I'll let you know as soon as we attempt the change.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 12:33 PM
To: Fuher, Michael (M.J.)
Subject: C-Max PHEV test results for Vehicle DL500090

Hi Mike,

In order to get the system miles in verify to reflect the actual start odometer readings of 6161 miles for test number DFMX91002289 and 6095 for test number DFMX91002288, please update the VI for vehicle DL500090 to change the odometer correction factor to 1.0.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Spieth, John [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7A48EF6030334C91BC8B660A14054AA0-SPIETH, JOHN]
Sent: 5/30/2014 7:25:25 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
Subject: RE: Ford Vehicle EM100045

Thanks, Joel

FYI—Dave VanAmburg was starting on the re-road load of config 4 the last I saw him today.

John

From: Ball, Joel
Sent: Friday, May 30, 2014 2:41 PM
To: Haynes, Ben; Spieth, John; Mazaitis, Vincent
Subject: FW: Ford Vehicle EM100045

Hi Ben,

Here are the parameters for vehicle EM100045 config 5. Please note the tire pressure change.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Friday, May 30, 2014 1:49 PM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Graham, Brennan (B.K.); Dabbs, John (J.P.)
Subject: Ford Vehicle EM100045

Joel,

Here are the Roadload Coefficients for vehicle **EM100045 version 5**:

SFE Configuration: 5
Vehicle: EM100045
ETW: 2875
TRLHP: 10.7
Track Force Coefficient f0: 21.57
Track Force Coefficient f1: 0.2548
Track Force Coefficient f2: 0.01839
Coastdown Time: 16.62
Canister Working Capacity: 105 g
Canister Volume: 1.8 L
Fuel Tank 40% Fill: 5 gal
Tire: P185/60R15

Tire Pressure: 38 psi

Please let me know if there is any additional information that you require.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Friday, May 30, 2014 10:16 AM
To: Szajner, David (D.J.)
Subject: FW: EM100045

Tire pressure on front wheels is 32 and road load is below:

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Thursday, May 29, 2014 4:50 PM
To: Spieth, John; Haynes, Ben; Mazaitis, Vincent
Cc: Wehrly, Linc
Subject: EM100045

Hi John,

The road load coefficients in verify now are correct for vehicle EM100045/4. A=22.88 B=0.255 C=0.01916 The values previously entered into verify were incorrect. Thank you Ben for catching this error.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 5/29/2014 5:00:54 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: EPA Request: 1.6L M/T

Let me confirm.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Thursday, May 29, 2014 1:00 PM
To: Fuher, Michael (M.J.)
Subject: RE: EPA Request: 1.6L M/T

Are these the correct shift schedules for this vehicle?

FTP 662
highway 316

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Thursday, May 29, 2014 11:04 AM
To: Ball, Joel
Subject: FW: EPA Request: 1.6L M/T

Joel, below are test specs for the manual transmission vehicle delivered this morning.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Graham, Brennan (B.K.)
Sent: Thursday, May 29, 2014 10:56 AM
To: Fuher, Michael (M.J.)
Cc: Cusumano, Jacob (J.J.)
Subject: RE: EPA Request: 1.6L M/T

Vehicle: EM100006
ETW: 2875

TRLHP: 10.9
Track Force Coefficient f0: 22.82
Track Force Coefficient f1: 0.2127
Track Force Coefficient f2: 0.01937
Canister Working Capacity: 105 g
Canister Volume: 1.8 L
Fuel Tank 40% Fill: 5 gal

Please let me know if there is any additional information that you require.

Thank You,
Brennan Graham
Fuel Economy Programs
Allen Park Test Laboratory (APTL) 3BH09
Bgraha45@ford.com | 313-322-5623

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 5/28/2014 12:18:19 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: 2014 Fiesta Label Tree

This looks good to me.

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Ball, Joel
Sent: Wednesday, May 28, 2014 6:37 AM
To: Wehrly, Linc
Subject: FW: 2014 Fiesta Label Tree

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Tuesday, May 27, 2014 5:42 PM
To: Ball, Joel
Subject: 2014 Fiesta Label Tree

Joel,
I just created this spreadsheet with label trees for the 2014 Fiesta and wanted to get it out to you quickly. I might do some fine tuning tomorrow if needed. It's based on my current understanding. We can discuss more tomorrow, but basically data are required where blue is shaded, and purple represents discretionary test point pending the outcome of the blue data.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 6/10/2014 2:24:56 AM
To: Fuher, Michael (M.J.) [mfuher@ford.com]; Heiser, Glen (G.A.) [gheiser@ford.com]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: Re: Staus of Fuel Economy results

Sure. I'll Call you at 11 am.

From: Fuher, Michael (M.J.) <mfuher@ford.com>
Sent: Monday, June 9, 2014 6:49:02 PM
To: Wehrly, Linc; Heiser, Glen (G.A.)
Cc: Ball, Joel
Subject: RE: Staus of Fuel Economy results

Hi Linc. Glen is out of the office on Tuesday. Can we connect after your meeting gets out, around 11am?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Wehrly, Linc [mailto:wehrly.linc@epa.gov]
Sent: Monday, June 09, 2014 4:12 PM
To: Heiser, Glen (G.A.); Fuher, Michael (M.J.)
Cc: Ball, Joel
Subject: Staus of Fuel Economy results

Glen and Mike,

I'm hoping that sometime tomorrow morning we can have a quick call to see where we all are with the final fuel economy label values. I have a meeting from 10-11 tomorrow that I can't get out of, but the rest of the morning I'm flexible. Please let me know if you can participate.

Thanks,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
2565 PLYMOUTH ROAD
ANN ARBOR, MICHIGAN 48105-2498

OFFICE OF
AIR AND RADIATION

June 2, 2014

Todd Fagerman, Manager
Car and Truck Certification
Ford Motor Company
Allen Park Test Laboratory
1500 Enterprise Dr, Suite 3W-200
Allen Park, Michigan 48101-2053

Dear Mr. Fagerman,

Per the requirements of 40 CFR §86.1836, the United States Environmental Protection Agency (EPA) requests that Ford Motor Co. provide one 2015 model year Ford F150 production vehicle to EPA for testing. The vehicle shall be randomly selected from the population of vehicles produced on the assembly line which represents the highest selling sub-configuration within the highest selling configuration of the highest selling base level (based on the sales projections stated in the application for certification and used for testing under 40 CFR part 600). Please deliver the vehicle to the National Vehicle and Fuels Emissions Laboratory (NVFEL) in Ann Arbor, Michigan no later than July 15, 2014. The vehicle shall have accumulated no more than 60 miles at the time it is delivered. EPA will conduct coastdown, emissions, and fuel economy tests which will take approximately 6 weeks and accumulate approximately 4,300 miles.

Should you have questions regarding this letter, please contact Mr. Joel Ball at Ball.joel@epa.gov or (734) 214-4238.

Sincerely,

Byron Bunker, Director
Compliance Division
Office of Transportation and Air Quality

Internet Address (URL) • http://www.epa.gov
Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 6/4/2014 5:53:19 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: C-Max PHEV test results for Vehicle DL500090

Thanks Joel.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 1:18 PM
To: Fuher, Michael (M.J.)
Subject: RE: C-Max PHEV test results for Vehicle DL500090

The Verify results are updated and the odo appears to be correct

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 12:55 PM
To: Ball, Joel
Subject: RE: C-Max PHEV test results for Vehicle DL500090

Joel, I have been informed that the VI has been updated to reflect a 1.0 correction factor.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 12:33 PM
To: Fuher, Michael (M.J.)
Subject: C-Max PHEV test results for Vehicle DL500090

Hi Mike,

In order to get the system miles in verify to reflect the actual start odometer readings of 6161 miles for test number DFMX91002289 and 6095 for test number DFMX91002288, please update the VI for vehicle DL500090 to change the odometer correction factor to 1.0.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 6/3/2014 8:52:07 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: Data

Sorry to bug you Joel. This morning, you thought there was a chance you could share this morning's preliminary data by todays' end. Any hope for that?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Danzeisen, Karen [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A7B7DB4732E04226BC9CED3A0F678AF6-DANZEISEN, KAREN]
Sent: 6/4/2014 5:18:12 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: C-Max PHEV test results for Vehicle DL500090

Both tests are now reprocessed.

Karen E. Danzeisen
Information Technology Specialist
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

danzeisen.karen@epa.gov
(734)214-4444

www.epa.gov/nvfel/

From: Ball, Joel
Sent: Wednesday, June 04, 2014 1:08 PM
To: Danzeisen, Karen
Subject: FW: C-Max PHEV test results for Vehicle DL500090

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 12:55 PM
To: Ball, Joel
Subject: RE: C-Max PHEV test results for Vehicle DL500090

Joel, I have been informed that the VI has been updated to reflect a 1.0 correction factor.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 12:33 PM
To: Fuher, Michael (M.J.)
Subject: C-Max PHEV test results for Vehicle DL500090

Hi Mike,

In order to get the system miles in verify to reflect the actual start odometer readings of 6161 miles for test number DFMX91002289 and 6095 for test number DFMX91002288, please update the VI for vehicle DL500090 to change the odometer correction factor to 1.0.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 6/5/2014 3:20:02 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: CTDI

Joel,
I understand that Ford has submitted a CTDI for the 1.0L M/T Fiesta (2 tests in 1 sub-configuration). I also understand that Ford is required to conduct a Ford-confirmatory test if EPA does not, with CO emissions on one test passing but > 90% of standard. As timing is tight, I would appreciate knowing your CTDI decision as soon as possible so we can begin our presumed testing. Thanks Joel.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 6/12/2014 12:24:44 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: FW: Ford Materials
Attachments: Ford Relabel Roll Out June 11 - BJB.docx; Ford relabel press release v9.docx

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Birgfeld, Erin
Sent: Wednesday, June 11, 2014 6:25 PM
To: Grundler, Christopher; Wehrly, Linc; Bunker, Byron; Snapp, Lisa; Simon, Karl; Alson, Jeff
Cc: Mylan, Christopher; Hengst, Benjamin
Subject: Ford Materials

Hi all,

Here are the latest and greatest materials for the Ford roll out. Note that the

The plan is as follows:

- 1:30 Ford sends out a press advisory for their press conf.
- 1;30 EPA shares our embargoed Press release with Det. News, AP
- 2:00 – EPA website goes live/ Ford Conference (I will get the call in number so those that are interested can listen in)
- 2:00 – EPA press release
- After Ford conference – Chris conducts interviews with press.

Signing off! See you all tomorrow.

-Erin

Erin Birgfeld
Director of Communications
Office of Transportation and Air Quality
Tel: 202.564.6741
Cell: 202.255.4434

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 6/11/2014 5:46:34 PM
To: Heiser, Glen (G.A.) [gheiser@ford.com]
CC: Holycross, Bob (R.T.) [rholycro@ford.com]; Fuher, Michael (M.J.) [mfuher@ford.com]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
Subject: EPA Adminstrator Notification to Ford regarding 2013 & 2014 Ford Hybrids and 2014 Ford Fiestas Fuel Economy Labels

Glenn,

EPA has completed all of its quality checks of the new Ford fuel economy label values for the 2013 and 2104 Ford Hybrids and the 2014 Ford Fiestas. In accordance with §600.312-86, it is EPA's determination that, beginning no later than 15 calendar days after the date of this notification, Ford must begin removing existing fuel economy labels and affixing correct fuel economy labels to all affected new vehicles which are currently unsold (that is, all affected 2013 and 2014 Fusion Hybrids, Fusion Energi, C-Max, C-Max Energi, Lincoln MKZ Hybrids, and 2014 Fiestas that have not yet been sold to individual owners, including all vehicles still in the manufacturing process, in the possession of Ford, in transit with shipping companies in the distribution system, or in possession of dealers.)

This determination is based on the requirements for labeling vehicles with fuel economy values as described in 40 CFR part 600 subpart D, "Fuel Economy Labeling," as well as the following language that addresses relabeling requirements (emphasis added).

§ 600.312-86 Labeling, reporting, and recordkeeping; Administrator reviews.

(a)

(1) *The manufacturer shall determine label values (general and specific) using the procedures specified in subparts C and D of this part and submit the label values, and the data sufficient to calculate the label values, to the Administrator according to the timetable specified in § 600.313.*

(2) *Except under paragraph (a)(4) of this section, the manufacturer is not required to obtain Administrator approval of label values prior to the introduction of vehicles for sale.*

(3) *The label values that the manufacturer calculates and submits under paragraph (a)(1) of this section shall constitute the EPA fuel economy estimates unless the Administrator determines that they are not calculated according to the procedures specified in subparts C and D of this part.*

(4) *If required by the Administrator, the manufacturer shall obtain Administrator approval of label values prior to affixing labels to vehicles.*

(5)

(i) If at any time during the model year, any label values are determined not to be calculated according to the procedures specified in subparts C and D of this part, the Administrator shall notify the manufacturer in writing.

(ii) *If the Administrator has sufficient information to enable calculation of the correct label values, this notification shall specify the correct label values which constitute the EPA Fuel Economy Estimates.*

(iii) *If additional information is required, the Administrator shall request such additional information and a recalculation of the label value by the manufacturer.*

(6) If the Administrator determines revised label values under paragraph (a)(5) of this section are lower than the label values calculated by the manufacturer, the manufacturer shall affix the revised labels to all affected new vehicles which are unsold beginning no later than 15 calendar days after the date of notification by the Administrator.

(b)

(1) The manufacturer is responsible for affixing vehicle labels that meet the format and content requirements of this subpart.

(2) *The manufacturer shall retain for examination, at the Administrator's discretion, typical label formats representing all information required on the manufacturer's fuel economy labels. The information shall include the text of all required and voluntary information as well as the size and color of print and paper, spacing, and location of all printed information. Where the fuel economy label is incorporated with the Automobile Information Disclosure Act label, the above requirements pertain to those sections of the label concerning fuel economy labeling information.*

(3) *If the Administrator determines upon examination of record that the label format or content do not meet the requirements of this subpart, the Administrator may:*

(i) *Require the manufacturer to make specific changes in subsequent labels, and*

(ii) *Require such changes to be implemented on a reasonable timetable, but no sooner than 15 days from the date of notification to the manufacturer.*

[49 FR 13852, Apr. 6, 1984]

We would like to discuss the timing of relabeling actions and plan to ensure dealers change all affected labels as soon as possible. If it appears that Ford will not be able to comply with the 15 day requirement, I would recommend that you contact me as soon as possible. Please accept this email as official notice and feel free to contact me with any questions, as always.

Regards,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 6/2/2014 8:14:46 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: VERIFY

Joel, do you know if the 1.6L A/T Fiesta tests early tomorrow?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, June 02, 2014 3:34 PM
To: Fuher, Michael (M.J.)
Subject: RE: VERIFY

We are trying to get the results into verify, having difficulty with the system do to the fact that we tested the vehicle before the test request was finalized in verify

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Monday, June 02, 2014 3:31 PM
To: Ball, Joel
Subject: VERIFY

Hi Joel.

I asked Ruowen Wu over here, and she said that she has not received the city test data for the plug-in hybrid through VERIFY. I think on Friday you expected it should come by today. Do you have any info regarding any data or IT obstacles? Thanks!

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 6/10/2014 4:39:11 PM
To: Good, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a0a212fab8644b89798966a2fff3ab8-Good, David]; French, Roberts [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c2bb2bd2583415da682f78cbe2154bc-French, Roberts]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: Final Ford FE Values
Attachments: Ford Fuel Economy Value Updates.docx

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Ford Fuel Economy Value Updates

		Old Label Values			New Label Values		
Model	Trimline and transmission	Combined (mpg)	City (mpg)	Highway (mpg)	Combined (mpg)	City (mpg)	Highway (mpg)
Fiesta (2014 only)	automatic	32	29	39	31	27	37
	manual	31	27	38	31	28	36
	SFE automatic	34	30	41	32	28	38
	SFE manual	37	32	45	36	31	43
	ST	29	26	35	29	26	35
Fusion Hybrid (2013 and 2014)		47	47	47	42	44	41
C-Max Hybrid* (2013 and 2014)		43	45	40	40	42	37
Lincoln MKZ Hybrid (2013 and 2014)		45	45	45	38	38	37
Fusion Energi Plug-in Hybrid (2013 and 2014)		43	44	41	38	40	36
C-Max Energi Plug-in Hybrid (2013 and 2014)		43	44	41	38	40	36

*The C-Max Hybrid was previously re-labeled in August 2013, with its combined label value lowered from 47 mpg to 43 mpg.

Message

From: Mazaitis, Vincent [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3852485D8AC641D8AD91035A5DE7C82B-MAZAITIS, VINCENT]
Sent: 6/2/2014 4:46:45 PM
To: Szajner, David (D.J.) [dszajner@ford.com]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: EM100006 Road Load Derivation
Attachments: EM100006_5-29-14_RL.pdf

Please find enclosed the Laboratory Test Data for the Subject vehicle. If you have any questions or concerns, please contact me.

Thank You,

Vincent Mazaitis
(734)214-4864

Vince Mazaitis

RLD_Derivation_Report.vi
Printed on 05/29/2014 at 03:45 PM

Vehicle Road Load Derivation Report

Cell ID	Vehicle ID:	Config Number	TestNumber
d006	EM100006	1	20140188004
Operator ID	**StartTime**	**StartDate**	**DynoConfig**
216064	15:03:01	29-May-2014	FWD

Track Target Settings

A	22.82	lbf
B	0.2127	lbf/mph
C	0.01937	lbf/mph^2
Hwy Inertia	2918.12	lbm

CoastDown Settings

UpperSpeed	70	mph
Lower Speed	10	mph
Interval	10	mph

CoastDown Results

Set Coefficients			Measured Coefficients				
A lbf	B lbf/mph	C lbf/mph^2	A lbf	B lbf/mph	C lbf/mph^2	MaxErr lbf	Status 2
11.41	0.0425	0.01937	33.7	0.0912	0.01996	9.19	Fail
0.53	0.164	0.01878	21.52	0.2594	0.01921	1.04	Pass
0.53	0.164	0.01878	21.55	0.2406	0.01964	1.7	Pass
0.53	0.164	0.01878	22.02	0.2045	0.01997	1.21	Pass

EPA Set Coefs

A	0.53	lbf
B	0.164	lbf/mph
C	0.01878	lbf/mph^2
ETW	2875	lbm

SAE Set Coefs

A	11.41	lbf
B	0.0425	lbf/mph
C	0.01937	lbf/mph^2

Performed by 5-29-14 Date

Verified by 5/29/14 Date

Message

From: Good, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6A0A212FAB8644B89798966A2FFF3AB8-GOOD, DAVID]
Sent: 6/10/2014 6:13:07 PM
To: Bunker, Amy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc45bf54f7fb4adfa01ab0455180574c-Bunker, Amy]
CC: Snapp, Lisa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16e26d18ae97412c99db2f8ed5419449-Snapp, Lisa]; Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; French, Roberts [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c2bb2bd2583415da682f78cbe2154bc-French, Roberts]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: FW: Updated Ford FE labels - revised FE Labels for the 2013 & 2014 C-Max PHEV & Fusion PHEV attached
Attachments: 2013 C-MAX PHEV EPA Box 6-9-14.pdf; 2013 FUSION PHEV EPA Box 6-9-14.pdf; 2014 FUSION PHEV EPA Box 6-9-14.pdf; 2014 CMAX PHEV EPA Box 6-9-14.pdf

Amy,

Please take a look at the revised Ford PHEV labels and let me know if you see any errors. [Why they sent 4 labels, I don't know. The C-Max & Fusion PHEV labels are identical in 2013 and in 2014. Only the fuel cost changes in 2014.]

Thanks

From: Beretz, Paul (P.D.) [mailto:pberetz@ford.com]
Sent: Tuesday, June 10, 2014 1:15 PM
To: Good, David
Cc: LaRue, Elisa (E.K.); French, Roberts; Ball, Joel; Cusumano, Jacob (J.J.); Beretz, Paul (P.D.)
Subject: RE: Updated Ford FE labels - Please send send copies of the revised FE Labels for the 2013 & 2014 C-Max PHEV or Fusion PHEV

Here are PDFs of the four labels

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 12:59 PM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send send copies of the revised FE Labels for the 2013 & 2014 C-Max PHEV or Fusion PHEV

Jac,

Thanks to Paul for sending copies of the PHEV spreadsheets.

When you get a chance, please us send copies of the revised FE Labels (window stickers for the 2013 & 2014 PHEVs---either the C-Max PHEV or Fusion PHEV is OK.

Thanks

From: Cusumano, Jacob (J.J.) [mailto:jcusuman@ford.com]
Sent: Tuesday, June 10, 2014 10:29 AM
To: Good, David
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

We will be sending the 2013 by 11:00 am....2014 to follow.

Thanks

J. J. Cusumano
Emission and Fuel Economy Supervisor
248-8521/jcusuman

From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 9:57 AM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Jac,

Please send the 2013 & 2014 final PHEV spreadsheet as soon as it's ready. For the PHEV labels, I have to double check your values and enter some of the info by hand (e.g. the composite combined values which are used for the leader lists on www.fueleconomy.gov).

Thanks

Dave

Message

From: LaRue, Elisa (E.K.) [elarue1@ford.com]
Sent: 6/10/2014 5:38:15 PM
To: Good, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a0a212fab8644b89798966a2fff3ab8-Good, David]
CC: French, Roberts [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c2bb2bd2583415da682f78cbe2154bc-French, Roberts]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Beretz, Paul (P.D.) [pberetz@ford.com]; LaRue, Elisa (E.K.) [elarue1@ford.com]
Subject: RE: Updated Ford FE labels - Please send send copies of the revised FE Labels for the 2013 & 2014 C-Max PHEV or Fusion PHEV

Dave –

The 2013 & 2014 Fusion & C-MAX PHEV labels have been submitted to Verify. Please let me know if you have any questions. Thank you.

Elisa LaRue
Fuel Economy Programs
phone: 313-32-23707
elarue1@ford.com

From: Beretz, Paul (P.D.)
Sent: Tuesday, June 10, 2014 1:15 PM
To: Good, David
Cc: LaRue, Elisa (E.K.); French, Roberts; Ball, Joel; Cusumano, Jacob (J.J.); Beretz, Paul (P.D.)
Subject: RE: Updated Ford FE labels - Please send send copies of the revised FE Labels for the 2013 & 2014 C-Max PHEV or Fusion PHEV

Here are PDFs of the four labels

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 12:59 PM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send send copies of the revised FE Labels for the 2013 & 2014 C-Max PHEV or Fusion PHEV

Jac,

Thanks to Paul for sending copies of the PHEV spreadsheets.

When you get a chance, please us send copies of the revised FE Labels (window stickers for the 2013 & 2014 PHEVs---either the C-Max PHEV or Fusion PHEV is OK.

Thanks

From: Cusumano, Jacob (J.J.) [mailto:jcusuman@ford.com]
Sent: Tuesday, June 10, 2014 10:29 AM
To: Good, David
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

We will be sending the 2013 by 11:00 am....2014 to follow.

Thanks

J. J. Cusumano
Emission and Fuel Economy Supervisor
248-8521/jcusuman

From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 9:57 AM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Jac,

Please send the 2013 & 2014 final PHEV spreadsheet as soon as it's ready. For the PHEV labels, I have to double check your values and enter some of the info by hand (e.g. the composite combined values which are used for the leader lists on www.fueleconomy.gov).

Thanks

Dave

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 5/19/2014 12:34:55 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Good, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a0a212fab8644b89798966a2fff3ab8-Good, David]; Peavyhouse, Robert [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1394f25fc907481389da07306bb3a027-Peavyhouse, Robert]
Subject: RE: 2013 and 2014 MY HEV Label/CAFE Tests

Mike,

Thanks for the confirmation. I agree with your summary. I have copied Dave Good and Bob Peavyhouse on this response as well so that they are up to date on how Ford will be handling CAFE for these vehicles in 2013 and 2014.

Regards,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Friday, May 16, 2014 2:11 PM
To: Wehrly, Linc
Subject: 2013 and 2014 MY HEV Label/CAFE Tests

Linc,

Thanks for speaking with me over the phone the past couple of days to discuss our fuel economy test plans for 2013 and 2014 Hybrids. I'd like to summarize the highlights of our agreements below. If you see any points that you do not recognize or with which you disagree, please let me know today. Thank you Linc.

- As you know, Ford tested a 2014 MY Fusion HEV at new TRLHP, which EPA later confirmed. Ford then tested a 2013 MY Fusion HEV at new TRLHP as we weren't sure if the fuel economy would be equivalent or slightly worse. As it turned out, the fuel economy result was higher on the 2013 MY test car than the 2014 MY test car. As we discussed, Ford does not plan to submit the higher fuel economy data from the 2013 MY test car to VERIFY, and we will use the lower fuel economy 2014 MY test car data for both 2013 MY and 2014 MY label and CAFE calculations.
- Likewise, Ford tested both a 2013 MY and a 2014 MY MKZ HEV in the (low volume) worse-case sub-configuration at new TRLHP. The fuel economy on the 2013 MY test car was lower than the fuel economy on the 2014 MY test car. Ford plans to submit to the EPA the test data on the 2013 MY test car, and we understand EPA does not plan to conduct confirmatory testing on that 2013 MY test car. The Ford test data from the 2013 MY test car will be used for both 2013 and 2014 MY (using data substitution) label and CAFE calculations. As a side note, Ford did submit data from the 2014

MY MKZ HEV into VERIFY, and we will attempt to rescind that test in VERIFY. If we find out we cannot rescind the test, then we will work with the EPA find a mutually-agreeable disposition for that test.

- Ford tested a 2014 MY C-MAX HEV at new TRLHP, which EPA later confirmed. Ford plans to use the EPA confirmatory test data for 2014 MY labels/CAFE. The 2014 MY C-MAX had some product improvements over the 2013 MY C-MAX, including aerodynamics. To support 2013 CAFE, Ford will use ADFE by taking the EPA-confirmed fuel economy data from the 2014 MY test car and adjusting for the higher 2013 MY TRLHP. Ford plans to voluntarily lower the 2013 MY C-MAX label values from the model type fuel economy down to values that align with the rounded, adjusted ADFE city and ADFE highway values. The label values for 2013 MY and 2014 MY C-MAX HEV both will be 42/37/40 mpg.

Thanks, Mike Fuher, P.E.

Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Fusion/CMAX Key and Push Button Start Derivation Procedure

- Check that F-terms and inertia are loaded correctly in VETS.
- Check that tire pressures are correct.
- Run a double-highway warm-up cycle.
- Bring vehicle to a stop after the double-highway.
- Put the car in Neutral.
- Key OFF vehicle or Power Down vehicle by pushing Start Button once.
- Open and close the driver's door.
- Ensure vehicle is still in Neutral.
- Begin dyno coastdown procedure.

Please note:

Do not use Augmented Braking.

PRNDL should be in park and key off when not in use.

Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

Message

From: Mazaitis, Vincent [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3852485D8AC641D8AD91035A5DE7C82B-MAZAITIS, VINCENT]
Sent: 4/23/2014 1:03:11 PM
To: Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: FW: Derivation Procedure
Attachments: Fusion-CMAX.txt; MKZ.txt

Hello Ben,

Please take a look at these procedures and let me know if anything is missing.

Thanks,

Vince Mazaitis

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Wednesday, April 23, 2014 8:30 AM
To: Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Dabbs, John (J.P.); Graham, Brennan (B.K.)
Subject: Derivation Procedure

Hey Vince,

Here is the Derivation Procedure for the Fusion/CMAX/MKZ Ford vehicles.

If able, please place a copy in Ford vehicles EL510048 & ER317196 currently testing at EPA. Thanks.

Fusion-CMAX.txt

MKZ.txt

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 5/19/2014 2:39:58 PM
To: Spieth, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7a48ef6030334c91bc8b660a14054aa0-Spieth, John]
CC: Bochenek, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d9456788ef034b79a06044ce4afa910a-Bochenek, David]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: FW: PHEV Testing

John,

It looks like we can expect the Ford PHEV (C-Max Energi) by the end of the day.

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Monday, May 19, 2014 10:35 AM
To: Wehrly, Linc
Cc: Ball, Joel; Cusumano, Jacob (J.J.)
Subject: RE: PHEV Testing

Hi Linc. The goal is to deliver the vehicle to you by close of business today. We are going through this weekend's tests to make sure they are valid. Thanks.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Wehrly, Linc [mailto:wehrly.linc@epa.gov]
Sent: Monday, May 19, 2014 8:55 AM
To: Fuher, Michael (M.J.)
Cc: Ball, Joel
Subject: PHEV Testing

Mike,

Do you have an update on the PHEV testing? Did you get a chance to complete all of the testing for the C-Max Energi over the weekend? Will we be seeing the vehicle today or tomorrow?

Thanks,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Message

From: Beretz, Paul (P.D.) [pberetz@ford.com]
Sent: 6/10/2014 4:24:55 PM
To: Good, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a0a212fab8644b89798966a2fff3ab8-Good, David]
CC: LaRue, Elisa (E.K.) [elarue1@ford.com]; French, Roberts [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c2bb2bd2583415da682f78cbe2154bc-French, Roberts]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Beretz, Paul (P.D.) [pberetz@ford.com]
Subject: FW: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible
Attachments: 2013 U.S. Relabel XML input EPA 06-03-14 matching Rob French.xlsm; 2014 U.S. Relabel XML input EPA 06-03-14 matching Rob French.xlsm

Hi Dave

Here's the 2014 PHEV spreadsheet.

It's a copy of 2013 with updated cost data.

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: Beretz, Paul (P.D.)
Sent: Tuesday, June 10, 2014 10:40 AM
To: Good, David
Cc: LaRue, Elisa (E.K.); French, Roberts; Ball, Joel; Cusumano, Jacob (J.J.)
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Hi Dave-

Here's a 2013 PHEV Spreadsheet. This is a variation on the one I sent the other day.

I started with Rob's and generated as much information as possible. I used mine to calculate any values that weren't on his.

I'll have a 2014 soon.

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: Cusumano, Jacob (J.J.)
Sent: Tuesday, June 10, 2014 10:29 AM
To: Good, David
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

We will be sending the 2013 by 11:00 am....2014 to follow.

Thanks

J. J. Cusumano
Emission and Fuel Economy Supervisor
248-8521/jcusuman

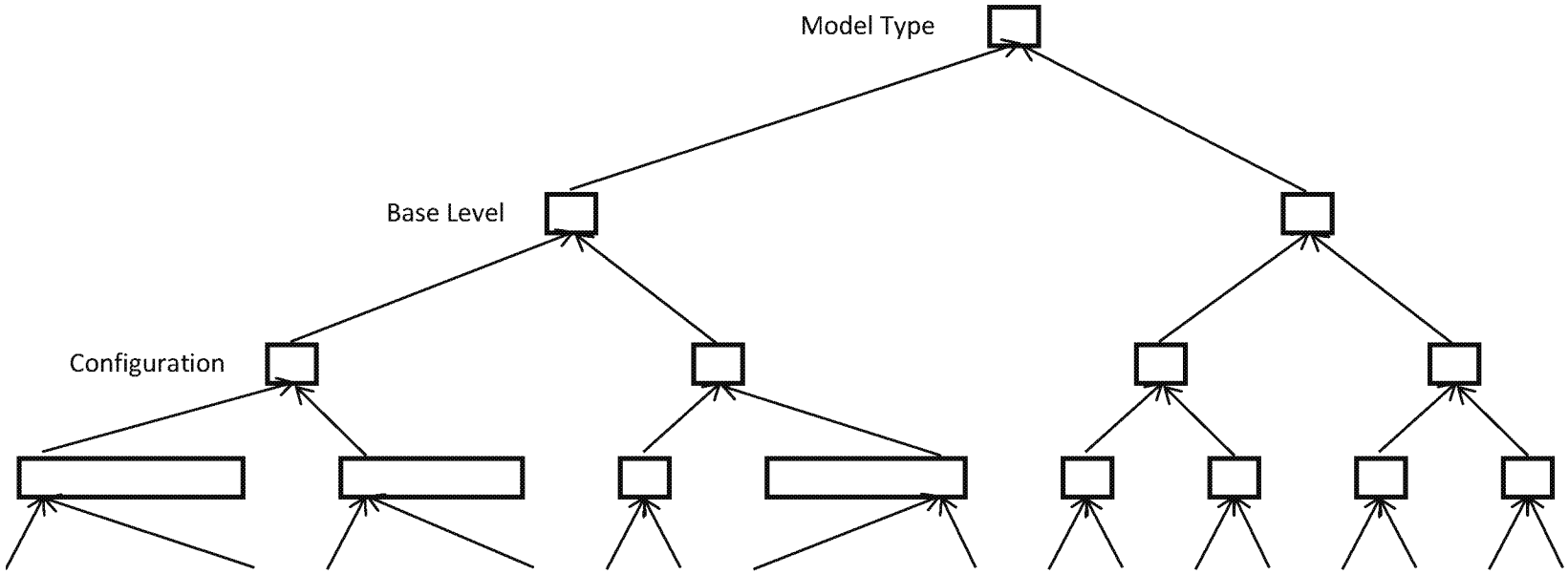
From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 9:57 AM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Jac,

Please send the 2013 & 2014 final PHEV spreadsheet as soon as it's ready. For the PHEV labels, I have to double check your values and enter some of the info by hand (e.g. the composite combined values which are used for the leader lists on www.fueleconomy.gov).

Thanks

Dave


Model Type
Base Level
Configuration

Sub Configuration

Tests

Data Input to CRIS
Verify PHEV Specific Data
Verify Data
Label Data

Data Not in Rob French's Spreadsheet

Electricity and Gasoline

	City								HWY						
		Driving Range	All Electric Range	Charge Time	Charge Depleting Gas MPG	kW-hr / 100Miles	Electric MPGe	Composite Gas/Electric MPGe	CO2		Driving Range	All Electric Range	Charge Time	Charge Depleting Gas MPG	kW-hr / 100Miles	Electric MPGe
5-Cycle Rounded Adjusted Model Type FE					(GL-97) (?)	(GL-97)	(GL-97)	(GL-219)	(GL-235)					(GL-98) (?)	(GL-98)	(GL-98)
					1658	34	99	95	5					0	42	81
Charge Time				8012									7820			
5-Cycle Unrounded Adjusted Model Type FE					(GL-94) (?)	(GL-94)	(GL-94)		(GL-271)					(GL-95) (?)	(GL-95)	(GL-95)
					1657.532638	33.9495251	99.27973926	94.51143206	5.335348889					0	41.64667709	80.93082654
MDIUF Calculation	0.47806676									0.414368884						
Label Adj. Range [miles]		21.41888577	20.92202825								17.36138512	17.36138512				
Unrounded Unadjusted Model Type FE					(GL-91) (?)	(GL-91)	(GL-91)		(GL-268)					(GL-92) (?)	(GL-92)	(GL-92)
					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
MDIUF Calculation	0.59									0.52						
Base Level FE					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
Configuration FE					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
Subconfiguration FE					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
Fleet Utility Factor	0.67511736									0.284439565						

Test Results

Label		30.59840824	29.88861179	8012	2367.903769	23.76466757	141.8281989	135.0163315	3.734744222		24.80197874	24.80197874	7820	0	29.15267397	115.6154665
				2.225555556									2.172222222			
CAFE							348.5	303.8								283.2

Composite Gas/Electric MPGe	CO2
(GL-220)	(GL-236)
81	0
	(GL-272)
80.93082654	0
	(GL-269)
115.6154665	0
115.6154665	0
115.6154665	0
115.6154665	0
115.6154665	0
283.2	

M-H

Charge Depleting Gas MPG	kW-hr / 100Miles	MPGe	CO2	(6) Composite Gas/Electric Combined MPGe	(7) Fuel Consumption Gas (Gal/100 Miles)	(8) Fuel Consumption Electricity (kW-hrs./100 Miles)	(2) Charge Time (hrs.)	(11) Driving Range (Miles)	(18) All Electric Range (Miles)
				GL-221	GL-214	GL-214	GL-216		
				88	0	37	2.5	20	19

(GL-99) (?)	(GL-99)	(GL-99)	(GL-201)
#DIV/0!	37	88	3

2.201555556

(GL-96) (?)	(GL-96)	(GL-96)	(GL-273)			
#DIV/0!	37.4132	87.8757	2.9	87.8757	911.6429511	37.4132435

19.59301048 | 19.31973884

(GL-93) (?)	(GL-93)	(GL-93)	(GL-270)	
#DIV/0!	26.1893	128.6977	2.1	125.5368

27.99001497

26.1893	128.6977	2.1	125.5367624

27.99001497

26.1893	128.6977	2.1	125.5367624

27.99001497

26.1893	128.6977	2.1	125.5367624

27.99001497

Gasoline Only

City MPG	City CO2	Highway MPG	Highway CO2	(9) Combined MPG	Combined CO2	(10) Fuel Consumption Gas	Fuel Tank Size (Gal)	Driving Range
				GL-99		GL-214		
				38		2.6	14	532

(GL-97)	(GL-235)	(GL-98)	(GL-236)	
40	219	36	245	231

(GL-94)	(GL-271)	(GL-95)	(GL-272)	(GL-96)	(GL-273)
40.4488	219	36.2655	245.2	38.4528	230.8

(GL-91)	(GL-268)	(GL-92)	(GL-269)	(GL-93)	(GL-270)
55	161	51.4	173	53.3195	166.4

55	161	51.4	173	53.3195	166.4

55	161	51.4	173	53.3195	166.4

55	161	51.4	173	53.3195	166.4

55.0	161	51.4	173	53.3195	166.4

Blended																		
			City		HWY		Electric Cost			Gasoline								
City FE	HWY FE	M-H FE		City Label Adj. Cost/mile [$ /mile]		HWY Label Adj. Cost/mile [$ /mile]	City	HWY	Combined	City	HWY	Combined	(14) Annual Fuel Cost	Composite City CO2	Composite HWY CO2	(17) Combined Composite CO2 Value	(13) Amount Saved/Spent Over 5 Years	(12) Driving Range
													GL-81			(GL-201)	GL-210/212	GL-218
									$300			$750	$1,050			129	$6,350	550

56	47	51

55.6736	47.0179	51.4143												116.8540316	143.5967495	128.9
			CD	CS	CD	CS										
				$ 0.07		$ 0.08							$1,073.78			
			$ 0.04	$ 0.09	$ 0.05	$ 0.10	$ 0.04	$ 0.05	$ 300.46	$ 0.09	$ 0.10	$ 774.09				

Gas Guzzler Input		
84.571	72.2742	78.5564

CAFE Fuel Economy

City	Hwy	M-H
93.1382	87.0082	90.2761
93.1382	87.0082	90.2761
93.1382	87.0082	90.2761
93.1382	87.0082	90.2761
93.1382	87.0082	

Label Constants

Price of Gas [$/Gal.]	Price of Electricity [$/kW-hr]	kW-Hrs./Gallon	City Slope	City Intercept	HWY Slope	HWY Intercept	CAFE Credit kW-Hrs./Gallon	Average Annual Miles	5 Yr. Fuel Cost
$ 3.55	$ 0.12	33.705	1.1805	0.003259	1.3466	0.001376	82.409	15000	$ 11,600

Enter data ONLY in GREEN cells

Enter Vehicle Information Here:	
Model Year:	2013
Manufacturer Name:	Ford
Model Name:	C-Max
Additional Descriptors (e.g., EcoMode, Config No.):	Veh. DL500090

Enter Test Information Here:	Test Date	Test Number/Identifier
Charge-Depleting City:	5/16/2014	C13-0612-03
Charge-Depleting Highway:	5/17/2014	C13-0612-03
Charge-Sustaining City:	5/14/2014	C13-0612-02
Charge-Sustaining Highway:	5/14/2014	C13-0612-02

CAFE, GHG, AND LABEL CALCULATIONS

CAFE & GHG CALCULATIONS		City	Highway	Combined
Fraction of Transition Cycle Allocated to Charge-Depleting (Zn)		0.099295263	0.417804936	Combined CAFE and CREE values are for informational purposes only. City and Highway values, rounded as shown, must be entered into Verify for each subconfiguration.
Charge-Depleting Range (Rcda)	miles	30.59840824	24.80197574	
Charge-Depleting DC Energy Consumed	W-hours	6223.75846	6222.842505	
Charge-Depleting Electricity Consumption Rate	AC W-hrs/mi	235.4023582	289.6720271	
Charge-Depleting Un-Incentivized Fuel Economy (no 0.15 credit applied)	MPGe	52.2819	42.4269	
Charge-Depleting Incentivized Fuel Economy (uses DOE Petroleum Equiv Factor)	MPGe	348.5479101	283.2479229	
Charge-Depleting CREE, utilitized	g/mi	0	0	
Fleet Utility Factor	UF	0.742226281	0.349282243	
Charge-Depleting Total Fuel Consumption, utilitized	gal-e	0.006159555	0.003715045	
Charge-Depleting CO2 Emissions	g/mi	3.734744222	0	
Equivalent All Electric Range, Unadjusted (calculated per § 535.65-12(b))	miles	29.88561179	24.80197574	
CAFE & GHG VALUES		City	Highway	
A. Composite CD/CS Incentivized Fuel Economy (for dual fuel "blended" PHEVs)	MPGe	94.7015	87.0105	91.0787
B. Composite CD/CS Incentivized Fuel Economy (for CAFE dual fuel vehicles)	MPGe	95.068	87.0105	91.2344
C. Composite CD/CS Fuel Economy (if NOT a CAFE dual fuel vehicle)	MPGe	52.2124	60.7301	74.8
C. Composite CD/CS CREE (does not include upstream emissions)	g/mi	42	113	74

LABEL CALCULATIONS		City	Highway	Combined
Charge-Depleting Cycle Range (Rcdc)	miles	26.075	21.63	19.59301048
Charge-Depleting Cost per Mile - Electricity	$/mi	$ 0.041	$ 0.050	
Charge-Depleting Cost per Mile - Gasoline	$/mi	$ 0.002	$ -	
Charge-Depleting Cost per Mile - Total Electricity + Gasoline	$/mi	$ 0.043	$ 0.050	
Charge-Sustaining Cost per Mile	$/mi	$ 0.09	$ 0.10	
MDIUF based on Rcda	mdiuf	0.47807	0.41437	0.451
MDIUF (for composite fractional UF calculations)	mdiuf	0.5432	0.4811	
Composite CD/CS Cost per Mile	$/mi	$ 0.07	$ 0.08	$ 0.07
LABEL VALUES		City	Highway	Combined
Charge-Depleting Range (Rcda)	miles	21.41888577	17.36138512	20.0
All-Electric Range (AER)	miles	20.42675855	17.04259665	19.0
Charge-Depleting Fuel Economy (MPGe)	mpge	94.51143206	81.44901057	88.0
Charge-Depleting Electricity Consumption Rate	kWh/100mi	33.9485251	41.64667709	37.0
Charge-Depleting Gasoline Consumption Rate	gal/100mi	0.06028637	0	0.0
Charge-Sustaining Fuel Economy	mpg	40	36	38.0
Charge-Sustaining Fuel Consumption Rate	gal/100mi	2.5	2.777777778	2.6
Annual Fuel Cost	$/year			$ 1,100.00
5-Year Save/Spend Value	$/5-years			$ 6,100.00
Composite CD/CS CO2 (fractional UF calculation)	g/mi	116.2267159	146.3959222	129
Composite CD/CS Fuel Economy (fractional UF calculation)	mpge	55.20013442	46.42202988	51

ENTER DATA HERE: CHARGE-SUSTAINING AND CHARGE-DEPLETING

CHARGE-SUSTAINING INPUTS: MPG, CREE, CO2		City	Highway
Fuel Economy, Unadjusted	mpg	55.0	51.4
Fuel Economy, Adjusted 5-Cycle or Derived 5-Cycle	mpg	40.0	36.0
CREE, Unadjusted	g/mi	162.0	173.0
CO2, Unadjusted	g/mi	161.0	173.0
CO2, Adjusted 5-Cycle or Derived 5-Cycle	g/mi	219.0	245.0
ADDITIONAL INPUTS FOR LABEL CALCULATIONS			
Gasoline cost	$/gallon	$ 3.58	
Electricity cost	$/kW-hour	$ 0.12	
Average vehicle MPG	MPG	23	
Average vehicle 5-year cost	$	$ 11,600	

CITY (UDDS) CHARGE-DEPLETING INPUTS

Which cycle/phase number is the transition cycle? 5
Enter the Total Recharge Energy (AC Watt-Hours): 7271.61
Enter the unadjusted all-electric range, if any (miles): 29.1833408

Cycle/Phase No.	Cycle/Phase Target Distance	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	miles	miles	Amp-hours	Volts	MPG	g/mi	g/mi
1	7.45	7.46904	4.665	335.01		0	
2	7.45	7.46036	9.416	319.68		0	
3	7.45	7.46245	14.307	308.77		0	
4	7.45	7.46521	19.068	300.565	635.104666	13.9245	
5	7.45	7.46159	19.548	295.585	61.2479776	143.922	
6	7.45	7.46699	19.665	295.29	59.5487528	148.597	
7	7.45	7.46759	19.742	295.465	59.2658217	149.378	
8	7.45						
9	7.45						
10	7.45						

HIGHWAY (HFET) CHARGE-DEPLETING INPUTS

Which cycle/phase number is the transition cycle? 3
Enter the Total Recharge Energy (AC Watt-Hours): 7230.44
Enter the unadjusted all-electric range, if any (miles): 24.3479952

Cycle/Phase No.	Cycle/Phase Target Distance	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	miles	miles	Amp-hours	Volts	MPG	g/mi	g/mi
1	10.3	10.2634	7.651	330.47		0	
2	10.3	10.2504	15.506	310.505		0	
3	10.3	10.2593	18.889	300.646	82.7161892	107.289	
4	10.3	10.264	19.051	297.02	54.0843318	164.013	
5	10.3	10.282	19.018	296.955	52.8462432	167.703	
6	10.3						
7	10.3						
8	10.3						
9	10.3						
10	10.3						

0.01292215

UDDS CALCULATIONS

Cycle/Phase No.	Gasoline Consumed	CO2	Net Amp-Hours Used Per Cycle	DC Energy Consumed	AC Energy Consumed	Cumulative Cycle Distance	City Fleet Utility Factor	City FUF x CREE	Electric Only Fuel Consumption	Total Fuel Consumption Rate (gas + electric)	Total Fuel Consumption (gas + electric)	FUF x Total Consumption	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF	MDIUF x Adjusted CO2	MDIUF x Adjusted Total Fuel Consumption
No.	gal	grams	Amp-hours	W-hours	W-hours	mi	UF	UF	gal/mi equiv	gal/mi equiv	gal-equiv	gal/mi equiv	miles	miles	UF	g/mi	g/mi
1	0.0000	0.0000	4.665	1582.822	1855.945	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	0.0000	0.0000	4.781	1518.800	1774.510	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	0.0000	0.0000	4.891	1510.184	1764.495	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	0.0118	103.9953	4.761	1430.390	1671.916	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	0.1218	1073.8278	0.481	142.176	166.118	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	0.1258	1109.5723	0.119	35.150	41.056	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	0.1260	1115.4262	0.08	23.637	27.617	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8																	
9																	
10																	

7.184439459 Recharge energy thru Rcda

HFET CALCULATIONS

Cycle/Phase No.	Gasoline Consumed	CO2	Net Amp-Hours Used Per Cycle	DC Energy Consumed	AC Energy Consumed	Cumulative Cycle Distance	Highway Fleet Utility Factor	Highway FUF x CREE	Electric Only Fuel Consumption	Total Fuel Consumption (gas + electric)	Total Fuel Consumption (gas + electric)	FUF x Total Consumption	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF	MDIUF x CO2	MDIUF x Adjusted Total Fuel Consumption
No.	gal	grams	Amp-hours	W-hours	W-hours	mi	UF	UF	gal/mi equiv	gal/mi equiv	gal-equiv	gal/mi equiv	miles	miles	UF	g/mi	g/mi
1	0.0000	0.0000	7.881	2528.426	3038.5578	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	0.0000	0.0000	7.855	2429.012	2925.0408	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	0.1248	1100.7150	3.383	1017.882	1221.0100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	0.1898	1683.4284	0.162	48.147	57.7649	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	0.1942	1720.9682	-0.033	-9.800	-11.7649	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6																	
7																	
8																	
9																	
10																	

i added this block to Rob's original

Test Data	City	HWY	Combined
Rcda	[illegible]	[illegible]	
All Electric Range	[illegible]	[illegible]	
Total Recharge event wh hrs	7271.61	7230.44	
MPGe from Total Recharge Event	142.8381803	115.6154665	
Recharge event normalized to Rcda w-hrs	7102.927458	7104.439459	
MPGe from Rcda Recharge Event	[illegible]	[illegible]	
Recharge Time	[illegible]	[illegible]	
Gasoline Used Gals	0.01292215	0	
MPG from Gasoline	[illegible]	[illegible]	
Total CO2	114.2772284	0	
CO2 grams/Mile	[illegible]	[illegible]	
kWhr/100 Miles Total Recharge	23.76466757	29.12267397	
kWhr/100 Miles Rcda Recharge	[illegible]	[illegible]	
MPGe Total Recharge Event	133.333304	115.6154665	
MPGe Rcda Recharge Event	[illegible]	118.3557294	
CAFE Electric MPGe Total Recharge Event	340.3562407	281.4468807	
CAFE Electric MPGe Rcda Recharge Event	[illegible]	[illegible]	

Label Data		
Adjusted Rcda	21.41888577	17.36138512
kWhr/100 Miles Total Recharge	32.9495251	41.64667709
kWhr/100 Miles Rcda Recharge	32.52890813	41.33171814
Adjusted MPGe Total Recharge	93.66931281	80.93002654
Adjusted MPGe Rcda Recharge	94.51143206	81.44901057

&[Path]&[File]

Cell: G10
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: C15
Comment: This value is informational only; not used for any calculations.

Cell: E15
Comment: This value is informational only; not used for any calculations.

Cell: F15
Comment: This value is informational only; not used for any calculations.

Cell: N16
Comment: These values should come from EPA guidance for the appropriate model year.

Cell: N17
Comment: From EPA guidance for the appropriate model year.

Cell: N18
Comment: From EPA guidance for the appropriate model year.

Cell: N19
Comment: From EPA guidance for the appropriate model year.

Cell: N20
Comment: From EPA guidance for the appropriate model year.

Cell: G23
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: E24
Comment: For Dual Fuel Vehicles. This is a 50-50 weighting of CS and CD MPG, where CD MPG gets the AMFA credit

Cell: F24
Comment: This is a 50-50 weighting of CS and CD MPG, where CD MPG gets the AMFA credit

Cell: G24
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: E25
Comment: This is a UF weighting to be used for a PHEV that is not a dual fuel vehicle under CAFE

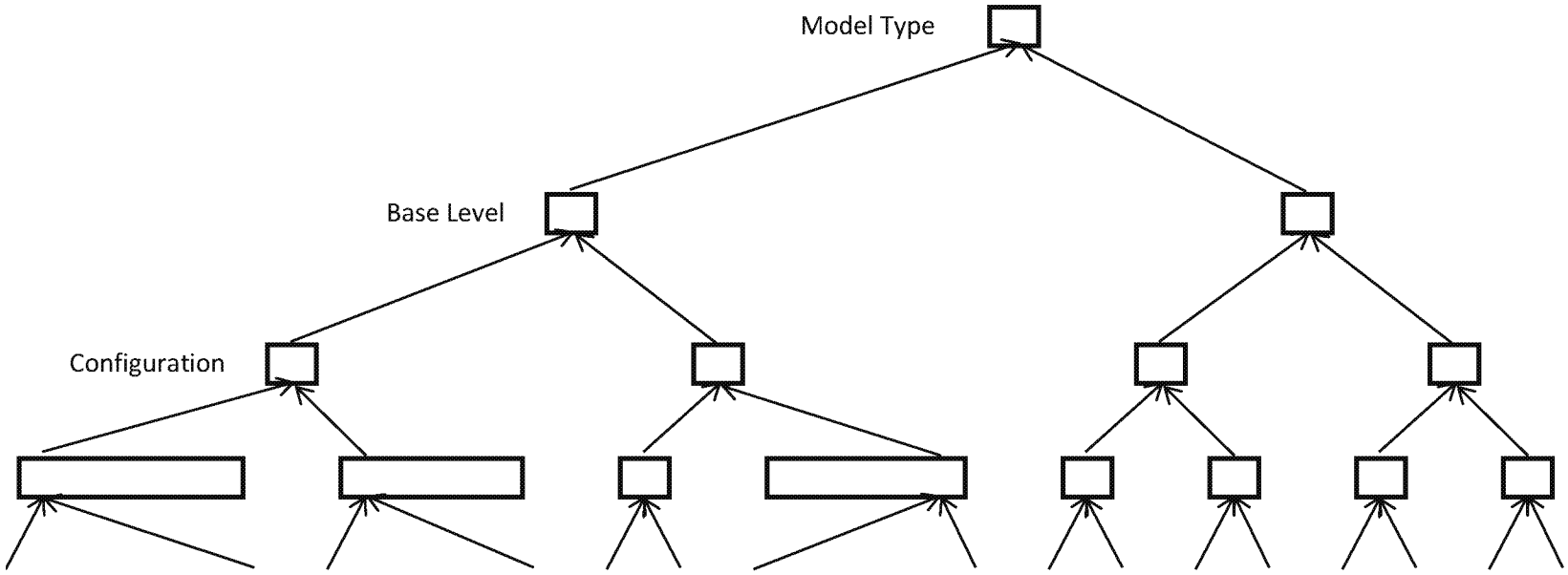
Cell: F25
Comment: This is a UF weighting to be used for a PHEV that is not a dual fuel vehicle under CAFE

Cell: G25
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: E26
Comment: This is a utility factor weighting of CS and CD CFEE emissions

Cell: F26
Comment: This is a utility factor weighting of CS and CD CFEE emissions

Cell: G26
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.


Model Type
Base Level
Configuration

Sub Configuration

Tests

Data Input to CRIS
Verify PHEV Specific Data
Verify Data
Label Data

Data Not in Rob French's Spreadsheet

Electricity and Gasoline

	City								HWY						
		Driving Range	All Electric Range	Charge Time	Charge Depleting Gas MPG	kW-hr / 100Miles	Electric MPGe	Composite Gas/Electric MPGe	CO2		Driving Range	All Electric Range	Charge Time	Charge Depleting Gas MPG	kW-hr / 100Miles	Electric MPGe
5-Cycle Rounded Adjusted Model Type FE					(GL-97) (?)	(GL-97)	(GL-97)	(GL-219)	(GL-235)					(GL-98) (?)	(GL-98)	(GL-98)
					1658	34	99	95	5					0	42	81
Charge Time				8012									7820			
5-Cycle Unrounded Adjusted Model Type FE					(GL-94) (?)	(GL-94)	(GL-94)		(GL-271)					(GL-95) (?)	(GL-95)	(GL-95)
					1657.532638	33.9495251	99.27973926	94.51143206	5.335348889					0	41.64667709	80.93082654
MDIUF Calculation	0.47806676									0.414368884						
Label Adj. Range [miles]		21.41888577	20.92202825								17.36138512	17.36138512				
Unrounded Unadjusted Model Type FE					(GL-91) (?)	(GL-91)	(GL-91)		(GL-268)					(GL-92) (?)	(GL-92)	(GL-92)
					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
MDIUF Calculation	0.59									0.52						
Base Level FE					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
Configuration FE					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
Subconfiguration FE					2367.903769	23.76466757	141.8281989	135.0163315	3.734744222					0	29.15267397	115.6154665
Rcda [miles]		30.59840824	29.88861179								24.80197874	24.80197874				
Charge Time (sec.)				8012									7820			
Fleet Utility Factor	0.67511736									0.284439565						

Test Results

Label		30.59840824	29.88861179	8012	2367.903769	23.76466757	141.8281989	135.0163315	3.734744222		24.80197874	24.80197874	7820	0	29.15267397	115.6154665
				2.225555556									2.172222222			
CAFE							348.5	303.8								283.2

Composite Gas/Electric MPGe	CO2
(GL-220)	(GL-236)
81	0
	(GL-272)
80.93082654	0
	(GL-269)
115.6154665	0
115.6154665	0
115.6154665	0
115.6154665	0
115.6154665	0
283.2	

M-H

Charge Depleting Gas MPG	kW-hr / 100Miles	MPGe	CO2	(6) Composite Gas/Electric Combined MPGe	(7) Fuel Consumption Gas (Gal/100 Miles)	(8) Fuel Consumption Electricity (kW-hrs./100 Miles)	(2) Charge Time (hrs.)	(11) Driving Range (Miles)	(18) All Electric Range (Miles)
				GL-221	GL-214	GL-214	GL-216		
				88	0	37	2.5	20	19

(GL-99) (?)	(GL-99)	(GL-99)	(GL-201)
#DIV/0!	37	88	3

2.201555556

(GL-96) (?)	(GL-96)	(GL-96)	(GL-273)			
#DIV/0!	37.4132	87.8757	2.9	87.8757	911.6429511	37.4132435

19.59301048 | 19.31973884

(GL-93) (?)	(GL-93)	(GL-93)	(GL-270)	
#DIV/0!	26.1893	128.6977	2.1	125.5368

27.99001497

26.1893	128.6977	2.1	125.5367624

27.99001497

26.1893	128.6977	2.1	125.5367624

27.99001497

26.1893	128.6977	2.1	125.5367624

27.99001497

Gasoline Only

City MPG	City CO2	Highway MPG	Highway CO2	(9) Combined MPG	Combined CO2	(10) Fuel Consumption Gas	Fuel Tank Size (Gal)	Driving Range
				GL-99		GL-214		
				38		2.6	14	532

(GL-97)	(GL-235)	(GL-98)	(GL-236)	
40	219	36	245	231

(GL-94)	(GL-271)	(GL-95)	(GL-272)	(GL-96)	(GL-273)
40.4488	219	36.2655	245.2	38.4528	230.8

(GL-91)	(GL-268)	(GL-92)	(GL-269)	(GL-93)	(GL-270)
55	161	51.4	173	53.3195	166.4

55	161	51.4	173	53.3195	166.4

55	161	51.4	173	53.3195	166.4

55	161	51.4	173	53.3195	166.4

55.0	161	51.4	173	53.3195	166.4

Blended																		
			City		HWY		Electric Cost			Gasoline								
City FE	HWY FE	M-H FE		City Label Adj. Cost/mile [$ /mile]		HWY Label Adj. Cost/mile [$ /mile]	City	HWY	Combined	City	HWY	Combined	(14) Annual Fuel Cost	Composite City CO2	Composite HWY CO2	(17) Combined Composite CO2 Value	(13) Amount Saved/Spent Over 5 Years	(12) Driving Range
													GL-81			(GL-201)	GL-210/212	GL-218
									$300			$750	$1,050			129	$6,250	550

56	47	51

55.6736	47.0179	51.4143												116.8540316	143.5967495	128.9	
			CD	CS	CD	CS											
				$ 0.07		$ 0.08							$1,062.89				
			$ 0.04	$ 0.09	$ 0.05	$ 0.10	$ 0.04	$ 0.05	$ 300.46	$ 0.09	$ 0.10	$ 763.19					

Gas Guzzler Input		
84.571	72.2742	78.5564

CAFE Fuel Economy

City	Hwy	M-H
93.1382	87.0082	90.2761
93.1382	87.0082	90.2761
93.1382	87.0082	90.2761
93.1382	87.0082	90.2761
93.1382	87.0082	

Label Constants

Price of Gas [$/Gal.]	Price of Electricity [$/kW-hr]	kW-Hrs./Gallon	City Slope	City Intercept	HWY Slope	HWY Intercept	CAFE Credit kW-Hrs./Gallon	Average Annual Miles	5 Yr. Fuel Cost
$ 3.50	$ 0.12	33.705	1.1805	0.003259	1.3466	0.001376	82.409	15000	$ 11,500

Enter data ONLY in GREEN cells

Enter Vehicle Information Here:	
Model Year:	2013
Manufacturer Name:	Ford
Model Name:	C-Max
Additional Descriptors (e.g., Eco Mode, Config No.):	Veh. DL500090

Enter Test Information Here:	Test Date	Test Number/Identifier
Charge-Depleting City:	5/16/2014	C13-0612-03
Charge-Depleting Highway:	5/17/2014	C13-0612-03
Charge-Sustaining City:	5/14/2014	C13-0612-02
Charge-Sustaining Highway:	5/14/2014	C13-0612-02

CAFE, GHG, AND LABEL CALCULATIONS

CAFE & GHG CALCULATIONS		City	Highway	Combined
Fraction of Transition Cycle Allocated to Charge-Depleting (Zn)		0.099355263	0.417004936	Combined CAFE and CREE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.
Charge-Depleting Range (Rcda)	miles	30.59540824	24.80197574	
Charge-Depleting DC Energy Consumed	W-hours	6223.75846	6022.842505	
Charge-Depleting Electricity Consumption Rate	AC W-hrs/mi	235.4023582	289.6720271	
Charge-Depleting Un-Incentivized Fuel Economy (no 0.15 credit applied)	MPGe	52.2819	42.4269	
Charge-Depleting Incentivized Fuel Economy (uses DOE Petroleum Equiv Factor)	MPGe	348.5479101	283.2479229	
Charge-Depleting CREE, utilitized	g/mi	0	0	
Fleet Utility Factor	UF	0.742326281	0.345282243	
Charge-Depleting Total Fuel Consumption, utilitized	gal-e	0.006159555	0.003715045	
Charge-Depleting CO2 Emissions	g/mi	3.734744222	0	
Equivalent All Electric Range, Unadjusted (calculated per § 600.116-12(b))	miles	29.88561179	24.80197574	
CAFE & GHG VALUES		City	Highway	
A. Composite CD/CS Incentivized Fuel Economy (for dual fuel "blended" PHEVs)	MPGe	94.7015	87.0105	91.0787
B. Composite CD/CS Incentivized Fuel Economy (for CAFE dual fuel vehicles)	MPGe	95.008	87.0105	91.2344
C. Composite CD/CS Fuel Economy (if NOT a CAFE dual fuel vehicle)	MPGe	92.2124	60.7801	74.8
C. Composite CD/CS CREE (does not include upstream emissions)	g/mi	42	113	74

LABEL CALCULATIONS		City	Highway	Combined
Charge-Depleting Cycle Range (Rcdc)	miles	26.075	21.63	19.59301048
Charge-Depleting Cost per Mile - Electricity	$/mi	$ 0.041	$ 0.050	
Charge-Depleting Cost per Mile - Gasoline	$/mi	$ 0.002	$ -	
Charge-Depleting Cost per Mile - Total Electricity + Gasoline	$/mi	$ 0.043	$ 0.050	
Charge-Sustaining Cost per Mile	$/mi	$ 0.09	$ 0.10	
MDIUF based on Rcda	mdiuf	0.47807	0.41437	0.451
MDIUF (for composite fractional UF calculations)	mdiuf	0.5432	0.4811	
Composite CD/CS Cost per Mile	$/mi	$ 0.07	$ 0.08	$ 0.07
LABEL VALUES		City	Highway	Combined
Charge-Depleting Range (Rcda)	miles	21.41888577	17.36138512	20.0
All-Electric Range (AER)	miles	20.42875855	17.04359665	19.0
Charge-Depleting Fuel Economy (MPGe)	mpge	94.51143206	81.44901057	88.0
Charge-Depleting Electricity Consumption Rate	kWh/100mi	33.9495251	41.64667709	37.0
Charge-Depleting Gasoline Consumption Rate	gal/100mi	0.060330637	0	0.0
Charge-Sustaining Fuel Economy	mpg	40	36	38.0
Charge-Sustaining Fuel Consumption Rate	gal/100mi	2.5	2.777777778	2.6
Annual Fuel Cost	$/year			$ 1,050.00
5-Year Save/Spend Value	$/5-years			$ 6,250.00
Composite CD/CS CO2 (fractional UF calculation)	g/mi	116.2267159	145.3959232	129
Composite CD/CO Fuel Economy (fractional UF calculation)	mpge	55.20013642	46.42202988	51

ENTER DATA HERE: CHARGE-SUSTAINING AND CHARGE-DEPLETING

CHARGE-SUSTAINING INPUTS: MPG, CREE, CO2		City	Highway
Fuel Economy, Unadjusted	mpg	55.0	51.4
Fuel Economy, Adjusted 5-Cycle or Derived 5-Cycle	mpg	40.0	36.0
CREE, Unadjusted	g/mi	162.0	173.0
CO2, Unadjusted	g/mi	161.0	173.0
CO2, Adjusted 5-Cycle or Derived 5-Cycle	g/mi	219.0	245.0

ADDITIONAL INPUTS FOR LABEL CALCULATIONS		
Gasoline cost	$/gallon	$ 3.50
Electricity cost	$/kW-hour	$ 0.12
Average vehicle MPG	MPG	23
Average vehicle 5-year cost	$	$ 11,500

0.01292215

CITY (UDDS) CHARGE-DEPLETING INPUTS

Which cycle/phase number is the transition cycle? 5
Enter the Total Recharge Energy (AC Watt-Hours): 7271.61
Enter the unadjusted all-electric range, if any (miles): 29.1833408

Cycle/Phase No.	Cycle/Phase Target Distance	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	miles	miles	Amp-hours	Volts	MPG	g/mi	g/mi
1	7.45	7.46904	4.665	335.01		0	
2	7.45	7.46036	9.415	319.68		0	
3	7.45	7.46245	14.307	308.77		0	
4	7.45	7.46521	19.068	300.565	635.104666	13.9245	
5	7.45	7.46159	19.549	295.585	61.2479776	143.922	
6	7.45	7.46699	19.665	295.29	59.5487528	148.597	
7	7.45	7.46759	19.742	295.465	58.2658217	149.378	
8	7.45						
9	7.45						
10	7.45						

UDDS CALCULATIONS

Cycle/Phase No.	Gasoline Consumed	CO2	Net Amp-Hours Used Per Cycle	DC Energy Consumed	AC Energy Consumed	Cumulative Cycle Distance	City Fleet Utility Factor	City FUF x CREE	Electric Only Fuel Consumption	Total Fuel Consumption Rate (gas + electric)	Total Fuel Consumption (gas + electric)	FUF x Total Consumption	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF	MDIUF x Adjusted CO2	MDIUF x Adjusted Total Fuel Consumption
No.	gal	grams	Amp-hours	W-hours	W-hours	mi	UF	UF	gal/mi equiv	gal/mi equiv	gal-equiv	gal/mi equiv	miles	miles	UF	g/mi	g/mi
1	0.0000	0.0000	4.665	1522.822	1825.945	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	0.0000	0.0000	4.781	1518.980	1773.510	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	0.0000	0.0000	4.892	1512.164	1764.695	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	0.0118	103.9953	4.261	1410.390	1671.916	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	0.1218	1073.8078	0.581	142.176	165.119	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	0.1254	1109.5723	0.118	35.340	41.056	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	0.1260	1115.4262	0.088	23.430	27.432	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8																	
9																	
10																	

7.184439459 Recharge energy thru Rcda

HIGHWAY (HFET) CHARGE-DEPLETING INPUTS

Which cycle/phase number is the transition cycle? 3
Enter the Total Recharge Energy (AC Watt-Hours): 7230.44
Enter the unadjusted all-electric range, if any (miles): 24.3479952

Cycle/Phase No.	Cycle/Phase Target Distance	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	miles	miles	Amp-hours	Volts	MPG	g/mi	g/mi
1	10.3	10.2634	7.651	330.47		0	
2	10.3	10.2504	15.506	310.505		0	
3	10.3	10.2593	18.889	300.645	82.7161892	107.289	
4	10.3	10.264	19.051	297.02	54.0843316	164.013	
5	10.3	10.282	19.038	296.955	52.8462432	167.703	
6	10.3						
7	10.3						
8	10.3						
9	10.3						
10	10.3						

HFET CALCULATIONS

Cycle/Phase No.	Gasoline Consumed	CO2	Net Amp-Hours Used Per Cycle	DC Energy Consumed	AC Energy Consumed	Cumulative Cycle Distance	Highway Fleet Utility Factor	Highway FUF x CREE	Electric Only Fuel Consumption	Total Fuel Consumption Rate (gas + electric)	Total Fuel Consumption (gas + electric)	FUF x Total Consumption	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF	MDIUF x CO2	MDIUF x Adjusted Total Fuel Consumption
No.	gal	grams	Amp-hours	W-hours	W-hours	mi	UF	UF	gal/mi equiv	gal/mi equiv	gal-equiv	gal/mi equiv	miles	miles	UF	g/mi	g/mi
1	0.0000	0.0000	7.651	2528.926	3010.2828	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	0.0000	0.0000	7.855	2439.012	2921.0408	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	0.1258	1100.7130	2.869	1012.882	1221.0300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	0.1898	1683.4281	0.182	42.114	57.7648	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	0.1942	1720.1882	-0.020	-9.380	-11.7642	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6																	
7																	
8																	
9																	
10																	

i added this block to Rob's original

Test Data	City	HWY	Combined
Rcda	[illegible]	[illegible]	
All Electric Range	[illegible]	[illegible]	
Total Recharge event w-hrs	7271.61	7230.44	
MPGe from Total Recharge Event	133.8281303	115.5154665	
Recharge event normalized to Rcda w-hrs	7202.927468	7184.439459	
MPGe from Rcda Recharge Event	[illegible]	[illegible]	
Recharge Time	[illegible]	[illegible]	
Gasoline Used Gals	0.01292215	0	
MPG from Gasoline	[illegible]	[illegible]	
Total CO2	114.2772784	0	
CO2 grams/Mile	[illegible]		
kWhr/100 Miles Total Recharge	25.76466757	29.12267397	
kWhr/100 Miles Rcda Recharge	[illegible]	[illegible]	
MPGe Total Recharge Event	133.3133304	115.5154665	
MPGe Rcda Recharge Event	[illegible]	116.5557294	
CAFE Electric MPGe Total Recharge Event	340.3562407	281.4468807	
CAFE Electric MPGe Rcda Recharge Event	[illegible]	[illegible]	

Label Data		
Adjusted Rcda	21.41888577	17.36138512
kWhr/100 Miles Total Recharge	33.9495251	41.64667709
kWhr/100 Miles Rcda Recharge	33.52990813	41.38171814
Adjusted MPGe Total Recharge	93.56931281	80.93002654
Adjusted MPGe Rcda Recharge	94.51143206	81.44901057

[Path][File]

Cell: G10
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: C15
Comment: This value is informational only; not used for any calculations.

Cell: E15
Comment: This value is informational only; not used for any calculations.

Cell: F15
Comment: This value is informational only; not used for any calculations.

Cell: N16
Comment: These values should come from EPA guidance for the appropriate model year.

Cell: N17
Comment: From EPA guidance for the appropriate model year.

Cell: N18
Comment: From EPA guidance for the appropriate model year.

Cell: N19
Comment: From EPA guidance for the appropriate model year.

Cell: N20
Comment: From EPA guidance for the appropriate model year.

Cell: G23
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: E24
Comment: For Dual Fuel Vehicles. This is a 50-50 weighting of CS and CD MPG, where CD MPG gets the AMFA credit

Cell: F24
Comment: This is a 50-50 weighting of CS and CD MPG, where CD MPG gets the AMFA credit

Cell: G24
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: E25
Comment: This is a UF weighting to be used for a PHEV that is not a dual fuel vehicle under CAFE

Cell: F25
Comment: This is a UF weighting to be used for a PHEV that is not a dual fuel vehicle under CAFE

Cell: G25
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Cell: E26
Comment: This is a utility factor weighting of CS and CD CFEE emissions

Cell: F26
Comment: This is a utility factor weighting of CS and CD CFEE emissions

Cell: G26
Comment: Combined CAFE and CFEE values are for informational purposes only. City and Highway values, rounded as shown, should be entered into Verify for each subconfiguration.

Message

From: Beretz, Paul (P.D.) [pberetz@ford.com]
Sent: 6/10/2014 7:25:18 PM
To: French, Roberts [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0c2bb2bd2583415da682f78cbe2154bc-French, Roberts]
CC: LaRue, Elisa (E.K.) [elarue1@ford.com]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Good, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a0a212fab8644b89798966a2fff3ab8-Good, David]
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Rob,

The difference you see goes back to the MPGe being based on the Rcda recharge energy and the Kw- Hrs. /100 miles being based on the full recharge event. What I did was force the combined gas/electric MPGe into cell K50 and left W50 a conversion of the Kw-Hrs. /100 miles from cell U50 by way of F73.

The inconsistency in columns E and F in rows 83 and 84 is from the lack of charge depleting gas FE in the HWY gives an error like the #div/0 in column AB of my tab. I still haven't figured out how to calculate a combined FE when one component is an infinite FE.

I have a more fundamental problem with the PHEV calculations. I seem to be the only one looking at a generic calculation of a general Label. Maybe I've been working on Truck CAFE too long, but a single test in a single subconfig making a model type is an anomaly.

To set up Ford's database I have to plan for more than one test in a subconfig, more than one subconfig in a config, more than one config in a base level, and more than one base level in a model type. This means part 600 not J1711 defines the calculations.

To me J1711 provides test data not a label. And, this may be a major oversimplification, but that test data is two things, how far, and how much. How far being the sum of the distances for the charge depleting cycles plus Z times the distance of the transition cycle. And how much is the sum of the quantities in the charge depleting cycles plus z times the quantity in the last charge depleting cycle.

I'm working up a variation of the spreadsheet based on that philosophy and will send it to you for analysis when I get a chance to finish it.

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: French, Roberts [mailto:french.roberts@epa.gov]
Sent: Tuesday, June 10, 2014 2:12 PM
To: Beretz, Paul (P.D.); Good, David
Cc: LaRue, Elisa (E.K.); Ball, Joel; Cusumano, Jacob (J.J.)
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Paul,

I first reviewed this information with an eye towards the circled items that are not shown (at least not directly) in my spreadsheet. A few of them actually are in my spreadsheet, but I think are not shown rounded as in yours. This includes the city and highway 5-cycle rounded adjusted model type kW-hr/100 miles and composite MPGe. I'm finding that many things match spot-on, but found one area where I have a question and a larger mismatch. It's the value that shows up in your spreadsheet in cell W50 (which ultimately ties back to cell F71 in the EPA Calc worksheet. I think this is the value using the recharge event normalized to Rcda and thus not entirely consistent with my calculations. You are using 115.615466, and I get 116.355729. There are also inconsistent formulae in columns E and F (city and highway), rows 83 and 84, but you may have a reason for this.

Most of the values that you circled that aren't in my spreadsheet can be easily calculated (e.g., by toggling an equation to use unadjusted Rcda instead of the adjusted), and when I do this I find that all the circled values can be derived from my spreadsheet with a perfect match with your calculations, except the highway unadjusted composite MPGe noted above (the adjusted value still rounds to 81 MPGe, so in the end no harm done). By extension, since the highway value is slightly off, so is the combined (your 125.5368 vs. my 125.9282).

Best,
Rob

Roberts W. French, Jr.
U.S. Environmental Protection Agency
National Vehicle and Fuel Emissions Laboratory
2000 Traverwood Drive
Ann Arbor, Michigan 48105
(734) 214-4380

From: Beretz, Paul (P.D.) [mailto:pberetz@ford.com]
Sent: Tuesday, June 10, 2014 10:40 AM
To: Good, David
Cc: LaRue, Elisa (E.K.); French, Roberts; Ball, Joel; Cusumano, Jacob (J.J.)
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Hi Dave-

Here's a 2013 PHEV Spreadsheet. This is a variation on the one I sent the other day.

I started with Rob's and generated as much information as possible. I used mine to calculate any values that weren't on his.

I'll have a 2014 soon.

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: Cusumano, Jacob (J.J.)
Sent: Tuesday, June 10, 2014 10:29 AM
To: Good, David
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

We will be sending the 2013 by 11:00 am....2014 to follow.

Thanks

J. J. Cusumano
Emission and Fuel Economy Supervisor
248-8521/jcusuman

From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 9:57 AM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Jac,

Please send the 2013 & 2014 final PHEV spreadsheet as soon as it's ready. For the PHEV labels, I have to double check your values and enter some of the info by hand (e.g. the composite combined values which are used for the leader lists on www.fueleconomy.gov).

Thanks

Dave

Message

From: French, Roberts [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0C2BB2BD2583415DA682F78CBE2154BC-FRENCH, ROBERTS]
Sent: 6/10/2014 8:14:46 PM
To: Beretz, Paul (P.D.) [pberetz@ford.com]
CC: LaRue, Elisa (E.K.) [elarue1@ford.com]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Good, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a0a212fab8644b89798966a2fff3ab8-Good, David]
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Paul,

Thanks, this helps a lot. I threw a few comments in below in red text.

Rob

Roberts W. French, Jr.
U.S. Environmental Protection Agency
National Vehicle and Fuel Emissions Laboratory
2000 Traverwood Drive
Ann Arbor, Michigan 48105
(734) 214-4380

From: Beretz, Paul (P.D.) [mailto:pberetz@ford.com]
Sent: Tuesday, June 10, 2014 3:25 PM
To: French, Roberts
Cc: LaRue, Elisa (E.K.); Ball, Joel; Cusumano, Jacob (J.J.); Good, David
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Rob,

The difference you see goes back to the MPGe being based on the Rcda recharge energy and the Kw- Hrs. /100 miles being based on the full recharge event. What I did was force the combined gas/electric MPGe into cell K50 and left W50 a conversion of the Kw-Hrs. /100 miles from cell U50 by way of F73.

The inconsistency in columns E and F in rows 83 and 84 is from the lack of charge depleting gas FE in the HWY gives an error like the #div/0 in column AB of my tab. I still haven't figured out how to calculate a combined FE when one component is an infinite FE.
Ah, now I see. Makes sense.

I have a more fundamental problem with the PHEV calculations. I seem to be the only one looking at a generic calculation of a general Label. Maybe I've been working on Truck CAFE too long, but a single test in a single subconfig making a model type is an anomaly.

To set up Ford's database I have to plan for more than one test in a subconfig, more than one subconfig in a config, more than one config in a base level, and more than one base level in a model type. This means part 600 not J1711 defines the calculations.

To me J1711 provides test data not a label. And, this may be a major oversimplification, but that test data is two things, how far, and how much. How far being the sum of the distances for the charge depleting cycles plus Z times the distance of the transition cycle. And how much is the sum of the quantities in the charge depleting cycles plus z times the quantity in the last charge depleting cycle.

I agree with the last few paragraphs. So far we've been mostly dealing with such unique vehicles that there is only one subconfig, one config, one base level. And a tool like mine can be used to generate model type label values in this currently simplistic world. But it's going to get much more challenging in the future. My calculator doesn't go the distance when it comes to model type label, CAFE, or GHG values (or at least it doesn't necessarily purport to) when there are multiple subconfigs/configs/base levels. Currently, my tool provides the necessary city and highway values (where MPGe is rounded to 4 decimal places) to represent a tested subconfiguration for CAFE or GHG calculations. I was hesitant to even put combined city/highway CAFE values in my worksheet, but people want to know (and in many cases, since PHEVs are mostly a simple world – especially relative to truck CAFE/GHG calculations – the combined value IS the final CAFE value). However, the calculation of the "real" final CAFE values, where all the subconfig values are production-weighted and so on, is being handled by our Verify data system, which essentially implements the Part 600 calculations.

But Verify doesn't calculate label values at this point (only CAFE and GHG), so we are on our own in this regard. It will at some point. I would be happy to check out any tool that you generate, and involve others as needed to arrive at a consensus regarding how to best calculate a model type PHEV label when we have multiple base levels, configs, and subconfigs. Off the top of my head I don't know why we couldn't do a production-weighted average (per Part 600) for all of the PHEV label metrics, but given the complexity of PHEVs, there may be a reason this wouldn't work. For example, the Rcda values from each tested subconfig would be production-weighted per Part 600, ultimately resulting in a model type Rcda.

I'm working up a variation of the spreadsheet based on that philosophy and will send it to you for analysis when I get a chance to finish it.

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: French, Roberts [mailto:french.roberts@epa.gov]
Sent: Tuesday, June 10, 2014 2:12 PM
To: Beretz, Paul (P.D.); Good, David
Cc: LaRue, Elisa (E.K.); Ball, Joel; Cusumano, Jacob (J.J.)
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Paul,

I first reviewed this information with an eye towards the circled items that are not shown (at least not directly) in my spreadsheet. A few of them actually are in my spreadsheet, but I think are not shown rounded as in yours. This includes the city and highway 5-cycle rounded adjusted model type kW-hr/100 miles and composite MPGe. I'm finding that many things match spot-on, but found one area where I have a question and a larger mismatch. It's the value that shows up in your spreadsheet in cell W50 (which ultimately ties back to cell F71 in the EPA Calc worksheet. I think this is the value using the recharge event normalized to Rcda and thus not entirely consistent with my calculations. You are using 115.615466, and I get 116.355729. There are also inconsistent formulae in columns E and F (city and highway), rows 83 and 84, but you may have a reason for this.

Most of the values that you circled that aren't in my spreadsheet can be easily calculated (e.g., by toggling an equation to use unadjusted Rcda instead of the adjusted), and when I do this I find that all the circled values can be derived from my spreadsheet with a perfect match with your calculations, except the highway unadjusted composite MPGe noted above (the adjusted value still rounds to 81 MPGe, so in the end no harm done). By extension, since the highway value is slightly off, so is the combined (your 125.5368 vs. my 125.9282).

Best,
Rob

Roberts W. French, Jr.
U.S. Environmental Protection Agency
National Vehicle and Fuel Emissions Laboratory
2000 Traverwood Drive
Ann Arbor, Michigan 48105
(734) 214-4380

From: Beretz, Paul (P.D.) [mailto:pberetz@ford.com]
Sent: Tuesday, June 10, 2014 10:40 AM
To: Good, David
Cc: LaRue, Elisa (E.K.); French, Roberts; Ball, Joel; Cusumano, Jacob (J.J.)
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Hi Dave-

Here's a 2013 PHEV Spreadsheet. This is a variation on the one I sent the other day.

I started with Rob's and generated as much information as possible. I used mine to calculate any values that weren't on his.

I'll have a 2014 soon.

Paul D. Beretz
Truck Fuel Economy and CAFE
Phone 313-317-2206

From: Cusumano, Jacob (J.J.)
Sent: Tuesday, June 10, 2014 10:29 AM
To: Good, David
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: RE: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

We will be sending the 2013 by 11:00 am....2014 to follow.

Thanks

J. J. Cusumano
Emission and Fuel Economy Supervisor
248-8521/jcusuman

From: Good, David [mailto:good.david@epa.gov]
Sent: Tuesday, June 10, 2014 9:57 AM
To: Cusumano, Jacob (J.J.)
Cc: Beretz, Paul (P.D.); LaRue, Elisa (E.K.); French, Roberts; Ball, Joel
Subject: Updated Ford FE labels - Please send the PHEV spreadsheet as well as enter the revised data in Verify---ASAP if possible

Jac,

Please send the 2013 & 2014 final PHEV spreadsheet as soon as it's ready. For the PHEV labels, I have to double check your values and enter some of the info by hand (e.g. the composite combined values which are used for the leader lists on www.fueleconomy.gov).

Thanks

Dave

Message

From: Smithson, Arlene [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C3BCA2EB135F40FA80D94D35BE1E516E-SMITHSON, ARLENE]
Sent: 5/23/2014 7:46:04 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: C-Max PHEV Soak Procedure

Hi, Joel:

Are you voiding the last Cmax test?!!! If so let me know to start a void report and get it out of QC.

Yours, Arlene

From: Ball, Joel
Sent: Friday, May 23, 2014 3:32 PM
To: Smithson, Arlene; Spieth, John; Bochenek, David; Mazaitis, Vincent
Subject: FW: C-Max PHEV Soak Procedure

All,

Ford has provided some additional information to clarify the procedures to insure the battery does not drain during the soak period. I recommend that we neet early Tuesday morning to discuss this and make sure we all understand it before proceeding.

Have a nice weekend

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Friday, May 23, 2014 3:07 PM
To: Ball, Joel
Subject: Soak Procedure

Joel,
I worked with our calibrators and we have come up with the following recommended key-off practices. In addition, we would like to be present for selected events after the prep drive on Tuesday and before the test drive on Wednesday hopefully to reduce the chances of another void test.

1. To power down/key off the vehicle, please be sure:

- Vehicle is in Park
- Ensure all accessory loads are turned off
- Start button is pushed to power down the vehicle
- Driver door is opened, then closed.

2. Except when centering the vehicle on the dynamometer, at no time during the soak should the power button be pressed or the gear shift ever be put into Neutral:

- Vehicle should not be taken out of Park when moving the vehicle between lab sites or to the fuel room.
- When needing to open the fuel door for fuel dispensing/draining, there is no need to press the vehicle power button. The fuel door open button should be functional without the vehicle being powered on.

3. When centering the vehicle on the dynamometer, the vehicle power button should be pressed and the vehicle put in Neutral. Once in Neutral, the vehicle should be immediately powered down, BEFORE rolling the vehicle on the dyno. As soon as the vehicle is centered and strapped down, the gear shifter should be put in Park.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 5/23/2014 7:06:57 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: Soak Procedure

Joel,
I worked with our calibrators and we have come up with the following recommended key-off practices. In addition, we would like to be present for selected events after the prep drive on Tuesday and before the test drive on Wednesday hopefully to reduce the chances of another void test.

1. To power down/key off the vehicle, please be sure:

- Vehicle is in Park
- Ensure all accessory loads are turned off
- Start button is pushed to power down the vehicle
- Driver door is opened, then closed.

2. Except when centering the vehicle on the dynamometer, at no time during the soak should the power button be pressed or the gear shift ever be put into Neutral:

- Vehicle should not be taken out of Park when moving the vehicle between lab sites or to the fuel room.
- When needing to open the fuel door for fuel dispensing/draining, there is no need to press the vehicle power button. The fuel door open button should be functional without the vehicle being powered on.

3. When centering the vehicle on the dynamometer, the vehicle power button should be pressed and the vehicle put in Neutral. Once in Neutral, the vehicle should be immediately powered down, BEFORE rolling the vehicle on the dyno. As soon as the vehicle is centered and strapped down, the gear shifter should be put in Park.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Guenther, Mark (M.T.) [mguenthe@ford.com]
Sent: 3/25/2014 1:27:16 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
CC: Fuher, Michael (M.J.) [mfuher@ford.com]; Cerone, John (J.C.) [jcerone@ford.com]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Smith, Anthony (A.C.) [asmit685@ford.com]
Subject: RE: Fiesta coastdown testing
Attachments: Fiesta Coastdown Data Summary.xlsx

Joel,

As we discussed, we have completed additional tests on the three Fiesta production vehicles at APG. The results were consistent with the Ford coastdown measurements obtained earlier. Attached is a summary sheet including results of all of the tests completed so far on the Fiestas (both Ford and EPA results).

At this time, we would like to take two out of the three vehicles and perform some component level testing in Dearborn, including tire rolling resistance testing, wind tunnel testing, and parasitic loss testing. We are especially concerned that the tires may not be meeting the tire specification agreed to by the supplier. On the third vehicle, we may consider trying to run a manual J2263 process with off-line calculations instead of using Buckley calculations. As you can imagine, we are very concerned with the differences between the Ford and EPA results/calculations. Even though the coastdown curves appear to be very close, as you noted, there is still a significant difference in the Energy calculations.

Please let us know if you have any concerns with this plan. Once we obtain the component level data on the vehicles, we will share this with you as well. Thanks.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 10:19 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark,

Attached is the data from the march 4 test of 728. Also below are my results from the March 5 test of 730 which the Ford driver ran. I analyzed the data with the wind and mass corrections applied. I assumed there was no offset to the yaw angle and no factor for blockage of the anemometer. I did not apply any correction for the anemometer drag. As you can see the difference has been reduced and will get even better when the anemometer drag is accounted for.

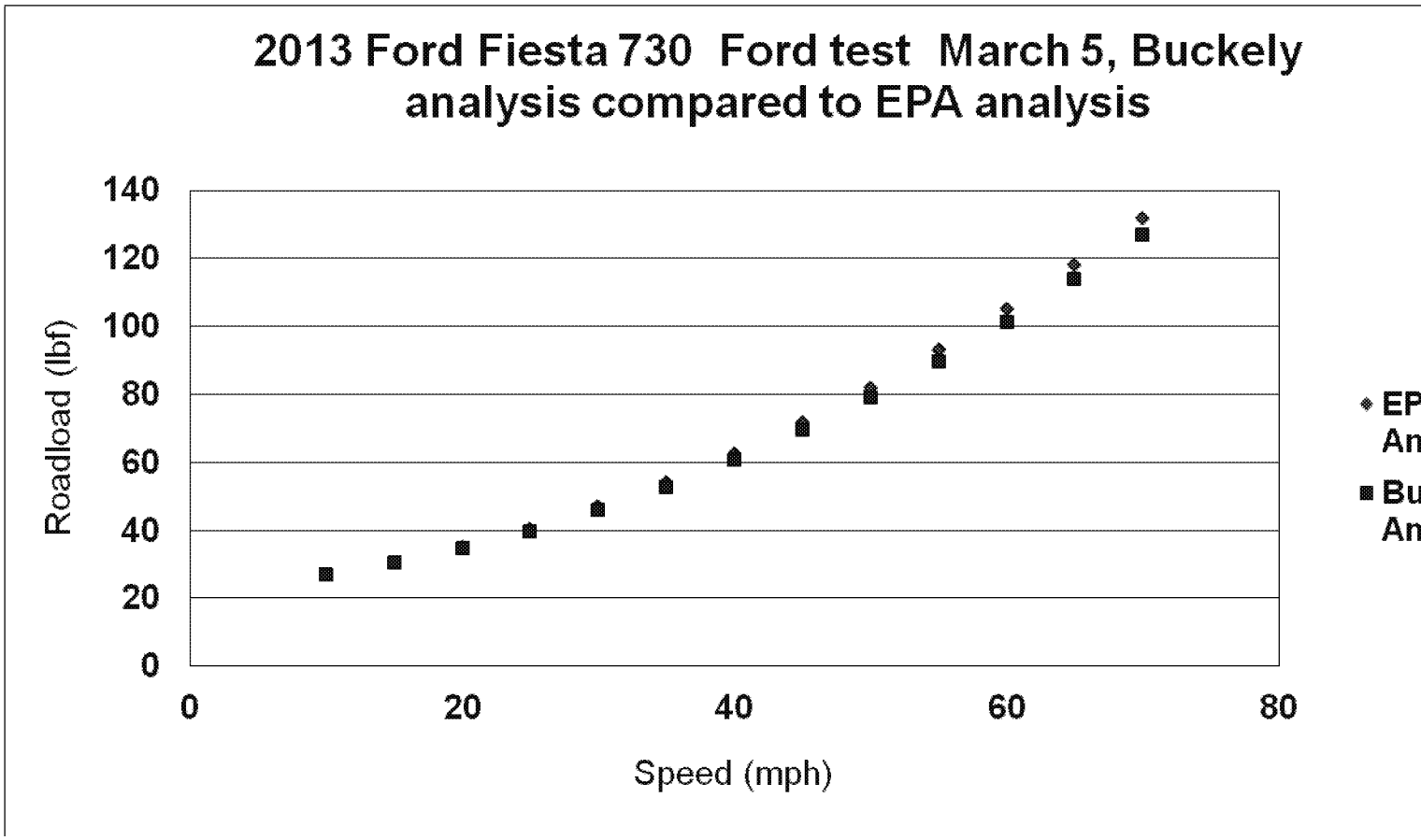
Roadload Comparison Worksheet

Roadload Coefficients:		EPA Analysis
A	22.47	(lb)
B	0.2536	(lb/mph)
C	0.01872	(lb/mph^2)

Enter A,B,C coefficient in boxes above and below

Roadload Coefficients:		Buckely Analysis
A	23.24	(lb)
B	0.2071	(lb/mph)
C	0.01825	(lb/mph^2)

Calculated Values:		
Work Done (ft*lbf)	City(FTP)	Hwy
Reported	3164898.3	45
Audit	3084139.4	43
Fractional Diff (%)	-2.55	



Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Wednesday, March 12, 2014 9:38 AM

To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

We are looking into your questions and will reply later today with as much information as possible. Would it be possible for you to provide us with the complete set of data for one of the coastdown runs with the anemometer (how about the March 4th test on vehicle 728)? We would like to see if it is possible to use the Buckley calculations to process your data, with hopes of determining why there may be a difference. Talk to you soon.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 9:28 AM
To: Ball, Joel; Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

A couple more questions.

When you analyze the data in the Buckley software do you use all of the data or only the data points between 70 and 10 mph? I noticed the data files you supplied go from 78 to 9. The SAE software allows you to select max and min speeds and we use 70 to 10.

Does the Buckley software remove points that exceed the max cross wind? What is the limit you apply?

Does the Buckley software remove points that exceed 3 std dev, from the mean?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Tuesday, March 11, 2014 1:39 PM
To: 'Guenther, Mark (M.T.)'
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark/ John,

I need some more information in order to analyze the data from the Mar 5th and 6th tests. The files you provided show relative wind speed and yaw angle. Are there wind speed calibration factors (for vehicle blockage) or

yaw angle zero offsets that need to be applied or have they already been factored in? Can you give me the anemometer drag in force (or CdA) to apply as well?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Monday, March 10, 2014 10:54 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

It was good working with you and Joel D. and Jim last week. I think it was a great learning experience. Attached is some information on the last coastdown test that we had problems processing while at APG (with both Buckley and EPA equipment on vehicle 312T730). John was finally able to get the data to process after eliminating the 7th and 8th runs. The F-terms from the Buckley report are shown below.

The attached file is taken from the Buckley software so that you can process the Vbox data with wind corrections from the Thursday morning "cold" test on 312T730. One of the tabs in the file is the driver sheet so that you have the ambient data that's not in the raw data (barometer, etc). Also attached is a summary of all of the testing performed so far on all three test vehicles. Please let us know if you need any other information to process the coastdowns runs.

This week, we are going to continue testing all three of our vehicles (with and without brakes, with engine on and engine off). We also were planning to look into the variability between the Buckley and the SAE template calculations to see if we can get a better understanding of what was going on there (it seems like most of the variation was related to the calculation of the F1 term). As we discussed, there may have been some variation with ambient/track temperature so we would like to understand that better also. Talk to you soon.

Done Print Save Copy HTML Copy Text

Road Load Distribution at EPA Standard Conditions

```
Vehicle : 312T730 Fiesta 4dr dps6
Test ID : Test 2 Epa audit Cold ambient
Inertia Weight Class (IWC) : 2875.00 (lbf)
Vehicle Weight for IWC : 2832.51 (lbf)
Test Weight : 2870.00 (lbf)
Test Winds (Unfiltered/Filtered@0.20Hz) (mph) :
                Spatial Average        Peak
      Total         7.55/  7.57     12.17/ 11.74
      Head/Tail     2.46/  2.46      5.86/  5.70
      Cross         7.07/  7.10     11.60/ 11.11
Test Ambient Pressure                 :   28.48 (in Hg)
Test Average Ambient Temperature      :   63.50 (deg F)
Test Average Front Axle Temperature   :  127.16 (deg F)
```

Tabulated Road Load (lbf) :

Speed (mph)	Tires in Abs. of Lift + Front Axle + Rear Axle	Drag Red. due to Lift	Aero	Total
10	26.2 (0.2)	0.00	1.9 (0.0)	28.0 (0.2)
15	27.2 (0.2)	0.00	4.2 (0.0)	31.4 (0.2)
20	28.3 (0.2)	0.00	7.4 (0.0)	35.7 (0.2)
25	29.3 (0.2)	0.00	11.6 (0.0)	40.8 (0.2)
30	30.3 (0.2)	0.00	16.7 (0.0)	46.9 (0.2)
35	31.3 (0.2)	0.00	22.7 (0.0)	54.0 (0.2)
40	32.2 (0.2)	0.00	29.6 (0.0)	61.9 (0.2)
45	33.2 (0.2)	0.00	37.5 (0.0)	70.7 (0.2)
50	34.1 (0.2)	0.00	46.3 (0.0)	80.4 (0.2)
55	35.1 (0.2)	0.00	56.0 (0.0)	91.1 (0.2)
60	36.0 (0.2)	0.00	66.7 (0.0)	102.6 (0.2)
65	36.8 (0.2)	0.00	78.2 (0.0)	115.1 (0.2)
70	37.7 (0.3)	0.00	90.7 (0.0)	128.4 (0.3)

Quadratic Road Load Representation :

Tires in Absence of Lift + Front Axle + Rear Axle	=	+23.99	+0.2202 V	-0.0003431 V^2
Tire Drag Reduction due to Lift	=	+0.00	+0.0000 V	+0.0000000 V^2
Aero Drag	=			+0.0185149 V^2
Total Drag	=	+23.99	+0.2202 V	+0.0181719 V^2

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, February 18, 2014 9:54 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Thanks for the info,

Both Jim Snyder and I (Joel Ball) tested at APG last march (less than 1 year ago) and at the Michigan proving grounds in June of 2012. I believe we were given provisional certification based on driving resumes we submitted. Joel Dalton also tested at the Michigan proving grounds in June of 2012 and submitted a driving resume but did not test at APG. It sounds like Joel Dalton will need to take the safety orientation but Jim and I will not (we will all try to get there by 12:30 just in case). Please let me know if we need to submit any further info for certification for Jim, Joel Dalton, or myself.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Tuesday, February 18, 2014 9:34 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.)
Subject: RE: Fiesta coastdown testing

Hi Joel,

Mike Fuher asked me to ensure that everything was on track for the Fiesta coastdown testing on the week of March 3rd. The bottom line is that we are on track and planning to support the testing as we discussed earlier. Our contact at Arizona Proving Grounds is going to be Jim Sumner (Cell: 623-738-8674). I believe that you have worked with Jim in the past, and he is making arrangements to support the testing. Below is an excerpt from Jim's email regarding training and safety orientation:

"Everyone is required to complete the driver safety training and track orientation at APG if they have not used the facility within 2 years. APG offers track orientations daily at 12:30pm. If the plane arrives at 10:40am, you should be able to make it to APG before 12:30pm. Anyone who plans on driving at APG has to be Ford tier II certified. I know Jim (Snyder) drove at APG last year, so I will have to find out what arrangements were made for that to happen."

Do you know if Jim Snyder took additional training to become Ford Tier II certified? Jim Sumner will follow-up with us on the requirements for Jim Snyder (or any of you) to become a Ford Tier II certified driver. I will also be going to APG (Cell: 248-207-1587) during the same timeframe that you will be at APG. In addition, John Cerone is one of the coastdown engineers that will be traveling with me. We will keep in contact with you prior to the trip, but please let Jim or I know if you have any questions or additional requests. Thanks.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Friday, February 14, 2014 10:13 AM
To: Fuher, Michael (M.J.)
Cc: Guenther, Mark (M.T.)
Subject: Fiesta coastdown testing

Hi Mike,

How are things going with the Fiesta vehicles? I wanted to confirm we are still on track for testing on March 3. Do we need to do anything to make arrangements for testing at Ford APG? Will we need to schedule any type of training or safety orientation? If so I would like to try to get that out of the way Monday Mars 3rd in the afternoon. Our flight arrives in Phoenix at 10:40 am so we should be able to get to APG by 1:00pm. We plan to ship a box of equipment next week to be sure it arrives before we do. The participants from EPA will be:

Joel Ball
Jim Snyder
Joel Dalton

Jim and I tested at Ford APG last year. Joel Dalton did not however he did test at Ford Michigan proving ground in 2012.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Mazaitis, Vincent [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3852485D8AC641D8AD91035A5DE7C82B-MAZAITIS, VINCENT]
Sent: 3/27/2014 12:43:30 PM
To: Szajner, David (D.J.) [dszajner@ford.com]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Lounds, Christopher (C.D.) [clounds@ford.com]; Landry, Mike (Michael P.) [mlandry@ford.com]
Subject: RE: Ford vehicle DL196764 2013 Focus
Attachments: DL196764_3-20-14_Roadload.pdf

Good morning David,

Please find the Road load Derivation enclosed.

Thanks,

Vince Mazaitis

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Wednesday, March 26, 2014 2:40 PM
To: Mazaitis, Vincent
Cc: Ball, Joel; Cusumano, Jacob (J.J.); Lounds, Christopher (C.D.); Landry, Mike (Michael P.)
Subject: Ford vehicle DL196764 2013 Focus

Vince,

In regards to the **E85** Test results for subject vehicle **DL196764** 2013 Focus, we have decided to request a EPA E85 retest of the **E85 City** only.

Once the Test schedule is established please let us know. A Ford representative would like to verify the Percent Methanol after C-Prep procedure is performed.

Please send the Roadload Data when available.

Thanks.

David J. Szajner
VH&C FE Programs
dszajner@ford.com
313-59-47954

From: Mazaitis, Vincent [mailto:mazaitis.vincent@epa.gov]
Sent: Tuesday, March 25, 2014 2:59 PM
To: Szajner, David (D.J.)
Cc: Ball, Joel
Subject: DL196764

Please find enclosed the Laboratory Test Data for the Subject vehicle. If you have any questions or concerns, please contact me.

Thank You,

Vincent Mazaitis
(734)214-4864

Message

From: Fuher, Michael (M.J.) [mfuher@ford.com]
Sent: 5/29/2014 5:08:10 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: EPA Request: 1.6L M/T

Yes, Joel. Brennan has confirmed the schedules you typed below are the ones to use for the testing.
Sorry we didn't provide it in the initial email.

Would you guess things are on track to complete the 1.6L auto and 1.6L manual on Friday, and then the SFE on Tuesday?
Any decisions made yet regarding charge-depleting testing next week?
Are you able to share preliminary mpg for the charge-sustaining city from yesterday?

Thanks!!

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Thursday, May 29, 2014 1:00 PM
To: Fuher, Michael (M.J.)
Subject: RE: EPA Request: 1.6L M/T

Are these the correct shift schedules for this vehicle?

FTP 662
highway 316

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Thursday, May 29, 2014 11:04 AM
To: Ball, Joel
Subject: FW: EPA Request: 1.6L M/T

Joel, below are test specs for the manual transmission vehicle delivered this morning.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Graham, Brennan (B.K.)
Sent: Thursday, May 29, 2014 10:56 AM

To: Fuher, Michael (M.J.)
Cc: Cusumano, Jacob (J.J.)
Subject: RE: EPA Request: 1.6L M/T

Vehicle: EM100006
ETW: 2875
TRLHP: 10.9
Track Force Coefficient f0: 22.82
Track Force Coefficient f1: 0.2127
Track Force Coefficient f2: 0.01937
Canister Working Capacity: 105 g
Canister Volume: 1.8 L
Fuel Tank 40% Fill: 5 gal

Please let me know if there is any additional information that you require.

Thank You,
Brennan Graham
Fuel Economy Programs
Allen Park Test Laboratory (APTL) 3BH09
Bgraha45@ford.com | 313-322-5623

Message

From: Bunker, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DDF7BCF023D241A9A477A2DC75D5901C-BUNKER, BYRON]
Sent: 4/23/2014 1:52:46 AM
To: Grundler, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d3be58c2cc8545d88cf74f3896d4460f-Grundler, Christopher]; OTAQ Materials [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d024a3342082470eada2969a12393750-OTAQ Materi]
CC: Charmley, William [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fb1828fb00af42ffb68b9e0a71626d95-Charmley, William]; Snapp, Lisa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16e26d18ae97412c99db2f8ed5419449-Snapp, Lisa]; Alson, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cbf363ab0a3944e4ae80def70b9826ba-Alson, Jeff]; Moran, Robin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cdc537a0f9d5433dae083bca681af983-Moran, Robin]; Birgfeld, Erin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3383bc15dd5542e5bff5c3de13ba9bf2-EBIRGFEL]; Hengst, Benjamin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c414e2bf04a246bb987d88498eefff06-Hengst, Benjamin]; Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Stewart, Gwen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3f8c5838943241caadb6005ffaddd7db-gstewart]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]
Subject: Contains CBI - - Updated Materials for CD Biweekly (2:30 PM Wed)
Attachments: Ford Fuel Economy AA Update April 2014 v3 contains CBI.pptx

***** Attached file contains information for which a CBI claim has been made ******

Attached are updated slides based on our initial discussion with Chris and additional input from Ford.

Thanks,

Byron

**** Contains CBI *****

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: Bunker, Byron
Sent: Tuesday, April 22, 2014 8:34 AM
To: Grundler, Christopher; OTAQ Materials
Cc: Charmley, William; Snapp, Lisa; Alson, Jeff; Moran, Robin; Birgfeld, Erin; Hengst, Benjamin; Wehrly, Linc; Stewart, Gwen
Subject: Contains CBI - - Updated Materials for CD Biweekly (10AM Tues)

***** Attached file contains information for which a CBI claim has been made ******

Attached is an updated version of the CD Biweekly materials for our two part meeting (this morning at 10 and tomorrow at 2:30).

Please note that the attachment now contains materials for which Ford has made a CBI claim.

I will bring a copy for Chris in AA.

Thanks,

Byron

**** Contains CBI *****

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: Grundler, Christopher
Sent: Monday, April 21, 2014 5:25 PM
To: Bunker, Byron; OTAQ Materials
Cc: Charmley, William; Snapp, Lisa; Alson, Jeff; Moran, Robin; Birgfeld, Erin; Hengst, Benjamin; Wehrly, Linc; Stewart, Gwen
Subject: RE: Materials for CD Biweekly (2PM Tues)

Ok

Gwen—pls add to tomorrow calendar

From: Bunker, Byron
Sent: Monday, April 21, 2014 5:23 PM
To: Grundler, Christopher; OTAQ Materials
Cc: Charmley, William; Snapp, Lisa; Alson, Jeff; Moran, Robin; Birgfeld, Erin; Hengst, Benjamin; Wehrly, Linc
Subject: RE: Materials for CD Biweekly (2PM Tues)

Gwen had already warned me that we might lose the 2:00 slot. If we could get from 10:00 to 10:30 tomorrow to start the briefing (mainly to go over some of the technical pieces), we can then come back to the whole briefing and a discussion of next steps on Wednesday at 2:30 during our already scheduled prebrief on this same subject.

In clearer table form.

10:00 – 10:30 tomorrow
and
2:30 – 3:30 on Wednesday in the slot already booked for a prebrief.

If that can work for you that should work well for us.

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: Grundler, Christopher
Sent: Monday, April 21, 2014 5:17 PM
To: Bunker, Byron; OTAQ Materials
Cc: Charmley, William; Snapp, Lisa; Alson, Jeff; Moran, Robin; Birgfeld, Erin; Hengst, Benjamin; Wehrly, Linc
Subject: RE: Materials for CD Biweekly (2PM Tues)

Byron—I need to dash to the airport at 2 to catch the evidently only reasonably priced flight tomorrow. I can do this meeting from 930-1030 if that works, or 1130-1230

From: Bunker, Byron
Sent: Monday, April 21, 2014 3:31 PM
To: OTAQ Materials
Cc: Grundler, Christopher; Charmley, William; Snapp, Lisa; Alson, Jeff; Moran, Robin; Birgfeld, Erin; Hengst, Benjamin; Wehrly, Linc
Subject: Materials for CD Biweekly (2PM Tues)

Attached are the materials for our CD Biweekly currently scheduled for 2:00PM on Tuesday. I understand it is possible the meeting will be moved to 1:00 PM on Tuesday or alternatively we will pick this up on Wednesday at 2:30. We are currently on Janet's calendar on Monday April 28.

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

Message

From: Mazaitis, Vincent [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3852485D8AC641D8AD91035A5DE7C82B-MAZAITIS, VINCENT]
Sent: 4/22/2014 6:01:42 PM
To: Wu, Ruowen (R.) [rwu5@ford.com]
CC: Dabbs, John (J.P.) [jdabbs1@ford.com]; Szajner, David (D.J.) [dszajner@ford.com]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: Fusion FHEV veh DR317196

Hello Ruowen,

I spoke with the lab and the Roadload and prep will occur in the afternoon. Please have your folks here at around 12:00 pm. If there is a change, I'll call.

Thanks Ruowen,

Vince Mazaitis

From: Wu, Ruowen (R.) [mailto:rwu5@ford.com]
Sent: Tuesday, April 22, 2014 10:58 AM
To: Mazaitis, Vincent
Cc: Dabbs, John (J.P.); Szajner, David (D.J.); Wu, Ruowen (R.)
Subject: Fusion FHEV veh DR317196

Vince,

The subject vehicle is scheduled to test on Thursday 4/24, assuming it'll prep. tomorrow. Could you coordinate with lab to narrow down prep. time to either morning or afternoon, so that our engineer could be there to help with road load and dyno mode setting?

Thank you very much for your help!

Ruowen Wu
Certification Engineering
1500 Enterprise Dr. Suite 3W-200
Allen Park, MI 48101-2053
Tel. 313/390-7247 Fax. 313/390-1243
e-mail. rwu5@ford.com

Message

From: Kiyabu, Scott (S.K.) [skiyabu@ford.com]
Sent: 4/8/2014 6:52:36 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: 1.6L Fiesta

Thank you!

Best Regards,

Scott Kiyabu
Application Engineer
Car & Truck Certification
Allen Park Test Lab
(313)390-2782

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, April 08, 2014 2:52 PM
To: Kiyabu, Scott (S.K.)
Cc: Landry, Mike (Michael P.); Kulik, Ed (E.C.)
Subject: RE: 1.6L Fiesta

Hi Scott, that's fine

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Kiyabu, Scott (S.K.) [mailto:skiyabu@ford.com]
Sent: Tuesday, April 08, 2014 2:17 PM
To: Ball, Joel
Cc: Landry, Mike (Michael P.); Kulik, Ed (E.C.)
Subject: 1.6L Fiesta

Joel,

2015MY 1.6L Fiesta test group, FFMXV01.6VDC, is a carry-over program from 2014MY. A few months ago, the responsible engineer went on medical leave and I was assigned this program. Last week, during the review process of the 2015MY application, the following errors were discovered in the EPA Certification Summary Information Report:

Vehicle ECT3-1.6-J-404

Listed in CSI Report		Correct	
Configuration	Engine Code	Configuration	Engine Code
0	ECT1A10505	0	ECT1A10501
		2	ECT1A10505
		3	ECT1A10508

Note: Configuration 1 is listed in the CSI report and corresponds to fuel economy tests run with engine code ECT1A10A10.

Test	EPA Test #	CSI Configuration	Correct Configuration
2-Day Evap	EFMX10023103	0	0
3-Day Evap	EFMX10023104	0	0
Running Loss	EFMX10023105	0	0
ORVR	EFMX10023106	0	0
US06	EFMX10023014	0	2
SC03	EFMX10023015	0	2
City	EFMX10023281	0	2
Highway	EFMX10023282	0	2
Cold CO	EFMX10023775	0	3

Vehicle weights, tires, and roadloads are the same for each configuration and therefore would be unaffected. The test data would be unaffected by these changes as well.

We apologize for these errors. We propose capturing the correct information in Section 12 of the applications, rather than rebuilding the CSI, of which we have already made numerous unsuccessful attempts due to various system issues. Please let us know if you concur.

Thank you for your time and assistance.

Best Regards,

Scott Kiyabu
Application Engineer
Car & Truck Certification
Allen Park Test Lab
(313)390-2782

Message

From: Bunker, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DDF7BCF023D241A9A477A2DC75D5901C-BUNKER, BYRON]
Sent: 4/25/2014 4:17:05 PM
To: OTAQ Materials [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d024a3342082470eada2969a12393750-OTAQ Materi]; Hengst, Benjamin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c414e2bf04a246bb987d88498eefff06-Hengst, Benjamin]; Cook, Leila [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d4536ad140a1461781d78ca67921b02f-Cook, Leila]; Ghanta, Venu [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7cf46c0305194992a35fd4fa7b1b78fc-vghanta]
CC: Grundler, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d3be58c2cc8545d88cf74f3896d4460f-Grundler, Christopher]; Simon, Karl [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=4d781d1ad595415db3a4e768c2d2b3fc-Simon, Karl]; Charmley, William [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fb1828fb00af42ffb68b9e0a71626d95-Charmley, William]; Birgfeld, Erin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3383bc15dd5542e5bff5c3de13ba9bf2-EBIRGFEL]; Alson, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cbf363ab0a3944e4ae80def70b9826ba-Alson, Jeff]; Snapp, Lisa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16e26d18ae97412c99db2f8ed5419449-Snapp, Lisa]; Moran, Robin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cdc537a0f9d5433dae083bca681af983-Moran, Robin]; Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: Materials for 4/28 briefing with Assistant Administrator McCabe - Update on Coast Down Testing
Attachments: Ford Fuel Economy AA Update April 2014 v5 contains CBI.pptx

Ben,

Attached are materials for our briefing with the AA on Monday (4/28 at 4:15 PM).

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

MKZ Push Button Start and Push Button Shift Derivation Procedure

- Check that F-terms and inertia are loaded correctly in VETS.
- Check that tire pressures are correct.
- Run a double-highway warm-up cycle.
- Bring vehicle to a stop after the double-highway.
- Put the car in Neutral by pressing the "N" button twice (look for flashing "N" light).
- Key OFF vehicle.
- Open and close the driver's door.
- Ensure vehicle is still in Neutral (look for flashing "N" light).
- Begin dyno coastdown procedure.

Please note:

Do not use Augmented Braking.

PRNDL should be in park and key off when not in use.

Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

Vehicle Identification Text:	ER827504
Test Group Name:	EFMXV02.0VZS
Model Year:	2014
Make:	Lincoln
Model:	MKZ (HEV)
Engine Code Text:	EC91H20523
Curb Weight Value:	3795
Equivalent Test Weight:	4250
GVWR:	4250
NV Ratio Value:	47.0
Axle Ratio Value:	3.61
Transmission Type:	CVT
Dyno Coefficients Cat:	C-H-E
Target Coefficient A Value:	36.7
Target Coefficient B Value:	0.3273
Target Coefficient C Value:	0.01654
Set Coefficient A Value:	13.62856
Set Coefficient B Value:	0.13535
Set Coefficient C Value:	0.01649
Hybrid Vehicle Indicator:	Y
Total Roadload HP Value:	12.6
Front Tire Pressure:	34
Rear Tire Pressure:	34
Tire Size:	245/45R18 - Michelin
Driver Selectable Trans:	Y
Fuel Tank Capacity:	13.5
Fuel Tank 40% Capacity:	5.4
Target Coastdown Time:	20.86
Nominal Hybrid Battery Voltage:	280
Maximum Hybrid Battery Current:	5
Test Vehicle Comment Text:	2014 MY Lincoln MKZ FHEV
Number of canisters:	One with an integrated bleed
Total volume in cm3:	1.7L
Working capacity in grams:	105g

Message

From: Szajner, David (D.J.) [dszajner@ford.com]
Sent: 4/24/2014 2:12:45 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]; Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]
Subject: Ford Vehicle Delivery
Attachments: E504 EPA VehInfo.xlsx

Gentlemen,

Please expect delivery today of Ford vehicle **ER827504, 2014 Lincoln MKZ FHEV** for Testing.

Attached is the Vehicle Information. Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Vehicle Identification Text:	ER827504
Test Group Name:	EFMXV02.0VZS
Model Year:	2014
Make:	Lincoln
Model:	MKZ (HEV)
Engine Code Text:	EC91H20523
Curb Weight Value:	3795
Equivalent Test Weight:	4250
GVWR:	4250
NV Ratio Value:	47.0
Axle Ratio Value:	3.61
Transmission Type:	CVT
Dyno Coefficients Cat:	C-H-E
Target Coefficient A Value:	36.7
Target Coefficient B Value:	0.3273
Target Coefficient C Value:	0.01654
Set Coefficient A Value:	13.62856
Set Coefficient B Value:	0.13535
Set Coefficient C Value:	0.01649
Hybrid Vehicle Indicator:	Y
Total Roadload HP Value:	12.6
Front Tire Pressure:	34
Rear Tire Pressure:	34
Tire Size:	245/45R18 - Michelin
Driver Selectable Trans:	Y
Fuel Tank Capacity:	13.5
Fuel Tank 40% Capacity:	5.4
Target Coastdown Time:	20.86
Nominal Hybrid Battery Voltage:	280
Maximum Hybrid Battery Current:	5
Test Vehicle Comment Text:	2014 MY Lincoln MKZ FHEV

Message

From: Mazaitis, Vincent [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3852485D8AC641D8AD91035A5DE7C82B-MAZAITIS, VINCENT]
Sent: 4/29/2014 11:55:11 AM
To: Szajner, David (D.J.) [dszajner@ford.com]
CC: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: RE: EL510048
Attachments: EL10048_4-24-14_RL.pdf

Good morning David,

Please find enclosed the Vehicle Road Load Derivation Report for the Subject vehicle.

If you have any questions or concerns, please contact me.

Thanks David,

Vince Mazaitis

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, April 28, 2014 2:13 PM
To: Mazaitis, Vincent
Subject: RE: EL510048

Thanks Vince, please send the Roadload data once it's made available.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Mazaitis, Vincent [mailto:mazaitis.vincent@epa.gov]
Sent: Monday, April 28, 2014 1:30 PM
To: Szajner, David (D.J.)
Cc: Ball, Joel
Subject: EL10048

David,

Please find enclosed the Laboratory Test Data for the Subject vehicle. If you have any questions or concerns, please contact me.

Thanks David,

Vince Mazaitis

Message

From: Cerone, John (J.C.) [jcerone@ford.com]
Sent: 3/18/2014 8:22:34 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
CC: Guenther, Mark (M.T.) [mguenthe@ford.com]
Subject: RE: Buckley yaw angle, speed default values
Attachments: buckley correction factors.JPG

Joel
Sorry for the delayed reply.
Attached is a picture of the correction factor portion of the Buckley analysis.
This picture is from the test on vehicle 730 on 3/5/14 with both sets of equipment in the car.
The anemometer calibration is done at 50mph as you stated, both directions, constant speed, during the warm up runs.
The corrections are part of the analysis and are baked into all F terms we've provided.

jcerone@ford.com
Coast Down & Parasitic Loss
Allen Park Test Lab
phone: (313) 323-0512
https://www.tc2.ford.com/ts/VEE/certification/coastdown/default.aspx

---

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, March 18, 2014 9:51 AM
To: Cerone, John (J.C.)
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Hi John,

Sorry maybe I wasn't clear, I'm not asking about an adjustment to the force data like that. When the anemometer is installed on the vehicle it needs to be zeroed. This can be done by measuring the yaw angle when the anemometer is pointed in line with the vehicle and then subtracting that value from the yaw angle measured during the runs. This is the offset I was referring to. Similarly the anemometer can be calibrated for vehicle blockage. One way to do this is to measure the relative wind speed at constant vehicle speed (e.g. 50 mph) in both directions and correct the relative wind speed measurement to normalize it to the vehicle speed. I wanted to know if these corrections were already applied to the wind data you sent me or if I need to apply them manually.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Cerone, John (J.C.) [mailto:jcerone@ford.com]
Sent: Monday, March 17, 2014 2:53 PM
To: Ball, Joel

Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Joel – to the best of my knowledge other than the Cd adjustment for the anemometer mounted on the roof, there is no other adjustment or offset.

jcerone@ford.com
Coast Down & Parasitic Loss
Allen Park Test Lab
phone: (313) 323-0512
https://www.tc2.ford.com/ts/VEE/certification/coastdown/default.aspx

---

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, March 17, 2014 12:24 PM
To: Cerone, John (J.C.)
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Hi John,

Thank you for the info. In an effort to make the most direct comparison possible, I will apply the same limits in my analysis. Do you have an answer for the question below:

Are there wind speed calibration factors (for vehicle blockage) or yaw angle zero offsets that need to be applied or have they already been factored in?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Cerone, John (J.C.) [mailto:jcerone@ford.com]
Sent: Monday, March 17, 2014 12:11 PM
To: Ball, Joel
Cc: Guenther, Mark (M.T.)
Subject: Buckley yaw angle, speed default values

Joel –
Sorry for the problems opening the previous picture – this time I saved it as a jpg – let me know if you have an problems seeing this one.

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg

which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

Message

From: Dabbs, John (J.P.) [jdabbs1@ford.com]
Sent: 3/18/2014 2:25:54 PM
To: Cusumano, Jacob (J.J.) [jcusuman@ford.com]; Kulik, Ed (E.C.) [ekulik@ford.com]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Fuher, Michael (M.J.) [mfuher@ford.com]
CC: Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]; Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]; Szajner, David (D.J.) [dszajner@ford.com]
Subject: RE: Focus FFV test on vehicle # DL196764 / 0
Attachments: ESF08-004.doc

Joel, the vehicle currently has E85 fuel from the last test and will be delivered to you on that fuel type.

For fuel change procedures please see the attached C-prep document. A copy of this form will also be placed inside the vehicle when it is delivered.

Let me know if there are any questions

Regards,

John Dabbs
Fuel Economy Programs
N.A.Environmental Compliance & FE Engineering
Cell (313)316-9179

From: Cusumano, Jacob (J.J.)
Sent: Tuesday, March 18, 2014 10:09 AM
To: Kulik, Ed (E.C.); Ball, Joel; Fuher, Michael (M.J.); Dabbs, John (J.P.)
Cc: Mazaitis, Vincent; Haynes, Ben
Subject: RE: Focus FFV test on vehicle # DL196764 / 0

I believe it currently has E85 fuel. John Dabbs please verify.

E85 test should run first.

J. J. Cusumano
Emission and Fuel Economy Supervisor
248-8521/jcusuman

From: Kulik, Ed (E.C.)
Sent: Tuesday, March 18, 2014 9:05 AM
To: Cusumano, Jacob (J.J.); Ball, Joel; Fuher, Michael (M.J.)
Cc: Mazaitis, Vincent; Haynes, Ben
Subject: RE: Focus FFV test on vehicle # DL196764 / 0

Jac,
Since Mike is out, I believe you would handle. Looks like a FE test for 2.0L Focus (VD2 test group).

Please confirm.

Thanks.

Regards,

Ed Kulik
Specialty Manager, VEE- Car & Truck Chassis Certification
Sustainability, Environment & Safety Engineering (SE&SE)
(313) 845-3155
ekulik@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, March 18, 2014 9:00 AM
To: Fuher, Michael (M.J.); Kulik, Ed (E.C.)
Cc: Mazaitis, Vincent; Haynes, Ben
Subject: Focus FFV test on vehicle # DL196764 / 0

Hi Mike/ Ed,

I'm not sure who to send this question to, could either of you please forward it to the correct person, Thanks.

The EPA test on vehicle # DL196764 is scheduled for this Friday. Since this is an FFV we will need some additional information from you:

What fuel will the vehicle have when it is derived? We will test with this fuel type to avoid having to perform the fuel learning twice.
Can you provide the fuel exchange and learning procedure that we will need to perform when we change from tier 2 to E85 fuel or visa versa?

Thanks,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Guenther, Mark (M.T.) [mguenthe@ford.com]
Sent: 3/17/2014 7:29:34 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
CC: Cerone, John (J.C.) [jcerone@ford.com]
Subject: RE: Buckley yaw angle, speed default values

Joel – When I was reviewing SAE J2263 not too long ago, I had the same question about speed calibration factors for vehicle blockage, and how Buckley handles this correction. I contacted Pete Janosi who is one of the original authors of SAE J2263 (he retired a few years back). My question to Pete, and his answer is shown below:

My question:
Pete – Hope all is going well. We had a question on SAE J2263 that no one around here was able to answer, and I was hoping you could provide a little insight. Within the document, there are several mentions on the impact of "blockage", but it is never really explained in detail. If I understand correctly, blockage refers to the impact of the vehicle on the airflow measurement by the anemometer. If so, how is this impact compensated for by the test methodology? Can you correct for the blockage by doing the calibration runs prior to the test when the anemometer measurements are compared to the vehicle speed? I assume that for the front mounted anemometer, there was no effect of blockage? Anything you can tell me about blockage would be appreciated.

Pete's Answer:
The "blockage" is a result of the vehicle piling up air in front of it so that the anemometer is reading slower air speed than would result from true free airstream. It is about 95% of true speed with an 8 foot boom (and 115% for roof mount!- similar idea in reverse.)

The magic solution is that it is compensated during the calibration (warm-up) runs. It is assumed that on average the wind speed did not vary much between alternate direction pairs of runs. If the vehicle is travelling 50 mph steady both ways the calibration calculates the average rpm of the prop for 50 mph so now it has a scaling factor to be used during the coastdowns. The coastdown (not warm-up) analysis does not assume the same weather during any speed or direction of travel so each measurement point is scaled. (You may realize that this method cannot exactly calculate the wind speed, which is not an issue because we can replace (wind speed)^squared with (anemometer rpm)^2 to determine the aerodynamic response. That's a little harder to grasp...).

So John- - don't we have a scaling/calibration factor that relates the anemometer revs. to the vehicle speed (50 mph)? If so, can you provide this info to Joel? We will look into the yaw angle zero offsets a little more, but at first glance, it doesn't appear to be a parameter that is used in the anemometer calibration or wind speed calculations.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Cerone, John (J.C.)
Sent: Monday, March 17, 2014 2:53 PM
To: Ball, Joel

Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Joel – to the best of my knowledge other than the Cd adjustment for the anemometer mounted on the roof, there is no other adjustment or offset.

jcerone@ford.com
Coast Down & Parasitic Loss
Allen Park Test Lab
phone: (313) 323-0512
https://www.tc2.ford.com/ts/VEE/certification/coastdown/default.aspx

---

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, March 17, 2014 12:24 PM
To: Cerone, John (J.C.)
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Hi John,

Thank you for the info. In an effort to make the most direct comparison possible, I will apply the same limits in my analysis. Do you have an answer for the question below:

Are there wind speed calibration factors (for vehicle blockage) or yaw angle zero offsets that need to be applied or have they already been factored in?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Cerone, John (J.C.) [mailto:jcerone@ford.com]
Sent: Monday, March 17, 2014 12:11 PM
To: Ball, Joel
Cc: Guenther, Mark (M.T.)
Subject: Buckley yaw angle, speed default values

Joel –
Sorry for the problems opening the previous picture – this time I saved it as a jpg – let me know if you have an problems seeing this one.

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
  image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

Message

From: Cerone, John (J.C.) [jcerone@ford.com]
Sent: 3/12/2014 2:22:55 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Guenther, Mark (M.T.) [mguenthe@ford.com]
CC: Fuher, Michael (M.J.) [mfuher@ford.com]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]
Subject: RE: Fiesta coastdown testing

Joel
Thank you for sharing this data.

I need to track down some more information to answer your yaw angle offset questions.

I did find the fiesta anemometer drag correction, the Cd addition of the roof mounted anemometer measured in our wind tunnel on a fiesta is .010.

jcerone@ford.com
Coast Down & Parasitic Loss
Allen Park Test Lab
phone: (313) 323-0512
https://www.tc2.ford.com/ts/VEE/certification/coastdown/default.aspx

---

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 10:19 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark,

Attached is the data from the march 4 test of 728. Also below are my results from the March 5 test of 730 which the Ford driver ran. I analyzed the data with the wind and mass corrections applied. I assumed there was no offset to the yaw angle and no factor for blockage of the anemometer. I did not apply any correction for the anemometer drag. As you can see the difference has been reduced and will get even better when the anemometer drag is accounted for.

Roadload Comparison Worksheet

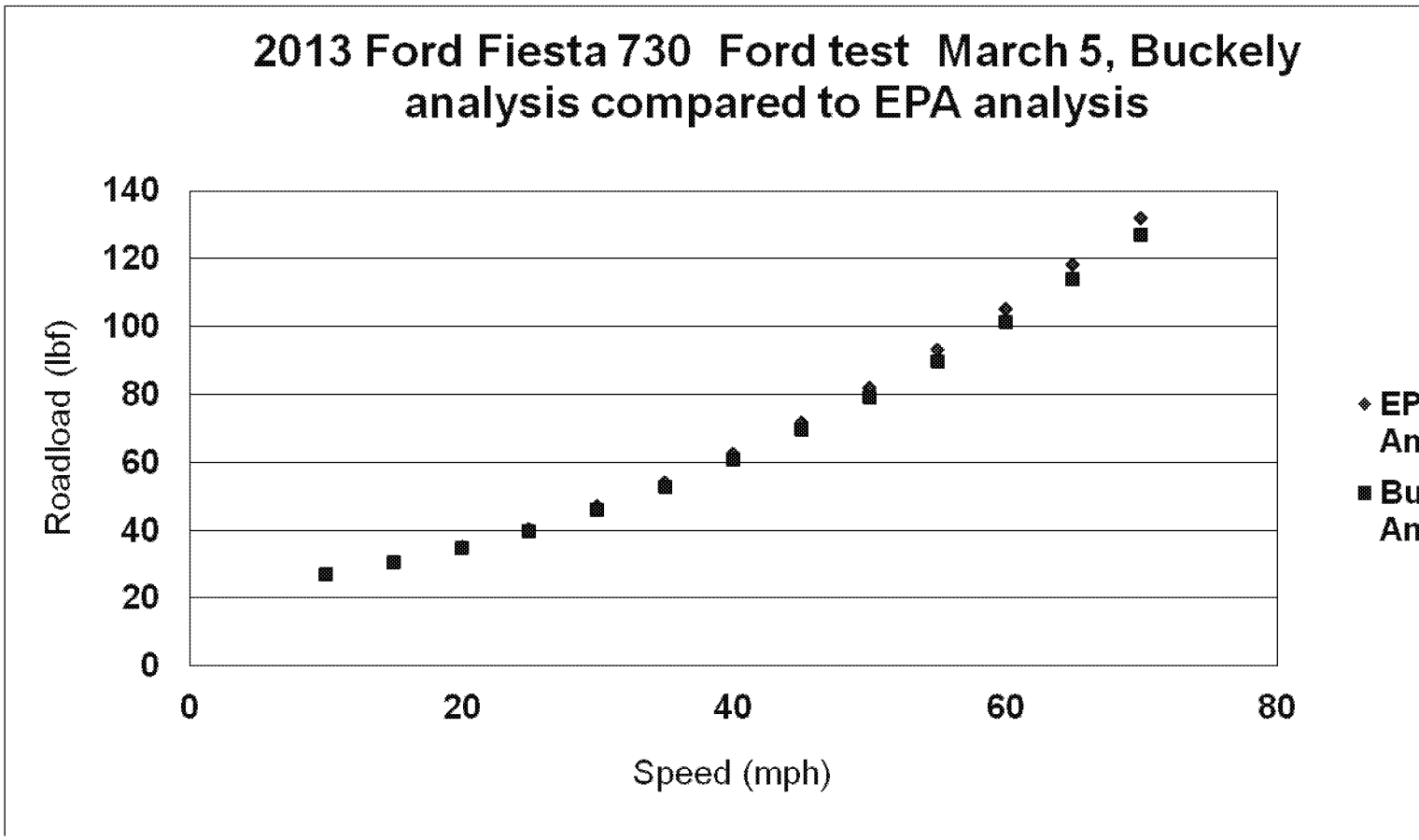
Roadload Coefficients:		EPA Analysis
A	22.47	(lb)
B	0.2536	(lb/mph)
C	0.01872	(lb/mph^2)

Enter A,B,C coefficient in boxes above and below

Calculated Values:

Roadload Coefficients:		Buckely Analysis
A	23.24	(lb)
B	0.2071	(lb/mph)
C	0.01825	(lb/mph^2)

Work Done (ft*lbf)	City(FTP)	Hwy
Reported	3164898.3	45
Audit	3084139.4	43
Fractional Diff (%)	-2.55	



Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Wednesday, March 12, 2014 9:38 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

We are looking into your questions and will reply later today with as much information as possible. Would it be possible for you to provide us with the complete set of data for one of the coastdown runs with the anemometer (how about the

March 4th test on vehicle 728)? We would like to see if it is possible to use the Buckley calculations to process your data, with hopes of determining why there may be a difference. Talk to you soon.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 9:28 AM
To: Ball, Joel; Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

A couple more questions.

When you analyze the data in the Buckley software do you use all of the data or only the data points between 70 and 10 mph? I noticed the data files you supplied go from 78 to 9. The SAE software allows you to select max and min speeds and we use 70 to 10.

Does the Buckley software remove points that exceed the max cross wind? What is the limit you apply?

Does the Buckley software remove points that exceed 3 std dev, from the mean?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Tuesday, March 11, 2014 1:39 PM
To: 'Guenther, Mark (M.T.)'
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark/ John,

I need some more information in order to analyze the data from the Mar 5th and 6th tests. The files you provided show relative wind speed and yaw angle. Are there wind speed calibration factors (for vehicle blockage) or yaw angle zero offsets that need to be applied or have they already been factored in? Can you give me the anemometer drag in force (or CdA) to apply as well?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Monday, March 10, 2014 10:54 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

It was good working with you and Joel D. and Jim last week. I think it was a great learning experience. Attached is some information on the last coastdown test that we had problems processing while at APG (with both Buckley and EPA equipment on vehicle 312T730). John was finally able to get the data to process after eliminating the 7th and 8th runs. The F-terms from the Buckley report are shown below.

The attached file is taken from the Buckley software so that you can process the Vbox data with wind corrections from the Thursday morning "cold" test on 312T730. One of the tabs in the file is the driver sheet so that you have the ambient data that's not in the raw data (barometer, etc). Also attached is a summary of all of the testing performed so far on all three test vehicles. Please let us know if you need any other information to process the coastdowns runs.

This week, we are going to continue testing all three of our vehicles (with and without brakes, with engine on and engine off). We also were planning to look into the variability between the Buckley and the SAE template calculations to see if we can get a better understanding of what was going on there (it seems like most of the variation was related to the calculation of the F1 term). As we discussed, there may have been some variation with ambient/track temperature so we would like to understand that better also. Talk to you soon.

Done Print Save Copy HTML Copy Text

Road Load Distribution at EPA Standard Conditions

```
Vehicle : 312T730 Fiesta 4dr dps6
Test ID : Test 2 Epa audit Cold ambient
Inertia Weight Class (IWC) : 2875.00 (lbf)
Vehicle Weight for IWC : 2832.51 (lbf)
Test Weight : 2870.00 (lbf)
Test Winds (Unfiltered/Filtered@0.20Hz) (mph) :
                 Spatial Average        Peak
      Total         7.55/  7.57     12.17/ 11.74
      Head/Tail     2.46/  2.46      5.86/  5.70
      Cross         7.07/  7.10     11.60/ 11.11
Test Ambient Pressure                 :   28.48 (in Hg)
Test Average Ambient Temperature      :   63.50 (deg F)
Test Average Front Axle Temperature   :  127.16 (deg F)


Tabulated Road Load (lbf) :


Speed    Tires in Abs. of Lift     Drag Red.      Aero           Total
(mph)        + Front Axle          due to
               + Rear Axle            Lift

   10           26.2 ( 0.2)            0.00      1.9 ( 0.0)     28.0 ( 0.2)
   15           27.2 ( 0.2)            0.00      4.2 ( 0.0)     31.4 ( 0.2)
   20           28.3 ( 0.2)            0.00      7.4 ( 0.0)     35.7 ( 0.2)
```

25	29.3 (0.2)	0.00	11.6 (0.0)	40.8 (0.2)
30	30.3 (0.2)	0.00	16.7 (0.0)	46.9 (0.2)
35	31.3 (0.2)	0.00	22.7 (0.0)	54.0 (0.2)
40	32.2 (0.2)	0.00	29.6 (0.0)	61.9 (0.2)
45	33.2 (0.2)	0.00	37.5 (0.0)	70.7 (0.2)
50	34.1 (0.2)	0.00	46.3 (0.0)	80.4 (0.2)
55	35.1 (0.2)	0.00	56.0 (0.0)	91.1 (0.2)
60	36.0 (0.2)	0.00	66.7 (0.0)	102.6 (0.2)
65	36.8 (0.2)	0.00	78.2 (0.0)	115.1 (0.2)
70	37.7 (0.3)	0.00	90.7 (0.0)	128.4 (0.3)

Quadratic Road Load Representation :

Tires in Absence of Lift + Front Axle + Rear Axle	=	+23.99	+0.2202 V	-0.0003431 V^2
Tire Drag Reduction due to Lift	=	+0.00	+0.0000 V	+0.0000000 V^2
Aero Drag	=			+0.0185149 V^2
Total Drag	=	+23.99	+0.2202 V	+0.0181719 V^2

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, February 18, 2014 9:54 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Thanks for the info,

Both Jim Snyder and I (Joel Ball) tested at APG last march (less than 1 year ago) and at the Michigan proving grounds in June of 2012. I believe we were given provisional certification based on driving resumes we submitted. Joel Dalton also tested at the Michigan proving grounds in June of 2012 and submitted a driving resume but did not test at APG. It sounds like Joel Dalton will need to take the safety orientation but Jim and I will not (we will all try to get there by 12:30 just in case). Please let me know if we need to submit any further info for certification for Jim, Joel Dalton, or myself.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Tuesday, February 18, 2014 9:34 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.)
Subject: RE: Fiesta coastdown testing

Hi Joel,

Mike Fuher asked me to ensure that everything was on track for the Fiesta coastdown testing on the week of March 3rd. The bottom line is that we are on track and planning to support the testing as we discussed earlier. Our contact at Arizona Proving Grounds is going to be Jim Sumner (Cell: 623-738-8674). I believe that you have worked with Jim in the past, and he is making arrangements to support the testing. Below is an excerpt from Jim's email regarding training and safety orientation:

"Everyone is required to complete the driver safety training and track orientation at APG if they have not used the facility within 2 years. APG offers track orientations daily at 12:30pm. If the plane arrives at 10:40am, you should be able to make it to APG before 12:30pm. Anyone who plans on driving at APG has to be Ford tier II certified. I know Jim (Snyder) drove at APG last year, so I will have to find out what arrangements were made for that to happen."

Do you know if Jim Snyder took additional training to become Ford Tier II certified? Jim Sumner will follow-up with us on the requirements for Jim Snyder (or any of you) to become a Ford Tier II certified driver. I will also be going to APG (Cell: 248-207-1587) during the same timeframe that you will be at APG. In addition, John Cerone is one of the coastdown engineers that will be traveling with me. We will keep in contact with you prior to the trip, but please let Jim or I know if you have any questions or additional requests. Thanks.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Friday, February 14, 2014 10:13 AM
To: Fuher, Michael (M.J.)
Cc: Guenther, Mark (M.T.)
Subject: Fiesta coastdown testing

Hi Mike,

How are things going with the Fiesta vehicles? I wanted to confirm we are still on track for testing on March 3. Do we need to do anything to make arrangements for testing at Ford APG? Will we need to schedule any type of training or safety orientation? If so I would like to try to get that out of the way Monday Mars 3rd in the afternoon. Our flight arrives in Phoenix at 10:40 am so we should be able to get to APG by 1:00pm. We plan to ship a box of equipment next week to be sure it arrives before we do. The participants from EPA will be:

Joel Ball
Jim Snyder
Joel Dalton

Jim and I tested at Ford APG last year. Joel Dalton did not however he did test at Ford Michigan proving ground in 2012.

Joel Ball
Light-Duty Vehicle Group

Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/2/2014 2:00:24 PM
To: Guenther, Mark (M.T.) [mguenthe@ford.com]
CC: Fuher, Michael (M.J.) [mfuher@ford.com]; Cerone, John (J.C.) [jcerone@ford.com]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Smith, Anthony (A.C.) [asmit685@ford.com]
Subject: RE: Fiesta coastdown testing

Hi Mark/John,

After applying the following criteria, which John provided, to the data from the test on vehicle 730 from march 5 and recalculating the road-load, the difference is reduced even further. These criteria are applied in our standard procedure when analyzing data per SAE 2263. They were not included in my first calculation of the data from your test of vehicle 730 because I did not have the wind data and therefore needed to calculate the road-load manually. These results still do not include the anemometer zero offset or compensation for anemometer blockage. If you are able to send my the zero and calibration files I will include those corrections as well.

ABCD Coast-Down Analysis
Formation of Analysis Matrix
Specify Analysis Range

Task	Value
Minimum Yaw Angle (deg)	-20
Maximum Yaw Angle (deg)	20
Minimum Vehicle Speed (mph)	10
Maximum Vehicle Speed (mph)	70
Minimum Relative Airspeed (mph)	5
Specify Coasts to Eliminate from Analysis	None
Task Complete	

Roadload Comparison Worksheet

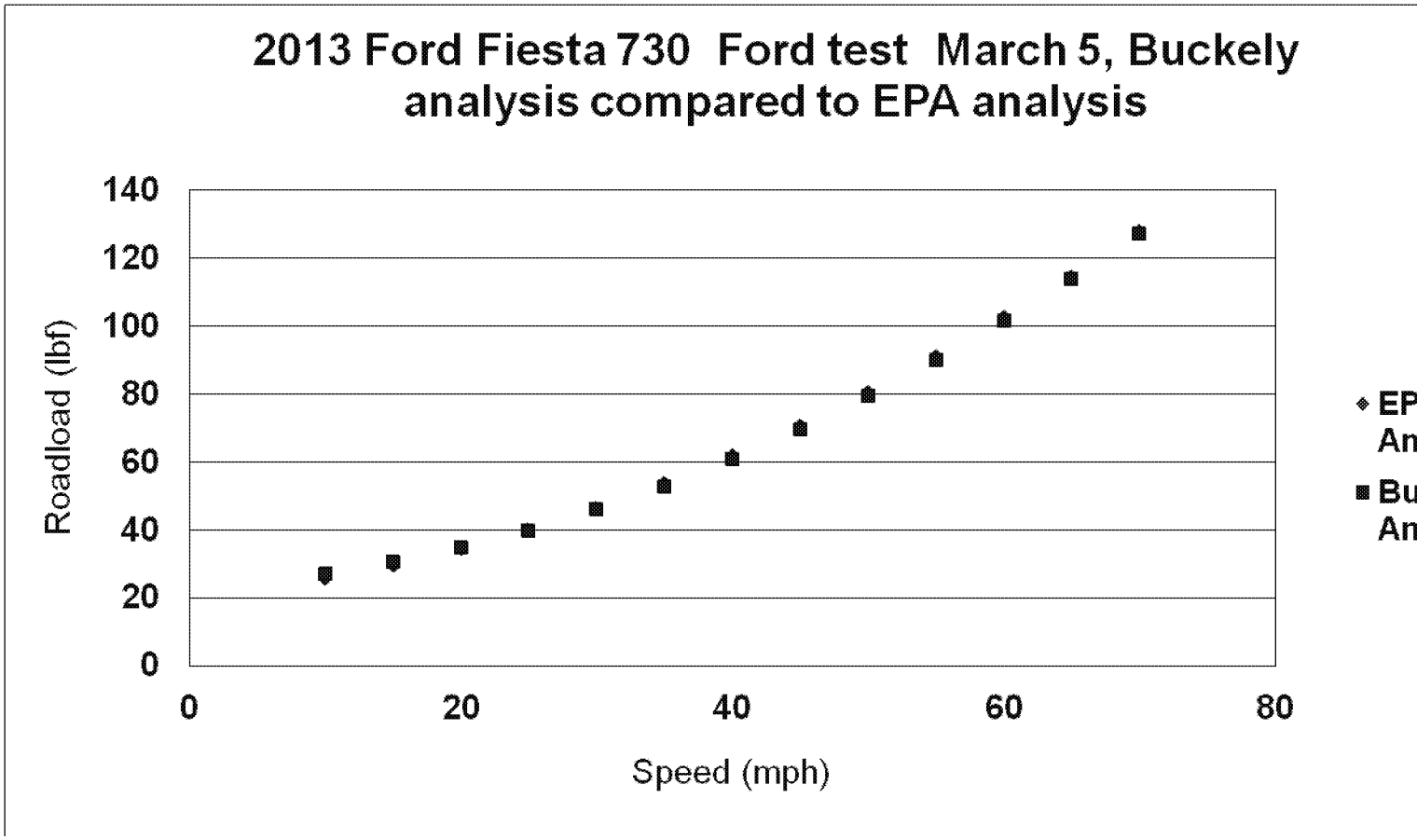
Roadload Coefficients:		EPA Analysis
A	20.02	(lb)
B	0.388	(lb/mph)
C	0.01643	(lb/mph^2)

Enter A,B,C coefficient in boxes above and below

Roadload Coefficients:		Buckely Analysis
A	23.24	(lb)

Calculated Values:		
Work Done (ft*lbf)	City(FTP)	Hwy
Reported	3113271.4	44

B	0.2071	(lb/mph)	Audit	3084139.4	43
C	0.01825	(lb/mph^2)	Fractional Diff (%)	-0.94	



Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Tuesday, March 25, 2014 9:27 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel; Smith, Anthony (A.C.)
Subject: RE: Fiesta coastdown testing

Joel,

As we discussed, we have completed additional tests on the three Fiesta production vehicles at APG. The results were consistent with the Ford coastdown measurements obtained earlier. Attached is a summary sheet including results of all of the tests completed so far on the Fiestas (both Ford and EPA results).

At this time, we would like to take two out of the three vehicles and perform some component level testing in Dearborn, including tire rolling resistance testing, wind tunnel testing, and parasitic loss testing. We are especially concerned that

the tires may not be meeting the tire specification agreed to by the supplier. On the third vehicle, we may consider trying to run a manual J2263 process with off-line calculations instead of using Buckley calculations. As you can imagine, we are very concerned with the differences between the Ford and EPA results/calculations. Even though the coastdown curves appear to be very close, as you noted, there is still a significant difference in the Energy calculations.

Please let us know if you have any concerns with this plan. Once we obtain the component level data on the vehicles, we will share this with you as well. Thanks.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 10:19 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark,

Attached is the data from the march 4 test of 728. Also below are my results from the March 5 test of 730 which the Ford driver ran. I analyzed the data with the wind and mass corrections applied. I assumed there was no offset to the yaw angle and no factor for blockage of the anemometer. I did not apply any correction for the anemometer drag. As you can see the difference has been reduced and will get even better when the anemometer drag is accounted for.

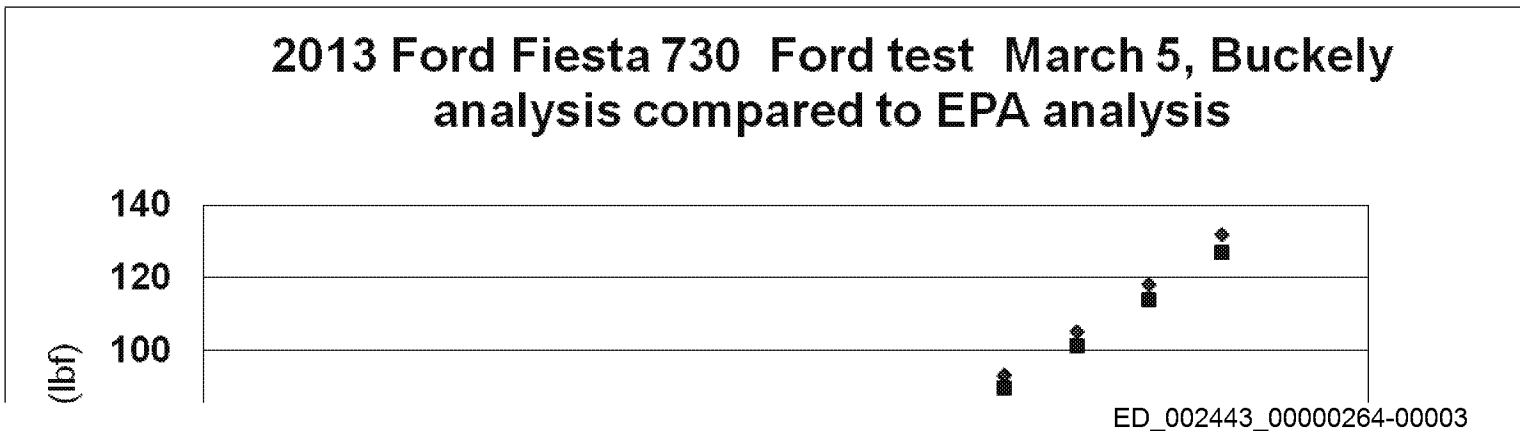
Roadload Comparison Worksheet

Roadload Coefficients:		EPA Analysis
A	22.47	(lb)
B	0.2536	(lb/mph)
C	0.01872	(lb/mph^2)

Enter A,B,C coefficient in boxes above and below

Roadload Coefficients:		Buckely Analysis
A	23.24	(lb)
B	0.2071	(lb/mph)
C	0.01825	(lb/mph^2)

Calculated Values:	
Work Done (ft*lbf)	City(FTP)
Reported	3164898.3
Audit	3084139.4
Fractional Diff (%)	-2.55



Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Wednesday, March 12, 2014 9:38 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

We are looking into your questions and will reply later today with as much information as possible. Would it be possible for you to provide us with the complete set of data for one of the coastdown runs with the anemometer (how about the March 4th test on vehicle 728)? We would like to see if it is possible to use the Buckley calculations to process your data, with hopes of determining why there may be a difference. Talk to you soon.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 9:28 AM
To: Ball, Joel; Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

A couple more questions.

When you analyze the data in the Buckley software do you use all of the data or only the data points between 70 and 10 mph? I noticed the data files you supplied go from 78 to 9. The SAE software allows you to select max and min speeds and we use 70 to 10.

Does the Buckley software remove points that exceed the max cross wind? What is the limit you apply?

Does the Buckley software remove points that exceed 3 std dev, from the mean?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Tuesday, March 11, 2014 1:39 PM
To: 'Guenther, Mark (M.T.)'
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark/ John,

I need some more information in order to analyze the data from the Mar 5th and 6th tests. The files you provided show relative wind speed and yaw angle. Are there wind speed calibration factors (for vehicle blockage) or yaw angle zero offsets that need to be applied or have they already been factored in? Can you give me the anemometer drag in force (or CdA) to apply as well?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Monday, March 10, 2014 10:54 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

It was good working with you and Joel D. and Jim last week. I think it was a great learning experience. Attached is some information on the last coastdown test that we had problems processing while at APG (with both Buckley and EPA equipment on vehicle 312T730). John was finally able to get the data to process after eliminating the 7th and 8th runs. The F-terms from the Buckley report are shown below.

The attached file is taken from the Buckley software so that you can process the Vbox data with wind corrections from the Thursday morning "cold" test on 312T730. One of the tabs in the file is the driver sheet so that you have the ambient

data that's not in the raw data (barometer, etc). Also attached is a summary of all of the testing performed so far on all three test vehicles. Please let us know if you need any other information to process the coastdowns runs.

This week, we are going to continue testing all three of our vehicles (with and without brakes, with engine on and engine off). We also were planning to look into the variability between the Buckley and the SAE template calculations to see if we can get a better understanding of what was going on there (it seems like most of the variation was related to the calculation of the F1 term). As we discussed, there may have been some variation with ambient/track temperature so we would like to understand that better also. Talk to you soon.

Done Print Save Copy HTML Copy Text

Road Load Distribution at EPA Standard Conditions

Vehicle : 312T730 Fiesta 4dr dps6
Test ID : Test 2 Epa audit Cold ambient
Inertia Weight Class (IWC) : 2875.00 (lbf)
Vehicle Weight for IWC : 2832.51 (lbf)
Test Weight : 2870.00 (lbf)
Test Winds (Unfiltered/Filtered@0.20Hz) (mph) :

	Spatial Average	Peak
Total	7.55/ 7.57	12.17/ 11.74
Head/Tail	2.46/ 2.46	5.86/ 5.70
Cross	7.07/ 7.10	11.60/ 11.11

Test Ambient Pressure : 28.48 (in Hg)
Test Average Ambient Temperature : 63.50 (deg F)
Test Average Front Axle Temperature : 127.16 (deg F)

Tabulated Road Load (lbf) :

Speed (mph)	Tires in Abs. of Lift + Front Axle + Rear Axle	Drag Red. due to Lift	Aero	Total
10	26.2 (0.2)	0.00	1.9 (0.0)	28.0 (0.2)
15	27.2 (0.2)	0.00	4.2 (0.0)	31.4 (0.2)
20	28.3 (0.2)	0.00	7.4 (0.0)	35.7 (0.2)
25	29.3 (0.2)	0.00	11.6 (0.0)	40.8 (0.2)
30	30.3 (0.2)	0.00	16.7 (0.0)	46.9 (0.2)
35	31.3 (0.2)	0.00	22.7 (0.0)	54.0 (0.2)
40	32.2 (0.2)	0.00	29.6 (0.0)	61.9 (0.2)
45	33.2 (0.2)	0.00	37.5 (0.0)	70.7 (0.2)
50	34.1 (0.2)	0.00	46.3 (0.0)	80.4 (0.2)
55	35.1 (0.2)	0.00	56.0 (0.0)	91.1 (0.2)
60	36.0 (0.2)	0.00	66.7 (0.0)	102.6 (0.2)
65	36.8 (0.2)	0.00	78.2 (0.0)	115.1 (0.2)
70	37.7 (0.3)	0.00	90.7 (0.0)	128.4 (0.3)

Quadratic Road Load Representation :

Tires in Absence of Lift = +23.99 +0.2202 V -0.0003431 V^2

+ Front Axle + Rear Axle				
Tire Drag Reduction	=	+0.00	+0.0000 V	+0.0000000 V^2
due to Lift				
Aero Drag	=			+0.0185149 V^2
Total Drag	=	+23.99	+0.2202 V	+0.0181719 V^2

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, February 18, 2014 9:54 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Thanks for the info,

Both Jim Snyder and I (Joel Ball) tested at APG last march (less than 1 year ago) and at the Michigan proving grounds in June of 2012. I believe we were given provisional certification based on driving resumes we submitted. Joel Dalton also tested at the Michigan proving grounds in June of 2012 and submitted a driving resume but did not test at APG. It sounds like Joel Dalton will need to take the safety orientation but Jim and I will not (we will all try to get there by 12:30 just in case). Please let me know if we need to submit any further info for certification for Jim, Joel Dalton, or myself.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Tuesday, February 18, 2014 9:34 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.)
Subject: RE: Fiesta coastdown testing

Hi Joel,

Mike Fuher asked me to ensure that everything was on track for the Fiesta coastdown testing on the week of March 3rd. The bottom line is that we are on track and planning to support the testing as we discussed earlier. Our contact at Arizona Proving Grounds is going to be Jim Sumner (Cell: 623-738-8674). I believe that you have worked with Jim in the past, and he is making arrangements to support the testing. Below is an excerpt from Jim's email regarding training and safety orientation:

"Everyone is required to complete the driver safety training and track orientation at APG if they have not used the facility within 2 years. APG offers track orientations daily at 12:30pm. If the plane arrives at 10:40am, you should be able to

make it to APG before 12:30pm. Anyone who plans on driving at APG has to be Ford tier II certified. I know Jim (Snyder) drove at APG last year, so I will have to find out what arrangements were made for that to happen."

Do you know if Jim Snyder took additional training to become Ford Tier II certified? Jim Sumner will follow-up with us on the requirements for Jim Snyder (or any of you) to become a Ford Tier II certified driver. I will also be going to APG (Cell: 248-207-1587) during the same timeframe that you will be at APG. In addition, John Cerone is one of the coastdown engineers that will be traveling with me. We will keep in contact with you prior to the trip, but please let Jim or I know if you have any questions or additional requests. Thanks.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Friday, February 14, 2014 10:13 AM
To: Fuher, Michael (M.J.)
Cc: Guenther, Mark (M.T.)
Subject: Fiesta coastdown testing

Hi Mike,

How are things going with the Fiesta vehicles? I wanted to confirm we are still on track for testing on March 3. Do we need to do anything to make arrangements for testing at Ford APG? Will we need to schedule any type of training or safety orientation? If so I would like to try to get that out of the way Monday Mars 3rd in the afternoon. Our flight arrives in Phoenix at 10:40 am so we should be able to get to APG by 1:00pm. We plan to ship a box of equipment next week to be sure it arrives before we do. The participants from EPA will be:

Joel Ball
Jim Snyder
Joel Dalton

Jim and I tested at Ford APG last year. Joel Dalton did not however he did test at Ford Michigan proving ground in 2012.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 3/12/2014 2:19:12 PM
To: Guenther, Mark (M.T.) [mguenthe@ford.com]
CC: Fuher, Michael (M.J.) [mfuher@ford.com]; Cerone, John (J.C.) [jcerone@ford.com]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]
Subject: RE: Fiesta coastdown testing
Attachments: Fiesta 728 ZERO 5hz VBOX0033.VBO; Fiesta 728 5hz VBOX0034 1.VBO; Fiesta 728 5hz VBOX0034 2.VBO; Fiesta 728 5hz VBOX0034 3.VBO; Fiesta 728 5hz VBOX0034 4.VBO; Fiesta 728 5hz VBOX0034 5.VBO; Fiesta 728 5hz VBOX0034 6.VBO; Fiesta 728 5hz VBOX0034 7.VBO; Fiesta 728 5hz VBOX0034 8.VBO; Fiesta 728 5hz VBOX0034 9.VBO; Fiesta 728 5hz VBOX0034 10.VBO; Fiesta 728 5hz VBOX0034 CAL 1.VBO; Fiesta 728 5hz VBOX0034 CAL 2.VBO; Fiesta 728 5hz VBOX0034 CAL 3.VBO; Fiesta 728 5hz VBOX0034 CAL 4.VBO

Hi Mark,

Attached is the data from the march 4 test of 728. Also below are my results from the March 5 test of 730 which the Ford driver ran. I analyzed the data with the wind and mass corrections applied. I assumed there was no offset to the yaw angle and no factor for blockage of the anemometer. I did not apply any correction for the anemometer drag. As you can see the difference has been reduced and will get even better when the anemometer drag is accounted for.

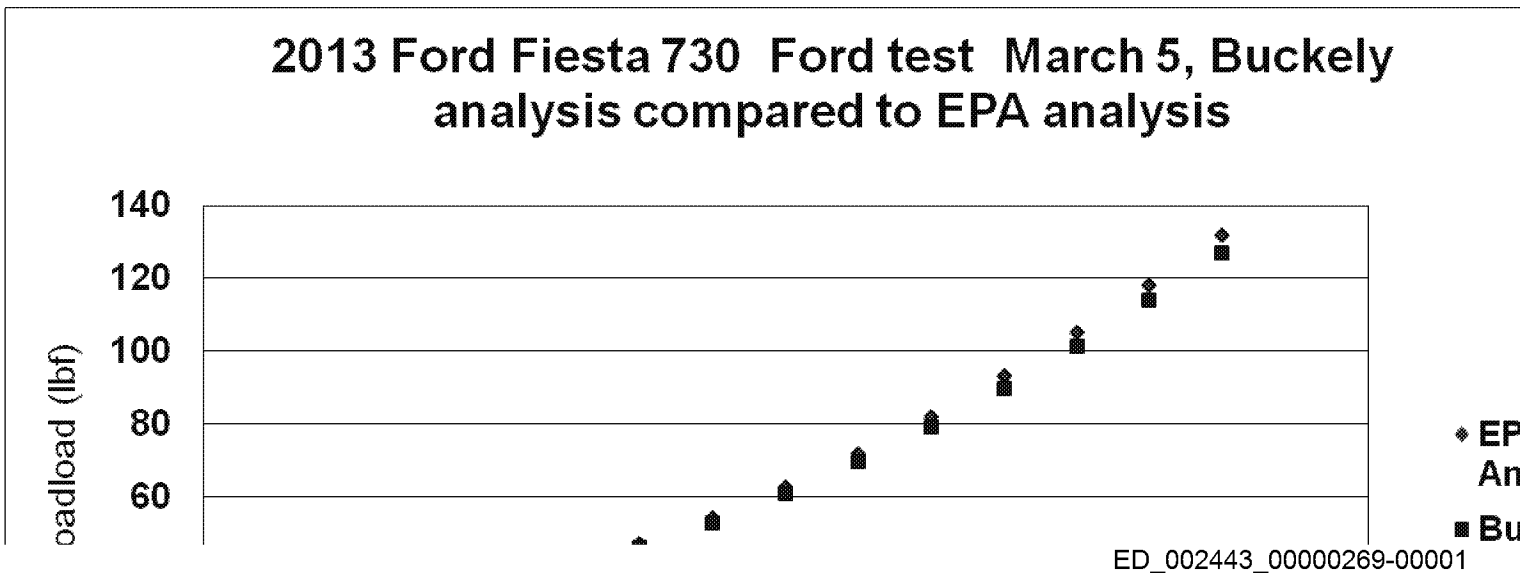
Roadload Comparison Worksheet

Roadload Coefficients:		EPA Analysis
A	22.47	(lb)
B	0.2536	(lb/mph)
C	0.01872	(lb/mph^2)

Enter A,B,C coefficient in boxes above and below

Roadload Coefficients:		Buckely Analysis
A	23.24	(lb)
B	0.2071	(lb/mph)
C	0.01825	(lb/mph^2)

Calculated Values:		
Work Done (ft*lbf)	City(FTP)	Hwy
Reported	3164898.3	45
Audit	3084139.4	43
Fractional Diff (%)	-2.55	



Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Wednesday, March 12, 2014 9:38 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

We are looking into your questions and will reply later today with as much information as possible. Would it be possible for you to provide us with the complete set of data for one of the coastdown runs with the anemometer (how about the March 4th test on vehicle 728)? We would like to see if it is possible to use the Buckley calculations to process your data, with hopes of determining why there may be a difference. Talk to you soon.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, March 12, 2014 9:28 AM
To: Ball, Joel; Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

A couple more questions.

When you analyze the data in the Buckley software do you use all of the data or only the data points between 70 and 10 mph? I noticed the data files you supplied go from 78 to 9. The SAE software allows you to select max and min speeds and we use 70 to 10.

Does the Buckley software remove points that exceed the max cross wind? What is the limit you apply?

Does the Buckley software remove points that exceed 3 std dev, from the mean?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Tuesday, March 11, 2014 1:39 PM
To: 'Guenther, Mark (M.T.)'
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Hi Mark/ John,

I need some more information in order to analyze the data from the Mar 5th and 6th tests. The files you provided show relative wind speed and yaw angle. Are there wind speed calibration factors (for vehicle blockage) or yaw angle zero offsets that need to be applied or have they already been factored in? Can you give me the anemometer drag in force (or CdA) to apply as well?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Monday, March 10, 2014 10:54 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Joel,

It was good working with you and Joel D. and Jim last week. I think it was a great learning experience. Attached is some information on the last coastdown test that we had problems processing while at APG (with both Buckley and EPA equipment on vehicle 312T730). John was finally able to get the data to process after eliminating the 7th and 8th runs. The F-terms from the Buckley report are shown below.

The attached file is taken from the Buckley software so that you can process the Vbox data with wind corrections from the Thursday morning "cold" test on 312T730. One of the tabs in the file is the driver sheet so that you have the ambient data that's not in the raw data (barometer, etc). Also attached is a summary of all of the testing performed so far on all three test vehicles. Please let us know if you need any other information to process the coastdowns runs.

This week, we are going to continue testing all three of our vehicles (with and without brakes, with engine on and engine off). We also were planning to look into the variability between the Buckley and the SAE template calculations to see if we can get a better understanding of what was going on there (it seems like most of the variation was related to the calculation of the F1 term). As we discussed, there may have been some variation with ambient/track temperature so we would like to understand that better also. Talk to you soon.

Done Print Save Copy HTML Copy Text

Road Load Distribution at EPA Standard Conditions

Vehicle : 312T730 Fiesta 4dr dps6
Test ID : Test 2 Epa audit Cold ambient
Inertia Weight Class (IWC) : 2875.00 (lbf)
Vehicle Weight for IWC : 2832.51 (lbf)
Test Weight : 2870.00 (lbf)
Test Winds (Unfiltered/Filtered@0.20Hz) (mph) :

	Spatial Average	Peak
Total	7.55/ 7.57	12.17/ 11.74
Head/Tail	2.46/ 2.46	5.86/ 5.70
Cross	7.07/ 7.10	11.60/ 11.11

Test Ambient Pressure : 28.48 (in Hg)
Test Average Ambient Temperature : 63.50 (deg F)
Test Average Front Axle Temperature : 127.16 (deg F)

Tabulated Road Load (lbf) :

Speed (mph)	Tires in Abs. of Lift + Front Axle + Rear Axle	Drag Red. due to Lift	Aero	Total
10	26.2 (0.2)	0.00	1.9 (0.0)	28.0 (0.2)
15	27.2 (0.2)	0.00	4.2 (0.0)	31.4 (0.2)
20	28.3 (0.2)	0.00	7.4 (0.0)	35.7 (0.2)
25	29.3 (0.2)	0.00	11.6 (0.0)	40.8 (0.2)
30	30.3 (0.2)	0.00	16.7 (0.0)	46.9 (0.2)
35	31.3 (0.2)	0.00	22.7 (0.0)	54.0 (0.2)
40	32.2 (0.2)	0.00	29.6 (0.0)	61.9 (0.2)
45	33.2 (0.2)	0.00	37.5 (0.0)	70.7 (0.2)
50	34.1 (0.2)	0.00	46.3 (0.0)	80.4 (0.2)
55	35.1 (0.2)	0.00	56.0 (0.0)	91.1 (0.2)
60	36.0 (0.2)	0.00	66.7 (0.0)	102.6 (0.2)
65	36.8 (0.2)	0.00	78.2 (0.0)	115.1 (0.2)
70	37.7 (0.3)	0.00	90.7 (0.0)	128.4 (0.3)

Quadratic Road Load Representation :

Tires in Absence of Lift + Front Axle + Rear Axle	=	+23.99	+0.2202 V	-0.0003431 V^2
Tire Drag Reduction	=	+0.00	+0.0000 V	+0.0000000 V^2

due to Lift				
Aero Drag	=			$+0.0185149\ V^2$
Total Drag	=	+23.99	+0.2202 V	$+0.0181719\ V^2$

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, February 18, 2014 9:54 AM
To: Guenther, Mark (M.T.)
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.); Snyder, Jim; Dalton, Joel
Subject: RE: Fiesta coastdown testing

Thanks for the info,

Both Jim Snyder and I (Joel Ball) tested at APG last march (less than 1 year ago) and at the Michigan proving grounds in June of 2012. I believe we were given provisional certification based on driving resumes we submitted. Joel Dalton also tested at the Michigan proving grounds in June of 2012 and submitted a driving resume but did not test at APG. It sounds like Joel Dalton will need to take the safety orientation but Jim and I will not (we will all try to get there by 12:30 just in case). Please let me know if we need to submit any further info for certification for Jim, Joel Dalton, or myself.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Guenther, Mark (M.T.) [mailto:mguenthe@ford.com]
Sent: Tuesday, February 18, 2014 9:34 AM
To: Ball, Joel
Cc: Fuher, Michael (M.J.); Sumner, Jim (J.R.); Cerone, John (J.C.)
Subject: RE: Fiesta coastdown testing

Hi Joel,

Mike Fuher asked me to ensure that everything was on track for the Fiesta coastdown testing on the week of March 3rd. The bottom line is that we are on track and planning to support the testing as we discussed earlier. Our contact at Arizona Proving Grounds is going to be Jim Sumner (Cell: 623-738-8674). I believe that you have worked with Jim in the past, and he is making arrangements to support the testing. Below is an excerpt from Jim's email regarding training and safety orientation:

"Everyone is required to complete the driver safety training and track orientation at APG if they have not used the facility within 2 years. APG offers track orientations daily at 12:30pm. If the plane arrives at 10:40am, you should be able to

make it to APG before 12:30pm. Anyone who plans on driving at APG has to be Ford tier II certified. I know Jim (Snyder) drove at APG last year, so I will have to find out what arrangements were made for that to happen."

Do you know if Jim Snyder took additional training to become Ford Tier II certified? Jim Sumner will follow-up with us on the requirements for Jim Snyder (or any of you) to become a Ford Tier II certified driver. I will also be going to APG (Cell: 248-207-1587) during the same timeframe that you will be at APG. In addition, John Cerone is one of the coastdown engineers that will be traveling with me. We will keep in contact with you prior to the trip, but please let Jim or I know if you have any questions or additional requests. Thanks.

Mark T. Guenther
Ford Motor Company, VH&C
Supervisor / Technical Expert
Coastdown & Test Technology
Ph: (313) 594-2054
e-mail: mguenthe@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Friday, February 14, 2014 10:13 AM
To: Fuher, Michael (M.J.)
Cc: Guenther, Mark (M.T.)
Subject: Fiesta coastdown testing

Hi Mike,

How are things going with the Fiesta vehicles? I wanted to confirm we are still on track for testing on March 3. Do we need to do anything to make arrangements for testing at Ford APG? Will we need to schedule any type of training or safety orientation? If so I would like to try to get that out of the way Monday Mars 3rd in the afternoon. Our flight arrives in Phoenix at 10:40 am so we should be able to get to APG by 1:00pm. We plan to ship a box of equipment next week to be sure it arrives before we do. The participants from EPA will be:

Joel Ball
Jim Snyder
Joel Dalton

Jim and I tested at Ford APG last year. Joel Dalton did not however he did test at Ford Michigan proving ground in 2012.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 3/19/2014 12:39:26 PM
To: Cerone, John (J.C.) [jcerone@ford.com]
CC: Guenther, Mark (M.T.) [mguenthe@ford.com]
Subject: RE: Buckley yaw angle, speed default values

Hi John,

Thank you for the info. Unfortunately I don't know how to apply these factors to the wind data you provided. I still wonder if they are already accounted for since you gave us wind speed and yaw angle already processed by Buckley. If they are not the only way I know to take these factors into account wound be for you to provide the data from 50 mph runs and the zero file. I could then calculate the adjustments manually. This would help us get closer to an apples to apple comparison.

Anyway, it looks like in all cases the difference between EPA's analysis and Ford's is small 2.2~2.5% (work done over the city) even though there are slight differences that haven't been accounted for yet.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Cerone, John (J.C.) [mailto:jcerone@ford.com]
Sent: Tuesday, March 18, 2014 4:23 PM
To: Ball, Joel
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Joel
Sorry for the delayed reply.
Attached is a picture of the correction factor portion of the Buckley analysis.
This picture is from the test on vehicle 730 on 3/5/14 with both sets of equipment in the car.
The anemometer calibration is done at 50mph as you stated, both directions, constant speed, during the warm up runs.
The corrections are part of the analysis and are baked into all F terms we've provided.

jcerone@ford.com
Coast Down & Parasitic Loss
Allen Park Test Lab
phone: (313) 323-0512
https://www.tc2.ford.com/ts/VEE/certification/coastdown/default.aspx

---

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, March 18, 2014 9:51 AM

To: Cerone, John (J.C.)
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Hi John,

Sorry maybe I wasn't clear, I'm not asking about an adjustment to the force data like that. When the anemometer is installed on the vehicle it needs to be zeroed. This can be done by measuring the yaw angle when the anemometer is pointed in line with the vehicle and then subtracting that value from the yaw angle measured during the runs. This is the offset I was referring to. Similarly the anemometer can be calibrated for vehicle blockage. One way to do this is to measure the relative wind speed at constant vehicle speed (e.g. 50 mph) in both directions and correct the relative wind speed measurement to normalize it to the vehicle speed. I wanted to know if these corrections were already applied to the wind data you sent me or if I need to apply them manually.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Cerone, John (J.C.) [mailto:jcerone@ford.com]
Sent: Monday, March 17, 2014 2:53 PM
To: Ball, Joel
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Joel – to the best of my knowledge other than the Cd adjustment for the anemometer mounted on the roof, there is no other adjustment or offset.

jcerone@ford.com
Coast Down & Parasitic Loss
Allen Park Test Lab
phone: (313) 323-0512
https://www.tc2.ford.com/ts/VEE/certification/coastdown/default.aspx

---

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, March 17, 2014 12:24 PM
To: Cerone, John (J.C.)
Cc: Guenther, Mark (M.T.)
Subject: RE: Buckley yaw angle, speed default values

Hi John,

Thank you for the info. In an effort to make the most direct comparison possible, I will apply the same limits in my analysis. Do you have an answer for the question below:

Are there wind speed calibration factors (for vehicle blockage) or yaw angle zero offsets that need to be applied or have they already been factored in?

Joel Ball
Light-Duty Vehicle Group
Compliance Division

United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Cerone, John (J.C.) [mailto:jcerone@ford.com]
Sent: Monday, March 17, 2014 12:11 PM
To: Ball, Joel
Cc: Guenther, Mark (M.T.)
Subject: Buckley yaw angle, speed default values

Joel –
Sorry for the problems opening the previous picture – this time I saved it as a jpg – let me know if you have an problems seeing this one.

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/24/2014 2:58:37 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]
Subject: FW: Ford Vehicle Delivery
Attachments: E504 EPA VehInfo.xlsx

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Thursday, April 24, 2014 10:13 AM
To: Ball, Joel; Mazaitis, Vincent; Haynes, Ben
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery today of Ford vehicle **ER827504, 2014 Lincoln MKZ FHEV** for Testing.

Attached is the Vehicle Information. Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/24/2014 5:45:59 PM
To: Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
Subject: FW: Ford Vehicle Delivery
Attachments: E504 EPA VehInfo.xlsx

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Thursday, April 24, 2014 11:54 AM
To: Wu, Ruowen (R.); Ball, Joel
Cc: Mazaitis, Vincent
Subject: RE: Ford Vehicle Delivery

Here is the updated Vehicle Information Sheet for vehicle ER827504.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Wu, Ruowen (R.)
Sent: Thursday, April 24, 2014 11:48 AM
To: ball.joel@epa.gov
Cc: Szajner, David (D.J.); Wu, Ruowen (R.)
Subject: FW: Ford Vehicle Delivery

Joel,

The answers are listed in bold red next to your questions.

Ruowen Wu

Certification Engineering

1500 Enterprise Dr. Suite 3W-200

Allen Park, MI 48101-2053

Tel. 313/390-7247 Fax. 313/390-1243

e-mail. rwu5@ford.com

From: Szajner, David (D.J.)
Sent: Thursday, April 24, 2014 11:07 AM
To: Wu, Ruowen (R.)
Subject: FW: Ford Vehicle Delivery

Ruowen,

Please see note below for vehicle ER827504, 2014 Lincoln MKZ FHEV. Please advise.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Thursday, April 24, 2014 11:05 AM
To: Szajner, David (D.J.); Mazaitis, Vincent; Haynes, Ben
Subject: RE: Ford Vehicle Delivery

Hi David,

Thank you for the info, I did not see any evap canister info. Could you please let us know:

- The number of canisters **one with an integrated bleed**
- Total volume in cm^3 **1.7L**
- Working capacity in grams **105g**

Thanks
Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Thursday, April 24, 2014 10:13 AM
To: Ball, Joel; Mazaitis, Vincent; Haynes, Ben
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery today of Ford vehicle **ER827504, 2014 Lincoln MKZ FHEV** for Testing.

Attached is the Vehicle Information. Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/23/2014 3:58:40 PM
To: Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]
CC: Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
Subject: FW: Derivation Procedure
Attachments: Fusion-CMAX.txt; MKZ.txt

Hi Ben,

Here is the new new procedure.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Wednesday, April 23, 2014 10:45 AM
To: Ball, Joel; Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Dabbs, John (J.P.); Graham, Brennan (B.K.); Guenther, Mark (M.T.); Cusumano, Jacob (J.J.); Fuher, Michael (M.J.)
Subject: Derivation Procedure

Joel/Vince,

Please see attached testing procedure files, as discussed per phone conservation with Mark Guenther, with updated direction for testing.

Please note these changes:

- Do not use Augmented Braking.
- PRNDL should be in park and key off when not in use.
- Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Szajner, David (D.J.)
Sent: Wednesday, April 23, 2014 10:08 AM
To: Ball, Joel; Cusumano, Jacob (J.J.) (jcusuman@ford.com); Fuher, Michael (M.J.)
Subject: Derivation Procedure

Joel,

Below is the Derivation Procedures for Ford vehicles. Thanks.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Szajner, David (D.J.)
Sent: Wednesday, April 23, 2014 8:30 AM
To: Mazaitis.vincent@epa.gov
Cc: Kapadia, Jimmy (J.H.) (jkapadia@ford.com); Cusumano, Thomas (T.J.) (tcusuma1@ford.com); Dabbs, John (J.P.) (jdabbs1@ford.com); Graham, Brennan (B.K.) (bgraha45@ford.com)
Subject: Derivation Procedure

Hey Vince,

Here is the Derivation Procedure for the Fusion/CMAX/MKZ Ford vehicles.

If able, please place a copy in Ford vehicles EL510048 & ER317196 currently testing at EPA. Thanks.

<< File: Fusion-CMAX.txt >>
<< File: MKZ.txt >>

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/11/2014 2:33:31 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]
Subject: ford coastdown model slide
Attachments: ford coastdown model slide.pptx

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Appointment

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/9/2014 4:36:50 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]

Subject: Accepted: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Busy

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/9/2014 6:45:26 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]
Subject: FW: Testing

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Monday, June 09, 2014 12:50 PM
To: Ball, Joel
Subject: Testing

Hi Joel. I got your voicemail. I understand Ford is still waiting for the data from Thursday's EPA test to enter VERIFY. After we get that, then we can start to calculate the label.

Separate from that, Ford conducted confirmatory testing on the 1.0L M/T over the weekend, which we are validating today. We are not planning to test any additional discretionary sub-configurations (e.g. 4-door) beyond what we have already tested. We do have the data from the EPA tests on the SFE and 1.6L M/T, so that was a success.

Please let me know if you agree that the Thursday test is not yet in VERIFY, or maybe the problem is on our end??

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/3/2014 5:12:54 PM
To: Fagerman, Todd (T.M.) [tfagerma@ford.com]
Subject: FW: Ford Coastdown Letter
Attachments: Ford Coastdown Audit Letter.pdf

Hi Todd,

This letter requesting a production vehicle for coastdown testing was sent to you in the mail, but I wanted to get you a copy right away. Please let me know if you have any questions.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

-----Original Message-----
From: Fearnside, Judy
Sent: Tuesday, June 03, 2014 11:55 AM
To: Ball, Joel
Subject: Ford Coastdown Letter

Judy Fearnside
Technical Support Specialist/Fees Team
A Senior Service America SEE
USEPA Compliance Division
(734) 214-4002

How we treat others comes back to us, always.

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/5/2014 12:45:07 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: VERIFY

No CTDI necessary. These tests are done at this point

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 6:53 PM
To: Ball, Joel
Subject: VERIFY

Joel, I understand the following EPA tests have been entered into VERIFY as manufacturer tests with a comment that they are EPA tests. Can you please recommend any Ford or EPA next steps for these tests (e.g. CTDI?), or are they completely done?

- Tests 2014-0188-002 & 2014-0188-003 for vehicle EM100006 (1.6L M/T)
- Tests 2014-0191-002 & 2014-0191-003 for vehicle EM100045 (1.6L A/T SFE)

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/4/2014 3:19:58 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: EM100045/5 results

The PHEV results are in verify now

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 10:09 AM
To: Ball, Joel
Subject: RE: EM100045/5 results

Can you please send the preliminary report in parallel? That way, if we go to Plan B, we can be ready.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 9:37 AM
To: Fuher, Michael (M.J.)
Subject: RE: EM100045/5 results

Karen is going to make one more try this morning and if she cannot find the issue we can talk about plan B.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 9:09 AM
To: Ball, Joel
Subject: RE: EM100045/5 results

Joel, regarding the charge-sustaining city test, does your VERIFY help team recommend waiting a bit longer for a fix, or should we try for a Plan B?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 8:15 AM
To: Fuher, Michael (M.J.)
Subject: EM100045/5 results

Here you are...

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/4/2014 2:56:57 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: VERIFY

Here are the fuel properties

Mfr Code	LOD	**Fuel Batch Id**	F00021
Submission Date	01/14/2014		
Fuel Calibration Number	318	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Fuel Batch Calibration Effective Date	2013-12-20	**Fuel Batch Calibration Ineffective Date**	2030-12-31
Fuel Batch Calibration Date	2014-01-14		
Carbon Weight Fraction NMHC		**Carbon Weight Fraction HC**	
Exhaust Carbon Weight Fraction			
Fuel Methanol Volume Fraction		**Fuel Density**	
Fuel Specific Gravity	0.744	**Fuel Net Heating Value**	18438
Fuel Blend Carbon Weight Fraction	0.867	**Weight Fraction CO2**	

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 10:28 AM
To: Ball, Joel
Subject: VERIFY

Joel,
We are attempting to submit the EPA data for the 1.6L M/T Fiesta test into VERIFY. There are fields for test fuel properties, which we don't have. Any advice?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/4/2014 2:20:42 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: EM100045/5 results
Attachments: DL500090_5-28-14.pdf

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 10:09 AM
To: Ball, Joel
Subject: RE: EM100045/5 results

Can you please send the preliminary report in parallel? That way, if we go to Plan B, we can be ready.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 9:37 AM
To: Fuher, Michael (M.J.)
Subject: RE: EM100045/5 results

Karen is going to make one more try this morning and if she cannot find the issue we can talk about plan B.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, June 04, 2014 9:09 AM
To: Ball, Joel
Subject: RE: EM100045/5 results

Joel, regarding the charge-sustaining city test, does your VERIFY help team recommend waiting a bit longer for a fix, or should we try for a Plan B?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, June 04, 2014 8:15 AM
To: Fuher, Michael (M.J.)
Subject: EM100045/5 results

Here you are...

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Cert

NVFEL Laboratory Test Data

CVS

Final Laboratory Test Results- Refer to VERIFY Reports for Official Data

Test Number: 2014-0172-004 | Vehicle ID: DL500090

Test Information

Test Date:	5/28/2014	MFR Name	Ford Motor Company
Key Start / Hot Soak:	13:04:52 / 09:23	MFR Codes:	30 FMX
Fuel Container ID:	F00021	Config #:	00
Fuel Type:	61 Tier 2 Cert Test Fuel	Transmission:	AUTO
Test Procedure:	21.04 Fed Fuel 2-day Exhaust (CAN LOAD)	Shift Schedule:	A09980005
Calculation Method:	Gasoline	Beginning Odometer:	006161.0 MI
Pretest Remarks:		Drive Schedule:	ftp4bag
		Soak Period:	18.3 hours

Bag Data	HC-FID	CO	NOx	CO2	CH4	NonMeth HC
Phase 1	(ppmC)	(ppm)	(ppm)	(%)	(ppm)	(ppmC)
Sample	5.139	44.447	0.362	0.631	2.278	
Ambient	3.148	0.000	0.012	0.043	2.111	
Net Concentration	2.140	44.447	0.351	0.590	0.268	1.826
Remarks:						
Phase 2						
Sample	3.214	5.830	0.009	0.214	2.094	
Ambient	3.112	0.000	0.010	0.043	2.073	
Net Concentration	0.151	5.830	-0.002	0.172	0.054	0.088
Remarks:						
Phase 3						
Sample	3.618	50.344	0.084	0.526	2.126	
Ambient	3.105	0.000	0.009	0.043	1.974	
Net Concentration	0.636	50.344	0.075	0.484	0.230	0.366
Remarks:						
Phase 4						
Sample	3.238	3.223	0.011	0.231	1.940	
Ambient	3.182	0.000	0.009	0.043	1.937	
Net Concentration	0.110	3.223	0.001	0.189	0.037	0.067
Remarks:						

Results	HC-FID	CO	NOx	CO2	CH4	NMHC / NMOG	Vol MPG
	(gpm)	(gpm)	(gpm)	(gpm)	(gpm)	(gpm)	(mpg)
Phase 1	0.027	1.123	0.014	234.2	0.004	0.023 / 0.024	37.848
Phase 2	0.003	0.235	0.000	108.8	0.001	0.002 / 0.002	81.824
Phase 3	0.008	1.279	0.003	193.4	0.003	0.005 / 0.005	45.730
Phase 4	0.002	0.130	0.000	120.0	0.001	0.001 / 0.001	74.331
						(NMOG=1.04xNMHC)	
Weighted	0.00908	0.67535	0.00376	161.383	0.00225	0.0068 / 0.0071	

Fuel Economy	Gasoline MPG					Dyno Settings	
Phase 1	37.79						Dyno #: D329 - FWD
Phase 2	81.70						Inertia: 4250
Phase 3	45.66						EPA Set Co A: 10.83
Phase 4	74.22	1% SOC Limit	Act SOC A-hr	Sys Nom Volts	Charge State		EPA Set Co B: 0.1377
		0.3065	0.0866	295.0	Pass		EPA Set Co C: 0.02107
Weighted	55.05						Emiss-Bench: Mexa 7200sle

v130711 - d329 EPAVDAEm140528125143 Page 1 of 2 Print Time 29-May-2014 07:36

NVFEL Laboratory Test Data

CVS

Final Laboratory Test Results- Refer to VERIFY Reports for Official Data

Test Number: 2014-0172-004 Vehicle ID: DL500090

Results

	HC-FID (grams)	CO (grams)	NOx (grams)	CO2 (grams)	CH4 (grams)	NMHC (grams)	Meth Response
							1.173
Phase 1	0.096	4.032	0.050	840.8	0.014	0.082	
Phase 2	0.012	0.905	0.000	418.7	0.005	0.007	
Phase 3	0.029	4.576	0.011	691.6	0.012	0.016	
Phase 4	0.008	0.500	0.000	461.3	0.003	0.005	

Test Conditions

	Phase 1	Phase 2	Phase 3	Phase 4
Barometer (inHg)	29.11	29.10	29.11	29.11
Avg Cell Temp (degF)	74.07	74.09	74.08	74.09
Dew Point (degF)	55.60	55.36	55.37	55.12
Specific Humidity (grains/lbm)	67.84	67.25	67.26	66.64
NOx Corr Factor	0.9675	0.9648	0.9649	0.9622
CO2 Dilution Factor	21.076	62.479	25.240	57.85
CFV Vmix (scf @68F)	2751.58	4708.86	2756.63	4707.45
CVS Flow Rate Avg (scfm)	325.69	320.95	326.16	324.61

Fan Placement: One Small Fan - Up - Front

Phase Time (secs)	506.90	870.30	507.10	870.10
Distance (miles)	3.589	3.847	3.577	3.844
Bag Analysis Time (secs)	52.2	51.9	51.7	63.6

	FTP B1	FTP B2	FTP B3	FTP B4	FTP4-W	MFR
IWR % diff	1.676	-0.104	0.937	0.181	0.624	-
ASCR % diff	0.899	0.079	0.428	0.383	0.395	-
EER	-0.309	-1.109	-0.386	-0.186	-0.458	-

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/19/2014 8:02:24 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
Subject: RE: Ford Vehicle Delivery

Charge sustaining and Charge depleting

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Monday, May 19, 2014 3:14 PM
To: Ball, Joel; Mazaitis, Vincent
Subject: RE: Ford Vehicle Delivery

Hi Joel. We're working on answering your questions, but want to confirm EPA's test plans. Is EPA planning to conduct a "charge-sustaining" test (and if so the charger/stabilizer are not needed), or is EPA planning to conduct "charge-depleting" testing. Linc had indicated that EPA would only conduct charge-sustaining testing.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, May 19, 2014 2:57 PM
To: Szajner, David (D.J.); Mazaitis, Vincent
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: RE: Ford Vehicle Delivery

Hi David,

Could you please email me the test information normally submitted in the supplemental info and the instructions for setting dyno mode and running the road-load derivation. Also will you be providing a charger or will we use the generic one? Will you be providing a voltage stabilizer? What mode (normal, eco…) will the testing be performed in?

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 2:16 PM
To: Mazaitis, Vincent; Ball, Joel
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery this afternoon of Ford vehicle **DL500090, 2013 CMAX PHEV** for EPA Testing.

During this duration of Ford HEV vehicle Testing at EPA, a Ford representative would like be present for both the Roadload and Test.

The primary Ford Engineers would be Jimmy Kapadia (jkapadia@ford.com) 313-805-0732, or T.J. Cusumano (tcusuma@ford.com) 313-806-6083.

Please include them in all updates with the current EPA testing schedule.

If you have any questions or concerns, please contact me. Thanks again.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/21/2014 2:24:09 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
CC: Spieth, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7a48ef6030334c91bc8b660a14054aa0-Spieth, John]; Bochenek, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d9456788ef034b79a06044ce4afa910a-Bochenek, David]; McBryde, Dan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6ba1b9547aff4c93bcfb8899c7ca094a-McBryde, Dan]; Smithson, Arlene [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3bca2eb135f40fa80d94d35be1e516e-Smithson, Arlene]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]; Kapadia, Jimmy (J.H.) [jkapadia@ford.com]; Cusumano, Thomas (T.J.) [tcusuma1@ford.com]
Subject: FW: CMax special instructions
Attachments: [Untitled].pdf

Hi Mike,

I would like to confirm that we will follow the procedure outlined in the attached document for the charge sustaining test with the one exception of the purge rate. We will purge the canister at a rate of 30 L/m.

Could you please confirm which parts of this procedure are necessary for the charge depleting test. Obviously the road load derivation will not be needed and charging will be, but it also does not seem necessary to check the SOC or run additional preconditioning to match the SOC window. Since the CD test will not be part of an evap test sequence, is it necessary to load the canister? It will add another day to the testing which, in that case, could not be completed until after the holiday next week. If you feel that it is necessary to match your CD test, we are happy to do it just understand that it will take a few days longer.

Please update the document to reflect the instructions for the CD test .

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Spieth, John
Sent: Wednesday, May 21, 2014 9:10 AM
To: Bochenek, David; Ball, Joel
Subject: CMax special instructions

Joel, please see attached special procedure. They go something like this:

1st drain & fill
RLD
2 preps, wait 30 min, check SOC, repeat as necessary
2nd drain & faill
8.5 hour purge (at our purge rate, somewhat faster than Ford's)
Within 1 hour of purge completion, 3rd drain and fill

6 hour soak
Test

Ford told Arlene or Dave that it would be required for the charge depleting city test as well (but not the highway, as we understand)

If we can skip on the charge depleting, we could probably finish on Friday

Thanks,
John

From: EZTech_Printer [mailto:EZTek@epa.gov]
Sent: Wednesday, May 21, 2014 7:58 AM
To: Spieth, John
Subject:

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/19/2014 8:04:37 PM
To: Szajner, David (D.J.) [dszajner@ford.com]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
CC: Kapadia, Jimmy (J.H.) [jkapadia@ford.com]; Cusumano, Thomas (T.J.) [tcusuma1@ford.com]; Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]
Subject: RE: Ford Vehicle Derivation Procedure

Thanks David, We still need the test parameters (target road load coefficent, ETW, Can load info, tires size...)

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 3:59 PM
To: Ball, Joel; Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.)
Subject: Ford Vehicle Derivation Procedure

Joel,

The attached testing procedure file can be used for the Derivation Procedure on Ford vehicle **DL500090, 2013 CMAX PHEV**.

Please note:

Do not use Augmented Braking.

PRNDL should be in park and key off when not in use.

Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, May 19, 2014 2:57 PM
To: Szajner, David (D.J.); Mazaitis, Vincent
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: RE: Ford Vehicle Delivery

Hi David,

Could you please email me the test information normally submitted in the supplemental info and the instructions for setting dyno mode and running the road-load derivation. Also will you be providing a charger or will we use the generic one? Will you be providing a voltage stabilizer? What mode (normal, eco...) will the testing be performed in?

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 2:16 PM
To: Mazaitis, Vincent; Ball, Joel
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery this afternoon of Ford vehicle **DL500090, 2013 CMAX PHEV** for EPA Testing.

During this duration of Ford HEV vehicle Testing at EPA, a Ford representative would like be present for both the Roadload and Test.

The primary Ford Engineers would be Jimmy Kapadia (jkapadia@ford.com) 313-805-0732, or T.J. Cusumano (tcusuma@ford.com) 313-806-6083.

Please include them in all updates with the current EPA testing schedule.

If you have any questions or concerns, please contact me. Thanks again.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/20/2014 3:16:59 PM
To: Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]; Bochenek, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d9456788ef034b79a06044ce4afa910a-Bochenek, David]; Smithson, Arlene [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3bca2eb135f40fa80d94d35be1e516e-Smithson, Arlene]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]; McBryde, Dan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6ba1b9547aff4c93bcfb8899c7ca094a-McBryde, Dan]
Subject: FW: PHEV test parameters for Veh. DL500090

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Tuesday, May 20, 2014 9:46 AM
To: Ball, Joel
Subject: FW: PHEV test parameters for Veh. DL500090

Joel, below are test parameters for subject vehicle.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Wu, Ruowen (R.)
Sent: Tuesday, May 20, 2014 9:38 AM
To: Fuher, Michael (M.J.)
Cc: Wu, Ruowen (R.)
Subject: PHEV test parameters for Veh. DL500090

Mike,

The basic test parameters are:

ETW	4250
F0	28.82
F1	0.3435
F2	0.02102
CDT	20.1

Tire size P225/50R17
Tire pressure 38

Canister volume & working capacity 2.8L, 190

Please let me know if more parameters are needed.

Ruowen Wu
Certification Engineering
1500 Enterprise Dr. Suite 3W-200
Allen Park, MI 48101-2053
Tel. 313/390-7247 Fax. 313/390-1243
e-mail. rwu5@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/29/2014 5:16:55 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: EPA Request: 1.6L M/T

Hi Mike, see my responses in red text below:

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Thursday, May 29, 2014 1:08 PM
To: Ball, Joel
Subject: RE: EPA Request: 1.6L M/T

Yes, Joel. Brennan has confirmed the schedules you typed below are the ones to use for the testing.
Sorry we didn't provide it in the initial email.

Would you guess things are on track to complete the 1.6L auto and 1.6L manual on Friday, and then the SFE on Tuesday?
Yes It appears so.
Any decisions made yet regarding charge-depleting testing next week? We will most likely waive this testing
Are you able to share preliminary mpg for the charge-sustaining city from yesterday? Unofficially I can say the MPG was within 3 %. The official results will be available after the validation checks are complete.

Thanks!!

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Thursday, May 29, 2014 1:00 PM
To: Fuher, Michael (M.J.)
Subject: RE: EPA Request: 1.6L M/T

Are these the correct shift schedules for this vehicle?

FTP 662
highway 316

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Thursday, May 29, 2014 11:04 AM
To: Ball, Joel
Subject: FW: EPA Request: 1.6L M/T

Joel, below are test specs for the manual transmission vehicle delivered this morning.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Graham, Brennan (B.K.)
Sent: Thursday, May 29, 2014 10:56 AM
To: Fuher, Michael (M.J.)
Cc: Cusumano, Jacob (J.J.)
Subject: RE: EPA Request: 1.6L M/T

Vehicle: EM100006
ETW: 2875
TRLHP: 10.9
Track Force Coefficient f0: 22.82
Track Force Coefficient f1: 0.2127
Track Force Coefficient f2: 0.01937
Canister Working Capacity: 105 g
Canister Volume: 1.8 L
Fuel Tank 40% Fill: 5 gal

Please let me know if there is any additional information that you require.

Thank You,
Brennan Graham
Fuel Economy Programs
Allen Park Test Laboratory (APTL) 3BH09
Bgraha45@ford.com | 313-322-5623

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/29/2014 5:18:28 PM
To: Spieth, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7a48ef6030334c91bc8b660a14054aa0-Spieth, John]; Haynes, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=989be6b2780c4b27ac3a736417e80cea-Haynes, Ben]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
Subject: RE: EPA Request: 1.6L M/T

Hi Ben,

These are the correct shift schedules for this vehicle:

FTP 662
highway 316

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Thursday, May 29, 2014 12:39 PM
To: Spieth, John; Haynes, Ben; Mazaitis, Vincent
Subject: FW: EPA Request: 1.6L M/T

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Thursday, May 29, 2014 11:04 AM
To: Ball, Joel
Subject: FW: EPA Request: 1.6L M/T

Joel, below are test specs for the manual transmission vehicle delivered this morning.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Graham, Brennan (B.K.)

Sent: Thursday, May 29, 2014 10:56 AM
To: Fuher, Michael (M.J.)
Cc: Cusumano, Jacob (J.J.)
Subject: RE: EPA Request: 1.6L M/T

Vehicle: EM100006
ETW: 2875
TRLHP: 10.9
Track Force Coefficient f0: 22.82
Track Force Coefficient f1: 0.2127
Track Force Coefficient f2: 0.01937
Canister Working Capacity: 105 g
Canister Volume: 1.8 L
Fuel Tank 40% Fill: 5 gal

Please let me know if there is any additional information that you require.

Thank You,
Brennan Graham
Fuel Economy Programs
Allen Park Test Laboratory (APTL) 3BH09
Bgraha45@ford.com | 313-322-5623

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/20/2014 5:59:45 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
CC: McBryde, Dan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6ba1b9547aff4c93bcfb8899c7ca094a-McBryde, Dan]; Smithson, Arlene [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3bca2eb135f40fa80d94d35be1e516e-Smithson, Arlene]; Spieth, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7a48ef6030334c91bc8b660a14054aa0-Spieth, John]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]; Kapadia, Jimmy (J.H.) [jkapadia@ford.com]; Cusumano, Thomas (T.J.) [tcusuma1@ford.com]
Subject: RE: PHEV test parameters for Veh. DL500090

Please make sure to drop the charger off by noon tomorrow.

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Tuesday, May 20, 2014 11:39 AM
To: Ball, Joel
Subject: RE: PHEV test parameters for Veh. DL500090

Joel, my understanding is that Ford will provide a charger for the CD tests (not needed for CS test), but we don't plan to provide any "voltage stabilizer".

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Tuesday, May 20, 2014 11:18 AM
To: Fuher, Michael (M.J.)
Subject: RE: PHEV test parameters for Veh. DL500090

Thanks Mike,

Will you be providing a charger for the CD test or will we use the generic charger?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Tuesday, May 20, 2014 9:46 AM
To: Ball, Joel
Subject: FW: PHEV test parameters for Veh. DL500090

Joel, below are test parameters for subject vehicle.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Wu, Ruowen (R.)
Sent: Tuesday, May 20, 2014 9:38 AM
To: Fuher, Michael (M.J.)
Cc: Wu, Ruowen (R.)
Subject: PHEV test parameters for Veh. DL500090

Mike,

The basic test parameters are:

ETW	4250
F0	28.82
F1	0.3435
F2	0.02102
CDT	20.1

Tire size P225/50R17
Tire pressure 38

Canister volume & working capacity 2.8L, 190

Please let me know if more parameters are needed.

Ruowen Wu
Certification Engineering
1500 Enterprise Dr. Suite 3W-200
Allen Park, MI 48101-2053
Tel. 313/390-7247 Fax. 313/390-1243
e-mail. rwu5@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/20/2014 12:05:54 PM
To: Bochenek, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d9456788ef034b79a06044ce4afa910a-Bochenek, David]
Subject: FW: Ford Vehicle Derivation Procedure
Attachments: Fusion-CMAX.txt

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 3:59 PM
To: Ball, Joel; Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.)
Subject: Ford Vehicle Derivation Procedure

Joel,

The attached testing procedure file can be used for the Derivation Procedure on Ford vehicle **DL500090, 2013 CMAX PHEV**.

Please note:

Do not use Augmented Braking.

PRNDL should be in park and key off when not in use.

Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, May 19, 2014 2:57 PM
To: Szajner, David (D.J.); Mazaitis, Vincent
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: RE: Ford Vehicle Delivery

Hi David,

Could you please email me the test information normally submitted in the supplemental info and the instructions for setting dyno mode and running the road-load derivation. Also will you be providing a charger or will we

use the generic one? Will you be providing a voltage stabilizer? What mode (normal, eco...) will the testing be performed in?

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 2:16 PM
To: Mazaitis, Vincent; Ball, Joel
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery this afternoon of Ford vehicle **DL500090, 2013 CMAX PHEV** for EPA Testing.

During this duration of Ford HEV vehicle Testing at EPA, a Ford representative would like be present for both the Roadload and Test.

The primary Ford Engineers would be Jimmy Kapadia (jkapadia@ford.com) 313-805-0732, or T.J. Cusumano (tcusuma@ford.com) 313-806-6083.

Please include them in all updates with the current EPA testing schedule.

If you have any questions or concerns, please contact me. Thanks again.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/21/2014 8:46:18 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Szajner, David (D.J.) [dszajner@ford.com]; Mazaitis, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3852485d8ac641d8ad91035a5de7c82b-Mazaitis, Vincent]
CC: Kapadia, Jimmy (J.H.) [jkapadia@ford.com]; Cusumano, Thomas (T.J.) [tcusuma1@ford.com]; Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: Ford Vehicle Derivation Procedure

Correction:

The Prep for the CS re-test will begin at 6:30 am tomorrow (Thursday 5-22)

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Wednesday, May 21, 2014 4:44 PM
To: 'Szajner, David (D.J.)'; Mazaitis, Vincent
Cc: 'Kapadia, Jimmy (J.H.)'; 'Cusumano, Thomas (T.J.)'; 'Fuher, Michael (M.J.)'
Subject: RE: Ford Vehicle Derivation Procedure

The Prep for the CS re-test will begin at 6:30 am tomorrow (5-24)

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Tuesday, May 20, 2014 8:58 AM
To: 'Szajner, David (D.J.)'; Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); 'Fuher, Michael (M.J.)'
Subject: RE: Ford Vehicle Derivation Procedure

Hi David,

The road load and prep are scheduled for 2:30 pm today.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 3:59 PM
To: Ball, Joel; Mazaitis, Vincent
Cc: Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.)
Subject: Ford Vehicle Derivation Procedure

Joel,

The attached testing procedure file can be used for the Derivation Procedure on Ford vehicle **DL500090, 2013 CMAX PHEV**.

Please note:

Do not use Augmented Braking.

PRNDL should be in park and key off when not in use.

Engineer to check of battery SOC 1/2 hour after prep via PTDiag.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, May 19, 2014 2:57 PM
To: Szajner, David (D.J.); Mazaitis, Vincent
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: RE: Ford Vehicle Delivery

Hi David,

Could you please email me the test information normally submitted in the supplemental info and the instructions for setting dyno mode and running the road-load derivation. Also will you be providing a charger or will we use the generic one? Will you be providing a voltage stabilizer? What mode (normal, eco...) will the testing be performed in?

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Szajner, David (D.J.) [mailto:dszajner@ford.com]
Sent: Monday, May 19, 2014 2:16 PM
To: Mazaitis, Vincent; Ball, Joel
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Duffy, Matthew (.); Salciccioli, Nick (N.); Dabbs, John (J.P.)
Subject: Ford Vehicle Delivery

Gentlemen,

Please expect delivery this afternoon of Ford vehicle **DL500090, 2013 CMAX PHEV** for EPA Testing.

During this duration of Ford HEV vehicle Testing at EPA, a Ford representative would like be present for both the Roadload and Test.

The primary Ford Engineers would be Jimmy Kapadia (jkapadia@ford.com) 313-805-0732, or T.J. Cusumano (tcusuma@ford.com) 313-806-6083.

Please include them in all updates with the current EPA testing schedule.

If you have any questions or concerns, please contact me. Thanks again.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/21/2014 5:53:17 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: CMax special instructions

Nevermind, I received them form Matthew Duffy.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Wednesday, May 21, 2014 1:50 PM
To: 'Fuher, Michael (M.J.)'
Cc: Spieth, John; Bochenek, David; McBryde, Dan; Smithson, Arlene; Mazaitis, Vincent; Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Heiser, Glen (G.A.)
Subject: RE: CMax special instructions

Hi Mike

Will you be sending the instructions for the CD test?

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, May 21, 2014 1:43 PM
To: Ball, Joel
Cc: Spieth, John; Bochenek, David; McBryde, Dan; Smithson, Arlene; Mazaitis, Vincent; Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Heiser, Glen (G.A.)
Subject: RE: CMax special instructions

Thanks Joel.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, May 21, 2014 1:40 PM
To: Fuher, Michael (M.J.)
Cc: Spieth, John; Bochenek, David; McBryde, Dan; Smithson, Arlene; Mazaitis, Vincent; Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Heiser, Glen (G.A.)
Subject: RE: CMax special instructions

Hi Mike,

We do not normally run 3 day evap tests. The 2-day canister load process does not purge the vehicle canister. The 30 L/min rate is used to purge the slave canister (used to determine 2g break though).

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, May 21, 2014 11:34 AM
To: Ball, Joel
Cc: Spieth, John; Bochenek, David; McBryde, Dan; Smithson, Arlene; Mazaitis, Vincent; Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.); Heiser, Glen (G.A.)
Subject: RE: CMax special instructions

Hi Joel.

We reviewed the CARB procedure and SAE J1711 and our read is that the battery should be in a charge sustaining condition at the end of the preconditioning drive, even for a charge depleting test. I agree you raise a good point as to the value of this requirement given only hours later the battery will be fully charged. At the same time, it is highly likely the battery already will be in this condition because it will have just completed a charge sustaining test.

We believe the canister load and fuel tank drain/fill steps are required despite the addition time required. We do not recommend any changes to the instructions.

Our CFR read of the canister purge process is that is conducted at nominal flow rate of 0.8cfm (22.7 L/m). Is the 30L/m purge rate EPA's normal purge rate for all car and truck tests?

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Wednesday, May 21, 2014 10:24 AM
To: Fuher, Michael (M.J.)
Cc: Spieth, John; Bochenek, David; McBryde, Dan; Smithson, Arlene; Mazaitis, Vincent; Kapadia, Jimmy (J.H.); Cusumano, Thomas (T.J.)
Subject: FW: CMax special instructions

Hi Mike,

I would like to confirm that we will follow the procedure outlined in the attached document for the charge sustaining test with the one exception of the purge rate. We will purge the canister at a rate of 30 L/m.

Could you please confirm which parts of this procedure are necessary for the charge depleting test. Obviously the road load derivation will not be needed and charging will be, but it also does not seem necessary to check the SOC or run additional preconditioning to match the SOC window. Since the CD test will not be part of an evap test sequence, is it necessary to load the canister? It will add another day to the testing which, in that case, could not be completed until after the holiday next week. If you feel that it is necessary to match your CD test, we are happy to do it just understand that it will take a few days longer.

Please update the document to reflect the instructions for the CD test .

Thanks

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Spieth, John
Sent: Wednesday, May 21, 2014 9:10 AM
To: Bochenek, David; Ball, Joel
Subject: CMax special instructions

Joel, please see attached special procedure. They go something like this:

1st drain & fill
RLD
2 preps, wait 30 min, check SOC, repeat as necessary
2nd drain & faill
8.5 hour purge (at our purge rate, somewhat faster than Ford's)
Within 1 hour of purge completion, 3rd drain and fill
6 hour soak
Test

Ford told Arlene or Dave that it would be required for the charge depleting city test as well (but not the highway, as we understand)

If we can skip on the charge depleting, we could probably finish on Friday

Thanks,
John

From: EZTech_Printer [mailto:EZTek@epa.gov]
Sent: Wednesday, May 21, 2014 7:58 AM
To: Spieth, John
Subject:

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 5/15/2014 6:29:13 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
Subject: FW: As Requested: Ford April 10th TRLHP Update Slides
Attachments: TRLHP EPA UPDATE 051414 Final.pdf

Sensitivity: Company Confidential

Byron,

Here is the Ford presentation from yesterday. Did you want to just share this with Chris as is and we'd quickly walk him through it or were you wanting me to summarize the slides into a separate Powerpoint presentation?

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Heiser, Glen (G.A.) [mailto:gheiser@ford.com]
Sent: Thursday, May 15, 2014 2:02 PM
To: Wehrly, Linc
Cc: Holycross, Bob (R.T.)
Subject: RE: As Requested: Ford April 10th TRLHP Update Slides
Sensitivity: Confidential

Linc,

CBI / Ex. 4

CBI / Ex. 4

Thank you for your attention to this request.

Kind regards,

Glen A. Heiser

Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 6/10/2014 4:17:19 PM
To: Birgfeld, Erin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3383bc15dd5542e5bff5c3de13ba9bf2-EBIRGFEL]; Snapp, Lisa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16e26d18ae97412c99db2f8ed5419449-Snapp, Lisa]; Alson, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cbf363ab0a3944e4ae80def70b9826ba-Alson, Jeff]; Mylan, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=70798537ae234bdeb55b66364fb8f220-Mylan, Christopher]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
CC: Grundler, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d3be58c2cc8545d88cf74f3896d4460f-Grundler, Christopher]
Subject: Final Ford FE values
Attachments: Ford Fuel Economy Value Updates.docx

Erin,

Here are the final new fuel economy label values for the Ford vehicles. We can discuss this more at the meeting this afternoon, but you will notice that the Ford Fiesta ST (performance version) label values did not change.

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Ford Fuel Economy Value Updates

		Old Label Values			New Label Values		
Model	Trimline and transmission	Combined (mpg)	City (mpg)	Highway (mpg)	Combined (mpg)	City (mpg)	Highway (mpg)
Fiesta (2014 only)	automatic	32	29	39	31	27	37
	manual	31	27	38	31	28	36
	SFE automatic	34	30	41	32	28	38
	SFE manual	37	32	45	36	31	43
	ST	29	26	35	NO CHANGE		
Fusion Hybrid (2013 and 2014)		47	47	47	42	44	41
C-Max Hybrid* (2013 and 2014)		43	45	40	40	42	37
Lincoln MKZ Hybrid (2013 and 2014)		45	45	45	38	38	37
Fusion Energi Plug-in Hybrid (2013 and 2014)		43	44	41	38	40	36
C-Max Energi Plug-in Hybrid (2013 and 2014)		43	44	41	38	40	36

*The C-Max Hybrid was previously re-labeled in August 2013, with its combined label value lowered from 47 mpg to 43 mpg.

Message

From: Birgfeld, Erin [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3383BC15DD5542E5BFF5C3DE13BA9BF2-EBIRGFEL]
Sent: 6/12/2014 5:47:23 PM
To: Grundler, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d3be58c2cc8545d88cf74f3896d4460f-Grundler, Christopher]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Snapp, Lisa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16e26d18ae97412c99db2f8ed5419449-Snapp, Lisa]; Mylan, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=70798537ae234bdeb55b66364fb8f220-Mylan, Christopher]; Hengst, Benjamin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c414e2bf04a246bb987d88498eefff06-Hengst, Benjamin]
CC: Alson, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cbf363ab0a3944e4ae80def70b9826ba-Alson, Jeff]; Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]; McMichael, Nate [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=58fb85a6a601456d87c58f23c40015d0-NMcMicha]
Subject: FORD PR - I will print out copies for the DC folks for the 2 pm
Attachments: FE Press Release FINAL 6-12014.pdf

Importance: High

Erin Birgfeld
Director of Communications
Office of Transportation and Air Quality
Tel: 202.564.6741
Cell: 202.255.4434

From: Purchia, Liz
Sent: Thursday, June 12, 2014 1:45 PM
To: Birgfeld, Erin; Jones, Enesta
Subject: FW: our document

Liz Purchia
Press Secretary
U.S. Environmental Protection Agency
Direct: 202-564-6691
Cell: 202-841-2230

From: Baker, Christin (C.) [mailto:cbake117@ford.com]
Sent: Thursday, June 12, 2014 1:44 PM
To: Purchia, Liz
Subject: our document

Christin Tinsworth Baker | Corporate Communications | Ford Motor Company | d: 202-962-5368 | c: 313-574-8732 | **cbake117@ford.com**

| NEWS

www.facebook.com/ford www.twitter.com/ford

Ford Motor Company Lowers Fuel Economy Ratings For Six Vehicles

- Ford identified an error with fuel economy ratings for certain vehicles through its internal testing and notified the U.S. Environmental Protection Agency (EPA)
- Ford worked with EPA as the agency retested the vehicles, which resulted in lower fuel economy ratings for Ford's 2013- and 2014-model year hybrid and plug-in hybrid vehicles, as well as most 2014-model year Fiestas
- The company apologizes to its customers, and will make goodwill payments to owners of the approximately 200,000 affected U.S. vehicles for the difference between the previous and revised ratings
- Ford reviewed its entire line up to determine the vehicles that required further testing and revised the fuel economy ratings for the affected vehicles. No other fuel economy ratings adjustments are planned

DEARBORN, Michigan, June 12, 2014 – Ford Motor Company announced today it is lowering the fuel economy ratings for its 2013- and 2014-model year hybrid and plug-in hybrid vehicles, as well as most 2014-model year Fiestas.

Ford identified an error with fuel economy ratings on certain vehicles through its internal testing and notified EPA. The company worked with EPA as the agency retested the vehicles to determine the correct fuel economy ratings.

"Ford is absolutely committed to delivering top fuel economy and accurate information," said Alan Mulally, Ford president and CEO. "We apologize to our customers and will provide goodwill payments to affected owners. We also are taking steps to improve our processes and prevent issues like this from happening again."

Ford reviewed its entire line up to determine the vehicles that required further testing and revised the fuel economy ratings for the affected vehicles. No other label adjustments are planned.

"This is our error. When we see an issue, we address it," said Raj Nair, Ford group vice president, Global Product Development. "That is why we notified EPA and lowered the fuel economy ratings for these vehicles."

Fuel Economy Testing
Fuel economy testing involves many factors. Ford's error was specific to a factor called "Total Road Load Horsepower", or TRLHP. TRLHP is a vehicle-specific resistance level used in vehicle dynamometer testing that determines fuel economy ratings. TRLHP is established through engineering models that are validated through vehicle testing, including physical track tests referred to as coastdown testing.

Use of these engineering models is a common industry practice, consistent with EPA regulations. These models normally are more reliable and consistent than physical vehicle tests, which can exhibit variability.

As an ongoing practice, Ford conducts tests on production vehicles to validate its engineering models. Based on coastdown testing of the Fusion Hybrid, the company found the TRLHP did not match the values used for the dynamometer testing.

Upon further testing, Ford also discovered an error specific to how we correlate wind tunnel results into the TRLHP model. Ford's error was the result of a recent process change, which the company has since corrected.

Ford has now validated through physical vehicle testing the TRLHP for the vehicles affected by this error and also has instituted enhanced validation tests for future vehicles to prevent reoccurrence of this error.

New Fuel Economy Ratings and Customer Information

Ford has communicated to its dealers that new fuel economy labels will be available in approximately six days and that dealers may continue selling the vehicles until the new labels are received.

Ford estimates that approximately 200,000 of these vehicles have been sold or leased to customers in the United States. Affected Ford and Lincoln owners and lessees in the United States will receive a goodwill payment for the estimated average fuel cost of the difference between the two fuel economy labels, as shown in the table below.

Affected U.S. fleet owners and affected owners outside of the United States will be contacted by their local Ford representatives.

Customers with questions can contact the Ford Customer Relationship Center at 1-866-436-7332 or visit: www.ford.com/mpglabel and www.lincoln.com/mpglabel.

U.S. EPA-Estimated Fuel Economy Label Ratings and Goodwill Payments*

Model Year	Vehicle	Powertrain	Revised *(City, Highway, Combined)*	Previous *(City, Highway, Combined)*	Lease Customers	Purchase Customers
2014	Fiesta	1.0L GTDI M/T	31 / 43 / **36**	32 / 45 / **37**	$125	$200
		1.6L A/T	27 / 37 / **31**	29 / 39 / **32**	$150	$250
		1.6L SFE A/T	28 / 38 / **32**	30 / 41 / **34**	$275	$450
		1.6L M/T	28 / 36 / **31**	27 / 38 / **31**	Combined MPG not affected	Combined MPG not affected
2013-14	C-MAX	Hybrid	42 / 37 / **40**	45 / 40 / **43**	$300	$475
	Fusion	Hybrid	44 / 41 / **42**	47 / 47 / **47**	$450	$775
	MKZ	Hybrid	38 / 37 / **38**	45 / 45 / **45**	$625	$1,050
Model Year	**Vehicle**	**Powertrain**	**Revised**** *(Charge Sustaining, Charge Depleting, EV Range)*	**Previous**** *(Charge Sustaining, Charge Depleting, EV Range)*	**Lease Customers**	**Purchase Customers**
2013-14	C-MAX Energi	Plug-in Hybrid	**38** mpg / 88 MPGe+ / 19 mi EV range	**43** mpg / 100 MPGe+ / 21 mi EV range	$475	$775
	Fusion Energi	Plug-in Hybrid	**38** mpg / 88 MPGe+ / 19 mi EV range	**43** mpg / 100 MPGe+ / 21 mi EV range	$525	$850

**Bolded figures in the above chart represent the values used to determine the customer goodwill payment.*
*** Combined numbers only. Revised EPA-estimated ratings: 40 city, 36 highway MPG; 95 city, 81 highway MPGe. Charge depleting range is 20 mi. Previous EPA-estimated ratings: 44 city, 41 highway MPG; 108 city, 92 hwy MPGe. Previous charge depleting range was 21.*
+MPGe is the EPA equivalent measure of gasoline fuel efficiency for electric mode operation.

# # #

For news releases, related materials and high-resolution photos and video, visit www.media.ford.com.

About Ford Motor Company

Ford Motor Company, a global automotive industry leader based in Dearborn, Michigan, manufactures or distributes automobiles across six continents. With about 183,000 employees and 65 plants worldwide, the company's automotive brands include Ford and Lincoln. The company provides financial services through Ford Motor Credit Company. For more information regarding Ford and its products worldwide, please visit www.corporate.ford.com.

Contacts: Said Deep
313.594-0942
sdeep@ford.com

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 5/28/2014 12:33:38 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
Subject: FW: 2014 Fiesta Label Tree
Attachments: 2014 Fiesta Labels.xlsx

Byron,

Here is Ford's proposal for what they are testing, using ADFE, and data substitution for the Fiestas. They have five labels that are made up of 13 subconfigurations. The 1.6L ATX (5-door with 15" wheels) is here at the lab and is getting prepped today and tested tomorrow. The 1.6L MTX will be tested at Ford today and we will get the vehicle either late today or tomorrow, meaning it probably won't get tested until Friday. Hopefully, Ford should know what the appropriate RL is for the 1.6L ATX SFE is by now and can share it with us so that we can test the SFE version on Friday as well. The C-Max Energi is getting its third charge sustaining FTP test today. I think running a charge depleting test is now out of the question. If we are still hoping for an announcement early next week, we are getting very close to the deadline for stopping our testing and performing QC and review.

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Ball, Joel
Sent: Wednesday, May 28, 2014 6:37 AM
To: Wehrly, Linc
Subject: FW: 2014 Fiesta Label Tree

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Tuesday, May 27, 2014 5:42 PM
To: Ball, Joel
Subject: 2014 Fiesta Label Tree

Joel,
I just created this spreadsheet with label trees for the 2014 Fiesta and wanted to get it out to you quickly. I might do some fine tuning tomorrow if needed. It's based on my current understanding. We can discuss more tomorrow, but

basically data are required where blue is shaded, and purple represents discretionary test point pending the outcome of the blue data.

Thanks, Mike Fuher, P.E.

Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Message

From: Heiser, Glen (G.A.) [gheiser@ford.com]
Sent: 4/3/2014 7:55:24 PM
To: Haugen, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5f7076c89c214ff5af375a2d788aba0c-Haugen, David]; Derksen, Kimberly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=17034f587f114032927774f8e91ca41f-Derksen, Kimberly]
CC: Paige, Dennis (D.J.) [dpaige@ford.com]; Brusstar, Matt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1b414a2c957e4e6084eacb0ed8b9a1d0-Brusstar, Matt]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Waite, Sherry [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=780f05f87a0b4de0ba2d59b80e3e0f3d-Waite, Sherry L.]
Subject: RE: EPA Ann Arbor Lab, interest in meeting & touring Allen Park Test Lab

David,

My apologies for not following up sooner. I am happy to work with Kim to get this set up.

Kind regards,

Glen A. Heiser

Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

From: Haugen, David [mailto:haugen.david@epa.gov]
Sent: Thursday, April 03, 2014 1:59 PM
To: Derksen, Kimberly
Cc: Paige, Dennis (D.J.); Brusstar, Matt; Heiser, Glen (G.A.); Bunker, Byron; Waite, Sherry
Subject: RE: EPA Ann Arbor Lab, interest in meeting & touring Allen Park Test Lab

Kim,
Can you please work with Byron's assistant (Sherry?) and Glen Heiser to coordinate on behalf of our EPA team a contingent touring Ford's APTL.

The suggested EPA attendees are listed below –
This is not urgent, so anytime in April or even early May would be fine.
Thanks, David

From: Haugen, David
Sent: Friday, March 28, 2014 8:28 AM
To: Heiser, Glen (G.A.)
Cc: Paige, Dennis (D.J.); Derksen, Kimberly; Brusstar, Matt
Subject: RE: EPA Ann Arbor Lab, interest in meeting & touring Allen Park Test Lab

Glen (& Dennis),
Thanks for the prompt reply and acceptance to my request.

As I mentioned, I think the group of EPA managers interested in joining this tour is not huge, but maybe 6-8 in size and would likely consist of the two lab managers who supervise LD vehicle compliance testing (Peralta & Spieth), the manager who supervises the testing services testing equipment O&M, data system integration (Nelson), perhaps my Fuels manager (Kolowich), perhaps my Deputy (Brusstar), myself, and then likely the LD Compliance manager Linc Wehrly or Linc's boss who is my counterpart Byron Bunker who is EPA's Compliance Division Director, and a Ford Cert Rep.

I will ask my assistant Kim Derksen to help with coordination of a date and time that will work best for APTL and allow those at EPA most interested the opportunity to join.

Is there a point of contact Kim should reach out to on your side? I would suggest that we tackle this by starting with a few dates mid-April or later.

Thanks again for your acceptance - we are looking forward to meeting you and seeing APTL.
David

From: Heiser, Glen (G.A.) <gheiser@ford.com>
Sent: Thursday, March 27, 2014 7:49 PM
To: Haugen, David
Cc: Paige, Dennis (D.J.)
Subject: RE: EPA Ann Arbor Lab, interest in meeting & touring Allen Park Test Lab

David,

As a way of introduction, I am the Manager of the Correlation and Fuel Economy Engineering Department. Part of my role is to be the interface with EPA in relation to Fuel Economy Testing and Laboratory/Test Equipment aspects.

I would be happy to work with Dennis and his staff to host you and your staff in a tour of our Allen Park Test Laboratory. Feel free to contact me at any time and we can discuss details.

Kind regards,
Glen A. Heiser
Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

From: Haugen, David [mailto:haugen.david@epa.gov]
Sent: Thursday, March 27, 2014 6:17 PM
To: Paige, Dennis (D.J.)
Cc: Heiser, Glen (G.A.)
Subject: EPA Ann Arbor Lab, interest in meeting & touring Allen Park Test Lab

Dennis,
As way of introduction, I am the Laboratory Director for EPA's National Vehicle and Fuel Emissions Laboratory in Ann Arbor. As I am sure you know, we conduct EPA's Cert Confirmatory and In-Use Verification emissions testing of all passenger car vehicles sold in the U.S (along with emissions compliance testing of heavy duty engines, small non-road engines, and transportation fuels).

We/EPA have initiated one-time Lab tour/technical exchanges between other automakers test labs in the area and NVFEL in the past two years, and I am interested in exploring a similar arrangement with Ford by requesting a visit to your Allen Park Test Lab.

Would you be open to offering a few of my staff and I a brief tour of your testing capabilities in exchange for a similar tour of EPA's Ann Arbor Lab?
Thanks in advance for your consideration of this request,

David

Dr. David Haugen, P.E.
Director, Testing and Advanced Technology Division
National Vehicle and Fuel Emissions Laboratory
U.S. EPA's Office of Transportation and Air Quality
PHONE: (734) 214-4366; FAX: (734) 214-4573; EMAIL: haugen.david@epa.gov
INTERNET: http://www.epa.gov/NVFEL
->->->->->->->->->->->->->->->--<-<-<-<-<-<-<-<-<-<-<-<-<-<-<-<-<-<-<-<-

Not responsive

Not responsive

From: Heiser, Glen (G.A.) [mailto:gheiser@ford.com]
Sent: Thursday, April 03, 2014 6:37 PM
To: Wehrly, Linc
Cc: Holycross, Bob (R.T.)
Subject: As Requested: Ford TRLHP Update Slides

Linc,

th

ed

CBI / Ex. 4

r

Thank you for your attention to this request.

Kind regards,

Glen A. Heiser

Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

Message

From: Grundler, Christopher [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3BE58C2CC8545D88CF74F3896D4460F-GRUNDLER, CHRISTOPHER]
Sent: 3/31/2014 3:53:47 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
Subject: Re: Call with Robert Brown - today if possible

Got it. Just landed

Christopher Grundler, Director
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202.564.1682 (DC)
734.214.4207 (Ann Arbor)
www.epa.gov/otaq

From: Bunker, Byron
Sent: Monday, March 31, 2014 10:43 AM
To: Grundler, Christopher
Cc: Charmley, William; Hengst, Benjamin; Wehrly, Linc
Subject: Call with Robert Brown - today if possible

Hi Chris,

I hope that your travel to God's country is going smoothly.

Bob Holycross called me late on Friday to let me know that Ford has an issue with the road load values for the Ford Fusion Hybrid. Ford is hoping to do some testing with us over the next six weeks to get a new value that will then lead to relabeling at least that vehicle. Robert Brown would like to visit with you by phone about this over the next few days. I think he realizes that he didn't engage with you as well as he should have during the C-Max relabel and wants to do better this time around.

Bob has let Robert know that you are on travel today and tomorrow. If you have time, Robert would like to talk to you as early as today, but he understands that it may not be possible to connect until you return from your trip. If you can make time, Robert's contact information is attached at the bottom of this e-mail.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

I am out of the office today but can be reached on my cell phone if you would like to talk (734) 353-9623.

Thanks,

Byron

From: Holycross, Bob (R.T.) <rholycro@ford.com>
Sent: Monday, March 31, 2014 10:43 AM
To: Bunker, Byron
Subject: Contact Information

Byron,
Robert's assistant is Deanna Rowe. Her direct line is 313-248-2138. Robert's direct line is 313-248-2137. Deanna put a call into Gwen, but I mentioned that you haven't spoken to Chris. I assume that you will coordinate with Gwen on when to get back with Robert's office once you have spoken to Chris. Feel free to give me a call in the meantime. Thanks, Byron.

Bob Holycross
Director
Global Certification & Program Compliance
Sustainability, Environment & Safety Engineering
Ford Motor Company
Phone: (313) 845-8247 E-Mail: rholycro@ford.com

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 3/31/2014 6:22:18 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Grundler, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d3be58c2cc8545d88cf74f3896d4460f-Grundler, Christopher]
CC: Charmley, William [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fb1828fb00af42ffb68b9e0a71626d95-Charmley, William]; Hengst, Benjamin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c414e2bf04a246bb987d88498eefff06-Hengst, Benjamin]
Subject: RE: Call with Robert Brown - today if possible

Chris and Byron,

Deliberative Process / Ex. 5

Thanks,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Bunker, Byron
Sent: Monday, March 31, 2014 11:43 AM
To: Grundler, Christopher
Cc: Charmley, William; Hengst, Benjamin; Wehrly, Linc
Subject: Call with Robert Brown - today if possible

Hi Chris,

I hope that your travel to God's country is going smoothly.

Bob Holycross called me late on Friday to let me know that Ford has an issue with the road load values for the Ford Fusion Hybrid. Ford is hoping to do some testing with us over the next six weeks to get a new value that will then lead to relabeling at least that vehicle. Robert Brown would like to visit with you by phone about this over the next few days. I think he realizes that he didn't engage with you as well as he should have during the C-Max relabel and wants to do better this time around.

Bob has let Robert know that you are on travel today and tomorrow. If you have time, Robert would like to talk to you as early as today, but he understands that it may not be possible to connect until you return from your trip. If you can make time, Robert's contact information is attached at the bottom of this e-mail.

Deliberative Process / Ex. 5

I am out of the office today but can be reached on my cell phone if you would like to talk (734) 353-9623.

Thanks,

Byron

From: Holycross, Bob (R.T.) <rholycro@ford.com>
Sent: Monday, March 31, 2014 10:43 AM
To: Bunker, Byron
Subject: Contact Information

Byron,
Robert's assistant is Deanna Rowe. Her direct line is 313-248-2138. Robert's direct line is 313-248-2137. Deanna put a call into Gwen, but I mentioned that you haven't spoken to Chris. I assume that you will coordinate with Gwen on when to get back with Robert's office once you have spoken to Chris. Feel free to give me a call in the meantime. Thanks, Byron.

Bob Holycross
Director
Global Certification & Program Compliance
Sustainability, Environment & Safety Engineering
Ford Motor Company
Phone: (313) 845-8247 E-Mail: rholycro@ford.com

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/17/2014 7:57:49 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]

Subject: FE discussion with Ford
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/22/2014 5:00:00 PM
End: 4/22/2014 6:00:00 PM
Show Time As: Tentative

Meeting to discuss status of Ford FE and coastdown testing

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/22/2014 11:18:56 AM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
Subject: FW: TRLHP Timeline
Attachments: GPDS Timeline.pdf

Byron,

Here is the timeline slide from Ford. It's a little busy and confusing, but I think we can use it. Also note in Mike's message

CBI / Ex. 4

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Monday, April 21, 2014 6:12 PM
To: Wehrly, Linc
Cc: Heiser, Glen (G.A.)
Subject: TRLHP Timeline

CBI / Ex. 4

CBI / Ex. 4

Thank you for your attention to this request.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Heiser, Glen (G.A.) [mailto:gheiser@ford.com]
Sent: Thursday, April 03, 2014 6:37 PM
To: Wehrly, Linc
Cc: Holycross, Bob (R.T.)
Subject: As Requested: Ford TRLHP Update Slides

Linc,

CBI / Ex. 4

Thank you for your attention to this request.

Kind regards,

Glen A. Heiser
Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

Message

From: Bunker, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DDF7BCF023D241A9A477A2DC75D5901C-BUNKER, BYRON]
Sent: 5/28/2014 12:43:08 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]
Subject: RE: 2014 Fiesta Label Tree

Thanks Linc. This looks good to me assuming that it makes sense to you and Joel.

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: Wehrly, Linc
Sent: Wednesday, May 28, 2014 8:34 AM
To: Bunker, Byron
Subject: FW: 2014 Fiesta Label Tree

Byron,

Here is Ford's proposal for what they are testing, using ADFE, and data substitution for the Fiestas. They have five labels that are made up of 13 subconfigurations. The 1.6L ATX (5-door with 15" wheels) is here at the lab and is getting prepped today and tested tomorrow. The 1.6L MTX will be tested at Ford today and we will get the vehicle either late today or tomorrow, meaning it probably won't get tested until Friday. Hopefully, Ford should know what the appropriate RL is for the 1.6L ATX SFE is by now and can share it with us so that we can test the SFE version on Friday as well. The C-Max Energi is getting its third charge sustaining FTP test today. I think running a charge depleting test is now out of the question. If we are still hoping for an announcement early next week, we are getting very close to the deadline for stopping our testing and performing QC and review.

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Ball, Joel
Sent: Wednesday, May 28, 2014 6:37 AM
To: Wehrly, Linc
Subject: FW: 2014 Fiesta Label Tree

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Tuesday, May 27, 2014 5:42 PM
To: Ball, Joel
Subject: 2014 Fiesta Label Tree

Joel,
I just created this spreadsheet with label trees for the 2014 Fiesta and wanted to get it out to you quickly. I might do some fine tuning tomorrow if needed. It's based on my current understanding. We can discuss more tomorrow, but basically data are required where blue is shaded, and purple represents discretionary test point pending the outcome of the blue data.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/1/2014 5:14:43 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]

Subject: Ford Fusion HEV Discussion
Location: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE

Start: 4/3/2014 6:00:00 PM
End: 4/3/2014 8:00:00 PM
Show Time As: Tentative

Meet with Ford to discuss status of coastdown testing on new Ford hybrids.

Appointment

From: Dalton, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5E590CA117F84CC384ADCF13B68B4358-DALTON, JOEL]
Sent: 4/9/2014 5:07:16 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]

Subject: Accepted: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Busy

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/1/2014 5:14:43 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
BCC: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user38dad7c7]

Subject: Ford Fusion HEV Discussion
Location: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE

Start: 4/3/2014 6:00:00 PM
End: 4/3/2014 8:00:00 PM
Show Time As: Busy

Meet with Ford to discuss status of coastdown testing on new Ford hybrids.

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/17/2014 7:57:48 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]
BCC: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user38ddfc61]

Subject: FE discussion with Ford
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/22/2014 5:00:00 PM
End: 4/22/2014 6:00:00 PM
Show Time As: Busy

Meeting to discuss status of Ford FE and coastdown testing

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/9/2014 3:12:22 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
BCC: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user38ddfc61]

Subject: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Busy

Meeting with Bob Holycross, Glenn Heiser, and Mark Guenther to discuss coastdown results and plans for fuel economy testing.

Message

From: Heiser, Glen (G.A.) [gheiser@ford.com]
Sent: 4/3/2014 10:36:31 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]
CC: Holycross, Bob (R.T.) [rholycro@ford.com]
Subject: As Requested: Ford TRLHP Update Slides
Attachments: TRLHP EPA UPDATE 040314 Final CBI.pdf

Linc,

CBI / Ex. 4

Thank you for your attention to this request.

Kind regards,

Glen A. Heiser

Department Manager
Correlation and Fuel Economy Engineering - SE&SE
O: 313-59-40738
C: 313-348-4512

Appointment

From: Jones, Jacqueline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=16199688D4B34778ACE3767CF6ACB2AF-JONES, JACQUELINE]
Sent: 4/9/2014 4:31:00 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]

Subject: Accepted: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Busy

Appointment

From: Snyder, Jim [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=18260D02987D49E280FC03D2A8D18DDD-SNYDER, JIM]
Sent: 4/9/2014 3:58:47 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]

Subject: Accepted: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Busy

Appointment

From: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=USER38DDFC61]
Sent: 4/9/2014 3:12:26 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]

Subject: Accepted: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM

Recurrence: (none)

Your request was accepted.

Sent by Microsoft Exchange Server 2013

Message

From: Heiser, Glen (G.A.) [gheiser@ford.com]
Sent: 5/28/2014 10:05:36 PM
To: Wehrly, Linc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=64e5f31ccb4841018441b3bf074842d0-Wehrly, Linc]
Subject: FW: 2014 Fiesta Label Tree
Attachments: 2014 Fiesta Labels v2.xlsx

Linc,

FYI

Kind regards,

Glen A. Heiser

Manager, Correlation and Fuel Economy Engineering
Vehicle Homologation & Compliance, SE&SE
O: 313-59-40738
C: 313-348-4512

From: Fuher, Michael (M.J.)
Sent: Wednesday, May 28, 2014 5:30 PM
To: Ball, Joel (ball.joel@epa.gov)
Cc: Heiser, Glen (G.A.); Holycross, Bob (R.T.)
Subject: RE: 2014 Fiesta Label Tree

Hi Joel.

I made some minor updates (added current label values, added % Volume of Fiestas for each label, and updated some test dates).

Thanks, Mike Fuher, P.E.

Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Fuher, Michael (M.J.)
Sent: Tuesday, May 27, 2014 5:42 PM
To: Ball, Joel (ball.joel@epa.gov)
Subject: 2014 Fiesta Label Tree

Joel,

I just created this spreadsheet with label trees for the 2014 Fiesta and wanted to get it out to you quickly. I might do some fine tuning tomorrow if needed. It's based on my current understanding. We can discuss more tomorrow, but basically data are required where blue is shaded, and purple represents discretionary test point pending the outcome of the blue data.

<< File: 2014 Fiesta Labels.xlsx >>

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/1/2014 5:14:43 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
BCC: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user38dad7c7]

Subject: Ford Fusion HEV Discussion
Location: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE

Start: 4/3/2014 6:00:00 PM
End: 4/3/2014 8:00:00 PM
Show Time As: Tentative

When: Thursday, April 03, 2014 2:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: AA-Room-Office-C35-ConfRoom/AA-OTAQ-OFFICE

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Meet with Ford to discuss status of coastdown testing on new Ford hybrids.

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/9/2014 3:12:23 PM
To: Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]; Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]
BCC: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user38ddfc61]

Subject: Ford Coastdown Results
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/10/2014 7:30:00 PM
End: 4/10/2014 9:00:00 PM
Show Time As: Tentative

When: Thursday, April 10, 2014 3:30 PM-5:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Meeting with Bob Holycross, Glenn Heiser, and Mark Guenther to discuss coastdown results and plans for fuel economy testing.

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/22/2014 11:16:45 AM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
CC: Heiser, Glen (G.A.) [gheiser@ford.com]
Subject: RE: TRLHP Timeline

Thanks Mike! This is very helpful. See you this afternoon.

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Monday, April 21, 2014 6:12 PM
To: Wehrly, Linc
Cc: Heiser, Glen (G.A.)
Subject: TRLHP Timeline

Confidential Business Information

Linc,

Glen Heiser is out of the office this week, and I am sending this email to you on his behalf.

CBI / Ex. 4

CBI / Ex. 4

Thank you for your attention to this request.

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

Appointment

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 4/17/2014 7:57:49 PM
To: Bunker, Byron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddf7bcf023d241a9a477a2dc75d5901c-Bunker, Byron]; Ball, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92af2ab6f5274bc597249d04358ef25f-Ball, Joel]; Snyder, Jim [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=18260d02987d49e280fc03d2a8d18ddd-Snyder, Jim]; Dalton, Joel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5e590ca117f84cc384adcf13b68b4358-Dalton, Joel]; Sohacki, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef46b8bb626b4d839372e708c5e1c0e9-Sohacki, Lynn]
BCC: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user38ddfc61]

Subject: FE discussion with Ford
Location: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Start: 4/22/2014 5:00:00 PM
End: 4/22/2014 6:00:00 PM
Show Time As: Tentative

When: Tuesday, April 22, 2014 1:00 PM-2:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: AA-Room-Office-C34-ConfRoom/AA-OTAQ-OFFICE

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Meeting to discuss status of Ford FE and coastdown testing

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 5/28/2014 6:39:47 PM
To: Fuher, Michael (M.J.) [mfuher@ford.com]
Subject: RE: Ford vehicle Delivery/Pickup

Great! Thanks!

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Fuher, Michael (M.J.) [mailto:mfuher@ford.com]
Sent: Wednesday, May 28, 2014 2:39 PM
To: Wehrly, Linc
Subject: FW: Ford vehicle Delivery/Pickup

Good news!

Thanks, Mike Fuher, P.E.
Specialty Manager, Compliance & Fuel Economy Engineering
Ford Motor Company / SE&SE / VH&C
Phone: 313-323-0403; Mobile: 313-575-5353

From: Szajner, David (D.J.)
Sent: Wednesday, May 28, 2014 2:36 PM
To: Mazaitis.vincent@epa.gov; Ball, Joel; Haynes.Ben@epamail.epa.gov
Cc: Fuher, Michael (M.J.); Cusumano, Jacob (J.J.); Dabbs, John (J.P.); Graham, Brennan (B.K.)
Subject: Ford vehicle Delivery/Pickup

Gentlemen,

We have dispatched vehicle **EM100045 2014 Fiesta**. This vehicle should arrive at EPA around 3:30pm today.

Thursday morning we will deliver Ford vehicle **EM100006 2014 Fiesta M/T** by 8am for EPA Testing.

Please prepare Ford vehicle **ER827504 2014 MKZ** for pickup tomorrow morning. Thanks again.

David J. Szajner
VH&C FE Programs
313-59-47954
dszajner@ford.com