Daemon41 Group
Apollo Board

WV VW Report Notes

1. Create dynamic bar charts https://bost.ocks.org/mike/bar
2. NOx, CO, THC, CO2
3. NOx 15-35x, 5-20x, at or below - for vehicles A, B, C
4. NOx 10x uphill
5. Weighted emissions- EPA standard is required of a fleet of cars for a model year. Weighted avg is a vehicle's expected contribution to the stats for the fleet. Expected value.
6. CVS is lab team equivalent of EPA-style test which engages the cheat
7. PEMS or OBS is the road test
8. LDT - Light Duty Truck
9. LDV - Light Duty Vehicle
10. Vehicles A,B 2012 passenger car
11. Vehicle C 2013 passenger car
12. Bag 2, 3 are warmed up engine
13. Rural uphill vs high speed flat highway - elevation changes increased emissions
14. Vehicles B, C may have done better
15. Vehicle B - NOx, 6x on avg., good flat vs bad w/ hills
16. CO, THC mostly low over all conditions
17. Urban vs highway 32-39% mpg loss
18. 3 vehicles only - small sample caveat
19. Page xvi: List of Abbreviations and Units
20. NOx - oxides of Nitrogen
21. NTE - not to exceed
22. Page 57: Vehicle Tests Matrix
23. Page 8: Fuel economy and CO2 emissions
24. Page 10: Test vehicles and engine specifications
25. Page 12: Test route comparisons
26. Page 13: Comparison of test route and driving conditions
27. Page 59: Applicable regulatory emissions limits
28. Page 65: Average NOx
29. Page 65, 67, 68, 70: NOx, CO, THC, CO2
30. Page 76: Avg fuel economy
31. Pages 14-17: Maps of routes 1-5
32. Page 22: Altitude profiles of routes
33. Page 31: map of routes 6, 7
34. Pages 51, 52 Comparison of integrated emissions rates between lab and mobile systems
35. Page 60: vehicle A, B avg CO2 CVS vs EPA (control group)
36. Page 61: vehicle A, B avg NOx CVS vs EPA (control group)

37. Page 62: vehicle A, B avg NOx over 5 test routes vs EPA **********
38. Page 63: vehicle A, B avg NOx over 5 test routes vs EPA as deviation ratio**********
39. Page 66 - 70: vehicle A, B avg CO, THC, CO2 over 5 test routes vs EPA **********
40. Page 76: Avg fuel economy of test vehicles over the 5 test routes
41. Page 79-82: Avg NOx, CO, THC, CO2 emissions for cross multi-state route, road vs EPA, expressed as g/km and deviation ratio
42. Page 85: Avg fuel economy for cross multi-state as mpg
43. Page 22: Routes 1 (highway) and 3 (rural) had the most distinct elevation differences - flat vs hilly
44. Routes 2,4,5 had elevation changes more moderate elevation changes than routes 1 and 3
45. Page 24: How long at each speed
46. Page 29: Cross multi-state driving characteristics
47. Page 51: definition of Bag 1, Bag 2, Bag 3
48. Page 52: Shows correlation between CVS and PEMS/OBS (control vs experimental)
49. Page 54,56: Verifying calibration and accuracy of testing equipment
50. Page 60: Avg CO2 - CVS vs EPA (control)
51. Page 62: Avg NOx - road vs EPA - EPA is green **********
52. Page 66: CO - road vs EPA (in range)
53. Page 67: THC - road vs EPA (in range)
54. Page 79: NOx - cross multi-state (big variance) - averages are colored on side of graph
55. Page 80: CO - same as above (in range)
56. Page 81: THC - same as above
57. Page 82: CO2 - same as above
58. Page 85: Fuel economy multi-state (in range)
59. Page 86: Start of on-road NOx Emissions
60. Only vehicle B went cross multi-state
61. Vehicle A had worst deviation from standard
62. Vehicle B was significantly off, but less than A
63. Averaging window - I think it is the percentage of time (y-axis) that emissions were at or below a certain concentration (x-axis).
64. End of Report