

ExDES Engine System Emissions

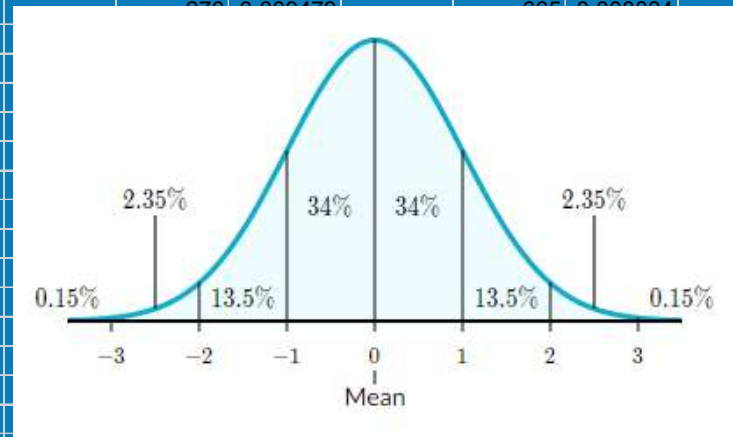
Explosion Protected Diesel Engine Systems

Registration data

DES Analysis

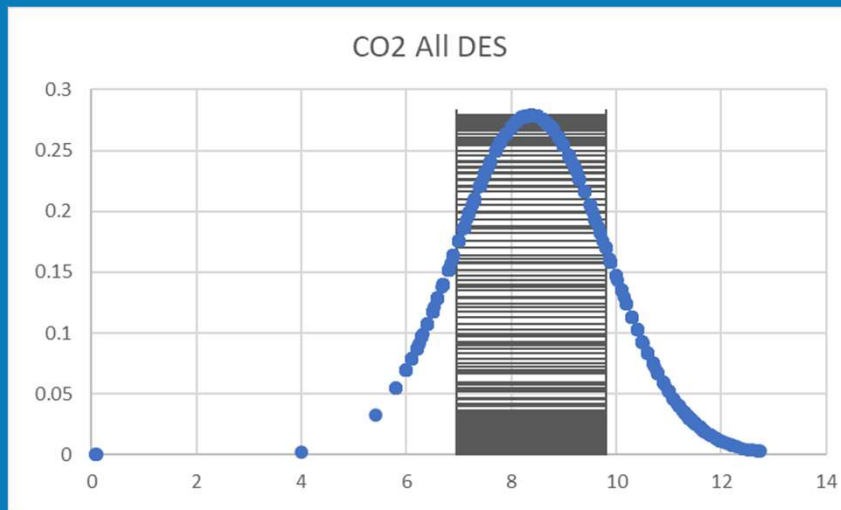
- 2852 records of baseline emission results
- Calculation of mean or average emission for CO₂, CO, NO_x and DP
- Calculation of standard deviation and plot of normal distribution

CO ₂		CO		Nox		DPM	
8.2	0.977363	230	0.007892	670	0.008771	12.3	0.030429
8.5	1.011525	342	0.001065	663	0.008828	17.7	0.044117
8.6	0.883472	300	0.005648	670	0.008771	47.1	0.000375
8.2	0.977363	250	0.009799	670	0.008771	13.3	0.033562
8.2	0.977363	300	0.005648	700	0.006496	18.5	0.045103
8.4	1.076172	260	0.009943	685	0.007976	12.1	0.029791
8.1	0.834305	240	0.009073	685	0.007976	10.8	0.025625
8.2	0.977363	255	0.009948	670	0.008771	20.9	0.045802
7.7	0.212626	250	0.009799	660	0.008788	12.4	0.030747
8.24	1.020052	235	0.008528	681	0.008269	24.6	0.040378
8.4	1.076172	270	0.009479	675	0.008602	18.7	0.045293
8.4	1.076172	270	0.009479	675	0.008602	18.7	0.045293
8.3	1.063918	315	0.003532	650	0.008385	14.5	0.037094
7.9	0.487784	310	0.004195	690	0.007541	22.4	0.044484
8.4	1.076172	220	0.00645	720	0.004162	16.4	0.041796
8.4	1.076172	220	0.00645	720	0.004162	17.5	0.043815
8.4	1.076172	235	0.008528	605	0.003699	17.8	0.044259
8.4	1.076172	235	0.008528	605	0.003699	24.6	0.040378
8.2	0.977363	250	0.009799	720	0.004162	17.8	0.044259
8.4	1.076172	255	0.009948	700	0.006496	24.6	0.040378
8.2	0.977363	250	0.009799	720	0.004162	17	0.042971
8.2	0.977363	250	0.009799	720	0.004162	24.8	0.039896
8.3	1.063918	310	0.004195	690	0.007541	14.3	0.036529
8.2	0.977363	250	0.009799	720	0.004162	15.4	0.039486
8.3	1.063918	310	0.004195	690	0.007541	11.1	0.026584
8.4	1.076172	235	0.008528	605	0.003699	12.6	0.031381
8.9	0.37894	310	0.004195	690	0.007541	21	0.045756
8.3	1.063918	315	0.003532	650	0.008385	14.7	0.037647
7.8	0.334088	310	0.004195	410	1.11E-09	77.1	2.12E-11
8.1	0.834305	220	0.00645	720	0.004162	14.2	0.036242
8.6	0.883472	255	0.009948	700	0.006496	12.8	0.03201
8.7	0.717019	310	0.004195	670	0.008771	13.7	0.034774
8.5	1.011525	250	0.009799	720	0.004162	18	0.044528
8.6	0.883472	260	0.009943	660	0.008788	24.9	0.03965
8.2	0.977363	230	0.007892	660	0.008788	20.4	0.045944
8.4	1.076172	255	0.009948	690	0.007541	25.8	0.037277
8.2	0.977363	250	0.009799	720	0.004162	18.9	0.04546
8.4	1.076172	270	0.009479	675	0.008602	26.3	0.035853
8.6	0.883472	220	0.00645	640	0.007617	11.6	0.028189
8.4	1.076172	250	0.009799	650	0.008385	38.8	0.004608
9.1	0.149312	270	0.009479	660	0.008788	10.2	0.023723
8.4	1.076172	195	0.002965	655	0.008637	16.4	0.041796



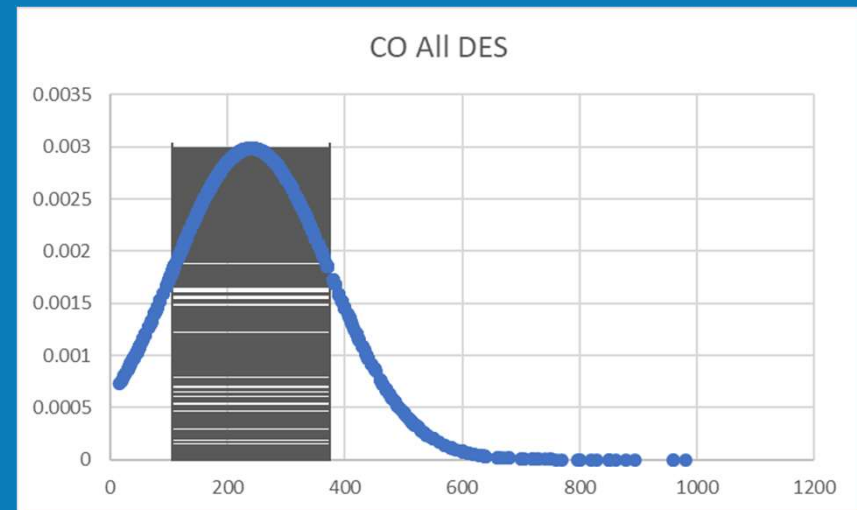
Diesel Exhaust Emissions

CO₂ Average 8.4 %



One standard deviation CO₂ upper tolerance
9.8 % (minimum 6%)

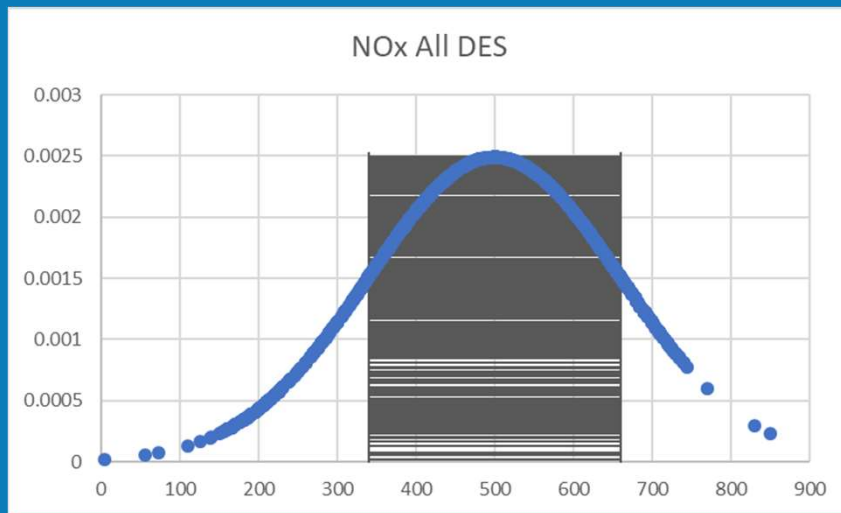
CO Average 240 ppm



One standard deviation CO upper tolerance
374 ppm

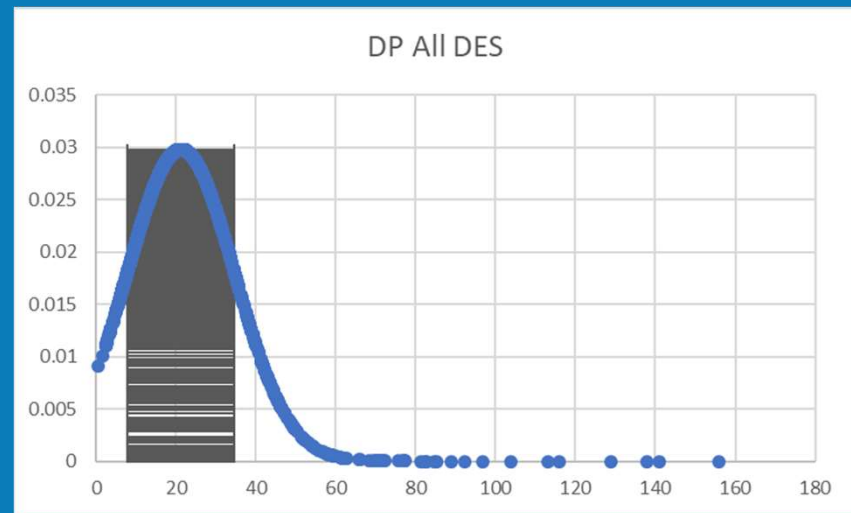
Diesel Exhaust Emissions

NOx Average 499 ppm



One standard deviation NOx upper tolerance
659 ppm

DP Average 21 mg/m³



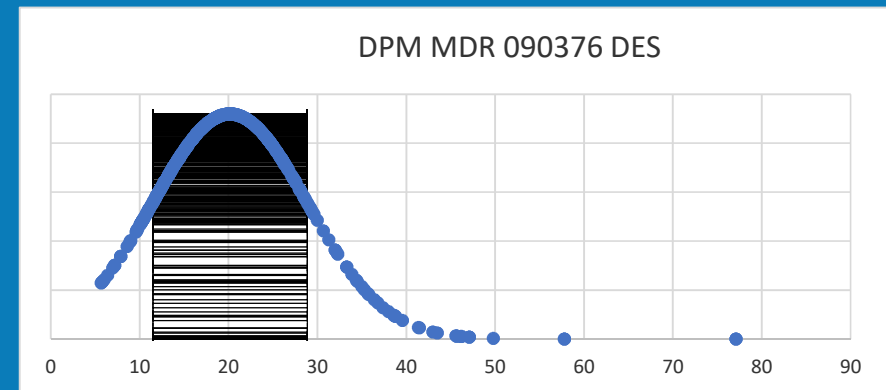
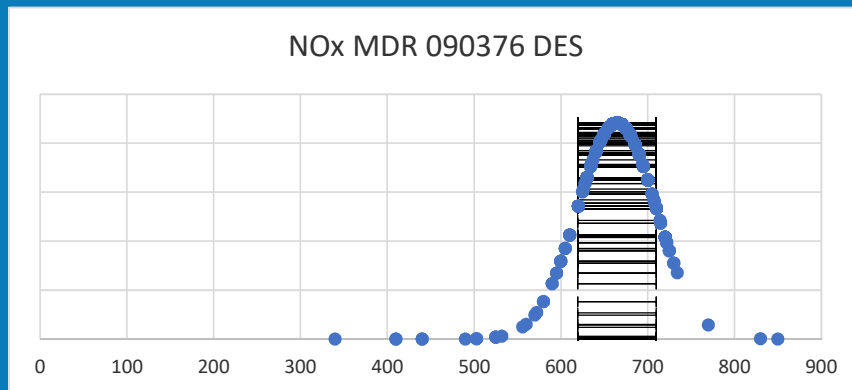
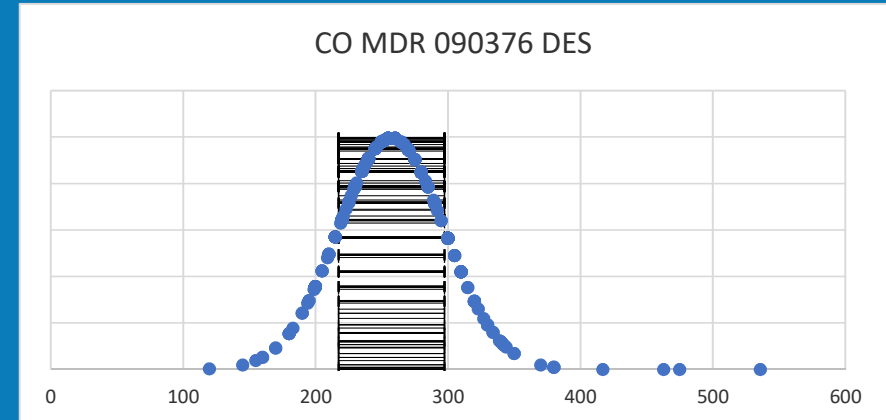
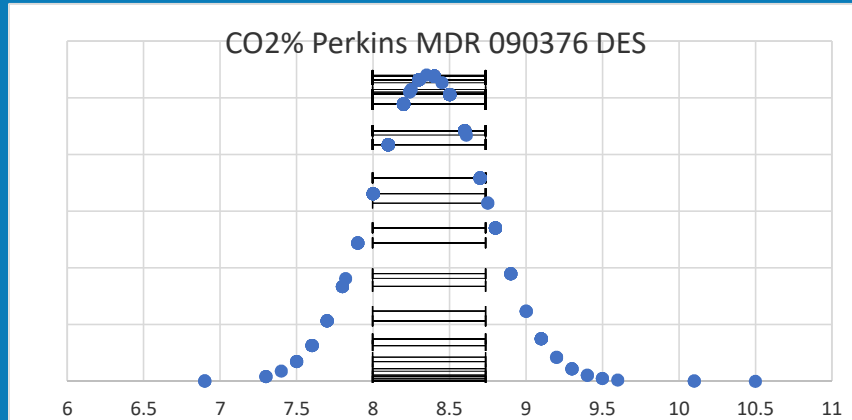
One standard deviation DP upper tolerance
34 mg/m³

Specific Engine System Bell Curves

Explosion Protected Diesel Engine Systems

MDR 090376 DES

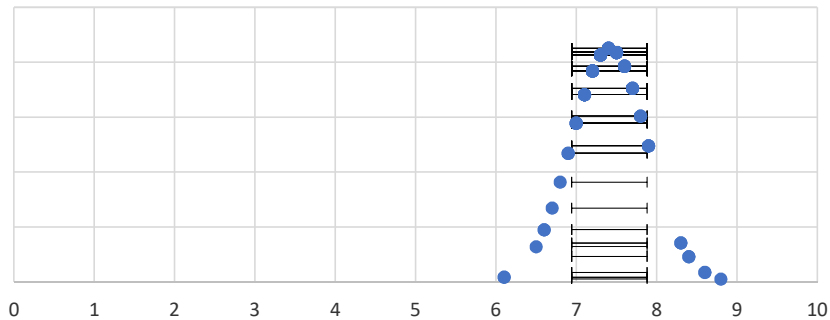
TYPE TEST	MDR 090376 DES		Upper Baseline variation from Type test	DB4	MDG29	
	DB2	MDG29				
CO2	7.9	8%	8.532	8.3	8%	8.964
CO	258	15%	296.7	252	15%	289.8
NOx	766	15%	750*	658	15%	756.7
DP	25.8			27.6		



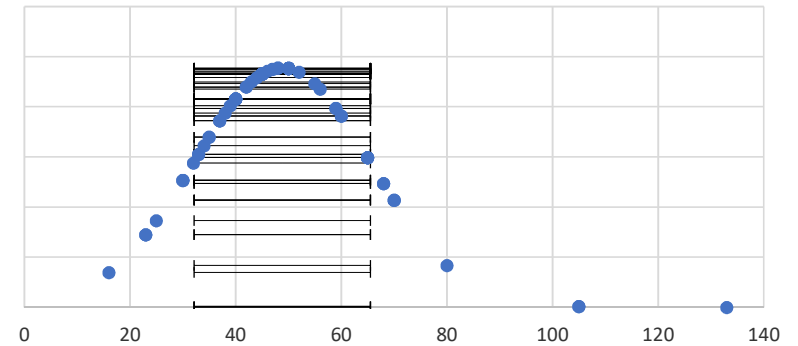
MDR 114056 DES

Type Test
Results Raw
CO2 7.5%
CO 45 ppm
Nox 508 ppm
DP 9.2 mg/m3

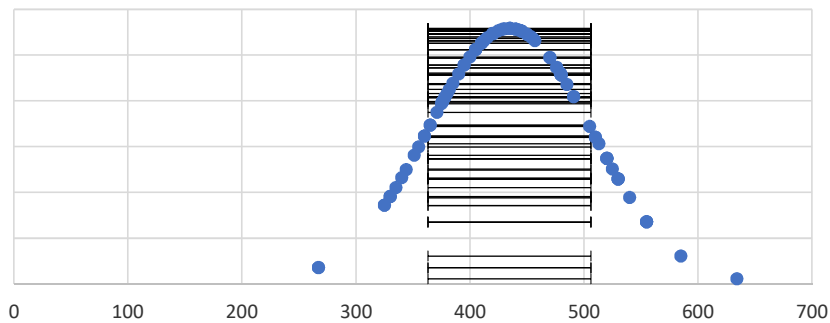
CO2 MWM MDR 114056 DES



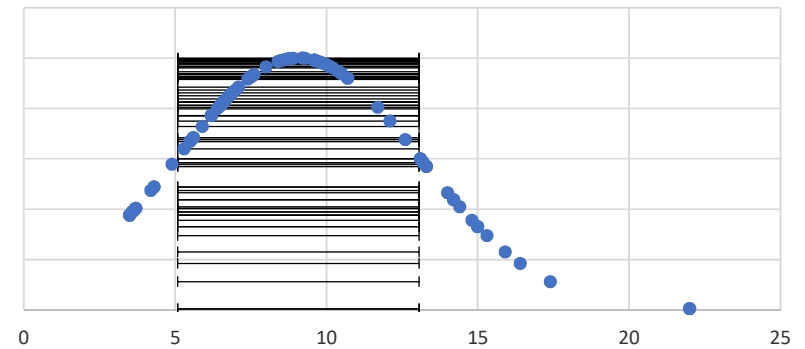
CO MWM MDR 114056 DES



NOx MWM MDR 114056 DES



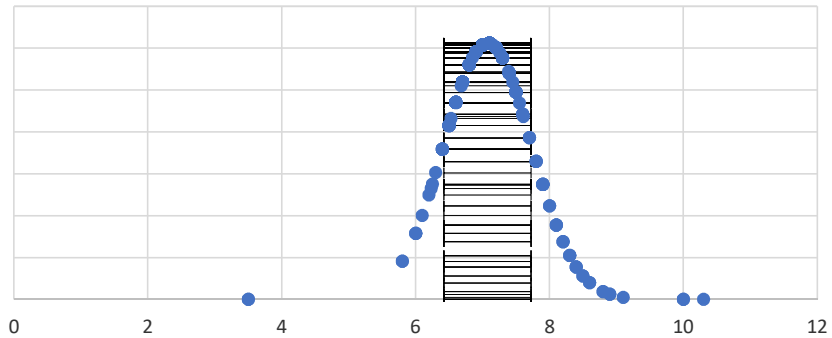
DPM MWM MDR 114056 DES



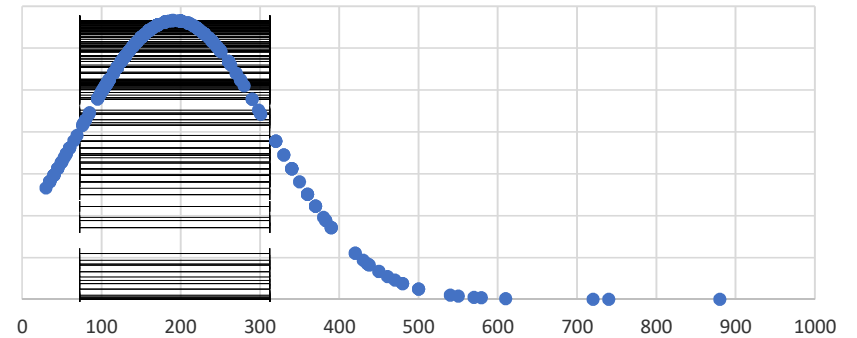
MDR 089003 DES

Type Test
CO2 7.3
CO 200
NO x 589
DP 20.2

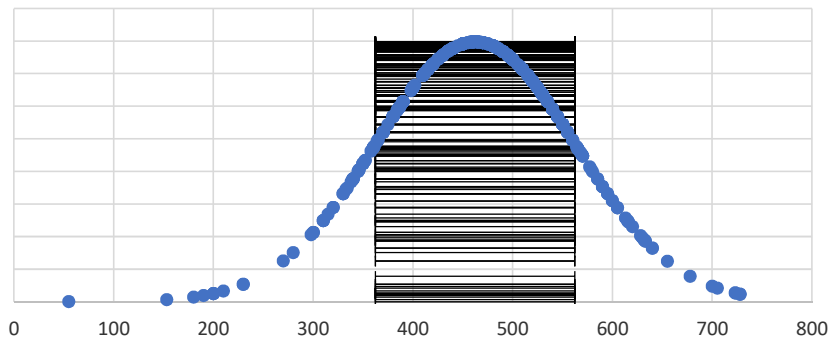
CO2 % - 3126 MDR 089003 DES



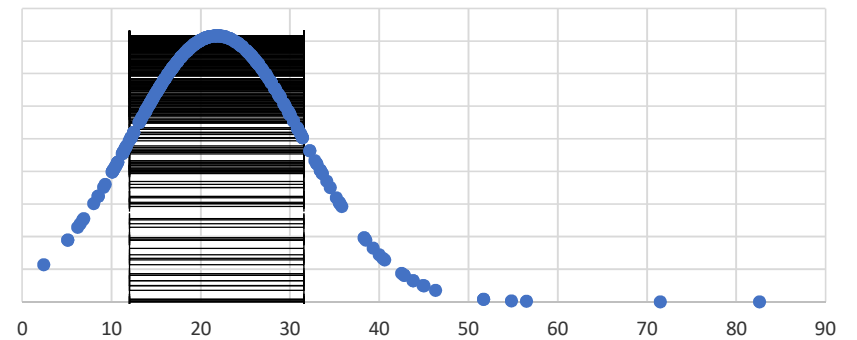
CO ppm - 3126 MDR 089003 DES



NOx ppm 3126 MDR 089003 DES



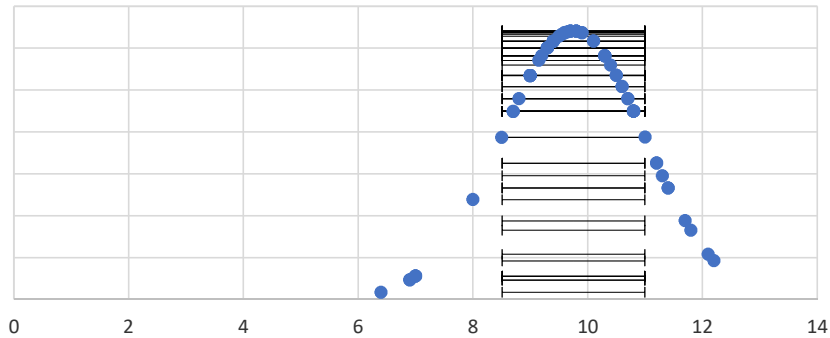
Particulates mg/m3 - 3126 MDR 089003 DES



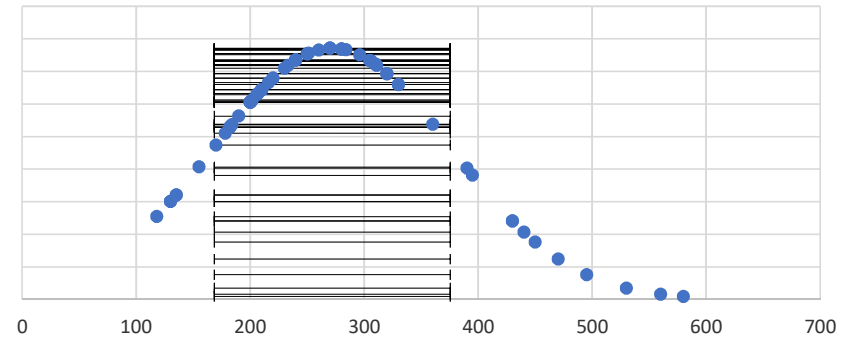
MDR 140985 DES

Type test
CO2 9.1
CO 418
Nox 415
DP 77.4

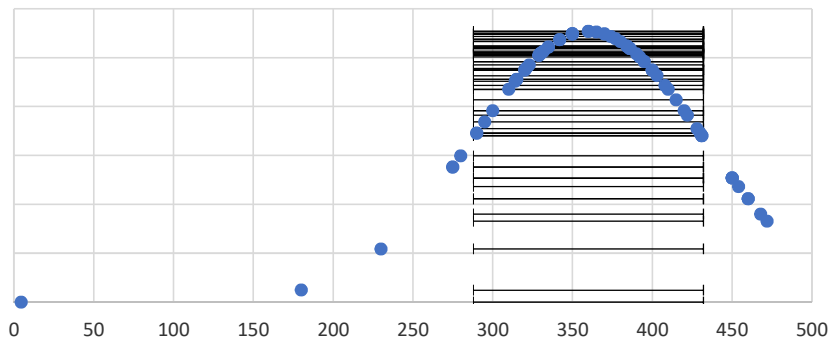
CO2 MDR 140985 DES



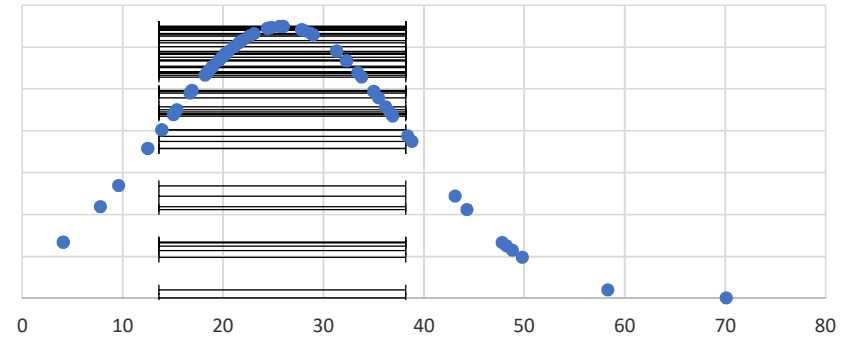
CO MER 140985 DES



NOx MDR 140985 DES



DP MDR 140985 DES



MDR 114991 DES

VLI HINO JO8C 122 kW

Type Test Raw

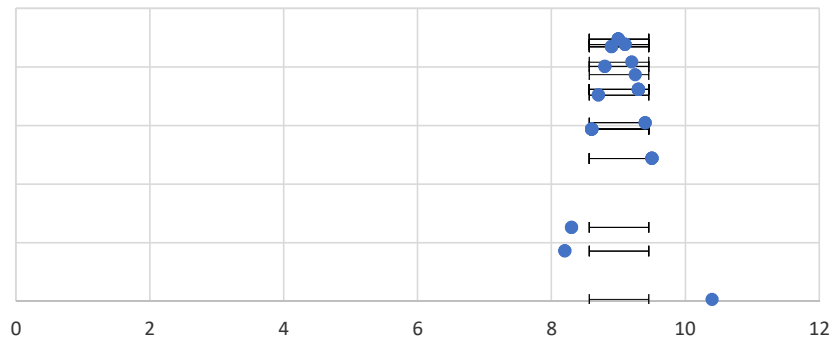
CO2 9.4

CO 206

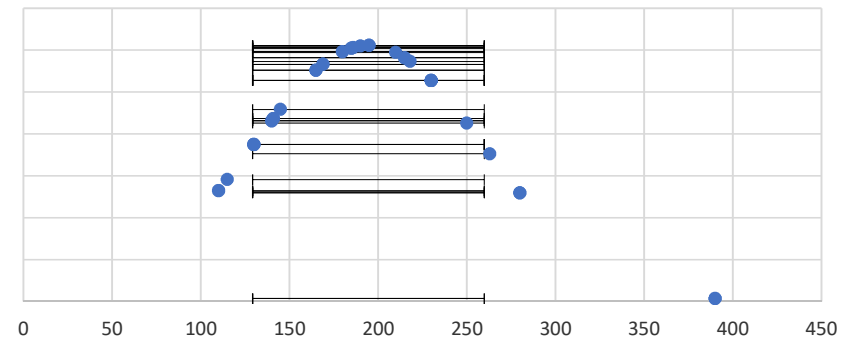
NO x 609

DP 16.5

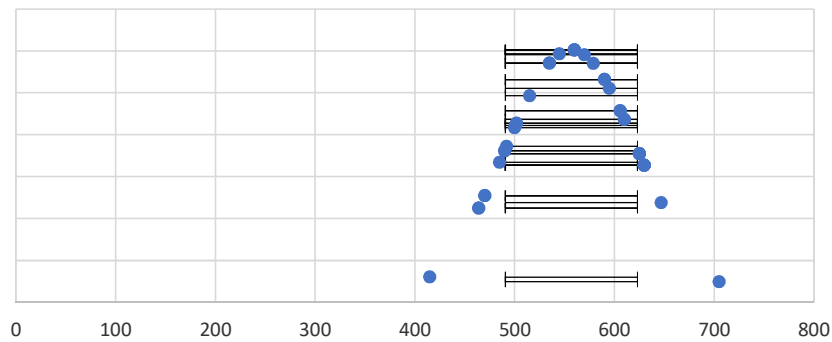
CO2 MDR 114991 DES



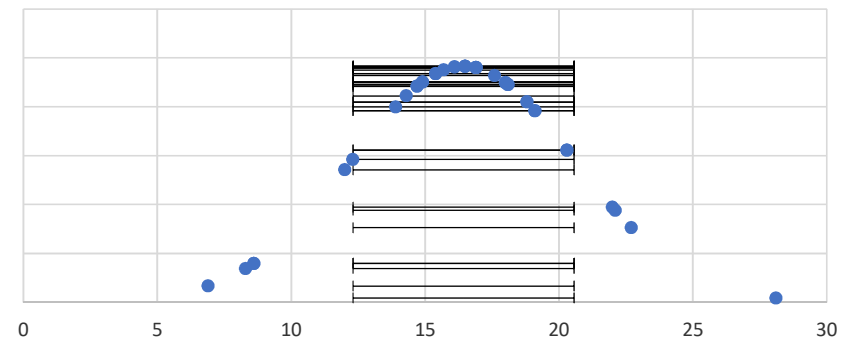
CO MDR 114991 DES



NOx MDR 114991 DES



DPM MDR 114991 DES

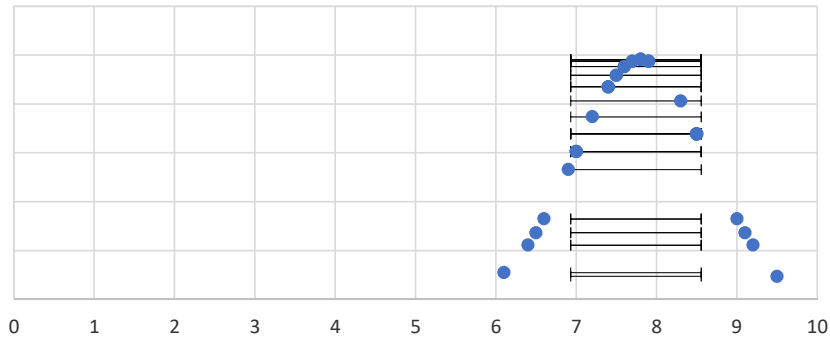


MDR 120207 DES

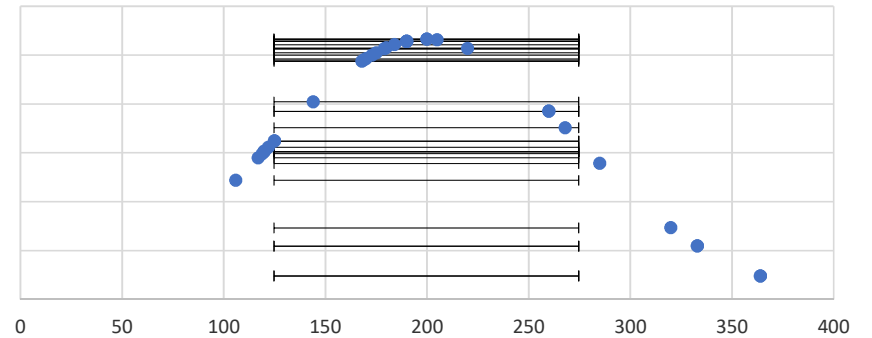
Hunter plant hire Kubota

Type	Test	Raw
CO2		9.6
CO		108
NO x		610
DP		

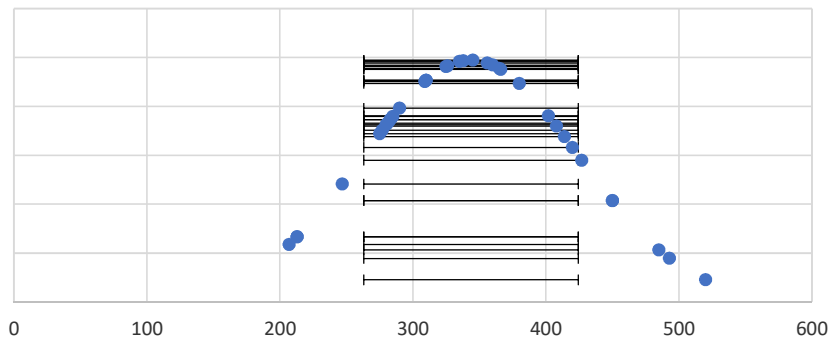
CO2 MDR 120207 DES



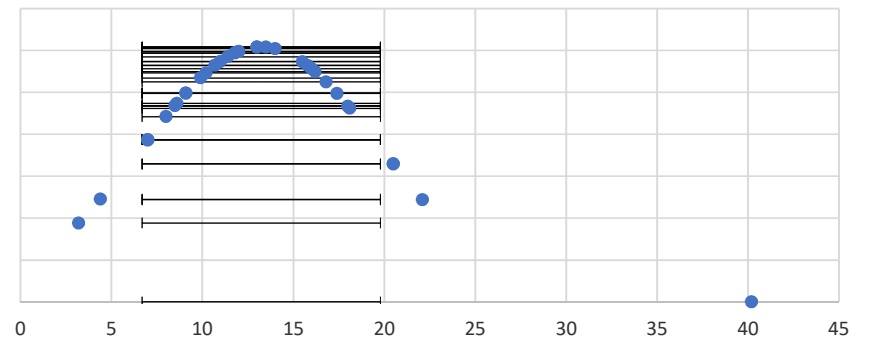
CO MDR 120207 DES



NOx MDR 120207 DES

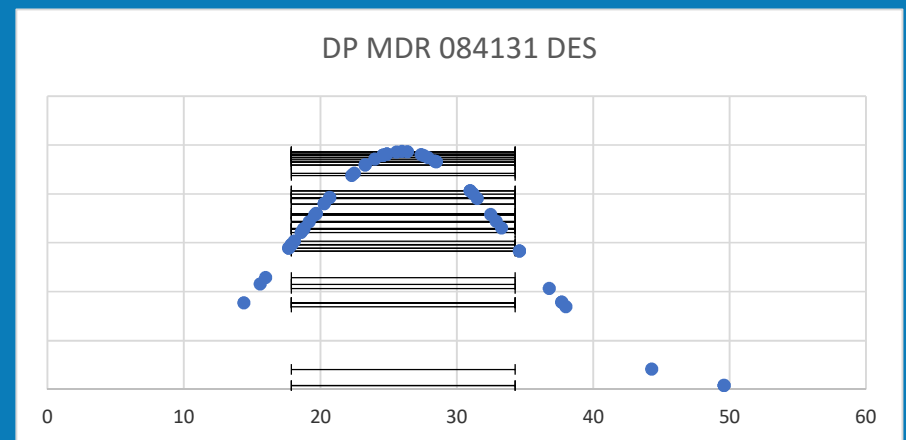
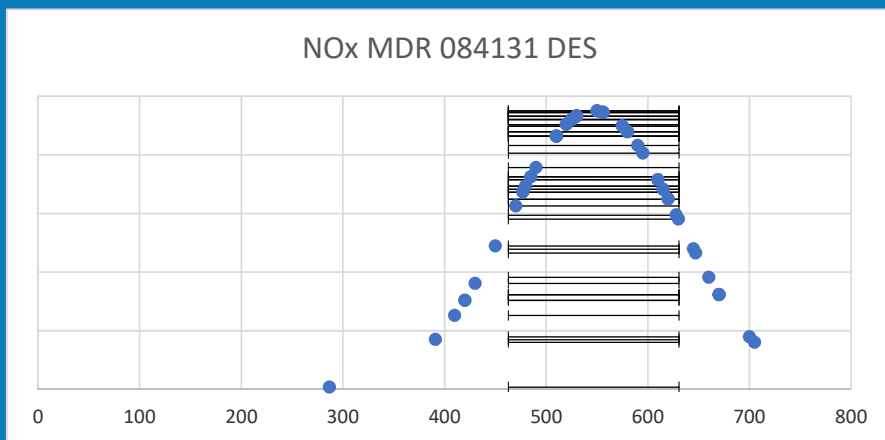
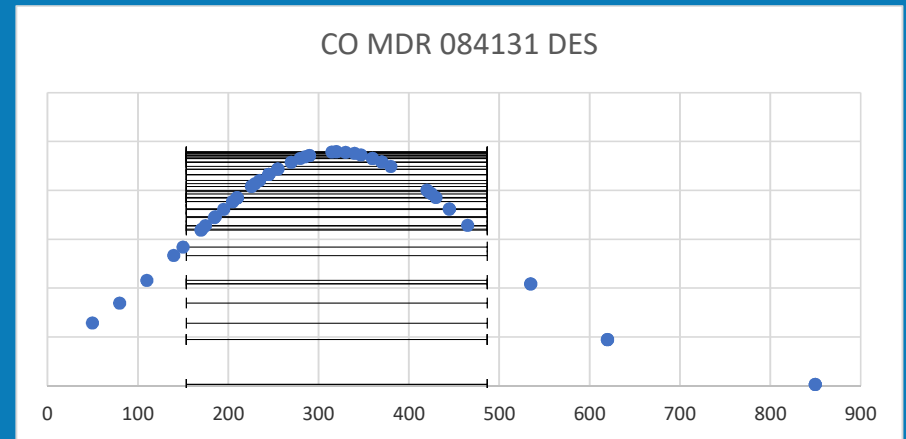
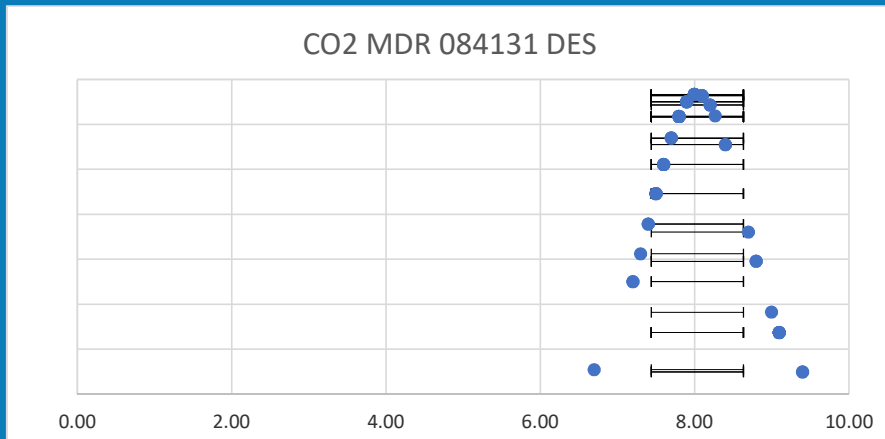


DPM MDR 120207 DES



MDR 084131 DES

Type Test	Raw
CO2	7.9
CO	280
Nox	570
DP	28.4



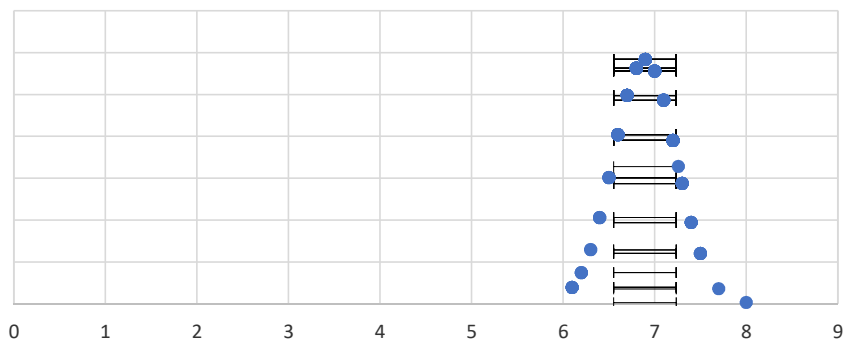
MDR 088335 DES

MDR 088335

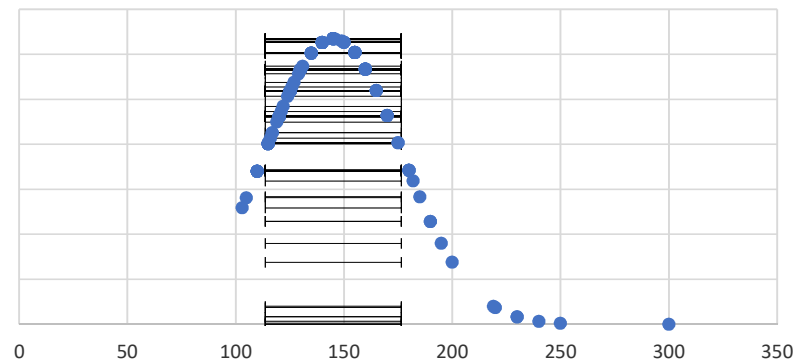
DES-1b

CO2	CO	Nox	DP
8	158	260	9

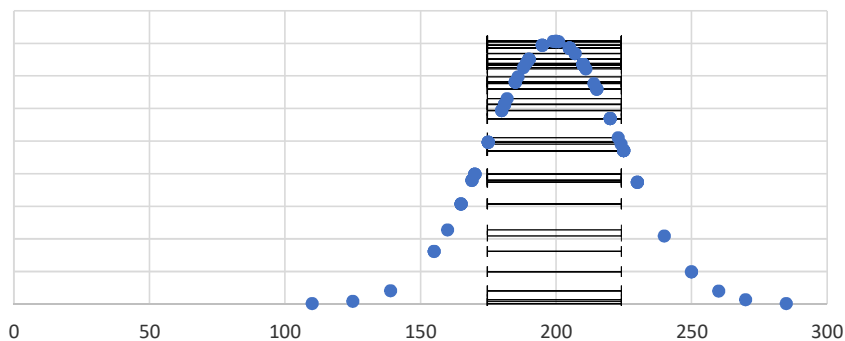
MDR 088335 DES CO2



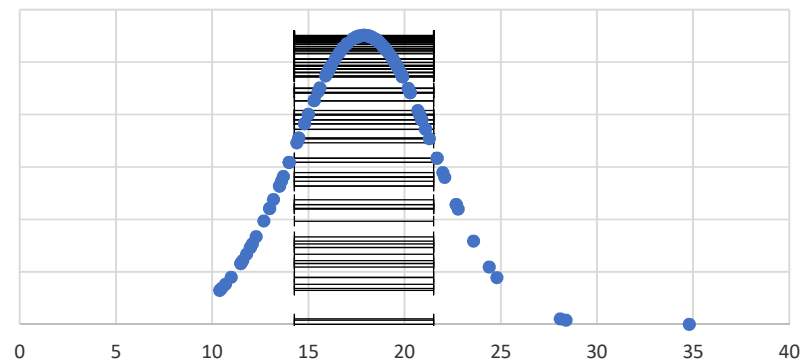
MDR 088335 DES CO



MDR 088335 DES NOx



MDR 088335 DES DP



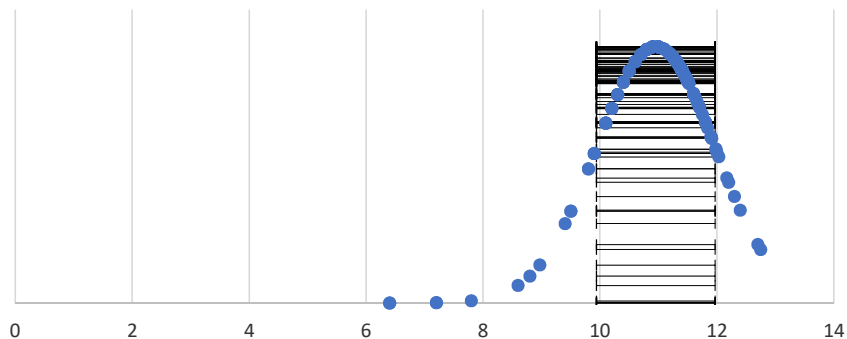
MDR 076980 DES

PJB Perkins 1104 (Cougar)

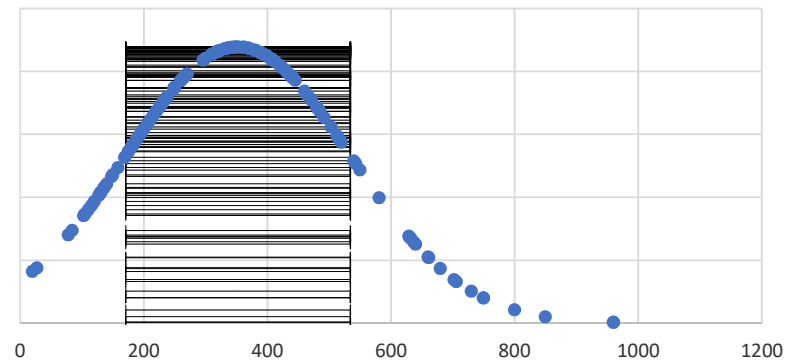
Type Test

CO2	10.4
CO	280
NO x	468
DP	

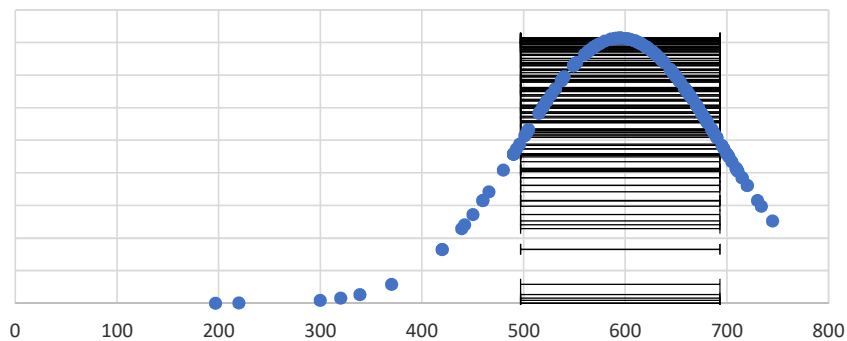
MDR 076980 DES CO2



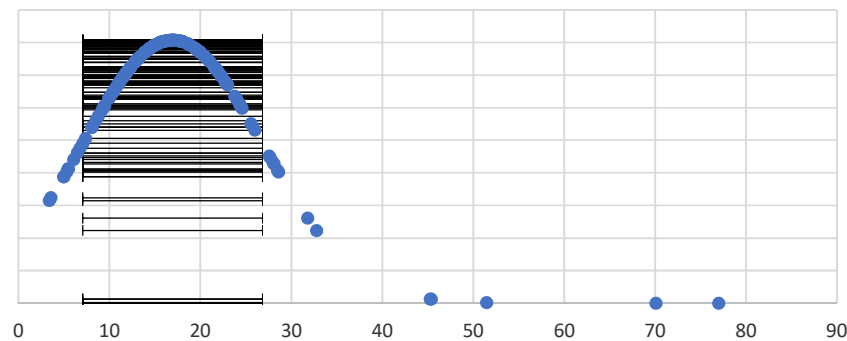
MDR 076980 DES CO



MDR 076980 DES NOx



MDR 076980 DES DP



MDR 124827 DES

VLI HINO JO5C

Type Test

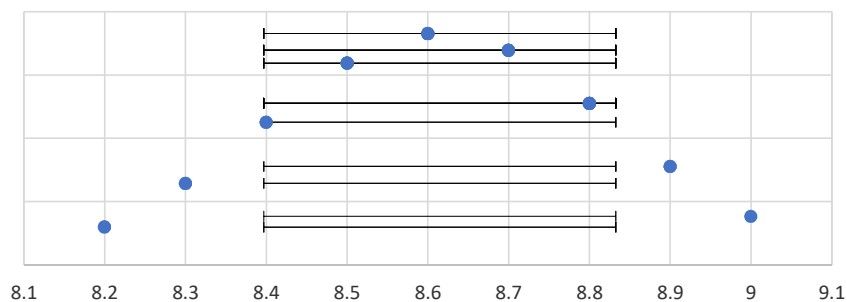
CO2 8.6

CO 50

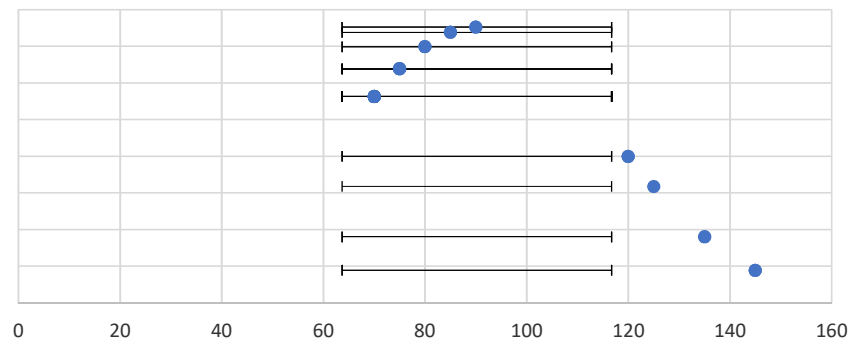
NOx 710

DP 8.1

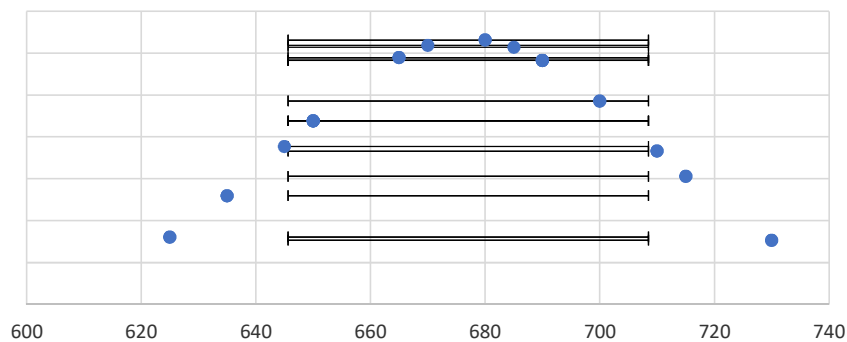
MDR 124827 DES CO2 %



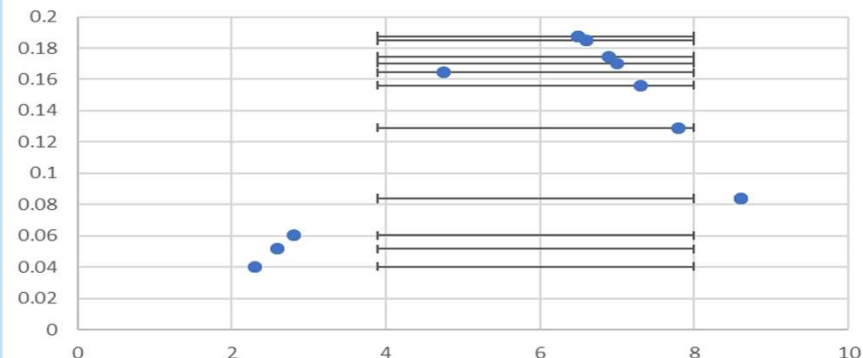
MDR 124827 DES CO



MDR 124827 DES NOx ppm

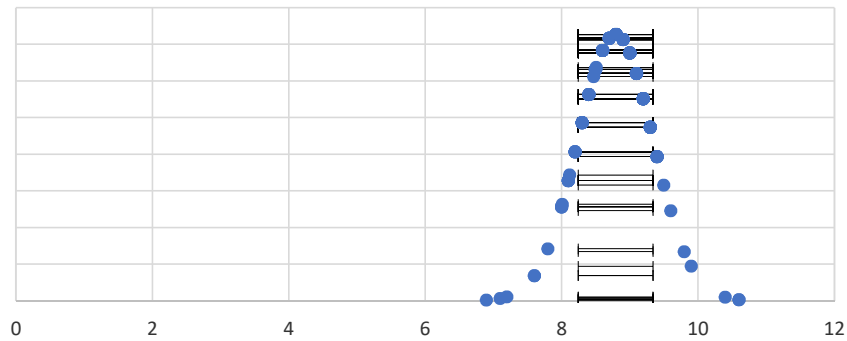


MDR 124872 DES DP

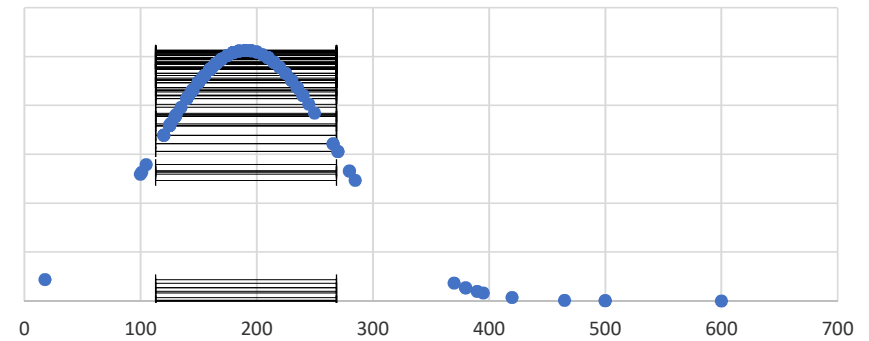


MDR 074246 DES

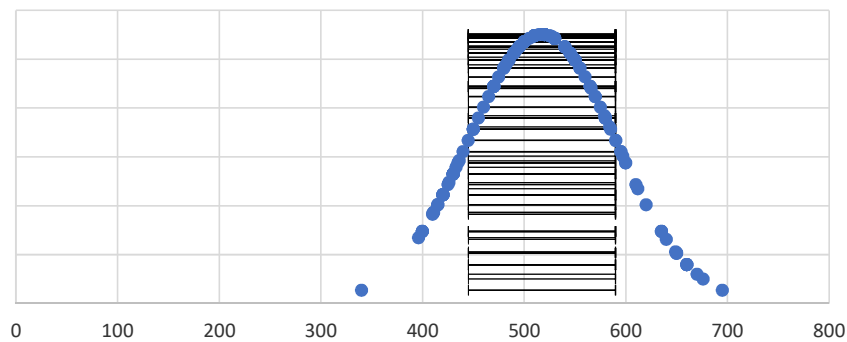
CO2 MDR 074246 DES



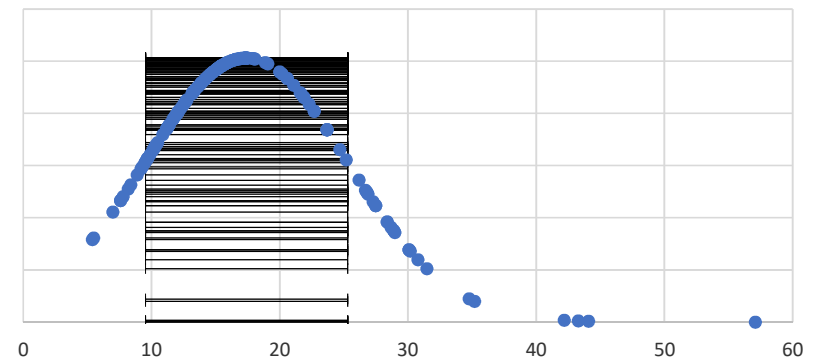
CO MDR 074246 DES



NOx MDR 074246 DES



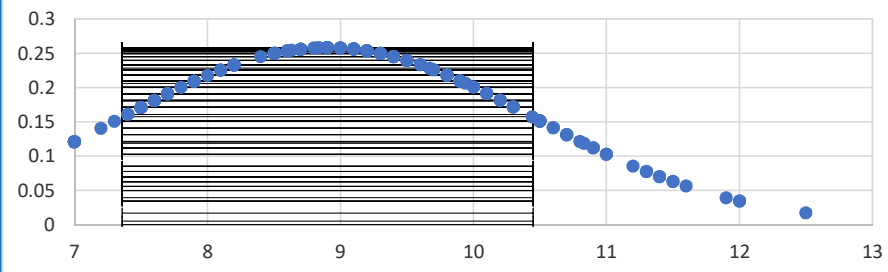
DP MDR 074246 DES



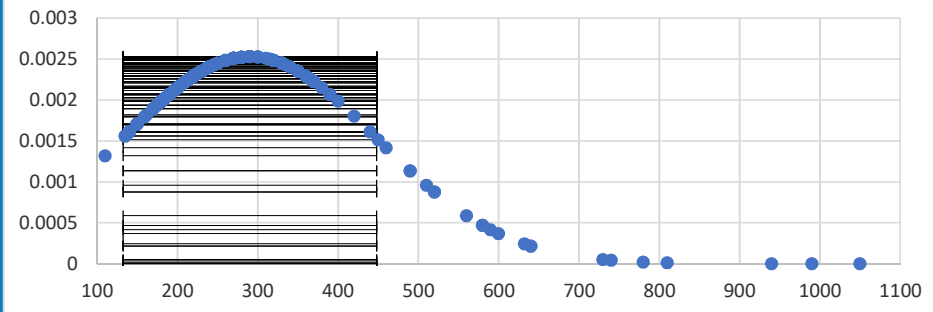
Type Test	
CO2	10%
CO	250 ppm
Nox	520 ppm
DP	30.8 mg/m3

MDR 131594 DES

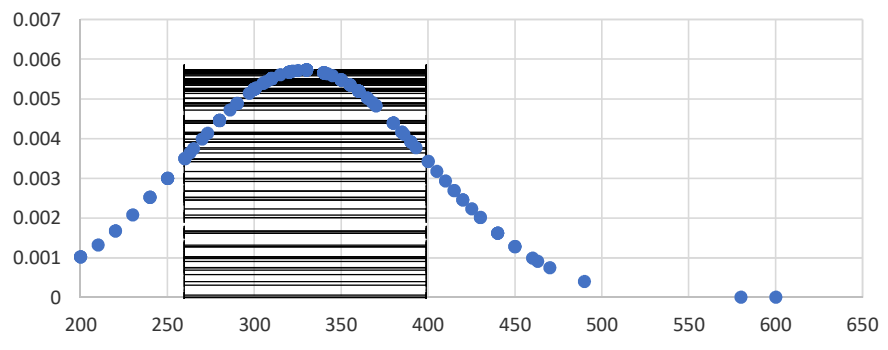
MDR 131594 DES CO2 %



MDR 131594 DES CO



MDR 131594 DES NOx



MDR 131594 DES DPM

