

DuPont Company
PFOA in Blood Serum
Index to EPA Update

Site Name	Location	Sample Date
Belle	Charleston, WV	2004
Chambers Works	Deepwater, NJ	2005
Dordrecht	Netherlands	2005
Dordrecht	Netherlands	2000, 2002, 2005
Experimental Station	Wilmington, DE	2005
Fayetteville	Fayetteville, NC	2004, 2005
Villers St. Paul	France	2002, 2003, 2005
Washington Works	Parkersburg, WV	2005

March 24, 2006
Barbara J. Dawson, CIH, CSP

DuPont Company
PFOA in Blood Serum
Belle Plant (Charleston, WV) Mechanics (Sampled in 2004)
(perform occasional overtime coverage at Washington Works site - Parkersburg, WV)

Name	PFOA (ppb)
Mechanic	8.14
Mechanic	10.5
Mechanic	49.7
Mechanic	11.8
Mechanic	7.03
Mechanic	30.2
Mechanic	10.4
Mechanic	15.4
Mechanic	21.3
Mechanic	29.9
Mechanic	15.9
Mechanic	13.5
Mechanic	10.1
Mechanic	39.6
Mechanic	10.9
Mechanic	24.0
Mechanic	23.9
Mechanic	15.1
Mechanic	16.3
Mechanic	15.6
Mechanic	26.0
Mechanic	7.52
Mechanic	13.4
Mechanic	14.3
Mechanic	10.1
Mechanic	27.8
Mechanic	6.23
Mechanic	4.61
Mechanic	21.6
Mechanic	11.9
Mechanic	10.2
Mechanic	18.0
Mechanic	64.8
Mechanic	13.2
Mechanic	10.1
Mechanic	20.0
Mechanic	34.1
Mechanic	0.5
Mechanic	16.9
Mechanic	9.48
Mechanic	18.6
Count	41
Average	18.01
Median	15.10
Minimum	0.50
Maximum	64.80
Standard Deviation	12.34

not quantifiable - 1/2 LOQ used for statistics

Analysis by Exygen Research, State College, PA
LOQ = 1 ppb
QC duplicates run - average values shown

March 24, 2006
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PFOA in Blood Serum
Chambers Works (Deepwater, NJ) Recent Hires
August - September 2005

	Result (ppb)
Exempt - recent hires	
	18
	18.4
	5.74
	35.2
	11.9
	14.5
Count	6
Average	17.29
Median	16.25
Minimum	5.74
Maximum	35.20
Std Dev	9.93
Prod Tech / Operator - recent hire	
	8.01
	9.56
	14.65
	10.8
	10.7
	18
	17.3
	15.5
Count	8
Average	13.07
Median	12.73
Minimum	8.01
Maximum	18.00
Std Dev	3.77
Total Population	
Count	14
Average	14.88
Median	14.58
Minimum	5.74
Maximum	35.20
Std Dev	7.09

Analysis by Exygen Research, State College, PA
LOQ = 1 ppb
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DuPont Company
PFOA in Blood Serum
Dordrecht Works, Netherlands
2005 Samples

Job	PFOA (ppb)
FEP personnel	3209.0
FEP personnel	4111.0
FEP personnel	636.5
FEP personnel	2954.9
FEP personnel	902.4
Count	5
Average	2362.8
Median	2954.9
Minimum	636.5
Maximum	4111.0
Std Dev	1519.5
Maintenance workers	1190.0
Maintenance workers	2548.5
Maintenance workers	1391.5
Maintenance workers	529.5
Maintenance workers	1080.2
Maintenance workers	1209.7
Maintenance workers	1296.1
Count	7
Average	1320.8
Median	1209.7
Minimum	529.5
Maximum	2548.5
Std Dev	609.1
Others (engineers/lab personnel)	3253.0
Others (engineers/lab personnel)	75.5
Others (engineers/lab personnel)	262.9
Others (engineers/lab personnel)	11387.0
Others (engineers/lab personnel)	417.9
Others (engineers/lab personnel)	565.3
Others (engineers/lab personnel)	601.2
Others (engineers/lab personnel)	312.0
Others (engineers/lab personnel)	406.1
Others (engineers/lab personnel)	134.7
Others (engineers/lab personnel)	446.4
Others (engineers/lab personnel)	416.1
Count	12
Average	1523.2
Median	417.0
Minimum	75.5
Maximum	11387.0
Std Dev	3219.1

Job	PFOA (ppb)
PTFE operator	1262.5
PTFE operator	2056.7
PTFE operator	1883.0
PTFE operator	3774.7
PTFE operator	3800.0
PTFE operator	3102.0
PTFE operator	4418.5
PTFE operator	2922.5
PTFE operator	3978.0
PTFE operator	2104.0
PTFE operator	1768.0
PTFE operator	802.4
PTFE operator	2282.0
PTFE operator	1882.0
PTFE operator	2977.7
PTFE operator	2718.7
PTFE operator	5634.0
PTFE operator	2856.5
PTFE operator	609.9
PTFE operator	3415.4
PTFE operator	3658.5
PTFE operator	4664.7
PTFE operator	2985.0
PTFE operator	3322.4
PTFE operator	519.8
PTFE operator	2619.7
PTFE operator	1132.2
PTFE operator	1979.1
Count	28
Average	2683.2
Median	2787.6
Minimum	519.8
Maximum	5634.0
Std Dev	1255.3
Total Populataion	
Count	52
Average	2201.3
Median	1931.1
Minimum	75.5
Maximum	11387.0
Std Dev	1907.5

DuPont Company
PFOA in Blood Serum
Dordrecht Works, Netherlands

Name	Result 2000 (ppb)	Result 2002 (ppb)	Result 2005 (ppb)	Change from 2002 to 2005	Comments
Teflon polymer operator		1264	2057	793	
Teflon polymer operator	1000	402	1883	1481	
Teflon polymer operator	4500	972	4418	3446	
Teflon polymer operator		1148	3253	2105	
Teflon polymer operator		397	262	-135	no exposure for 2 years due to job change
Teflon polymer operator		754	2978	2224	
Teflon polymer operator	13900		5634		was active in Teflon clean- out team prior to year 2000
Teflon polymer operator	1600	621	2856	2235	
Teflon polymer operator		1136	3415	2279	
Teflon polymer operator		979	1979	1000	
Teflon polymer operator	1400		2620		
Average	4480	853	2850	1714	
Median	1600	972	2856		
Minimum	1000	397	262		
Maximum	13900	1264	5634		
Standard Deviation	5446	324	1406		
n=	5	9	11		
Maintenance	800	872	1190	318	
Maintenance		1506	2548	1042	
Maintenance		1110	1391	281	
Maintenance		441	1296	855	
Average	800	982	1606	624	
Median	800	991	1344		
Minimum	800	441	1190		
Maximum	800	1506	2548		
Standard Deviation	0	446	633		
n=	1	4	4		
Service section	38		75		
FEP operator		3476	3209	-267	
FEP operator	4500		4111	1391	
FEP operator		2640	2955	315	
FEP operator		823	902	79	
Average	4500	2313	2794	380	
Median	4500	2640	3082		
Minimum	4500	823	902		
Maximum	4500	3476	4111		
Standard Deviation	0	1356	1356		
n=	1	3	4		
Lab technician	10 000		11387		lab technician doing most of APFO analysis- checked working method/procedures after 2005 high result
Lab technician		313	601		

Analysis by Medizinisches Labor Bremen, Bremen, Germany
LOQ = 10 ppb
New method in use for 2002 and 2005 samples

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PFOA in Blood Serum
Dordrecht Works, Netherlands
Changes over time in workers with 2005 Samples

Name	Result 2000 (ppb)	Result 2002 (ppb)	Result 2005 (ppb)	Change from 2002 to 2005	Comments
Engineer	950		418		moved from project engineer C8 recovery to day function
Total Population Average	3188	1109	2671	1562	
Total Population Median	1400	922	2548		
Total Population Minimum	38	313	75		
Total Population Maximum	13900	3476	11387		
Total Population Standard Deviation	4320	820	2369		
n=	9	17	23		

Analysis by Medizinisches Labor Bremen, Bremen, Germany
LOQ = 10 ppb
New method in use for 2002 and 2005 samples

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PFOA in Blood Serum
Baseline Samples Prior to Start of Pilot Process (12/04 - 2/05)
Experimental Station, Wilmington, DE
Telomers Research and Development Work

	Result (ppb)
	10.1
	23.0
	9.45
	21.1
	276
	8.37
	10.75
	5.19
	10.0
	5.94
	29.2
	4.86
	4.55
	29.7
	34.3
	4.37
Count	16
Average	30.4
Median	10.1
Minimum	4.4
Maximum	276.0
Std Dev	66.26

Analysis by Exygen Research, State College, PA
LOQ = 1 ppb
QC duplicates run - average values shown

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DuPont Company
PFOA in Blood Serum
Fayetteville Works, Fayetteville, NC

*some baseline samples were collected between campaigns, these samples are shown with the previous dataset

Job	5th Sample 12/04 (ppb)	6th Sample 6/05 (ppb)	7th Sample 12/05 (ppb)
Supervision/Technical	559	556	678
Supervision/Technical	241	279	334
Supervision/Technical	246	291	439
Supervision/Technical	252	225	709
Supervision/Technical	3.06	no sample	no sample
Supervision/Technical	9.27	14	12.2
Supervision/Technical	19.8	27.4	no sample
Supervision/Technical	16.1	39	42.1
Supervision/Technical	7.49	no sample	no sample
Supervision/Technical	6.29	8.65	no sample
Supervision/Technical	9.79	no sample	no sample
Supervision/Technical	no sample	6.67	7.11
Count	11	9	7
Average	124.5	160.7	317.3
Median	16.1	39.0	334.0
Min	3.1	6.7	7.1
Max	559.0	556.0	709.0
Std Dev	180.3	191.2	306.5
Support (wage)	1057	2325	4540
Support (wage)	1653	no sample	no sample
Support (wage)	no sample	64	no sample
Support (wage)	no sample	no sample	12.6
Support (wage)	no sample	no sample	9.63
Support (wage)	no sample	no sample	9.55
Support (wage)	421	409	586
Support (wage)	no sample	58.9	no sample
Support (wage)	no sample	9.72	no sample
Count	3	5	5
Average	1043.7	573.3	1031.6
Median	1057.0	64.0	12.6
Min	421.0	9.7	9.6
Max	1653.0	2325.0	4540.0
Std Dev	616.1	992.1	1977.0
Nafion Tech	18.7	26.3	27.6
Nafion Tech	2.89	no sample	no sample
Nafion Tech	9.99	no sample	no sample
Nafion Tech	7.37	no sample	no sample
Count	4	1	1
Average	9.7	26.3	27.6
Median	8.7	26.3	27.6
Minimum	2.9	26.3	27.6
Maximum	18.7	26.3	27.6
Std Dev	6.7	0	0

Job Name	5th Sample 12/04* (ppb)	6th Sample 6/05* (ppb)	7th Sample 12/05 (ppb)
APFO Field/ CCR Tech	128	151	no sample
APFO Field/ CCR Tech	no sample	440	672
APFO Field/ CCR Tech	112	119	130
APFO Field/ CCR Tech	51	59.7	no sample
APFO Field/ CCR Tech	1743	1780	1990
APFO Field/ CCR Tech	511	685	971
APFO Field/ CCR Tech	294	no sample	366
APFO Field/ CCR Tech	1853	1850	3260
APFO Field/ CCR Tech	1523	1550	1600
APFO Field/ CCR Tech	1897	1320	no sample
APFO Field/ CCR Tech	499	no sample	1200
Count	10	9	8
Average	861.1	883.9	1273.6
Median	505.0	685.0	1085.5
Minimum	51.0	59.7	130.0
Maximum	1897.0	1850.0	3260.0
Std Dev	789.0	742.3	1011.1
APFO/Teflon Tech*	24.2	33.4	no sample
APFO/Teflon Tech	no sample	8.85	40.8
APFO/Teflon Tech*	7.32	50.3	no sample
APFO/Teflon Tech*	11	20.4	47.9
APFO/Teflon Tech*	3.15	47.9	41.1
APFO/Teflon Tech	no sample	17.7	no sample
APFO/Teflon Tech*	10.7	50.5	no sample
APFO/Teflon Tech*	23.2	142	156
Count	6	8	4
Average	13.3	46.4	71.5
Median	10.9	40.7	44.5
Minimum	3.2	8.9	40.8
Maximum	24.2	142.0	156.0
Std Dev	8.6	41.8	56.5

*samples collected between campaigns highlighted

Total Population			
Count	34	32	25
Average	389.1	395.8	715.3
Median	37.6	61.9	334.0
Min	3.1	6.7	7.1
Max	1897.0	2325.0	4540.0
Std Dev	612.8	636.6	1110.5

DuPont Company
PFOA in Blood Serum
Villers St. Paul, France
Telomers Production
2002-2005

Job description	Results 2002 (ppb)	Results 2003 (ppb)	Results 2005 (ppb)	Difference 2005-2003
Process operator	5.4	34.2	45	10.8
Process operator	39.6	85.6	77	-8.6
Process operator	52	92.2	73	-19.2
Process operator	37.7	70.2	67	-3.2
Process operator	45	94.5	106	11.5
Process operator	34		92	
Process operator		33.9	44	10.1
Process operator		38	52	14
Process operator		26.3	27	0.7
Process operator	33	57.6	65	7.4
Process operator	20.1	62.5	63	0.5
Process operator	14	37.3	36	-1.3
Process operator	22.8	84.1	94	9.9
Process operator		58.8	60	-10.2
Process operator	41.5	80.7	83	2.3
Process operator	8.5	35.6	34	-1.6
Average	29.5	59.4	63.6	4.2
Median	33.5	58.8	64.0	
Minimum	5.4	26.3	27.0	
Maximum	52.0	94.5	106.0	
Std Deviation	15.0	24.0	23.2	
n=	12	15	16	
Administ. Operator	10.5	26.4	26	
Administ. Operator		6.7	5	
Administ. Operator		5.8	5	
Administ. Operator	33.5		48	
Administ. Operator		61	54	
Administ. Operator	51	67.2	51	
Average	31.7	33.4	31.5	-1.9
Median	33.5	26.4	37.0	
Minimum	10.5	5.8	5.0	
Maximum	51.0	67.2	54.0	
Std Deviation	20.3	29.3	22.8	
n=	3	5	6	
Contractor	7.1	5	10	5
Contractor	9.7		12	
Average	8.4	5.0	11.0	
Median	8.4	5.0	11.0	
Minimum	7.1	5.0	10.0	
Maximum	9.7	5.0	12.0	
Std Deviation	1.8	0.0	1.4	
n=	2	1	2	

	2005 Entire Population
Average	51.2
Median	51.5
Minimum	5.0
Maximum	106.0
Std Deviation	28.5
n=	24

Analysis by Medizinisches Labor Bremen, Bremen, Germany

LOQ = 10 ppb

(when result < LOQ, 1/2 of LOQ (5) is shown
and used to calculate the descriptive statistics

March 24, 2006
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DuPont Company
PFOA in Blood Serum
Washington Works (Parkersburg, WV)
2005 Recent Hires

	PFOA (ppb)
	65.3
	24.7
	18.8
	139
	51.1
	51.6
	18.6
	12.5
	19.6
	46.9
	11.9
	582
	633
	22.1
	99.0
	19.6
	261
	279
	18.5
	257
	10.5
	117
	12.7
	365
	21.0
	13.9
Count	26
Average	121.9
Median	35.8
Minimum	10.5
Maximum	632.9
Std Dev	173.9

Analysis by Exygen Research, State College, PA
LOQ = 1 ppb
QC duplicates run - average values shown
Some workers had previous occupational exposure

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