 <p>2820 S. English Station Road - Louisville, KY 40299 Tel: (502) 357-0132 Fax (502) 267-8379</p>	<p>Date: 15-Jul-14 TEST NO. 14-1262</p> <p style="font-size: 1.2em; font-weight: bold;">Federal Register Part 63 Method 319 TEST REPORT</p>
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Filter Description	
Manufacturer Filter Model Part Number Generic Filter Type Nominal Dimensions (H x W x D) Pocket / Pleat Quantity Media Type Est. Gross Media Area Adhesive Type	Filter Systems 319N2F 319N2F-202015/2 NESHAP 319 Final Stage Bag Filter 20"x20"x15" 2 Pockets Synthetic 10 Ft ² N A

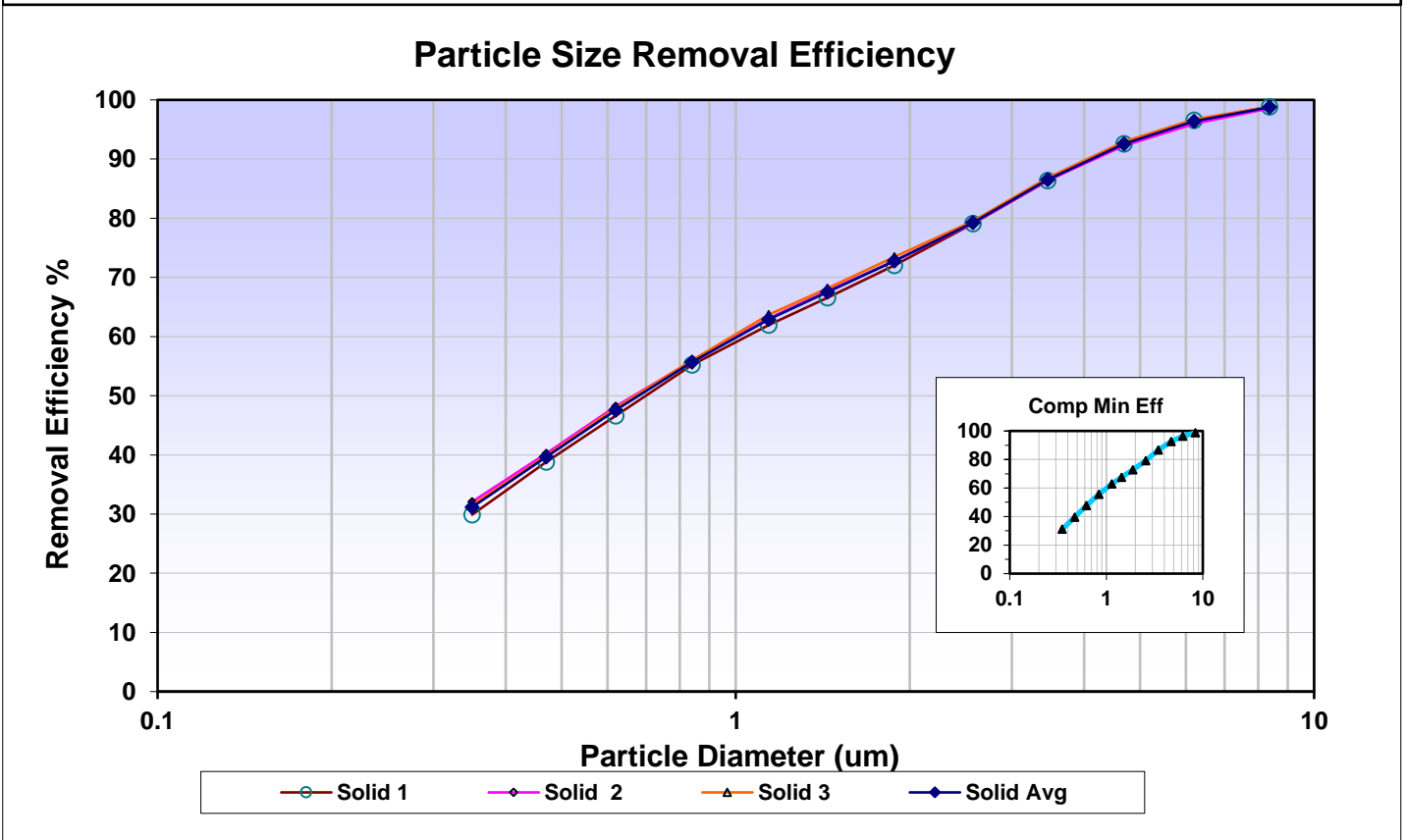
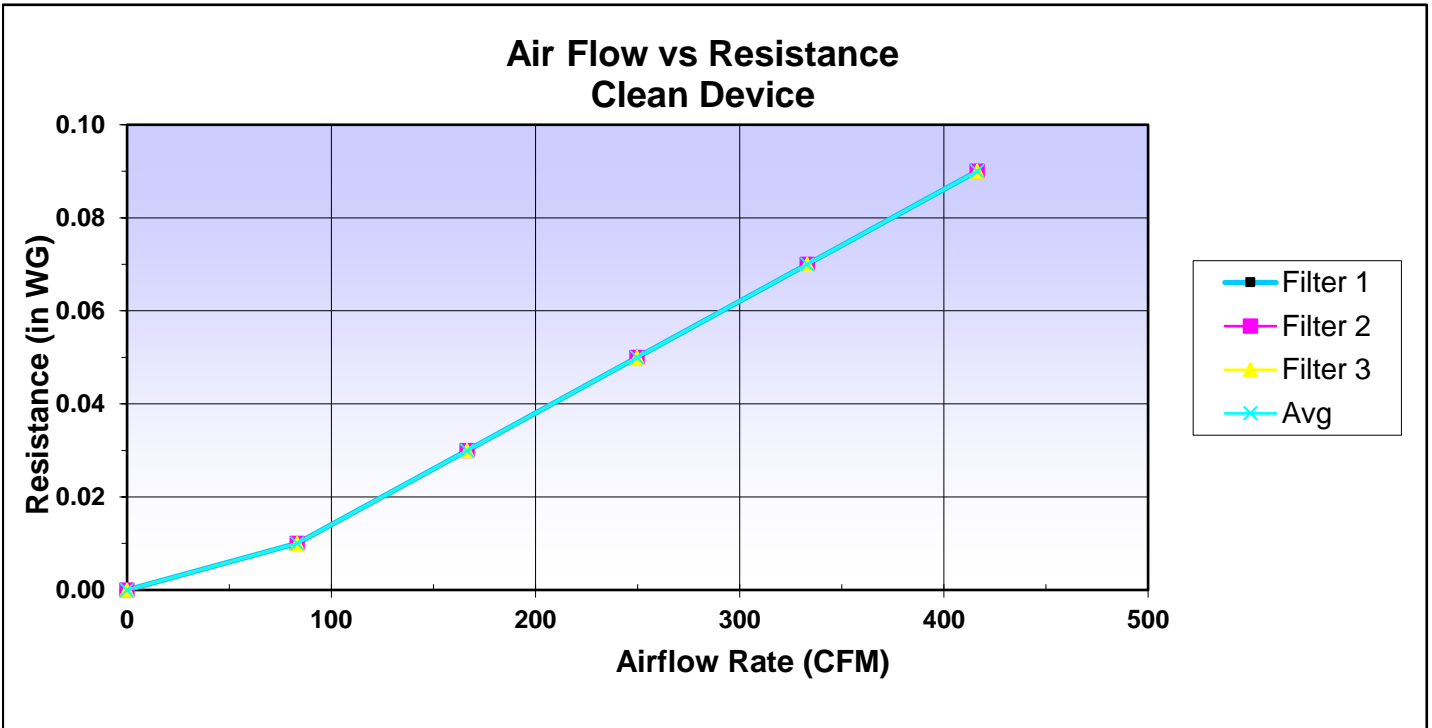


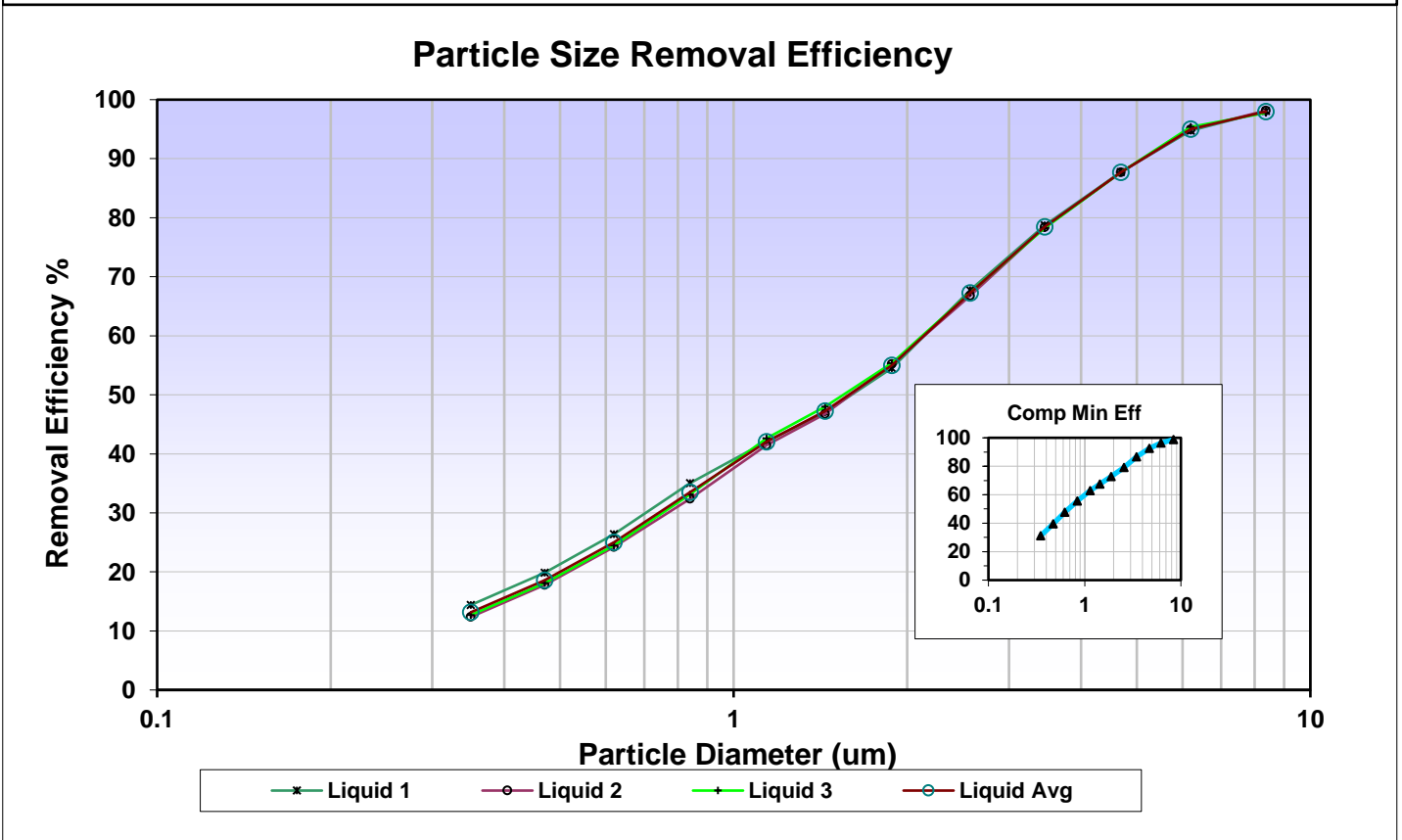
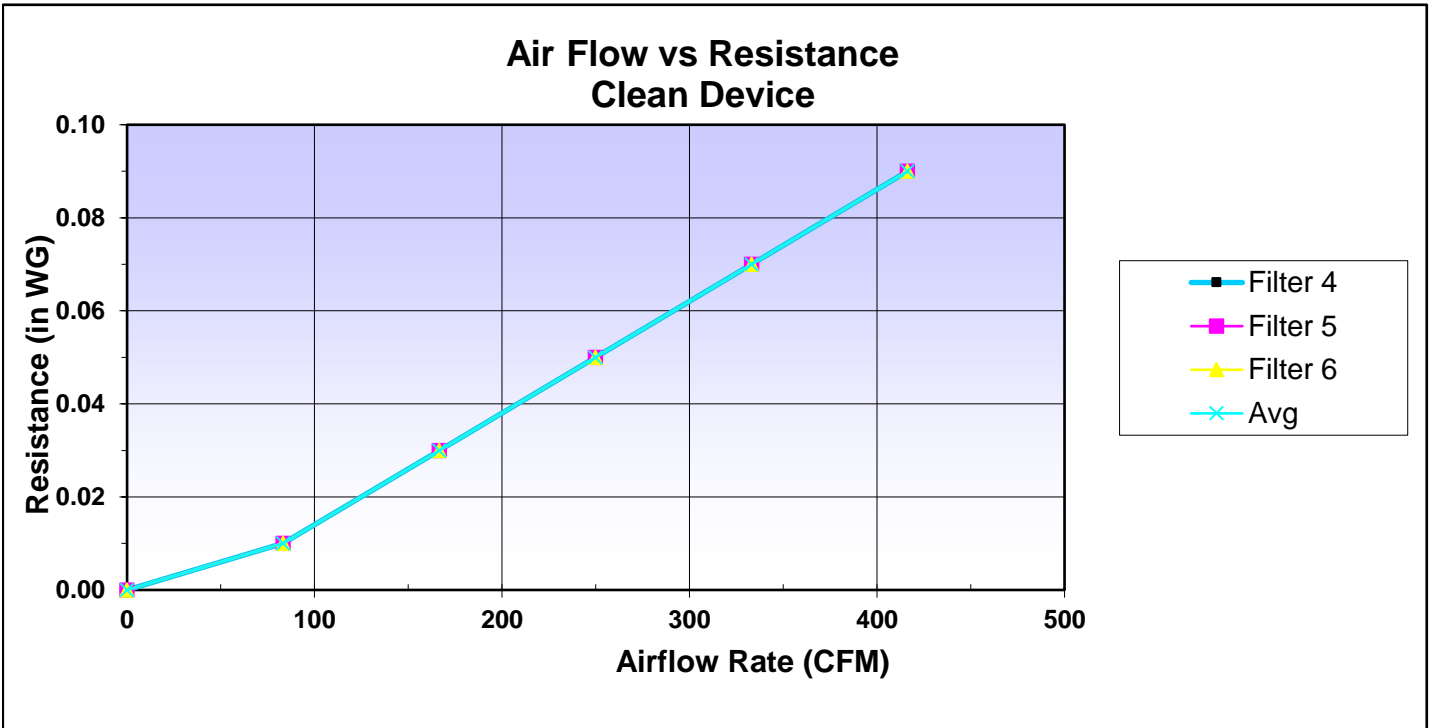
Test Conditions			
Loading Dust Type	N A	Test Air Temp (degrees F.)	72
Barometric Pressure (In. Hg.)	29.35	Relative Humidity (%)	33

Test Results			
Airflow Rate (CFM)	333		
Nominal Face Velocity (fpm)	120		
Avg. Initial Resistance (in WG)	0.07		
	<u>Solid</u>	<u>Liquid</u>	
(% Composite Avg. Efficiency 0.30 - 1.0 um)	44	23	
(% Composite Avg. Efficiency 1.0 - 3.0 um)	71	53	
(% Composite Avg. Efficiency 3.0 - 10.0 um)	94	90	

Comments Tested For: Filter Systems
 Solid Phase Challenge - KCL
 Liquid Phase Challenge - Oleic Acid
 Filter Has Passed Minimum Requirements As Detailed In CFR Part 63 Method 319 For Existing Sources

Approval: 





Data

Test No. 14-1262
Date: 15-Jul-14

Data - Initial Resistance (Solid Phase)

Airflow (CFM)	Resistance (in WG)	Resistance (in WG)	Resistance (in WG)	Avg Resistance (in WG)
0	0.00	0.00	0.00	0.00
83	0.01	0.01	0.01	0.01
167	0.03	0.03	0.03	0.03
250	0.05	0.05	0.05	0.05
333	0.07	0.07	0.07	0.07
416	0.09	0.09	0.09	0.09

Data - Particle Removal Efficiency (Solid Phase)

Particle Size Range (um)	Geometric Mean Diam (um)	Particle Removal Efficiency (%)			
		Solid 1	Solid 2	Solid 3	Solid Avg
0.30 - 0.40	0.35	29.9	32.1	31.5	31.2
0.40 - 0.55	0.47	38.8	40.2	39.9	39.6
0.55 - 0.70	0.62	46.6	48.2	47.9	47.6
0.70 - 1.00	0.84	55.2	55.9	56.0	55.7
1.00 - 1.30	1.14	62.0	63.1	63.7	62.9
1.30 - 1.60	1.44	66.6	67.8	68.2	67.5
1.60 - 2.20	1.88	72.0	72.8	73.5	72.8
2.20 - 3.00	2.57	79.1	79.1	79.5	79.2
3.00 - 4.00	3.46	86.4	86.4	86.9	86.5
4.00 - 5.50	4.69	92.6	92.2	93.0	92.6
5.50 - 7.00	6.20	96.5	96.0	96.7	96.4
7.00 - 10.00	8.37	98.8	98.6	98.9	98.8
		Solid 1	Solid 2	Solid 3	Solid Avg

Interpolated Data		Minimum
Micron Size	Efficiency%	
8.1	98.5	>90
5.0	93.4	>50
2.6	79.5	>10

Solid Phase - Pass
Existing Sources

Data - Initial Resistance (Liquid Phase)

Airflow (CFM)	Resistance (in WG)	Resistance (in WG)	Resistance (in WG)	Avg Resistance (in WG)
0	0.00	0.00	0.00	0.00
83	0.01	0.01	0.01	0.01
167	0.03	0.03	0.03	0.03
250	0.05	0.05	0.05	0.05
333	0.07	0.07	0.07	0.07
416	0.09	0.09	0.09	0.09

Data - Particle Removal Efficiency (Liquid Phase)

Particle Size Range (um)	Geometric Mean Diam (um)	Particle Removal Efficiency (%)			
		Liquid 1	Liquid 2	Liquid 3	Liquid Avg
0.30 - 0.40	0.35	14.4	12.4	12.7	13.2
0.40 - 0.55	0.47	19.9	17.8	18.1	18.6
0.55 - 0.70	0.62	26.4	24.2	24.5	25.0
0.70 - 1.00	0.84	35.0	32.4	33.1	33.5
1.00 - 1.30	1.14	42.1	41.5	42.6	42.1
1.30 - 1.60	1.44	47.0	46.8	48.0	47.3
1.60 - 2.20	1.88	54.5	55.2	55.3	55.0
2.20 - 3.00	2.57	67.7	66.8	67.3	67.3
3.00 - 4.00	3.46	78.7	78.4	78.2	78.4
4.00 - 5.50	4.69	87.7	87.7	87.7	87.7
5.50 - 7.00	6.20	94.7	95.0	95.4	95.0
7.00 - 10.00	8.37	98.1	98.1	97.8	98.0
		Liquid 1	Liquid 2	Liquid 3	Liquid Avg

Interpolated Data		Minimum
Micron Size	Efficiency%	
5.7	92.6	>90
4.1	83.2	>50
2.2	60.7	>10

Liquid Phase - Pass
Existing Sources

Solid 1

Test No. 14-1262
Date: 15-Jul-14

Geo. Mean Dia. (uM)	0.350 Up	0.475 Up	0.625 Up	0.850 Up	1.150 Up	1.450 Up	1.900 Up	2.600 Up	3.500 Up	4.750 Up	6.250 Up	8.500 Up
bin #	bin 1	bin 2	bin 3	bin 4	bin 5	bin 6	bin 7	bin 8	bin 9	bin 10	bin 11	bin 12
Upstream	135386	79447	43954	55772	13413	6471	26132	16200	7954	6033	2889	1713
Upstream	141731	82860	46234	57931	14266	6632	27438	17011	8454	6185	2953	1755
Upstream	151624	88796	49482	62440	15439	7334	29867	18166	8973	6247	2982	1664
Upstream	171214	99923	55608	70023	16987	7828	32507	19799	9612	6885	3231	1785
Upstream	169467	98295	54090	68262	16648	7819	31701	19264	9292	6735	3148	1735
Upstream	164132	94990	52184	65701	16153	7575	30944	19088	9002	6313	3044	1611
Upstream	206898	119367	66082	81986	20305	9672	38657	23166	10845	7644	3329	1807
Upstream	181257	104755	57973	72227	17664	8215	33878	20115	9459	6519	2965	1570
Upstream	199582	114932	63995	80186	19685	9293	37072	22477	10275	6883	2870	1474
Upstream	187861	106916	59527	73853	18231	8393	34464	20734	9470	6380	2780	1453
Average Ub	19.30	1.40	0.50	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
Average U	170915.20	99028.10	54912.90	68838.10	16879.10	7923.20	32266.00	19602.00	9333.60	6582.40	3019.10	1656.70
StdDev Ub	3.47	1.26	0.71	0.32	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00
95% Ub,ucl	21.7790	2.3048	1.0058	0.3262	0.3262	0.3262	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Downstream	99423	53933	25285	24353	5696	2052	7892	3747	1162	476	116	28
Downstream	94958	51280	24614	22977	5617	2043	7780	3605	1149	483	111	20
Downstream	107016	57121	27468	25743	6039	2245	8641	4082	1278	487	107	17
Downstream	120617	64603	30853	29086	6838	2549	9041	4544	1389	535	108	27
Downstream	126614	67144	31882	29689	6897	2786	9331	4596	1368	563	125	25
Downstream	116254	61488	29388	27184	6438	2618	9056	4306	1316	511	105	18
Downstream	143016	75308	35492	33065	7689	3174	10216	4970	1442	527	132	22
Downstream	132535	69724	33301	31330	7164	2864	10140	4717	1351	512	120	15
Downstream	148398	78669	37222	34693	8451	3325	11394	5385	1617	590	128	20
Downstream	140985	72970	34904	32248	7651	3059	11142	4955	1441	545	110	21
Average Db	13.70	2.40	0.10	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
Average D	122981.60	65224.00	31040.90	29036.80	6848.00	2671.50	9463.30	4490.70	1351.30	522.90	116.20	21.30
StdDev Db	3.83	0.97	0.32	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00
95% Db,ucl	16.4405	3.0911	0.3262	0.0000	0.0000	0.0000	0.0000	0.0000	0.3262	0.0000	0.0000	0.0000

Average R	1.025	1.076	1.058	0.941	1.067	1.004	1.049	1.094	1.061	1.070	1.115	1.100
Average P	0.7187	0.6581	0.5650	0.4216	0.4058	0.3358	0.2934	0.2289	0.1448	0.0796	0.0386	0.0128
StdDev P	0.0268	0.0239	0.0199	0.0151	0.0161	0.0215	0.0163	0.0098	0.0071	0.0049	0.0033	0.0023
Corrected P	0.7010	0.6118	0.5338	0.4478	0.3805	0.3344	0.2798	0.2092	0.1365	0.0743	0.0346	0.0117

PSE	29.90	38.82	46.62	55.22	61.95	66.56	72.02	79.08	86.35	92.57	96.54	98.83
E1	42.64											
E2	69.90											
E3	93.57											

Solid 2

Test No. 14-1262
Date: 15-Jul-14

Geo. Mean Dia. (uM)	0.350 Up	0.475 Up	0.625 Up	0.850 Up	1.150 Up	1.450 Up	1.900 Up	2.600 Up	3.500 Up	4.750 Up	6.250 Up	8.500 Up
bin #	bin 1	bin 2	bin 3	bin 4	bin 5	bin 6	bin 7	bin 8	bin 9	bin 10	bin 11	bin 12
Upstream	140506	76576	42276	50932	12421	5910	23774	14624	6875	4859	2209	1210
Upstream	138454	77718	43101	53144	12847	6195	25281	15308	7440	5274	2549	1341
Upstream	141926	79810	44093	54121	13219	6280	25275	15367	7310	5140	2452	1256
Upstream	137531	78085	43123	53181	12918	6108	24707	15131	7133	4856	2211	1185
Upstream	149911	85849	47687	59025	14213	6611	26993	16512	7671	5380	2445	1311
Upstream	156015	88410	49122	59676	14263	6891	26890	16376	7578	5066	2250	1090
Upstream	129658	73086	40526	49364	12032	5674	22894	13915	6764	4752	2276	1189
Upstream	129082	72687	40431	49538	11837	5600	23132	14154	6775	4754	2255	1225
Upstream	129007	72821	40507	50189	12357	5769	23697	14231	7075	4998	2381	1334
Upstream	107728	60856	34077	42022	10469	4896	19998	12645	6080	4354	2116	1214
Average Ub	6.90	1.80	0.40	0.50	0.20	0.30	0.20	0.10	0.00	0.00	0.00	0.00
Average U	135981.80	76589.80	42494.30	52119.20	12657.60	5993.40	24264.10	14826.30	7070.10	4943.30	2314.40	1235.50
StdDev Ub	3.14	1.32	0.70	0.71	0.42	0.48	0.42	0.32	0.00	0.00	0.00	0.00
95% Ub,ucl	9.1481	2.7417	0.9001	1.0058	0.5016	0.6455	0.5016	0.3262	0.0000	0.0000	0.0000	0.0000

Downstream	95180	47871	22896	20678	5034	1839	6767	3249	991	431	112	18
Downstream	97170	49694	24016	21899	5087	1991	7233	3536	1027	437	103	25
Downstream	94726	49463	23812	21876	5179	1871	7082	3405	974	395	88	16
Downstream	93942	49114	23325	21900	5029	1947	7068	3301	1028	406	114	17
Downstream	99260	52562	24996	23210	5466	2091	7548	3573	1117	442	85	29
Downstream	112390	58312	27764	25589	5989	2145	7846	3848	1118	443	93	23
Downstream	91769	47896	22739	21036	4931	2019	6906	3271	1000	407	111	20
Downstream	87645	45491	21869	20257	4786	1839	6632	3211	968	381	106	14
Downstream	86842	45515	21504	20341	4771	1927	6756	3196	1009	410	115	20
Downstream	73262	37898	18442	17357	4056	1674	5771	2835	882	396	97	17
Average Db	3.60	0.70	0.30	0.20	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
Average D	93218.60	48381.60	23136.30	21414.30	5032.80	1934.30	6960.90	3342.50	1011.40	414.80	102.40	19.90
StdDev Db	2.27	0.82	0.48	0.42	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00
95% Db,ucl	5.2242	1.2889	0.6455	0.5016	0.0000	0.0000	0.3262	0.0000	0.0000	0.0000	0.0000	0.0000

Average R	1.009	1.056	1.051	0.931	1.076	1.004	1.054	1.081	1.053	1.081	1.105	1.124
Average P	0.6852	0.6314	0.5443	0.4109	0.3975	0.3237	0.2870	0.2255	0.1431	0.0840	0.0445	0.0161
StdDev P	0.0187	0.0154	0.0130	0.0104	0.0118	0.0168	0.0062	0.0065	0.0044	0.0042	0.0060	0.0035
Corrected P	0.6792	0.5977	0.5181	0.4415	0.3692	0.3224	0.2722	0.2087	0.1358	0.0777	0.0402	0.0143

PSE	32.08	40.23	48.19	55.85	63.08	67.76	72.78	79.13	86.42	92.23	95.98	98.57
E1	44.09											
E2	70.69											
E3	93.30											

Solid 3

Test No. 14-1262
Date: 15-Jul-14

Geo. Mean Dia. (uM)	0.350 Up	0.475 Up	0.625 Up	0.850 Up	1.150 Up	1.450 Up	1.900 Up	2.600 Up	3.500 Up	4.750 Up	6.250 Up	8.500 Up
bin #	bin 1	bin 2	bin 3	bin 4	bin 5	bin 6	bin 7	bin 8	bin 9	bin 10	bin 11	bin 12
Upstream	146310	81965	45438	56393	13434	6285	26223	15843	7870	5231	2458	1219
Upstream	146694	83034	45952	57059	13752	6379	26595	15977	7542	5226	2458	1250
Upstream	165991	91597	50240	60690	14471	6863	27153	16233	7350	5130	2264	1061
Upstream	158760	88616	48598	59186	14298	6404	27213	16160	7629	5165	2296	1114
Upstream	146721	79735	43591	52238	12780	5959	23467	14246	6651	4452	1918	981
Upstream	136913	74361	40544	47504	11261	5212	21074	12651	5802	3971	1773	843
Upstream	134689	72508	39133	46814	11075	5097	21147	12501	5822	4044	1730	860
Upstream	179161	100074	54426	64612	15243	6985	28045	16465	7443	4727	1989	890
Upstream	193538	109193	59783	70934	16886	7705	30864	17745	8029	5110	2117	956
Upstream	181279	100144	53132	61965	14175	6652	25877	14791	6444	4173	1656	751
Average Ub	3.40	0.60	0.40	0.10	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00
Average U	159005.60	88122.70	48083.70	57739.50	13737.50	6354.10	25765.80	15261.20	7058.20	4722.90	2065.90	992.50
StdDev Ub	1.78	0.84	0.52	0.32	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00
95% Ub,ucl	4.6707	1.2032	0.7694	0.3262	0.0000	0.0000	0.0000	0.3262	0.3262	0.0000	0.0000	0.0000

Downstream	101255	52588	24857	23128	5288	1970	7304	3385	1019	359	76	21
Downstream	101756	53153	25632	23201	5423	1951	7417	3589	1008	421	87	13
Downstream	112018	57545	26880	24357	5651	2024	7509	3525	1023	383	76	11
Downstream	112257	56809	27267	24537	5624	2096	7588	3725	1105	393	108	17
Downstream	101528	50688	23811	21648	4859	1840	6657	3080	911	360	80	8
Downstream	95275	47831	22309	19765	4464	1717	6086	2750	836	294	65	8
Downstream	90614	44484	21026	18517	4185	1604	5657	2723	825	295	65	14
Downstream	122990	61911	28699	25763	5770	2318	7832	3580	971	373	64	14
Downstream	134358	70460	33121	29214	6745	2604	8512	3991	1095	398	69	15
Downstream	126794	64485	29351	26295	5716	2207	7527	3436	948	320	56	7
Average Db	1.60	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average D	109884.50	55995.40	26295.30	23642.50	5372.50	2033.10	7208.90	3378.40	974.10	359.60	74.60	12.80
StdDev Db	1.17	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95% Db,ucl	2.4396	0.5016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Average R	1.009	1.056	1.051	0.931	1.076	1.004	1.054	1.081	1.053	1.081	1.105	1.124
Average P	0.6908	0.6351	0.5469	0.4094	0.3908	0.3196	0.2799	0.2212	0.1384	0.0761	0.0361	0.0128
StdDev P	0.0105	0.0112	0.0107	0.0089	0.0089	0.0140	0.0067	0.0064	0.0061	0.0037	0.0049	0.0035
Corrected P	0.6848	0.6012	0.5205	0.4398	0.3630	0.3183	0.2654	0.2047	0.1314	0.0704	0.0327	0.0114

PSE	31.52	39.88	47.95	56.02	63.70	68.17	73.46	79.53	86.86	92.96	96.73	98.86
E1	43.84											
E2	71.21											
E3	93.85											

Liquid 1

Test No. 14-1262
Date: 15-Jul-14

Geo. Mean Dia. (uM)	0.350 Up	0.475 Up	0.625 Up	0.850 Up	1.150 Up	1.450 Up	1.900 Up	2.600 Up	3.500 Up	4.750 Up	6.250 Up	8.500 Up
bin #	bin 1	bin 2	bin 3	bin 4	bin 5	bin 6	bin 7	bin 8	bin 9	bin 10	bin 11	bin 12
Upstream	235312	192470	107640	92360	19121	12033	45723	10606	2949	1555	294	73
Upstream	233818	192454	107489	91815	19032	11924	45406	10231	2911	1476	236	76
Upstream	218004	179433	100035	85465	17697	11004	41958	9606	2673	1407	261	62
Upstream	228544	187860	104598	89521	18479	11557	44591	10051	2878	1401	237	61
Upstream	234535	192193	107171	92023	18952	11841	45606	10314	2931	1404	273	68
Upstream	233484	190650	106735	91360	18808	11807	45490	10455	2891	1475	256	75
Upstream	245291	201397	111704	96367	19871	12300	47860	10862	2901	1531	269	84
Upstream	239479	195005	109135	93521	19250	12130	46243	10607	2944	1479	265	77
Upstream	231285	189563	104811	90114	18628	11625	45000	10247	2819	1453	263	62
Upstream	243878	199688	111163	95236	19915	12419	46853	10667	3045	1479	278	72
Average Ub	14.10	1.80	0.70	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average U	234363.00	192071.30	107048.10	91778.20	18975.30	11864.00	45473.00	10364.60	2894.20	1466.00	263.20	71.00
StdDev Ub	2.73	1.14	0.67	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95% Ub,ucl	16.0502	2.6121	1.1828	1.1001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Downstream	205250	160112	86227	59897	11883	6449	20450	3937	657	203	10	3
Downstream	201341	156286	83156	57727	11673	6250	21793	3832	614	202	16	1
Downstream	187869	146352	77871	54407	11017	5766	19510	3547	589	211	12	2
Downstream	193500	150048	80159	55721	11377	5990	20106	3632	570	191	18	4
Downstream	200756	157016	82825	58192	11710	6080	19669	3816	655	214	22	1
Downstream	205040	160003	85111	59809	11938	6312	20376	3769	692	193	27	1
Downstream	210455	164409	87023	61085	12411	6626	22778	3957	625	220	22	1
Downstream	207864	162525	85865	60651	12116	6357	22678	4016	641	213	16	0
Downstream	199386	155115	82632	58014	11978	6259	22001	3832	636	217	16	1
Downstream	203271	157427	84313	59659	11898	6609	22361	3764	693	205	18	0
Average Db	11.10	2.80	0.60	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average D	201473.20	156929.30	83518.20	58516.20	11800.10	6269.80	21172.20	3810.20	637.20	206.90	17.70	1.40
StdDev Db	6.84	1.99	0.70	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95% Db,ucl	15.9917	4.2226	1.1001	0.7828	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Average R	1.004	1.020	1.060	0.981	1.074	0.997	1.024	1.139	1.033	1.151	1.287	1.077
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Average P	0.8598	0.8171	0.7802	0.6376	0.6220	0.5284	0.4655	0.3677	0.2201	0.1413	0.0678	0.0208
StdDev P	0.0127	0.0155	0.0134	0.0108	0.0125	0.0088	0.0201	0.0078	0.0109	0.0078	0.0199	0.0202
Corrected P	0.8560	0.8012	0.7362	0.6498	0.5790	0.5297	0.4547	0.3227	0.2130	0.1227	0.0526	0.0193

PSE	14.40	19.88	26.38	35.02	42.10	47.03	54.53	67.73	78.70	87.73	94.74	98.07
E1	23.92											
E2	52.85											
E3	89.81											

Liquid 2

Test No. 14-1262
Date: 15-Jul-14

Geo. Mean Dia. (uM)	0.350 Up	0.475 Up	0.625 Up	0.850 Up	1.150 Up	1.450 Up	1.900 Up	2.600 Up	3.500 Up	4.750 Up	6.250 Up	8.500 Up
bin #	bin 1	bin 2	bin 3	bin 4	bin 5	bin 6	bin 7	bin 8	bin 9	bin 10	bin 11	bin 12
Upstream	231468	190498	106071	90964	19089	11556	45674	10209	2963	1537	285	82
Upstream	223150	183817	102349	86697	18675	11166	44029	9930	2821	1520	271	95
Upstream	243304	199493	111118	94594	20371	12120	47642	10780	3025	1511	269	73
Upstream	253854	207342	115551	99463	21018	12740	50362	11100	3176	1613	303	89
Upstream	267023	219456	122042	104106	22228	13516	52410	11696	3251	1709	325	106
Upstream	263861	216037	119888	102863	21947	13174	51840	11629	3347	1645	358	75
Upstream	253050	206927	115494	98986	21064	12639	49786	11340	3113	1648	323	89
Upstream	249897	204606	115418	98230	20768	12632	49280	11124	3082	1567	303	75
Upstream	240221	197427	109611	94065	19899	12064	46817	10787	3031	1590	275	75
Upstream	244711	200858	111712	95127	20329	12224	47922	10812	3080	1593	285	60
Average Ub	14.80	3.10	0.60	0.30	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00
Average U	247053.90	202646.10	112925.40	96509.50	20538.80	12383.10	48576.20	10940.70	3088.90	1593.30	299.70	81.90
StdDev Ub	5.69	2.38	0.52	0.48	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00
95% Ub,ucl	18.8716	4.8011	0.9694	0.6455	0.3262	0.3262	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Downstream	202244	157990	84310	59535	12068	5850	22512	3791	620	184	16	1
Downstream	196934	153237	81900	58462	11653	5883	19310	3732	645	189	21	2
Downstream	212382	166827	88838	62553	12678	6454	21586	4005	723	239	10	3
Downstream	225547	177247	94525	66244	13604	6845	20766	4198	713	222	21	1
Downstream	232477	180807	95367	67640	13814	6889	22328	4321	750	243	17	0
Downstream	231313	180249	96422	67947	13690	6983	22432	4388	736	254	17	1
Downstream	228575	179223	95963	67587	13471	7090	22224	4434	737	268	30	4
Downstream	216839	168055	89868	63247	13066	6519	23819	4182	680	244	19	1
Downstream	211930	165845	88712	62912	12310	6558	23460	4109	649	214	20	2
Downstream	215916	169587	90686	63973	12785	6685	24037	4248	640	207	23	1
Average Db	11.20	2.60	0.50	0.30	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.00
Average D	217415.70	169906.70	90659.10	64010.00	12913.90	6575.60	22247.40	4140.80	689.30	226.40	19.40	1.60
StdDev Db	4.59	2.27	0.97	0.48	0.32	0.00	0.32	0.00	0.00	0.00	0.00	0.00
95% Db,ucl	14.4831	4.2242	1.1952	0.6455	0.3262	0.0000	0.3262	0.0000	0.0000	0.0000	0.0000	0.0000

Average R	1.004	1.020	1.060	0.981	1.074	0.997	1.024	1.139	1.033	1.151	1.287	1.077
Average P	0.8801	0.8384	0.8029	0.6634	0.6287	0.5310	0.4588	0.3784	0.2231	0.1419	0.0649	0.0201
StdDev P	0.0104	0.0138	0.0159	0.0119	0.0089	0.0172	0.0332	0.0079	0.0108	0.0151	0.0169	0.0139
Corrected P	0.8762	0.8221	0.7576	0.6761	0.5852	0.5324	0.4482	0.3322	0.2159	0.1233	0.0504	0.0186

PSE	12.38	17.79	24.24	32.39	41.48	46.76	55.18	66.78	78.41	87.67	94.96	98.14
E1	21.70											
E2	52.55											
E3	89.79											

Liquid 3

Test No. 14-1262
Date: 15-Jul-14

Geo. Mean Dia. (uM)	0.350 Up	0.475 Up	0.625 Up	0.850 Up	1.150 Up	1.450 Up	1.900 Up	2.600 Up	3.500 Up	4.750 Up	6.250 Up	8.500 Up
bin #	bin 1	bin 2	bin 3	bin 4	bin 5	bin 6	bin 7	bin 8	bin 9	bin 10	bin 11	bin 12
Upstream	275352	226157	127052	108941	23337	13539	54883	12550	3436	1805	310	86
Upstream	287023	237429	132225	114766	24534	14525	58007	13118	3742	1951	339	96
Upstream	287528	236012	132049	114168	24294	14174	57575	13271	3769	1908	352	83
Upstream	281242	231701	128776	111555	23835	14016	56171	12845	3729	1801	367	80
Upstream	270602	223102	124133	107491	22935	13646	54192	12487	3434	1777	331	65
Upstream	275984	226220	126265	108810	23394	13663	55395	12225	3501	1844	375	79
Upstream	279073	229797	127744	110003	23798	13913	55517	12688	3516	1827	333	85
Upstream	282453	231242	128689	111059	24245	14002	56356	12992	3686	1756	361	100
Upstream	277272	227935	127106	109857	23262	13616	55685	12627	3535	1849	329	99
Upstream	272020	223382	124480	107249	23173	13545	54082	12296	3440	1791	371	88
Average Ub	16.00	3.40	0.70	0.20	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00
Average U	278854.90	229297.70	127851.90	110389.90	23680.70	13863.90	55786.30	12709.90	3578.80	1830.90	346.80	86.10
StdDev Ub	4.42	3.17	1.06	0.42	0.00	0.00	0.32	0.00	0.32	0.00	0.00	0.00
95% Ub,ucl	19.1632	5.6670	1.4578	0.5016	0.0000	0.0000	0.3262	0.0000	0.3262	0.0000	0.0000	0.0000

Downstream	243061	189802	101421	72026	14486	7437	24741	4664	769	241	25	3
Downstream	249456	195888	104314	74079	14821	7209	25518	4864	812	268	22	3
Downstream	253577	198401	106261	74979	14983	7344	25566	4829	855	234	18	1
Downstream	247626	194602	104573	74005	14705	7454	27402	4855	762	248	16	3
Downstream	237774	186681	99516	70225	14365	7157	26350	4604	753	260	18	3
Downstream	235242	183173	98190	69649	14039	6828	26029	4472	816	253	16	3
Downstream	242843	188982	101035	71547	14563	7098	23035	4656	821	279	26	1
Downstream	247641	193994	104313	73621	14644	7349	25361	4763	829	279	19	1
Downstream	242362	189765	101461	71558	14611	6859	25329	4891	820	253	25	2
Downstream	245067	192910	102004	72424	14702	7144	25596	4722	802	279	19	0
Average Db	13.80	2.80	0.50	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average D	244464.90	191419.80	102308.80	72411.30	14591.90	7187.90	25492.70	4732.00	803.90	259.40	20.40	2.00
StdDev Db	5.47	3.08	1.08	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95% Db,ucl	17.7150	5.0060	1.2726	0.9001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Average R	1.004	1.020	1.060	0.981	1.074	0.997	1.024	1.139	1.033	1.151	1.287	1.077
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Average P	0.8767	0.8349	0.8002	0.6560	0.6163	0.5186	0.4572	0.3724	0.2248	0.1419	0.0595	0.0242
StdDev P	0.0123	0.0142	0.0123	0.0101	0.0114	0.0164	0.0225	0.0081	0.0093	0.0113	0.0143	0.0153
Corrected P	0.8729	0.8186	0.7551	0.6686	0.5737	0.5199	0.4466	0.3269	0.2176	0.1233	0.0463	0.0224

PSE	12.71	18.14	24.49	33.14	42.63	48.01	55.34	67.31	78.24	87.67	95.37	97.76
E1	22.12											
E2	53.32											
E3	89.76											