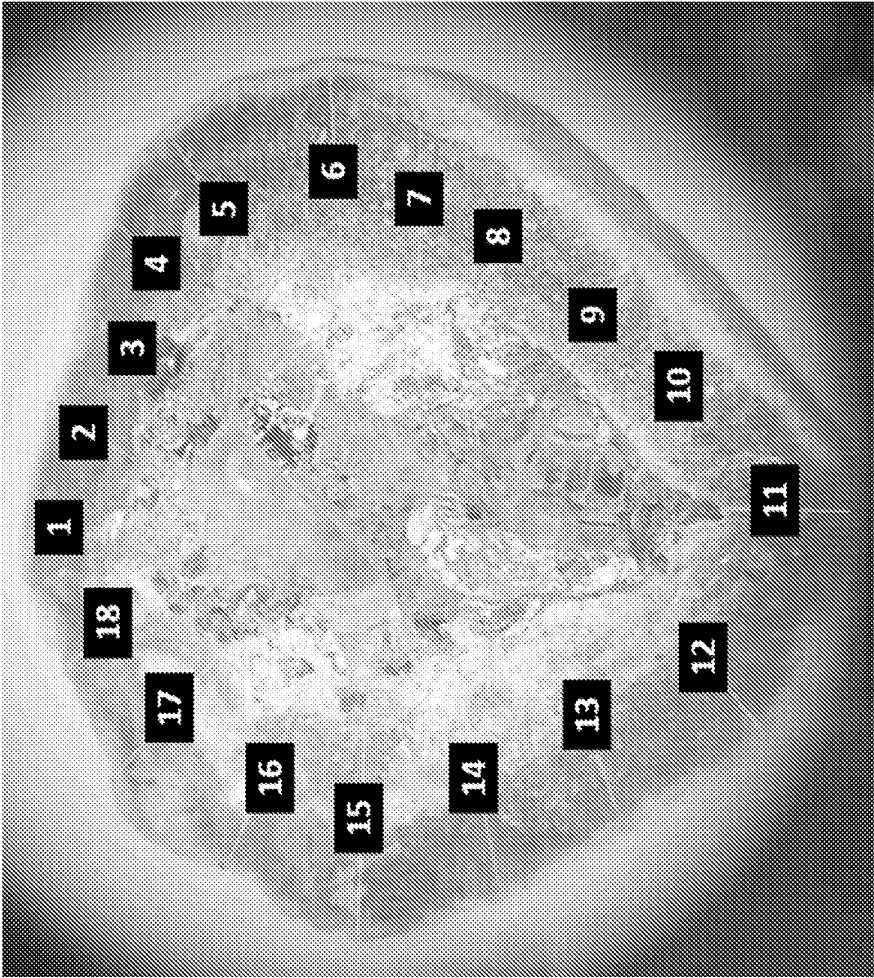
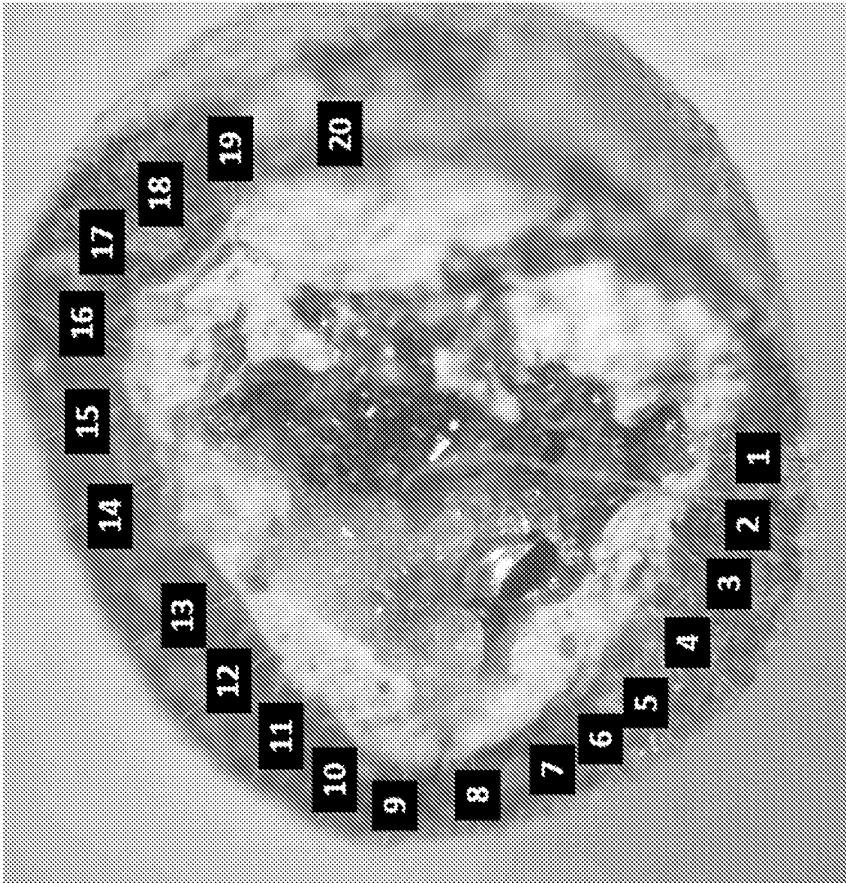


FIG. 1A



Label	Thickness (μm)
1	311.968
2	289.397
3	253.091
4	361.057
5	543.86
6	594.012
7	471.196
8	343.43
9	343.682
10	354.682
11	364.876
12	524.616
13	593.623
14	620.036
15	669.183
16	581.83
17	469.046
18	379.997

FIG. 1B



Label	Thickness (μm)
1	289.111
2	371.402
3	433.656
4	400.628
5	353.332
6	316.804
7	273.090
8	237.018
9	242.966
10	256.141
11	288.058
12	352.784
13	351.319
14	324.416
15	277.34
16	335.552
17	349.005
18	413.100
19	254.518
20	262.112

FIG. 2

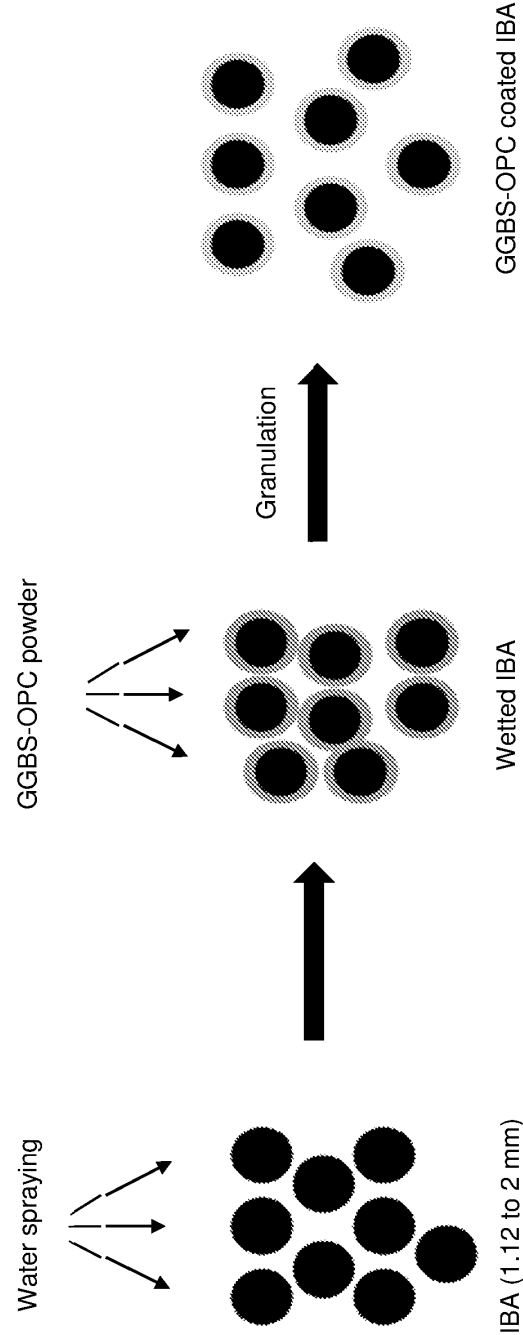


FIG. 3A

Formulation for Coating Sample															
Test Parameter	Pre-processing and Post-metal-recovery IBA (raw IBA)	Binder : IBA = 2 : 1													
		CS0	CS1	CS2	CS3	CS4	CS8	CS9	CS10	CS11	CS12	CS13	CS14	CS15	
		400PC4 8GG20MF F-GG	1000PC	800PC2 8GG10 GG10MF GG	600PC4 8GG30 GG10MF GG	500PC5 8GG140 GG10MF GG	500PC5 8GG	500PC5 8GG30 GG20MF GG	500PC4 80PC10 MF-OPC 50GG	500PC3 80PC20 MF-OPC 50GG	500PC4 8GG10S F	400PC5 8GG10S F	500PC4 8GG10B	400PC5 8GG10B	
Aluminium (Al)	N.D.	10.72	5.62	3.38	23.1	26.1	13.3	8.7	7.99	0.68	11.6	11	16.7	13.8	
Antimony (Sb)	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Arsenic (As)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.017	0.019	0.13	N.D.	N.D.	N.D.	N.D.	
Barium (Ba)	1.14	0.34	2.71	3.51	0.12	N.D.	0.17	0.1	0.11	0.13	0.35	0.14	0.16	0.15	
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Chromium (Cr) (Total)	0.012	N.D.	0.040	0.01	0.018	0.015	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.015	0.013	
Chromium (Cr) (VI)	0.044	N.D.	0.17	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Cobalt (Co)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Copper (Cu)	8.9	0.18	0.16	0.22	0.16	0.11	0.071	0.027	0.036	0.033	0.059	0.111	0.05	0.055	
Manganese (Mn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Mercury (Hg)	N.D.	N.D.	0.00014	0.0001	N.D.	N.D.	N.D.	0.00015	N.D.	0.00013	N.D.	N.D.	N.D.	N.D.	
Molybdenum (Mo)	1.72	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.031	0.12	0.042	0.062	
Nickel (Ni)	0.05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Lead (Pb)	2.61	N.D.	0.27	0.36	0.028	0.012	N.D.	N.D.	N.D.	N.D.	0.034	N.D.	N.D.	N.D.	
Sodium (Na)	3.609	122.56	363	247	202	259	221	102	107	N.D.	204	250	367	380	
Silver (Ag)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Selenium (Se)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Tin (Sn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Vanadium (V)	N.D.	N.D.	N.D.	N.D.	N.D.	0.012	N.D.	0.012	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Zinc (Zn)	3.21	N.D.	N.D.	0.17	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Bromide	61	1.20	1.8	1.06	0.8	0.36	0.67	0.23	0.23	0.17	0.05	1.56	0.68	0.94	
Chloride	9.831	283.98	643	590	182	78.9	175	35.7	30.7	27	194	367	164	231	
Fluoride	2.56	1.98	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Sulphate (SO ₄)	1.483	22.3	9.48	8.52	96	89.9	31.9	34.1	23.6	26.8	29.4	52.8	43.8	52.3	
Ammonia (as N)	3.45	0.68	0.4	0.92	0.51	0.67	0.7	0.59	0.54	0.53	0.69	0.51	0.56	0.56	
Total Nitrogen (as N)	9.85	2.64	2.63	2.24	1.8	1.84	1.28	1.23	1.04	1.04	1.97	2.37	2.26	2.25	
Total Phosphorus (as P)	N.D.	N.D.	0.061	0.064	0.059	0.073	0.03	0.11	0.12	0.063	N.D.	0.038	0.043	0.037	
Total Organic Carbon (TOC)	802	44	43.6	45.1	33.5	21.2	12.9	12.6	11.7	9.12	16.5	24.5	12.8	18.1	
Chemical Oxygen Demand (COD)	2,332	78	94	84	46	64	28	14	N.D.	26	36	70	28	46	

CS0 = Ordinary Portland Cement
CS1 = Microsilica
CS2 = Silica Fume
CS3 = Bentonite
CS4 = Bentonite
CS8 = Microsilica
CS9 = Microsilica
CS10 = Silica Fume
CS11 = Bentonite
CS12 = Microsilica
CS13 = Bentonite
CS14 = Bentonite
CS15 = Bentonite

N.D. = Not Detected GPC = Ordinary Portland Cement SF = Silica Fume B = Bentonite

FIG. 3B

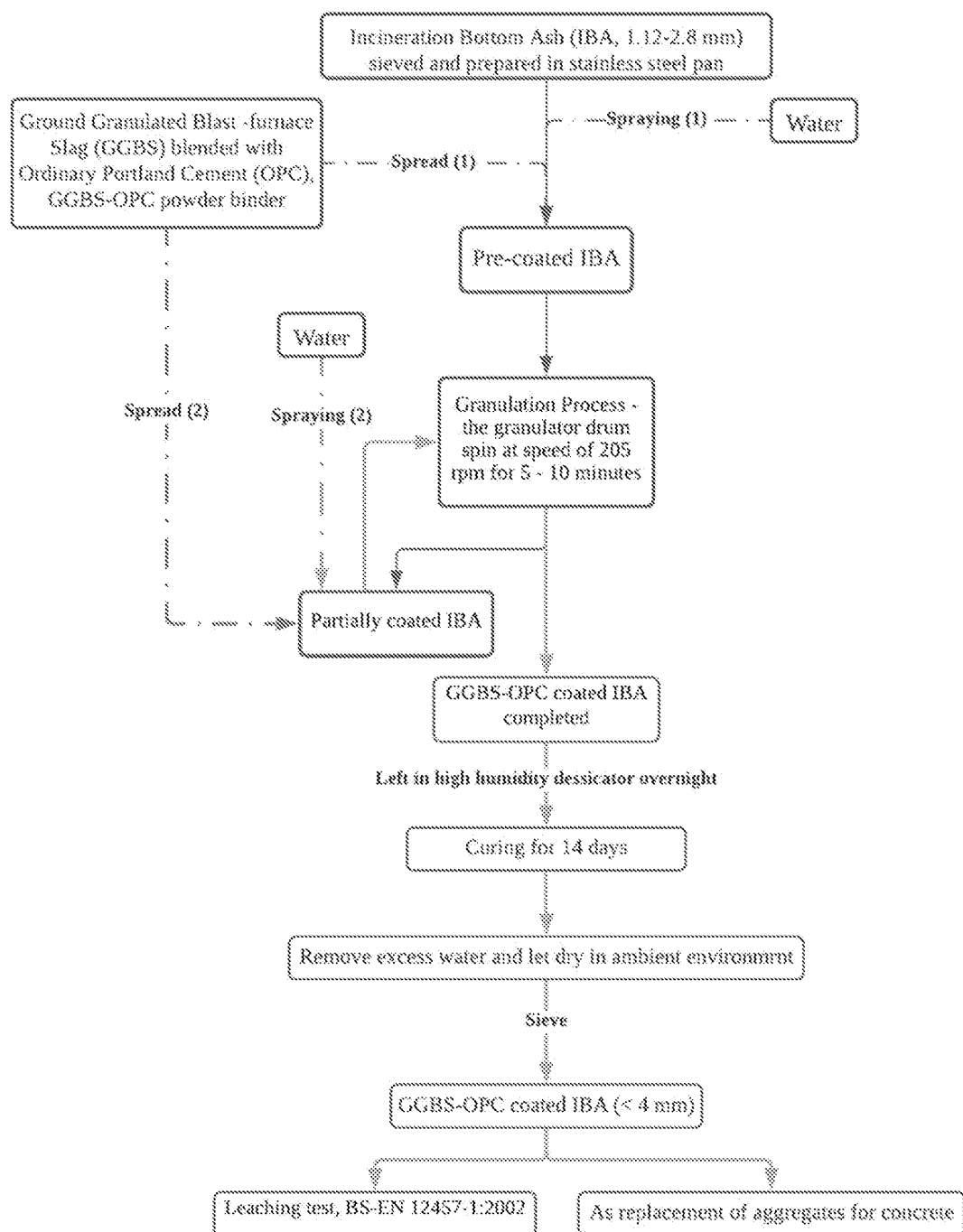
Additional formulation for Coating Sample			
Test Parameter	Binder : IBA = 1 : 1		
	1:1 (14D)	Repeat Test (7D)	Repeat Test (14D)
	CS11-R	CS11-R	CS11-R
Aluminum (Al)	5.82	2.53	4.48
Antimony (Sb)	N.D.	N.D.	N.D.
Arsenic (As)	0.018	0.013	0.026
Barium (Ba)	0.21	0.24	0.48
Cadmium (Cd)	N.D.	N.D.	N.D.
Chromium (Cr) (Total)	0.027	0.094	0.028
Chromium (Cr) (VI)	N.D.	0.090	0.022
Cobalt (Co)	N.D.	N.D.	N.D.
Copper (Cu)	0.046	0.18	0.11
Manganese (Mn)	N.D.	N.D.	N.D.
Mercury (Hg)	N.D.	0.00015	N.D.
Molybdenum (Mo)	N.D.	N.D.	N.D.
Nickel (Ni)	N.D.	N.D.	N.D.
Lead (Pb)	N.D.	N.D.	N.D.
Sodium (Na)	N.D.	N.D.	N.D.
Silver (Ag)	N.D.	N.D.	N.D.
Selenium (Se)	N.D.	N.D.	N.D.
Tin (Sn)	N.D.	N.D.	N.D.
Vanadium (V)	N.D.	N.D.	N.D.
Zinc (Zn)	N.D.	N.D.	N.D.
Bromide	0.29	1.15	0.94
Chloride	103	313	257
Fluoride	N.D.	N.D.	N.D.
Sulphate (SO₄)	192	105	N.D.
Ammonia (as N)	0.34	0.66	0.58
Total Nitrogen (as N)	0.97	2.77	1.80
Total Phosphorus (as P)	N.D.	0.034	0.066
Total Organic Carbon (TOC)	21.8	39.6	17.9
Chemical Oxygen Demand (COD)	N.D.	124	56

FIG. 4

Test Parameter	Pre-processing IBA and post-metal recover IBA (raw IBA)	CS0	CS1	CS2	CS3	CS4	CS8	CS9	CS10	CS11	CS12	CS13	CS14	CS15
Benzene	N.D.	400PC4 GG20M FGG	100OPC	800PC2 GG10 GG10MF GG)	600PC4 GG30 GG10MF GG)	500PC5 GG40 GG10MF GG)	500PC5 GG	500PC5 GG20MF GG)	500PC4 GG10 MFOPC) 50GG	500PC3 GG20 MFOPC) 50GG	500PC4 GG10S F	400PC5 GG10S F	500PC4 GG10B	400PC5 GG10B
Ethylbenzene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Xylenes (sum)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Phenol	1.82	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Naphthalene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Anthracene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Phenanthrene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Fluoranthene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chrysene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzo(a)anthracene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzo(a)pyrene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzo(k)fluorant hene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Indeno(1,2,3-cd)pyrene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzo(ghi)perylene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PAH (total of 10)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Polychlorobiphenyls (PCBs) (Sum)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Mineral Oil (C8-C9)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Mineral Oil (C10-C36)	177	N.D.	19.8	25.4	31.9	20.2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Asbestos	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D. = Not detected OPC = Ordinary Portland Cement GG = GGBS MF = Microsilica SF = Silica Fume B = Bentonite

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FIG. 5

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FIG. 6