Table IIA-1
ASH GROVE CEMENT COMPANY, SEATTLE PLANT
2004
IDENTIFICATION OF NON-FUGITIVE SOURCES AND CALCULATION OF EMISSION FACTORS

	ASH GROVE Seattle Plant Unit Id.	Equipment Number	PSCAA Point Number	Control Equipment Number	Plant Location	Design Capacity, acfm	Year Installed	Pollutant	Potential Emissions(1) kg/hr	Max. Design Mg/hr	Process Quantity Type	Emission Factor kg/Mg	Process Quantity Type	Process Quantity Mg/year 2002	Contaminant kg/year 2002
1	KN	41B.BF3	1	34	#1 COAL MILL	10400	1990	PM	0.202	10	Coal (wet) to Mill # 1	2.03E-02	Coal (wet) to Mill # 1	32893	667
								CO	(2)	(2)	"	(3)	"	32893	43390
								NOx	(2)	(2)	"	(3)	"	32893	42723
								SO2	(2)	(2)	"	(3)	"	32893	4592
2		41B.BF4	1	34	#2 COAL MILL	10400	1990	PM	0.202	10	Coal (wet)to Mill # 2	2.03E-02	Coal (wet)to Mill # 2	32893	667
								CO	(2)	(2)	"	(3)	"	32893	43390
								NOx	(2)	(2)	"	(3)	"	32893	42723
								SO2	(2)	(2)	"	(3)	"	32893	4592
3		413.BF1	8	15	MAIN BAGHOUSE	n/a	1990	PM	(2)	(2)	Clinker from Kiln	4.14E-02	Clinker from Kiln	558562	23124
								CO	(1)	(1)	"	(1)	"	558562	1079296
								NOx	(1)	(1)	"	(1)	"	558562	1062694
								SO2	(1)	(1)	"	(1)	"	558562	114216
4	RM	312BF1	3	22	TRANSFER TOWER 8	5320	1990	PM	0.104	268	Clay+Steel Scale+Silica + Bottom Ash	3.87E-04	Clay+Steel Scale+Silica + Bottom A	216848	84
5		316.BF1	21	40	FLY ASH D/C	750	1994	PM	0.015	27	Fly Ash rec'd	5.36E-04	Fly Ash rec'd	0	0
6		311.BF2	3	36	TRANSFER TOWER 3/4	4800	1990	PM	0.093	284	Limestone rec'd	3.29E-04	Limestone rec'd	676609	223
7	NotOpr 01	311.BF1	3	18	STACKER	2000	1990	PM	0.039	1021	Limestone rec'd	3.81E-05	Limestone rec'd	0	0
8		311.BF3	3	19	TRANSFER TOWER 5	3800	1990	PM	0.074	284	Limestone rec'd	2.60E-04	Limestone rec'd	676609	176
9		311BF4	3	24	331 L.S./CLAY/Bot Ash BINS	10600	1990	PM	0.206	222	Limestone+Clay +Bot Ash rec'd	9.28E-04	Limestone+Clay +Bot Ash rec'd	727892	675
10		311.BF5	3	20	TRANSFER TOWER 6	9350	1990	PM	0.182	284	Limestone+Clay + Bottom Ash rec'd	6.41E-04	Limestone+Clay + Bottom Ash rec'd	727892	466
11		41B.FN2	3	33	COAL FEEDER #2	1150	1990	PM	0.022	10	Coal (wet) used in Mill #2	2.24E-03	Coal (wet) used in Mill #2	32893	74
12		41A.BF3	3	28	COAL SILO	1300	1990	PM	0.025	181	Coal rec'd	1.39E-04	Coal rec'd	69667	10
13		41B.FN1	3	33	COAL FEEDER #1	1150	1990	PM	0.022	10	Coal (wet) used in Mill #1	2.24E-03	Coal (wet) used in Mill #1	32893	74
14		41A.BF2	3	27	TRANSFER TOWER 5	3050	1990	PM	0.059	227	Coal (wet) rec'd	2.62E-04	Coal (wet) rec'd	69667	18
15	NotOpr03	315.BF1	3	25	TRANSFER TOWER 7	2400	1990	PM	0.047	222	Total Raw Material used	2.10E-04	Limest+clay+silica+iron+FlyAsh	0	0
16		313.BF1	3	23	331 STEEL&SILICA BINS	11550	1990	PM	0.225	268	Steel Scale+Silica used	8.40E-04	Steel Scale+Silica used	158971	133
17	KF	41C.BF1	20	35	PF BIN	1250	1990	PM	0.024	18	Coal (pulverized) produced	1.49E-03	Coal (pulverized) produced	61181	91
18		411.BF1	5	31	BLEND SILOS (W)	8324	1990	PM	0.162	227	1/2 Kiln Feed produced	7.14E-04	1/2 Kiln Feed produced	371464	265
19		413.BF3	3	29	KILN FEED BLD	7800	1990	PM	0.148	207	Kiln Feed produced	7.15E-04	Kiln Feed produced	744119	532
20		317.BF1	3	30	BLEND SILOS (E)	8000	1990	PM	0.156	227	1/2 Kiln Feed produced	6.86E-04	1/2 Kiln Feed produced	371464	255
21		413.BF2	8	39	SORBENT SYS. D/C	750	1993	PM	0.015	27	Sorbent rec'd	5.36E-04	Sorbent rec'd	1185	1
22	CK	419.BF1	3	32	G-COOLER	20600	1990	PM	0.401	167	Clinker, 100 % produced.	2.40E-03	Clinker, 100 % produced.	558562	1341
23	NotOpr 00	419.FN7	10	2	CLINKER SILOS -Top(SW)	3864	1968	PM	0.075	227	Clinker, 0 % prod.+rec'd.	3.31E-04	Clinker, 0 % prod.+rec'd.	0	0
24		511.BF1	3	4	CLINKER SHED ELEV.	5000	1968	PM	0.097	227	Clinker, 15 % prod.+rec'd.	4.29E-04	Clinker, 15 % prod.+rec'd.	83784	36
		511.BF8			CLINKER SHED	20000	2002	PM	0.389	227	Clinker, 15 % prod.+rec'd.	1.72E-03	Clinker, 15 % prod.+rec'd.	83784	144
25		419.FNC	10	14	CLINKER SILOS-Top(N-center)	6000	1968	PM	0.117	167	Clinker, 85 % prod.+rec'd.	6.99E-04	Clinker, 85 % prod.+rec'd.	474778	332
26		419.FN5	10	2	CLINKER SILOS-Top(S-center)	3864	1968	PM	0.075	227	Clinker, 60% prod.+ 66% Gyp rec'd.	3.31E-04	Clinker, 60% prod.+ 66% Gyp rec'd	354630	116
27		511.FN8			CLINKER SILOS-Bot(E)	1770	1968	PM	0.034	227	Clinker, 85% prod.+ 50% Gyp used	1.52E-04	Clinker, 85% prod.+ 50% Gyp used	490266	74
28		419.FN9	10	2	CLINKER SILOS-Top(SE)	3864	1968	PM	0.075	167	Clinker, 30% prod.+33% Gyp rec'd.	4.50E-04	Clinker, 30% prod.+33% Gyp rec'd.	177315	80
29		511.FN6			CLINKER SILOS BOT(W)	1770	1968	PM	0.034	227	Clinker, 40% prod.+ 50% Gyp used	1.52E-04	Clinker, 40% prod.+ 50% Gyp used	238913	36
30		419.FZ3	9	38	CLINKER SILOS-Top(NE)	5800	1990	PM	0.113	167	Clinker, 100 % prod.+rec'd.	6.76E-04	Clinker, 100 % prod.+rec'd.	558562	378
31		41G.BF1	15	41	CLINKER LOADOUT D/C	1000	1994	PM	0.019	227	Clinker, shipped	8.58E-05	Clinker, shipped	0	0
	CM	611.BF7	18	10	SS TANKS LOADING	1716	1960	PM	0.033	181	Cement, 5% prod.+rec'd.	1.84E-04	Cement, 5% prod.+rec'd.	33936	6
		610.BF2			GP2 SILO 19	4200	2002	PM	0.082	59	Cement, 47 % prod.+rec'd.	1.39E-03	Cement, 47 % prod.+rec'd.	265834	276
32		515.BF1	12	42	FM #1 MILL SWEEP D/C	20000	1994	PM	0.280	59	Cement, 50 % prod.	4.75E-03	Cement, 50 % prod.	282802	1344
33		610.BF1			GP2 TRANSFER BIN	3864	1968	PM	0.075	100	Cement, 3 % prod.+rec'd.	7.53E-04	Cement, 3 % prod.+rec'd.	16968	13
		610.BF3			GP2 SILO 17	4200	2002	PM	0.082	59	Cement, 47 % prod.+rec'd..	1.39E-03	Cement, 47 % prod.+rec'd..	265834	276
34		525.BF1	12	42	FM #2 MILL SWEEP D/C	20000	1994	PM	0.280	59	Cement, 50 % prod.	4.75E-03	Cement, 50 % prod.	282802	1344
35		611.BF2	15	7	GP2 RAIL LOAD	1770	1968	PM	0.034	145	Cement, 55 % prod.+rec'd.at GP2	2.37E-04	Cement, 55 % prod.+rec'd.at GP2	311083	74
36		611.BF4	16	8	GP1 SILO (N)	3200	1969	PM	0.062	59	Cement, 0.5 % prod.+rec'd.	1.06E-03	Cement, 0.5 % prod.+rec'd.	2828	3
	InOpr 97	940.543	19	13	PACK HOUSE	4150	1969	PM	0.081	36	Cement, 0 % prod.+rec'd.	2.23E-03	Cement, 0 % prod.+rec'd.	0	0
37		525.BF2	13	45	FM #2 SEPARATOR;	77000	1995	PM	0.599	59	Cement, 50 % prod.	1.02E-02	Cement, 50 % prod.	282802	2874
38		611.BF6	17	9	SS TANKS(Top)	6000	1999	PM	0.117	136	Cement, 20% prod.+rec'd.	8.58E-04	Cement, 20% prod.+rec'd.	33936	29
39		515.BF2	13	45	FM #1 SEPARATOR;	77000	1995	PM	0.599	59	Cement, 50 % prod.	1.02E-02	Cement, 50 % prod.	282802	2874
40	InOpr 95	940.551	19	11	PACK HOUSE, MASONRY	8200	1928	PM	0.160	36	Cement, 0 % prod.+rec'd.	4.40E-03	Cement, 0 % prod.+rec'd.	0	0
41		611.BF4	16	5	GP1 SILO (S)	4150	1969	PM	0.081	54	Cement, 0.0 % prod.+rec'd.	1.48E-03	Cement, 0.0 % prod.+rec'd.	0	0
42		611.BF1	15	7	GP2 TRUCK LOAD	1770	1968	PM	0.034	490	Cement, 40 % prod.+rec'd.at GP2	7.03E-05	Cement, 40 % prod.+rec'd.at GP2	226242	16
43		611.BF8			CEMENT DOME	6000	1999	PM	0.117	118	Cement, 6 % prod.+rec'd.	9.90E-04	Cement, 6 % prod.+rec'd.	33936	34
44					BULK BAG LOADING	500	2002	PM	0.010	9	Cement, 0.5 % prod.+rec'd.	1.07E-03	Cement, 0.5 % prod.+rec'd.	2828	3
45															
46															
47															

(1) Unless specified, potential hourly emissions are calculated at the allowable of 0.005 gr/dscf and assuming that acf = dcf since most of the dust collectors handle ambient air.
(2) Emission Factor calculated from other data discussed in the specific Point and Segment of Section IIA-1.
(3) Dependent upon coal usage, see discusson in Section IIA-1.

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Table IIA-2
ASH GROVE CEMENT COMPANY, SEATTLE PLANT
2004 FOR EMISSION STATEMENT
SUMMARY OF DATA

Ash Grove Unit	PSAPCA Point	PSAPCA Segment	Megagram 2004	Tons 2004	Pounds 2004
			PM	PM	PM
KN	1	01	23	25.490	50980
	1	02	1	1.470	2941
RM	2	01	2	2.131	4262
KF	3	01	1	1.261	2522
CK	4	01	3	2.798	5597
CM	5	01	9	10.103	20206
Total			39	43	
KN	1	01	1079	1190	2379400
	1	02	87	96	191315
RM	2	01	0	0	0
KF	3	01	0	0	0
CK	4	01	0	0	0
CM	5	01	0	0	0
Total			1166	1285	
KN	1	01	1063	1171	2342800
	1	02	85	94	188372
RM	2	01	0	0	0
KF	3	01	0	0	0
CK	4	01	0	0	0
CM	5	01	0	0	0
Total			1148	1266	
KN	1	01	114	126	251800
	1	02	9	10	20248
RM	2	01	0	0	0
KF	3	01	0	0	0
CK	4	01	0	0	0
CM	5	01	0	0	0
Total			123	136	

Table IIA-3
2004 FOR EMISSION STATEMENT
RAW MATERIAL, PRODUCTION and SHIPPING

PSAPCA KN LIMIT tons/yr	2004	DATA 2004	TONS (input)	Mg	kg	lbs
PM10	tons	Stuff				
46	43	CO	1189.70	1079.30	1079295.84	2379400.00
CO	tons	NOx	1171.40	1062.69	1062894.08	2342800.00
2353	1285	SOx	125.90	114.22	114216.48	251800.00
	lbs					
	2570715					
NOx	tons					
1846	1266					
	lbs					
	2531172					
SO2	tons					
176	138.0					
	lbs					
	272046					

POINT	MATERIAL	RECEIVED TONS (input)	RECEIVED Mg (calc)	USED TONS (input)	USED Mg (calc)	PRODUCED TONS (input)	PRODUCED Mg (calc)	SHIPPED TONS (input)	SHIPPED Mg (calc)
1	COAL	76793	69667	72515	65786				
2	CLAY	17113	15525	17905	16243				
	IRON	37625	34133	38656	33436				
	SILICA +ERI+ JHBP Chips	144876	131432	138377	125538				
	LIMESTONE	745821	676609	743649	674638				
	GYPSUM	32556	29535	34144	30975				
	FLYASH	0	0	0	0				
	BOTTOM ASH	38079	34545	39416	35758				
3	KILN FEED			818752	740966	818925	742929		
	SORBENT	1306	1185	1312	1190				
4	CLINKER	0	0	623500	565639	616899	558562	0	0
5	CEMENT	0	0			623462	565605	643135	583452
FM#2	FLYASH-1PM	0		0	0	0	0		

		Tons			
point 002	Total RM	970931	cl prod.	558562	8760
point 003	Total KF	818074	cl/hr	85.095	
point 004	Total CK	615899	emis rate kg/hr	1.13	
point 005	Total CM	623462	kg/Mg clinker	0.0133	

		PM10	PM2.5	lbs.2.5
KN	1	50980	0.077 lbs per ton clinker	47409
	1	2941	0.6 x coal pm10	1765
RM	2	4262	0.6 x RM pm10	2557
KF	3	2522	0.6 per ton KF	1513
CK	4	5597	0.6 per ton clinker	3358
CM	5	20206	0.6 per ton cement	12124

SEA0194

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SEATTLE PLANT

12/31/04

	RECEIVED / PRODUCED DAY	MONTH	YEAR	USED / SHIPPED DAY	MONTH	YEAR	INVENTORY	rec	produced
RAW MATERIALS									
LIMESTONE		64,400	744,031	2,371	65,970	741,849	23,820	745821	743639
LIME FINES		0	1,790	(75)	0	1,790	0		
BOTTOM ASH		1,182	38,079	(640)	1,639	39,416	537	38079	39416
CASTLE ROCK CLAY		0	356	#REF!	0	356	0	356	356
PORT HARDY SILICA		15,189	106,042	117	12,743	99,500	6,542		
JAMES HARDIE SILICA		341	7,520	(879)	341	7,520	150	144867	138377
ERI (RECYCLED)		6,086	31,050	#REF!	6,104	31,103	100		
JHBP CHIPS		0	255	#REF!	0	255	0		
[illegible]		0	21,966	389	0	[illegible]	0		
[illegible]		6,018	14,693	#REF!	[illegible]	[illegible]	500	[illegible]	[illegible]
[illegible]		0	967	#REF!	0	[illegible]	0		
HYDRATED LIME(sorbent)		30	1,306	0	35	1,312	49	1306	1312
RAW MATERIAL SALES									
3/4" LIMESTONE SALES		14,301	213,017	23,868	15,331	209,266	8,319		
BLAST FURNACE SLAG		402	1,429		0	797	631		
KILN FEED									
TYPE I/II	748	89,085	926,339	5,630	89,159	931,340	4,428		
FUELS (TONS)									
GAS (Tons)				#REF!	51	589			
COAL (Tons)	0	8,944	76,793	#REF!	7,171	72,515	9,069		
TDF (Tons)				543	987	11,037	0		
TDF Weight Percent				#REF!	12.0%	13.1%			
FUELS (NET HEAT VALS)	Fuel Usage Rate			Fuel Usage (MMBTU)					
GAS (MMBTU Net)	#REF!	1.2%	1.4%	#REF!	2,214	25,798			
COAL (MMBTU Net)	#REF!	84.4%	82.9%	0	155,040	1,567,757			
TDF (MMBTU Net)	#REF!	14.4%	15.7%	0	26,539	296,675			
TOTAL (MMBTU Net)				#REF!	183,793	1,890,229			
MMBTU/Ton					3.02	3.07			
CLINKER									
PRODUCTION	17,654	60,765	615,699	#REF!	51,016	623,500	20,318		
SALES / RECEIVALS	0	0	0	0	0	0			
CEMENT ADDITIVES									
GYPSUM	0	5,108	32,566	#REF!	2,917	34,144	4,422		
GRINDING AID (Lbs)	0	0	405,180	#VALUE!	27,608	392,046	16,711		
CEMENT									
TYPE I-II	#REF!	50,601	632,462	664	42,511	643,135	62,368		
TYPE III	#REF!	2,269	24,119	69	1,412	27,182	1,003		
TYPE CG	#REF!	1,064	1,064	0	0	2,387	1,064		
TOTAL PRODUCED	#REF!	53,933	657,644	733	43,923	672,704			
TOTAL RECEIVED	0	0	0	0	0	0			
GRAND TOTAL	#REF!	53,933	657,644	733	43,923	672,704	64,435		