Table IIA-1
ASH GROVE CEMENT COMPANY, SEATTLE PLANT
2002
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 Emissi-ons(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	38863	788
								CO	(2)	(2)	"	(3)	"	38863	55640
								NOx	(2)	(2)	"	(3)	"	38863	47724
								SO2	(2)	(2)	"	(3)	"	38863	7386
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	38863	788
								CO	(2)	(2)	"	(3)	"	38863	55640
								NOx	(2)	(2)	"	(3)	"	38863	47724
								SO2	(2)	(2)	"	(3)	"	38863	7386
3		413.BF1	6	15	MAIN BAGHOUSE	n/a	1990	PM	(2)	(2)	Clinker from Kiln	4.14E-02	Clinker from Kiln	629453	26059
								CO	(1)	(1)	"	(1)	"	629453	1171377
								NOx	(1)	(1)	"	(1)	"	629453	1004724
								SO2	(1)	(1)	"	(1)	"	629453	155494
4	**RM**	312BF1	3	22	TRANSFER TOWER 8	5320	1990	PM	0.104	268	Clay+Steel Scale+Silica rd.	3.87E-04	Clay+Steel Scale+Silica rd.	203992	79
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	764916	252
7	InOpr 01	311.BF1	3	18	STACKER	2000	1990	PM	0.039	1021	Limestone rec'd	3.81E-05	Limestone rec'd		0
8		311.BF3	3	19	TRANSFER TOWER 5	3800	1990	PM	0.074	284	Limestone rec'd	2.60E-04	Limestone rec'd	764916	199
9		311BF4	3	24	331 L.S./CLAY BINS	10600	1990	PM	0.206	222	Limestone+Clay rec'd	9.28E-04	Limestone+Clay rec'd	880524	817
10		311.BF5	3	20	TRANSFER TOWER 6	9350	1990	PM	0.182	284	Limestone+Clay rec'd	6.41E-04	Limestone+Clay rec'd	880524	564
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	38863	87
12		41A.BF3	3	28	COAL SILO	1300	1990	PM	0.025	181	Coal rec'd	1.39E-04	Coal rec'd	78098	11
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	38863	87
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	78098	20
15		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	991891	208
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	89077	75
17	**KF**	41C.BF1	20	35	PF BIN	1250	1990	PM	0.024	16	Coal (pulverized) produced	1.49E-03	Coal (pulverized) produced	72285	108
18		411.BF1	5	31	BLEND SILOS (W)	8324	1990	PM	0.162	227	Kiln Feed produced	7.14E-04	Kiln Feed produced	964174	689
19		413.BF3	3	29	KILN FEED BLD	7600	1990	PM	0.148	207	Kiln Feed produced	7.15E-04	Kiln Feed produced	967456	692
20		317.BF1	3	30	BLEND SILOS (E)	8000	1990	PM	0.156	227	Kiln Feed produced	6.86E-04	Kiln Feed produced	964174	662
21		413.BF2	8	39	SORBENT SYS. D/C	750	1993	PM	0.015	27	Sorbent rec'd	5.36E-04	Sorbent rec'd	3314	2
22	**CK**	419.BF1	3	32	G-COOLER	20600	1990	PM	0.401	167	Clinker, 100 % produced.	2.40E-03	Clinker, 100 % produced.	629453	1511
23	InOpr 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.	94418	41
		511.BF8			CLINKER SHED	20000	2002	PM	0.389	227	Clinker, 15 % prod.+rec'd. @2 mo	1.72E-03	Clinker, 15 % prod.+rec'd. @2 mo	94418	27
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.	535035	374
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	402258	133
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	552422	84
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.	201129	91
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	269168	41
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.	629453	426
31		41G.BF1	15	41	CLINKER LOADOUT D/C	1000	1994	PM	0.019	227	Clinker, shipped	8.58E-05	Clinker, shipped	0	0
32	**CM**	611.BF7	18	10	SS TANKS LOADING	1716	1960	PM	0.033	181	Cement, 6% prod.+rec'd.	1.84E-04	Cement, 6% prod.+rec'd.	38517	7
33		610.BF2	14	6	GP2 SILO 19	3680	1968	PM	0.072	59	Cement, 47 % prod.+rec'd.@3 mo.	1.21E-03	Cement, 47 % prod.+rec'd.@3 mo.	302459	92
		610.BF2			GP2 SILO 19	4200	2002	PM	0.082	59	Cement, 47 % prod.+rec'd.@9 mo.	1.39E-03	Cement, 47 % prod.+rec'd.@9 mo.	302459	314
34		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.	320971	1525
35		610.BF1			GP2 TRANSFER BIN	3864	1968	PM	0.075	100	Cement, 3 % prod.+rec'd.	7.53E-04	Cement, 3 % prod.+rec'd.	19258	15
36		610.BF3	14	6	GP2 SILO 17	3680	1968	PM	0.072	59	Cement, 47 % prod.+rec'd.@3 mo.	1.21E-03	Cement, 47 % prod.+rec'd.@3 mo.	302459	92
		610.BF3			GP2 SILO 17	4200	2002	PM	0.082	59	Cement, 47 % prod.+rec'd.@9 mo.	1.39E-03	Cement, 47 % prod.+rec'd.@9 mo.	302459	314
37		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.	320971	1525
38		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	332705	79
39		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.	3210	3
40	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
41		525.BF2	13	45	FM #2 SEPARATOR;	77000	1995	PM	0.599	59	Cement, 50 % prod.	1.02E-02	Cement, 50 % prod.	320971	3262
42		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.	38517	33
43		515.BF2	13	45	FM #1 SEPARATOR;	77000	1995	PM	0.599	59	Cement, 50 % prod.	1.02E-02	Cement, 50 % prod.	320971	3262
44	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
45		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
46		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	241967	17
47		611.BF8			CEMENT DOME	6000	1999	PM	0.117	118	Cement, 6 % prod.+rec'd.	9.90E-04	Cement, 6 % prod.+rec'd.	38517	38
					BULK BAG LOADING	500	2002	PM	0.010	9	Cement, 0.5 % prod.+rec'd.	1.07E-03	Cement, 0.5 % prod.+rec'd.	3210	3

(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
2002 FOR EMISSION STATEMENT
SUMMARY OF DATA

Ash Grove Unit	PSAPCA Point	PSAPCA Segment	Megagram 2002	Tons 2002	Pounds 2002
			PM	PM	PM
KN	1	01	26	28.725	57450
	1	02	2	1.737	3475
RM	2	01	2	2.645	5290
KF	3	01	2	2.371	4743
CK	4	01	3	3.006	6013
CM	5	01	11	11.664	23329
Total			45	50	
			CO	CO	CO
KN	1	01	1171	1291	2582400
	1	02	111	123	245325
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			1283	1414	
			NOx	NOx	NOx
KN	1	01	1005	1108	2215000
	1	02	95	105	210422
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			1100	1213	
			SO2	SO2	SO2
KN	1	01	155	171	342800
	1	02	15	16	32566
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			170	188	

PSAPCA KN LIMIT tons/yr	2002	DATA 2002	TONS (input)	Mg (calc)	kg	lbs
PM10	tons	Stuff	(input)	Mg	kg	lbs
46	29	CO	1291.20	1171.38	1171376.64	2582400.00
CO	tons	NOx	1107.50	1004.72	1004724.00	2215000.00
2353	1291	SOx	171.40	155.49	155494.08	342800.00
	lbs					
	2827725					
NOx	tons					
1846	1108					
	lbs					
	2425422					
SO2	tons					
176	171.4					
	lbs					
	375366					

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	86087	78098	85677	77726	0	0	0	0
2	CLAY+Bot Ash	127434	115608	129775	117732	0	0	0	0
	IRON	19932	18082	20152	18282	0	0	0	0
	SILICA + chips	77493	70302	78037	70795	0	0	0	0
	LIMESTONE	843161	764916	865390	785082	0	0	0	0
	GYPSUM	41062	37251	38330	34773				
	FLYASH	0	0	0	0	0	0	0	0
3	KILN FEED			1061215	962734	1062802	964174	0	0
	SORBENT	3653	3314	3618	3282		0	0	0
4	CLINKER	0	0	663278	601726	693842	629453	0	0
5	CEMENT	1750	1588		0	707608	641942		0
FM#2	FLYASH-1PM	0	0	0	0	0	0		

		Tons			
point 002	Total RM	1131684	cl prod.	629453	8760
point 003	Total KF	1064833	cl/hr	85.095	
point 004	Total CK	693842	emis rate kg/hr	1.13	
point 005	Total CM	709358	kg/Mg clinker	0.0133	

		PM10	PM2.5	lbs.2,5
KN	1	57450	0.077 lbs per ton clinker	53426
	1	3475	0.6 x coal pm10	2085
RM	2	5290	0.6 x RM pm10	3174
KF	3	4743	0.6 per ton KF	2846
CK	4	6013	0.6 per ton clinker	3608
CM	5	23329	0.6 per ton cement	13997

ASH GROVE CEMENT - WESTERN REGION
SEATTLE PLANT

12/31/02

	RECEIVED / PRODUCED				USED / SHIPPED				
	DAY	MONTH	YEAR		DAY	MONTH	YEAR		INVENTORY
RAW MATERIALS									
LIMESTONE		82,822	843,161			91,621	865,390		13,939
LIME FINES		1,606	4,312			1,606	4,313		0
BOTTOM ASH		11,702	105,419			11,778	105,268		294
CASTLE ROCK CLAY		1,764	20,931			2,600	23,423		867
ERI (RECYCLED)		0	1,084			0	1,084		0
SUPERIOR SILICA		8,022	73,517			8,083	73,911		229
JHARDIE CHIPS		0	3,976			0	4,126		0
COMINCO SLAG		2,246	18,651			2,274	18,872		587
HECKET SLAG		0	0			0	0		0
KLEEN BLAST SLAG		140	1,281			140	1,280		0
HYDRATED LIME		734	3,653			748	3,681		14
RAW MATERIAL SALES									
3/4" LIMESTONE SALES		18,695	149,943			16,528	137,014		10,174
5/8" AGG. (STONEWAY)		0	0			0	0		3,655
SILICA (STEILACOOM)		0	0			0	0		7,445
KILN FEED									
TYPE I/II		114,691	1,062,802			115,461	1,061,215		8,097
FUELS (TONS)									
COAL (Tons)		5,816	86,087			9,646	85,677		4,507
TDF (Tons)						683	5,499		0
FUELS (NET HEAT VALS	Fuel Usage Rate				Fuel Usage (MMBTU)				
GAS (MMBTU Net)		6.7%	7.5%			16,200	160,915		
COAL (MMBTU Net)		86.1%	86.0%			208,551	1,852,320		
TDF (MMBTU Net)		7.2%	6.5%			17,476	140,783		
TOTAL (MMBTU Net)						242,227	2,154,017		
MMBTU/Ton						3.17	3.10		
CLINKER									
PRODUCTION		76,418	693,842			62,382	669,278		38,171
SALES / RECEIVALS		0	0			0	0		
CEMENT ADDITIVES									
GYPSUM		4,619	41,062			3,319	38,330		7,675
GRINDING AID (Lbs)		45,200	425,200			38,316	400,817		45,735
CEMENT									
TYPE I		53,261	615,947			17,225	314,444		69,942
TYPE II		0	0			6,936	114,629		0
TYPE I-II		0	0			10,037	161,028		0
TYPE III		3,710	27,546			2,279	28,119		3,527
TYPE CG		8,730	64,115			5,651	64,487		4,062
TYPE I-II (Durkee)		0	1,113			0	0		0
TYPE III (Durkee)		0	637			0	0		0
TYPE I-II (LaFarge)		0	10,676			0	0		0
TOTAL PRODUCED		65,701	707,608			42,128	682,706		
TOTAL RECEIVED		0	1,750			0	0		
GRAND TOTAL		65,701	709,358			42,128	682,706		77,532

	RUN TIME				PRODUCTION RATE				REASON FO
EQUIPMENT DATA	DAY	MONTH	YEAR		DAY	MONTH	YEAR		DOWNTIM
RAW MILL (TPH)		625.1	5803.8			183.5	183.1		
KILN (TPD)		723.0	7063.3			2536.8	2357.6		
% RUN TIME		97.2%	80.6%						
#1 FINISH MILL (TPH)		647.2	6922.4			50.8	48.3		
% RUN TIME		87.0%	79.0%						
#2 FINISH MILL (TPH)		666.2	7398.9			49.3	50.5		
% RUN TIME		89.5%	84.5%						

MATERIAL	RECEIVED		USED	
	TONS	Mg	TONS	Mg
	(input)	(calc)	(input)	(calc)
COAL	86087	78098	85677	77726
CLAY+Bot Ash	127434	115608	129775	117732
IRON	19932	18082	20152	18282
SILICA + chips	77493	70302	78037	70795
LIMESTONE	843161	764916	865390	785082
GYPSUM	41062	37251	38330	34773
FLYASH	0	0	0	0
KILN FEED			1061215	962734
SORBENT	3653	3314	3618	3282
CLINKER	0	0	663278	601726
CEMENT	1750	1588		0
FLYASH-1PM	0	0	0	0

OR
IE

SEA0188

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