

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW SOURCE REVIEW SECTION
BUREAU OF AIR REGULATION
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TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Southdown, Inc.,
Brooksville, Hernando County, Florida

Air Construction Permit Number 0530010-003-AC (PSD-FL-233)
(Supersedes AC 27-258569, 258570, 258571, and 258572)
Kilns 1 and 2, Coolers 1 and 2

May 6, 1997

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

Air Permit No. 0530010-003-AC
PSD-FL-233 Kilns & Coolers No 1 & No. 2

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Southdown, Inc.
U.S. Highway 98
Brooksville, Florida 34605

Authorized Representative:
Mr. Don Kelly, Plant Manager

1.2 Reviewing and Process Schedule

02-21-92: Date of Receipt of Application Addendum
02-24-97: Southdown's letter requesting burning of "oil-dry" grease and rags in kilns
04-01-97: Koogler & Associates' letter requesting burning of on-site generated, non-hazardous used oil/grease.

2. FACILITY INFORMATION

2.1 Facility Location

Southdown, Inc.
Portland Cement Manufacturing Facility
UTM: Zone 17; 356 and 3169
Directions: Highway 98, Northwest of Brooksville in, Hernando County.

2.2 Standard Industrial Classification Code

Major Group Number	32	<i>Clay, Glass and Concrete Products</i>
Group Number	324	<i>Cement, Hydraulic</i>
Industry Number	3241	<i>Cement, Hydraulic</i>

2.3 Facility Category

This facility includes two existing cement plants consisting of two cement kilns and two clinker coolers along with ancillary equipment. Air pollutant emissions are over 100 tons per year (TPY) of particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). This is a Major Facility per Rule 62-210.200(171), F.A.C. and a Major (Title V) Source of Air Pollution per Rule 62-210.200(173). This industry is listed in Table 62-212.400-1, F.A.C., Major Facility Categories.

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3. PROJECT DESCRIPTION

3.1 *This project involves the following emissions units:*

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

The proposed modification consists of about a 4 percent increase in the kiln preheater feed rates from 145 to 150 tons per hour (tph), rolling 30 production-day average for each kiln. The design maximum feed rate, stated in the current permit as 165 tph, remains unchanged.

The following changes will be performed:

1. Modify preheater exit gas cyclones to increase efficiency, which will reduce heat loss and lower the pressure drop.
2. Replace kiln ID fan with a higher efficiency in order to increase air flow without increasing the drive motor horsepower.
3. Add two modules to the existing Kiln No. 1 baghouse to allow a lower air-to-cloth ratio when a module is isolated for maintenance.
4. Improve the clinker cooler efficiency by upgrading fans and adding static gates.
5. Increase kiln preheater feed capacity to ensure 150 tph on a continuous basis, with a maximum design hourly rate of 165 tph.
6. Add drying drum to the No. 1 Raw Mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

The above changes will increase the overall thermal efficiency of the process. Thus the maximum heat input will not exceed the existing limit of 300 MMBtu/hr. Each kiln and cooler utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns.

In addition, Southdown has also requested to allow both kilns the burning of on-site generated, non-hazardous oil and grease (5,000 gallons). The spent lubricants can consist of oil or grease dripping collected and containerized, oily rags and/or oily absorbent that has been used in the cleanup of a small on-site spill. The used oil/grease or oily rags and oily absorbent material will be containerized

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(typically in sealed one-gallon containers) and introduced into either of the kiln systems at the base of the preheater (in a location similar to where whole tires are introduced in kiln No. 1). Southdown has indicated that they have been burning on-site generated, non-hazardous oil and grease for a number of years and that it is a common practice in the cement industry.

The proposed permit revisions will, however, result in significant net emission increases for PM/PM₁₀ (Kilns 1 and 2 and Coolers 1 and 2) NO_x, VOC and for CO (Kilns 1 and 2) when comparing past actual with future potential emissions.

Background Information

Kiln and Cooler 1 were originally permitted in 1973, while Kiln and Cooler 2 were originally permitted in 1980. Kilns 1 and 2 are currently permitted under permits AC 27-258571 and AC27-258572, respectively. Coolers 1 and 2 are permitted under AC 27-258569 and AC27-258570, respectively.

Both kilns are presently permitted for a maximum 1-hour kiln preheater feed rate of 165 tons per hour (TPH), a corresponding kiln feed rate of 148 TPH, a 30-day average kiln preheater feed rate of 150 TPH and a corresponding kiln feed rate of 135 TPH. The maximum heat input rate to each kiln is 300 MMBtu per hour. Each kiln utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_x, SO₂, CO, and VOC.

Both coolers are permitted for a maximum 1-hour throughput rate of 96 TPH and, a 30-day average throughput rate of 90 TPH. Each clinker cooler utilizes a baghouse to control the emissions of particulate matter.

The applicant has requested removal of clinker production limits and that emission limits be based on feed to the kiln preheater (k_{ph}) instead of feed to the kiln.

4. PROCESS DESCRIPTION

4.1 *General Information*

Portland cement is a fine powder, usually gray in color, that consists of a mixture of dicalcium silicate, tricalcium silicate, tricalcium aluminate, and tricalcium aluminoferrite, and miscellaneous minerals to which one or more forms of calcium sulfate have been added. About 95% of the cement production in the U.S. is portland cement. Masonry cement, also produced at the portland cement plant, represents the balance of the domestic cement production.

There are several variations in cement manufacturing including the wet, dry, dry preheater and dry

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precalciner processes. The precalciner process also includes a preheater. These processes are essentially identical relative to the manufacture of cement from raw materials. However, the type of process does affect the equipment design, method of operation, and fuel consumption. Because of its lower fuel requirements, most new portland cement plants use the dry precalciner process.

The choice of fuel is based on economics. The most commonly used kiln fuels are coal, natural gas, and oil. Supplementary fuels such as petroleum coke, tires, used oil and various kinds of wastes are burned at many plants. Fuel combustion differs between the wet, dry, dry preheater and dry precalciner processes. In the first three, all fuel combustion typically occurs in the kiln. In the latter, some fuel combustion occurs in a separate calcining vessel located between the preheater and kiln. In any of the processes, it is possible to introduce additional fuels such as tires directly into the kiln. Southdown uses the dry preheater process, a version of which is depicted in simplified form in figure 1 (from a portland cement association publication).

The production of portland cement is a four-step process: (1) raw materials acquisition and handling (2) kiln feed preparation for pyroprocessing, (3) pyroprocessing, and (4) finished cement grinding. The chemical reactions and physical processes that constitute the transformation are quite complex. The heart of the portland cement manufacturing process is the pyroprocessing system which includes the rotary kiln and suspension preheater/precalciner (when present). Several complex chemical reactions necessary to produce portland cement minerals take place in the pyroprocessing system.

Pyroprocessing (preheater process) may be conveniently divided into five stages, depending on location and temperature of the materials in the system.

1. Uncombined water evaporates from raw materials as material temperature increases to 100°C (212°F) in the upper preheater or raw materials roller mill.
2. As the material temperature increases from 100°C to approximately 430°C (800°F) in the preheater, combined water is liberated from argillaceous compounds.
3. Between 430°C and 900°C (1650°F), partial calcination occurs in the lower preheater and is completed within the kiln. Carbon dioxide is liberated from the carbonates and calcium oxide (lime) is formed.
4. Following calcination, sintering of the oxides occurs in the burning zone of the rotary kiln at temperatures up to 1510°C (2750°F). Lime, silica, and iron and aluminum compounds react to form calcium silicates, aluminates, ferrites and aluminoferrites. Alkali sulfates and chlorides evaporate.
5. Following sintering, clinker nodules are produced as the temperature of the material decreases from 1510°C to 1370°C (2500°F).

The raw materials enter the pyroprocessing system in the uppermost preheater cyclones. They exit the preheater and enter the kiln at the elevated end. The rotation of the kiln causes the solid materials

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- Rule 62-210.370 Reports
- Rule 62-210.550 Stack Height Policy
- Rule 62-210.650 Circumvention
- Rule 62-210.700 Excess Emissions
- Rule 62-210.900 Forms and Instructions
- Rule 62-212.300 General Preconstruction Review Requirements
- Rule 62-212.400 Prevention of Significant Deterioration
- Rule 62-296.320 General Pollutant Emission Limiting Standards
- Rule 62-297.310 General Test Requirements
- Rule 62-297.400 EPA Methods Adopted by Reference
- Rule 62-297.401 EPA Test Procedures
- Rule 62-297.520 EPA Performance Specifications

Cement Plants 1 and 2 are subject to all applicable requirements of 40 CFR 60, NSPS for Portland Cement Plants, Subpart F.

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

6. SOURCE IMPACT ANALYSIS

6.1 *Emission Limitations*

This facility emits the following PSD regulated pollutants: particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, fluorides, beryllium, mercury and lead. Cement Plant No. 2 has already gone through various PSD reviews [PSD-FL-063, PSD-FL-124, PSD-FL-124(A) and PSD-FL-188].

The new permit (0530010-003 AC - Section III. B) will address the increases in actual PM/PM₁₀ emissions from both Kiln and Cooler 1, establish a CO limit for Kiln 1 under all operating conditions, and establish for the first time NO_x and VOC emission limitations and include all other applicable conditions for Kiln and Cooler 1 from existing permits. The Department's proposed permitted emission and compliance requirements for Kiln and Cooler No. 1 are summarized in Tables 1-1, Air Pollutant Emission Standards and Terms, and Table 2-1, Compliance Requirements.

Permit 0530010-003 AC, Section III. C, will address the increases of actual PM/PM₁₀, emissions from Kiln and Cooler 2, the increases in emissions of NO_x, CO and VOC from Kiln 2, and include all other conditions for Kiln and Cooler 2 from existing permits. The Department's proposed permitted emissions and compliance requirements for Kiln and Cooler 2 are summarized in Tables 1-2, Air Pollutant Emission Standards and Terms, and Table 2-2, Compliance Requirements.

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6.2 Emission Summary

CEMENT KILN No. 1 and COOLER No. 1 [1]

Pollutants	Current Allowable		Current Actual		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	39	171	17.8 [4]	70.6 [4]	27	118.3	47.7	25/15
(cooler) PM/PM10	7.1	28.1	6.17 [4]	24.5 [4]	13.6	59.6	32.4	25/15
SO ₂	15	65.7	NA	NA	15	65.7	NA	40
NO _x	NA [6]	NA [6]	155.2 [5]	616[5]	285	1248.3	632.3	40
CO	57.7 [3]	234 [3]	53.6 [5]	212.9 [5]	180	788.4	575.5	100
VOC	NA	NA	4.4 [5]	17.5 [5]	13.6	59.6	42.10	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	20%				20%			

CEMENT KILN No. 2 AND COOLER No. 2 [2]

Pollutants	Current Allowable		Current Actual [4]		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	13.5	55.4	6.77	25.9	27	118.3	92.46	25/15
(cooler) PM/PM10	5.0	20.5	4.44	17.0	13.6	59.6	42.6	25/15
SO ₂	15	65.70	NA	NA	15	65.7	NA	40
NO _x	250	1025	159.05	606.7	258	1130	523.3	40
CO	64	262	53	203	180	788.4	585.4	100
VOC	7.4	30.3	4.47	17.1	13.6	59.6	42.5	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	10%				10%			

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Footnotes:

- ¹ These units were originally permitted in 1973. Permit No. AC27- 2251.
- ² These units were originally permitted by EPA in 1980 (PSD-FI-063).
- ³ CO emission limits of 57.7 lbs/hr and 234.4 tons/yr were established while burning tires (20% WTDF) and coal.
- ⁴ Kiln and Cooler No. 1 operated 8001 hours in 1994 and 7875 hours in 1995.
Kiln and Cooler No. 2 operated 7478 hours in 1994 and 7780 hours in 1995.
- ⁵ Based on actual stack test conducted in 1994 and 1995 while burning tires (20% WTDF) and coal. Assuming actual hours of operation as reported to the District in 1994 and 1995.
- ⁶ There are no allowable limits for NO_x from this kiln.

In the original submittal (1996), Southdown requested the Department to consider current allowable emissions for the baseline calculations instead of actual emissions because in some cases the actual emissions are greater and cannot be used to perform the calculations. However, the Department used actual emissions from the last two years (1994 and 1995) of operation. Actual emissions are based on the Department's records kept at the Southwest District Office in Tampa.

Enforcement Note: The District has been negotiating a consent agreement with Southdown as a result of a number of excess opacity and stack test emissions violations.

6.3 Control Technology Review

The Department and the U.S. EPA have made several previous BACT determinations (1980, 1988, 1993) for this cement manufacturing facility, specifically Cement Plant No. 2. Cement Plant 2 was built in accordance with a PSD/BACT review conducted in 1980. BACT reviews conducted since that time have been related to corrections of very stringent initial limits as well as to allow burning of different fuels. Because of these operational changes, BACT limits were developed and revised for Cement Plant 2. The actual controls have been use of fabric filters (baghouses) for particulate control and process optimization for control of CO, SO₂ NO_x, and VOC.

Southdown has curtailed a number of the operational changes which resulted in the PSD/BACT reviews conducted since the construction of Cement Plant 2. They plan to use the same technology that they always have used, but want to insure that the emissions limits are consistent with that technology and with the requirements of the Major Source (Title V) Program to insure that the facility continuously operate in compliance with applicable conditions.

The current revision for Cement Plant No. 2 (Kiln and Cooler No. 2) will consider a revision of the BACT emission limits for PM/PM₁₀, and CO. In addition a new BACT limit will be set for VOC emissions. The rationale for this change is explained in the BACT determination, a copy of which is attached to this document.

Cement Plant No. 1 was built prior to existence of the PSD program. This modification will increase the process rate along with an increase in pollutant emissions. New emission limits for PM/PM₁₀,

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NO_x, CO and VOC will be set for Kiln 1 and PM/PM₁₀ for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NO_x/ton kiln_{ph} feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln_{ph} feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO₂)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO₂/ton kiln_{ph} feed). These represent the lowest known rates from any kiln in the country. SO₂ emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO₂ removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM₁₀)

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln_{ph} feed and 0.09 lb/ton kiln_{ph} feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 18.0 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln_{ph} feed and 0.09 lb VOC/ton kiln_{ph} feed. These limits will be accomplished by combustion control.

6.3.5 Metal Emissions

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al, Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

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metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for these elements.

Southdown has provided assurances that emissions of these pollutants will not result in exceedances of air quality standards or ambient guidelines developed to protect human health and welfare. PSD pollutants: Mercury (Hg), Beryllium (Be), lead (Pb), and arsenic (As) are under the PSD threshold level and are not subject to PSD review.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: PM/PM₁₀, CO, NO_x, and VOC. The air quality impact analyses required by the PSD regulations for these pollutants include:

- * An analysis of existing air quality for PM₁₀, CO, NO_x, and VOC;
- * A significant impact analysis for PM₁₀, CO and NO_x;
- * A PSD increment analysis for PM₁₀ and NO_x;
- * An Ambient Air Quality Standards (AAQS) analysis for PM₁₀, and
- * An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

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NO_x, CO and VOC will be set for Kiln 1 and PM/PM₁₀ for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NO_x/ton kiln_{ph} feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln_{ph} feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO₂)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO₂/ton kiln_{ph} feed). These represent the lowest known rates from any kiln in the country. SO₂ emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO₂ removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM₁₀)

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln_{ph} feed and 0.09 lb/ton kiln_{ph} feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 180 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln_{ph} feed and 0.09 lb VOC/ton kiln_{ph} feed. These limits will be accomplished by combustion control.

6.3.5 Metal Emissions

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al, Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

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6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that CO and NO₂ impacts from the project are predicted to be less than the de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for these pollutants. However as shown in the table, PM₁₀ impacts from the project are predicted to be greater than the de minimus level; therefore, preconstruction ambient air quality monitoring is required for PM₁₀. Previously existing representative monitoring data from a PM₁₀ monitor in the vicinity of the facility were used to fulfill the PM₁₀ monitoring requirement and to establish a PM₁₀ background concentration for use in the AAQS analysis. Background concentrations established for PM₁₀ are 105 and 35 ug/m³ for the 24-hour and annual averaging times, respectively. The net emissions increase of VOC is compared to a de minimus monitoring emission rate in tons per year instead of a concentration level. For this project, the net emissions increase of VOC is less than the de minimus emissions rate of 100 tons per year; thus, preconstruction ambient air quality monitoring for VOC is not required.

Maximum Project Air Quality Impacts for Comparison to the De Minimus Ambient Levels.

Pollutant	Avg. Time	Max Predicted Impact (ug/m ³)	Impact Greater Than De Minimus?	De Minimus Level(ug/m ³)
PM ₁₀	24-hour	12.1	YES	10
CO	8-hour	142	NO	575
NO ₂	Annual	0.64	NO	14
VOC	Annual	50.4 TPY	NO	100 TPY*

*No significant air quality de minimus concentration level for O₃ has been established. Instead de minimus level is based on net emissions increase of VOC.

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6.4.3 *Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses*

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

6.4.4 *Significant Impact Analysis*

Initially, the applicant conducted modeling using only the proposed project's emissions. Receptors were placed within 20 km of the facility, which is located in a PSD Class II area, and the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 14 km to the west of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

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Portland Cement Plant

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Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.

Pollutant	Avg. Time	Max Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?	Radius of Significant Impact (km)
PM ₁₀	Annual	1.3	1	YES	2.5
	24-hour	12.1	5	YES	2.5
CO	8-hour	142	500	NO	0.0
	1-hour	409	2000	NO	0.0
NO _x	Annual	0.64	1	NO	0.0

Maximum Project Air Quality Impacts in the CNWA for Comparison to the PSD Class I Significant Impact Levels

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m ³)	Significant Impact?	National Park Service (NPS) Significant Impact Level (ug/m ³)
PM ₁₀	Annual	0.075	NO	0.08
	24-hour	1.1	YES	0.27
NO ₂	Annual	0.11	YES	0.03

As shown in the tables the maximum predicted air quality impacts due to PM₁₀ emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility. The maximum predicted air quality impacts due to PM₁₀ and NO_x emissions are greater than the significant impact levels in the Class I area for the 24-hour and annual averaging times, respectively. Therefore, the applicant was required to do further PM₁₀ modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Further modeling for Class I impacts was also required for the PM₁₀ 24-hour averaging time and the NO₂ annual averaging time. Further modeling for CO impacts was not required because maximum predicted CO impacts were less than the applicable significant impact levels.

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

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significant impact area for each pollutant. For predicting maximum PM₁₀ concentrations in the vicinity of the facility, a discrete receptor grid comprised of 369 receptors located along the property boundary and a polar receptor grid of 53 receptors located at radial distances of 2.5 and 3.0 km were used in these analyses. For the PSD Class I analysis, a receptor grid consisting of twenty receptors along the boundary of the CNWA was used. The results of these analyses are discussed below.

6.4.6 PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in the table below show that the maximum predicted PM₁₀ impacts are less than the allowable increments.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m ³)
PM ₁₀	Annual	3.8	NO	17
	24-hour	24.9	NO	30

The results of the PSD Class I increment analysis presented in the table below show that the maximum predicted PM₁₀ impact for all sources within 120 km of the Class I area is greater than the allowable increment; however, the analysis also shows that this project's contribution to any predicted exceedance of the increment is less than the National Park Service significant impact level. The maximum predicted NO₂ impact is less than the allowable NO₂ increment.

PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m ³)	Maximum Southdown Contribution To Any Exceedance	National Park Service Significant Impact Level	Southdown Contribution Significant
PM ₁₀	24-hour	8.2	YES	8	0.021	0.027	NO
NO ₂	Annual	0.9	NO	2.5	N/A	N/A	N/A

6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table,

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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emissions from the proposed facility are not expected to cause or significantly contribute to a violation of an AAQS.

Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m ³)	Background Conc. (ug/m ³)	Total Impact (ug/m ³)	Total Impact Greater Than AAQS	Florida AAQS (ug/m ³)
PM ₁₀	Annual	6	35	41	NO	50
	24-hour	42	105	147	NO	150

6.5 Additional Impacts Analysis

6.5.1 *Impacts On Soils, Vegetation, And Wildlife*

The maximum ground-level concentrations predicted to occur for PM₁₀, NO_x, VOC and CO as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

6.5.2 *Impact On Visibility*

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CNWA. The results indicate that the maximum visibility impacts do not exceed the screening criteria inside or outside this area. As a result, there is no significant impact on visibility predicted for this Class I area. In addition a regional haze analysis was done. This analysis predicted no adverse impacts upon regional haze.

6.5.3 *Growth-Related Air Quality Impacts*

There will be no growth-related impacts because no physical or operational modifications will occur and production will not change as a result of this permit action.

6.5.4 *Air Toxics Air Quality Impacts*

The maximum predicted impacts of regulated and non-regulated toxic air pollutants that are proposed to be emitted by the project are all less than the Department's draft annual Ambient Reference Concentrations (ARC).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by Southdown, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: T. Heron

Meteorologist: C. Holladay

Reviewed and approved by A. A. Linero, P.E.

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
 Southdown, Inc.
 Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
 Kiln No.1 & Cooler No.1 PSD-FL-233

Emission Unit 003 - Kiln No. 1
 Emission Unit 004 - Cooler No. 1

E.U. ID#	Description	Pollutant ID	Fuel(s)	Allowable Emissions(2)			Equivalent	Regulation(s)
				lb/ton dry kiln _{ph} feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	Emissions (3)	
ARMS # 003	Kiln No. 1	PM/PM ₁₀	Coal/Gas/Oil/WTDF	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	SO ₂ (1)	Coal/Gas/Oil/WTDF	0.10	15.0	16.5	66	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	NO _x	Coal/Gas/Oil/WTDF	1.83	275	301	1318	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	CO	Coal/Gas/Oil/WTDF	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	VOC	Coal/Gas/Oil/WTDF	0.09	13.6	14.9	60	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	(4) To Be Determined	(4)	(4)	(4)	
ARMS # 003	Kiln No. 1	20% VE	Coal/Gas/Oil/WTDF					Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	10% VE						Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	PM/PM ₁₀		0.09	13.6	14.9	60	Rule 62-204.800, F.A.C.

ALLOWABLE OPERATING RATES

		KILN No.1	Cooler No.1	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate (kiln _{ph})	TPH	165		One-hour maximum
Kiln preheater feed rate (kiln _{ph}) *	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

- (1) Emissions of SO₂ will not exceed 15 lbs/hr (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258571]
- (2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
- (3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed to assess applicable Title V fees and for PSD recordkeeping tracking purposes.
- (4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
 Southdown, Inc.
 Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
Kiln No. 2 & Cooler No. 2 PSD-FL-233

Emission Unit 014 - Kiln No. 2
 Emission Unit 015 - Cooler No. 2

E.U. ID#	Description	Pollutant ID	Fuel(s)	Allowable Emissions(2)			Equivalent Emissions (3)	Regulation(s)
				lb/ton dry kiln _{ph} feed *	lb/hr @ 150 TPH	lb/hr @ 165 TPH	TPY	
ARMS # 014	Kiln No. 2	PM/PM ₁₀	Coal/Gas/Oil	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	SO ₂ (1)	Coal/Gas/Oil	0.10	15.0	16.5	66	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	NO _x	Coal/Gas/Oil	1.72	258.0	283.8	1130	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	CO	Coal/Gas/Oil	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	VOC	Coal/Gas/Oil	0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	Be,Pb,Hg	Coal/Gas/Oil	(4)	(4)	(4)	(4)	Rule 62-4.070(3), F.A.C.
ARMS # 014	Kiln No. 2	10% VE	Coal/Gas/Oil					Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	10% VE						Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	PM/PM ₁₀		0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No. 2	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate (kiln _{ph})	TPH	165		One-hour maximum
Kiln preheater feed rate (kiln _{ph})*	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

- (1) Emissions of SO₂ will not exceed 15 lbs/hr (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. [AC27-268572]
- (2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
- (3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed for informational purposes and for PSD and recordkeeping tracking purposes.
- (4) To confirm emissions of these pollutants are under the PSD threshold levels.

Table 2-1. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
 Southdown, Inc.
 Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
 PSD-FL-233 Kiln No. 1 & Cooler No. 1

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 003	Kiln No.1	PM/PM ₁₀ [6]	Coal/Gas/Oil/WTDF	5 or 201/201A	initial/annual	3 one-hour run	COMS [3]
ARMS # 003	Kiln No.1	VE	Coal/Gas/Oil/WTDF	9	initial/annual [3]	180 min.	
ARMS # 003	Kiln No.1	SO ₂ [5]	Coal/Gas/Oil/WTDF	6C	initial/annual [5]	3 one-hour run	
ARMS # 003	Kiln No.1	NO _x	Coal/Gas/Oil/WTDF	7E	initial/annual [7]	3 one-hour run	
ARMS # 003	Kiln No.1	CO [4]	Coal/Gas/Oil/WTDF	10	initial/annual [4]	3 one-hour run	
ARMS # 003	Kiln No.1	VOC [2]	Coal/Gas/Oil/WTDF	25 or 25A	initial [2]	3 one-hour run	
ARMS # 003	Kiln No.1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	29	initial [8]	3 one-hour run	
ARMS # 004	Cooler No.1	PM/PM ₁₀ [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 004	Cooler No.1	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

- [1] Testing of emissions shall be conducted while burning coal and WTDF (20% heat input). Kiln No. 1 is allowed to burn natural gas, waste tire derived fuel (WTDF), and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. B5. Frequency of testing after initial compliance shall be determined by the DEP Southwest District Office.
- [2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.
- [3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.
- [4] Continuous process monitors for CO and/or O₂ to optimize combustion conditions for pollution control shall be part of the process.
- [5] Emissions of SO₂ shall not exceed 15 lbs/hour (150 TPH) and 16.5 lbs/hr (165 TPH). Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).
- [6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM₁₀.
- [7] NO_x - An initial and Annual compliance tests as required by EPA Method 7E.
- [8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

Table 2-2. Compliance Requirements.

FACILITY ID NUMBER: 0630010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 2 & Cooler No.2

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 014	Kiln No.2	PM/PM ₁₀ [6]	Coal / Gas / Oil	5 or 201/201A	initial/annual	3 one-hour run	COMS [3]
ARMS # 014	Kiln No.2	VE	Coal / Gas / Oil	9	initial/annual [3]	180 min.	
ARMS # 014	Kiln No.2	SO ₂ [5]	Coal / Gas / Oil	6C	initial/annual [5]	3 one-hour run	
ARMS # 014	Kiln No.2	NOx	Coal / Gas / Oil	7E	initial/annual [7]	3 one-hour run	
ARMS # 014	Kiln No.2	CO [4]	Coal / Gas / Oil	10	initial/annual [4]	3 one-hour run	
ARMS # 014	Kiln No.2	VOC [2]	Coal / Gas / Oil	25 or 25A	initial [2]	3 one-hour run	
ARMS # 014	Kiln No.2	Be,Pb,Hg	Coal / Gas / Oil	29	initial [8]	3 one-hour run	
ARMS # 015	Cooler No. 2	PM/PM ₁₀ [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 015	Cooler No. 2	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

- [1] Testing of emissions shall be conducted while burning coal. Kiln No. 2 is allowed to burn natural gas and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. C5. Frequency of testing after initial compliance shall be determined by the DEP Southwest District Office.
 - [2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.
 - [3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.
 - [4] Continuous process monitors for CO and/or O₂ to optimize combustion conditions for pollution control shall be part of the process.
 - [5] Emissions of SO₂ shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).
 - [6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM₁₀.
 - [7] NOx - Initial and Annual compliance tests as required by EPA Method 7E.
 - [8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.
- * MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

In the Matter of an
Application for Permit by:

Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006 /

DRAFT Permit No.:0530010-003-AC
PSD-FL-233
Brooksville Portland Cement Facility
Hernando County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Southdown, Inc., applied on February 21, 1997, to the Department for modification of the existing air construction permits for its Brooksville facility located at Highway 98 Northwest of Brooksville, Hernando County. The request is to revise permitted emission limits for two existing kilns and coolers to reflect an increase from 145 to 150 tons per hour in kiln preheater feed rates.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a new air construction permit is required to revise the emission limits as proposed.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

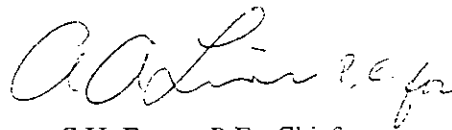
In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



C.H. Fancy, P.E., Chief
Bureau of Air Regulation

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: 0550010-003-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for an increase in process rates applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM₁₀), nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/ liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM₁₀ from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

Emissions will increase as a result of a increase in process feed rates to each kiln. The presently permitted process rates of 145 tons per hour (TPH as preheater feed on a 30 day average) will be increased to 150 TPH. The permit will account for increases in the permitted emissions of PM/PM₁₀ from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM₁₀ from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a BACT permit limit for NO_x from Kiln No. 1.

Total emissions, including increases, of pollutants subject to PSD review shall not exceed the following limits:

<u>Pollutant</u>	<u>Maximum Emissions Tons Per Year (TPY)</u>
CO	1,576
PM/ PM ₁₀	356
VOC	120
NO _x	2,448

The maximum emission rate of sulfur dioxide, which is not subject to PSD review by this action, will be TPY. An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO_x emissions from the project have an insignificant PSD Class II impact. The maximum predicted PSD Class II PM₁₀ increments consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class II Increment Consumed (µg/m³)</u>	<u>Allowable Increment (µg/m³)</u>	<u>Percent Increment Consumed</u>
PM ₁₀		
24-hour 24.9	30	83
Annual 3.8	17	22

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM₁₀ annual averaging time. The maximum predicted PSD Class I PM₁₀ increment consumed by the project for the 24 hour averaging time is 1.03 µg/m³ or 13% of the available 24 hour increment of 8 µg/m³. The maximum predicted PSD Class I NO₂ increment consumed by the project is 0.9 µg/m³ or 36% of the available increment of 2.5 µg/m³.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

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A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

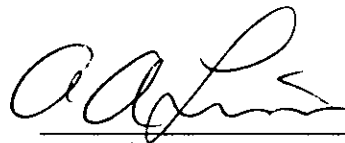
P.E. Certification Statement

Permittee:
Southdown, Inc.
Portland Cement Manufacturing Facility
Brooksville, Florida

Permit No.: 0530010-003 AC and PSD-FI-233
Facility ID No.: 0530010

Project type: PSD Permit for Existing Cement Plants
Process Rate Increase (145-150 preheater kiln feed)
Kilns and Coolers No. 1 and No. 2

I HEREBY CERTIFY that the engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).



A.A. Linero, P.E.
Registration Number: 26032

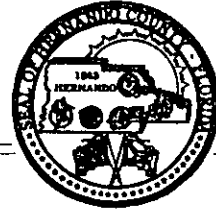
5/6/97
Date

Department of Environmental Protection
Bureau of Air Regulation
New Source Review Section
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Phone (904) 488-1344
Fax (904) 922-6979

05/06/97

Board of County Commissioners

Hernando County



PLANNING DEPARTMENT
Government Center / Administration Building
20 North Main Street, Room 262
Brooksville, Florida 34601 - 2828

Planning - (352) 754-4057
Fax -(352) 754-4420
E-Mail: planning@co.hernando.fl.us

May 20, 1997

Ms. Teresa Heron
Bureau Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Southdown, Inc., Kilns and Coolers No. 1 & 2, Brooksville Plant, Hernando County
Permit Number 0530010-003-AC
PSD-FL-233

Dear Ms. Heron:

With respect to the DEP Draft Air Construction Permit (# 0530010-003) for Southdown Inc., Hernando County proposes additional language be added to the permit to assure that the used oil/grease to be burned meets the non-hazardous criteria of the County's Air Toxics and Hazardous Waste Fuel Burning Facility Moratorium. The proposed language is similar to that found under specific condition #8 in Florida Crushed Stone permit AC 27-274892. Per your conversation with Dawn Shaw on May 16, 1997, the following language is suggested:

The constituents and properties of the on-site generated used oil and grease shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 266.40 (July 1, 1992 version), which is adopted by reference in Rule 62-730.181, Florida Administrative Code (F.A.C.):

<u>Constituents/Properties</u>	<u>Allowable Concentration</u>
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum

RECEIVED

MAY 22 1997

BUREAU OF
AIR REGULATION

(Table Continued)

<u>Constituents/Properties</u>	<u>Allowable Concentration</u>
Flash Point	140 °F minimum
Polychlorinated Byphenyls (PCBs)	Less than 2 ppm

If you have any questions, please contact Dawn Shaw or myself at (352)754-4057 or SUNCOM 669-4057.

Thank you for your assistance and cooperation in this matter.

Sincerely,



Lawrence Jennings
Department Director

DMS/ld

pc: Charles Hetrick, County Administrator
A.A. Linero, P.E., DEP Bureau of Air Regulation
C.H. Fancy, P.E., Chief, DEP Bureau of Air Regulation

cc: J. Nelson

SWD

EPA

NPS

A. Hill, Southdown

D. Kelly, Southdown



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ■ FAX 377-7158

RECEIVED

MAY 19 1997

KA 521-95-09

May 16, 1997

BUREAU OF
AIR REGULATION

VIA FAX AND MAIL

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulations
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Southdown, Inc.
Hernando County, Florida
Comments on Draft Permit 0530010-003-AC
(PSD-FL-233)
Kilns 1 and 2 and Coolers 1 and 2

Dear Mr. Fancy:

We have reviewed the subject draft air construction permit issued by the Department for modifications to Kilns 1 and 2 and Coolers 1 and 2 located at Southdown's Portland cement plant in Hernando County, Florida. There are some probable changes in the Project Description as presented on page 3 of the Technical Evaluation and Preliminary Determination that we would like to bring to the Department's attention. Additionally, we will comment on the initial compliance testing requirements for carbon monoxide for both Kilns 1 and 2.

Comments on Project Description

One minor comment is that on page 3 of the Technical Evaluation and Preliminary Determination, Kilns 1 and 2 and Coolers 1 and 2 are identified as Emission Units 001, 002, 003 and 004, respectively. In the Draft Permit, Kiln 1 and Cooler 1 are identified as Emissions Units 003 and 004, respectively, and Kiln 2 and Cooler 2 are identified as Emission Units 014 and 015, respectively. This inconsistency is pointed out only for editorial purposes.

Further on page 3, there are six physical modifications listed that are associated with the production rate increase at Southdown. We would like to bring to your attention that further study by Southdown has resulted in

refinements to the modification necessary at the plant. The following comments are numbered consistent with the modifications listed on page 3 of the Technical Evaluation and Preliminary Determination.

- No. 1. Southdown has evaluated the pre-heater exit gas cyclones and determined them to be reasonably efficient. As a result, Southdown does not presently plan to replace or modify the cyclones. At some future date, however, modifications may be necessary to increase the thermal efficiency and reduce pressure drop.
- No. 2. Along with replacing the two kiln I.D. fans with higher efficiency fans, Southdown may find it necessary to install larger drive motors to accelerate the larger fan rotors.
- No. 3. Modifications for the baghouse on Kiln 1 are currently under review by Southdown. The final modifications to the baghouse might include the addition of two to four additional modules and, in addition, the baghouse fan and/or motor may require replacement for compatibility with the modified baghouse.
- No. 4. No change.
- No. 5. No change.
- No. 6. No change.
- No. 7. In addition to the six modifications listed in the Technical Evaluation and Preliminary Determination and previously discussed with the Department, Southdown may decide to remove the raw mill air heaters.
- No. 8. Another modification previously unmentioned is that the discharge ducts of both raw mills will be replaced to increase the drying capacity of the mills. This replacement is largely maintenance.

These changes and modifications to the plant do not affect the production rates or emission rates stated in the Draft Permit.

Comments on Compliance Requirements

The compliance requirements in the Draft Permit for Kiln 1 (Table 2-1) and Kiln 2 (Table 2-3) require a one-time, one-week monitoring period for carbon monoxide. At footnote (4) in both referenced tables, it is stated:



"Continuous emission monitors shall be installed for a period of one week to show compliance with the CO limit. CEM shall meet the applicable requirements of 40 CFR 60, Appendix D and Appendix F. Thereafter, continuous process monitors for CO and/or O₂ to optimize combustion conditions for pollution control shall be part of the process."

The emission limiting standards for carbon monoxide for Kiln 1 (Table 1-1) and Kiln 2 (Table 1-2) both set an hourly emission limit for carbon monoxide and Southdown has agreed to accept these hourly limits. Early in the permitting process, there were discussions of longer averaging times for certain pollutants (e.g., a 30-day average for NO_x and possibly a 7-day average for CO); however, when the emission limits appearing in the Draft Permit were finally agreed upon, Southdown accepted them as hourly averages, not to be exceeded.

Hopefully, the one-week CO monitoring requirements for Kiln 1 and Kiln 2 were carried over from these earlier discussions and can be deleted from the permit.

Nothing else in the permit makes any reference to a one week averaging period and there is no reference to a one-week averaging period in the Best Available Control Technology (BACT) determination which is part of the Technical Evaluation and Preliminary Determination. Also, no doubt that might justify a longer compliance demonstration period has ever been expressed by the Department or Southdown regarding the ability of Southdown to operate Kilns 1 and 2 in compliance with the new CO limits. From a rule basis, unless a longer averaging time for compliance demonstration is agreed to by the Department and the applicant (or unless there is a requirement for CEM), the Department's rule (62-297.310(1), FAC) requires:

"For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct; three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured"

In this case, the compliance requirements in the Draft Permit specify that the duration of each of the determinations (test runs) is to be one-hour.

In our review of the Draft Permit and the permitting history of this project, the only rationale we can find for the one-week monitoring requirement for CO is the early discussions of long-term compliance averaging times for compliance. As there is nothing to support the requirement for the one-week monitoring requirement for carbon monoxide, it is requested that the one-week monitoring requirement for carbon



Mr. C. H. Fancy
Florida Department of
Environmental Protection

May 16, 1997
Page 4

monoxide be deleted from both the Kiln 1 and Kiln 2 compliance requirements.

We appreciate the opportunity to provide you with these comments. If you have any questions regarding our comments, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES


John B. Koogler, Ph.D., P.E.

JBK:wa

c: Mr. A. Linero, FDEP, Tallahassee
Ms. T. Heron, FDEP, Tallahassee
Mr. A. Gill, Southdown
Mr. D. Kelly, Southdown



262954



Post-It® Fax Note	7671	Date	3/12/97	# of pages	1
To	Theresa Heron	From	Don Kelly		
Co./Dept.		Co.	HW mgmt		
Phone #		Phone #	8-0300		
Fax #	922-6979	Fax #			

Protection
e, Florida 32399-2400

DEP Form # 62-710.600(1)
Form Title Application for Registration
Used Oil and Used Oil Filter Handlers
Effective Date June 8, 1995

gistration

3745
2201

Used Oil and Used Oil Filter Handlers*

(*Handlers are any persons subject to the registration requirements of Rule 62-710.500 and 62-710.850.4, F.A.C. (see item 4b below))

For registration period July 1, 199__ through June 30, 199__

Please Print or Type Form

1. Business Name SOUTHDOWN, INC. - BROOKSVILLE CEMENT FEID No. 72-0296500
 DBA (Doing Business As) FLORIDA MINING & MATERIALS Telephone No. (352) 796-7241
 Mailing Address: P. O. BOX 6
 City: BROOKSVILLE State: FLORIDA Zip: 34605
 Street Address: 16301 PONCE DE LEON County: HERNANDO
 City: BROOKSVILLE State: FLORIDA Zip: 34614
 Latitude/Longitude: / or Section: 14 Township 218 Range 18E
 (This information may be found on property deeds or determined from a Florida DOT County Road Map)

2. Facility Owner Name: SOUTHDOWN, INC. Telephone No. (800) 999-8529
 Address: 1200 SMITH STREET, SUITE 2400
 City: HOUSTON State: TEXAS Zip: 77002

3. Name of person operating (if different than owner)
 Name: DON B. KELLY Telephone No. (352) 796-7241

4. Make \$100.00 fee check payable to Florida Department of Environmental Protection
 4a. Registration Status New Renewal EPA ID No. FLD 072 543 010

4b. Check boxes which apply to your used oil activity(ies).
 Used Oil : Transporter Transfer Facility Marketer Processor Burner of off-spec used oil

Used Oil Filter : Transporter Transfer Facility Processor End User

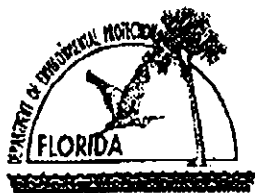
6. Certification

5a. General Certification to be signed by all Registrants:
 To the best of my knowledge and belief I certify the information provided in this application is true, accurate and correct.

DON B. KELLY Don B. Kelly 3/28/97
 Name of Authorized Person (Print or Type) Signature of Authorized Person Date

5b. Specific Certification to be Signed by all Used Oil Transporters except those exempted by 62-710.600(1)
 I certify as a used oil transporter that the training program and financial responsibility required under Section 62-710.600, Florida Administrative Code is in place, current and being adhered to. If any modifications have been made to the originally approved training program, they are explained in the attachments to this registration form. Evidence of financial responsibility is demonstrated by the attached Used Oil Transporter Certification of Liability Insurance, DEP form 62-710.900(4).

 Name of Authorized Person (Print or Type) Signature of Authorized Person Date



Florida Department of Environmental Protection
Twin Towers Office Bldg. • 2800 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form # 62-710.806(3)
Form Title Annual Report by
Used Oil and Used Oil Filter Handlers
Effective Date June 8, 1995

Annual Report by Used Oil and Used Oil Filter Handlers*

(*Handlers are any persons subject to the registration requirements of Rule 62-710.600 and 62-710.850, F.A.C. [see Section A, Box 5 below])

For reporting period January 1, 1996 through December 31, 1996

Use the information recorded in your Record Keeping forms (62-710.900(2)) to complete this document.

SECTION A To be completed by all registered persons

1. Company Name: SOUTHDOWN, INC. - BROOKSVILLE 2. Telephone No. (352) 796-7241
CEMENT
Mailing Address P. O. BOX 6, BROOKSVILLE, FLORIDA 34605

3. EPA ID # FLD 072 543 010

Check box if changed since last registration

4. Name of person preparing report (please print) MATT STONE

Affiliation with business MAINTENANCE ENGINEER

Phone number (if different than Number 2, above) ()

5. Type of operation (check as many as apply)

Used Oil: Transporter Transfer Facility Processor Marketer Burner of off-spec used oil

Used Oil Filter: Processor

SECTION B To be completed by all registered used oil handlers.

Note: Filter operations complete Section C (Optional)

	Automotive	Industrial	Mixed
1. Amount (in gallons) of Used Oil and Oily Waste Collected		22,636	
2. Amount (in gallons) of Used Oil and Oily Waste Marketed, Disposed of or End Used			
N - Not an end use, transferred to another facility			
O - Marketed as an on-spec used oil fuel			
F - Marketed as an off-spec used oil fuel			
I - Marketed for an industrial process		15,710	
B - Burned as off-spec used oil fuel		3,516	
D - Disposal		3,410	
Landfilled			
Wastewater Treatment Unit			
Incinerator			
Other			

3. Total amount (in gallons) of used oil collected
(Total of boxes from Part 1 of this section)
22,636

4. Total amount (in gallons) of used oil end used
(Total of boxes from Part 2 of this section)
22,636

5. End of year, on hand estimate (Difference between the amounts in boxes 3 and 4 above) 0



Department of Environmental Protection

DRAFT

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

Southdown, Inc.,
Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006

FID No.:	0530010
PSD No.:	PSD-FL-233
Permit No.:	0530010-001-AC
SIC No.:	3241
Expires:	October 31, 1997

Authorized Representative:
Don Kelly, Plant Manager

LOCATED AT:

Southdown, Inc., Brooksville Plant, Hernando County
Project: Portland Cement Manufacturing
Kilns Nos. 1 & 2 and Clinker Coolers 1 & 2

UTM: Zone 17 ; 356.0 km E ; 3169.9 km N
Directions: Located on Highway 98, NW of Brooksville, Hernando County

STATEMENT OF BASIS:

This draft construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices made a part of this permit:

Table 1-1 and 1-2	Air Pollutants Standards and Terms
Table 2-1 and 2-2	Compliance Requirements
Appendix BD-1	BACT Determination
Appendix GC-1	Construction Permit General Conditions

EFFECTIVE DATE:

Howard L. Rhodes, Director
Division of Air Resources Management

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

PLEASE FILL OUT AND RETURN THIS CHECK LIST WITH YOUR REGISTRATION

Registration Form. Please be sure it is signed.

Registration Fee. \$100.00

Training Certification:

This company is exempt from transporter certification requirements per 62.710.600(1) (a) or (c). Please circle appropriate exemption.

This company transports only used oil filters and is exempt from training and insurance requirements.

This company has compiled a training manual, a copy of which is enclosed for review.

This company purchased the UAUOS manual and has attached the signature pages.

Proof of Insurance:

Certificate of Liability Insurance Form 62-710.900(4) signed by insurance company is enclosed. Certificate of Insurance (ACORD) will only be accepted for renewals when renewing with the same carrier (Rule 62-710.600(2)(d).

Permits

This company is a Used Oil Processor and holds a General Permit; Number _____

Expiration date _____ (Attach copy of page showing number and expiration date.)

This company is burner of off-specification used oil and holds an Air Permit; Number 0530010-001-AC

Expiration date October 31, 1997. (Attach copy of page showing number and expiration date.)

Don B. Kelly
Signature

PLANT MANAGER
Title

Dated 2/28/97



February 24, 1997

RECEIVED

FEB 27 1997

BUREAU OF
AIR REGULATION

Mr. A. A. Linero, P.E., Administrator
Bureau Of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Permit No. 0530010-001-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2

Dear Mr. Linero:

On February 21, 1997, we submitted an amended permit application for the two kilns and clinker coolers at our Brooksville Plant. I would like to take this opportunity to re-emphasize two points:

- 1) In my January 31, 1997 letter I stated that our Brooksville Plant has been burning our on-site generated, non-hazardous wastes, such as used oil, lubricants, "oil-dry", grease and rags in the kilns. This has been a practice at our Brooksville Plant for a number of years and was authorized in the early eighties by a letter from the FDEP. Unfortunately, we cannot locate a copy of this letter at this time. Therefore, we request that a provision be included in our permit, in Sections B5 & C5, to burn such non-hazardous wastes. We use approximately 45,000 gallons of lubricants and 30,000 lbs of grease annually at this plant. A good portion of the spent lubricants is burned in the kiln and the remainder is used for other lubricating purposes.
- 2) We will demonstrate compliance for CO and NO_x emissions through three 1-hour tests, as we discussed during our meeting on January 30, 1997.

If you have any questions please call me at (713) 653-8098.

Sincerely,

Amarjit Singh Gill, PE
Director, Air Permitting

c: Don Kelly
John Koogler
Dave Repasz
Dan Heintz



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 18, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly, Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Dear Mr. Kelly:

Re: DEP File No. 0530010-003-AC (PSD-FL-233)
Production Increase, Kilns 1 and 2
Burning of Used Oil, Lubricants, Grease, Rags in Kilns 1 and 2

The Department is in receipt of Mr. Amargit Singh Gill's letter dated February 24, 1997, which states that the Brooksville Plant has been burning on-site generated, non-hazardous wastes such as used oil, lubricants, "oil-dry" grease and rags in the kilns for a number of years. According to the applicable construction permits (AC27-258569, 258570, 258571 and 258572), there is no mention of these materials. The recently noticed draft permit (DEP File No. 0530010-001-AC) was based on the current construction permits and would have restricted fuels to the burning of coal, waste tire derived fuel (WTDF for kiln No. 1), natural gas and certain amount of fuel oils No. 2, 4, 5, and 6 only.

We reviewed Department files in our Tampa and Tallahassee offices and were unable to find the letter mentioned by Mr. Singh authorizing burning of such wastes. We request that you provide that letter or any other evidence that such authorization was given. Our records indicate that:

- On April 1990 Southdown filed a request to burn on-spec used oil along with WTDF and coal.
- On April 9, 1991 the Department issued a letter authorizing Southdown to conduct performance tests for different fuel scenarios which included on-spec used oil (50% coal/50% on-spec used oil fuel and 30% coal/20% TDF/50% on-spec used oil). Did Southdown conduct those tests? We do not have records that these tests were performed. A permit modification to allow burning of on-specification used oil was never issued.

- August 17, 1992, Southdown reapplied to burn WTDF only. A permit modification was issued to allow Kiln No. 1 to burn **only** WTDF in addition to coal.

We recently received copies of Southdown's annual report and registration for Used Oil and Used Oil Filter Handlers, from the Solid/Hazardous Waste Section. According to these forms, Southdown burns off-spec used oil and holds an Air Permit No. 0530010-001-AC. Since the permit was not issued, the previous permits should be referenced and the authorization to burn these materials attached.

If Southdown plans to burn these materials, they should be included in the current construction permit application. We require reasonable assurance per Rule 62-04.070, F.A.C. that burning of on-spec and off-spec used oil along with lubricants, grease, and rags will not contravene applicable air and solid/hazardous waste regulations including Rules 62-210, 62-212, 62-272, 62-275, 62-296, 62-297, and 62-710, F.A.C.

Please submit additional information such as effects on emissions, fate of pollutants, stack test results, projected toxic ambient air concentrations, used oil sample analysis, used oil quantity, heat input percentages, impacts on waste cement kiln dust generation, manner of introduction into the kilns, etc. We will resume processing the application as soon as we receive a response to this letter.

If you have any questions on this matter, please call Teresa Heron (Review Engineer) or Cleve Holladay (meteorologist) at (904) 448-1344.

Sincerely,



A. A. Linero, P.E. Administrator
New Source Review Section

AAL/th/t

cc: B. Beals, EPA
J. Bunyak, NPS
B. Thomas, SWD
L. Garcia, HCEPD
A. Gill, Southdown
J. Koogler, P.E.
J. Flint, DEP Hazardous Waste Section

P 265 659 208

US Postal Service

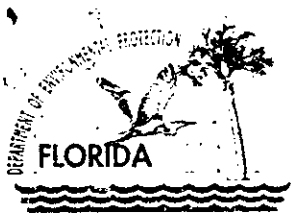
Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
Don Kelly	
Street & Number	
Inglisdown, Inc	
Post Office, State, & ZIP Code	
Bradsville, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
5-6-97	
0530010-003-AC	
POD-FL-233	
Kooler's + Kins 1+2	

PS Form 3800, April 1995



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

May 6, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Don Kelly
Plant Manager
Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006

Re: DRAFT Permit No. 0530010-003-AC (PSD-FL-233)
Kilns and Coolers No. 1 and No. 2


Dear Mr. Kelly:

Enclosed is one copy of the Draft Air Construction Permit for the Southdown cement plants located at US Highway 98, Northwest of Brooksville, Hernando County. The Technical Evaluation and Preliminary Determination along with the Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any other questions, please contact Teresa Heron or Mr. Linero at 904/488-1344.

Sincerely,


C. H. Fancy, P.E., Chief,
Bureau of Air Regulation

CHF/th/h

Enclosures

In the Matter of an
Application for Permit by:

Southdown, Inc.
Post Office Box 6
Brooksville, Florida 34605-0006 /

DRAFT Permit No.:0530010-003-AC
PSD-FL-233
Brooksville Portland Cement Facility
Hernando County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Southdown, Inc., applied on February 21, 1997, to the Department for modification of the existing air construction permits for its Brooksville facility located at Highway 98 Northwest of Brooksville, Hernando County. The request is to revise permitted emission limits for two existing kilns and coolers to reflect an increase from 145 to 150 tons per hour in kiln preheater feed rates.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a new air construction permit is required to revise the emission limits as proposed.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT". The notice shall be published one time only within 30 (thirty) days in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 904/488-1344; Fax 904/ 922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit pursuant to Rule 62-103.150 (6), F.A.C.

The Department will issue the FINAL Permit, in accordance with the conditions of the enclosed DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT." Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., or a party requests mediation as an alternative remedy under Section 120.573 F.S. before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9730, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

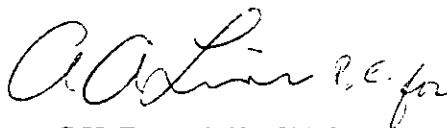
In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



C.H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 5-6-97 to the person(s) listed:

Mr. Don Kelly, Southdown, Inc. *
Brian Beals, EPA
John Bunyak, NPS
John Koogler, P.E.
Amargit Gill, Southdown, Inc.
Bill Thomas, SWD
Tom Ellison, SWD
Lizanne Garcia, HCPD

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52(7), Florida
Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Kari Ober 5-6-97
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No.: 0530010-003-AC, (PSD-FL-233)
Southdown Brooksville Cement Manufacturing Facility
Hernando County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Southdown, Inc., for an increase in process rates applicable to its portland cement facility located on Highway 98, Northwest of Brooksville, Hernando County. A Best Available Control Technology (BACT) determination was required for particulate matter (PM/PM₁₀), nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compounds (VOC) pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The applicant's name and address are: Southdown, Inc. Post Office Box 6, Brooksville, Florida 34605-0006.

The new permit will replace four current construction permits for Cement Plants No. 1 and No. 2 which were originally permitted in 1973 and 1980, respectively. Each plant includes a coal/ liquid fuel/ gas-fired, dry process cement kiln with a preheater and clinker cooler. Air pollution control is achieved by fabric filters (baghouses) for PM/PM₁₀ from the kilns and coolers; absorption of sulfur compounds and metals into the product; and combustion controls for CO, volatile organic compounds (VOC), and nitrogen oxides (NO_x).

Emissions will increase as a result of a increase in process feed rates to each kiln. The presently permitted process rates of 145 tons per hour (TPH as preheater feed on a 30 day average) will be increased to 150 TPH. The permit will account for increases in the permitted emissions of PM/PM₁₀ from Coolers No. 1 and No. 2 and Kiln No. 2; decrease of permitted emissions of PM/PM₁₀ from Kiln No. 1; establishment of or increase in permitted emission limits of CO and VOC from both kilns; and will set a BACT permit limit for NO_x from Kiln No. 1.

Total emissions, including increases, of pollutants subject to PSD review shall not exceed the following limits:

<u>Pollutant</u>	<u>Maximum Emissions Tons Per Year (TPY)</u>
CO	1,576
PM/ PM ₁₀	356
VOC	120
NO _x	2,448

The maximum emission rate of sulfur dioxide, which is not subject to PSD review by this action, will be TPY. An air quality impact analysis was conducted. Emissions from the facility will consume PSD increment but will not significantly contribute to or cause a violation of any state or federal ambient air quality standards. NO_x emissions from the project have an insignificant PSD Class II impact. The maximum predicted PSD Class II PM₁₀ increments consumed by all sources in the area, including this project, will be as follows:

<u>PSD Class II Increment Consumed (µg/m³)</u>	<u>Allowable Increment (µg/m³)</u>	<u>Percent Increment Consumed</u>	
PM ₁₀			
24-hour	24.9	30	83
Annual	3.8	17	22

The project has an insignificant impact on the Chassahowitzka PSD Class I area for the PM₁₀ annual averaging time. The maximum predicted PSD Class I PM₁₀ increment consumed by the project for the 24 hour averaging time is 1.03 µg/m³ or 13% of the available 24 hour increment of 8 µg/m³. The maximum predicted PSD Class I NO₂ increment consumed by the project is 0.9 µg/m³ or 36% of the available increment of 2.5 µg/m³.

The Department will issue the FINAL Permit in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments and requests for public meetings should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. or a party requests mediation as an alternative remedy under Section 120.573 before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for petitioning for a hearing are set forth below, followed by the procedures for requesting mediation.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A person whose substantial interests are affected by the Department's proposed permitting decision, may elect to pursue mediation by asking all parties to the proceeding to agree to such mediation and by filing with the Department a request for mediation and the written agreement of all such parties to mediate the dispute. The request and agreement must be filed in (received by) the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

A request for mediation must contain the following information: (a) The name, address, and telephone number of the person requesting mediation and that person's representative, if any; (b) A statement of the preliminary agency action; (c) A statement of the relief sought; and (d) Either an explanation of how the requester's substantial interests will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that the requester has already filed, and incorporating it by reference.

The agreement to mediate must include the following: (a) The names, addresses, and telephone numbers of any persons who may attend the mediation; (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time; (c) The agreed allocation of the costs and fees associated with the mediation; (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation; (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen; (f) The name of each party's representative who shall have authority to settle or recommend settlement; and (g) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 F.S., the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 F.S. for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57 F.S. remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: 904/488-1344
Fax: 904/922-6979

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW SOURCE REVIEW SECTION
BUREAU OF AIR REGULATION
Telephone (904) 488-1344
Fax (904) 922-6979
Mail Station # 5505

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Southdown, Inc.,
Brooksville, Hernando County, Florida

Air Construction Permit Number 0530010-003-AC (PSD-FL-233)
(Supersedes AC 27-258569, 258570, 258571, and 258572)
Kilns 1 and 2, Coolers 1 and 2

May 6, 1997

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

Air Permit No. 0530010-003-AC
PSD-FL-233 Kilns & Coolers No 1 & No. 2

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Southdown, Inc.
U.S. Highway 98
Brooksville, Florida 34605

Authorized Representative:
Mr. Don Kelly, Plant Manager

1.2 Reviewing and Process Schedule

- 02-21-97: Date of Receipt of Application Addendum
- 02-24-97: Southdown's letter requesting burning of "oil-dry" grease and rags in kilns
- 04-01-97: Koogler & Associates' letter requesting burning of on-site generated, non-hazardous used oil/grease.

2. FACILITY INFORMATION

2.1 Facility Location

Southdown, Inc.
Portland Cement Manufacturing Facility
UTM: Zone 17; 356 and 3169
Directions: Highway 98, Northwest of Brooksville in, Hernando County.

2.2 Standard Industrial Classification Code

Major Group Number	32	Clay, Glass and Concrete Products
Group Number	324	Cement, Hydraulic
Industry Number	3241	Cement, Hydraulic

2.3 Facility Category

This facility includes two existing cement plants consisting of two cement kilns and two clinker coolers along with ancillary equipment. Air pollutant emissions are over 100 tons per year (TPY) of particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). This is a Major Facility per Rule 62-210.200(171), F.A.C. and a Major (Title V) Source of Air Pollution per Rule 62-210.200(173). This industry is listed in Table 62-212.400-1, F.A.C., Major Facility Categories.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

Air Permit No. 0530010-003-AC
PSD-FL-233 Kilns & Coolers No 1 & No. 2

3. PROJECT DESCRIPTION

3.1 *This project involves the following emissions units:*

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
001	Unit No. 1 - Kiln No. 1
002	Unit No. 2 - Kiln No. 2
003	Unit No. 3 - Cooler No. 1
004	Unit No. 4 - Cooler No. 2

The proposed modification consists of about a 4 percent increase in the kiln preheater feed rates from 145 to 150 tons per hour (tph), rolling 30 production-day average for each kiln. The design maximum feed rate, stated in the current permit as 165 tph, remains unchanged.

The following changes will be performed:

1. Modify preheater exit gas cyclones to increase efficiency, which will reduce heat loss and lower the pressure drop.
2. Replace kiln ID fan with a higher efficiency in order to increase air flow without increasing the drive motor horsepower.
3. Add two modules to the existing Kiln No. 1 baghouse to allow a lower air-to-cloth ratio when a module is isolated for maintenance.
4. Improve the clinker cooler efficiency by upgrading fans and adding static gates.
5. Increase kiln preheater feed capacity to ensure 150 tph on a continuous basis, with a maximum design hourly rate of 165 tph.
6. Add drying drum to the No. 1 Raw Mill and increase the mill fan capacity to recuperate the waste heat from the preheater gas.

The above changes will increase the overall thermal efficiency of the process. Thus the maximum heat input will not exceed the existing limit of 300 MMBtu/hr. Each kiln and cooler utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns.

In addition, Southdown has also requested to allow both kilns the burning of on-site generated, non-hazardous oil and grease (5,000 gallons). The spent lubricants can consist of oil or grease dripping collected and containerized, oily rags and/or oily absorbent that has been used in the cleanup of a small on-site spill. The used oil/grease or oily rags and oily absorbent material will be containerized

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

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PSD-FL-233 Kilns & Coolers No 1 & No. 2

(typically in sealed one-gallon containers) and introduced into either of the kiln systems at the base of the preheater (in a location similar to where whole tires are introduced in kiln No. 1). Southdown has indicated that they have been burning on-site generated, non-hazardous oil and grease for a number of years and that it is a common practice in the cement industry.

The proposed permit revisions will, however, result in significant net emission increases for PM/PM₁₀ (Kilns 1 and 2 and Coolers 1 and 2) NO_x, VOC and for CO (Kilns 1 and 2) when comparing past actual with future potential emissions.

Background Information

Kiln and Cooler 1 were originally permitted in 1973, while Kiln and Cooler 2 were originally permitted in 1980. Kilns 1 and 2 are currently permitted under permits AC 27-258571 and AC27-258572, respectively. Coolers 1 and 2 are permitted under AC 27-258569 and AC27-258570, respectively.

Both kilns are presently permitted for a maximum 1-hour kiln preheater feed rate of 165 tons per hour (TPH), a corresponding kiln feed rate of 148 TPH, a 30-day average kiln preheater feed rate of 150 TPH and a corresponding kiln feed rate of 135 TPH. The maximum heat input rate to each kiln is 300 MMBtu per hour. Each kiln utilizes a baghouse to control the emissions of particulate matter. There are no add-on controls for any of the other pollutants emitted from the cement kilns. Raw material properties, chemical reactions in the kiln, absorption into the clinker, and combustion controls minimize emissions of NO_x, SO₂, CO, and VOC.

Both coolers are permitted for a maximum 1-hour throughput rate of 96 TPH and, a 30-day average throughput rate of 90 TPH. Each clinker cooler utilizes a baghouse to control the emissions of particulate matter.

The applicant has requested removal of clinker production limits and that emission limits be based on feed to the kiln preheater (k_{ph}) instead of feed to the kiln.

4. PROCESS DESCRIPTION

4.1 *General Information*

Portland cement is a fine powder, usually gray in color, that consists of a mixture of dicalcium silicate, tricalcium silicate, tricalcium aluminate, and tricalcium aluminoferrite, and miscellaneous minerals to which one or more forms of calcium sulfate have been added. About 95% of the cement production in the U.S. is portland cement. Masonry cement, also produced at the portland cement plant, represents the balance of the domestic cement production.

There are several variations in cement manufacturing including the wet, dry, dry preheater and dry

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
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precalciner processes. The precalciner process also includes a preheater. These processes are essentially identical relative to the manufacture of cement from raw materials. However, the type of process does affect the equipment design, method of operation, and fuel consumption. Because of its lower fuel requirements, most new portland cement plants use the dry precalciner process.

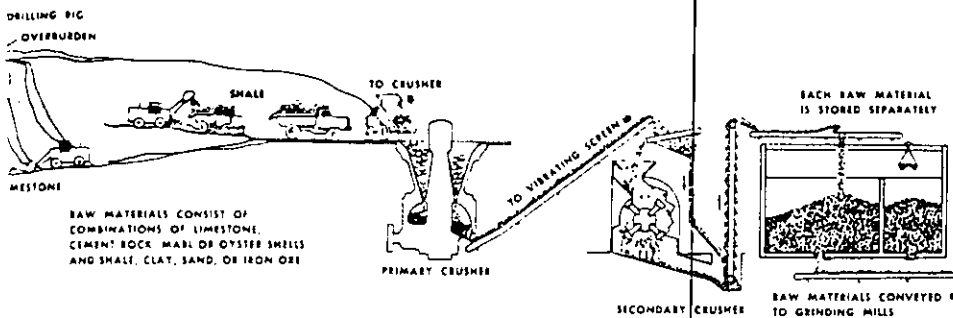
The choice of fuel is based on economics. The most commonly used kiln fuels are coal, natural gas, and oil. Supplementary fuels such as petroleum coke, tires, used oil and various kinds of wastes are burned at many plants. Fuel combustion differs between the wet, dry, dry preheater and dry precalciner processes. In the first three, all fuel combustion typically occurs in the kiln. In the latter, some fuel combustion occurs in a separate calcining vessel located between the preheater and kiln. In any of the processes, it is possible to introduce additional fuels such as tires directly into the kiln. Southdown uses the dry preheater process, a version of which is depicted in simplified form in figure 1 (from a portland cement association publication).

The production of portland cement is a four-step process: (1) raw materials acquisition and handling (2) kiln feed preparation for pyroprocessing, (3) pyroprocessing, and (4) finished cement grinding. The chemical reactions and physical processes that constitute the transformation are quite complex. The heart of the portland cement manufacturing process is the pyroprocessing system which includes the rotary kiln and suspension preheater/precalciner (when present). Several complex chemical reactions necessary to produce portland cement minerals take place in the pyroprocessing system.

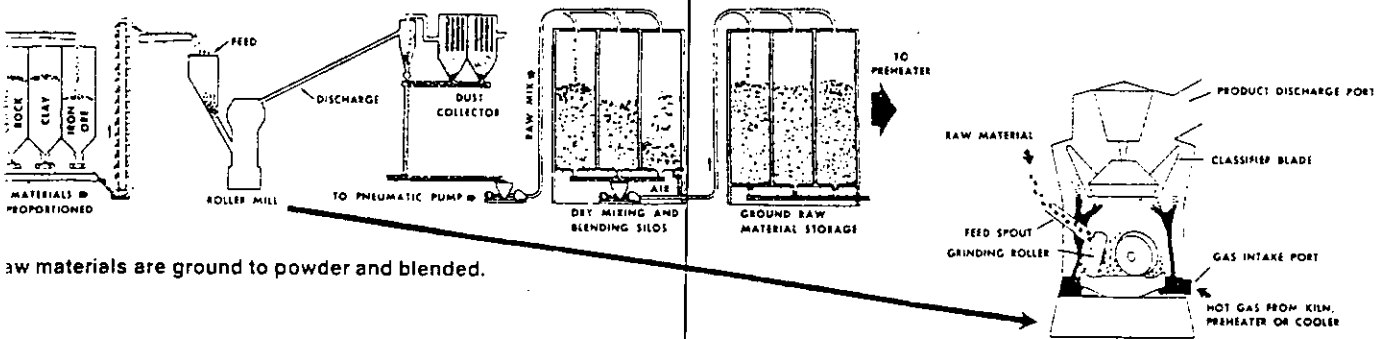
Pyroprocessing (preheater process) may be conveniently divided into five stages, depending on location and temperature of the materials in the system.

1. Uncombined water evaporates from raw materials as material temperature increases to 100°C (212°F) in the upper preheater or raw materials roller mill.
2. As the material temperature increases from 100°C to approximately 430°C (800°F) in the preheater, combined water is liberated from argillaceous compounds.
3. Between 430°C and 900°C (1650°F), partial calcination occurs in the lower preheater and is completed within the kiln. Carbon dioxide is liberated from the carbonates and calcium oxide (lime) is formed.
4. Following calcination, sintering of the oxides occurs in the burning zone of the rotary kiln at temperatures up to 1510°C (2750°F). Lime, silica, and iron and aluminum compounds react to form calcium silicates, aluminates, ferrites and aluminoferrites. Alkali sulfates and chlorides evaporate.
5. Following sintering, clinker nodules are produced as the temperature of the material decreases from 1510°C to 1370°C (2500°F).

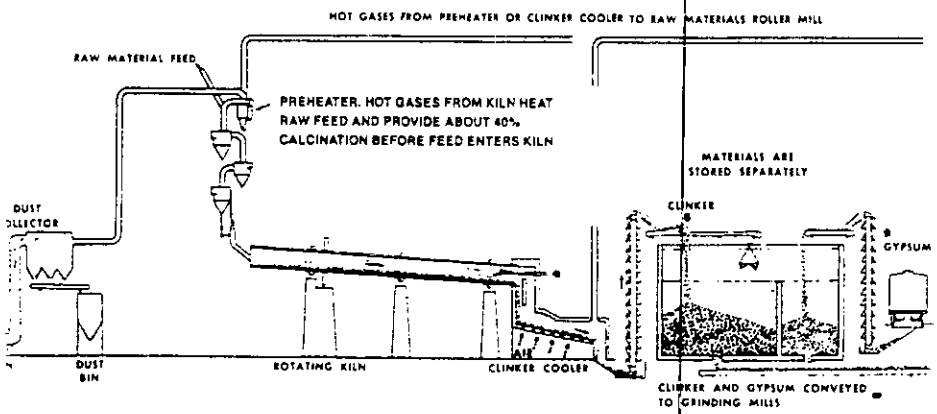
The raw materials enter the pyroprocessing system in the uppermost preheater cyclones. They exit the preheater and enter the kiln at the elevated end. The rotation of the kiln causes the solid materials



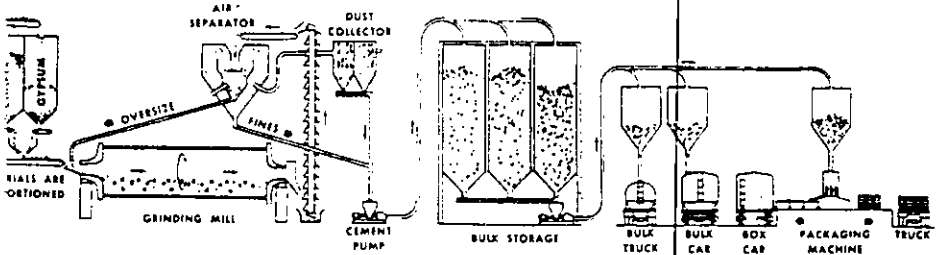
one is first reduced to 125 mm size, then to 20 mm, and stored.



raw materials are ground to powder and blended.



urning changes raw mix chemically into cement clinker. Note four-stage preheater, flash furnaces, and shorter kiln.



inker with gypsum is ground into Portland cement and shipped.

Figure 1 New technology in dry-process cement manufacturing

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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to be slowly transported downward from the front end. Fuel is supplied at the lower or discharge end of the kiln. The hot, gaseous combustion products move countercurrent to the materials flow, thereby transferring heat to solids in the kiln and preheater.

The product of the rotary kiln is known as clinker which enters a vessel where it is cooled by air. Hot air from the clinker cooler is recovered and returned to the pyroprocessing system as combustion air. The cooled clinker is mixed with a form of calcium sulfate, usually gypsum, and ground in ball or tube mills in the finish mill department to produce portland cement.

Portland cement is shipped from the packhouse or shipping department in bulk or in paper bags by truck or rail.

A process flow diagram for this facility is presented in Figure 2.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the applicable provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This facility is located in Hernando County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C.

The proposed project, increasing PM/PM₁₀ actual emissions from Kilns 1 and 2 and Cooler 1 and 2 CO, NOx and VOC emissions from Kilns 1 and 2, is subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), because the emission increases for both pollutants exceed the significant emission rates given in Table 62-212.400-2, F.A.C. This review consists of a determination of Best Available Control Technology (BACT) and, unless otherwise exempted, an analysis of the air quality impact of the proposed project's impacts on soils, vegetation and visibility along with air quality impacts resulting from associated commercial, residential and industrial growth.

The emission units affected by this modification shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations) and, specifically, the following chapters and rules:

- | | |
|-------------------|--|
| • Chapter 62-4 | Permits |
| • Rule 62-204.220 | Ambient Air Quality Protection |
| • Rule 62-204.240 | Ambient Air Quality Standards |
| • Rule 62-204.260 | Prevention of Significant Deterioration Increments |
| • Rule 62-204.360 | Designation of Prevention of Significant Deterioration Areas |
| • Rule 62-204.800 | Federal Regulations Adopted by Reference |
| • Rule 62-210.300 | Permits Required |
| • Rule 62-210.350 | Public Notice and Comments |

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

Air Permit No. 0530010-003-AC
PSD-FL-233 Kilns & Coolers No 1 & No. 2

- Rule 62-210.370 Reports
- Rule 62-210.550 Stack Height Policy
- Rule 62-210.650 Circumvention
- Rule 62-210.700 Excess Emissions
- Rule 62-210.900 Forms and Instructions
- Rule 62-212.300 General Preconstruction Review Requirements
- Rule 62-212.400 Prevention of Significant Deterioration
- Rule 62-296.320 General Pollutant Emission Limiting Standards
- Rule 62-297.310 General Test Requirements
- Rule 62-297.400 EPA Methods Adopted by Reference
- Rule 62-297.401 EPA Test Procedures
- Rule 62-297.520 EPA Performance Specifications

Cement Plants 1 and 2 are subject to all applicable requirements of 40 CFR 60, NSPS for Portland Cement Plants, Subpart F.

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

This facility emits the following PSD regulated pollutants: particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, fluorides, beryllium, mercury and lead. Cement Plant No. 2 has already gone through various PSD reviews [PSD-FL-063, PSD-FL-124, PSD-FL-124(A) and PSD-FL-188].

The new permit (0530010-003 AC - Section III. B) will address the increases in actual PM/PM₁₀ emissions from both Kiln and Cooler 1, establish a CO limit for Kiln 1 under all operating conditions, and establish for the first time NO_x and VOC emission limitations and include all other applicable conditions for Kiln and Cooler 1 from existing permits. The Department's proposed permitted emission and compliance requirements for Kiln and Cooler No. 1 are summarized in Tables 1-1, Air Pollutant Emission Standards and Terms, and Table 2-1, Compliance Requirements.

Permit 0530010-003 AC, Section III. C, will address the increases of actual PM/PM₁₀, emissions from Kiln and Cooler 2, the increases in emissions of NO_x, CO and VOC from Kiln 2, and include all other conditions for Kiln and Cooler 2 from existing permits. The Department's proposed permitted emissions and compliance requirements for Kiln and Cooler 2 are summarized in Tables 1-2, Air Pollutant Emission Standards and Terms, and Table 2-2, Compliance Requirements.

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology ()
 - (b) Determination of Prevention of Significant Deterioration (); and
 - (c) Compliance with New Source Performance Standards ().
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.
-

APPENDIX GC
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT/LAER/RACT CLEARINGHOUSE DATABASE COMPARISON

The following table is to be used for reference and comparison with portland cement facilities listed in the BACT/LAER/RACT Clearinghouse database:

POLLUTANT	lb/ton clinker	lb/ton kiln _{ph} feed *	lb/ton kiln feed**	lb/MM BTU
PM/PM ₁₀ (kiln)	0.31	0.18	0.2	0.08
SO ₂ (kiln)	0.16	0.10	0.12	0.05
NO _x (Kiln No. 1)	3.05	1.83	2.03	0.91
NO _x (Kiln No. 2)	2.87	1.72	1.91	0.86
CO (kiln)	2.00	1.2	1.33	0.57
VOC (kiln)	0.15	0.09	0.1	0.04
PM/PM ₁₀ (Cooler)	0.15	0.09	0.1	0.04

Based on the following process rates:

Preheater feed rate (kiln_{ph} feed rate) : 165 TPH (one-hour maximum)

Preheater feed rate (kiln_{ph} feed rate) *: 150 TPH (30-day average)

Kiln feed rate **: 135 TPH (30-day average)

Clinker production : 90 TPH (30-day average)

Heat Input : 300 MMBTU/hr

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

Teresa Heron, Review Engineer,
A. A. Linero, Administrator, New Source Review Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Howard L. Rhodes, Director
Division of Air Resources Management

Date:

Date:

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT DETERMINATION BY DEP:

Based on the information provided by the applicant and the information searches conducted by the Department, the BACT emission levels are established as follows:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM ₁₀) (kilns)	0.18 lb./ton kiln _{ph} feed
Particulate Matter (PM/PM ₁₀)(coolers)	0.09 lb/ton kiln _{ph} feed
Carbon Monoxide (kilns)	1.2 lb/ton kiln _{ph} feed
Nitrogen Oxides (Kiln No. 1)	1.83 lb/ton kiln _{ph} feed
Nitrogen Oxides (Kiln No. 2)	1.72 lb/ton kiln _{ph} feed
Volatile Organic Compounds (kilns)	0.09 lb/ton kiln _{ph} feed
Visible Emissions (Kiln No. 2)	10 percent (no change)

COMPLIANCE

Compliance with the particulate emission limitations shall be in accordance with the EPA Reference Method 5 as contained in Appendix A, 40 CFR 60, and set forth in Subsection 60.64 of the NSPS for Portland Cement Plants, 40 CFR 60.

Continuous opacity monitors (kilns and coolers) shall meet the requirements of the 40 CFR 60.63, NSPS Subpart F for Portland Cement Plants. Compliance with the opacity standard for the Kilns and Clinker Coolers No. 1 and No. 2 shall be demonstrated by EPA reference Method 9.

Compliance with the CO limitations shall be demonstrated initially and annually by using EPA Reference Method 10 as contained in Appendix A, 40 CFR 60.

Pursuant to Rules 62-4.070(3), 62-212.400(6), and 62-297.520, F.A.C., the kiln/cooler exhaust stack system shall also be equipped with continuous monitors process monitors to record CO and/or O₂ to indicate proper maintenance, operation, and to optimize combustion for pollution control.

Compliance with the NO_x limitation shall be demonstrated initially and annually by using EPA Reference Method 7E as contained in Appendix A, 40 CFR 60.

Compliance with the VOC limitations shall be demonstrated (on a one time basis) by three one hour stack tests using Method 25 or 25A as contained in Appendix A, 40 CFR 60.

**APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

BACT for CO was proposed by Southdown to be 1.2 lb/ton kiln_{ph} feed (2.0 lb/ton clinker at a clinker production rate of 90 TPH) for both Kilns. This value will provide sufficient flexibility to minimize NO_x and SO₂ emissions. The value is within the Department's recent BACT determination to Florida Crushed Stone (FCS) with a CO limit of 2.0 lb/ton clinker. However the Department encourages Southdown to continue to be judicious in selecting sources of coal ash. Some of the local power companies are trying to recover the unburned carbon in the coal ash by reburning it, taking advantage of the heat content, and producing a more salable coal ash for customers such as the cement industry. If Southdown revises its specifications and accepts poor quality flyash, it can be counter-productive for this pollution prevention effort affecting both industries.

A BACT determination was required for VOC for both Kilns. The Department accepts the limit requested by Southdown which will result in annual emissions above the PSD threshold. It will allow Southdown sufficient flexibility in control for all combustion products.

No BACT determination was requested or required for metals such as mercury, beryllium, lead arsenic, fluorides and sulfuric acid mist (PSD pollutants). Original emission estimates submitted for previous applications provided assurance that emissions of these pollutants are less than the PSD significant threshold values.

No new BACT determination was requested for SO₂. The actual BACT emission level of 15 lb SO₂/hr is being met. This is equal to 0.10 lb SO₂/ton kiln_{ph} feed. For comparison with industry conventions, this value is equal to 0.16 lb SO₂/ton clinker at a production rate of 90 TPH. Kiln No. 1 also meets the same SO₂ limit as Kiln No. 2.

A new BACT- NO_x emission limit of 1.83 lb/ton kiln_{PH} feed or 275 lb/hr (3.05 lb/NO_x/ton clinker at a production rate of 90 TPH, 30-day average) will be set for Kiln No. 1. BACT for Kiln No. 2 will remain at 1.72 lb NO_x/ton kiln_{ph} feed or 258 lb/hr at a 150 TPH process rate (2.86 lb/ton clinker at a production rate of 90 TPH, 30-days average).

APPENDIX BD**BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

Southdown will reduce the VOC emissions by controlling the temperatures in the kiln system. In the kiln, the feed material will reach about 2700 degrees Fahrenheit. The temperature of the gases in the kiln will reach between 3700 to 3800 degrees Fahrenheit. At these high temperatures, virtually all VOCs will be consumed or destroyed regardless of their source (limestone, mill scale, coal, fuel oil, etc.). Clinker production requires certain temperatures, residence time, and turbulence within the kiln. These factors are sufficient to ensure the destruction of almost all VOCs at cement plants.

Emissions of VOC can also be controlled by add-on control devices, by the mechanisms of adsorption, absorption, or incineration (afterburning). Incineration processes include flame incineration, thermal incineration, and catalytic incineration. No add-on controls for VOC have been demonstrated for cement plants.

A review of the BACT Clearinghouse reveals that for cement plants, BACT for VOCs is proper combustion practices.

For VOC, the applicant has estimated 13.6 lb/hr (an increase of approximately 9.1 lb/hr) for both kilns. The applicant is utilizing good combustion practices for both kilns to reduce VOCs emissions.

BACT DETERMINATION RATIONALE:

The existing BACT VE limit of 10 percent for Kiln No. 2 is more stringent than the NSPS for Portland Cement Plant, 40 CFR 60, Subpart F for Kiln No. 2. It is also consistent with various recent BACT determinations made throughout Florida. There is no good basis for considering the higher VE limit proposed by Southdown than the one already established. Although Kiln No. 1 has a VE limit of 20 percent, the kilns are operated similarly and will have identical PM limits. The efforts to maintain the lower Opacity limit at Kiln No. 2 will probably result in fairly low opacity from Kiln No. 1.

BACT for PM (0.2 lb/ton kiln feed) from Kilns No. 1 and No. 2 proposed by Southdown is more stringent than the NSPS for Portland Cement Plants, 40 CFR 60, Subpart F. The basis is the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone and the original BACT determination for Southdown (then FM&M). The Department accepts the applicant's proposed limit (as corrected to 0.18 lb/ton kiln_{ph} feed) for both Kiln Nos. 1 and 2.

BACT for PM (0.1 lb/ton kiln_{ph}) feed from Coolers Nos. 1 and 2 proposed by Southdown is equal to that given in the NSPS for Portland Cement Plants. Southdown was unable to achieve lower limits set in the past as a result of permit conditions they agreed to comply with in order to avoid PSD/BACT. The basis is also the BACT determinations made by the Department for Florida Rock Industries and Florida Crushed Stone. The Department accepts the applicant's proposed limit (corrected to 0.09 lb/ton kiln_{ph} feed) for both Coolers Nos. 1 and 2 with the understanding that it is being met at all times rather than just during annual emission tests.

**APPENDIX BD
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

Carbon Monoxide

Carbon monoxide (CO) is a pollutant formed by the incomplete combustion (oxidation) of carbon containing compounds in the cement kiln fuel and during the transformation of cement raw materials to cement clinker. When insufficient oxygen is provided, more CO and less CO₂ are formed than under excess air conditions. Substantial quantities of CO and CO₂ are also generated through calcining of limestone and other calcareous material. This calcining process thermally decomposes CaCO₃ to CaO and CO₂. The calcining of limestone in the cement manufacturing process liberates large amounts of CO₂, which is available for dissociation into CO.

Flyash, a constituent of the raw feed mix, contains unburnt carbon which can vary in concentration depending on the source of the flyash. As the raw feeds travels down the preheater tower, most of the carbon present in the flyash is burned off. However, some of it is emitted as carbon monoxide. This contributes to fluctuations in carbon monoxide emissions.

The generation of CO and NO_x is inversely related to that of NO_x and is linked to the oxygen level that is present in the kiln system. As the oxygen level increases, the formation of NO_x increases and the formation of CO decreases. Conversely, when the oxygen level decreases, the formation of NO_x decreases and the formation of CO increases. Southdown will meet CO and NO_x emission levels by controlling excess oxygen in the kiln to a level between one and one-half to three percent excess oxygen. A continuous CO process monitor will assist in the control of the CO content in the kiln.

Emissions of CO can potentially be reduced at portland cement plants through utilization of proper combustion practices to maximize the oxidation of CO to CO₂ and reducing the quantity of CO in the flue gas stream (flue gas control). The high temperatures and control of excess air and fuel, typically results in simultaneous optimization for CO and NO_x. The applicant proposes proper combustion practices as BACT to control emissions of CO from this plant. A review of the BACT Clearinghouse reveals that for cement plants, BACT for CO is proper combustion practices.

The applicant proposes a CO limit of 1.2 lb/ton of feed_{ph} and good combustion practice as BACT for CO for each Kiln. This represents an emission increases for Kiln No. 1 from 57.7 lb/hr to 180 lb/hr and for Kiln No. 2 from 64.0 to 180 lb/hr respectively. This increase is proposed in order to allow for more representative on a year-round basis compared with what is achievable during an annual test. It also accounts for fluctuations due to normal process oscillations and varying characteristics of raw materials and fuels.

Volatile Organic Compounds

VOC is also a pollutant formed due to incomplete combustion of fuel and organic material in the feed material to the kiln system. Limestone contains very low levels of VOCs. An additional source of VOC is oil from mill scale which is sometimes used as a raw material for its iron.

APPENDIX BD

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

BACT for Kiln No. 2 will remain as set in 1988. This is 1.72 lb/ton kiln_{PH} feed (250 lb/hr at 145 TPH preheater feed, 30 -day average) which is equivalent to the new BACT limit of 1.72 lb/ton kiln_{PH} feed (258 lb/hr at 150 TPH preheater feed, 30-days average) or 2.86 lb/ton clinker at a production rate of 90 TPH, 30-day average. Kiln No. 2 has steadily meet this BACT standard.

This value is substantially similar to several BACT Determination made by the Department in 1995 and 1997. It is compared below with previous determinations documented by the BACT Clearinghouse.

Previous BACT Determinations

BASIS	Least Stringent	Most Stringent	Proposed
	Year 1978	Year 1981	Year 1996
lb/ton clinker	11.13	0.85	2.8

It is important to note that the facility which was given the 0.85 lb/ton clinker NO_x limit has not been able to meet it since construction. A dry process plant with a preheater/precalciner received a NO_x limit of 1.11 lb/ton clinker but was never built. Another dry process plant with a preheater/precalciner received a BACT determination of 2.09 lb NO_x/ton clinker. However, it appears that since that time a less stringent standard was applied. One dry process preheater/precalciner kiln in California received a NO_x BACT determination of 2.5 lb/ton clinker. The Department made a BACT Determination of 2.8 lb/ton clinker in 1997 (Florida Crushed Stone) and in 1995 for the proposed Florida Rock Industries Cement Plant in Newberry, Florida. The main reason that the lb/ton clinker emission rate was higher than the one for the California plant was that Florida limestone is wetter and requires more heat input to dry. A claim by the kiln manufacturer that differences in volatility between Eastern and Western coal should be reflected in an even higher emission limit for the Florida kiln was rejected by the Department.

Based on the long history of past permitting actions of Kiln No. 1 since its permit was issued in 1973 (no allowable emission limit for any pollutant other than PM), and the few stack records data on file with the Department, the Department has determined that the BACT limit for this kiln will not exceed 1.83 lb/ton kiln_{PH} feed (275 lb/hr at 150 TPH preheater feed rate) or 3.05 lb/ton clinker at a production rate of 90 TPH, 30-days average. Introduction of tires in the material feed end of the kiln (Kiln No. 1) will reduce the thermal load on the burner end and possibly result in lower NO_x emissions.

The Department considers that NO_x emissions from Kiln No. 1 will be minimized as a result of burning tires [refer to files on stack tests performed in 1993 while burning 80% coal and 20% WTDF (190.73 lb/hr in a two days average) 1994 (158.73 lb/hr), and 1995 (151.59 lb/hr)].

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APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

NO_x emissions represent a significant portion of the total emissions generated by this project, and shall be minimized using BACT.

The emissions of NO_x can potentially be reduced at Portland cement plants by two methods:

1. Minimizing the quantity of NO_x generated during combustion (combustion modifications).
2. Reducing the quantity of NO_x in the flue gas stream (flue gas controls).

In establishing BACT for cement kilns, the Department reviewed the EPA BACT/LAER Clearinghouse and a paper presented at the Air and Waste Management Association (AWMA) International Specialty Conference on Waste Combustion in Boilers and Industrial Furnaces. The paper, "Reduction of NO_x Emissions from Cement Kiln/Calcliner through the Use of the NO_xOUT Process," which was written by representatives of Nalco and Ash Grove Cement, suggests that SNCR is a viable control method. A level as low as 1.0 lb/ton of clinker was reached based on demonstration tests conducted at the Ash Grove cement plant in Seattle, Washington. However the process has not been demonstrated on a long term basis. Recently a proposed cement plant (Great Star Cement, Clark County, Nevada) was permitted with the urea-based SNCR/NO_xOUT process as BACT. The process relies on the reaction between ammonia and NO_x to yield molecular nitrogen. The delivery system consists of urea injectors in one of the preheater sections. The objective was to achieve 50% reduction of NO_x emissions. At that level there should be no ammonia slip while meeting a BACT limit of 3.1 lb/ton clinker.

A review of the EPA BACT/LAER Clearinghouse (BACT Clearinghouse) information indicates that NO_x emissions at most facilities are minimized by process control and good combustion practices.

The applicant stated that NO_x emissions at this facility will be controlled through "proper combustion practices" such as burner design with primary combustion air control. The applicant has proposed for each kiln with a preheater design a NO_x emission rate of 285 lb/hr and 1.9 lb/ton kiln_{PH} feed (3.17 lb/ton clinker at a production rate of 90 TPH, 30-day average).

A review of the NO_x emission rate summary indicates that the applicant's proposal is among the BACT determinations made to date for plants utilizing dry processes. The dry process with a preheater/precalciner is considered to be the most energy-efficient process. Dry process preheater designs, such as the one employed by Southdown, are also energy efficient. Therefore it is expected that the lower fuel use will result in relatively low NO_x, as well as documented reductions from tire burning, are further reasons to expect low emission rate from the both preheater design kilns.

Although the Department has good tracking records data on Kiln No. 2 showing compliance with the BACT standard of 1.72 lb/ton kiln_{PH} feed (250 lbs/hr) for at least the last 12 years, little reliable data presently exist to confirm the NO_x emission rate from Kiln No. 1.

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BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

facilities for particulate control from kilns and coolers. Both types of control equipment provide for the recovery/recycling of collected dust back into the process stream. Baghouses are also used to control particulate emissions from most other material processing operations at cement plants.

Common controls to limit particulate emissions from fugitive sources (such as roadways, stockpiles, and material processing and conveying equipment) include wet suppression, sweeping, application of surfactants, paving of roads and covering of stockpiles to reduce wind erosion. Wet suppression of fugitive particulate emissions is considered as BACT for most material handling operations and unpaved roads. Dust from stockpiles can be minimized by relatively high material moisture content with additional water spraying as necessary.

A review of the BACT Clearinghouse shows that baghouses and ESPs are widely used to control particulate matter from process emission units at cement plants. They are commonly accepted as BACT. At this facility, particulate matter sources are controlled by baghouses.

Southdown has proposed to increase the process rate (145 to 150 TPH) for both kilns, therefore changing the allowable emission rates for particulate matter (PM/PM₁₀) from Kilns Nos. 1 and 2 and Clinker Coolers Nos. 1 and 2 to allow for the fluctuations in emission rates during normal operating conditions. The permitted PM/PM₁₀ limits would be increased for Kiln No. 2 from 13.5 pounds per hour (lb/hr) to 27.0 lb/hr, while PM/PM₁₀ emissions for Kiln No. 1 are proposed to be decreased from 39.0 lb/hr (allowable emissions) to 27.0 lb/hr. The proposed limit for the two clinker coolers would be increased from 7.13 lb/hr (Kiln No. 1) and 5.0 lb/hr (Kiln No. 2) to 13.6 lb/hr. The proposed kiln particulate emission limits are equivalent to 0.18 pounds per ton of dry feed to each kiln preheater (lb/ton feed_{ph}). This is a standard lower than the New Source Performance Standard NSPS limit of 0.3 pounds per ton of dry feed (kiln). For the coolers the proposed limits are equivalent to 0.09 lb/ton feed_{ph} which is less than the applicable NSPS limit.

Southdown also requested to increase VE (which is largely linked to particulate emissions) from 10 percent for Kiln No. 2 to 20 percent.

PRODUCTS OF COMBUSTION AND INCOMPLETE COMBUSTION

Nitrogen Oxides

Emissions of NO_x from dry process cement plants with a preheater include the kiln, and any fuel-fired support operation. NO_x is generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel (fuel NO_x) and by thermal fixation of nitrogen in the combustion air (thermal NO_x). As flame temperature increases, the amount of thermally generated NO_x increases. Fuel type affects the quantity and type of NO_x generated. Generally, natural gas is low in nitrogen. However it causes higher flame temperatures and generates more thermal NO_x than oil or coal, which have higher fuel nitrogen content, but exhibit lower flame temperatures.

APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

- o Particulate matter from kilns and coolers (PM/PM₁₀, and VE). This is controlled generally by add-on particulate collection equipment such as baghouses or electrostatic precipitators.
- o Products of combustion and incomplete combustion (e.g., SO₂, NO_x, CO, VOC). Control is largely achieved by good combustion practices and reactions with clinker and raw materials.
- o Emissions from materials handling, conveyance, and storage (primarily PM). Controlled generally by fabric filters and reasonable precautions.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM, SO₂, H₂SO₄, fluorides, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

BACT ANALYSIS

Particulate Matter (PM/PM₁₀)

Particulate Matter is generated by the various physical and chemical processes at a cement manufacturing plant. Sources of particulate matter at cement plants include (1) quarrying and crushing, (2) raw material storage, (3) grinding and blending, 4) clinker production, 5) finish grinding, and 6) packaging and loading. Additional sources of PM are raw material storage piles, conveyers, storage silos, and unloading facilities.

The largest emission source of PM within cement plants is the pyroprocessing system that includes the kiln and clinker cooler exhaust stacks (in this case, common kiln/cooler stack). Emissions from kilns are affected by several factors, including differences in convective patterns, material movement patterns, burner locations and insertion lengths, heat transfer mechanisms, and the type of clinker cooler that supplies secondary air to the kiln for combustion. Typically, dust from the pollution control equipment servicing the kiln and cooler is collected and recycled into the kiln and thus incorporated into the clinker. Southdown has stated that the great majority of the cement kiln dust (CKD) captured in the baghouse is returned to the pyroprocessing system as raw material.

Common control devices for stack gases include settling chambers, inertial separators, impingement separators, wet scrubbers, fabric filters, and electrostatic precipitators. Fabric filters (baghouses) and electrostatic precipitator (ESPs) are generally considered equivalent for particulate control. Both types of devices can achieve removal efficiencies of over 99 percent. ESPs and baghouses are used extensively as control devices at cement plants. ESPs are generally specified for kiln and clinker cooler exhaust gases because of their ability to operate effectively at varying temperatures. Baghouses are also used at various

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DATE OF RECEIPT OF A BACT APPLICATION:

February 21, 1997

REVIEW GROUP MEMBERS:

Teresa Heron, and A. A. Linero of the New Source Review Section.

BACT DETERMINATION PROCEDURE:

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- (a) Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- (b) All scientific, engineering, and technical material and other information available to the Department.
- (c) The emission limiting standards or BACT determination of any other state.
- (d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as follows:

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Following is the BACT determination proposed by the applicant. These are on the basis of feed to the kiln.

BACT DETERMINATION REQUESTED BY THE APPLICANT - KILN FEED BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM ₁₀) (kilns)	0.2 lb./ton of dry kiln feed
Particulate Matter (PM/PM ₁₀)(coolers)	0.1 lb/ton of dry kiln feed
Nitrogen Oxides	2.11 lbs/ton of dry kiln feed
Carbon Monoxide (kilns)	1.30 lb/ton dry kiln feed
Volatile Organic Compounds (Kiln No. 2)	0.1 lb/ton dry kiln feed
Visible Emissions (Kiln No. 2)	20 percent

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The above limits are expressed in terms of pollutant emitted per ton of material reaching the kiln. Following a review of past permits, the exact process, requirements of the applicable NSPS for cement plants, and discussions with Southdown, the Department will limit only raw material fed to the kiln preheater. This is the most accurate and reliable measure of kiln operating rate in a preheater or precalciner kiln, particularly when there are no bypass streams and when little or no cement kiln dust is wasted. All limits will be expressed in terms of pounds of pollutant per ton of material fed to the kiln preheater (kiln_{ph}). Where appropriate, equivalent factors in terms of pounds of pollutant per ton of clinker produced will also be given for reference and comparison with industry or EPA reporting conventions. The above table is therefore adjusted as follows:

BACT DETERMINATION REQUESTED BY THE APPLICANT - PREHEATER BASIS:

POLLUTANT	EMISSION LIMIT
Particulate Matter (PM/PM ₁₀) (kilns)	0.18 lb./ton of dry kiln _{ph} feed
Particulate Matter (PM/PM ₁₀)(coolers)	0.09 lb/ton of dry kiln _{ph} feed
Nitrogen Oxides (NO _x)	1.9 lb/ton of dry kiln _{ph} feed
Carbon Monoxide (kilns)	1.2 lb/ton dry kiln _{ph} feed
Volatile Organic Compounds (Kiln No. 2)	0.09 lb/ton dry kiln _{ph} feed
Visible Emissions (Kiln No. 2)	20 percent

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BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

SOUTHDOWN, INC.
PORTLAND CEMENT FACILITY
PERMIT 0530010-003 AC (PSD-FL-233)
Hernando County

DRAFT

The applicant, Southdown Inc. (SI), owns a portland cement manufacturing facility in Brooksville. It consists of two kilns with a preheater design and two clinker coolers along with raw mill, finish mill, cement and clinker handling equipment, coal handling equipment, silos, and air pollution control equipment. A process description is included in the Technical Evaluation and Preliminary Determination.

Each kiln/cooler is permitted to process 165 tons per hour (TPH) of raw material fed to the preheater, 148 TPH to the kiln, and 90 TPH from the cooler on a 1-hr basis. Each is also permitted to process 145 TPH to the preheater, 130 TPH to the kiln, and 84 TPH from the cooler on a 30-day basis.

A single, large, fabric filter system (baghouse) is already in use to capture particulate matter from each kiln and cooler. Baghouses are also used to limit particulate emissions from other process emission points. All the emission units controlled by baghouses are listed in a Best Available Control Technology (BACT) determination performed for Cement Plant 2 in 1980. Kiln No. 2 has three (3) additional BACT determinations on file with the Department (1980, 1988 and 1993). No previous BACT determinations have been performed on Kiln No. 1.

Southdown requested to revise the allowable emissions limits for their kilns and coolers due to an increase in the process rate to the kiln preheater from 145 to 150 TPH (30-day basis). Specifically, it was requested to increase emissions limits for particulate matter (PM/PM₁₀), carbon monoxide (CO), nitrogen oxides (NO_x), visible emissions (VE) and volatile organic compounds (VOC) from Kiln No. 2; decrease PM/PM₁₀ (allowable emissions) and increase NO_x, VOC and CO emission limits for Kiln 1; and increase the PM/PM₁₀ limits for Coolers Nos. 1 and 2.

The project and rule applicability are described in the separate Technical Evaluation and Preliminary Determination. A Best Available Control Technology (BACT) determination pursuant to Prevention of Significant Deterioration (PSD) is required for each pollutant exceeding the significant emission rates in Table 62-212.400-2, F.A.C., "Regulated Air Pollutants Significant Emissions Rates." The increase in actual emissions will subject Kilns Nos. 1 and 2 to PSD review for particulate matter, nitrogen oxides, volatile organic compounds and carbon monoxide, and Coolers Nos. 1 and 2 to PSD review for particulate matter.

Table 1-1. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
 Southdown, Inc.
 Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
 Kiln No.1 & Cooler No.1 PSD-FL-233

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Emission Unit 003 - Kiln No. 1
 Emission Unit 004 - Cooler No. 1

E.U. ID#	Description	Pollutant ID	Fuel(s)	Allowable Emissions(2)			Equivalent Emissions (3)	Regulation(s)
				lb/ton dry kiln _{ph} feed *	lb/hr @150 TPH	lb/hr @ 165 TPH	TPY	
ARMS # 003	Kiln No. 1	PM/PM ₁₀	Coal/Gas/Oil/WTDF	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	SO ₂ (1)	Coal/Gas/Oil/WTDF	0.10	15.0	16.5	66	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	NO _x	Coal/Gas/Oil/WTDF	1.83	275	301	1318	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	CO	Coal/Gas/Oil/WTDF	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 003	Kiln No. 1	VOC	Coal/Gas/Oil/WTDF	0.09	13.6	14.9	60	Rule 62-4.070(3), F.A.C.
ARMS # 003	Kiln No. 1	Bc,Pb,Hg	Coal/Gas/Oil/WTDF	(4) To Be Determined	(4)	(4)	(4)	
ARMS # 003	Kiln No. 1	20% VE	Coal/Gas/Oil/WTDF					Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	10% VE						Rule 62-204.800, F.A.C.
ARMS # 004	Cooler No. 1	PM/PM ₁₀		0.09	13.6	14.9	60	Rule 62-204.800, F.A.C.

ALLOWABLE OPERATING RATES

		KILN No.1	Cooler No.1	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate (kiln _{ph})	TPH	165		One-hour maximum
Kiln preheater feed rate (kiln _{ph}) *	TPH	150		(30 - day average)
Kiln Heat Input	MMBtu/hr	300		

NOTES

- (1) Emissions of SO₂ will not exceed 15 lbs/hr. Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258571]
- (2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
- (3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed to assess applicable Title V fees and for PSD recordkeeping tracking purposes.
- (4) To confirm emissions of these pollutants are under the PSD threshold levels.

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Table 2-1. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
 Southdown, Inc.
 Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
 PSD-FL-233 Kiln No. 1 & Cooler No. 1

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 003	Kiln No.1	PM/PM ₁₀ [6]	Coal/Gas/Oil/WTDF	5 or 201/201A	initial/annual	3 one-hour run	COMS [3]
ARMS # 003	Kiln No.1	VE	Coal/Gas/Oil/WTDF	9	initial/annual [3]	180 min.	
ARMS # 003	Kiln No.1	SO ₂ [5]	Coal/Gas/Oil/WTDF	6C	annual [5]	3 one-hour run	
ARMS # 003	Kiln No.1	NO _x	Coal/Gas/Oil/WTDF	7E	initial/annual [7]	3 one-hour run	
ARMS # 003	Kiln No.1	CO [4]	Coal/Gas/Oil/WTDF	10	initial/annual [4]	3 one-hour run	
ARMS # 003	Kiln No.1	VOC [2]	Coal/Gas/Oil/WTDF	25 or 25A	initial only	3 one-hour run	
ARMS # 003	Kiln No.1	Be,Pb,Hg	Coal/Gas/Oil/WTDF	29	initial [8]	3 one-hour run	
ARMS # 003	Kiln No.1	PM/PM ₁₀ [6]	Coal/Gas/Oil/WTDF	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 004	Cooler No.1	PM/PM ₁₀ [6]		5 or 201/201A	initial/annual	3 one-hour run	COMS [3]
ARMS # 004	Cooler No.1	VE		9	initial/annual [3]	180 min.	

Notes:

- [1] Testing of emissions shall be conducted while burning coal and WTDF (20% heat input). Kiln No. 1 is allowed to burn natural gas, waste tire derived fuel (WTDF), and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. B5.
 - [2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.
 - [3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.
 - [4] Continuous emissions monitors shall be installed for a period of one week to show compliance with the CO limit. CEMS shall meet the applicable requirements of 40 CFR 60 Appendix B and Appendix F. Thereafter, continuous process monitors for CO and/or O₂ to optimize combustion conditions for pollution control shall be part of the process.
 - [5] Emissions of SO₂ shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).
 - [6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM₁₀.
 - [7] NO_x - An initial and Annual compliance tests as required by EPA Method 7E.
 - [8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.
- * MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

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Table 2-2. Compliance Requirements.

FACILITY ID NUMBER: 0530010

Permittee:
Southdown, Inc.
Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
PSD-FL-233 Kiln No. 2 & Cooler No.2

E.U. ID#	Description	Pollutant Name or parameter	Fuel(s) [1]	EPA Reference Method	Testing Time Frequency	Min. Compliance Test Duration	Monitoring System (MS)*
ARMS # 014	Kiln No.2	PM/PM ₁₀ [6]	Coal / Gas / Oil	5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 014	Kiln No.2	VE	Coal / Gas / Oil	9	initial/annual [3]	180 min.	COMS [3]
ARMS # 014	Kiln No.2	SO ₂ [5]	Coal / Gas / Oil	6C	annual [5]	3 one-hour run	
ARMS # 014	Kiln No.2	NOx	Coal / Gas / Oil	7E	initial/annual [7]	3 one-hour run	
ARMS # 014	Kiln No.2	CO [4]	Coal / Gas / Oil	10	initial/annual [4]	3 one-hour run	
ARMS # 014	Kiln No.2	VOC [2]	Coal / Gas / Oil	25 or 25A	initial only	3 one-hour run	
ARMS # 014	Kiln No.2	Be,Pb,Hg	Coal / Gas / Oil	29	initial [8]	3 one-hour run	
ARMS # 015	Cooler No. 2	PM/PM ₁₀ [6]		5 or 201/201A	initial/annual	3 one-hour run	
ARMS # 015	Cooler No. 2	VE		9	initial/annual [3]	180 min.	COMS [3]

Notes:

- [1] Testing of emissions shall be conducted while burning coal. Kiln No. 2 is allowed to burn natural gas and fuel oils (No. 2,4,5, and 6) as auxiliary fuels and on site generated non-hazardous wastes, used oil and grease. See specific condition No. C5.
- [2] VOC emission shall be tested initially to comply with the condition of this permit. Thereafter, compliance will be assumed provided that the CO allowable emission rate is not exceeded.
- [3] Pursuant to 40 CFR 60, Subpart F, the kiln and cooler exhaust system shall be equipped with continuous monitors to record the opacity at the stack to indicate proper maintenance and operation. Monitoring of the opacity of emissions shall be determined by COMS pursuant to 40 CFR 60.63. Notification and recordkeeping shall be in accordance with 40 CFR 60.7 and 40 CFR 60.65.
- [4] Continuous emissions monitors shall be installed for a period of one week to show compliance with the CO limit. CEMS shall meet the applicable requirements of 40 CFR 60 Appendix B and Appendix F. Thereafter, continuous process monitors for CO and/or O2 to optimize combustion conditions for pollution control shall be part of the process.
- [5] Emissions of SO₂ shall not exceed 15 lbs/hour. Annual testing is required in lieu of fuel sulfur restrictions. (Supplemental information received by DEP March 31, 1995).
- [6] Southdown has the option of using Method 5 if they stipulate that all of the PM is PM₁₀.
- [7] NOx - Initial and Annual compliance tests as required by EPA Method 7E.
- [8] To confirm emissions of these pollutants are under the PSD threshold levels. Initial test.

* MS = Continuous Opacity Monitoring System (COMS) - Continuous Emission Monitoring System (CEMS)

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Table 1-2. Air Pollutant Standards and Terms.

FACILITY ID NUMBER: 0530010

Permittee:
 Southdown, Inc.
 Portland Cement Plant

DRAFT Permit No.: 0530010-003-AC
 Kiln No. 2 & Cooler No. 2 PSD-FL-233

Emission Unit 014 - Kiln No. 2
 Emission Unit 015 - Cooler No. 2

E.U. ID#	Description	Pollutant ID	Fuel(s)	Allowable Emissions(2)			Equivalent Emissions (3)	Regulation(s)
				lb/ton dry kiln _{ph} feed *	lb/hr @ 150 TPH	lb/hr @ 165 TPH	TPY	
ARMS # 014	Kiln No. 2	PM/PM ₁₀	Coal/Gas/Oil	0.18	27.0	29.7	118	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	SO ₂ (1)	Coal/Gas/Oil	0.10	15.0	16.5	66	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	NO _x	Coal/Gas/Oil	1.72	258.0	283.8	1130	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	CO	Coal/Gas/Oil	1.20	180.0	198.0	788	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	VOC	Coal/Gas/Oil	0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.
ARMS # 014	Kiln No. 2	B6,Pb,Hg	Coal/Gas/Oil	(4)	(4)	(4)	(4)	Rule 62-4.070(3), F.A.C.
ARMS # 014	Kiln No. 2	10% VE	Coal/Gas/Oil					Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	10% VE						Rule 62-212.400(6), F.A.C.
ARMS # 015	Cooler No.2	PM/PM ₁₀		0.09	13.6	14.9	60	Rule 62-212.400(6), F.A.C.

ALLOWABLE OPERATING RATES

		KILN No. 2	Cooler No. 2	
Hours of operation per Year		8760	8760	
Kiln preheater feed rate (kiln _{ph})	TPH	165		One-hour maximum
Kiln preheater feed rate (kiln _{ph}) *	TPH	150		(30 - day average)
Kiln Heat input	MMBtu/hr	300		

NOTES

- (1) Emissions of SO₂ will not exceed 15 lbs/hr. Annual testing is required in lieu of fuel sulfur restrictions. [AC27-258572]
- (2) Compliance units. This facility shall demonstrate compliance based on these emission standards.
- (3) "Equivalent Emissions" are based on annual average emissions at the 30-day feed rate of 150 TPH. The "Equivalent Emissions" are also listed for informational purposes and for PSD and recordkeeping tracking purposes.
- (4) To confirm emissions of these pollutants are under the PSD threshold levels.

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

- August 13, 1995 Permits issued at the Southwest District office (AC-27-258569, AC27-258570, AC27-258571, AC27-258572) to allow the burning of natural gas, fuel oils Nos. 2, 4, 5 and 6. Deletes use of flolite in Kilns No. 1 and No. 2.
- February 22, 1996 Request to modify cement Kiln No. 1, Cooler No 1 and Kiln No. 2, and Cooler No. 2. The request was to increase emissions of CO, VOC and to increase/decrease TSP (Kiln No. 1). A detailed project description was listed in the Technical Evaluation and Preliminary Determination. Permit Nos. PSD-FL-233 and 0530010-001-AC. This draft permit was public noticed but was never issued.
- February 21, 1997 Request to increase 4 percent in the kiln preheater feed rates form 145 to 150 TPH, rolling 30- production day average for each kiln. A PSD review will be conducted for PM/PM₁₀, NO_x, CO and VOC emissions for both kilns.

NOTE: This permit revises and supersedes air construction permits numbers AC27-258589, 258570, 258571, and 258572.

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION IV. PERMITTING HISTORY AND RELEVANT DOCUMENTS

Permitting History

A detailed Permitting History of the emission units modified in this permit are found in Appendix PH.

December 18, 1973	Permit AC 27-2251 to construct Kiln No. 1 and Associated Equipment.
July 25, 1980	Permits AC 27-30444, 30446, 30447, 30449, 30450, 30451, 30453, 30454 and 30455 to construct Kiln No. 2 and Associated Equipment.
March 1981	PSD-FL-063 issued by EPA - Permit to Construct Kiln No. 2 and Associated Equipment.
November 3, 1987	Modification of Kiln No. 2: Increase NO _x limits from 195.3 lbs/hr to 250 lbs/hr and SO ₂ limits from 3 lbs/hr to 12 lbs/hr. Permit No. AC 27-138850 and PSD-FL-124.
July 20, 1990	Modifications of Kiln No. 2 to burn Flolite oil, increase operating rates and operate kiln without operating the raw mill, PSD-FL-124A. Modification to burn tires in Kiln No. 1. This request was granted. Currently (1996) this facility is not burning tires.
July 25, 1990	AC 27-173474, NO _x emissions were reduced from 250 lbs/hr to 162.3 lbs/hr.
January 25, 1991	Modification of Kiln No. 2 Auxiliary Sources to coincide with recent changes in operation of No. 2 Kiln, AC 27-185898, 27-185900 through -185907.
March 8, 1991	Permit Issued to burn Flolite at Kiln No. 1 AC 27-186923. Allow testing while burning TDF. Conditions of permit remain unchanged.
February 24, 1992	Request to burn waste classified as hazardous waste was withdrawn. This request was filed with the U.S. EPA, Region IV.
January 26, 1993	Modification to allow an increase in cement Kiln No. 2. NO _x emissions from 162.3 lbs/hr to 250 lbs/hr, 30 days rolling average. This increase was to reflect previous BACT limit (PSD-FL-124). Permit allows use of Flolite. New permits, PSD-FL-188 and AC 27-212252, were issued.
April 15, 1994	Permit issued to allow the use of TDF to provide 20% of heat input. AC27-240349, Kiln No. 1.

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

- (e) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit
- (f) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. [Rule 62-4.070(3), F.A.C.]

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

60.7(d). Such reports shall be submitted quarterly pursuant to 40 CFR 60.7 (c). [Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]

C18. The following Kiln No. 2 fuel records shall be maintained and made available upon request:

1. Coal

- (a) the coal usage rate in tons/day;
- (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload).

2. Liquid Fuels

- (a) The fuel type (number) and usage rate in gal/day;
- (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment.

3. Natural Gas

- (a) The fuel usage rate in cubic feet per day;
- (b) The average heating value (Btu/Ft³) provided by the gas supplier.
[Rule 62-4.070(3), F.A.C.]

C19. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with Rule 62-297.310 (8), F.A.C. [Rule 62-210.370 (3) and Rule 62-.297.310(8), F.A.C.]

Daily Operation and Maintenance (O&M) Log:

C20 This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information:

- (a) The data collected from in-stack monitoring instruments
- (b) The records on daily feed rates and clinker production rate
- (c) The amount and type of fuel burned per affected unit
- (d) Calibration logs for all instruments

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

$$E = (c_s \times Q_{sd}) / (P \times K)$$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c _s	=	concentration of particulate matter, g/dscm (g/dscf)
Q _{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler. [Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]

- C12. Suitable methods shall be used to determine the *kiln feed rate (P)*, except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. [40 CFR 60.64(3)]
- C13. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. [40 CFR 60.11. and Rule 62-297.310 (7), F.A.C.]
- C14. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. [Rule 62-4.070 (3), 62-297.310, 62-213, 62-4.055, 62-4.22, F.A.C.]
- C15. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

RECORDKEEPING AND REPORTING REQUIREMENTS

- C16. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in the **BACT Determination** (10% opacity for the Kiln and Cooler). The content of these reports must comply with the requirements in 40 CFR

AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

- (f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot.
- (h) Southdown is allowed to burn on site generated, non-hazardous waste (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) used oil and grease and rags in the kilns (less than 5,000 gallons per year..

Use of fuels other than those listed above is prohibited. [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

- C6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit [Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]

MONITORING OF OPERATIONS

- C7. The owner or operator shall record the daily production and preheater-kiln system feed rates. [Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]
- C8. The owner or operator shall install, calibrate, maintain, and operate in accordance with 40 CFR 60.13 a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stack. [Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]
- C9. The opacity monitoring device shall meet the applicable requirements of Chapter 62-204, F.A.C., 40 CFR 60.11 and 40 CFR 60.13, including certification of the device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) Notification Requirements.

TEST METHODS AND PROCEDURES

- C10. These emission units shall be tested in accordance with the applicable EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-2. Compliance Requirements (attached) list the EPA Methods. No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with all applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements. [Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, F.A.C, and 40 CFR 60, Appendix A and 40 CFR 60.8, Subpart A]
- C11. Compliance with the particulate matter standard contained in Table 1-2 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION C. SPECIFIC CONDITIONS

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
014	Kiln No. 2
015	Cooler No. 2

EMISSION LIMITATIONS

- C1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-2 Air Pollutant Standards and Terms (attached). [Rule 62-210.200(198) and 62-212.400, F.A.C.]
- C2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. [Rule 62-210.700, F.A.C. and 40 CFR 60.7]

OPERATIONAL LIMITATIONS

- C3. Cement Kiln No. 2 is allowed to operate continuously 8760 hours/year [Rule 62-210.233, F.A.C., Definitions, Potential to Emit (PTE)].
- C4. *Process operating rates:*
- Kiln preheater feed rate -- 165 tons/hour (one hour maximum)
 - Kiln preheater feed rate -- 150 tons/hour (30-day average)
- [AC 27-186923, AC 27-258572 and Dr. John Koogler's letter of November 22, 1994]. [Rule 62-210.233, F.A.C., (PTE)]
- C5. The No. 2 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, which is approximately:
- (a) 24,000 pounds per hour of coal with a heating value of 12,500 Btu/lb
 - (b) 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141, 300 Btu/gal
 - (c) 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal
 - (d) 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal
 - (e) 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

modification. FDEP and HBCCC shall review this information and, prior to any modification, determine whether further stack testing is required in order to determine if such modifications will result in an increase in actual emissions, whether a permit modification is necessary, and/or what the terms of any modified permit shall be. FDEP will provide a clear point of entry for Hernando County and any other substantially-affected parties to challenge any of FDEP's proposed determinations in this regard. [Construction Permit No. AC27-240349] Southdown, Inc., shall bear the burden to provide reasonable assurances that such modifications will not increase actual emissions.

AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

B19. Two copies of the results of the emission tests for the pollutants listed in Condition 1 for these emission units shall be submitted within forty-five days of the last sampling run to the Department's Southwest District office. Reports shall be in a format consistent with and shall include the information in accordance with **Rule 62-297.310 (8), F.A.C. [Rule 62-210.370(3) and Rule 62-297.310(8), F.A.C.]**

Daily Operation and Maintenance (O&M) Log:

B20. This facility shall maintain a central file containing all measurements, records, and other data that are required to be collected pursuant to the various specific conditions of this permit. Operators shall keep a daily O&M log to include, at a minimum, the following information.

- (a) The data collected from in-stack monitoring instruments
- (b) The records on daily feed rates and clinker production rate
- (c) The amount and type of fuel burned per affected unit
- (d) Calibration logs for all instruments
- (e) Maintenance/repair logs for any work performed on equipment or instrument which is subject to this permit; and,
- (f) Fuel analysis data.

All measurements, records, and other data required to be maintained by Southdown, shall be retained for at least five (5) years following the data on which such measurements, records, or data are recorded. This data shall be made available to the Department upon request. The Department's Southwest District office shall be notified in writing at least 15 days prior to the testing (auditing) of any instrument required to be operated by this facility to allow witnessing by authorized personnel. **[Rule 62-4.070(3), F.A.C.]**

OTHER RULE REQUIREMENTS

B21. If there is a change in the method of operation, etc., pursuant to Florida Administrative Code (F.A.C.) **Rule 62-210.200, Definitions - Modification**, the permittee shall submit an application along with the appropriate processing fee to the Department's Bureau of Air Regulation. Any physical modifications to the WTDF feed mechanism utilized during the test burn of WTDF/coal that results in an increased feed rate, a change in the location where WTDF is introduced into the kiln, or the introduction of WTDF into the kiln through the use of a mechanism other than a double air lock feed system, may require a modification of the permit. If the WTDF feed mechanism is to be physically modified in this manner, a description of such modification shall be submitted to FDEP and HCBCC 90 days prior to actual

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]

RECORDKEEPING AND REPORTING REQUIREMENTS

- B16. The owner or operator shall submit reports of excess emissions based upon data from the continuous opacity monitoring system. Periods of excess emissions that shall be reported are defined as all 6 minute periods during which the average opacity exceeds that allowed in 40 CFR 60.62(a)(2) and 40 CFR 60.62(b)(2). The content of these reports must comply with the requirements in 40 CFR 60.7(d). Such reports shall be submitted quarterly pursuant to 40 CFR 60.7 (c).
[Rule 62-204.800, F.A.C.; 40 CFR 60.63(d), 60.65(a) and 40 CFR 60.7]
- B17. Daily sampling and recording of the baghouse dust for the No. 1 kiln is required. The concentration of thallium in the baghouse dust shall not exceed 1.5%. Compliance shall be demonstrated using the "Thallium Concentration Monitoring and Analysis Procedure" as described in Mr. Bob Roger's letter to Dr. John Koogler, dated January 12, 1994 [Attachment #9 of Construction Permit No. AC27-240349].
- B18. The following fuel records shall be maintained for a minimum of five (5) years and made available upon request:
1. Coal
 - (a) the coal usage rate in tons/day;
 - (b) the average sulfur content and heating value (Btu/lb) of each coal shipment based upon analysis of a sample representative of the shipment (trainload).
 2. Liquid Fuels
 - (a) The fuel type (number) and usage rate in gal/day;
 - (b) Records of the sulfur content and heating value (Btu/gal) of each oil shipment based upon analysis of a sample representative of the shipment.
 3. Natural Gas
 - (a) The fuel usage rate in cubic feet per day;
 - (b) The average heating value (Btu/Ft³) provided by the gas supplier.
 4. Tires
 - (a) The utilization/firing rate of WTDF shall be quantified (weighed) continuously and recorded hourly;
 - (b) The quantities of all deliveries of WTDF shall be documented and kept on record/file.

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

EPA Methods. No other test method shall be used unless approval from the Department has been received in writing. These emission units shall comply with applicable requirements of Rule 62-297.310, F.A.C., General Test Requirements and 40 CFR 60.8 Performance Tests.

[Rules 62-204.800, 62-297.310, 62-297.400, 62-297.401, 62-297.620 F.A.C, and 40 CFR 60 Appendix A, and 40 CFR 60.8, Subpart A]

- B11. Compliance with the particulate matter standard contained in Table 1-1 Air Pollutant Standards and Terms (attached) shall be determined using EPA Method 5. The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (c_p \times Q_{sd}) / (P \times K)$$

where:

E	=	emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed
c_p	=	concentration of particulate matter, g/dscm (g/dscf),
Q_{sd}	=	volumetric flow rate of effluent gas, dscm/hr (dscf/hr)
P	=	total kiln feed (dry basis) rate, metric ton/hr (ton/hr)
K	=	conversion factor, 1000 g/kg (453.6 g/lb)

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.

[Rules 62-204.800 and 62-297.401, F.A.C. 40 CFR 60.64(b)(1) - (3)]

- B12. Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate. [40 CFR 60.64(3)]
- B13. The visible emissions test shall be conducted by a certified observer and be a minimum of 180 minutes in duration. The test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. [40 CFR 60.11 and Rule 62-297.310 (7), F.A.C.]
- B14. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100% of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, each emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. The initial compliance test results shall be submitted to the DEP Southwest District office with the application for an operating permit. [Rule 62-4.070 (3), 62-297.310, 62-4.055, 62-4.22, and Chapter 62-213, F.A.C.]

- B15. Operating procedures shall include good combustion practices and proper training of all operators and supervisors. The good combustion practices shall meet the guidelines and procedures as established by the

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

- B5. The No. 1 cement kiln fuel heat input rate shall not exceed 300 MMBtu/hr, which is approximately:
- (a) 24,000 pounds per hour of coal with a heating value of 12,500 Btu/lb
 - (b) 2,116 gallons/hour of No. 2 fuel oil with a heating value of 141,300 Btu/gal
 - (c) 2,060 gallons/hour of No. 4 fuel oil with a heating value of 145,600 Btu/gal
 - (d) 2,016 gallons/hour of No. 5 fuel oil with a heating value of 148,800 Btu/gal
 - (e) 1,982 gallons/hour of No. 6 fuel oil with a heating value of 151,300 Btu/gal
 - (f) 292,683 cubic feet/hour of natural gas with a heating value of 1,025 Btu per cubic foot
 - (g) 2.14 tons per hour of whole tire-derived fuel (WTDF)
 - (h) Southdown is allowed to burn on site generated non-hazardous waste (as defined by Rule 62-730.030, F.A.C., or 40 CFR Part 261) used oil and grease in the kilns (less than 5,000 gallons per year).

Use of fuels other than those listed above is prohibited. [Construction Permit No. AC27-186923 and AC27-212252 and Supplemental information received by DEP March 31, 1995]

- B6. Any other operating parameters (including control equipment operating parameters) established during compliance testing and/or inspection that will confirm the proper operation of each emission unit shall be included in the operating permit. [Rule 62-297.310, F.A.C. and 62-4.070, F.A.C.]

MONITORING OF OPERATIONS

- B7. The owner or operator shall record the daily production and preheater-kiln system feed rate. [Rule 62-204.800, F.A.C., 40 CFR 60.63(a)]
- B8. The owner or operator shall install, calibrate, maintain, and operate in accordance with 40 CFR 60.13 a *continuous opacity monitoring system* to measure the opacity of emissions from the cement kiln and clinker cooler control device stacks. [Rule 62-204.800, F.A.C., 40 CFR 60.63(b)]
- B9. The opacity monitoring device shall meet the applicable requirements of Chapter 62-204, F.A.C., 40 CFR 60.11 and 40 CFR 60.13, including certification of the device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) Notification Requirements.

TEST METHODS AND PROCEDURES

- B10. These emission units shall be tested in accordance with the applicable EPA/reference method, testing time frequency, and minimum compliance test duration. Table 2-1. Compliance Requirements (attached) lists the

SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION B. SPECIFIC CONDITIONS:

The following Specific Conditions apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
003	Kiln No. 1
004	Cooler No. 1

EMISSION LIMITATIONS

- B1. The emissions from these emission units shall not exceed the allowable emission rates listed in Table 1-1 Air Pollutant Standards and Terms (attached). [Rule 62-210.200(198) and 62-212.400, F.A.C.]
- B2. In order to minimize excess emissions during startup/shutdown/malfunction this emission units shall adhere to best operational practices. [Rule 62-210.700, F.A.C. and 40 CFR 60.7]

OPERATIONAL LIMITATIONS

- B3. These emission units are allowed to operate continuously (8760 hours/year). [Rule 62-210.233, F.A.C. Definitions-Potential to emit (PTE)]

B4. OPERATING RATES:

- Kiln preheater feed rate -- 165 tons/hour (one-hour maximum)
- Kiln preheater feed rate -- 150 tons/hour (30-day average)

[AC 27-186923, AC 27-258571 and Dr. John Koogler's letter of November 22, 1994]
 [Rule 62-210.233 F.A.C., (PTE)]

TIRE BURNING:

- (a) The No. 1 cement kiln's maximum utilization/firing rate of WTDF shall not exceed 20 percent of the total Btu heat input, or 2.14 tons per hour [Construction Permit No. AC 27-240349].
- (b) WTDF may be introduced into the No. 1 cement kiln only at a point at the base of the preheater (i.e., exit of gases from the kiln) [Construction Permit No. AC27-240349].
- (c) WTDF firing in the No. 1 cement kiln shall not commence or be conducted unless the cement kiln has reached an operating temperature of at least 1,400 degree Fahrenheit for one hour. The operating gas temperature shall be measured at the cement kiln exit [Construction Permit No. AC27-240349].
- (d) In the No. 1 cement kiln, continuous whole tire-derived fuel (WTDF) utilization/firing shall be allowed (i.e., 8760 hrs/yr operation) [Construction Permit AC27-240349].

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SECTION III. EMISSION UNIT(S) SPECIFIC CONDITIONS

SUBSECTION A. NSPS COMMON CONDITIONS: 40 CFR 60 SUBPART A, GENERAL PROVISIONS

EMISSION UNITS

This permit addresses the following emission units.

EMISSIONS UNIT No.	EMISSIONS UNIT DESCRIPTION
003	Unit No. 1 - Kiln No. 1
014	Unit No. 2 - Kiln No. 2
004	Unit No. 3 - Cooler No. 1
015	Unit No. 4 - Cooler No. 2

These emission units shall comply with all applicable requirements of 40 CFR 60, General Provisions, Subpart A.

- A.1. [40 CFR 60.7, Notification and record keeping]
- A.2. [40 CFR 60.8, Performance tests]
- A.3. [40 CFR 60.11, Compliance with standards and maintenance requirements]
- A.4. [40 CFR 60.12, Circumvention]
- A.5. [40 CFR 60.13, Monitoring requirements]
- A.6. [40 CFR 60.19, General notification and reporting requirements]

These emission units shall comply with all applicable provisions of the 40 CFR 60 New Source Performance Standards for Portland Cement Plants, Subpart F, 40 CFR 60, Appendix A, and 40 CFR 51, Appendix M.

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- 6.3 Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Air Compliance Section of the Southwest District office within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7. [Rules 62-4.130 and 62-210.700(6), F.A.C.]
- 6.4 Annual Operating Report for Air Pollutant Emitting Facility: Before March 1st of each year, the owner or operator shall submit to the Department this required report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year. [Rule 62-210.370(3), F.A.C.]
- 7.0 **OTHER REQUIREMENTS**
- 7.1 Waste Disposal: The owner or operator shall treat, store, and dispose of all liquid, solid, and hazardous wastes in accordance with all applicable Federal, State, and Local regulations. This air pollution permit does not preclude the permittee from securing any other types of required permits, licenses, or certifications.
- 7.2 Used Oil and Grease: Used oil and grease burned at this facility (Kiln 1 and 2) shall not be a hazardous waste as defined by 40 CFR Part 261.3 or Rule 62-730.030, F.A.C. It shall not include fuels or blended fuels consisting in whole or in part of hazardous waste or which include mixture of any solid waste generated from the treatment, storage, or disposal of hazardous waste. These fuels shall be burned in compliance with Section 403.769(3), Florida Statutes.
- 7.3 Other Regulations: The owner or operator shall comply with applicable provisions of Rule 62-710, Used oil Management and 40 CFR Parts 279, Standards for the Management of used oil.

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

- 5.3 Test Notification: The owner or operator shall notify the Southwest District office in Tampa in writing at least (30) days [initial] and (15) days [annual] prior to conducting each scheduled compliance test. The notification shall include the test date, the expected test time, the facility contact person for the test, and the person or company conducting the test. The (30) or (15) day notification requirement may be waived at the discretion of the Department. Likewise, if circumstances prevent testing during the test window specified for the emission unit, the owner or operator may request an alternate test date before the expiration of this window. **[Rule 62-297.310 and 40 CFR 60.8, F.A.C.]**
- 5.4 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rule 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Southwest District office in Tampa. **[Rule 62-297.310, F.A.C.]**
- 5.5 Stack Testing Facilities: The owner or operator shall install stack testing facilities in accordance with **Rule 62-297.310, F.A.C.**
- 5.6 Exceptions and Approval of Alternate Procedures and Requirements: An Alternate Sampling Procedure (ASP) may be requested from the Bureau of Air Regulation of the Florida Department of Environmental Protection in accordance with the procedures specified in **Rule 62-297.620, F.A.C.**
- 6.0 **REPORTS AND RECORDS**
- 6.1 Duration: All reports and records required by this permit shall be kept for at least (5) years from the date the information was recorded. **[62-4.160(14)(b), F.A.C.]**
- 6.2 Emission Compliance Stack Test Reports:
- (a) A *test report* indicating the results of the required compliance tests shall be filed with the Southwest District office in Tampa as soon as practical, but no later than 45 days after the last sampling run is completed. **[Rule 62-297.310, F.A.C.]**
 - (b) The *test report* shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310 (8), F.A.C.**

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

3.4 Excess Emissions Requirements [Rule 62-210.700, F.A.C.]

- (a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Southwest District office for longer duration. [Rule 62-210.700(1), F.A.C.]
- (b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
- (c) In case of excess emissions resulting from malfunctions, the owner or operator shall notify the Air Pollution Control Section of the Southwest District office within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. [Rule 62-210.700(6), F.A.C.]

4.0 Monitoring of Operations

4.1 Determination of Process Variables:

- (a) The permittee shall install, operate, and maintain equipment and/or instruments necessary to determine process variables, such as process weight input or heat input, when such data is needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. [Rule 62-297.310 (5), F.A.C.]
- (b) Equipment and/or instruments used to directly or indirectly determine such process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C.]

5.0 TEST REQUIREMENTS

5.1 Test Performance: Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial startup up and annually thereafter, (except for VOC), the owner or operator shall conduct performance test(s) for PM/PM₁₀, NO_x, SO₂, CO, VE and VOC (initial) pursuant to 40 CFR 60.8, Performance Tests, Rule 62-296.310 F.A.C., 40 CFR 60, Appendix A and 40 CFR 51, Appendix M. [Rule 62-204.800, F.A.C and Rule 62-297.310, F.A.C.]

5.2 Test Procedures and Test Reports shall meet all applicable requirements of the Florida Administrative Code Chapter 62-297. [Rule 62-297.310, F.A.C.]

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

2.3 General Pollutant Emission Limiting Standards: [Rule 62-296.320 (1), F.A.C.]

- (a) The owner or operator shall not store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems.
- (b) No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

NOTE: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [F.A.C. 62-210.200(198)]

3.0 OPERATION AND MAINTENANCE

- 3.1 Changes/Modifications: The owner or operator shall submit to the Department of Environmental Protection, Bureau of Air Regulation and/or the Southwest District office in Tampa, for review and obtain approval for any changes in, or modifications to: the method of operation; process or pollution control equipment; increase in hours of operation; equipment capacities; or any change which would result in an increase in potential/actual emissions. Depending on the size and scope of the modification, it may be necessary to submit an application for, and obtain an air construction permit prior to making the desired change. FDEP will provide a clear point of entry for Hernando County and any other substantially affected parties to challenge any of FDEP's proposed determinations in this regard. *Routine maintenance of equipment would not constitute a modification of this permit.* [Rule 62-4.030, 62-210.300 and 62-4.070(3), F.A.C.]
- 3.2 Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the owner or operator shall notify the Southwest District office in Tampa as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the steps being taken to correct the problem and prevent future recurrence; and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit and the regulations. [Rule 62-4.130, F.A.C.]
- 3.3 Circumvention: The owner or operator shall not circumvent any air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rules 62-210.650, F.A.C.]

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SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]

2.0 EMISSION LIMITING STANDARDS

2.1 General Visible Emissions Standard: [Rule 62-296-320 (4)(b), F.A.C.] Unless otherwise specified by rule or permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere any air pollutants from new or existing emissions units, the opacity of which is equal to:

- Visible emissions from PM fugitive sources shall not exceed 10% opacity.

2.2 Unconfined Emissions of Particulate Matter [Rule 62-296.320(4)(c), F.A.C.]

- (a) The owner or operators shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any source whatsoever, including, but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission.
- (b) Reasonable precautions shall include the following:
- All permanent haul roads shall be paved.
 - Temporary haul road shall be watered or treated with chemical dust suppressants at regular intervals.
 - Dry materials (moisture content $\leq 14\%$) shall be stored below grade, in silos, or in enclosed structures.
 - Coal stored at or above natural grade shall be compacted, turned and/or watered as necessary to maintain a minimum 8% moisture content in the surface layer, and shall be aligned with the predominant wind direction to minimize wind erosion.
 - Abandoned haul road and other disturbed areas shall be revegetated within 60 days of the date that active service of the roads ends.
 - All cement products shall be transferred to transport trucks with a sealed pneumatic conveying system which is either a closed system or exhausted through a bag filter.

NOTE: Facilities that cause frequent, valid complaints may be required by the Southwest District office in Tampa to take these or other reasonable precautions. In determining what constitutes reasonable precautions for a particular source, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

DRAFT**SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS****1.0 ADMINISTRATIVE**

- 1.1 **Regulating Agencies:** All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Florida Department of Environmental Protection (FDEP) Southwest District Air Resource Program Permitting Section located at 3804 Coconut Drive, Tampa, Florida 33619-8218, and phone number (813)744-6100. All applications for permits to construct or modify an emission unit(s) subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP) located at 2600 Blairstone Road, Tallahassee, Florida 32399-2400 and phone number (904)488-1344.
- 1.2 **General Conditions:** The owner and operator is subject to and shall be aware of and operate under the attached General Permit Conditions G.1 through G.15 listed in *Appendix GC* of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
- 1.3 **Terminology:** The terms used in this permit have specific meanings as defined in the corresponding chapter of the Florida Administrative Code.
- 1.4 **Forms and Application Procedures:** The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C., when appropriate and follow the application procedures in Chapter 62-4, F.A.C. [Rule 62-210.900, F.A.C.]
- 1.5 **Expiration:** This air construction permit shall expire on June 30, 1998. [Rule 62-210.300(1), F.A.C.] The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Southwest District office of any delays in completion of the project which would affect the startup day by more than 90 days. [Rule 62-4.090, F.A.C.]
- 1.6 **Application for Title V Permit:** This air construction permit revises specific permit conditions to reflect the current applicable requirements, BACT and new permit emission limits. Stack testing of emissions that are required by this permit shall be performed to determine compliance with all new applicable permitted limits. A revision of the Title V operating permit application pursuant to Chapter 62-213, F.A.C., shall be submitted to the DEP District office in Tampa. [Chapter 62-213, F.A.C.]
- 1.7 **Applicable Regulations:** Unless otherwise indicated, the construction and operation of these emission units shall be in accordance with the capacities and specifications stated in the application. Southdown, Inc., is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4; 62-103; 62-204, 62-210, 62-212, 62-213, 62-296, 62-297; and the Code of Federal Regulations Section 40, Part 60. Specifically, this facility is subject to the New Source Performance Standards (NSPS) for Portland Cement Plants identified by the Code of Federal Regulations Section 40, Part 60, Subpart F, and incorporated by reference in the Florida Administrative Code regulation 62-204.800. Issuance of this

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AIR CONSTRUCTION PERMIT 0530010-003-AC AND PSD-FL-233

SECTION II. EMISSION UNIT(S) COMMON SPECIFIC CONDITIONS

FACILITY DESCRIPTION:

This facility consists of two identical portland cement manufacturing plants and associated equipment. These plants are identified as Cement Plant No. 1 and Cement Plant No. 2.

EMISSION UNITS

These permits address the following emission units:

EMISSIONS UNIT NO.	EMISSIONS UNIT DESCRIPTION
003	Kiln No. 1
004	Cooler No. 1
014	Kiln No. 2
015	Cooler No. 2

REGULATORY CLASSIFICATION

This industry is listed in Table 62-212.400-1 of Chapter 62-212, F.A.C., "Major Facility Categories." Therefore, stack and fugitive emissions of over 100 tons per year of carbon monoxide, volatile organic compounds, sulfur dioxide, nitrogen oxides, or particulate matter characterize the installation as a major facility subject to the requirements of Rule 62-204.800, F.A.C., which incorporates 40 CFR Subpart F, the New Source Performance Standards (NSPS) for Portland Cement Plants. This facility is a Title V source.

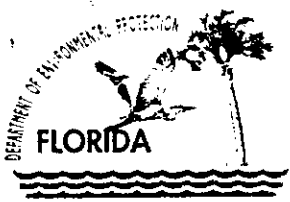
PERMIT SCHEDULE:

xx/xx/xx End of Public Comment period
xx/xx/xx Publication of Notice in The Tampa Tribune
xx/xx/xx Issued Intent to Issue Permit
04/03/97 Application deemed complete

Relevant Documents:

The documents listed below are the basis of the permit. The documents listed below are specifically related to this permitting action. These documents are on file with the Department.

1. Application received February 22, 1996. Addendum received February 21, 1997.
2. Department's letters dated March 8, March 21, July 10, July 25, September 23, October 31, 1996 and January 5, 1997.
3. Southdown Inc. letters dated April 1, June 17, July 22, August 26, October 2, (netting calculations) October 14, November 5, November 11, 1996, January 30, January 31 and February 24, 1997.
4. National Park Service's letter dated April 11, 1996.
5. Hernando County Planning Department's letter dated March 8, 1996.
6. Koogler & Associates' letter dated June, October 15, November 7, 1996, and April 1, 1997.
7. Issued Intent to Issue Permit on October 25, 1996. Public Notice published in Tampa Tribune November 12, 1996.
8. Appendix PH. Southdown permitting history.



Department of Environmental Protection

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Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

PERMITTEE:

**Southdown, Inc.,
Brooksville Plant
Post Office Box 6
Brooksville, Florida 34605-0006**

Authorized Representative:
Don Kelly, Plant Manager

FID No.:	0530010
PSD No.:	PSD-FL-233
Permit No.:	0530010-003-AC
SIC No.:	3241
Expires:	June 30, 1998

LOCATED AT:

Southdown, Inc., Brooksville Plant, Hernando County
Project: Portland Cement Manufacturing
Kilns Nos. 1 & 2 and Clinker Coolers 1 & 2

UTM: Zone 17 ; 356.0 km E ; 3169.9 km N
Directions: *Located on Highway 98, NW of Brooksville, Hernando County*

STATEMENT OF BASIS:

This draft construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, 62-297. The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

Attached appendices and tables made a part of this permit:

Table 1-1 and 1-2
Table 2-1 and 2-2
Appendix BD-1
Appendix GC-1

Air Pollutants Standards and Terms
Compliance Requirements
BACT Determination
Construction Permit General Conditions

EFFECTIVE DATE:

Howard L. Rhodes, Director
Division of Air Resources
Management

SOUTHDOWN, INC.
PORTLAND CEMENT PLANT
Brooksville, Florida
PSD-FL-233 and 0530010-001-AC
Facility ID No. 0530010

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**DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR RESOURCES MANAGEMENT
BUREAU OF AIR REGULATION
TELEPHONE (904) 488-1344
FAX (904) 922-6979
Mail Station # 5505**

AIR CONSTRUCTION PERMIT

(Revision of AC 27-258569,-258570,-258571, and-258572)

**SOUTHDOWN, INC
PORTLAND CEMENT PLANT**

Facility ID No.:0530010
Brooksville, Florida
Hernando County
Florida

Permit No. 0530010-003-AC and PSD-FL-233
Kiln and Cooler No. 1 and No. 2

May XX, 1997

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

Air Permit No. 0530010-003-AC
PSD-FL-233 Kilns & Coolers No 1 & No. 2

NO_x, CO and VOC will be set for Kiln 1 and PM/PM₁₀ for Cooler 1. These emissions limits will be based on PSD/BACT requirements for these pollutants.

6.3.1 Nitrogen Oxides (NO_x)

Nitrogen oxides will be limited to an emission factor of 1.83 lb NO_x/ton kiln_{ph} feed (275 lb/hr) for Kiln 1. The limit from Kiln 2 will remain at 1.72 lb NO_x/ton kiln_{ph} feed (258 lb/hr). These limits are attained through process and combustion control.

6.3.2 Sulfur dioxide (SO₂)

Sulfur dioxide emissions from each kiln will remain limited to 15 lb/hr (0.10 lb SO₂/ton kiln_{ph} feed). These represent the lowest known rates from any kiln in the country. SO₂ emissions are minimized by maintaining proper ratios of sulfur and alkali in the pyroprocessing environment and intimate contact between raw materials and exhaust gases. Ultimately the sulfur oxides are incorporated into the clinker lattice structure, thus minimizing the amount emitted to the atmosphere. A small measure of SO₂ removal is theoretically possible in the baghouse although insufficient moisture is present to allow this mechanism to be significant.

6.3.3 Particulate Matter (PM/PM₁₀)

Particulate emissions will be limited to 27 lb/hr from each kiln and 13.6 lb/hr from each cooler. These equate to 0.18 lb/ton kiln_{ph} feed and 0.09 lb/ton kiln_{ph} feed from the kiln and cooler respectively. These values are among the lowest at any cement plant in the country. The exhaust gases from both kilns and coolers are controlled by fabric filters (baghouses). When properly maintained, baghouses routinely achieve a particulate control efficiency greater than 99.9 percent.

6.3.4 Carbon Monoxide and Volatile Organic Compounds (CO and VOC)

Emissions from each kiln of carbon monoxide and volatile organic compounds will be limited to 180 lb CO/hr and 13.6 lb VOC/hr. These values correspond to emission factors of 1.2 lb CO/ton kiln_{ph} feed and 0.09 lb VOC/ton kiln_{ph} feed. These limits will be accomplished by combustion control.

6.3.5 Metal Emissions

Most trace metals in the kiln systems behave in a manner similar to the main elements, i.e. Ca, Si, Al, Fe and Mg. As such, most of the trace metals are bound in the clinker and in the dusts discharged from the kiln system. Studies show that more than 99.9 % of the total main and trace elements inputs are bound in the solids of the kiln system.

Analyses of the on site generated, non-hazardous used oil/grease, burned as these kilns, meets the on-specification used oil limits for arsenic, cadmium, lead and total halogens but exceed the on-specification used oil limit for chromium. However, studies show that the low volatility of the

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Southdown, Inc.
Portland Cement Plant

Air Permit No. 0530010-003-AC
PSD-FL-233 Kilns & Coolers No 1 & No. 2

metals, including chromium, and its extensive bonding in the clinker results in insignificant emissions for these elements.

Southdown has provided assurances that emissions of these pollutants will not result in exceedances of air quality standards or ambient guidelines developed to protect human health and welfare. PSD pollutants: Mercury (Hg), Beryllium (Be), lead (Pb), and arsenic (As) are under the PSD threshold level and are not subject to PSD review.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: PM/PM₁₀, CO, NO_x, and VOC. The air quality impact analyses required by the PSD regulations for these pollutants include:

- * An analysis of existing air quality for PM₁₀, CO, NO_x, and VOC;
- * A significant impact analysis for PM₁₀, CO and NO_x;
- * A PSD increment analysis for PM₁₀ and NO_x;
- * An Ambient Air Quality Standards (AAQS) analysis for PM₁₀, and
- * An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

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6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that CO and NO₂ impacts from the project are predicted to be less than the de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for these pollutants. However as shown in the table, PM₁₀ impacts from the project are predicted to be greater than the de minimus level; therefore, preconstruction ambient air quality monitoring is required for PM₁₀. Previously existing representative monitoring data from a PM₁₀ monitor in the vicinity of the facility were used to fulfill the PM₁₀ monitoring requirement and to establish a PM₁₀ background concentration for use in the AAQS analysis. Background concentrations established for PM₁₀ are 105 and 35 ug/m³ for the 24-hour and annual averaging times, respectively. The net emissions increase of VOC is compared to a de minimus monitoring emission rate in tons per year instead of a concentration level. For this project, the net emissions increase of VOC is less than the de minimus emissions rate of 100 tons per year; thus, preconstruction ambient air quality monitoring for VOC is not required.

Maximum Project Air Quality Impacts for Comparison to the De Minimus Ambient Levels.

Pollutant	Avg. Time	Max Predicted Impact (ug/m ³)	Impact Greater Than De Minimus?	De Minimus Level(ug/m ³)
PM ₁₀	24-hour	12.1	YES	10
CO	8-hour	142	NO	575
NO ₂	Annual	0.64	NO	14
VOC	Annual	50.4 TPY	NO	100 TPY*

*No significant air quality de minimus concentration level for O₃ has been established. Instead de minimus level is based on net emissions increase of VOC.

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6.4.3 *Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses*

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options in each modeling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

6.4.4 *Significant Impact Analysis*

Initially, the applicant conducted modeling using only the proposed project's emissions. Receptors were placed within 20 km of the facility, which is located in a PSD Class II area, and the Chassahowitzka National Wilderness Area (CNWA) which is a PSD Class I area located approximately 14 km to the west of the project at its closest point. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the CNWA. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

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Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility.

Pollutant	Avg. Time	Max Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?	Radius of Significant Impact (km)
PM ₁₀	Annual	1.3	1	YES	2.5
	24-hour	12.1	5	YES	2.5
CO	8-hour	142	500	NO	0.0
	1-hour	409	2000	NO	0.0
NO _x	Annual	0.64	1	NO	0.0

Maximum Project Air Quality Impacts in the CNWA for Comparison to the PSD Class I Significant Impact Levels

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m ³)	Significant Impact?	National Park Service (NPS) Significant Impact Level (ug/m ³)
PM ₁₀	Annual	0.075	NO	0.08
	24-hour	1.1	YES	0.27
NO ₂	Annual	0.11	YES	0.03

As shown in the tables the maximum predicted air quality impacts due to PM₁₀ emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility. The maximum predicted air quality impacts due to PM₁₀ and NO_x emissions are greater than the significant impact levels in the Class I area for the 24-hour and annual averaging times, respectively. Therefore, the applicant was required to do further PM₁₀ modeling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Further modeling for Class I impacts was also required for the PM₁₀ 24-hour averaging time and the NO₂ annual averaging time. Further modeling for CO impacts was not required because maximum predicted CO impacts were less than the applicable significant impact levels.

6.4.5 Receptor Networks For PSD Increment And AAQS Analyses

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the

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significant impact area for each pollutant. For predicting maximum PM₁₀ concentrations in the vicinity of the facility, a discrete receptor grid comprised of 369 receptors located along the property boundary and a polar receptor grid of 53 receptors located at radial distances of 2.5 and 3.0 km were used in these analyses. For the PSD Class I analysis, a receptor grid consisting of twenty receptors along the boundary of the CNWA was used. The results of these analyses are discussed below.

6.4.6 PSD Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in the table below show that the maximum predicted PM₁₀ impacts are less than the allowable increments.

PSD Class II Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m ³)
PM ₁₀	Annual	3.8	NO	17
	24-hour	24.9	NO	30

The results of the PSD Class I increment analysis presented in the table below show that the maximum predicted PM₁₀ impact for all sources within 120 km of the Class I area is greater than the allowable increment; however, the analysis also shows that this project's contribution to any predicted exceedance of the increment is less than the National Park Service significant impact level. The maximum predicted NO₂ impact is less than the allowable NO₂ increment.

PSD Class I Increment Analysis

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Impact Greater Than Allowable Increment?	Allowable Increment (ug/m ³)	Maximum Southdown Contribution To Any Exceedance	National Park Service Significant Impact Level	Southdown Contribution Significant
PM ₁₀	24-hour	8.2	YES	8	0.021	0.027	NO
NO ₂	Annual	0.9	NO	2.5	N/A	N/A	N/A

6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table,

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emissions from the proposed facility are not expected to cause or significantly contribute to a violation of an AAQS.

Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m ³)	Background Conc. (ug/m ³)	Total Impact (ug/m ³)	Total Impact Greater Than AAQS	Florida AAQS (ug/m ³)
PM ₁₀	Annual	6	35	41	NO	50
	24-hour	42	105	147	NO	150

6.5 Additional Impacts Analysis

6.5.1 Impacts On Soils, Vegetation, And Wildlife

The maximum ground-level concentrations predicted to occur for PM₁₀, NO_x, VOC and CO as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I area. No significant impacts on this area are expected.

6.5.2 Impact On Visibility

Visual Impact Screening and Analysis (VISCREEN), the EPA-approved Level I visibility computer model, was used to estimate the impact of the proposed project's stack emissions on visibility in the CNWA. The results indicate that the maximum visibility impacts do not exceed the screening criteria inside or outside this area. As a result, there is no significant impact on visibility predicted for this Class I area. In addition a regional haze analysis was done. This analysis predicted no adverse impacts upon regional haze.

6.5.3 Growth-Related Air Quality Impacts

There will be no growth-related impacts because no physical or operational modifications will occur and production will not change as a result of this permit action.

6.5.4 Air Toxics Air Quality Impacts

The maximum predicted impacts of regulated and non-regulated toxic air pollutants that are proposed to be emitted by the project are all less than the Department's draft annual Ambient Reference Concentrations (ARC).

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7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by Southdown, Inc., the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations provided the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: T. Heron

Meteorologist: C. Holladay

Reviewed and approved by A. A. Linero, P.E.

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Footnotes:

- ¹ These units were originally permitted in 1973. Permit No. AC27- 2251.
- ² These units were originally permitted by EPA in 1980 (PSD-Fl-063).
- ³ CO emission limits of 57.7 lbs/hr and 234.4 tons/yr were established while burning tires (20% WTDF) and coal.
- ⁴ Kiln and Cooler No. 1 operated 8001 hours in 1994 and 7875 hours in 1995.
Kiln and Cooler No. 2 operated 7478 hours in 1994 and 7780 hours in 1995.
- ⁵ Based on actual stack test conducted in 1994 and 1995 while burning tires (20% WTDF) and coal. Assuming actual hours of operation as reported to the District in 1994 and 1995.
- ⁶ There are no allowable limits for NO_x from this kiln.

In the original submittal (1996), Southdown requested the Department to consider current allowable emissions for the baseline calculations instead of actual emissions because in some cases the actual emissions are greater and cannot be used to perform the calculations. However, the Department used actual emissions from the last two years (1994 and 1995) of operation. Actual emissions are based on the Department's records kept at the Southwest District Office in Tampa.

Enforcement Note: The District has been negotiating a consent agreement with Southdown as a result of a number of excess opacity and stack test emissions violations.

6.3 Control Technology Review

The Department and the U.S. EPA have made several previous BACT determinations (1980, 1988, 1993) for this cement manufacturing facility, specifically Cement Plant No. 2. Cement Plant 2 was built in accordance with a PSD/BACT review conducted in 1980. BACT reviews conducted since that time have been related to corrections of very stringent initial limits as well as to allow burning of different fuels. Because of these operational changes, BACT limits were developed and revised for Cement Plant 2. The actual controls have been use of fabric filters (baghouses) for particulate control and process optimization for control of CO, SO₂ NO_x, and VOC.

Southdown has curtailed a number of the operational changes which resulted in the PSD/BACT reviews conducted since the construction of Cement Plant 2. They plan to use the same technology that they always have used, but want to insure that the emissions limits are consistent with that technology and with the requirements of the Major Source (Title V) Program to insure that the facility continuously operate in compliance with applicable conditions.

The current revision for Cement Plant No. 2 (Kiln and Cooler No. 2) will consider a revision of the BACT emission limits for PM/PM₁₀, and CO. In addition a new BACT limit will be set for VOC emissions. The rationale for this change is explained in the BACT determination, a copy of which is attached to this document.

Cement Plant No. 1 was built prior to existence of the PSD program. This modification will increase the process rate along with an increase in pollutant emissions. New emission limits for PM/PM₁₀,

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6.2 Emission Summary

CEMENT KILN No. 1 and COOLER No. 1 [1]

Pollutants	Current Allowable		Current Actual		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	39	171	17.8 [4]	70.6 [4]	27	118.3	47.7	25/15
(cooler) PM/PM10	7.1	28.1	6.17 [4]	24.5 [4]	13.6	59.6	32.4	25/15
SO ₂	15	65.7	NA	NA	15	65.7	NA	40
NO _x	NA [6]	NA [6]	155.2 [5]	616 [5]	285	1248.3	632.3	40
CO	57.7 [3]	234 [3]	53.6 [5]	212.9 [5]	180	788.4	575.5	100
VOC	NA	NA	4.4 [5]	17.5 [5]	13.6	59.6	42.10	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	20%				20%			

CEMENT KILN No. 2 AND COOLER No. 2 [2]

Pollutants	Current Allowable		Current Actual [4]		New Proposed Allowable		Net Increase ton/yr	PSD Significant Level ton/yr
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
(kiln) PM/PM10	13.5	55.4	6.77	25.9	27	118.3	92.46	25/15
(cooler) PM/PM10	5.0	20.5	4.44	17.0	13.6	59.6	42.6	25/15
SO ₂	15	65.70	NA	NA	15	65.7	NA	40
NO _x	250	1025	159.05	606.7	258	1130	523.3	40
CO	64	262	53	203	180	788.4	585.4	100
VOC	7.4	30.3	4.47	17.1	13.6	59.6	42.5	40
Opacity (cooler)	10%				10%			
Opacity (kiln)	10%				10%			