

5-31-78 RC  
AD 29-6228



D.E.R.

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STATE OF FLORIDA SOUTHWEST DISTRICT  
TAMPA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

Source Type: Air Pollution [ ] Incinerator [ ]  
Type application: [X] Operation [ ] Construction  
Source Status: [ ] New [X] Existing [ ] Modification  
Company Name: Borden, Inc. County: Hillsborough  
Source Identification: Defluorination Units, Reactors No. 1, No. 2, & Paragon No. 2  
Source Location: Street: Coronet Road (Southeast) City: Plant City  
UTM: East 17-393.8 North 3096.3  
Appl. Name and Title: B. V. Galloway - Environmental Manager  
Appl. Address: P. O. Box 790, Plant City, Fla. 33566

STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative of Borden, Inc.  
I certify that the statements made in this application for a \_\_\_\_\_ permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations of the Department and revisions thereof. I also understand that a permit, if granted by the Department, will be nontransferable and I will promptly notify the Department upon sale or legal transfer of the permitted establishment.

B.V. Galloway  
Signature of the Owner or Authorized Representative and Title  
Date: April 6, 1978 Telephone No.: (813) 752-1161

\*Attach a letter of authorization. If applicant is a corporation, a Certificate of Good Standing must be submitted with application. This may be obtained for a \$5.00 charge from the Secretary of State, Bureau of Corporate Records, Tallahassee, Florida 32304.

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulation of the Department. It is also agreed that the undersigned will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature: Anthony R. Lenkei Mailing Address: P. O. Box 790  
Name: Anthony R. Lenkei Plant City, Fla. 33566  
(Please Type)  
Company Name: Borden, Inc. Telephone No.: (813) 752-1161  
Florida Registration Number: 8716 Date: April 6, 1978

(Affix Seal)

DETAILED DESCRIPTION OF SOURCE

A. Describe the nature and extent of the project. Refer to existing pollution control facilities, expected improvement in performance of the facilities and state whether the project will result in full compliance. Attach additional sheet if necessary.

This source is the result of the operation of two (2) fluid bed reactors and one (1) rotary kiln. These units were previously permitted to operate under Permit No. AO 29-2082 which expired 7/1/75. Compliance test results revealed that the source was in compliance for fluorides, but out of compliance for particulate emissions. A wet ionizing scrubber was installed in the Reactor gas stream during 1977 under EPA Administrative Order # AO-77-19(a). A pre-test meeting was held on January 24, 1978 followed by the Compliance test, pre-scheduled, on February 2, 1978. Results of the test indicate that this source is now operating well within compliance.

B. Schedule of Project Covered in this Application (Construction Permit Application Only).

Start of Construction: N/A
Completion of Construction:

C. Costs of Construction (Show a breakdown of estimated costs for individual components/units of the project serving pollution control purpose only). Information on actual costs shall be furnished with the application for operation permit.

Cost not finalized, however, \$517,480 spent and/or committed to this project.

D. For this source indicate any previous DER permits, orders, and notices; including issuance dates and expiration dates.

AO 29-2082 issued May 23, 1973, expired July 1, 1975, A-48-D issued April 13, 1970, valid until revoked or surrendered and superseded permits to operate Nos. 48, 48-B, 48-C. Administrative Order AO 77-19(a) dated May 9, 1977. Construction Permit AC 29-2494 issued March 29, 1977, expired November 1, 1977.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? Yes X No

**AIR POLLUTION SOURCES & CONTROL DEVICES**  
(other than incinerators)

**A. Identification of Air Contaminants:**

- 1)  Particulates  
 a)  Dust                      b)  Fly Ash                      c)  Smoke                      d)  Other (Identify)
- 2)  Sulfur Compounds  
 a)  SO<sub>x</sub> as SO<sub>2</sub>                      b)  Reduced Sulfur as H<sub>2</sub>S                      c)  Other (Identify)
- 3)  Nitrogen Compounds  
 a)  NO<sub>x</sub> as NO<sub>2</sub>                      b)  NH<sub>3</sub>                      c)  Other (Identify)
- 4)  Fluorides                      5)  Acid Mist                      6)  Odor
- 7)  Hydrocarbons                      8)  Volatile Organic Compounds
- 9)  Other (Specify): \_\_\_\_\_

**B. Raw Materials and Chemicals Used (Be Specific):**

Description	Utilization Rate lbs./hr. Tons/Hr.	Approximate Contaminant Content		Relate to Flow Diagram
		Type	% Wt.	
Prepared Feed: Normal	16.0	Fluorine	3.38 in feed	A

**C. Process Rate:**

- 1) Total Process Input Rate (Units\*): 16.0 T/Hr.
- 2) Product Weight (Units\*): 14.7 T/Hr.
- 3) Normal Operating Time: 24 hrs/day, if seasonal describe: \_\_\_\_\_  
 hrs./day: \_\_\_\_\_ days/wk.: \_\_\_\_\_ wks/yr.: \_\_\_\_\_

**D. Airborne Contaminants Discharged:**

Name of Contaminant	Actual** Discharge		Discharge Criteria Rate*	Allowable Discharge lbs./hr.	Relate to Flow Diagram
	lbs./hr.	T/yr.			
Fluoride **	< 2.24	< 9.8	#/T P <sub>2</sub> O <sub>5</sub> input	2.24	2
Particulates **	< 20.00	< 87.6	lbs./hr.	20.00	2

\*Refer to Chapter 17-2.04(2), Florida Administrative Code.  
 (Discharge Criteria: Rate = lbs./ton P<sub>2</sub>O<sub>5</sub>, lbs./M BTU/hr., etc.)

\*\*Estimate only if this is an application to construct.

\*\*Emissions will not exceed the allowable amount. The figures shown are based on a feed rate of 16.0T/hr and corresponding P<sub>2</sub>O<sub>5</sub> rate. During the compliance test, the actual DER Form PERM 12-1 (Apr 76) Page 3 of 6 particulate emission rate was 8.0 lbs/hr.

*Procedural*

E. Control Devices:

Name and Type (Model and Serial No.)	Contaminant	Efficiency*	Conditions of Operations*	Basis for Efficiency Operational Data, Test, Design, Data
*Wet Scrubber & Teller Packed Scrubber	F & Part.			
** 2-Ceilcote Double Stage	Particulate	80% removal	Continuous	Based on operational data & pilot test results incorporated into de sign.
IWS 300 Systems	Matter	Based on inlet-25,000 ACFM 100° F Sat'd 0.11 Gr./ SCF	irrigation: ionizer plates- 50 GPM, pack- ing-300 GPM/ stage, Total 2 Stages=700 GPM; also inter- mittent deluge flush water pressure 25 PSIG	
Overall Efficiency		99.9%		

\*Initial reactor gas stream & paragon stream  
 \*See required supplement. \*\*Final stage of reactor gas stream  
 (Include any test data and/or design data for efficiency substantiation)

F. Fuels: No. 5 fuel oil and natural gas

Type (Be Specific)	Consumption*		Maximum Heat Input MMBTU/hr.
	Avg./hr.	Max./hr.	
No. 5 Fuel Oil	187. gal.	829 gal.	114,688 (If oil only was used)
Natural Gas	78.4	114.7	114,688 (If gas only was used)

\*Units: Natural Gas - MCG/hr.; Fuel Oils, Coal - lbs./hr.

Fuel Analysis: No. 5 fuel oil

Percent Sulfur: 1.75 to 1.90 Percent Ash: .012 to .026  
 Density: 7.42 lb./gal.  
 Heat Capacity: 18639 BTU/lb. 138,300 BTU/gal.

Other Fuel Contaminants: \_\_\_\_\_

G. Indicate liquid or solid wastes generated and method of disposal:

Recirculated pond water and fresh water addition is used as a scrubbing medium.  
Wastewater discharge from the scrubbers is contained in a series of ponds and reused.

H. Emission Stack Geometry and Flow Characteristics, (provide data for each stack):

Stack Height: 152 ft. Stack Diameter: 5.79 ft.  
 Gas Flow Rate: 98,700 ACFM Gas Exit Temperature: 96 °F  
 Water Vapor Content: \_\_\_\_\_ %

**INCINERATOR INFORMATION**

N/A

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs./Hr. Incinerated							

Description of Waste: \_\_\_\_\_

Total Weight Incinerated (lbs./hr.): \_\_\_\_\_ Design Capacity (lbs./hr.): \_\_\_\_\_

Approximate Number of Hours of Operation per Day: \_\_\_\_\_, days/week: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Date Constructed: \_\_\_\_\_ Model No.: \_\_\_\_\_

	Volume (ft.) <sup>3</sup>	Heat Release (BTU/hr.)	Fuel		Temp. (°F)
			Type	BTU/hr.	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ Stack Temp.: \_\_\_\_\_ °F

Type of Pollution Control Device:     Cyclone         Wet scrubber         Afterburner  
     Other (Specify): \_\_\_\_\_

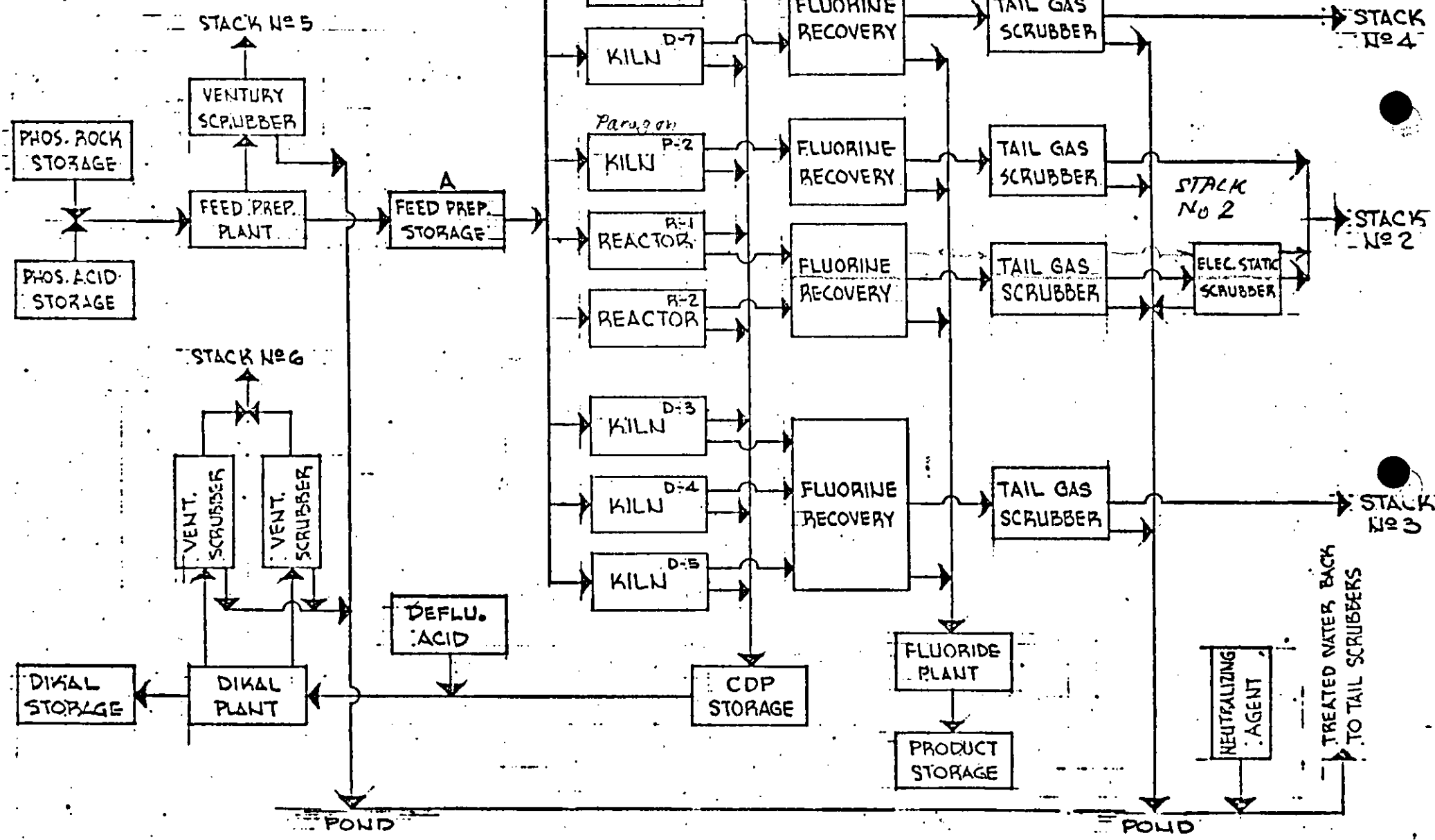
Brief Description of Operating Characteristics of Control Device: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Ultimate Disposal of Any Effluent Other Than That Emitted From the Stack (scrubber water, ash, etc.): \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

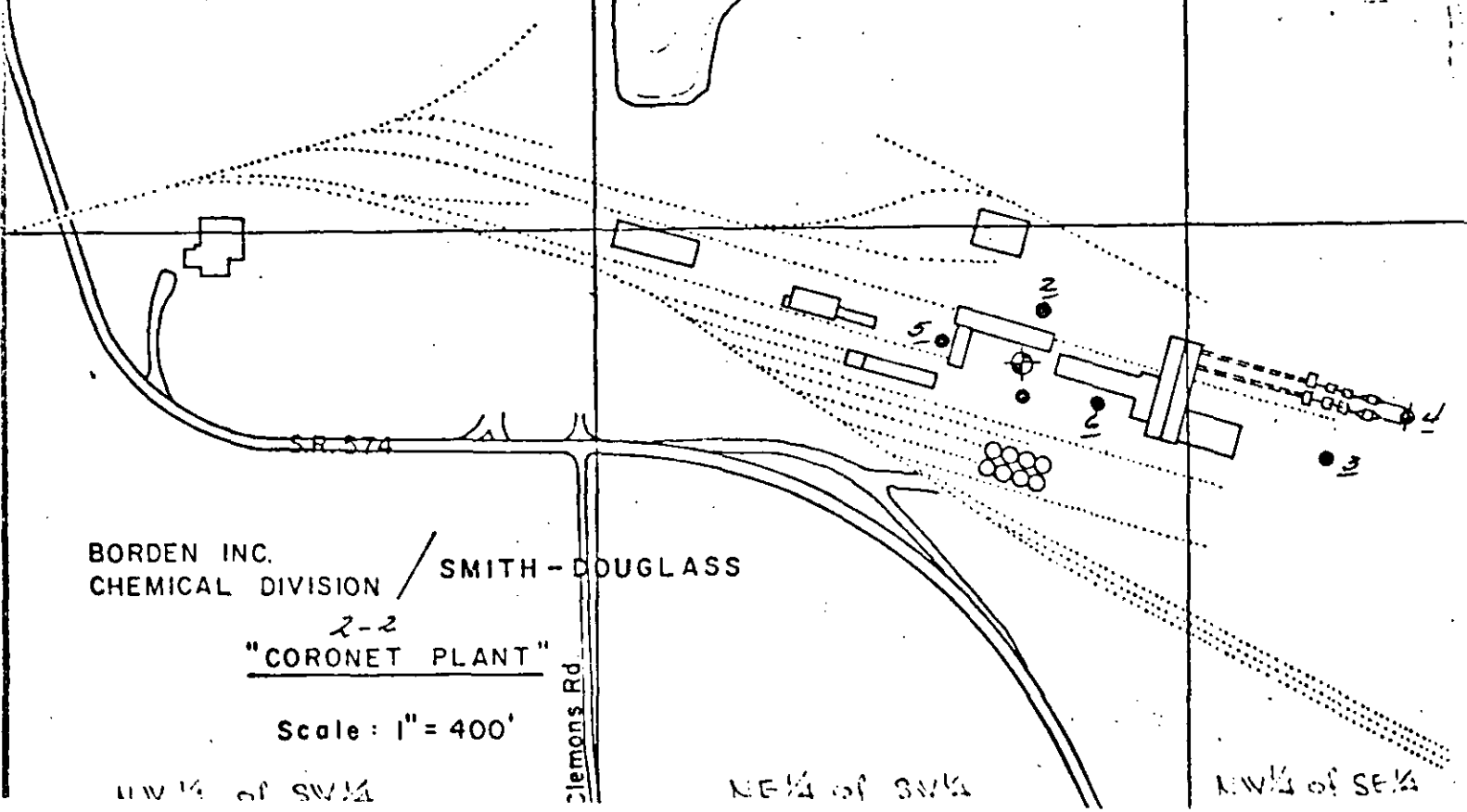
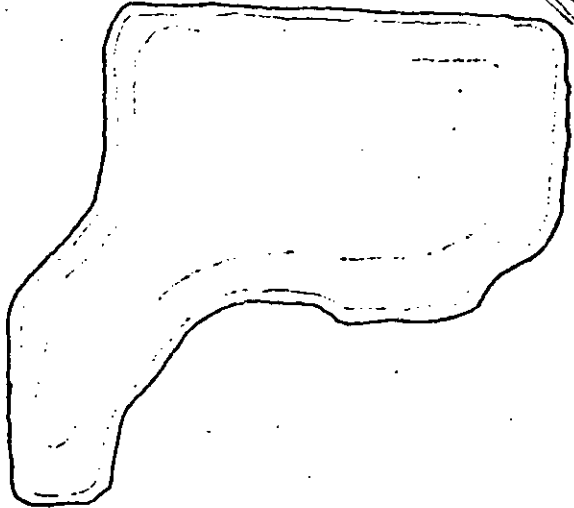
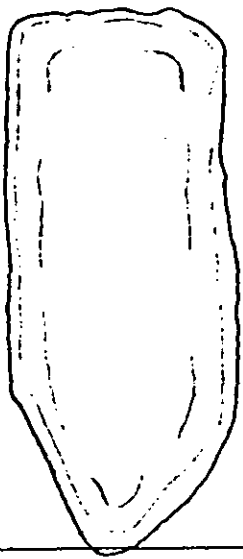
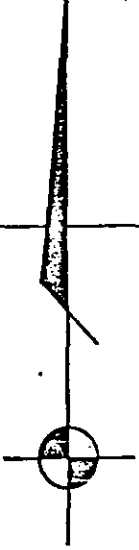
FLOW DIAGRAM 2-1  
BODDEN INC. CHEMICAL DIVISION  
PLANT CITY, FLORIDA



35 T 28 S  
2 T 29 S

RANGE 22 E.

NORTH



BORDEN INC. / SMITH - DOUGLASS  
CHEMICAL DIVISION  
2-2  
"CORONET PLANT"

Scale: 1" = 400'

1/4 of SW 1/4

Clemons Rd.

NE 1/4 of SW 1/4

NW 1/4 of SE 1/4