

P.O. Drawer L.
Plant City, Florida 33568
Telephone: 813/782-1591

CENTRAL PHOSPHATES, INC.



Industries, Inc.
Plant City Phosphate Complex

TRANSMITTAL TO: Willard Hanks

FROM: Paul Roberts

DATE: 5/31/89

PAGES: 4 INCLUDING THIS TRANSMITTAL SHEET

SP: _____
RTES: _____

05/31/89 09:21 AM *CEN PHOS INC.

CENTRAL PHOSPHATES, INC., Subsidiary of

P.O. Drawer L.
Plant City, Florida 33566
Telephone: 813/782-1591



CF Industries, Inc.

Plant City Phosphate Complex

May 30, 1989

Mr. Willard Hanks
State of Florida
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

SUBJECT: Central Phosphates, Inc.
Y-Train Granulation Plant
Product Cooler Construction Permit

Dear Mr. Hanks:

Attached are the feed rates to process you requested for the subject permit application.

Please call Jim Martin or Paul Roberts (813/782-1591, 888-9900, 752-0489, or 223-7093) if we can assist you further.

Sincerely,

J.E. Parsons / JEP

J.E. Parsons
General Manager

JEP/PRR/lh

cc: Mr. Jerry Campbell-HCEPC
Bill Thomas - Tampa, DER

CENTRAL PHOSPHATES INC.
Y TRAIN COOLER ADDITION

INPUT MATERIAL BALANCE

DAP

Product Rate = 100 Tons/hour

Numbers calculated by the ratio 100/75 from application

39.8% P2O5 Phosphoric Acid	244,533 lbs/hr
99.5% purity Ammonia	46,276 lbs/hr

MAP

Product Rate = 100 Tons/hour

P2O5 $\frac{200,000 \text{ lbs/hr}}{.95(\% \text{ recovery})} = 210526 \text{ lbs MAP X } 52.1\% \text{ P2O5} = 109,684 \text{ #/hr input}$

$\frac{109684 \text{ lbs P2O5}}{.420 \text{ (acid concentration)}} = 261,153 \text{ lbs } 42\% \text{ Phos acid}$

NH3 $210526 \text{ lbs MAP X } 11.0\% \text{ N} = 23,158 \text{ lbs N}$
 $23158 \text{ X } 17\text{NH}_3/14\text{N} = 28,120 \text{ lbs NH}_3$
 $28,120 / .995\% \text{ purity} = 28,261 \text{ lbs Ammonia input}$

GTSP

Product Rate = 55 Tons/hour

Rock @ 30.50% P2O5 = 55T/Hr Product X 2000 lbs/ton X .4259
T.Rock/Ton Product - 93% recovery = 50,369 lbs/hr input

Acid @ 38.4% P2O5 = 55T/Hr Product X 2000 lbs/ton X .8857
T.Acid/Ton Product - 93% recovery = 104,764 lbs/hr input

See next page for calculations on GTSP

GTSP PRODUCTION
55 T/Hr PRODUCTION RATE
93% RECOVERY

ANALYSES ASSUMED:

	%P2O5	%CaO
Product	47.00	19.50
Rock Feed	30.50	44.75
Acid Feed	38.40	0.50

CALCULATIONS:

R = rock
A = acid

$$.3050R + .3840A = .4700 \quad (\text{P2O5 Balance})$$

$$R + .005A = .1950 \quad (\text{CaO Balance})$$

$$R = 1.5410 - 1.2590A$$

$$.4475(1.5410 - 1.2590A) + .005A = .1950$$

$$.6896 - .5584A = .1950$$

$$A = .8857 \text{ Tons Acid/Ton GTSP}$$

$$R = 1.5410 - 1.2590(.8857)$$

$$R = .4259 \text{ Tons Rock/T.}$$

$$\text{Rock} = .4259 \text{ tons}/.93(\text{recovery}) = .4579 \text{ Tons}$$

$$\text{Acid} = .8857 \text{ tons}/.93(\text{recovery}) = .9524 \text{ Tons}$$

$$\text{ROCK} = .4579 \times 55 \text{ tons/hr} \times 2000 \text{ lbs/ton} = 50,369 \text{ lbs/hr}$$

$$\text{Acid} = .9524 \times 55 \text{ tons/hr} \times 2000 \text{ lbs/ton} = 104,764 \text{ lbs/hr}$$