NEW WALES CHEMICAL COMPANY POLK COUNTY, FLORIDA



SUPPLEMENTAL DATA FOR PSD REVIEW

NEW WALES CHEMICAL COMPANY POLK COUNTY, FLORIDA

OCTOBER 1979

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TABLE OF CONTENTS

ECTION	
1	Introduction to New Wales
2	Expansion Plans
3	New Source Summary
4	Best Available Control Technology
5 .	Air Quality Impact
6	Secondary Impacts

SECTION 1
INTRODUCTION TO NEW WALES CHEMICALS
(REVISED MAY, 1979)

NEW WALES CHEMICALS, INC. NEW WALES, FLORIDA

INTRODUCTION - PLANT TOUR

THE NEW WALES PLANT PRODUCES NO RAW MATERIALS, BUT RELIES HEAVILY ON TRUCK AND RAIL TRANSPORTATION TO BRING IN SULFUR, PHOSPHATE ROCK, FUEL DIL, AMMONIA, LIMESTONE, SODA ASH, SILICA AND REAGENTS.

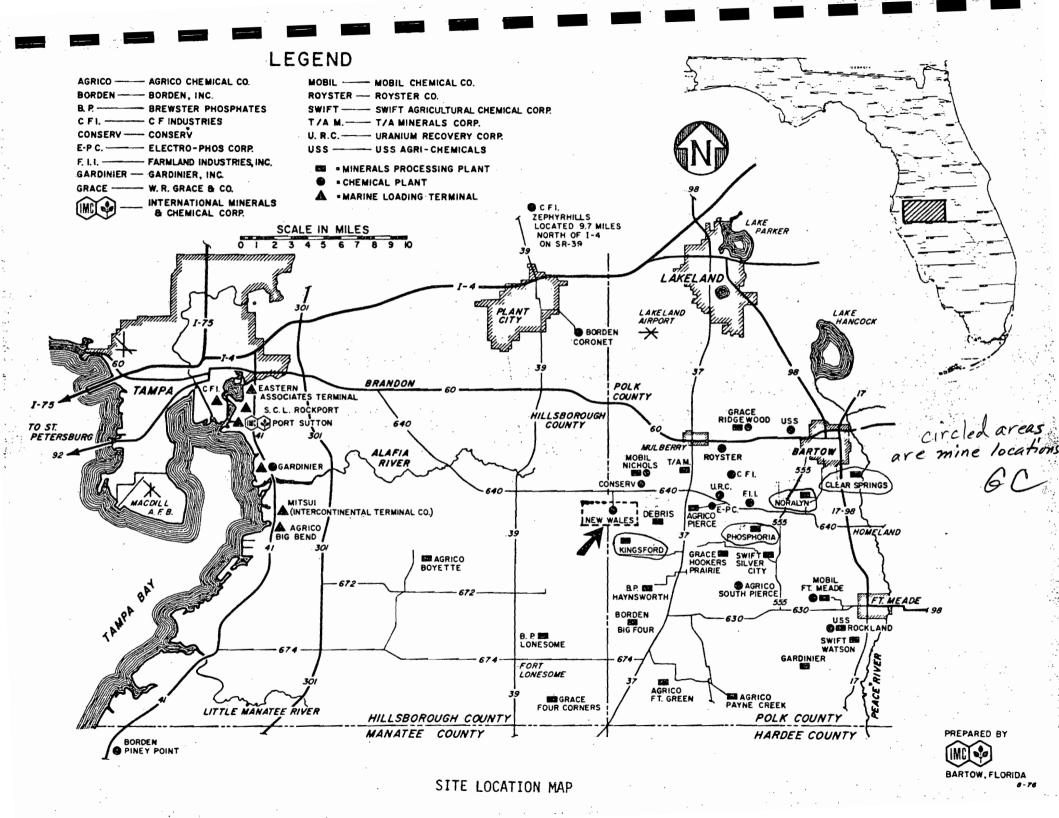
TRAFFIC HANDLES OVER 225 RAILCARS AND 300 TRUCKS ON A TYPICAL DAY.

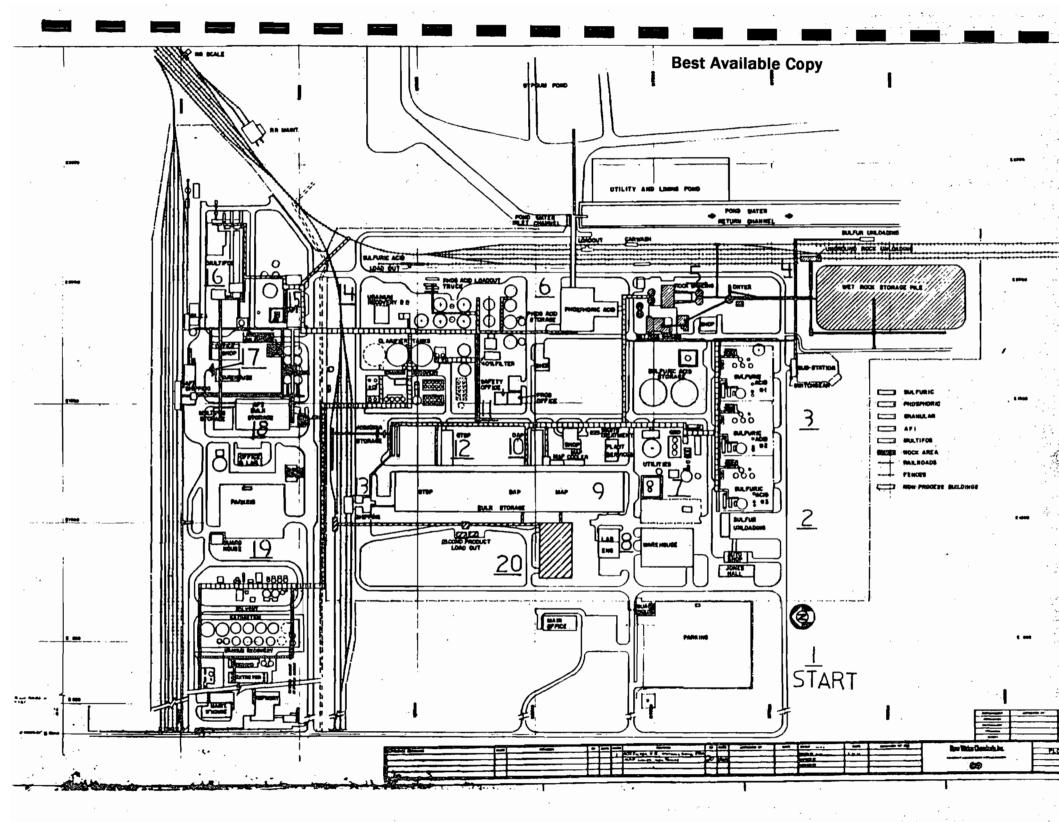
END PRODUCTS INCLUDE MERCHANT GRADE PHOSPHORIC ACID, MONOAMMONIUM PHOSPHATE (MAP), DIAMMONIUM PHOSPHATE (DAP), GRANULAR TRIPLE SUPER PHOSPHATE (GTSP), AND SULFURIC ACID. ANIMAL FEED INGREDIENTS INCLUDE DEFLUORINATED CALCIUM PHOSPHATES (DYNAFOS, BIOFOS, MULTIFOS) AND DEFLUORINATED AMMONIUM PHOSPHATES (MONOFOS AND DUOFOS). TOTAL PRODUCTION FOR THE 1978 FISCAL YEAR UTILIZED OVER 850,000 TONS OF P205.

EMPLOYMENT LEVEL AT NEW WALES IS 850 PERSONS, WITH TOTAL PAYROLL COSTS FOR FISCAL 1979 EXPECTED TO APPROACH \$11,000,000 NOT INCLUDING CONTRACTOR FORCES.

THE PLANT SITE PROPERTY IS THREE-QUARTERS OF A MILE LONG BY ONE-HALF MILE WIDE, WITH THE FARTHEST POINT OF THE COOLING POND TWO MILES AWAY.

THE ATTACHED MAP IDENTIFIES, BY NUMBER, IMPORTANT FEATURES OF THE COMPLEX.





NEW WALES CHEMICALS, INC. NEW WALES, FLORIDA

1. ENTRANCE FACILITY

TO MORE READILY UNDERSTAND THE SIZE AND CAPACITY OF NEW WALES, LETS TAKE A TOUR OF THE COMPLEX STARTING AT THE SOUTH MAIN TRUCK GATE.

2. SULFUR UNLOADING AND STORAGE

THE FIRST STOP INSIDE THE PLANT FOR MOST TRUCKS IS THE MOLTEN SULFUR UNLOADING AND STORAGE FACILITY. UP TO SEVENTY-FIVE TRUCKS PER DAY DROP THEIR LOAD OF SULFUR INTO A CONCRETE, STEAM HEATED PIT, HOLDING UP TO 1400 TONS OF MOLTEN SULFUR AT 270°F. A SECOND FACILITY RECEIVES SULFUR FROM RAILCARS, STORING IT IN A HEATED, INSULATED TANK. THIS SULFUR IS USED AT A RATE OF 2400 TONS PER DAY AT AN EFFICIENCY OF BETTER THAN 99.9% TO PRODUCE SULFURIC ACID.

3. SULFURIC ACID PLANTS

TO THE LEFT ARE THREE MONSANTO ENVIRO-CHEM DOUBLE ABSORPTION SULFURIC ACID PLANTS, EACH RATED AT 2000 TONS PER DAY. THESE PLANTS HAVE ACTUALLY PRODUCED ABOUT 2700 TONS PER DAY AT TIMES.

MOLTEN SULFUR IS BURNED WITH AIR AT 1800°F IN A HORIZONTAL BRICK-LINED FURNACE TO PRODUCE GASEOUS SULFUR DIOXIDE, THIS GAS IS THEN REACTED WITH MORE AIR AT 800-1100°F, IN THE PRESENCE OF A SPECIAL PLATINUM/VANADIUM PENTOXIDE CATALYST, TO PRODUCE GASEOUS SULFUR TRIOXIDE. THIS GAS THEN REACTS WITH WATER IN THE PRESENCE OF SULFURIC ACID TO MAKE MORE SULFURIC ACID.

TO CONSERVE ENERGY, LARGE STEAM GENERATORS AND GAS-TO-GAS HEAT EXCHANGERS ARE EMPLOYED. UNTIL RECENTLY IT WAS ONLY NECESSARY TO ACHIEVE SULFUR EFFICIENCIES OF 97%. However, RECENT EFFORTS TO IMPROVE AIR QUALITY HAVE RESULTED IN LEGISLATION REQUIRING STACK GASES TO BE CLEANED TO A LEVEL EQUIVALENT TO 99.7% EFFICIENCY. THIS IS GENERALLY ACCOMPLISHED BY UTILIZING THE DOUBLE ABSORPTION PROCESS, WHEREBY SULFUR TRIOXIDE IS ABSORBED INTO WATER TO PRODUCE SULFURIC ACID IN TWO STEPS. THE FIRST STEP RESULTS IN ABOUT 90-95% SULFUR EFFICIENCY; THE SECOND STEP RESULTS IN 99.9% EFFICIENCY.

SULFURIC ACID IS SENT TO TWO 13,000 TON STORAGE TANKS FOR FURTHER PROCESSING IN THE PLANT.

4. ROCK RECEIVING

WET, UNGROUND PHOSPHATE ROCK IS RECEIVED BY RAILCAR FROM THE VARIOUS IMC MINES IN POLK COUNTY. THESE MINES ARE KINGSFORD, NORALLYN, CLEAR SPRINGS, AND PHOSPHORIA. NORMALLY 120 RAILCARS, CONTAINING UP TO

100 TONS OF ROCK EACH ARE UNLOADED PER DAY. AN UNDERGROUND UNLOADING PIT CAN RECEIVE ROCK FROM TWO CARS AT A TIME. A BELT CONVEYOR SYSTEM DIRECTS THIS MATERIAL TO A 200,000 TON STORAGE PILE WHICH PROVIDES ABOUT THREE WEEKS STORAGE CAPACITY FOR THE PLANT. IN ADDITION, ABOUT 200 TRUCKS PER DAY ARE DUMPED AND PUSHED UP ONTO THE PILE. A TRAVELING STACKER BLENDS THIS MATERIAL TO PRODUCE A MORE UNIFORM GRADE OF ROCK REQUIRED TO PRODUCE HIGH QUALITY END PRODUCTS. THIS BLENDING OPERATION IS BECOMING MORE IMPORTANT AS THE PHOSPHATE COMPANIES ARE REQUIRED TO PROCESS LOWER GRADES OF ROCK. THE ROCK WHICH USED TO BE CONSIDERED LOW QUALITY 10 YEARS AGO IS NOW CONSIDERED HIGH QUALITY.

5. ROCK GRINDING AND GROUND ROCK RECEIVING

WET, UNGROUND ROCK FROM THE STORAGE PILE IS CONVEYED TO THE WET ROCK FEED BIN. FROM THERE THE ROCK IS SENT TO BE WASHED BEFORE BEING GROUND. WASHING IS NECESSARY TO REMOVE CLAYS FROM THE ROCK. IF THE CLAYS ARE NOT REMOVED, THEN THE DISCHARGE FROM THE ROD MILLS IS ALMOST IMPOSSIBLE TO PUMP BECAUSE OF A VERY HIGH VISCOSITY. AFTER LEAVING THE WASHER THE ROCK IS THEN GROUND TO FORM A SLURRY OF WATER AND ROCK WHICH IS THEN FURTHER GROUND IN A BALL MILL AND FINALLY STORED IN AGITATED TANKS BEFORE BEING PUMPED TO THE PHOSPHORIC ACID PLANT.

GROUND PHOSPHATE ROCK OF A HIGHER QUALITY IS REQUIRED FOR PRODUCTION OF GTSP. THIS ROCK IS RECEIVED BY RAILCAR IN A DRY, GROUND FORM AT THE FACILITY TO THE RIGHT. ROCK IS PNEUMATICALLY CONVEYED, USING AIR, TO THE GTSP PLANT LOCATED AT THE OTHER END OF THE COMPLEX.

6. PHOSPHORIC ACID PRODUCTION FACILITY

PHOSPHORIC ACID IS PRODUCED BY REACTING GROUND PHOSPHATE ROCK WITH SULFURIC ACID IN LARGE CONCRETE ATTACK TANKS. TWO SEPARATE PHOSPHORIC ACID TRAINS, EACH CAPABLE OF PRODUCING UP TO 1500 TONS/DAY P205, WERE DESIGNED AND INSTALLED BY DAVY POWERGAS INC., OF LAKELAND, FLORIDA. THE CONCRETE ATTACK TANKS IS COMPOSED OF NINE AGITATED COMPARTMENTS WHICH INTIMATELY MIX THE WET ROCK SLURRY AND SULFURIC ACID TO PRODUCE PHOSPHORIC ACID AND WASTE GYPSUM. THE PHOSPHORIC ACID AND GYPSUM ARE SEPARATED ON TWO 75' DIAMETER PRAYON 30-D FILTERS. THE GYPSUM IS MIXED WITH WATER FROM THE GYPSUM POND, AND THE MIXTURE FLOWS BY GRAVITY BACK TO THE GYPSUM POND FOR SETTLING OUT. IT IS ANTICIPATED THAT THE ULTIMATE GYPSUM PONDS WILL ENCOMPASS MORE THAN 750 ACRES OF LAND. APPROXIMATELY 5,000,000 TONS PER YEAR OF GYPSUM ARE PRODUCED AT THIS PLANT.

THE 30% PHOSPHORIC ACID RECOVERED FROM THE PRAYON FILTERS IS PUMPED TO THE STORAGE TANK FARM AREA TO THE RIGHT. THIS ACID IS THEN CONCENTRATED STAGE-WISE UP TO 54% FOR FURTHER PROCESSING. THE EVAPORATION IS CARRIED OUT IN SIX FORCED CIRCULATION EVAPORATORS LOCATED TO THE LEFT. THESE ARE THE VESSELS THAT RESEMBLE LARGE TEA CUPS. EXCESS STEAM FROM THE SULFURIC ACID PLANT IS REQUIRED TO DRIVE OFF WATER FROM THE 30% ACID.

APPROXIMATELY ONE-FOURTH OF THE PHOSPHORIC ACID PRODUCED IN THIS FACILITY IS FURTHER CLARIFIED FOR DIRECT SALES TO CUSTOMERS. PHOSPHORIC ACID PRODUCED IN THE CONVENTIONAL WET PROCESS PHOSPHORIC ACID PLANT CONTAINS APPROXIMATELY 5% SOLIDS. THESE SOLIDS NEED TO BE REMOVED IN ORDER TO PREVENT SETTLING OUT IN TANK CARS AND TANK TRUCKS. THE MAJORITY OF THE 54% ACID IS PUMPED TO OTHER USERS; THESE ARE THE MAP, DAP, GTSP, AFI AND MULTIFOS.

7. SULFURIC ACID UTILITIES CONTROL CENTER

ON THE RIGHT, CROSSING THE COMPLEX TO THE WEST, WE COME TO THE SULFURIC ACID AND UTILITIES CONTROL BUILDING. THE THREE SULFURIC ACID PLANTS ARE CONTROLLED FROM THIS BUILDING. ALSO, THE UTILITIES GENERATION AND DISTRIBUTION SYSTEM IS CONTROLLED FROM THIS BUILDING. THE NEW WALES CHEMICALS, INC. COMPLEX USES LARGE QUANTITIES OF WELL DRINKING WATER, INSTRUMENT AND PLANT AIR, DEMINERALIZED BOILER FEED WATER, FUEL OIL, DIESEL OIL AND STEAM. THIS CONTROL UNIT MAKES UP THE HEART OF THE COMPLEX.

8. LABORATORY FACILITIES AND MAINTENANCE WAREHOUSE

TO THE LEFT IS THE PLANT OFFICE BUILDING. THIS BUILDING HOUSES THE QUALITY CONTROL AND ENVIRONMENTAL LABORATORY FACILITIES AND OFFICES FOR ENGINEERING AND PRODUCTION SUPERINTENDENTS.

TO THE RIGHT IS THE MAINTENANCE WAREHOUSE WHICH HOUSES ALL SPARE PARTS FOR THE COMPLEX AND MANY OF THE SHOPS FACILITIES. THESE INCLUDE INSTRUMENTATION, ELECTRICAL, CARPENTER AND MACHINE SHOPS.

9. FERTILIZER BULK STORAGE BUILDING

TO THE LEFT IS A 960' LONG FERTILIZER STORAGE BUILDING, WHICH HOUSES UP TO 70,000 TONS OF BULK PRODUCTS. BULK GRANULAR MATE-RIAL FROM THE DAP, AND GTSP PLANTS IS CONVEYED INTO THIS STORAGE BUILDING AND THEN STACKED IN FOUR SEPARATE PILES. MATERIAL IS RECLAIMED USING LARGE FRONT END LOADERS AND DIRECTED ONTO A 1000' LONG CONVEYOR BELT. THIS BELT HANDLES 250 TONS PER HOUR OF PRODUCT.

10. MAP/DAP MANUFACTURING FACILITY

MAP IS PRODUCED BY REACTING 54% PHOSPHORIC ACID AND AMMONIA AT THE TOP OF A PRILL TOWER. THIS TOWER IS ENCLOSED WITH A FLEXIBLE CURTAIN. MATERIAL FALLING THROUGH THE CURTAIN REACTS AND DRIES BEFORE REACHING THE FLOOR. A LARGE ROTATING RAKE DIRECTS THIS MATERIAL ONTO A BELT AND THEN TO AN ELEVATOR TO STORAGE. APPROXIMATELY 30 TONS PER HOUR OF MAP CAN BE PRODUCED.

GRANULAR DAP IS PRODUCED BY REACTING 54% PHOSPHORIC ACID AND VAPOR AMMONIA IN A REACTION AND GRANULATION CIRCUIT. A WET GRANULAR PRODUCT IS PRODUCED WHICH IS THEN DRIED, SCREENED, COOLED AND SENT TO STORAGE. 84 TONS PER HOUR OF DAP ARE PRODUCED IN THIS FACILITY.

THE MAP AND DAP FACILITIES WERE CONSTRUCTED BY THE D.M. WEATHERLY COMPANY OF ATLANTA, GEORGIA.

11. PRODUCTION AND SAFETY OFFICE BUILDING

TO THE EAST OF DAP/MAP IS THE BUILDING WHICH HOUSES THE PLANT SAFETY DEPARTMENT, PRODUCTION ACCOUNTING, AND PRODUCTION SUPERVISORS.

12. GTSP MANUFACTURING

GTSP IS PRODUCED BY REACTING 40% PHOSPHORIC ACID WITH 75 BPL GROUND ROCK IN A REACTION AND GRANULATION CIRCUIT. A WET GRANULAR PRODUCT, IS PRODUCED WHICH IS THEN DRIED AND SCREENED AND SENT TO STORAGE. AT PRESENT RATES 60 TONS PER HOUR OF GTSP IS PRODUCED.

THE GTSP FACILITY WAS CONSTRUCTED BY THE D.M. WEATHERLY COMPANY.

13. FERTILIZER SHIPPING FACILITY

MAP, DAP, AND GTSP IS CONVEYED FROM THE BULK STORAGE BUILDING TO THE SHIPPING BUILDING AT 250 TONS PER HOUR. PRODUCT IS LOADED OUT BY EITHER RAILCAR OR TRUCK AT RATES APPROACHING 4500 TONS PER DAY. TO REDUCE WASTED TRANSPORTATION COSTS, <u>DUAL PURPOSE TRUCKS ARE USED FOR INCOMING SULFUR AND OUTBOUND FERTILIZER</u>. A SECOND RAILCAR SHIPPING SYSTEM IS UNDER CONSTRUCTION ADJACENT TO THIS FACILITY AND WILL BE CONNECTED TO TRUCK LOADOUT WEST OF THE EXISTING BULK STORAGE BUILDING (POINT 9) AND THE NEW MAP STORAGE BUILDING.

14. URANIUM RECOVERY PILOT PLANT

IMC PILOTED MUCH OF ITS NEW URANIUM RECOVERY PROCESS IN THE AREA TO THE SOUTH. MOST OF THE CONSTRUCTION ACTIVITY VISIBLE IS THE \$50,000,000 RECOVERY PLANT WHICH WILL EXTRACT U3D8 AS YELLOWCAKE FROM NEW WALES PHOSPHORIC ACID. ADDITIONAL URANIUM WILL BE EXTRACTED FROM ACID AT SATELLITE PLANTS AND PROCESSED HERE AT NEW WALES.

15. AFI (ANIMAL FEED INGREDIENTS) PLANT

THIS MODERN FACILITY WAS CONSTRUCTED TO MEET THE MARKET DEMAND FOR PHOSPHATE PRODUCTS ANALYZING LOW IN FLUORINE. SINCE THE FLUORINE IS REMOVED DIRECTLY FROM THE FEED PHOSPHORIC ACID, A VALUABLE PURIFIED ACID CALLED LIQUIFOS IS ALSO PRODUCED. PRODUCTION OF UP TO 2000 TPD OF CALCIUM AND AMMONIUM PHOSPHATE ANIMAL FEED GRADE PRODUCTS IS POSSIBLE IN THIS PLANT.

PRODUCT STORAGE IS IN THE LARGE CONCRETE SILOS AND IN A BULK STORAGE BUILDING (POINT 19). LIMESTONE FEED IS ALSO STORED IN THE SILO CLUSTER.

16. MULTIFOS PLANT

THE MULTIFOS PLANT, WITH ITS HUGE KILNS, PRODUCES LOW FLUORINE DICALCIUM PHOSPHATE BY HIGH TEMPERATURE CALCINATION OF 75% BPL PHOSPHATE ROCK, SODA ASH AND PHOSPHORIC ACID AT 360 TONS/DAY, DESIGN RATE. THE PLANT CONSISTS OF A MIXED FEEDS SECTION WITH ITS OWN WAREHOUSE, AND A PRODUCT SIZING AND CLASSIFICATION SECTION AFTER THE KILNS. STORAGE IS IN THE BUILDING TO THE NORTH OF POINT 19, THE AFI BULK STORAGE.

17. AFI SHIPPING, MAINTENANCE AND MAINTENANCE WAREHOUSE

THE AFI AND MULTIFOS SHIPPING AND STORAGE AREAS ARE PURPOSELY ISOLATED FROM THE BALANCE OF THE COMPLEX TO INSURE OUR CUSTOMERS OF MINIMUM CHANCE OF CONTAMINATION BY PRODUCTS CONTAINING NORMAL LEVELS OF FLUORINE. EVEN THE MAINTENANCE WAREHOUSE IS SEPARATE TO AVOID THE CHANCE OF CONTAMINATED EQUIPMENT BEING PLACED IN SERVICE AND TO PROVIDE FOR THE INTEGRITY OF THIS AREA OF THE COMPLEX.

18. AFI BULK STORAGE BUILDING

THIS CONCRETE AND WOOD STRUCTURE EFFICIENTLY REPLACES OLDER, STEEL BUILDINGS LESS SUITABLE FOR FERTILIZER STORAGE. STORAGE CAPACITY IS 11,000 TONS.

19. NORTH GATE

THE CONSTRUCTION ACTIVITY IN THIS AREA IS PART OF THE URANIUM RECOVERY PROJECT.

20. 2ND PRODUCT STORAGE FACILITY

THIS STORAGE BUILDING IS DESIGNED TO STORE ONLY MAP. IN ADDITION TO STORING MAP, THIS FACILITY ALLOWS US TO SHIP MATERIAL FROM THIS STORAGE WHILE WE ARE SHIPPING FROM THE LARGER STORAGE BUILDING WHICH WAS SEEN EARLIER.

PLANT MATERIAL FLOW

NEW WALES CHEMICALS, INC., A WHOLLY OWNED SUBSIDIARY OF INTERNATIONAL MINERALS & CHEMICAL CORPORATION, IS THE WORLD'S LARGEST GRASS ROOTS PRODUCTION FACILITY FOR THE MANUFACTURE OF PHOSPHORIC ACID AND PHOSPHATE FERTILIZER INGREDIENTS. LAST YEAR, THIS COMPLEX PRODUCED OVER 850,000 TONS P205; THIS YEAR THAT QUANTITY WILL PROBABLY BE SURPASSED. A TYPICAL DAILY MATERIAL BALANCE IS ATTACHED.

THE NORMAL DAILY CONSUMPTION OF DRIED, 68 BPL PHOSPHATE ROCK IS 10,000 TONS. THIS ROCK IS SUPPLIED TO NEW WALES AS WET ROCK AND IS STORED IN THE WET ROCK STORAGE PILE.

THE ROCK IS RECEIVED AND STORED AT ABOUT 12% MOISTURE.

URIGINALLY IT WAS DRIED AND GROUND FOR USE. A WET ROCK

GRINDING FACILITY IS NOW BEING USED WHICH REPLACED THE ROCK

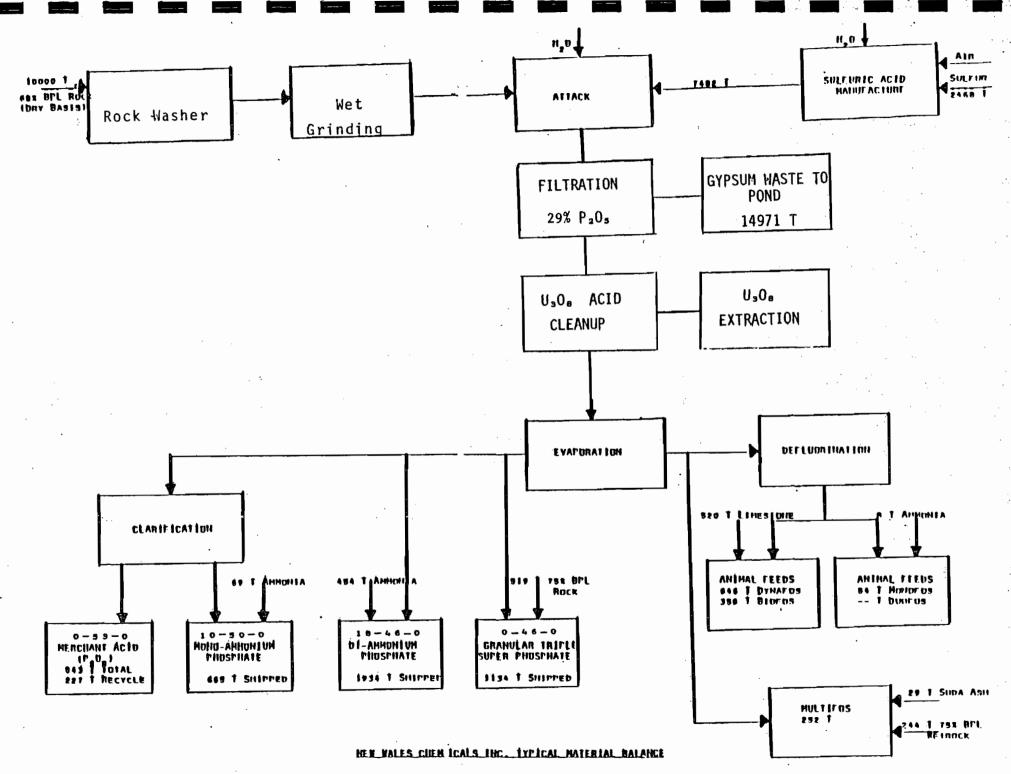
DRYER AND DRY ROCK GRINDING MILLS.

Our plants' sulfuric acid demand is almost 7500 TPD, 100% H2SO4 basis. This acid is produced in three double absorption plants. Our daily sulfur consumption is almost 2500 TPD.

THE PHOSPHORIC ACID DEPARTMENT PRODUCES 2700 TPD P205 AS 29% ACID. THIS ACID IS PRODUCED BY REACTING GROUND, DRIED ROCK WITH SULFURIC ACID. THE REACTION RESULTS IN A SLURRY OF PHOSPHORIC ACID AND GYPSUM (CASO4 · 2H2O). THE GYPSUM IS A BY-PRODUCT AND IS SEPARATED FROM THE ACID BY FILTRATION. NEW WALES GENERATES 15,000 TPD OF WASTE GYPSUM.

THE WEAK PHOSPHORIC ACID IS CONCENTRATED BY EVAPORATION TO 54% ACID FOR USE. THE ACID MAY BE CLARIFIED FOR DIRECT SALES OR PROCESSED FURTHER INTO DRY PRODUCTS.

APPROXIMATELY 840 TPD OF P205 AS 54% ACID IS CLARIFIED BY NOZZLE CENTRIFUGES TO PRODUCE MERCHANT GRADE PHOSPHORIC ACID. A BY-PRODUCT OF THIS CLARIFICATION IS A HIGHLY IMPURE PHOSPHORIC ACID SLUDGE. THIS SLUDGE IS REACTED WITH AMMONIA IN A SPRAY TOWER TO PRODUCE 665 TPD OF NON-GRANULAR MONDAMMONIUM PHOSPHATE (MAP). MAP IS A 10-50-0 ANALYSIS FERTILIZER USED IN BULK BLENDS, SUSPENSION FERTILIZERS AND GRANULATION PLANTS.



GRANULAR TRIPLE SUPER PHOSPHATE, AN 0-46-0 FERTILIZER, IS PRODUCED IN A CONVENTIONAL SLURRY GRANULATION PLANT BY REACTING PHOSPHORIC ACID WITH FINELY GROUND (85% -200 MESH) 75 BPL PHOSPHATE ROCK. THE SLURRY PRODUCED BY THIS REACTION IS SPRAYED ON A RECYCLING BED OF MATERIAL TO YIELD A SPHERICAL PRODUCT. NEW WALES PRODUCES 1134 TPD OF GTSP.

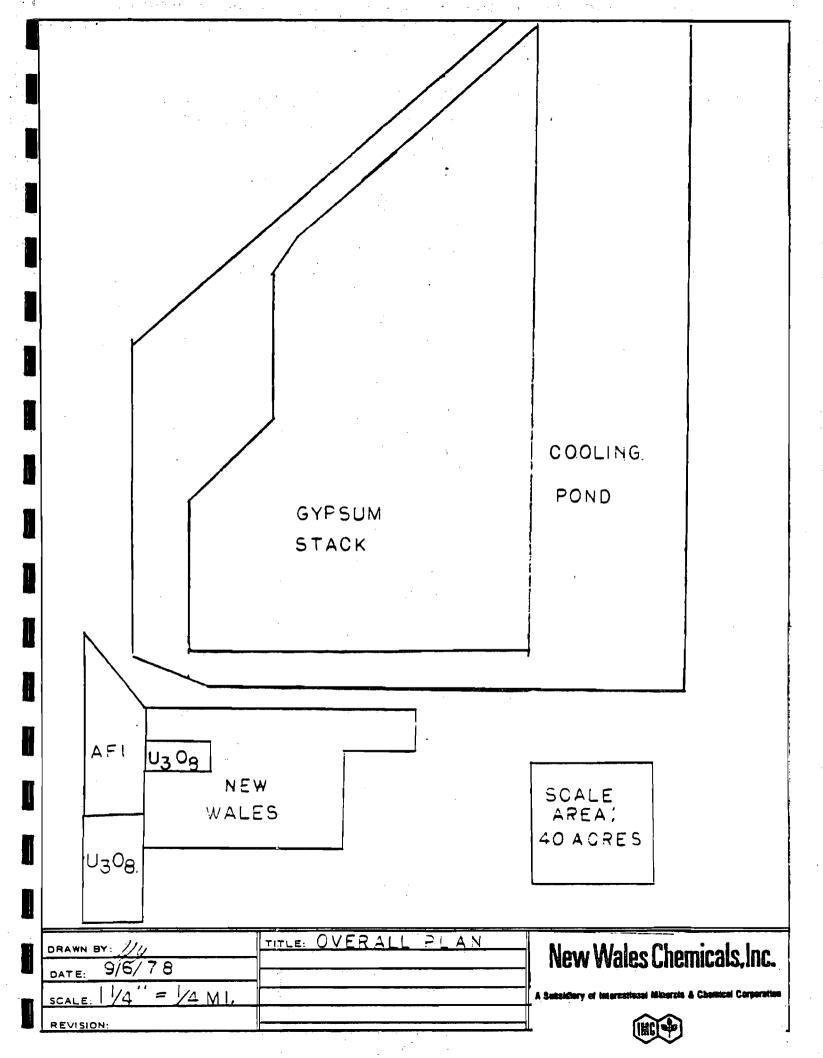
THE HIGHEST VOLUME PRODUCT MANUFACTURED AT NEW WALES IS DIAMMONIUM PHOSPHATE (DAP). DAP IS AN 18-46-0. FERTILIZER PRODUCED BY REACTING PHOSPHORIC ACID WITH AMMONIA. THE AMMONIATED PHOSPHATE SLURRY IS GRANULATED TO A SPHERICAL PRODUCT SIMILAR TO GTSP. NEW WALES PRODUCES 1934 TPD OF DAP.

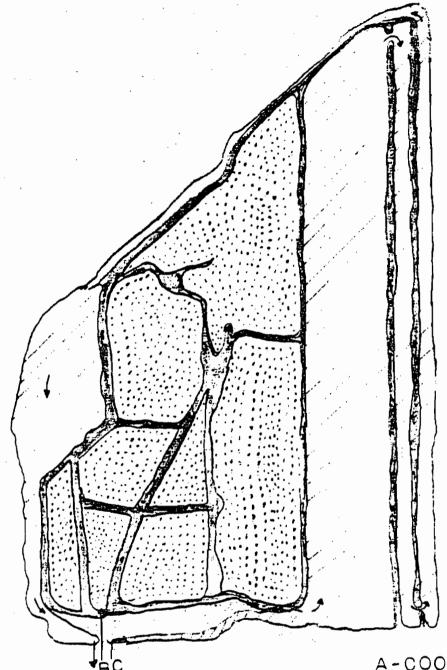
A LARGE QUANTITY OF PHOSPHORIC ACID IS DEFLUORINATED FOR THE PRODUCTION OF LOW FLUORINE ANIMAL FEED MATERIALS. LIMESTONE IS REACTED WITH PHOSPHORIC ACID TO PRODUCE DYNAFOS AND BIOFOS. AMMONIA IS REACTED WITH PHOSPHORIC ACID TO PRODUCE MONOFOS AND DUOFOS.

OUR NEWEST OPERATION PRODUCES 252 TONS/DAY MULTIFOS, BY THE REACTION OF PHOSPHORIC ACID, SODA ASH, AND 75% BPL WET ROCK. MULTIFOS IS ANOTHER LOW FLUORINE ANIMAL FEED INGREDIENT.

OTHER OPERATIONS AT THIS FACILITY INCLUDE UTILITIES GENERATION AND DISTRIBUTION, RAW MATERIALS HANDLING, AND END PRODUCT SHIPPING.

FINALLY, WE ARE CONSTRUCTING A U308 EXTRACTION PLANT. THIS WILL RECOVER APPROXIMATELY 1 LB. OF URANIUM FROM EACH TON OF P205 PRODUCED AT NEW WALES.





SOLID DARK AREAS ARE DIKES

☐ GYPSUM STACK 300 ACRES

COOLING POND 300 ACRES

A-COOLING POND EXIT

B-GYPSUM INLET C-COOLING PONDINLET

	TITLE: PLAN VIEW OF	7
DRAWN BY: 10	GYPSIM STACK	
DATE: 9/6/18	COOTING POND	1
SCALE: NONE	COOLING TONB	١

New Wales Chemicals.Inc.



GYPSUM CAKE COMPOSITION - DRY BASIS ESTIMATE 5.5 TONS GYPSUM/TON P2D5 PRODUCED

ELEMENT	TONS/ TON P205 PRODUCED	*ESTIMATED TONS IN IMC GYP STACK
TOTAL P205 W.S. P205 C. I. P205 CAO S F S102 FE203 AL203 NA20 K20 MG0 PB M0 CD HG SE	0.054 0.020 0.007 1.90 1.03 0.059 0.387 0.0016 0.0050 0.023 0.016 0.0008 47 × 10 ⁻⁶ < 160 × 10 ⁻⁶ < 7.7 × 10 ⁻⁶ 313 × 10 ⁻⁹ < 7.7 × 10 ⁻⁶	109,380 40,510 14,180 3,848,410 2,086,240 119,500 783,860 3,240 10,130 46,586 32,410 1,620 95 <324 <16 0.6 <16

^{*} New Wales has produced 2,025,480 tons of P2D5 through June 30, 1978.

NEW WALES CHEMICALS, INC. ENVIRONMENTAL PROTECTION FACILITIES SUMMARY

PHOSPHATE ROCK PROCESSING 628,000 1974 CYCLONES (4) SCRUBBERS (5) BAGHOUSES (2) PHOSPHORIC ACID PRODUCTION 828,000 1974 CROSSFLOW SCRUBBERS (2) BAGHOUSES (2) SCRUBBER (1)	EARLY COST
BAGHOUSES (2) PHOSPHORIC ACID PRODUCTION 828,000 1974 CROSSFLOW SCRUBBERS (2) BAGHOUSES (2) SCRUBBER (1)	,118,000
BAGHOUSES (2) SCRUBBER (1)	221,654
COANUM ATER SERTING STEEL STEE	269,725
GRANULATED FERTILIZER PRODUCTION 3,145,000 1974 SCRUBBERS (8) BAGHOUSES (3) 1 AND SHIPPING (MAP, DAP, GTSP) CYCLONES (9)	,109,851
ANIMAL FEED INGREDIENT PRODUCTION 2,695,600 1976 SCRUBBERS (3) BAGHOUSES (8) CYCLONES (4)	951,301
MULTIFOS DEFLUORINATION PLANT 3,100,000 1977 SCRUBBERS (3) BAGHOUSES (6) 1	,094,059
WASTE TREATMENT 1,500,000 1974 PONDS, CANALS, PUMPS	552,147
\$17,896,600	,316,740

11.3% OF INSTALLED CAPITAL

15% OF NON-RAW MATERIAL COSTS

SECTION 2
EXPANSION PLANS

SECTION 3
NEW SOURCE SUMMARY

NEW SOURCE SUMMARY

The New Wales Chemical Company is a phosphate fertilizer complex located in western Polk County, Florida. At this complex phosphate rock is processed into several different fertilizer products and animal feed ingredients. The complex includes sulfuric acid plants, phosphoric acid plants, granular triple superphosphate production, ammoniated phosphate production, animal feed ingredient production and a uranium recovery unit. Phosphate rock drying, grinding and handling is an integral part of the fertilizer complex.

The original New Wales fertilizer complex was permitted in 1974; prior to PSD regulations.

In 1976 an animal feed ingredient plant was constructed and in 1977 a multiphos plant was constructed. In 1978 a granular products load-out system was permitted and in the same year a uranium recovery unit was permitted.

The present construction plans call for two (2) sulfuric acid plants, a phosphoric acid plant, a diamonium phosphate fertilizer plant, a granular products load-out system and a <u>liming station for water</u> treatment.

All of the sources existing and proposed for the New Wales Chemical Complex are summarized in the following table. The construction date for each source is also listed. For sources permitted after January 6, 1975 potential and actual annual emission rates are listed. The actual emission rate of the various pollutants was obtained from permits on file with the Florida Department of Environmental Regulation, were estimated using EPA emission factors (AP-42) or are based on field measurements. The potential emissions were arrived at by dividing the actual emissions by the fraction of pollutant escaping through the air pollution control system. In the following sections, each pollutant emitted from the modified source is discussed and the method of estimating actual and potential emissions are delineated.

Particulate Matter

In all cases the actual particulate matter emission rate has been established by engineering estimate or emission measurements. These data are included in permits on file with the Florida Department of Environmental Regulation. A potential emission rate of particulate matter for each source was obtained by dividing the actual emission rate by the fraction of material escaping through the air pollution control system.

Sulfur Dioxide

Sulfur dioxide is emitted from the proposed sulfuric acid plants and from various combustion sources. The potential and actual sulfur dioxide emissions from the double absorption sulfuric acid plants were assumed to be the same since both absorption units are considered an integral part of the plant. The emissions were calculated based on new source performance standards.

And had been to been to be to

Potential sulfur dioxide emissions from combustion sources were calculated on the basis of fuel consumption and sulfur content of the fuel. The actual emissions were assumed to be 15 percent of potential emissions on the basis of tests conducted by New Wales and others.

Fluorides

Actual fluoride emissions from the various sources were established by design criteria or field measurements. The potential fluoride emissions were calculated from the actual emissions on the assumption that fluoride scrubbers average 96 percent efficiency.

Nitrogen Oxides

Nitrogen oxides are emitted from the proposed sulfuric acid plants and various combustion sources. The NO_X emissions from the sulfuric acid plants were calculated based on recent field measurements_which show a NO_X concentration in the sulfuric acid stack gases of 2.1 x 10^{-5} pounds per SCFD.

Potential and actual emissions from the combustion sources were assumed to be identical. They were calculated on the basis of fuel consumption and an emission factor of 20 pounds $N0_X$ per 1,000 gallons of fuel. This emission factor is within the range of those presented in AP-42 and has been confirmed by recent field measurements conducted by SKEC.

Hydrocarbons

Hydrocarbons are emitted from the solvent extraction unit in the uranium recovery plant. The potential and actual hydrocarbon emissions were calculated based on pilot studies conducted by New Wales.

Acid Mist

Sulfuric acid mist will be emitted by the proposed sulfuric acid plants. The actual acid mist emissions were based on new source performance standards. Potential acid mist emissions were calculated based on the assumption that mist eliminators are 90 percent efficient. This estimate is based on recent measurements made by SKEC.

200

1974 original source permit, pre-PSD

NEW	MALES	CHEMICAL	COMPANY	DOLK	COUNTY	FLORIDA
14 (2.17)	MALES	CHEFITCHE	CULIFANT.	PULK	CUUNINI I	LEGITION

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NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

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SECTION 4
BEST AVAILABLE CONTROL TECHNOLOGY

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Best available control technology is required to control emissions of regulated pollutants from major modifications of air pollution sources. In the case of phosphate fertilizer complexes BACT is to apply to pollutants with a potential emission rate of greater than 100 tons per year and an actual emission rate of greater than 50 tons per year. For the New Wales Chemical Complex, BACT is to apply for particulate matter, sulfur dioxide, nitrogen oxide and sulfuric acid mist.

Preliminary engineering data are included in the attached Florida Department of Environmental Regulation Construction Permit Applications for the control systems proposed for each proposed source.

In general, bag collectors will be employed on all sources emitting particulate matter. The sulfuric acid plants will be double absorption plants incorporating high efficiency Brinks mist eliminators. These two measures are proposed as BACT for sulfur dioxide and acid mist. The major source of nitrogen-oxides in the proposed complex are the sulfuric acid plants. There is no known control technology for reducing NO_X emissions from these sources.

Even though actual emission of fluorides from the proposed modifications are less than 50 tons per year, the control technology proposed for the fluoride sources constitutes BACT. The fluoride emissions are controlled with packed scrubbers.



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

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SECTION II: GENERAL PROJECT INFORMATION

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Normal Equipment Couracing Times: healasts: 24 ; develocis: 7 ; wesslyr: 50 ; if seasonal, describe:	19	this application associated with or part of a Development of Regional Impact (DRI) pursuant to Charact 280, Florida Statutes, and Ch
os o Source: any source which came into existence, began operation or construction, or received a permit for the latter <u>on or after</u> January		
Source: any source which came into existence, began operation or construction, or received a permit for the latter <u>on or yiter J</u> anuary	N	ormal Equipment Courating Times hearant: 24 ; develorits:; westyr:; if seasonal, describe:
Source: any source which came into existence, began operation or construction, or received a permit for the latter <u>on or yiter J</u> anuary	_	

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES

(other then incinerators)

A. Raw Materials and Ci	hemicals Used in	Your Process
-------------------------	------------------	--------------

Description	Utilization Reta lbs./hr.	Relate to Flow Diagram
MOLTEN SULFUR	660 TPD	SULFUR BURNER

E. Process Rate:

1) Total Process Input Rate (lbs./nr.): 660 TPD SULFUR

2) Product Weight (Has/hr): 2000 TPD H2SD4

C. Airborne Comuminants Discharged:

Name of Contaminant		tudi - verije *	Allowed Discharge. Rate Per	Allowable Discharge	Relate to Flow Diagram
	ibs./hr.	T/yr.	Ch. 17-2, F.A.C.**	(ibs_/hr.)	
SD2	≦ 4 TPD		4# SD2/TON H2S	D4 -	STACK
H2SO4 MIST	≦ 0.15	TPD	0.15# MIST/TON	H2SD4	STACK
:					
-					

D. Control Devices:

Name and Type (Model and Serial No.)	Conteminent	Efficiency [†]	Range of Particles Size Collected (in microns)	Basis for Efficiency ^{††}
DOUBLE ABSORPTION	SD2	99.7	NA .	DESIGN
TOWERS WITH BRINKS	H2SD4 MIST	100%	>3 MICRONS	11
HV MIST ELIMINATOR	\$	85-97%	1-3 MICRONS	• • • • • • • • • • • • • • • • • • • •
		50-85%	<1/2 MICRON	91
	<u>, </u>			
	<u> </u>	·		
•			• }	

^{*}Excitate only if this is an application to construct.

^{*}Specify units in accordance with emission standards prescribed within Section 17-2.04, F.A.C. (e.g. Section 17-2.04(6)(e)1.a. specifies that new fossil fuel steam generators are allowed to emit perticulate matter at a rate of 0.1 lbs., per million BTU heat input computed as a maximum 2-hour everage.)

^{****}Using above example for a source with 260 million BTU per nour heat input: C.1 lbs x 260 MMBTU = 26 lbs./hr.

[†]See Supplemental Requirements, page 5, number 2.

TTIndicate whether the efficiency value is based upon performance testing of the device or design data.

Type (Be Specific)			Communition*			Maximum Heat Input			
		avg./	ang_/itr.		Mess./hr.		(MMSTU/hr)		
	· · · · · · · · · · · · · · · · · · ·								
		•							
				, _					
nitti: Nettural Ga	s - MMCF/hr.; Fo	et Olis, Coet - Ibs./f	ir.	,					
Fuel Analysis:									
Percent Suifur:	;			_Percent Ash:		· · · · · · · · · · · · · · · · · · ·			
Density:			 	_Jb./gal.					
Heet Capacity:	·			_870/6			BTU/g		
Other Fuel Cor	ntarinests:					•			
If applicable, in	ndicate the percan	it of fuel used for s	pase heating:	Anne	al Average:	Maximum:			
		neverad and metho							
ALL BL	OWDOWN R	EUSED IN	KINGSFOR	D CPERATI	ON				
				·					
				 		·	- 		
Emission Stack	Geometry and F	low Characteristics	(provide data for	r each stack):					
Stack Height: .	199			ft. Stax	:x Diameter:	8.5			
Gas Flow Rate	120,000	·	·	ACFM Gas	Exit Temperature: .	160			
	oncone: 0								
				- ~					
		•							
					4 77.004				
		364	ICM IA: HACHER	ERATOR INFORM	ATION				
			NOT APP		ATION				
'ype of Watte	Type O	Type I (Russish)			Type IV (Perhalogical)	Type V {Liq. & Ges By-grod.}	Type VI (Solid 8y-orad.)		
'ype of Watte		Type I	NOT APP	L ICABLE	Type IV	(Liq. & Ges	Solid		
'ype of Watte Lips_/Hr. Incinerated		Type I	NOT APP	L ICABLE	Type IV	(Liq. & Ges	Solid		
Liss./Hr. Incineressd	(Plastica)	Type I (Rustoish)	NOT APP Type II (Refuse)	L ICABLE	Type IV (Perhalogical)	(Liq. & Ges	Solid		
Lbs_/Hr. Incineresid	(Plastica)	Type I (Russisian)	NOT APP Type i! (Refuse)	Type III (Garbage)	Type IV (Perhalogical)	(Lig. & Gas By-grod.)	(Solid 8y-orod.)		
Lbs./Hr. Incineresed cription of West	(Plastica)	Type I (Rubbish)	NOT APP Type II (Refuse)	Type III (Gertage)	Type IV (Perhatogical)	(Lig. & Gas By-grod.)	(Solid 8y-orod.)		
Lbs./Hr. Incineresed eriotion of West al Weight Inciner proximate Numb	(Plastica) E: record (lbs_/hr_): mer of House of Op	Type I (Rubbish)	NOT APP Type i! (Refuse)	Type III (Gertage)	Type IV (Perhological)	(Lig. & Gas By-grod.)	(Solid 8y-orod.)		

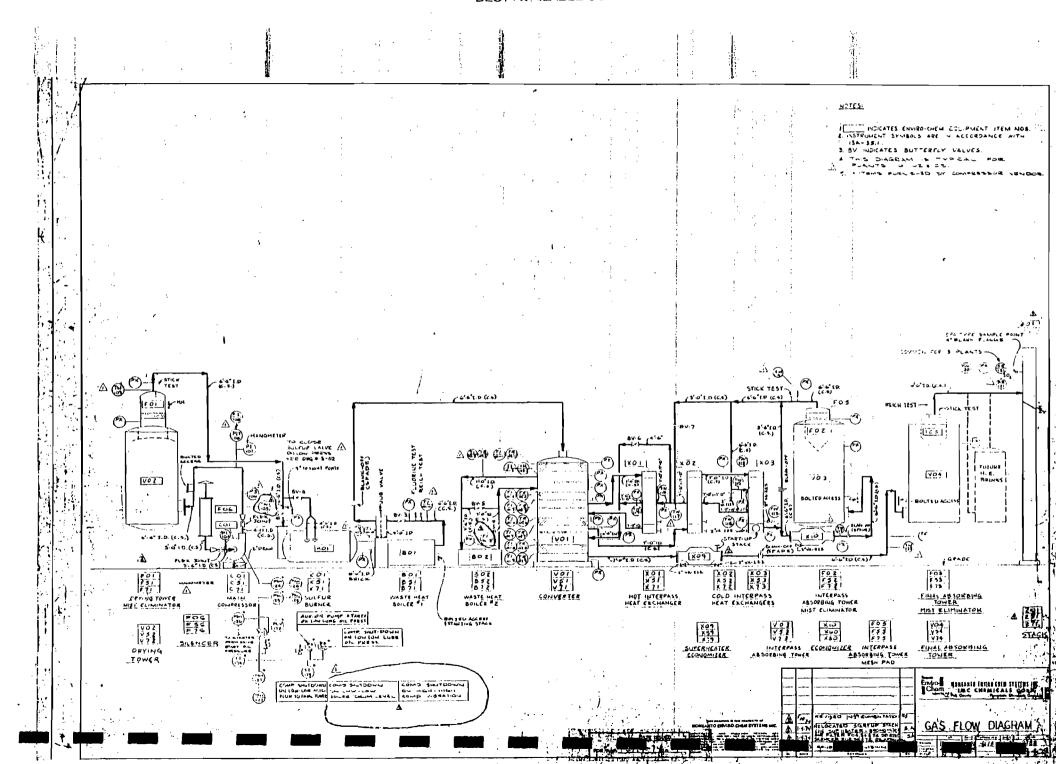
BEST AVAILABLE COPY

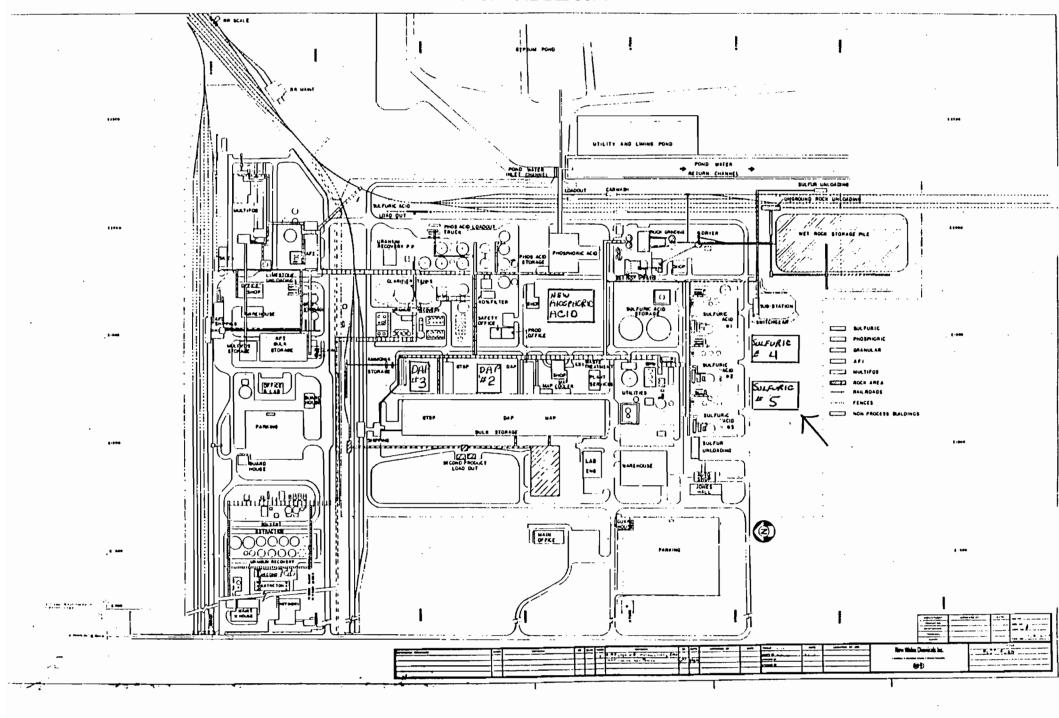
•	Volume	Hest Release	Fuel		Temp. (°F)	
	(+1_)3	(BTU/mr.)	Туре	BTU/nr.	1	
Primary Chamber						
Secondary Chamber ···						
		nter:S	teck Temp.:	· · · · · · · · · · · · · · · · · · ·	°	
Gas Flow Rate:		DSCFM*				
	lev design capacity, submit th	 In emissions rate in grains per st	anderd exbic fo	oot dry aus com	ected to 50% excess air.	
		Cyclone [] Cher (Specify):	<u>.</u>		[] Attarburner	
		· · · · · · · · · · · · · · · · · · ·				
·	· · · · · · · · · · · · · · · · · · ·	 	· _ · · ·			
					_	
Ultimate Disposel of Any	Effluent Other Than That E	mitted From the Stack (scrubb)	er water, eet, e	re.):		
					 	
						
						
				_		

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please Provide the Following Supplements Required For All Pollution Sources:

- 1. Total process input rate and product weight show derivation.
- Efficiency estimation of control device(s) show derivation. Include pertinent set and/or design data.
- An 8%" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where rew materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne perticles are evolved and where finished products are obtained.
- An 8%" x 11" plot plan of facility showing the exact location of manufacturing processes and outlets for airporne emissions. Relate all flows to the flow diagram.
- 5. An 85" x 11" plot plan showing the exact location of the establishment, and points of eirborne emissions in relation to the surrounding area, residences and other permanent structures and resoweys. (Example: Copy of USGS topographic map.)
- 6. Description and sketch of storm water control measures taken both ouring and after construction.
- 7. An application tax of \$20,00, unless exampted by Chapter 17-4.05(3), FAC, made payable to the Department of Environmental Regulation.
- 8. With construction permit application, include design details for control device(s). Example: for begnouse, include cloth to air retio; for scrubber, include cross-sectional slotten; etc.
- 9. Cartification by the P.E. with the operation permit application that the source was constructed as shown in the construction permit application.







INTERNATIONAL MINERALS & CHEMICAL CORPORATION

November 22, 1978

Mr. T. L. Craig Vice President & General Manager New Wales Chemicals, Inc. Post Office Box 1035 Mulberry, Florida 33860

Dear Tom:

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Very truly yours,

Harry L. Carroll

t

STATE OF FLORIDA

DEPARTMENT OF STATE . DIVISION OF CORPORATIONS

I certify from the records of this office that IMC CHEMICALS CORP., changed its name to; NEW WALES CREMICALS, INC., is a corporation organized under the Laws of the State of Delaware, authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.



GIVEN under my hand and the Grent
Seal of the State of Florida, at
Taliahassee, the Capital, this the
lat day of June
1977.

Bur Contin

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301



BOB GRAHAM GOVERNOR

JACOB D. VARN SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

August 24, 1979

RECEIVED BY NEW WALES CHÉMICALS, INC. T. L. CRAIG

AUG 30 1979

Mr. Thomas L. Craig,
Vice President & General
Manager
New Wales Chemicals, Inc.
P. O. Box 1035
Mulberry, Florida 33860

Noted	· · · · · · · · · · · · · · · · · · ·	File	
Referred	То		

Subject: Best Available Control Technology (BACT) for New Wales Chemicals, Inc. Sulfuric Acid Plants No. 4 & No. 5, to be located in Polk

County

Dear Mr. Craig:

The Department of Environmental Regulation has reviewed the BACT Application submitted by you, and determined Best Available Control Technology (BACT) for the above referenced soruce as follows:

so₂:

Emission not to exceed 4.0 #/ton of 100% H₂SO₄/attainable with a double

absorption system.

Sulfuric Acid Mist:

Emissions not to exceed 0.15 #/ton of

100% H₂SO₄/attainable with a high

efficiency demister.

Opacity:

Not greater than 10 percent.

NSPS

Test Method:

As prescribed in EPA NSPS, 40 CFR,

Part 60, Subpart H.

The complete BACT determination document is attached.

Sincerely,

Victoria Martinez, howes.

Victoria Martinez BACT Coordinator

VM/es

Attachment

original typed on 100% recycled paper

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee								
To:	Loctn.:							
To:	Loctn.:							
To:	Loctn.:							
From:	Date:							

TO:

Jacob D. Varn

Secretary

FROM:

J. P. Subramani, Chief (

Bureau of Air Quality Management

DATE:

August 20, 1979

SUBJECT:

BACT Determination - New Wales Chemicals, Inc.

Sulfuric Acid Plants No. 4 and No. 5, to be

located in Polk County

Facility: Two identical double absorption sulfuric

acid plants with a combined process input

rate of 1320 tons/day of sulfur.

BACT Determination Requested by the Applicant:

Pollutant

SO2:

4 lbs/ton 100% H2SO4 acid produced

Sulfuric Acid

Mist:

0.15 lbs/ton 100% H2SO, acid

produced

Date of Receipt of a Complete BACT Application:

June 5, 1979

Date of Publication in the Florida Administrative Weekly:

August 6, 1979

Date of Publication in a Newspaper of General Circulation:

August 8, 1979, The Ledger, Lakeland, Florida

Jacob D. Varn Page Two August 20, 1979

Study Group Members:

A BACT determination on a sulfuric acid plant was completed April 16, 1979. There has been no significant technological improvement since that date. Thus the same BACT applies and a study group is not needed.

EPA's New Source Performance Standards (NSPS) for Sulfuric Acid Plants:

Pollutant

Rate of Concentration

SO2:

 $4 \#/\text{ton of } 100 \text{ H}_2\text{SO}_4$

Sulfuric Acid Mist:

0.15 #/ton of 100% H₂SO₄

BACT Determination by the Florida Department of Environmental Regulation:

so₂:

Emission not to exceed 4.0 #/ton of 100% H_2SO_4 /attainable with a double absorption system.

Sulfuric Acid Mist:

Emissions not to exceed 0.15 #/ton of

100% H₂SO₄/attainable with a high

efficiency demister.

Opacity:

Not greater than 10 percent.

Test Method:

As precribed in EPA NSPS, 40 CFR,

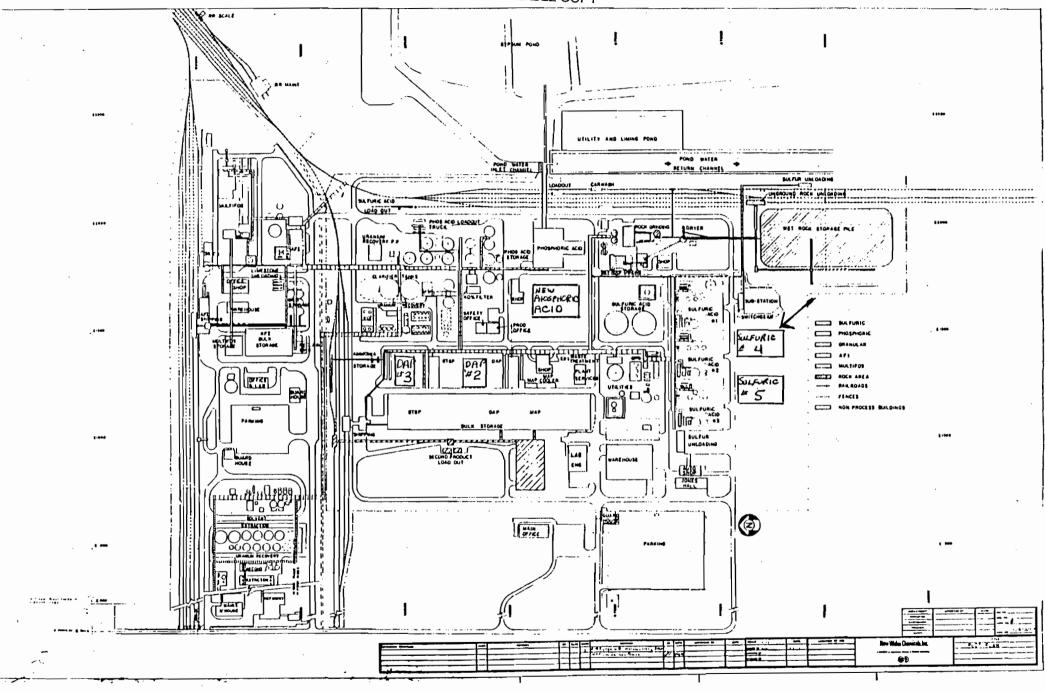
Part 60, Subpart H.

Justification of DER Determination:

There has been no significant technological improvements since December 1978 when EPA reviewed its NSPS for this type of source. Although lower emissions than NSPS are attainable the selection of NSPS as BACT allows for the normal decrease in efficiency with the passage of time.

Details of the Analysis May be Obtained by Contacting:

Victoria Martinez, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32301



Jacob D. Varn Page Three August 20, 1979

Recommendation from: Bureau of Air Quality Management

by: J. P. Subramani

Date: AUGUST 20, 1979

Approved by: Jacob ()

Date: 21 ST AUGUST 1979

JDV/es

Attachment



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

Company Na Identify the Fired: CC Source Local Little: Littled Appl. Name	Type: [X] C sine: NEW specific sine DNTACT tion: Street: East	WALES SULFUR HWY. 6	CHEMIC CHEMIC CHEMIC CHEMICAL CHEMICA CHEMICA CH	CALS.	INC.	Modifica						
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Identify the Fired): CC Source Local UTM: : Letitud Appl. Name	NTACT tion: Street:	SULFUR	ic Acit	amed in th	is application				cou	ney: PO	K	
Fired): CC Source Local UTM: Letitud Appl. Name	DNTACT tion: Street:	SULFUR Hwy. 6	IC ACIT			on (i.e.:						
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www.regine	 Tiste:	THOMAS	L. CRA	IG. N	/ICE [/] P	RESI	DENT	AND G	ENER	AL MA	NAGER	10
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		(Plaine Typ						<u> </u>	<u> </u>			
Compe	Name:NE	W WALE	S CHEMI	CALS,	INC.	Telephor	ne No.:	813-	428-	2531		
Florida	Asparation	Number:	18595			Date: _	4 – 6	-79		_		
		(Affix Seel)										

SECTION II: GENERAL PROJECT INFORMATION

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SECTION III: AIR POLLLITION SOURCES & CONTROL DEVICES

icther then incinerators

Α.	Raw Material	and Chamicals	Used in	Your Process
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Description	Utilization Rete Ibs./hr.	Relate to Flow Diagram
MOLTEN SULFUR	660 TPD	SULFUR BURNER

B. Process Rate:

1) Total Process Input Rate (Ibs./hr.J: 660 TPD SULFUR

2) Product Weight (the/hr): 2000 TPD H2SD4

C. Airborne Conteminants Discharged:

Name of Contembrant	Act Disens	sud Orget*	Allowed Discharge. Rate Per Ch. 17-2, F.A.C.**	Allowable Discharge	Relate to Flow Diagram		
	lbs_/lvr.	T/yr.	- Ch. 17-2, F.A.C.**	(line./hr.)			
502	≦ 4 TPD		4# SD2/TON H2S	D4 -	STACK		
H2SO4 MIST	≤ 0.15	TPD	0.15# MIST/TON	H2SD4	STACK		
<u> </u>							
		_			<u> </u>		

D. Control Devices:

Name and Type (Model and Serial No.)	Comminent	Efficiency [†]	Range of Perticles Size Collected (in microns)	Basis for Efficiency ^{1†}
DOUBLE ABSORPTION	502	99.7	NA	DESIGN
TOWERS WITH BRINKS	H2SD4 MIST	100%	>3 MICRONS	11
HV MIST ELIMINATOR	\$	85-97%	1-3 MICRONS	91
		50-85%	<1/2 MICRON	11
		<u> </u>		

^{*}Estimate only If this is an application to construct.

**See Supplemental Requirements, page 5, number 2.

TTIndicate whether the efficiency value is based upon performance testing of the device or design data.

^{**}Specify units in accordance with emission standards prescribed within Section 17-2.04, F.A.C. (e.g. Section 17-2.04(6)(e)1.a. specifies that new fossil fuel seem generators are allowed to emit perticulate matter at a rate of 0.1 lbs. per million BTU nest input computed as a maximum 2-hour average.)

^{****}Using above example for a source with 250 million BTU per hour heat input: 0.1 lbs x 250 MMBTU = 25 lbs./hr.

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SECTION IV: INCINERATOR INFORMATION

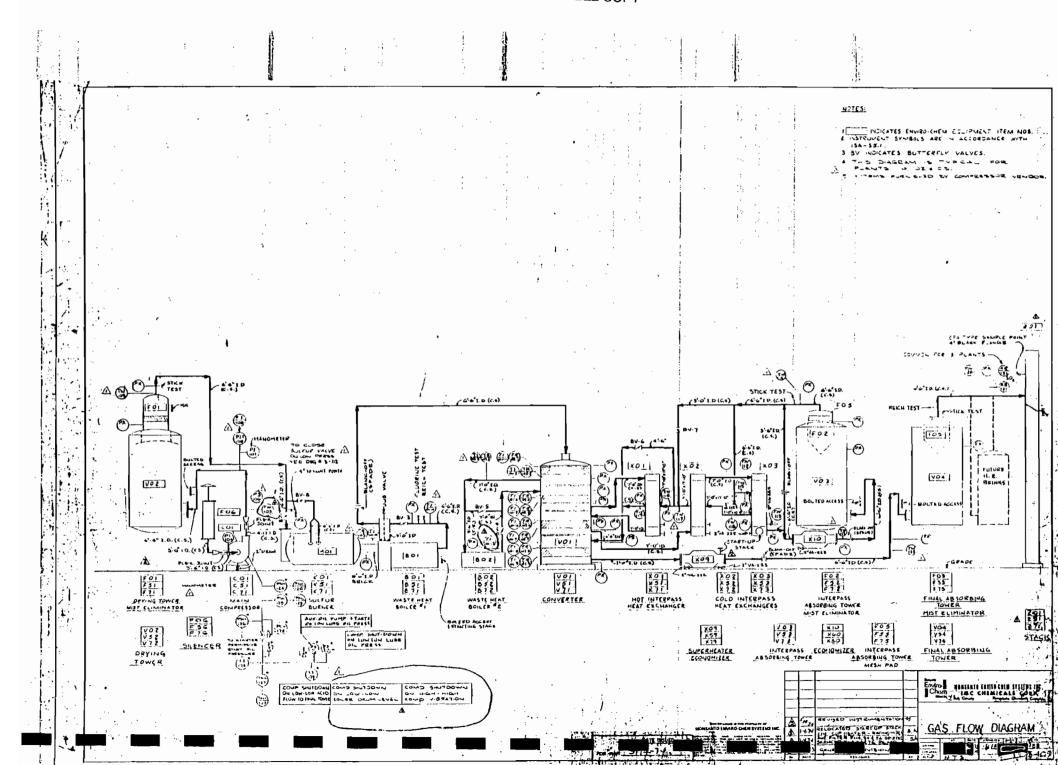
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Lbs./Hr. Incinerated										
Description of West	·									
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Sete Constructed: .	Cens Communicad: Model No.:									

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Primery Chamber							
Secondary Chamber						-	
Stack Height:		ter:S	tack Temp.:			°F	
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		emissions rate in grains per st	anderd cubic to	oot dry gas com	ucted to 60% excess air.		
•		Other (Specify):			[] Attarbumer	_	
Ultimate Disposal of Any	r Effluent Other Then That En	nitted From the Stack (acrubb)	er water, ash, e	m.) :	·		
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SECTION V: SUPPLEMENTAL REQUIREMENTS

Please Provide the Following Supplements Required For All Pollution Sources:

- 1. Total process input rate and product weight show derivation.
- 2. Efficiency essimation of control device(s) show derivation. Include partinent test and/or design data.
- 3. An 8½" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where rew materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- An 8%" x 11" plot plan of facility showing the exact location of manufacturing processes and outlets for airporne emissions. Relate all flows to the flow diagram.
- An 8%" x 11" plot plan showing the exact location of the establishment, and points of sirborne emissions in relation to the surrounding area, residences and other permanent structures and resowers. (Example: Copy of USGS topographic map.)
- 6. Description and skarch of storm water control measures taken both during and after construction.
- 7. An application tee of \$20.00, unless exampted by Chapter 17-4.05(3), FAC, made payable to the Department of Environmental Regulation.
- 8. With construction permit application, include design details for control device(s). Example: for technology include cloth to air retio; for scrubber, include cross-sectional sketch; etc.
- 9. Certification by the P.E. with the operation permit application that the source was constructed as shown in the construction permit application.





INTERNATIONAL MINERALS & CHEMICAL CORPORATION

November 22, 1978

Mr. T. L. Craig Vice President & General Manager New Wales Chemicals, Inc. Post Office Box 1035 Mulberry, Florida 33860

Dear Tom:

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Very truly yours,

Harry L. Carroll

t

STATE OF FLORIDA

DEPARTMENT OF STATE - DIVISION OF CORPCRATIONS

I certify from the records of this office that IMC CREMICALS CORP., changed its name to; NEW WALES CREMICALS, INC., is a corporation organized under the Laws of the State of Delaware, authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.



GIVEN under my hand and the Great
Seal of the State of Florida, at
Tallahassee, the Capital, this the
1st day of June
1977.

Auc Constilla



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

	
ron Type: [X] Air Polletion	[] Indiameter
	[] Modification [] Renewal of DER Permit No.
NEW WALES CHEMICALS,	INC. POLK
noisy the sectific emission point source(s) addressed in PHOSPHORIC ACID PLANT WI	this application (i.e.: Lime Klin No. 4 with Venturi Scrubber; Peeking Unit No. 2, (ITH CROSSFLOW SCRUBBER (#3)
	Y LINE RD. CIN: MULBERRY
	North
Latitude:	N. Loneitude : ' 'W.
	VICE PRESIDENT & GENERAL MANAGER
	RRY, FL. 33860
Appress:	
SECTION I: STA	TEMENTS BY APPLICANT AND ENGINEER
APPLICANT .	
am the undersioned dwiver or authorized representative	NEW WALES CHEMICALS, INC.
I certify that the statements made in this application for	CONSTRUCTION
THOMAS L. CRAIG	Languice PRES. & GEN. M
Name of Person Signing (please Type or Print)	Signature of the Owner or Authorized Representative and Title
	Dets: 4-6-79 Telephone No.: 813-428-25
*Attach a letter of authorization.	•
PROFESSIONAL ENGINEER REGISTERED IN FLOR	RIDA
formity with modern engineering principles applicable to responsible assurance, in my professional judgement, to an effluent that complies with all applicable statutes of that the undersigned will furnish the applicant a set of and, if applicable, pollution sources.	pollution control project have been designed/examined by me and found to be in to the treatment and disposes of pollutarits characterized in the permit application. That the pollution control facilities, when properly maintained end operated, will discribe the State of Florida and the rules and regulations of the Department. It is also a instructions for the proper maintenance and operation of the pollution control facilities.
Signature: Lace & Stand	Melling Address: P. D. BOX 1035
Name: CRAIG A PFLAUM (Please Type)	MULBERRY, FL. 33860
Company Name: NEW WALES CHEMICAL	S, INC Telephone No.: 813-428-2531
COMPANY PRINTS:	- S 1 1 1 C Telephone No.: 013-428-2331
Florice Registration Number: 18595	Deta: _4-6-79

BEST AVAILABLE COPY SECTION II: GENERAL PROJECT INFORMATION Describe the nature and expert of the project. Refer to pollution control edulament, and expected improvements in source parformance as a sate of installation. State whether the project will result in full compliance. Attach aggistories sheet if necessary, NEW WALES CHEMICALS, INC. PROPOSES TO CONSTRUCT A 1500 TPD WET PROCESS PHOSPHORIC ACID PLANT. UNIT_WILL BE DESIGNED AND BUILT BY DAVY POWERGAS, INC. OF LAKELAND, FL WITH THE UNIT WILL BE A FLUORINE FUME SCRUBBER TO BE ALSO DESIGNED AND INSTALLED BY DAVY POWERGAS. INC. axio of Project Covered in this Application (Compression Pennic Application Only). Completion of Communicate JUNE: 30, 1983 Start of Comprections JUNE 30, 1980 Costs of Construction. (Note: show breekdown of existend costs only for individual companyonal set the project serving pollution control purpose. Information on establicated shall be furnished with the application for operation permit.) ESTIMATED COST \$750,000,00 Indicate any previous CER permits, orders and notices associated with the emission point, including permit issuance and expiration dates. . NA Is the emission point considered to be a New* or Edizing* source, as defined in Chapter 17-2.0285 & (6), Florida Administrative Code? Is this application emociated with or part of a Dominsment of Regional Impact (DR1) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ______Yes _______No 24 6,6 Normal Equipment Operating Time: hre/day: ... New Source: any source which came into existence, bugan operation or construction, or received a permit for the latter on or strey lanuary 18, Existing Source: any source in existence, operating or under construction (or with a permit to p

(other than incinerators)

A. Raw Meterials and Chemicals Used in Your Process:

Description	Utilization Rate lbs./hr.	Resette to Ficav Diagram
SULFURIC ACID	4110 TPD	ATTACK TANK
PHOSPHATE ROCK	5520 TPD	ATTACK TANK
	and the second s	

B. Process Asse:

1) Total Procuss Input Rase (lbs./hr.): 9630 TPD

2) Product Weight (the/hr): 1500 TPD P205

C. Airborne Conteminents Discharged:

Name of Contaminent		tudi turge*	Allowed Discharge: Rate Per	Allowable Discharge***	Relate to Flow Diagram
	ibs_/hr.	T/ye.	Ch. 17-2, F.A.C.**	(Line Aries)	
FLUDRIDES	\\ \leq 1.4	= 5.6	0.02 LBS F/TON P2	05 ≦ i.4	STACK
					1
<u>-</u>					
		1.			
				-	
·		· 	<u> </u>		
			1		

D. Control Devices:

Name and Type (Model and Serial No.)	Contaminent	Efficiency [†]	Range of Particles Size Collected (in microne).	Basis for Efficiency ^{TT}
DAVY POWERGAS, INC.	F	TO MEET	REQUIREMENTS	OF FL. AIR CODE
ESIGNED CROSSFLOW				
CRUBBER				
			Ì	<u> </u>
<u> </u>				· ·

^{*}Estimate only If this is an application to construct.

^{**}Sourcity units in accordance with emission standards prescribed within Section 17-2.04, F.A.C. (e.g. Section 17-2.04(6)(e)1.a. specifies that new fossil fuel swam generators are allowed to emit perticulate matter at a rate of 0.1 lbs. per million 8TU nest input computed as a maximum 2-hour swares.)

^{****}Using above example for a source with 260 million BTU per nour heat input: 0.1 lbs x 250 MM8TU = 25 lbs./hr.

^{**}See Supplemental Requirements, page 5, number 2.

TTIndicate whether the efficiency value is based upon performance testing of the cavice or design data.

	Soudifiel		Consumerio	n ^	Maximum Heat Insut			
		arg_/t	TF.	Max./hr.		(MMSTU/hr)		
	·				1	·		
	 			 	<u> </u>			
nice: National God	- MMCF/hr.; For	i Cila, Coni - iba/ii	v.					
Fool Analysis.					*			
Phromit Suitur:				_Percent Ash:				
Density:		·		باهو/بطاني				
Heet Capacity:							sīu/	
Other Food Con				· · ·				
If empliments, in	مديمه في جمعت	t of fuel used for s	nee herine:			- Manusauses		
NA								
		nervire) and methe	_		٠.			
ALL LIC	NUID AND	SULID WAS	STE TO GY	PSUM POND				
Stack Height:		ow Characteristical	-			د د		
Gas Flow Reter	35000				k Diameter:			
		- 4.0		ACFM GM	k Diameter:			
				ACFM GM				
				ACFM GM				
				ACFM GM				
				ACFM GM				
		- 4.0		ACFM GM	Ezit Tempereture:			
		- 4.0	TON IV: INCINI	, ACFM Gas	Ezit Tempereture:			
Weter Vepor Co		- 4.0	TON IV: INCINI	ACFM GM - % ERATOR INFORMA	Ezit Tempereture:		Type VI (Solid By-prod.)	
Ween Vepor Co	Type Q	- 4.0	NOT APP	ACFM GM	Exit Temperature:	Type V	Sorid	
Type of Wases Liss/Hr. Incureress	Type G	Type !	NOT APP Type II (Refuse)	ERATOR INFORMAL LICABLE Type III (Garbage)	Exit Temperature:	Type V	Sorid	
Type of Wases Liss/Hr. Inconvented	Type Q (Plantocal	Type (Rubbish)	NOT APP Type (I (Refuse)	ERATOR INFORMAL LICABLE Type HII (Gartespa)	Exit Temperature:	Tyce V (Lic. & Ges Sy-prost.)	(Soriet By-prod.)	
Veces Vepos Co You of Wester Libs./Hr. Incomment	Type O (Passace)	Type (Problem)	NOT APP Type II (Refuse)	ACFM Gas RATOR INFORM LICABLE Type III (Garbage)	Exit Temperature: Type (V (Peanslogical)	Tyce V (Lie. & Gos By-prost.)	(Soild By-prod.)	
"you of Warm Libs./Hr. Incommunic	Type O (Planuce)	Type (Problem)	NOT APP Type (I (Refuse)	ACFM Gas RATOR INFORM LICABLE Type III (Garbage)	Exit Temperature: Type (V (Pethological)	Tyce V (Lie. & Gos By-prost.)	(Solid By-prod.)	

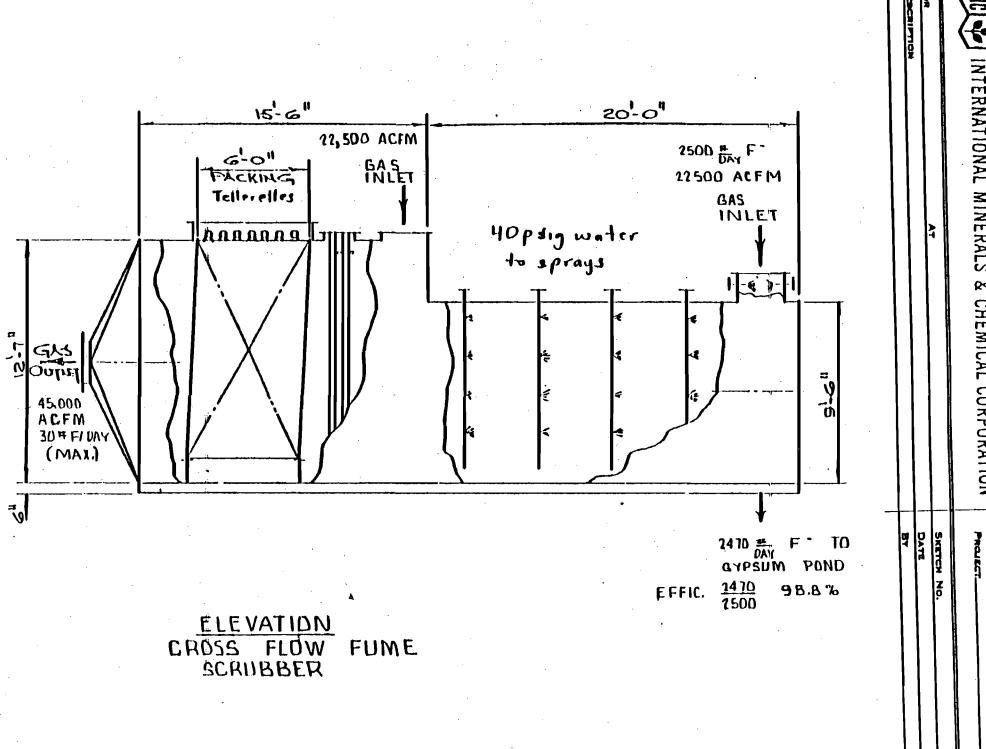
08# Form 12-1 (Jan. 78) Page 4 of 5

	Vaturne			Temp. (°F)	
	(12)3	(STU/hr.)	Туре	BTU/hr.	
Primery Chamber					
scondary Chamber -					
ck Height:	ft. Stack Diem	our:8	tack Temp.:		
Flow Rene:		DSCFM*			
50 or more tons per t	day design capacity, submit t	he emissions rate in grains per st	ancerd cubic fo	oot dry gas com	ected to 50% excess eir.
e of Pollution Comm	al Device:] Cyclone []	Wet Scrubber		[] Afterturrer
] Other (Specify):			
	• •	rol Device:			
	• •	•			
f Description of Ope	veting Cherecteristics of Con-	nol Device:			
f Description of Ope	veting Cherecteristics of Con-	•			
of Description of Ope	veting Cherecteristics of Con-	nol Device:			
f Description of Ope	veting Cherecteristics of Con-	nol Device:			
f Description of Ope	veting Cherecteristics of Con-	nol Device:			

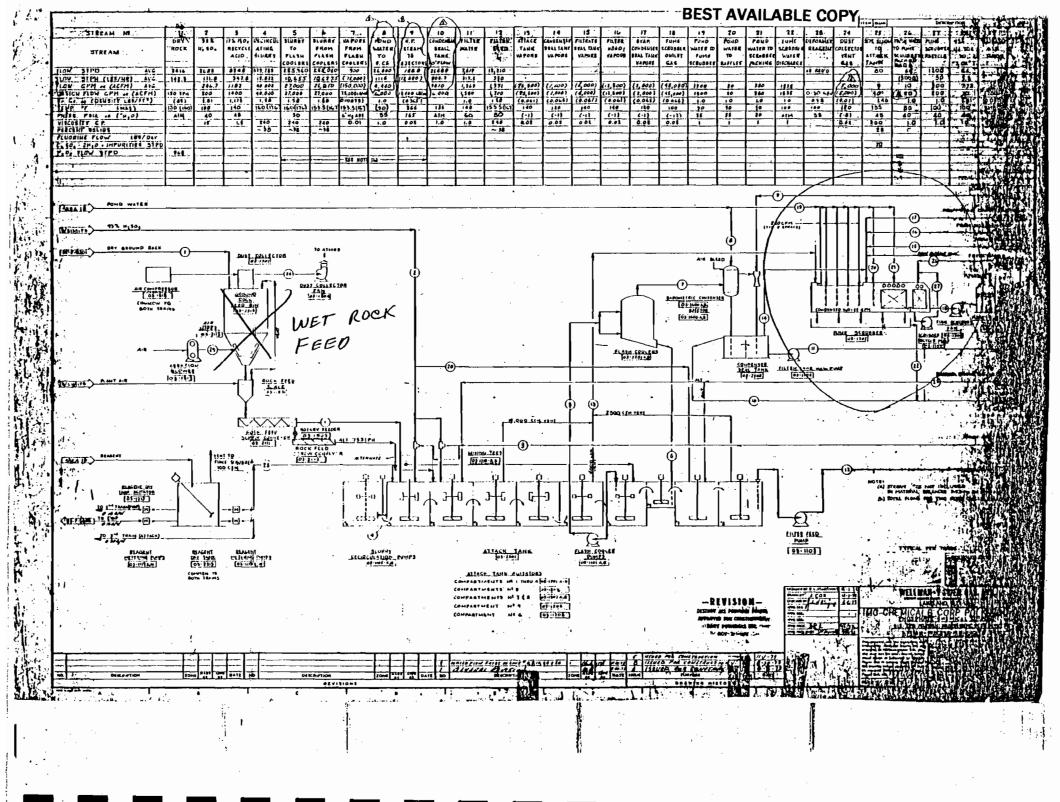
SECTION V: SUPPLEMENTAL REQUIREMENTS

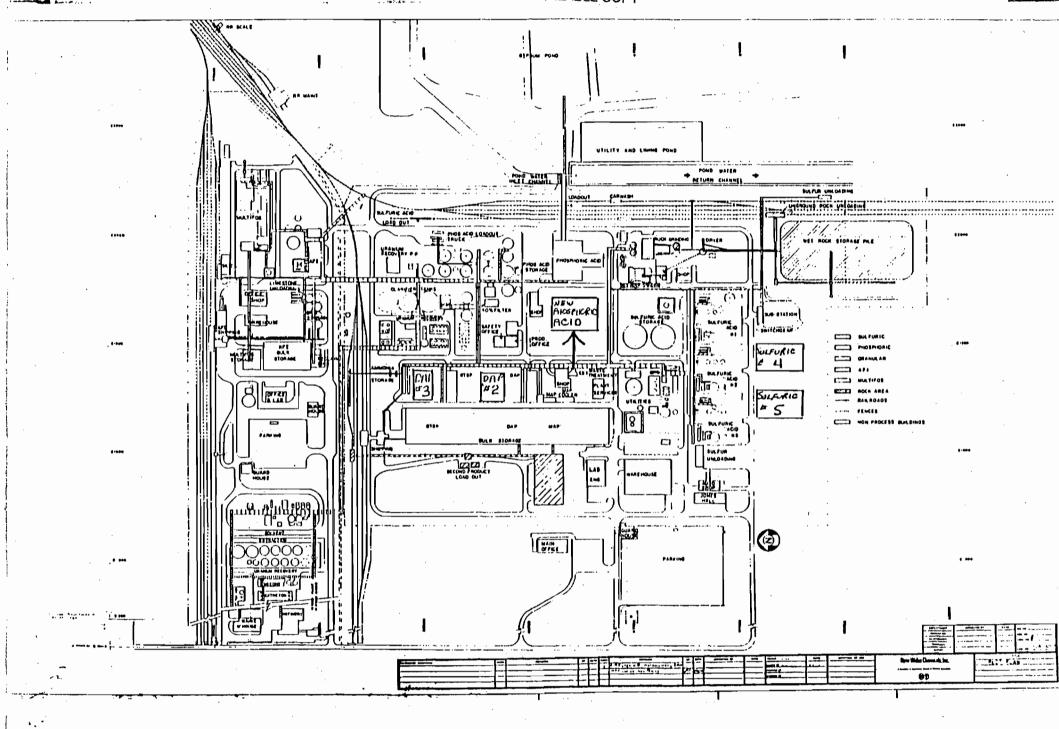
Please Provide the Pollowing Supplements Required For All Pollotian Sources

- 1. Total process input rese and product weight show derivation.
- 2. Efficiency examination of control device(s) show derivation. Include pertinent test and/or design data.
- An 8%" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where rew measures error, where solid and liquid waste exit, where gaseous emissions and/or airporne persides are evolved and where finished products are consisted.
- An 8%" x 11" plot pian of facility showing the exact location of manufacturing processes and outlets for aircome emissions. Relate all flows to she flow diagram.
- 5. An 8%" x 11" plot plan showing the exect location of the establishment, and points of sirborne emissions in relation to the surrounding area, residences and other permanent structures and resolverys. (Example: Copy of USGS topographic med.)
- Description and steach of storm water control measures taken both during and after construction.
- 7. An application tea of \$20.00, unless exampled by Chapter 174.05(3), FAC, made payable to the December of Environmental Regulation.
- With construction permit spolication, include design details for control devicets). Example: for beginning, include cloth to air retia; for couper, include cross-sectional sketch; etc.
- 9. Certification by the P.E. with the operation permit application that the source was constructed as shown in the construction permit application.



MC (INTERNATIONAL MINERALS & CHEMICAL CORPORATION





HARRY L CARROLL
Vice President
Florida



INTERNATIONAL MINERALS & CHEMICAL CORPORATION

November 22, 1978

Mr. T. L. Craig Vice President & General Manager New Wales Chemicals, Inc. Post Office Box 1035 Mulberry, Florida 33860

Dear Tom:

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Very truly yours,

Harry L. Carroll

STATE OF FLORIDA

DEPARTMENT OF STATE - DIVISION OF CORPORATIONS

I certify from the records of this office that IMC CHEMICALS CORP., changed its name to: NEW WALES CREATCALS, IMC., is a corporation organized under the Laws of the State of Delaware; authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.



GIVEN under my hand and the Great
Seal of the State of Florida, at
Tallahasers, the Capital, this the
1st day of June
1977.

Au Contilla



STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

_ [X] New¹ [] Existing¹

APPLICATION TYPE: [X] Construction [] Operation [] Mo	dification
COMPANY NAME: New Wales Chemicals, Inc.	COUNTY: POlk
Identify the specific emission point source(s) addressed in this applic No. 2, Ges Fired) DAP Plant With Venturi And	cation (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit Tailgas Scrubbers
SOURCE LOCATION: Street Highway 640-Hillsbo	County Line City Mulberry
UTM: East 396.7	County Line 3079.4
Latitude ' "N	Longitude ' 'W
APPLICANT NAME AND TITLE: Thomas L. Craig, V	ice-President & General Manager
APPLICANT ADDRESS: P. O. Box 1035, Mulber	ry, Florida 33860
SECTION I: STATEMENTS BY A A. APPLICANT I am the undersigned owner or authorized representative* of _N	•
pollution control source and pollution control facilities in su Florida Statutes, and all the rules and regulations of the depar- granted by the department, will be non-transferable and I will I	wheage and belief. Further, I agree to maintain and operate the ich a manner as to comply with the provision of Chapter 403, ritment and revisions thereof. I also understand that a permit, if promptly notify the department upon sale or legal transfer of the
	Signed:
	Name and Title (Please Type)
·	Date: 8-31-79 Telephone No. 813-428-2531
B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (W	
be in conformity with modern engineering principles applicable permit application. There is reasonable assurance, in my professory maintained and operated, will discharge an effluent that concludes and regulations of the department. It is also agreed that it cant a set of instructions for the proper maintenance and operat sources. (Affix Seal) STATE OF ORION ADDITION ORION MO. 18595	control project have been designed/examined by me and found to e to the treatment and disposal of pollutants characterized in the sssional judgment, that the pollution control facilities, when proposinglies with all applicable statutes of the State of Florida and the ne undersigned will furnish, if authorized by the owner, the application of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution of the pollution control facilities and, if applicable, pollution dispersions with all some pollution of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities and, if applicable, pollution dispersions of the pollution control facilities, when propositions and the control facilities, when propositions dispersions dispersions of the State of Florida and the control facilities and the control facilities, when propositions dispersions dispersions are control facilities, when propositions dispersions dispersion

¹See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)
DEB_FORM 17-1.122(16) Page 1 of 10

SOURCE TYPE: Air Pollution

SECTION II: GENERAL PROJECT INFORMATION

ioilowed by				ride removal
	-			-
CHITSSIOIS :	COM THIS DIANT			
	covered in this application (•••	
Start of Construction	n July, 1980	Com	pletion of Construction	July, 1983
				or individual components/ur and with the application for the
Estimated	purchase and ins	stallation	cost \$6,000,0	00, for scrubbi
systems.				
				
Indicate any previo	us DER permits, orders and	notices associated 4	vith the emission point,	including permit issuance at
None	•			
				
				·
and Chapter 22F-2	Florida Administrative Code	2?Yes	No.	uant to Chapter 380, Florida
and Chapter 22F-2 Normal equipment	Florida Administrative Code	24 ; stays/wk	X_No 6 6 ; wks/yr 5	uant to Chapter 380, Florida O ; If power plant, hrs/yr
and Chapter 22F-2 Normal equipment	Florida Administrative Code operating time: hrs/day	24 ; stays/wk	X_No 6 6 ; wks/yr 5	
and Chapter 22F-2 Normal equipment	Florida Administrative Code operating time: hrs/day	24; stays/wk	X_No 6 6 ; wks/yr5	
and Chapter 22F-2 Normal equipment	Florida Administrative Code operating time: hrs/day	24; stays/wk	X_No 6 6 ; wks/yr5	0 ; If power plant, hrs/yr
and Chapter 22F-2, Normal equipment if seasonal, describe	Florida Administrative Code operating time: hrs/day	24; stays/wk	X_1No 6 6 ; wks/yr 5	① ; If power plant, hrs/yr
and Chapter 22F-2, Normal equipment if seasonal, describe	Florida Administrative Code	e?Yes 24; stays/wk	X_1No 6 6 ; wks/yr 5	① ; If power plant, hrs/yr
and Chapter 22F-2, Normal equipment if seasonal, describe	Florida Administrative Code operating time: hrs/day	e?Yes 24; stays/wk	X_1No 6 6 ; wks/yr 5	O ; If power plant, hrs/yr _
And Chapter 22F-2, Normal equipment if seasonal, describe this is a new sour 1. Is this source in: a. If yes, has to	Florida Administrative Code operating time: hrs/day	e? Yes 24 ; stays/wk awer the following a marticular pollutant?	X_No 6 6 : evks/yr 5	O ; If power plant, hrs/yr _
and Chapter 22F-2, Normal equipment if seasonal, describe this is a new sour. 1. Is this source in a. If yes, has to the this seasonal this source in the this source in the this seasonal this seaso	Florida Administrative Code operating time: hrs/day	e? Yes 24 ; stays/wk awer the following a marticular pollutant?	X_No 6 6 : evks/yr 5	O ; If power plant, hrs/yr _
And Chapter 22F-2, Normal equipment if seasonal, describe this is a new sour this this source in a. If yes, has to the Tryes, has the tryes, has the tryes, this troops the tryes, the trye	Florida Administrative Code operating time: hrs/day	e? Yes 4 ; stays/wk swer the following a particular pollutant?	X_No 6 6 : evks/yr 5	O ; If power plant, hrs/yr _
And Chapter 22F-2, Normal equipment if seasonal, describe this is a new sour this this source in a. If yes, has to the Tryes, has the tryes, has the tryes, this troops the tryes, the trye	Florida Administrative Code operating time: hrs/day	e? Yes 24 ; stays/wk swer the following a sersioular pollutant?	X_No 6 6 : eviks/yr5 assessions. (Yes or No) -	O ; If power plant, hrs/yr _
and Chapter 22F-2, Normal equipment if seasonal, describe if seasonal, describe if this is a new source in a. If yes, has to b. If yes, has to c. If yes, has to c. If yes, list no	Florida Administrative Code operating time: hrs/day	e? Yes 4 ; stays/wk	X_No 6.6: wks/yr_5 austions. (Yes or No)	O ; If power plant, hrs/yr _
and Chapter 22F-2, Normal equipment if seasonal, describe this is a new sour 1. Is this source in a. If yes, this to b. If yes, this to	Florida Administrative Code operating time: hrs/day	e? Yes 4 ; stays/wk	X_No 6.6: wks/yr_5 austions. (Yes or No)	O ; If power plant, hrs/yr _
and Chapter 22F-2, Normal equipment if seasonal, describe if seasonal, describe if this is a new source in a. If yes, has to b. To yes, a section VI. 2. Does the State	Prevention of Significant	e? Yes 4 ; stays/wk awer the following a particular pollutant? Rate been applied?	X_No 6 6 : evics/yr5 positions. (Yes or No) -	O ; If power plant, hrs/yr _
and Chapter 22F-2. Normal equipment if seasonal, describe if seasonal, describe if this is a new sour 1. Is this source in a. If yes, has to b. If yes, has to c. If yes, hist no 2. Does thest evaluate Section VI. 3. Does the State expply to this exe	Prevention of Significant 1 roe? If yes, see Sections 1 in 1	aver the following a servicular pollutant? Rate been applied? The poly to the service of VII is a servic	X_No 6 6 : evics/yr5 positions. (Yes or No) -	O ; If power plant, hrs/yr _
and Chapter 22F-2. Normal equipment if seasonal, describe if seasonal, describe if this is a new sour 1. Is this source in a. If yes, has to b. If yes, has to c. If yes, hist no 2. Does thest evaluate Section VI. 3. Does the State expply to this exe	Prevention of Significant 1 roo? If yes, see Sections 1 for a sections 1 for a section of the se	aver the following a servicular pollutant? Rate been applied? The poly to the service of VII is a servic	X_No 6 6 : evics/yr5 positions. (Yes or No) -	O ; If power plant, hrs/yr _

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization	Dalan as Flow Birms
Description —	Туре	% Wt	Rate - lbs/hr	Relate to Flow Diagram
Phosphoric acid	F	2.0	70 TPH (P205)	Reactors/Venturi Scrubbers
Ammonia	-	_	30 TPH	Reactors/Granulators

В.	Drocore	Pota i	f ennliceble:	(See Section V	/ Item 1\
D.	L 1 (CC23)	mate, i	i applicable.	Jame Section A	, 160111 1/

1. Total Process Input Rate (lbs/hr): _____140 TPH

2. Product Weight (lbs/hr): 140 TPH

C. Airborne Contaminants Emitted:

None of	Emission ¹		Allowed Emission ²	Allowable ³	Potential Emission ⁴	Relate
Name of Contaminant	Maximum lbs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr T/yr	to Flow Diagram
Fluoride	4.0/ ≤ 1	6.5	0.06 lbs F/ton	≤ 4.0	unknown	stacks
	j.		P205			
Particulate	38.0/≦	150.0	process wt.	≦ 38.0	unknown	stacks/
					·	bag coll.
Ammonia	10.0/≦	40.0	not regulated			stacks
SO2	Intermi	ttent				stacks

D. Control Devices: (See Section V, Item 4)

	Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles ⁵ Size Collected (in microns)	Basis for Efficiency (Sec. V, It ⁵
4 <u>/</u> ea.	Venturi Scrubbers	F	to comply		
		Part.	with std.		
- 4/ea.	Tailgas Scrubbers	F		<u></u>	
		Part.	·		
⊥/ea.	Bag Collector	Part.		·	_ (
_					

¹See Section V, Item 2.

⁵If Applicable

DER FORM 17-1.122(16) Page 3 of 10

²Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. — 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard

⁴Emission, if source operated without control (See Section V, Item 3)

E. Fuel

Type (Be Specific)			Consu	mption*		Maximum Heat Input		
Type (Be Specific)			avg/hr max./		/hr	(MMBTU	IMBTU/hr)	
#6 Fuel Oi	1	Ir	ntermitten	t ·				
	 .							
						<u> </u>		
Units Natural Gas,	MMCE/hr Fuel	Oils herrelefter	Cost thefor	· · · · · · · · · · · · · · · · · · ·				
rel Analysis:			550., 152					
•	2.5			ercent Ash:	0.02			
			stos/gail T			.15		
			BTU/Ib _					
•			rtion):					
The Total Contains	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	y comp an pons						
If applicable.	indicate the new	ent of fuel area	for space heating.	Annual Ave		Marrianian		
				•	a 9e	**********		
		~	nethod of disposal,		-			
			recycled to		•			
All lia	uid waste	will be	routed to	cooling	pond.			
	k Geometry and	Flow Cheracter	istics (Provide dat	for each stack	١٠.	• .		
Emission Stac Stack Height: Gas Flow Ra	k Geometry and Stack hei blower di te: 250,000	Flow Character gh±s 120 scharge DSCFM TO	istics (Provide data 80' tr S	s for each stack tack Diameter: ias Exit Tempe): 6	00°	1	
Emission Stac Stack Height: Gas Flow Ra	k Geometry and Stack hei blower di te: 250,000	Flow Character ghts 120 scharge DSCFM TO	istics (Provide dat	e for each stack tack Diameter; ias Exit Tempe (elocity:	6! ea 6! ea 65	00°	1	
Emission Stac Stack Height: Gas Flow Ra	k Geometry and Stack hei blower di te: 250,000	Flow Character ghts 120 scharge DSCFM TO	istics (Provide data 80' ft S DT. ACFM G	e for each stack tack Diameter; ias Exit Tempe (elocity:): 6	00°	1	
Emission Stac Stack Height: Gas Flow Ra	k Geometry and Stack hei blower di te: 250,000	Flow Character gh±s 120 scharge DSCFM TO	istics (Provide date 80'	e for each stack tack Diameter: ias Exit Tempe elocity:	6' ea 6' ea 65	00°		
Emission Stac Stack Height: Gas Flow Ra	k Geometry and Stack hei blower di te: 250,000	Flow Character gh±s 120 scharge DSCFM TO	istics (Provide date 80'	e for each stack tack Diameter: ias Exit Temper alocity:	6' ea 6' ea 65	00°		
Emission Stac Stack Height: Gas Flow Ra	k Geometry and Stack hei blower di te: 250,000 Content: 2-5	Flow Character ghts 120 scharge DSCFM TO	istics (Provide date 80' t S	e for each stack tack Diameter: es Exit Temper elocity: TOR INFORM.	6' ea 65 ATION	00°		
Emission Stac Stack Height: Gas Flow Ra Water Vapor (k Geometry and Stack hei blower di te: 250,000	Flow Character gh±s 120 scharge DSCFM TO	istics (Provide date 80'	e for each stack tack Diameter: ias Exit Temper alocity:	6' ea 6' ea 65	Type V	Type V!	
Emission Stac Stack Height: Gas Flow Ra Water Vapor (k Geometry and Stack he: blower d: blower d: content: 2-5	Flow Character ah±s 120 scharge DSCFM TO SECTION	istics (Provide data 80' 1 S DT. ACFM G IV: INCINERA Not ap	tack Diameter: as Exit Temper elocity: TOR INFORM.	6 ea 65 Type TV	00°	Type VI (Solid	
Emission Stac Stack Height: Gas Flow Ra Water Vapor I	Type D	Flow Character ah±s 120 scharge DSCFM TO SECTION	istics (Provide data 80' 1 S DT. ACFM G IV: INCINERA Not ap	tack Diameter: tack Diameter: tas Exit Tempe slocity: FOR INFORM. plicable Type 111 (Garbage)	6 ea 65 Type TV	Type V (Ling & Gas By-prod.)	Type VI (Solid	
Emission Stac Stack Height: Gas Flow Ra Water Vapor I	k Geometry and Stack he: blower d: blower d: content: 2-5	Flow Character ah±s 120 scharge DSCFM TO SECTION	istics (Provide data 80' ft S OT. ACFM G 1V: INCINERA Not ap Type 1! (Refuse)	s for each stack tack Diameter: as Exit Temper elocity: FOR INFORM. plicable Type III (Garbage)	6 ea 65 Type TV	Type V (Liq & Gas Byend.)	Type VI	
Emission Stac Stack Height: Gas Flow Ra Water Vapor I	Type D (Plastics)	Flow Character ghts 120 scharge DSCFM TO SECTION Type 1 (Rubbish)	istics (Provide data 80' ft S OT. ACFM G 1V: INCINERA Not ap Type 1! (Refuse)	tack Diameter: tack Diameter: tas Exit Tempe slocity: FOR INFORM. plicable Type III (Garbage)	6 ea ature: 1 65 ATION Type IV (Pathological)	Type V (Ling & Gas By-prod.)	Type VI (Solid By-prod.)	
Emission Stack Height: Stack Height: Gas Flow Ra Water Vapor I Type of Waste	Type D [Plastics)	Flow Character ghts 120 scharge DSCFM TO SECTION Type 1 (Rubbish)	istics (Provide data 80' ft S OT. ACFM G IV: INCINERA Not ap Type 11 (Refuse)	e for each stack track Diameter: es Exit Tempe elocity: TOR INFORM. plicable Type 111 (Gerbege)	6 ea ature: 1 65 ATION Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)	
Emission Stack Height: Stack Height: Gas Flow Ra Water Vapor I Water Vapor I Waste Stack Height Incine	Type D [Plastics)	Flow Character gh±s 120 scharge DSCFM TO SECTION Type 1 (Rubbish)	istics (Provide date 80' ft SOT. ACFM GOT. ACF	tack Dismeter: tack Dismeter: tas Exit Temper elocity: FOR INFORM plicable Type III (Garbage)	6 ea ature: 1 65 ATION Type IV (Pathological)	Type V (Liq & Gas Byprod.)	Type V! (Solid By-prod.)	
Emission Stack Height: Stack Height: Gas Flow Ra Water Vapor I Type of Waste	Type D [Plastics)	Flow Character ghts 120 scharge DSCFM TO SECTION (Rubbish)	istics (Provide date 80' ft SOT. ACFM GOT. ACF	tack Diameter: tack Diameter: tas Exit Tempe elocity: FOR INFORM plicable Type III (Garbage)	6 ea ature: 1 65 Type IV (Pathological)	Type V (Liq & Gas Byprod.)	Type VI (Solid By-prod.)	
Emission Stack Stack Height: Sas Flow Ra Water Vapor I Water Vapor I Water Vapor I Water Vapor I Waste Stack Height Waste	Type D [Plastics) Type D [Plastics] For of Hours of L Type Type D [Plastics]	Flow Character ghis 120 scharge DSCFM TO SECTION Type 1 (Rubbish)	istics (Provide date 80' ft SOT. ACFM GOT. ACF	s for each stack track Diameter: as Exit Tempe slocity: FOR INFORM plicable Type 111 (Gerbege)	6 ea ature: 1 65 Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type V! (Solid By-prod.)	

imary Chamber condary Chamber ck Height: Flow Rate: 50 or more tons per day designes air. se of pollution control device: If description of operating charact	f	ACFM	ions rate in grains	DSCFM® Velocity per standard cubic foot of	FP!
condary Chamber ck Height: Flow Rate: 50 or more tons per day design air. se of pollution control device: If description of operating character imate disposal of any effluent oth	Capaci	ACFM	ions rate in grains	DSCFM® Velocity per standard cubic foot of	FP pas corrected to 50% ex
Flow Rate: 50 or more tons per day design air. se of pollution control device: [of description of operating characteristics are control devices of description of operating characteristics are disposal of any effluent others.	Capaci	ACFM	ions rate in grains	DSCFM® Velocity per standard cubic foot of	FP pas corrected to 50% ex
Flow Rate: 50 or more tons per day designes air. The of pollution control device: If description of operating characteristics are disposal of any effluent others.	Capaci	ACFM	ions rate in grains	DSCFM® Velocity per standard cubic foot of	FP: dry gas corrected to 50% ex
50 or more tons per day design is air. The of pollution control device: [In description of operating characters of the control of the characters of the control of the characters of the control of the control of the characters	capaci	ity, submit the emiss	ions rate in grains	per standard cubic foot o	dry gas corrected to 50% ex
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of description of operating characters of the characters of any effluent others.		cione [] Wet Scru	hhar [] Afteri		h.i
of description of operating characters of the characters of any effluent others.	1 Cv				· T
imate disposal of any effluent oth					
	teristic	s of control devices: .			
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				· · ·	
					<u> </u>
					
·	er tha	n that emitted from t	he stack (scrubbe	r water, ash, etc.):	
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		·			
·					
<u> </u>					

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- With construction permit application, include design details for all air pollution control systems (e.g., for beginning include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of sirborne-emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8%" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate : all flows to the flow diagram.

- An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

Contaminant	Rate or Concentration
Fluorides	0.060 lbs/ton of P205 feed
	
	
<u> </u>	
Has EPA declared the best available control tach	nology for this class of sources (If yes, attach copy) [] Yes/ 🖂
Conterninant	Rate or Concentration
Committee	Tigle of Goracination
	
	<u> </u>
What emission levels do you propose as best avai	ilable control technology?
Conteminent	Rate or Concentration
Fluorides	≤ 0.060 lbs/ton P205 feed
1 2402 2403	
Describe the existing control and treatment such	• •
1. Control Device/System: Teller des	ign coaxial venturis with a horizontal
1. Control Device/System: Teller des	ign coaxial venturis with a horizontal
1. Control Device/System: Teller des 2. Operating Principles: packed bed Condensation	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact.
1. Control Device/System: Teller des 2. Operating Principles: packed bed Condensation 3. Efficiency: to meet standard	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. s4. Cobs Coax: 3,000,000.00
1. Control Device/System: Teller des 2. Operating Principles: Dacked bed Condensation 3. Efficiency: to meet standard 5. Destul Life: life of plant	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. Capital Coax: 3,000,000,00
1. Control Device/System: Teller des 2. Operating Principles: packed bed 2. Operating Principles: Condensation 3. Efficiency: to meet standard 5. Design Life: life of plant 7. Energy: 8.5 x 106 KWH/VI	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. s4. Cobs Coax: 3,000,000.00
1. Control Device/System: Teller des 2. Operating Principles: Dacked bed Condensation 3. Efficiency: to meet standard 5. Destul Life: life of plant	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 4. Captal Coax: 3,000,000,00 5. Opening Coax: 10-15% of raw mate
1. Control Device/System: Teller des 2. Operating Principles: packed bed 2. Operating Principles: Condensation 3. Efficiency: to meet standard 5. Design Life: life of plant 7. Energy: 8.5 x 106 KWH/VI	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. 4. Captal Coax: 3,000,000,00 5. Opening Coax: 10-15% of raw mater. 8. Management Cost
1. Control Device/System: Teller des 2. Operating Principles: packed bed 2. Operating Principles: Condensation 3. Efficiency: to meet standard 5. Design Life: life of plant 7. Energy: 8.5 x 106 KWH/Vrg. 2017 9. Emissions:	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 4. Captal Coax: 3,000,000,00 5. Opening Coax: 10-15% of raw mate
1. Control Device/System: Teller des 2. Operating Principles: packed bed 2. Operating Principles: Condensatir 3. Efficiency: to meet standard 5. Desful Life: life of plant 7. Energy: 8.5 x 106 KWH/Vr. 9. Emissions: Contaminant Fluoride	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. Capital Coax: 3,000,000,00 6. Operating Coax: 10-15% of raw mate 8. Maintenance Coax: Coax 8. Maintenance Coax: Coax 8. Maintenance Coax: Coax 9. Maintenance
1. Control Device/System: Teller des 2. Operating Principles: Dacked bed Condensation 3. Efficiency: to meet standard 5. Desful Life: life of plant 7. Energy: 8.5 x 106 KWH/vr. 9. Emissions: Contaminent Fluoride Particulate	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. Capital Coax: 3,000,000,00 6. Operating Coax: 10-15% of raw mate 8. Maintenant Coax: 10-15% of raw mate 9. Western Concentration 10.05 lbs/ton P205 input
1. Control Device/System: Teller des 2. Operating Principles: packed bed 2. Operating Principles: Condensatir 3. Efficiency: to meet standard 5. Desful Life: life of plant 7. Energy: 8.5 x 106 KWH/Vr. 9. Emissions: Contaminant Fluoride	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. Capital Coax: 3,000,000,00 6. Operating Coax: 10-15% of raw mate 8. Maintenance Coax: Coax: Plant Coax: 10-15% input Plant Coax: 10-15% input Drocess Wt. 11mics
1. Control Device/System: Teller des 2. Operating Principles: Dacked bed Condensation 3. Efficiency: to meet standard 5. Desful Life: life of plant 7. Energy: 8.5 x 106 KWH/vr. 9. Emissions: Contaminent Fluoride Particulate	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. Capital Coax: 3,000,000,00 6. Operating Coax: 10-15% of raw mate 8. Maintenant Coax: 10-15% of raw mate 9. Western Concentration 10.05 lbs/ton P205 input
1. Control Device/System: Teller des 2. Operating Principles: Dacked bed Condensation 3. Efficiency: to meet standard 5. Useful Life: life of plant 7. Energy: 8.5 x 106 KWH/yrg.co. 9. Emissions: Contaminant Fluoride Particulate Ammonia	ign coaxial venturis with a horizontal scrubber. on, absorption, and inertial impact. 5. Capital Coax: 3,000,000,00 6. Operating Coax: 10-15% of raw mate 8. Maintenance Coax: Coax: Plant Coax: 10-15% input Plant Coax: 10-15% input Drocess Wt. 11mics
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10. Stack Parameters

a. Height: 100

ft. b. Diameter: 6

ft.

c. Flow Rate:

100,000

ACFM d. Temperature: 100-110

٥F

e. Velocity: 60

FPS

- Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).
 - 1. Teller design low pressure drop coaxial venturi scrubbing with
 - a. Control Device: crossflow wet packed bed tailgas scrubbing.
 - b. Operating Principles: Condensation, absorption and inertial impact.
 - c. Efficiency*: to meet standards . d. Capital Cost: dependent on plant size
 - e. Useful Life: life of plant
- f. Operating Cost: operation and maintenance
- g. Energy*: dependent on plant size h. Maintenance Cost: cost est. to be 10-15% of
- i. Availability of construction materials and process chemicals:

raw material cost

Good

- i. Applicability to manufacturing processes: Add on system to control emissions.
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

Proven technology

2.

- a. Control Device: Coaxial venturi with vertical packed bed scrubber.
- b. Operating Principles: Condensation, absorption and inertial impact.
- c. Efficiency: to meet standards d. Capital Cost: dependent on plant size
- e. Useful Life: life of plant f. Operating Cost: & maintenance 10-15%
- g. Energy **: dependent on plant sizeh. Maintenance Costs: of raw material cost
- i. Availability of construction materials and process chemicals:

Good

- Applicability to manufacturing processes: Add on system to control emissions.
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

Proven technology

- *Explain method of determining efficiency.
- **Energy to be reported in units of electrical power KWH design rate.

3.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

^{*}Explain method of determining efficiency above.

•	i.	Availability of construction materials and process of	hemio	als:
	j.	Applicability to manufacturing processes:		
,	k.	Ability to construct with control device, install in a	waiiab	le space and operate within proposed levels:
•	4.			
	a.	Control Device		
	b.	Operating Principles:		
	C.	Efficiency*:	d.	Capital Cost:
	€.	Life:	f.	Operating Cost:
	g.	Energy:	ħ.	Maintenance Cost:
	i.	Availability of construction materials and process of	hemic	als:
	j.	Applicability to manufacturing processes:		
	k.	Ability to construct with control device, install in a	delieve	ele space, and operate within proposed levels:
F. D	escrib	e the control technology selected:		
	1. Co	mrol Device: Coaxial venturi with	ver	tical packed bed tailgas scrubber.
	2. Eff	iciency*: to meet standards	3.	Capital Cost: \$6,000,000.00
	4. Lif	e: life of plant	5.	Operating Cost: Estimated combined cost
	6. En	ergy: 16 x 10 ⁶ KWH/yr.	7.	Maintenance Cost: to be 10-15% of raw material cost
	8. Ma	nutacturer: Davy McKee Lakeland,	Inc	
	9. O ti	her locations where employed on similar processes:		
	æ.	Similar scrubbing system des	ign	ed by D. M. Weatherly.
		(1) Company: USS Agri-Chemical	.s	
	·	(2) Mailing Address: Box 150		
		3) Dity: Bartow	-44)	Summe: Florida 33830
		(5) Environmental Manager: Jim Carrol	.1	•
		(6) Telephone No.: 813-533-0471		
*Expl	ain m	ethed of determining efficiency above.		
		(7) Emissions*:	1.	Maria Contraction of the Contrac
	Fluo	Conteminant Conteminant	=	Rate or Concentration 0.06 lbs/ton P205 process input
-	Par	ticulate Additional Control of the Additiona	رد	rocess wt. limits
·	S02	10000000000000000000000000000000000000	ับ	nknown
	Ammo	onia	- 11	HUDOWN TO THE RESERVE OF THE PARTY OF THE PA
	ъ.			
	ে । ১৯৪৫ কু	[1] Company: Proper language Sale and the		
	i de la compansión de l	(2) Malling Address		
	2	(B) Chy:	341)	
Appli	cent n	nust provide this information when available Shoul	dition	information mot be evaluable, applicant must state the season(s)
why.	, . T : ,;	C. AMBRICA CO.		

(5)	Environmental	Manager
(3)	CUAILOUMBUITA	MISSISSIET.

- (6) Telephone No.:
- (7) Emissions*:

Contaminan	т

Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

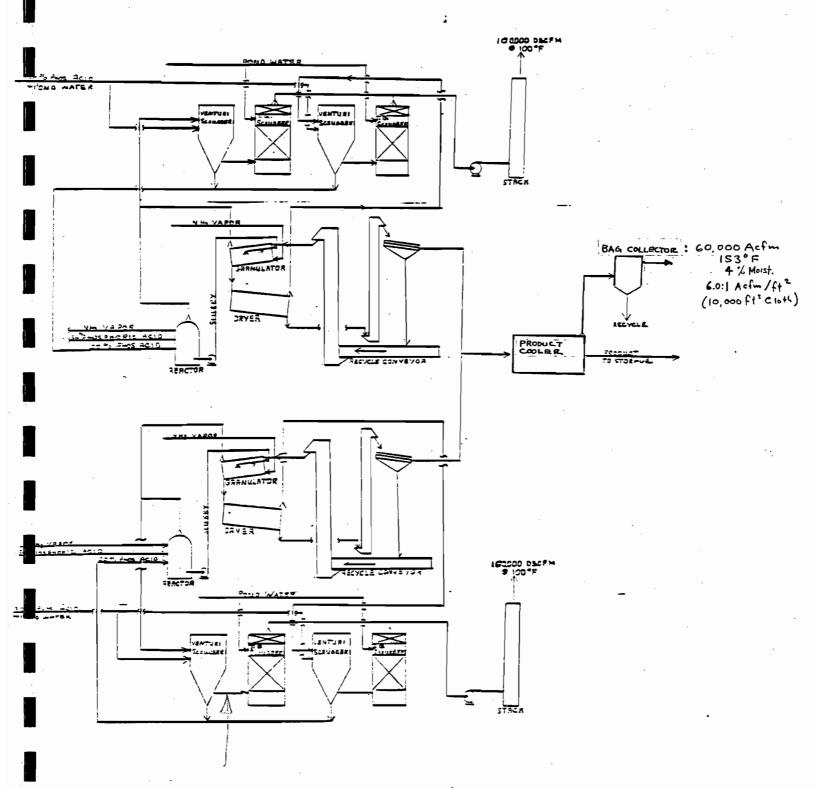
New Wales has had extensive conversations with DAP plant operators and their environmental personnel in this area. Because of our contacts we have concluded that the <u>vertical packed tailgas</u> scrubber, which is currently in use at USS Agri-Chemicals, is the most efficient fluoride removal device currently available.

^{*}Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION PSD data to be submitted separately. Company Monitored Data _ no sites _ Period of monitoring month day month Vear Other data recorded . Attach all data or statistical summaries to this application. 2. Instrumentation, Field and Laboratory Was instrumentation EPA referenced or its equivalent? _____ Yes _____ No Was instrumentation calibrated in accordance with Department procedures? _____ Yes _____ No __ b) Unknown В. Meteorological Data Used for Air Quality Modeling vear 2. Surface data obtained from (location) _ 3. Upper air (mixing height) data obtained from (location) 4. Stability wind rose (STAR) data obtained from (location) ___ C. Computer Models Used ______ Modified? If yes, attach description. Modified? If ves. attach description. Modified? If yes, attach description. Modified? If ves. attach description. Attach copies of all final model runs showing input data, receptor locations, and principle output tables. D. Applicants Maximum Allowable Emission Data **Pollutant Emission Rate** TSP _ grams/sec 50^2 _ grams/sec E. Emission Data Used in Modeling Attach list of emission sources. Emission date required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time. Attach all other information supportive to the PSD review.

- *Specify bubbler (B) or continuous (C).
- G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.



DAP PLANT WITH OUAL REACTOR/GRANULATORS - COMMON COOLER



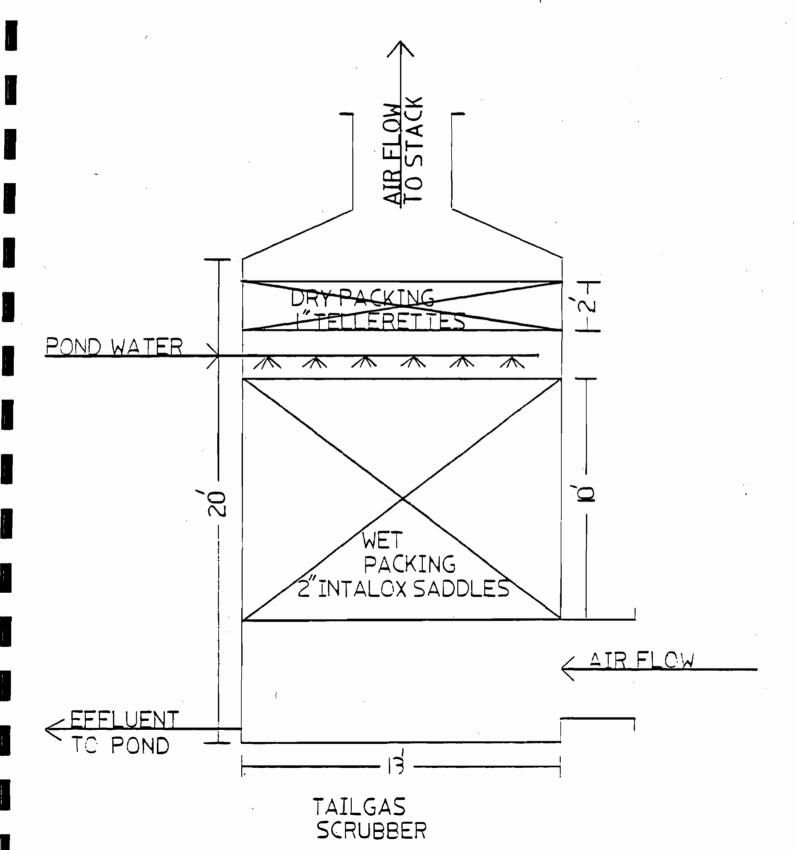
INTERNATIONAL MINERALS & CHEMICAL CORPORATION

PROJECT DAP PLANT

FOR AT SKETCH NO. |

DESCRIPTION DATE 8/29/79

BY ALC-



HARRY L CARROLL
Vice President



INTERNATIONAL MINERALS & CHEMICAL CORPORATION

November 22, 1978

Mr. T. L. Craig Vice President & General Manager New Wales Chemicals, Inc. Post Office Box 1035 Mulberry, Florida 33860

. Dear Tom:

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Very truly yours,

Harry L. Carroll

DEPARTMENT OF STATE - DIVISION OF CORPORATIONS

I certify from the records of this office that INC CHEMICALS CORP., enanged its name to; NEW WALES CHEMICALS, INC., is a corporation organized under the Laws of the State of Delaware, authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

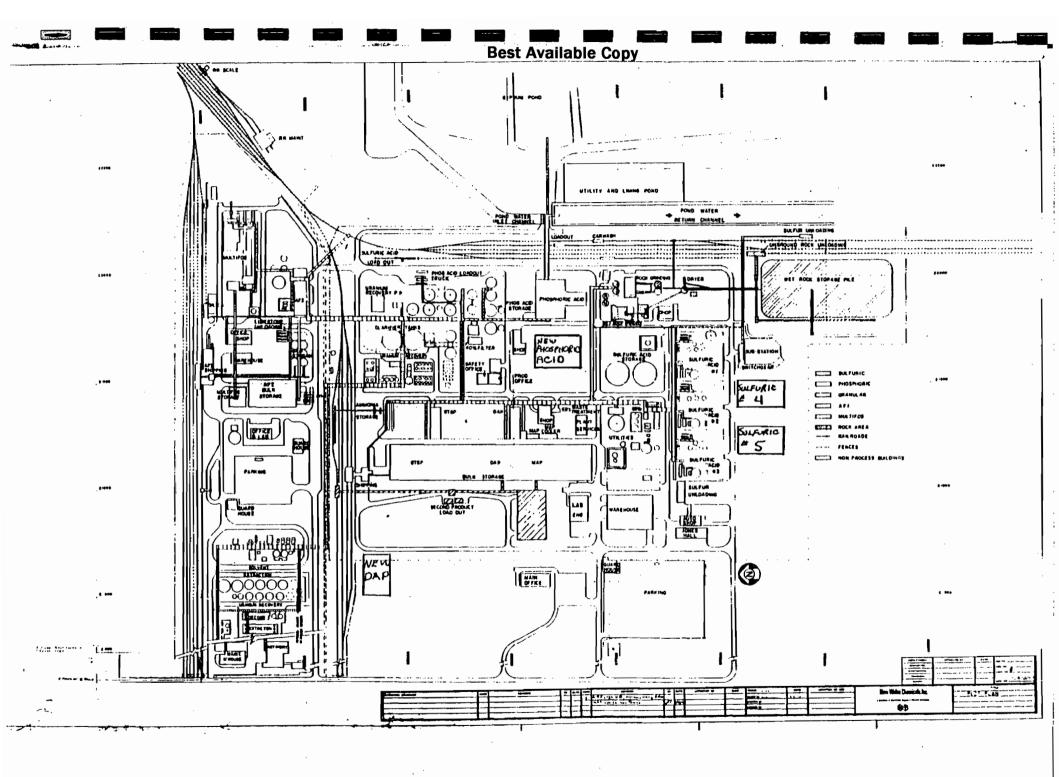
I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.

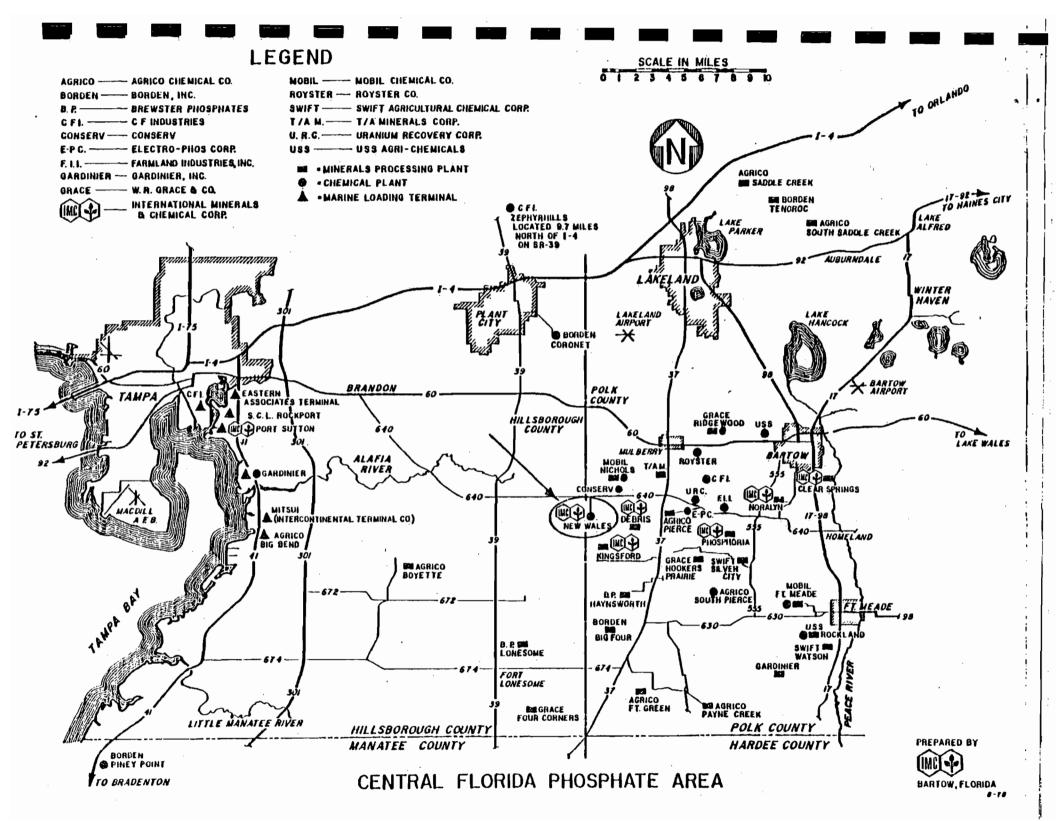


GIVEN under my hand and the Great Seal of the State of Florida, at Tallahasere, the Capital, this the lat day of June

1977.

Bue Consider







DEPARTMENT OF ENVIRONMENTAL REGULATION APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

plication Type: [X] Construction [] Operation	[] Modification [] Renewel of DER Permit No.
mpany Nama: New Wales Chemicals, Inc.	county: Polk
entify the specific emission point source(s) addressed in this a	application (i.e.: Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2,
ed): GTSP Truck/Rail Loadout With I	
urce Location: Street: P. O. Box 1035	City: Mulberry
UTM: Esst 396.7	North3079.4
Latitude: ° "N.	
opl. Name and Title:	
ol, Address:	•
APPLICANT I am the undersigned owner or authorized representative of*	New Wales Chemicals, Inc.
tiam the cudersidued dwilet or anthorized teblessuifities of .	
pollution control facilities in such a manner as to comply v	construction de belief. Further, I agree to maintain and operate the pollution control source with the provisions of Chapter 403, Florida Statutes, and all the rules and regulations are permit, if granted by the Department, will be nontransfereble and I will pronounce the provisions of Chapter 403, Florida Statutes, and all the rules and regulations are permitted establishment.
true, correct and complete to the best of my knowledge an pollution control facilities in such a manner as to comply violate the Department and revisions thereof. I also understand the	de belief. Further, I agree to maintain and operate the poliution control source with the provisions of Chapter 403, Florida Statutes, and all the rules and regulation as permit, if granted by the Department, will be nontransferable and I will pronount establishment. Your Vice-President & Gen.
true, correct and complete to the best of my knowledge an pollution control facilities in such a manner as to comply wo fithe Department and revisions thereof. I also understand they notify the Department upon sale or legal transfer of the pe	de belief. Further, I agree to maintain and operate the poliution control source with the provisions of Chapter 403, Florida Statutes, and all the rules and regulation at a permit, if granted by the Department, will be nontransferable and I will pronormitted establishment. Yice—President & Gen. Signature of the Owner or Authorized Representative and Title
true, correct and complete to the best of my knowledge an pollution control facilities in such a manner as to comply wo fithe Department and revisions thereof. I also understand the ly notify the Department upon sale or legal transfer of the performance. Craig	de belief. Further, I agree to maintain and operate the poliution control source with the provisions of Chapter 403, Florida Statutes, and all the rules and regulation at a permit, if granted by the Department, will be nontransferable and I will pronormitted establishment. Yice—President & Gen. Signature of the Owner or Authorized Representative and Title
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true, correct and complete to the best of my knowledge an pollution control facilities in such a manner as to comply v of the Department and revisions thereof. I also understand the policy true Department upon sale or legal transfer of the performance. Craig Name of Person Signing (please Type or Print)	Signature of the Owner or Authorized Representative and Title Date: Output R. 1977 Telephone No.
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SECTION II: GENERAL PROJECT INFORMATION

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SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES

(other than incinerators)

A. Raw Materials and Chemicals Used in Your Process:

Description	Utilization Rate Ibs./hr.	Relate to Flow Disgram
GTSP	150	loadout

B.	Decree	Rate
₽.	PTOCHE	nau.

11 Total Process Input Rate (lbs./hr.): 150 TPH

2) Product Weight (lbs/hr): 150 TPH

C. Airborne Contaminants Discharged:

Name of . Contaminant		kctual charge*	Allowed Discharge Rate Per Ch. 17-2, F.A.C.**	Allowable Discharge *** (lbs./hr.)	Ralate to Flow Diagram
	lbs./hr.	T/yr.			
particulate	1.63	7.10	process wt.	38.6	blower discharge
		Ţ		1.	
		_			
		- 			
	<u> </u>		<u>'</u>		

D. Control Devices:

Name and Type (Model and Serial No.)	Contaminent	Efficiency†	Range of Particles Size Collected (in microns)	Basis for Efficiency ††
mikro-pulsaire	particulate	99.9	< 1 micron	design
#2215-8-TR-20		1 .	1	
mikro-pulsaire	11	99.9	< 1 micron	design
#180S-8-TR-20				
		!	1	1
•			\	

^{*}Estimate only if this is an application to construct.

DER Form 12-1 (Jan. 78) Page 3 of 5

^{**}Specify units in accordance with emission standards prescribed within Section 17-2.04, F.A.C. (e.g. Section 17-2.04(6)(e)1.a. specifies that new fossil fuel steam generators are allowed to emit particulate metter at a rate of 0.1 lbs. per million BTU heat input computed as a maximum 2-hour metrer.)

^{***}Using above example for a source with 260 million BTU per hour heat input: C.1 lbs x MMETU = 26 lbs./hr.

[†]See Supplemental Requirements, page 5, number 2.

[†]Thindicate whether the efficiency value is based upon performance testing of the device or design data.

Type (Be Specific)			Consumption*			Maximum	
		avg_/h	ır.	Max_/hr.		Heat (nout (MMBTU/hr)	
			: -	<u>-</u>			
· · · · · · · · · · · · · · · · · ·	<u> </u>						
its: Natural Ge	- MMCF/hr.; F	uet Oils, Cost - lbs./h	r.				
Fuel Analysis:							
Percent Suifur:			· - · -	_Percant Ash:	· .		 -
Dansity:				_ib./gai.			
Heat Capacity:				_8TU/Ib			81
Other Fuel Cor	itaminants:						
					al Aversos:		
SOIId Wa	ste to st	corage					
Emission Stack Stack Height:	Geometry and	Flow Characteristics	(provide data for	each stack): _ ft.	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate	Geometry and 100	Flow Characteristics	(provide data for	each stack): _ft. Stac , ACFM Gas			_
Emission Stack Stack Height: Gas Flow Rate	Geometry and	Flow Characteristics	(provide date for	each stack): _ft. Stac , ACFM Gas	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate	Geometry and 100	Flow Characteristics	(provide date for	each stack): _ft. Stac , ACFM Gas	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate	Geometry and 100	Flow Characteristics	(provide date for	each stack): _ft. Stac , ACFM Gas	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate	Geometry and 100	Flow Characteristics	(provide date for	each stack): _ft. Stac , ACFM Gas	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate	Geometry and 100	Flow Characteristics 8500 ent	(provide data for	each stack): _ft. Stac , ACFM Gas	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate	Geometry and 100	Flow Characteristics 8500 ent	(provide data for	each stack): _ft. Stac . ACFM Gas _%	x Diameter: 1.5		
Emission Stack Stack Height: Gas Flow Rate Water Vapor C	Geometry and 100	Flow Characteristics 8500 ent	(provide data for	each stack): _ft. Stac . ACFM Gas _%	x Diameter: 1.5		Type V (Said
Emission Stack Stack Height: Gas Flow Rate Water Vapor C	Geometry and 100 . 10500/8 ambi	Flow Characteristics 8500 ent SECT	(provide data for	each stack): _ ft. Stack . ACFM Gas _ % ERATOR INFORM	Exit Temperature:	Type V	Type V (Said
Emission Stack Stack Height: Gas Flow Rate Water Vapor C	Geometry and 100 10500/8 ambi	Flow Characteristics 8500 ent SECT	ON IV: INCINE NA Type II	each stack): _ft. Stack . ACFM Gas _% ERATOR INFORM Type III (Garbage)	Exit Temperature:	Type V	Type V (Solid By-prod

. Model No.:

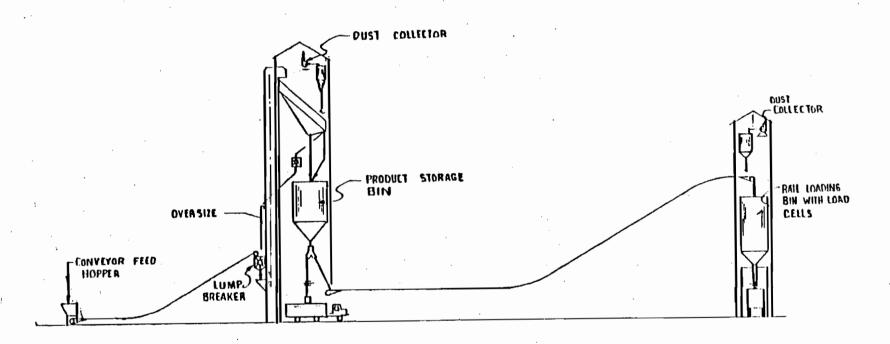
Date Constructed: .

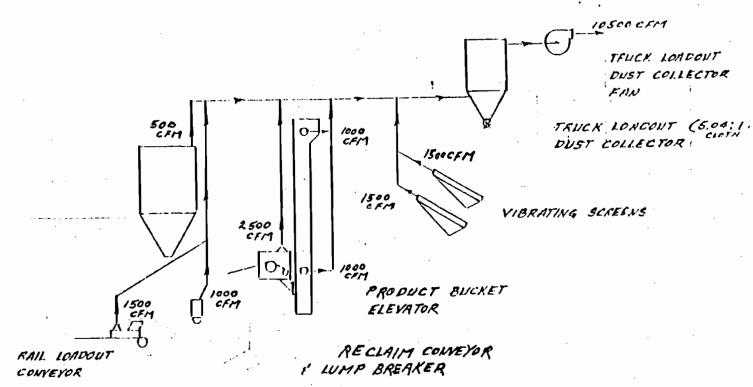
	Volume (ft.) ³	Heat Release	F	uel	Temp. (°F)	
	(TL.)~	(BTU/hr.)	Туре	BTU/hr.		
Primary Chamber	,					
Secondary Chamber						
tack Height:	ft. Stack Diamet	ter:	Stack Temp.: _	· · · · · · · · · · · · · · · · · · ·		
ias Flow Rate:	ACFM _	DSCFM*	-	•		
If 50 or more tons per day	design connectry, submit the	emissions rate in grains per :	ttancient cubic f	not dev ous come	end to 50% avenus air	
	-	_				
ype of Poliution Control D	evice: []	Cyclone [] Wet Scrubber	1] Afterburner	
-	[]	Other (Specify):				
Brief Description of Operation	ng Characteristics of Contro	ol Device:				
						
·		· .	_··-			
		<u> </u>				
Ultimate Disposal of Any Ef	fluent Other Than That En	nitted From the Stack (scrub	ber water, ash, e	tc.):		
• .						
			· · ·			
<u> </u>		· · · · · ·		· · · · · · ·	<u> </u>	
-						
·····				-	<u></u>	

SECTION V: SUPPLEMENTAL REQUIREMENTS

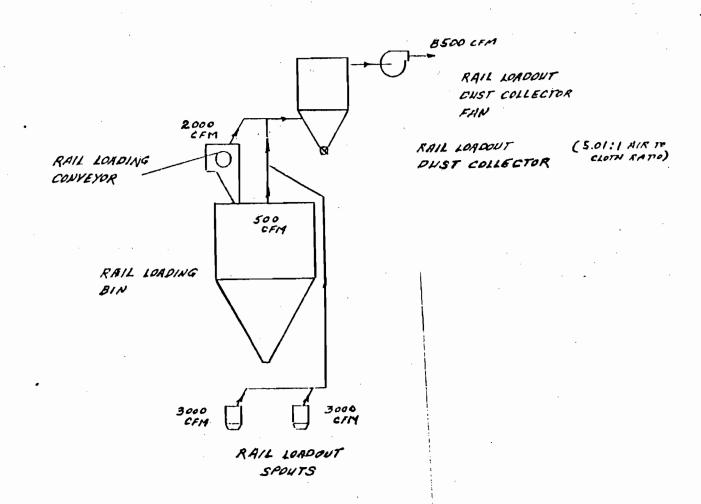
Please Provide the Following Supplements Required For All Pollution Sources:

- 1. Total process input rate and product weight show derivation.
- 2. Efficiency estimation of control device(s) show derivation. Include pertinent test and/or design data.
- An 8½" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw
 materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne perticles are evolved and where finished products are
 obtained.
- 4. An 8%" x 11" plot plen of facility showing the exact location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
- 5. An 8%" x 11" plot plan showing the exact location of the establishment, and points of airborne emissions in relation to the surrounding area, residences and other permanent structures and roadways, (Example: Copy of USGS topographic map.)
- 6. Description and skatch of storm water control measures taken both during and after construction.
- 7. An application fee of \$20,00, unless exempted by Chapter 17-4,05(3), FAC, made payable to the Department of Environmental Regulation.
- 8. With construction permit application, include design details for control device(s). Example: for baghouse, include cloth to air ratio; for scrubber, include cross-sectional sketch; etc.
- 9. Certification by the P.E. with the operation permit application that the source was constructed as shown in the construction permit application.





TRUCK LORDING SPOUT





INTERNATIONAL MINERALS & CHEMICAL CORPORATION

November 22, 1978

Mr. T. L. Craig Vice President & General Manager New Wales Chemicals, Inc. Post Office Box 1035 Mulberry, Florida 33860

Dear Tom:

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Very truly yours,

Harry L. Carroll

DEPARTMENT OF STATE - DIVISION OF CORPCRATIONS

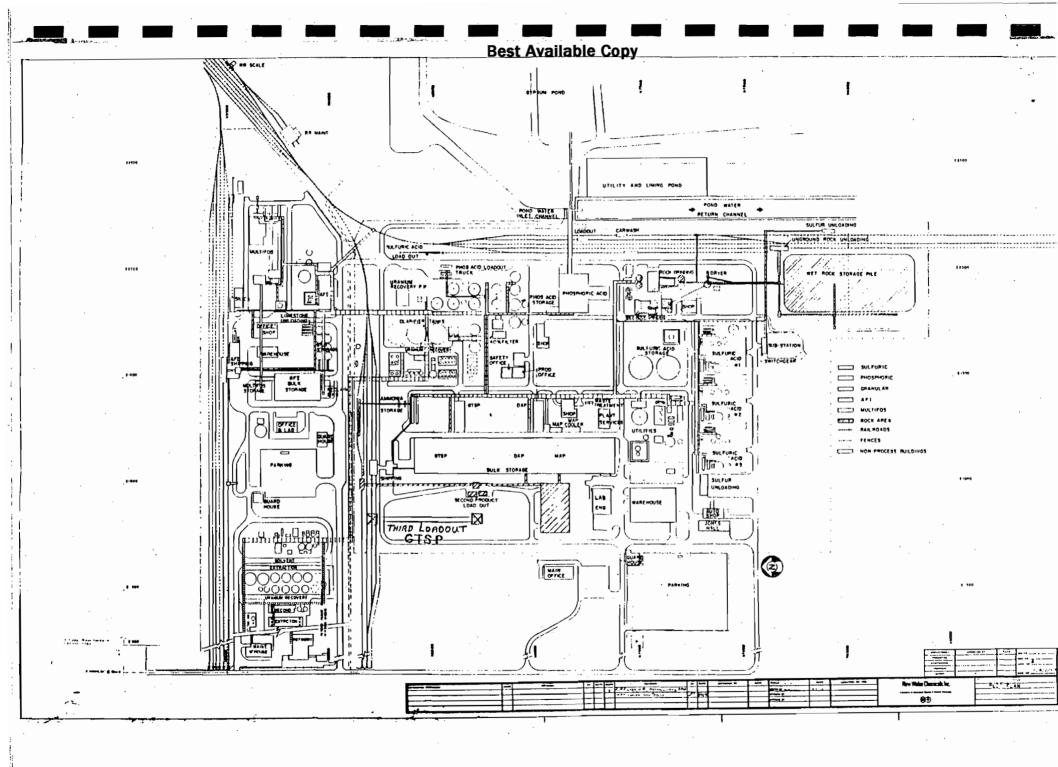
I certify from the records of this office that IMC CHEMICALS CORP., changed its name to: NEW WALES CHEMICALS, INC., is a corporation organized under the Laws of the State of Delaware, authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.



GIVEN under my hand and the Great
Seal of the State of Florida, at
Tallahassee, the Capital, this the
1st day of June
1977.

Aug O Station





DEPARTMENT OF ENVIRONMENTAL REGULATION APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

Source Type: [X] Air Pollution [] Incli	
	Modification [] Renewel of DER Permit No.
ompany Name: New Wales Chemicals, Inc.	County: POlk
	cation (i.e.: Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Ga
ired): Limestone storage with bag collector	ors at water treatment station.
ource Location: Street: P. O. Box 1035	city: Mulberry, Fl. 33860
UTM: East 396.7	North3079.4
Latitude: ° ' "N.	Longitude : ° "W.
appl. Name and Title: Thomas L. Craig, Vice-Pre	esident and General Manager
Appl. Address: P. O. Box 1035, Mulberry, Fl.	

SECTION I: STATEMENT	S BY APPLICANT AND ENGINEER
APPLICANT	
I am the undersigned owner or authorized representative of ullet	ew Wales Chemicals, Inc.
I certify that the statements made in this application for a	onstruction permit ar
	ilief. Further, I agree to maintain and operate the poliution control source and the provisions of Chapter 403, Florida Statutes, and all the rules and regulation
	the provisions of Chapter 403, Florida Statutes, and all the rules and ragulation permit, if granted by the Department, will be nontransferable and I will prompt
ly notify the Department upon sale or legal transfer of the permit	
	Homac & Gary Vice-President & Gen
Thomas L. Craig	Thank & Mary Vice-President & Gen
Name of Person Signing (please Type or Print)	Signature of the Owner or Authorized Representative and Title
	Date: (1161111 8,1919 Telephone No.: 813-428-2531
*Attach a letter of authorization.	<i>U</i>
·	
PROFESSIONAL ENGINEER REGISTERED IN FLORIDA	•
This is to certify that the engineering features of this pollution	n control project have been designed/examined by me and found to be in con
	stment and disposal of pollutants characterized in the permit application. Then pliution control facilities, when properly maintained and operated, will discharg
	te of Florida and the rules and regulations of the Department. It is also agree
that the undersigned will furnish the applicant a set of instructionand, if applicable, pollution sources.	ons for the proper maintenance and operation of the pollution control facilities
Signature: Carry A. P. Maria	D 0 D 102E
- 1 - 20	Mailing Address: P. O. Box 1035
Name: Craiq A. Pflaum (Please Type)	Mulberry, Fl.
	33860
Company Name: New Wales Chemicals, Inc.	Telephone No.: 813-428-2531
Florida Registration Number: 18595	Date:
(Affix Seal)	

SECTION II: GENERAL PROJECT INFORMATION

	net of installation. State whether the project will result in full compliance. Attach additional sheet if necessary. New Wales proposes to construct a double liming station to treat contaminated
	water for reuse internally. The treatment will consist of 1st treating the
_	contaminated water with limestone to elevate the pH of the water sufficiently
_	
	to precipitate the F. The limestone will be trucked to New Wales and hydraulica
	transferred to a storage bin. A bag collector will be employed to prevent fugit
	dust. After treatment to remove F, lime is then used to further elevate the pH
	for P2O5 removal. The lime will also be trucked to New Wales and hydraulically
	transferred to a storage bin with a bag collector.
_	
_	
ich	Start of Construction: 9/1/79 Completion of Construction: 12/1/80
un	ts of Construction. (Note: show breakdown of estimated costs only for individual components/units of the project serving pollution contropose. Information on actual costs shall be furnished with the application for operation permit.) Bag collector cost plus installation ea. \$10,000.00
	Total cost for two (2) units \$20,000.00 est.
_	
_	
	icate any previous DEA permits, orders and notices associated with the emission point, including permit issuance and expiration dates. None
1 TI	
s ti	None ne amission point considered to be a New* or Existing* source, as defined in Chapter 17-2,02(5) & (6), Florida Administrative Code? NewExisting
s ti	None ne emission point considered to be a New* or Existing* source, as defined in Chapter 17-2,02(5) & (6), Florida Administrative Code? NewExisting nis socilication associated with or part of a Development of Regional Impact (DR1) pursuant to Chapter 380, Florida Statutes, and Chapter 22, Florida Administrative Code?YeeNo
s ti	None The emission point considered to be a New* or Existing* source, as defined in Chapter 17-2.02(5) & (6), Florida Administrative Code? NewExisting This socilication associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 2., Florida Administrative Code?YeeNo The potential for water treatment is only expected to occur during the rainy
is to	ne emission point considered to be a New* or Existing* source, as defined in Chapter 17-2,02(5) & (6), Florida Administrative Code? New

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES

(other than incinerators)

A. Raw Materials and Chemicals Used in Your Process:

Description	Utilization Rate Ibs./hr.	Relate to Flow Diagram
Limestone	12 TPH	Limestone Storage
Lime	2.5 TPH	Lime Storage
Contaminated Water	2000 GPM	·

_	_	_
	Process	

2) Product Weight (lbs/hr): treated water 375 TPH	1)	Total Process Input Rate (lbs./hr.):	water/limeston	<u>e/lime</u>	514.5 TPH	
	2)	Product Weight (lbs/hr):	treated water	375 TP	·H	

C. Airborne Contaminants Discharged:

Name of Conteminant		tual harge*	Allowed Discharge	Allowable Discharge ***	Relate to Flow Diagram	
	lbs./hr.	T/yr.	Ch. 17-2, F.A.C.**	(lbs./hr.)		
Limestone	≦ 0.15	≦ 0.5	E=3.59 ^{p062} E=3.59 ^{p062}	16.8	"bag collector"	
Lime	≦ 0.03	≦ 0.1	E=3.59 ^{PU62}	6.3	11 11	
,			·			

D. Control Devices:

Name and Type (Model and Serial No.)	Contaminant	Efficiency [†]	Range of Particles Size Collected (in microns)	Basis for Efficiency ††
Mikro-pulsaire	particulate	99.9	< 1 micron	Design
bag collector				<u> </u>
Mikro-pulsaire	particulate	99.9	< 1 micron	Design
bag collector				
	-	···-·		

^{*}Estimate only if this is an application to construct.

^{**}Specify units in accordance with emission standards prescribed within Section 17-2.04, F.A.C. (e.g. Section 17-2.04(6)(e)1.a. specifies that new fossil fuel steam generators are allowed to emit particulate matter at a rate of 0.1 lbs. per million BTU heat input computed as a maximum 2-hour average.)

^{***}Using above example for a source with 260 million BTU per hour heat input: 0.1 lbs x MMBTU = 26 lbs./hr.

[†]See Supplemental Requirements, page 5, number 2.

^{††}Indicate whether the efficiency value is based upon performance testing of the device or design data.

Type (Be Specific) avg. Juits: Natural Gas - MMCF/hr.; Fuel Oils, Coal - Ibs., Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Stack Height: Emission Stack Geometry and Flow Characteristic Stack Height: Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating:] sod of disposal: rage bins.	Max./hr. — Percent Ash: — — Ib./gal. — BTU/Ib. NA Annu		Maximum:	вто
Inits: Natural Gas - MMCF/hr.; Fuel Oils, Coal - Ibs., Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating:] sod of disposal: rage bins.	— Percent Ash: —— — Ib./gal. — BTU/lb. NA Annu or each stack):	al Average:	(MMBTU/hr)	вто
Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: Emission Stack Geometry and Flow Characteristic Stack Height: 6as Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating: ! nod of disposal: rage bins. cs (provide data for	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	вто
Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevatic Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating: ! nod of disposal: rage bins. cs (provide data for	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	BTU
Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevatic Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating: ! nod of disposal: rage bins. cs (provide data for	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	BTU
Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: Emission Stack Height	space heating: ! nod of disposal: rage bins. cs (provide data for	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	BTU
Fuel Analysis: Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: Emission Stack Geometry and Flow Characteristic Stack Height: 6	space heating: ! nod of disposal: rage bins. cs (provide data for	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	BTU
Percent Sulfur: Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevation Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating:] nod of disposal: rage bins. cs (provide data fo	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	BTU
Density: Heat Capacity: Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevation Gas Flow Rate: [1600 ea. Water Vapor Content:ambient	space heating:] nod of disposal: rage bins. cs (provide data fo	Ib./gal. BTU/Ib NA Annu or each stack):	al Average:	Maximum:	BTU
Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: Emission Stack Height: Em	space heating:] nod of disposal: rage bins.	BTU/lb	al Average:	Maximum:	
Other Fuel Contaminants: If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: Stack Height: 1600 ea. Water Vapor Content: ambient	space heating:] rage bins. rage bins.	NA Annu	al Average:	Maximum:	
If applicable, indicate the percent of fuel used for Indicate liquid or solid wastes generated and meth Solid waste returned to store Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevation Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	space heating:] nod of disposal: rage bins. cs (provide data fo	NA Annu			
Indicate liquid or solid wastes generated and meth Solid waste returned to store state of the st	rage bins. rage bins.	or each stack):			
Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevatic Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	rage bins. rage bins.	or each stack):			
Emission Stack Geometry and Flow Characteristic Stack Height: est. 75 ft. elevation Gas Flow Rate: 1600 ea. Water Vapor Content: ambient	rage bins,	or each stack):		,	
Gas Flow Rate: 1600 ea. Water Vapor Content: ambient				_	
Water Vapor Content: <u>ambient</u>			k Diameter:		
			Exit Temperature: .	<u>ambient</u>	
SEC		 %			
SEC					
SEC	•				
SEC					
	TION NA INCIN	ERATOR INFORM	ATION		
3.0	TION IV. INCH	ENATOR INFORM	A11014		
· · · · · · · · · · · · · · · · · · ·	NOT APPL	ICABLE	_	1 I	
Type of Waste Type O Type t (Plastics) (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.
Lbs./Hr. Incinerated					
	1		l		
scription of Waste:					•
al Weight Incinerated (lbs./hr.):proximate Number of Hours of Operation per Day:					

. Model No.: _

Manufacturer: _____

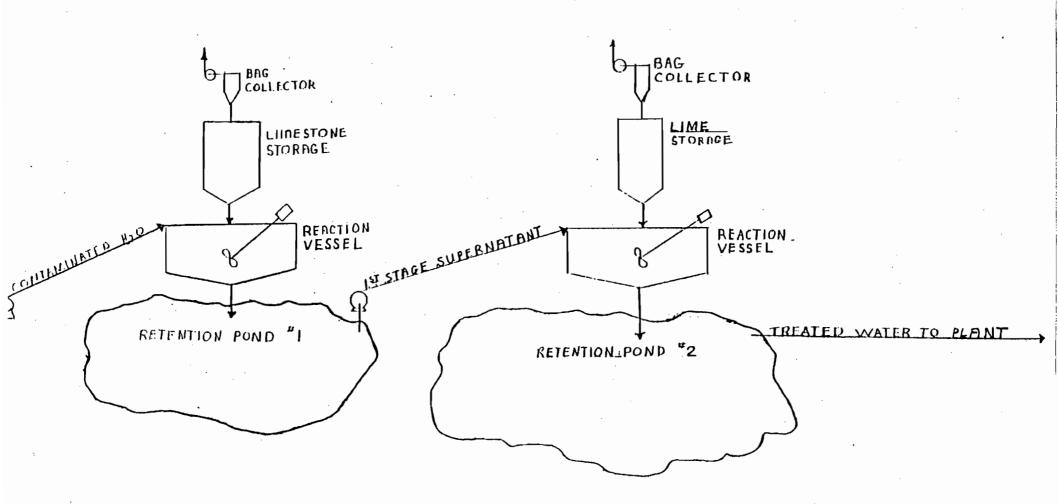
Date Constructed: _

	Volume	Heat Release	Fuel		Temp. (°F)	
	(ft.) ³	(BTU/hr.)	Type	BTU/hr.		
Primary Chamber						
Secondary Chamber						
Stack Height:	ft. Stack Diam	eter:S	itack Temp.: _		°F	
Gas Flow Rate:	ACFM	DSCFM*				
*If 50 or more tons per of Type of Pollution Control	ol Device: [Cyclone [Other (Specify):] Wet Scrubber		[] Afterburner	
Brief Description of Ope		rol Device:		-	<u> </u>	
		-				
Ultimate Disposal of Any		Emitted From the Stack (scrubb				
			·			
	·	•				
				•		

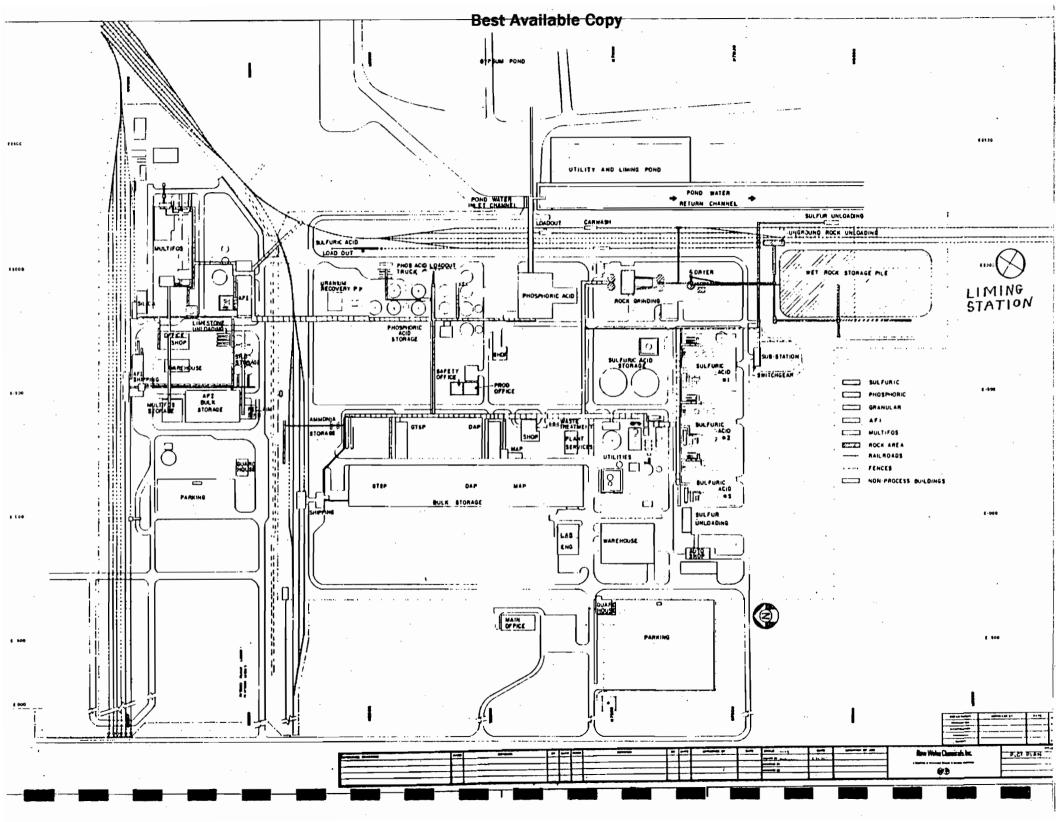
SECTION V: SUPPLEMENTAL REQUIREMENTS

Please Provide the Following Supplements Required For All Pollution Sources:

- Total process input rate and product weight show derivation.
- 2. Efficiency estimation of control device(s) show derivation. Include pertinent test and/or design data.
- An 8%" x 11" flow diagram, which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw
 materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are
 obtained.
- 4. An 8%" x 11" plot plan of facility showing the exact location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
- 5. An 8%" x 11" plot plan showing the exact location of the establishment, and points of airborne emissions in relation to the surrounding area, residences and other permanent structures and roadways. (Example: Copy of USGS topographic map.)
- 6. Description and sketch of storm water control measures taken both during and after construction.
- 7. An application fee of \$20.00, unless exempted by Chapter 17-4.05(3), FAC, made payable to the Department of Environmental Regulation.
- 8. With construction permit application, include design details for control device(s). Example: for baghouse, include cloth to air ratio; for scrubber, include cross-sectional sketch; etc.
- 9. Certification by the P.E. with the operation permit application that the source was constructed as shown in the construction permit application.



CONTAMINATED WATER TREATMENT CIRCUIT





INTERNATIONAL MINERALS & CHEMICAL CORPORATION

November 22, 1978

Mr. T. L. Craig Vice President & General Manager New Wales Chemicals, Inc. Post Office Box 1035 Mulberry, Florida 33860

. Dear Tom:

This letter is your authorization to sign on behalf of New Wales Chemicals, Inc. the various applications for permits, specifically the applications for operating permits from the Florida Department of Environmental Regulation.

Very truly yours,

Harry L. Carroll

t

DEPARTMENT OF STATE . DIVISION OF CORPCRATIONS

I certify from the records of this office that IMC CREMICALS CORP., changed its name to; NEW WALES CREMICALS, INC., is a corporation organized under the Laws of the State of Delaware, authorized to transact business within the State of Florida, qualified on the 1st day of June, 1977, under the new name.

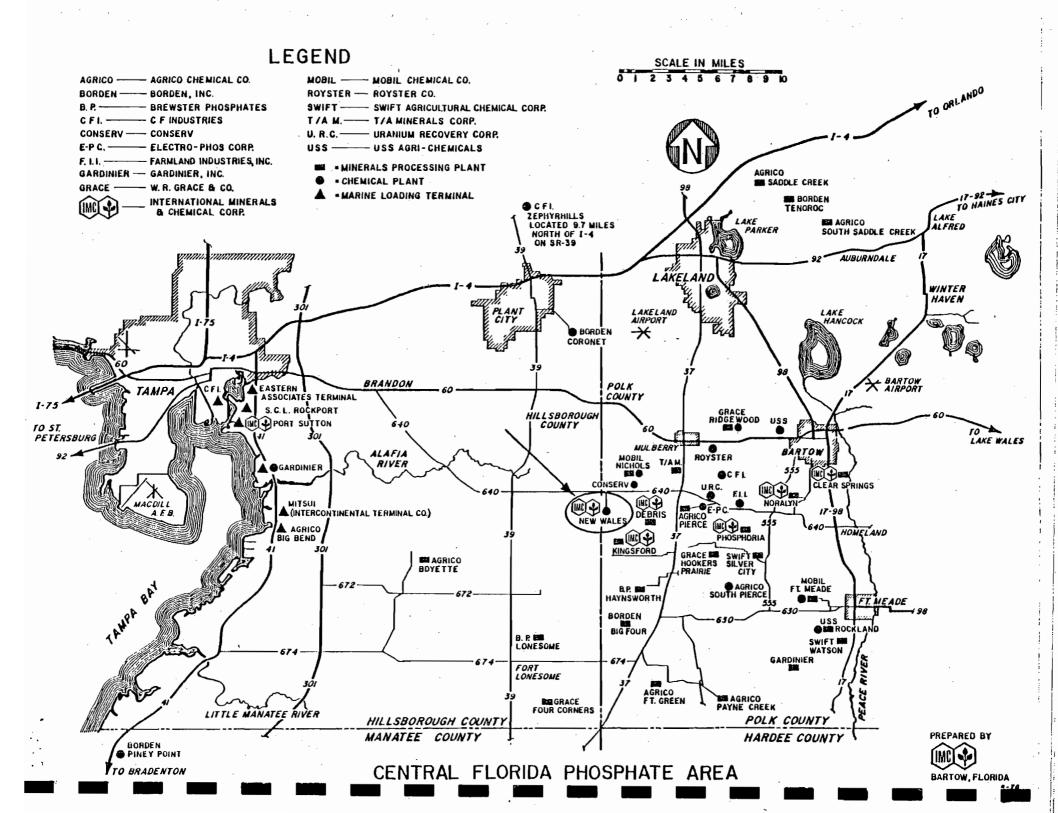
I further certify that said corporation has paid all fees due this office through December 31, 1977 and its status is active.



GIVEN under my hand and the Great
Seal of the State of Florida, at
Tallahassee, the Capitel, this the
1st day of June
1977.

Bus Constitue

SECRETARY OF STATE



SECTION 5
AIR QUALITY IMPACT

AIR QUALITY IMPACT ANALYSIS

Air quality modelling has been conducted to evaluate the impact of sulfur dioxide and particulate matter emissions from the modified New Wales facility. The modelling has established the baseline level for these pollutants and the impact of new or modified sources (all sources constructed since January 6, 1975). The impact of new or modified sources within 50 km of the New Wales complex have also been included in the air quality analysis.

The air quality modelling for both long-term and short-term impacts was conducted in accordance with guidelines established by EPA (Guideline For Air Quality Models, March 1978).

With sulfur dioxide the annual, the 24-hour and the 3-hour time periods were investigated. With particulate matter the annual period and the 24-hour period were evaluated.

The annual period was evaluated for both pollutants by using the Air Quality Display Model (AQDM). As previously stated all sources within 50 km of the New Wales Chemical Complex were included in the evaluation. Meteorological data from Tampa for the period 1970-1974 were used.

For the 24- and 3-hour periods, the CRSTER and PTMTPW models were used. The CRSTER was used to establish the meteorological conditions resulting in the highest second-high concentrations at various directions from the fertilizer complex. The meteorological data base used was for the 1970-1974 period from Tampa, Florida. Once the meteorological conditions were established, these data plus emission data from various sources were input into the PTMTPW model and the point of maximum impact was determined. Receptor spacing of 0.1 km were used in determining the point of maximum impact.

The results of the modelling are summarized in the following Table and Figures. In reviewing the Figures summarizing the short-term impacts it will be noted that in some cases the baseline concentration plus the new source impact do not add to the total calculated pollutant concentration. This is because the various concentrations were not calculated for the same exact receptors; but for different receptors in a small area. The reported values are the extremes of the calculated values.

SUMMARY OF AIR QUALITY ANALYSIS(1) NEW WALES CHEMICAL COMPANY POLK COUNTY, FLORIDA

	Air	Quality Standa	rds; AN Mysis		PSD		TSP Non-Attainment
Pollutant/ Time	Fla. Std. (ug/m ³)	Baseline (ug/m3)	& Existing Sources (ug/m ³)	Class II Increment (ug/m ³)	Calculated Increment (ug/m ³)	Fraction Increment Consumed	Calculated Impact (ug/m ³)
TSP Annual(2)	60	43	50	19	5	26.3%	<1
24-Hour(3)	150	103	115	37	22	59.5%	<1
SO ₂ Annual	60	12	15	20	5	25.0%	
24-Hour	260	128	163	91	40	44.0%	
3-Hour	1300	292	407	512	120	23.4%	

⁽¹⁾ Only the maximum impacts or pollutants levels are summarized in this Table. See Figures following for more detailed information.

⁽²⁾ Calculated concentrations include 35 ug/m^3 background.

⁽³⁾ Calculated concentrations include 65 ug/m³ background.



e de la companya de l

NEW Source

IMDACT

BASELINE

EXISTING 3

DROPOSED

ALL Sources S SINCR 1/5/75

PREPOSED N.W Sources PRE 115/75

MAXIMUM CONSCESS

(B) & B) MEDICES

TOCATHER.

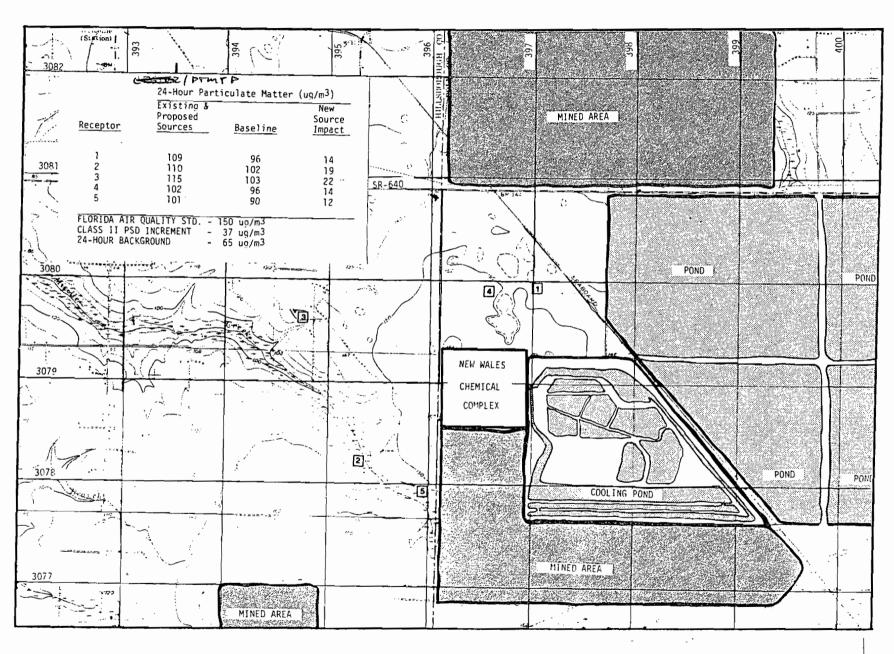


FIGURE 5-1
SUMMARY OF 24-HOUR PARTICULATE MATTER LEVELS
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

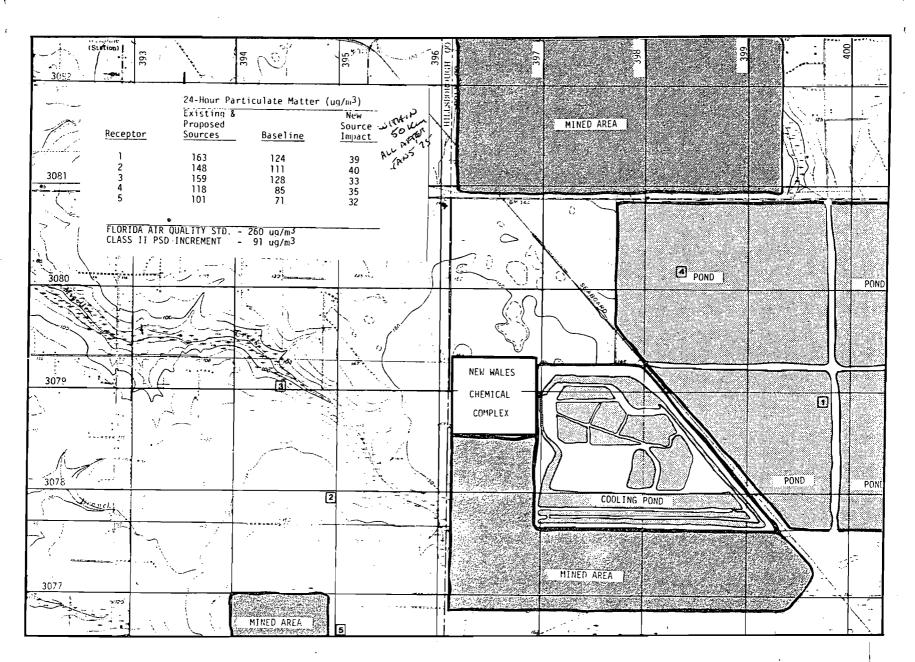


FIGURE 5-2
SUMMARY OF 24-HOUR SO₂ LEVELS
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

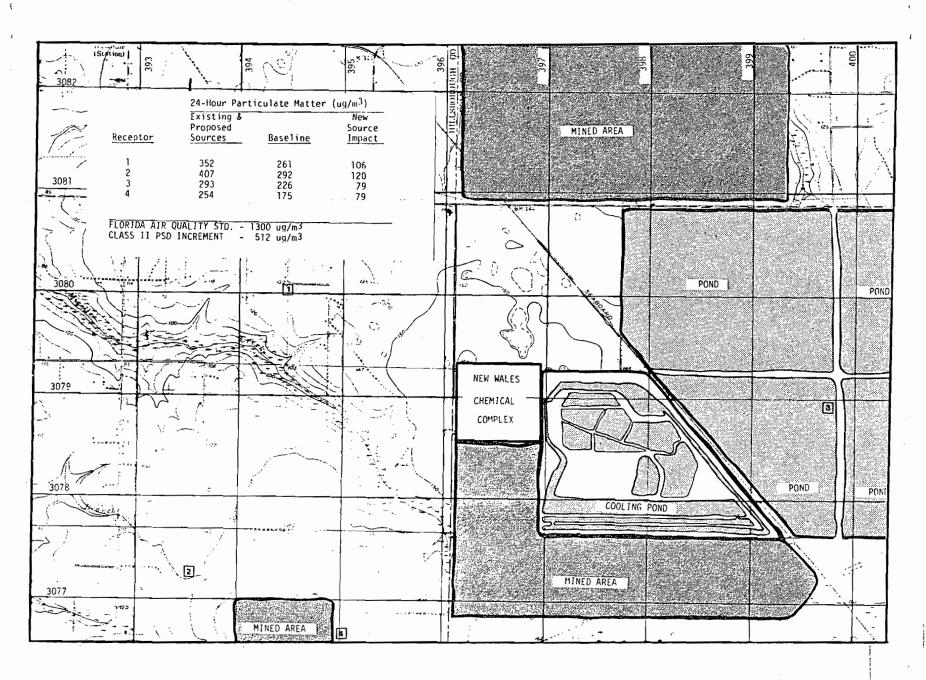


FIGURE 5-3
SUMMARY OF 3-HOUR SO₂ LEVELS
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

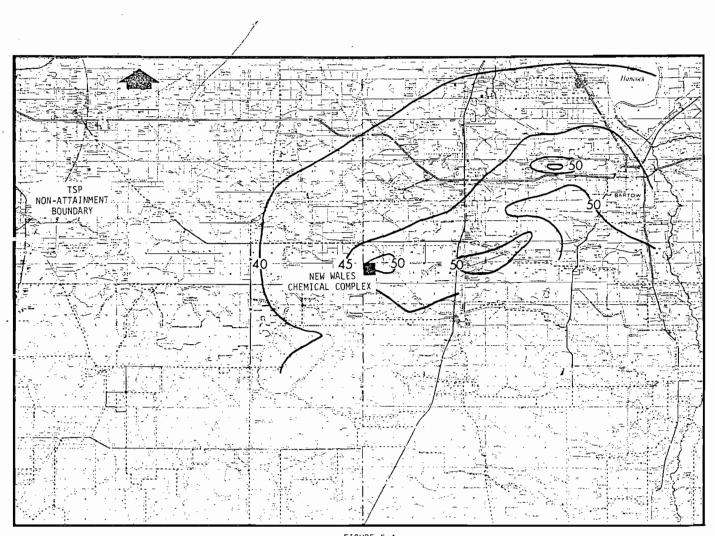


FIGURE 5-4
ANNUAL AVERAGE TSP LEVELS (ug/m³) WITH EXISTING AND PROPOSED SOURCES;
INCLUDING 35 ug/m³ BACKGROUND
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

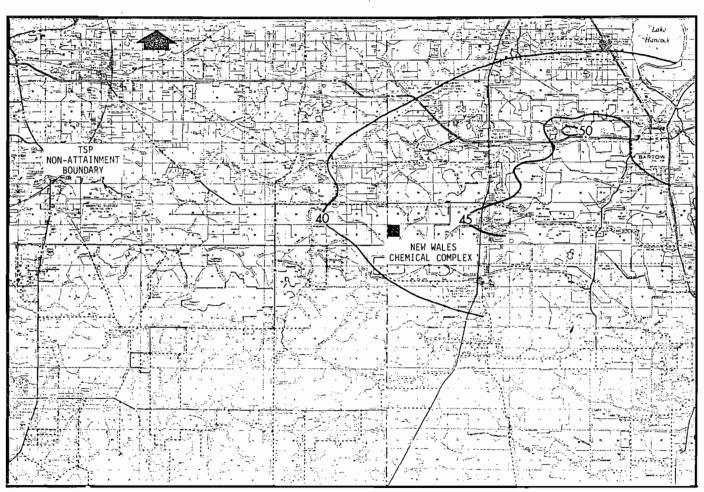


FIGURE 5-5
ANNUAL AVERAGE TSP LEVELS (ug/m³) FOR BASELINE PERIOD;
INCLUDING 35 uq/m³ BACKGROUND
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

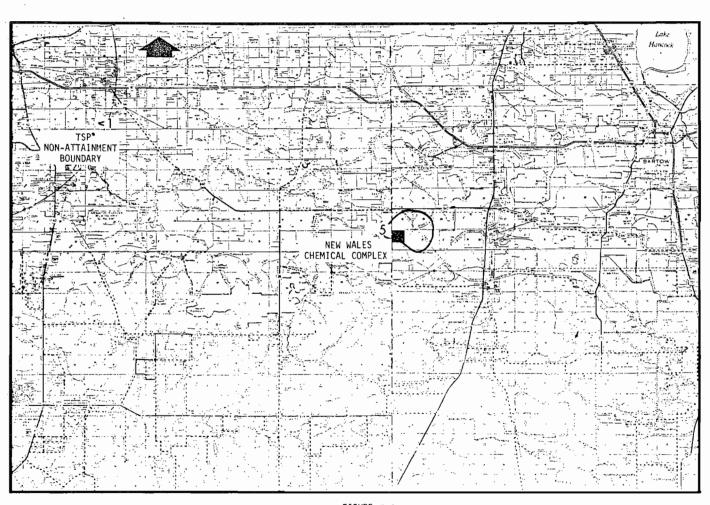


FIGURE 5-6
ANNUAL AVERAGE NEW SOURCE TSP IMPACT (ug/m³)
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

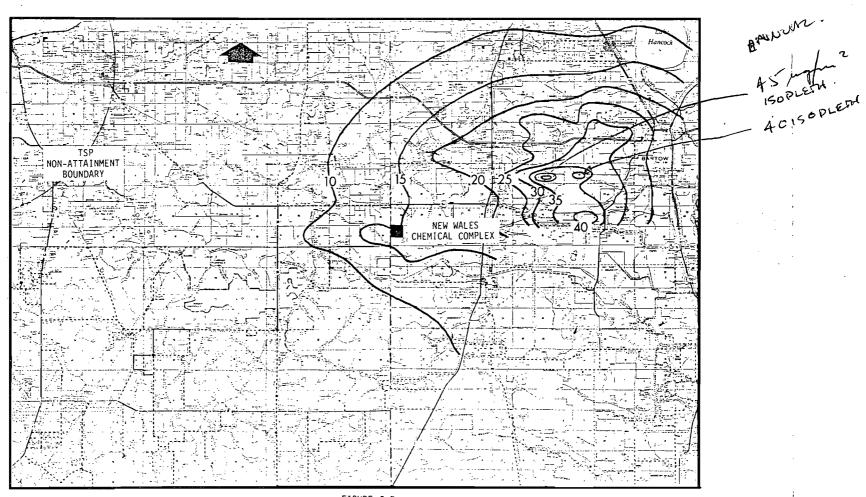


FIGURE 5-7
ANNUAL AVERAGE SO₂ LEVELS (ug/m³) WITH EXISTING AND PROPOSED SOURCES NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

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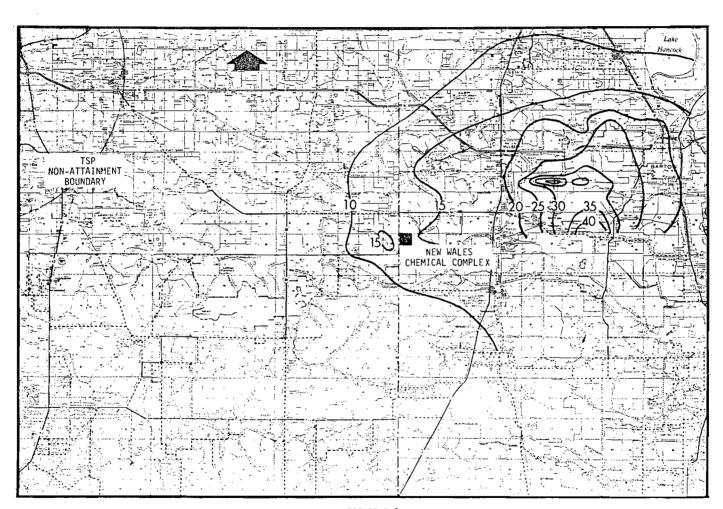


FIGURE 5-8 ANNUAL AVERAGE SO2 LEVELS (ug/m 3) FOR BASELINE PERIOD NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

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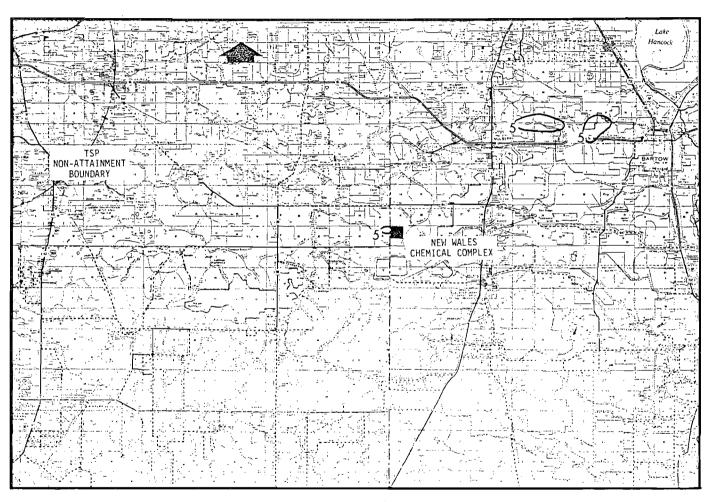


FIGURE 5-9
ANNUAL AVERAGE NEW SOURCE SO₂ IMPACT (ug/m³)
NEW WALES CHEMICAL COMPANY, POLK COUNTY, FLORIDA

SECTION 6
SECONDARY IMPACTS

SECONDARY IMPACTS

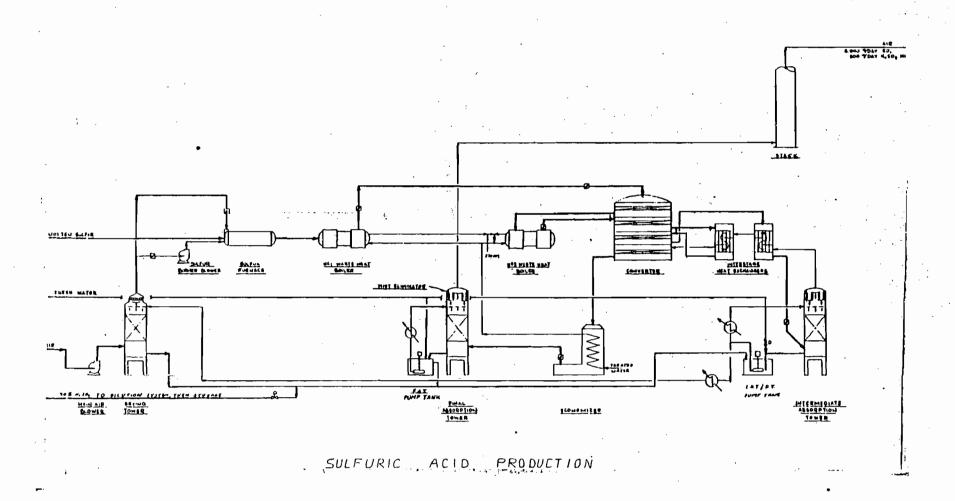
A qualitative evaluation of the proposed expansion on soils, vegetation, visibility and commercial growth in the area has been prepared.

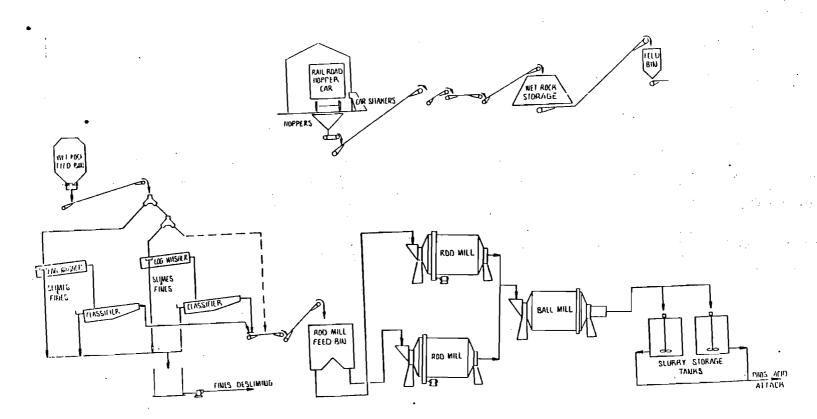
Air quality modelling has demonstrated that particulate matter and sulfur dioxide levels after the proposed expansion will be well below the national secondary air quality standards. Since these standards were promulgated to protect welfare related values, it is projected that the proposed expansion will not adversely impact soils, vegetation and visibility in the surrounding area.

Since nitrogen oxide emissions from the modified facility are only seven percent of the sulfur dioxide emissions and since the annual average sulfur dioxide impact of the proposed modification is only five micrograms per cubic meter, the ambient nitrogen oxides concentration from emissions from the proposed sources will be so low that no secondary impact is anticipated.

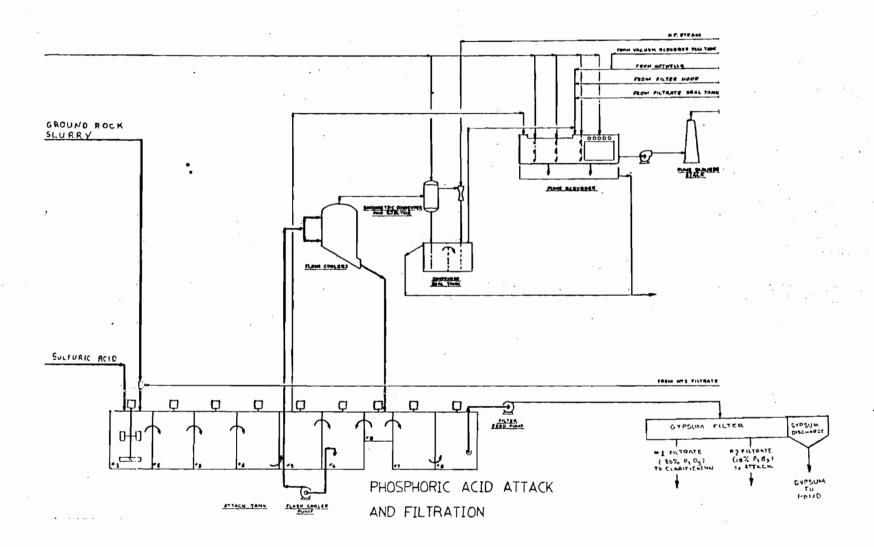
The fluoride emissions from the proposed modification are not expected to create any adverse secondary impacts. An Environmental Impact Statement recently submitted for a phosphate fertilizer complex in north Florida (Environmental Impact Statement, Occidental Chemical Company Swift Creek Chemical Complex, Hamilton County, Florida, US EPA Region IV, Atlanta, Georgia, July 1978) includes a section on the environmental impact of fluoride emissions. In this document it states that no significant adverse impact to cattle, agricultural crops or timber was established.

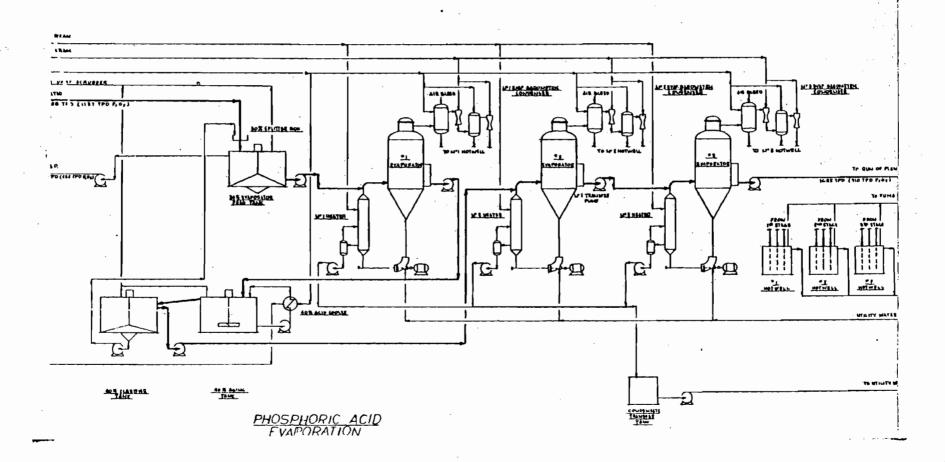
Regarding the impact of commercial growth in the vicinity, the entire southwest section of Polk County is given to phosphate rock mining and processing. The modification proposed by New Wales will represent only a small fraction of the total industry capacity in the county and will; therefore, not have a significant impact on industrial or commercial growth in the area.

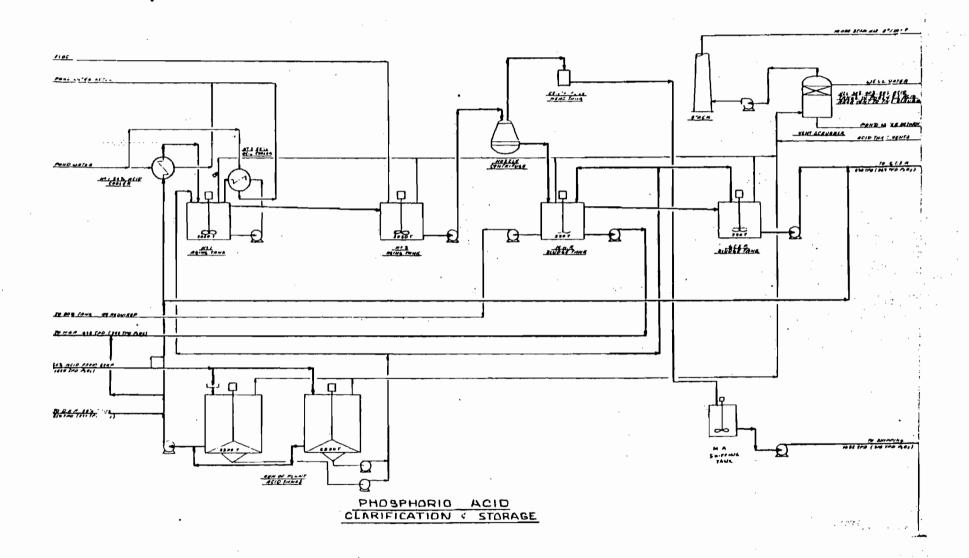


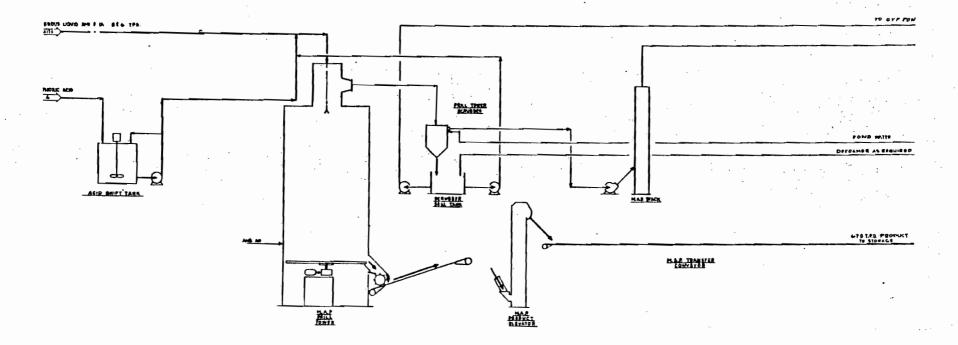


WET ROCK UNLOADING AND GRINDING



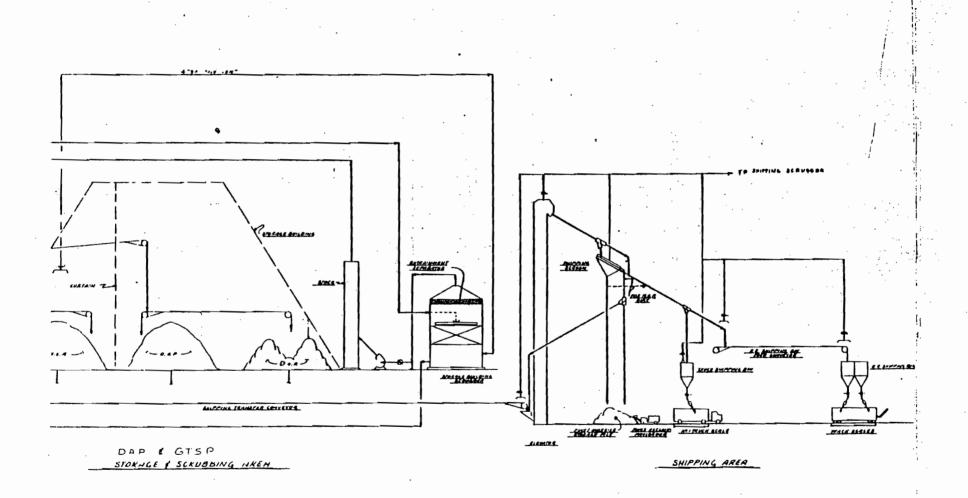


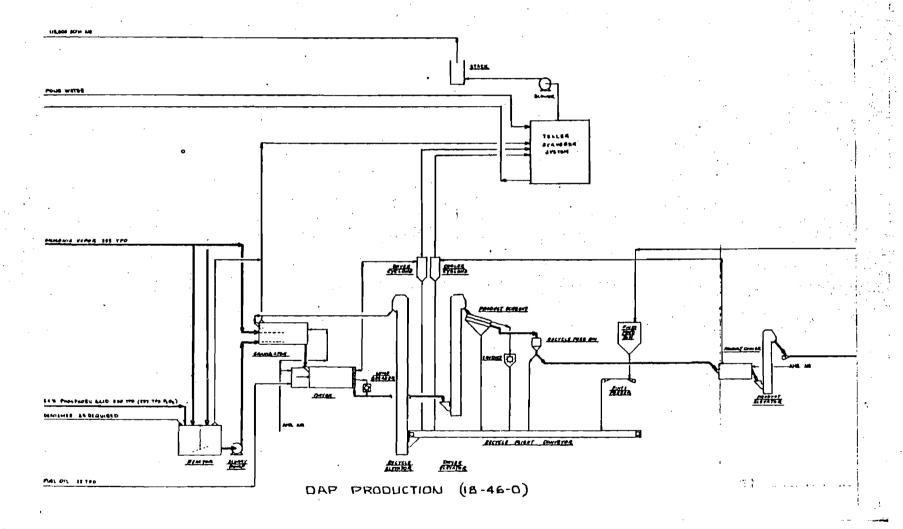


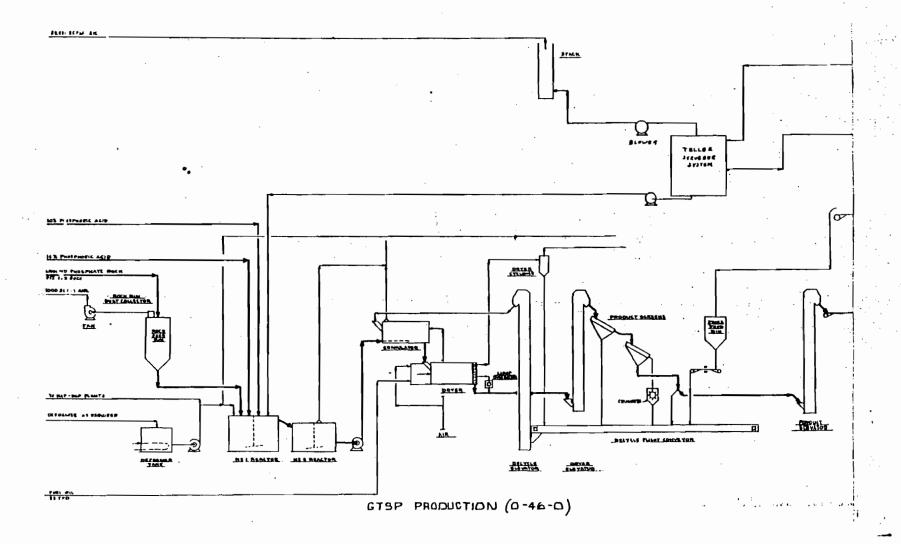


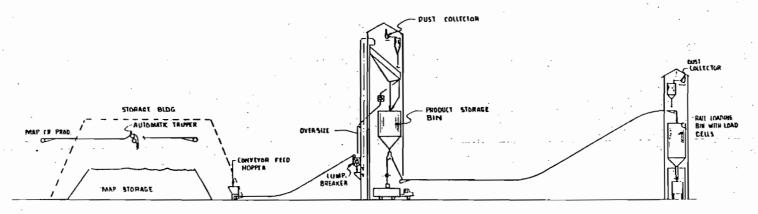
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