



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

FAX TRANSMITTAL SHEET

TO: PRADEEP RAVAL
DATE: Mar. 29, PHONE: 904/377-5822
TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 4
FROM: Katherine Zhang
DIVISION OF AIR RESOURCES MANAGEMENT

COMMENTS: _____

With the help of Title V Engineer,
we got the PM allowable for City of
Lakeland - Carsen Station.

PHONE: 904/488-1344 FAX NUMBER: 904/922-6979

If there are any problems with this fax transmittal, please call the above phone number.

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IMC GLOBAL, INC. - PRAIRIE

APIS ID	ITEM						
40TPA53005601	17 402.90 3087.00	22.2	AA	LIMESTONE BUCKET ELEVATOR, BAGHOUSE	32.3 lb/hr		
40TPA53005602	17 402.90 3087.00	22.2	AA	RAYMOND MILL #1, LIMEROCK GRINDING	15 lb/hr		
40TPA53005603	17 402.90 3087.00	22.2	AA	RAYMOND MILL NO. 3, LIMEROCK GRINDING	19.2 lb/hr		
40TPA53005604	17 402.90 3087.00	22.2	AA	LIMEROCK DRYER WITH CYCLONE AND BAGHOUSE	32.4 lb/hr		
40TPA53005605	17 402.90 3087.00	22.2	AA	#4 RAYMOND MILL AT PRAIRIE PLANT	19.2 lb/hr		
40TPA53005606	17 402.90 3087.00	22.2	AA	LIMESTONE BIN & TRUCK LOADOUT	30.4 lb/hr		

APIS ID	ITEM	allowable g/s	TPY	HT	TEMP	STACK	EXIT	STACK
				M	K	DIAM M	VELOCITY m/s	REFM
★ 40TPA53005601	PM	4.06	141.4	27.4	310	0.30	12.80	2000
40TPA53005602	PM	1.89	65.7	22.8	327	0.33	24.07	4520
40TPA53005603	PM	2.41	84.0	22.8	327	0.33	40.53	7600
40TPA53005604	PM	4.08	141.9	21.3	357	1.34	15.54	46596
40TPA53005605	PM	2.41	84.0	19.8	333	0.60	10.05	6300
40TPA53005606	PM	3.83	133.1	15.2	298	0.15	23.16	900

IMC Global

CITY OF LAKELAND - LARSEN POWER STATION

40TPA53000301	17	409.00	3106.20	37.8	AA	UNIT #4, 20 MW, 279 MMBTU/HR NATURAL GAS & #
40TPA53000302	17	409.00	3106.20	37.8	AA	POWER PLANT LARSEN STEAM GENERATOR #5 25 MW
40TPA53000303	17	409.00	3106.20	37.8	AA	POWER PLANT LARSEN STEAM GENERATOR #6 - 25
40TPA53000304	17	409.00	3106.20	37.8	AA	LARSEN 50MW STEAM GENERATOR #7
40TPA53000305	17	409.00	3106.20	37.8	AA	GAS TURBINE PEAKING UNIT # 3
40TPA53000306	17	409.00	3106.20	37.8	AA	GAS TURBINE PEAKING UNIT #2 AND UNIT #6
40TPA53000307	17	409.00	3106.20	37.8	AA	GAS TURBINE PEAKING UNIT #1
40TPA53000308	17	409.00	3106.20	37.8	AA	120 MW COMBINED CYCLE COMBUSTION TURBINE W/#!

	allowable g/s	TPY	HT M	TEMP K	STACK DIAM M	EXIT VELOCITY m/s	STACK ACFM
40TPA53000301 PM		152.7	50.2	433	3.04	5.48	87200
40TPA53000302 PM		175.7	50.2	444	3.04	6.40	100000
40TPA53000303 PM		167.4	50.2	444	3.04	6.40	100000
40TPA53000304 PM		337.1	50.2	444	3.04	6.70	106000
40TPA53000305 PM				256			
40TPA53000306 PM			9.7	699	1.52	171.29	662400
40TPA53000307 PM			9.7	699	1.52	171.29	662400
40TPA53000308 PM		22	47.2	522	5.79	18.89	1058000

City of Lakeland

3/24/15-88

TPA.XLS

4/11/14 TPA

Unit ID	Unit Name	Capacity (MW)	Hours/yr	SO2	PM	NOX	CO	P10	PB	VOC	SO2	PM	NOX	CO	P10	PB	VOC
40TPAS3000301	UNIT #4, 20 MW, 279 MMBTU/HR NATURAL	20	279	0	0.1	0.3	0	0	0	0	2.75	0.3	0	0	0	0	0
40TPAS3000302	POWER PLANT LARSEN STEAM GENERA			0	0	0	0	0	0	0	2.75	0.3	0	0	0	0	0
40TPAS3000303	POWER PLANT LARSEN STEAM GENERA			0	0	0	0	0	0	0	2.75	0.3	0	0	0	0	0
40TPAS3000304	LARSEN 50MW STEAM GENERATOR #7			0	0	0	0	0	0	0	2.75	0.3	0	0	0	0	0
40TPAS3000305	GAS TURBINE PEAKING UNIT #3			0	0	0	0	0	0	0	0	0	0	0	0	0	0
40TPAS3000306	GAS TURBINE PEAKING UNIT #2 AND LRI			0	0	0	0	0	0	0	0	0	0	0	0	0	0
40TPAS3000307	GAS TURBINE PEAKING UNIT #1			0	0	0	0	0	0	0	0	0	0	0	0	0	0
40TPAS3000308	120 MW COMBINED CYCLE COMBUSTIO			0	0	0	0	0	0	0	0	0.025	25	0	0	0	0

Facility
 Total max heat input
 1,521.1 mmbtu/hr
 @ PMS 0.3 1,045 hrs/yr
 @ PM 0.1 7,665 hrs/yr
 PMS = 249.8
 PM = 583

-01 Unit #4 876 hours/yr
 Nat'l Gas 278.8 mmbtu/hr input
 Fuel oil 277.2
 PM 0.1
 PMS 0.3 #/mmbtu 3 hrs/24 hours
 SO2 Fuel oil 2.75 #/mmbtu

-04 Unit #7 8760 hours/yr
 Nat'l Gas 615.6 mmbtu/hr
 Fuel oil 597.6
 PM, PMS, SO2 same

-05, 06, 07 Peak Units no PM limits

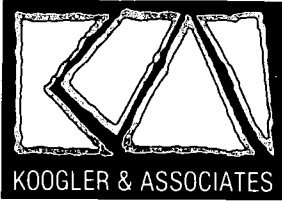
-08 CT #8
 Gas 22
 Oil 22 TPA

-02 Unit #5 8760 hours/yr
 Nat'l Gas 320.8 mmbtu/hr
 Fuel oil 300.5
 PM, PMS, SO2 same as Unit #4 above

-03 Unit #6 8760 hours/yr
 Nat'l Gas 286.5 mmbtu/hr
 Fuel oil 305.9
 PM, PMS, SO2 same as Unit #4 above

PMS criteria allowed $(\frac{3 \text{ hrs}}{\text{day}}) \times (365 \text{ days}) = 1,095 \text{ hours/yr}$

Unit	PM	PMS	Product
-01	106.9	45.8	= 152.7
-02	123	52.7	= 175.7
-03	117.2	50.2	= 167.4
-04	236	101.1	= 337.1
-08	22		
Total PM = 854.9 TPA			



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 173-94-04

March 29, 1995

RECEIVED
MAR 30 1995
Bureau of
Air Regulation

Ms. Katherine Zhang
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Additional Modeling Information
U.S. Agri-Chemicals Corporation
PSD-FL-222 (AC53-260190) Prilled MAP Plant

Dear Ms. Zhang:

This is a follow up to your fax this morning (presented in Attachment 1) regarding particulate matter sources to be included in the ambient air quality modeling analysis for the evaluation of the above referenced project.

It is our understanding that more conservative information has been found in FDEP files regarding particulate matter emissions from IMC Prairie and City of Lakeland's Larson Plant. Based on these emission rates, the 20D analysis for USAC's proposed project would indicate that these two facilities need to be included in the Ambient Air Quality Standards (AAQS) Analysis.

In accordance with your discussions with Pradeep Raval, the sources at the two facilities have been modeled, using the ISC2 model and identical receptors to the previous submittal. The modeling results, presented in Attachment 2, indicate that the inclusion of the two additional facilities in the modeling analysis is not expected to result in an exceedance of the ambient air quality standard. It should be noted that adding the maximum predicted impact from the two facilities to a previously predicted maximum impact from all sources in the area, provides a highly conservative estimate of the overall maximum impact.

A disk containing the modeling output is enclosed for your files.

We understand that this information satisfactorily concluded your review of the proposed USAC project. We appreciate your willingness to expedite the technical write-up regarding this project as USAC is under considerable pressure to maintain the project schedule. We appreciate your kind consideration.

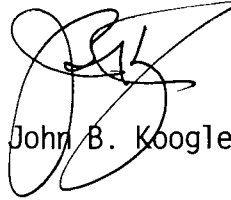
Ms. Katherine Zhang
Florida Department of
Environmental Protection

March 29, 1995
Page 2

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOGLER & ASSOCIATES



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

JBK:par
Enc.

c: Steve Susick, USAC



ATTACHMENT 1

**ADDITIONAL SOURCES FOR INCLUSION IN
THE AMBIENT AIR QUALITY ANALYSIS**



CITY OF LAKELAND - LARSEN POWER STATION

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40TPA53000308	17	409.00	3106.20	37.8	AA	120 MW COMBINED CYCLE COMBUSTION TURBINE W/ #1

allowable
8/3

TPY
152.7
175.7
167.4
337.1

22

40TPA53000301	PM
40TPA53000302	PM
40TPA53000303	PM
40TPA53000304	PM
40TPA53000305	PM
40TPA53000306	PM
40TPA53000307	PM
40TPA53000308	PM

HT M	TEMP K	STACK DIAM M	EXIT VELOCITY m/s	STACK REFUG
50.2	433	3.04	5.48	87200
50.2	444	3.04	6.40	100000
50.2	444	3.04	6.40	100000
50.2	444	3.04	6.70	106000
	256			
9.7	699	1.52	171.29	662400
9.7	699	1.52	171.29	662400
47.2	522	5.79	18.89	1058000

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IMC GLOBAL, INC. - PRAIRIE

APIS ID

UTM

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40TPA53005606	17	402.90	3087.00	22.2	AA	LIMESTONE BIN & TRUCK LOADOUT	30.4 <i>lb/hr</i>

TEL NO:

		<i>allowable</i> g/s	TPY	HT M	TEMP K	STACK DIAM M	EXIT VELOCITY m/s	STACK REFM
★	40TPA53005601	4.06	141.4	27.4	310	0.30	12.80	2000
	40TPA53005602	1.89	65.7	22.8	327	0.33	24.07	4520
	40TPA53005603	2.41	84.0	22.8	327	0.33	40.53	7600
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	40TPA53005606	3.83	133.1	15.2	298	0.15	23.16	900

MAR-29-'95 WED 11:05 ID:

ATTACHMENT 2

SUMMARY OF AMBIENT AIR QUALITY STANDARD ANALYSIS FOR PM10

U. S. AGRI-CHEMICALS
POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ($\mu\text{g}/\text{m}^3$) (1)	
	24-HOUR	ANNUAL
IMC/LARSON IMPACTS		
1987	3.54	0.18
1988	2.61	0.19
1989	3.06	0.25
1990	2.82	0.22
1991	2.78	0.16
PREVIOUSLY MODELED MAXIMUM IMPACT W/BKGRD	118	47
REVISED MODELING MAXIMUM IMPACT W/BKGRD	121.54	47.25
AMBIENT AIR STANDARD (Rule 62-272, FAC)	150	50

NOTE:

- (1) The predicted impacts represent the highest-high impact for the annual period and the highest second-high for the 24-hour period.
- (2) The maximum predicted impacts for the 24-hour and annual periods, including a conservative background PM10 concentration level (for Gibsonton) of $30 \mu\text{g}/\text{m}^3$, would still be below the ambient air quality standards.

