



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

August 22, 2000

**RECEIVED**

Mr. Richard Krakowski  
Vice President and General Manager  
IMC Phosphate Company  
P.O. Box 2000  
Mulberry, FL 33860-1100

AUG 31 2000

BUREAU OF AIR REGULATION

Dear Mr. Krakowski:

RE: Responsible Official (RO) for IMC Phosphates Company Facilities

As we discussed on the phone on August 18, 2000, your recent request to process Title V permit Administrative Corrections for five IMC facilities to reflect the recent company name change raised the question of the designation of the Responsible Official (RO) for each of the facilities. This is an important Title V concept as this person is required to sign all Title V permit applications and compliance statements and thereby accepts responsibility for the accuracy of the information contained in them.

The recent Administrative Correction requests, in which the Application for Transfer of Permit documents were signed by you and included a letter delegating to you the designation of a Responsible Corporate Official, raised the question as to whether this was indicating that you were now the designated RO for these five facilities under the new company name of IMC Phosphate Company, superceding other individual facility RO designations that we had previously received under the name IMC – Agrico Co. Based on our conversation, this was not your intent, and we agreed that it would be appropriate and useful for all parties if there were an official designation and acceptance of RO status for each of the facilities under the new company name. To that end please respond by indicating who is the responsible official (name and title) for each of the following Title V facilities, along with a signature from each of those so designated stating that they are aware of and accept this RO designation.:

- Central Florida Mineral Operations (facility ID 1050034)
- South Pierce Facility (facility ID 1050055)
- Prairie Facility (facility ID 1050056)
- Nichols Facility (facility ID 1050057)
- New Wales Facility (facility ID 1050059)

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

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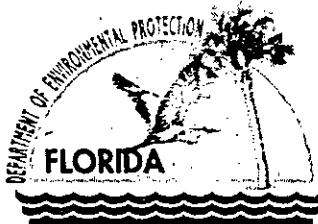
If you have any questions concerning this letter please contact me (ext. 107) or David Zell (ext. 118) of my staff at (813) 744-6100.

Sincerely,



Jerry Kissel, P.E.  
District Air Engineer  
Southwest District

dz/  
IMC\_RO.doc



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

## NOTICE OF PERMIT AMENDMENT

### CERTIFIED MAIL

Mr. Richard Krakowski  
Vice President and General Manager  
IMC Phosphate Company  
P.O. Box 2000  
Mulberry, FL 33860-1100

Dear Mr. Krakowski:

Re: Air Construction Permit Amendment Request, dated July 21, 2000

**Project:** Company Name Change from IMC-Agrico Company to IMC  
Phosphates Company (*ARMS Project 1050059-0032*)

**Location:** New Wales Facility (*Facility ID 1050059*)

**Affected Permit Nos.:** 1050059-024-AC (PSD FL-244), 1050059-029-AC

On July 25, 2000 the Department received the referenced request to change the company name for the two (2) current construction permits for the IMC Phosphates Company New Wales facility. The Department hereby amends air construction permits 1050059-024-AC (PSD FL-244), 1050059-029-AC as follows:

Page 1 - PERMITTEE; and in header on Pages 2-6 for 1050059-029-AC:

### Change From:

IMC-Agrico Company

### To:

IMC Phosphates Company

\* \* \* \* \*

Procedures for administrative hearing and variance/waiver are described below.

IMC Phosphates Company

Administrative Hearing

This permit is final agency action unless a timely petition for administrative hearing is filed pursuant to sections 120.569 and 120.57 F. S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;
- (c) A statement of how and when petitioner received notice of the agency action or proposed action;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

IMC Phosphates Company

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301

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

Mediation is not available in this proceeding.

Variance/Waiver

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

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. The petition must specify the following information:

- (a) The name, address, and telephone number of the petitioner;
- (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any;
- (c) Each rule or portion of a rule from which a variance or waiver is requested;
- (d) The citation to the statute underlying (implemented by) the rule identified in (c);
- (e) The type of action requested;
- (f) The specific facts that would justify a variance or waiver for the petitioner;
- (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and
- (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration requested.

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

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

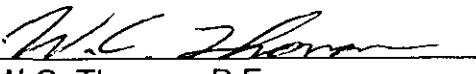
IMC Phosphates Company

This permit amendment is final agency action unless a timely petition for administrative hearing is filed pursuant to sections 120.569 and 120.57 F. S., before the deadline for filing a petition. Upon timely filing of a petition or a request for an extension of time to file the petition, this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate procedure, with the Clerk of the Department in the Office of General Counsel, Douglas Building, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

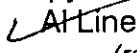
Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

  
W.C. Thomas, P.E.  
District Air Program Administrator

drz IMCNWacam.doc

copy to:

 A. Linero, FDEP DARM/BAR, New Source Review Section, Tallahassee  
*(regarding BAR issued construction permit 1050059-024-AC (PSD FL-244))*

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT AMENDMENT was sent by certified mail and copies were mailed by U.S. Mail before the close of business on AUG 29 2000 to the listed persons, unless otherwise noted.

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

  
Patricia A. Shipton  
Clerk

AUG 29 2000  
Date



**IMC**

xc: Stack Team – UR Bldg.  
A. A. Linero

Certified Mail 7099 3400 0005 0929 3712  
Return Receipt Requested

**RECEIVED**

August 28, 2000

AUG 30 2000

BUREAU OF AIR REGULATION

Mr. W. C. Thomas, P. E.  
Florida Department of  
Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318

**RE: Multifos C-Kiln  
Permit ID No. 1050059-014-AV  
Unit ID No. 074  
New Wales Plant**

Dear Mr. Thomas:

Enclosed are the results of the compliance test for the above-referenced permit.

If you have any questions, please contact me at 863-428-7106.

Sincerely,

P. A. Steadham, Manager  
Environmental Services  
Concentrates - Florida

PAS:oan

Enclosures

a:t\_1108

Turley Ext. 7153

## Report of Compliance Sampling

### **IMC-Phosphates Company**

Project: Multifos C-Kiln

Facility: New Wales Operations

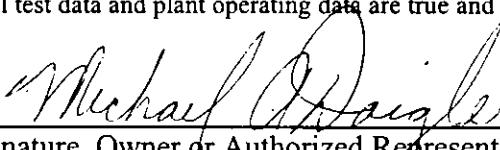
Point ID: 74

AIRS: 1050059

Permit Number: 1050059-014-AV

Test Date: July 11,12,13 , 2000

To the best of my knowledge, all applicable field and analytical procedures  
comply with Florida Department of Environmental Protection requirements  
and all test data and plant operating data are true and correct.



---

Signature, Owner or Authorized Representative  
Michael A. Daigle, General Manager, New Wales

### **IMC-Phosphates Company**

P.O. Box 2000

Mulberry, FL 33860

(863) 428-2500

Company ID #: 1108

08/21/2000

**Introduction:**

This report details the compliance sampling results for the following source:

Project: Multifos C-Kiln  
Facility: New Wales Operations  
Point ID: 74  
AIRS: 1050059  
Permit Number: 1050059-014-AV (1050059-024-AC)  
Test Date: July 11,12,13 , 2000

**Summary of Results**

The source was found to be in compliance with the permits and regulations of the Florida Department of Environmental Protection. The process data and emissions testing results are summarized below:

Process Data:

**Kiln P2O5 Feed Rate**      2.05 TPH

**Fuel Firing Information**

**Fuel:** Natural Gas

**C Kiln Fuel Rate**      32.1 MMBtu/hr

**Emissions:**

Allowables by Permit Condition Number P.5, P.6 , P.8, P.9 & P.10

|                    |             | Actual | Allowable |
|--------------------|-------------|--------|-----------|
| Fluorides:         | lb/hr       | 0.45   | 0.08      |
|                    | lb/ton P2O5 | 0.220  | 0.038     |
| Particulates:      | lb/hr       | 4.50   | 14.30     |
| Sulfur Dioxide:    | lb/hr       | 2.27   | 8.70      |
| Nitrogen Oxides:   | lb/hr       | 6.25   | N/A       |
| Visible Emissions: | %           | 12.9   | 15        |

**Emissions Testing Methods:**

Methods in accordance with Specific Condition Number P.15

Fluorides: Method 5 & 13B Combined with modifications as allowed by Department for analysis.

Particulate: Method 5 & 13B Combined.

Nitrogen Oxides: Method 7E

Sulfur Dioxide: Method 8

Visible Emissions: Method 9

## IMC-Phosphates Company

## Process Information

Project: Multifos C-Kiln

Facility: New Wales Operations

Point ID: 74

AIRS: 1050059

Permit Number: 1050059-014-AV

Test Date: July 11,12,13 , 2000

Test Time: 0844-0948, 0853-1009, 1020-1125

## Process Rate Data &amp; Calculations

**Kiln Feed Rate**

| Date                    | Time      | Kiln   | Kiln Feed Rate | Kiln Feed Moisture | % P  | $\frac{.43646}{\% \text{P2O5}/\% \text{P}} = \text{P2O5 TPH}$ |
|-------------------------|-----------|--------|----------------|--------------------|------|---|
| 7/11/00                 | 0844-0948 | C Kiln | 6              | 6.5                | 16.1 | 0.43646   |
| 7/12/00                 | 0853-1009 | C Kiln | 5.5            | 3.6                | 16.1 | 0.43646   |
| 7/13/00                 | 1020-1125 | C Kiln | 6              | 5.5                | 16.3 | 0.43646   |
| <b>Average P2O5 TPH</b> |           |        |                |                    |      | <b>2.05</b>   |

**Caustic Scrubber****Cross flow Scrubber**

| Date       | Time  | Sulfite    | 50 % Caustic | Recirc     | Total Liquid | Delta p<br>"inches | Fan Amps   |
|------------|-------|------------|--------------|------------|--------------|--------------------|------------|
|            |       | Sump ph    | Flow gpm     | Flow       | gpm          | H2O                |            |
| 7/11/00    | 8:00  | 7.2        | 25           | 196        | 1882         | 1.07               | 127        |
|            | 9:00  | 7.4        | 26           | 197        | 1883         | 1.12               | 128        |
|            | 10:00 | 7.6        | 24           | 197        | 1882         | 1.13               | 126        |
| 7/12/00    | 8:00  | 7.2        | 17           | 198        | 2053         | 0.80               | 93         |
|            | 9:00  | 7.4        | 6            | 198        | 2050         | 0.80               | 93         |
|            | 10:00 | 7.6        | 9            | 197        | 2048         | 0.78               | 91         |
| 7/13/00    | 10:00 | 6.5        | 17           | 196        | 2017         | 0.96               | 104        |
|            | 11:00 | 6.6        | 21           | 196        | 2015         | 0.91               | 104        |
|            | 12:00 | 6.5        | 15           | 196        | 2011         | 0.95               | 104        |
| <b>AVG</b> |       | <b>7.1</b> | <b>17.8</b>  | <b>197</b> | <b>1982</b>  | <b>0.95</b>        | <b>108</b> |

**Fuel Usage Information**

C Kiln Fuel  
Rate  
mmBTU/hr

| Date                             | Time      | Fuel Type   | (1000Btu/cu ft) |
|----------------------------------|-----------|-------------|-----------------|
| 7/11/00                          | 0844-0948 | Natural Gas | 32.4            |
| 7/12/00                          | 0853-1009 | Natural Gas | 34.0            |
| 7/13/00                          | 1020-1125 | Natural Gas | 30.0            |
| <b>Average Fuel Firing Rates</b> |           |             | <b>32.1</b>     |

## Process Statement:

I certify that the above statements are true and correct to the best of my knowledge.

Signature: Joe R. Clark  
 Title: Production Superintendent  
 Date: 8-18-00

## IMC-Phosphates Company

## Process Information

Project: Multifos C-Kiln

Facility: New Wales Operations

Point ID: 74

AIRS: 1050059

Permit Number: 1050059-014-AV

Test Date: July 11,12,13 , 2000

Test Time: 1145-1250 , 1402-1509 , 0847-0951

## Process Rate Data &amp; Calculations

**Kiln Feed Rate**

| Date                    | Time      | Kiln   | Kiln Feed Rate | Kiln Feed Moisture | % P  | $\frac{.43646}{\% \text{P}2\text{O}5/\% \text{P}} = \text{P2O5 TPH}$ |
|-------------------------|-----------|--------|----------------|--------------------|------|--|
| 7/11/00                 | 1145-1250 | C Kiln | 6              | 6.5                | 16.1 | 0.43646  |
| 7/12/00                 | 1402-1509 | C Kiln | 5.5            | 3.6                | 16.1 | 0.43646  |
| 7/13/00                 | 0847-0951 | C Kiln | 6              | 5.5                | 16.3 | 0.43646  |
| <b>Average P2O5 TPH</b> |           |        |                |                    |      | <b>2.05</b>  |

**Caustic Scrubber****Cross flow Scrubber**

| Date       | Time  | Sulfite    | 50 % Caustic | Recirc     | Total Liquid | Delta p<br>"inches | Fan Amps   |
|------------|-------|------------|--------------|------------|--------------|--------------------|------------|
|            |       | Sump ph    | Flow gpm     | Flow       | gpm          | H2O                |            |
| 7/11/00    | 11:00 | 6.5        | 26           | 196        | 1881         | 1.07               | 125        |
|            | 12:00 | 6.5        | 26           | 196        | 1884         | 1.10               | 125        |
|            | 13:00 | 6.6        | 24           | 195        | 1883         | 1.01               | 124        |
| 7/12/00    | 13:00 | 9.7        | 18           | 199        | 2046         | 0.79               | 92         |
|            | 14:00 | 8.2        | 7            | 197        | 2047         | 0.80               | 91         |
|            | 15:00 | 6.6        | 16           | 196        | 2049         | 0.80               | 90         |
| 7/13/00    | 8:00  | 6.5        | 9            | 196        | 2016         | 0.89               | 98         |
|            | 9:00  | 6.6        | 11           | 196        | 2019         | 0.98               | 104        |
|            | 10:00 | 6.5        | 17           | 196        | 2017         | 0.96               | 104        |
| <b>AVG</b> |       | <b>7.1</b> | <b>17.1</b>  | <b>196</b> | <b>1982</b>  | <b>0.93</b>        | <b>106</b> |

**Fuel Usage Information**

## C Kiln Fuel

## Rate

## mmBTU/hr

| Date                             | Time      | Fuel Type   | C Kiln Fuel<br>Rate<br>mmBTU/hr<br>(1000Btu/cu ft) |
|----------------------------------|-----------|-------------|--|
| 7/11/00                          | 1145-1250 | Natural Gas | 32.4   |
| 7/12/00                          | 1402-1509 | Natural Gas | 34.0   |
| 7/13/00                          | 0847-0951 | Natural Gas | 30.0   |
| <b>Average Fuel Firing Rates</b> |           |             | <b>32.1</b>  |

## Process Statement:

I certify that the above statements are true and correct to the best of my knowledge.

Signature: Jak R. Chisholm  
 Title: Production Superintendent  
 Date: 8-18-00

| Source Sampling Summary Sheet |                                 |                   |         |         |         |
|-------------------------------|---------------------------------|-------------------|---------|---------|---------|
|                               |                                 |                   |         |         |         |
|                               | Facility:                       | NEW WALES         |         |         |         |
|                               | Plant:                          | MULTIFOS C - KILN |         |         |         |
|                               | Company ID:                     | 1108              |         |         |         |
|                               | FDEP AIRS & Pt. ID:             | 1050059-074       |         |         |         |
|                               | Test Team:                      | RS/DA             |         |         |         |
|                               |                                 |                   |         |         |         |
|                               | Parameter                       | Unit              | Run 1   | Run 2   | Average |
|                               | Date:                           |                   | 7/11/00 | 7/12/00 | 7/13/00 |
|                               | Time Start:                     |                   | 844     | 853     | 1020    |
|                               | Time End:                       |                   | 948     | 1009    | 1125    |
|                               | Barometric Pressure:            | Inch Hg           | 30.10   | 30.10   | 30.10   |
|                               | Static Pressure:                | Inch H2O          | 0.32    | 0.32    | 0.32    |
|                               | Stack Pressure:                 | Inch Hg           | 30.124  | 30.124  | 30.124  |
|                               | Average Sqrt Delta P:           | Inch HOH 1/2      | 0.747   | 0.650   | 0.635   |
|                               | Average Delta H:                | Inch HOH          | 1.821   | 1.413   | 1.358   |
|                               | Maximum Run Vacuum:             | Inch Hg           | 10.0    | 11.0    | 10.0    |
|                               | Meter Box Number:               | Unity             | 3187    | 3187    | 3187    |
|                               | Average Meter Temp:             | Degrees F         | 84.8    | 81.2    | 91.7    |
|                               | Average Stack Temp:             | Degrees F         | 113.8   | 111.5   | 110.7   |
|                               | Metered Sample Volume:          | Cubic Feet        | 46.51   | 41.03   | 40.99   |
|                               | Standard Meter Volume:          | Cubic Feet        | 45.39   | 40.27   | 39.46   |
|                               | Moisture Measured:              | %                 | 0.0894  | 0.0897  | 0.0787  |
|                               | Moisture Saturation:            | %                 | 0.0962  | 0.0900  | 0.0880  |
|                               | Moisture Used for Calculations: | %                 | 0.0894  | 0.0897  | 0.0787  |
|                               | Pitot Coefficient:              | Unity             | 0.84    | 0.84    | 0.84    |
|                               | Nozzle Diameter:                | Inch              | 0.25    | 0.25    | 0.25    |
|                               | Stack Area:                     | Square Feet       | 7.07    | 7.07    | 7.07    |
|                               | Traverse Points:                | Unity             | 24      | 24      | 24      |
|                               | Sampling Time:                  | Minutes           | 60      | 60      | 60      |
|                               | Stack Gas Molecular Weight:     | lb/lb-mol         | 27.988  | 27.985  | 28.106  |
|                               | Actual Stack Velocity:          | Feet/sec          | 44.285  | 38.404  | 37.416  |
|                               | Actual Stack Gas Flow:          | ACFM              | 18772   | 16279   | 15861   |
|                               | Dry Standard Stack Gas Flow:    | DSCFM             | 15835   | 13784   | 13610   |
|                               | Isokinetic Rate:                | %                 | 99.10   | 101.00  | 100.23  |
|                               |                                 |                   |         |         |         |
|                               | Fluoride Emission:              | lb/day            | 7.74    | 14.05   | 10.56   |
|                               | Fluoride Emission:              | lb/hr             | 0.32    | 0.59    | 0.44    |
|                               | Particulate Emission:           | lb/day            | 13.28   | 41.58   | 105.46  |
|                               | Particulate Emission:           | lb/hr             | 0.55    | 1.73    | 4.39    |
|                               |                                 |                   |         |         | 2.23    |

| Source Sampling Summary Sheet |                                 |                 |         |         |         |
|-------------------------------|---------------------------------|-----------------|---------|---------|---------|
|                               |                                 |                 |         |         |         |
|                               | Facility:                       | New Wales       |         |         |         |
|                               | Plant:                          | MULTIFOS C-KILN |         |         |         |
|                               | Company ID:                     | 1108            |         |         |         |
|                               | FDEP AIRS & Pt. ID:             | 1050059 & 074   |         |         |         |
|                               | Test Team:                      | FB,DC,RS        |         |         |         |
|                               |                                 |                 |         |         |         |
|                               | Parameter                       | Unit            | Run 1   | Run 2   | Average |
|                               | Date:                           |                 | 7/11/00 | 7/12/00 | 7/13/00 |
|                               | Time Start:                     |                 | 1145    | 1402    | 847     |
|                               | Time End:                       |                 | 1250    | 1509    | 951     |
|                               | Barometric Pressure:            | Inch Hg         | 30.10   | 30.10   | 30.12   |
|                               | Static Pressure:                | Inch H2O        | 0.32    | 0.32    | 0.32    |
|                               | Stack Pressure:                 | Inch Hg         | 30.124  | 30.124  | 30.144  |
|                               | Average Sqrt Delta P:           | Inch HOH 1/2    | 0.692   | 0.664   | 0.688   |
|                               | Average Delta H:                | Inch HOH        | 1.817   | 1.504   | 1.592   |
|                               | Maximum Run Vacuum:             | Inch Hg         | 10.0    | 13.0    | 9.0     |
|                               | Meter Box Number:               | Unity           | 3187    | 3187    | 3187    |
|                               | Average Meter Temp:             | Degrees F       | 84.5    | 92.9    | 88.1    |
|                               | Average Stack Temp:             | Degrees F       | 114.0   | 112.7   | 110.8   |
|                               | Metered Sample Volume:          | Cubic Feet      | 47.06   | 42.95   | 43.63   |
|                               | Standard Meter Volume:          | Cubic Feet      | 45.95   | 41.27   | 42.33   |
|                               | Moisture Measured:              | %               | 0.0911  | 0.0728  | 0.0757  |
|                               | Moisture Saturation:            | %               | 0.0966  | 0.0932  | 0.0880  |
|                               | Moisture Used for Calculations: | %               | 0.0911  | 0.0728  | 0.0757  |
|                               | Pitot Coefficient:              | Unity           | 0.84    | 0.84    | 0.84    |
|                               | Nozzle Diameter:                | Inch            | 0.250   | 0.250   | 0.250   |
|                               | Stack Area:                     | Square Feet     | 7.07    | 7.07    | 7.07    |
|                               | Traverse Points:                | Unity           | 24      | 24      | 24      |
|                               | Sampling Time:                  | Minutes         | 60      | 60      | 60      |
|                               | Stack Gas Molecular Weight:     | lb/lb-mol       | 27.970  | 28.171  | 28.139  |
|                               | Actual Stack Velocity:          | Feet/sec        | 41.011  | 39.179  | 40.554  |
|                               | Actual Stack Gas Flow:          | ACFM            | 17385   | 16608   | 17191   |
|                               | Dry Standard Stack Gas Flow:    | DSCFM           | 14634   | 14293   | 14809   |
|                               | Isokinetic Rate:                | %               | 108.55  | 99.83   | 98.83   |
|                               |                                 |                 |         |         |         |
|                               | SO2 Emission:                   | lb/day          | 28.51   | 58.68   | 76.05   |
|                               |                                 | lb/hr           | 1.19    | 2.44    | 3.17    |
|                               | Nitrogen Oxides:                | lb/day          | 121.20  | 197.52  | 155.04  |
|                               | Nitrogen Oxides:                | lb/hr           | 5.05    | 8.23    | 6.46    |
|                               |                                 |                 |         |         |         |

## VISIBLE EMISSION OBSERVATION FORM

|                                      |                                |                     |
|--------------------------------------|--------------------------------|---------------------|
| SOURCE NAME<br><b>IMC PHOSPHATES</b> |                                |                     |
| ADDRESS<br><b>NEW WALES FACILITY</b> |                                |                     |
| P.O. BOX 2000 3095 C.R. 640          |                                |                     |
| CITY<br><b>MULBERRY</b>              | STATE<br><b>FL</b>             | ZIP<br><b>33860</b> |
| PHONE<br><b>408-7383</b>             | SOURCE ID NUMBER<br><b>074</b> |                     |

|   |                                 |
|---|---------------------------------|
| PROCESS EQUIPMENT<br><b>MULTI-PHOS C-KILN</b> | OPERATING MODE<br><b>6 T.PH</b> |
| CONTROL EQUIPMENT<br><b>WET SCRUBBER</b>      | OPERATING MODE<br><b>NORMAL</b> |

|  |  |
|--|--|
| DESCRIBE EMISSION POINT<br>START <b>CIRCULAR STACK</b> STOP <b>SAME</b>  |  |
| HEIGHT ABOVE GROUND LEVEL<br>START $\approx$ <b>125</b> STOP <b>SAME</b> | HEIGHT RELATIVE TO OBSERVER<br>START $\approx$ <b>125</b> STOP <b>SAME</b> |
| DISTANCE FROM OBSERVER<br>START $\approx$ <b>360'</b> STOP <b>SAME</b>   | DIRECTION FROM OBSERVER<br>START <b>WSW</b> STOP <b>WSW</b>                |

|   |  |
|---|--|
| DESCRIBE EMISSIONS<br>START <b>Lofting plume</b> STOP <b>SAME</b>   |  |
| EMISSION COLOR<br>START <b>white</b> STOP <b>white</b>  | PLUME TYPE<br>FUGITIVE <input checked="" type="checkbox"/> INTERMITTENT <input type="checkbox"/>             |
| WATER DROPLETS PRESENT<br>NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>                             | IS WATER DROPLET PLUME<br>ATTACHED <input type="checkbox"/> N/A DETACHED <input checked="" type="checkbox"/> |
| POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED<br>START $\approx$ <b>20'</b> ABOVE <b>stack exit</b> STOP <b>SAME</b> |  |

|   |  |
|---|--|
| DESCRIBE BACKGROUND<br>START <b>SKY</b> STOP <b>SKY</b> |  |
| BACKGROUND COLOR<br>START <b>blue</b> STOP <b>SAME</b>  | SKY CONDITIONS<br>START <b>Scatt.</b> STOP <b>Scatt.</b> |
| WIND SPEED MPH<br>START <b>2-4</b> STOP <b>2-4</b>      | WIND DIRECTION<br>START STOP                             |
| AMBIENT TEMP.<br>START <b>88</b> STOP <b>88°</b>        | WET BULB TEMP <b>82</b> RH, percent <b>78%</b>           |

|                      |                   |                  |
|----------------------|-------------------|------------------|
| SOURCE LAYOUT SKETCH | <b>MULTI-PHOS</b> | Draw North Arrow |
|                      |                   |                  |
| PLANT 20             | Plant Point       |                  |
| PVC                  |                   |                  |
| Sun ♦ Wind →         |                   |                  |
| Plume and Stack      |                   |                  |
| 140°                 |                   |                  |
| Sun Location Line    |                   |                  |

|          |
|----------|
| COMMENTS |
|          |
|          |

|  |
|--|
| I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS |
| SIGNATURE  |
| TITLE  |
| DATE   |

| SEC<br>MIN | OBSERVATION DATE<br><b>07-13-00</b> |    |    | SEC<br>MIN | START TIME<br><b>10:20</b> | STOP TIME<br><b>11:30</b> |
|------------|-------------------------------------|----|----|------------|----------------------------|---------------------------|
|            | 0                                   | 15 | 30 |            |                            |                           |
| 1          | 10                                  | 10 | 10 | 10         | 31                         | 15 15) 10 10              |
| 2          | 10                                  | 10 | 10 | 10         | 32                         | 10 10 10 10               |
| 3          | 10                                  | 15 | 15 | 10         | 33                         | 10 10 10 15               |
| 4          | 10                                  | 10 | 10 | 10         | 34                         | 10 10 10 10               |
| 5          | 10                                  | 15 | 15 | 15         | 35                         | 15 15 15 10               |
| 6          | 15                                  | 10 | 10 | 10         | 36                         | 10 10 15 15               |
| 7          | 10                                  | 10 | 10 | 10         | 37                         | 15 10 15 15               |
| 8          | 10                                  | 10 | 10 | 10         | 38                         | 10 10 10 10               |
| 9          | 10                                  | 15 | 10 | 10         | 39                         | 10 10 10 10               |
| 10         | 10                                  | 10 | 10 | 10         | 40                         | 10 15 15 10               |
| 11         | 15                                  | 15 | 10 | 10         | 41                         | 10 10 10 10               |
| 12         | 10                                  | 10 | 10 | 10         | 42                         | 5 5 10 10                 |
| 13         | 10                                  | 10 | 10 | 10         | 43                         | 10 10 10 10               |
| 14         | 15                                  | 10 | 10 | 15         | 44                         | 10 10 10 15               |
| 15         | 15                                  | 10 | 10 | 10         | 45                         | 15 10 10 15               |
| 16         | 10                                  | 10 | 10 | 10         | 46                         | 10 10 10 10               |
| 17         | 10                                  | 10 | 10 | 10         | 47                         | 10 10 10 10               |
| 18         | 10                                  | 10 | 15 | 10         | 48                         | 10 10 15 15               |
| 19         | 10                                  | 10 | 10 | 10         | 49                         | 15 15 15 10               |
| 20         | 10                                  | 10 | 10 | 10         | 50                         | 10 10 10 10               |
| 21         | 10                                  | 10 | 10 | 15         | 51                         | 10 10 10 10               |
| 22         | 15                                  | 15 | 10 | 10         | 52                         | 10 10 10 10               |
| 23         | 10                                  | 10 | 10 | 10         | 53                         | 15 15 10 10               |
| 24         | 5                                   | 10 | 10 | 10         | 54                         | 15 15 15 10               |
| 25         | 10                                  | 10 | 15 | 10         | 55                         | 10 10 10 10               |
| 26         | 10                                  | 10 | 15 | 15         | 56                         | 10 15 10 10               |
| 27         | 15                                  | 15 | 15 | 10         | 57                         | 10 10 10 10               |
| 28         | 10                                  | 10 | 15 | 15         | 58                         | 15 15 15 15               |
| 29         | 15                                  | 10 | 10 | 15         | 59                         | 15 10 10 10               |
| 30         | 15                                  | 15 | 10 | 10         | 60                         | 10 10 10 10               |

AVERAGE OPACITY FOR HIGHEST PERIOD **12.9%** NUMBER OF READINGS ABOVE 15 % WERE **0**  
 RANGE OF OPACITY READINGS MINIMUM **5%** MAXIMUM **15%**

OBSERVER'S NAME (PRINT)  
**JEFFREY J. KENT**  
 OBSERVER'S SIGNATURE  
**J. Kent**  
 DATE **7/13/00**  
 ORGANIZATION  
**IMC PHOSPHATES**  
 CERTIFIED BY  
**ETA TAMPA FDEP**  
 DATE **2/22/2000**  
 VERIFIED BY  
 DATE

## **Test Participants**

Conducted the Field Testing

- 1 F. Barnes
- 2 R. Sellers
- 3 M. Gierke

Performed the Laboratory Analysis

- 1 F. Barnes
- 2 R. Sellers
- 3 M. Gierke

Provided the Process Data

- 1 J. Clements

Prepared the Test Report

- 1 R. Sellers
- 2 F. Barnes

Field Data

&

Run Calculations

**Run 1 Calculations and Results**

Facility: NEW WALES  
Plant: MULTIFOS C - KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059-074  
Test Team: RS/DA

Date: 7/11/00 mm/dd/yy  
Start Time: 844 End Time: 948

Standard Meter Volume Vrms: 45.39 dscf

Average Stack Velocity: 44.28 fps  
Stack Gas Volume: 18772 ACFM  
Stack Gas Dry Volume: 15835 DSCFM

Isokinetic Variation: 99.10 %

Isokinetics Adjusted For Bws>Saturation: NA %  
Vlc calculated for Saturated Conditions: NA ml H2O

**Emission Calculations**

Particulate Total mg: 12.0 mg  
0.55 lb/hr  
13.28 lb/day

Fluoride Total mg: 7.00 mg  
0.32 lb/hr  
7.74 lb/day

Run 1

Run 1 Data

Facility: NEW WALES  
Plant: MULTIFOS C - KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059-074  
Test Team: RS/DA

Date: 7/11/00 mm/dd/yy  
Start Time: 844 End Time: 948

Number of Traverse Points: 24  
Dwell Time/Point: 2.5 min.  
Total Test Time: 60 min.

Stack Diameter: 36 inches  
Stack Area: 7.07 sq. ft.

Molecular Weight Dry Md: 28.969  
Volume of Water Vapor Condensed: 84 ml  
Weight of Water Collected in Silica Gel: 10.7 gram  
Moisture Volume Fraction Bwo: 0.0894  
Moisture Volume Saturated Bwo: 0.0962  
Moisture Percent Saturation: 93  
Moisture Used for Calculations: 0.0894  
Stack Molecular Weight Ms: 27.988

Barometric Pressure Pb: 30.10 in Hg  
Stack Static Pressure Pv: 0.32 in H<sub>2</sub>O  
Stack Pressure Ps: 30.124 in Hg  
Average Meter Delta H: 1.821 in H<sub>2</sub>O  
Meter Pressure Pm: 30.234 in Hg  
Console Number: 3187  
Meter Delta Ha: 1.742  
Meter Correction Factor: 0.9969

Average Meter Temperature: 84.8 deg. F  
Average Stack Temperature: 113.8 deg. F 45.5 deg C

Average Square Root Delta P: 0.747  
Meter Volume Vm: 46.51 cu. ft.  
Probe Length/Liner: 3' SS  
Cp: 0.84  
Nozzle Ident.: 0.25  
Nozzle Diameter Dn: 0.25 in.  
Impinger Set Number: P-1  
Average Computer K: 3.3157

## Run 1

## Run 1 Data Sheet

Facility: NEW WALES  
 Plant: MULTIFOS C - KILN  
 Team (CB/PR): RS/DA

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059-074

Date **7/11/00**  
 Dwell Time **2.5** min.  
 Traverse Points **24**  
 Stack Diameter **36** inches  
 Est % Saturation **90** %  
 Stack Static Pressure **0.32** in H2O  
 Barometric Pressure **30.10** in Hg  
 Dry Molecular Weight **28.969**

Meter Box Number **3187**  
 Meter Delta Ha (in. H2O) **1.742**  
 Meter Correction Factor **0.9969**  
 Nozzle Ident.: **0.25**  
 Nozzle Diameter Dn: **0.250**  
 Impinger Set Number: **P-1**  
 Probe length/Liner: **3' SS**  
 Filter Set Number **1**

Pitot Check  
 pos **4.2** in H2O  
 neg **4.6** in H2O  
 Leak Check  
 cfm **0.005** cfm  
 vac **15** in Hg

| Time Start <b>844</b> |      |              |                |                |            |            |               |               |                |               |       |     |
|-----------------------|------|--------------|----------------|----------------|------------|------------|---------------|---------------|----------------|---------------|-------|-----|
| Point                 | Time | Meter Volume | Calc'd Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump  | Vac |
| 1                     | 0.0  | 886.814      | 0.69           | 2.273          | 2.2        | 112        | 244           | 246           | 75             | 75            | 66    | 9   |
| 2                     | 2.5  | 888.93       | 0.68           | 2.240          | 2.2        | 113        | 239           | 244           | 75             | 75            | 61    | 9   |
| 3                     | 5.0  | 891.05       | 0.68           | 2.227          | 2.2        | 113        | 241           | 249           | 76             | 75            | 58    | 9   |
| 4                     | 7.5  | 893.16       | 0.72           | 2.360          | 2.3        | 113        | 242           | 247           | 78             | 75            | 57    | 10  |
| 5                     | 10.0 | 895.29       | 0.72           | 2.365          | 2.3        | 113        | 241           | 244           | 80             | 75            | 57    | 10  |
| 6                     | 12.5 | 897.41       | 0.73           | 2.402          | 2.4        | 113        | 242           | 244           | 82             | 75            | 59    | 10  |
| 7                     | 15.0 | 899.56       | 0.62           | 2.044          | 2          | 113        | 242           | 243           | 84             | 76            | 62    | 9   |
| 8                     | 17.5 | 901.64       | 0.5            | 1.653          | 1.6        | 114        | 243           | 243           | 86             | 77            | 62    | 7   |
| 9                     | 20.0 | 903.48       | 0.44           | 1.450          | 1.4        | 114        | 245           | 242           | 89             | 77            | 61    | 6   |
| 10                    | 22.5 | 905.2        | 0.4            | 1.321          | 1.3        | 114        | 245           | 243           | 91             | 77            | 61    | 5   |
| 11                    | 25.0 | 906.87       | 0.39           | 1.291          | 1.2        | 114        | 245           | 244           | 93             | 78            | 61    | 5   |
| 12                    | 27.5 | 908.48       | 0.38           | 1.261          | 1.2        | 114        | 247           | 245           | 94             | 78            | 61    | 5   |
| 13                    | 30.0 | 910.085      | 0.47           | 1.561          | 1.5        | 113        | 237           | 240           | 89             | 79            | 66    | 6   |
| 14                    | 32.5 | 911.83       | 0.47           | 1.565          | 1.5        | 113        | 235           | 242           | 93             | 79            | 62    | 6   |
| 15                    | 35.0 | 913.59       | 0.47           | 1.571          | 1.5        | 114        | 236           | 245           | 95             | 80            | 62    | 6   |
| 16                    | 37.5 | 915.35       | 0.48           | 1.599          | 1.5        | 114        | 236           | 250           | 96             | 80            | 63    | 6   |
| 17                    | 40.0 | 917.1        | 0.57           | 1.900          | 1.9        | 115        | 239           | 247           | 98             | 81            | 64    | 9   |
| 18                    | 42.5 | 919.1        | 0.64           | 2.126          | 2.1        | 114        | 237           | 243           | 99             | 82            | 64    | 9   |
| 19                    | 45.0 | 921.17       | 0.65           | 2.177          | 2.1        | 114        | 243           | 245           | 100            | 82            | 65    | 9   |
| 20                    | 47.5 | 923.25       | 0.62           | 2.078          | 2          | 115        | 244           | 246           | 100            | 83            | 66    | 9   |
| 21                    | 50.0 | 925.31       | 0.58           | 1.934          | 1.9        | 115        | 245           | 244           | 100            | 83            | 66    | 9   |
| 22                    | 52.5 | 927.35       | 0.58           | 1.934          | 1.9        | 115        | 245           | 245           | 101            | 84            | 67    | 9   |
| 23                    | 55.0 | 929.4        | 0.54           | 1.804          | 1.8        | 115        | 245           | 245           | 101            | 84            | 67    | 9   |
| 24                    | 57.5 | 931.4        | 0.52           | 1.737          | 1.7        | 115        | 246           | 245           | 101            | 85            | 67    | 8   |
| End                   | 60.0 | 933.325      |                |                |            |            |               |               |                |               |       |     |
|                       |      | Average      |                |                | 113.8      |            |               |               | 84.8           |               | 62.7  |     |
|                       |      | 0.73         | Max            |                |            | 247        | 250           |               |                |               | 67    | 10  |
|                       |      |              | Min            |                | 235        | 240        |               |               |                |               | 57    |     |
|                       |      |              | Range          |                | 223-273    | 223-273    |               |               |                |               | 32-68 |     |

Time End **948**

Pitot Check  
 pos **5.0** in H2O  
 neg **4.7** in H2O  
 Leak Check  
 cfm **0.005** cfm  
 vac **11** in Hg

Min Value

## Field Data Sheet

Run Number: 1

Facility: New Wales

Plant: Multifire C-Kiln

Test Team: RS/04

Company ID: 1108

FDEP AIRS &amp; Pt. ID: 1050059-074

|                       |             |
|-----------------------|-------------|
| Date                  | 7-11-00     |
| Traverse Points       | 24          |
| Stack Diameter        | 36 inches   |
| Dwell Time            | 1.5 min.    |
| Est % Saturation      | 90 %        |
| Stack Static Pressure | .32 in H2O  |
| Barometric Pressure   | 30.10 in Hg |
| Dry Molecular Weight  | 28.969      |

|                          |       |
|--------------------------|-------|
| Meter Box Number         | 3187  |
| Meter Delta Ha (in. H2O) | 1,742 |
| Meter Correction Factor  | .9969 |
| Nozzle Identification:   |       |
| Nozzle Diameter Dn:      | ,250  |
| Impinger Set Number:     | P-1   |
| Probe length/Liner:      | 3' 55 |
| Filter Set Number:       | 1     |

|             |            |
|-------------|------------|
| Pitot Check |            |
| pos         | 4.2 in H2O |
| neg         | 4.6 in H2O |
| Leak Check  |            |
| cfm         | .005       |
| vac         | 15 in Hg   |

Time Start 08 44

| Point | Time | Meter Volume | Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
| 1     | 0    | 886.814      | .69     | 2.2            | 112        | 244        | 246           | 75            | 75             | 66            | 9        |
| 2     | 2.5  | 888.93       | .69     | 2.2            | 113        | 239        | 244           | 75            | 75             | 61            | 9        |
| 3     | 5    | 891.05       | .68     | 2.2            | 113        | 241        | 249           | 76            | 75             | 58            | 9        |
| 4     | 7.5  | 893.16       | .72     | 2.3            | 113        | 242        | 247           | 78            | 75             | 57            | 10       |
| 5     | 10   | 895.29       | .72     | 2.3            | 113        | 241        | 244           | 80            | 75             | 57            | 10       |
| 6     | 12.5 | 897.41       | .73     | 2.4            | 113        | 242        | 244           | 82            | 75             | 59            | 10       |
| 7     | 15   | 899.56       | .62     | 2.0            | 113        | 242        | 243           | 84            | 76             | 62            | 9        |
| 8     | 17.5 | 901.64       | .50     | 1.6            | 114        | 243        | 243           | 86            | 77             | 62            | 7        |
| 9     | 20   | 903.48       | .44     | 1.4            | 114        | 245        | 242           | 89            | 77             | 61            | 6        |
| 10    | 22.5 | 905.20       | .40     | 1.3            | 114        | 243        | 243           | 91            | 77             | 61            | 5        |
| 11    | 25   | 906.97       | .39     | 1.2            | 114        | 245        | 244           | 93            | 78             | 61            | 5        |
| 12    | 27.5 | 908.48       | .38     | 1.2            | 114        | 247        | 245           | 94            | 78             | 61            | 5        |
| 13    | 30   | 910.085      | .47     | 1.5            | 113        | 237        | 240           | 89            | 79             | 66            | 6        |
| 14    | 32.5 | 911.93       | .47     | 1.5            | 113        | 235        | 242           | 93            | 74             | 62            | 6        |
| 15    | 35   | 913.59       | .47     | 1.5            | 114        | 236        | 245           | 95            | 80             | 62            | 6        |
| 16    | 37.5 | 915.35       | .48     | 1.5            | 114        | 236        | 250           | 96            | 80             | 63            | 6        |
| 17    | 40   | 917.10       | .57     | 1.9            | 115        | 239        | 247           | 98            | 81             | 64            | 9        |
| 18    | 42.5 | 919.10       | .64     | 2.1            | 114        | 237        | 243           | 99            | 82             | 64            | 9        |
| 19    | 45   | 921.17       | .65     | 2.1            | 114        | 243        | 245           | 100           | 92             | 65            | 9        |
| 20    | 47.5 | 923.25       | .62     | 2.0            | 115        | 244        | 246           | 100           | 83             | 64            | 9        |
| 21    | 50   | 925.31       | .58     | 1.9            | 115        | 245        | 244           | 100           | 83             | 66            | 9        |
| 22    | 52.5 | 927.35       | .58     | 1.9            | 115        | 245        | 245           | 101           | 84             | 67            | 9        |
| 23    | 55   | 929.40       | .54     | 1.8            | 115        | 245        | 245           | 101           | 84             | 67            | 9        |
| 24    | 57.5 | 931.40       | .52     | 1.7            | 115        | 246        | 245           | 101           | 85             | 67            | 8        |
| 25    | 60   | 933.325      |         |                |            |            |               |               |                |               |          |
| End   |      |              |         |                |            |            |               |               |                |               |          |

Time End 0948

Pitot Check

|     |            |
|-----|------------|
| pos | 5.0 in H2O |
| neg | 4.7 in H2O |

Leak Check

|     |          |
|-----|----------|
| cfm | .005     |
| vac | 11 in Hg |

Run 2

**Run 2 Calculations and Results**

Facility: NEW WALES  
Plant: MULTIFOS C - KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059-074  
Test Team: Da,Fb

Date: 7/12/00 mm/dd/yy  
Start Time: 853 End Time: 1009

Standard Meter Volume Vms: 40.27 dscf

Average Stack Velocity: 38.40 fps  
Stack Gas Volume: 16279 ACFM  
Stack Gas Dry Volume: 13784 DSCFM

Isokinetic Variation: 101.00 %

Isokinetics Adjusted For Bws>Saturation: NA %  
Vlc calculated for Saturated Conditions: NA ml H2O

**Emission Calculations**

Particulate Total mg: 38.3 mg  
1.73 lb/hr  
41.58 lb/day

Fluoride Total mg: 12.94 mg  
0.59 lb/hr  
14.05 lb/day

Run 2

Run 2 Data

Facility: NEW WALES  
Plant: MULTIFOS C - KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059-074  
Test Team: Da,Fb

Date: 7/12/00 mm/dd/yy  
Start Time: 853 End Time: 1009

Number of Traverse Points: 24  
Dwell Time/Point: 2.5 min.  
Total Test Time: 60 min.  
  
Stack Diameter: 36 inches  
Stack Area: 7.07 sq. ft.

Molecular Weight Dry Md: 28.969  
Volume of Water Vapor Condensed: 75 ml  
Weight of Water Collected in Silica Gel: 9.3 gram  
Moisture Volume Fraction Bwo: 0.0897  
Moisture Volume Saturated Bwo: 0.0900  
Moisture Percent Saturation: 100  
Moisture Used for Calculations: 0.0897  
Stack Molecular Weight Ms: 27.985

Barometric Pressure Pb: 30.10 in Hg  
Stack Static Pressure Pv: 0.32 in H<sub>2</sub>O  
Stack Pressure Ps: 30.124 in Hg  
Average Meter Delta H: 1.413 in H<sub>2</sub>O  
Meter Pressure Pm: 30.204 in Hg  
Console Number: 3187  
Meter Delta Ha: 1.742  
Meter Correction Factor: 0.9969

Average Meter Temperature: 81.2 deg. F  
Average Stack Temperature: 111.5 deg. F 44.2 deg C

Average Square Root Delta P: 0.650  
Meter Volume Vm: 41.03 cu. ft.  
Probe Length/Liner: 3' SS  
Cp: 0.84  
Nozzle Ident.: 0.25  
Nozzle Diameter Dn: 0.250 in.  
Impinger Set Number: P-2  
Average Computer K: 3.3432

## Run 2 Data Sheet

Facility: NEW WALES  
 Plant: MULTIFOS C - KILN  
 Team (CB/PR): Da,Fb

Company ID: 1108  
 DEP AIRS & Pt. ID: 1050059-074

|                       |             |                          |        |                    |
|-----------------------|-------------|--------------------------|--------|--------------------|
| Date                  | 7/12/00     | Meter Box Number         | 3187   |                    |
| Dwell Time            | 2.5 min.    | Meter Delta Ha (in. H2O) | 1.742  | Pitot Check        |
| Traverse Points       | 24          | Meter Correction Factor  | 0.9969 | pos [ ] 4.2 in H2O |
| Stack Diameter        | 36 inches   | Nozzle Ident.:           | 0.25   | neg [ ] 4.5 in H2O |
| Est % Saturation      | 90 %        | Nozzle Diameter Dn:      | 0.250  | Leak Check         |
| Stack Static Pressure | 0.32 in H2O | Impinger Set Number:     | P-2    | cfm [ ] 0.000 cfm  |
| Barometric Pressure   | 30.10 in Hg | Probe length/Liner:      | 3' SS  | vac [ ] 15 in Hg   |
| Dry Molecular Weight  | 28.969      | Filter Set Number        | 2      |                    |

| Point | Time | Meter   |        | Calc'd  |         | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|---------|--------|---------|---------|------------|------------|---------------|---------------|----------------|---------------|----------|
|       |      | Time    | Volume | Delta P | Delta H |            |            |               |               |                |               |          |
| 1     | 0.0  | 981.317 | 0.45   | 1.511   | 1.5     | 110        | 234        | 240           | 79            | 79             | 64            | 9        |
| 2     | 2.5  | 983.07  | 0.47   | 1.578   | 1.6     | 110        | 253        | 241           | 78            | 78             | 63            | 9        |
| 3     | 5.0  | 984.85  | 0.48   | 1.609   | 1.6     | 111        | 243        | 244           | 79            | 79             | 61            | 10       |
| 4     | 7.5  | 986.65  | 0.5    | 1.669   | 1.7     | 111        | 243        | 240           | 80            | 78             | 61            | 10       |
| 5     | 10.0 | 988.47  | 0.5    | 1.669   | 1.7     | 111        | 243        | 243           | 81            | 79             | 60            | 10       |
| 6     | 12.5 | 990.3   | 0.48   | 1.606   | 1.6     | 111        | 244        | 248           | 83            | 79             | 63            | 10       |
| 7     | 15.0 | 992.11  | 0.48   | 1.609   | 1.6     | 111        | 245        | 247           | 84            | 79             | 64            | 10       |
| 8     | 17.5 | 993.93  | 0.45   | 1.510   | 1.5     | 111        | 245        | 245           | 85            | 79             | 61            | 10       |
| 9     | 20.0 | 995.72  | 0.4    | 1.343   | 1.3     | 112        | 245        | 244           | 86            | 79             | 57            | 9        |
| 10    | 22.5 | 997.44  | 0.4    | 1.336   | 1.3     | 112        | 246        | 245           | 87            | 79             | 55            | 9        |
| 11    | 25.0 | 999.13  | 0.38   | 1.271   | 1.3     | 111        | 246        | 244           | 88            | 79             | 57            | 9        |
| 12    | 27.5 | 1000.83 | 0.36   | 1.212   | 1.2     | 111        | 246        | 244           | 90            | 79             | 58            | 8        |
| 13    | 30.0 | 1002.43 | 0.32   | 1.079   | 1.1     | 112        | 244        | 243           | 81            | 79             | 66            | 7        |
| 14    | 32.5 | 1003.93 | 0.35   | 1.164   | 1.2     | 112        | 242        | 245           | 81            | 79             | 63            | 8        |
| 15    | 35.0 | 1005.48 | 0.38   | 1.264   | 1.3     | 112        | 243        | 245           | 81            | 79             | 62            | 9        |
| 16    | 37.5 | 1007.1  | 0.4    | 1.330   | 1.3     | 112        | 244        | 246           | 83            | 79             | 63            | 9        |
| 17    | 40.0 | 1008.73 | 0.4    | 1.333   | 1.3     | 112        | 245        | 245           | 83            | 79             | 61            | 10       |
| 18    | 42.5 | 1010.36 | 0.44   | 1.466   | 1.5     | 112        | 245        | 244           | 83            | 79             | 56            | 11       |
| 19    | 45.0 | 1012.1  | 0.46   | 1.533   | 1.5     | 112        | 245        | 244           | 83            | 79             | 56            | 11       |
| 20    | 47.5 | 1013.85 | 0.46   | 1.533   | 1.5     | 112        | 247        | 245           | 84            | 79             | 58            | 11       |
| 21    | 50.0 | 1015.6  | 0.44   | 1.467   | 1.5     | 112        | 245        | 246           | 84            | 79             | 59            | 11       |
| 22    | 52.5 | 1017.4  | 0.4    | 1.334   | 1.3     | 112        | 245        | 244           | 85            | 80             | 61            | 9        |
| 23    | 55.0 | 1019.07 | 0.39   | 1.303   | 1.3     | 112        | 246        | 243           | 86            | 80             | 61            | 9        |
| 24    | 57.5 | 1020.72 | 0.37   | 1.237   | 1.2     | 112        | 244        | 243           | 88            | 80             | 61            | 9        |
| End   | 60.0 | 1022.35 |        |         |         |            |            |               |               |                |               |          |

|         |       |      |      |
|---------|-------|------|------|
| Average | 111.5 | 81.2 | 60.5 |
|---------|-------|------|------|

|         |     |     |    |
|---------|-----|-----|----|
| 0.5 Max | 253 | 248 | 66 |
|---------|-----|-----|----|

|     |     |     |    |
|-----|-----|-----|----|
| Min | 234 | 240 | 55 |
|-----|-----|-----|----|

|       |         |         |       |
|-------|---------|---------|-------|
| Range | 223-273 | 223-273 | 32-68 |
|-------|---------|---------|-------|

|             |           |
|-------------|-----------|
| Pitot Check | Min Value |
|-------------|-----------|

|             |            |
|-------------|------------|
| pos [ ] 4.3 | 0.5 in H2O |
|-------------|------------|

|             |            |
|-------------|------------|
| neg [ ] 4.6 | 0.5 in H2O |
|-------------|------------|

|            |
|------------|
| Leak Check |
|------------|

|               |            |
|---------------|------------|
| cfm [ ] 0.000 | <0.020 cfm |
|---------------|------------|

|            |          |
|------------|----------|
| vac [ ] 13 | 11 in Hg |
|------------|----------|

Time End 1009

## Field Data Sheet

Run Number: 2

Facility: New Wales  
 Plant: Mattfors C-kila  
 Test Team: DC, FB

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059-074

|                       |                                |
|-----------------------|--------------------------------|
| Date                  | <u>7/12/2000</u>               |
| Traverse Points       | <u>24</u>                      |
| Stack Diameter        | <u>.36</u> inches              |
| Dwell Time            | <u>2.5</u> min.                |
| Est % Saturation      | <u>90</u> %                    |
| Stack Static Pressure | <u>.31</u> in H <sub>2</sub> O |
| Barometric Pressure   | <u>30.10</u> in Hg             |
| Dry Molecular Weight  | 28.969                         |

|                                       |              |
|---------------------------------------|--------------|
| Meter Box Number                      | <u>3187</u>  |
| Meter Delta Ha (in. H <sub>2</sub> O) | <u>1.742</u> |
| Meter Correction Factor               | <u>.9969</u> |
| Nozzle Identification                 | <u>.250</u>  |
| Nozzle Diameter Dn:                   | <u>.250</u>  |
| Impinger Set Number:                  | <u>1-2</u>   |
| Probe length/Liner:                   | <u>3'55</u>  |
| Filter Set Number:                    | <u>2</u>     |

|             |             |                     |
|-------------|-------------|---------------------|
| Pitot Check |             |                     |
| pos         | <u>4.2</u>  | in H <sub>2</sub> O |
| neg         | <u>4.5</u>  | in H <sub>2</sub> O |
| Leak Check  |             |                     |
| cfm         | <u>.000</u> |                     |
| vac         | <u>15</u>   | in Hg               |

Time Start 8:53

| Point | Time | Meter Volume | Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
| 1     | 0    | 981.317      | .45     | 1.5            | 110        | 234        | 240           | 79            | 79             | 64            | 9        |
| 2     | 2.5  | 983.07       | .47     | 1.6            | 110        | 253        | 241           | 78            | 78             | 63            | 9        |
| 3     | 5.0  | 984.85       | .48     | 1.6            | 111        | 243        | 244           | 79            | 79             | 61            | 10       |
| 4     | 7.5  | 986.65       | .50     | 1.7            | 111        | 243        | 240           | 80            | 78             | 61            | 10       |
| 5     | 10   | 988.47       | .50     | 1.7            | 111        | 243        | 243           | 81            | 79             | 60            | 10       |
| 6     | 12.5 | 990.30       | .48     | 1.6            | 111        | 244        | 248           | 83            | 79             | 63            | 10       |
| 7     | 15   | 992.11       | .48     | 1.6            | 111        | 245        | 247           | 84            | 79             | 64            | 10       |
| 8     | 17.5 | 993.97       | .45     | 1.5            | 111        | 245        | 245           | 85            | 79             | 61            | 10       |
| 9     | 20   | 995.72       | .40     | 1.3            | 112        | 245        | 244           | 86            | 79             | 57            | 9        |
| 10    | 22.5 | 997.44       | .40     | 1.3            | 112        | 246        | 245           | 87            | 79             | 55            | 9        |
| 11    | 25   | 999.17       | .38     | 1.3            | 111        | 246        | 244           | 88            | 79             | 57            | 9        |
| 12    | 27.5 | 1000.83      | .36     | 1.2            | 111        | 246        | 244           | 90            | 79             | 58            | 8        |
| 13    | 30   | 1002.426     | .32     | 1.1            | 112        | 244        | 243           | 81            | 79             | 66            | 7        |
| 14    | 32.5 | 1003.93      | .35     | 1.2            | 112        | 242        | 245           | 81            | 79             | 63            | 8        |
| 15    | 35   | 1005.48      | .38     | 1.3            | 112        | 243        | 245           | 81            | 79             | 62            | 9        |
| 16    | 37.5 | 1007.10      | .40     | 1.3            | 112        | 244        | 246           | 83            | 79             | 63            | 9        |
| 17    | 40   | 1008.73      | .40     | 1.3            | 112        | 245        | 245           | 83            | 79             | 61            | 10       |
| 18    | 42.5 | 1010.36      | .44     | 1.5            | 112        | 245        | 241           | 83            | 79             | 56            | 11       |
| 19    | 45   | 1012.10      | .46     | 1.5            | 112        | 245        | 244           | 83            | 79             | 56            | 11       |
| 20    | 47.5 | 1013.85      | .46     | 1.5            | 112        | 247        | 245           | 84            | 79             | 58            | 11       |
| 21    | 50   | 1015.60      | .44     | 1.5            | 112        | 245        | 246           | 84            | 79             | 59            | 11       |
| 22    | 52.5 | 1017.40      | .40     | 1.3            | 112        | 245        | 244           | 85            | 80             | 61            | 9        |
| 23    | 55   | 1019.07      | .39     | 1.3            | 112        | 246        | 243           | 86            | 80             | 61            | 9        |
| 24    | 57.5 | 1020.72      | .37     | 1.2            | 112        | 244        | 243           | 88            | 80             | 61            | 9        |
| 25    | 60   | 1022.48      |         |                |            |            |               |               |                |               |          |
| End   |      |              |         |                |            |            |               |               |                |               |          |

Time End 10:09

Pitot Check

|     |            |                     |
|-----|------------|---------------------|
| pos | <u>4.3</u> | in H <sub>2</sub> O |
| neg | <u>4.6</u> | in H <sub>2</sub> O |

Leak Check

|     |             |       |
|-----|-------------|-------|
| cfm | <u>.000</u> |       |
| vac | <u>13</u>   | in Hg |

**Run 3 Calculations and Results**

Facility: NEW WALES  
Plant: MULTIFOS C - KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059-074  
Test Team: Da,Fb

Date: 7/13/00 mm/dd/yy  
Start Time: 1020 End Time: 1125

Standard Meter Volume Vms: 39.46 dscf

Average Stack Velocity: 37.42 fps  
Stack Gas Volume: 15861 ACFM  
Stack Gas Dry Volume: 13610 DSCFM

Isokinetic Variation: 100.23 %

Isokinetics Adjusted For Bws>Saturation: NA %  
Vlc calculated for Saturated Conditions: NA ml H2O

**Emission Calculations**

Particulate Total mg: 96.4 mg  
4.39 lb/hr  
105.46 lb/day

Fluoride Total mg: 9.65 mg  
0.44 lb/hr  
10.56 lb/day

Run 3

Run 3 Data

Facility: NEW WALES

Plant: MULTIFOS C - KILN

Company ID: 1108

FDEP AIRS & Pt. ID: 1050059-074

Test Team: Da,Fb

Date: 7/13/00 mm/dd/yy  
Start Time: 1020 End Time: 1125

Number of Traverse Points: 24

Dwell Time/Point: 2.5 min.

Total Test Time: 60 min.

Stack Diameter: 36 inches  
Stack Area: 7.07 sq. ft.

Molecular Weight Dry Md: 28.969

Volume of Water Vapor Condensed: 62 ml

Weight of Water Collected in Silica Gel: 9.6 gram

Moisture Volume Fraction Bwo: 0.0787

Moisture Volume Saturated Bwo: 0.0880

Moisture Percent Saturation: 89

Moisture Used for Calculations: 0.0787

Stack Molecular Weight Ms: 28.106

Barometric Pressure Pb: 30.10 in Hg

Stack Static Pressure Pv: 0.32 in H<sub>2</sub>O

Stack Pressure Ps: 30.124 in Hg

Average Meter Delta H: 1.358 in H<sub>2</sub>O

Meter Pressure Pm: 30.200 in Hg

Console Number: 3187

Meter Delta Ha: 1.742

Meter Correction Factor: 0.9969

Average Meter Temperature: 91.7 deg. F

Average Stack Temperature: 110.7 deg. F 43.7 deg C

Average Square Root Delta P: 0.635

Meter Volume Vm: 40.99 cu. ft.

Probe Length/Liner: 3' SS

Cp: 0.84

Nozzle Ident.: 0.25

Nozzle Diameter Dn: 0.250 in.

Impinger Set Number: P-3

Average Computer K: 3.4230

## Run 3

## Run 3 Data Sheet

Facility: NEW WALES  
 Plant: MULTIFOS C - KILN  
 Team (CB/PR): Da,Fb

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059-074

|                       |             |                          |        |
|-----------------------|-------------|--------------------------|--------|
| Date                  | 7/13/00     | Meter Box Number         | 3187   |
| Dwell Time            | 2.5 min.    | Meter Delta Ha (in. H2O) | 1.742  |
| Traverse Points       | 24          | Meter Correction Factor  | 0.9969 |
| Stack Diameter        | 36 inches   | Nozzle Ident.: Dn:       | 0.25   |
| Est % Saturation      | 90 %        | Nozzle Diameter Dn:      | 0.250  |
| Stack Static Pressure | 0.32 in H2O | Impinger Set Number:     | P-3    |
| Barometric Pressure   | 30.10 in Hg | Probe length/Liner:      | 3' SS  |
| Dry Molecular Weight  | 28.969      | Filter Set Number:       | 3      |

| Point | Time | Meter Volume | Time Start |      | Calc'd Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |    |
|-------|------|--------------|------------|------|----------------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|----|
|       |      |              | 1020       | 1020 |                |                |            |            |               |               |                |               |          |    |
| 1     | 0.0  | 110.12       |            |      | 0.5            | 1.712          | 1.4        | 109        | 237           | 237           | 87             | 86            | 63       | 5  |
| 2     | 2.5  | 111.88       |            |      | 0.57           | 1.952          | 1.9        | 111        | 236           | 231           | 89             | 86            | 60       | 7  |
| 3     | 5.0  | 113.93       |            |      | 0.57           | 1.933          | 1.9        | 111        | 236           | 231           | 91             | 86            | 60       | 7  |
| 4     | 7.5  | 115.98       |            |      | 0.55           | 1.869          | 1.8        | 111        | 236           | 230           | 92             | 86            | 55       | 7  |
| 5     | 10.0 | 117.92       |            |      | 0.55           | 1.871          | 1.8        | 111        | 239           | 231           | 94             | 87            | 55       | 7  |
| 6     | 12.5 | 119.82       |            |      | 0.55           | 1.876          | 1.8        | 111        | 236           | 236           | 95             | 87            | 55       | 7  |
| 7     | 15.0 | 121.78       |            |      | 0.4            | 1.365          | 1.3        | 111        | 237           | 236           | 96             | 88            | 56       | 7  |
| 8     | 17.5 | 123.51       |            |      | 0.35           | 1.197          | 1.1        | 111        | 237           | 236           | 96             | 88            | 56       | 7  |
| 9     | 20.0 | 125.09       |            |      | 0.33           | 1.128          | 1.1        | 111        | 237           | 239           | 97             | 88            | 57       | 7  |
| 10    | 22.5 | 126.7        |            |      | 0.3            | 1.027          | 1          | 111        | 236           | 239           | 98             | 88            | 58       | 6  |
| 11    | 25.0 | 128.3        |            |      | 0.27           | 0.925          | 0.92       | 110        | 239           | 240           | 97             | 88            | 58       | 5  |
| 12    | 27.5 | 129.65       |            |      | 0.3            | 1.033          | 1          | 110        | 240           | 240           | 97             | 88            | 59       | 5  |
| 13    | 30.0 | 131.22       |            |      | 0.41           | 1.411          | 1.4        | 110        | 240           | 242           | 93             | 87            | 62       | 7  |
| 14    | 32.5 | 132.9        |            |      | 0.45           | 1.542          | 1.5        | 110        | 239           | 242           | 94             | 88            | 60       | 8  |
| 15    | 35.0 | 134.69       |            |      | 0.45           | 1.545          | 1.5        | 111        | 238           | 242           | 96             | 88            | 60       | 8  |
| 16    | 37.5 | 136.44       |            |      | 0.5            | 1.710          | 1.7        | 111        | 239           | 244           | 97             | 88            | 58       | 10 |
| 17    | 40.0 | 138.25       |            |      | 0.52           | 1.780          | 1.7        | 111        | 238           | 244           | 98             | 88            | 58       | 10 |
| 18    | 42.5 | 140.09       |            |      | 0.5            | 1.713          | 1.7        | 111        | 237           | 245           | 98             | 88            | 59       | 10 |
| 19    | 45.0 | 141.9        |            |      | 0.4            | 1.370          | 1.3        | 110        | 238           | 242           | 98             | 88            | 59       | 10 |
| 20    | 47.5 | 143.75       |            |      | 0.35           | 1.206          | 1.2        | 111        | 238           | 237           | 99             | 88            | 59       | 10 |
| 21    | 50.0 | 145.3        |            |      | 0.35           | 1.200          | 1.2        | 111        | 237           | 235           | 99             | 89            | 59       | 8  |
| 22    | 52.5 | 147          |            |      | 0.3            | 1.030          | 1          | 111        | 238           | 236           | 99             | 88            | 59       | 7  |
| 23    | 55.0 | 148.6        |            |      | 0.2            | 0.686          | 0.68       | 111        | 238           | 236           | 99             | 88            | 59       | 7  |
| 24    | 57.5 | 149.79       |            |      | 0.2            | 0.686          | 0.68       | 111        | 238           | 236           | 99             | 88            | 60       | 5  |
| End   | 60.0 | 151.11       |            |      | Average        |                |            | 110.7      |               |               | 91.7           |               | 58.5     |    |
|       |      |              |            |      | 0.57           | Max            |            |            | 240           | 245           |                |               | 63       | 10 |
|       |      |              |            |      |                | Min            |            |            | 236           | 230           |                |               | 55       |    |
|       |      |              |            |      |                | Range          |            |            | 223-273       | 223-273       |                |               | 32-68    |    |

Time End 1125

Pitot Check Min Value

|     |     |             |
|-----|-----|-------------|
| pos | 4.1 | 0.57 in H2O |
| neg | 4.5 | 0.57 in H2O |

Leak Check

|     |       |            |
|-----|-------|------------|
| cfm | 0.000 | <0.020 cfm |
| vac | 13    | 10 in Hg   |

## Field Data Sheet

Run Number: 3

Facility: New Wales  
 Plant: C-K/I/N  
 Test Team: KS/DA/FB

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059-074

|                       |         |
|-----------------------|---------|
| Date                  | 7-13-00 |
| Traverse Points       | 24      |
| Stack Diameter        | 36      |
| Dwell Time            | 2.5     |
| Est % Saturation      | 90      |
| Stack Static Pressure | .32     |
| Barometric Pressure   | 30.12   |
| Dry Molecular Weight  | 28.969  |

|                          |       |
|--------------------------|-------|
| Meter Box Number         | 3187  |
| Meter Delta Ha (in. H2O) | 1.742 |
| Meter Correction Factor  | .9969 |
| Nozzle Identification    | ,250  |
| Nozzle Diameter Dn:      | .250  |
| Impinger Set Number:     | P-3   |
| Probe length/Liner:      | 3'55  |
| Filter Set Number:       | 3     |

|             |      |        |
|-------------|------|--------|
| Pitot Check |      |        |
| pos         | 4.5  | in H2O |
| neg         | 4.1  | in H2O |
| Leak Check  |      |        |
| cfm         | .000 |        |
| vac         | 15   | in Hg  |

Time Start 1020

| Point | Time | Meter Volume | Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
| 1     | 0    | 110.12       | .50     | 1.4            | 109        | 237        | 237           | 87            | 86             | 63            | 5        |
| 2     | 2.5  | 111.58       | .57     | 1.7            | 111        | 236        | 231           | 89            | 86             | 60            | 7        |
| 3     | 5    | 113.93       | .57     | 1.9            | 111        | 236        | 231           | 91            | 86             | 60            | 7        |
| 4     | 7.5  | 115.90       | .55     | 1.8            | 111        | 236        | 230           | 92            | 86             | 55            | 7        |
| 5     | 10   | 117.52       | .55     | 1.8            | 111        | 239        | 231           | 94            | 87             | 55            | 7        |
| 6     | 12.5 | 119.02       | .55     | 1.8            | 111        | 236        | 236           | 95            | 87             | 55            | 7        |
| 7     | 15   | 121.78       | .40     | 1.3            | 111        | 237        | 236           | 96            | 88             | 56            | 7        |
| 8     | 17.5 | 123.51       | .35     | 1.1            | 111        | 237        | 236           | 96            | 88             | 56            | 7        |
| 9     | 20   | 125.09       | .33     | 1.1            | 111        | 237        | 239           | 97            | 88             | 57            | 7        |
| 10    | 22.5 | 126.70       | .30     | 1.0            | 111        | 236        | 239           | 98            | 88             | 58            | 6        |
| 11    | 25   | 128.30       | .27     | .92            | 110        | 239        | 240           | 97            | 88             | 58            | 5        |
| 12    | 27.5 | 129.65       | .30     | 1.0            | 110        | 240        | 240           | 97            | 88             | 59            | 5        |
| 13    | 30   | 131.22       | .41     | 1.4            | 110        | 240        | 242           | 93            | 87             | 62            | 7        |
| 14    | 32.5 | 132.90       | .45     | 1.5            | 110        | 239        | 242           | 94            | 88             | 60            | 8        |
| 15    | 35   | 134.69       | .45     | 1.5            | 111        | 238        | 242           | 96            | 88             | 60            | 8        |
| 16    | 37.5 | 136.44       | .50     | 1.7            | 111        | 239        | 244           | 97            | 88             | 58            | 10       |
| 17    | 40   | 138.25       | .52     | 1.7            | 111        | 238        | 244           | 98            | 88             | 58            | 10       |
| 18    | 42.5 | 140.09       | .50     | 1.7            | 111        | 237        | 245           | 98            | 88             | 59            | 10       |
| 19    | 45   | 141.90       | .40     | 1.3            | 110        | 238        | 242           | 98            | 88             | 59            | 10       |
| 20    | 47.5 | 143.75       | .35     | 1.2            | 111        | 238        | 237           | 99            | 88             | 59            | 10       |
| 21    | 50   | 145.30       | .35     | 1.2            | 111        | 237        | 235           | 99            | 89             | 59            | 8        |
| 22    | 52.5 | 147          | .30     | 1.0            | 111        | 238        | 236           | 99            | 88             | 59            | 7        |
| 23    | 55   | 149.6        | .20     | .68            | 111        | 238        | 236           | 99            | 88             | 59            | 7        |
| 24    | 57.5 | 149.79       | .20     | .68            | 111        | 238        | 236           | 99            | 88             | 66            | 5        |
| 25    | 60   | 151.11       |         |                |            |            |               |               |                |               |          |
| End   |      |              |         |                |            |            |               |               |                |               |          |

Time End 1125

|             |      |        |
|-------------|------|--------|
| Pitot Check |      |        |
| pos         | 4.1  | in H2O |
| neg         | 4.5  | in H2O |
| Leak Check  |      |        |
| cfm         | .000 |        |
| vac         | 13   | in Hg  |

**Run 1 Calculations and Results**

Facility: New Wales  
Plant: MULTIFOS C-KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059 & 074  
Test Team: FB,DC,RS

Date: 07/11/00  
Start Time: 1145 End Time: 1250

Standard Meter Volume Vms: 45.95 dscf

Average Stack Velocity: 41.01 fps  
Stack Gas Volume: 17385 ACFM  
Stack Gas Dry Volume: 14634 DSCFM

Isokinetic Variation: 108.55 %

Isokinetics Adjusted For Bws>Saturation: NA %  
Vlc calculated for Saturated Conditions: NA ml H2O

**Emission Calculations**

SO2 Total mg: 28.22 mg  
1.19 lb/hr  
28.51 lb/day

Run 1

Run 1 Data

Facility: New Wales  
Plant: MULTIFOS C-KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059 & 074  
Test Team: FB,DC,RS

Date: 07/11/00  
Start Time: 1145 End Time: 1250

Number of Traverse Points: 24  
Dwell Time/Point: 2.5 min.  
Total Test Time: 60 min.

Stack Diameter: 36 inches  
Stack Area: 7.07 sq. ft.

Molecular Weight Dry Md: 28.969  
Volume of Water Vapor Condensed: 83 ml  
Weight of Water Collected in Silica Gel: 14.8 gram  
Moisture Volume Fraction Bwo: 0.0911  
Moisture Volume Saturated Bwo: 0.0966  
Moisture Percent Saturation: 94  
Moisture Used for Calculations: 0.0911  
Stack Molecular Weight Ms: 27.970

Barometric Pressure Pb: 30.10 in Hg  
Stack Static Pressure Pv: 0.32 in H<sub>2</sub>O  
Stack Pressure Ps: 30.124 in Hg  
Average Meter Delta H: 1.817 in H<sub>2</sub>O  
Meter Pressure Pm: 30.234 in Hg  
Console Number: 3187  
Meter Delta Ha: 1.742  
Meter Correction Factor: 0.9969

Average Meter Temperature: 84.5 deg. F  
Average Stack Temperature: 114.0 deg. F 45.5 deg C

Average Square Root Delta P: 0.692  
Meter Volume Vm: 47.06 cu. ft.  
Probe Length/Liner: 3' Glass  
Cp: 0.84  
Nozzle Ident.: 0.250  
Nozzle Diameter Dn: 0.250 in.  
Impinger Set Number: S3  
Average Computer K: 3.8424

## Run 1

## Run 1 Data Sheet

Facility: New Wales

Plant: MULTIFOS C-KILN

Team (CB/PR): FB,DC,RS

Company ID: 1108

FDEP AIRS &amp; Pt. ID: 1050059 &amp; 074

|                       |             |
|-----------------------|-------------|
| Date                  | 07/11/00    |
| Dwell Time            | 2.5 min.    |
| Traverse Points       | 24          |
| Stack Diameter        | 36 inches   |
| Est % Saturation      | 0 %         |
| Stack Static Pressure | 0.32 in H2O |
| Barometric Pressure   | 30.10 in Hg |
| Dry Molecular Weight  | 28.969      |

|                          |          |
|--------------------------|----------|
| Meter Box Number         | 3187     |
| Meter Delta Ha (in. H2O) | 1.742    |
| Meter Correction Factor  | 0.9969   |
| Nozzle Ident.:           | 0.250    |
| Nozzle Diameter Dn:      | 0.250    |
| Impinger Set Number:     | S3       |
| Probe length/Liner:      | 3' Glass |
| Filter Set Number        | 1        |

|             |            |
|-------------|------------|
| Pitot Check |            |
| pos         | 4.2 in H2O |
| neg         | 4.5 in H2O |
| Leak Check  |            |
| cfm         | 0.000 cfm  |
| vac         | 15 in Hg   |

| Point | Time | Meter Volume | Calc'd  |         | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
|       |      |              | Delta P | Delta H |                |            |            |               |               |                |               |          |
| 1     | 0.0  | 933.99       | 0.37    | 1.410   | 1.4            | 114        |            |               | 80            | 80             | 62            | 6        |
| 2     | 2.5  | 935.67       | 0.4     | 1.525   | 1.5            | 113        |            |               | 81            | 80             | 60            | 5        |
| 3     | 5.0  | 937.46       | 0.4     | 1.529   | 1.5            | 114        |            |               | 83            | 80             | 55            | 6        |
| 4     | 7.5  | 939.24       | 0.39    | 1.491   | 1.4            | 114        |            |               | 85            | 80             | 55            | 6        |
| 5     | 10.0 | 940.95       | 0.45    | 1.723   | 1.7            | 114        |            |               | 87            | 80             | 55            | 7        |
| 6     | 12.5 | 942.85       | 0.5     | 1.918   | 1.9            | 114        |            |               | 88            | 80             | 55            | 8        |
| 7     | 15.0 | 944.82       | 0.52    | 1.997   | 1.9            | 114        |            |               | 90            | 80             | 55            | 9        |
| 8     | 17.5 | 946.85       | 0.58    | 2.231   | 2.2            | 114        |            |               | 92            | 80             | 55            | 9        |
| 9     | 20.0 | 948.98       | 0.52    | 2.004   | 2              | 114        |            |               | 93            | 80             | 55            | 9        |
| 10    | 22.5 | 951.05       | 0.52    | 2.006   | 2              | 114        |            |               | 93            | 81             | 55            | 9        |
| 11    | 25.0 | 953.04       | 0.46    | 1.776   | 1.7            | 114        |            |               | 93            | 81             | 55            | 10       |
| 12    | 27.5 | 954.95       | 0.52    | 2.008   | 2              | 114        |            |               | 93            | 82             | 55            | 10       |
| 13    | 30.0 | 956.91       | 0.6     | 2.319   | 2.3            | 114        |            |               | 90            | 82             | 63            | 10       |
| 14    | 32.5 | 959.04       | 0.61    | 2.351   | 2.3            | 114        |            |               | 89            | 82             | 60            | 10       |
| 15    | 35.0 | 961.15       | 0.6     | 2.310   | 2.3            | 114        |            |               | 88            | 82             | 58            | 10       |
| 16    | 37.5 | 963.22       | 0.59    | 2.270   | 2.2            | 114        |            |               | 88            | 82             | 56            | 10       |
| 17    | 40.0 | 965.49       | 0.55    | 2.116   | 2.1            | 114        |            |               | 88            | 82             | 56            | 10       |
| 18    | 42.5 | 967.69       | 0.55    | 2.116   | 2.1            | 114        |            |               | 88            | 82             | 56            | 10       |
| 19    | 45.0 | 969.84       | 0.45    | 1.731   | 1.7            | 114        |            |               | 88            | 82             | 56            | 10       |
| 20    | 47.5 | 971.89       | 0.4     | 1.539   | 1.5            | 114        |            |               | 88            | 82             | 59            | 9        |
| 21    | 50.0 | 973.75       | 0.4     | 1.539   | 1.5            | 114        |            |               | 86            | 82             | 59            | 9        |
| 22    | 52.5 | 975.59       | 0.4     | 1.536   | 1.5            | 114        |            |               | 86            | 82             | 59            | 9        |
| 23    | 55.0 | 977.4        | 0.39    | 1.497   | 1.4            | 114        |            |               | 86            | 82             | 60            | 9        |
| 24    | 57.5 | 979.2        | 0.4     | 1.536   | 1.5            | 114        |            |               | 86            | 82             | 60            | 9        |
| End   | 60.0 | 981.05       | Average |         | 114.0          |            |            |               | 84.5          |                | 57.3          |          |
|       |      |              | 0.61    | Max     |                |            |            |               |               |                | 63            | 10       |
|       |      |              |         | Min     |                |            |            |               |               |                | 55            |          |

Time End 1250

|             |            |
|-------------|------------|
| Pitot Check | Min Value  |
| pos         | 4.5 in H2O |
| neg         | 4.1 in H2O |
| Leak Check  |            |
| cfm         | <0.020 cfm |
| vac         | 10 in Hg   |

## Field Data Sheet

Run Number: 108

Facility: New Wales  
 Plant: Multifac C-KiW  
 Test Team: DA/RS/FB SO2

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059, E074

JL 7/11

Date: 7-11-00  
 Traverse Points: 24  
 Stack Diameter: .36 inches  
 Dwell Time: 2.5 min.  
 Est % Saturation: 90%  
 Stack Static Pressure: .32 in H2O  
 Barometric Pressure: 30.10 in Hg  
 Dry Molecular Weight: 28.969

Meter Box Number: 3187  
 Meter Delta Ha (in. H2O): 1.742  
 Meter Correction Factor: .9969  
 Nozzle Identification: .250  
 Nozzle Diameter Dn: .250  
 Impinger Set Number: P-2  
 Probe length/Liner: 3' 55  
 Filter Set Number: 2

Pitot Check  
 pos 4.2 in H2O  
 neg 4.5 in H2O  
 Leak Check  
 cfm .000  
 vac .15 in Hg

Time Start 1145

| Point | Time | Meter Volume | Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
| 1     | 0    | 833.59       | .37     | 1.4            | 114        | N/A        | N/A           | 80            | 80             | 62            | 6        |
| 2     | 2.5  | 935.67       | .40     | 1.5            | 113        | N/A        | N/A           | 81            | 80             | 60            | 5        |
| 3     | 5    | 937.46       | .40     | 1.5            | 114        |            |               | 83            | 80             | 55            | 6        |
| 4     | 7.5  | 939.24       | .39     | 1.4            | 114        |            |               | 85            | 80             | 55            | 6        |
| 5     | 10   | 940.95       | .45     | 1.7            | 114        |            |               | 87            | 80             | 55            | 7        |
| 6     | 12.5 | 942.85       | .50     | 1.9            | 114        |            |               | 88            | 80             | 55            | 8        |
| 7     | 15   | 944.82       | .52     | 1.9            | 114        |            |               | 90            | 80             | 55            | 9        |
| 8     | 17.5 | 946.95       | .58     | 2.2            | 114        |            |               | 92            | 80             | 55            | 9        |
| 9     | 20   | 948.98       | .52     | 2.0            | 114        |            |               | 93            | 80             | 55            | 9        |
| 10    | 22.5 | 951.05       | .52     | 2.0            | 114        |            |               | 93            | 81             | 55            | 9        |
| 11    | 25   | 953.04       | .46     | 1.7            | 114        |            |               | 93            | 81             | 55            | 10       |
| 12    | 27.5 | 954.95       | .52     | 2.0            | 114        |            |               | 93            | 82             | 55            | 10       |
| 13    | 30   | 956.91       | .60     | 2.3            | 114        |            |               | 90            | 82             | 63            | 10       |
| 14    | 32.5 | 959.04       | .61     | 2.3            | 114        |            |               | 89            | 82             | 60            | 10       |
| 15    | 35   | 961.15       | .60     | 2.3            | 114        |            |               | 88            | 82             | 58            | 10       |
| 16    | 37.5 | 963.22       | .59     | 2.2            | 114        |            |               | 88            | 82             | 56            | 10       |
| 17    | 40   | 965.49       | .55     | 2.1            | 114        |            |               | 88            | 82             | 56            | 10       |
| 18    | 42.5 | 967.69       | .55     | 2.1            | 114        |            |               | 88            | 82             | 56            | 10       |
| 19    | 45   | 969.84       | .45     | 1.7            | 114        |            |               | 88            | 82             | 59            | 10       |
| 20    | 47.5 | 971.99       | .40     | 1.5            | 114        |            |               | 88            | 82             | 59            | 9        |
| 21    | 50   | 973.75       | .40     | 1.5            | 114        |            |               | 86            | 82             | 59            | 9        |
| 22    | 52.5 | 975.59       | .40     | 1.5            | 114        |            |               | 86            | 82             | 59            | 9        |
| 23    | 55   | 977.40       | .39     | 1.4            | 114        |            |               | 86            | 82             | 60            | 9        |
| 24    | 57.5 | 979.20       | .40     | 1.5            | 114        | ↓          | ↓             | 86            | 82             | 60            | 9        |
| 25    | 60   | 981.05       |         |                |            |            |               |               |                |               |          |
| End   |      |              |         |                |            |            |               |               |                |               |          |

Time End 1250

Pitot Check

|     |            |        |
|-----|------------|--------|
| pos | <u>7.5</u> | in H2O |
| neg | <u>4.1</u> | in H2O |

Leak Check

|     |             |       |
|-----|-------------|-------|
| cfm | <u>.000</u> |       |
| vac | <u>.15</u>  | in Hg |

Run 2

**Run 2 Calculations and Results**

Facility: New Wales  
Plant: MULTIFOS C-KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059 & 074  
Test Team: FB,DC,RS

Date: 07/12/00  
Start Time: 1402 End Time: 1509

Standard Meter Volume Vms: 41.27 dscf

Average Stack Velocity: 39.18 fps  
Stack Gas Volume: 16608 ACFM  
Stack Gas Dry Volume: 14293 DSCFM

Isokinetic Variation: 99.83 %

Isokinetics Adjusted For Bws>Saturation: NA %  
Vlc calculated for Saturated Conditions: NA ml H2O

**Emission Calculations**

SO2 Total mg: 53.42 mg  
2.44 lb/hr  
58.68 lb/day

Run 2

Run 2 Data

Facility: New Wales  
Plant: MULTIFOS C-KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059 & 074  
Test Team: FB,DC,RS

Date: 07/12/00  
Start Time: 1402 End Time: 1509

Number of Traverse Points: 24  
Dwell Time/Point: 2.5 min.  
Total Test Time: 60 min.

Stack Diameter: 36 inches  
Stack Area: 7.07 sq. ft.

Molecular Weight Dry Md: 28.969  
Volume of Water Vapor Condensed: 58 ml  
Weight of Water Collected in Silica Gel: 10.8 gram  
Moisture Volume Fraction Bwo: 0.0728  
Moisture Volume Saturated Bwo: 0.0932  
Moisture Percent Saturation: 78  
Moisture Used for Calculations: 0.0728  
Stack Molecular Weight Ms: 28.171

Barometric Pressure Pb: 30.10 in Hg  
Stack Static Pressure Pv: 0.32 in H<sub>2</sub>O  
Stack Pressure Ps: 30.124 in Hg  
Average Meter Delta H: 1.504 in H<sub>2</sub>O  
Meter Pressure Pm: 30.211 in Hg  
Console Number: 3187  
Meter Delta Ha: 1.742  
Meter Correction Factor: 0.9969

Average Meter Temperature: 92.9 deg. F  
Average Stack Temperature: 112.7 deg. F 44.8 deg C

Average Square Root Delta P: 0.664  
Meter Volume Vm: 42.95 cu. ft.  
Probe Length/Liner: 3' Glass  
Cp: 0.84  
Nozzle Ident.: 0.250  
Nozzle Diameter Dn: 0.250 in.  
Impinger Set Number: S-2  
Average Computer K: 3.3912

## Run 2

## Run 2 Data Sheet

Facility: New Wales  
 Plant: MULTIFOS C-KILN  
 Team (CB/PR): FB,DC,RS

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059 & 074

Date 07/12/00  
 Dwell Time 2.5 min.  
 Traverse Points 24  
 Stack Diameter 36 inches  
 Est % Saturation 90 %  
 Stack Static Pressure 0.32 in H2O  
 Barometric Pressure 30.10 in Hg  
 Dry Molecular Weight 28.969

Meter Box Number 3187  
 Meter Delta Ha (in. H2O) 1.742 Pitot Check  
 Meter Correction Factor 0.9969  
 Nozzle Ident.: 0.250 pos 3.8 in H2O  
 Nozzle Diameter Dn: 0.250 neg 4.5 in H2O  
 Impinger Set Number: S-2 Leak Check  
 Probe length/Liner: 3' Glass cfm 0.000 cfm  
 Filter Set Number: 1 vac 15 in Hg

| Point | Time | Meter Volume | Calc'd  |         | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
|       |      |              | Meter   | Delta P |                |            |            |               |               |                |               |          |
| 1     | 0.0  | 22.8         | 0.45    | 1.537   | 1.5            | 113        |            |               | 98            | 98             | 66            | 5        |
| 2     | 2.5  | 24.58        | 0.49    | 1.674   | 1.7            | 113        |            |               | 94            | 96             | 64            | 6        |
| 3     | 5.0  | 26.45        | 0.5     | 1.699   | 1.7            | 113        |            |               | 94            | 97             | 64            | 8        |
| 4     | 7.5  | 28.32        | 0.5     | 1.700   | 1.7            | 113        |            |               | 93            | 96             | 60            | 9        |
| 5     | 10.0 | 30.11        | 0.49    | 1.663   | 1.7            | 113        |            |               | 93            | 95             | 59            | 12       |
| 6     | 12.5 | 32           | 0.47    | 1.594   | 1.6            | 113        |            |               | 93            | 95             | 58            | 12       |
| 7     | 15.0 | 33.82        | 0.4     | 1.356   | 1.4            | 113        |            |               | 93            | 94             | 59            | 12       |
| 8     | 17.5 | 35.48        | 0.4     | 1.355   | 1.4            | 113        |            |               | 93            | 94             | 60            | 12       |
| 9     | 20.0 | 37.31        | 0.36    | 1.220   | 1.2            | 113        |            |               | 93            | 93             | 60            | 13       |
| 10    | 22.5 | 38.95        | 0.35    | 1.185   | 1.2            | 111        |            |               | 94            | 93             | 60            | 12       |
| 11    | 25.0 | 40.54        | 0.36    | 1.234   | 1.2            | 111        |            |               | 95            | 93             | 60            | 12       |
| 12    | 27.5 | 42.12        | 0.35    | 1.201   | 1.2            | 111        |            |               | 95            | 93             | 61            | 12       |
| 13    | 30.0 | 43.725       | 0.44    | 1.510   | 1.5            | 113        |            |               | 93            | 92             | 65            | 13       |
| 14    | 32.5 | 45.498       | 0.44    | 1.488   | 1.5            | 113        |            |               | 93            | 92             | 61            | 13       |
| 15    | 35.0 | 47.286       | 0.46    | 1.556   | 1.6            | 113        |            |               | 93            | 92             | 62            | 8        |
| 16    | 37.5 | 49.11        | 0.5     | 1.691   | 1.7            | 113        |            |               | 92            | 92             | 61            | 9        |
| 17    | 40.0 | 50.99        | 0.51    | 1.723   | 1.7            | 113        |            |               | 92            | 91             | 60            | 9        |
| 18    | 42.5 | 52.91        | 0.49    | 1.654   | 1.7            | 113        |            |               | 91            | 90             | 61            | 9        |
| 19    | 45.0 | 54.82        | 0.47    | 1.584   | 1.6            | 113        |            |               | 91            | 90             | 62            | 8        |
| 20    | 47.5 | 56.68        | 0.45    | 1.516   | 1.5            | 113        |            |               | 92            | 90             | 61            | 8        |
| 21    | 50.0 | 58.52        | 0.44    | 1.484   | 1.5            | 113        |            |               | 92            | 90             | 61            | 8        |
| 22    | 52.5 | 60.33        | 0.45    | 1.518   | 1.5            | 113        |            |               | 92            | 90             | 62            | 8        |
| 23    | 55.0 | 62.14        | 0.45    | 1.518   | 1.5            | 113        |            |               | 92            | 89             | 63            | 8        |
| 24    | 57.5 | 64           | 0.4     | 1.348   | 1.3            | 112        |            |               | 92            | 89             | 63            | 7        |
| End   | 60.0 | 65.75        | Average |         | 112.7          |            |            |               | 92.9          |                | 61.4          |          |
|       |      |              | 0.51    | Max     |                |            |            |               |               |                | 66            |          |
|       |      |              |         | Min     |                |            |            |               |               |                | 58            |          |
|       |      |              |         | Range   |                |            |            |               |               |                | 32-68         |          |

Time End 1509

Pitot Check Min Value  
 pos 4.5 0.51 in H2O  
 neg 4.2 0.51 in H2O  
 Leak Check  
 cfm 0.000 <0.020 cfm  
 vac 15 13 in Hg

## Field Data Sheet

Run Number: 3

Facility: New Caledon  
 Plant: Multifos C-Lite Son  
 Test Team: DC RS, FB SO2

Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059 & 074

Date 7/12/2000  
 Traverse Points 24  
 Stack Diameter .76 inches  
 Dwell Time 2.5 min.  
 Est % Saturation 90%  
 Stack Static Pressure .32 in H2O  
 Barometric Pressure 30.10 in Hg  
 Dry Molecular Weight 28.969

Meter Box Number 3187  
 Meter Delta Ha (in. H2O) 1.742  
 Meter Correction Factor .9969  
 Nozzle Identification .250  
 Nozzle Diameter Dn: .250  
 Impinger Set Number: P-3  
 Probe length/Liner: .755  
 Filter Set Number: 3

Pitot Check  
 pos 3.8 in H2O  
 neg 4.5 in H2O  
 Leak Check  
 cfm 000  
 vac /5 in Hg

Time Start 2:02

| Point | Time | Meter Volume | Delta P | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
| 1     | 0    | 22.80        | .45     | 1.5            | 113        | n/a        | n/a           | 98            | 98             | 66            | 5        |
| 2     | 2.5  | 24.58        | .49     | 1.7            | 113        | ↓          | ↓             | 94            | 96             | 64            | 6        |
| 3     | 5    | 26.45        | .50     | 1.7            | 113        | ↓          | ↓             | 94            | 97             | 64            | 8        |
| 4     | 7.5  | 28.32        | .50     | 1.7            | 113        |            |               | 93            | 96             | 60            | 9        |
| 5     | 10   | 30.11        | .49     | 1.7            | 113        |            |               | 93            | 95             | 59            | 12       |
| 6     | 12.5 | 32.0         | .47     | 1.6            | 113        |            |               | 93            | 95             | 58            | 12       |
| 7     | 15   | 33.82        | .40     | 1.4            | 113        |            |               | 93            | 94             | 59            | 12       |
| 8     | 17.5 | 35.48        | .40     | 1.4            | 113        |            |               | 93            | 94             | 60            | 12       |
| 9     | 20   | 37.31        | .36     | 1.2            | 113        |            |               | 93            | 93             | 60            | 13       |
| 10    | 22.5 | 38.95        | .35     | 1.2            | 111        |            |               | 94            | 93             | 60            | 12       |
| 11    | 25   | 40.54        | .36     | 1.2            | 111        |            |               | 95            | 93             | 60            | 12       |
| 12    | 27.5 | 42.12        | .35     | 1.2            | 111        |            |               | 95            | 93             | 61            | 12       |
| 13    | 30   | 43.725       | .44     | 1.5            | 113        |            |               | 93            | 92             | 65            | 13       |
| 14    | 32.5 | 45.49        | .44     | 1.5            | 113        |            |               | 93            | 92             | 61            | 13       |
| 15    | 35   | 47.28        | .46     | 1.6            | 113        |            |               | 93            | 92             | 62            | 8        |
| 16    | 37.5 | 49.11        | .50     | 1.7            | 113        |            |               | 92            | 92             | 61            | 9        |
| 17    | 40   | 50.95        | .51     | 1.7            | 113        |            |               | 92            | 91             | 60            | 9        |
| 18    | 42.5 | 52.91        | .49     | 1.7            | 113        |            |               | 91            | 90             | 61            | 9        |
| 19    | 45   | 54.82        | .77     | 1.6            | 113        |            |               | 91            | 90             | 62            | 8        |
| 20    | 47.5 | 56.68        | .45     | 1.5            | 113        |            |               | 92            | 90             | 61            | 8        |
| 21    | 50   | 58.52        | .44     | 1.5            | 113        |            |               | 92            | 90             | 61            | 8        |
| 22    | 52.5 | 60.37        | .45     | 1.5            | 113        |            |               | 92            | 90             | 62            | 9        |
| 23    | 55   | 62.14        | .45     | 1.5            | 113        |            |               | 92            | 89             | 63            | 8        |
| 24    | 57.5 | 64           | .40     | 1.3            | 112        |            |               | 92            | 89             | 63            | 7        |
| 25    | 60   | 65.750       |         |                |            |            |               |               |                |               |          |
| End   |      |              |         |                |            |            |               |               |                |               |          |

Time End 1509

Pitot Check

|     |     |        |
|-----|-----|--------|
| pos | 4.5 | in H2O |
| neg | 4.2 | in H2O |

Leak Check

|     |     |       |
|-----|-----|-------|
| cfm | 000 |       |
| vac | /5  | in Hg |

**Run 3 Calculations and Results**

Facility: New Wales  
Plant: MULTIFOS C-KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059 & 074  
Test Team: FB,DC,RS

Date: 07/13/00  
Start Time: 847 End Time: 951

Standard Meter Volume Vms: 42.33 dscf

Average Stack Velocity: 40.55 fps  
Stack Gas Volume: 17191 ACFM  
Stack Gas Dry Volume: 14809 DSCFM

Isokinetic Variation: 98.83 %

Isokinetics Adjusted For Bws>Saturation: NA %  
Vlc calculated for Saturated Conditions: NA ml H2O

**Emission Calculations**

SO2 Total mg: 68.54 mg  
3.17 lb/hr  
76.05 lb/day

## Run 3

## Run 3 Data Sheet

Facility: New Wales  
 Plant: MULTIFOS C-KILN  
 Team (CB/PR): FB,DC,RS  
 Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059 & 074

Date 07/13/00  
 Dwell Time 2.5 min.  
 Traverse Points 24  
 Stack Diameter 36 inches  
 Est % Saturation 90 %  
 Stack Static Pressure 0.32 in H2O  
 Barometric Pressure 30.12 in Hg  
 Dry Molecular Weight 28.969

|                          |          |                    |
|--------------------------|----------|--------------------|
| Meter Box Number         | 3187     | Pitot Check        |
| Meter Delta Ha (in. H2O) | 1.742    | pos [ ] 4.3 in H2O |
| Meter Correction Factor  | 0.9969   | neg [ ] 4.5 in H2O |
| Nozzle Ident.:           | 0.250    | Leak Check         |
| Nozzle Diameter Dn:      | 0.250    | cfm [ ] 0.000 cfm  |
| Impinger Set Number:     | S-1      | vac [ ] 15 in Hg   |
| Probe length/Liner:      | 3' Glass |                    |
| Filter Set Number        | 2        |                    |

| Point | Time | Meter Volume | Calc'd  |         | Actual Delta H | Stack Temp | Probe Temp | Hot Box Temp. | Meter In Temp | Meter Out Temp | Impinger Temp | Pump Vac |
|-------|------|--------------|---------|---------|----------------|------------|------------|---------------|---------------|----------------|---------------|----------|
|       |      |              | Delta P | Delta H |                |            |            |               |               |                |               |          |
| 1     | 0.0  | 66.213       | 0.53    | 1.777   | 1.7            | 110        |            |               | 78            | 78             | 65            | 7        |
| 2     | 2.5  | 68.07        | 0.56    | 1.877   | 1.8            | 110        |            |               | 78            | 78             | 62            | 7        |
| 3     | 5.0  | 70           | 0.57    | 1.911   | 1.9            | 109        |            |               | 80            | 79             | 57            | 8        |
| 4     | 7.5  | 72.01        | 0.6     | 2.029   | 2              | 110        |            |               | 82            | 78             | 55            | 8        |
| 5     | 10.0 | 74.04        | 0.6     | 2.019   | 2              | 110        |            |               | 84            | 78             | 54            | 8        |
| 6     | 12.5 | 76.07        | 0.58    | 1.955   | 1.9            | 110        |            |               | 86            | 78             | 54            | 8        |
| 7     | 15.0 | 78.09        | 0.56    | 1.891   | 1.8            | 110        |            |               | 89            | 79             | 55            | 8        |
| 8     | 17.5 | 80.06        | 0.4     | 1.356   | 1.3            | 110        |            |               | 90            | 79             | 57            | 6        |
| 9     | 20.0 | 81.77        | 0.35    | 1.188   | 1.2            | 110        |            |               | 92            | 80             | 62            | 5        |
| 10    | 22.5 | 83.35        | 0.31    | 1.055   | 1              | 110        |            |               | 94            | 80             | 62            | 5        |
| 11    | 25.0 | 84.83        | 0.3     | 1.023   | 1              | 111        |            |               | 96            | 80             | 62            | 5        |
| 12    | 27.5 | 86.27        | 0.3     | 1.019   | 1              | 110        |            |               | 98            | 81             | 61            | 5        |
| 13    | 30.0 | 87.724       | 0.33    | 1.130   | 1.1            | 110        |            |               | 91            | 84             | 65            | 5        |
| 14    | 32.5 | 89.24        | 0.33    | 1.126   | 1.1            | 111        |            |               | 97            | 82             | 60            | 5        |
| 15    | 35.0 | 90.76        | 0.36    | 1.226   | 1.2            | 111        |            |               | 98            | 82             | 59            | 5        |
| 16    | 37.5 | 92.35        | 0.38    | 1.295   | 1.2            | 111        |            |               | 100           | 83             | 59            | 5        |
| 17    | 40.0 | 93.95        | 0.4     | 1.367   | 1.3            | 111        |            |               | 102           | 89             | 60            | 5        |
| 18    | 42.5 | 95.55        | 0.5     | 1.721   | 1.7            | 112        |            |               | 103           | 84             | 62            | 7        |
| 19    | 45.0 | 97.42        | 0.52    | 1.773   | 1.7            | 112        |            |               | 104           | 84             | 62            | 7        |
| 20    | 47.5 | 99.34        | 0.58    | 1.979   | 1.9            | 112        |            |               | 105           | 85             | 63            | 8        |
| 21    | 50.0 | 101.35       | 0.64    | 2.188   | 2.1            | 112        |            |               | 104           | 85             | 63            | 9        |
| 22    | 52.5 | 103.44       | 0.65    | 2.220   | 2.2            | 112        |            |               | 104           | 86             | 64            | 9        |
| 23    | 55.0 | 105.6        | 0.6     | 2.051   | 2              | 112        |            |               | 104           | 86             | 65            | 9        |
| 24    | 57.5 | 107.72       | 0.62    | 2.119   | 2.1            | 112        |            |               | 104           | 86             | 66            | 9        |
| End   | 60.0 | 109.847      |         |         |                |            |            |               |               |                |               |          |

Average 110.8  
 0.65 Max  
 Min  
 Range

Time End 951

|               |             |
|---------------|-------------|
| Pitot Check   | Min Value   |
| pos [ ] 5.3   | 0.65 in H2O |
| neg [ ] 5.0   | 0.65 in H2O |
| Leak Check    |             |
| cfm [ ] 0.000 | <0.020 cfm  |
| vac [ ] 10    | 9 in Hg     |

Run 3

Run 3 Data

Facility: New Wales  
Plant: MULTIFOS C-KILN  
Company ID: 1108  
FDEP AIRS & Pt. ID: 1050059 & 074  
Test Team: FB,DC,RS

Date: 07/13/00  
Start Time: 847 End Time: 951

Number of Traverse Points: 24  
Dwell Time/Point: 2.5 min.  
Total Test Time: 60 min.

Stack Diameter: 36 inches  
Stack Area: 7.07 sq. ft.

Molecular Weight Dry Md: 28.969  
Volume of Water Vapor Condensed: 62 ml  
Weight of Water Collected in Silica Gel: 11.6 gram  
Moisture Volume Fraction Bwo: 0.0757  
Moisture Volume Saturated Bwo: 0.0880  
Moisture Percent Saturation: 86  
Moisture Used for Calculations: 0.0757  
Stack Molecular Weight Ms: 28.139

Barometric Pressure Pb: 30.12 in Hg  
Stack Static Pressure Pv: 0.32 in H2O  
Stack Pressure Ps: 30.144 in Hg  
Average Meter Delta H: 1.592 in H2O  
Meter Pressure Pm: 30.237 in Hg  
Console Number: 3187  
Meter Delta Ha: 1.742  
Meter Correction Factor: 0.9969

Average Meter Temperature: 88.1 deg. F  
Average Stack Temperature: 110.8 deg. F 43.8 deg C

Average Square Root Delta P: 0.688  
Meter Volume Vm: 43.63 cu. ft.  
Probe Length/Liner: 3' Glass  
Cp: 0.84  
Nozzle Ident.: 0.250  
Nozzle Diameter Dn: 0.250 in.  
Impinger Set Number: S-1  
Average Computer K: 3.3974

# SOUTHERN ENVIRONMENTAL SCIENCES, INC.

1204 North Wheeler St. Plant City, Florida 33566 (813) 752-5014

## NOX EMISSIONS TEST CALCULATIONS

COMPANY: IMC-AGRICO CO. NEW WALES FACILITY

SOURCE: MULTIFOS KILN "C"

TEST DATE: 07/13/00

DATA ANALYST: M. Gierke

| RUN NO. | AVERAGE CONC.<br>(PPM) | STACK FLOWRATE<br>(dscfm) | EMISSIONS            |                        |          |
|---------|------------------------|---------------------------|----------------------|------------------------|----------|
|         |                        |                           | (mg/m <sup>3</sup> ) | (lbs/ft <sup>3</sup> ) | (lbs/hr) |
| 1       | 47.6                   | 14,809                    | 91.0                 | 5.68E-06               | 5.05     |
| 2       | 77.6                   | 14,809                    | 148.4                | 9.27E-06               | 8.23     |
| 3       | 51.5                   | 14,809                    | 98.5                 | 6.15E-06               | 5.46     |
| AVERAGE | 58.90                  | 14,809                    | 112.6                | 7.03E-06               | 6.25     |

FORMULAS: mg/m<sup>3</sup> = ppm x .041573 x molecular wt.

$$\text{lb/ft}^3 = \frac{\text{mg/m}^3}{35.31 \text{ ft}^3/\text{m}^3 \times 1000 \text{ mg/g} \times 453.59 \text{ g/lb}}$$

$$\text{lb/hr} = \text{lb/ft}^3 \times \text{flowrate} \times 60 \text{ min/hr}$$

where:

Pstd = 29.92 "Hg

Tstd = 528 deg R

Molecular Wt. of NO<sub>2</sub> = 46

## Analytical Data

# IMC-Agrico Company

## Particulate and Moisture Data Sheet Method 5 & 13B Combined

Facility NEW WALES

Date : 7/11/00

Plant MULTIFOS C - KILN

Run 1

Impinger Set Number: P-1

| Impinger Number:          | 1   | 2   | 3 | 4                     |
|---------------------------|-----|-----|---|-----------------------|
| Final (grams/mls):        | 174 | 110 | 0 | 370.6                 |
| Initial (grams/mls):      | 100 | 100 | 0 | 359.9                 |
| Difference (grams/mls):   | 74  | 10  | 0 | 10.7                  |
| Total Moisture Collected: |     |     |   | 84 mls      10.7 gram |

Filter Set Number: 1

| Filter Analysis |        | Probe Wash Analysis |          |
|-----------------|--------|---------------------|----------|
| Filter Number:  | 63     | Beaker Number:      | C        |
| Final Weight    | 0.6757 | Final Weight:       | 159.5257 |
| Initial Weight: | 0.6756 | Initial Weight:     | 159.5138 |
| Difference:     | 0.0001 | Difference:         | 0.0119   |

### Fluoride and Particulate Calculations

**Fluoride**

|                        |      |
|------------------------|------|
| Probe Wash Fluoride mg | 1.48 |
| Impinger Fluoride mg:  | 5.52 |

Total Fluoride mg: 7.00

**Particulate**

|                           |      |
|---------------------------|------|
| Probe Wash Particulate mg | 11.9 |
| Filter Particulate mg:    | 0.1  |

Total Particulate mg: 12.0

# IMC-Agrico Company

**Particulate and Moisture Data Sheet**  
**Method 5 & 13B Combined**

Facility NEW WALES

Date : 7/12/00

Plant MULTIFOS C - KILN

Run 2

---

Impinger Set Number: P-2

| Impinger Number:          | 1   | 2   | 3 | 4                    |
|---------------------------|-----|-----|---|----------------------|
| Final (grams/mls):        | 163 | 112 | 0 | 326.7                |
| Initial (grams/mls):      | 100 | 100 | 0 | 317.4                |
| Difference (grams/mls):   | 63  | 12  | 0 | 9.3                  |
| Total Moisture Collected: |     |     |   | 75 mls      9.3 gram |

---

Filter Set Number: 2

| Filter Analysis |        | Probe Wash Analysis |          |
|-----------------|--------|---------------------|----------|
| Filter Number:  | 64     | Beaker Number:      | 42       |
| Final Weight    | 0.7272 | Final Weight:       | 150.4336 |
| Initial Weight: | 0.7031 | Initial Weight:     | 150.4194 |
| Difference:     | 0.0241 | Difference:         | 0.0142   |

---

### Fluoride and Particulate Calculations

#### **Fluoride**

|                        |       |
|------------------------|-------|
| Probe Wash Fluoride mg | 1.33  |
| Impinger Fluoride mg:  | 11.16 |
| Filter Fluoride mg:    | 0.45  |
| Total Fluoride mg:     | 12.94 |

#### **Particulate**

|                           |      |
|---------------------------|------|
| Probe Wash Particulate mg | 14.2 |
| Filter Particulate mg:    | 24.1 |
| Total Particulate mg:     | 38.3 |

Run 3

# IMC-Agrico Company

## Particulate and Moisture Data Sheet Method 5 & 13B Combined

Facility NEW WALES

Date : 7/13/00

Plant MULTIFOS C - KILN

Run 3

Impinger Set Number: P-3

| Impinger Number:          | 1   | 2   | 3 | 4                    |
|---------------------------|-----|-----|---|----------------------|
| Final (grams/mls):        | 152 | 110 | 0 | 391.1                |
| Initial (grams/mls):      | 100 | 100 | 0 | 381.5                |
| Difference (grams/mls):   | 52  | 10  | 0 | 9.6                  |
| Total Moisture Collected: |     |     |   | 62 mls      9.6 gram |

Filter Set Number: 3

| Filter Analysis |        | Probe Wash Analysis |          |
|-----------------|--------|---------------------|----------|
| Filter Number:  | 65     | Beaker Number:      | B        |
| Final Weight    | 0.7427 | Final Weight:       | 106.7722 |
| Initial Weight: | 0.6637 | Initial Weight:     | 106.7548 |
| Difference:     | 0.0790 | Difference:         | 0.0174   |

## Fluoride and Particulate Calculations

### Fluoride

|                        |      |
|------------------------|------|
| Probe Wash Fluoride mg | 4.20 |
| Impinger Fluoride mg:  | 0.95 |
| Filter Fluoride mg:    | 4.50 |
| Total Fluoride mg:     | 9.65 |

### Particulate

|                           |      |
|---------------------------|------|
| Probe Wash Particulate mg | 17.4 |
| Filter Particulate mg:    | 79.0 |
| Total Particulate mg:     | 96.4 |

Run 1

## IMC Phosphates Company

### Moisture Data Sheet Method 8

Facility New Wales

Date : 07/11/00

Plant MULTIFOS C-KILN

Run 1

---

|                           |     |        |     |           |
|---------------------------|-----|--------|-----|-----------|
| Impinger Set Number:      | S3  |        |     |           |
| Impinger Number:          | 1   | 2      | 3   | 4         |
| Final (grams/mls):        | 155 | 122    | 106 | 335.0     |
| Initial (grams/mls):      | 100 | 100    | 100 | 320.2     |
| Difference (grams/mls):   | 55  | 22     | 6   | 14.8      |
| Total Moisture Collected: |     | 83 mls |     | 14.8 gram |

---

### Sulfur Dioxide

Laboratory mg 82.22

Run 2

## IMC Phosphates Company

### Moisture Data Sheet Method 8

Facility New Wales

Date : 07/12/00

Plant MULTIFOS C-KILN

Run 2

| Impinger Set Number:      | S-2 |     |        |           |
|---------------------------|-----|-----|--------|-----------|
| Impinger Number:          | 1   | 2   | 3      | 4         |
| Final (grams/mls):        | 154 | 102 | 102    | 301.4     |
| Initial (grams/mls):      | 100 | 100 | 100    | 290.6     |
| Difference (grams/mls):   | 54  | 2   | 2      | 10.8      |
| Total Moisture Collected: |     |     | 58 mls | 10.8 gram |

---

### Sulfur Dioxide

Laboratory mg            53.42

Run 3

## IMC Phosphates Company

### Moisture Data Sheet Method 8

Facility New Wales

Date : 07/13/00

Plant MULTIFOS C-KILN

Run 3

---

| Impinger Set Number:      | S-I |        |           |
|---------------------------|-----|--------|-----------|
| Impinger Number:          | 1   | 2      | 3         |
| Final (grams/mls):        | 157 | 104    | 101       |
| Initial (grams/mls):      | 100 | 100    | 100       |
| Difference (grams/mls):   | 57  | 4      | 1         |
| Total Moisture Collected: |     | 62 mls | 11.6 gram |

---

### Sulfur Dioxide

Laboratory mg                  68.54

IMC-AGRICO COMPANY

New Wales Facility

Multifos Kiln "C"

7/13/00

Nitrogen Oxides

0-1000 PPM Range

6 cm/hr

446 ppm NO

1345 End Run #3

2020 1

1245 Start Run #3

446 ppm NO

1225 End Run #2

2020 5

1125 Start Run #2

446 ppm NO

1005 End Run #1

2020 1

1005 Start Run #1

446 ppm NO

446 ppm NO

2020 5

2005 PAM NO 952

2020

## Calibrations

# IMC Phosphates Company

## Post Test Dry Gas Meter Calibration Form

Facility: NEW WALES

Plant: MULTIFOS C- KILN

Meter Box Number: 3187

Date: 8/2/00

Barometric Pressure, Pb: 30.10

Standard Test Meter Number: 693497

| Delta H | Gas Volume     |         |               |         | Temperature, F |        |               |        | Time<br>min. | Yi     | Delta H@ |
|---------|----------------|---------|---------------|---------|----------------|--------|---------------|--------|--------------|--------|----------|
|         | Standard Meter |         | Dry Gas Meter |         | Standard Meter |        | Dry Gas Meter |        |              |        |          |
|         | Initial        | Final   | Initial       | Final   | Inlet          | Outlet | Inlet         | Outlet |              |        |          |
| 1.6     | 639.125        | 649.762 | 426.358       | 437.538 | 68             | 76     | 89            | 90     | 15           | 0.9789 | 1.7259   |
| 1.6     | 649.762        | 660.343 | 437.538       | 448.636 | 68             | 72     | 88            | 86     | 15           | 0.9802 | 1.7390   |
| 1.6     | 660.343        | 670.877 | 448.636       | 459.676 | 66             | 70     | 88            | 83     | 15           | 0.9820 | 1.7462   |

Delta H to be at intermediate setting from test.

|           |          |          |
|-----------|----------|----------|
| Tolerance | +/- 0.02 | +/- 0.15 |
| Deviation | 0.0016   | 0.0111   |
| Average   | 0.9803   | 1.737    |

Test Performed at Vacuum: 13 in Hg

Percentage Difference in Yi Pretest vs Post Test. 1.66 %

Pretest Yi Value 0.9969

Percentage Difference cannot exceed 5%

Person Performing Calibration:

  
Ross Sellers

# IMC Phosphates Company

## Post Test Dry Gas Meter Calibration Form

Facility: New Wales

Plant: Multifos C-Kiln

Meter Box Number: 3187

Date: 8/3/00

Barometric Pressure, Pb: 30.1

Standard Test Meter Number: 693497

| Delta H | Gas Volume     |        |               |        | Temperature, F |        |               |        | Time<br>min. | Yi     | Delta H@ |
|---------|----------------|--------|---------------|--------|----------------|--------|---------------|--------|--------------|--------|----------|
|         | Standard Meter |        | Dry Gas Meter |        | Standard Meter |        | Dry Gas Meter |        |              |        |          |
|         | Initial        | Final  | Initial       | Final  | Inlet          | Outlet | Inlet         | Outlet |              |        |          |
| 1.5     | 708.06         | 718.46 | 498.2         | 508.85 | 68             | 68     | 75            | 70     | 15           | 0.9813 | 1.7205   |
| 1.5     | 718.46         | 728.87 | 508.85        | 519.54 | 68             | 68     | 75            | 70     | 15           | 0.9785 | 1.7172   |
| 1.5     | 728.87         | 739.3  | 519.54        | 530.25 | 68             | 68     | 81            | 72     | 15           | 0.9859 | 1.6978   |

Delta H to be at intermediate setting from test.

Test Performed at Vacuum: 11 in Hg

Tolerance +/- 0.02 +/- 0.15

Deviation 0.0040 0.0140

Average 0.982 1.712

Percentage Difference in Yi Pretest vs Post Test. 1.50 %

Pretest Yi Value 0.9969

Percentage Difference cannot exceed 5%

Person Performing Calibration:

  
Flint Barnes

# IMC-Agrico Company

## Dry Gas Meter Calibration Form

Meter Box Number: 3187

Date: 02/08/00

Barometric Pressure, Pb: 30.25

Standard Test Meter Number: 693497

| Delta H | Gas Volume     |        |               |        | Temperature, F |        |               |        | Time<br>min. | Yi       | Delta H@ |
|---------|----------------|--------|---------------|--------|----------------|--------|---------------|--------|--------------|----------|----------|
|         | Standard Meter |        | Dry Gas Meter |        | Standard Meter |        | Dry Gas Meter |        |              |          |          |
|         | Initial        | Final  | Initial       | Final  | Inlet          | Outlet | Inlet         | Outlet |              |          |          |
| 0.5     | 60.271         | 65.638 | 43.039        | 48.515 | 70             | 71     | 75            | 74     | 14           | 0.9863   | 1.8772   |
| 1       | 65.969         | 71.027 | 48.852        | 53.982 | 70             | 71     | 75            | 74     | 9            | 0.9910   | 1.7470   |
| 1.5     | 71.662         | 77.16  | 54.624        | 60.198 | 70             | 71     | 80            | 74     | 8            | 0.9948   | 1.7442   |
| 2       | 77.793         | 83.385 | 60.736        | 66.395 | 70             | 71     | 81            | 74     | 7            | 0.9964   | 1.7196   |
| 3       | 84.125         | 90.099 | 67.238        | 73.163 | 70             | 71     | 81            | 74     | 6            | 1.0142   | 1.6604   |
| 4       | 91.448         | 97.122 | 74.617        | 80.318 | 70             | 71     | 80            | 75     | 5            | 0.9987   | 1.7043   |
|         |                |        |               |        |                |        |               |        |              |          |          |
|         |                |        |               |        |                |        |               |        | Tolerance    | +/- 0.02 | +/- 0.15 |
|         |                |        |               |        |                |        |               |        | Deviation    | 0.0173   | 0.1351   |
|         |                |        |               |        |                |        |               |        | Average      | 0.9969   | 1.742    |

Person Performing Calibration:



Flint Barnes

# IMC-Agrico Company

## Dry Gas Meter Calibration Form

Meter Box Number: 3187

Date: 02/08/00

Barometric Pressure, Pb: 30.25

Standard Test Meter Number: 693497

| Delta H | Gas Volume     |        |               |        | Temperature, F |        |               |        | Time<br>min. | Yi       | Delta H@ |
|---------|----------------|--------|---------------|--------|----------------|--------|---------------|--------|--------------|----------|----------|
|         | Standard Meter |        | Dry Gas Meter |        | Standard Meter |        | Dry Gas Meter |        |              |          |          |
|         | Initial        | Final  | Initial       | Final  | Inlet          | Outlet | Inlet         | Outlet |              |          |          |
| 0.5     | 60.271         | 65.638 | 43.039        | 48.515 | 70             | 71     | 75            | 74     | 14           | 0.9863   | 1.8772   |
| 1       | 65.969         | 71.027 | 48.852        | 53.982 | 70             | 71     | 75            | 74     | 9            | 0.9910   | 1.7470   |
| 1.5     | 71.662         | 77.16  | 54.624        | 60.198 | 70             | 71     | 80            | 74     | 8            | 0.9948   | 1.7442   |
| 2       | 77.793         | 83.385 | 60.736        | 66.395 | 70             | 71     | 81            | 74     | 7            | 0.9964   | 1.7196   |
| 3       | 84.125         | 90.099 | 67.238        | 73.163 | 70             | 71     | 81            | 74     | 6            | 1.0142   | 1.6604   |
| 4       | 91.448         | 97.122 | 74.617        | 80.318 | 70             | 71     | 80            | 75     | 5            | 0.9987   | 1.7043   |
|         |                |        |               |        |                |        |               |        |              |          |          |
|         |                |        |               |        |                |        |               |        | Tolerance    | +/- 0.02 | +/- 0.15 |
|         |                |        |               |        |                |        |               |        | Deviation    | 0.0173   | 0.1351   |
|         |                |        |               |        |                |        |               |        | Average      | 0.9969   | 1.742    |

Person Performing Calibration:



Flint Barnes

## IMC-AGRICO CO. NEW WALES

ENVIRONMENTAL Department

## THERMOMETER CALIBRATIONS

Calibrated BY

*Flint Barnes*

FLINT BARNES

| DATE    | ID NO   | TYPE | RANGE | ICE BATH  |      |             | TEPID WATER |                         |             | BOILING WATER |      |
|---------|---------|------|-------|-----------|------|-------------|-------------|-------------------------|-------------|---------------|------|
|         |         |      |       | STD THERM | TEMP | % or o DIFF | STD THERM   | TEMP                    | % or o DIFF | STD THERM     | TEMP |
| 6/26/00 | OM1     | Them | Dig   | 38        | 38   | 0           | 62          | 62                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | OM2     | Them | Dig   | 38        | 38   | 0           | 62          | 62                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | OM3     | Them | Dig   | 38        | 38   | 0           | 62          | 62                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | OM4     | Them | Dig   | 34        | 34   | 0           | 62          | 62                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PS3     | T/T  | Dig   | 34        | 34   | 0           | 72          | 72                      | 0           | 212           | 212  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PSA (5) | T/T  | Dig   | 34        | 34   | 0           | 68          | 68                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PSB (5) | T/T  | Dig   | 34        | 34   | 0           | 70          | 69                      | 1           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PSC (5) | T/T  | Dig   | 34        | 34   | 0           | 70          | 70                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PSB-OLD | T/T  | Dig   | 34        | 34   | 0           | 72          | 72                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PS6 5   | T/T  | Dig   | 34        | 34   | 0           | 68          | 68                      | 0           | 212           | 212  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PG3     | T/T  | Dig   | 34        | 34   | 0           | 72          | 72                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PG5     | T/T  | Dig   | 34        | 34   | 0           | 70          | 70                      | 0           | 212           | 212  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | E1      | T/T  | Dig   | 34        | 34   | 0           | 68          | 68                      | 0           | 0             | 0    |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | E2      | T/T  | Dig   | 34        | 34   | 0           | 68          | 68                      | 0           | 0             | 0    |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | E3      | T/T  | Dig   | 34        | 34   | 0           | 70          | 70                      | 0           | 0             | 0    |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | E4      | T/T  | Dig   | 34        | 34   | 0           | 68          | 68                      | 0           | 0             | 0    |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | HB1     | T/T  | Dig   | 0         | 0    | 0           | 70          | 70                      | 0           | 212           | 212  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | HB2     | T/T  | Dig   | 0         | 0    | 0           | 70          | 70                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | HB3     | T/T  | Dig   | 0         | 0    | 0           | 72          | 72                      | 0           | 212           | 212  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | HB4     | T/T  | Dig   | 0         | 0    | 0           | 70          | 70                      | 0           | 210           | 210  |
| 6/26/00 |         |      |       |           |      |             |             |                         |             |               | 0    |
| 6/26/00 | PS 8 NE | T/T  | Dig   | 34        | 34   | 0           | 68          | 68                      | 0           | 210           | 210  |
|         |         |      |       |           |      |             |             |                         |             |               | 0    |
|         |         |      |       |           |      |             | PS          | STEEL                   | PROBE       |               |      |
|         |         |      |       |           |      |             | PG          | GLASS                   | PROBE       |               |      |
|         |         |      |       |           |      |             | E           | EXIT                    | ADAPTOR     |               |      |
|         |         |      |       |           |      |             | HB          | HOT                     | BOX         |               |      |
|         |         |      |       |           |      |             | Them        | Digital                 | Thermometer |               |      |
|         |         |      |       |           |      |             | T/T         | Thermometer-Them-Couple |             |               |      |

# IMC-Agrico Company

Environmental Department

## Nozzle Size Calibration

Facility: IMC-AGRICO New Ulm

Plant: Multifos C-kiln

Date: 2/11/2000

| Nozzle ID | Run Number | D-1  | D-2  | D-3  | Delta | Average |
|-----------|------------|------|------|------|-------|---------|
| .250      | 1,2,3      | .250 | .251 | .250 | .001  | .250    |
|           |            |      |      |      |       |         |
|           |            |      |      |      |       |         |

D-1, D-2, D-3      Measurement of Diameter at Three locations  
Three Decimal Places required.

Delta      Maximum Difference in a D-1, D-2, D-3.  
Value not to exceed 0.004.

Average      Average of D-1, D-2, D-3.  
Three Decimal Places required.

Person Performing Calibration:

Dan Carroll

# SOUTHERN ENVIRONMENTAL SCIENCES, INC.

1204 North Wheeler St. Plant City, Florida 33566 (813) 752-5014

## NITROGEN OXIDES ANALYZER CALIBRATION DATA

### EPA METHOD 7E

|                    |                                   |
|--------------------|-----------------------------------|
| COMPANY            | IMC-AGRICO CO. NEW WALES FACILITY |
| SOURCE             | MULTIFOS KILN "C"                 |
| OPERATOR           | M. Gierke                         |
| DATE               | 07/13/00                          |
| RUN #S             | ALL                               |
| INSTRU. SPAN RANGE | 1000                              |

|            | Cylinder value (PPM) | Analyzer calibration responses (PPM) | Absolute difference (PPM) | Difference (% of Span) |
|------------|----------------------|--------------------------------------|---------------------------|------------------------|
| Zero       | 0                    | 0                                    | 0                         | 0.0                    |
| Mid-range  | 446                  | 445                                  | 1                         | 0.1                    |
| High-range | 852                  | 850                                  | 2                         | 0.2                    |

## SYSTEM CALIBRATION BIAS AND DRIFT DATA

|       | Initial Values                      |                                   | Final Values                        |                                   |                                     | Drift<br>(% of span) |
|-------|-------------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|-------------------------------------|----------------------|
|       | Analyzer calibration response (PPM) | System calibration response (PPM) | System calibration bias (% of span) | System calibration response (PPM) | System calibration bias (% of span) |                      |
| Run 1 | Zero                                | 0                                 | 0.0                                 | 0                                 | 0.0                                 | 0.0                  |
|       | Upscale                             | 445.0                             | 448                                 | 0.3                               | 449                                 | 0.4                  |
| Run 2 | Zero                                | 0                                 | 0.0                                 | 0                                 | 0.0                                 | 0.0                  |
|       | Upscale                             | 445.0                             | 449                                 | 0.4                               | 448                                 | 0.3                  |
| Run 3 | Zero                                | 0                                 | 0.0                                 | 0                                 | 0.0                                 | 0.0                  |
|       | Upscale                             | 445.0                             | 448                                 | 0.3                               | 448                                 | 0.3                  |

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response} - \text{Analyzer Cal.}}{\text{Span}} \times 100$$

**SPECTRA GASES INC.**

3434 Route 22 West • Branchburg, NJ 08876 USA Tel. (908) 252-9300 • (908) 932-0624 • Fax. (908) 252-0611  
Shipped From: 80 Industrial Drive • Alpha, NJ 08865

**CERTIFICATE OF ANALYSIS****EPA PROTOCOL MIXTURE**  
**PROCEDURE #: G1**

**CUSTOMER:** Cherokee Instruments Inc.  
**SGI ORDER #:** 151728  
**ITEM#:** 3  
**P.O.#:** 3683

**CYLINDER #:** CC85120  
**CYLINDER PRES:** 1000 PSIG  
**CGA OUTLET:** 560

**CERTIFICATION DATE:** 3/15/2000  
**EXPIRATION DATE:** 3/15/2002

B-3

**CERTIFICATION HISTORY**

| COMPONENT    | DATE OF ASSAY         | MEAN CONCENTRATION     | CERTIFIED CONCENTRATION | ANALYTICAL ACCURACY  |
|--------------|-----------------------|------------------------|-------------------------|----------------------|
| Nitric Oxide | 3/7/2000<br>3/15/2000 | 353.3 ppm<br>349.3 ppm | 352 ppm                 | +/- 1%               |
| NOx          |                       |                        | 352 ppm                 | Reference Value Only |
|              |                       |                        |                         |                      |
|              |                       |                        |                         |                      |
|              |                       |                        |                         |                      |
|              |                       |                        |                         |                      |

**BALANCE** Nitrogen

**PREVIOUS CERTIFICATION DATES:** None

**REFERENCE STANDARDS**

| COMPONENT    | SRM/NTRM# | CYLINDER# | CONCENTRATION |
|--------------|-----------|-----------|---------------|
| Nitric Oxide | GMIS-1    | CC118878  | 1014 ppm      |
|              |           |           |               |
|              |           |           |               |
|              |           |           |               |

**INSTRUMENTATION**

| COMPONENT    | MAKE/MODEL | SERIAL #       | DETECTOR          | CALIBRATION DATE(S) |
|--------------|------------|----------------|-------------------|---------------------|
| Nitric Oxide | Teco 10    | 10AR-24979-249 | Chemiluminescence | 3/15/2000           |
|              |            |                |                   |                     |
|              |            |                |                   |                     |
|              |            |                |                   |                     |

THIS STANDARD WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.  
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: PF

DATE: 3/15/2000

For Technical Information Call  
-800-752-1597

Air Products and Chemicals, Inc. \* 12722 S. Wentworth Avenue, Chicago, IL 60628



ISO CERTIFICATION: 9002

# CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS STANDARD

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer:  
AIR PRODUCTS AND CHEMICALS, INC.  
4822 INDUSTRY LANE  
UDI BUSINESS PARK  
DURHAM NC 27709

Order No: CSS-072856-01  
Batch No: 86J-S1026  
PO:  
Release:

Cylinder No: SG9166856BAL  
Bar Code No: DTX194  
Cylinder Pressure\*: 2000 psig  
Certification Date: 11/12/1998  
Expiration Date: 11/12/2000

| CERTIFIED CONCENTRATION |                         | REFERENCE STANDARDS |               |                        | ANALYTICAL INSTRUMENTATION |               |                  |                       |  |
|-------------------------|-------------------------|---------------------|---------------|------------------------|----------------------------|---------------|------------------|-----------------------|--|
| Component               | Certified Concentration | Cylinder Number     | Standard Type | Standard Concentration | Instrument Name/Model      | Serial Number | Last Calibration | Measurement Principal |  |
| NITRIC OXIDE            | 446 ±5.2 PPM            | SG91518788AL        | NTRM 81687X   | 844.0 PPM              | ROSEMOUNT 951A             | 010877        | 10/28/98         | CHEMILUMINESCENCE     |  |

NO<sub>2</sub> (Reference Value Only): 2.20 PPM

NITROGEN Balance Gas

\* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:

Richard Vandyke

(16921)

Approved By:

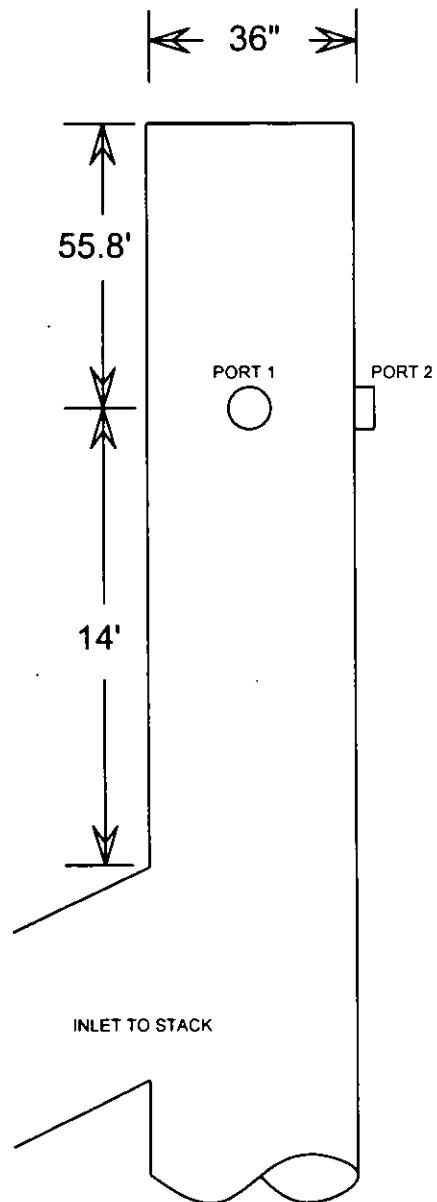
James Laas

Pub. No. 320 9702

11/16/2000 3:41PM

## **Stack Diagram and Sampling Locations**

**SAMPLE PORT LOCATION  
NEW WALES OPERATIONS  
MULTIFOS C KILN**



| POINT NO. | INCHES INSIDE STACK WALL |
|-----------|--------------------------|
| 1         | 1.00                     |
| 2         | 2.41                     |
| 3         | 4.25                     |
| 4         | 6.38                     |
| 5         | 9.00                     |
| 6         | 12.80                    |
| 7         | 23.20                    |
| 8         | 27.00                    |
| 9         | 29.62                    |
| 10        | 31.75                    |
| 11        | 33.59                    |
| 12        | 35.00                    |

|           |     |           |                         |               |  |
|-----------|-----|-----------|-------------------------|---------------|--|
| PREPARED: | CDT | TITLE:    | TRAVERSE POINT LOCATION | IMC-AGRIC CO. |  |
| DATE:     |     | LOCATION: | NEW WALES               | FILE:         |  |
| REVISED:  |     | SCALE:    |                         | DRAWING NO.:  |  |

**Method 1**  
**Sample and Velocity Traverse Selection**

Facility: New Wales  
 Plant: Multifos C Kiln  
 Company ID: 1108  
 FDEP AIRS & Pt. ID: 1050059-014-AV

**Points for Circular Stacks**

|                                    |                  |
|------------------------------------|------------------|
| Stack Diameter                     | 36 inches        |
| Distance Upstream of Disturbance   | 77.08 feet       |
| Upstream Diameters                 | 25.69            |
| Distance Downstream of Disturbance | 55.8 feet        |
| Downstream Diameters               | 18.60            |
| Downstream/Upstream Ratio          | 18.60      25.69 |

|                              | Particulate Traverses |         |          |          |
|------------------------------|-----------------------|---------|----------|----------|
|                              | > 7/1.75              | > 6/1.5 | > 5/1.25 | < 5/1.25 |
| Number of Traverse Points    | 12                    | 16      | 20       | 24       |
| Number of Ports              | 2                     |         |          |          |
| Number of Points per Port    | 12                    | > 6/1.5 | < 6/1.5  |          |
| Number of Points on Diameter | 12                    | 12      | 16       |          |
| Traverse Distance Offset     | 0 inches              |         |          |          |

| Point Number | Distance (inches) | Distance w/offset | Distance % |
|--------------|-------------------|-------------------|------------|
| 1            | 1.00              | 1.00              | 2.13       |
| 2            | 2.41              | 2.41              | 6.70       |
| 3            | 4.25              | 4.25              | 11.81      |
| 4            | 6.38              | 6.38              | 17.73      |
| 5            | 9.00              | 9.00              | 25.00      |
| 6            | 12.80             | 12.80             | 35.57      |
| 7            | 23.20             | 23.20             | 64.43      |
| 8            | 27.00             | 27.00             | 75.00      |
| 9            | 29.62             | 29.62             | 82.27      |
| 10           | 31.75             | 31.75             | 88.19      |
| 11           | 33.59             | 33.59             | 93.30      |
| 12           | 35.00             | 35.00             | 97.87      |



**IMC**

**RECEIVED**

AUG 31 2000

**CERTIFIED MAIL 7099 3400 0005 0929 3835**  
**RETURN RECEIPT REQUESTED**

BUREAU OF AIR REGULATION

August 28, 2000

A. A. Linero, P.E.  
Administrator, New Source Review Section  
Bureau of Air Regulation  
Florida Department of  
Environmental Protection  
Southwest District  
2600 Blair Stone Road MS 5505  
Tallahassee, Florida 32399-2400

**RE: Construction Permit Extension Request**  
**Permit No. 1050059-024-AC (PSD-FL-244)**  
**AIRS No. 1050059**  
**Emissions Units Nos. 074, 075 and 076**  
**New Wales Plant**

Dear Mr. Linero:

This letter is in response to your letter of August 7, 2000, which requested additional information related to IMC Phosphates' request to extend the Mulifos Kiln C construction permit. Because of market conditions, the Company has suspended operation of C Kiln for approximately three months. The responses follow:

- 1. List the tasks to be performed to achieve "normal operating conditions" and the approximate dates for completing those tasks.**
  - A. A summary of actions taken to-date is attached.**
  - B. A new burner was installed on June 27, 2000 and required adjustments to optimize the flame shape. This task has been completed and must be evaluated once the kiln resumes operation. This configuration is now similar to that of the A and B Kilns.**
  - C. Instrumentation to monitor volumetric flow through the kiln will be installed and is needed to improve combustion control for the burner. This task will be completed by December 1, 2000.**

- D. Operating procedures for kiln combustion control must be developed based on the recently installed carbon monoxide monitoring instrumentation. This task will begin once the kiln resumes operation. To this point, the sustained fuel usage rate for the new kiln has not been comparable to that of the existing kilns.
- 2. Identify additional production and emission testing that needs to be conducted and provide estimated dates for completion of those tasks.**
- A. Testing to improve the quality of the mixed feed to the kilns will be conducted. This will involve operation of the C Kiln on a non-continuous basis for up to four weeks to reduce the free moisture content of the mixed feed.
- B. Not all possible improvements have been identified and as testing progresses, additional action items may be developed. Testing will begin December 1, 2000 depending on kiln operation.
- C. Additional fluoride testing will need to be conducted to address the problem identified in the response to the Department's question below.
- 3. Provide a statement (and basis for believing) that the facility will comply with applicable regulation.**

Based on the compliance testing conducted on the new kiln, the emission limits of the construction permit will be met with the exception of the fluoride limit of 0.038 lb/ton P<sub>2</sub>O<sub>5</sub>. From the two compliance tests that have been conducted on this kiln, the fluoride emissions have been found to be located primarily in the probe/filter portion of the sampling train. This indicates that the fluoride is a liquid, solid, or both. As the Department is aware, the design of the scrubbing system was based on the fluoride being in a gaseous form. These compliance test reports are being finalized and will be submitted under separate cover.

Thank you for your attention to this matter. If you have any questions, please contact P.A. Steadham at 863-428-7106 or C.D. Turley at 863-428-7153.

Sincerely,



M. A. Daigle  
General Manager  
New Wales Plant

MAD:oan

Attachment (1 copy)

*J. Reynolds*  
*E. L. [unclear]*

### **Summary of Tasks Completed on C-Kiln**

This is a summary of actions taken to achieve "normal operation" of C-Kiln over the period from start up in October 1999 through shutdown in August 2000.

1. November 1999 - installed air dump on primary air to keep flame out on start-up.
2. December 1999 - installed Pillard type gas nozzle in burner to lengthen flame.
3. March 2000 - corrected primary air flow and burner steam flow instrument calibrations.
4. March 2000 - purchased portable combustion analyzer to fine tune burner operation.
5. April 2000 - reinstalled Svedala burner. Svedala field service engineer visited plant for 3 days to optimize burner. Burner had been set for low firing rate. In addition, balance of primary to secondary air was incorrect and was properly adjusted.
6. April 2000 - reinstalled Pillard type gas nozzle. The bushy flame pattern with Svedala burner washed out refractory in burner zone, requiring replacement.
7. April 2000 - switched to high pressure steam over concerns with fluctuating steam quality using low pressure steam.
8. April 2000 - verified kiln slope was correct.
9. May 2000 - repositioned both the oxygen sample tube and temperature probe in the feed end of the kiln.
10. June 2000 - installed Pillard burner to improve flame length. Better than Svedala burner but still not as long as A/B. Ring formation near burning zone continued to affect rates.
11. July 2000 - replaced missing distribution cone on Pillard burner to increase flame length similar to A/B.
12. August 2000 - installed on-line CO analyzer for improved combustion control.



Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

August 7, 2000

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. M. A. Daigle, General Manager  
IMC Phosphates Company  
P.O. Box 2000  
Mulberry, FL 33860-1100

Re: Extension Request/DEP File No. 1050059-024-AC (PSD-FL-244)

Dear Mr. Daigle:

The Department reviewed your request dated July 21, 2000 to extend the expiration date of the construction permit from September 30, 2000 to September 30, 2001. The reasons given for the extension request are that "the initial startup has been problematic and normal operating conditions have not been achieved. Efforts to reach these levels continue."

Per Rule 62-4.080(3), F.A.C., an extension for a construction permit shall be granted if the applicant can demonstrate reasonable assurances that upon completion, the extended permit will comply with the standards and conditions required by applicable regulation.

We already have fairly extensive information about the facility and the control equipment. To complete the reasonable assurance requirement allowing extension of the permit, please submit the following information:

1. List the tasks to be performed to achieve "normal operating conditions" and the approximate dates for completing those tasks.
2. Identify additional production and emission testing that needs to be conducted and provide estimated dates for completion of those tasks.
3. Provide a statement (and basis for believing) that the facility will comply with applicable regulation.

According to Rule 62-4-080(3), the permit will remain in effect until final action is taken by the Department. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If you have any questions regarding this matter, please call John Reynolds at 850/921-9536.

Sincerely,



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

Cc: Bill Thomas, DEP SWD  
Jeff Spence, Polk County ESD

"More Protection, Less Process"

Printed on recycled paper.

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Mr. M. A. Daigle, Gen. Mgr.  
IMC Phosphates Co.  
PO Box 2000  
Mulberry, FL 33860-1100

**COMPLETE THIS SECTION ON DELIVERY**

A. Received by (Please Print Clearly)

DeLphy

B. Date of Delivery

8-9-00

C. Signature

X DeLphy Quen

Agent  
 Addressee

D. Is delivery address different from item 1?

 Yes

If YES, enter delivery address below:

 No

## 3. Service Type

|  |   |
|--|---|
| <input checked="" type="checkbox"/> Certified Mail | <input type="checkbox"/> Express Mail                   |
| <input type="checkbox"/> Registered                | <input type="checkbox"/> Return Receipt for Merchandise |
| <input type="checkbox"/> Insured Mail              | <input type="checkbox"/> C.O.D.                         |

## 4. Restricted Delivery? (Extra Fee)

 Yes2. Article Number (Copy from service label)  
7099 3400 0000 1453 2870

PS Form 3811, July 1999

Domestic Return Receipt

102695-99-M-1789

**U.S. Postal Service  
CERTIFIED MAIL RECEIPT**  
*(Domestic Mail Only; No Insurance Coverage Provided)*

## Article Sent To:

M.A. Daigle, Inc. Phosphate

Postage \$

8/7/00

Certified Fee

Return Receipt Fee  
(Endorsement Required)Postmark  
HereRestricted Delivery Fee  
(Endorsement Required)

Total Postage &amp; Fees \$

Name (Please Print Clearly) to be completed by mailer

71. A. Daigle, Gen. Mgr.

Street/Apt. No.: PO Box 2000

City, State, ZIP-4: Mulberry, FL 33860-1100

PS Form 3800, July 1999

See Reverse for Instructions



Jeb Bush  
Governor

# Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

David B. Struhs  
Secretary

July 27, 2000

Mr. M. A. Daigle  
General Manager  
New Wales Plant  
IMC Phosphates Company  
P. O. Box 2000  
Mulberry, Florida 33860-1100

RE: Permit No. 1050059-024-AC  
Request for Extension of Expiration Date

Dear Mr. Daigle:

The Bureau of Air Regulation received the above referenced request on July 26, 2000 and processing has begun. Since this facility holds a current Title V operating permit, no fee is required to extend the permit pursuant to Chapter 62-4.050(4)(a)2. Your check No. 120070 for \$50 is enclosed. If you have any questions, please feel free to call me at (850)921-9505.

Sincerely,

Patty Adams  
Bureau of Air Regulation

/pa

Enclosure

Cc: John Reynolds

## ARMS Facility

POINT AIRS ID 1050059 STATUS A OFFICE SWD SW: TAMPA  
 SITE NAME IMC-AGRICO CO. (NEW WALES) COUNTY POLK  
 OWNER/COMP IMC-AGRICO CO. (NEW WALES)

## Project

AIR Permit #: 1050059-014-AV Project #: 014 CRA Reference #:  
 Permit Office: SWD (DISTRICT) Agency Action: Issued  
 Project Name: INITIAL TITLE V Desc:  
 Type/Sub/Req: AV /00 Initial Title V Permit Requests Logged: 07-AUG-1996  
 Received: 14-JUN-1996 Issued: 26-MAR-1999 Expires: 26-MAR-2004 OGC:  
 Fee: 0.00 Fee Recd: Dele: Override: NONE

## Related Party

Role: APPLICANT Begin: 07-AUG-1996 End:  
 Name: RAVAL, PRADEEP Company: KOOGLER & ASSOCIATES  
 Addr: 4014 NW THIRTEENTH STREET  
 City: GAINESVILLE State: FL Zip: 32609- Country: U.S.A.  
 Phone: 904-377-5822 Fax: 904-377-7158  
 Processor: CAWKWELL\_R Processors  
 Y Active: 27-JAN-1997 Inactive:

Enter Project Name.

Count: 16 ^ v

&lt;Replace&gt;



**IMC**

Certified Mail 7099 3400 0005 0929 4702

**Return Receipt Requested**

July 21, 2000

**RECEIVED**

JUL 26 2000

Mr. Clair Fancy  
Florida Department of  
Environmental Protection  
Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

BUREAU OF AIR REGULATION

**RE: Request for Extension of Expiration Date  
Permit No. 1050059-024-AC  
AIRS No. 1050059  
Emissions Units Nos. 079, 075, and 076  
New Wales Plant**

Dear Mr. Fancy:

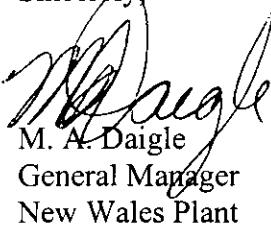
IMC Phosphates Company requests an extension of the expiration date of Construction Permit No. 1050059-024-AC from September 30, 2000 to September 30, 2001. Check No. 120070 in the amount of \$50.00 is enclosed to cover the applicable processing fee. The initial startup of the project has been problematic and normal operating conditions have not been achieved. Efforts to reach these levels continue.

In my capacity as General Manager of the New Wales Plant, a delegation of authority as the responsible official for this facility is attached.

The company has recently undergone a name change from IMC-Agrico Company to IMC Phosphates Company. The name change is being made under separate cover in accordance with Department requirements.

Thank you for your attention to this matter. If you have any questions, please contact me at 863-428-7102.

Sincerely,



M. A. Daigle  
General Manager  
New Wales Plant

MAD:oan  
Attachment

C:\COLA\NW\_1050059-24\_EXTENSION.DOC

IMC Phosphates Company, P O. Box 2000, Mulberry, Florida 33860-1100 (863) 428-250

**Steven J. Demetriou**  
President



**IMC Phosphates MP Inc.**  
100 S. Saunders Road, Suite 300  
Lake Forest, Illinois 60045-2561  
847.739.1200

July 10, 2000

Mike A. Daigle  
General Manager - New Wales Plant  
IMC Phosphates MP Inc.  
P.O. Box 2000  
Mulberry, FL 33860-1100

Re: Delegation of Authority under Environmental Programs

Dear Mike:

In your capacity as General Manager - New Wales Plant for IMC Phosphates MP Inc. (the "Corporation"),<sup>1</sup> you are in charge of principal business functions for IMC Phosphates Company in the areas of mine permitting, reclamation and remediation, surveying, and terminal operations in Florida. Consequently, for purposes of applicable environmental, mine permitting, reclamation, and remediation statutes and regulations, and in accordance with the By-laws of the Corporation, the resolutions of the Board of Directors, and the Amended and Restated Partnership Agreement of the Partnership, as amended, I hereby designate you as a Responsible Corporate Official and delegate to you the authority to execute all necessary environmental documentation and reports, mine permitting documentation, reclamation and remediation documentation, and surveys required in connection with your responsibilities for the Corporation and the Partnership; provided, however, that such authority shall be subject to all necessary corporate approvals having been first obtained, as required by the By-laws, resolutions of the Board of Directors or actions of the Policy Committee of the Partnership, and is further limited now or in the future by such resolutions, management guides, and actions as may be inconsistent with this delegation.

As you know, this delegation has been in effect since the 1<sup>st</sup> day of December 1999, and supersedes any previous delegations of similar authority that may have been given either to you or to any predecessor with responsibilities similar to yours.

Steven J. Demetriou

A handwritten signature in black ink, appearing to read "Steven J. Demetriou".

President  
IMC Phosphates MP Inc.

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<sup>1</sup> IMC Phosphates MP Inc. is the managing general partner of IMC Phosphates Company, a general partnership organized under the laws of Delaware (the "Partnership").



RECEIVED

APR 14 2000

CERTIFIED MAIL Z 149 946 516  
RETURN RECEIPT REQUESTED

BUREAU OF AIR REGULATION

April 11, 2000

Mr. Gerald J. Kissel  
Florida Department of  
Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318

RE: Testing Extension Request  
Permit No. 1050059-024-AC  
AIRS No. 1050059  
Emissions Units Nos. 074, 075 and 076  
New Wales Plant

PSD - FL - 244

Dear Mr. Kissel:

This is a request to extend the date to conduct performance tests required for Construction Permit No. 1050059-024-AC. The extension would be from 4/23/00 to 7/22/00 or an additional 90 days. Consistent operation of Kiln C has not been accomplished to date due to a host of start up problems. An attempt to conduct the tests was made in the first week of April. The emission tests were not valid because of erratic kiln operation due to problems during the runs. Efforts are underway to solve these problems. The testing will be scheduled as soon as possible.

Thank you for your attention to this matter. If you have any questions, please contact me at 941-428-7106 or C.D. Turley at 941-428-7153.

Sincerely,

A handwritten signature in black ink, appearing to read "P.A. Steadham". It is written in a cursive style with a horizontal line extending to the right after the signature.

P. A. Steadham  
Environmental Manager  
Concentrates - Florida

cc: twf, jrg  
John Reynolds, FDEP Tallahassee

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