



KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

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352/377-5822 ■ FAX/377-7158

KA 102-04-01

August 5, 2004

RECEIVED

AUG 09 2004

BUREAU OF AIR REGULATION

Mr. John Reynolds
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Construction Permit Application for
Liquid Fertilizer Plant
White Springs Agricultural Chemicals, Inc.
Facility ID: 0470002

Dear Mr. Reynolds:

Enclosed are four copies of a construction permit application for a liquid fertilizer plant, as previously discussed with you, proposed to be located at the existing Suwannee River Complex in White Springs, Florida.

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

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:par
Encl.

C: C. Pults, WSA
R. Felton-Smith, FDEP -Jacksonville



Department of Environmental Protection

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AUG 09 2004

Division of Air Resource Management

BUREAU OF AIR REGULATION

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option)

– Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: White Springs Agricultural Chemicals, Inc.	
2. Site Name: Suwannee River and Swift Creek Complex	
3. Facility Identification Number: 0470002	
4. Facility Location...: Street Address or Other Locator: E of SR 137, E of US 41, N of White Springs City: White Springs County: Hamilton Zip Code: 32096	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: Pradeep Raval, Consultant	
2. Application Contact Mailing Address... Organization/Firm: Koogler & Associates Street Address: 4014 N.W. 13th Street City: Gainesville State: FL Zip Code: 32609	
3. Application Contact Telephone Numbers... Telephone: (352) 377-5822 Fax: (352) 377-7158	
4. Application Contact Email Address: praval@kooglerassociates.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	8-9-04
2. Project Number(s):	0470002-051-AE
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

Air construction permit.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

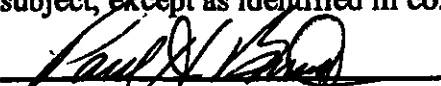
Application Comment

This application is submitted for a minor project proposed at the existing chemical plant of White Springs Agricultural Chemicals of installing equipment to manufacture liquid fertilizer at the Suwannee River Complex.

As discussed with FDEP staff, only the information being changed or added to the existing facility is submitted herein.

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: Paul H. Barrett, General Manager
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input checked="" type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: White Springs Agricultural Chemicals, Inc. Street Address: P.O. Box 300 City: White Springs State: FL Zip Code: 32096
4. Application Responsible Official Telephone Numbers... Telephone: (386) 397-8308 ext. Fax: (386) 397-8390
5. Application Responsible Official Email Address: pbarrett@pcsphosphate.com
6. Application Responsible Official Certification: I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.  Signature _____ Date <u>7-26-04</u>

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: John B. Koogler, Ph.D., P.E. Registration Number: 12925
2. Professional Engineer Mailing Address... Organization/Firm: Koogler & Associates Street Address: 4014 N.W. 13th Street City: Gainesville State: FL Zip Code: 32609
3. Professional Engineer Telephone Numbers... Telephone: (352) 377-5822 Fax: (352) 377-7158
4. Professional Engineer Email Address: jkoo@kooglerassociates.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> Signature _____ Date <u>8/5/04</u> (seal)

* Attach any exception to certification statement.

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1.	<input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2.	<input type="checkbox"/> Synthetic Non-Title V Source	
3.	<input checked="" type="checkbox"/> Title V Source	
4.	<input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5.	<input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6.	<input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7.	<input type="checkbox"/> Synthetic Minor Source of HAPs	
8.	<input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9.	<input checked="" type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10.	<input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11.	<input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12.	Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM	A	N
PM10	A	N
NOX	A	N
SO2	A	N
FL	B	N
SAM	A	N
CO	A	N
VOC	B	N

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]?(all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
NA					
7. Facility-Wide or Multi-Unit Emissions Cap Comment:					

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: _____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Att. 1</u> <input type="checkbox"/> Previously Submitted, Date: _____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: _____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: <input checked="" type="checkbox"/> Attached, Document ID: <u>Att. 1</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>Att. 1</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
 Attached, Document ID: _____ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications NA

1. List of Insignificant Activities (Required for initial/renewal applications only):
 Attached, Document ID: _____ Not Applicable (revision application)
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
 Attached, Document ID: _____
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
 Attached, Document ID: _____
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
 Attached, Document ID: _____
 Equipment/Activities On site but Not Required to be Individually Listed
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
 Attached, Document ID: _____ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
 Attached, Document ID: _____ Not Applicable

Additional Requirements Comment

The proposed project consists of installing equipment to manufacture liquid fertilizer.

EMISSIONS UNIT INFORMATION

Section [1] of [1]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1] of [1]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Liquid Fertilizer Plant**

3. Emissions Unit Identification Number: **NA**

4. Emissions Unit Status Code: C	5. Commence Construction Date: NA	6. Initial Startup Date: NA	7. Emissions Unit Major Group SIC Code: 28	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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9. Package Unit: **NA**
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating: **NA** MW

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description: **Demister**

2. Control Device or Method Code(s): **015**

EMISSIONS UNIT INFORMATION

Section [1] of [1]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:	40 tph	
3. Maximum Heat Input Rate:	million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	24 hours/day 52 weeks/year	7 days/week 8760 hours/year
6. Operating Capacity/Schedule Comment:		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

C. EMISSION POINT (STACK/VENT) INFORMATION
 (Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: liquid fertilizer		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 40 feet	7. Exit Diameter: 4.5 feet	
8. Exit Temperature: 140 °F	9. Actual Volumetric Flow Rate: 30,000 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

EMISSIONS UNIT INFORMATION

Section [1] of [1]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Fertilizer Production		
2. Source Classification Code (SCC): 3-01-030-99		3. SCC Units: Tons produced
4. Maximum Hourly Rate: 40	5. Maximum Annual Rate: 350,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: NA	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

Section [1] of [1]

EMISSIONS UNIT INFORMATION

Section [1] of [1]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
F	000	000	EL
PM	015	000	NS

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: F		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.1 lb/hour 0.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.1 lb/hr Reference: FDEP Estimate		7. Emissions Method Code: 5	
8. Calculation of Emissions: F= 0.1 lb/hr x 8760 hrs/yr x ton/2000 lbs = 0.5 tpy			
9. Pollutant Potential/Estimated Fugitive Emissions Comment:			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: Rule	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.1 lb/hr	4. Equivalent Allowable Emissions: 0.1 lb/hour 0.5 tons/year
5. Method of Compliance: EPA Method 13B, initial test only if F emissions are determined to be negligible.	
6. Allowable Emissions Comment (Description of Operating Method): BACT	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1 lb/hour 4.4 tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 1 lb/hr Reference: Estimate	7. Emissions Method Code: 5
9. Calculation of Emissions: F=1 lb/hr x 8760 hrs/yr x ton/2000 lbs = 4.4 tpy	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: DEP Method 9	
5. Visible Emissions Comment: General VE	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ____ of ____ NA

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Attachment 1 <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Attachment 1 <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute <input checked="" type="checkbox"/> Attached, Document ID: Attachment 1 <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attachment 1</u> <input type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Additional Requirements Comment

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ATTACHMENT 1

AVAILABLE PLANT INFORMATION

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Property of Pacific Northwest Solutions, Inc.

Advanced Concepts & Design, Inc.

77 Symons Street, Richland, WA 99352

509/943-1431

September 22, 1998

Harvey Underwood
Operating Manager
Pacific Northwest Solutions, Inc.
2430 E. Foster Wells Road, Suite B
Pasco, WA 99302-3140

Dear Mr. Underwood;

RE: SOURCE TESTING RESULTS OF TRANSPORTABLE 10-34 FERTILIZER PLANT

Advanced Concepts & Design, Inc., (AC&D) is enclosing the results of the source testing conducted at the 10-34-0 fertilizer generator during operations at the Tidewater Dock Area, Franklin County, WA. Testing was performed on August 5-6, 1998.

The data presented on the attached report describes the testing protocols and laboratory procedures used to complete this task. All methods were in general accordance with Environmental Protection Agency (EPA) Reference Methods as defined in 40 CFR 60 "Regulations on Standards of Performance for Stationary Sources, Appendix A"; EPA-Emission Measurement Center (EMC) Procedures; and in accord with AC&D's quality assurance plan.

We believe that this report and the data presented are reflective of the emissions on the day of testing and at the operational conditions of the generator. If you have any questions with this report, or the testing protocols, please call me at 509/943-1431.

Sincerely,

Scott R. Somers
Source Tester

Enc.

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Advanced Concepts & Design, Inc.

77 Symons Street, Richland, WA 99352
509/943-1431

Date: September 22, 1998

To: Harvey Underwood
Operating Manager
Pacific Northwest Solutions, Inc.
2430 E. Foster Wells Road, Suite B
Pasco, WA 99302-3140
509-547-5960

From: Scott R. Somers
Source Tester
Advanced Concepts & Design, Inc.
77 Symons Street
Richland, WA 99352
509/943-1431

RE: SOURCE TESTING RESULTS OF TRANSPORTABLE 10-34 FERTILIZER PLANT**Scope**

Advanced Concepts & Design, Inc., (AC&D) was requested by Pacific Northwest Solutions, Inc. (PNS) to conduct emissions testing of a transportable 10-34 fertilizer generator, unit number: 3304B. The scope of work was to conduct representative source tests for particulate and ammonia. This testing was similar to initial source testing which occurred on September 18, 1997. Follow-on testing was performed in order to verify operational changes and account for the additional year of PNS experience in fertilizer manufacturing. Washington State Department of Ecology (WDOE), Air Programs, Spokane Regional Office, was notified of the testing and granted a temporary air permit to PNS.

Summary

Source testing was conducted on August 5-6, 1998. Five representative particulate and ammonia emissions tests were performed at varying process conditions using Environmental Protection Agency's (EPA) methodologies. Detailed field notes, data sheets and laboratory results are attached. To account for different operating conditions, PNS stepped the fertilizer production rate of 36 to 42 tons per hour over the duration of the source testing.

At the operating conditions noted, the testing data indicated an overall average particulate emission rate of 0.5 pounds per hour and ammonia emission rate of 23.7 pounds per hour. Although particulate rates held fairly constant between the two different production rates (e.g. 36 and 42 tons/hr), ammonia emission rates varied noticeably based on production rates. Source test runs conducted at 36 tons/hr yielded an average ammonia rate of 9.8 lbs/hr, whereas at a production rate of 42 tons/hr yielded ammonia rates of 33.1 lbs/hr. These emission rates are far below the 1997 source testing results and, as reported by PNS, are more reflective and consistent with current process and operating parameters. Attached is a letter from PNS explaining the machine and operational improvements integrated into their 10-34 fertilizer manufacturing.

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Industrial Process/Operation

This process is a method of producing fertilizer composed of nitrogen and phosphorous. The fertilizer generator is manufactured by Precision Tank and Equipment Company, Athens, IL. The process operates by combining nitrogen (anhydrous ammonia) with phosphorous (superphosphoric acid). The other raw ingredient is water, used to dilute the product to stable, standard grades of commercial fertilizer. Standard grades manufactured by this process are 10-34 and 11-37, which equates to a Nitrogen-Phosphorous Pentoxide. This plant was tested under 10-34 generation.

The production procedure is a three-step process. First, the ammonia and acid reacts. Second, reaction products are brought to correct proportions, and lastly the product is cooled. Within the reactor process temperatures reach ~650°F, discharged reactor product is then quenched and brought to the desired grade. Various water and product recirculation processes are incorporated to remove latent heat and balance final product prior to transfer to storage. Production rates for these sources are 30-40 tons/hour. Figure 1 represents a general schematic representation of these process and flow paths for 10-34 generators.

Description of Evaluation

Test methods, analytical procedures, and calculations used in this testing were in general accordance with EPA Reference Methods as specified in 40 CFR 60, "Regulations on Standards of Performance for New Stationary Sources, Appendix A". The measurement and quality control procedures followed EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, EPA-600/4-77-027b and AC&D quality assurance plan. All laboratory analytical and quality assurance procedures adhered to standard protocols. The methods utilized are briefly summarized below.

Reference Method 1: Sample and Velocity Traverses for Stationary Sources.

The number and locations of all isokinetic sampling traverse points were calculated using Reference Method 1 protocols. Like all transportable sources, this generator operates without a permanent stack structure. To accommodate EPA stack sampling guidelines for the extraction of representative samples from effluent sources, a temporary structure was built. The structure will allow for at least a two-duct diameter downstream and half-diameter upstream any flow disturbance. This is a rectangular discharge. Cooling tower emissions exits the 10-34 generator via a 84" x 108" demister pad, were it is immediately channeled through a canvas shroud with an exit dimension of 29" x 105". This latter dimension shall be considered the stack discharge area for computing equivalent duct diameters.

$$De = 2(L*W)/(L+W)$$

$$De = 2(105"*29")/(105"+29") = 45.4" \text{ or } 4'$$

The equation indicates that sampling points must be at least 8' downstream and 2' upstream in order to attain EPA's minimum criteria. At this location, the stack area will be divided into 27 individual areas along 9 traverse lines. Each area will measure 9 5/8" x 11 5/8" and sample extraction will occur within each of these centroids. Figure 2 represents the configuration and layout of the stack extension and sampling locations.

Reference Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rates.

Stack gas velocities were determined by the procedures outlined in this method. A Stausschiche (Type S) pitot tube, meeting the requirements for performance specification, calibration and operation, was used to measure velocity pressures; these pressure measurements, along with gas density determinations, were used to determine the stack velocities. Stack gas temperatures were measured at regular intervals throughout the sampling period using a Type K thermocouple. The pitot tube was found to comply with EPA specifications, and assigned a correction factor of 0.84.

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Reference Method 4: Determination of Moisture Content in Stack Gases.

Known volumes of gas were extracted from the stack, and the moisture was removed from the sample stream by condensation in impingers and adsorption on silica gel. Moisture determination was conducted simultaneously with particulate and ammonia emission measurements (Methods 5 and 206). Water gain in the impingers was measured volumetrically and water absorbed on the silica gel was determined gravimetrically. The impingers were kept chilled with ice over the duration of the sampling runs. The impinger catch was saved and subsequently used in Method 206 for ammonia determination.

Reference Method 5: Determination of Particulate Emissions from Stationary Sources.

Method 5 was used in conjunction with Reference Methods 1, 2, and 4 to determine the particulate emissions from this stationary source. Particulates were extracted isokinetically from the stack via a heated probe with a stainless steel liner and collected on a glass fiber filter housed within a hot-box located directly downstream of the probe. The probe and oven were maintained at ~250°F during sampling. The particulate matter, which includes any material that condenses at or above the specified filter temperature, were measured gravimetrically. After each run, the probe was cleaned and rinsed multiple times with an acetone/water mixture. The particulate weight contained in this rinsate was determined by heating the solution to dryness and measuring the weight gain of the container. This probe rinsate weight gain was added to the filter captured particulate mass, yielding total particulate mass. Particulate matter concentrations in the stack gas stream are expressed as grains per dry standard cubic feet (gr/dscf), as well as pounds per hour (lbs/hr).

The sampling runs consisted of isokinetic sampling at each of the 27 points. Sample time per traverse point was 3 minutes, thus yielding a total run time of 81 minutes. During sampling the isokinetic sampling rates were calculated using the nomograph supplied by the equipment manufacturer. After completing the sampling, the overall isokinetic rate for each run was calculated and were within the EPA quality control limits of 90-110 percent isokinetic. As noted on each of the test data sheets, each run satisfactorily passed the post leak test procedure, so no leak rate corrections were necessary. Sample train cleanup consisted of placing the filter and front half rinse solutions into pre-labeled containers. The impinger solution was sulfuric acid for the collection of ammonia gases as prescribed in Method 206.

Reference Method 206: Determination of Ammonia from Stationary Sources.

Ammonia was collected in unison with Method 5 particulates. Guidance procedures for ammonia utilized a slight modification of EPA's Draft Method 206 "Procedure for Collection and Analysis of Ammonia from Stationary Sources." The method states that ammonia collection would occur immediately after an instack filter (Method 17) using 0.1N sulfuric acid (H_2SO_4). After review of the method, it was determined that it was not most appropriate method for this source given the large amount of free water vapor in the cooling tower discharge, thus making it impossible to apply instack filtration techniques. The method was appropriate for use with a Method 5 sampling train. WDOE and AC&D also determined that the amount of free water vapor would rapidly dilute the prescribed 0.1N acid solution, thus reducing the collection efficiency of the solution.

Upon a review of past 10-34 ammonia emission test procedures, it was noted that a 5N sulfuric acid solution has been used by the Tennessee Valley Authority (TVA) when conducting source testing of a Mears fertilizer generator. This method has been accepted by various State's Air Programs. After checking with DataChem Laboratory and WDOE, it was determined that this absorbing solution would be appropriate for this test. Therefore, after the Method 5 filter, two Greenburg-Smith impingers were filled with 100-mLs of 5N H_2SO_4 . Sample recovery and

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cleanup consisted of determining impinger catch volume and then rinsing each impinger multiple times with DI water. Absorbing and rinsate solutions were combined and submitted for analysis.

Results:

Complete stack sampling data sheets for each of the five sample runs are attached. The average particulate and ammonia emission rates for the transportable 10-34 fertilizer generator operating between 36 to 42 tons/hour were 0.5 and 23.7 pounds per hour (lbs/hr), respectively. It was observed that particulate matter emission rates remained fairly constant and irrespective of production rate. Ammonia emission rates appeared to be more tightly bound by production rate and acid supplier. As observed, when the generator operated at 36 or 42 tons/hr the process yielded average ammonia discharges of 9.8 and 33.1 lbs/hr. A summary of the source sampling data is detailed in Table 1.

Copies of the calculation spreadsheets, field data sheets, laboratory analytical and quality control reports, generator production run sheets, and chain of custody forms are included for PNS and WDOE review and project documentation.

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Table 1: Summary of Source Test Results, Transportable 10-34 Fertilizer Plant, August 5-6, 1998

Parameters	Units	Run A	Run B	Run C	Run D	Run E
Process Operating Conditions	tons/hr	36	36	42	42	42
Average Barometric Pressure	"Hg	29.42	29.40	29.59	29.56	29.51
Average Stack Temperature	°F	137	134	135	139	140
Number of Traverse Points	---	27	27	27	27	27
Sample Time/Traverse Point	Minutes	3	3	3	3	3
Total Run Time	Minutes	81	81	81	81	81
Moisture Content	%H ₂ O	26	28	29	29	30
Average Stack Velocity	ft/sec	17.43	19.35	22.67	21.70	21.79
Volumetric Flow Rate	cfm	22117	24552	28762	27530	26375
Total Moisture Gain (Impingers)	mLs	304	326	422	424	406
Total Volume Sampled	dscf	41.038	41.376	49.732	49.987	46.373
Total Particulate Mass	grams	0.005	0.008	0.009	0.013	0.010
Particulate Concentration	gr/dscf	0.002	0.003	0.003	0.004	0.003
Particulate Emission Rate	lbs/hr	0.3	0.5	0.5	0.7	0.6
Total Ammonia in Sample	mg	560	340	1260	1580	1040
Ammonia Emission Rate	lbs/hr	11.5	8.0	33.4	39.8	26.0
Isokinetic Rate	%	99	95	95	100	98

Average Particulate Emission Rate: 0.5 lbs/hr (all runs)

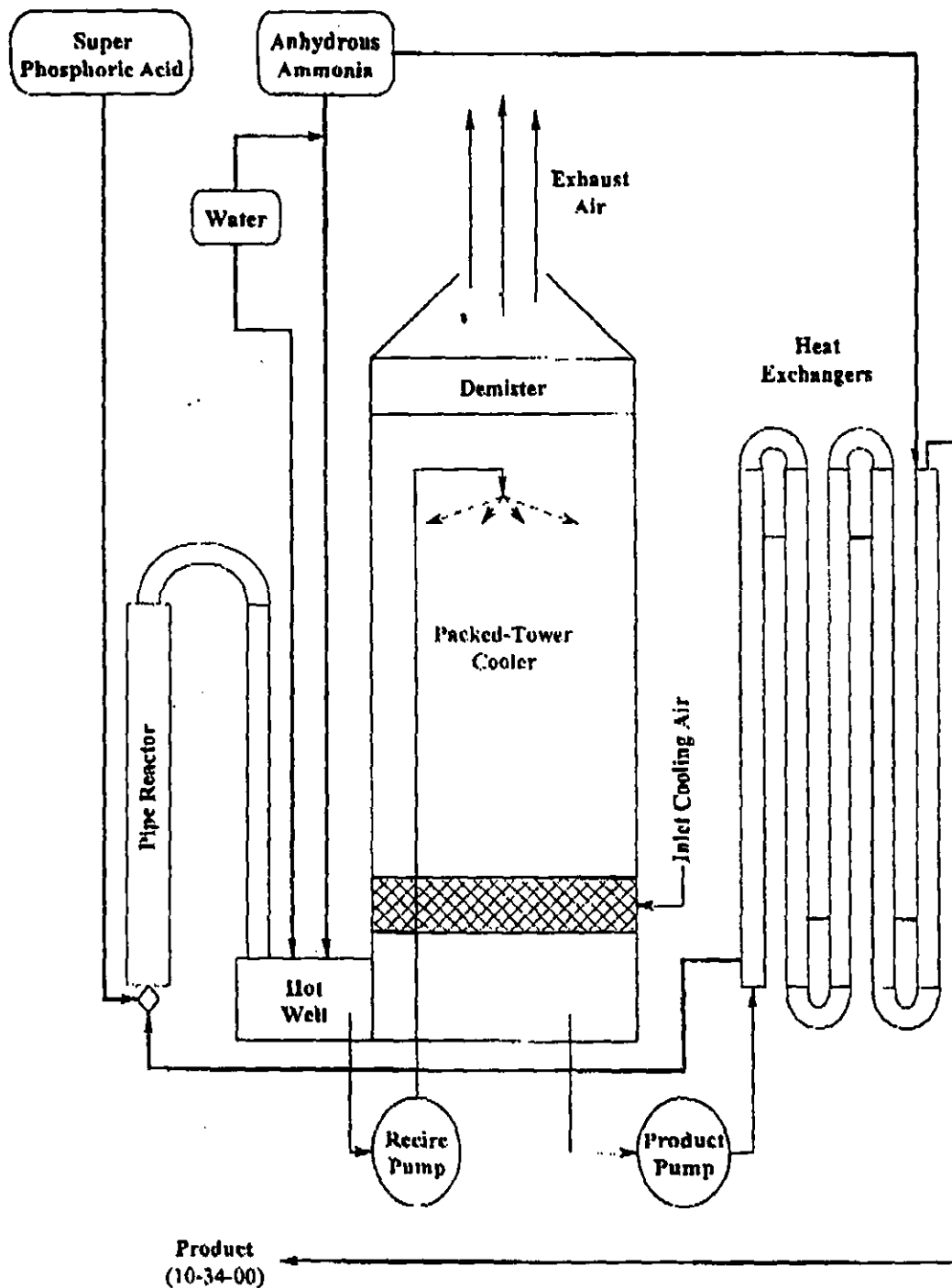
Average Ammonia Emission Rate: 23.7 lbs/hr (all runs)

Average Ammonia Emission Rate: 9.8 lbs/hr (at 36 Tons/hr)

Average Ammonia Emission Rate: 33.1 lbs/hr (at 42 Tons/hr)

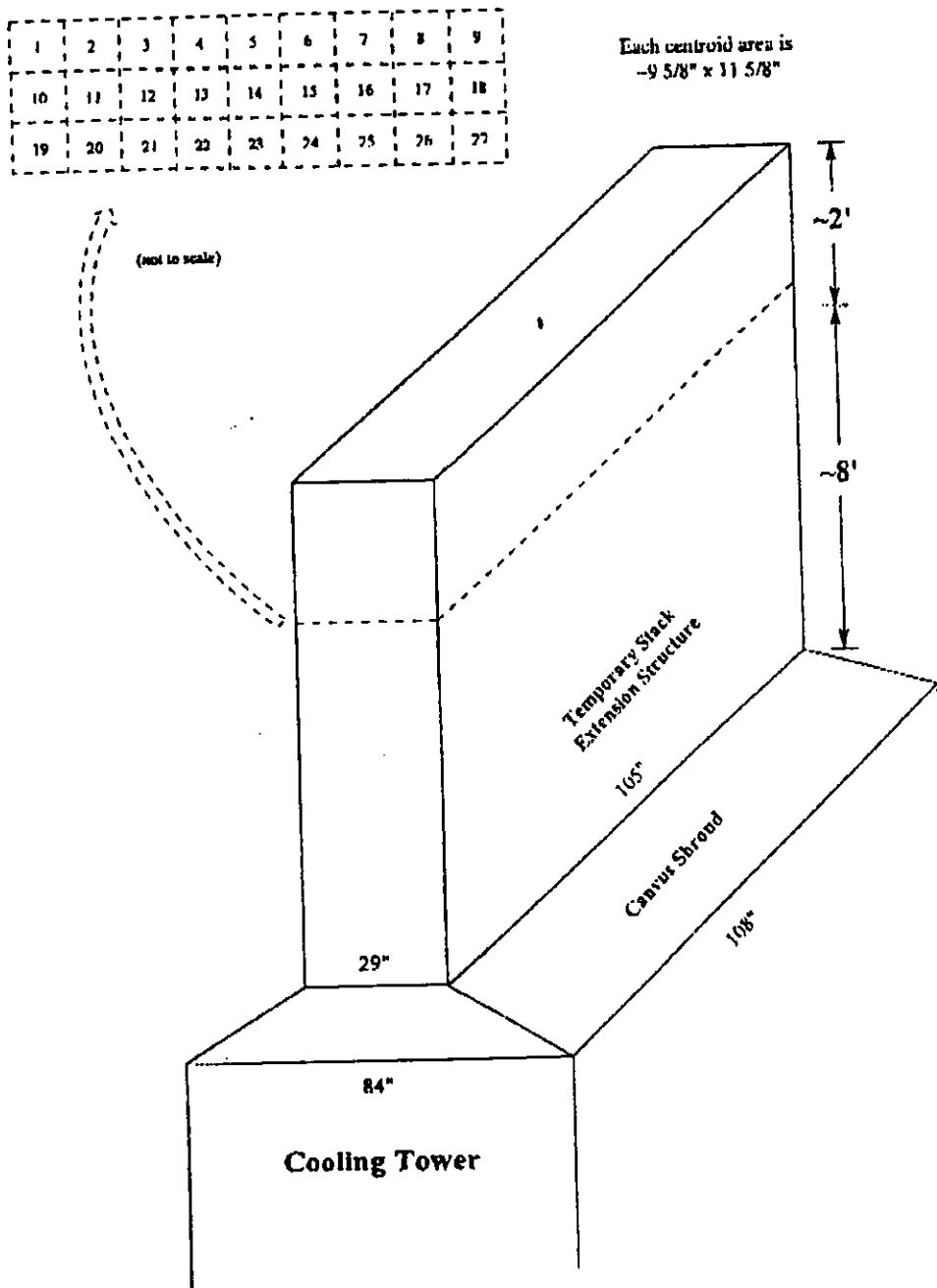
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Figure 1: Typical 10-34 Fertilizer Generator Flowsheet



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Figure 2: Temporary Stack Layout and Sampling Locations



Equivalent Duct Diameters (D_e):

$$\frac{2(L \cdot W)}{(L+W)} \rightarrow \frac{2(29'' \cdot 105'')}{(29''+105'')} \rightarrow \frac{6090}{134} \rightarrow 45.4'' (\sim 4')$$