PN-ABP-994

ENVIRONMENTAL SCOPING MEETING REPORT AND INITIAL ENVIRONMENTAL EXAMINATION

SITE LOCATION; SIDS, BENI SUEF GOVERNORATE, ARAB REPUBLIC OF EGYPT

PROPOSED COTTON SEED GINS
AND SEED CONDITIONING FACILITIES
USAID CONTRACT NO. 263-0152-C-00-1016-00

DAVY McKEE CORPORATION
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Chicago, Illinois 60606

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Agricultural Research Center
Cotton Research Institute
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GIZA - EGYPT

ENVIRONMENTAL SCOPING MEETING REPORT FOR INITIAL ENVIRONMENTAL EXAMINATION SIDS - BENI SUEF GOVERNORATE

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وزارة الزراعة واستصلاح الأراضي

المشروع القومي للأبحاث الزراعية

مركز البحوث الزراعية

Al-Ahram 3 AUGUST 1991

COPY OF PUBLIC NOTICE IN EGYPTIAN NEWSPAPER INVITING INTERESTED PARTIES TO ATTEND THE ENVIRONMENTAL SCOPING MEETING IN SIDS AND SAKHA

THE AL AHRAM NEWSPAPER IS THE MOST WIDELY DISTRIBUTED NATIONAL NEWSPAPER IN EGYPT.

I INTRODUCTION

An Environmental Scoping Meeting for the proposed cotton seed gins and foundation cotton seed conditioning facilities to be built on the SIDS Site was held by the Ministry of Agriculture, Government of Egypt on 8 August 1991 at the Engineering Training Center in SIDS, Beni Suef Governorate.

The purpose of this meeting was to explain the project and to solicite questions of concern about the environment from public officials and from the general public. The presentation was in English and Arabic. The welcome and opening remarks were in Arabic, and the remainder of the presentation was in English and Arabic. A typed copy of the presentation was provided in both languages. Dr. Mohamed Abdel Salam, Deputy Director of the Cotton Research Institute of the Ministry of Agriculture, answered the technical and environmental questions.

The Government of Egypt (GOE), through the Ministry of Agriculture (MOA), Agriculture Research Center (ARC),National Agricultural Research Project(NARP), in association with the United State Agency for International Development (USAID) is proposing to build foundation cotton gin, seed conditioning, and seed research facilities in Egypt. These facilities, including their technological improvements will improve the performance of this industry within Egypt. The facilities and their operation are intended as models of design, performance and capacity. The project will extend the on-going program for expansion of the seed conditioning component of the seed supply industry.

Cotton farming employs about 650,00 people in Egypt and supports a large textile industry. Textile production represents more than one fourth of total manufacturing output. In the past, cotton has provided significant export revenues. This important source of foreign exchange has declined substantially in recent years. During the 1981/82 production year, cotton exports totaled 685,000 bales. Cotton exports for the 1990/91 season were down to 45,000 bales. This represents a drop in export volume of 93 %.

Egyptian cotton competes against synthetic materials on the world market, as well as other high quality cotton. Consistency of this high quality cotton is an important factor in maintaining and increasing market share. The obsolete gins for the foundation seed ginning is detrimental to the quality levels of Egyptian cotton.

Cotton production has been declining. In the early 1980's, cotton was produced on over 420,000 hectares. Last year, farmers grew cotton on only 315,000 hectares, a reduction in area of 25%. This reduction has occurred because of low profitability for the farmer. This is caused by two primary factors: 1) the government pays the farmer less than market price for cotton, and 2) cotton seeds for planting are very poor in quality and result in low yields per acre. The cotton privatization program underway in Egypt will solve the first main problem. This project for cotton seed gins and seed conditioning facilities are designed to assist in correcting the second main problem of poor seed quality andquantity and to improve cotton quality.

Specific goals of this project are to:-

1.0 Improve seed quality and reduce seed costs and losses by introducing modern delinting and conditioning for cotton seeds in Egypt. This will:

1.1 Establish and maintain varietal integrity.

1.2 Reduce planting seed from 70 Klg. per feddan (acre) to approximately 15 Klg. per feddan.

1.3 Allow farmers to plant to a stand rather than have great inconsistency in output of cotton per feddan.

1.4 Centralize fungicide and pesticide application in a well controlled factory environment rather than have farmers apply these chemicals at the farm level.

1.5 Increase seeds available for oil instead of returning the poor yield seeds to the farmer for planting.

1.6 Increase availability of animal feed through proper capture of lint and culled seeds rather than return this to the soil in the form of unproductive planting.

2.0 Improve cotton quality and cost and provide higher capacity by replacing antiquated foundation seed ginning facilities and equipment with modern technology. Improvements in the process will include:

2.1 Utilization of seed cotton modules. Modules are the most efficient method of storing and handling seed cotton and are utilized extensively in the US. This will provide a steady supply of seed cotton to the new, high capacity gins.

2.2 Installation of precleaning equipment not utilized presently. This will improve cotton quality.

2.3 Introduce moisture control for proper consistency during the process and for the finished, baled cotton that will improve cotton quality.

2.4 Use of modern rotary knife, roller gins to improve cotton turn out, capacity and productivity.

2.5 Install final cleaning of lint to improve cotton quality.

2.6 Introduce the Universal Density Bale (UDB) for improved quality and future mechanization of bale handling.

3.0. Train operating management, equipment operators, and maintenance personnel. This will bring the skills of production personnel to the level required for efficient operation of these modern plants.

4.0. Install equipment and procedures designed to meet safety standards and working conditions prevalent in the US.

5.0. Meet pollution control standards established for US facilities within this industry.

The project is further defined in the next section followed by the environmental impact of the project in the subsequent sections.

II PROJECT DESCRIPTION

The SIDS site is approximately 7.5 feddans (acres). It is presently occupied by the Regional Foundation Seed Ginning Station which will be replaced. The site is in an area owned by the Ministry of Agriculture (MOA) with a designated use of light industrial. The site is bordered by the road on the South and MOA facilities on the other three sides. The road in front of the plant is paved. It is approximately 200 meters from the site to the main road which connects Beni Suef and Minya.

The site plan is provided at the end of this section.

The facilities have a total of 159,530 square feet (14,835 square meters). The ginning and seed conditioning operations are tied to the planting and harvesting cycles, and therefore, will operate 100 days per year. This is similar to operations in the US. The plant will process 5 metric tons per hour of cotton seed. The annual production at SIDS for the operating season is as follows:-

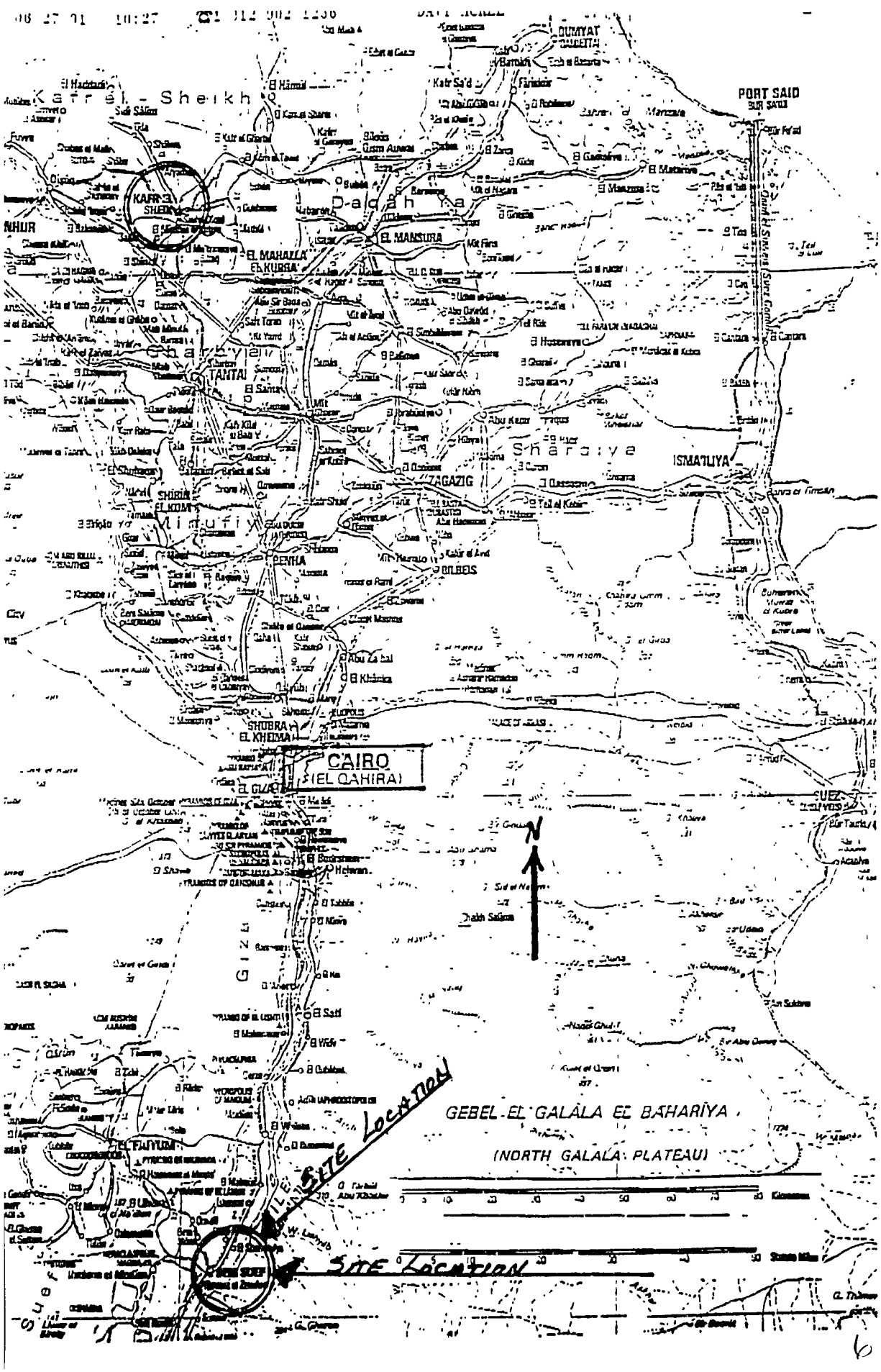
Input:	Seed Cotton	7,550 mt/yr (50,333 bags)
Output:	Baled Cotton	2,510 mt/yr (11,040 bales)
	Bagged Seed	3,631 mt/yr

The research facility will operate intermittently approximately 5 months per year. Anticipated research production at SIDS is:

Input:	Seed Cotton	60 mt/yr (400 bags)
Output:	Baled Cotton	20 mt/yr (87bales)
	Bagged Seed	33 mt/yr

The SIDS facility will process cotton from upper Egypt. Details of the production flow and process are provided in the PRESENTATION SECTION VIII, PART C, PROJECT OVERVIEW.

5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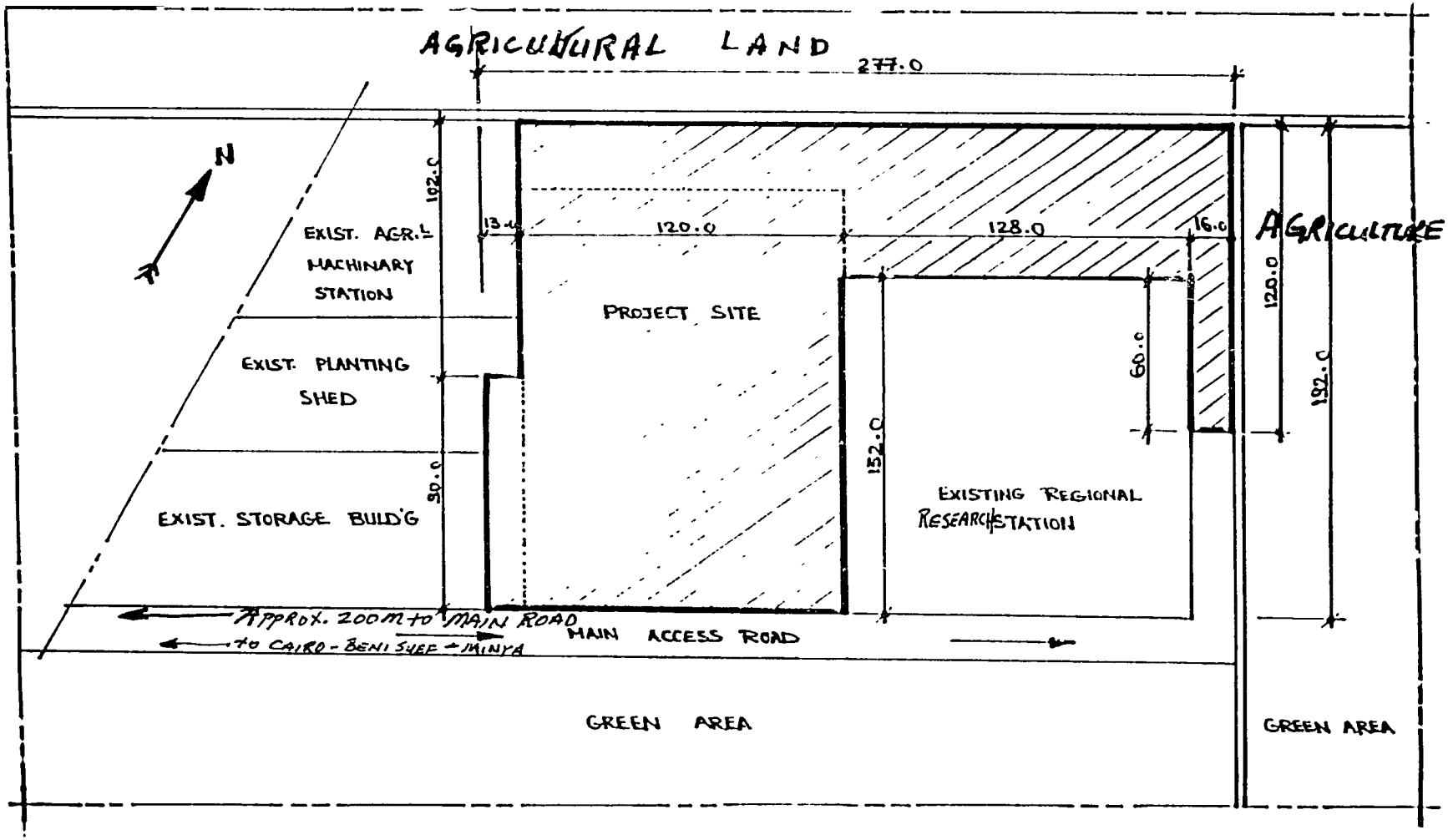
(NORTH GALALA PLATEAU)
FAYUM
SITE Location
SITE Location

6



GENERAL SITE PLAN AT SIDS

BY. : ENG. M. GOWAILY

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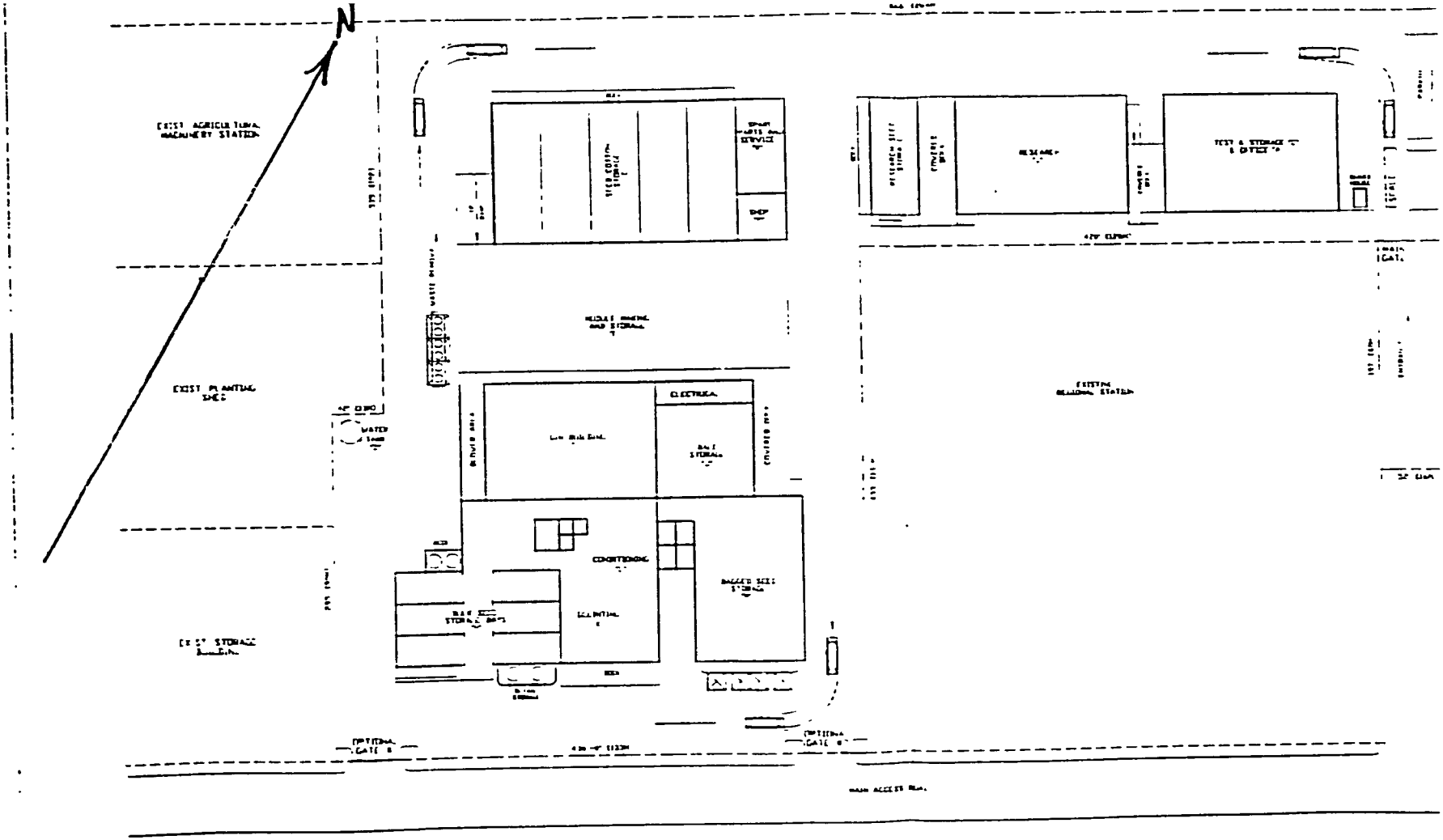

SITE PLAN AT SIDS

III ENVIRONMENTAL ISSUES OVERVIEW - SIDS

1) The land required for the plant is presently in use as a cotton ginning facility, and therefore, does not represent any change in land use.

2) Changes in the character of the soil in the area around the plant will be minimal since the plant is designed with the best available technology to minimize air emissions and water pollution.

3) Since the plant site is only about 7 feddans and is relatively flat, the total impact of water runoff will be minimal and will be drained to an irrigation ditch.

4) The plant waste water will consist of process water, sanitary sewerage and plant runoff. Plant runoff, as mentioned before, is minimal due to low rain fall and will be drained into existing irrigation ditches. Sanitary sewerage will be collected in septic tanks which will be periodically drained. The contents will be disposed of at an acceptable site elsewhere which is the present method used for other facilities in the area. It is estimated to be no more than 10 gallons per day per employee. The process water stream will include some water which has been used for acid wash. This water will be neutralized, however, and drained into an irrigation ditch. No solid wastes are contained in the process effluent and the water having been neutralized, will have no adverse effect on the surrounding area.

5) During the process of Seed Conditioning, pesticides and fungicides for cotton will be applied to the cotton seed. This will be done under strict supervision, using safe, industry tested and tried equipment and by personnel trained in the procedures. This is a positive environmental impact, in that it will minimize the requirement to distribute pesticides and fungicides widely to individual farmers which is the present method. Consequently, the chances of environmental mishap, such as, ingestion of chemicals by farmers, inadvertent contamination of animal feed and waters, and uneven distribution of chemicals on the fields will be minimized.

6) A very important aspect of Seed Conditioning is that the amount of seed needed for planting (conditioned seed vs unconditioned seed) is considerably less per feddan (15 kilos vs 70 kilos). This means that an additional 55 kilos per feddan (acre) of cotton seed will be available for production of valuable cotton seed oil.

7) Traffic should not represent a problem because there should only be a maximum of 3 trucks per hour during the 8 hour day of the 100 day operating period.

8) The new Cotton Ginning and Seed Conditioning facilities with their support laboratories and research facilities are a positive contribution to the environmental impact on Egypt by the Egyptian Cotton Industry. The plants, while improving the quality of the ginned cotton and foundation cotton seed, use the latest air pollution control equipment and technology available .

All air streams discharging from the plant will pass through high efficiency cyclones or bag houses. Discharges of pollutants from the air handling equipment will be minute. This actually reduces air pollution and protects the workers and the surrounding community from exposure to lint, dust and other airborne pollutants which would be generated by a plant of like capacity, that is not equipped with these pollution control devises.
The ginning equipment, for example, is completely enclosed from the telescoping suction tube through the baler. This limits the atmospheric discharge of any particle to the exhaust from the 1D-3D cyclone exhaust ducts. The cyclones are reported to be 99.9% efficient.

The cyclones will recover lint from the delinting process as a fine powder like substance. This lint will be collected, neutralized and mixed with cull seed and sold for cattle feed.

Chemical dust from the seed conditioning section is captured during the processing. This represents a very small quantity. It will be disposed of at the end of the ginning season along with small amounts of other wet chemical wastes. These materials can be used to treat waste seeds which can then be planted for a green manure crop, enhancing the land used. These are sound environmental practices and are used in the United States.

IV ENVIRONMENTAL QUESTIONS RECEIVED AT MEETING AND ANSWERS PROVIDED

A total of 91 people registered for the Environmental Scoping Meeting at SIDS. There was open discussion with numerous questions and comments. All technical and environmental questions were answered in Arabic by DR. Mohamed Abdel Salam, Deputy Director of the Cotton Research Institute. This section of the report covers the environmental questions and answers and identifies the individuals asking the questions. Answers follow immediately after the questions.

1- NAME: Abdel Aziz Abdel Nabi TITLE: President of Corn Section (Agric. Res. Center)

Questions:-

1- Define the area for which the project is going to provide ginning facilities.

Answer:-

1- The SIDS plant is designed to serve the North sector of Upper Egypt, Beni Suef, Al Fayoum, and Menya .
It is planned to either:

A- Increase the working hours of SIDS plant to serve Assuit & Sohag.

B- To start building a new ginning plant to serve Assuit & Sohag.

2- NAME: Moustafa Ali Moursi TITLE: Researcher (Sids Agric. Research Station)

Questions:-

1- How will the project deal with pollution when it comes out of the plant ? Will it be using fume filters?

2- How will you control the dust that comes out of the plant? What is the equipment and how would it affect the neighborhood (how to protect it) ?

3- How will you get rid of all kinds of wastes and what is the method of treating it, specifically, for solid wastes which have some solid elements that affect the environment?

Answer:

1-2 The project has an integrated system to get rid of all streams of air coming out from the plants activities and there won't be any harmful affects on the surrounding environments. The performance of dust filters reach an efficiency of 99.9% .

3- All wastes will be dealt with so as not to affect the environment starting with the ginning process, waste water ..etc.

3- NAME: Abdel Azim Awny TITLE: Farmer

Questions:-

1- Is there any harmful effect due to chemical treatment when extracting oil for human consumption or for animal feeding ?

Answer:

1- The treated seeds are distinguished through its color. Because of that, it is known to every one that it is not consumable for either human kind or animals.

Also these seeds are valuable for planting & should not be used for any other purpose.

4- NAME: Mr. Bader Mehana TITLE: Director, (Middle Egypt-Regional Station)

Question:-

1- Is the use of acid delinting more cost - effective than mechanical delinting or will there be waste in the use of acid ? Is there any device to make sure that seeds are neutralized economically?

Answer:-

1- Egyptian Cotton Seed has minimal fuzz so chemical delinting is the most appropriate method rather than the mechanical method. Our project will adopt this method.

To control the neutralization process, the equipment is designed to use specific amounts of diluted acid during treatment of cotton seed in which the amounts of chemicals used for neutralization is going to be well controlled.

5- NAME: Abdel Aziz Abdel Nabi

TITLE: President of Corn Section (Agric. Res. Center)

Questions:

1- What are the capabilities to secure good maintenance for the project so as not to encounter the same problems of other foreign projects in Egypt ?

2- Is there going to be any co-ordination regarding the strains of cotton to be ginned & other different strains planted in the area served by the project ?

Answer:

1- The project will provide all training required for technicians & laborers before they will be responsible to carry out the responsibilities of the plant. Also, the project will secure all spare parts required for more than three years

2- The plant is assigned for the ginning of foundation seeds in this area with good separation of strain.

6- NAME: Sami Kandiel TITLE: Head of Agricultural Mechanization Sector (Upper Egypt)

Questions:-

1- What are the precautions for using heavy (trucks) for the project ? What about the noise and also the pollution and way of protection?

Answer:-

1- The project is close to the main road & if any damages occur to the road , the project will be responsible to amend any harm or damages.

- Our capacity is (400 kentars/ day) which is equal to 4 trucks.
We have already implemented a study for soil investigation and topographical survey to secure the ability of roads surrounding the project to meet the demands of a continuous supply & transport facilities.

7- NAME: Dr. Ahmed Abdel Latif TITLE: Agricultural Consular

Questions:-

1- How will water pollution be neutralized? How will you make sure it is not acid? Also, there must be a better way for handling sewage than the existing system .

Answer:-

1- The project will secure neutralization of waste water before discharge through chemical treatment, so as not to affect the environment. The equipment and procedures used are utilized effectively in the US. The sewage treatment evaluation is for the entire area and not just this plant. We will utilize the present method until a new sewage treatment facility is built.

8- NAME: Mr. Atef Abdel Kader TITLE: Assistant Researcher

Questions:-

1- What are the effects of fume filter defects on the environment and people living in the area.

Answer:-

- As mentioned before the efficiency of the filters is about 99.9%.

9- NAME: Abdel Latif Mohamed TITLE: Branch Manager Bank of Agricultural Development

Questions:-

1- There must be a Modern sewage system to fit with the high technology of the project.

Answer:-

1- This applies to The Sids Research Station and an area sewage system will be done in the near future.

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10- NAME: Sehata Taha TITLE: Assistant Manager (Agric. Development Authority)

Question:

1- Why not obtain the benefit of advanced research in the field of pesticides which is considered to be a current major problem ?

Answer:

1- The project is running a fungicide & pesticide treatment against aphids and thrips and not for boll worms.

11- NAME: Abdel Aziz Mohamed TITLE: Technical Mechanical (SIDS Res. Center)

Questions:

1- Is it possible to treat cotton seed with fungicides after the ginning process with minor dependence on the farmer to do that ?

Answer:

1- Yes. A comprehensive process of ginning, fungicides and pesticides would be applied to the cotton seed leaving a minor job to be done by the farmer in the field.

12- NAME: Abdel Latif Mohamed TITLE: Branch Manager
Bank of
Agric. Development

Questions:

1- Have treated seeds previously been examined in Egyptian soil? If so, kindly compare its productivity with that which is currently produced.

2- Would you build the project in the desert area with consideration of future expansion of the project, instead of building it in a no sewage area and inhibited area near the Agriculture Research Station ?

Answer:

1- The delinted and chemically treated seeds were previously examined in Kaluobia, and it gave remarkable results.

2- The new plant will be built where the old plant is now.

13- NAME: Ebied Mohamed Ebied TITLE: Technician

Questions:

1- Suggesting not to build the project on planted ground or to use a poor area near the village like basin No. 27 which has never been used in planting.

Answer:

1- Location is already chosen in the same land of the old ginning building.

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14- NAME: Mr. Refaat Hnery TITLE: Engineer
(Agric. Development Co.)

Questions:

1- How will the project deal with fuzz so as not to encounter any problems with agricultural mechanization ?

Answer:

- The fuzz will be eliminated completely which will help future mechanization.

15- NAME: Mohamed Abdel Hakim TITLE: Assistant Researcher
Sids Res. Station

Questions:

1- When eliminating wastes shucked with seed cotton, is that done by air or by machine, and does it affect the cotton lint ?

2- When ginning various cotton strains how will the waste be eliminated when applying the closed system ?

Answers:

1- By air & machine, no effect on cotton quality.

2- By a closed system, it is meant there will be no waste to pollute the environment. The lint and seeds captured by the system will be used for animal feed.

V ENVIRONMENTAL QUESTIONS RECEIVED BY MAIL AFTER THE MEETING

At the end of the Environmental Scoping Meeting, after all questions were answered, the audience was invited to submit any additional questions in writing. Self addressed envelops were provided to facilitate this effort. Any new questions were to be submitted within 10 days.

No questions were received 10 days after the Scoping Meeting.

VI. WORK PLAN

Most of the questions were related to anticipated discharges from the plant. These questions were answered at the meeting in Arabic by Dr. Mohamed Abdel Salam, Deputy Director of the Cotton Research Institute of the Ministry of Agriculture. The questions and answers are contained in this section in English.

Nevertheless, it is worthwhile to mention that the solutions to questions concerning plant discharges have already been specified as intregal parts of the plant design. They are already specified in the drawings and equipment lists. The best available technology is utilized for all air emission equipment and neutralization of process waters. This design will meet OSHA Standards and the most stringent US pollution requirements.

Four questions were raised that were also answered at the meeting, but require follow-up steps. They are listed below:

1. Contact the Agricultural Extension Division of the Ministry of Agriculture to request training of farmers for proper handling and planting of the new seeds. Co-ordinate their activity with the growing season starting in 1994.

2. Specify the need for training operators and management in proper operation of the equipment and safety procedures. Also, specify the need for proper safety equipment for employees. This will be part of the procurement package used to obtain the construction contractor who will be responsible for implementing these specifications and procedures.

3. Review the condition and capacity of the paved road from the plant to the main road (200 meters), and advise on its ability to sustain the traffic for the new facility. Recommend course of action.

4. Advise the proper GOE department concerning requests for area wide waste treatment facilities.

INITIAL ENVIRONMENTAL EXAMINATION

SITE LOCATION; SIDS, BENI SUEF GOVERNORATE,
ARAB REPUBLIC OF EGYPT

PROPOSED COTTON SEED GINS
AND SEED CONDITIONING FACILITIES
USAID CONTRACT NO. 263-0152-C-00-1016-00

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A&E DESIGN CONSTRUCTION MANAGEMENT
USAID CONTRACT NO. 263-0152-C-00-1016-00

INITIAL ENVIRONMENTAL EXAMINATION
SIDS, BENI SUEF GOVERNORATE

I INTRODUCTION

The Government of Egypt (GOE), through the Ministry of Agriculture (MOA), Agriculture Research Center (ARC),National Agricultural Research Project(NARP), in association with the United State Agency for International Development (USAID) is proposing to build foundation cotton gin, seed conditioning, and seed research facilities in Egypt. These facilities, including their technological improvements will improve the performance of this industry within Egypt. The facilities and their operation are intended as models of design, performance and capacity. The project will extend the on-going program for expansion of the seed conditioning component of the seed supply industry.

The environmental impact of this project has been evaluated. The conclusion is that it will have no significant effect on the environment. Each category on the suggested " Impact Identification and Evaluation Form" was reviewed. All categories were evaluated with no impact or with little impact expect for Socioeconomic which has been rated with a moderate environmental impact. This represents a positive impact and is the basic reason for implementing the project. The project will improve working conditions of farmers and plant employees and will improve costs, quality, and production of Egyptian cotton.

Cotton farming employs about 650,00 people in Egypt and supports a large textile industry. Textile production represents more than one fourth of total manufacturing output. In the past, cotton has provided significant export revenues. This important source of foreign exchange has declined substantially in recent years. During the 1981/82 production year, cotton exports totaled 685,000 bales. Cotton exports for the 1990/91 season were down to 45,000 bales. This represents a drop in export volume of 93 %.

Egyptian cotton competes against synthetic materials on the world market, as well as other high quality cotton. Consistency of this high quality cotton is an important factor in maintaining and increasing market share. The obsolete gins for the foundation seed ginning is detrimental to the quality levels of Egyptian cotton.

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Specific goals of this project are to:-

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1.4 Centralize fungicide and pesticide application in a well controlled factory environment rather than have farmers apply these chemicals at the farm level.

1.5 Increase seeds available for oil instead of returning the poor yield seeds to the farmer for planting.

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2.0 Improve cotton quality and cost and provide higher capacity by replacing antiquated foundation seed ginning facilities and equipment with modern technology. Improvements in the process will include:

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2.2 Installation of precleaning equipment not utilized presently. This will improve cotton quality.

2.3 Introduce moisture control for proper consistency during the process and for the finished, baled cotton that will improve cotton quality.

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2.5 Install final cleaning of lint to improve cotton quality.

2.6 Introduce the Universal Density Bale (UDB) for improved quality and future mechanization of bale handling.

3.0. Train operating management, equipment operators, and maintenance personnel. This will bring the skills of production personnel to the level required for efficient operation of these modern plants.

4.0. Install equipment and procedures designed to meet safety standards and working conditions prevalent in the US.

5.0. Meet pollution control standards established for US.facilities within this industry.

The project is further defined in the next section followed by the environmental impact of the project in the subsequent sections.

II. SUMMARY AND CONCLUSIONS

Based on the process described under the subsequent section entitled "Project Description", the potential environmental impact for this project has been analyzed. Considerations include the land use, water, atmospheric (air, noise), natural resource, cultural, socioeconomic, traffic, energy use, health and other considerations. Due to the nature of the operations and their magnitudes, the impact on each of these items is none or little,except for socioeconomic which is moderate . In no case is there a significant negative environmental impact on the adjacent properties or surrounding environment. In general, there is a positive impact on the environment. The overall evaluation indicates that this project will have no significant impact on the environment. The best available technology is used for the design of the processes and environmental control equipment. The completed "Impact Identification and Evaluation" form is included on the next page. Each item mentioned above is described in detail in subsequent sections of this report.

SIDS, BENI SUEF GOVERNORATE

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-areas 1/	Impact Identification and Evaluation 2/
A. LAND USE	
1. Changing the character of the land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	L
d. Changing soil character	L
2. Altering natural defenses	N
3. Foreclosing important uses	N
4. Jeopardizing man or his works	N
5. Other factors	
_____	N
_____	_____
B. WATER QUALITY	
1. Physical state of water	L
2. Chemical and biological states	L
3. Ecological balance	N
4. Other factors	
_____	N
_____	_____

1/ See Explanatory Notes for this form.

2/ Use the following symbols:
N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

August 1976

C. ATMOSPHERIC

1. Air additives ———— L
2. Air pollution ———— L
3. Noise pollution ———— N
4. Other factors

———— M
————

D. NATURAL RESOURCES

1. Diversion, altered use of water ———— M
2. Irreversible, inefficient commitments ———— M
3. Other factors

———— N
————

E. CULTURAL

1. Altering physical symbols ———— M
2. Dilution of cultural traditions ———— N
3. Other factors

———— M
————

F. SOCIOECONOMIC

1. Changes in economic, employment patterns ———— M
2. Changes in population ———— M
3. Changes in cultural patterns ———— N
4. Other factors

———— M
————

G. HEALTH

1. Changing a natural environment _____ N

2. Eliminating an ecosystem element _____ N

3. Other factors

_____ N

_____ _____

H. GENERAL

1. International impacts _____ N

2. Controversial impacts _____ N

3. Larger program impacts _____ N

4. Other factors

_____ N

_____ _____

I. OTHER POSSIBLE IMPACTS (not listed above)

_____ N

_____ _____

_____ _____

See attached Discussion of Impacts.

III. TECHNICAL ANALYSIS

This section of the environmental examination provides the technical background necessary to evaluate the environmental impact of the proposed factories.

A. Project Description

1. Design Basis

This project includes one (1) production line. The line at SIDS is practically identical in design and production capacity to each of the two (2) lines at SAKHA.

The plant at SIDS includes seed cotton ginning and cotton seed conditioning facilities plus research.

The total capacity of the SIDS factory with one line is :

Input:	Seed Cotton	7,550 MT/YR (50,333 bag)
Output:	Baled Cotton	2,510 MT/YR (11,040 Bales)
	Bagged Seed	3,631 MT/YR

The production time at Sids will be operating 100 days/year, 8 hours/day.

The site also includes research facilities. The Sids research building has one (1) gin and one (1) seed conditioning operation. The research facilities will be operated intermittently during a period of approximately 5 months each year.

Research production anticipated at Sids is:

Input :	Seed Cotton	60 MT/YR
		(400 Bags)
Output:	Baled Cotton	20 MT/YR
		(87 Bales)
	Bagged Seed	33 MT/YR

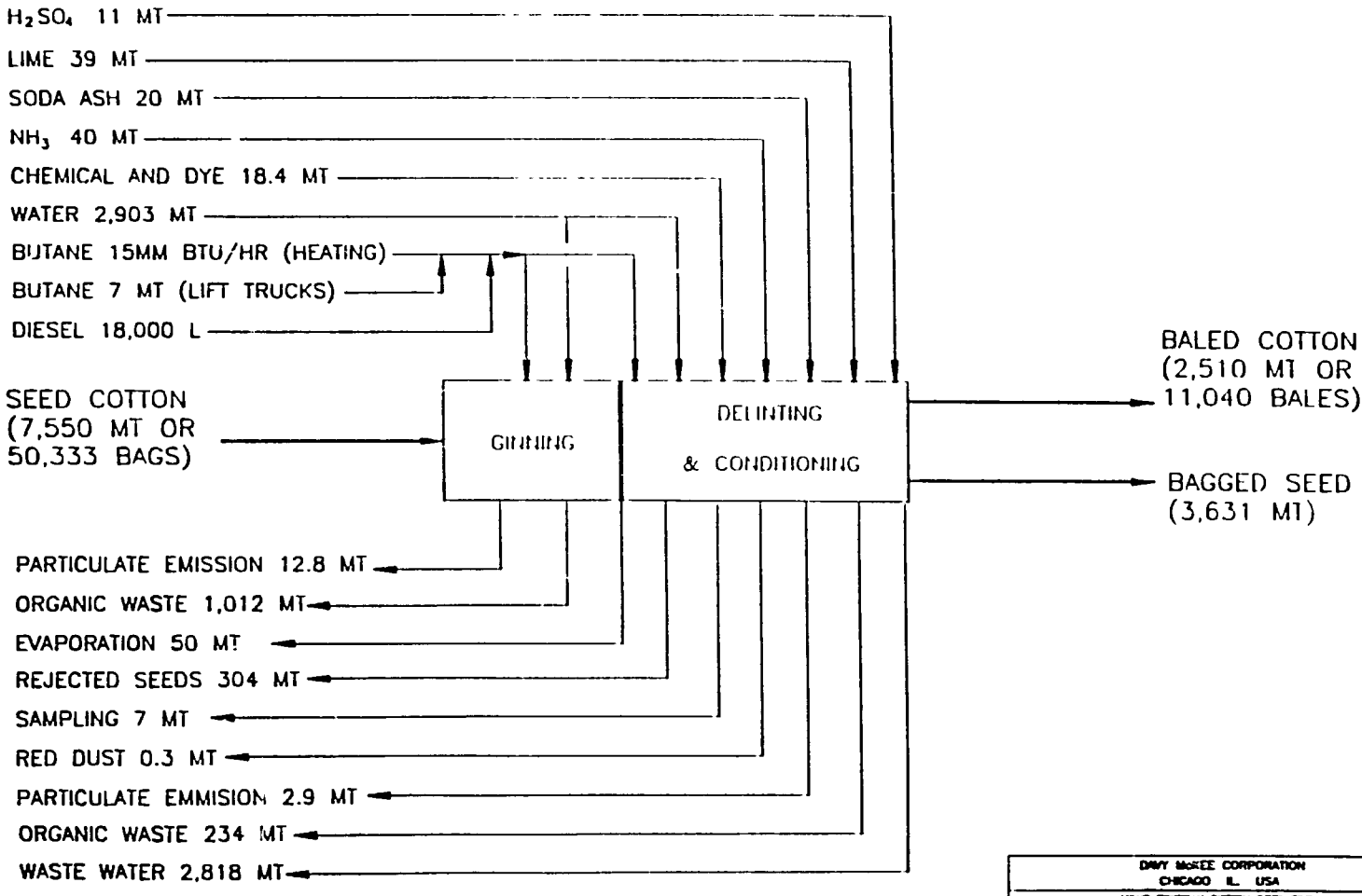
2. Process Description

a. Material Inputs and Outputs

The material inputs and outputs for Sids are shown on the attached Drawing SK-910625.

3. Site Plan

The site occupies about 7.5 feddans (acres). It is located between four existing facilities: Agricultural machinery station, planting shed, storage building and regional station, as shown on the attached Dwg. C-3S-001. Sids, Beni Suef Governorate is about 121 Kilometers (75 miles) south of Cairo.



FOOTNOTE: ASSUME DELINTING/CONDITIONING SEASON 100 DAYS/YR @ 8 HRS/DAY

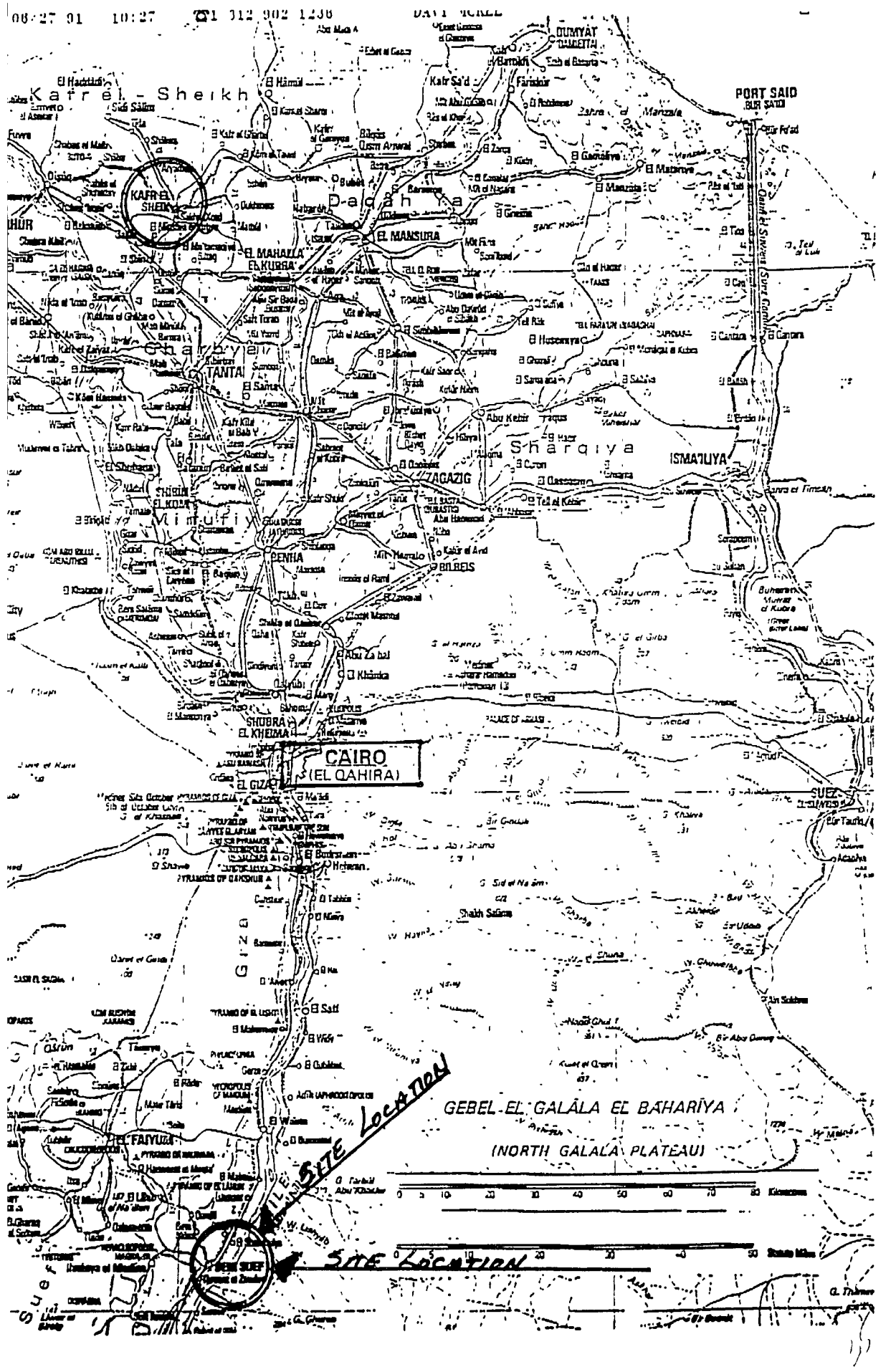
DAVY McKEE CORPORATION
CHICAGO IL USA

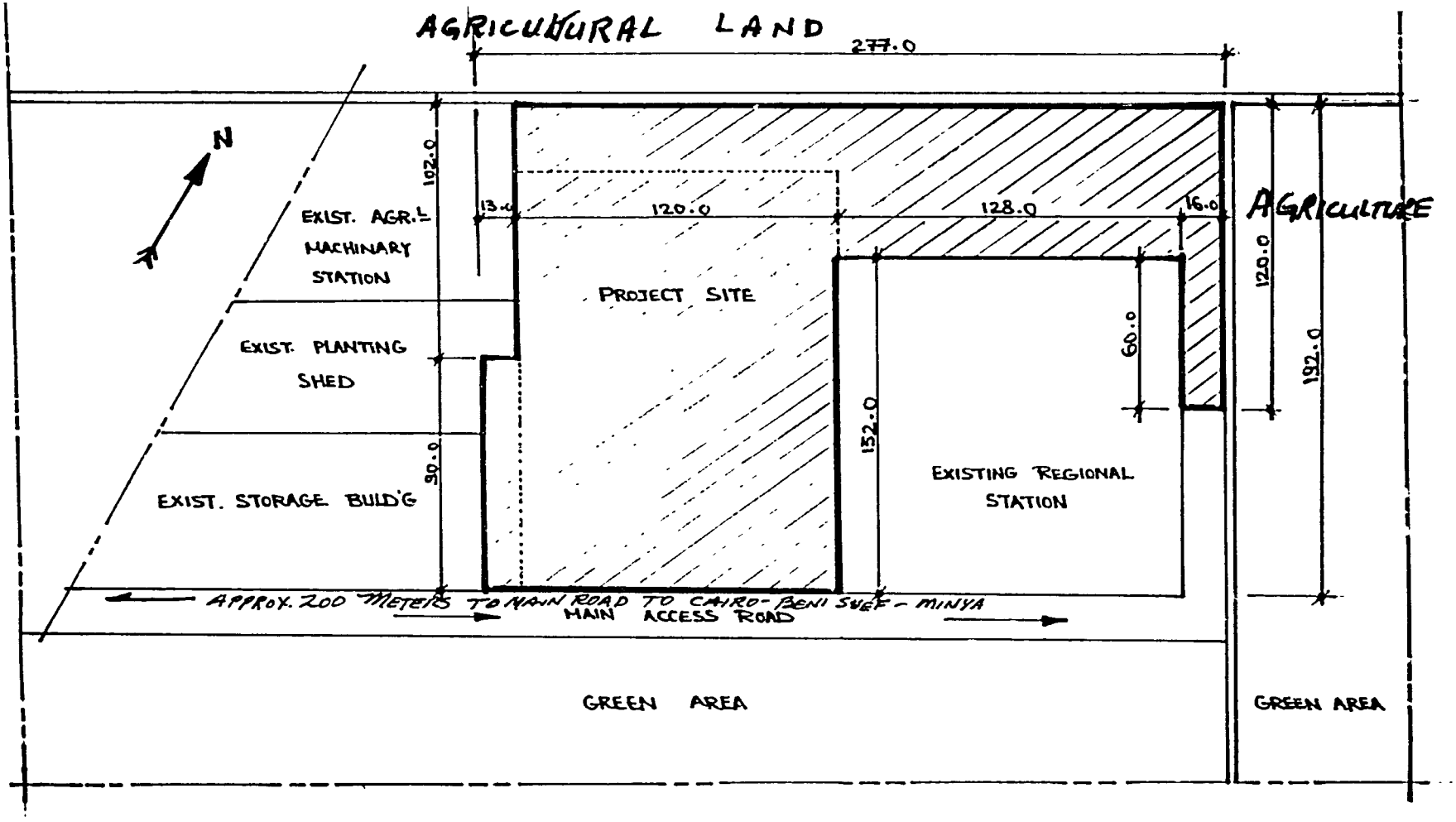
USAID EGYPTIAN COTTON SEED GINS
AND SEED CONDITIONING FACILITIES
USAID CONTRACT No 263-0152-C-00-1018-00

SIDS (1) PLANT

MATERIAL BALANCE
(ANNUAL VOLUME)

DWG SK-910625 PROJECT 203311 JULY 23 1991 A. CHEM | A


Kafr el-Sheikh
PORT SAID
KAFR EL SHEIKH
Dakahlya
EL MANSURA
EL MAHALLA EL KUBRA
Gharbiya
TANTA
Sharqiya
ZAGAZIG
ISMAILIYA
Minufiya
PENHA
BILBEIS
CAIRO
(EL QAHIRA)
SHUBRA EL KHEIMA
EL GIZA
SUEZ
Giza
EL FAIYUM
GEBEL-EL-GALALA EL BAHARIYA
(NORTH GALALA PLATEAU)
Site Location
Site Location
0 10 20 30 40 50 60 70 80 Kilometers
0 10 20 30 40 50 Statute Miles

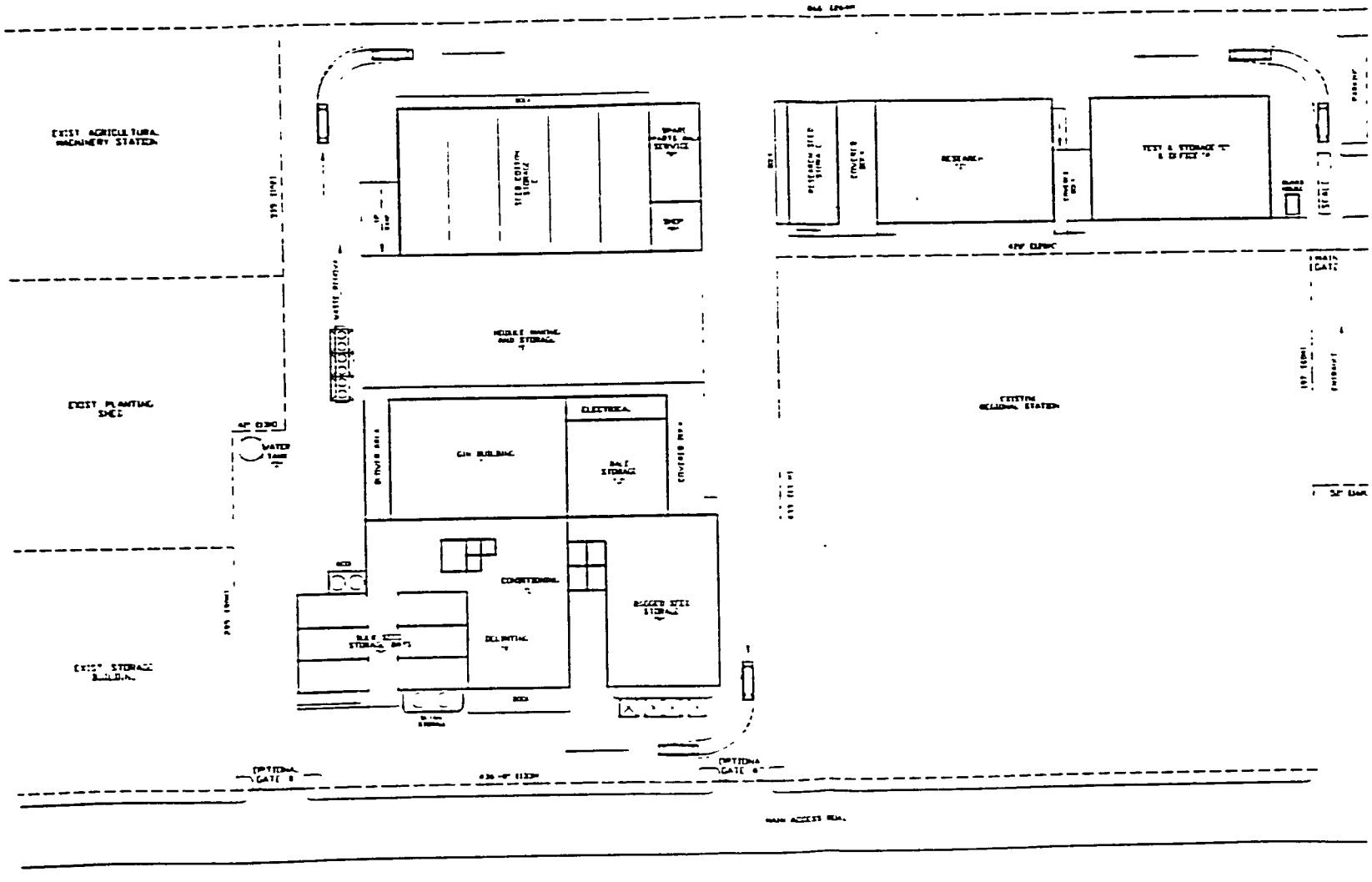


GENERAL SITE PLAN AT SIDS

BY. : ENG. M. GOWAILY

• DIMS IN MTS.

• REV. : 0 DATE 25.4.91



SITE PLAN AT SIDS

4. Infrastructure Conditions

Infrastructure considerations are:

- Access to each site
- Water requirements
- Electrical energy usage
- Fuel requirements
- Disposal of liquid waste
- Disposal of trash
- Disposal of sanitary sewage

Each of these considerations is discussed in the following sections of the analysis.

B. Potential Environmental Impacts

The potential environmental impacts are discussed in the order in which the impact identification and evaluation form is designed. The completed "Impact Identification and Evaluation" form is included in this report following page VII/4.

1. Land Use and Summary

The environmental affect of this project on land use is evaluated as no impact to little impact.

The Sids site is owned by the Ministry of Agriculture (MOA) for light industrial use. Since people do not live on the site, relocation expenses and/or new housing would not be required.

No change will occur in the character of the land due to a population increase. This factory will employ approximately 100 people in an area with sufficient available employees. These people will be drawn from the immediate local which should have virtually no effect on local transportation needs.

Sanitary sewage generated at the plant location will be collected in a holding septic tank with occasional withdrawals of septic materials for disposal elsewhere at an acceptable site. This is the practice of the present gin and other facilities in the area, there will be no impact on the environment.

Natural resources will not be affected since no extraction operations are planned.

There will be a low impact due to land clearing because the new facility will replace the present facility with the addition of approximately 3 feddans of adjacent - MOA land presently occupied by storage sheds and agricultural research land. The site will have proper drainage.

The site is owned by the MOA and is surrounded on three sides by land and/or facilities that are also owned by the MOA. These include an agricultural mechanization station, planting sheds, a storage building and a regional agricultural research station for cereals. The area is designated for agricultural light industrial use. Along the south wall there is a paved road.

Road improvements on the existing road will be minor and will be confined to the short distance of approximately 200 meters to the main road. The main road connects Beni Suef and Minya. The traffic will not change significantly from previous ginning seasons.

Changes in characteristics of the soil in the area will be minimal, since the factory is designed with the best available technology for the minimization of air emissions and waste water control.

Spill plans will be incorporated into the factory design to preclude any serious impact upon the surroundings in the event of an accident. Spill plans include built-up retention areas for containment vessels. These will have a capacity in excess of the vessels so that any spills will not escape.

Although of minimum concern, attention will be paid to the handling of storm waters during the infrequent rains that occur at Sids. The site will be drained into an irrigation ditch adjacent to the property.

Small quantities of acidic waste will be produced from the process. These acidic wastes will be neutralized so that they will have no determental affect on the land serviced by the irrigation trench adjacent to the plant where the discharge of the neutralized waste will occur. It is currently planned to neutralize this waste with lime because of its high availability and low cost.

The main use of acid will be for the delinting process. This acid is recirculated, filtered and replenished for reuse. The process is well tested and used successfully in the US. During the process, the dilute acid solution is

approximately 11% to 12% sulfuric acid. Once per week, the dilute acid solution will be neutralized with lime and discharged to the irrigation ditch adjacent to the plant. The dilute acid from the research operation will also be neutralized and discharged to the irrigation ditch.

The soil is alkaline, and this neutralized water should be a benefit to the soil.

Organic solid wastes generated from the process will be used as a fertilizer or as animal fed additives. The organic wastes are generated in the form of lint, sticks, and leaves from the gin; and lint, twigs, and broken seeds from the delinting and conditioning plant. These organic wastes are properly filtered through the cyclones. The lint from the seed delinting operation is also properly neutralized as will be discussed in the section on Atmosphere. The cyclones are the 1D-3D design which is the latest technology available and have an efficiency level of 99.0%. The wastes will be transported from the factory sites by truck to appropriate locations.

A beneficial by-product of this process is rejected seeds that will be sent to the mills for

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the production of cotton seed oil and animal feed.

The environmental impact on natural defenses is evaluated to be low. Since the area of the site is flat and only 7.5 feddans, precipitation runoff will be minimal. The site will be properly drained to the irrigation ditch. Containment of any spills will be incorporated into the factory design, as well as proper treatment and handling of waste water.

Future other uses of the land will not be foreclosed since all of the buildings and equipment can be removed from the site should a more important use be found for this property. As pointed out earlier, the Sids site is surrounded by other, agricultural structures.

The nature of these factories is such that man or his works will not be jeopardized by the construction of these facilities. Attention has been paid to those details concerning employee safety which are discussed in the section dealing with health.

2. <u>Water</u>

Annual consumption of water is estimated to be 3,200 metric tons for the Sids location. Water will be provided by the City Waster System. This quantity of water, plus water removed from the seed cotton, will be returned to the land so that there will be no loss in water because of these operations.

The process water discharges will be properly neutralized and discharged in the irrigation ditch for agricultural use as discussed in the land use portion of this report. Because of the availability and low cost of lime, it is planned to utilize lime as the neutralizing agent.

Sanitary sewage will be disposed of separately from other waste waters. It will be held in septic tanks with periodic removal and disposal at a suitable location. This procedure is followed now at the ginning facility on the site and for other factories in the area.

In summary, the environmental affect on water is evaluated to have little impact.

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3. Atmospheric

All air streams discharged from the plant will pass through high efficiency cyclones or bag houses The cyclones will filter all air discharges from the gins and the delinting and conditioning plants, except the small amount of chemical dust from the seed treating process. This will be filtered through a highly efficient bag house.

The cyclones will filter the most air. These are the 1D-3D cyclones which are the latest technology available and meet the most stringent air pollution standards in the US. They are reported to have an efficiency of 99.9%. Discharges of pollutants from the air handling equipment will be very little.

There is a separate set of cyclones for the gin, the delinting plant, and the research facility.

The cyclones will recover lint from the delinting process as a fine powder like substance. This lint will be collected in the cyclones. The lint is then automatically neutralized utilizing equipment that is installed and operated successfully in the US. It will then be mixed with cull seeds and sold for cattle feed.

The air handling system for the chemical dust includes a baghouse, which will be very efficient in collecting this type of dust. This dust will be collected and disposed of at the end of the season. It will be mixed with wet chemical wastes. Wet chemical wastes can be used to treat waste seeds, and these, in turn, can be planted for a "green manure" corp, enhancing the properties of the land in which the waste seeds are planted. These are sound environmental practices utilized in the United States.

Other vapors that can discharge into the environment will be controlled through proper design of the factory and installed equipment to preclude the discharge of other than minute quantities of materials to the atmosphere. In the event of a spill, safety procedures will be in place for a proper handling of spilled materials so that they should not affect air or water quality.

No major problems are anticipated with equipment generating noise. The sound levels of all equipment utilized in this factory should in no way impact on any of the neighboring operations.

In summary, the impact on the surrounding atmosphere is evaluated as low.

4. Natural Resources

The environmental impact of this project on natural resources is evaluated as none.

Water utilized in these facilities will be neutralized to ensure that it is useful for irrigation of land. There will not be any irreversible or inefficient operations in this regard.

Butane, used as fuel, will produce harmless carbon dioxide and water vapor as part of the combustion process. Butane is an efficient fuel and the modern burners specified in this design are clean burning and efficient. The fuel burning units will be adequately monitored to ensure that the production of carbon monoxide resulting from oxygen deficiencies is precluded.

5. Cultural Considerations

It is anticipated that no physical symbols will be altered and there should be no dilution of cultural traditions. Since the work force required at the plant is small, no changes are anticipated in population of the surrounding area.

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No changes in cultural patterns are anticipated since previous hiring patterns will be followed.

Procedures will be established to protect archaeological finds during constructions.

There is no expected environmental impact on cultural patterns.

6. Socioeconomic

Since the factory is located in an area having sufficient population density, the labor force required to operate the facility would not be a disruption to the employment pattern within the affected states. Some of the equipment utilized in the factories is mechanically sophisticated and would require mechanics having skills essentially the same as automobile mechanics responsible for rebuilding automobile engines and power trains. This project provides training programs to give maintenance personnel the specialized expertise required for the equipment. This will be an up-grading of skills in the area, and is considered a positive environmental impact. The occasional need for welders should not place a significant demand on the available trained delivery force.

It is assumed that the operating and maintenance force for this facility will be hired on a competitive basis from the surrounding area so there would not be any socioeconomic disruption.

Because of the relatively small work force, no changes are anticipated in population of the surrounding area.

Since the output of this factory will improve the working conditions of employees and cotton farmers, and improve the cost and output of cotton, this project is considered to have a moderate impact within the Egyptian economy.

7. <u>Traffic</u>

The traffic patterns at the factory site would be determined by the movements of operating personnel and the truck, or lorry, movements inbound and outbound for handling materials, supplies and trash. The patterns would be similar to the present gin located on the site.

It is assumed that the majority of factory employees will walk to work or will arrive at the factory site via mass conveyances. For planning purposes, it is assumed that no more than 5

company owned passenger vehicles will move into and out of the site. The bulk of traffic movements will be that resulting from materials movements. The following table summarizes these average truck movements.

AVERAGE TRUCK MOVEMENTS PER DAY

	Sids
Inbound Seed Cotton	9
Inbound Supplies	1 (2)
Outbound Cotton	3
Outbound Seed	4 (3)
Outbound Solid Waste	3
Total*	20

(1) Range of movements is based on trucks carrying 10 tonnes per load.

(2) Annual requirements will be 88 truck movements, or about one every other day.

(3) Assumes that treated seed is stored at another site away from the factory.

* Road improvements would be required for the approximately 200m to the main road.

On the basis of this analysis, the average truck movements at Sids will be about 2¼ per hour. It is safe to assume that the maximum truck movements will be on the order of 3 per hour. This number of truck movements should not impose any problems in the area of the Sids factory sites. Because of the relatively few truck movements, the contribution to atmospheric pollution by these vehicles should be very low, and virtually impossible to measure.

In summary, traffic movements in and around the Sids factory site will have a very low impact on the environment.

8. Energy Use

Energy required to operate the plants is in the forms of electrical energy to operate the machinery and butane used as a fuel for the dryers in the gin and conditioning plants.

The total connected horsepower for the plant is estimated to be 2000. The diversity factor is estimated to be 0.85. Because of the nature of the process, the demand upon start-up of the facility should extend over about 30 minutes as each unit of equipment is brought on line sequentially in the overall operation of either facility. The motors used to drive the equipment should be sized quite closely, and it is anticipated that the power factor (without correction) will be approximately 0.85. If required, this power factor can be improved by the installation of capacitors.

Electricity will be taken directly from the national grad, so there should be no adverse affect on the surrounding operations or populations. Since this is a continuous process, reliability of the power distribution system will have a pronounced affect on the productivity of the factories. If power outages are frequent, or extended low voltage conditions exist, productivity of these facilities will be affected markedly.

The quantity of butane to operate the Sids facilities is estimated to be 287 tonnes per

year. This consumption will occur over 100 days during the season.

Under normal conditions and with good equipment maintenance, the combustion products from the dryers will be carbon dioxide and water vapor, with no measurable quantities of carbon monoxide.

In summary, the environmental impact of energy use is estimated to be very low.

9. Health

Health aspects are considered from three viewpoints: injuries resulting from machinery, exposure to manufacturing supplies and ingredients, and chronic diseases.

It is planned that all equipment supplied and installed will be equipped with adequate guards to minimize the risk of physical injury during the operation of the plant. However guards and safety devices must be properly installed and maintained at all times during the operation of the plant. Procedures must be established to electrically disconnect, or lock out, the power supply to the prime mover of any piece of equipment being repaired to ensure that personal injury will not result.

With the exception of butane, flammability of the various materials is moderate or non-existent. With proper operation and storage and adequate training of personnel, no serious problems are anticipated in the operation of the factory. Lint is a source of flammability. Should a cyclone malfunction resulting in no discharge of the lint, there is a possibility of heat build-up which could cause ignition of the cotton lint.

Combustion would take the form of smoldering rather than open flame. These types of fires are relatively easy to put out by using adequate quantities of water to thoroughly wet the smoldering lint.

The chemical reactivity of all the compounds, with the exception of sulfuric acid, is low so that no problems are expected in this regard. The provision of adequate safety equipment, proper clothing and proper training should result in good safe handling practices with sulfuric acid.

Some of the fungicides used in the treating of seed may have irritating properties, particularly with respect to the eyes. An eye bath will be available in the areas where the fungicide is handled so that immediate steps can be taken to correct the cause of irritation. Within the manufacturing system, adequate vapor and dust handling systems are provided so that, under normal operation, no irritation should result.

Byssinosis, also called mill fever or brown lung disease, is a pulmonary aliment alleged to develop on repeated inhalation of cotton dust. Because of the ventilation and dust collection systems incorporated into the design of these factories, this disease would not be a problem.

In summary, with the plant design, planned training program, and the provision of appropriate clothing and safety equipment, the environmental impact on health is low.

10. Other

Because of the type and scale of the proposed operations at Sids, no international or controversial impacts are foreseen.

In summary, no other problems have been identified as having impact on the environment.

C. Program Implementation

The solutions concerning plant discharges have already been specified as integral parts of the plant design and are contained in the drawings and equipment lists. Training is an important part of this project.

Key to the environmental impact is a program of implementation to ensure that each of these aspects are properly handled and controlled. The various phases of the project are discussed in the sections that follow.

1. Construction

Provision during construction will consist of:

- Methods for handling sanitary sewage,
- Establishment and frequent review of a safety program to ensure safe construction methods,
- Contingency plans for storage and handling of hazardous construction materials such as acetylene and other materials used for welding,
- Safe welding practices to preclude the possibility of fire,
- Procedures for stopping construction and reviewing the site in the event of archaeological finds on the site.

Delivery of large units of equipment will be coordinated with local officials to ensure inconveniences are minimized in delivering the equipment to the factory site. Safe practices and procedures will be established and enforced in the unloading and handling of equipment.

2. Initial Operation and Start-up

A carefully executed program will be used to check out all equipment to make sure that it is properly installed, and that it functions correctly both electrically and mechanically prior to beginning any operation.

3. Monitoring

Suitable methods and apparatus will be provided to ensure that effluent discharged from the plant comply with necessary standards. Training programs and supervisory practices will be established to ensure that the monitoring procedures are properly implemented. Remedial action plans will be developed for the off chance that an emission exceeds the desired value or level.

4. Spill Plan

Spill plans will be developed and necessary physical arrangements will be installed in the plant to handle accidental spills of chemicals within the plant. The spill plans will include methods of disposal of the specific materials involved.

5. Storm Water Handling

Rainfall is minimal at Sids. However, the plant design includes proper run off from the factory site resulting from rain.

6. Disposal of Waste Streams

All waste streams will be properly neutralized for discharge into the irrigation ditch. Organic solid wastes will be properly conditioned prior to loading onto trucks for disposal as feed or fertilizer materials.

7. Finished Goods Storage and Handling

Proper procedures and equipment will be supplied to ensure the safe handling of the treated seeds for the next seasons plantings. Adequate ventilation will be provided to ensure personnel safety.

8. Shutdown

Provisions will made for a shutdown of all equipment at the end of the season to ensure safety during the period of non-operation as well as ease of start-up for the following campaign.

9. Maintenance

A planned maintenance program for equipment, buildings and site will be developed and in place to ensure safe operation of the facility and equipment. Necessary security measures will be provided to preclude vandalism or possible injury to intruders.

10. Emergency Action Contacts

The information listed on the following pages is for emergency contacts if an accident or serious malfunction occurs. Capability for maintenance and proper operation of the air filtering cyclone system, baghouse and neutralizing systems will be contained within the skills of plant management and technical personnel at the facility. An inventory spare parts for these systems will be maintained on the premises. All discharges will be monitored by Quality Control and Maintenance personnel to verify compliance with standards and to identify actions needed.

Contact organizations, individuals and telephone numbers are listed on the following pages.

In summary, the environmental impacts of this project are minimal. The process design and equipment are the latest technology and meet the US requirements for pollution control and safety. Training is an important part of this project so that employees will operate the equipment properly and safety. These requirements will be included in the construction contractors specifications so that the solutions will be carried to completion.

SIDS PLANT

Subject: Project Utilities & Services for Emergency Contact Reference List of Concerned Parties/Personnel

1. Electrical Power

Organization	:	Biba Electric Network
Person to contact:		Eng./ Sorour Mahmoud Amin
Telephone No.	:	082/400891

2. City Water:

Organization	:	Biba Engineering Department
Person to contact:		Eng./Mohamed Ali Metwally
Telephone No.	:	082/400722

3. Sewer System:

Organization	:	Biba Drainage Department
Person to contact:		General Director
Telephone No.	:	082/400939

4. Process Water Neutralization/Discharge:

Organization	:	Regional Station /M.O.A
Person to contact:		Mr./ Badr El Mehani
Telephone No.	:	082/324873

Process waters will not be discharged unless properly neutralized and verified by Quality Control Manager and Station Engineer.

5. Air Pollution/Cyclone System

Organization	:	New Cities Development Authority (Beni Suef)
Person to contact:		General Director
Telephone No.	:	082/324231

6. <u>Fire Fighting:</u>

Organization	:	Biba Fire Brigade station
Person to contact:		Station Commander
Telephone No.	:	082/400480

7. <u>Fuel Supply:</u>

Organization	:	Petrogas Head Office (Cairo)
Person to contact:		Eng./Mahmoud Khattab
Telephone No.	:	2485216

8. <u>Industrial Safety:</u>

Organization	:	Biba City Council
Person to contact:		Eng./ Ali Mohamed Shahba
Telephone No.	:	082/400945

9. <u>Medical Care:</u>

Organization	:	SIDS Hospital
Person to contact:		Dr. Moustafa Abdel Aziz
Telephone No.	:	082/400477

10. <u>Security:</u>

Organization	:	SIDS Police Station
Person to contact:		Mr./ Hassan Amer
Telephone No.	:	082/400491

11. <u>Cultural Find Action Plan:</u>
(During Construction)

Organization	:	Middle Egypt Cultural Zone (beni Suef)
Person to contact:		Mr./Moustafa El Zeiary
Telephone No.	:	082/323975

IV. IEE PREPARERS AND QUALIFICATIONS

The IEE was prepared by the Davy McKee Corporation (DMC) with contributions from the DMC Chicago and Cairo Offices. The individuals preparing the IEE and their qualifications are provided on the following pages.

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Name: Robert L. Opila — Age: 62
Profession: Engineer — Nationality: USA
Years Associated with Firm: 2
Proposed Position on Team: Senior Staff Engineer

KEY QUALIFICATION:

Mr. Opila has served as a process development and design engineer and/or project manager for the design and construction of facilities producing a wide range of agricultural products. The products include cereals, corn starches and sweeteners; animal and fish feeds; pet foods; breads, buns, cakes, cookies, and crackers; sucrose, liquid sugar, confections, chocolate, cocoa, and compound coatings; soy bean extraction, fat splitting and edible oil refining; margarine, mayonnaise and fresh frozen and further processed poultry, cheese, ice cream, tomato paste, sauce, and catsup; dry and canned soups; apple, grape, citrus and cranberry juices; frozen pizza and entrees.

EDUCATION:

B.S. Chemical Engineering - Illinois Institute of Technology

MBA - University of Chicago

EXPERIENCE RECORD:

Two years with Davy Mckee as Director of Special Projects and Vice President .

Three years with the Austin Company as Manager of the Process Division Business Group.

Eleven years with Globe Engineering as President

Two years CRS Sirrine, Vice President

Three years Griffith Laboratories, Director of Corporate Engineering

LANGUAGES: NONE

11/2/90 — Robert L. Opila (E.O.L)

DATE — **Signature of Staff Member**

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Robert L. Opila

SUMMARY OF PUBLICATIONS: *Over 30 publications and papers including:*

Energy Conservation in the Food Industries. UK/US Workshop, Cambridge, England, November 6, 1984.
R. L. Opila

Planning a New Facility. Food '86- Engineering & Packaging Show, Atlantic City, N. Y., June 225-27, 1986.
R. L. Opila

The Food Facility of the Future. ALCHE Summer National Meeting New York, N. Y., August 26, 1986.
R. L. Opila

PATIENTS:

U.S. Nos. 3,086,008; 3,114,656; 3,150,006;3,158,449; 3,289,870

DATE ***Signature of Staff Mamber***

RFP EGYPT 90-007
ATTACHMENT J.4.

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

ame: *John Walker* **Age:** 57
rofession: *Civil Engineer* **Nationality:** *American*
ears Associated with Firm: *17*
roposed Position on Team: *Environmental Specialist*

EY QUALIFICATIONS:

gistered Professional Engineer - Experience in Egypt with AID projects, expertise in wastewater aracterization, feasibility studies and engineering design of wastewater treatment facilities.

DUCATION:

S. Civil Engineering - Manhattan College, New York

XPERIENCE RECORD:

years of Environmental Engineering with Davy McKee Corporation.

ANGUAGES:

ONE

UMMARY OF PUBLICATIONS:

uthor: "Environmental Permitting and Its Impact on Project Schedule" Symposium on Environmental issues ncerning the Chemical Industry, Coastal Carolina Section AIChE, June, 1988.

14 SEPTEMBER 1990 John H. Walker

Signature of Staff Member

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Name: *Erik Lokensgard*
Profession: *Operations Specialist*
Years Associated with Firm: *2*
Proposed Position on Team: *Project Manager*

Age: *51*
Nationality: *American*

KEY QUALIFICATIONS:

Twenty years experience in executive, management, and technical positions primarily in manufacturing operations under USDA jurisdiction. Operations and engineering experience is inclusive from receiving, processing, slicing, packaging, shipping and distribution. Specific project responsibilities include strategic and conceptual analysis of operations and facilities requirements through preliminary design. Process flow, operation analysis, project cost estimates, direct operating costs, fixed operating costs, plant staffing, capacities, production scheduling, equipment specifications and selections, equipment and project scheduling, plant start-up, training and return on investment analysis.

EDUCATION:

B.S. Economics - University of Wisconsin - 1968

EXPERIENCE RECORD:

Three years with Oscar Mayer Corporation as an Industrial Engineer.
Three years with Booz, Allen & Hamilton, Inc. as a Management Consultant.
Fifteen years with Swift & Company as Operations Manager and Director of Industrial Engineering.
Two years with Davy McKee as Operations Specialist.

LANGUAGES:

NONE

SUMMARY OF PUBLICATIONS:

NONE

9/14/90 Erik Lokensgard

Signature of Staff Member

RFP EGYPT 90-007
ATTACHMENT J.4.

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Name: *Albert Chen* **Age:** 50
Profession: *Mechanical Engineer* **Nationality:** *Chinese*
Years Associated with Firm:
Proposed Position on Team: *Lead Engineer - Material Handling*

KEY QUALIFICATIONS:

Extensive international experience in material handling systems. Specific knowledge Ginning Equipment. Worked with engineering companies in processing, packaging and material handling. He served as a Project Engineer for Kraft Foods for five years specializing in processing and packaging; then developed a frozen foods processing line in Taiwan; then served as a Project Manager in food manufacturing for Jewel Food Stores. Also worked as a lead equipment engineer for a natural gas processing project in Houston for DMI.

EDUCATION:

B. S. Mechanical Engineering - National Taiwan University
M. S. Food Engineering - University of Massachusetts
Ph.D Food Engineering - Michigan State University

EXPERIENCE RECORD:

Twelve years with Davy McKee as a Staff Engineer.
Five years with Kraft Foods as a Process Engineer

LANGUAGES:

Chinese - Excellent
Japanese - Good

SUMMARY OF PUBLICATIONS:

"Residence-Time Distribution in a Swept-Surface Heat Exchanger". "An analysis of the Thermal Properties of Dry Food Powder in a Packed Bed". Transaction of the ASAE 15 (5) 951-955 (1972).

Sept. 14, 1990 Albert C Chen

, 1990 **Signature of Staff Member**
Albert C Chen

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

ame: *Refik M. Guran*
rofession: *Chemical Engineer*
ears Associated with Firm:
oposed Position on Team: *Project Engineer*

Age: *49*
Nationality: *U. S. National*

Y QUALIFICATIONS:

oject Engineer - *Registered Professional Engineer - Project Engineer on two previous Aid projects. Field gineering experience in Egypt, lived in Cairo, Egypt for 12 months. Senior group supervisor and project gineer for design of industrial, commercial, transportation, and sanitary structures. Has extensive knowledge computer programs and applications to management and structural engineering. Formulated a computer ed multi-discipline man-hour control and drawing status report now in use.*

UCATION:

S. Mathematics - Park College - Missouri
S. Civil Engineering - University of Missouri
S. Civil Engineering - University of Missouri

PERIENCE RECORD:

years experience as Project Engineer and Group Supervisor with Davy McKee on multi-faceted projects.
t years as Engineering Group Supervisor with Deleuw Cather.

NGUAGES:

ish - Excellent

MMARY OF PUBLICATIONS:

hor: Data Recover Software, IBC, DOS

9/14/90

Signature of Staff Member

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Name: *Charles C. Owens*
Profession: *Owner/Operator of Ginning Company*
Years Associated with Firm:
Proposed Position on Team: *Ginning Specialist*

Age: *60*
Nationality: *USA*

KEY QUALIFICATIONS:

Mr. Owen has the distinction of being named National Cotton Ginner of the Year for 1989 at the annual meeting of the National Cotton Ginners Association in Washington, D.C. He has extensive experience in management and operational analysis, including budgeting, staffing and operating ginning operations since 1959. This included remodeling and changing ginning equipment as needed. Also, he prepared feasibility studies, obtained financing, and was involved in design layout and construction of various modern ginning plants for such firms as La Paz Gin, Parker, Arizona; Gila River Forms Gin, Sacaton, Arizona; Anderson-Clayton Valencia Gin, Buckeye, Arizona, Solyer-American Gin, Corcoran, California; and Glenbar Gin, Inc., Pima, Arizona. Capacity of these plants ranged from ginning of 20 to 50 bales per hours.

EDUCATION:

North Georgia College
West Georgia College
University of Arizona

EXPERIENCE RECORD:

8 years with Cotton Producers Association as Manager of Pima Gin and Upland Ginning operation.
11 years with Southside Gin Company, Inc., as Manager of 2 cotton ginning operations.
7 years with Lummus Industries, Inc., in sales
5 years as Owner/Operator of Glenbar Gin, Inc.

LANGUAGES:

None

SUMMARY OF PUBLICATIONS:

Author of - "Conditioning Seed Cotton For Roller Ginning", Beltwide Cotton Ginning Conference 1990; "Operating And Managing Roller Gins", Beltwide Cotton Ginning Conferences 1990; "Seed Cotton Cylinder Cleaners And Extractors", 1990 Ginners School - U.S. Cotton Ginning Laboratory, Stoneville, Mississippi; "Roller Ginning", 1990 Edition of the Cotton Ginners Handbook; "Quality From A Ginners Point Of View", 1988 Cotton Production Conference.

11/2/90 — Charles C. Owen (EOL)

Date — **Signature of Staff Member**

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Name: Earl Dykes **Age:** 37
Profession: Owner/Operator of Acid Delinting & Conditioning Company **Nationality:** USA
Years Associated with Firm:
Proposed Position on Team : Seed Conditioning Specialist

KEY QUALIFICATION:

Mr. Dykes is a Seed Specialist who has been involved with every aspect of the seed industry. Specifically, during the feasibility study phase when forming Arizona Processing Inc. Mr. Dykes was heavily involved with the financial planning, market analysis, cost, pricing, and varietal selection for the entire line of seeds. He was involved with all aspects of forming the business including legal aspects of starting a corporation. He dealt with finalize institutions and government agencies including state and federal regulators for air pollution control and waste treatment, permit requirements and United States Department of Agriculture. From a technical aspect Mr. Dykes developed the layout for Arizona Processing and completed three major process upgrades in the last 12 years. He acted as General Contractor during initial construction and for each modernization program. Implemented new quality program and procedures to improve seed quality. Installed a new process for acid delinting to comply with new EPA regulations. As current operator/owner and General Manager, Mr. Dykes is directly involved in day-to-day decisions on pricing, markets and requirements. R & D for selection of vertical selection and treatment, Procurement, Production, Sales and Distribution. Mr. Dykes is a past President of the American Cotton Seed Delinters' Association and is the current President of the Arizona Crop Improvement Association.

EDUCATION:

B.S. Marketing - Auburn University

EXPERIENCE RECORD:

12 years experience as an Owner and General Manager of Arizona Processing Inc.

LANGUAGES:

None

SUMMERY OF PUBLICATIONS:

None

11/2/90 Earl Dykes (EOL)
Date Signature of Staff Member

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CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Name: Mahmoud Gowailly — **Age:** 44
Profession: Engineer — **Nationality:** Egyptian
Years Associated with Firm:
Proposed Position on Team : Senior Staff Engineer

KEY QUALIFICATION:

Mr. Gowaily has been directly involved with engineering, construction, and start up of new operations and facilities for over 20 years. His responsibilities have included staff engineer, project engineer and project manager. Mr. Gowaily also was responsible for the engineering and maintenance department of a large pharmaceutical company (120,000 sq mt) where he establisned a preventive maintenance program and trained supervisors and the maintenance staff. His responsibilities for the pharmaceutical operations began with the initial feasibility study, economic justification, technical evaluation, and plant layout through construction, start-up and operation. He fulfilled the role of designer of the process layout and was responsible for coordination of the project as the project manager.

EDUCATION:

B. S., Mechanical Engineering, Ein Shams University, Cairo, Egypt, June 1969.
On-the-job training and numerous missions abroad.

EXPERIENCE RECORD:

Engineering General Company (Cairo - Egypt) (1969 - 1973)
As Project Engineer.

Private Consulting Office (Cairo - Egypt) (1969 - 1973 as part time)
As Mechanical Design Engineer

Shaiba Area Authority (Kuwait State) (1973 - 1982)
As Head of Mechanical Sec. - Port Department.

Mechanical Union Pharmaceutical Co.
(Abu Sultan - Egypt) (1983 - 1990)
As project Manager/Head of Engineering Department.

Davy Mckee Corporation (Cairo, Egypt) (Dec. 1990 to present)
As Senior Staff Engineer.

CURRICULUM VITAE FOR MEMBERS OF CONTRACTOR'S TEAM

Mahmoud Gowaily

Design supervision of site mechanical & electrical installations for 16 pumping stations and aviation base

Design and prepartion of all Engineering Drawings/Tender documents for Oil & Soap Project.

Preparation and supervision of installation of preventive maintenance programs, preparing new proposals & modifications for new projects and extansions

Project Management and Control for a Pharmaceutical Plant (120,000 Sq. Mt) including:

- *Tendering, Bidding Stages, final selection * Contracting.*
- *Consultation and coordination of works, related to production Equipment & Facilities.*

LANGUAGES :

	Speaking	Reading & Writing
English	Good	Very Good
Arabic	Excellent	Excellent

26 AUG. 1991

Date

Signature of Stuff Member

ENVIRONMENTAL SCOPING MEETING PRESENTATION

Ministry of Agriculture & Land Reclamation

National Agriculture Research Project (NARP)

Agriculture Research Centre

ENVIRONMENTAL EVALUATION OVERVIEW

FOR

SEED COTTON GINS & SEED CONDITIONING

FACILITIES

USAID CONTRACT NO. 263-0152-C-00-1016-00

SIDS, Beni Suef Governorate

EGYPT

DAVY McKEE CORPORATION
Agricultural Research Center
Cotton Research Institute
6 El Gamaa Street
GIZA - EGYPT

AGENDA

SIDS SEED COTTON GINS &
SEED CONDITIONING FACILITIES
SCOPING MEETING
On August 8, 1991

TIME	PART	TOPIC	SPEAKER
09:30 - 10:30	A	Arrival, Registration,	
10:30 - 10:50	B	Welcome, Opening Remarks and Introduction	Chairman of MOA/ARC
10:50 - 11:20	C	Project Overview	DMC Representative
11:20 - 11:30	D	USAID Project Involvment and Environmental Procedures	USAID Representative
11:30 - 11:45	E	Environmental Issues Overview	DMC Representative
11:45 - 12:30	F	Questions, Comments and Proposals from Audience	Moderator
12:30 - 12:35	G	Closing Remarks	Chairman of MOA/ARC
12:35 - 1:00	H	Refreshments	
	I	Copies of Presentation Slides	

Word of
Director General of N A R P
or Director of Seed Component, N A R P

It is a pleasure for me to meet you today to discuss one of the most important facilities to be planned by the National Agricultural Research Project, the joint cooperation activity between the Ministry of Agriculture and USAID. This project is a Cotton Ginning and Seed Delinting plant to be built at Sakha and Sids. As it will be explained to you shortly, these facilities are of special importance in the effort carried out by the Ministry of Agriculture to improve Cotton productivity. Each facility, in fact, is not merely a gin and seed bagging plant as it is now existing at Sakha and Sids, but a complete plant aimed at the production of foundation seeds according to the most modern available technology.

According to the regulations governing the projects to be executed by USAID, it is a prerequisite to discuss the Project in open meetings with local people and authorities, especially from the point of view of its impact on the local environment and society. However, I would like to assure you that great care has been taken in designing the facility to avoid any sort of pollution.

I have no doubt that these two facilities will be a landmark, for years to come, to the value of aid given by the US to Egypt in developing its national economy, and the strength of friendship between the two peoples of USA and Egypt which we all hope will grow stronger in the coming years.

Dr. Mohamed Abdel Salam, Deputy Director of the Cotton Research Institute, will give you a short appraisal of the project and its importance to Cotton improvement, and Mr. Erik Lokensgard of Davy McKee, the Architect & Engineers of the Project, will explain in some detail the design and technical aspects of the project. After that, we can start our open discussion which I expect will concentrate upon the objectives and environmental impact of the project and its acceptance by local inhabitants.

Deputy Director of Cotton Research Institute (Chairman of Foundation Seed Facilities Supervising Committee)

Achievement of high Cotton yield per feddan rests on three major factors:

The first one:

Varieties of high yielding potential and high quality. The Cotton Research Institute of the Ministry of Agriculture succeeded in the last decades in introducing many varieties of world fame, now commercially grown of which are: The Extra-long staple; G. 45, G. 70, G. 76 and G. 77, and the long-staple; G. 75, G. 80 and G. 81. The breeding of a new variety usually takes about 10 years and sometimes 15 years or more, until a small amount of pure seed of the new variety is obtained. The new variety, before releasing to commercial growing is given a name, usually the serial number of the original cross preceded by the word Giza which is the research station at which the process of breeding was started and where the Cotton Research Institute headquarters are located.

The second factor:

High quality seeds to be distributed to farmers. This is done by the CRI and the General Administration for Seeds. We shall discuss this in some detail later.

The third factor:

Appropriate agricultural practices applied by farmers to realize the optimum level of the inherited productivity potential of the seeds they are using, as well as the highest lint quality as both will be transmitted into economical gains to the farmers.

Now we can discuss in some detail the second factor which is the one related to the project, i.e. the production of good seeds of the commercially grown varieties known to farmers usually as variety strains.

After the breeding of the new variety and the decision to grow it on a commercial scale, a new process starts which is in fact a series of continuous processes that continue as long as the variety is in commercial production. The process is called variety renewal and seed propagation. The starting point is usually, as previously mentioned, a small amount of seeds, usually a few tens of kilograms, and the final point is thousands of tons of certified seed.

Variety renewal is the breeding of successive series, or wave of new strains, one each year, from each variety according to a well established procedure that ensures the new strain will be genetically typical to the variety. Propagation is the gradual increase of the amount of seeds of each strain in successive years to be distributed to farmers, so that a new strain is available to farmers each year and the oldest strain is withdrawn. This system ensures the maintenance of the genetic structure and inherited yield potential of the variety through a reasonable span of years, sometimes several decades.

The production of cotton sowing seeds (each strain of each variety) is usually accomplished through two main steps:

The first step:

The production of Foundation Seed. This is done by the CRI using its staff, farms (mainly), laboratories and gins.

The second step:

Propagation of Foundation Seeds to Produce Registered Seeds in farmers fields, and in the following years, propagation of Registered Seeds to produce Certified Seeds which are to be used for sowing for one, two or more years according to the rate of seed propagation and the area grown by the variety after which the seeds are to be used for extracting oil. This stage is carried out under the direct supervision of CAS. It is worthwhile to mention here that ageing of a strain. i.e. being in commercial production for longer period, affects negatively its potential productivity, and therefore, it is very important to speed up the renewal so as to shorten this period.

The production of Foundation seed which is not a simple process but rather an advanced, scientific, complicated and technical one, could be summarized in the following manner:

1. Production of breeder seed, for each commercial variety. This is carried out in the fields of CRI, in which the cotton breeder (The Cotton Varietal maintenance section, CRI), using the pure variety seeds he maintains, through a series of successive selections; selection among individual plants of those identical to the variety in growth and quality characters, growing the selected individual plants in the second year to obtain families and selection among families, growing the selected families in a yield experiment to obtain nucleoli and thus to obtain the nucleus or the breeder seed of the new strain which will be given a code number, the year its breeding is completed, to denote it from preceding strains.

2. Propagation of the breeder seed to obtain the foundation seed. This is carried out by CRI in its fields at research stations, the fields of Agriculture Development Co. of MOA, and the farms of selected farms.

In all steps, including the production of foundation seed, ginning is carried out in the laboratories of CRI and its ginneries especially Sakha and Sids. Ginning is carried out under strict rules to prevent (absolutely) mixing of seeds of different varieties or seeds of different strains of the same variety. During the last years, and because of inadequacy of MOA farms, the CRI depended increasingly on private farms of selected farmers as well as ginning the major part of foundation seed in commercial gins. Ginning registered and certified seeds is carried out in about 57 commercial gins under the direct supervision of CAS in cooperation with CRI. The average amounts of seed cotton ginned (Last four years) for the production of foundation seeds were as follows:

	MOA Farms (Kentar)	Private Farms (Kentar)
Upper Egypt	1 000	4 100
Delta	8 350	50 000
Total	9 350	54 100

(1 Kentar = 157.5 kg, and produces approx. 100 kg. seeds)

The above mentioned amounts are regarded as inadequate, and CRI hopes to increase the total to 100,000 Kentars, two thirds for the Delta and one third for Upper Egypt. The produced seed are treated only by temperature against boll worms and bagged. Samples are withdrawn from both seeds and lint for quality testing.

This is about cotton sowing seed production. What about the new Sakha and Sids gins and seed facilities ?

In fact, it could be stated that the establishment of these two facilities represents the cornerstone of the effort to modernize the system of cotton sowing seed production, besides both Sakha and Sids ginneries could not be run any longer and Sakha in particular is now unsafe to work, after being used for more than 70 years.

The advantages to cotton production that could be realized from the establishment of the two facilities could be summarized in the following:

1. Speeding-up the process of foundation seed production which could save one year from the age of the strain. This will undoubtedly have its positive impact on the yield.

2. Production of delinted seed (for the first time in Egypt) treated with fungicides, and if required with insecticides against seedling insects (mainly thrips and aphids), which will improve plants stand in the fields and consequently yields.

3. Saving in the amount of sowing seeds.

The project represents an example of the modern cotton sowing seed industry, and while it is a first step and will cover the requirements from foundation seeds, it is hoped that other projects would follow shortly afterwards that will cover the requirements from registered and certified seeds. When such projects are completed, good seeds, that yield higher yields, will be available to farmers, and there will be no complaints about ageing of the strains, besides saving about 50,000 tons of seeds that could be used for the extraction of oil and seed-cake for animal feed.

It is also worthwhile to mention that the ginnery which is an integral part of the facility will be an example of modern ginning that could be imitated in future modernization of the ginning industry in Egypt.

PROJECT OVERVIEW - SIDS

1.0 INTRODUCTION

Sids Seed Cotton Ginning, Cotton Seed Delinting and Conditioning Facilities

The Sids site consists of two main sections. The Ginning section and the Cotton Seed Delinting and Conditioning section. In addition there will be Cotton breeding research laboratories and plant maintenance facilities.

The plant is designed to process 7,550 metric tons (50,333 bags) of Egyptian Seed Cotton annually. From this will be produced 2,510 metric tons (11,040 bales) of Cotton and 3,631 metric tons of conditioned Cotton Seed.

2.0 GINNING

We will discuss the plant sections separately, beginning with Seed Cotton Ginning. After that, we will discuss the Cotton Breeding Research Laboratories.

The Seed Cotton Ginning Facilities consist of:

a) Receiving and Storage .

b) Module Making and Gin Feeding .

c) Seed Cotton Ginning.

d) Cotton Baling, Handling, Storage and Shipping.

e) Pollution Control

2.1 Seed Cotton will be delivered to the plant by truck, as it is now, from collecting points located throughout the cotton growing area serviced by the Sids plant. It will be delivered in bags which will be stored in storage cells. From there it will be taken and loaded into the module making equipment.

2.2 Module making, new to Egypt but extensively used in the United States, is required to satisfy the following conditions for this plant. The high capacity gins need a steady feed of 7 metric tons of seed cotton per hour. The modules will be prepared 24 hours prior to Ginning to allow the humidity to equalize.

In this way they will be in position for processing the next day with no interference to the flow of seed cotton to the high capacity gin. The modules are about 8 metric tons and 10 will be set-up for the next days ginning.

An equal amount of uncompressed cotton would require a very large area which simply is not available. The space required to store modules for one days Ginning is available, however. Additionally, since each time a module is moved into the gin feeding area, the space previously occupied by it will become available for a new module. Module making, after the first days supply is complete, will proceed simultaneously with ginning.

The module, after being placed in position under the telescoping suction tubes of the Gin feeding system, will have the Cotton decompressed by the powerful suction and conveyed via overhead ducts to the Gins.

2.3 The Seed Cotton, on its way to the Gins, will pass through various devices to prepare and precondition it for Ginning. It will have rocks and other heavy foreign objects removed, trash will be separated and sent to storage, it will be dried by hot air, cleaned by inclined, stick and impact cleaners in sequence, then sent via overhead screw conveyor distributor to the Seed Cotton Gins.

The rotary knife roller Gins, the most modern available, use the latest technology, and represent a substantial improvement over the Gins currently in use in Egypt.

The Cotton, after passing through the Gins, undergoes additional cleaning and is condensed and humidified prior to entering the cotton baler.

2.4 The next step in the process is baling, which takes place in the double chamber bale press. Here the cotton is compressed into 218 Kilo Bales, wrapped in cotton wrapping, to protect it from contamination and sewn closed. It is then transferred to the bale storage area, from which it is shipped via truck.

2.5 All air streams discharging from the Ginning plant will pass through high efficiency cyclones which limit the emission of pollutants to minute amounts. These cyclones, known as 1D-3D type, are the latest technology available and are reported to be 99.9% effective. These cyclones are used extensively because they are effective, inexpensive and require little maintenance.

The slides (photographs) of the ginning equipment were taken while the plant was operating. This illustrates how effective the cleaning system is and that it is a great improvement over the present system.

3.0 COTTON SEED DELINTING AND CONDITIONING

The Cotton Seed Delinting and Conditioning Facilities consist of:

a) Fuzzy Seed Storage

b) Acid Delinting, Neutralizing and Screening

c) Pesticide and Fungicide Treating

d) Bagging and Bagged Seed Storage

e) Pollution Control

3.1 Fuzzy Seed, transported from the Gin via conveyors and air ducts, is deposited in seed storage rooms. These rooms are equipped with fan fed air ducts, which aerate the stored seed piles, preventing overheating and protecting the seed quality. From these piles, the seed is transported by front end-loader trucks to a metering bin which feeds the acid delinting section.

3.2 The seed then goes to seed cleaning where sticks, large trash, sand and seed meat from broken seed are removed.

It is then conveyed to the acid reactor where it is treated in a diluted acid bath. It then goes to a centrifuge where the diluted acid solution is separated and removed from the seed. The acid and water from the reactor and from the centrifuge are in a closed system where it is filtered, replenished and reused on a continues basis.

When the seed leaves the centrifuge, it is sent to the butane fired drying kiln. The temperature of the drying kiln is closely controlled to prevent damage to the seed. The Seed is then sent to the buffer where it is further agitated in the rotating kiln to strip any remaining lint from the seed and drying is completed. The drier and buffer are closely controlled for time and temperature. This is the operation that kills the pink boll worm. The equipment is designed to give maximum flexibility for time and temperature to assure optimum results.

The lint that is removed from the seeds in the drier and buffer is removed by the air handling system. The air flows against the flow of product and transports the lint to the 1D-3D cyclone system. The waste lint is neutralized before it is transferred to the bulk holding bin.

When the seed leaves the buffer, it is conveyed to the neutralizer where soda ash is used to neutralize the seed. After neutralization, it undergoes additional cleaning in the pre-cleaner and precision cleaner. The seed is then subjected to the selection process in gravity separators from which the good seed is sent to the treatment area and the rejects are sent to oil mills.

3.3 The next step in the process, treating, involves the application of pesticides and fungicides in the correct amounts to protect the seed while in storage and even after it is planted. The seed is then given an easily detectable DYE coat to indicate it has undergone the treatment process.

3.4 Following treatment, the conditioned seed is now ready to be weighed and packed in protective bags which are then placed on pallets, stretch wrapped and sent to the bag storage area.

3.5 As in the ginning plant, all air steams, except the chemical dust from treating, will pass through high efficiency cyclones. Here again, the cyclones will be the 1D-3D model and are the best technology available. The lint from the drier and buffer will be neutralized by a well designed automatic system successfully utilized in the US.

A separate air handling system will transport the small amounts of chemical dust from the seed treating process to a baghouse. A baghouse is used here because it is very effective in collecting this type of dust. Since quantities are small, the dust will be collected at the end of season for application to seeds used for a green manure corp.

All process water will be neutralized before discharge from the plant.

4.0 COTTON BREEDING RESEARCH LABORATORY

The Cotton Breeding Research Laboratory, a miniature seed cotton ginning/cotton seed delinting and conditioning facility, is dedicated solely to cotton breeding research.
The Cotton Breeding research facilities consist of:

a) Seed Cotton Receiving and Storage

b) Seed Cotton Ginning

c) Cotton Baling

d) Delinting and Conditioning

e) Pollution Control

4.1 Seed cotton is delivered from research farms and is stored in segregated areas to ensure against contamination. From there, it is moved by lift truck to the Research Ginning area as required.

4.2 The seed cotton is ginned in the research gin which is similar to the production plant. It is equipped with the necessary feeding and precleaning equipment. The gin equipment train includes a telescoping suction tube, separator, vacuum cotton feeder, feed bin, feeder, roller gin and seed belt with integral reclaim, and dual bagging station.

4.3 The discharged lint is pneumatically conveyed through a battery condenser into an automatic flat baler. The bales, actually a by-product of the research effort, are not wasted, however. They are sent to storage and later sold to cotton trading companies.

4.4 The ginned seed can be sent directly to delinting, conditioning and treating which is also in the research facility. An option is to bag the seed for storage and later delinting, conditioning and treating. The processed seed is used for cotton breeding research. The delinting and conditioning facilities equipment train include an acid reactor, acid wash trough, rotary drum dryer, cleaner, gravity table, treater and bagger.

4.5 As in the production Ginning and Seed Conditioning facilities, all discharge air streams will pass through 1D-3D cyclones to limit atmospheric emissions. All effluent liquids will have been neutralized and will contain no solids.

USAID AND THE ENVIRONMENTAL ASSESSMENTS FOR THE COTTON SEED GIN FACILITIES

Since 1976, the United States Congress has required that USAID conduct an Environmental Assessment (EA) on any project it finances, in total or in part, that may have a "significant effect" on the environment. Congress did this to ensure that environmental values now expressed in U.S. domestic law were systematically reflected in USAID's decision making process. This does not mean that USAID-funded projects are required to meet U.S. legal requirements, such as air and water quality standards. They are not. Rather, through the EA process USAID strives to strike a balance between the needs and legal requirements of recipient countries, and the environmental values of the American people. In addition, the EA process offers a means by which USAID can provide technical assistance in the form of environmental experts to work with local scientists, engineers, and planners to strengthen their environmental analytic capabilities.

An Environmental Assessment is a technical analysis done to inform decision makers about the potential environmental impacts of a proposed project and other alternative courses of action. It identifies a way of mitigating or eliminating negative effects, as well as enhancing positive ones. An EA is prepared by an interdisciplinary team of environmental scientists, engineers, public health experts, and social scientists, working in concert with government agencies, and concerned private individuals and groups. The Scoping Meeting represents the formal mechanism for seeking the involvement and guidance of agencies and individuals not closely involved in the project to date.

The EA does not recommend a specific course of action, nor determine whether a project should be implemented. Rather, it informs decision makers about the environmental aspects of the proposed project, for their evaluation in conjunction with other project aspects, such as: engineering and social soundness, and economic feasibility.

To date, USAID has prepared EA's on a variety of large capital projects. Some of these such as electric power plants, dams, irrigation systems, though they may improve human living conditions, have potentially serious negative environmental effects, obviously requiring careful study. Other large capital projects, such as water treatment and distribution, and waste water collection and treatment, improve human living conditions mainly through improving their physical environment. Such more seemingly benign projects still require environmental study because any large capital project has at least some adverse environmental effects, and to ensure that the positive effects of, in this case, a Cotton Seed Gin Facility, are maximized within given budgetary and other constraints.

The engineers and others responsible for making the preliminary designs for the new Seed Cotton Gin Facilities at Sakha, Kafr El Sheikh, and Sids, Beni Suef Governorates, for identifying plants sites, and waste discharge points have already weighed numerous environmental factors, avoiding in the process many negative environmental effects. The task for the Environmental Assessment team, guided by this Scoping Meeting, is to review the work done to date, study local conditions, consult with concerned parties, and do their best to ensure that the Cotton Seed Gin Facilities have environmentally sound waste treatment and other systems for many years to come.

Thank you for your co-operation.

USAID
August 6/August 8, 1991

ENVIRONMENTAL ISSUES OVERVIEW - SIDS

1) The land required for the plant is presently in use as a cotton ginning facility, and therefore, does not represent any change in land use.

2) Changes in the character of the soil in the area around the plant will be minimal since the plant is designed with the best available technology to minimize air emissions and water pollution.

3) Since the plant site is only about 7 feddans and is relatively flat, the total impact of water runoff will be minimal and will be drained to an irrigation ditch.

4) The plant waste water will consist of process water, sanitary sewerage and plant runoff. Plant runoff, as mentioned before, is minimal due to low rain fall and will be drained into existing irrigation ditches. Sanitary sewerage will be collected in septic tanks which will be periodically drained. The contents will be disposed of at an acceptable site elsewhere which is the present method used for other facilities in the area. It is estimated to be no more than 10 gallons per day per employee. The process water stream will include some water which has been used for acid wash. This water will be neutralized, however, and drained into an irrigation ditch. No solid wastes are contained in the process effluent and the water having been neutralized, will have no adverse effect on the surrounding area.

5) During the process of Seed Conditioning, pesticides and fungicides for cotton will be applied to the cotton seed. This will be done under strict supervision, using safe, industry tested and tried equipment and by personnel trained in the procedures. This is a positive environmental impact, in that it will minimize the requirement to distribute pesticides and fungicides widely to individual farmers which is the present method. Consequently, the chances of environmental mishap, such as, ingestion of chemicals by farmers, inadvertent contamination of animal feed and waters, and uneven distribution of chemicals on the fields will be minimized.

6) A very important aspect of Seed Conditioning is that the amount of seed needed for planting (conditioned seed vs unconditioned seed) is considerably less per feddan (15 kilos vs 70 kilos). This means that an additional 55 kilos per feddan of cotton seed will be available for production of valuable cotton seed oil.

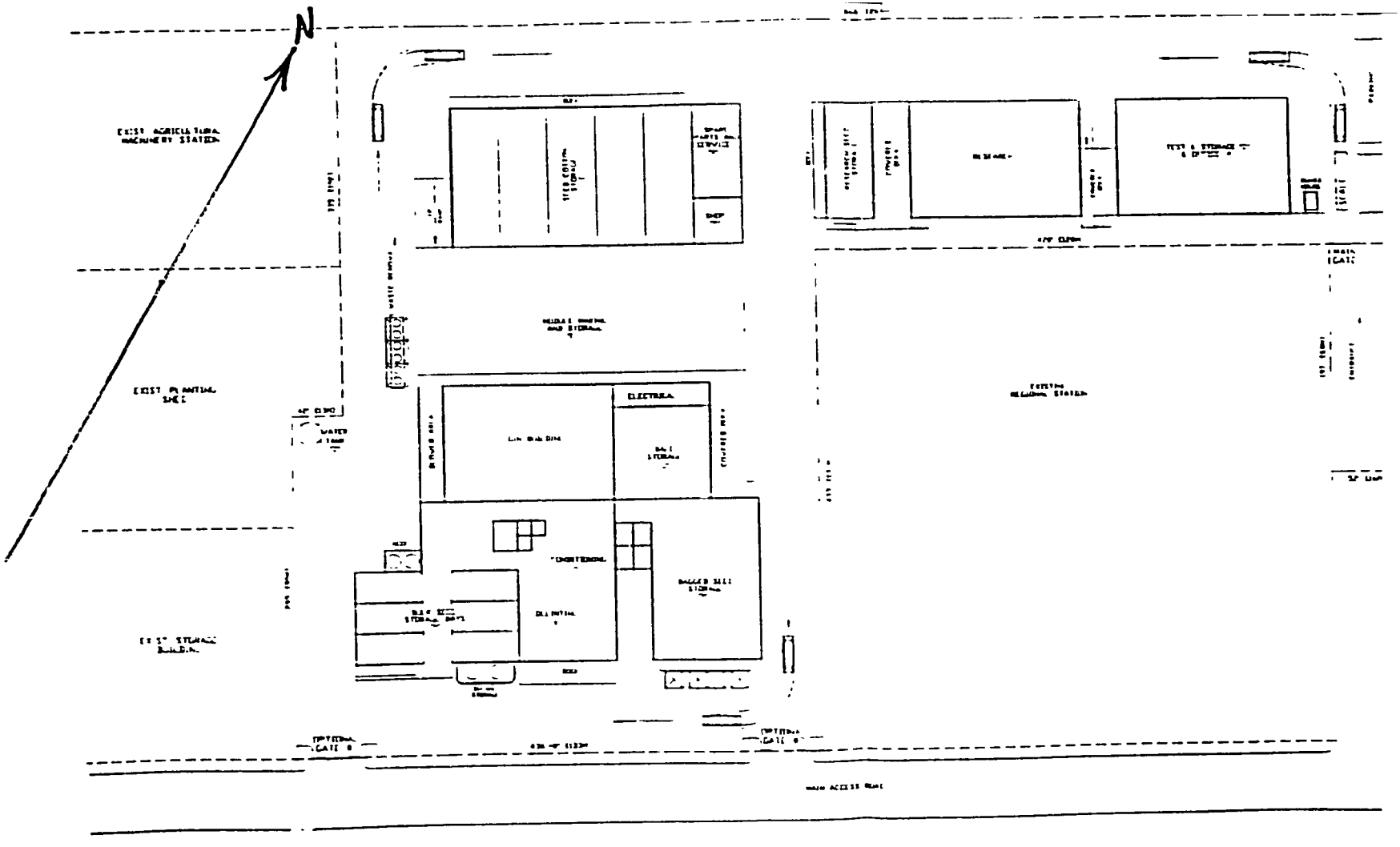
7) Traffic should not represent a problem because there should only be a maximum of 3 trucks per hour during the 100 day operating period

8) The new Cotton Ginning and Seed Conditioning facilities with their support laboratories and research facilities are a positive contribution to the environmental impact on Egypt by the Egyptian Cotton Industry. The plants, while improving the quality of the ginned cotton and foundation cotton seed, use the latest air pollution control equipment and technology available .

All air streams discharging from the plant will pass through high efficiency cyclones or bag houses. Discharges of pollutants from the air handling equipment will be minute. This actually reduces air pollution and protects the workers and the surrounding community from exposure to lint, dust and other airborne pollutants which would be generated by a plant of like capacity, that is not equipped with these pollution control devises.
The ginning equipment, for example, is completely enclosed from the telescoping suction tube through the baler. This limits the atmospheric discharge of any particle to the exhaust from the 1D-3D cyclone exhaust ducts. The cyclones are reported to be 99.[illegible]% efficient.

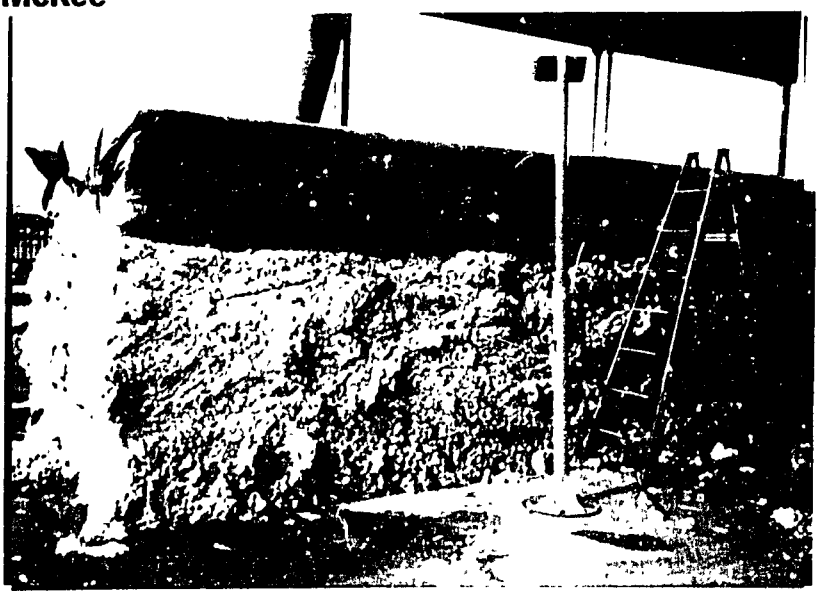
The cyclones will recover lint from the delinting process as a fine powder like substance. This lint will be collected, neutralized and mixed with cull seed and sold for cattle feed.

Chemical dust from the seed conditioning section is captured during the processing. This represents a very small quantity. It will be disposed of at the end of the ginning season along with small amounts of other wet chemical wastes. These materials can be used to treat waste seeds which can then be planted for a green manure crop, enhancing the land used. These are sound environmental practices and are used in the United States.



SITE PLAN AT SIDS

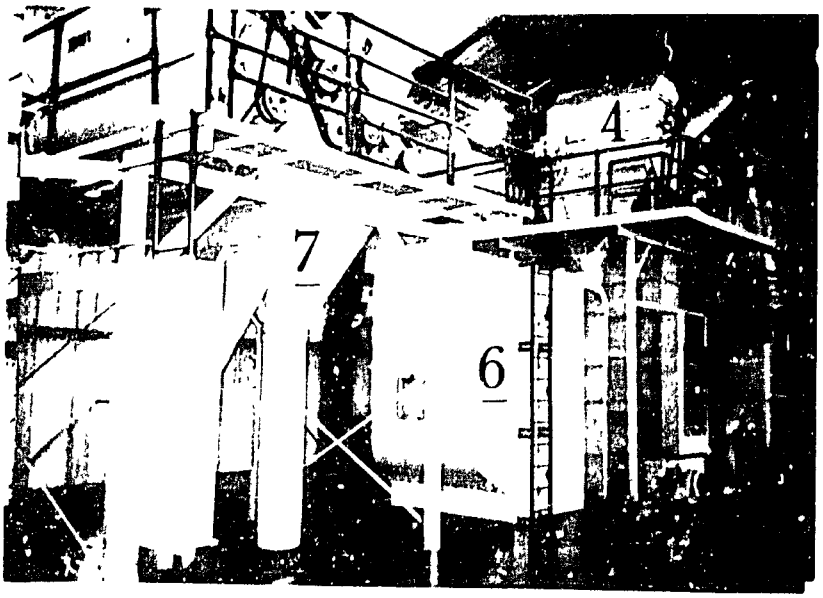
Davy McKee

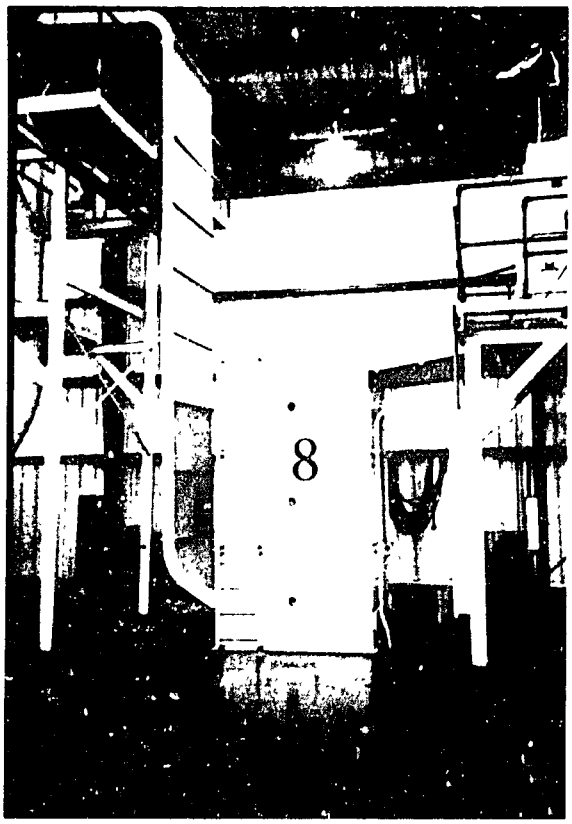


1. Module
1a. Telescoping Suction Device

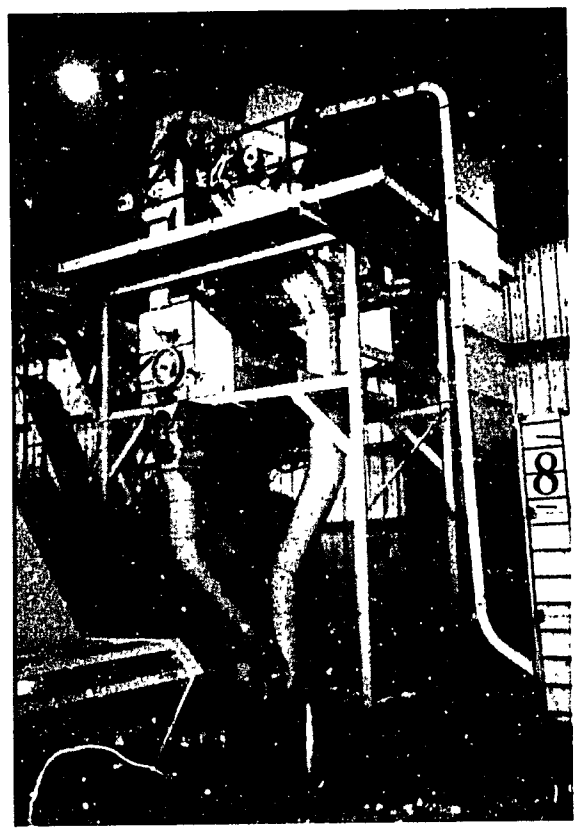
Davy McKee

2. Rock Trap
3. Gas Burner
4. Separator
5. Feed Control
6. Tower Dryer No .
7. Hot Air Cleaner No .





8. Tower Dryer No 2



8. Dryer

9. Hot Air Cleaner No. 2

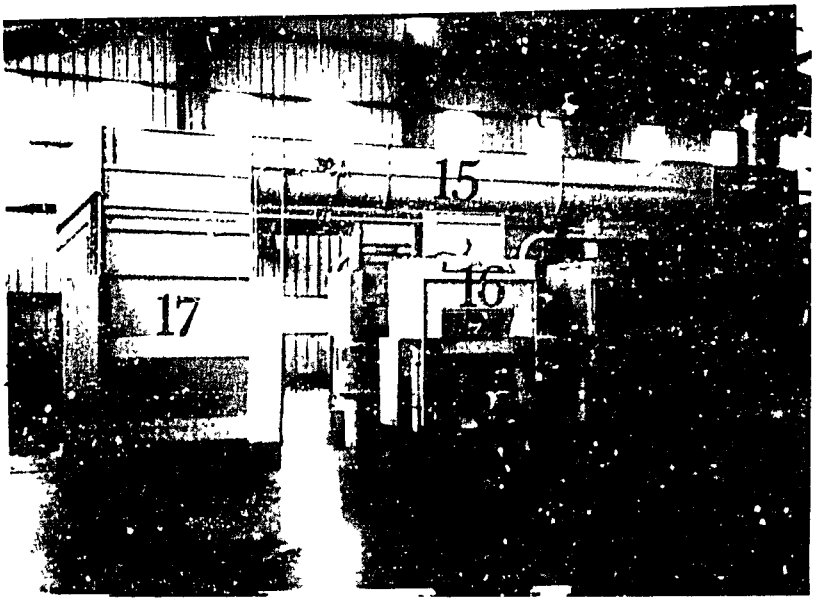
10. Stick Machine

Davy McKee

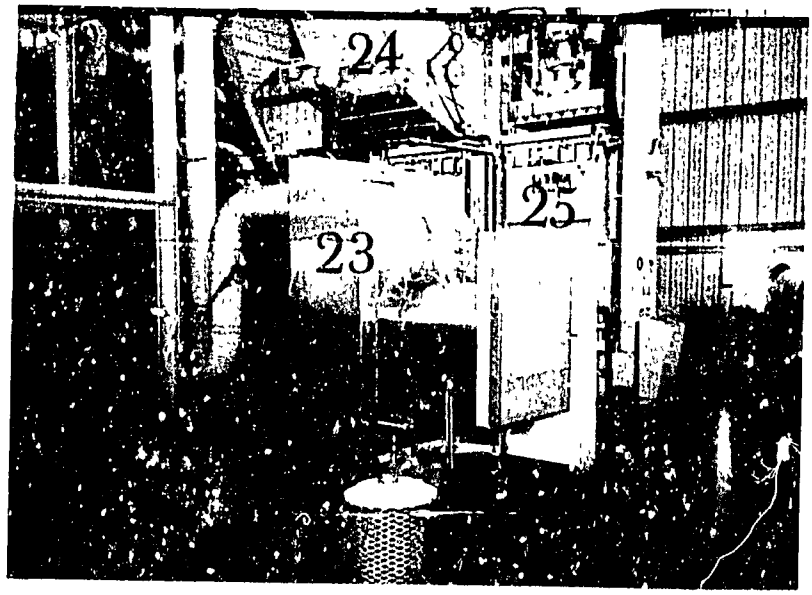
11. Split Stream Seed Cotton
12. Hot Air Cleaner No

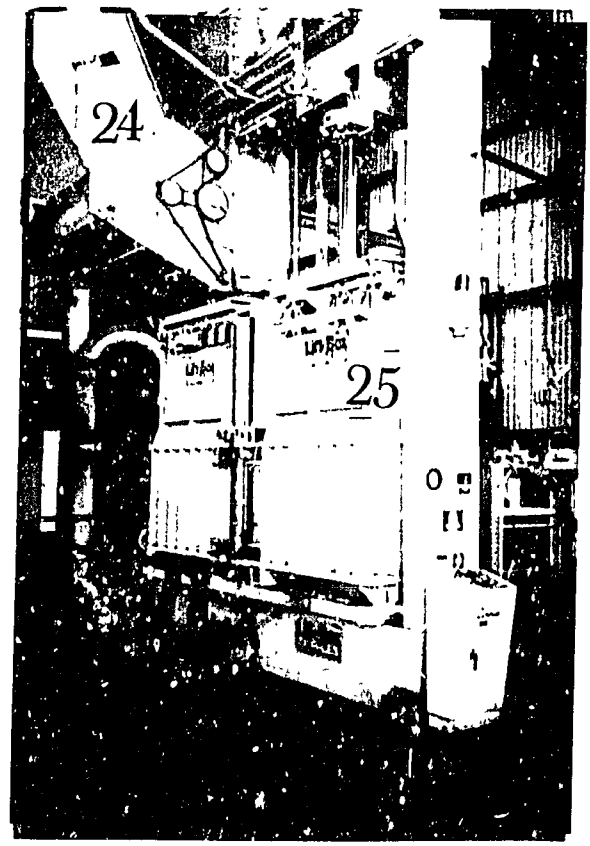
Davy McKee

15. Conveyor Distributor
16. Feeder and Gin Stand
17. Overflow Hopper



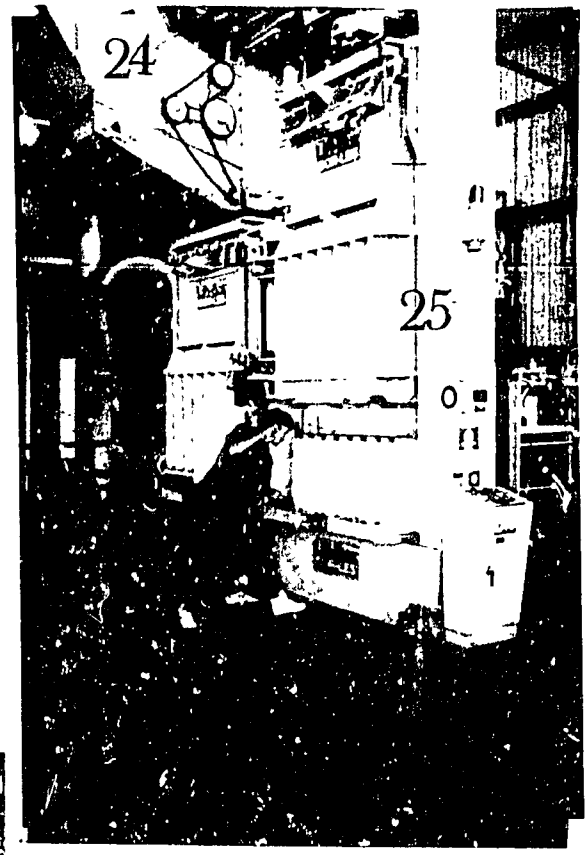
Davy McKee





23. Humidifier Unit
24. Lint Slide
25. Lift Box Bale Press

Davy McKee

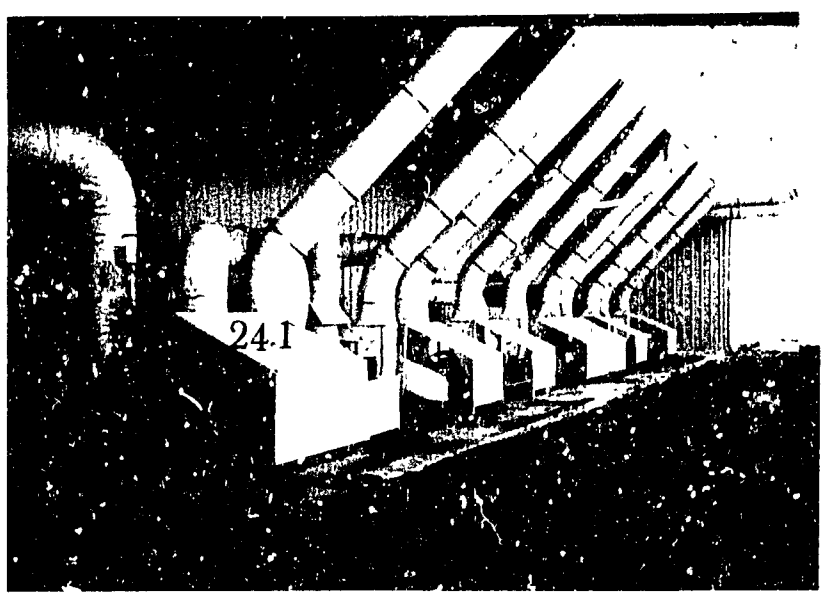


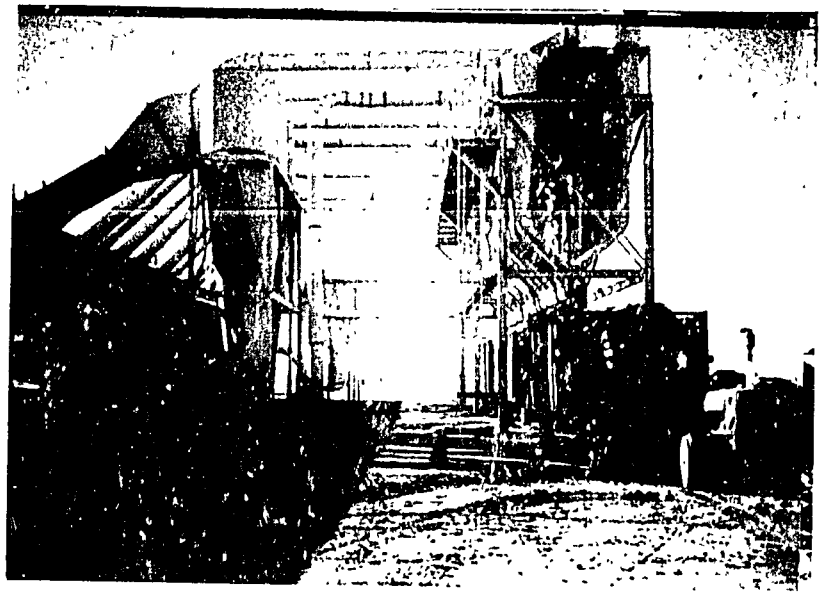
24. LINT SLIDE
25. BALE PRESS

26. BALE TRANSFER PRESS TO SCALE

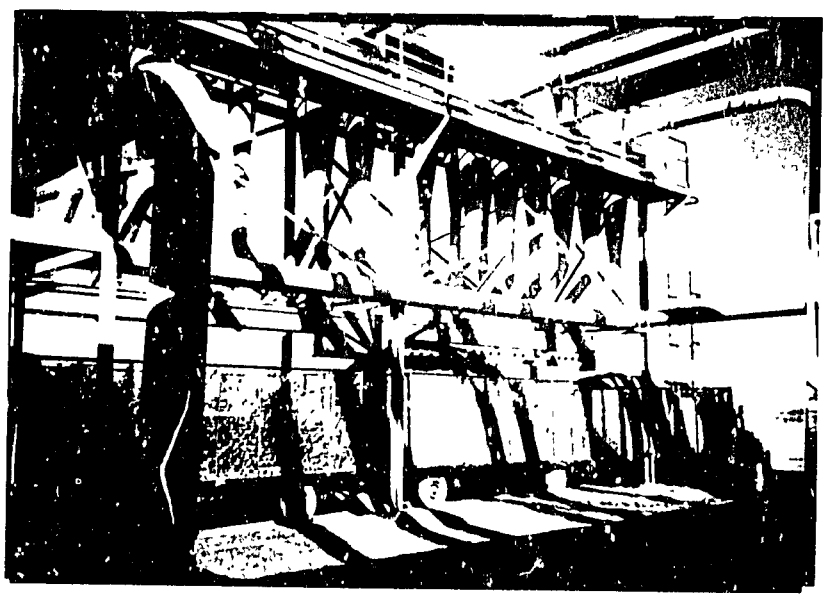
26. BALE OVERWRAP &
SCALE

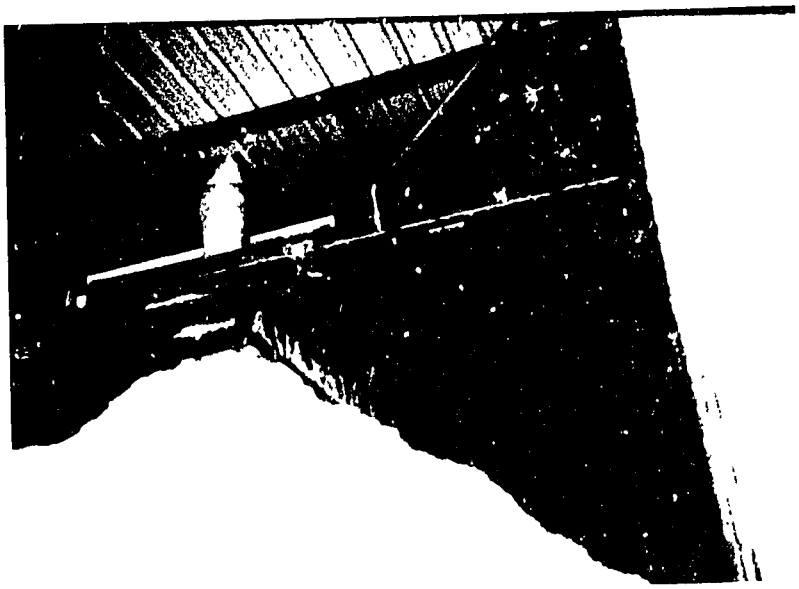
24.1 FANS-AIR HANDLING
SYSTEM





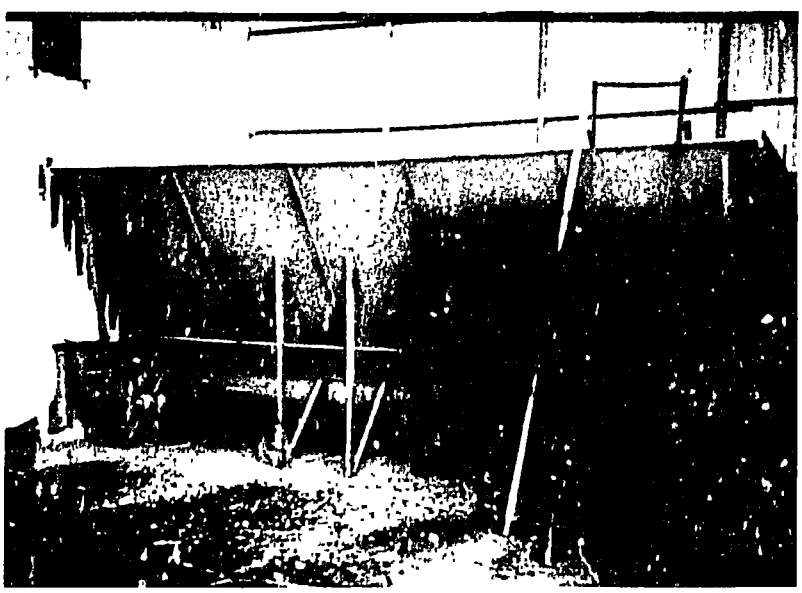
1D - 3D CYCLONES





Fuzzy Seed Storage

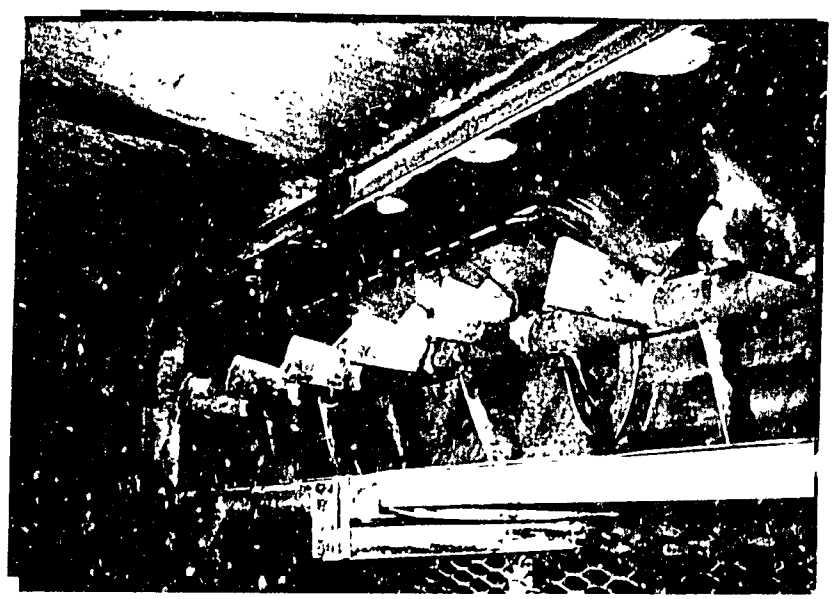
Metering Bin

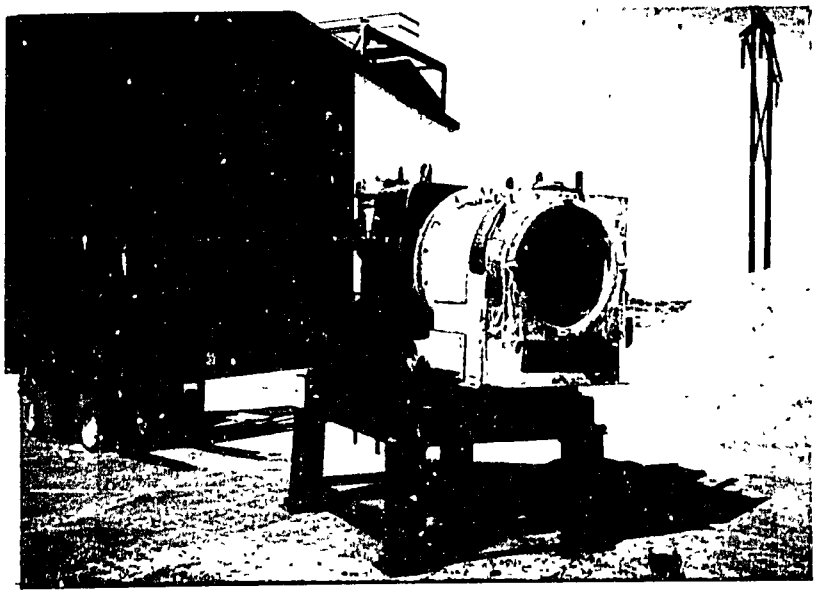


Davy McKee

Feeder Agitator

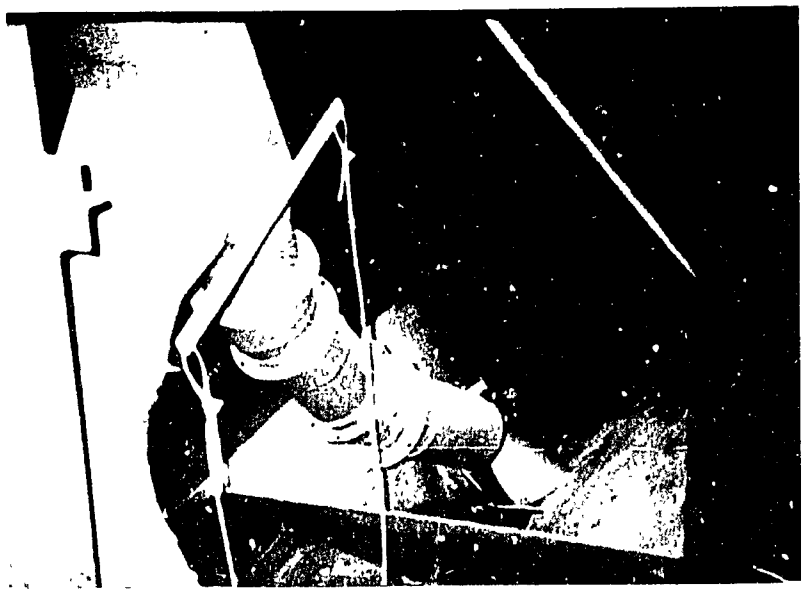
Acid Delinting Trough





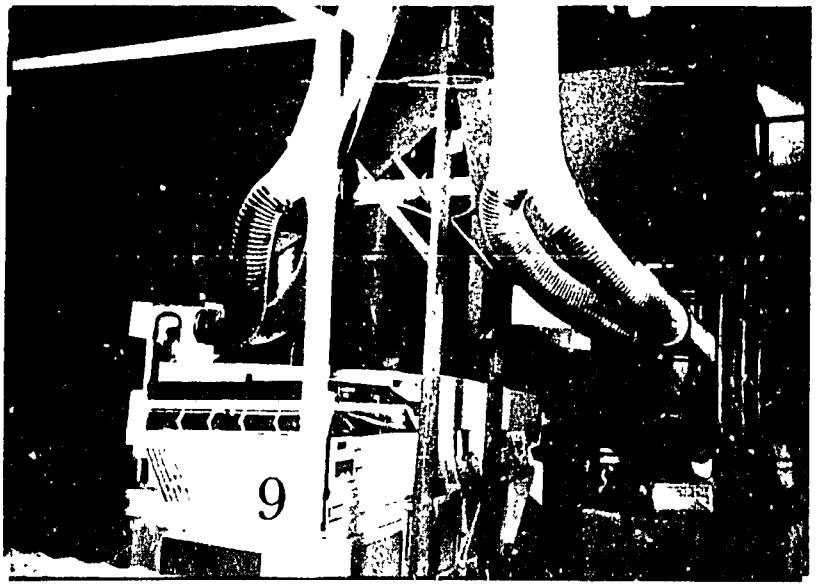
Centrifuge (Off-Line)

Dryer and/or Buffer



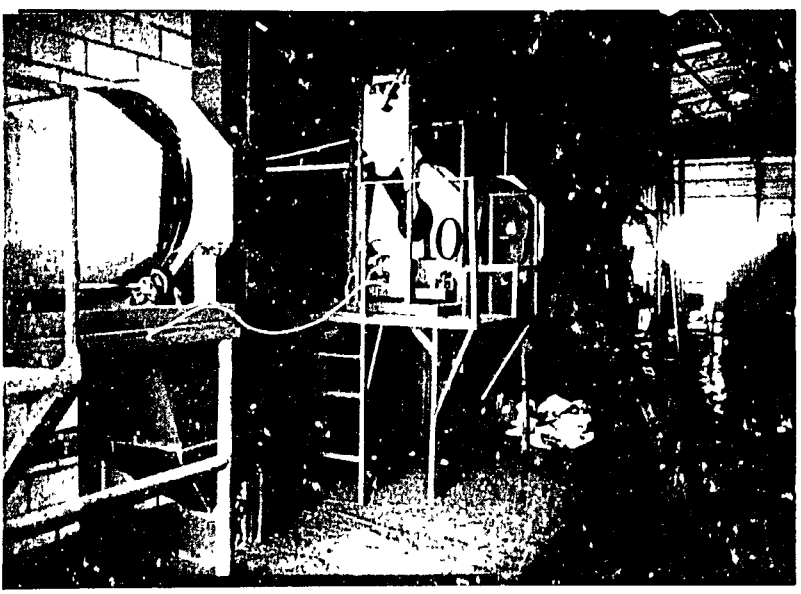
Cleaner Inlet with Divert Gate

Seed Cleaning Equipment

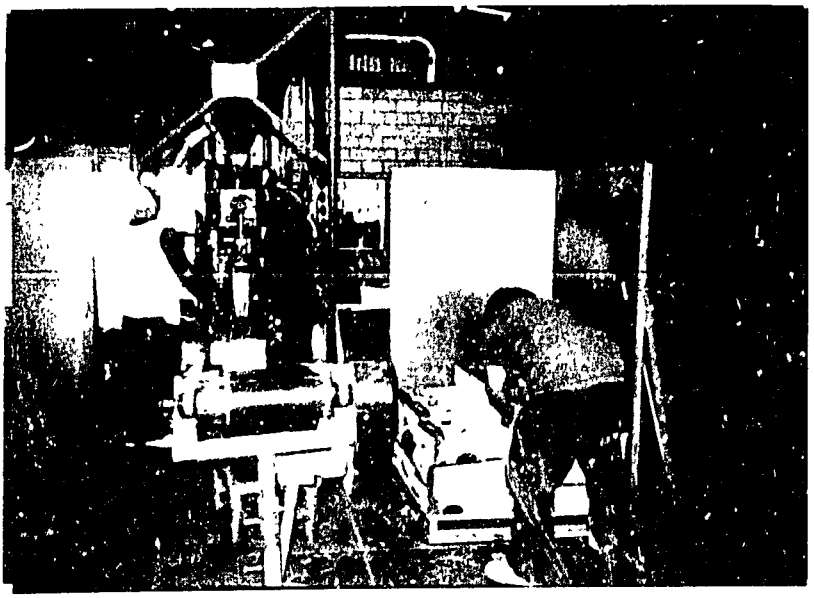


9. Seed Grading Equipment

10. Treater



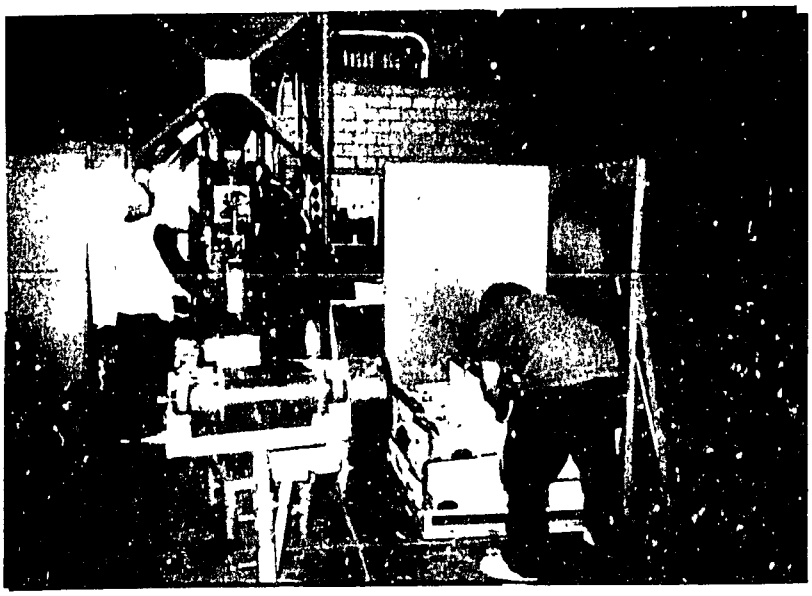
Bagging Station



Pallet Forming Station

Over Wrapper Station

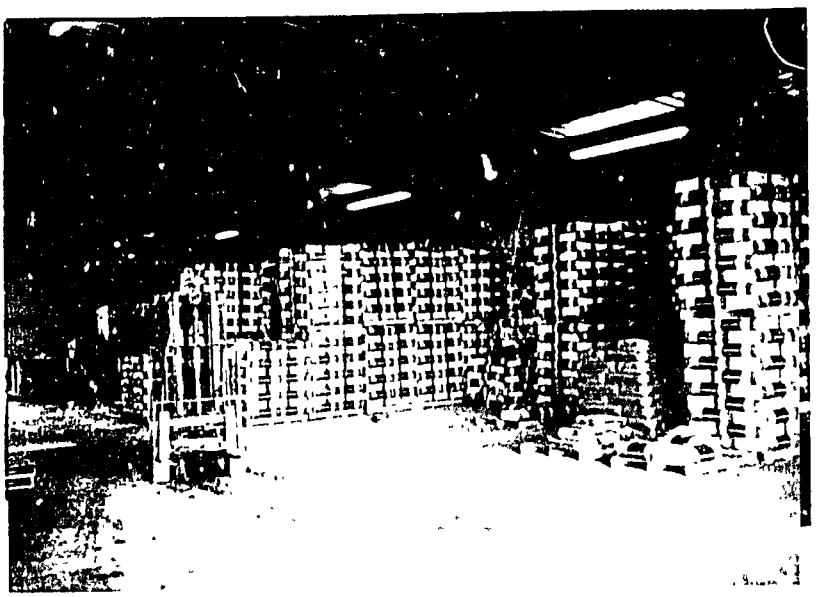
Bagging Station



Pallet Forming Station

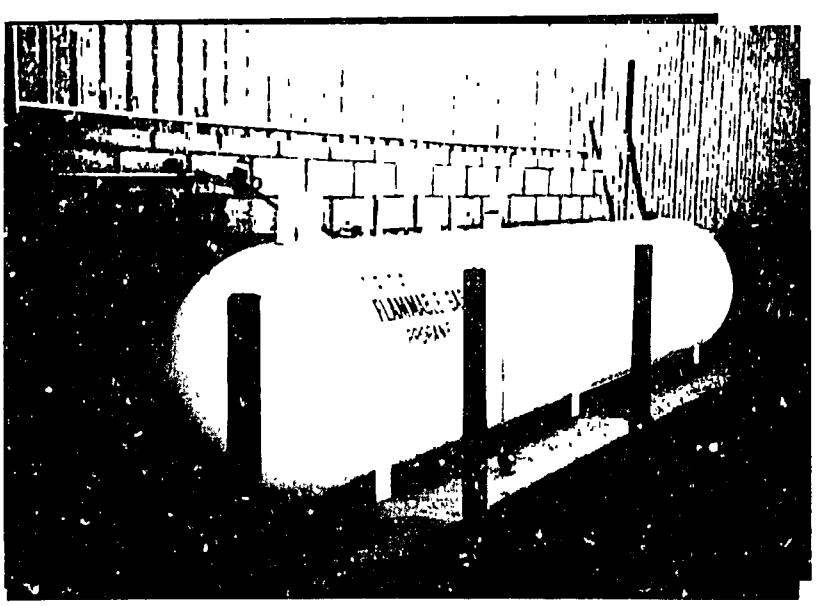
Over Wrapper Station

Davy McKee

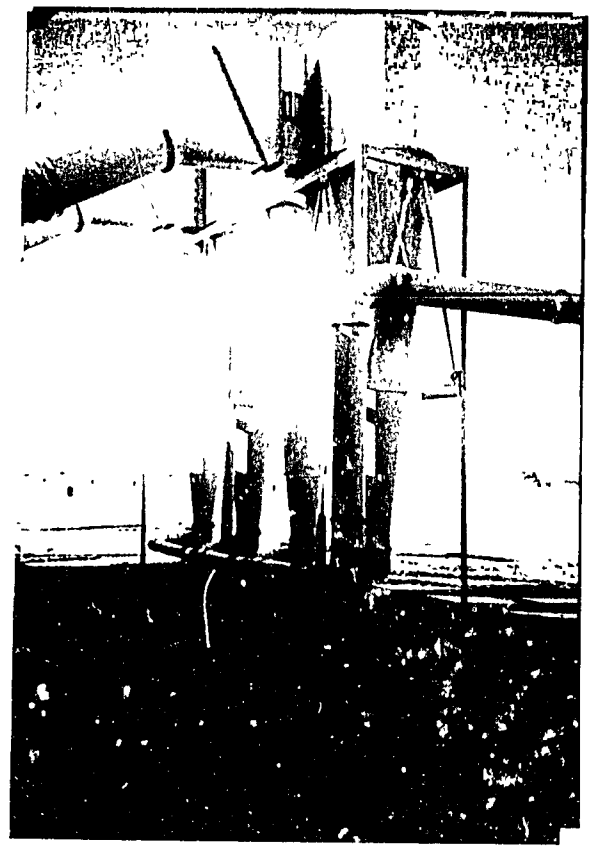


Finished Bag Storage Warehouse

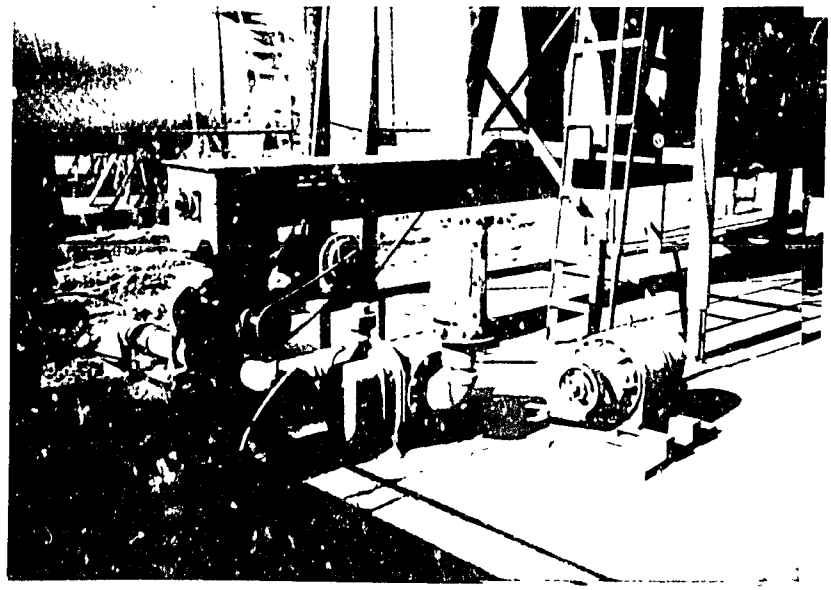
Propane/Butane Storage Tank



Davy McKee

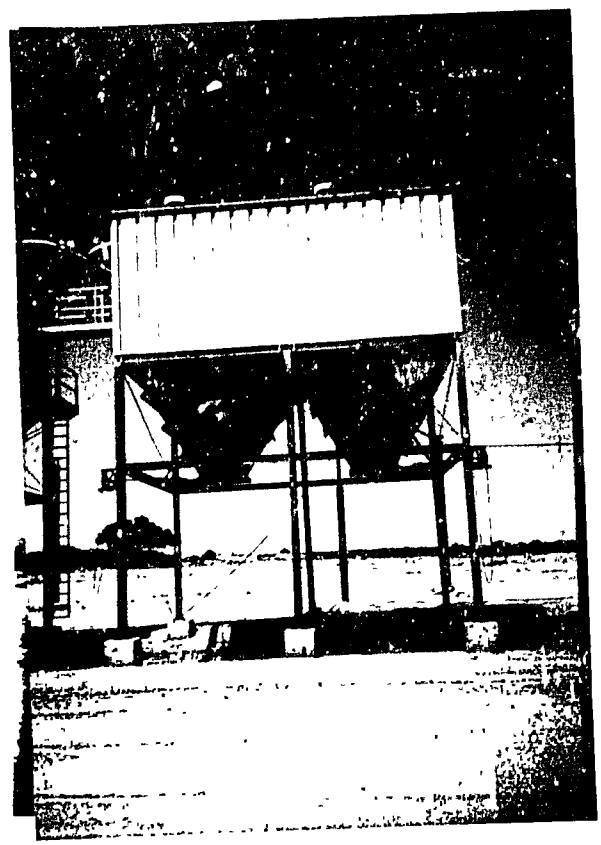


High Efficiency Dust Collection



Waste Seed Conveyor
Waste Seed Neutralization Station

Waste Seed Storage Bin



IX Meeting Attendees SIDS

ENVIRONMENTAL SCOPING MEETING
SIDS, BENI SUEF GOVERNORATE

8 August 1991

ATTENDEES

NO.	NAME	COMPANY	POSITION
1	Eng. Moustafa Mahmoud	Beni Suef Governorate	Agric.sector presedint
2	Moustafa Ali Moursi	Agric. Res. Station	Researcher
3	Sayed Ramadan	Agric. Setion	Inspector
4	Abdel Aziz Ali	Agric. Section	Instruction Manager
5	Abdel Hakim Shaker	Mechnical Agric.	Manager
6	Dt. Mokhtar Housien	Animal Prod. Res. Inst.	Inspector
7	Ali Hassan Abdel Gouad	Research Delinting	Delinting Officer
8	Kheder Atrees Salem	Captain of Police Station	Captain
9	Hassan Ahmed Soliman	Cotton Research Inst.	Technical Assistant
10	Moustafa Younes	SIDS Research Station	Cotton Specialist
11	Mohamed Anwar Sayed	SIDS Research Station	Farmer
12	Ahmed Maher Mohamed	SIDS Research Station	Farmer
13	Ragab Taha	SIDS Research Station	Farmer
14	Abdel Aziz Mohamed	SIDS Research Center	Technical Mechanical
15	Mohamed Hanafy Ramadan		Farmer
16	Samir Fouad	Seed Section	Engineer
17	Srour Mohamed	Electricity Co.	Eng. President

NO.	NAME	COMPANY	POSITION
18	Mohamed Mohamed Housie	SIDS Station	Security
19	Gamil Abdel satar	Mechanical Agric.	Technician
20	Abdel Bari Abdel Salam	Mechanical Agric.	Indust. Sec.Officer
21	Hassan Ahmed	Mechanical Agric.	Store Keeper
22	Nour El Din Gaber	Mechanical Agric.	Technician
23	Hassan Farag	Mechanical Agric.	Store Keeper
24	Housien Hassan Ahmed	Mechanical Agric.	Maintenance Eng.
25	Salah Hassan	Mechanical Agric.	Driver
26	Abdel attya Gouda	Agric. Res. Station	Test Forman
27	Ashraf Gaber	Mechanical Agric.	Technician
28	Nabil Abdel Azim	Agric. Res. Station	Test Farmer
29	Abdel Rahman Kamel	Mechanical Agric.	Eng. assistant
30	Hamdy Aziz	Agric. Res. Station	Writer
31	Moustafa Ahmed Gad	Agric. Res. Station	Technical Assistant
32	Abdel Allah Mahmoud	Agric. Res. Station	Test Forman
33	Abdel Wahab Osama	Mechanical Agric.	Eng. Assistant
34	Samy Mohamed Ismail	Agric. Res. Station	Technical Assistant
35	Medhat Abdel Azim	Mechanical Agric.	Test Farmer

NO.	NAME	COMPANY	POSITION
36	Abdel Gouad Abdel Aziz	Mechanical Agric.	Technical Mechanical
37	Mahmoud Abdel Aliem	Cotton Res. Station	Specialist
38	Ibrahim Abdel Hamid	Agric. Research	Technician
39	Mousatafa Abdel Latif	Mechanical Agric.	Store Keeper
40	Mohamed Abdel Aziem	Mechanical Agric.	Adm. & Financial Manager
41	Marwan Abdel Fattah	Mechanical Agric.	Agric. Engineer
42	Soubhy Mohamed Ahmed	Naser Station	Superintendent
43	Ahmed Abdel Wahab	Mechanical Agric.	Store Keeper
44	Gyhan Ali Hassan	Mechanical Agric.	Accountant
45	Shaban Mohamed Farag	Agric Development Co.	Officer
46	Eng. Gamal Abdel Moniem	Mechanical Agric.	Mecahnical Agric Manager
47	Magdy Mohamed	Mechanical Agric.	Adm. Financial Manager
48	Ahmed Fahmy	Mechanical Agric.	Admn. Officer
49	Mahmoud Abdel Wahab	Agric. Development Co.	
50	Essam Kilany	Mechanical Agric.	Technician
51	Mohamed Ramadan Ragab	Mechanical Agric.	Technician
52	Ibied Mohanmed	Mechanical Agric.	Technician
53	Mohamed Abdel Fattah	Mechanical Agric.	Technical Forman
54	Moustafa Housien	Mechanical Agric.	Enginner
55	Mamdouh Soliman	Mechanical Agric.	Agric. Specialist

NO.	NAME	COMPANY	POSITION
56	Dr. Ahmed Abdel Latief	Beni Suef Governorate	Agric.Consultant
57	Samy Hassan	Agric. Development Co.	Technical Mechanical
58	Mousatfa Hassan	Mechanical Agric.	Writer
59	Refaat Hindy	Agric. Development Co.	Engineer
60	Moslem Ragab	Agric. Development Co.	
61	Sayed Abdel Hady	Agric.Research Center	Cotton Specialist
62	Mohamed Abdel Hakim	Agric.Research Center	Researcher
63	Housien Mohamed Zayed	Agric.Research Center	Researcher
64	Salah El Din Ahmed	Agric.Research Center	Researcher
65	Moustafa Mohamed	Agric.Research Center	Research Farm MGR.
66	Mohamed Shaban	Cotton Res. Inst.	Researcher
67	Foukya Fouad	El Wadi Delinting Co.	Manager
68	Essam Ahmed	Environment Authority	Researcher
69	Samy Saad	Environment Authority	Researcher
70	Shehata Taha	Agric. Develop. Auth.	G. M. of Agric. Develop. Co.
71	Bader Mehana	Agric. Res. Center	Regional Station Middle Egy Egypt
72	Mohamed Salama Mohamed	Rural Elec.	General Manager
73	Nabil Samy	Beni Suef Adv. Center	Station MGR.
74	Abdel Latief Mohamed	Credit Agric.Bank	Department Manager

NO.	NAME	COMPANY	POSITION
75	Mahmoud Abdel Aziem	SIDS Local Unit	President
76	Khairy Abdel Hamid	SIDS Local Unit	Manager
77	Hassan Ali	Agric. Res. Center	Grading Manager
78	Atef Abdel Kader	Agric. Res. Center	Researcher
79	Abdel Aziz Abdel Nabi	Agric. Res. Center	Corn Dept. Manager
80	Dr. Boshra Naguib Ayad	Egyptian Agric. Co.	Researcher
81	Mohamed Badawi		Farmer
82	Attya Ismail	Test Managemet	Test Forman
83	Dr. Mohamed El Sayed	Cotton Research Inst.	Deputy Institute
84	Mahmoud Ahmed Soliman	Seeds Centeral Authority	Director
85	Dennis Light	USAID	Engineering Office
86	Youssef Abdel Khalick	USAID	Project Officer
87	Ali Attya	Seeds Centeral Authority	Seed Co. Produc. Manager
88	Mohamed Rashied	Seeds Centeral Authority	Delinting Specialist
89	Refik Guran	DMC	Engineering Manager
90	Erik Lokensgard	DMC	USA Project Manager
91	Mahmoud El Gowaily	DMC	Project Engineer

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