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1. Members of the Study Team

(1) Basic Design Study Team

(Government ... 2, Consultants .. 4)

- |  |   |
|--|---|
| ① Leader                                       | Hideo MIYAMOTO, Deputy Director First Basic Design Division Grant Aid Study and Design Dept., JICA                    |
| ② Grant Aid Cooperation                        | Shigeki KOBAYASHI, Foreign Affairs Officer Grant Aid Division Economic Cooperation Bureau Ministry of Foreign Affairs |
| ③ Project Manager,<br>Grain Storage Management | Isamu YAMAZAKI<br>General Manager Consultants Dept., Overseas Merchandise Inspection Co., Ltd.                        |
| ④ Facility Plan                                | Shunichi KOHARA, Director Fuji Plant Engineering Co., Ltd.  |
| ⑤ Equipment Plan                               | Masakazu KANAMOTO<br>Technical Advisor, Consultants Dept., Overseas Merchandise Inspection Co., Ltd.                  |
| ⑥ Interpreter<br>(Japanese/Mongol)             | Makiko KATO<br>Japan Development Service Co., Ltd.  |

(2) Draft Explanation Mission

(Government .. 2, Consultants .. 2)

- |  |  |
|--|--|
| ① Leader   | Fujiko YOSHIDA<br>Assistant Director<br>Grant Aid Division<br>Economic Cooperation Bureau Ministry of Foreign<br>Affairs |
| ② Grant Aid                                      | Shinichi MASUDA<br>First Basic Design Division<br>Grant Aid Study and Design Dept., JICA                                 |
| ③ Project Manager<br>Grain Storage<br>Management | Isamu YAMAZAKI<br>General Manager, Consultants Dept.<br>Overseas Merchandise Inspection Co., Ltd.                        |
| ④ Equipment Plan                                 | Masakazu KANAMOTO<br>Technical Advisor, Consultants Dept.<br>Overseas Merchandise Inspection Co., Ltd.                   |
| ⑤ Interpreter<br>(Japanese/Mongol)               | Makiko KATO<br>Japan Development Co., Ltd.   |

## 2. Study Schedule

### (1) Site Study Mission

	Date		Movement	Content of Study
1	Sept. 28	Wed	Tokyo → Beijing	Yamazaki, Kohara, Kanamoto and Kato departed and stay at Beijing
2	Sept. 29	Thu	Beijing → Ulaanbaatar	Courtesy call on Embassy of Japan. Explained on Inception report at Ministry of Food and Agriculture.
3	Sept. 30	Fri	Ulaanbaatar → Murun	Explanation on inception report and questionnaire at Murun flour mill.
4	Oct. 1	Sat	Murun	Study on the project site and related facility. Collection of questionnaire and Q & A.
5	Oct. 2	Sun	Murun → Ulaanbaatar	Q & A, Meeting with Governor of Horgol prefecture
6	Oct. 3	Mon	Ulaanbaatar → Choybalsan	Explanation of inception report and questionnaire at Choybalsan flour mill
7	Oct. 4	Tue	Tokyo → Beijing  Choybalsan	Miyamoto leader departed.  Study on project site and relative facility, collection of questionnaire and Q & A.
8	Oct. 5	Wed	Beijing → Ulaanbaatar  Choybalsan → Ulaanbaatar	Miyamoto leader arrived.  Interview with Deputy Governor of Dornod prefecture
9	Oct. 6	Thu	Ulaanbaatar → Undrkhan	Explained on system of grant aid cooperation, purpose of Study and schedule at Ministry of Trade and Industry
10	Oct. 7	Fri	Tokyo → Beijing  Undrkhan	Kobayashi member departed.  Explained on inception report and questionnaire.
11	Oct. 8	Sat	Beijing → Ulaanbaatar  Undrkhan → Ulaanbaatar	Kobayashi member arrived.  Interview with Hentiy prefectural governor. Study on project site and relative facility. Collection of questionnaire and Q & A.
12	Oct. 9	Sun	Ulaanbaatar → Harhorin	Explained on inception report and questionnaire at Harhorin flour mill

	Date	Movement	Content of Study
13	Oct. 10 Mon	Harhorin	Interviewed with Deputy Mayor of Harhorin city. Study on project site and relative facility. Collection of questionnaire and Q & A. Preliminary study on natural conditions.
14	Oct. 11 Tue	Harhorin → Ulaanbaatar  Harhorin	Q & A  Kanamoto continued study at Harhorin.
15	Oct. 12 Wed	Ulaanbaatar → Harhorin  Harhorin	Discussed on "Minutes" at Ministry of Trade and Industry  Continued on Harhorin
16	Oct. 13 Thu	Ulaanbaatar   Harhorin → Ulaanbaatar	Collected information and data at Ministry of Trade & Industry, Ministry of Infrastructure Development, Ministry of Energy · Soil · Mining, Banks.  Writing of "Minutes" draft. Kanamoto continued and completed study.
17	Oct. 14 Fri	Ulaanbaatar	Signing on "Minutes". Report to the Embassy of Japan, JICA office on the study. Collected information at Ministry of Infrastructure Development
18	Oct. 15 Sat	Ulaanbaatar→ Beijing → Tokyo  Ulaanbaatar   Ulaanbaatar → Undrkhan	Miyamoto leader and Kobayashi member returned to Japan.  Collected information on natural condition. Collected information at Ministry of Food and Agriculture and at Ministry of Infrastructure Development.  Kohara and Kato left for Undrkhan for restudy
19	Oct. 16 Sun	Undrkhan  Ulaanbaatar	Discussion on questionnaire at Undrkhan flour mill.  Collected information on natural condition. Analysis of collected data and information
20	Oct. 17 Mon	Undrkhan  Ulaanbaatar	Study on project site and relative facility. Collection of questionnaire and Q & A. preliminary study on natural condition  Collected information at banks, transportation companies, etc.

	Date		Movement	Content of Study
21	Oct. 18	Tue	Undrkhan → Ulaanbaatar  Ulaanbaatar	Kohara and Kato completed restudy at Undrkhan.  Collected information at Ministry of Food and Agriculture and Ministry of Infrastructure Development
22	Oct. 19	Wed	Ulaanbaatar	Studied the estimate and method of investigation on natural conditions. Collected information at construction companies, post offices, national railway, etc.
23	Oct. 20	Thu	Ulaanbaatar	Collected technical information on construction works
24	Oct. 21	Fri	Ulaanbaatar	Report about the study at Ministry of Food and Agriculture, the Embassy of Japan, JICA office, Ministry of Trade and Industry. Collected information on communication cost and transportation charges. Collected information at Mongolian National Institute for Standardization and Meteorology, Construction company, Soil survey company, Design company for agricultural facility, etc.
25	Oct. 22	Sat	Ulaanbaatar → Beijing Beijing → Tokyo	Yamazaki, Kohara, Kanamoto and Kato returned to Japan

## (2) Draft Explanation Mission

Schedule

No.	Date	Movement	Members from Government (Yoshida, Masuda)	Consultant	Stay
1	Feb. 27 Mon	Tokyo → Beijing	Departure (10:10→13:50 NH905)		Beijing
2	Feb. 28 Tue	Beijing → Ulaanbaatar	Move (9:35→11:35 CA901) Courtesy call on the embassy of Japan, JOCV office, Ministry of Food & Agriculture, Ministry of Trade & Industry		Ulaanbaatar
3	Mar. 1 Wed		Draft explanation Discussion on Minutes (Ministry of Food & Agriculture, Ministry of Trade & Industry)		Ulaanbaatar
4	Mar. 2 Thu	Ulaanbaatar → Harhorin	Move to Harhorin (About 6 hours by car) Draft explanation (Harhorin flour mill)		Harhorin
5	Mar. 3 Fri	Harhorin → Ulaanbaatar	Move to Ulaanbaatar (About 6 hours)		Ulaanbaatar
6	Mar. 4 Sat	Ulaanbaatar → Undrkhan	Move to Undrkhan (About 7 hours) Draft explanation (Undrkhan flour mill)		Undrkhan
7	Mar. 5 Sun	Undrkhan → Ulaanbaatar	Move to Ulaanbaatar (About 8 hours through Sumer, Bor-ondor)		Ulaanbaatar
8	Mar. 6 Mon		Analysis of data, Discussion with MOFA		Ulaanbaatar
9	Mar. 7 Tue		Signing on "Minutes" Report to Embassy of Japan, JOCV office		Ulaanbaatar
10	Mar. 8 Wed		Analysis of data and Internal discussion		Ulaanbaatar
11	Mar. 9 Thu		Analysis of data, study on Yoshida grant aid project		Ulaanbaatar
12	Mar. 10 Fri	Ulaanbaatar → Beijing	Move (12:30 → ) CA902		Beijing
13	Mar. 11 Sat	Beijing → Tokyo	Arrive Tokyo (9:30 → 13:50) CA925		



### 3. List of People Interviewed

#### Ministry of Food and Agriculture (食糧・農牧業省)

- Gochoo DAVAADORJ ; General Director, Crop, Machinery and Irrigation Department (29 Sep. & 21 Oct., 1994)
- KHISHIGEE ; Manager, Crop, Machinery and Irrigation Department (29 Sep. ~ 11 Oct. & 21 Oct., 1994)
- Tseveen SHAGDAR ; Electrical Engineer, Crop, Machinery and Irrigation Department (12 ~ 20 Oct., 1994)
- KHORLOOBAATAR ; Agricultural Engineer, Crop, Machinery and Irrigation Department (12 Oct., 1994)
- YADAM ; Agricultural Machinery Engineer, Crop, Machinery and Irrigation Department (13 ~ 20 Oct., 1994)
- Chultem PERENLEI ; General Director, Economics and International Cooperation Department (6 Oct., 1994)
- Rentsensonomyn DURIMA; Officer, Economics and International Cooperation Department (29 Sep. & 14 ~ 21 Oct., 1994)

#### Ministry of Trade and Industry (通産省)

- L. NASANBUYAN ; Assistant of Director, Economy & Foreign Trade Policy Department (30 Sep., 1994)
- P. GANKHUYAG ; Assistant of Director, Economy & Foreign Trade Policy Department (30 Sep. & 14 Oct., 1994)

#### Ministry of Infrastructure Development (インフラ開発省)

- I. SURENBAYAR ; General Director, Department of Building and Building Material Industry (14 Oct., 1994)
- S. SUKHBAATAR ; Head, Department of Technological Information (14 ~ 15 Oct., 1994)
- Ts. ENKHBAYAR ; General Director, State Expert in construction engineering, City Planning Development Department (15 & 19 Oct. 1994)
- A. TSOGT ; State Expert in Heating and ventilation, City Planning Development Department (15 & 19 Oct., 1994)
- Ts. HASBAATAR ; State Expert in electrical engineering, City Planning Development Department (15 & 19 Oct., 1994)

Ministry of Energy, Geology and Mining (エネルギー・地質・鉱山省)

Tumen-Ayushyn AVARZED; Expert, Power Department (13 Oct., 1994)

Mongolian National Institute for Standardization and Metrology

(国家規準測量センター)

Jigmidiin BAVUUSUREN ; Director General (21 Oct., 1994)

Murun Flour & Feed Mills Factory and the persons concerned (ムルン製粉工場)

J. BUYANT ; Director General (30 Sep. ~ 2 Oct., 1994)  
L. GANBAT ; Chief Engineer (30 Sep. ~ 2 Oct., 1994)  
B. BALGAN-OCHIR ; Chief Accounting Officer (30 Sep. ~ 2 Oct., 1994)  
CH. OYUNCHIMEG ; Chief Mechanic (30 Sep. ~ 2 Oct., 1994)  
B. OYUNBAT ; Chief Electric (30 Sep. ~ 2 Oct., 1994)

; Vice Governor, Hovsgol Province (2 Oct., 1994)

Choybalsan Flour & Feed Mills and the persons concern (チヨイバルサン製粉工場)

O. LHAGBA ; Director General (3 ~ 5 Oct., 1994)  
D. NAMJILCHEREN ; Chief Engineer (3 ~ 5 Oct., 1994)  
Ch. SUHUBAATAR ; Chief Account Officer (3 ~ 5 Oct., 1994)  
  
R. RENCHINBYAMBA ; First Vice Governor, Dornod Province (5 Oct., 1994)  
B. GOMBOSUREN ; Director, Agriculture Department of Province Governor Office (5 Oct., 1994)

Undrkhaan Flour & Feed Mills <TSATSAL Company> and the persons concerned

(ウンドゥルハーン製粉工場)

Bayanmunkhiin NERGUI ; Director General (7 & 8 Oct., 1994)  
Sh. JANJIVDORJ ; Chief Engineer (7 & 8 Oct., 1994)  
S. TSEDENDAMBA ; Chief Accounting Officer (7 & 8 Oct., 1994)

Tsedendamba BALDANDOLJ; Governor, Hentii Province (8 Oct., 1994)

D. BAATARHUYANG ; Vice Governor, Director of food and Agriculture Department, Hentii Province (8 Oct., 1994)

Harhorin Flour & Feed Mills and the persons concerned (カラコルム製粉工場)

Dugeriin DJAMSRANDJAV ; General Director (9 ~ 13 Oct., 1994)  
ERDENECHIR ; Chief Engineer (9 ~ 12 Oct., 1994)  
ICHINHORLOO ; Chief Accounting Officer (9 ~ 12 Oct., 1994)  
DABAATSEREN ; Accounting Officer (9 ~ 12 Oct., 1994)  
BATBOLD ; Chief Administrator (9 ~ 12 Oct., 1994)  
MINIJIMAA ; Lab. Engineer (9 ~ 10 Oct., 1994)  
CHULUUNBAT ; Mechanical Engineer (9 ~ 12 Oct., 1994)  
KHAGUAA ; Mechanical Engineer (9 ~ 12 Oct., 1994)  
Sh. NORJMOO ; Electrical Engineer (9 ~ 13 Oct., 1994)  
  
; Vice Mayor, Harhorin (10 Oct., 1994)  
; Chief Administrator, Harhorin city office (10 Oct., 1994)

URLAN (Company of Building Designing, Land Surveying and Soil Investigation)  
(建築設計・測量・地質調査会社)

Lhamsurengen NYAMSUREN; General Director, Architect (13 ~ 21 Oct., 1994)

UUSGEL (Company of Construction Engineering and Geological Research: the former Geological Engineering Institute, Ministry of Infrastructure Development)  
(地質調査会社: 旧インフラ開発省 地質工学研究所)

Magsariin MYAGMARJAV ; General Director, Geological Engineer (16, 18 & 21 Oct., 1994)

TUSAL (Company of Building Engineering) (建築設計-特に構造計算)

Sodnomtseren TSEMBEL ; Director, Structural Engineer (20 Oct., 1994)

HAABZ (Company of Construction Design, Production and Trade: The former Agricultural Construction Institute, Ministry of Food and Agriculture)

(建築設計会社: 旧食糧・農牧業省 農業施設工学研究所)

Osor CEDENDAMBA ; Director General (21 Oct., 1994)

KHARSN (Company of Construction Design) (地質調査・測量・建築設計会社)

N. BUYANBADRAKH ; Director General, Architect (17 & 18 Oct., 1994)

URAAABAARTAR Construction Co., Ltd. (Construction Company) (建設会社)

Baataryn JUGDER ; Director General (19 & 21 Oct., 1994)

MONGOLIA BUILDING CONCERN (Construction Company) (建設会社)

Haidavin LHUNREV ; Vice Director (19 & 21 Oct., 1994)

SOVINVEST (Construction Company)

BARILGA Corporation (Company of Manufacture, Trade and Construction Investment)

(建設資材製造・建設会社)

L. SHAGDARRAGCHAA ; General Director (19 Oct., 1994)

J. BAYASGALAN ; Manager (19 ~ 21 Oct., 1994)

TUUSHIN (Company of International Freight Forward) (運送会社-内陸輸送関係)

P. BATSAIKHAN ; Vice Director (17 Oct., 1994)

B. PUREVCHULUUN ; Traffic Manager, International Forwarding Division (17 Oct., 1994)

D. ENKHBAT ; Manager, International Forwarding Division (17 Oct., 1994)

H. DAVAANYAM ; Assistant Manager, Import Department (17 Oct., 1994)

Mongol Japanese Embassy (在モンゴル 日本大使館)

Takuo KIDOKORO ; Councilor

Keizo KAGAWA ; First Secretary

JICA (JOVC) Ulaanbaatar Office (JICA(JOVC)ウランバートル事務所)

Yukio SASAKI ; Resident Representative

Tatsuo ONO ; Coordinator of JOVC

JICA Expert (JICA専門家)

Toshio MIZUGUCHI ; Agronomist

Motohiro J. ARIHARA ; Economic Reform & Development

JICA Mission for Agricultural Master Planning (農業マスタープラン調査団)

Kouji HATTORI ; Team Leader

Kazuo OKANO ; Team Member

Kiyoshi SAKAI ; Team Member

Teruhiko TAKANO ; Team Member

4. Minutes of Discussion

(1) Basic Design Study Mission

MINUTES OF DISCUSSIONS  
BASIC DESIGN STUDY ON THE PROJECT FOR  
CONSTRUCTION OF THE GRAIN STORAGE IN MONGOLIA

In response to a request from the Government of Mongolia, the Government of Japan decided to conduct a Basic Design Study on the Project for Construction of the Grain Storage in Mongolia (hereinafter referred to as "the Project.") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Mongolia a study team, which is headed by Mr. Hideo Miyamoto, Deputy Director, First Basic Design Study Division, Grant Aid Study & Design Department, JICA, and is scheduled to stay in the country from September 29 to October 22, 1994.

The team held discussions with the officials concerned of the Government of Mongolia and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study report.

Ulaanbaatar, October 14, 1994



Mr. Hideo Miyamoto

Team Leader,

Basic Design Study Team

JICA

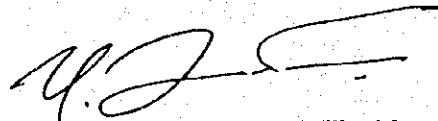


Mr. Gochoo Davaadorj

General Director,

Crop, Machinery and Irrigation Dept.

Ministry of Food and Agriculture



Mr. CH. Enebish

Deputy Director, Economy &

Foreign Trade Policy Dept.

Ministry of Trade and Industry

## ATTACHMENT

### 1. Objective

The objective of the Project is to decrease post-harvest losses for wheat by constructing storage facilities with necessary equipment.

### 2. Project sites

The Project sites, shown in ANNEX I, are the following four flour-mills in a priority order.

Harhorin (Ovorhangai)

Undrkhan (Henti)

Murun (Housgol)

Choybalsan (Dornod)

### 3. Executing agency

The Ministry of Food and Agriculture is responsible for the administration and execution of the Project.

### 4. Items requested by the Government of Mongolia

After discussions with the Basic Design Study Team, the items described in ANNEX II were finally requested by the Mongolian side.

However, the final components of the Project will be decided after further studies.

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5. Japan's Grant Aid system

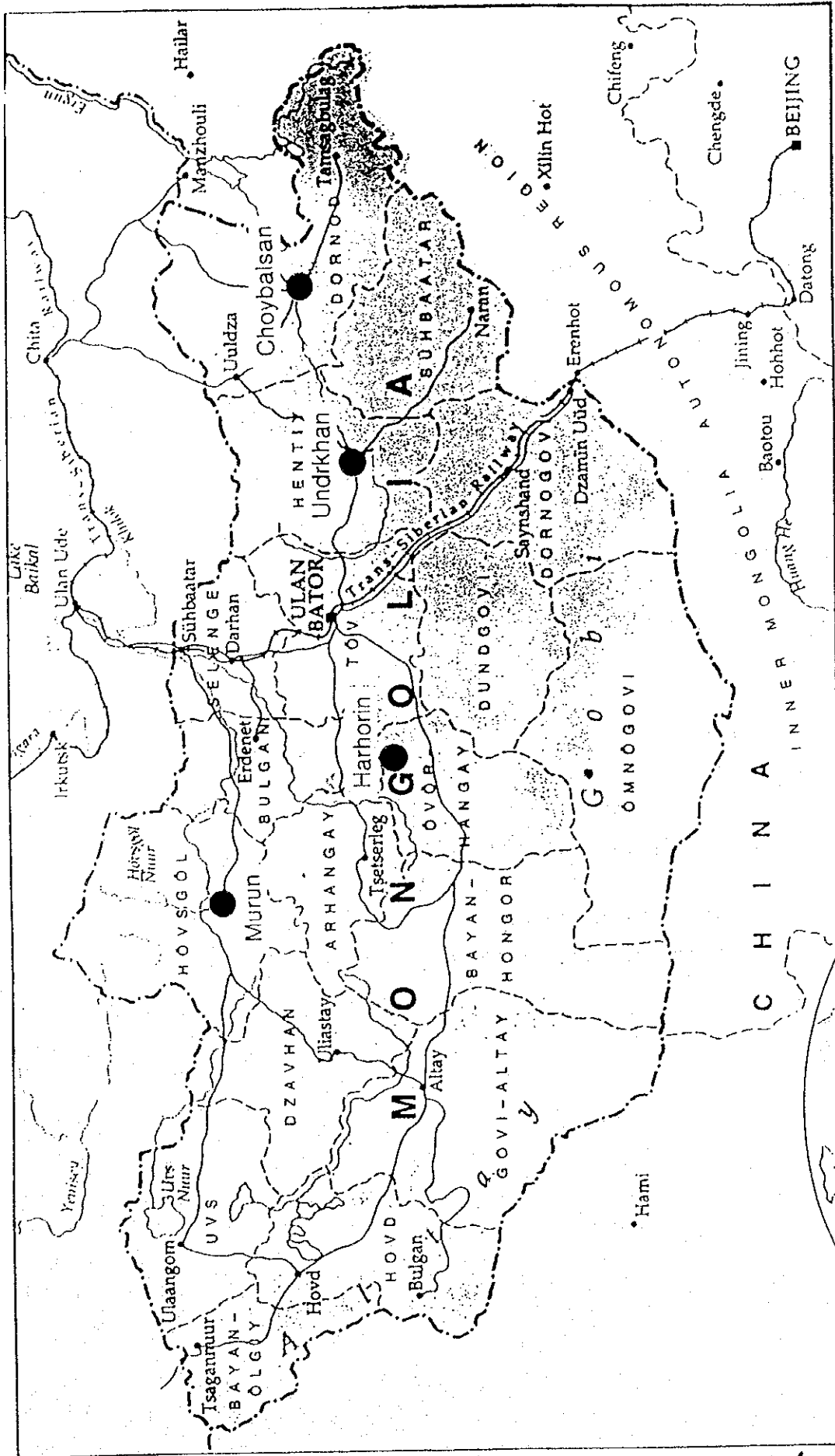
- 1) The Government of Mongolia has understood the system of Japanese Grant Aid explained by the Team, in accordance with ANNEX III.
- 2) The Government of Mongolia will take necessary measures, described in Annex IV for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. Schedule of the Study

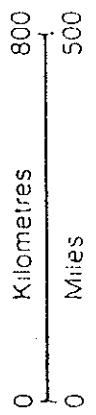
- 1) The consultants will proceed to further studies in Mongolia until October 22, 1994.
- 2) JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around February, 1995.

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- International boundary
- Aymag boundary
- Main railway
- Main road
- Project site



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ANNEX II

Items requested by the Mongolian side

1. Construction of the grain storage facilities

1) For Harhorin site

Silo type grain storage, capacity 7,000~10,000 tons

2) For Undrkhan site

Silo type grain storage, capacity 7,000~8,000 tons

2. Provision of equipment

1) For Harhorin and Undrkhan sites

Receiving hopper

Cleaner

Grain drier

Scale(s)

Conveyors and elevators

Inspection equipment (wheat grain)

2) For Murun and Choybalsan sites

Inspection equipment (wheat grain)

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ANNEX III

On Japan's Grant Aid Scheme

1) Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

Application (Request made by a recipient country)

Study (Basic Design Study conducted by JICA)

Appraisal & Approval

(Appraisal by the Government of Japan and Approval by the Cabinet)

Determination of Implementation

(The Notes exchanged between the both Governments)

Implementation

(Implementation of the Project)

(2) Firstly, an application or a request for a project made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to see whether or not it is suitable for Japan's Grant Aid. If the request is deemed suitable, the Government of Japan entrusts a study on the request to JICA (Japan International Cooperation Agency).

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises to see whether or not the project is suitable for Japan's Grant Aid Program, based on a Basic Design Study report prepared by JICA and the results are then submitted for approval by the Cabinet.

Fourthly, the project approved by the cabinet becomes official when pledged by the Exchange of Notes signed by the both governments.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2) Basic Design Study

(1) Contents of the Study

The aim of the study (Basic Design Study) conducted by JICA on a project requested is to provide a basic document necessary for

appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) to confirm background of the request, objectives, effects of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation.
- b) to evaluate appropriateness of the project for the Grant Aid Scheme from a technical, social and economical point of view.
- c) to confirm items agreed on by the both parties concerning a basic concept of the project.
- d) to prepare a basic design of the project.
- e) to estimate cost involved in the project.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request.

Implementing the project, the recipient country must take necessary measures involved which are itemized on Exchange of Notes.

(2) Selecting (a) Consulting Firm(s)

For smooth implementation of the study, JICA uses (a) consulting firm(s) registered. JICA selects (a) firm(s) through proposals submitted by firms which are interested. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference made by JICA.

The consulting firm(s) used for the study is(are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid possible undue delay in implementation caused if a new selection process is repeated.

3) Japan's Grant Aid Scheme

(1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non reimbursable funds needed to procure facilities, equipment and services for economic and social development of the country under principles in accordance with relevant laws of Japan. The Grant Aid is not in a form of donation or such.

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(2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Notes exchanged by the both Governments, in which the objectives of the project, period of execution, conditions and amount of the Grant, etc. are confirmed.

(3) "The period of the Grant" means one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country origin.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means Japanese physical persons of Japanese juridical persons controlled by Japanese physical persons.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude into contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is necessary to secure accountability to Japanese tax payers.

(6) Undertakings Required of the Government of the Recipient Country

In the implementation of the Grant, the recipient country is required to undertake the necessary measures such as the following:

a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.

b) To provide facilities for distribution of electricity, water

supply and drainage and other incidental facilities in and around the sites.

- c) To secure buildings prior to the procurement in case of the installation of the equipment.
  - d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant.
  - e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
  - f) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.
- (7) Proper Use

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all expenses other than those to be borne by the Grant Aid.

(8) Re-export

The products purchased under the Grant should not be re-exported from the recipient country.

(9) Banking Arrangement (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of Government of the recipient country in an authorized foreign exchange bank of Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient

country or its designated authority under the contracts verified.

- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

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ANNEX IV

Necessary measures to be taken by the Government of Mongolia in case Japan's Grant Aid is executed.

1. To secure the site for the Project.
2. To clear, level and reclaim the site prior to commencement of the construction.
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the site.
4. To construct the access road to the site prior to commencement of the construction.
5. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site.
  - 1) Electricity distributing line to the site.
  - 2) City water distribution main to the site.
  - 3) Drainage city main to the site.
  - 4) Telephone trunk line and the main distribution panel of building.
  - 5) General furniture such as carpets, curtains, tables, chairs and others.
6. To bear commissions to the Japanese foreign exchange bank for the banking services based upon Banking Arrangement.
7. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation.
8. To accord Japanese Nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Mongolia and stay therein for the performance of their work.
9. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Mongolia with respect to the supply of the products and services under the verified contracts.
10. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant.
11. To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.

4. Minutes of Discussion

(2) Draft Explanation Mission

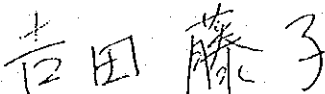
MINUTES OF DISCUSSIONS  
BASIC DESIGN STUDY ON THE PROJECT FOR  
CONSTRUCTION OF THE GRAIN STORAGE  
IN  
MONGOLIA  
(CONSULTATION ON DRAFT REPORT)

In October 1994, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for Construction of the Grain Storage (hereinafter referred to as "the Project") to Mongolia, and through discussion, field survey, and technical examination of the results in Japan, JICA has prepared a Draft Report of the Study.

In order to explain and to consult Mongolia on the components of the Draft Report, JICA sent to Mongolia a Draft Report Explanation Team, headed by, Ms. Fujiko YOSHIDA, Assistant Director, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, from 28th of February to 7th of March, 1995.

As a result of discussions, both parties confirmed the main items described on the attached sheet.

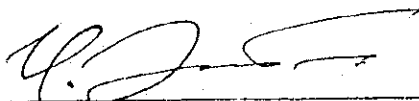
Ulaanbaatar, 7, March 1995



Ms. Fujiko YOSHIDA  
Team Leader,  
Draft Report Explanation Team,  
Japan International Cooperation Agency



Mr. Gochoo Davaadorj  
General Director,  
Crop, Machinery and Irrigation Dep.,  
Ministry of Food and Agriculture



Mr. CH. Enebish  
Deputy Director,  
Economy & Foreign Trade Policy Dept.,  
Ministry of Trade and Industry



### 1. Components of Draft Report

The Government of Mongolia has agreed and accepted in principle the components of the Draft Report explained by the Team.

### 2. Japan's Grant Aid system

- (1) The Government of Mongolia has understood the system of Japan's Grant Aid Scheme described in Annex II explained by the Team.
- (2) The Government of Mongolia will take necessary measures, described in Annex I, for smooth implementation of the Project on condition that Japan's Grant Aid is extended to the Project.

### 3. Further Schedule

The Team will make the Final Report in accordance with the confirmed items, and send it to the Government of Mongolia in and around April 1995.

(8)

2.2.2

#### 4. Amendment

'ARTICLE 3 Executing agency' in ATTACHMENT of the Minutes of Discussion, dated 14 October 1994, had been amended as follows:

The Ministry of Trade and Industry and the Ministry of Food and Agriculture is responsible for the administration and execution of the Project.

(FD)

by us.

ANNEX I

Necessary measures to be taken by the Government of Mongolia on condition that Japan's Grant Aid is executed;

1. To secure the site for the Project
2. To clear, level and reclaim the site prior to the commencement of the construction
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the site
- 4.. To construct the access road to the site prior to the commencement of the construction
5. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental facilities to the Project site
  - 1) Electricity distribution line to the site
  - 2) Water supply line to the site
  - 3) Drainage and sewage line form the site.
  - 4) Telephone trunk line to the main distribution panel to be installed in a building
  - 5) General furniture such as carpets, curtain, tables, chairs and others
6. To bear commissions of Authorization to Pay (A/P) and payment commission to a Japanese foreign exchange bank for the banking services based on the Banking Arrangement (B/A).
7. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkment

(FF)

*Handwritten signature*

8. To accord Japanese nationals, whose services may be required in connection with the supply of products and the services under the verified contracts, such facilities as may be necessary for their entry into Mongolia and stay therein for the execution of the Project

9. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant

10. To bear all the expenses other than those covered by the Grant, necessary for the construction of the facilities as well as for the transportation and the installation of the equipment.

(S)

2.2.2

## ANNEX II

### ON JAPAN'S GRANT AID PROGRAM

#### 1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures:

- **Application**  
(request made by a recipient country)
- **Study**  
(Preliminary Study / Basic Design Study conducted by JICA)
- **Appraisal & Approval**  
(Appraisal by the Government of Japan and Approval by the Cabinet of Japan)
- **Determination of Implementation**  
(Exchange of Notes between the both Governments)
- **Implementation**  
(Implementation of the Project)

(2) Firstly, an application or a request for a project made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to see whether or not it is suitable for Japan's Grant Aid. If the request is deemed suitable, the Government of Japan entrusts a study on the request to JICA (Japan International Cooperation Agency) .

Secondly , JICA conducts the Study (Basic Design Study) , using a Japanese consulting firm. If the background and objective of the requested project are not clear, a Preliminary Study is conducted prior to a Basic Design Study.

Thirdly, the Government of Japan appraises to see whether or not the Project is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA and the results are then submitted for approval by the Cabinet.

Fourthly, the Project approved by the Cabinet becomes official when pledged by the Exchange of Notes signed by the both Governments.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

(16)

16/11/72

## 2. Contents of the Study

### 1) Contents of the Study

The purpose of the Study (Preliminary Study/Basic Design Study) conducted on a project requested by JICA is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) to confirm background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,
- b) to evaluate appropriateness of the Project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) to confirm items agreed on by the both parties concerning a basic concept of the project,
- d) to prepare a basic design of the project,
- e) to estimate cost involved in the project.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request.

Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

### 2) Selecting (a) Consulting Firm(s)

For smooth implementation of the study, JICA uses (a) consulting firm(s) registered. JICA selects (a) firm(s) through proposals submitted by firms which are interested. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference made by JICA.

The consulting firm(s) used for the study is(are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid possible undue delay in implementation caused if a new selection process is repeated.

### (3) Status of a Preliminary Study in the Grant Aid Program

A Preliminary Study is conducted during the second step of a project formulation & preparation as mentioned above.

A result of the study will be utilized in Japan to decide if the Project is to be suitable for a Basic Design Study.

Based on the result of the Basic Design Study, the Government would proceed to the stage of decision making process (appraisal and approval).

It is important to notice that at the stage of Preliminary Study, no commitment is made by the Japanese side concerning the realization of the Project in the scheme of Grant Aid Program.

JP

10/11/82

### 3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non reimbursable funds needed to procure facilities, equipment and services for economic and social development of the country under the following principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not in a form of donation or such.

2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes by both Governments, in which the objectives of the Project, period of execution, conditions and amount of the Grant etc. are confirmed.

3) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

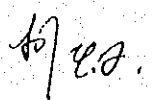
When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country origin.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". ( The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons. )

5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude into contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

6) Undertakings required to the Government of the recipient country



In the implementation of the Grant Aid, the recipient country is required to undertake necessary measures such as the following:

- ① to secure land necessary for the sites of the project and to clear and level the land prior to commencement of the construction work,
- ② to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- ③ to secure buildings prior to the installation work in case the Project is providing equipment,
- ④ to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- ⑤ to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- ⑥ to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

7) Proper Use

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for their operation and maintenance as well as to bear all expenses other than those to be borne by the Grant Aid.

8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

9) Banking Arrangement (B/A)

- (a) The Government of the recipient country or its designated authority shall open an account in the name of the

⑤

M. J. S.



Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank" ) . The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the contracts verified.

- (b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.

(FB)

b/4.2

General Indexes					
Form of Government	Republic	*1	Area	1,565,000 Km <sup>2</sup>	*1
Head of State	President Punsalmaagiyn OCHIRBAT	*1	Population	2,367,000 (1993)	*1
Date of Independence	March 13, 1921	*1	Capital	Ulaanbaatar	*1
Racial Composition	Mongol 90%, Cossack 4%	*1	Main Cities	Altay, Darhan	*1
		*1	Population Participating Economic Activity	,000	*1
Language • Official Language	Mongol	*1	Compulsory Education	7 years (1992)	*2
Religion	Tibetan Buddhism	*1	Primary School Attendance Rate	- % (1990)	*2
Joining United Nations	October, 1961		Literacy Rate	- %	*1
Joining World Bank • IMF	February, 1991	*1	Population Density	1 person/Km <sup>2</sup> (1992)	*2
		*1	Population Increment Rate	2.62% (1993)	*2
			Average Life	Average 65.77 Male 63.5 Female 68.1	*1
			Infant Mortality	44.9/1000 (1993)	*1
			Calory Supply	2,360.0 cal/day/person (1990)	*2

Economic Index					
Currency Unit	Togrik	*1	Foreign Trade		*3
Exchange Rate (1US\$)	1US\$= -	*3	Export	- Mil. Dollars	*2
Fiscal Year	January ~ December	*1	Import	- Mil. Dollars	*2
National Budget		*2		- %	*4
Revenue	- Mil. Dollars	*2	Main Export Item	Copper, Livestock, Livestock Products	*1
Expenditure	- Mil. Dollars	*2	Main Import Item	Machinery, Food, Fuel	*1
International Payments	- Mil. Dollars	*2	Export to Japan	43.0 Mil. Dollars (1992)	*5
ODA Received	105.00 Mil. Dollars (1992)	*2	Import from Japan	37.0 Mil. Dollars (1992)	*5
Gross Domestic Production (GDP)	1,264.6 Mil. Dollars (1992)	*2			
GDP per Capita	- Dollars	*2	Foreign Currency Reserve	- Mil. Dollars	*1

Country	MONGOLIA
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1994.10 2/3

Industrial Composition of GDP	Agriculture - %	*2	Foreign Liabilities	374.5 Mil. Dollars (1992)	*4
	Mining Manufacturing - %		Reimbursement Rate	7.1% (1992)	*4
	Services - %		Inflation Rate	195.8% (1992)	*2
Industrial Composition of Employment	Agriculture (1992) 40.0%	*2	National Development Plans		*5
	Mining Manufacturing (1992) 21.0%				
	Services (1992) 39.0%				
Economic Growth Rate	-7.6% (1992)	*2			

\*5

Meteorology (Average 1967~1979) Place: Ulan Bator													(Altitude 1,325 m)
Month	1	2	3	4	5	6	7	8	9	10	11	12	Average/Total
Max. Temperature	-19.0	-13.0	-4.0	7.0	13.0	21.0	22.0	21.0	14.0	6.0	-6.0	-16.0	3.8°C
Min. Temperature	-32.0	-29.0	-22.0	-8.0	-2.0	7.0	11.0	8.0	2.0	-8.0	-20.0	-28.0	-10.0°C
Ave. Temperature	-25.5	-21.0	-13.0	-0.5	5.5	14.0	16.5	14.5	8.0	-1.0	-13.0	-22.0	-3.1°C
Precipitation	0.0	0.0	3.0	5.0	10.0	28.0	76.0	51.0	23.0	5.0	5.0	3.0	209.0 mm
Rain/Dry Season	Dry	Dry	Dry	Dry						Dry	Dry	Dry	

\*6

Record of ODA by Japan					(Grant aid and Loans are committed amount, Unit: 100 Million Yen)
Item	Year	1989	1990	1991	1992
Grant Aid Assistance		2,043.46	2,382.47	2,515.30	2,699.97
Technical Cooperation		2,146.74	1,989.63	2,050.70	2,194.95
Loans		5,161.42	5,676.39	7,364.47	5,852.05
Total		9,351.62	10,048.49	11,930.47	10,746.97

\*6

Record of ODA by Japan					(Net paid out, Unit: \$ Million)
Item	Year	1989	1990	1991	1992
Grant Aid Assistance		0.97	1.37	3.29	4.45
Technical Cooperation		0.97	0.32	20.98	25.46
Loans		0.00	0.00	24.47	12.19
Total		1.94	1.69	48.74	42.10

Country	MONGOLIA
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1994.10 3/3

\*7

(Net paid, Unit: \$ Million)						
	Grant Aid (1)		Loans (2)	Official Development Assistance (ODA) (1) + (2) = (3)	Other Government/Private Investments (4)	Total Economic Cooperation (3) + (4)
		Technical Cooperation				
Bi-lateral Assistance (Main Donor)	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
Inter-Multinational Assistance	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00

\*8

Government Organization in Charge of Foreign Assistance	
Technology	Relative Gov. Dept. • Above Gov. Org. → Trade & Industry Board
Grant Aid	Relative Gov. Dept. • Above Gov. Org. → Trade & Industry Board
JOVC	Relative Gov. Dept. • Above Gov. Org. → Trade & Industry Board

- \*1 The World Factbook (C.I.A)
- \*2 Human Development Report (UNDP)
- \*3 International Financial Statistics (IMF)
- \*4 World Debt Tables (WORLD)
- \*5 Newest World Index (TOKYO Shoseki)
- \*6 ODA of Japan (Min. Foreign Affairs)
- \*7 Manual for Overseas Economic Cooperation (OECD)
- \*8 Cooperation Information by Country (JICA)

## 6. Details of the Work Costs to be Borne by the Government of Mongolia

Estimated cost of construction under responsibility of the government of Mongolia are as follows:

### (1) Harhorin site

• Ground clearing works	- Removal of hard standings at site and leveling	3,120,000 TG
	- Removal of abandoned flat warehouse	1,664,000 TG
	- Repair works of existing buildings (rain leaks, etc.)	1,248,000 TG
	- Repair works of existing Mechanized flat warehouse	3,500,000 TG
	- Supply of powerline	1,800,000 TG
	- Supply of water pipeline joint	400,000 TG
• Facility	- Curtain, desk, chair	1,331,200 TG

### (2) Undrkhan site

• Ground clearing works	- Removal of hard standings at site and leveling	1,040,000 TG
	- Repair works (rain leaks, etc.) on existing works	1,248,000 TG
	- Supply of powerline	1,800,000 TG
	- Supply of water pipeline joint	400,000 TG
• Facility works	- Curtains Clerical desks • Chairs	1,331,200 TG
	- Electricity supply works for wheat quality inspection equipment	124,800 TG

(3) Murun site

• Facility works	- Electricity supply works for wheat quality inspection equipment	124,800 TG
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(4) Choybalsan site

• Facility works	- Electricity supply works for wheat quality inspection equipment	124,800 TG
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Total		19,256,800 TG
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Besides the above, it is necessary to include commissions, taxes, etc. such as below mentioned.

- Bank commissions for banking arrangement
- Import tax, commodity tax, bussiness tax and etc.

The government of Mongolia must budget for these works and execute the works at the appropriate time.

7. Soil Survey Reports

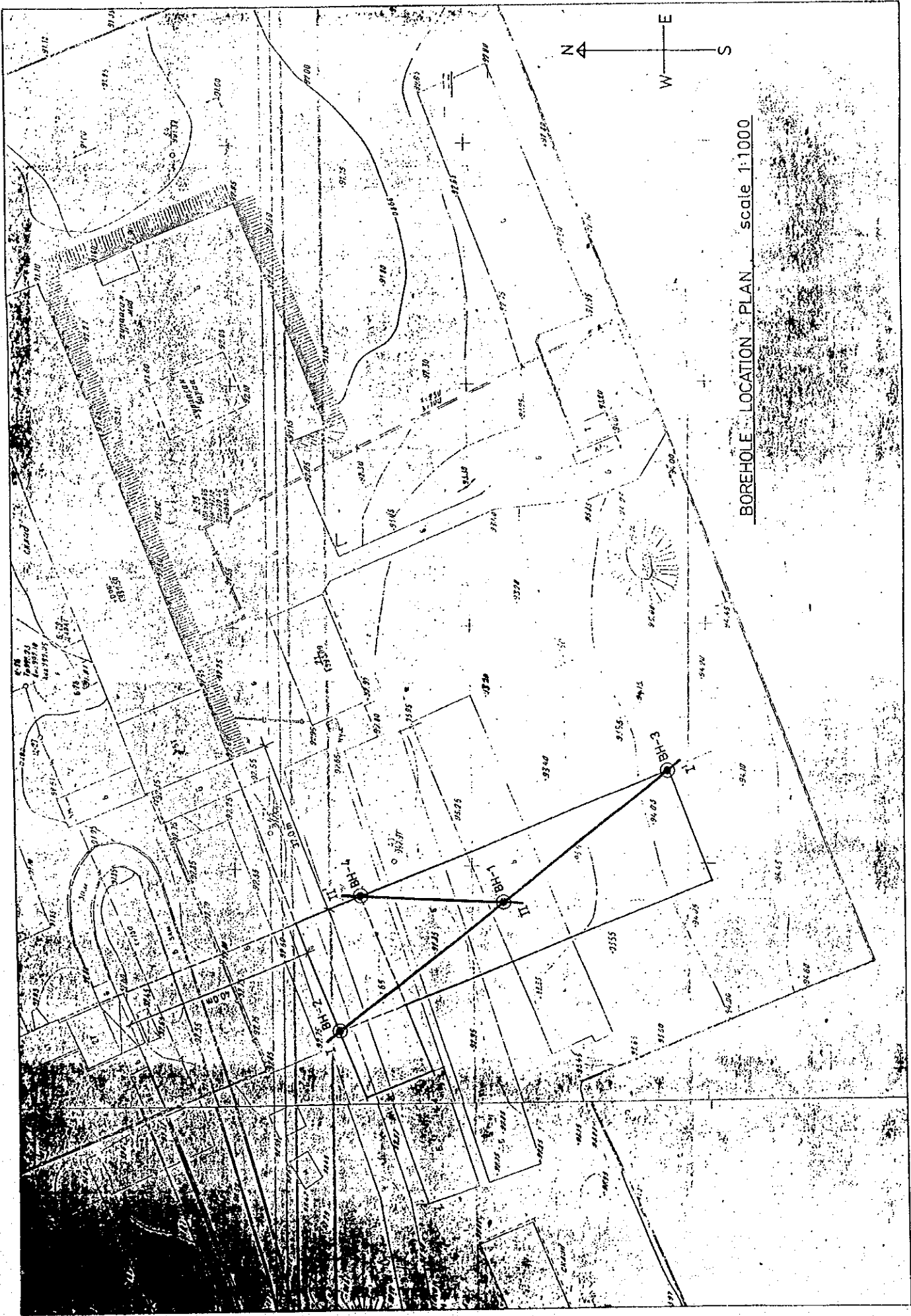
(1) Harhorin Site

**URLAN PROJECT & DESIGNING CO.,LTD**

Construction Engineering Geological Research production and service  
"IKH UUSGEL" joint-stock company

**Final report of engineering-geological  
investigation for the proposed  
construction of Grain Storage  
in Kharkhorin city.  
Uburkhangai aimag, Mongolia.**

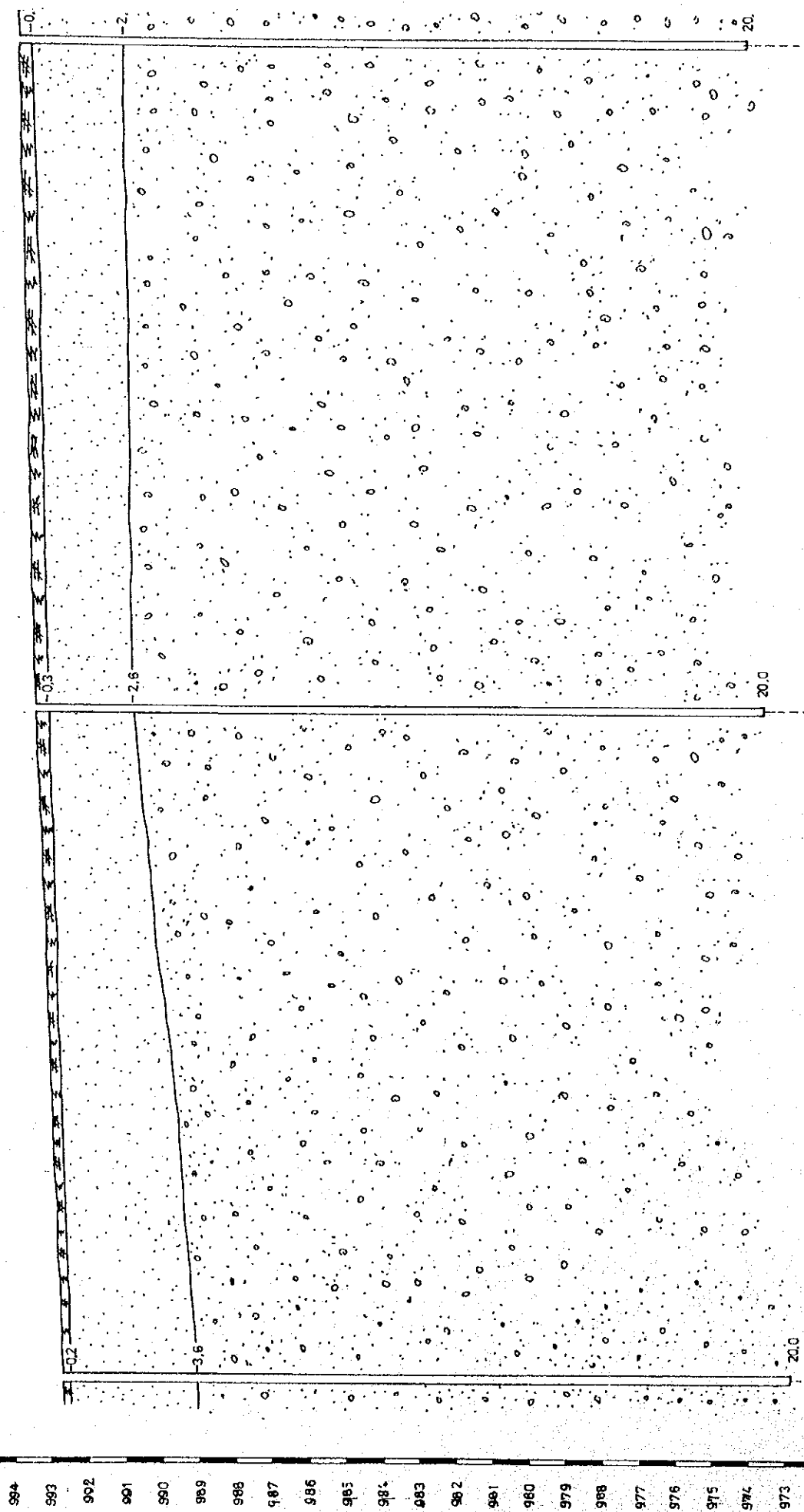
**Ulaanbaatar, 1994**



BOREHOLE LOCATION PLAN scale 1:1000



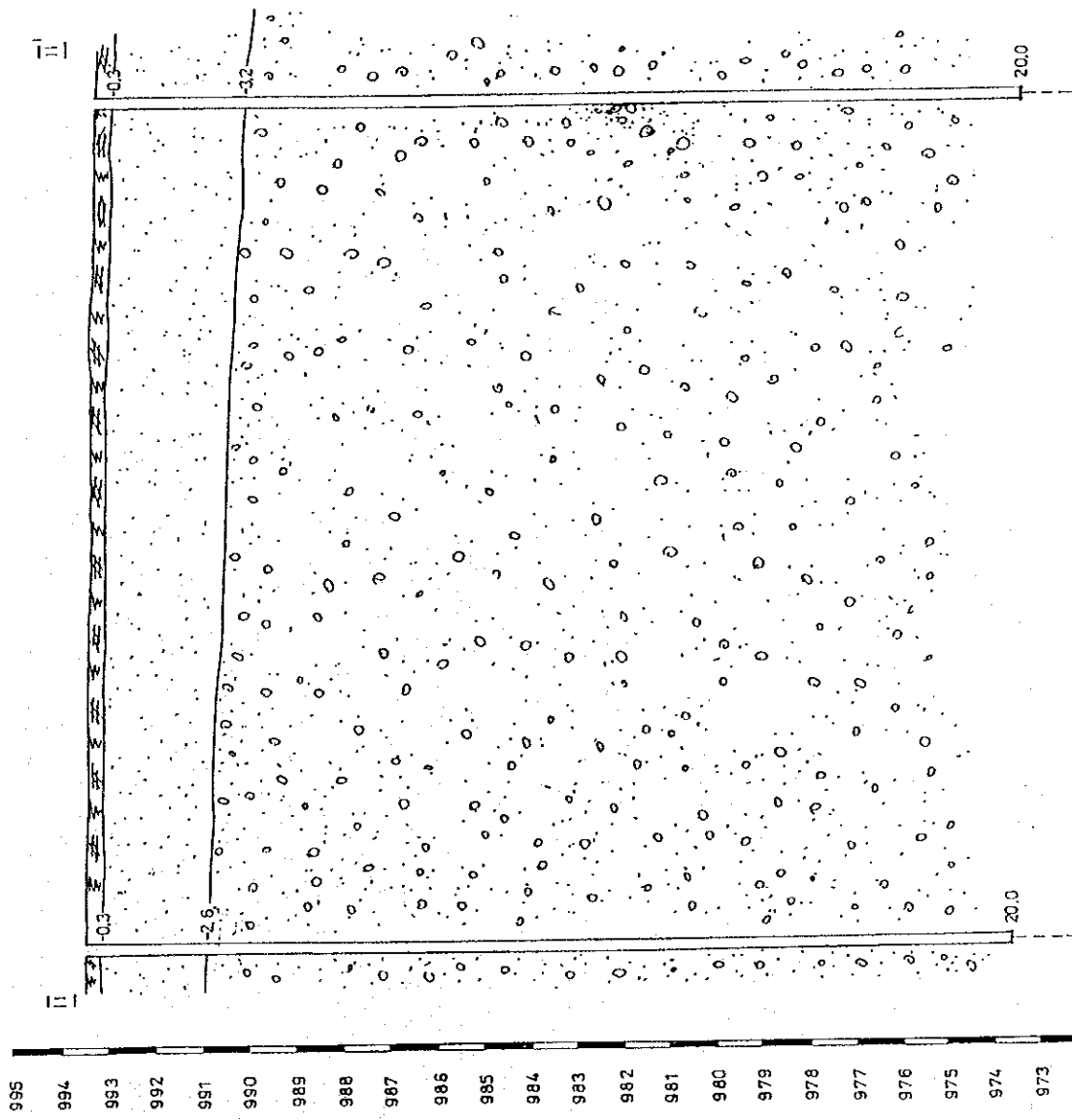
I GROSS SECTION I-N LINE I-I'



994  
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974  
973

LES	BH-2	992.74	45.0
	BH-1	993.45	45.0
			994.10

GROSS SECTION I N L I N E II-II



- 995
- 994
- 993
- 992
- 991
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- 974
- 973

THE NUMBER OF BOREHOLES	BH-1	BH-4
THE LEVEL, M	993.5	993.07
DISTANCE, M		45.0





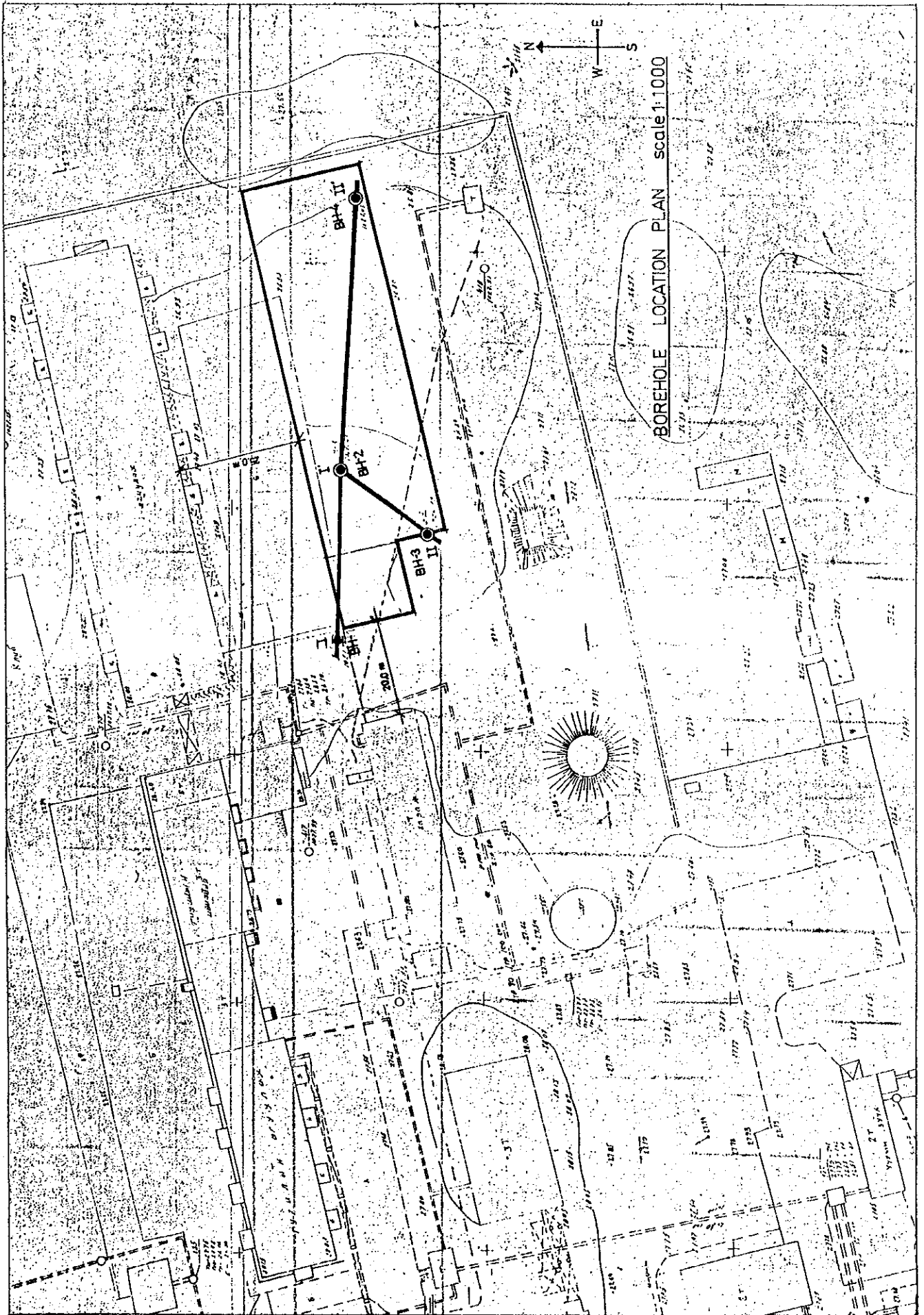
(2) Undrkhan Site

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Construction Engineering Geological Research production and service  
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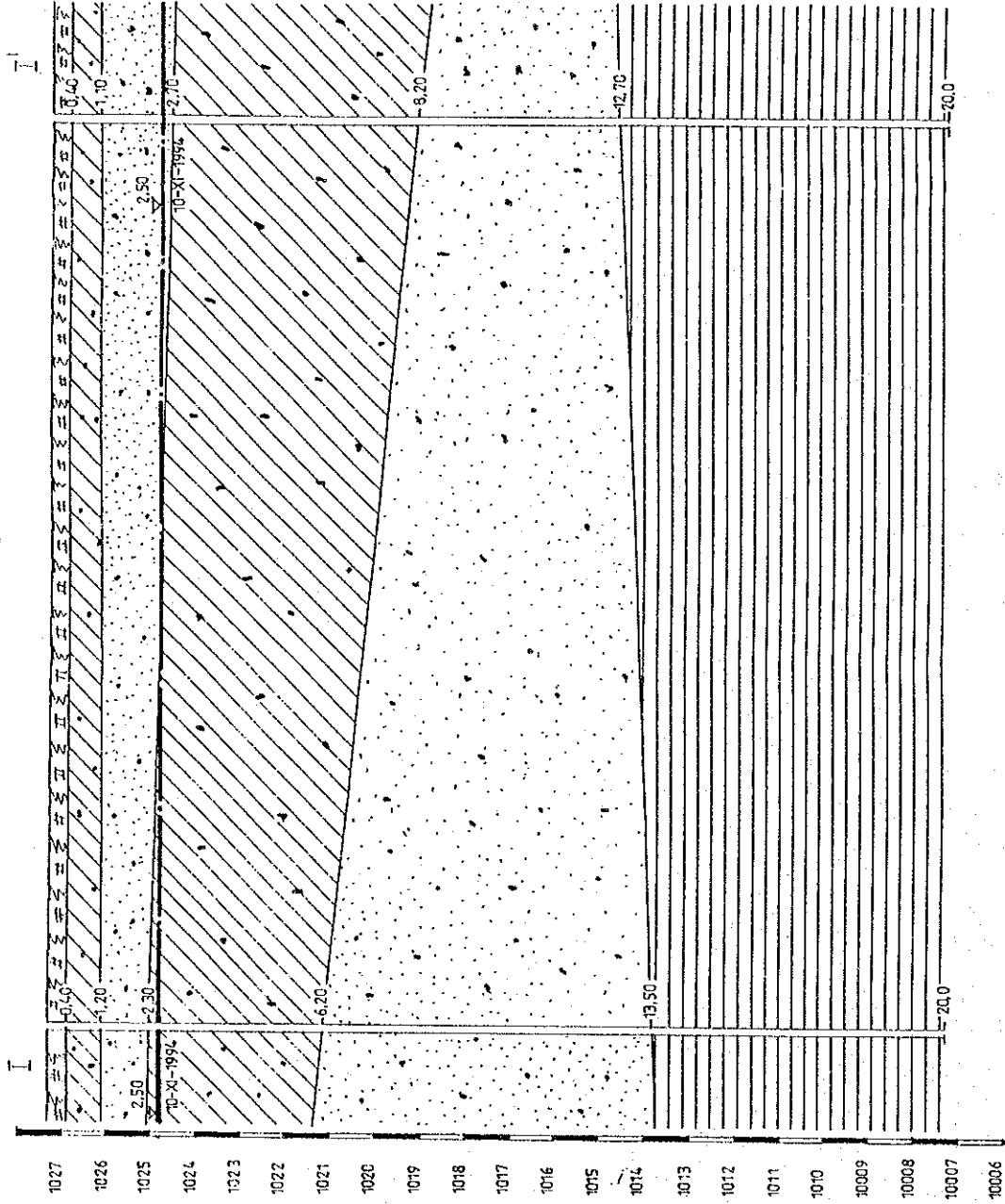
**Report of engineering-geological  
investigation for the proposed  
construction of Grain Storage  
in Undurkhaan city.  
Khentii aimag, Mongolia.**

**Ulaanbaatar, 1994**



BOREHOLE LOCATION PLAN scale 1:1000

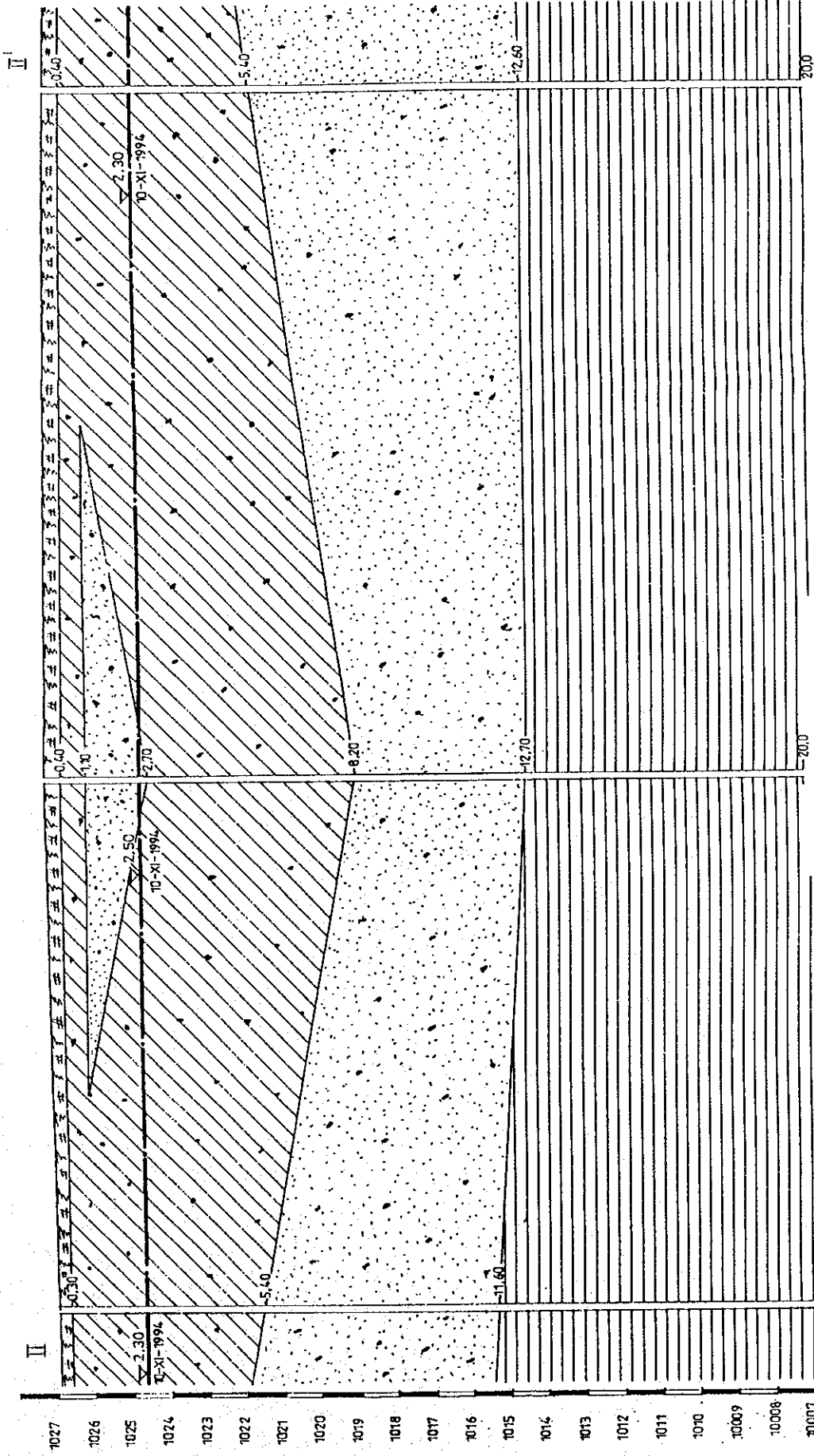
GROSS SECTION I-I'



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1011  
1010  
1009  
1008  
1007  
1006

THE NUMBER OF BOREHOLE	BH-1	BH-2
LEVEL OF LANDSURFACE .M	1027.28	1027.20
DISTANCE BETWEEN THE BOREHOLES .M	35.0	

GROSS SECTION II-II'



BH-3	1026.99	21.50
BH-2	1027.20	54.0
BH-4	1027.03	







8. Collected Data

(1) Wheat Collected from Each Farms

Table-1 Amount of Wheat Collected from Each Farm (Harhorin)

Farms	Distance from Mill to Farm (km)	Amount Collected (ton)											
		1989	M <sub>79</sub>	1990	M <sub>78</sub>	1991	M <sub>77</sub>	1992	M <sub>76</sub>	1993	M <sub>75</sub>	1989~1993 Total	M <sub>74</sub>
1 KHARKHORIN	18.2	11,977.5	217,990.5	11,044.9	201,017.2	12,216.8	222,345.8	5,046.6	91,848.1	6,619.2	120,469.4	46,905.0	853,571.0
2 TORSHIRUULEKH	91	6,652.8	605,404.8	7,849.2	714,277.2	4,704.2	428,082.2	4,814.1	436,083.1	5,069.9	461,360.9	29,080.2	2,647,208.2
3 KHOTONT	32	3,298.5	105,552.0	3,929.5	125,744.0	3,389.5	108,454.0	939.4	30,080.8	2,014.1	64,451.2	13,571.0	434,272.0
4 KHASHAAT	42	1,941.5	81,543.0	134.0	5,628.0	444.2	18,656.4	218.1	9,160.2	310.4	13,036.8	3,048.2	128,024.4
5 OLZIIT	120	1,083.0	129,960.0	1,081.3	129,755.0	476.2	57,144.0	491.1	58,932.0	520.0	62,400.0	3,651.6	438,192.0
6 KHAIKHAAN	258	4,008.7	1,034,244.6	3,543.6	914,248.8	4.8	1,238.4		0.0	557.4	143,809.2	8,114.5	2,093,541.0
7 OGIIINUUR	90	2,098.7	188,883.0	365.5	32,895.0	552.8	49,752.0	118.3	10,647.0	1,108.2	99,738.0	4,243.5	381,915.0
8 TSEWER	100	619.1	61,910.0	502.5	50,250.0	334.6	33,460.0		0.0	10.7	1,070.0	1,466.9	146,690.0
9 BAI TSENGEL	182	167.8	30,539.6	277.1	50,432.2	348.8	63,481.6	209.9	38,201.8	203.0	36,946.0	1,206.6	219,601.2
10 IKH YANLIR	165	10.4	1,716.0		0.0		0.0		0.0		0.0	10.4	1,716.0
11 BURD	75	786.6	58,995.0	1,635.3	122,647.5	1,022.8	76,710.0	311.2	23,340.0	218.6	16,395.0	3,974.5	298,087.5
12 KHISHIG ONDOR	160	651.0	104,160.0		0.0		0.0		0.0		0.0	651.0	104,160.0
13 MUGOD	180	4.3	774.0		0.0		0.0		0.0		0.0	4.3	774.0
14 SANSAR	112	926.8	103,801.6		0.0	11.6	1,299.2	3,896.1	436,363.2	82.1	9,195.2	4,916.6	550,859.2
15 GURVANBULAG	90	20.0	1,800.0		0.0		0.0		0.0	19.7	1,773.0	39.7	3,573.0
16 ULAANTOLGOI	310	10.3	3,193.0		0.0		0.0		0.0		0.0	10.3	3,193.0
17 FM COMPLEX		21.5	0.0		0.0		0.0		0.0		0.0	21.5	0.0
18 FM COMPLEX			0.0	3.8	0.0		0.0		0.0		0.0	3.8	0.0
19 TUNGALAG TAMIR	147		0.0		0.0		0.0	203.8	29,958.6		0.0	203.8	29,958.6
20 URIN SALBAR	18		0.0		0.0		0.0	5.0	90.0		0.0	5.0	90.0
21 ANTLAG	2		0.0		0.0		0.0	202.5	405.0	184.4	368.8	386.9	773.8
22 UGTAAR	340		0.0		0.0		0.0	12.3	4,182.0		0.0	12.3	4,182.0
23 BUREG KHANGAI			0.0		0.0		0.0	9.2	0.0		0.0	9.2	0.0
24 TAVAN BULAG	128		0.0		0.0		0.0	16.1	2,060.8		0.0	16.1	2,060.8
25 KHOLBOONI SALBAR	18		0.0		0.0		0.0	4.7	84.6		0.0	4.7	84.6
26 DAGSHIN			0.0		0.0		0.0		0.0	61.6	0.0	61.6	0.0

Farms	Distance from Mill to Farm (km)	Amount Collected (ton)											
		1989	M <sub>89</sub>	1990	M <sub>90</sub>	1991	M <sub>91</sub>	1992	M <sub>92</sub>	1993	M <sub>93</sub>	1989~1993 Total	M <sub>t</sub>
27 SARNAI			0.0		0.0		0.0		0.0	5.9	0.0	5.9	0.0
28 BAYANBULAG			0.0		0.0		0.0		0.0	27.3	0.0	27.3	0.0
29 HAIMANGOMTAR	173		0.0		0.0		0.0		0.0	23.1	3,996.3	23.1	3,996.3
30 SARNAI	1		0.0		0.0		0.0		0.0	16.0	16.0	16.0	16.0
31 GURVANTAMIR			0.0		0.0		0.0		0.0	124.6	0.0	124.6	0.0
32 BAYANKHANGAI			0.0		0.0		0.0		0.0	4.3	0.0	4.3	0.0
33 ZALUUCHUUD	310		0.0		0.0		0.0		0.0	432.9	134,199.0	432.9	134,199.0
34 KHANBAYAN	25		0.0		0.0		0.0		0.0	116.6	2,915.0	116.6	2,915.0
35 AGRO	45		0.0		0.0		0.0		0.0	5.5	247.5	5.5	247.5
36 OFFICE	18		0.0		0.0		0.0		0.0	7.8	140.4	7.8	140.4
37 SONINKHANGAI			0.0		0.0		0.0		0.0	6.0	0.0	6.0	0.0
38 ELEVATOR			0.0		0.0		0.0		0.0	754.6	0.0	754.6	0.0
39 FM COMPLEX			0.0		0.0		0.0		0.0	459.2	0.0	459.2	0.0
40 TERKHINGOL			0.0		0.0		0.0		0.0	44.0	0.0	44.0	0.0
41 ERDENE SANT			0.0		0.0		0.0		0.0	12.3	0.0	12.3	0.0
42 SON			0.0		0.0		0.0		0.0	5.9	0.0	5.9	0.0
Total		34,278.5	2,730,467.1	30,366.7	2,346,895.9	23,506.3	1,060,633.6	16,498.4	1,173,417.2	19,025.3	1,172,527.7	123,675.2	8,483,941.5
Accumulated average distance (km) (M <sub>x</sub> ) / Total Weight		79.7		77.3		45.1		71.1		66.9		69.5	

Table-2 Amount of Wheat Collected from Each Farm (Undrkhán)

Farms	Distance from Mill to Farm (km)	Amount Collected (ton)												
		1989	M <sub>89</sub>	1990	M <sub>90</sub>	1991	M <sub>91</sub>	1992	M <sub>92</sub>	1993	M <sub>93</sub>	1989~1993 Total	Mt	
1 CHANDAGA	53	1,302.2	69,016.6	566.7	30,035.1	3,360.3	178,095.9	435.8	23,097.4		0.0	5,665.0	300,245.0	
2 ONDORKHAAN	8	3,726.0	29,808.0	3,825.8	30,606.4	3,835.7	30,685.6	0.0	0.0	230.4	1,843.2	11,617.9	92,943.2	
3 KHURKH	118	4,216.0	497,488.0	191.3	22,573.4	500.0	59,000.0	0.0	0.0	387.1	45,677.8	5,294.4	624,739.2	
4 BUTEELCHI NEGDEL	173	2,531.1	437,880.3	2,325.7	402,346.1	1,399.9	242,182.7	0.0	0.0	0.0	0.0	6,256.7	1,082,409.1	
5 SOTSIALIZMINZAM	105	1,466.8	154,014.0	1,317.3	138,316.5		0.0	660.0	69,300.0	416.4	43,722.0	3,860.5	405,352.5	
6 KHOGJIL	100	415.6	41,560.0		0.0		0.0		0.0		0.0	415.6	41,560.0	
7 SHINE ORHOLT	129	342.1	44,130.9		0.0	709.0	91,461.0	69.5	8,955.5		0.0	1,120.6	144,557.4	
8 KHAMTIN KHUCHI	202	1,359.1	274,538.2	999.4	201,678.8	-	0.0	241.1	48,702.2	358.7	72,457.4	2,958.3	597,575.6	
9 BAYAN ADRAGA ULAAN OD	172	955.9	164,414.8		0.0		0.0		0.0	999.3	171,879.6	1,955.2	336,294.4	
10 HODOLMOR	249	1,205.7	300,219.3	486.9	123,728.1		0.0	780.1	194,244.9	704.4	175,395.6	3,187.1	793,587.9	
11 TUMENTSOGT	212	2,595.4	550,224.8	1,383.0	293,196.0	6,597.2	1,398,606.4	1,544.1	327,349.2	3,044.2	645,370.4	15,163.9	3,214,746.8	
12 ALTANTURUU	118		0.0		0.0		0.0	31.2	3,681.6	370.0	43,660.0	401.2	47,341.6	
13 URGATS	118		0.0		0.0		0.0		0.0	561.5	66,257.0	561.5	66,257.0	
14 DAVSHIL	118		0.0		0.0		0.0	9.3	1,097.4	686.9	81,054.2	696.2	82,151.6	
15 KHURKH	118		0.0		0.0		0.0		0.0	1,403.0	165,554.0	1,403.0	165,554.0	
16 TAKHILGAT	67		0.0		0.0		0.0		0.0	302.2	20,247.4	302.2	20,247.4	
17 DULAAN	17		0.0		0.0		0.0	344.4	5,854.8	387.8	6,592.6	732.2	12,447.4	
18 BURENTSOGT	112		0.0		0.0		0.0	395.1	44,251.2	1,008.9	112,996.8	1,404.0	157,248.0	
19 SALKHIT	280		0.0		0.0	4,532.7	1,269,156.0	1,555.7	435,596.0	1,576.3	441,364.0	7,664.7	2,146,116.0	
20 ALTAL	72		0.0		0.0		0.0		0.0	12.2	878.4	12.2	878.4	
21 TSANT	17		0.0		0.0		0.0		0.0	11.5	195.5	11.5	195.5	
22 OLZIIT	53		0.0		0.0		0.0	312.0	16,536.0		0.0	312.0	16,536.0	
23 ORGIN	129		0.0		0.0		0.0	520.9	67,196.1		0.0	520.9	67,196.1	
24 URGATS	53		0.0		0.0		0.0	135.8	7,197.4		0.0	135.8	7,197.4	
25 URAN	53		0.0		0.0		0.0	106.8	5,660.4		0.0	106.8	5,660.4	
26	53		0.0		0.0		0.0	148.9	7,891.7		0.0	148.9	7,891.7	

Farms	Distance from Mill to Farm (km)	Amount Collected (ton)											1989~1993 Total	Mt
		1989	M <sub>89</sub>	1990	M <sub>90</sub>	1991	M <sub>91</sub>	1992	M <sub>92</sub>	1993	M <sub>93</sub>	1989~1993 Total		
29 KHOTOL	680		0.0		0.0				0.0	3,356.8	2,282,624.0	3,356.8	2,282,624.0	
30 BAYAN TEREM	110		0.0		0.0	516.7	56,837.0		0.0		0.0	516.7	56,837.0	
Total		20,115.9	2,563,294.9	11,106.1	1,242,680.4	21,451.5	3,326,024.6	7,324.3	1,270,317.8	16,534.8	4,614,445.9	76,532.6	13,016,763.6	
Accumulated average (km) (Mx) / Total Weight		127.4		111.9		155.0		173.4		279.1		170.1		

Table-3 Amount of Wheat Collected from Each Farm (Murun)

Farms	Distance from Mill to Farm (km)	Amount Collected (ton)											1989~1993 Total	Mt
		1989	M <sub>89</sub>	1990	M <sub>90</sub>	1991	M <sub>91</sub>	1992	M <sub>92</sub>	1993	M <sub>93</sub>	1989~1993 Total		
1 TARIALAN	180	6,855.3	1,233,954.0	7814.0	1,406,520.0	4,149.0	746,820.0	3,866.8	663,984.0	5,681.9	1,022,742.0	28,367.2	5,074,020.0	
2 EG-UUR	240		0.0	61.4	14,736.0	0.0	0.0	532.0	127,680.0	389.3	93,432.0	982.1	235,848.0	
3 RASHAANT	170	513.5	87,295.0	200.0	34,000.0	2,914.0	495,380.0	768.5	130,645.0	232.5	39,525.0	4,628.5	785,8458.0	
4 IKH-UUL	160	672.9	107,664.0	869.8	139,168.0	465.0	74,400.0		0.0	192.9	30,864.0	2,200.6	352,096.0	
5 ARDIN ZORIG								100.0		171.0		271.0		
6 MAGSARJAV	268	2,527.6	677,396.8	2,552.8	684,150.4	4,565.0	1,223,420.0	1,749.6	468,892.8	2,287.3	612,996.4	13,682.3	3,666,856.4	
7 TESHIG		412.6	0.0	31.5	0.0	20.0	0.0	1,165.3	0.0	352.4	0.0	1,981.8	0.0	
8 HOTOL								2,035.3	0.0	580.0	0.0	2,615.3	0.0	
9 OTHERS		2,927.9	0.0	1,502.4	0.0	841.8	0.0	3,518.3	0.0	3,000.0	0.0	11,790.4	0.0	
Total		13,909.8	2,106,309.8	13,031.9	1,594,424.0	12,954.8	2,540,020.0	13,735.8	1,392,201.8	12,887.3	1,799,559.4	66,519.6	10,115,665.4	
Accumulated average Distance (km) (Mx) / Total Weight		199.3		138.7		210.0		201.1		204.8		202.9		

Table-4 Amount of Wheat Collected from Each Farm (Choybalsan)

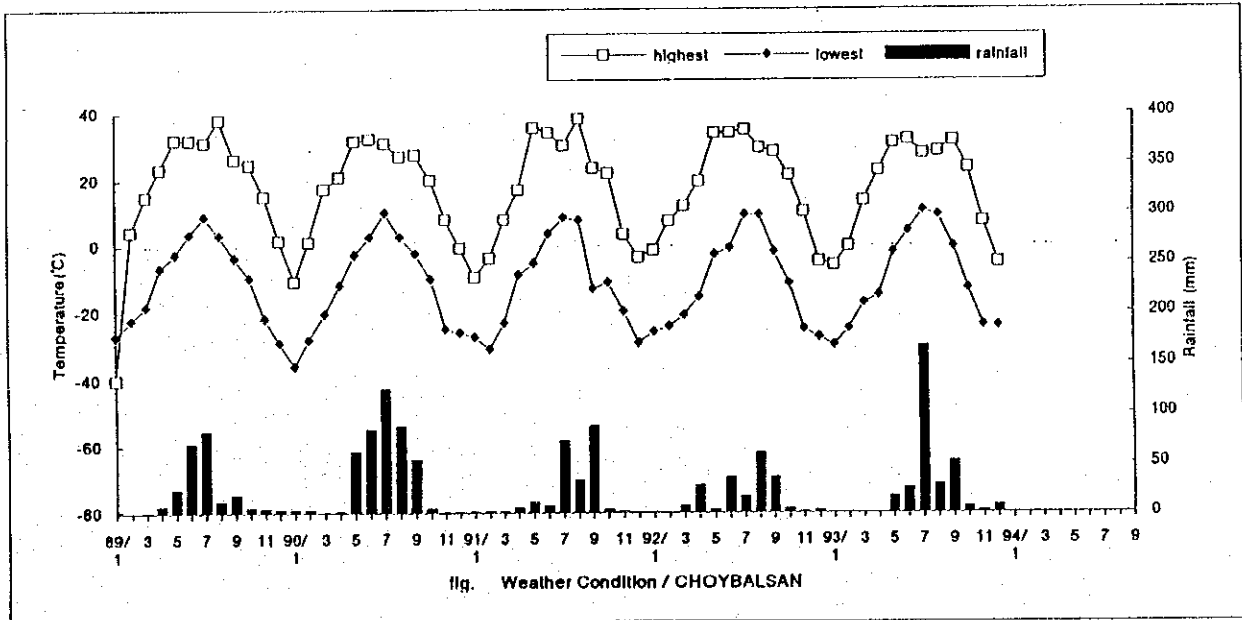
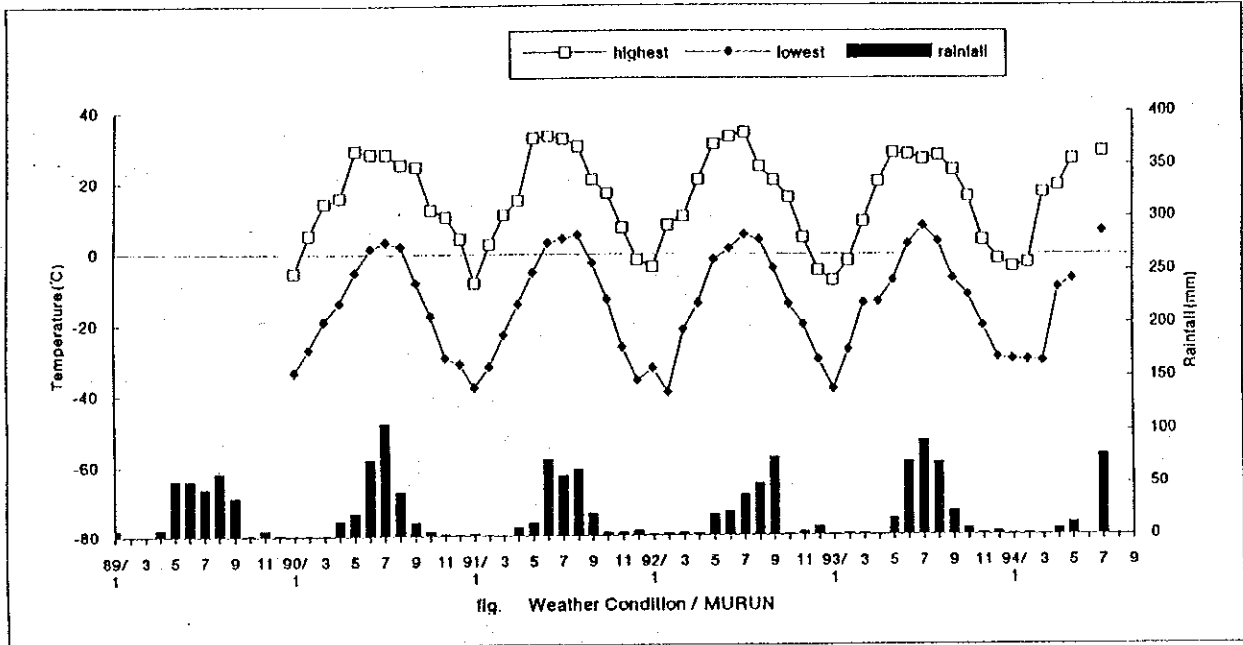
Farms	Distance from Mill to Farm (km)	Amount Collected (ton)												
		1989	M <sub>89</sub>	1990	M <sub>90</sub>	1991	M <sub>91</sub>	1992	M <sub>92</sub>	1993	M <sub>93</sub>	1989~1993 Total	M <sub>t</sub>	
1 KHALKHOL	356	22,102.1	7,868,347.6	5,760.2	2,050,631.2	13,921.1	4,955,911.6	4,231.4	1,506,378.4	1,324.7	471,593.2	47,339.5	16,852,862.0	
2 HODOLMOR	215	779.1	167,506.5	28.0	6,020.0	451.9	97,158.5	190.4	40,936.0	317.6	68,284.0	1,767.0	379,905.0	
3 HERLEN	112	2,635.7	295,198.4	818.8	91,705.6	132.8	14,873.6	539.4	60,412.8	655.0	73,360.0	4,781.7	535,550.4	
4 ONON	256	509.1	130,329.6	10.5	2,688.0		0.0		0.0	481.3	123,212.8	1,000.9	256,230.4	
5 SHINE ZAM	168	935.0	157,080.0	222.4	37,363.2		0.0	193.6	32,524.8	308.0	51,744.0	1,659.0	278,712.0	
6 GALUIT NEGDEL	168	1,101.2	185,001.6	576.0	98,768.0	561.2	94,281.6	314.7	52,869.6	337.1	56,632.8	2,890.2	485,553.6	
7 TUG NEGDEL	120	1,258.2	150,984.0	767.6	92,112.0	1,013.9	121,668.0	239.5	28,632.0	175.9	21,108.0	3,454.2	414,504.0	
8 ULZ NEGDEL	243	441.4	107,260.2	508.2	123,492.6	172.6	41,941.8	113.5	27,580.5	271.2	65,901.6	1,506.9	366,176.7	
9 INVESTIGATE DEP.	350	1,329.2	465,220.0	41.5	14,525.0	746.8	261,380.0	597.3	209,055.0	150.8	52,780.0	2,865.6	1,002,960.0	
10 ZAGIL	138	359.3	49,583.4	513.9	70,918.2	191.8	26,468.4	32.0	4,416.0	24.7	3,408.6	1,121.7	154,794.6	
11 BAYANDUN	196	341.3	66,894.8	51.0	9,996.0	252.2	49,431.2	49.3	9,662.8	89.3	17,502.8	783.1	153,487.6	
12 HOJIL	57	171.8	9,792.6	421.1	24,002.7	147.0	8,379.0		0.0	61.3	3,494.1	801.2	45,668.4	
13 MEAT COMPLEX	45	515.6	23,202.0	286.9	12,910.5		0.0	24.6	1,107.0		0.0	827.1	37,219.5	
14 EREENTSAV	330	421.4	139,062.0	637.2	210,276.0		0.0	9.8	3,234.0	94.6	31,218.0	1,163.0	383,790.0	
15 YALALT	330	77.8	25,674.0	374.6	123,618.0	735.0	242,550.0	380.0	125,400.0	319.7	105,501.0	1,887.1	622,743.0	
16 TUMENTSOGT	246		0.0	81.5	20,049.0	93.1	22,902.6	55.0	13,530.0	24.8	6,100.8	254.4	62,582.4	
17 MONGOL BARILGA KOMPANI	216		0.0		0.0		0.0	5.6	1,209.6		0.0	5.6	1,209.6	
18 BAYAN UUL	256		0.0		0.0		0.0	249.1	63,769.6	481.3	123,212.8	730.4	186,982.4	
19 SALKHIT	216		0.0		0.0		0.0	163.6	35,337.6		0.0	163.6	35,337.6	
20 OTHERS	112		0.0		0.0	70.8	7,929.6	38.0	4,256.0	107.6	12,051.2	216.4	24,236.8	
21 ARICULTURAL SCHOOL	45		0.0		0.0	20.0	900.0		0.0		0.0	20.0	900.0	
22 BUYANKHORSHOO	50		0.0		0.0	90.8	4,540.0		0.0		0.0	90.8	4,540.0	
Total		32,978.2	9,841,136.7	11,099.4	2,997,076.0	18,610.0	5,950,315.9	7,425.9	2,220,311.7	5,223.9	1,287,105.7	75,328.4	22,285,946.0	

Farms	Distance from Mill to Farm (km)	Amount Collected (ton)										
		1989	$M_{89}$	1990	$M_{90}$	1991	$M_{91}$	1992	$M_{92}$	1993	$M_{93}$	1989~1993 Total
Accumulated Average Distance (km) ( $M_{93}$ ) / Total Weight	298.4	269.1	319.7	298.9	246.4	285.8						





2) Temperature, Precipitation at Each Site  
Weather Condition



(3) Result of Coal Analysis

Analytical report of COAL



CHUGAI TECHNOS Co., Ltd.

CHUGAI TECNOS Co., Ltd.  
9-12, Yokogawa-shinmachi, Nishi-ku,  
Hiroshima, JAPAN

Certificate No. 52932

Date: 22 December 1994


Messers. OVERSEAS MERCHANDISE INSPECTION Co., Ltd.

Subject: analytical report of COAL

Analytical results		※	※
(Proximate analysis)		COAL A	COAL B
Ash content	(Dry basis)	: 12.69 %	: 7.68 %
Moisture content	(Dry basis)	: 4.81 %	: 28.54 %
Volatile matter content	(Arrival basis)	: 41.49 %	: 43.37 %
Calorific value	(Dry basis)	: 6470 Cal/g	: 5830 Cal/g
(Ultimate analysis)			
Hydrogen	(Dry basis)	: 5.1 %	: 4.4 %
Sulfur	(Dry basis)	: 0.76 %	: 2.10 %

※ COAL A : Harhorin Site  
COAL B : Undrkhan Site

Reported by :

  
O. SAKODA

(chief of analytical section)

CHUGAI TECHNOS Co., Ltd.  
9-12, Yokogawa-shinmachi, Nishi-ku,  
Hiroshima, JAPAN

Certificate No. 53326

Date: 19 January 1995

Messers. OVERSEAS MERCHANDISE INSPECTION Co., Ltd.

Subject: analytical report of COAL

Analytical results

(Proximate analysis)

		※	COAL
Ash content	(Dry basis)	:	27.36 %
Moisture content	(Dry basis)	:	11.37 %
Volatile matter content	(Arrival basis)	:	36.07 %
Calorific value	(Dry basis)	:	5240 Cal/g

(Ultimate analysis)

Hydrogen	(Dry basis)	:	4.3 %
Sulfur	(Dry basis)	:	1.22 %

※ Slack(dust coal) using for heating station near Harhorin site

Reported by : O. Sakoda  
O. SAKODA

(chief of analytical section)









JICA