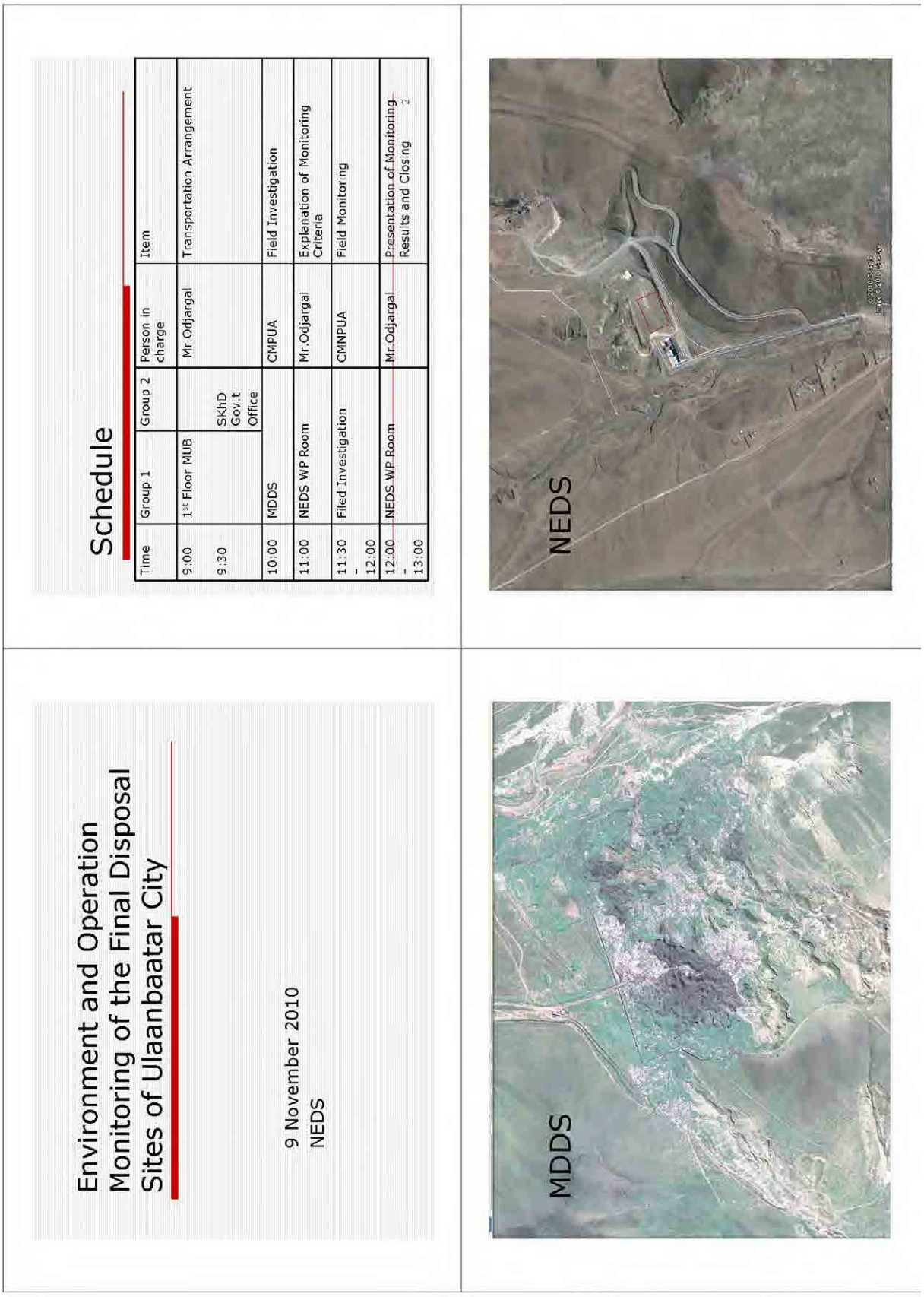
C.4 処分場評価会

C.4.1 2010年11月9日



d. Monitoring NEDS Landfill Operation

- Monitoring Guideline was approved by EPWMD on 20th Oct 2010
- Monitoring will be conducted regularly on Oct and Jun. twice a year.
- First Monitoring was planned to be conducted on 27th October 2010 but due to CMPUA strike, it will be organized today on 9th November 2010.

Member of Monitoring Team

Name	Organization
Ts.Munkhbat	Department, Ministry of Nature, Environment and Tourism
B.Buyanbat	Governor's Office of Ulaanbaatar City
M.Badamkhand	City Specialized Inspection Agency
B.Batdorj	Officer, PSD, SKhD Government
Sharavdorj	Head, Mongolian Ecologists Union
B.Myagmardorj	Officer on Environment Pollution, World Vision
Munkhtsetseg	Head, Tolgoit NGO
M.Tserendulam	Governor, Khoroo No3, SKhD
B.Ganbaatar	Governor, Khoroo No4, SKhD
Z.Narantsatsralt	Principal, School No 65, SKhD
B.Oyuntsetseg	Principal, Kindergarten No 80, SKhD
D.Yavuukhuu	Resident, Khoroo No3, SKhD
N.Dolgor	Resident, Khoroo No4, SKhD

9

Check Item

- **Category A: Environment effect and operational conditions**
- **Category B: Function of facilities**

10

How to evaluate (1) Environmental Conditions

No	Items	Choices	Assessment Guideline
A1	Fire & Smoke	Acceptable	there is only spot fire and smoke
		Medium	
		Terrible	Most of landfill surface is covered with smoke due to fire
A2	Offensive odor	Acceptable	
		Medium	
		Terrible	
A3	Leachate	Acceptable	
		Medium	
		Terrible	
A4	Waste scattering	Acceptable	A small amount of waste is scattered at the entrance area, on the access road, and in the surrounding part of the disposal site
		Medium	A lot of waste is scattered at the entrance area and on the access road, but it is still possible for vehicles to reach to the land fill area
		Terrible	There are too much volume of waste on the access road for vehicles to reach to the landfill area
A5	Animals (dogs, birds, etc)	Acceptable	There are few animals.
		Medium	
		Terrible	There is a lot of animals
A6	Vermin (flies, worms, etc)	Acceptable	There are few vermins
		Medium	
		Terrible	There is a lot of vermins
A7	View	Acceptable	Generally clean as a landfill site
		Medium	
		Terrible	Very dirty in spite of landfill site

How to evaluate (2) Operational Conditions

No	Items	Choices	Assessment Guideline
A8	Whole operation	Well controlled or operated	Machinery movement is well controlled by the controller
		Medium	
		Terrible	No control at all
A9	Working situations of waste pickers	Well controlled or operated	Safely working
		Medium	
		Terrible	Dangerous working condition
A10	collection vehicles	Well controlled or operated	Condition of collection vehicles are good
		Medium	
		Terrible	Smoke, noise and rough operation are observed
A11	Bulldozer and other landfill operation heavy vehicles	Well controlled or operated	Wastes are leveled by the bulldozer
		Medium	
		Terrible	There is a lot of unloaded wastes without leveling
A12	Location of unloading waste	Well controlled or operated	Collection vehicles are unloading wastes at designated place
		Medium	
		Terrible	Collection vehicles are disposing wastes as they like
		Medium	
		Terrible	

How to evaluate (3) Function of facilities

No	Items	Choices	Assessment Guideline
B1	Access road	Functioning	Smooth surface and well maintained
		Medium	
		Not functioning	Many holes and no maintenance
B2	Weighbridge (measurement facilities and computer system)	Functioning	Weighing data is recorded everyday
		Medium	
		Not functioning	Frequent breakdown
B3	On-site road	Functioning	Smooth surface and well maintained
		Medium	
		Not functioning	Many holes and no maintenance
B4	Embankment Dam	Functioning	Front surface of embankment dam is shaped and covered with soil
		Medium	
		Not functioning	Slope is not shaped and wastes are exposed
B5	Gas removal facilities	Functioning	Gas removal pipe is extended according to the landfilling
		Medium	
		Not functioning	Gas removal pipe is varied with wastes and not functioning
B6	Security facilities Fence (fixed type), Gate, Bank	Functioning	There is no damage and well maintained
		Medium	
		Not functioning	Fence is damaged and no replacement
B7	Leachate treatment facilities	Functioning	Well maintained
		Medium	
		Not functioning	No maintenance
B8	Drainage systems	Functioning	Drainage is provided for heavy rain
		Medium	
		Not functioning	No drainage is provided

Environmental Effect

No	Items	Acceptable	Medium	Terrible	Score	Note
A1	Fire & Smoke	3	2	1		
A2	Offensive odor	3	2	1		
A3	Wastewater	3	2	1		
A4	Waste scattering	3	2	1		
A5	Animals (dogs, birds, etc)	3	2	1		
A6	Vermin (flies, worms, etc)	3	2	1		
A7	View	3	2	1		

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Operation Condition

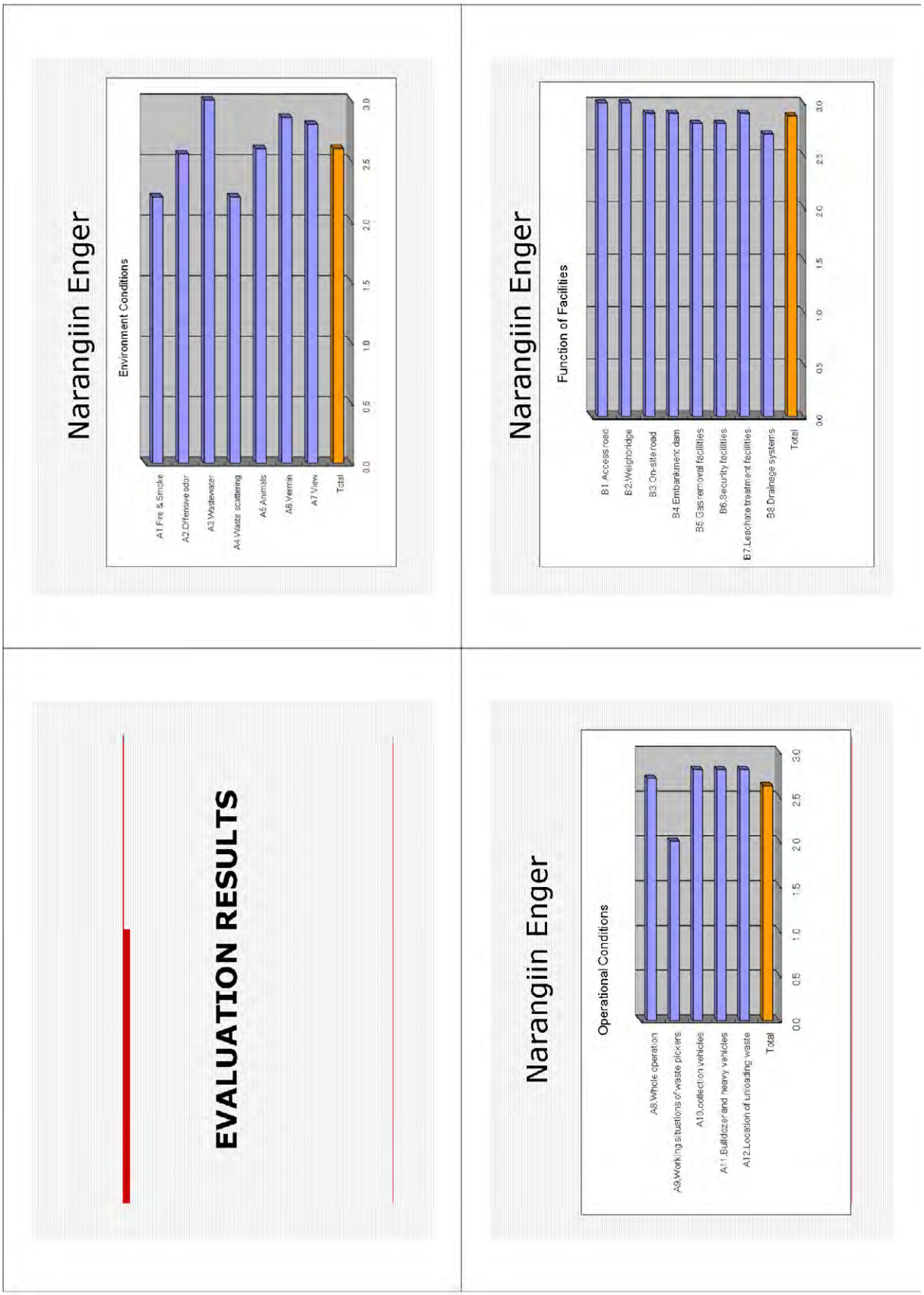
No	Items	Well controlled or operated	Medium	Terrible	Score	Note
A8	Whole operation	3	2	1		
A9	Working situations of waste pickers	3	2	1		
A10	collection vehicles	3	2	1		
A11	Bulldozer and other landfill operation heavy vehicles	3	2	1		
A12	Location of unloading waste	3	2	1		
Total of Category A						

15

Function of Facilities

No	Items	Functioning	Medium	Not-functioning	Score	Note
B1	Access road	3	2	1		
B2	Weighbridge (measurement facilities and computer system)	3	2	1		
B3	On-site road	3	2	1		
B4	Embankment dam	3	2	1		
B5	Gas removal facilities	3	2	1		
B6	Security facilities Fence (fixed type), Gate, Bank	3	2	1		
B7	Leachate treatment facilities	3	2	1		
B8	Drainage systems	3	2	1		
Total of Category B						

16


Narangiin Enger
Environment Conditions
A1 Fire & Smoke
A2 Offensive odor
A3 Wastewater
A4 Waste scattering
A5 Animals
A6 Vermin
A7 View
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Narangiin Enger
Function of Facilities
B1 Access road
B2 Weighbridge
B3 On-site road
B4 Embankment dam
B5 Gas removal facilities
B6 Security facilities
B7 Leachate treatment facilities
B8 Drainage systems
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0
EVALUATION RESULTS
Narangiin Enger
Operational Conditions
A8 Whole operation
A9 Working situations of waste pickers
A10 collection vehicles
A11 Bulldozer and heavy vehicles
A12 Location of unloading waste
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0

C.4.2 2011年7月27日

Environment and Operation Monitoring of the Final Disposal Sites of Ulaanbaatar City

Second Monitoring
27 July 2011
MDDS & MDDS

Guideline to inspect NEDS & MDDS operations approved by EPWMD on October 20, 2010

1. Inspection Purpose
2. Committee Members
3. Inspection Period
   - twice a year, June and October
4. Inspection Site
5. Inspection Item
6. Reporting
   - Report shall be prepared and submitted to GM for follow up measures, and publicized website www.ubservice.mn and other mass media tools
7. First monitoring was conducted on November 10, 2010

Members of Monitoring Team

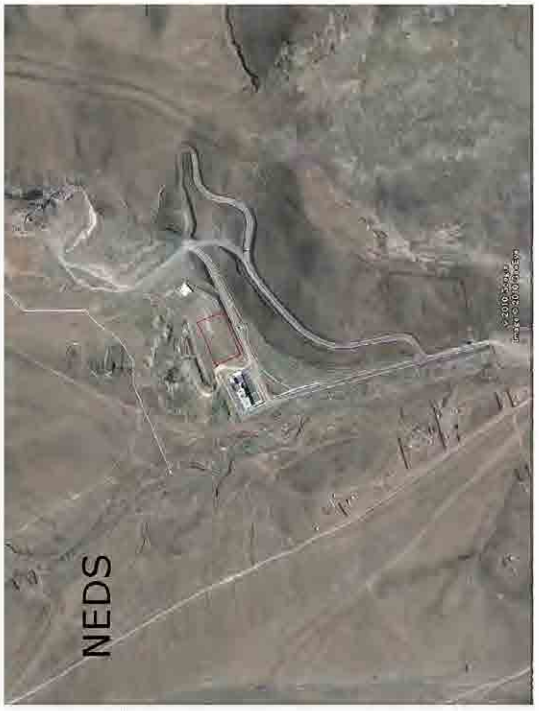
	Name	1st Monitoring	Organization
Group 1	1. O.Odjargal	1. O.Odjargal	EPWMD Mayor's Office
	2. Ts.Munkhbat	2. Ts.Munkhbat	Department, MONET
	3. B.Buyanbat	3. B.Buyanbat	Governor's Office of Ulaanbaatar City
	4. M.Badamkhand	4. M.Badamkhand	City Specialized Inspection Agency
	5. Sharavdorj		Head, Mongolian Ecologists Union
Group 2	5. B.Batdorj	5. B.Batdorj	Officer, PSD, SKhD Government
	6. B.Myagmardorj		Officer on Environment Pollution, World Vision
	7. Munkhtsetseg	7. D.Ganbaatar	Head, Tolgoit NGO
	8. M.Tserendulam	8. S.Khashgerel	Governor, Khoroo No3, SKhD
	9. B.Ganbaatar	9. E.Nansalmaa	Governor, Khoroo No4, SKhD
	10.Z.Narantsatsralt		Principal, School No 65, SKhD
	11.B.Oyuntsetseg	11.S.Oyungerel	Principal, Kindergarten No 80, SKhD
	12.D.Yavuukhuu		Resident, Khoroo No3, SKhD
	13.N.Dolgor	13.N.Dolgor	Resident, Khoroo No4, SKhD

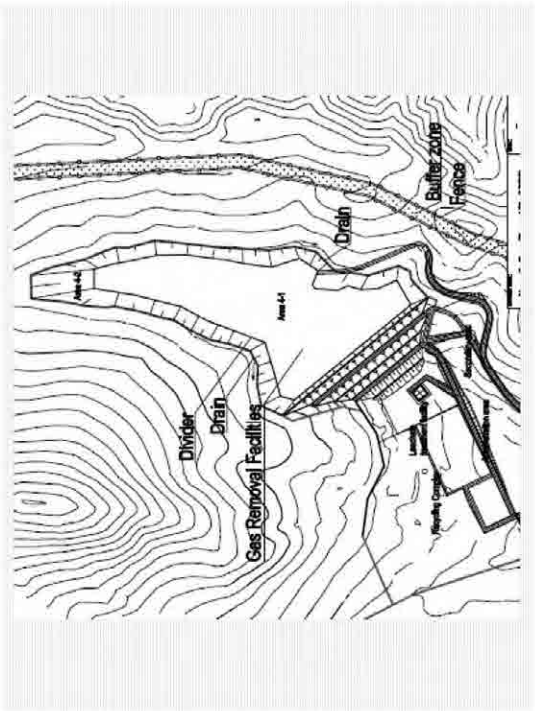
3

Schedule

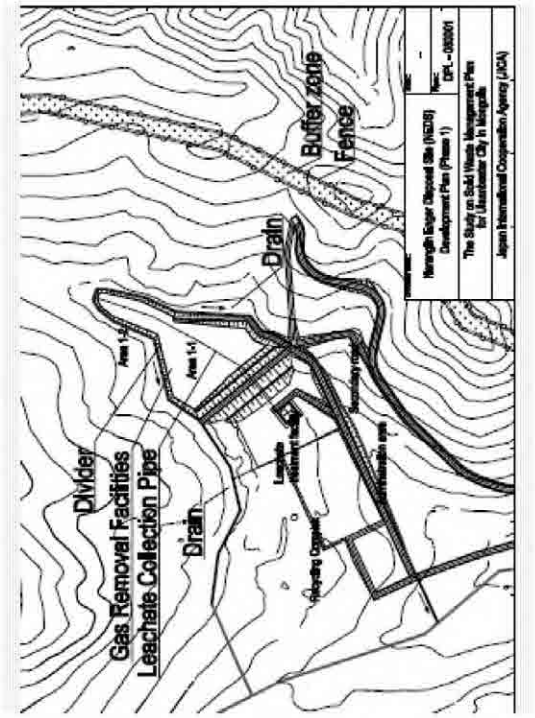
Time	Group 1	Group 2	Person in charge	Item
10:00	1st Floor MUB		Mr.Odjargal	Transportation Arrangement
10:00		SKhD Governor's Office	JET	
10:30	MDDS		CMPUA	Field Investigation
11:30	NEDS Director Room		Mr.Odjargal	Explanation of Monitoring Criteria
12:00 - 12:30	Filed Investigation		CMPUA	Field Monitoring
12:30 - 13:00	NEDS Director Room		Mr.Odjargal	Presentation of Monitoring Results and Closing

4


NEDS


Buffer zone
Fence
Drain
Divider
Drain
Gas Removal Facilities


MDDS


Buffer zone
Fence
Drain
Divider
Gas Removal Facilities
Leachate Collection Pipe
Drain

Reference: NEDS Gas Monitoring Data

(Regular monitoring conducted by CMPUA staff at NEDS)

Check Item

- **Category A: Environment effect and operational conditions**
- **Category B: Function of facilities**

12

Reference: NEDS Water Monitoring Data

(Regular monitoring conducted by CMPUA staff at NEDS)

How to evaluate (1) Environmental Conditions

No	Items	Choices	Assessment Guideline
A1	Fire & Smoke	Acceptable	there is only spot fire and smoke
		Medium	
		Terrible	Most of landfill surface is covered with smoke due to fire
A2	Offensive odor	Acceptable	
		Medium	
		Terrible	
A3	Leachate	Acceptable	
		Medium	
		Terrible	
A4	Waste scattering	Acceptable	A small amount of waste is scattered at the entrance area, on the access road, and in the surrounding part of the disposal site
		Medium	A lot of waste is scattered at the entrance area and on the access road, but it is still possible for vehicles to reach to the land fill area
		Terrible	There are too much volume of waste on the access road for vehicles to reach to the landfill area
A5	Animals (dogs, birds, etc)	Acceptable	There are few animals.
		Medium	
		Terrible	There is a lot of animals
A6	Vermin (flies, worms, etc)	Acceptable	There are few vermins
		Medium	
		Terrible	There is a lot of vermins
A7	View	Acceptable	Generally clean as a landfill site
		Medium	
		Terrible	Very dirty in spite of landfill site

How to evaluate (2) Operational Conditions

No	Items	Choices	Assessment Guideline
A8	Whole operation	Well controlled or operated	Machinery movement is well controlled by the controller
		Medium	
		Terrible	No control at all
A9	Working situations of waste pickers	Well controlled or operated	Safely working
		Medium	
		Terrible	Dangerous working condition
A10	collection vehicles	Well controlled or operated	Condition of collection vehicles are good
		Medium	
		Terrible	Smoke, noise and rough operation are observed
A11	Bulldozer and other landfill operation heavy vehicles	Well controlled or operated	Wastes are leveled by the bulldozer
		Medium	
		Terrible	There is a lot of unloaded wastes without leveling
A12	Location of unloading waste	Well controlled or operated	Collection vehicles are unloading wastes at designated place
		Medium	
		Terrible	Collection vehicles are disposing wastes as they like
		Medium	
		Terrible	

How to evaluate (3) Function of facilities

No	Items	Choices	Assessment Guideline
B1	Access road	Functioning	Smooth surface and well maintained
		Medium	
		Not functioning	Many holes and no maintenance
B2	Weighbridge (measurement facilities and computer system)	Functioning	Weighing data is recorded everyday
		Medium	
		Not functioning	Frequent breakdown
B3	On-site road	Functioning	Smooth surface and well maintained
		Medium	
		Not functioning	Many holes and no maintenance
B4	Embankment Dam	Functioning	Front surface of embankment dam is shaped and covered with soil
		Medium	
		Not functioning	Slope is not shaped and wastes are exposed
B5	Gas removal facilities	Functioning	Gas removal pipe is extended according to the landfilling
		Medium	
		Not functioning	Gas removal pipe is varied with wastes and not functioning
B6	Security facilities Fence (fixed type), Gate, Bank	Functioning	There is no damage and well maintained
		Medium	
		Not functioning	Fence is damaged and no replacement
B7	Leachate treatment facilities	Functioning	Well maintained
		Medium	
		Not functioning	No maintenance
B8	Drainage systems	Functioning	Drainage is provided for heavy rain
		Medium	
		Not functioning	No drainage is provided

Environmental Effect

No	Items	Acceptable	Medium	Terrible	Score	Note
A1	Fire & Smoke	3	2	1		
A2	Offensive odor	3	2	1		
A3	Wastewater	3	2	1		
A4	Waste scattering	3	2	1		
A5	Animals (dogs, birds, etc)	3	2	1		
A6	Vermin (flies, worms, etc)	3	2	1		
A7	View	3	2	1		

16

Operation Condition

No	Items	Well controlled or operated	Medium	Terrible	Score	Note
A8	Whole operation	3	2	1		
A9	Working situations of waste pickers	3	2	1		
A10	collection vehicles	3	2	1		
A11	Bulldozer and other landfill operation heavy vehicles	3	2	1		
A12	Location of unloading waste	3	2	1		
Total of Category A						

17

Function of Facilities

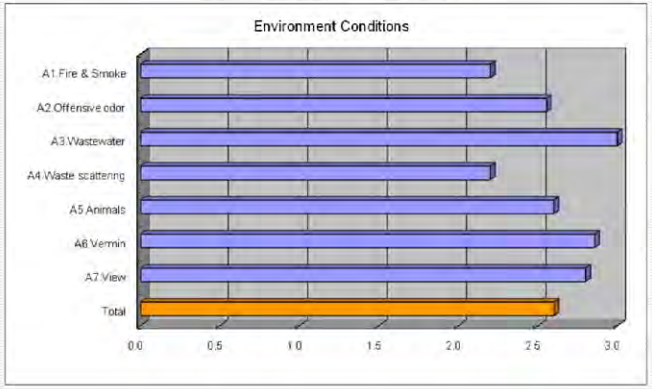
No	Items	Functioning	Medium	Not-functioning	Score	Note
B1	Access road	3	2	1		
B2	Weighbridge (measurement facilities and computer system)	3	2	1		
B3	On-site road	3	2	1		
B4	Embankment dam	3	2	1		
B5	Gas removal facilities	3	2	1		
B6	Security facilities Fence (fixed type), Gate, Bank	3	2	1		
B7	Leachate treatment facilities	3	2	1		
B8	Drainage systems	3	2	1		
Total of Category B						

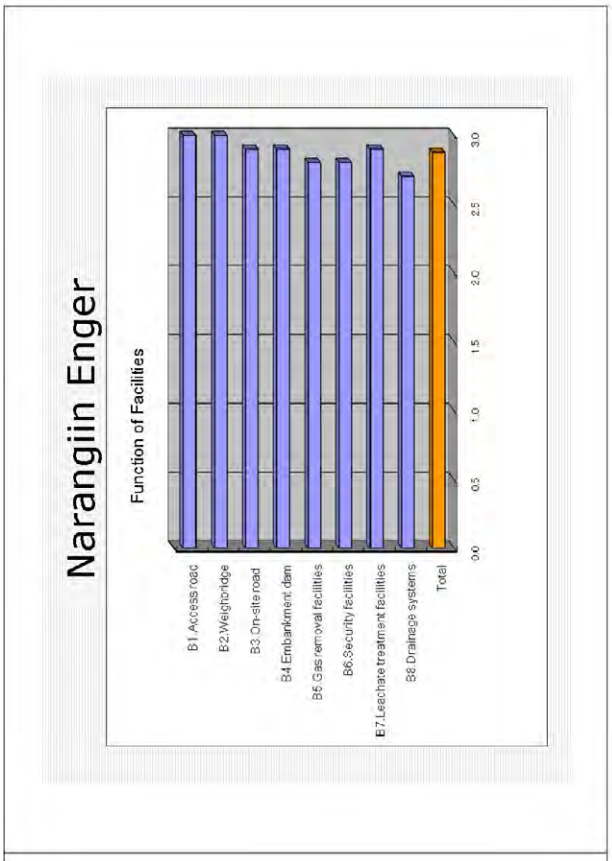
18

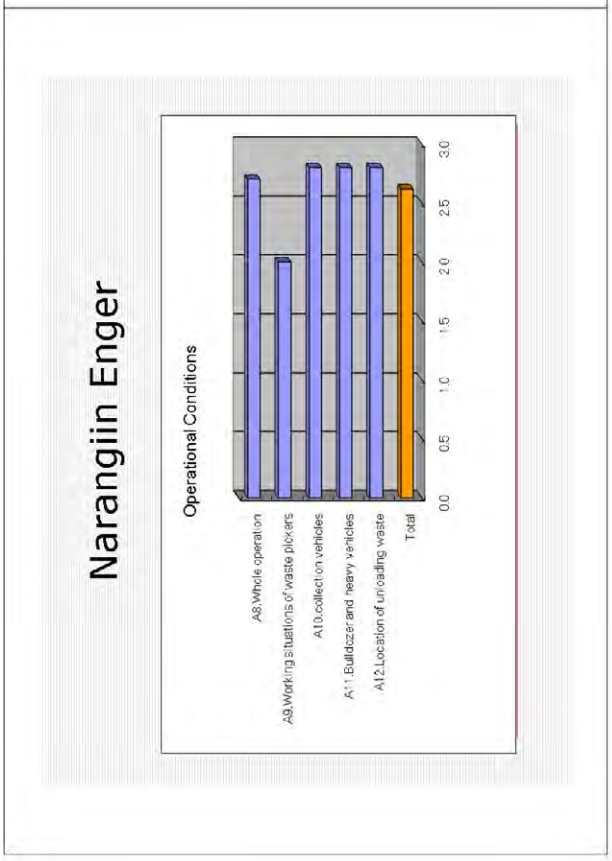
EVALUATION RESULTS

1st Monitoring on
November 10, 2010

Narangiin Enger




Narangiin Enger
Function of Facilities
B1.Access road
B2.Weighbridge
B3.On-site road
B4.Embankment dam
B5.Gas removal facilities
B6.Security facilities
B7.Leachate treatment facilities
B8.Drainage systems
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0


Narangiin Enger
Operational Conditions
A8.Whole operation
A9.Working situations of waste pickers
A10.collection vehicles
A11.Bulldozer and heavy vehicles
A12.Location of unloading waste
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0

C.4.3 2012年5月14日

Environment and Operation Monitoring of the Final Disposal Sites of Ulaanbaatar City

Second Monitoring
14 May 2012
NEDS

Guideline to inspect NEDS & MDDS operations approved by EPWMD on October 20, 2010

1. Inspection Purpose
2. Committee Members
3. Inspection Period
   - twice a year, June and October
4. Inspection Site
5. Inspection Item
6. Reporting
   - Report shall be prepared and submitted to GM for follow up measures, and publicized website www.ubservice.mn and other mass media tools
7. First monitoring was conducted on November 10, 2010

Members of Monitoring Team

	Name	1st Monitoring	Organization
Group 1	1. O.Odjargal	1. O.Odjargal	EPWMD Mayor's Office
	2. Ts.Munkhbat	2. Ts.Munkhbat	Department, MONET
	3. B.Buyanbat	3. B.Buyanbat	Governor's Office of Ulaanbaatar City
	4. M.Badamkhand	4. M.Badamkhand	City Specialized Inspection Agency
	5. Sharavdorj		Head, Mongolian Ecologists Union
Group 2	5. B.Batdorj	5. B.Batdorj	Officer, PSD, SKhD Government
	6. B.Myagmardorj		Officer on Environment Pollution, World Vision
	7. Munkhtsetseg	7. D.Ganbaatar	Head, Tolgoit NGO
	8. M.Tserendulam	8. S.Khashgerel	Governor, Khoroo No3, SKhD
	9. B.Ganbaatar	9. E.Mansalmaa	Governor, Khoroo No4, SKhD
	10.Z.Narantsatsralt		Principal, School No 65, SKhD
	11.B.Oyuntsetseg	11.S.Oyungerel	Principal, Kindergarten No 80, SKhD
	12.D.Yavuukhuu		Resident, Khoroo No3, SKhD
	13.N.Dolgor	13.N.Dolgor	Resident, Khoroo No4, SKhD

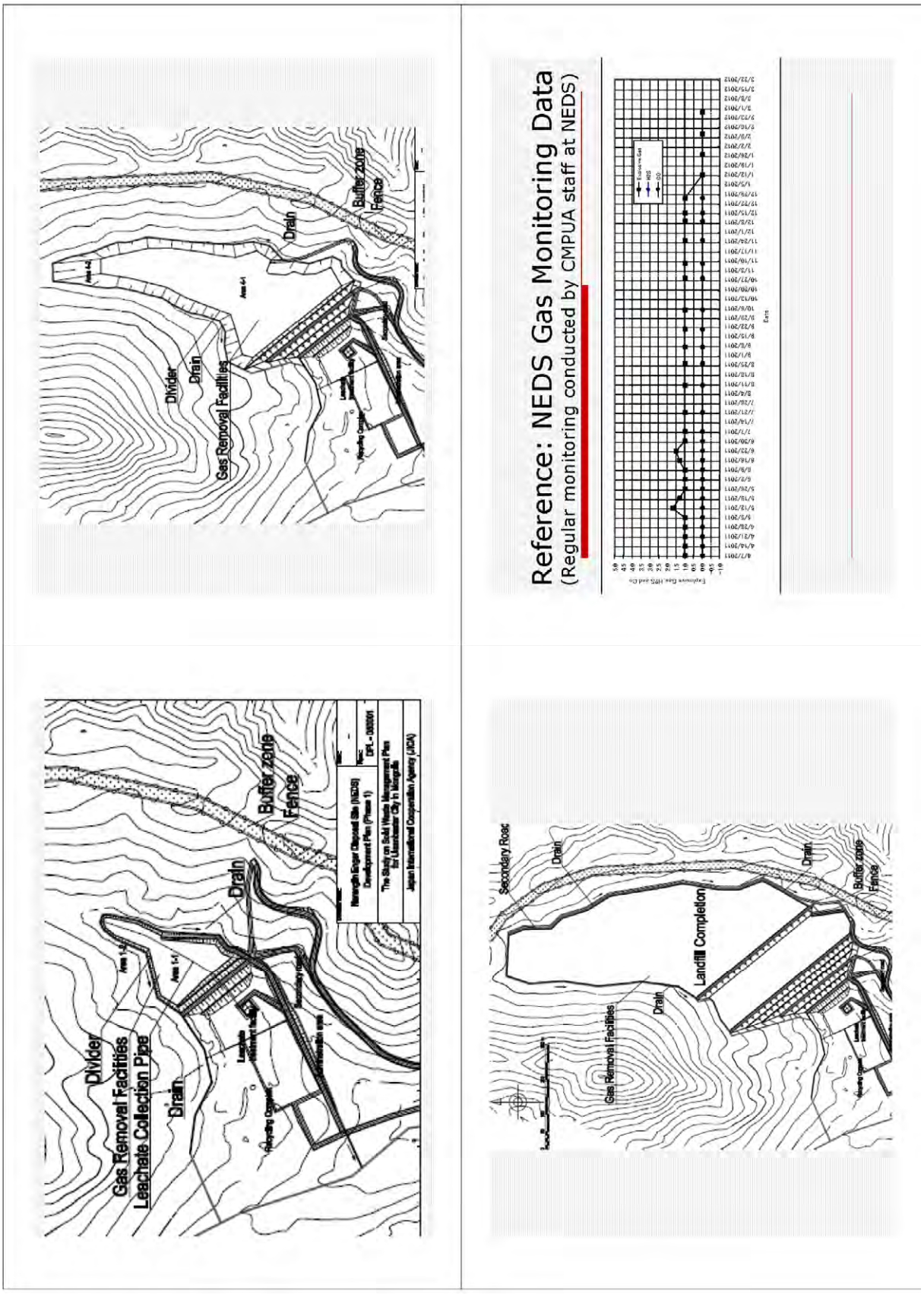
3

Schedule

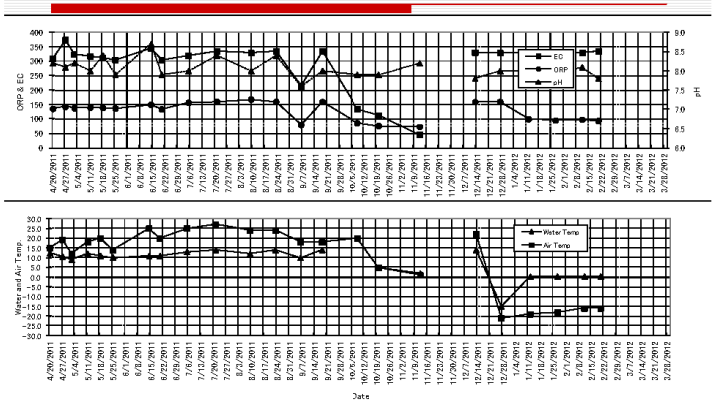
Time	Group 1	Person in charge	Item
13:20	1st Floor MUB	Mr.Odjargal	Transportation Arrangement
14:00 - 14:30	NEDS	CMPUA	Field Investigation
14:30 - 15:00	RPF Facility	CMPUA	Field Investigation
15:00 - 16:00	NEDS Director Room	Mr.Odjargal	Presentation of Monitoring Results and Closing

4


2009 October
2011 October
2009 May
2010 September


Reference: NEDS Gas Monitoring Data
(Regular monitoring conducted by CMPUA staff at NEDS)
Buffer zone
Fence
Drain
Divider
Gas Removal Facilities
Leachate Collection Pipe
Secondary Road
Landfill Completion

Reference: NEDS Water Monitoring Data
(Regular monitoring conducted by CMPUA staff at NEDS)



Check Item

- **Category A: Environment effect and operational conditions**
- **Category B: Function of facilities**

14

How to evaluate (1) Environmental Conditions

No	Items	Choices	Assessment Guideline
A1	Fire & Smoke	Acceptable	there is only spot fire and smoke
		Medium	
		Terrible	Most of landfill surface is covered with smoke due to fire
A2	Offensive odor	Acceptable	
		Medium	
		Terrible	
A3	Leachate	Acceptable	
		Medium	
		Terrible	
A4	Waste scattering	Acceptable	A small amount of waste is scattered at the entrance area, on the access road, and in the surrounding part of the disposal site
		Medium	A lot of waste is scattered at the entrance area and on the access road, but it is still possible for vehicles to reach to the land fill area
		Terrible	There are too much volume of waste on the access road for vehicles to reach to the landfill area
A5	Animals (dogs, birds, etc)	Acceptable	There are few animals.
		Medium	
		Terrible	There is a lot of animals
A6	Vermin (flies, worms, etc)	Acceptable	There are few vermins
		Medium	
		Terrible	There is a lot of vermins
A7	View	Acceptable	Generally clean as a landfill site
		Medium	
		Terrible	Very dirty in spite of landfill site

How to evaluate (2) Operational Conditions

No	Items	Choices	Assessment Guideline
A8	Whole operation	Well controlled or operated	Machinery movement is well controlled by the controller
		Medium	
		Terrible	No control at all
A9	Working situations of waste pickers	Well controlled or operated	Safely working
		Medium	
		Terrible	Dangerous working condition
A10	collection vehicles	Well controlled or operated	Condition of collection vehicles are good
		Medium	
		Terrible	Smoke, noise and rough operation are observed
A11	Bulldozer and other landfill operation heavy vehicles	Well controlled or operated	Wastes are leveled by the bulldozer
		Medium	
		Terrible	There is a lot of unloaded wastes without leveling
A12	Location of unloading waste	Well controlled or operated	Collection vehicles are unloading wastes at designated place
		Medium	
		Terrible	Collection vehicles are disposing wastes as they like
		Medium	
		Terrible	

How to evaluate (3) Function of facilities

No	Items	Choices	Assessment Guideline
B1	Access road	Functioning	Smooth surface and well maintained
		Medium	
		Not functioning	Many holes and no maintenance
B2	Weighbridge (measurement facilities and computer system)	Functioning	Weighing data is recorded everyday
		Medium	
		Not functioning	Frequent breakdown
B3	On-site road	Functioning	Smooth surface and well maintained
		Medium	
		Not functioning	Many holes and no maintenance
B4	Embankment Dam	Functioning	Front surface of embankment dam is shaped and covered with soil
		Medium	
		Not functioning	Slope is not shaped and wastes are exposed
B5	Gas removal facilities	Functioning	Gas removal pipe is extended according to the landfilling
		Medium	
		Not functioning	Gas removal pipe is varied with wastes and not functioning
B6	Security facilities Fence (fixed type), Gate, Bank	Functioning	There is no damage and well maintained
		Medium	
		Not functioning	Fence is damaged and no replacement
B7	Leachate treatment facilities	Functioning	Well maintained
		Medium	
		Not functioning	No maintenance
B8	Drainage systems	Functioning	Drainage is provided for heavy rain
		Medium	
		Not functioning	No drainage is provided

Environmental Effect

No	Items	Acceptable	Medium	Terrible	Score	Note
A1	Fire & Smoke	3	2	1		
A2	Offensive odor	3	2	1		
A3	Wastewater	3	2	1		
A4	Waste scattering	3	2	1		
A5	Animals (dogs, birds, etc)	3	2	1		
A6	Vermin (flies, worms, etc)	3	2	1		
A7	View	3	2	1		

18

Operation Condition

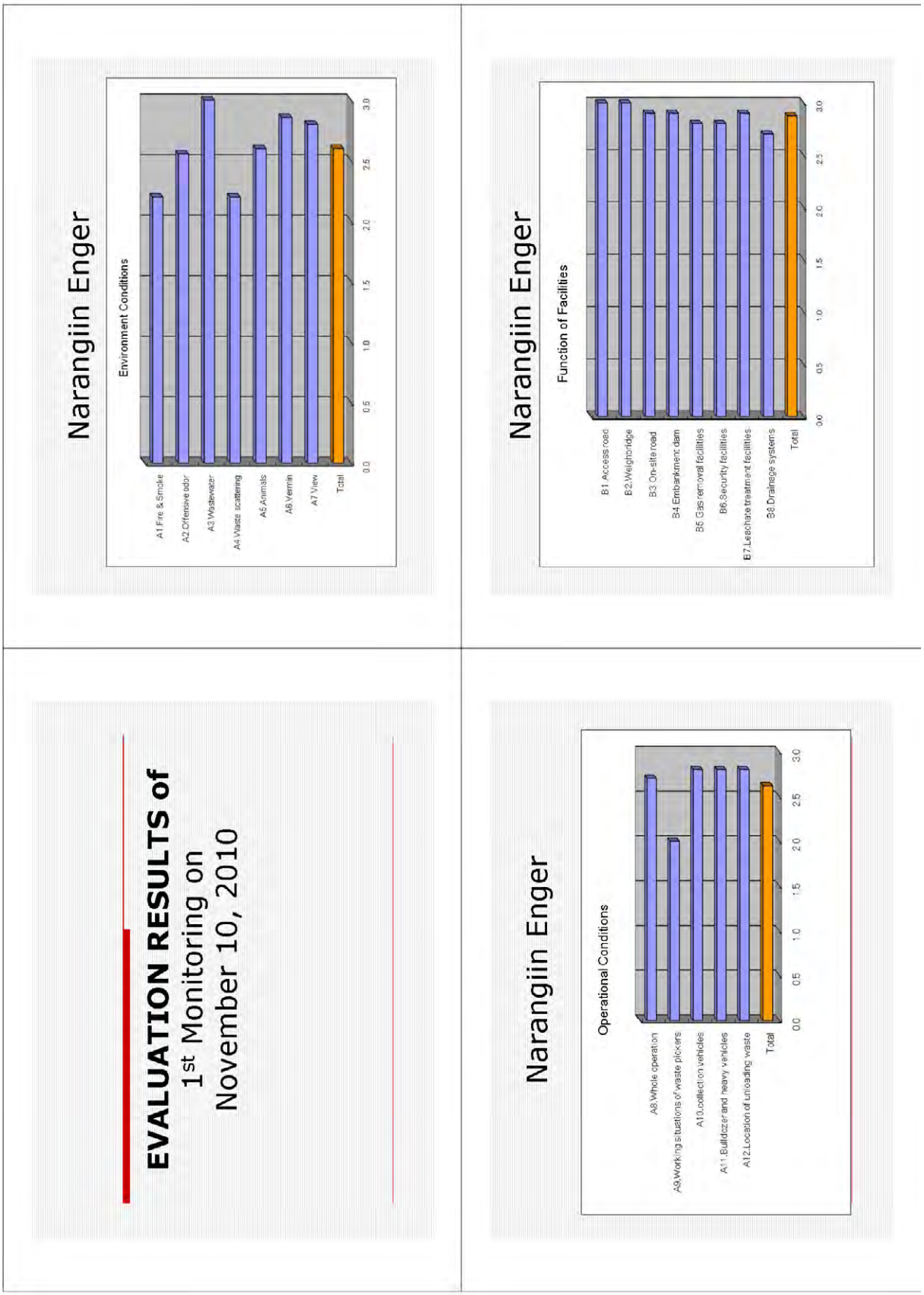
No	Items	Well controlled or operated	Medium	Terrible	Score	Note
A8	Whole operation	3	2	1		
A9	Working situations of waste pickers	3	2	1		
A10	collection vehicles	3	2	1		
A11	Bulldozer and other landfill operation heavy vehicles	3	2	1		
A12	Location of unloading waste	3	2	1		
Total of Category A						

19

Function of Facilities

No	Items	Functioning	Medium	Not-functioning	Score	Note
B1	Access road	3	2	1		
B2	Weighbridge (measurement facilities and computer system)	3	2	1		
B3	On-site road	3	2	1		
B4	Embankment dam	3	2	1		
B5	Gas removal facilities	3	2	1		
B6	Security facilities Fence (fixed type), Gate, Bank	3	2	1		
B7	Leachate treatment facilities	3	2	1		
B8	Drainage systems	3	2	1		
Total of Category B						

20


Narangiin Enger
Environment Conditions
A1 Fire & Smoke
A2 Offensive odor
A3 Wastewater
A4 Waste scattering
A5 Animals
A6 Vermin
A7 View
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Narangiin Enger
Function of Facilities
B1 Access road
B2 Weighbridge
B3 On-site road
B4 Embankment dam
B5 Gas removal facilities
B6 Security facilities
B7 Leachate treatment facilities
B8 Drainage systems
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0
EVALUATION RESULTS of
1st Monitoring on
November 10, 2010
Narangiin Enger
Operational Conditions
A8 Whole operation
A9 Working situations of waste pickers
A10 collection vehicles
A11 Bulldozer and heavy vehicles
A12 Location of unloading waste
Total
0.0
0.5
1.0
1.5
2.0
2.5
3.0

SECTION D

廃棄物処理事業の管理に係る活動

D　廃棄物処理事業の管理に係る活動

D.1　標準入札図書運用ガイドライン

標準入札図書運用ガイドライン

2012 年 1 月

Japanese Expert Team

目　　次

第１章 ガイドライン概要

１-１　標準入札図書の目的

標準入札図書は、ウランバートル市におけるごみ収集業務に民間業者を参入させることで競争原理を働かせ、経済的でかつ品質の高いサービスを市民に提供することを目的に作成したものである。

１-２　準拠する法律

家庭ごみの収集業務をDistrictが業者に委託するに当たって、準拠すべき法律は以下のとおりである。基本となる法律は「Law of Mongolia on Household and Industrial Waste」であり、入札に関しては、「Public Procurement Law of Mongolia」である。関連する法律、法令と準拠すべき条例と優先順位は以下の通り。

１-２-１　基本法律・法令及び優先順位

準拠すべき法律・法令とその優先順位を以下に示す。

1. Law of Mongolia on Household and Industrial Waste (State Parliament, 1 December 2005 with revision till 9 June 2011)
2. Public Procurement Law of Mongolia (State Parliament, 28 November 2003)
3. Decree of the Government of Mongolia #22 On approval of the threshold value (Prime Minister, 15 February 2006)

ごみ収集運搬に係る入札実施が目的であるため、最優先に準拠すべき法律は「Law of Mongolia on Household and Industrial Waste」である。次に入札を実施するために準拠すべく法律は「Public Procurement Law of Mongolia」であり、これを補足する「Decree of the Government of Mongolia #22 On approval of the threshold value」である。

１-２-２　その他準拠すべき条例

その他入札に向けての計画段階、入札資格事前審査及び入札・契約時に於いて準拠すべき条例は以下のとおりである。

【計画段階】

- ✓ Regulation on Organization the Evaluation Committee and Coordination its Activities　(Order #81 made by the Ministry of Finance on 30 March 2007)
- ✓ Regulation on Verification of Tender Progress and the Results and Granting Permission (Order #145 made by the Ministry of Finance on 25 May 2007)

【入札資格事前審査】

- ✓ Regulation on Organization the Evaluation Committee and Coordination its Activities (Order

#81 made by the Ministry of Finance on 30 March 2007)

- ✓ Regulation on Verification of Tender Progress and the Results and Granting Permission (Order #145 made by the Ministry of Finance on 25 May 2007)

【入札・契約】

- ✓ Prototype on Tenders for Implementation of Works (Order #428 made by the Ministry of Finance on 20 December 2006)
- ✓ Instruction for Tender Evaluation (Order #81 made by the Ministry of Finance on 30 March 2007)
- ✓ Regulation on Verification of Tender Progress and the Results and Granting Permission (Order #145 made by the Ministry of Finance on 25 May 2007)
- ✓ Regulation on Organization the Evaluation Committee and Coordination its Activities (Order #81 made by the Ministry of Finance on 30 March 2007)

1-3　留意すべき法律等の解釈について

ごみ収集運搬業務委託の入札を行うために準拠すべき法律、法案及び条例については前述したが、それぞれの法律、法案及び法令の解釈について特に留意すべき点を以下に整理した。

1-3-1　ごみ収集業者の選定

（1）Law of Mongolia HH & IW

ごみ収集業者の選定権はLaw of Mongolia on HH &IWによるとDistrictの権限であると明記されている。

Article 9	Powers of Khural s of Citizens' Representative and the Capital city, aimag, soum and district Governors
9.5.	Governor of district has the following rights:
9.5.2.	to select a company, organization that would carry out waste collection and transportation activities; to operate in accordance the approved regulations; and to finance operations and services carried out by a company, organization based on the terms of the contract;

また、これらの条文ではごみ収集業者を「民間業者」及び「公社」から選定すると明記されている。

（2）Public Procurement Law of Mongolia

Public Procurement Law of Mongoliaでは、公社の入札資格に対して以下のように規定している。

Article 14	Assessing general conditions
14.1	A tenderer shall be regarded as not qualifying general conditions if the following circumstances are proven:
14.1.3	Operations of a legal entity with whole or partial state ownership who are dependent on the procuring entity

この条文では「公社が公社の資本を入札主催の District より受けている場合には、入札に参加できない」と規定されている。これは例を挙げると Sukhubataar District の EU のように Sukhbataat District の資本を受けている公社は、Sukhbataar District の主催するごみ収集運搬業務の入札に参加できないということである。しかしながら EU は他の Sukhbataar District 以外の District で行われる入札には参加することが可能である。

（3）Tender Prototypes for Procurement of Works

入札を実施する場合には徴収されたごみ収集料金に（Local Funds に該当する）基づいてごみ収集が実施されるため、入札方法については「Law of Mongolia on Procurement of Goods, Works and Services with State and Local Funds」に従う必要がある。

入札方法の詳細については「Ministry of Finance」が「Law of Mongolia on Procurement of Goods, Works and Services with State and Local Funds」に基づいて作成した「Tender Prototypes for Procurement of Works」に従う必要がある。「Tender Prototypes for Procurement of Works」では入札資格者を以下のように規定している。

4	Entitled tenderer
4.2	Tenderers will be considered as unauthorized in the following cases (this also applies to every member of a consortium):
4.2.11	If the tenderer is state owned or mixed property company that is dependent on the client or financed from the state budget, non-profit organization, or the Law on Company does not regulate its operation and it directly belongs to the client organization.

この条文では「政府より全てもしくは部分的に資本提供を受けている会社で、施主の資本が入っている、政府の仕事を行って金銭を受領している者、また、非利益会社、会社登録法に基づく会社に該当しない者」と記載されている。公社は基本的に国もしくは自治体の資本が入っており、かつ、政府の仕事を行い金銭受領しているため、この条文に従うと「公社」には入札資格はないと解釈できる。

これらの齟齬に対する解釈は、1-2　準拠する法律記載したとおり「Law of Mongolia on Household and Industrial Waste」、「Public Procurement Law of Mongolia」が優先すると解釈でき、「Tender Prototypes for Procurement of Works」はこの二つの法に基づくべきであると解釈できる。

一方で「Tender Prototypes for Procurement of Works」の序文には、

> The prototype should be adjusted depending on the characteristics of the procurements in a way to change its data table for tender selection (DTTS) and relevant articles in the special conditions of the contract document.

とあり、Instruction to Tenderer の変更は認められていないが、上記条文は「Law of Mongolia on Household and Industrial Waste」、「Public Procurement Law of Mongolia」に従って以下のように訂正すべきである。

4.2.11　If the tenderer is operated by a legal entities with whole or partial ownership by procuring entity and Non profitable organizations.

1-3-2　入札の種類と入札予定価格による入札方法の選定

（1）入札の種類

「Public Procurement Law of Mongolia」では入札の種類を以下のように規定している。

Article 7 Procurement procedure

7.1　The procuring entity shall select a contractor and enter into a contract guided by the following procurement procedures in procurement of goods, works or services:

7.1.1　Open procurement procedure;

7.1.2　Exceptional procurement procedure;

7.1.3　Selection of a contractor of consulting services.

1） Open procurement procedure

「Public Procurement Law of Mongolia」では公開入札について以下のように規定されている。

Article 17Open tendering

17.1　Invitation for open tendering shall be announced in accordance with Article 21 of this law, and all interested tenderers shall be given an equal opportunity to participate.

17.2　Interested tenderers shall submit their technical and financial proposals concurrently by the deadline fixed by the procuring entity.

17.3　Open tendering shall be carried out in one stage except as provided in Article 18 (Conducting two-stage tendering) of this Law.

2） Exceptional procurement procedure

「Public Procurement Law of Mongolia」では Exceptional procurement procedure について以下のように規定されている。

Article 31　Application of the Exceptional procurement procedure

31.1　Exceptional procurement procedures shall be carried out in the following ways:

31.1.1　Limited tendering;

Article 32　Limited Tendering

32.1　Limited tendering shall be applied in the following cases:

32.1.1　The number of bodies capable of executing complicated goods, works or services requiring high qualification, expertise, equipment, and technology is limited;

31.1.2　Comparison;

Article 33　Comparison method

33.1.　The comparison procedure may be used where the cost estimate of the goods works

or services does not exceed the threshold values set out in 8.1.1 of this Law.

33.2 The comparison procedure shall be applied as follows:

33.2.1 Invite 3 or more bodies that satisfy the technical specification and other conditions and requirement to submit their price proposals;

33.2.2 Authorize a tenderer, who satisfied technical and other conditions and requirements and quoting the lowest price, to sign a contract as specified in 29.1 of this Law.

31.1.3 Direct contracting

Article 34 Direct Contracting method

34.1 The direct contracting procedure may only be used in the following cases:

34.1.1 The condition specified in provisions 30.4.3 and 33.4 of this law;

34.1.2 Given the necessity to protect copyright, a contract can be signed only with one body, and no substitute exists for the body;

34.1.3 given additional supplies do not exceed 20% of the value of the initial contract, and there is a need of replacing, repairing and making additional supplies of some parts of the goods and equipment provided under the initial agreement, the procuring entity has to change the supplier and such a change leads to procurement of supplies with different technical specifications, which cause a technical difficulty in the application and maintenance or incur cost-inefficiency;

（２）入札予定価格による入札種類の選定

「Public Procurement Law of Mongolia」では入札予定価格によっても入札方法を規定している。規定を以下に示す。

Article 8 Selection of procurement procedure

8.1 The Cabinet shall determine the following threshold values distinguishing between goods, works and services:

8.1.1 Upper ceiling for cost estimate of goods, works or services available under comparison method;

8.1.2 Upper ceiling for cost estimate of goods, works or services available under direct procurement;

8.1.3 Upper ceiling for cost estimate of consulting service available under least-cost consultant selection procedure;

8.1.4 Lower ceiling for cost estimate of goods, works or services that require authorization from the state administrative body for budgetary matters;

8.1.5 Lower ceiling for cost estimate of goods, works or services whose invitation to tender is posted onto a web site mentioned in provision 52.1.12 of this law;

8.2 The open procurement procedure shall be applied to procurement of goods, works and/or services whose cost estimates exceed the threshold value set forth in provision 8.1.1 of this law unless the law provides otherwise.

8.3 The threshold value set forth in provision 8.1 of this law shall be reset by the Cabinet subject to recommendations of the state administrative body agency for budgetary

matters on each occasion of the consumer price index fluctuating by more than 25%.

また、それぞれの基準金額を「Decree of the Government of Mongolia #22 on approval of the threshold value」を以下のように規定している。

表 １.１　基準金額

Classification / Types of the threshold value	Goods	Works	Service	
			Consultant	Other
Upper ceiling for cost estimate of goods, works or services available under comparison method	30,000,000	50,000,000	10,000,000	30,000,000
Upper ceiling for cost estimate of goods, works or services available under direct procurement	1,000,000	-	1,000,000	1,000,000
Upper ceiling for cost estimate of consulting service available under least-cost consultant selection procedure	-	-	2,000,000	-
Lower ceiling for cost estimate of goods, works or services that require authorization from the state administrative body for budgetary matters	800,000,000	1,000,000,000	200,000,000	800,000,000
Lower ceiling for cost estimate of goods, works or services whose invitation to tender is posted onto a Web site	50,000,000	100,000,000	50,000,000	50,000,000

Source: Decree of the Government of Mongolia #22, on approval of the threshold value 15 Feb. 2006

（３）入札方法の選定

上記に示す入札方法の選定基準をフローチャートに整理したものを以下に示す。

２-２　計画立案

計画立案段階では、a) ごみ収集・運搬業務内容の決定、b) 入札上限価格の設定及び c) 入札準備を行う。（Draft Preliminary Survey Report を参照）

２-２-１　ごみ収集・運搬業務内容の決定

ここではごみ収集・運搬業者に求める a) 収集エリア、b) 収集頻度、c) 収集ルートを決定する。これらを決定するにあたって、以下の情報を収集する。

1. 収集エリアの人口、世帯数
2. 一人あたりのごみ排出量
3. 収集エリアの地図
4. 収集エリア内の現況収集場所
5. 収集エリアの現況収集回数
6. 収集エリア内の現況収集ルート
7. 収集エリア内の住民の満足度

収集頻度及び収集ルートについては現状を調査し（Time & Motion Survey）、また、住民からの意向を参考に適切な収集頻度、ルートを定めることが望ましい。収集エリアが広い、ルートが煩雑であるなど適切な収集頻度、ルートを定めることが困難な場合には、現状を採用してもよい。しかしながらここでは後に説明する入札上限価格の算定のために、最低限収集頻度は決定する必要がある。

２-２-２　入札上限価格の設定

（１）入札上限価格設定の必要性

契約というものは、「施主から与えられた業務内容もしくは請負者が提案した業務内容に対して、請負者がこれを履行した時、施主はこの業務内容に対して双方が合意した対価を支払う」ことを約束するものである。したがって施主は、指示した業務内容に対してどのくらいの費用が必要になるのかを算定し、また、どのくらいの費用が請負業者に対して支払えるのかを確認し、請負者に対する業務指示が、支払い能力を超えていないかを確認する必要がある。

（２）業務実施に必要な費用

業務実施に必要な費用の算定に必要な情報は、以下のとおりである。（詳細は Preliminary Survey Report for The Project on Waste collection & Transportation）を参照。

1. 運搬費（収集エリアから処分場までの１往復当たりの料金）
2. 収集頻度
3. ごみ排出量（収集エリアの人口×一人当たりごみ排出量）

運搬費の算定は適正なごみ料金設定ガイドライン（Guideline for setting of applicable waste collection fee）に基づき算出し、以下の数式にて業務実施に必要な費用を算出する。

業務に必要な費用（Tg/月）

＝ごみ排出総量（ton/月）÷ごみ運搬可能量（ton/回）×ごみ運搬費用（Tg/回）

（３）支払能力

支払能力の算定に必要な情報は以下のとおりである。（詳細は Preliminary Survey Report for The Project on Waste collection & Transportation）を参照。

1. 収集エリアの世帯数
2. 住民の支払うごみ収集・運搬料金徴収率

支払い能力の算定は以下の数式にて算出する。

支払い可能金額（Tg）

＝住民が支払うごみ収集・運搬料金（Tg/月）×ごみ収集・運搬料金徴収率（%）-α

α：ごみ収集・運搬業務に必要な施主側の費用（事務関連費用などの運営費）

（４）入札上限価格の決定

上記で算出した業務に必要な費用が支払い可能額を下回っていれば、入札上限価格を支払い可能額とする。

業務に必要な費用　＜　支払い可能額　→　入札上限額　＝　支払い可能額

業務に必要な費用が支払い可能額を上回った場合、請負者に委託する業務内容を見直す必要がある。この方法は 2 つあり a) 支払い可能額の増大、b) 業務に必要な費用の縮小である。これらの方法を以下に示す。

１）支払い可能額の増大

ごみ収集・運搬頻度は、ごみ排出総量：ごみ運搬可能量で算出されるが、計算上のごみ収集・運搬頻度が整数になることは稀である。

（例）10 t ÷ 3.24 t/trip (Compactor truck 8m3) = 3.08 trip

上記の例の場合、必要な収集回数は 4 回となるが、実際にはコンパクタートラックは万歳とはなっていない。4 回の収集で運搬できるごみ量は、

4 trip × 3.24 t/trip = 12.96 t

であり、12.96 t – 10 t – 2.96 t 分の空隙がある。

この空隙に見合う世帯数は、空隙：（一人当たり日排出ごみ量×日数）：平均世帯人数

2.96 t ÷ (0.00028 t/capita/day × 30 days) ÷ 4.128 capita/household = 85.4 household

となる。

この 85 世帯から徴収できるごみ収集・運搬費を支払い可能額に上乗せできる。

85 household × 2000 Tg/month/household – 170,000 Tg/month

一方で業務に必要な費用は、収集頻度が同じであるため変わらない。

２） 業務に必要な費用の縮小

業務に必要な費用の縮小は、収集回数の変更により行う。以下に例を示す。

【基の条件】

収集地区から排出されるごみ量：　12.25 t/week

施主の指示するごみ収集頻度：　3 times/week

収集に使用する車両：　8 m3 Compactor truck (最大積載量 3.24 t/trip)

一往復当たりのごみ収集・運搬費：　64,800 Tg/trip/unit

この場合、業務に必要な費用は、

12.25 t/week ÷ 3 times/week ÷ 3.24 t/trip/unit = 1.26 trip/week/unit
1.26 trip/ week/unit → 2 trip/week/unit
2 trip/week/unit × 64,800 Tg/trip/unit × 3 times/week = 388,800 Tg

この条件の場合必要な収集回数は 1.26 回/週/台である。これは積載可能量を大きく下回っており、経済的な収集頻度とは言えない。

そこで収集頻度を 2 times/week とした場合、業務に必要な費用は以下のとおりとなる。

12.25 t/week ÷ 2 times/week ÷ 3.24 t/trip/unit = 1.89 trip/week/unit
1.89 trip/ week/unit → 2 trip/week/unit
2 trip/week/unit × 64,800 Tg/trip/unit × 2 times/week = 259,200 Tg

必要収集ごみ量を満足ながら収集頻度を変更することで、事業に必要な費用が 129,600 Tg 縮小することができる。

２-２-３　入札図書の運用

（１）標準入札図書の構成

標準入札図書は「Tender Prototypes for Procurement of Works」に基づき、Chapter 1～7 で構成されている。

Chapter 1：Instruction to Tenderer

Chapter 2：Data table for tender selection (DTTS)

Chapter 3：Tender Selection forms (TSF)

Chapter 4：Technical Specification

Chapter 5：General Condition of Contract

Chapter 6：Special Condition of Contract

Chapter 7：Contract Forms

「Tender Prototypes for Procurement of Works」では、各種の入札に対処できるように作成されている。

（２）Instruction tenderer

１-３-１入札参加資格について理由は１-３-１　ごみ収集業者の選定に記述したが、Chapter 14.2.11 の条文を以下のように変更した。

【原文】

4.2.11　If the tenderer is state owned or mixed property company that is dependent on the client or financed from the state budget, non-profit organization, or the Law on Company does not regulate its operation and it directly belongs to the client organization.

【変更後】

4.2.11　If the tenderer who are operations of a legal entity with whole or partial state ownership by the procuring entity, non-profit organization, or the Law on Company does not regulate its operation are not satisfied.

（３）DTTS と Special condition of Contract の記載方法について

１）DTTS

DTTS に記載されている内容の中で、記載に判断の必要な項目について以下に述べる。

【A General condition of contract】

- Chapter 1.5.3 (d)
  「契約や入札業務に従事した経験がある技術者」を要求しているが、これらの技術者はごみ収集・運搬業務入札に特に必要とする人材ではない。

- Chapter 1.6.1
  応札業者に求めるものは単独でもコンソーシアムでも同一であるため、コンソーシアムに設ける特別な条件はない

【C Preparation of Proposal】

- Chapter 21
  「Public Procurement Law of Mongolia」Article 20. Tender Security では次のように規定している。
  「Open Tender」の場合入札予定金額の１－2%とし、その他の入札方法の場合については「Tender Security」の規定はない。

【E Opening and Evaluation of Proposals】

■ Chapter 1.34.4

「Public Procurement Law of Mongolia」 Article 43. Performance guarantee and its amount, issuing a performance では次のように規定している。

43.2. The procuring entity shall set and state in the tender documents the amount of performance guarantee at **5 percent of the contract value**.

43.4. The procuring entity shall require the contractor to furnish a performance guarantee in the following cases:

43.4.1. Entering into a procurement contract for works with an cost estimate of over **MNT 150 million**;

２） Special Condition of Contract

■ Chapter 5.13

Prototype では以下のように記載されている。

Items to be covered by the compulsory insurances and their minimum insurance payment are the following:

(a) The maximum amount to be deducted by the client for the insurance of the works, facilities and materials will be [Specify the amount].

(b) The minimum amount to be paid by the contractor for insurances of the works, facilities and materials related to the mistakes in the drawings prepared by the contractor will be [Specify the amount].

(c) The maximum amount to be deducted by the client for the insurances of equipments will be [Specify the amount].

(d) The minimum amount to be paid by the contractor for the insurances against losses or breakdowns of equipments will be [Specify the amount].

(e) The maximum amount to be deducted by the client for insurances of other assets will be [Specify the amount].

(f) The minimum amount to be paid by the contractor for insurances of other assets will be [Specify the amount].

(g) The minimum amount to be paid by the contractor for casualty and life insurances will be the following:

(1) [Specify the amount] for employees of the contractor.

(2) [Specify the amount] for other people.

この内 (a)～(f)は工事契約の場合にのみ該当するため、ごみ収集・運搬業務契約には (g) のみを記載すべき。

■ Chapter 5 23～32

23.0 The contractor should prepare clarified work program within [specify the number of days] days after the receipt of the statement granting the contract rights.

25.0　The work program will be clarified in every [specify the number of days] days.

25.0　The amount to be deducted for any failure in submission of the clarified work program will be [specify the amount].

32.0　The warranty period will be [specify the number of days] days.

ごみ収集・運搬業務に「work program」は不要である。また、業務完了後の「瑕疵担保期間」の設定も適切ではないため削除した。

■ Chapter 5.47

47.0　The amount of the bonus will be [Specify the percentage]% of the contract price per day

この条文は「早期完成」に対して適用するものである。ごみ収集・運搬業務は、決められた期間中実施するもので、この条文ンはごみ収集・運搬業務には適切でないため削除した。

■ Chapter 5.55, 5.57

55.0　The acts of adjustments in implementation drawings, under-ground works, engineering lines and technological equipments will be submitted before [specify the date]. The operation and maintenance manual will be handed over before [specify the date].

55.0　The amount of payment to be deducted for failure in submission of the above-mentioned materials in respective due time will be [specify the amount].

57.0　Additional costs that the client pays at the completion of the works is calculated by [percent] % of the uncompleted works.

これらの条項は「建設工事」もしくは「機材調達」に於いて適用される内容であり、ごみ収集・運搬業務には適さないため削除した。

（４）Technical Specification

１）1. Basic service

ここでは施主が請負者に求める基本的な内容を記載している。

家庭ごみの収集料金はアパート料金や電気料金と共に徴収され、その料金はそれぞれのDistrictの監督下に置かれている。そして家庭から排出されるごみ収集・運搬料金はこの資金を基に支払われる仕組みとなっている。

しかしながら地域内より排出されるごみは家庭のみならず事業者からも排出される。現状では事業者から排出されるごみは、ごみ収集業者と排出事業者が直接ごみ収集・運搬契約を結んでいる。このため徴収された料金は直接ごみ収集・運搬業者の手元に置かれ、徴収された料金は District が管理することはできない。したがって家庭ごみと事業ごみの収集契約を一本の契約で統括することは現状では不可能である。

一方、収集区域内で不法投棄が発生した場合、家庭から排出されたものか、事業者から排

出されたものかを判断することは不可能であり、不法投棄の処分はだれの責任であるかを明確にすることが必要とされている。このような現状を改善し不法投棄処分ごみの処理責任を一本化するために次のような条項を設けた。

- ✓ 家庭ごみの収集契約締結業者は、同一収集地域内の事業者とごみ収集・運搬契約と結ぶこと。

２） 3. General education and compliance

この条項では、請負者は施主より与えられた条件に従って業務を実施すると伴に、市民へごみ排出の方法などの教育も請負者の義務として行うことを規定している。

３） 10 Vehicles

この条項では、請負者が使用するごみ収集・運搬車両について規定している。主な規定内容は以下のとおりである。

1. ごみ運搬用車両であり、臭気が漏れない、ごみが飛散しない、ごみ汁が毀れない構造であること。
2. 使用する車両は色を統一し会社名、連絡先を明記すること。また、作業員はユニフォームを着用すること。
3. 車両は規定の定期点検を受け、いつも良好な状態であること
4. 使用車両が故障した場合には、請負者の責任で代替車両を手配すること
5. 車両の積載重量を守ること

４） 18 Liability & Indemnity

この条項では、請負業者が業務中もしくは業務に関連する行動中に起きた、事故やけがに対する補償のための保険に付加することを規定している。

５） 20 Financial Penalties

この条項では、請負者が業務契約に規定している規程に違反もしくは抵触した場合に、金銭的な罰則を与えることを規定している。

罰則規定は点数制とし、改善命令（Rectification Notice）　－１点、不履行通知（Default Notice）－２点、再度の不履行通知（Supplementary Notice）　－３点と規定している。それぞれの罰則命令の発出規定は、Tender Document に示すとおり。

累積反則点数によって以下の反則金を徴収する。

Default Points in any month	Deduction from monthly installment
0-20	1.0%
21-40	2.0%
41-60	5.0%

この累積反則点数と罰金の数値は、仮にも受けたもので、それぞれの District の現在の状況を踏まえて改訂する必要がある。

６） 23 Submission of optional proposal

この条項は、施主の掲示した条件（収集頻度、収集ルート）よりも効率的にごみ収集・運搬業務を行えると考える応札者に対して、代替案の提案を認めるものである。代替案提案応札者は、施主の提示した条件に基づく応札金額と代替案による金額の双方を提出するように規定している。これは、他の応札業者と同一の条件であった場合、どの応札業者が安価な提示を行ったかを確認するものである。

代替案提案者は、代替案に基づく「収集ルート、収集場所」「収集頻度、収集時間」資料を提出することを義務付けている。

第３章 標準入札関連資料

標準入札に関連する資料は以下のとおりである。

1. Preliminary Survey Report for The Project on Waste collection & Transportation
2. Guideline for setting of applicable waste collection fee
3. Prequalification Documents for the Project on Waste collection & Transportation
4. Tender Document for the Project on Waste collection & Transportation

D.2　入札関連図書

D.2.1　Preliminary survey

PRELIMINARY STUDY REPORT
ON
THE PROJECT THE PROJECT ON WASTE
COLLECTION & TRANSPORTATION
AT
KHOROO NO. 7, SUKHBATAAR DISTRICT

December 2011

Contents

1. Summary of the preliminary study

1-1 Objective of the preliminary survey

The preliminary study is aim to set up for figures which will be needed for tender specification and budget allocation for tender.

These figures are to be used for tender specifications. Required setting up figures are as below.

1. Population in the designated area
2. Number of the household in the designated area
3. Waste generation amount
4. Waste collection route
5. Waste collection point
6. Waste collection frequency
7. Tender price (budget)

1-2 Required defined figures

When waste collection service is to be ordered to the subcontractor, the client shall survey and calculate these figures.

(1) Population, number of Household and Waste generation amount

Based on the information such as number of population and waste generation rate, the client shall calculate waste generation amount in the designated area.

(2) Waste collection rute and point

The client shall survey (by the Time & Motion survey) current waste collection route. If the current collection route and / or point are needed to modify, the revised route shall be define by the client.

(3) Waste collection frequency

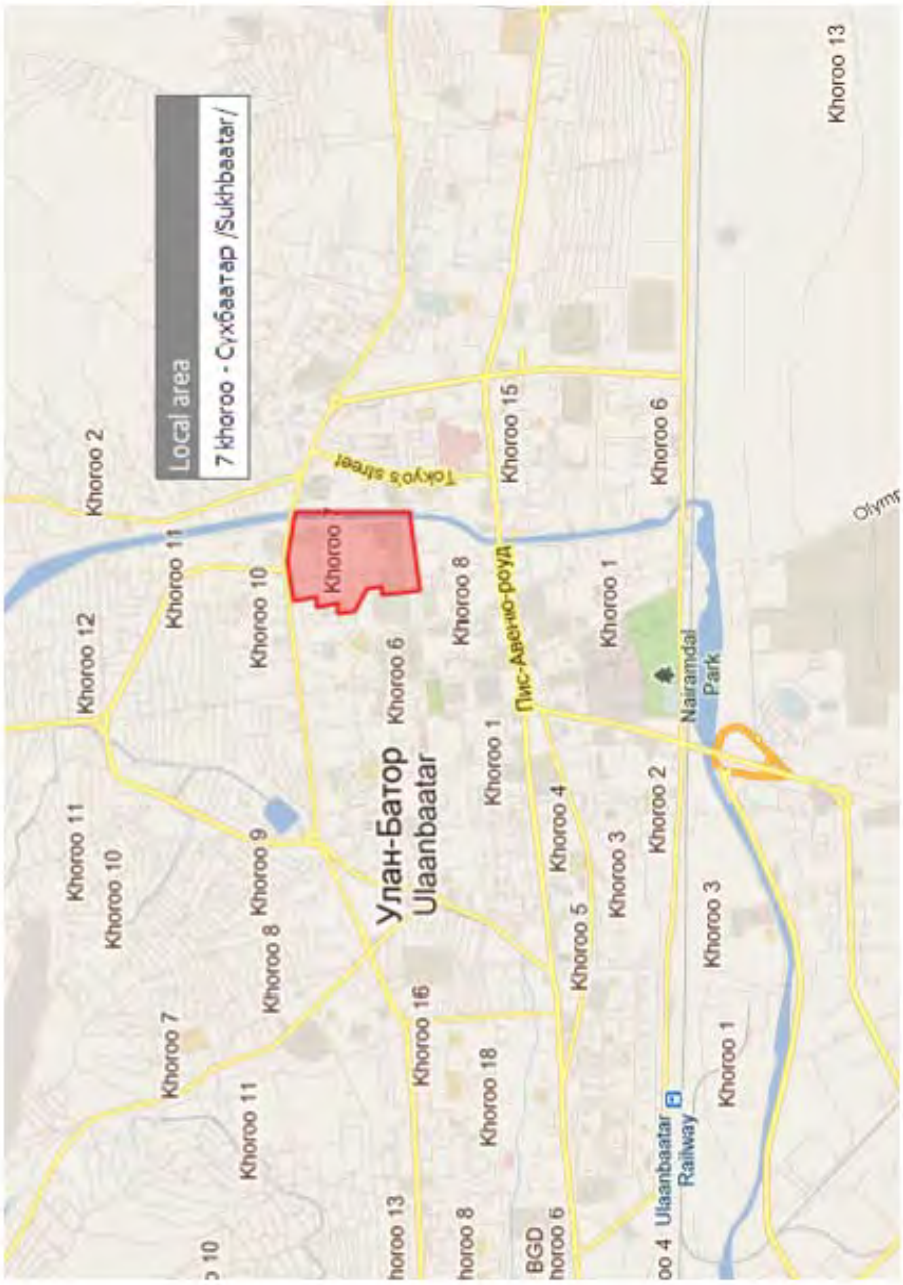
Also the based on the time & motion survey and waste generation amount, the adequate frequency of waste collection shall be set.

(4) Tender price (budget)

Based on the frequency of waste collection and Guideline for waste collection and transport fee, the Tender price (budget) shall be set.

2. Location

Designated location is shown as below.



3. Time and Motion Survey

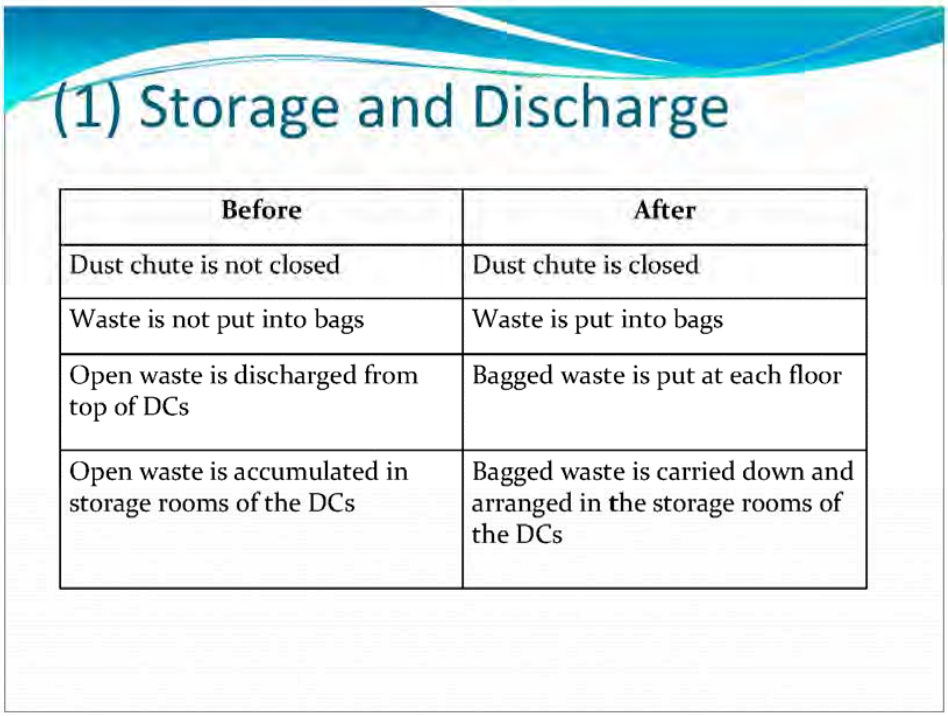
3-1 Basic information

Basic information for designated area (SBD#7) is as below.

Description	Quantities
Population	5,596 capita
Household	1,404 household
Waste generation rate	312 g/person/day

3-2 Time and motion survey

The sample of the time and motion survey result is as below.




Closure of DCs


<=Before: DCs
After: DCs=>

(2) Collection

Before	After
Frequency=>Once a week	Frequency=>3 times/week
No schedule	Planned schedule
Route: Not neatly planned	Route: Neatly planned
Collecting waste is difficult	Collecting waste is easy
Collection is in efficient	Collection is efficient

Route: Before **Route: After**

*3 **Time** and Motion Survey*

4. Setting out of Specification

4-1 Collection route and point

Based on the Time & Motion survey, collection route and points are set as below.

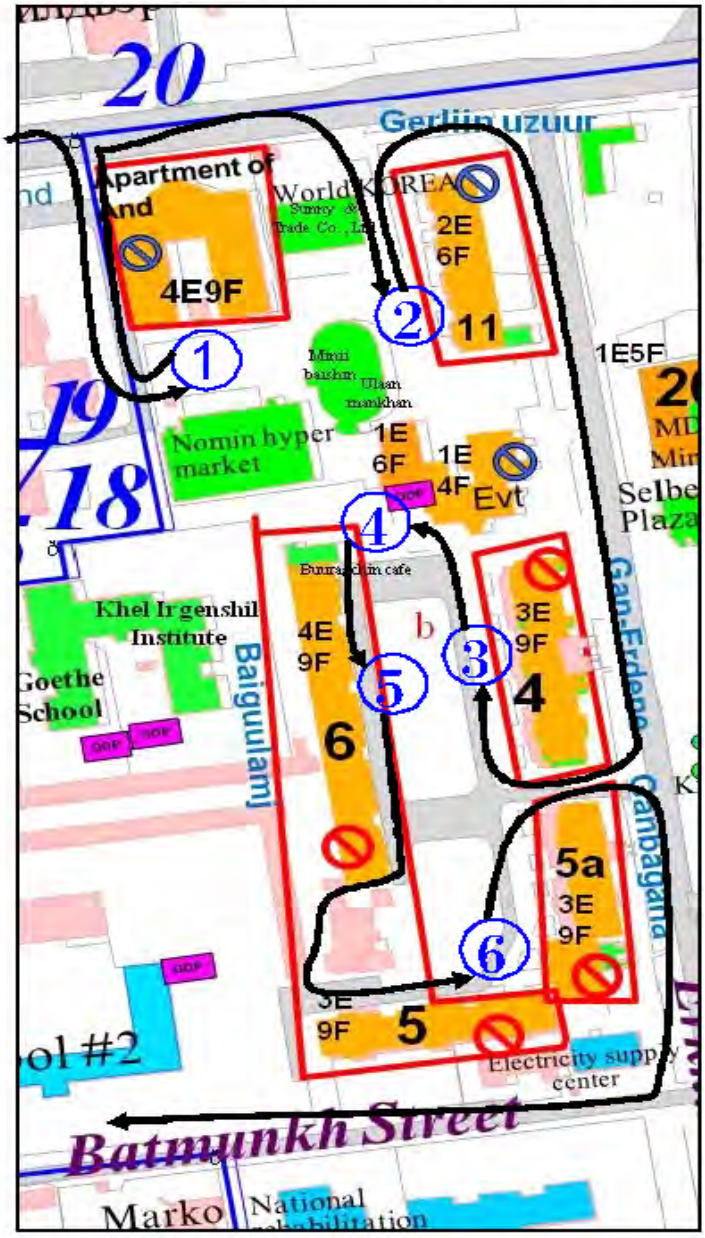


Figure 4-1: Collection route and point (SBD #7)

4-2 Frequency and Time table of the waste collection

Based on the Time and Motion Survey, frequency and time table of the waste collection is set as below. The M/P 2020 objective related to the collection frequency in apartment areas is 3 times/week: twice/week for regular collection and once/week for separate collection. However, this objective was set based on the assumptions that SWM in UBC and the residents' environmental education would have been improved by the target year.

For the time being, collection frequency in an area should be set considering the following items:

1. Conditions in target areas: possibility of waste storage, types of discharge points and sanitation requirements;
2. Seasonal impacts: summer and winter;
3. Results of POS: possible days to store waste at generation sources.

Standard collection frequencies acceptable under the current conditions are compiled in the table below by types of residential areas:

Table 4-1: Standard collection frequencies

No	Types of residential areas	Standard collection frequency
1	Apartments with DC	Once/week
2	Apartments with closed DC or expected to close	2-3 times/week
3	Apartments without DC	3 times/week
4	Ger area	1-2 times/month

Having set the collection frequency, the collection schedule should be set as shown in the table below:

Table 4-2: Frequency and Time table of waste collection

*4 **Setting** out of Specification*

Days		Sources	Freq. (times/ week)	Col. Hours	Col. Amount (kg)	Mon	Tue	Wed	Thu	Fri	Sat
Mon, Wed, Fri	**Morning Trip:**										
	1	Selbe houses/Orchlon	6	0:24	532	9:00		9:00		9:00	
	2	Macro Centre	3	0:13	312		⇢				
	3	Apart-9/1 & 5/1	3	0:13	197						
	4	Music and Dance College	3	0:24	519		⇢				
	5	Apart-39	3	0:08	208						
	6	Apart-4	3	0:13	409						
	7	Apart-6	3	0:17	409						
	8	Apart-5	3	0:08	409						
	9	Apart-5A	3	0:09	358	12:30		12:30		12:30	
		Expected Trip Waste (kg)				**3352**		**3352**		**3352**	
	Afternoon Trip:										
	1	Odkon Co., Ltd	1	0:03	236					14:50	
	2	Craft atilier	3	0:12	355	14:50		14:50			
	3	Apart-18 (15)	3	0:13	59						
	4	Apart-7A	3	0:17	709						
	5	Tanii delguur	3	0:06	153						
	6	Tegsh AOU/Panda's Villa	6	0:18	436						
	7	Tegsh's businesses	6	0:05	55						
	8	Sunny and trade	3	0:14	255						
	9	Business of Apart-13 (11)	6	0:08	55						
	10	Soraksan & GaM	6	0:05	55						
	11	Business of Apart-4	6	0:09	138						
	12	Business of Apart-5A	6	0:06	42	18:00				18:00	
	13	Chingeltei Electricity Supply	3	0:11	153			18:00			
		Expected Trip Waste (kg)				**2312**		**2465**		**2548**	
Tue, Thu, Sat	**Morning Trip:**										
	1	Selbe houses/Orchlon	6	0:24	532		9:00		9:00		9:00
	2	Democratic Party	1	0:02	10						
	3	Apart-9	3	0:11	414						
	4	Apart-8	3	0:21	296						
	5	Apart-7	3	0:30	632						
	6	Apart-10	3	0:45	1270		12:30		12:30		12:30
		Expected Trip Waste (kg)					**3153**		**3153**		**3153**
	Afternoon Trip:										
	1	Rehabilitation clinics	3	0:20	657		14:50		14:50		14:50
	2	Nova furniture	3	0:06	100			⇢			
	3	Frame factory	1	0:08	100						
	4	Apart-36 (Selbe-2)	3	0:18	260			⇢			
	5	Pizza romania, Khaliun trade c	3	0:18	290						
	6	Auto wash	3	0:06	58						
	7	Food market	3	0:07	580						
	8	Tegsh AOU/Panda's Villa	6	0:18	436						
	9	Tegsh's businesses	6	0:05	55						
	10	Apart-13 (11)	3	0:14	255			⇢			
	11	Business of Apart-13 (11)	6	0:08	55						
	12	Soraksan & GaM	6	0:05	55						
	13	Business of Apart-4	6	0:09	138						
	14	Business of Apart-5A	6	0:06	42		18:00		18:00		
	15	Smile and Selbe bars	1	0:16	355						18:00
		Expected Trip Waste (kg)					**2980**		**3080**		**3335**

Collection days=6 per week　　**Travel hours:** (1) Khoroo to NEDS=>0:50 (2) NEDS to Khoroo=>1:30 (break included)
Number of trips=12 per week　　**Operation hours:** (1) Collection hours=2:40 per trip; (2) Shifting hours=0:50 per trip

5. Budget allocation

5-1 Basis of collection and transport cost

Basic price of collection and transport cost is calculated "Guideline for waste collection and transport fee". The cost per trip is calculated below.

Table 5-1: Basic price of collection and transport

Unit: Tg/trip

Type of collection track	SBD	ChD	SKhD	BZD	BGD	KhUD
Compactor (15m3)	106,400	104,000	87,600	116,100	95,500	109,400
Compactor (8m3)	64,800	63,800	57,000	68,700	60,300	65,800
Dump Track (10m3)	72,400	70,700	59,700	78,800	64,800	74,300
Average distance (km)	16.1	15.1	8.0	20.3	11.3	17.3

5-2 Project cost

Project cost is consisting of (1) waste collection and transportation cost and (2) other cost. Details of individual costs are as below.

(1) Waste collection and transport cost

Waste generation amount

5,596 capita x 0.312 kg/capita/day = 1,746 kg/day = 1.75 ton/day

1.75 ton/day x 7days/week = 12.25 ton/week

Collection frequency

3 times/week (SBD-7, apartments with closed DCs)

Required trips to be conducted on a collection day

1. by compactor track (8m3)
   Loading capacity is 3.24 ton/ trip
   12.25 ton/week / 3 times/week / 3.24 ton/trip = 1.26 trip/day => 2 trips/time
2. by dump track (10m3)
   Loading capacity is 2.70 ton/ trip
   12.25 ton/week / 3 times/week / 2.70 ton/trip = 1.51 trip/day => 2 trip/time

Required collection and transport cost

1. by compactor track (8m3)
   2 trip/time x 3 times/week x 52 weeks/year x 64,800 Tg/trip = 20,217,600 Tg/year
2. by dump track (10m3) :
   2 trips/time x 3 times/week x 52 weeks/year x 72,400 Tg/trip = 22,588,800 Tg/year

Note: the above collection and transportation cost is included other expenses for the collection firm.

*5 **Budget** allocation*

Required budget for collection and transport is in the range from 20,220,000 to 22,600,000 Tg/year

If the contract will be made for three (3) years : **say 67,800,000 Tg/contract**

(2) Other cost required

1) Employment of consultancy agent

The client is needed to employ consultancy agent who work as member of Evaluation committee.

Required cost is ********* **Tg/contract**

2) Others

If any.

Required cost is ********* **Tg/contarct**

(3) Total required

Total cost will be

1.	Waste collection and transportation cost	:	67,800,000 Tg/contract
2.	Other cost required	:	********** Tg/contract
	Total		********** **Tg/contract**

5-3 Fee Collection

(1) Waste collection fee for discharger

Waste collection fee for discharger 2,000 Tg/HH/month

(2) To be collected fee amount

2,000 Tg/HH/month x 1,404 HH (3.99 capita / HH) x 12 month/year x 3 years/contract = 101,088,000 Tg/contract

5-4 Justification

Implementing the project smoothly, the income amount has to be more than the expenditure.

Income (Waste collection fee for discharger) > Expenditure (Project cost)

In case the expenditure is more than the income, the project plan shown as below shall be reconsidered. In principle, it is required either to reduce of expenditure or increase of income.

(1) Adjust waste collection area (Increasing income)

Reconsidering collection area to expand and its will utilize waste collection equipment as much as possible.

[For example]

In the 5-2(1), the number of trips to be conducted on a collection day for both cases (using compactor truck and dump truck) was estimated to be 2 trips/time, however based on the

discharged waste amount it require 1.26 trips/time for compactor truck and 1.51 trips/time for dump truck.

Therefore expanding waste collection area to collect more waste and it makes equipment frequency as close as possible to 2 trips/ time.

In this case, expenditure is same as previous calculation however income will be increase due to expanding of the waste collection area.

[Expenditure]

Waste generation amount

7,417 capita x 0.312 kg/capita/day = **2,314** kg/day = **2.31** ton/day

2.31 ton/day x 7days/week = **16.2** ton/week

Required daily collection frequency

1. by compactor track (8m3)

   Loading capacity is 3.24 ton/ trip

   16.2 ton/week / 3 times/week / 3.24 ton/trip = **1.66** trip/day => 2 trips/time

2. by dump track (10m3)

   Loading capacity is 2.70 ton/ trip

   16.2 ton/week / 3 times/week / 2.70 ton/trip = **2.00** trip/day => 2 trip/time

Required collection and transport cost

1. by compactor track (8m3)

   2 trip/day x 3 days/week x 52 weeks/year x 64,800 Tg/trip x 3 years/ contract =
   60,652,800 Tg/contract

2. by dump track (10m3) :

   2 trips/time x 3 times/week x 52 weeks/year x 72,400 Tg/trip x 3 years/ contract =
   67,766,400 Tg/contract

Same amount of expenditure

[Income]

2,000 Tg/HH/month x **1,858** HH (3.99 capita / HH) x 12 month/year x 3 years/contract = **133,776,000** Tg/contract

Increased income 32,688,000 Tg/contract

(2) Adjust waste collection frequency (Reducing expenditure)

Reducing waste collection frequency and its will reduce expenditure.

[For example]

In the 5-2(1), the number of trips to be conducted on a collection day for both cases (using compactor truck and dump truck) was estimated to be 2 trips/time, however based on the discharged waste amount its require 1.26 trips/time for compactor truck and 1.51 trips/time for dump truck.

Therefore reducing waste collection frequency but collect discharged waste and it make equipment

fully utilize as close as possible to 2 trips/day.

[Expenditure]

Waste generation amount

5,596 capita x 0.312 kg/capita/day = 1,746 kg/day = 1.75 ton/day

1.75 ton/day x 7days/week = 12.25 ton/week

Required daily collection frequency

1. by compactor track (8m3)

Loading capacity is 3.24 ton/ trip

12.25 ton/week / **2** times/week / 3.24 ton/trip = **1.93** trip/time => 2 trips/time

Required collection and transport cost

1. by compactor track (8m3)

2 trip/time x **2** times/week x 52 weeks/year x 64,800 Tg/trip x 3 years/contract =

40,435,200 Tg/contract

Reducing expenditure 20,217,600

[Income]

2,000 Tg/HH/month x 1,404 HH (3.99 capita / HH) x 12 month/year x 3 years/contract = 101,088,000 Tg/contract

Same income

D.2.2 PQ Document

Government of Sukhbaatar District

PREQUALIFICATION DOCUMENTS

FOR

The Project on Waste Collection & Transportation
At
Khoroo No 7, Sukhbaatar District

CONTENTS

January 2012

Production and Service Department,
Sukhbaatar District, Capital City of Mongolia

INVITATION TO PREQUALIFICATION

Dear Sir and/or Madame,

On behalf of the Governor of ****** District (hereinafter referred to as "the Client"), Production and Service Department (hereinafter referred to as "the PSD") informs that Mongolian or foreign legal entities or their consortium are invited to prequalification for competitive tendering for the Project on Waste Collection and Transportation at Khoroo No. 7 Sukhbaatar District which will be implemented under the Consignment Contract.

Mongolian or foreign legal entities interested in participating in the tendering are kindly requested to submit the application for prequalification and all accompanying documents, which shall be prepared in accordance with this Prequalification Documents and shall be delivered by hand to;

(Address of the Office of PSD, Sukhbaatar District)

The delivery of the application shall not be later than **:**(Time) Mongolian standard time on the **.the day of *****, 20**.

Applicants who are to be invited for the tendering will be informed in due time.

Yours respectfully,

(Signature)
Director of PSD
Sukhbaatar District

Contents

1. INSTRUCTION TO APPLICANTS

1-1 Background of the Project

Sukhbaatar District in the Capital City of Mongolia is responsible for providing municipal and civic service, which included collection, transportation and disposal of Municipal Solid Waste generated in its jurisdiction.

Sukhbaatar District desires to establish an environmentally sound Solid Waste Management system in the city under the consignment contract.

The Governor of the Sukhbaatar District, invites Applicants for participation in the prequalification for the Project on the Waste Collection and Transportation at Khoroo 7, Sukhbaatar District (hereinafter referred to as "the Project").

2. Consignment Contract

2-1 Contents of Consignment Contract

Subject to the terms and conditions to be set forth in the Consignment Contract, the Governor of the Sukhbaatar District will make consignment contract with the successful Tenderer who will be "the Consignment contractor" the Contract which consists of the rights and obligations to be exercised at Khoroo 7, Sukhbaatar District (hereinafter referred to as "the Territory") as set forth in the Consignment Contract.

Obligations

1. To provide waste collection and transportation service in the Territory
2. To support the government to improvement of discharge manner

The obligations clarified as above are hereinafter referred to as "the Service".

2-2 Consignment Cotract Period

A period of the Consignment granted may be one (1) year after the date of signing of the Consignment Contract.

3. Conditions of Prequalification

Applicants for prequalification of the tendering shall be required to satisfy following conditions.

3-1 Corporation nature

Qualified tenderers shall be Mongolian or foreign legal firms or their consortium who have a capacity to provide the service in the Territory. Qualified tenderers shall be incorporated and registered under the laws of Mongolia who are controlled by Mongolian nationals.

The Qualified tenderers shall have enough capacity, which is recognized by equipment, maintenance facilities and qualified staff belonging to him, for providing the Service in the Territory and be reliance socially without any crime.

3-2 Financial status

Qualified tenderer shall be in sound financial conditions. The applicants for pre-qualification shall submit business experience records, financial statements for the last three (3) consecutive fiscal years comprising balance sheets and profits and loss statements.

3-3 Experience of waste collection and transportation service

Qualified tenderers shall have experience of providing waste collection services regardless of prime contracting or sub-contracting during the last five (5) years.

3-4 Experience of the similar works

Qualified tenderers may submit the experience of similar works which means transportation business, construction works and recycling business.

4. Required Documents for Prequalification

The applicants for prequalification shall be required to submit the following documents in duplicate, which shall be prepared in accordance with the attached forms and written in Mongolian.

The application and all accompanying documents shall be delivered by hand to the address below by the closing time specified in the Invitation to Pre-qualification of this Prequalification Documents.

1. Application Letter (Form-1)
2. General Information of Applicant (Form-2)
3. Financial Statement (Form-3)
4. List of Experiences of the Waste Collection Service (Form-4)
5. List of Experiences of the Similar Works (Form-5)
6. Company Registration Certificate

5. Notification to Applicants

All applicants who satisfy the conditions of prequalification shall be prequalified and notified within fourteen (14) days after the closing time specified in the Invitation to Pre-qualification of this Prequalification Documents. Therefore, the Governor of Sukhbaatar District will certify every applicant qualified as a capable entity to provide waste collection and transportation service.

Unsuccessful applicants also shall be notified in the same period.

6. Further schedule

The Tender Documents shall be delivered to all prequalified applicants after the around beginning (middle, end) of *****, 20**. The qualified applicants shall be requested to submit the tender around beginning (middle, end) of *****, 20**, Fixed schedule shall be stipulated in the Tender Documents.

7. Form of Prequalification

(1) Form 1

(Letterhead of the Tenderer)

APPLICATION LETTER

To: Governor of ……. District

Re: The Project on Waste Collection Service at Khoroo 7, Sukhbaatar District

Dear Sir and/or Madame,

We are pleased to apply for participation in the prequalification for the captioned project, to be conducted under the consignment contract, and to submit the documents in duplicate for your review and acceptance, the documents in duplicate, which are attached hereto.

We declare that the particulars attached herein are true and correct in every detail.

(Date)… (Month)….., 20**.

Yours respectfully,

(Signature)
(Printed Name of Signer)
(Title of Signer)
(Name of Tenderer)
(Address of Tenderer)

Note: Name and position of person who may be contacted for further information if required are as follows;

Name :
Position :
Telephone No. :
Facsimile No. :
e-mail Address :

Prequalification Document

(2) Form 2

General Information of Applicant

1. Name (legal name)

2. Address of the Head Office

3. The Specific License Granted by (name of authority), Mongolia
   License Number :
   Date of Issue :

4. Name of Company's Representative

5. Date Establishment of Applicants
   (month and year)

6. Full Paid-in Capital

7. Numbers of Employee
   (1) Administration Staff
   (2) Environmental Engineering Staff
   (3) Mechanical and Electrical Engineering Staff
   (4) Driver
   (5) Collection Workers
   (6) Others
   TOTAL

8. Numbers and Type of Equipment for waste collection

Type of equipment	Date of manufacture	Number	Note
1.			
2.			
3.			
4.			

Type of Equipment: Compactor truck, Dump truck, Open truck, Hoist truck, Container, etc.

Prequalification document

9. Maintenance facilities

Location of Workshop	Workshop area (m^2)		Main instruments
	Area (m^2)	Warm garage (m^2)	
1.			
2.			

(Signature)
(Name of Signer)
(Title of Signer)
(Name of Tenderer)

(3) Form 3

Financial Statement

Unit: Million Mongolian Tugruk

Item \ Fiscal Year	201*	201*
1. Gross sales		
2. Gross profit		
3. Operating profit		
4. Ordinary profit		
5. Net profit before tax		
6. Current assets		
7. Fixed assets		
8. Current liabilities		
9. Share holders' equity		
10. Total of liabilities and share holders' equity		

Remarks: Gross profit = Gross sales - Cost of sales
Operation profit = Gross profit - Selling and Administration cost
Ordinary profit = Operating profit + non-operating income - non-operating expense
Net profit before tax = Ordinary profit + extraordinary income - extraordinary loss

(Signature)
(Name of Signer)
(Title of Signer)
(Name of Tenderer)

(4) Form 4

List of Major Experiences

Name of Project	Client	Country	Contract Amount (Million MNT)	Contract Period (M, Y M, Y)	Description of the Works

(Signature)
(Name of Signer)
(Title of Signer)
(Name of Tenderer)

(5) Form 5

List of Experiences of the Similar Works

Name of Project	Client	Country	Contract Amount (Million MNT)	Contract Period (M, Y – M, Y)	Description of the Works

(Signature)
(Name of Signer)
(Title of Signer)
(Name of Tenderer)