No.

Government of Nepal
Ministry of Local Development

JAPAN INTERNATIONAL
COOPERATION AGENCY

THE STUDY
ON
THE SOLID WASTE MANAGEMENT
FOR THE KATHMANDU VALLEY
(Monitoring and Follow-up Phase)

FINAL REPORT

VOLUME III: SUPPORTING REPORT

March 2007

NIPPON KOEI CO., LTD.

YACHIYO ENGINEERING CO., LTD.

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Volume III : Supporting Report

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Supporting Report A

Implementation Status of Annual Work Plan of FY 2005/06 (2062/63)

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Progress of Annual Work Plan of FY 2005/06 (2062/63) as of November 2005

Table A-1(1) KMC: Progress of Annual Work Plan of FY 2062/63 (As of November 2005)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Establishment of rules for private sector collection and its monitoring system**		In total NRs 400, 880, 075 is approved for SWM activities. Almost all activities of the AWP is approved by the Council.			
1	Preparation of agreement and TOR for PPP	SWMS/Rajesh Manander		Started		
A-1 S2	**Promotion of private sector participation in door to door collection for 25% of HHs**					
1	Agreement with private sector	SWMS/Rajesh Manander		Started		
A-1-S3	**Preparation of equipment replacement plan and pilot test for a few types collection vehicles and commencement of replacement of tractors (for 25% collection)**					
1	Preparation of an equipment replacement plan	MS/Purusotam Shakya		Not started		Rescheduled to Chitra
2	Procurement of a Compactor Truck or Tipper with cover	Environment Dept./MS		Canceled		
3	Replacement of tractors purchasing 4 vehicles	Environment Dept./MS		Not started		Rescheduled to Chitra
A-1-S6	**Introduction of GIS System for waste collection plan**					
1	Preparation of an inventory of sweeping areas	SWMS/Rajesh Manander		Started		Started in two Wards
2	Time and Motion survey of core areas	SWMS/Rajesh Manander		Completed		
3	Record data of sweeping areas inventory into the GIS system	SWMS/Rajesh Manander		Started		Will be completed in a month
4	Record data of Time and Motion survey of core areas	SWMS/Rajesh Manander		Completed		
A-1-S7	**Improvement of collection and transportation system taking into consideration waste transportation to Sisdol landfill site**					
1	Plan and implement direct collection system in 2 Wards as pilot basis	SWMS/Rajesh Manander		Not started		Rescheduled
2	Preparation of new collection plan (core areas)	SWMS/Rajesh Manander		Not started		Rescheduled
A-2-S1	**Establishment of effective operation system of Teku transfer station**					
1	Preparation of an effective operation plan of Teku transfer station	SWMS/Rajesh Manander		Started		
2	Construction and laying RCC of 1,000 sq meter	SWMS/Rajesh Manander		Completed		
3	Infrastructure for night time operation (lighting system)	SWMS/Rajesh Manander		Completed		
4	Drainage management	SWMS/Rajesh Manander		Completed		
5	Upgrading servicing situation (vehicle washing)	SWMS/Rajesh Manander		Completed (80%)		
6	Weight bridge operation	SWMS/Rajesh Manander		Completed		
A-2-S2	**Plan (design), construction and operation of Balaju transfer station (including necessary revision of primary collection route)**					
1	Preparation of a plan together with design of Balaju transfer station	SWMS/Rajesh Manander		Postponed		
2	Implementation of public consultation	SWMS/Rajesh Manander		Postponed		
3	Implementation of IEE study	SWMS/Rajesh Manander		Postponed		
A-3-S1	**Renovation of existing mechanical workshop including replacement of old equipment and establishment of efficient parts stock system**					
1	Renovation of mechanical workshop	MS/Purusotam Shakya		Not started		Rescheduled
2	Procurement of official facilities (computer and steel racks)	MS/Purusotam Shakya		Completed		
3	Store database software package and management training	MS/Purusotam Shakya		Continued		
4	Mechanics training	MS/Purusotam Shakya		Not started		Rescheduled

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
B-1-S1	**Cooperation with SWMRMC to proceed development of a central level WPF (50-100 t/d) at appropriate place**					
1	Final site selection	SWMS/Rajesh Manandhar		Not started		
2	Site surveys	SWMS/Rajesh Manandhar		Not started		
3	Concept design	SWMS/Rajesh Manandhar		Not started		
4	Feasibility study including market study	SWMS/Rajesh Manandhar		Not started		
5	EIA	SWMS/Rajesh Manandhar		Not started		
B-2-S1	**Review of the existing home and community composting and recycling activities**					
1	Implementation of reviewing activities	CMU/Shriju		Completed		Two reports are at hand.
B-2-S2	**Production of home compost bins and home vermi-compost kits and their distribution**					
1	Compost bin set distribution	CMU		Started	Delay in administrative process	Tendering process is going on. CKV experiences to be utilized.
2	Vermi-composting kits development and provision of subsidy	CMU		Not started		To be reviewed with the Env.Dept.
3	Recycling sets for Nature Clubs	CMU		Completed		Distributed at last part of FY.
B-2-S3	**Operation of Community Recycling Center (CRC) in Ward 21 and its extension to other Wards (with support from NEREPA)**					
1	CRC-supporting activities	CMU		Continued		CRC is operated well & other program is onward.
2	CRC-establishment in 5 Wards	CMU		Started		
B-3-S1	**Operation and expansion of medium-scale vermi-composting**					
1	Operation of medium-scale vermi-composting	CMU		Continued		Operational organization will be fixed.
B-3-S2	**Implementation of sales campaign together with marketing study**					
1	Implementation of marketing study	CMU		Not Started		Some support for marketing is needed
2	Preparation and Implementation of sales campaign including review and evaluation	CMU		Not Started		
C-1-S1	**Operation of Sisdol sanitary landfill site**					
1	Procurement of heavy equipment and vehicles (1 wheel loader, 1 supervision vehicle, 1 mobile maintenance vehicle w/ tools)	MS/Purusotam Shakya		Not started		On schedule
2	Monitoring daily LF management	SWMS/Rajesh Manandhar		Continued		
3	Extension of gas venting pipes	SWMS/Rajesh Manandhar		Continued		
4	Intermediate leachate collection	SWMS/Rajesh Manandhar		Continued		
5	Maintenance of leachate collection and treatment facilities	SWMS/Rajesh Manandhar		Continued		One time conducted
6	Building maintenance	SWMS/Rajesh Manandhar		Continued		
7	Operation of pump	SWMS/Rajesh Manandhar		Continued		
8	Vehicle and equipment hiring including rental trucks for 3 months (mid-July~end-Sept)	SWMS/Rajesh Manandhar		Completed		
9	Arrangement of fuel for equipment within the site	SWMS/Rajesh Manandhar		Continued		
C-2-S1	**Conducting of survey for possible long-term landfill sites**					
1	Site selection survey and public consultation	SWMS/Rajesh Manandhar		Continued		Coordination with SWMRMC

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
C-2-S2	**Cooperation with SWMRMC to proceed establishment of a long-term landfill site**					
1	Site surveys	SWMS/Rajesh Manandhar		Started		Coordination with SWMRMC
2	Concept design	SWMS/Rajesh Manandhar		Not started		
3	Feasibility study including market study	SWMS/Rajesh Manandhar		Not started		
4	EIA	SWMS/Rajesh Manandhar		Not started		
C-3-S1	**Rehabilitation and landscaping works of the Bagmati (Balkhu) dumping site**					
1	Planning for rehabilitation works for Balkhu	SWMS/Rajesh Manandhar		Started		On schedule
2	Selection of contractor for rehabilitation and landscaping	SWMS/Rajesh Manandhar		Not started		On schedule
3	Rehabilitation works and landscaping (500~1,000m per year)	SWMS/Rajesh Manandhar		Continued		
D-1-S1	**Establishment of 50 more Nature Clubs**					
1	Establishment of 50 Nature Clubs	CMU/Shriju		Started	Weak promotion & HR	3 new Nature Clubs are established, 10 additional will be established.
D-1-S2	**Development of training packages on**					
1	Solid Waste Management, Greenery Promotion. Cultural Heritage Conservation, Communication,	CMU/Shriju		Started		Material is ready for printing.
2	Nature Club management	CMU/Shriju		Started		
D-1-S3	**Training for Nature Clubs members on the above five areas**					
1	Workshop for Guide Teachers	CMU/Umesh		Not Started		
2	Workshop for Principals	CMU/Umesh		Completed		
3	Workshop for Nature clubs	CMU/Umesh		Started		21 schools (3 sectors) are remaining for Baishakh.
4	Handover Nature clubs	CMU/Umesh		Completed		
5	Eco-Yatra for observation visits	CMU/Shriju		Started		Two tours (Yatra) are done. Rest will be conducted on demands/events base
D-1-S4	**Regular interaction between Nature Clubs and local communities to reach out to society as a whole**					
1	Regular interaction between Nature Clubs and local communities	CMU/Shriju		Started		3 local groups conducted
D-2-S1	**Development of a database of community groups, NGOs/CBOs and private sector, and selection of the best ones for long-term work**					
1	Development of a database	CMU/Shriju		Not Started	No initiation from CMU	Arrangement of a computer & mobilize of city volunteers are needed.
D-2-S2	**Review and evaluation of the existing Ward Environmental Committee (WEC) and formation of active WECs in 10 Wards**					
1	Review and evaluation of the existing WECs	CMU/Shriju		Started		Concept paper preparation & meeting with 2 WECs have been done.
2	Form active WECs in 5 Wards	CMU/Shriju		Started		WEC in 5 wards will be activated.
D-2-S3	**Provision of training on SWM and community mobilization for WECs**					
1	Training for WECs	CMU/Sanu		Started		
2	Coordination and networking of WECs	CMU/Sanu		Started		
3	Conduct community cleanup	CMU/Sanu		Started		
D-2-S4	**Provision of technical and financial assistance to best community initiatives of WECs**					
1	Training for NGOs/CBOs	CMU/Sanu		Started		On going with 2 technical supports monthly

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-2-S5	**Provision of annual award to best WEC**					
1	Provision of annual award	CMU/Sanu		Started		
D-3-S1	**Mobilization of City Volunteers (CVs) to support BABA program**					
1	Mobilization of CVs	CMU/Shriju		Started		3 days training will be done from Dec '.05
D-3-S2	**Implementation of closed camps for capability building and raising team spirit of each batch**					
1	Capability training camp	CMU/Shriju		Started		1 in July 05 & 1 in Feb.06. USAID's fund will be used.
2	City Volunteers training	CMU/Shriju		Started		Scheduled in 2nd week of December '05
D-4-S1	**Production of CMU's promotional materials (flyers, brochures, posters, stickers, etc.)**					
1	Promotional materials	CMU/Shriju		Started		5 new design sets, stickers, brosure & reprinting are on.
D-4-S3	**Setting up of self-explanatory displays on SWM at CMU and other key locations for wider publicity**					
1	Self-explanatory displays in Kicks prime location	CMU/Shriju		Started		Display in CEO's secretariat. Other displays are planned.
D-4-S4	**Regular featuring and reporting on SWM on TV program "Hamro Kathmandu"**					
1	Radio Jingles	CMU/Shriju		Started		Covers in KMC's TV program every month..
2	Media Promotion	CMU/Shriju		Started		ditto
D-4-S5	**Design and maintenance of the web page on SWM**					
1	Web page design	CMU/Shriju		Not started		To be discussed with the Information Dept.
2	Web page maintenance	CMU/Shriju		Not started		ditto
D-4-S6	**Implementation of community exhibition and event regularly**					
1	Community Exhibition on Environment and Earth day	CMU/Shriju		Not started		
D-5-S1	**Recruiting of a BABA coordinator**					
1	Recruiting of a BABA coordinator	CMU/Shriju		Postponed	Not on KMC priority	
D-5-S2	**Recruiting of assistant level staff for administration**					
1	Recruiting of assistant level staff for administration	CMU/Shriju		Postponed	Not on KMC priority	
E-1-S1	**Implementation of the reorganization plan of the Environment Department**					
1	Obtain approval from the Municipal Board/ Council on the new organization structure	Environment Dept./Mr.Indraman		Started		Submitted to KMC for approval
2	Conducting of sharing session to disseminate information about the new organization structure	Environment Dept./Mr.Indraman		Not started	New organization structure is not approved yet officially	
E-2-S1	**Establishment of a monitoring and evaluation system in alignment with the Action Plan**					
1	Preparation of plan of operation of monitoring and evaluation	SWMS/Rajesh Manandhar		Continued		
2	Conducting of monitoring and review of the Annual Work Plan	Environment Dept./Mr.Indraman		Started		1st monitoring is going on
3	Formulation of Annual Work Plan of FY2063/64	Environment Dept./Mr.Indraman		Not started		Will be done in Falgun

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
E-2-S2	**Mainstreaming of program-based budgeting system and expenditure monitoring for a more efficient use of resources**					
1	Conducting of expenditure monitoring of the Annual Work Plan	Environment Dept./Mr.Indraman		Not started		
2	Formulation of program-based budget of FY2063/64	Environment Dept./Mr.Indraman		Not started		Will be done in Falgun
E-2-S3	**Improvement of information flow and management by encouraging regular coordination meetings and sharing of experiences**					
1	Implementation of regular coordination meetings	Environment Dept./Mr.Indraman		Not started		
E-2-S4	**Introduction of systematic collection and analysis of SW data by database**					
1	Waste record database	SWMS/Robert		Completed		
2	Budget database	SWMS/Robert		Not started		Rescheduled
3	Store database	SWMS/Robert		Not started		Rescheduled
E-3-S1	**Preparation of TORs for each unit delineating tasks and responsibilities to be undertaken during Action Plan implementation**					
1	Review of existing tasks and responsibilities of each unit	SWMS/Rajesh Manandhar		Not started		
2	Series of meetings among related units	SWMS/Rajesh Manandhar		Not started		
3	Preparation of TORs for each unit	SWMS/Rajesh Manandhar		Not started		
E-3-S2	**Reassignment of necessary staff (Taking into consideration future resource demands such as for facilities development)**					
1	Development of reassignment plan	SWMS/Rajesh Manandhar		Continued		
2	Reassignment of necessary staff	SWMS/Rajesh Manandhar		Continued		
E-4-S1	**Development of a staffing plan based on HRD program and its application**					
1	Development of a staffing plan	Environment Dept./Mr.Indraman		Not started		
E-4-S2	**Assignment of a Learning Manager for HRD and maintain an inventory of staff skills and knowledge, training history**					
1	Assignment of a learning manager	SWMS/Rajesh Manandhar		Not started		
2	Development of database	SWMS/Rajesh Manandhar		Continued		
3	Collection of necessary data from each staff	SWMS/Rajesh Manandhar		Not started		
E-4-S3	**Strengthening of knowledge-sharing mechanism and peer-training sessions for full utilization of existing human resources**					
1	Development of plan of knowledge-sharing mechanism and peer-training sessions	SWMS/Rajesh Manandhar		Not started		
2	Implementation of knowledge-sharing meeting and peer-training session	SWMS/Rajesh Manandhar		Not started		
F-1-S1	**Dissemination of Medical Waste Management Guidelines**					
1	Obtain of official approval from the municipal board on the Medical Waste Management Guidelines	SWMS/Rajesh Manandhar		Started		Guideline is not approved yet
2	Planning of medical waste management system	SWMS/Rajesh Manandhar		Started		
F-1-S2	**Operation of a medical waste treatment facility at Teku**					
1	Public consultation	SWMS/Rajesh Manandhar		Started		
2	Conducting a test run	SWMS/Rajesh Manandhar		Completed		
F-1-S3	**Procurement of additional equipment (auto clave)**					
1	Procurement of an auto clave	SWMS/Rajesh Manandhar		Canceled	Marged with the other sources	

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
F-1-S4	**Training for staff of KMC, private sector, and medical institutions**					
1	Training for KMC staff operators	SWMS/Rajesh Manandhar		Contined		
2	Training for health care staff by national dental hospital (USAID funds)	SWMS/Rajesh Manandhar		Contined		
F-3-S1	**Review of working conditions of the sweeper population and provision of measures to improve their performance.**					
1	Establishment of a day care center	SWMS/Rajesh Manandhar		Not started		
2	Provision of health care services to sweeper population and their children (supported by World Vision)	SWMS/Rajesh Manandhar		Continued		

Table A-1(2) LSMC: Progress of Annual Work Plan of FY 2062/63 (As of November 2005)

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Review of existing policy of LSMC and establishment of strong bylaws (and rules) interacting with all stakeholders and its publication**					
1	Study of private sector involvement in SWM and paying system	ES/Pradeep Amatya	50,000	Not started		Rescheduled
A-1-S2	**Preparation of standard TOR and agreement for PPP concept**					
1	Preparation of individual agreement for PPP with the existing private sector who are presently involved the waste collection services.	TDD/Prabin Shrestha	-	Started		Discussion started with community of W. No 3
2	Review meeting with private operators	TDD/Prabin Shrestha		Started		Discussion at individual level
3	Preparation of PPP operation guideline in SWM	TDD/Prabin Shrestha	-	Not started	Waiting for the guideline prepared	Rescheduled
4	Signing on the agreement in 4 wards	TDD/Prabin Shrestha		Not started		On schedule
A-1-S3	**Introduction of a new pilot project for waste collection from shops by private sector**					
1	Rikshaw collection system - 6 rikshaws	ES/Pradeep Amatya	90,000	Started		Purchase order issued
2	Distribution of buckets	ES/Pradeep Amatya	-	Not started		Rescheduled
3	Increase handcarts	ES/Pradeep Amatya	-	Canceled		Rickshaw takes place instead
A-1-S4	**Newly introduction of door to door collection for 25% houses at the outside the city core area by private sector**					
1	Develop networking system with private partners	TDD/Prabin Shrestha	-	Postponed		
2	Set up the target area and its introduction schedule (Preparation of planning report)	ES/Pradeep Amatya		Not started		On schedule
A-2-S1	**Implementation of Time and Motion study**					
1	Computer training for 5 staffs	ES/Pradeep Amatya	30,000	Not started	Budget for 2 staff	Rescheduled
2	Detail Time and Motion survey of all existing routes	ES/Pradeep Amatya	-	Not started		Rescheduled
3	Preparation of survey report	ES/Pradeep Amatya	-	Not started		Rescheduled
4	Improve collection route and street cleaning activities based on the report	ES/Pradeep Amatya		Started		
A-2-S2	**Introduction of new collection routes**					
1	Improvement of collection routes and collection points by using GIS Map and GPS	ES/Pradeep Amatya		Not started		Will be started after training
2	Development of backup system of the collection route	ES/Pradeep Amatya		Not started		On schedule
A-2-S3	**Implementation of transportation and maintenance cost analysis**					
1	Implementation of cost analysis	ES/Pradeep Amatya		Started		In planning phase
A-2-S4	**Implementation of vehicle capacity analysis and plan for procurement of new vehicles**					
1	Capacity analysis	ES/Pradeep Amatya		Not started		On schedule
2	Preparation of procurement plan	ES/Pradeep Amatya		Not started		

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-3-S1	**Arrangement for a temporary transfer station (in Afadole) and commencement of temporary transferring**					
1	30 days notification for the preparation of T/S	PWD/Rudra Gautam		Not started	Not necessary	Notification may raise public issues
2	Public consultation meetings	PWD/Rudra Gautam		Started		Key persons list preparing process
3	Hire consultants for IEE	PWD/Rudra Gautam		Not started		Rescheduled
4	Hire a supervisor for topography survey	PWD/Rudra Gautam	432,000	Not started		Rescheduled
5	Prepare a concept plan	PWD/Rudra Gautam		Not started		Rescheduled
6	Detail design, estimate and drawings	PWD/Rudra Gautam		Not started		Rescheduled
7	Arrangement of budget for the construction in next fiscal year	PWD/Rudra Gautam		Not started		
B-1-S1	**Cooperation with SWMRMC and KMC for development of WPF**					
1	Concept plan preparation	PWD/Rudra Gautam	-	Not started		Due to delay of the initiated by SWMRMC
2	Candidate site investigation	PWD/Rudra Gautam	-	Not started		
3	Research previous reports and data	PWD/Rudra Gautam	-	Not started		
4	prepare site selection criteria, list up potential sites, field visit, preparation of report and public discussion/meetings	PWD/Rudra Gautam	-	Not started		
B-2-S1	**Distribution of 1,200 home composting bins**					
1	Procurement of compost bins	PWD/Rudra Gautam	360,000	Not started		840,000 is expected from GGP fund
2	One day training on home compost bin for community and 100 municipal staff	CDS/Sabina	175,000	Not started		Rescheduled
3	Follow-up household composting program by hiring motivators and resource persons	ES/Pradeep Amatya	36,000	Not started		Rescheduled
4	Survey report preparation	ES/Pradeep Amatya	-	Not started		Rescheduled
5	Procurement of vermi-composting kits	CDS/Sabina	200,000	Not started		Rescheduled
6	Two days training on vermi-composting	ES/Sabina		Not started		Rescheduled
7	Follow-up of vermi-composting	ES/Pradeep Amatya		Not started		On schedule
8	Survey report preparation	ES/Pradeep Amatya		Not started		On schedule
B-3-S1	**Promotion of 3Rs practices by local people**					
1	Plastic separation	CDS/Sabina		Continued		
2	Paper recycling	CDS/Sabina		Not started		On schedule
3	Introduction of cotton bags	CDS/Sabina	50,000	Not started		On schedule
4	Support to introduce second hand shop	CDS/Sabina		Not started		On schedule
C-1-S1	**Operation of Sisdol SF with KMC**					
1	Dispatch staff and loader	ES/Pradeep Amatya		Completed		
2	Regular visit to Sisdol LF operation	ES/Pradeep Amatya	500,000	Continued		
C-1-S2	**Cooperation with SWMRMC and KMC for development of a long term landfill site**					
1	Site surveys	PWD/Rudra Gautam		Completed		Survey report submitted to MOLD by SWMRMC
2	Concept design	PWD/Rudra Gautam		Not started		
3	Feasibility study and market study	PWD/Rudra Gautam		Not started		
4	EIA	PWD/Rudra Gautam		Not started		
C-1-S3	**Closure of Bagmati dumping site**					
1	Closure works in cooperation with KMC	ES/Pradeep Amatya	-	Not started		On schedule

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-1-S1	**Implementation of public awareness/education activities**					
1	Implementation of exhibition as Public Event (1 time)	CDS/Sabina	100,000	Not started		On schedule
2	Implementation of wall painting as Public Event	ES/Prabin Shrestha	50,000	Not started		On schedule
3	Clean up campaign (provision of materials) before Earth Day	CDS/Sabina	50,000	Not started		On schedule
4	Rally for celebrating Environment Day	CDS/Sabina		Not started		On schedule
5	Award Ceremony on Earth Day	CDS/Sabina	25,000	Not started		On schedule
D-2-S1	**Formation and mobilization of Ward Environment Conservation Committee (WECC) on a pilot basis**					
1	Identification of pilot wards	CDS/Sabina		Not started		Rescheduled
2	One-day training for selected members (about 15 people) of pilot wards	CDS/Sabina	15,000	Not started		Rescheduled
3	Formulation of WECC by providing seed money	CDS/Sabina		Not started		On schedule
D-2-S2	**Formation and mobilization of Nature/Eco Clubs among children**					
1	Workshop for target school teachers (5 schools*2 people+10 staffs)	CDS/Sabina	15,000	Started		
2	Camp for target school students and form Nature/Eco Clubs (3-day)	CDS/Sabina	60,000	Not started		Rescheduled
3	Support of Nature/Eco Clubs by providing seed money	CDS/Sabina	25,000	Not started		Rescheduled
4	Various activities (competition, clean up, field visit, capacity building training)	CDS/Sabina	20,000	Not started		On schedule
D-2-S3	**Mobilization of youth as City Volunteers (CVs)**					
1	Sharing program with KMC twice a year	CDS/Sabina	-	Not started		Rescheduled
2	Refresher training (2 day training)	CDS/Sabina	-	Not started		12 volunteers selected
3	Regular monthly meetings	CDS/Sabina	-	Started		2 meetings conducted
D-2-S4	**Strengthening of women groups for SWM**					
1	One month training on reuse/recycling (30 people)	CDS/Sabina	40,000	Not started		On schedule
E-1-S1	**Plan for HRD and monitoring including municipal staff/NGOs/CBOs/TLOs**					
1	Development of HRD plan for SWM	Task Force	-	Not started	It should be a part of municipal HRD plan	Better to prepare municipal HRD plan
E-2-S1	**Announcement of SWM overall yearly plan of LSMC at beginning of each fiscal year**					
1	Annual workplan monitoring	Task Force	-	Continued		1st monitoring completed
2	Mid-term Review	Task Force		Not started		On schedule
3	Annual Workplan Evaluation	Task Force		Not started		On schedule
4	Annual Workplan Formulation for FY2063	Task Force		Not started		On schedule
5	Annual SWM Budget Formulation for FY2063	Task Force		Not started		On schedule
E-3-S1	**Review of SWM organization (Environment Dept.) and appoint responsible persons as focal points to coordinate all dimensions of SWM with motivating environment**					
1	Review of SWM organization (Environment Dept.) and appoint responsible persons	CEO		Not started		

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
E-5-S1	**Collection and arrangement of solid waste data in database**					
1	Waste quantity & quality survey (Wet season)	ES/Pradeep Amatya	-	Started		Daily report is preparing but yet to be compiled
2	Waste quantity & quality survey (Dry season)	ES/Pradeep Amatya	-	Not started		On schedule
3	Input of solid waste data to database	ES/Pradeep Amatya		Not started		On schedule
4	Establishment of reporting system	ES/Pradeep Amatya		Not started		Rescheduled
		Total	2,323,000			

Table A-1(3) BKM: Progress of Annual Work Plan of FY 2062/63 (As of November 2005)

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Procurement of Garbage Tipper and Tricycles**					
1	Procurement of Tricycles - 5 nos	PPWS/Dinesh	NRs 100, 000 is proposed in draft budget to implement AWP. But the municipal council has authority to change the budget.	Postponed	Budget is not approved	
2	Procurement of 1.5 m3 capacity small garbage Tipper - 2 nos	PPWS/Dinesh		Not started		Rescheduled
A-2-S1	**Promotion of source separation and collection of organic kitchen waste by formulating users groups at local household level**					
1	Planning of source separated collection system	PPWS/Dinesh, SWS/Moti		Continued		Pilot project in W No 14 and 17
2	Explanation to the public	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
3	Selection of model areas and preparation (distribute buckets)	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
4	Implementation of collection	PPWS/Dinesh, SWS/Moti		Not started		On schedule
5	Evaluation	PPWS/Dinesh, SWS/Moti		Not started		On schedule
A-2-S2	**Promotion of source separation and collection from hotels and restaurants**					
1	Preparation of a plan	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
2	Explanation to the concerned hotels, restaurants and stakeholders	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
3	Preparatory works for collection	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
4	Implementation of activities	PPWS/Dinesh, SWS/Moti		Not started		On schedule
5	Evaluation and preparation for further planning	PPWS/Dinesh, SWS/Moti		Not started		On schedule
B-1-S1	**Procurement of a 10 t/d capacity excavator or backhoe loader, and waste sorting device**					
1	Study of market for mini excavator	PPWS/Dinesh		Not started		
2	Finalization of type of excavator	PPWS/Dinesh		Not started		
3	Procurement of excavator	PPWS/Laxman		Postponed	Budget is not approved	
4	Operation of excavator	PPWS/(TBN)		Postponed	ditto	
B-1-S2	**Land acquisition of extension area**					
1	Preparation of plan	PPWS/Laxman		Not started		
2	Land acquisition	PPWS/Laxman		Not started		
B-1-S3	**Infrastructure development (open trussed shade, garage, parking area, weighbridge, sorting area, screening area, etc.)**					
1	Design and estimate for shade	PPWS/Laxman		Not started		Rescheduled
2	Construction of shade	PPWS/Laxman		Not started		Rescheduled
3	Operation of shade for composting and recycling	PPWS/(TBN)		Not started		On schedule
4	Establishment of non recyclable materials disposal mechanism	PPWS/(TBN)		Not started		On schedule
B-2-S1	**Promotion of waste minimization by making people well known with various methods of waste reduction at sources (e.g.. home compost bins and vermi-composting, gift and educational training tools for school children from waste)**					
1	Preparation for source separation	PPWS/Dinesh		Not started		Rescheduled
2	700 no of bags procurement and distribution	PPWS/Dinesh		Not started		Rescheduled
3	Organizing of core group	PPWS/Dinesh		Not started		Rescheduled
4	Operation of source separation	PPWS/Dinesh		Not started		On schedule
C-1-S1	**Topographical survey and soil investigation**					
1	Preliminary studies (topographical survey, soil survey)	PPWS/Laxman, Dinesh		Postponed		Previous study report will be used

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
C-1-S2	**Completion of EIA procedure**					
1	Completion of EIA procedure	PPWS/Laxman, Dinesh		Continued		Scoping repot was approved
C-3-S1	**Establishment of local committee for social consensus for the development of the site**					
1	Interaction program with local people	PPWS/Laxman, Dinesh, SWS/Moti		Not started	Due to opposition of local people	
2	Interaction program with media	PPWS/Laxman, Dinesh, SWS/Moti		Not started		
3	Interaction program with DDC, MTM, VDCs, SWMRMC, MOLD	PPWS/Laxman, Dinesh, SWS/Moti		Not started		
4	Demarcation of the boundary	PPWS/Laxman, Dinesh		Not started		
5	Formation of a basket fund	PPWS/Laxman, Dinesh		Not started	Budget is to be allocated by HMG	
6	Notification	PPWS/Laxman, Dinesh		Not started		
D-1-S1	**Development of training tools/materials for community participation**					
1	Drafting and design of flex and OHP sheets	SWS/Dilip, Krishna		Not started		Rescheduled
2	Production of OHP sheets	SWS/Dilip, Krishna		Not started		Rescheduled
3	Procurement of OHP	SWS/Dilip, Krishna		Canceled	OPH of Khopa Collage can be used	
D-1-S2	**Dissemination of information regarding SWM inclusive collection system (leaflets, brochures, calendars, advertisements in halls before starting of film show)**					
1	Follow-up programs for house wives in Ward no. 14, 15 and 17 (4 times)	SWS/Dilip, Krishna		Not started		On schedule
2	School based orientation program	SWS/Dilip, Krishna		Postponed	Budget is not approved	
D-1-S3	**Implementation of mass communication and education program (distribution of stickers & posters, drama play, competition among children group-drama, original stage drama during Gaijatra festival, drawing wall paintings, cleansing at the local community)**					
1	Publication of promotional materials	SWS/Dilip, Krishna		Not started		On schedule
2	Cleanup campaign	SWS/Dilip, Krishna		Postponed	Budget is not approved	
3	Drawing competition	SWS/Dilip, Krishna		Postponed	Budget is not approved	
4	Essay competition	SWS/Dilip, Krishna		Not started		On schedule
5	Drama	SWS/Dilip, Krishna		Postponed	Budget is not approved	
6	Award program	SWS/Dilip, Krishna		Postponed	Budget is not approved	
7	Rally	SWS/Dilip, Krishna		Not started		On schedule

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-2-S1	**Promotion of Interpersonal Communication and Education program with arrangement of agreement with NGO such as selection of target communities, orientation workshop, baseline information survey in regard to existing knowledge, attitude & practices on SWM,**					
1	Promotion of waste minimization by making people well known with various methods of waste reduction at sources			Not started		Rescheduled
1a	Refresher training on composting	SWS/Dilip, Krishna		Not started		Rescheduled
1b	Reuse training	SWS/Dilip, Krishna		Not started		Rescheduled
2	Expansion of Nature Clubs			Not started		Rescheduled
2a	Follow-up meetings with existing Nature Clubs	SWS/Dilip, Krishna		Not started		Rescheduled
2b	Follow-up activities for existing Nature Clubs	SWS/Dilip, Krishna		Not started		Rescheduled
2c	Workshop for target school teachers	SWS/Dilip, Krishna		Not started		Rescheduled
2d	Training for target school children and from 5 Nature Clubs	SWS/Dilip, Krishna		Not started		Rescheduled
2e	Provide seed money and stationary for 5 Nature Clubs to conduct activities (Rs 2,000 for seed money and Rs 500 for stationary)	SWS/Dilip, Krishna		Postponed	Budget is not approved	
2f	Field visit (2 times with vehicles: 2 groups, 3 times without vehicles: 2 groups)	SWS/Dilip, Krishna		Postponed	Budget is not approved	
E-1-S1	**Implementation of training on SWM based on the TNA**					
1	Conduct training program as TNA	PPWS/Laxman		Not started		On schedule
E-1-S2	**Finalization of organizational restructuring for SWM**					
1	Establishment of Environment Section	CEO		Completed		
2	Transfer of staff	CEO		Continued		
3	Provide TOR to the staff	CEO		Completed		
4	Physical improvement	CEO		Continued		
5	Approve Task Force TOR	CEO		Completed		
6	Drafting SWM guideline (By laws)	Environmental Sec./(TBN)		Not started		On schedule
E-2-S1	**Collection of relating data for SWM**					
1	Collection of relating data for SWM	ES/(TBN)		Not started		
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	ES/(TBN)		Not started		

Table A-1(4) MTM: Progress of Annual Work Plan of FY 2062/63 (As of November 2005)

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Procurement of collection vehicle (s) and assignment of a driver, collectors and loaders**					
1	Arrangement of collection vehicle	PTS/Satya	In total NRs 1,500, 000 is allocated in budget for SWM activities. But there is unallocated budget, which can be utilized in SWM activities.	Continued		Rs 200, 000 has been spent so far for the rent of a collection vehicle. Municipality need a collection vehicle
2	Arrangement of collectors with collection equipment	PTS/Satya		Continued		Rs 450,000 will spent for the wage of collectors
A-2-S1	**Setting "depo (s)" at new collection areas**					
1	Preparation of a plan of depo(s) for collection/transfer	PTS/Satya		Started		
2	Public meeting/consultation with local people to discuss the depo development plan	PTS/Satya		Started		Initial meeting was held
3	Preparation of design drawing of depo(s) including topo/geological surveys	PTS/Satya		Not started		On schedule
4	Tender for construction	PTS/Satya		Postponed		
5	Construction of depo(s)	PTS/Satya		Postponed	Lack of manpower and vehicle	
6	Preparation of operation plan of depo(s) and review	PTS/Satya		Postponed		
7	Operation of depo(s)	PTS/Satya		Postponed		
A-3-S1	**Preparation of guidelines for private sector collection**					
1	Review of the established general rules of PPP	CDSS/Tulsi		Started		PPP guideline is prepared
2	Clarification of the existing private collection in Wards 15, 16, and 17	CDSS/Tulsi		Started		Four groups are working as private collectors
3	Preparation of own guidelines of MTM for private sector collection	CDSS/Tulsi		Started		On discussion phase
4	Preparation of individual agreement paper for PPP with the existing private sector	CDSS/Tulsi		Started		On discussion phase
5	Signing on the agreements	CDSS/Tulsi		Not started		Rescheduled
6	Monitoring of private sector activity	CDSS/Tulsi		Continued		
B-2-S1	**Providing of bags and metal strings (suiros) for separation at source**					
1	Expansion of plastic recycling (50 bags, 50 strings, etc.)	CDSS/Tulsi		Not started		On schedule
2	Training for community (2 groups)	CDSS/Tulsi		Not started		Rescheduled
B-3-S2	**Operating community composting**					
1	Conducting a study for composting chamber operation	CDSS/Tulsi		Not started	Lack of fund for operation	Municipality will seek other option for the operation of chambers for example,
2	Trial of operation of composting chamber	CDSS/Tulsi		Not started	Lack of fund for operation	
C-1-S1	**Identification and arrangement of a temporary landfill site**					
1	Nominating candidates, public consultation and site selection	PTS/Satya		Started		
2	Preliminary engineering survey, pre feasibility study and design	PTS/Satya		Not started		On schedule
3	Land preparation work	PTS/Satya		Not started		On schedule
C-2-S1	**Conclusion of agreement with BKM for development and utilization of Taikabu LF**					
1	Cooperation and support to BKM/SWMRMC	PTS/Satya, LS/Siva		Continued		Seeking alternative LFS instead of Taikabu

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-1-S1	**Raising of public awareness through local radio (FM) and miking**					
1	Broadcasting on local FM on SWM	CDSS/Tulsi		Continued		
2	Miking regarding SWM	CDSS/Tulsi		Continued		
D-1-S2	**Implementation of public events**					
1	SWM exhibition (1time for 2 days)	CDSS/Tulsi, Krishna		Not started		On schedule
D-2-S1	**Development of training tools and promotion materials for community participation**					
1	Development of training tools and promotion materials	CDSS/Krishna		Not started		On schedule
D-2-S2	**Formation and mobilization of Eco/Nature Clubs at schools**					
1	Four Eco-clubs formation and mobilization with training and fund	CDSS/Krishna		Not started		Will be started very soon
D-2-S3	**Formation and mobilization and skills development of community groups for SWM**					
1	Household reuse training (2times, 5days)	CDSS/Tulsi		Not started		Rescheduled
2	Community group interaction and feedback collection	CDSS/Tulsi		Not started		On schedule
3	Community groups formation, mobilization and partnership	CDSS/Tulsi		Not started		On schedule
4	Refresher training on SWM for existing groups 10days one time	CDSS/Tulsi		Not started		Rescheduled
D-2-S4	**Implementation of community-based clean up program**					
1	Clean up program (4 times)	CDSS/Tulsi		Not started		Rescheduled
2	Temple and monuments cleaning by mobilizing community and students (3 times)	CDSS/Tulsi		Not started		On schedule
3	Municipal area cleaning works	CDSS/Tulsi		Continued		
D-2-S5	**Mobilization of youth as city volunteers for SWM**					
1	Selection of 17 city volunteers (to be assigned to each ward)	CDSS/Tulsi		Not started		Rescheduled
2	Three-day camp	CDSS/Tulsi		Not started		Rescheduled
3	Regular activities including meeting	CDSS/Tulsi		Not started		On schedule
E-1-S1	**Strengthening of SWM Sub-section**					
1	Review job descriptions and implement assignments	CEO		Started		Draft JD prepared
E-2-S1	**Collection of relating data for SWM**					
1	Collection of relating data for SWM	PTS/Satya		Continued		
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	PTS/Satya		Not started		On schedule

Table A-1(5) KRM: Progress of Annual Work Plan of FY 2062/63 (As of Nobember 2005)

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of deviation	Remarks
A-1-S1	**Preparation of agreements with private sector (NGOs/CBOs) and conclusion of the contracts (up to two parties)**					
1	Review & examine previous agreements and establishment of general rules/guideline	PTS/Bal, SWMU/Anuj, Gyan	In total NRs 700, 000 is approved by the council to implement SWM activities	Completed		
2	Preparation of individual agreement for PPP	PTS/Bal, SWMU/Anuj, Gyan		Completed		
3	Conduct meeting with the potential private operators for identifying zoning areas	PTS/Bal, SWMU/Anuj, Gyan		Started		
4	Call for the proposal including their planning and work	PTS/Bal, SWMU/Anuj, Gyan		Not started		Preparation works completed and rescheduled for Poush
5	Review and analysis of proposal and locating sites for collection	PTS/Bal, SWMU/Anuj, Gyan		Started		Collection site decided by municipal board
6	Signing on the agreement & contracting the work for SWM services	PTS/Bal, SWMU/Anuj, Gyan		Not started		Rescheduled for Magh
7	Monitoring of performance of private activities	PTS/Bal, SWMU/Anuj, Gyan		Continued		
B-1-S1	**Selection and arrangement of land for a composting facility**					
1	Discussion with NGOs for development of a composting facility	PTS/Bal, SWMU/Anuj, Gyan		Started		Composting site had been decided at the Bagmati River
B-2-S1	**Promotion of home composting program (by providing bins, bags)**					
1	Planning of extension	SWMU/Gyan		Started		Discussion with community started
2	Preparation plan for three trainings	SWMU/Gyan		Not started		Rescheduled to Magh in two wards
3	Development of O&M plan	SWMU/Gyan		Not started		Rescheduled to Magh
4	Distribution of 25 bins, 150 bags and 150 suiros	SWMU/Gyan		Not started		Rescheduled to Magh
5	Evaluation and improvement	SWMU/Gyan		Not started		On schedule
B-3-S1	**Continuous implementation of separated collection of plastic bags (by providing wires (suiros), etc.)**					
1	Agreement with "Kawadi" for plastic collection	SWMU/Anuj, Gyan		Started		Discussion going on and rescheduled agreement to Poush
2	Planning of extension of collection areas	SWMU/Gyan		Not started		
3	Operation of a plastic store house	SWMU/Gyan		Continued		
4	Evaluation and improvement	SWMU/Gyan		Not started		On schedule
C-1-S1	**Coordination with KMC for utilization of Teku T/S**					
1	Conclusion of agreement with KMC for Teku T/S	CEO		Started		Verbal agreement to use Teku T/S
2	Classification of waste quality (Data analysis)	PTS/Bal		Not started		
3	Discussion with KMC on duty demarcation and cost sharing	PTS/Bal		Started		Verbal agreement with KMC to Teku T/S without cost in return of Bagmati LFS
4	Discussion with private sector and NGOs on the manner to transport wastes to Teku T/S	PTS/Bal		Started		
5	Procurement of necessary equipment and facilities	PTS/Bal		Postponed	Budget is not approved	Private sector will do the activities instead

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of deviation	Remarks
D-1-S1	**Implementation of education program of SWM for school children and households (by promoting home composting, plastic bag separation, etc.)**					
1	Collection of school level training demand	SWMU/Anuj		Not started		Rescheduled
2	Conduct 10 training on SWM	SWMU/Anuj		Not started		On schedule
3	Identify and form 5 new groups	SWMU/Anuj		Not started		On schedule
4	Train 5 newly formed groups	SWMU/Anuj		Not started		On schedule
5	Exhibition	SWMU/Anuj		Not started		On schedule
6	Clean up campaign	SWMU/Anuj		Started		Two campaigns have completed
7	Formation of 10 Nature Clubs	SWMU/Anuj		Not started		On schedule
E-1-S1	**Establishment of a section (unit) on SWM**					
1	Final approval of TOR and implementation	CEO		Not started		Rescheduled for Poush
2	Strengthen SWM Unit (staff selection, provision of physical facilities)	Account Sec/(TBN)		Completed		
E-2-S1	**Implementation of staff training on SWM and other related skills**					
1	HRD Plan (training on SWM & other skill)	PTS/Bal		Started		Field visit to other municipalities
2	Prepare Annual Work Plan for the coming year	Municipal board/TF		Not started		On schedule
E-3-S1	**Collection of related data for SWM from private sector**					
1	Arrangement of the collected data collection from private sector	PTS/Bal		Started		Preparatory works are going on (data will be collected in the process of preparation of city profile)
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	PTS/British		Not started		
F-1-S1	**Coordination with SWMRMC, neighboring municipalities and NGOs/CBOs**					
1	Coordination with SWMRMC, neighboring municipalities and NGOs/CBOs	CEO, Task Force		Started		

Table A-1(6) SWMRMC: Progress of Annual Work Plan of FY 2062/63 (As of November 2005)

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
S1	Clarification of demarcation between SWMRMC and Local Bodies by issuing a new policy and amendment of the Solid Waste Act	Ashok Shahi	100,000	Started		Legal expert will be assigned
S2	Clarification of legal status and change of jurisdictional area by amendment of the Act	Ashok Shahi		Started		
S3	Establishment of a strategic plan for SWMRMC (future organizational and institutional development plan)	Ashok Shahi	-	Not started		
S7	Implementation of Public Relations (PRs) activities (management of web-site and issue of newsletter, etc.)	Nirmal Acharya	100,000	Started		
S1	**Development of Sisdol Short-term LF**					
S1-1	Development of Sisdol LF Valley 2	Ram Sharan Maharjan	13,200,000	Started		
S1-2	Handover Valley 2 to operator	Ashok Shahi	-	Not started		
S1-3	Periodic environmental monitoring	Nirmal Acharya	300,000	Not started		
S2	**Development of Waste Processing Facility (KMC, LSMC, KRM)**		to be allocated			
S2-1	Land selection	Ashok Shahi		Not started		
S2-2	Site investigation works	Ashok Shahi		Not started		
S2-3	Land acquisition	Ashok Shahi		Not started		
S2-4	Concept design and feasibility study	Ashok Shahi		Not started		
S2-5	EIA process	Nirmal Acharya		Not started		
S3	**Development of Long-term LF (KMC, LSMC, KRM)**					
S3-1	Construction of access road	Ram Sharan Maharjan	5,000,000	Started		
S3-2	Identification of the capacity and service areas	Ram Sharan Maharjan	-	Not started		
S3-3	Site investigation works	Ram Sharan Maharjan	-	Not started		
S3-4	Land acquisition	Ram Sharan Maharjan	-	Not started		
S3-5	Concept design	Ram Sharan Maharjan	-	Not started		
S3-6	EIA process	Nirmal Acharya	900,000	Started		Scoping report and TOR for EIA has been submitted to MOEST
S4	**Development of Long-term LF (BKM, MTM)**					
S4-1	Site investigation works (EIA, Topography survey, Soil investigation)	Topa Ram Acharya	2,000,000	Not started	Opposition of local people	Meetings with local people are being held
S5	**Closure of Bagmati River dumping site**		17,000,000			NRs 900,000 has been spend
S5-1	Design of Bagmati River dumping site closure plan	Ram Sharan Maharjan		Not started		
S5-2	Implementation of Bagmati closure plan	Ram Sharan Maharjan		Not started		

A - 2

Progress of Annual Work Plan of FY 2005/06 (2062/63) as of February 2006

Table A-2 (1) KMC: Progress of Annual Work Plan of FY 2062/63 (As of February, 2006)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Establishment of rules for private sector collection and its monitoring system**		In total NRs 400, 880, 075 is approved for SWM activities. Almost all activities of the AWP is approved by the Council.			
1	Preparation of agreement and TOR for PPP	SWMS/Rajesh Manander		Started		**Agreement and TOR have been prepared**
A-1 S2	**Promotion of private sector participation in door to door collection for 25% of HHs**					
1	Agreement with private sector	SWMS/Rajesh Manander		Started	**Needed consensus from authorities and SWM workers**	
A-1-S3	**Preparation of equipment replacement plan and pilot test for a few types collection vehicles and commencement of replacement of tractors (for 25% collection)**					
1	Preparation of an equipment replacement plan	MS/Purusotam Shakya		Not started		Rescheduled to Chitra
2	Procurement of a Compactor Truck or Tipper with cover	Environment Dept./MS		Canceled		
3	Replacement of tractors purchasing 4 vehicles	Environment Dept./MS		**Canceled**		
A-1-S6	**Introduction of GIS System for waste collection plan**					
1	Preparation of an inventory of sweeping areas	SWMS/Rajesh Manander		**Completed**		Started in two Wards
2	Time and Motion survey of core areas	SWMS/Rajesh Manander		Completed		
3	Record data of sweeping areas inventory into the GIS system	SWMS/Rajesh Manander		**Completed**		
4	Record data of Time and Motion survey of core areas	SWMS/Rajesh Manander		Completed		
A-1-S7	**Improvement of collection and transportation system taking into consideration waste transportation to Sisdol landfill site**					
1	Plan and implement direct collection system in 2 Wards as pilot basis	SWMS/Rajesh Manander		**Started**		**With support from the JICA Study Team**
2	Preparation of new collection plan (core areas)	SWMS/Rajesh Manander		Not started		Rescheduled to Jestha
A-2-S1	**Establishment of effective operation system of Teku transfer station**					
1	Preparation of an effective operation plan of Teku transfer station	SWMS/Rajesh Manander		Started		
2	Construction and laying RCC of 1,000 sq meter	SWMS/Rajesh Manander		Completed		
3	Infrastructure for night time operation (lighting system)	SWMS/Rajesh Manander		Completed		
4	Drainage management	SWMS/Rajesh Manander		Completed		
5	Upgrading servicing situation (vehicle washing)	SWMS/Rajesh Manander		**Completed**		
6	Weight bridge operation	SWMS/Rajesh Manander		Completed		
A-2-S2	**Plan (design), construction and operation of Balaju transfer station (including necessary revision of primary collection route)**					
1	Preparation of a plan together with design of Balaju transfer station	SWMS/Rajesh Manander		**Started**		**With support from the JICA Study Team**
2	Implementation of public consultation	SWMS/Rajesh Manander		Postponed		Rescheduled to Falgum
3	Implementation of IEE study	SWMS/Rajesh Manander		Postponed		
A-3-S1	**Renovation of existing mechanical workshop including replacement of old equipment and establishment of efficient parts stock system**					
1	Renovation of mechanical workshop	MS/Purusotam Shakya		**Completed**		Painting and cleaning
2	Procurement of office facilities (computer and steel racks)	MS/Purusotam Shakya		Completed		
3	Store database software package and management training	MS/Purusotam Shakya		Continued		**Data entry has started**
4	Mechanics training	MS/Purusotam Shakya		Not started		Rescheduled

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
B-1-S1	**Cooperation with SWMRMC to proceed development of a central level WPF (50-100 t/d) at appropriate place**					
1	Final site selection	SWMS/Rajesh Manandhar		**Started**		**Together with SWMRMC**
2	Site surveys	SWMS/Rajesh Manandhar		Not started		
3	Concept design	SWMS/Rajesh Manandhar		Not started		
4	Feasibility study including market study	SWMS/Rajesh Manandhar		Not started		
5	EIA	SWMS/Rajesh Manandhar		Not started		
B-2-S1	**Review of the existing home and community composting and recycling activities**					
1	Implementation of reviewing activities	CMU/Shriju		Completed		Reports have been prepared
B-2-S2	**Production of home compost bins and home vermi-compost kits and their distribution**					
1	Compost bin set distribution	CMU		Started	Delay in administrative process	Tendering process is going on. CKV experiences to be utilized.
2	Vermi-composting kits development and provision of subsidy	CMU		**Continued**		
3	Recycling sets for Nature Clubs	CMU		Completed		Distributed at last part of FY.
B-2-S3	**Operation of Community Recycling Center (CRC) in Ward 21 and its extension to other Wards (with support from NEREPA)**					
1	CRC-supporting activities	CMU		Continued		CRC is operated well & other program is onward.
2	CRC-establishment in 5 Wards	CMU		Started		
B-3-S1	**Operation and expansion of medium-scale vermi-composting**					
1	Operation of medium-scale vermi-composting	CMU		Continued		**Labels have been developed for product sale**
B-3-S2	**Implementation of sales campaign together with marketing study**					
1	Implementation of marketing study	CMU		**Completed**		**Packaging and marketing under the name of "Healthy Grow"**
2	Preparation and Implementation of sales campaign including review and evaluation	CMU		Not Started		**Rescheduled to Chitra**
C-1-S1	**Operation of Sisdol sanitary landfill site**					
1	Procurement of heavy equipment and vehicles (1 wheel loader, 1 supervision vehicle, 1 mobile maintenance vehicle w/ tools)	MS/Purusotam Shakya		**Continued**		
2	Monitoring daily LF management	SWMS/Rajesh Manandhar		Continued		
3	Extension of gas venting pipes	SWMS/Rajesh Manandhar		Continued		
4	Intermediate leachate collection	SWMS/Rajesh Manandhar		Continued		
5	Maintenance of leachate collection and treatment facilities	SWMS/Rajesh Manandhar		Continued		One time conducted
6	Building maintenance	SWMS/Rajesh Manandhar		Continued		
7	Operation of pump	SWMS/Rajesh Manandhar		Continued		
8	Vehicle and equipment hiring including rental trucks for 3 months (mid-July~end-Sept)	SWMS/Rajesh Manandhar		Completed		
9	Arrangement of fuel for equipment within the site	SWMS/Rajesh Manandhar		Continued		
C-2-S1	**Conducting of survey for possible long-term landfill sites**					
1	Site selection survey and public consultation	SWMS/Rajesh Manandhar		Continued		Coordination with SWMRMC

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
C-2-S2	**Cooperation with SWMRMC to proceed establishment of a long-term landfill site**					
1	Site surveys	SWMS/Rajesh Manandhar		Started		Coordination with SWMRMC
2	Concept design	SWMS/Rajesh Manandhar		Not started		
3	Feasibility study including market study	SWMS/Rajesh Manandhar		Not started		
4	EIA	SWMS/Rajesh Manandhar		**Started**		**Coordination with SWMRMC**
C-3-S1	**Rehabilitation and landscaping works of the Bagmati (Balkhu) dumping site**					
1	Planning for rehabilitation works for Balkhu	SWMS/Rajesh Manandhar		**Continued**		On schedule
2	Selection of contractor for rehabilitation and landscaping	SWMS/Rajesh Manandhar		Not started		Rescheduled
3	Rehabilitation works and landscaping (500~1,000m per year)	SWMS/Rajesh Manandhar		Continued		
D-1-S1	**Establishment of 50 more Nature Clubs**					
1	Establishment of 50 Nature Clubs	CMU/Shriju		**Continued**		Three new Nature Clubs have been established, 10 additional will be established.
D-1-S2	**Development of training packages on**					
1	Solid Waste Management, Greenery Promotion. Cultural Heritage Conservation, Communication,	CMU/Shriju		**Completed**		
2	Nature Club management	CMU/Shriju		**Completed**		
D-1-S3	**Training for Nature Clubs members on the above five areas**					
1	Workshop for Guide Teachers	CMU/Umesh		**Completed**		
2	Workshop for Principals	CMU/Umesh		Completed		
3	Workshop for Nature clubs	CMU/Umesh		**Completed**		
4	Handover Nature clubs	CMU/Umesh		Completed		
5	Eco-Yatra for observation visits	CMU/Shriju		Started		**Two tours (Yatra) are done. Rest will be conducted in Ashad**
D-1-S4	**Regular interaction between Nature Clubs and local communities to reach out to society as a whole**					
1	Regular interaction between Nature Clubs and local communities	CMU/Shriju		Started		**5 local groups conducted**
D-2-S1	**Development of a database of community groups, NGOs/CBOs and private sector, and selection of the best ones for long-term work**					
1	Development of a database	CMU/Shriju		**Postponed**	**Arrangement of a computer & mobilize of city volunteers are needed.**	
D-2-S2	**Review and evaluation of the existing Ward Environmental Committee (WEC) and formation of active WECs in 10 Wards**					
1	Review and evaluation of the existing WECs	CMU/Shriju		**Completed**		Concept paper preparation & meeting with 2 WECs have been done.
2	Form active WECs in 5 Wards	CMU/Shriju		Not started		**Rescheduled to Ashad**
D-2-S3	**Provision of training on SWM and community mobilization for WECs**					
1	Training for WECs	CMU/Sanu		Started		
2	Coordination and networking of WECs	CMU/Sanu		Started		
3	Conduct community cleanup	CMU/Sanu		Started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-2-S4	**Provision of technical and financial assistance to best community initiatives of WECs**					
1	Training for NGOs/CBOs	CMU/Sanu		**Completed**		12 trainings have been conducted.
D-2-S5	**Provision of annual award to best WEC**					
1	Provision of annual award	CMU/Sanu		Started		
D-3-S1	**Mobilization of City Volunteers (CVs) to support BABA program**					
1	Mobilization of CVs	CMU/Shriju		Started		3 days training will be done from Dec '.05
D-3-S2	**Implementation of closed camps for capability building and raising team spirit of each batch**					
1	Capability training camp	CMU/Shriju		Started		Rescheduled
2	City Volunteers training	CMU/Shriju		**Completed**		
D-4-S1	**Production of CMU's promotional materials (flyers, brochures, posters, stickers, etc.)**					
1	Promotional materials	CMU/Shriju		**Completed**		
D-4-S3	**Setting up of self-explanatory displays on SWM at CMU and other key locations for wider publicity**					
1	Self-explanatory displays in KMC's prime location	CMU/Shriju		**Completed**		
D-4-S4	**Regular featuring and reporting on SWM on TV program "Hamro Kathmandu"**					
1	Radio Jingles	CMU/Shriju		**Continued**		Covers in KMC's TV program every month..
2	Media Promotion	CMU/Shriju		**Continued**		ditto
D-4-S5	**Design and maintenance of the web page on SWM**					
1	Web page design	CMU/Shriju		**Postponed**		
2	Web page maintenance	CMU/Shriju		**Postponed**		
D-4-S6	**Implementation of community exhibition and event regularly**					
1	Community Exhibition on Environment and Earth day	CMU/Shriju		Not started		
D-5-S1	**Recruiting of a BABA coordinator**					
1	Recruiting of a BABA coordinator	CMU/Shriju		**Postponed**	Not on KMC priority	
D-5-S2	**Recruiting of assistant level staff for administration**					
1	Recruiting of assistant level staff for administration	CMU/Shriju		**Postponed**	Not on KMC priority	
E-1-S1	**Implementation of the reorganization plan of the Environment Department**					
1	Obtain approval from the Municipal Board/ Council on the new organization structure	Environment Dept./Mr.Indraman		Started		Submitted to KMC for approval
2	Conducting of sharing session to disseminate information about the new organization structure	Environment Dept./Mr.Indraman		Not started	New organization structure is not approved yet officially	
E-2-S1	**Establishment of a monitoring and evaluation system in alignment with the Action Plan**					
1	Preparation of plan of operation of monitoring and evaluation	SWMS/Rajesh Manandhar		Continued		
2	Conducting of monitoring and review of the Annual Work Plan	Environment Dept./Mr.Indraman		Started		1st monitoring is going on
3	Formulation of Annual Work Plan of FY2063/64	Environment Dept./Mr.Indraman		Not started		Will be done in Falgun
E-2-S2	**Mainstreaming of program-based budgeting system and expenditure monitoring for a more efficient use of resources**					
1	Conducting of expenditure monitoring of the Annual Work Plan	Environment Dept./Mr.Indraman		**Started**		
2	Formulation of program-based budget of FY2063/64	Environment Dept./Mr.Indraman		Not started		Will be done in Falgun

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
E-2-S3	**Improvement of information flow and management by encouraging regular coordination meetings and sharing of experiences**					
1	Implementation of regular coordination meetings	Environment Dept./Mr.Indraman		**Started**		
E-2-S4	**Introduction of systematic collection and analysis of SW data by database**					
1	Waste record database	SWMS/Robert		Completed		
2	Budget database	SWMS/Robert		Not started		Rescheduled
3	Store database	SWMS/Robert		**Started**		
E-3-S1	**Preparation of TORs for each unit delineating tasks and responsibilities to be undertaken during Action Plan implementation**					
1	Review of existing tasks and responsibilities of each unit	SWMS/Rajesh Manandhar		**Postponed**		
2	Series of meetings among related units	SWMS/Rajesh Manandhar		**Postponed**		
3	Preparation of TORs for each unit	SWMS/Rajesh Manandhar		**Postponed**		
E-3-S2	**Reassignment of necessary staff (Taking into consideration future resource demands such as for facilities development)**					
1	Development of reassignment plan	SWMS/Rajesh Manandhar		Continued		
2	Reassignment of necessary staff	SWMS/Rajesh Manandhar		Continued		
E-4-S1	**Development of a staffing plan based on HRD program and its application**					
1	Development of a staffing plan	Environment Dept./Mr.Indraman		Not started		
E-4-S2	**Assignment of a Learning Manager for HRD and maintain an inventory of staff skills and knowledge, training history**					
1	Assignment of a learning manager	SWMS/Rajesh Manandhar		Not started		
2	Development of database	SWMS/Rajesh Manandhar		Continued		
3	Collection of necessary data from each staff	SWMS/Rajesh Manandhar		**Postponed**		
E-4-S3	**Strengthening of knowledge-sharing mechanism and peer-training sessions for full utilization of existing human resources**					
1	Development of plan of knowledge-sharing mechanism and peer-training sessions	SWMS/Rajesh Manandhar		Not started		
2	Implementation of knowledge-sharing meeting and peer-training session	SWMS/Rajesh Manandhar		Not started		
F-1-S1	**Dissemination of Medical Waste Management Guidelines**					
1	Obtain of official approval from the municipal board on the Medical Waste Management Guidelines	SWMS/Rajesh Manandhar		Started		Guideline is not approved yet
2	Planning of medical waste management system	SWMS/Rajesh Manandhar		Started		
F-1-S2	**Operation of a medical waste treatment facility at Teku**					
1	Public consultation	SWMS/Rajesh Manandhar		Started		
2	Conducting a test run	SWMS/Rajesh Manandhar		Completed		
F-1-S3	**Procurement of additional equipment (auto clave)**					
1	Procurement of an auto clave	SWMS/Rajesh Manandhar		**Started**		**Request to the other sources**
F-1-S4	**Training for staff of KMC, private sector, and medical institutions**					
1	Training for KMC staff operators	SWMS/Rajesh Manandhar		**Postponed**		
2	Training for health care staff by national dental hospital (USAID funds)	SWMS/Rajesh Manandhar		Continued		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
F-3-S1	**Review of working conditions of the sweeper population and provision of measures to improve their performance.**					
1	Establishment of a day care center	SWMS/Rajesh Manandhar		**Postponed**		
2	Provision of health care services to sweeper population and their children (supported by World Vision)	SWMS/Rajesh Manandhar		**Postponed**	**Due to delay in signing process**	

Table A-2 (2) LSMC: Progress of Annual Work Plan of FY 2062/63 (As of February 2006)

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Review of existing policy of LSMC and establishment of strong bylaws (and rules) interacting with all stakeholders and its publication**					
1	Study of private sector involvement in SWM and paying system	ES/Pradeep Amatya	50,000	Not started		Rescheduled
A-1-S2	**Preparation of standard TOR and agreement for PPP concept**					
1	Preparation of individual agreement for PPP with the existing private sector who are presently involved the waste collection services.	TDD/Prabin Shrestha	-	Started		Discussion started with community of W. No 3
2	Review meeting with private operators	TDD/Prabin Shrestha		Started		Discussion at individual level
3	Preparation of PPP operation guideline in SWM	TDD/Prabin Shrestha	-	Not started		Rescheduled
4	Signing on the agreement in 4 wards	TDD/Prabin Shrestha		Not started		**Rescheduled to Ashad**
A-1-S3	**Introduction of a new pilot project for waste collection from shops by private sector**					
1	Rikshaw collection system - 6 rikshaws	ES/Pradeep Amatya	90,000	**Completed**		Purchase order issued
2	Distribution of buckets	ES/Pradeep Amatya	-	**Postponed**		
3	Increase handcarts	ES/Pradeep Amatya	-	Canceled		Rickshaw takes place instead
A-1-S4	**Newly introduction of door to door collection for 25% houses at the outside the city core area by private sector**					
1	Develop networking system with private partners	TDD/Prabin Shrestha	-	Postponed		
2	Set up the target area and its introduction schedule (Preparation of planning report)	ES/Pradeep Amatya		**Started**		**Discussion is on going in Wards Nos 2 and 3.**
A-2-S1	**Implementation of Time and Motion study**					
1	Computer training for 5 staffs	ES/Pradeep Amatya	30,000	Not started	Budget for 2 staff	**Rescheduled to Chitra**
2	Detail Time and Motion survey of all existing routes	ES/Pradeep Amatya	-	**Postponed**		
3	Preparation of survey report	ES/Pradeep Amatya	-	**Postponed**		
4	Improve collection route and street cleaning activities based on the report	ES/Pradeep Amatya		**Postponed**		
A-2-S2	**Introduction of new collection routes**					
1	Improvement of collection routes and collection points by using GIS Map and GPS	ES/Pradeep Amatya		**Started**		
2	Development of backup system of the collection route	ES/Pradeep Amatya		**Postponed**		
A-2-S3	**Implementation of transportation and maintenance cost analysis**					
1	Implementation of cost analysis	ES/Pradeep Amatya		Started		In planning phase
A-2-S4	**Implementation of vehicle capacity analysis and plan for procurement of new vehicles**					
1	Capacity analysis	ES/Pradeep Amatya		**Postponed**		
2	Preparation of procurement plan	ES/Pradeep Amatya		**Postponed**		
A-3-S1	**Arrangement for a temporary transfer station (in Afadole) and commencement of temporary transferring**					
1	30 days notification for the preparation of T/S	PWD/Rudra Gautam	432,000	Not started		
2	Public consultation meetings	PWD/Rudra Gautam		Started		Key persons list preparing process
3	Hire consultants for IEE	PWD/Rudra Gautam		Not started		Rescheduled
4	Hire a supervisor for topography survey	PWD/Rudra Gautam		**Completed**		**With support from the JICA Study Team**

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
5	Prepare a concept plan	PWD/Rudra Gautam		**Completed**		**ditto**
6	Detail design, estimate and drawings	PWD/Rudra Gautam		Not started		Rescheduled
7	Arrangement of budget for the construction in next fiscal year	PWD/Rudra Gautam		Not started		
B-1-S1	**Cooperation with SWMRMC and KMC for development of WPF**					
1	Concept plan preparation	PWD/Rudra Gautam	-	Not started		Due to delay of the initiated by SWMRMC
2	Candidate site investigation	PWD/Rudra Gautam	-	**Started**		
3	Research previous reports and data	PWD/Rudra Gautam	-	Not started		
4	Prepare site selection criteria, list up potential sites, field visit, preparation of report and public discussion/meetings	PWD/Rudra Gautam	-	Not started		
B-2-S1	**Distribution of 1,200 home composting bins**					
1	Procurement of compost bins	PWD/Rudra Gautam	360,000	**Started**		**80 bins have been procured**
2	One day training on home compost bin for community and 100 municipal staff	CDS/Sabina	175,000	Not started		Rescheduled to Falgum
3	Follow-up household composting program by hiring motivators and resource persons	ES/Pradeep Amatya	36,000	**Started**		
4	Survey report preparation	ES/Pradeep Amatya	-	**Started**		
5	Procurement of vermi-composting kits	CDS/Sabina	200,000	Not started		Rescheduled
6	Two days training on vermi-composting	ES/Sabina		Not started		Rescheduled
7	Follow-up of vermi-composting	ES/Pradeep Amatya		Not started		On schedule
8	Survey report preparation	ES/Pradeep Amatya		Not started		On schedule
B-3-S1	**Promotion of 3Rs practices by local people**					
1	Plastic separation	CDS/Sabina		Continued		
2	Paper recycling	CDS/Sabina		**Postponed**		
3	Introduction of cotton bags	CDS/Sabina	50,000	Not started		On schedule
4	Support to introduce second hand shop	CDS/Sabina		Not started		On schedule
C-1-S1	**Operation of Sisdol SF with KMC**					
1	Dispatch staff and loader	ES/Pradeep Amatya		Completed		
2	Regular visit to Sisdol LF operation	ES/Pradeep Amatya	500,000	Continued		
C-1-S2	**Cooperation with SWMRMC and KMC for development of a long term landfill site**					
1	Site surveys	PWD/Rudra Gautam		Completed		
2	Concept design	PWD/Rudra Gautam		Not started		
3	Feasibility study and market study	PWD/Rudra Gautam		Not started		
4	EIA	PWD/Rudra Gautam		Not started		
C-1-S3	**Closure of Bagmati dumping site**					
1	Closure works in cooperation with KMC	ES/Pradeep Amatya	-	**Started**		**Mud filling is going on**
D-1-S1	**Implementation of public awareness/education activities**					
1	Implementation of exhibition as Public Event (1 time)	CDS/Sabina	100,000	Not started		On schedule
2	Implementation of wall painting as Public Event	ES/Prabin Shrestha	50,000	Not started		**Rescheduled**
3	Clean up campaign (provision of materials) before Earth Day	CDS/Sabina	50,000	Not started		On schedule
4	Rally for celebrating Environment Day	CDS/Sabina		Not started		On schedule
5	Award Ceremony on Earth Day	CDS/Sabina	25,000	Not started		On schedule

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-2-S1	**Formation and mobilization of Ward Environment Conservation Committee (WECC) on a pilot basis**					
1	Identification of pilot wards	CDS/Sabina		**Completed**		**Wards Nos 5 and 20**
2	One-day training for selected members (about 15 people) of pilot wards	CDS/Sabina	15,000	Not started		Rescheduled
3	Formulation of WECC by providing seed money	CDS/Sabina		Not started		**Rescheduled**
D-2-S2	**Formation and mobilization of Nature/Eco Clubs among children**					
1	Workshop for target school teachers (5 schools*2 people+10 staffs)	CDS/Sabina	15,000	Started		
2	Camp for target school students and form Nature/Eco Clubs (3-day)	CDS/Sabina	60,000	Not started		Rescheduled
3	Support of Nature/Eco Clubs by providing seed money	CDS/Sabina	25,000	Not started		Rescheduled
4	Various activities (competition, clean up, field visit, capacity building training)	CDS/Sabina	20,000	Not started		On schedule
D-2-S3	**Mobilization of youth as City Volunteers (CVs)**					
1	Sharing program with KMC twice a year	CDS/Sabina	-	Not started		Rescheduled
2	Refresher training (2 day training)	CDS/Sabina	-	Started		12 volunteers selected
3	Regular monthly meetings	CDS/Sabina	-	Started		2 meetings conducted
D-2-S4	**Strengthening of women groups for SWM**					
1	One month training on reuse/recycling (30 people)	CDS/Sabina	40,000	Not started		
E-1-S1	**Plan for HRD and monitoring including municipal staff/NGOs/CBOs/TLOs**					
1	Development of HRD plan for SWM	Task Force	-	Not started	It should be a part of municipal HRD plan	Better to prepare municipal HRD plan
E-2-S1	**Announcement of SWM overall yearly plan of LSMC at beginning of each fiscal year**					
1	Annual workplan monitoring	Task Force	-	Continued		1st monitoring completed
2	Mid-term Review	Task Force		Not started		On schedule
3	Annual Workplan Evaluation	Task Force		Not started		On schedule
4	Annual Workplan Formulation for FY2063	Task Force		Not started		On schedule
5	Annual SWM Budget Formulation for FY2063	Task Force		Not started		On schedule
E-3-S1	**Review of SWM organization (Environment Dept.) and appoint responsible persons as focal points to coordinate all dimensions of SWM with motivating environment**					
1	Review of SWM organization (Environment Dept.) and appoint responsible persons	CEO		Not started		
E-5-S1	**Collection and arrangement of solid waste data in database**					
1	Waste quantity & quality survey (Wet season)	ES/Pradeep Amatya	-	Started		Daily report is preparing but yet to be compiled
2	Waste quantity & quality survey (Dry season)	ES/Pradeep Amatya	-	**Postponed**		On schedule
3	Input of solid waste data to database	ES/Pradeep Amatya		Not started		On schedule
4	Establishment of reporting system	ES/Pradeep Amatya		Not started		Rescheduled
		Total	2,323,000			

Table A-2 (3) BKM: Progress of Annual Work Plan of FY 2062/63 (As of February, 2006)

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Procurement of Garbage Tipper and Tricycles**					
1	Procurement of Tricycles - 5 nos	PPWS/Dinesh	NRs 100, 000 is proposed in draft budget to implement AWP. But the municipal council has authority to change the budget.	Postponed	Budget is not approved	
2	Procurement of 1.5 m3 capacity small garbage Tipper - 2 nos	PPWS/Dinesh		**Postponed**		
A-2-S1	**Promotion of source separation and collection of organic kitchen waste by formulating users groups at local household level**					
1	Planning of source separated collection system	PPWS/Dinesh, SWS/Moti		Continued		Pilot project in W No 14 and 17
2	Explanation to the public	PPWS/Dinesh, SWS/Moti		Started		Explanation materials have been prepared.
3	Selection of model areas and preparation (distribute buckets)	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
4	Implementation of collection	PPWS/Dinesh, SWS/Moti		Not started		On schedule
5	Evaluation	PPWS/Dinesh, SWS/Moti		Not started		On schedule
A-2-S2	**Promotion of source separation and collection from hotels and restaurants**					
1	Preparation of a plan	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
2	Explanation to the concerned hotels, restaurants and stakeholders	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
3	Preparatory works for collection	PPWS/Dinesh, SWS/Moti		Not started		Rescheduled
4	Implementation of activities	PPWS/Dinesh, SWS/Moti		Not started		On schedule
5	Evaluation and preparation for further planning	PPWS/Dinesh, SWS/Moti		Not started		On schedule
B-1-S1	**Procurement of a 10 t/d capacity excavator or backhoe loader, and waste sorting device**					
1	Study of market for mini excavator	PPWS/Dinesh		**Postponed**	Budget is not approved	
2	Finalization of type of excavator	PPWS/Dinesh		**Postponed**	ditto	
3	Procurement of excavator	PPWS/Laxman		**Postponed**	ditto	
4	Operation of excavator	PPWS/(TBN)		**Postponed**	ditto	
B-1-S2	**Land acquisition of extension area**					
1	Preparation of plan	PPWS/Laxman		Not started		
2	Land acquisition	PPWS/Laxman		Not started		
B-1-S3	**Infrastructure development (open trussed shade, garage, parking area, weighbridge, sorting area, screening area, etc.)**					
1	Design and estimate for shade	PPWS/Laxman		Not started		Rescheduled
2	Construction of shade	PPWS/Laxman		**Postponed**	Budget is not approved	
3	Operation of shade for composting and recycling	PPWS/(TBN)		**Postponed**	ditto	
4	Establishment of non recyclable materials disposal mechanism	PPWS/(TBN)		**Postponed**	ditto	
B-2-S1	**Promotion of waste minimization by making people well known with various methods of waste reduction at sources (e.g.. home compost bins and vermi-composting, gift and educational training tools for school children from waste)**					
1	Preparation for source separation	PPWS/Dinesh		Not started		Rescheduled
2	700 no of bags procurement and distribution	PPWS/Dinesh		Not started		Rescheduled
3	Organizing of core group	PPWS/Dinesh		Not started		Rescheduled
4	Operation of source separation	PPWS/Dinesh		Not started		On schedule

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
C-1-S1	**Topographical survey and soil investigation**					
1	Preliminary studies (topographical survey, soil survey)	PPWS/Laxman, Dinesh		Postponed		Previous study report will be used
C-1-S2	**Completion of EIA procedure**					
1	Completion of EIA procedure	PPWS/Laxman, Dinesh		Continued		Scoping repot was approved
C-3-S1	**Establishment of local committee for social consensus for the development of the site**					
1	Interaction program with local people	PPWS/Laxman, Dinesh, SWS/Moti		Not started	Due to opposition of local people	Rescheduled
2	Interaction program with media	PPWS/Laxman, Dinesh, SWS/Moti		Not started		Rescheduled
3	Interaction program with DDC, MTM, VDCs, SWMRMC, MOLD	PPWS/Laxman, Dinesh, SWS/Moti		Not started		Rescheduled
4	Demarcation of the boundary	PPWS/Laxman, Dinesh		Not started		
5	Formation of a basket fund	PPWS/Laxman, Dinesh		Not started	Budget is to be allocated by HMG	
6	Notification	PPWS/Laxman, Dinesh		Not started		
D-1-S1	**Development of training tools/materials for community participation**					
1	Drafting and design of flex and OHP sheets	SWS/Dilip, Krishna		Not started		Rescheduled
2	Production of OHP sheets	SWS/Dilip, Krishna		Not started		
3	Procurement of OHP	SWS/Dilip, Krishna		Canceled	OPH of Khopa Collage can be used	
D-1-S2	**Dissemination of information regarding SWM inclusive collection system (leaflets, brochures, calendars, advertisements in halls before starting of film show)**					
1	Follow-up programs for house wives in Ward no. 14, 15 and 17 (4 times)	SWS/Dilip, Krishna		Not started		On schedule
2	School based orientation program	SWS/Dilip, Krishna		**Postponed**	Budget is not approved	
D-1-S3	**Implementation of mass communication and education program (distribution of stickers & posters, drama play, competition among children group-drama, original stage drama during Gaijatra festival, drawing wall paintings, cleansing at the local community)**					
1	Publication of promotional materials	SWS/Dilip, Krishna		Not started		On schedule
2	Cleanup campaign	SWS/Dilip, Krishna		**Postponed**	Budget is not approved	
3	Drawing competition	SWS/Dilip, Krishna		**Postponed**	Budget is not approved	
4	Essay competition	SWS/Dilip, Krishna		**Postponed**	Budget is not approved	
5	Drama	SWS/Dilip, Krishna		**Postponed**	Budget is not approved	
6	Award program	SWS/Dilip, Krishna		**Postponed**	Budget is not approved	
7	Rally	SWS/Dilip, Krishna		Not started		On schedule

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-2-S1	**Promotion of Interpersonal Communication and Education program with arrangement of agreement with NGO such as selection of target communities, orientation workshop, baseline information survey in regard to existing knowledge, attitude & practices on SWM,**					
1	Promotion of waste minimization by making people well known with various methods of waste reduction at sources			Not started		Rescheduled
1a	Refresher training on composting	SWS/Dilip, Krishna		Not started		Rescheduled
1b	Reuse training	SWS/Dilip, Krishna		Not started		Rescheduled
2	Expansion of Nature Clubs			Not started		Rescheduled
2a	Follow-up meetings with existing Nature Clubs	SWS/Dilip, Krishna		Not started		Rescheduled
2b	Follow-up activities for existing Nature Clubs	SWS/Dilip, Krishna		Not started		Rescheduled
2c	Workshop for target school teachers	SWS/Dilip, Krishna		Not started		Rescheduled
2d	Training for target school children and from 5 Nature Clubs	SWS/Dilip, Krishna		Not started		Rescheduled
2e	Provide seed money and stationary for 5 Nature Clubs to conduct activities (Rs 2,000 for seed money and Rs 500 for stationary)	SWS/Dilip, Krishna		Postponed	Budget is not approved	
2f	Field visit (2 times with vehicles: 2 groups, 3 times without vehicles: 2 groups)	SWS/Dilip, Krishna		Postponed	Budget is not approved	
E-1-S1	**Implementation of training on SWM based on the TNA**					
1	Conduct training program as TNA	PPWS/Laxman		Not started		On schedule
E-1-S2	**Finalization of organizational restructuring for SWM**					
1	Establishment of Environment Section	CEO		Completed		
2	Transfer of staff	CEO		Continued		
3	Provide TOR to the staff	CEO		Completed		
4	Physical improvement	CEO		Continued		
5	Approve Task Force TOR	CEO		Completed		
6	Drafting SWM guideline (By laws)	Environmental Sec./(TBN)		**Postponed**	Budget is not approved	
E-2-S1	**Collection of relating data for SWM**					
1	Collection of relating data for SWM	ES/(TBN)		**Started**		
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	ES/(TBN)		**Started**		

Table A-2 (4) MTM: Progress of Annual Work Plan of FY 2062/63 (As of February 2006)

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
A-1-S1	**Procurement of collection vehicle (s) and assignment of a driver, collectors and loaders**					
1	Arrangement of collection vehicle	PTS/Satya	In total NRs 1,500, 000 is allocated in budget for SWM activities. But there is unallocated budget, which can be utilized in SWM activities.	Continued		**Municipality has been waiting for a collection vehicle to be provided from KMC**
2	Arrangement of collectors with collection equipment	PTS/Satya		Continued		
A-2-S1	**Setting "depo (s)" at new collection areas**					
1	Preparation of a plan of depo(s) for collection/transfer	PTS/Satya		Started		
2	Public meeting/consultation with local people to discuss the depo development plan	PTS/Satya		Started		Initial meeting was held
3	Preparation of design drawing of depo(s) including topo/geological surveys	PTS/Satya		Not started		On schedule
4	Tender for construction	PTS/Satya		Postponed		
5	Construction of depo(s)	PTS/Satya		Postponed	Lack of manpower and vehicle	
6	Preparation of operation plan of depo(s) and review	PTS/Satya		Postponed		
7	Operation of depo(s)	PTS/Satya		Postponed		
A-3-S1	**Preparation of guidelines for private sector collection**					
1	Review of the established general rules of PPP	CDSS/Tulsi		Completed		PPP guideline is prepared
2	Clarification of the existing private collection in Wards 15, 16, and 17	CDSS/Tulsi		Completed		Four groups are working as private collectors
3	Preparation of own guidelines of MTM for private sector collection	CDSS/Tulsi		Started		On discussion phase
4	Preparation of individual agreement paper for PPP with the existing private sector	CDSS/Tulsi		Started		On discussion phase
5	Signing on the agreements	CDSS/Tulsi		Not started		Rescheduled
6	Monitoring of private sector activity	CDSS/Tulsi		Continued		
B-2-S1	**Providing of bags and metal strings (suiros) for separation at source**					
1	Expansion of plastic recycling (50 bags, 50 strings, etc.)	CDSS/Tulsi		Not started		**Rescheduled to Baishak**
2	Training for community (2 groups)	CDSS/Tulsi		Not started		**Rescheduled to Chitra**
B-3-S2	**Operating community composting**					
1	Conducting a study for composting chamber operation	CDSS/Tulsi		Not started	Lack of fund for operation	Discussion is going on for privatization
2	Trial of operation of composting chamber	CDSS/Tulsi		Not started	Lack of fund for operation	
C-1-S1	**Identification and arrangement of a temporary landfill site**					
1	Nominating candidates, public consultation and site selection	PTS/Satya		Started		Shdhikali is identified
2	Preliminary engineering survey, pre feasibility study and design	PTS/Satya		Not started		On schedule
3	Land preparation work	PTS/Satya		Not started		On schedule
C-2-S1	**Conclusion of agreement with BKM for development and utilization of Taikabu LF**					
1	Cooperation and support to BKM/SWMRMC	PTS/Satya, LS/Siva		Continued		Seeking alternative LFS instead of Taikabu

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
D-1-S1	**Raising of public awareness through local radio (FM) and miking**					
1	Broadcasting on local FM on SWM	CDSS/Tulsi		Continued		
2	Miking regarding SWM	CDSS/Tulsi		Continued		
D-1-S2	**Implementation of public events**					
1	SWM exhibition (1time for 2 days)	CDSS/Tulsi, Krishna		Not started		To be held on Earth Day
D-2-S1	**Development of training tools and promotion materials for community participation**					
1	Development of training tools and promotion materials	CDSS/Krishna		Not started		Reschedule
D-2-S2	**Formation and mobilization of Eco/Nature Clubs at schools**					
1	Four Eco-clubs formation and mobilization with training and fund	CDSS/Krishna		Not started		Will be started very soon
D-2-S3	**Formation and mobilization and skills development of community groups for SWM**					
1	Household reuse training (2times, 5days)	CDSS/Tulsi		Not started		Rescheduled
2	Community group interaction and feedback collection	CDSS/Tulsi		Not started		On schedule
3	Community groups formation, mobilization and partnership	CDSS/Tulsi		**Continued**		On schedule
4	Refresher training on SWM for existing groups 10days one time	CDSS/Tulsi		Not started		Rescheduled
D-2-S4	**Implementation of community-based clean up program**					
1	Clean up program (4 times)	CDSS/Tulsi		**Started**		
2	Temple and monuments cleaning by mobilizing community and students (3 times)	CDSS/Tulsi		Not started		On schedule
3	Municipal area cleaning works	CDSS/Tulsi		Continued		
D-2-S5	**Mobilization of youth as city volunteers for SWM**					
1	Selection of 17 city volunteers (to be assigned to each ward)	CDSS/Tulsi		Not started		Rescheduled
2	Three-day camp	CDSS/Tulsi		Not started		Rescheduled
3	Regular activities including meeting	CDSS/Tulsi		Not started		
E-1-S1	**Strengthening of SWM Sub-section**					
1	Review job descriptions and implement assignments	CEO		Started		Draft JD prepared
E-2-S1	**Collection of relating data for SWM**					
1	Collection of relating data for SWM	PTS/Satya		Continued		
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	PTS/Satya		**Started**		On schedule

Table A-2 (5) KRM: Progress of Annual Work Plan of FY 2062/63 (As of February, 2006)

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of deviation	Remarks
A-1-S1	**Preparation of agreements with private sector (NGOs/CBOs) and conclusion of the contracts (up to two parties)**					
1	Review & examine previous agreements and establishment of general rules/guideline	PTS/Bal, SWMU/Anuj, Gyan	In total NRs 700, 000 is approved by the council to implement SWM activities	Completed		
2	Preparation of individual agreement for PPP	PTS/Bal, SWMU/Anuj, Gyan		Completed		
3	Conduct meeting with the potential private operators for identifying zoning areas	PTS/Bal, SWMU/Anuj, Gyan		**Completed**		
4	Call for the proposal including their planning and work	PTS/Bal, SWMU/Anuj, Gyan		**Completed**		
5	Review and analysis of proposal and locating sites for collection	PTS/Bal, SWMU/Anuj, Gyan		Not started	**Due to delay of tender process**	**Rescheduled to Chitra**
6	Signing on the agreement & contracting the work for SWM services	PTS/Bal, SWMU/Anuj, Gyan		Not started	**Ditto**	**Ditto**
7	Monitoring of performance of private activities	PTS/Bal, SWMU/Anuj, Gyan		Continued		
B-1-S1	**Selection and arrangement of land for a composting facility**					
1	Discussion with NGOs for development of a composting facility	PTS/Bal, SWMU/Anuj, Gyan		Started		**Composting site had been decided at the Bagmati River and other candidate sites have been discussed**
B-2-S1	**Promotion of home composting program (by providing bins, bags)**					
1	Planning of extension	SWMU/Gyan		**Completed**		**Ward Nos 2 and 6 have been decided for extension**
2	Preparation plan for three trainings	SWMU/Gyan		**Started**		**Training will be conducted in Chitra**
3	Development of O&M plan	SWMU/Gyan		**Completed**		
4	Distribution of 25 bins, 150 bags and 150 suiros	SWMU/Gyan		**Started**		**70 suiros have been distributed**
5	Evaluation and improvement	SWMU/Gyan		**Started**		
B-3-S1	**Continuous implementation of separated collection of plastic bags (by providing wires (suiros), etc.)**					
1	Agreement with "Kawadi" for plastic collection	SWMU/Anuj, Gyan		Started		**Discussion with local Kawadi is going on**
2	Planning of extension of collection areas	SWMU/Gyan		Not started	**Due to delay of agreement with Kawadi**	
3	Operation of a plastic store house	SWMU/Gyan		Continued		
4	Evaluation and improvement	SWMU/Gyan		Not started		On schedule
C-1-S1	**Coordination with KMC for utilization of Teku T/S**					
1	Conclusion of agreement with KMC for Teku T/S	CEO		Started		Verbal agreement to use Teku T/S
2	Classification of waste quality (Data analysis)	PTS/Bal		Not started		**Rescheduled to Ashad**
3	Discussion with KMC on duty demarcation and cost sharing	PTS/Bal		Started		Verbal agreement with KMC to Teku T/S without cost in return of Bagmati LFS
4	Discussion with private sector and NGOs on the manner to transport wastes to Teku T/S	PTS/Bal		Started		**To be completed in Chitra**
5	Procurement of necessary equipment and facilities	PTS/Bal		**Canceled**	Budget is not approved	Private sector will do the activities instead

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Approved Budget (NRs)	Status	Reasons of deviation	Remarks
D-1-S1	**Implementation of education program of SWM for school children and households (by promoting home composting, plastic bag separation, etc.)**					
1	Collection of school level training demand	SWMU/Anuj		Not started		Rescheduled
2	Conduct 10 training on SWM	SWMU/Anuj		Not started		On schedule
3	Identify and form 5 new groups	SWMU/Anuj		Not started		On schedule
4	Train 5 newly formed groups	SWMU/Anuj		Not started		On schedule
5	Exhibition	SWMU/Anuj		Not started		On schedule
6	Clean up campaign	SWMU/Anuj		**Completed**		Two campaigns have completed
7	Formation of 10 Nature Clubs	SWMU/Anuj		Not started		On schedule
E-1-S1	**Establishment of a section (unit) on SWM**					
1	Final approval of TOR and implementation	CEO		**Completed**		
2	Strengthen SWM Unit (staff selection, provision of physical facilities)	Account Sec/(TBN)		Completed		
E-2-S1	**Implementation of staff training on SWM and other related skills**					
1	HRD Plan (training on SWM & other skill)	PTS/Bal		Started		Field visit to other municipalities
2	Prepare Annual Work Plan for the coming year	Municipal board/TF		Not started		On schedule
E-3-S1	**Collection of related data for SWM from private sector**					
1	Arrangement of the collected data collection from private sector	PTS/Bal		**Completed**		**Detail data has been collected**
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	PTS/British		**Started**		
F-1-S1	**Coordination with SWMRMC, neighboring municipalities and NGOs/CBOs**					
1	Coordination with SWMRMC, neighboring municipalities and NGOs/CBOs	CEO, Task Force		Started		

Table A-2 (6) SWMRMC: Progress of Annual Work Plan of FY 2062/63 (As of February, 2006)

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
S1	Clarification of demarcation between SWMRMC and Local Bodies by issuing a new policy and amendment of the Solid Waste Act	Ashok Shahi	100,000	Started		**Legal expert will be assigned and a draft report has been prepared.**
S2	Clarification of legal status and change of jurisdictional area by amendment of the Act	Ashok Shahi		Started		
S3	Establishment of a strategic plan for SWMRMC (future organizational and institutional development plan)	Ashok Shahi	-	Not started		
S7	Implementation of Public Relations (PRs) activities (management of web-site and issue of newsletter, etc.)	Nirmal Acharya	100,000	Started		
S1	**Development of Sisdol Short-term LF**					
S1-1	Development of Sisdol LF Valley 2	Ram Sharan Maharjan	13,200,000	Started		**Tender evaluation process has started.**
S1-2	Handover Valley 2 to operator	Ashok Shahi	-	Not started		
S1-3	Periodic environmental monitoring	Nirmal Acharya	300,000	**Started**		**Members of Environmental Coordination Committee has been nominated.**
S2	**Development of Waste Processing Facility (KMC, LSMC, KRM)**		to be allocated			
S2-1	Land selection	Ashok Shahi		**Started**		**Discussions with local people for the candidate site has started.**
S2-2	Site investigation works	Ashok Shahi		Not started		
S2-3	Land acquisition	Ashok Shahi		Not started		
S2-4	Concept design and feasibility study	Ashok Shahi		Not started		
S2-5	EIA process	Nirmal Acharya		Not started		
S3	**Development of Long-term LF (KMC, LSMC, KRM)**					
S3-1	Construction of access road	Ram Sharan Maharjan	5,000,000	Started		
S3-2	Identification of the capacity and service areas	Ram Sharan Maharjan	-	**Started**		
S3-3	Site investigation works	Ram Sharan Maharjan	-	**Started**		
S3-4	Land acquisition	Ram Sharan Maharjan	-	Not started		
S3-5	Concept design	Ram Sharan Maharjan	-	Not started		
S3-6	EIA process	Nirmal Acharya	900,000	Started		**Scoping report and TOR for EIA has been approved by MOEST**
S4	**Development of Long-term LF (BKM, MTM)**					
S4-1	Site investigation works (EIA, Topography survey, Soil investigation)	Topa Ram Acharya	2,000,000	Not started	Opposition of local people	**Meetings with local people will be held**
S5	**Closure of Bagmati River dumping site**		17,000,000			NRs 900,000 has been spend
S5-1	Design of Bagmati River dumping site closure plan	Ram Sharan Maharjan		Not started		
S5-2	Implementation of Bagmati closure plan	Ram Sharan Maharjan		Not started		

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Final Evaluation of Annual Work Plan of FY 2005/06 (2062/63) as of July 2006

Table A-3 (1) KMC: Final Evaluation of Annual Work Plan of FY 2062/63 (As of July, 2006)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
A-1-S1	**Establishment of rules for private sector collection and its monitoring system**		Total Rs 400,880,075 is approved for SWM activities (almost all activities of the action plan is approved by the council).			
1	Preparation of agreement and TOR for PPP	SWMS/Rajesh Manandhar		Started		Guideline, ToR and Agreement has been prepared; PPP survey completed
A-1 S2	**Promotion of private sector participation in door to door collection for 25% of HHs**					
1	Agreement with private sector	SWMS/Rajesh Manandhar		Not Started	Higher authorities and SWM workers are not ready for privatization	
A-1-S3	**Preparation of equipment replacement plan and pilot test for a few types collection**					
1	Preparation of an equipment replacement plan	MS/Purusotam Shakya		Not started	Leadership changes frequently	
2	Procurement of Compactor Truck or Tipper with cover	Environment Dept./MS		Postponed		
3	Replacement of tractors purchasing 4 vehicles	Environment Dept./MS		Postponed		
A-1-S6	**Introduction of GIS System for waste collection plan**					
1	Preparation of an inventory of sweeping areas	SWMS/Rajesh Manandhar		Started		Report is still to be submitted
2	Time and Motion survey of core areas	SWMS/Rajesh Manandhar		Completed		
3	Record data of sweeping areas inventory into the GIS system	SWMS/Rajesh Manandhar		Completed		
4	Record data of Time and Motion survey of core areas	SWMS/Rajesh Manandhar		Completed		
A-1-S7	**Improvement of collection and transportation system taking into consideration waste**					
1	Plan and implement direct collection system in 2 Wards as pilot basis	SWMS/Rajesh Manandhar		Started		60% direct collection in core areas
2	Preparation of new collection plan (core areas)	SWMS/Rajesh Manandhar		Not started	Collection time has not been fixed (day or night)	
A-2-S1	**Establishment of effective operation system of Teku transfer station**					
1	Preparation of an effective operation plan of Teku transfer station	SWMS/Rajesh Manandhar		Started		
2	Construction and laying RCC of 1,000 sq meter	SWMS/Rajesh Manandhar		Completed		
3	Infrastructure for night time operation (lighting system)	SWMS/Rajesh Manandhar		Completed		
4	Drainage management	SWMS/Rajesh Manandhar		Completed		
5	Upgrading servicing situation (vehicle washing)	SWMS/Rajesh Manandhar		Completed		
6	Weight bridge operation	SWMS/Rajesh Manandhar		Completed		
A-2-S2	**Plan (design), construction and operation of Balaju transfer station (including necessary**					
1	Preparation of a plan together with design of Balaju transfer station	SWMS/Rajesh Manandhar		Completed		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
2	Implementation of public consultation	SWMS/Rajesh Manandhar		Started		Report to be submitted yet
3	Implementation of IEE study	SWMS/Rajesh Manandhar		Not started	Preliminary environment study is completed	
A-3-S1	**Renovation of existing mechanical workshop including replacement of old equipment**					
1	Renovation of mechanical workshop	MS/Purusotam Shakya	Rs 5000000 is allocated in PWD budget	Started		Painting and cleaning works completed, estimate submitted centre for roofing in workshop
2	Procurement of official facilities (computer and steel racks)	MS/Purusotam Shakya		Completed		
3	Store database software package and management training	MS/Purusotam Shakya		Continued		Installed and data entry started
4	Mechanics training	MS/Purusotam Shakya		Completed		7 persons in 2 groups have received training form India
B-1-S1	**Cooperation with SWMRMC to proceed development of a central level WPF (50-100**					
1	Final site selection	SWMS/Rajesh Manandhar		Started		
2	Site surveys	SWMS/Rajesh Manandhar		Not started	SWMRMC has a responsibility for this activity	
3	Concept design	SWMS/Rajesh Manandhar		Not started		
4	Feasibility study including market study	SWMS/Rajesh Manandhar		Not started		
5	EIA	SWMS/Rajesh Manandhar		Not started		
B-2-S1	**Review of the existing home and community composting and recycling activities**					
1	Implementation of reviewing activities	CMU/Shriju		Completed		
B-2-S2	**Production of home compost bins and home vermi-compost kits and their distribution**					
1	Compost bin set distribution	CMU		Started		800 set purchased; distribution will start from Srawan
2	Vermi-composting kits development and provision of subsidy	CMU		Completed		60 set distributed
3	Recycling sets for Nature Clubs	CMU		Not Started	Clean Energy Nepal is supposed to provide support but not started yet	
B-2-S3	**Operation of Community Recycling Center (CRC) in Ward 21 and its extension to other**					
1	CRC-supporting activities	CMU		Competed		
2	CRC-establishment in 5 Wards	CMU		Not Started		
B-3-S1	**Operation and expansion of medium-scale vermi-composting**					
1	Operation of medium-scale vermi-composting	CMU		Continued		Improvement of operation and revenue generating is necessary

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
B-3-S2	**Implementation of sales campaign together with marketing study**					
1	Implementation of marketing study	CMU		Completed		Packaging and marketing by the name "Healthy Grow"
2	Preparation and implementation of sales campaign including review and evaluation	CMU		Started		Price fixed for 1 and 5 kg packs in Rs 12 and 55 respectively
C-1-S1	**Operation of Sisdol sanitary landfill site**					
1	Procurement of heavy equipment and vehicles (1 wheel loader, 1 supervision vehicle, 1 mobile maintenance vehicle w/ tools)	MS/Purusotam Shakya		Not started		
2	Monitoring daily LF management	SWMS/Rajesh Manandhar		Continued		
3	Extension of gas venting pipes	SWMS/Rajesh Manandhar		Continued		
4	Intermediate leachate collection	SWMS/Rajesh Manandhar		Continued		
5	Maintenance of leachate collection and treatment facilities	SWMS/Rajesh Manandhar		Continued		
6	Building maintenance	SWMS/Rajesh Manandhar		Completed		
7	Operation of pump	SWMS/Rajesh Manandhar		Completed		One new pump purchased and installed
8	Vehicle and equipment hiring including rental trucks for 3 months (mid-July~end-Sept)	SWMS/Rajesh Manandhar		Completed		
9	Arrangement of fuel for equipment within the site	SWMS/Rajesh Manandhar		Completed		
C-2-S1	**Conducting of survey for possible long-term landfill sites**					
1	Site selection survey and public consultation	SWMS/Rajesh Manandhar		Continued		Survey is going on in coordination with SWMRMC
C-2-S2	**Cooperation with SWMRMC to proceed establishment of a long-term landfill site**					
1	Site surveys	SWMS/Rajesh Manandhar		Completed		Coordination with SWMRMC
2	Concept design	SWMS/Rajesh Manandhar		Completed		ditto
3	Feasibility study	SWMS/Rajesh Manandhar		Completed		ditto
4	EIA	SWMS/Rajesh Manandhar		Started		ditto
C-3-S1	**Rehabilitation and landscaping works of the Bagmati (Balkhu) dumping site**					
1	Planning for rehabilitation works for Balkhu	SWMS/Deepak		Completed		
2	Selection of contractor for rehabilitation and landscaping	SWMS/Deepak		Not started		
3	Rehabilitation works and landscaping (500~1,000m per year)	SWMS/Deepak		Not started		
D-1-S1	**Establishment of 50 more Nature Clubs**					
1	Establishment of 15 Nature Clubs	CMU/Shriju		Started		3 clubs have been established
D-1-S2	**Development of training packages on**					
1	Solid Waste Management, Greenery Promotion. Cultural Heritage Conservation, Communication,	CMU/Shriju		Started		
2	Nature Club management	CMU/Shriju		Started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
D-1-S3	**Training for Nature Clubs members on the above five areas**					
1	Workshop for Guide Teachers	CMU/Umesh		Completed		
2	Workshop for Principals	CMU/Umesh		Completed		
3	Workshop for Nature Clubs	CMU/Umesh		Completed		
4	Handover Nature Clubs	CMU/Umesh		Completed		
5	Eco-Yatra for observation visits	CMU/Shriju		Started		2 tours have been completed
D-1-S4	**Regular interaction between Nature Clubs and local communities to reach out to society**					
1	Regular interaction between Nature Clubs and local communities	CMU/Shriju		Started		
D-2-S1	**Development of a database of community groups, NGOs/CBOs and private sector, and**					
1	Development of a database	CMU/Shriju		Started		Information received
D-2-S2	**Review and evaluation of the existing Ward Environmental Committee (WEC) and**					
1	Review and evaluation of the existing WECs	CMU/Shriju		Started		
2	Form active WECs in 5 Wards	CMU/Shriju		Started		Formed in Ward no 21
D-2-S3	**Provision of training on SWM and community mobilization for WECs**					
1	Training for WECs	CMU/Sanu		Not started		
2	Coordination and networking of WECs	CMU/Sanu		Continued		
3	Conduct community cleanup	CMU/Sanu		Continued		
D-2-S4	**Provision of technical and financial assistance to best community initiatives of WECs**					
1	Training for NGOs/CBOs	CMU/Sanu		Completed		2 trainings a month conducted
D-2-S5	**Provision of annual award to best WEC**					
1	Provision of annual award	CMU/Sanu		Not started		
D-3-S1	**Mobilization of City Volunteers (CVs) to support BABA program**					
1	Mobilization of CVs	CMU/Shriju		Started		
D-3-S2	**Implementation of closed camps for capability building and raising team spirit of each**					
1	Capability training camp	CMU/Shriju		Not Started		
2	City Volunteers training	CMU/Shriju		Started		One training conducted
D-4-S1	**Production of CMU's promotional materials (flyers, brochures, posters, stickers, etc.)**					
1	Promotional materials	CMU/Shriju		Completed		
D-4-S3	**Setting up of self-explanatory displays on SWM at CMU and other key locations for**					
1	Self-explanatory displays in KMCs prime location	CMU/Shriju		Completed		In CEO Secretariat
D-4-S4	**Regular featuring and reporting on SWM on TV program "Hamro Kathmandu"**					
1	Radio Jingles	CMU/Shriju		Completed		
2	Media Promotion	CMU/Shriju		Completed		
D-4-S5	**Design and maintenance of the web page on SWM**					
1	Web page design	CMU/Shriju		Postponed		
2	Web page maintenance	CMU/Shriju		Postponed		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
D-4-S6	**Implementation of community exhibition and event regularly**					
1	Community Exhibition on Environment and Earth Day	CMU/Shriju		Completed		On Earth Day at Ward no 21
D-5-S1	**Recruiting of a BABA coordinator**					
1	Recruiting of a BABA coordinator	CMU/Shriju		Not started		
D-5-S2	**Recruiting of assistant level staff for administration**					
1	Recruiting of assistant level staff for administration	CMU/Shriju		Not started		
E-1-S1	**Implementation of the reorganization plan of the Environment Department**					
1	Obtain approval from the Municipal Board/ Council on the new organization structure	Environment Dept./Indraman		Started		Submitted for approval
2	Conducting of sharing session to disseminate information about the new organization structure	Environment Dept./Indraman		Not started	New organization structure is not approved yet	
E-2-S1	**Establishment of a monitoring and evaluation system in alignment with the Action Plan**					
1	Preparation of plan of operation of monitoring and evaluation	SWMS/Rajesh Manandhar		Continued		
2	Conducting of monitoring and review of the Annual Work Plan	Environment Dept./Mr.Indraman		Started		
3	Formulation of Annual Work Plan of FY2063/64	Environment Dept./Mr.Indraman		Started		
E-2-S2	**Mainstreaming of program-based budgeting system and expenditure monitoring for a**					
1	Conducting of expenditure monitoring of the Annual Work Plan	Environment Dept./Mr.Indraman		Started		
2	Formulation of program-based budget of FY2063/64	Environment Dept./Mr.Indraman		Started		
E-2-S3	**Improvement of information flow and management by encouraging regular**					
1	Implementation of regular coordination meetings	Environment Dept./Mr.Indraman		Started		In every Monday
E-2-S4	**Introduction of systematic collection and analysis of SW data by database**					
1	Waste record database	SWMS/Rajesh		Completed		
2	Budget database	SWMS/Rajesh		Not started		
3	Store database	SWMS/Rajesh		Started		
E-3-S1	**Preparation of TORs for each unit delineating tasks and responsibilities to be**					
1	Review of existing tasks and responsibilities of each unit	SWMS/Rajesh Manandhar		Postponed		
2	Series of meetings among related units	SWMS/Rajesh Manandhar		Postponed		
3	Preparation of TORs for each unit	SWMS/Rajesh Manandhar		Postponed		
E-3-S2	**Reassignment of necessary staff (Taking into consideration future resource demands**					
1	Development of reassignment plan	SWMS/Rajesh Manandhar		Continued		
2	Reassignment of necessary staff	SWMS/Rajesh Manandhar		Continued		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
E-4-S1	**Development of a staffing plan based on HRD program and its application**					
1	Development of a staffing plan	Environment Dept./Mr.Indraman		Not started	New organization structure is not approved yet	
E-4-S2	**Assignment of a Learning Manager for HRD and maintain an inventory of staff skills**					
1	Assignment of a learning manager	SWMS/Rajesh Manandhar		Not started		
2	Development of database	SWMS/Rajesh Manandhar		Continued		In the process of software development
3	Collection of necessary data from each staff	SWMS/Rajesh Manandhar		Not started	After software preparation	
E-4-S3	**Strengthening of knowledge-sharing mechanism and peer-training sessions for full**					
1	Development of plan of knowledge-sharing mechanism and peer-training sessions	SWMS/Rajesh Manandhar		Started		
2	Implementation of knowledge-sharing meeting and peer-training session	SWMS/Rajesh Manandhar		Started		
F-1-S1	**Dissemination of Medical Waste Management Guidelines**					
1	Obtain of official approval from the municipal board on the Medical Waste Management Guidelines	SWMS/Rajesh Manandhar		Started		Guideline is not approved so far
2	Planning of medical waste management system	SWMS/Rajesh Manandhar		Not started		Test run completed but could not started due to oppose by local people
F-1-S2	**Operation of a medical waste treatment facility at Teku**					
1	Public consultation	SWMS/Rajesh Manandhar		Started		
2	Conducting a test run	SWMS/Rajesh Manandhar		Completed		
F-1-S3	**Procurement of additional equipment (auto clave)**					
1	Procurement of an auto clave	SWMS/Rajesh Manandhar		Canceled	Managed by other sources	
F-1-S4	**Training for staff of KMC, private sector, and medical institutions**					
1	Training for KMC staff operators	SWMS/Rajesh Manandhar		Postponed		
2	Training for health care staff by national dental hospital (USAID funds)	SWMS/Sriju		Started		Will be done in Srawan at Patan Hospital
F-3-S1	**Review of working conditions of the sweeper population and provision of measures to**					
1	Establishment of a day care center	SWMS/Rajesh Manandhar		Postponed		
2	Provision of health care services to sweeper population and their children (supported by World Vision)	SWMS/Rajesh Manandhar		Not started	Program cancelled due to delay in signing process with World Vision	

Table A-3 (2) LSMC: Final Evaluation of Annual Work Plan of FY 2062/63 (As of July, 2006)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
A-1-S1	**Review of existing policy of LSMC and establishment of strong bylaws (and rules)**					
1	Study of private sector involvement in SWM and paying system	ES/Pradeep Amatya	50,000	Started		Criteria of paying system is set with private sector.
A-1-S2	**Preparation of standard TOR and agreement for PPP concept**					
1	Preparation of individual agreement for PPP with the existing private sectors who are presently involved the waste collection services.	TDD/Prabin Shrestha	-	Started		Discussion started with community of W. No 3
2	Review meeting with private operators	TDD/Prabin Shrestha		Continued		A half day W/S with private sector was organized and review meeting is continued in every month
3	Preparation of PPP operation guideline in SWM	TDD/Prabin Shrestha	-	Not started	Consultant will be hired to conduct this activity next year.	
4	Signing on the agreement in 4 wards	TDD/Prabin Shrestha		Not started		Old agreement is continued.
A-1-S3	**Introduction of a new pilot project for waste collection from shops by private sector**					
1	Rickshaw collection system - 6 rickshaws	ES/Pradeep Amatya	90,000	Completed		Used in plastic separation
2	Distribution of buckets	ES/Pradeep Amatya	-	Canceled	This program is replaced by Rickshaw	
3	Increase handcarts	ES/Pradeep Amatya	-	Canceled		
A-1-S4	**Newly introduction of door to door collection for 25% houses at the outside the city core**					
1	Develop networking system with private partners	TDD/Prabin Shrestha	-	Canceled	Solid Waste Management Association is constituted by private sectors	
2	Set up the target area and its introduction schedule (Preparation of planning report)	ES/Pradeep Amatya		Continued		
A-2-S1	**Implementation of Time and Motion study**					
1	Computer training for 5 staffs	ES/Pradeep Amatya	30,000	Started		One staff received training
2	Detail Time and Motion survey of all existing routes	ES/Pradeep Amatya	-	Not started	Transportation route has been changed	
3	Preparation of survey report	ES/Pradeep Amatya	-	Not started		
4	Improve collection route and street cleaning activities based on the report	ES/Pradeep Amatya		Not started	Transportation route has been changed	
A-2-S2	**Introduction of new collection routes**					
1	Improvement of collection routes and collection points by using GIS Map and GPS	ES/Pradeep Amatya		Started		GIS is used but GPS is not used.

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
2	Development of backup system of the collection route	ES/Pradeep Amatya		Postponed		
A-2-S3	**Implementation of transportation and maintenance cost analysis**					
1	Implementation of cost analysis	ES/Pradeep Amatya		Completed		
A-2-S4	**Implementation of vehicle capacity analysis and plan for procurement of new vehicles**					
1	Capacity analysis	ES/Pradeep Amatya		Postponed		
2	Preparation of procurement plan	ES/Pradeep Amatya		Postponed		
A-3-S1	**Arrangement for a temporary transfer station (in Afadole) and commencement of**					
1	30 days notification for the preparation of T/S	PWD/Rudra Gautam	432,000	Postponed	Necessary action before notification is not completed.	
2	Public consultation meetings	PWD/Rudra Gautam		Started		
3	Hire consultants for IEE	PWD/Rudra Gautam		Started		Preliminary environmental survey has been completed
4	Hire a supervisor for topography survey	PWD/Rudra Gautam		Completed		
5	Prepare a concept plan	PWD/Rudra Gautam		Completed		
6	Detail design, estimate and drawings	PWD/Rudra Gautam		Not started		
7	Arrangement of budget for the construction in next fiscal year	PWD/Rudra Gautam		Not started		
B-1-S1	**Cooperation with SWMRMC and KMC for development of WPF**					
1	Concept plan preparation	PWD/Rudra Gautam	-	Not started		
2	Candidate site investigation	PWD/Rudra Gautam	-	Started		
3	Research previous reports and data	PWD/Rudra Gautam	-	Not started		
4	Prepare site selection criteria, list up potential sites, field visit, preparation of report and public discussion/meetings	PWD/Rudra Gautam	-	Not started		
B-2-S1	**Distribution of 1,200 home composting bins**					
1	Procurement of compost bins	PWD/Rudra Gautam	360,000	Completed		250 bins purchased
2	One day training on home compost bin for community and 100 municipal staff	CDS/Sabina	175,000	Completed		2 days training for 200 people and orientation for 100 people
3	Follow-up household composting program by hiring motivators and resource persons	ES/Pradeep Amatya	36,000	Completed		2 motivators, 1 from JICA volunteer
4	Survey report preparation	ES/Pradeep Amatya	-	Completed		
5	Procurement of vermi-composting kits	CDS/Sabina	200,000	Not started		
6	Two days training on vermi-composting	ES/Sabina		Started		1/2 day training for 200 people
7	Follow-up of vermi-composting	ES/Pradeep Amatya		Not started		
8	Survey report preparation	ES/Pradeep Amatya		Not started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
B-3-S1	**Promotion of 3Rs practices by local people**					
1	Plastic separation	CDS/Sabina		Continued		
2	Paper recycling	CDS/Sabina		Not started		
3	Introduction of cotton bags	CDS/Sabina	50,000	Postponed		
4	Support to introduce second hand shop	CDS/Sabina		Not started		
C-1-S1	**Operation of Sisdol SF with KMC**					
1	Dispatch staff and loader	ES/Pradeep Amatya		Completed		
2	Regular visit to Sisdol LF operation	ES/Pradeep Amatya	500,000	Continued		
C-1-S2	**Cooperation with SWMRMC and KMC for development of long term landfill site**					
1	Site surveys	PWD/Rudra Gautam		Completed		
2	Concept design	PWD/Rudra Gautam		Completed		
3	Feasibility study	PWD/Rudra Gautam		Completed		
4	EIA	PWD/Rudra Gautam		Started		
C-1-S3	**Closure of Bagmati dumping site**					
1	Closure works in cooperation with KMC	ES/Pradeep Amatya	0	Continued		
D-1-S1	**Implementation of public awareness/education activities**					
1	Implementation of exhibition as Public Event (1 time)	CDS/Sabina	100,000	Completed		On Environment Day
2	Implementation of wall painting as Public Event	ES/Prabin Shrestha	50,000	Canceled	Political Slogan is panted in identified wall.	Flex board will be prepared and placed.
3	Clean up campaign (provision of materials) before Earth Day	CDS/Sabina	50,000	Completed		Stone water spot cleanup campaign
4	Rally for celebrating Environment Day	CDS/Sabina		Completed		
5	Award Ceremony on Earth Day	CDS/Sabina	25,000	Completed		On Environment Day
D-2-S1	**Formation and mobilization of Ward Environment Conservation Committee (WECC)**					
1	Identification of pilot wards	CDS/Sabina		Completed		Wards .Nos. 5 and 20
2	One-day training for selected members (about 15 people) of pilot wards	CDS/Sabina	15,000	Not started		
3	Formulation of WECC by providing seed money	CDS/Sabina		Not started		
D-2-S2	**Formation and mobilization of Nature/Eco Clubs among children**					
1	Workshop for target school teachers (5 schools*2 people+10 staffs)	CDS/Sabina	15,000	Started		Meeting with school is completed and data is being collecting form 25 schools
2	Camp for target school students and form Nature/Eco Clubs (3 day)	CDS/Sabina	60,000	Not started		Workshop will be held in Srawan
3	Support of Nature/Eco Clubs by providing seed money	CDS/Sabina	25,000	Not started		
4	Various activities (competition, clean up, field visit, capacity building training)	CDS/Sabina	20,000	Not started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
D-2-S3	**Mobilization of youth as City Volunteers (CVs)**					
1	Sharing program with KMC twice a year	CDS/Sabina	-	Not started		
2	Refresher training (2 day training)	CDS/Sabina	-	Completed		4 days camp training held from Com. Dev. budget.
3	Regular monthly meetings	CDS/Sabina	-	Continued		
D-2-S4	**Strengthening of women groups for SWM**					
1	One month training on reuse/recycling (30 people)	CDS/Sabina	40,000	Completed		10 days training for 50 persons
E-1-S1	**Plan for HRD and monitoring including municipal staff/NGOs/CBOs/TLOs**					
1	Development of HRD plan for SWM	Task Force	-	Not started		
E-2-S1	**Announcement of SWM overall yearly plan of LSMC at beginning of each fiscal year**					
1	Annual work plan monitoring	Task Force	-	Completed		
2	Mid-term Review	Task Force		Not started		
3	Annual Work plan Evaluation	Task Force		Completed		
4	Annual Work plan Formulation for FY2063	Task Force		Started		
5	Annual SWM Budget Formulation for FY2063	Task Force		Started		
E-3-S1	**Review of SWM organization (Environment Dept.) and appoint responsible persons as**					
1	Review of SWM organization (Environment Dept.) and appoint responsible persons	CEO		Not started		
E-5-S1	**Collection and arrangement of solid waste data in database**					
1	Waste quantity & quality survey (Wet season)	ES/Pradeep Amatya	-	Started		
2	Waste quantity & quality survey (Dry season)	ES/Pradeep Amatya	-	Not started		
3	Input of solid waste data to database	ES/Pradeep Amatya		Continued		
4	Establishment of reporting system	ES/Pradeep Amatya		Continued		

Table A-3 (3) BKM: Final Evaluation of Annual Work Plan of FY 2062/63 (As of July, 2006)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
A-1-S1	**Procurement of Garbage Tipper and Tricycles**					
1	Procurement of Tricycles - 5 nos	ES/Dinesh	Total Rs 100,000 is allocated to implement annual work plan form municipal council.	Not started	Necessary only after extension of collection area.	
2	Procurement of 1.5 m3 capacity small garbage Tipper - 2 nos	ES/Dinesh		Postponed	Lack of budget	
A-2-S1	**Promotion of source separation and collection of organic kitchen waste by formulating**					
1	Planning of source separated collection system	ES/Dinesh, SWS/Moti		Started		Wards Nos 14 and 17 has been identified.
2	Explanation to the public	ES/Dinesh, SWS/Moti		Started		Explanation to public is started.
3	Selection of model areas and preparation (distribute buckets)	ES/Dinesh, SWS/Moti		Not started		
4	Implementation of collection	ES/Dinesh, SWS/Moti		Not started		
5	Evaluation	ES/Dinesh, SWS/Moti		Not started		
A-2-S2	**Promotion of source separation and collection from hotels and restaurants**					
1	Preparation of a plan	ES/Dinesh, SWS/Moti		Not started		
2	Explanation to the concerned hotels, restaurants and stakeholders	ES/Dinesh, SWS/Moti		Not started		
3	Preparatory works for collection	ES/Dinesh, SWS/Moti		Not started		
4	Implementation of activities	ES/Dinesh, SWS/Moti		Not started		
5	Evaluation and preparation for further planning	ES/Dinesh, SWS/Moti		Not started		
B-1-S1	**Procurement of a 10 t/d capacity excavator or backhoe loader, and waste sorting device**					
1	Study of market for mini excavator	ES/Dinesh		Postponed	Lack of budget	
2	Finalization of type of excavator	ES/Dinesh		Postponed	Lack of budget	
3	Procurement of excavator	PPWS/Laxman		Postponed	Lack of budget	
4	Operation of excavator	ES/(TBN)		Postponed	Lack of budget	
B-1-S2	**Land acquisition of extension area**					
1	Preparation of plan	PPWS/Laxman		Postponed	Lack of budget	
2	Land acquisition	PPWS/Laxman		Postponed	Lack of budget	
B-1-S3	**Infrastructure development (open trussed shade, garage, parking area, weighbridge,**					
1	Design and estimate for shade	PPWS/Laxman		Postponed	Lack of budget	
2	Construction of shade	PPWS/Laxman		Postponed	Lack of budget	
3	Operation of shade for composting and recycling	ES/(TBN)		Postponed	Lack of budget	
4	Establishment of non recyclable materials disposal mechanism	ES/(TBN)		Postponed	Lack of budget	

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
B-2-S1	**Promotion of waste minimization by making people well known with various methods of**					
1	Preparation for source separation	ES/Dinesh/Moti		Not started	Political instability and changes in leadership.	
2	700 no of bags procurement and distribution	ES/Dinesh/Moti		Not started		
3	Organizing of core group	ES/Dinesh/Moti		Not started		
4	Operation of source separation	ES/Dinesh/Moti		Not started		
C-1-S1	**Topographical survey and soil investigation**					
1	Preliminary studies (topographical survey, soil survey)	ES/Dinesh, PPWS/Laxman		Canceled	Previous study report has been found	
C-1-S2	**Completion of EIA procedure**					
1	Completion of EIA procedure	ES/Dinesh, PPWS/Laxman		Continued		Scooping Repot has been approved, but suspended due to opposition of local people
C-3-S1	**Establishment of local committee for social consensus for the development of the site**					
1	Interaction program with local people	PPWS/Laxman, ES/Dinesh, SWS/Moti		Not started		
2	Interaction program with media	PPWS/Laxman, ES/Dinesh, SWS/Moti		Continued		
3	Interaction program with DDC, MTM, VDCs, SWMRMC, MOLD	PPWS/Laxman, ES/Dinesh, SWS/Moti		Continued		
4	Demarcation of boundary	ES/Dinesh, PPWS/Laxman		Not started		
5	Formation of basket fund	ES/Dinesh, PPWS/Laxman		Not necessary		
6	Notification	ES/Dinesh, PPWS/Laxman		Not started		
D-1-S1	**Development of training tools/materials for community participation**					
1	Drafting and design of flex and OHP sheets	SWS/Dilip and Krishna		Not started		
2	Production of OHP sheets	SWS/Dilip and Krishna		Not started		
3	Procurement of OHP	SWS/Dilip and Krishna		Canceled	OHP of Khopa Collage can be use	
D-1-S2	**Dissemination of information regarding SWM inclusive collection system (leaflets,**					
1	Follow-up programs for house wives in Wards Nos. 14, 15 and 17 (4 times)	SWS/Dilip and Krishna		Not started		
2	School based orientation program	SWS/Dilip and Krishna		Postponed	Lack of budget	
D-1-S3	**Implementation of mass communication and education program (distribution of stickers**					
1	Publication of promotional materials	SWS/Dilip and Krishna		Not started		
2	Cleanup campaign	SWS/Dilip and Krishna		Postponed	Lack of budget	
3	Drawing competition	SWS/Dilip and Krishna		Postponed	Lack of budget	
4	Essay competition	SWS/Dilip and Krishna		Postponed	Lack of budget	
5	Drama	SWS/Dilip and Krishna		Postponed	Lack of budget	
6	Award program	SWS/Dilip and Krishna		Postponed	Lack of budget	

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
7	Rally	SWS/Dilip and Krishna		Postponed	Lack of budget	
D-2-S1	**Promotion of Interpersonal Communication and Education program with arrangement**					
1	Promotion of waste minimization by making people well known with various methods of waste reduction at sources			Not started		
1a	Refresher training on composting	SWS/Dilip and Krishna		Not started		
1b	Reuse training	SWS/Dilip and Krishna		Not started		
2	Expansion of Nature Clubs			Not started		
2a	Follow-up meetings with existing Nature Clubs	SWS/Dilip and Krishna		Not started		
2b	Follow-up activities for existing Nature Clubs	SWS/Dilip and Krishna		Not started		
2c	Workshop for target school teachers	SWS/Dilip and Krishna		Not started		
2d	Training for target school children and from 5 Nature Clubs	SWS/Dilip and Krishna		Not started		
2e	Provide seed money and stationary for 5 Nature Clubs to conduct activities (Rs 2,000 for seed money and Rs 500 for stationary)	SWS/Dilip and Krishna		Postponed	Lack of budget	
2f	Field visit (2 times with vehicles: 2 groups, 3 times without vehicles: 2 groups)	SWS/Dilip and Krishna		Postponed	Lack of budget	
New	Seed money for core group of Wards Nos 14, 16 and 17 @ 10,000	SWS/Dilip and Krishna		Started		
E-1-S1	**Implementation of training on SWM based on the TNA**					
1	Conduct training program as TNA	PPWS/Laxman		Not started		
E-1-S2	**Finalization of organizational restructuring for SWM**					
1	Establishment of Environment Section	CEO		Started		Decision has been made to establish the section
2	Transfer of staff	CEO		Started		
3	Provide TOR to the staff	CEO		Started		TOR has been provided to 2 persons.
4	Physical improvement	CEO		Not started		
5	Approve Task Force TOR	CEO		Completed		
6	Drafting SWM guideline (By laws)	ES/(TBN)		Postponed	Lack of budget	
E-2-S1	**Collection of relating data for SWM**					
1	Collection of relating data for SWM	ES/(TBN)		Started		
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	ES/(TBN)		Started		Training Completed

Table A-3 (4) MTM: Final Evaluation of Annual Work Plan of FY 2062/63 (As of July, 2006)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
A-1-S1	**Procurement of collection vehicle (s) and assignment of a driver, collectors and loaders**					
1	Arrangement of collection vehicle	PTS/Satya	Total Rs 1,500,000 is allocated in budget for SWM activities.	Continued		Collection by a rented vehicle needs Rs 42.000 per month; Municipality needs at least one collection vehicle
2	Arrangement of collectors with collection equipment	PTS/Satya		Continued		2 persons are appointed
A-2-S1	**Setting "depo (s)" at new collection areas**					
1	Preparation of a plan of depo(s) for collection/transfer	PTS/Satya		Not Started	Lack of support from local people	
2	Public meeting/consultation with local people to discuss the depo development plan	PTS/Satya		Not Started		
3	Preparation of design drawing of depo(s) including topo/geological surveys	PTS/Satya		Not Started		
4	Tender for construction	PTS/Satya		Not Started		
5	Construction of depo(s)	PTS/Satya		Not Started		
6	Preparation of operation plan of depo(s) and review	PTS/Satya		Not Started		
7	Operation of depo(s)	PTS/Satya		Not Started		
A-3-S1	**Preparation of guidelines for private sector collection**					
1	Review of the established general rules of PPP	CDSS/Tulsi		Continued		
2	Clarification of the existing private collection in Wards 15, 16, and 17	CDSS/Tulsi		Completed		Four groups are working as private collectors
3	Preparation of own guidelines of MTM for private sector collection	CDSS/Tulsi		Started		Documents are collected
4	Preparation of individual agreement paper for PPP with the existing private sector	CDSS/Tulsi		Not Started	Yet to be redefined as per new guideline	
5	Signing on the agreements	CDSS/Tulsi		Not started	Yet to be redefined as per new guideline	
6	Monitoring of private sector activity	CDSS/Tulsi		Continued		4 private sectors are working and W No 2,7,12,13,14,15 and 16 are divided into private sector collection.
B-2-S1	**Providing of bags and metal strings (suiros) for separation at source**					
1	Expansion of plastic recycling (50 bags, 50 strings, etc.)	CDSS/Tulsi		Started		25 strings are distributed
2	Training for community (2 groups)	CDSS/Tulsi		Not started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
B-3-S2	**Operating community composting**					
1	Conducting a study for composting chamber operation	CDSS/Tulsi		Started		Study and 95% of construction work completed.
2	Trial of operation of composting chamber	CDSS/Tulsi		Not started	Delay in construction work by user committee	
C-1-S1	**Identification and arrangement of a temporary landfill site**					
1	Nominating candidates, public consultation and site selection	PTS/Satya		Started		Hattimahankal LFS has been identified
2	Preliminary engineering survey, pre feasibility study and design	PTS/Satya		Not Started	Due to absence of peoples representatives	
3	Land preparation work	PTS/Satya		Not Started		
C-2-S1	**Conclusion of agreement with BKM for development and utilization of Taikabu LF**					
1	Cooperation and support to BKM/SWMRMC	PTS/Satya, LS/Kashav		Continued		
D-1-S1	**Raising of public awareness through local radio (FM) and miking**					
1	Broadcasting on local FM on SWM	CDSS/Tulsi		Continued		On every Tuesday
2	Miking regarding SWM	CDSS/Tulsi		Continued		
D-1-S2	**Implementation of public events**					
1	SWM exhibition (1time for 2 days)	CDSS/Tulsi, Krishna		Completed		On Environment Day with the support of World Vision
D-2-S1	**Development of training tools and promotion materials for community participation**					
1	Development of training tools and promotion materials	CDSS/Krishna		Started		Promotional materials like advertisement in news papers, T shirts, leaflets are produced jointly with Team Nepal and World Vision
D-2-S2	**Formation and mobilization of Eco/Nature Clubs at schools**					
1	Four Eco-clubs formation and mobilization with training and fund	CDSS/Krishna		Started		8-9 schools have self initiated ECO club
D-2-S3	**Formation and mobilization and skills development of community groups for SWM**					
1	Household reuse training (2times, 5days)	CDSS/Tulsi		Not started		
2	Community group interaction and feedback collection	CDSS/Tulsi		Completed		
3	Community groups formation, mobilization and partnership	CDSS/Tulsi		Continued		Rs 1,500 per month is provided for mobilization
4	Refresher training on SWM for existing groups 10days one time	CDSS/Tulsi		Not started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
D-2-S4	**Implementation of community-based clean up program**					
1	Clean up program (4 times)	CDSS/Tulsi		Completed		8 times
2	Temple and monuments cleaning by mobilizing community and students (3 times)	CDSS/Tulsi		Completed		
3	Municipal area cleaning works	CDSS/Tulsi		Continued		
D-2-S5	**Mobilization of youth as city volunteers for SWM**					
1	Selection of 17 city volunteers (to be assigned to each ward)	CDSS/Tulsi		Not started		
2	Three-day camp	CDSS/Tulsi		Not started		
3	Regular activities including meeting	CDSS/Tulsi		Not started		
E-1-S1	**Strengthening of SWM Sub-section**					
1	Review job descriptions and implement assignments	CEO		Started		Capacity development plan of municipality is necessary
E-2-S1	**Collection of relating data for SWM**					
1	Collection of relating data for SWM	PTS/Satya		Continued		
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	PTS/Satya		Continued		

Table A-3 (5) KRM: Final Evaluation of Annual Work Plan of FY 2062/63 (As of July, 2006)

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
A-1-S1	**Preparation of agreements with private sector (NGOs/CBOs) and conclusion of the**					
1	Review & examine previous agreements and establishment of general rules/guideline	PTS/Bal, SWMU/Anuj, Gyan	Total Rs 700,000 is approved by council to implement SWM activities	Completed		
2	Preparation of individual agreement for PPP	PTS/Bal, SWMU/Anuj, Gyan		Completed		
3	Conduct meeting with the potential private operators for identifying zoning areas	PTS/Bal, SWMU/Anuj, Gyan		Completed		
4	Call for the proposal including their planning and work	PTS/Bal, SWMU/Anuj, Gyan		Completed		
5	Review and analysis of proposal and locating sites for collection	PTS/Bal, SWMU/Anuj, Gyan		Started		
6	Signing on the agreement & contracting the work for SWM services	PTS/Bal, SWMU/Anuj, Gyan		Not started		
7	Monitoring of performance of private activities	PTS/Bal, SWMU/Anuj, Gyan		Continued		Monitoring current private sectors' activities
B-1-S1	**Selection and arrangement of land for a composting facility**					
1	Discussion with NGOs for development of a composting facility	PTS/Bal, SWMU/Anuj, Gyan		Started		Composting site is decided in Bagmati Bank
B-2-S1	**Promotion of home composting program (by providing bins, bags)**					
1	Planning of extension	SWMU/Gyan		Completed		
2	Preparation of plan and implementation of two trainings	SWMU/Gyan		Completed		Conducted in Wards Nos 6 and 7
3	Development of O&M plan	SWMU/Gyan		Continued		
4	Distribution of 25 bins, 150 bags and 150 suiros	SWMU/Gyan		Completed		27 bins, 45 bags and 230 Suiros distributed
5	Evaluation and improvement	SWMU/Gyan		Not started		
B-3-S1	**Continuous implementation of separated collection of plastic bags (by providing wires**					
1	Agreement with "Kawadi" for plastic collection	SWMU/Anuj, Gyan		Not started		
2	Planning of extension of collection area	SWMU/Gyan		Completed		
3	Operation of plastic store house	SWMU/Gyan		Continued		
4	Evaluation and improvement	SWMU/Gyan		Not started		

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Approved Budget	Status	Reasons for Deviation	Remarks
C-1-S1	**Coordination with KMC for utilization of Teku T/S**					
1	Conclusion of agreement with KMC for Teku T/S	CEO		Started		Verbal agreement with KMC to use Teku T/S
2	Classification of waste quality (Data analysis)	PTS/Bal		Not started		
3	Discussion with KMC on duty demarcation and cost sharing	PTS/Bal		Started		Verbal agreement with KMC to use Teku T/S without cost in return of Bagmati dumping area
4	Discussion with private sector and NGOs on the manner to transport wastes to Teku T/S	PTS/Bal		Started		
5	Procurement of necessary equipment and facilities	PTS/Bal		Postponed	Lack of budget	Private sector will operate the activities
D-1-S1	**Implementation of education program of SWM for school children and households (by**					
1	Collection of school level training demand	SWMU/Anuj		Not started		Initiation is taken by schools and women groups
2	Conduct 4 training on SWM	SWMU/Anuj		Not started		
3	Identify and form 2 new groups	SWMU/Anuj		Not started		
4	Train 2 newly formed groups	SWMU/Anuj		Started		1 training has been completed
5	Exhibition	SWMU/Anuj		Not started		
6	Clean up campaign	SWMU/Anuj		Completed		In Ward No 6
7	Formation of 5 Nature Clubs	SWMU/Anuj		Not started		
E-1-S1	**Establishment of a section (unit) on SWM**					
1	Final approval of TOR and implementation	CEO		Completed		Report is completed but yet to be approved by municipality
2	Strengthen SWM Unit (staff selection, provision of physical facilities)	Account Sec/(TBN)		Completed		
E-2-S1	**Implementation of staff training on SWM and other related skills**					
1	HRD Plan (training on SWM & other skill)	PTS/Bal		Started		Field visit to other municipalities
2	Prepare Annual Work Plan for the coming year	Municipal board/TF		Not started		
E-3-S1	**Collection of related data for SWM from private sector**					
1	Arrangement of the collected data collection from private sector	PTS/Bal		Completed		Detail data is collected through private sector
E-2-S2	**Arrangement of the collected data in the database**					
1	Arrangement of the collected data in the database	PTS/British		Started		
F-1-S1	**Coordination with SWMRMC, neighboring municipalities and NGOs/CBOs**					
1	Coordination with SWMRMC, neighboring municipalities and NGOs/CBOs	CEO, Task Force		Continued		

Table A-3 (6) SWMRMC: Final Evaluation of Annual Work Plan of FY 2062/63 (As of July, 2006)

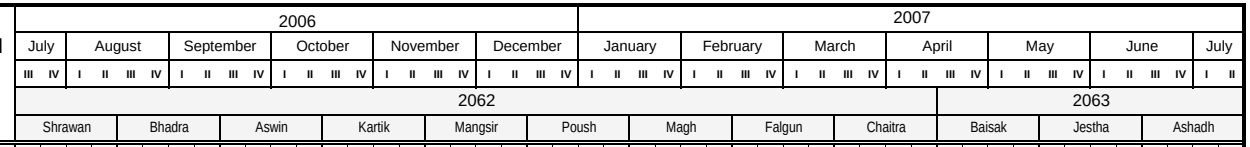
SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person	Approved Budget (NRs)	Status	Reasons of Deviation	Remarks
S1	Clarification of demarcation between SWMRMC and Local Bodies by issuing a new policy and amendment of the Solid Waste Act	Ashok Shahi	100,000	Started		Legal expert has been assigned.
S2	Clarification of legal status and change of jurisdictional area by amendment of the Act	Ashok Shahi		Started		
S3	Establishment of a strategic plan for SWMRMC (future organizational and institutional development plan)	Ashok Shahi	-	Started		
S7	Implementation of Public Relations (PRs) activities (management of web-site and issue of newsletter, etc.)	Ashok Shahi	100,000	Started		Web-site has been set up linking with web-site of MOLD
S1	**Development of Sisdol Short-term LF**					
S1-1	Development of Sisdol LF Valley 2	Ram Sharan Maharjan	13,200,000	Started		
S1-2	Handover Valley 2 to operator	Ashok Shahi	-	Not started		
S1-3	Periodic environmental monitoring	Ashok Shahi	300,000	Not started		
S2	**Development of Waste Processing Facility (KMC, LSMC, KRM)**		to be allocated			
S2-1	Land selection	Ashok Shahi		Started		
S2-2	Site investigation works	Ashok Shahi		Not started		
S2-3	Land acquisition	Ashok Shahi		Not started		
S2-4	Concept design and feasibility study	Ashok Shahi		Not started		
S2-5	EIA process	Ashok Shahi		Not started		
S3	**Development of Long-term LF (KMC, LSMC, KRM)**					
S3-1	Construction of access road	Ram Sharan Maharjan	5,000,000	Started		
S3-2	Identification of the capacity and service areas	Ram Sharan Maharjan	-	Completed		
S3-3	Site investigation works	Ram Sharan Maharjan	-	Completed		
S3-4	Land acquisition	Ram Sharan Maharjan	-	Not started		Buffer area has been discussed with local people
S3-5	Concept design	Ram Sharan Maharjan	-	Completed		
S3-6	EIA process	Ram Sharan Maharjan	900,000	Started		Scoping report and TOR for EIA has been approved by MOEST
S4	**Development of Long-term LF (BKM, MTM)**					
S4-1	Site investigation works (EIA, Topography survey, Soil investigation)	Topa Ram Acharya	2,000,000	Not started	Opposition of local people	Meetings with local people are being held
S5	**Closure of Bagmati River dumping site**		17,000,000			NRs 900,000 has been spend
S5-1	Design of Bagmati River dumping site closure plan	Ram Sharan Maharjan		Not started		
S5-2	Implementation of Bagmati closure plan	Ram Sharan Maharjan		Not started		

Supporting Report B

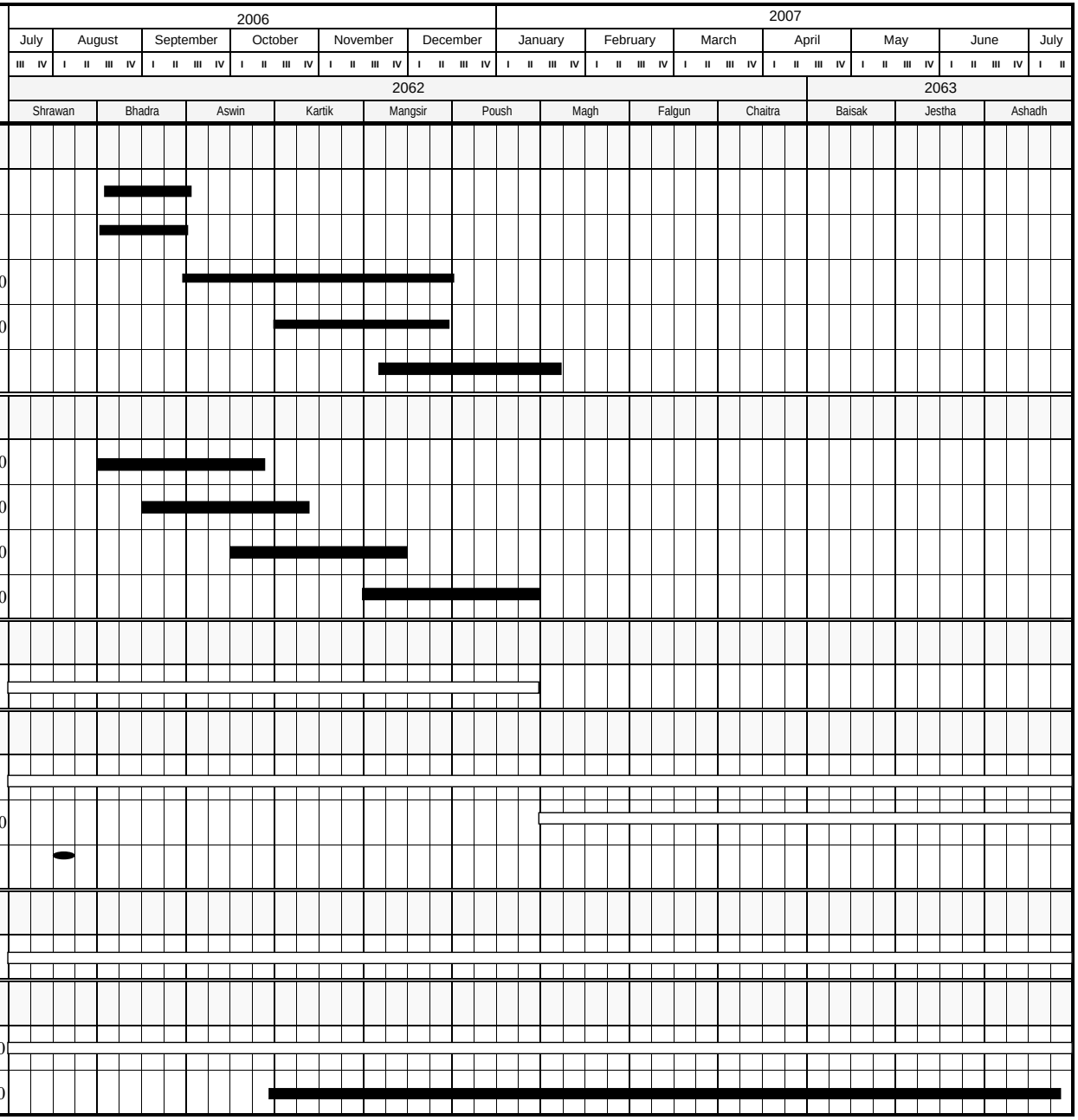
Annual Work Plan of FY 2006/07 (2063/62)

Annual Work Plan of Fiscal Year of 2006/07 (2063/64) Proposed by Task Force (KMC)

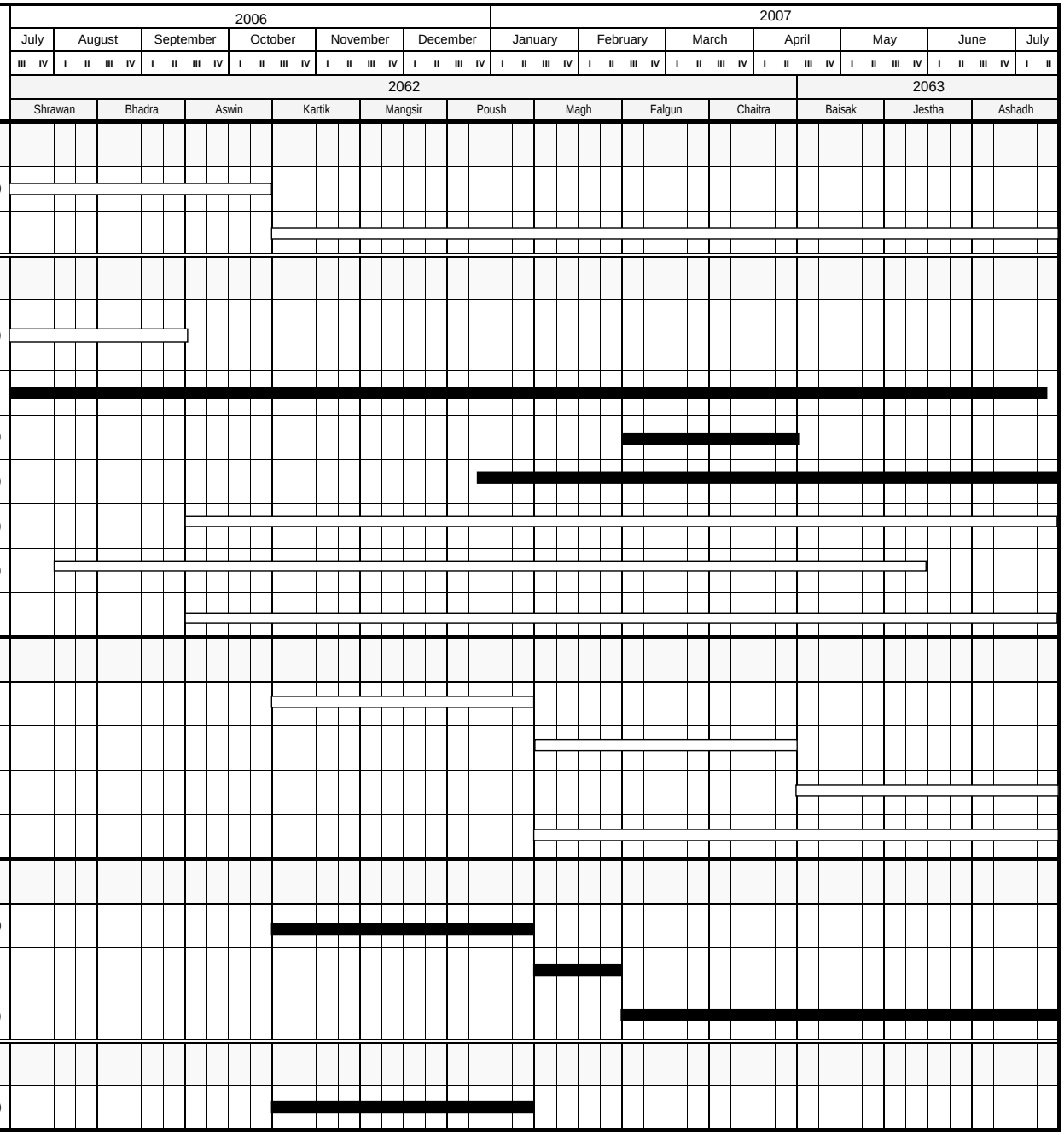
SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)
A-1-S1	**Establishment of rules for private sector collection and its monitoring system**		
1	Workshop on PPP in SWM with stakeholders to get the views from all the stakeholders including PPP Unit	SWMS/Rajesh Manandhar	50,000
A-1 S2	**Promotion of private sector participation in door to door collection for 25% of HHs**		
1	Financial Cost Analysis of each wards for SWM (street sweeping, door-to-door collection, waste transportation	SWMS/Rajesh Manandhar	
2	Preparation of database of existing SWM situation including private sectors	SWMS/Rajesh Manandhar	100,000
3	Two week long training program for Private Sectors with the financial help from donor agency	SWMS/Rajesh Manandher	200,000
A-1-S3	**Preparation of equipment replacement plan and pilot test for a few types collection vehicles and commencement of replacement of tractors (for 25%**		
1	Preparation of tendering document for compactor provided by Matsumoto City	SWMS/MS	
2	Preparation of necessary documents to get clearance from Ministry of Environment and Science and technology	Environment Dept./MS	400,000
3	Preparation of an equipment replacement plan	MS/Purusotam Shakya	
4	Replacement of tractors purchasing 4 vehicles	Environment Dept./MS	5,500,000
5	Operation of the vehicles	Environment Dept./MS	
A-1-S6	**Introduction of GIS System for waste collection plan**		
1	Introduction of route plan of existing vehicle routes	SWMS/Rajesh Manandhar	100,000
A-2-S1	**Establishment of effective operation system of Teku transfer station**		
1	Preparation of an effective operation plan of Teku transfer station taking consideration of present and future collection time	SWMS/Rajesh Manandhar	
2	Road improvement works from Teku main road to TS	SWMS/Rajesh Manandhar	200,000
3	Drainage management of In front of KMC Building	SWMS/Rajesh Manandhar	500,000



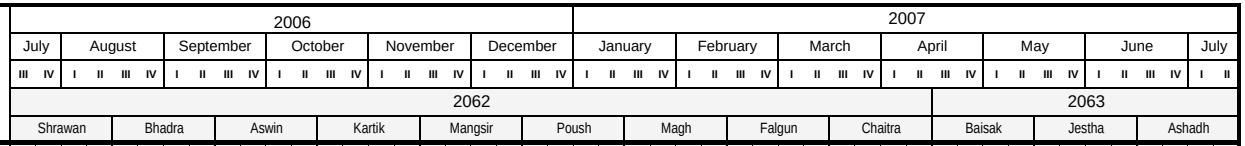
SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)
A-2-S2	**Plan (design), construction and operation of Balaju transfer station (including necessary revision of primary collection route)**		
1	Preparation of a plan together with design of Balaju transfer station	SWMS/Rajesh Manandhar	
2	Identification of possible Mini Transfer Stations along Ring Road (south side)	SWMS/Rajesh Manandhar	
3	Construction of needed infrastructure for Balaju Transfer Station	SWMS/Rajesh Manandhar	10,000,000
4	Construction of needed infrastructure for Mini Transfer Station	SWMS/Rajesh Manandhar	200,000
5	Operation of Balaju Transfer Station & Mini Transfer Stations	SWMS/Rajesh Manandhar	
A-3-S1	**Renovation of existing mechanical workshop including replacement of old equipment and establishment of efficient parts stock system**		
1	Renovation of mechanical workshop	MS/Purusotam Shakya	1,000,000
2	Procurement of official facilities (computer and steel racks)	MS/Purusotam Shakya	200,000
3	Store database software package and management training	MS/Purusotam Shakya	200,000
4	Mechanics training	MS/Purusotam Shakya	100,000
B-2-S1	**Review of the existing home and community composting and recycling activities**		
1	Implementation of reviewing activities	CMU/Shriju	
B-2-S2	**Production of home compost bins and home vermi-compost kits and their distribution**		
1	Compost of new 800 bin set distribution	CMU	1,200,000
2	Subsidy of Rs 100 for Vermi-composting kits	CMU	20,000
3	Recycling sets for Nature Clubs	CMU	
B-2-S3	**Operation of Community Recycling Center (CRC) in Ward 21 and its extension to other Wards (with support from NEREPA)**		
1	CRC-supporting activities	CMU	100,000
B-3-S1	**Operation and expansion of medium-scale vermi-composting**		
1	Operation of medium-scale vermi-composting	CMU	200000
2	Maintenance and physical development of existing vermi composting	CMU	500000



SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)
B-3-S2	**Implementation of sales campaign together with marketing study**		
1	Marketing of compost	CMU	50,000
2	Preparation and Implementation of sales campaign including review and evaluation	CMU	
C-1-S1	**Operation of Sisdol sanitary landfill site**		
1	Procurement of heavy equipment and vehicles (1 Chain Dozer and 1 mobile maintenance vehicle w/ tools)	MS/Purusotam Shakya	20,000,000
2	Monitoring daily LF management	SWMS/Rajesh Manandhar	
3	Extension of gas venting pipes	SWMS/Rajesh Manandhar	100,000
4	Maintenance of leachate collection and treatment facilities	SWMS/Rajesh Manandhar	300,000
5	Construction of additional leachate treatment plant	SWMS/Rajesh Manandhar	1,000,000
6	Closer plan for the Valley I	SWMS/Rajesh Manandhar	1,000,000
7	Plan to accumulate or disposal area if the Valley II of Sisdol is not completed within the time frame	SWMS/Rajesh Manandhar	
C-2-S2	**Cooperation with SWMRMC to proceed establishment of a long-term landfill site**		
1	Site surveys	SWMS/Rajesh Manandhar	
2	Concept design	SWMS/Rajesh Manandhar	
3	Feasibility study including market study	SWMS/Rajesh Manandhar	
4	EIA	SWMS/Rajesh Manandhar	
C-3-S1	**Rehabilitation and landscaping works of the Bagmati (Balkhu) dumping site**		
1	Planning for rehabilitation works for Balkhu	SWMS/Deepak	300,000
2	Selection of contractor for rehabilitation and landscaping	SWMS/Deepak	
3	Rehabilitation works and landscaping (500~1,000m per year)	SWMS/Deepak	1,500,000
D-1-S1	**Establishment of 50 more Nature Clubs**		
1	Establishment of 10 Nature Clubs	CMU/Shriju	20,000



SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)
D-1-S2	**Development of training packages on**		5,000
1	Solid Waste Management, Greenery Promotion. Cultural Heritage Conservation, Communication,	CMU/Shriju	
2	Nature Club management	CMU/Shriju	
D-1-S3	**Training for Nature Clubs members on the above five areas**		
1	Workshop for Guide Teachers and Principals	CMU/Umesh	120,000
2	Workshop for Nature clubs	CMU/Umesh	200,000
3	Handover Nature clubs	CMU/Umesh	60,000
4	Eco-Yatra for observation visits	CMU/Shriju	30,000
5	Support to Nature Clubs	CMU/Umesh	50,000
6	Training for Nature Clubs members on the above five areas	CMU/Shriju	50,000
D-1-S4	**Regular interaction between Nature Clubs and local communities to reach out to society as a whole**		
1	Regular interaction between Nature Clubs and local communities	CMU/Shriju	
D-2-S1	**Development of a database of community groups, NGOs/CBOs and private sector, and selection of the best ones for long-term work**		
1	Development of a database	CMU/Shriju	
D-2-S4	**Provision of technical and financial assistance to best community initiatives of WECs**		
1	Conduct 20 trainings for NGOs/CBOs	CMU/Sanu	100,000
D-2-S5	**Provision of intensive for best practices**		
1	Provide program support to community based organizations for replicate and extension of best practices	CMU/Sanu	300,000
D-3-S1	**Mobilization of City Volunteers (CVs) to support BABA program**		
1	Mobilization of CVs	CMU/Shriju	50,000



SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)	2006												2007													
				July		August				September			October			November			December			January			February			March			April			May			June			July	
				III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
				2062																										2063											
				Shrawan				Bhadra				Aswin				Kartik				Mangsir				Poush				Magh				Falgun				Chaitra				Baisak				Jestha				Ashadh			
D-3-S2	**Implementation of closed camps for capability building and raising team spirit of each batch**																																								
1	Capability training camp - 1	CMU/Shriju	100,000																																						
2	City Volunteers training - 1	CMU/Shriju	100,000																																						
D-4-S1	**Production of CMU's promotional materials (flyers, brochures, posters, stickers, etc.)**																																								
1	Promotional materials	CMU/Shriju	300,000																																						
2	Documentary production	CMU/Shriju	300,000																																						
3	Procurement of Computer and Camera to produce promotional materials	CMU/Shriju	100,000																																						
4	Safa tempo operation	CMU/Shriju	100,000																																						
D-4-S3	**Setting up of self-explanatory displays on SWM at CMU and other key locations for wider publicity**																																								
1	Self-explanatory displays in 35 Wards and KMC Departments	CMU/Shriju	50,000																																						
D-4-S4	**Regular featuring and reporting on SWM on TV program "Hamro Kathmandu"**																																								
1	Regular dissemination of massage on SWM through FM and miking	CMU/Shriju																																							
D-4-S6	**Implementation of community exhibition and event regularly**																																								
1	Community Exhibition	CMU/Shriju																																							
2	Exhibition/Seminar in Water Day	CMU/Shriju	100,000																																						
3	Exhibition in Environment Day	CMU/Shriju	200,000																																						
4	Award distribution in Earth Day	CMU/Shriju	100,000																																						
D-5-S1	**Recruiting of a BABA coordinator**		60,000																																						
1	Recruiting of a BABA coordinator	CMU/Shriju																																							
D-5-S2	**Recruiting of assistant level staff for administration**																																								
1	Recruiting of assistant level staff for administration	CMU/Shriju																																							

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)	2006												2007													
				July		August		September		October		November		December		January		February		March		April		May		June		July	
				III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II III IV		I II	
				2062																						2063			
				Shrawan		Bhadra		Aswin		Kartik		Mangsir		Poush		Magh		Falgun		Chaitra		Baisak		Jestha		Ashadh			
E-2-S1	**Establishment of a monitoring and evaluation system in alignment with the Action Plan**																												
1	Preparation of plan of operation of monitoring and evaluation	SWMS/Rajesh Manandhar																											
2	Conducting of monitoring and review of the Annual Work Plan	Environment Dept./Mr.Rabin Man																											
3	Formulation of Annual Work Plan of FY2064/65	Environment Dept./Mr.Rabin Man																											
E-2-S2	**Mainstreaming of program-based budgeting system and expenditure monitoring for a more efficient use of resources**																												
1	Conducting of expenditure monitoring of the Annual Work Plan	Environment Dept./Mr.Rabin Man																											
2	Formulation of program-based budget of FY2064/65	Environment Dept./Mr.Rabin Man																											
E-2-S3	**Improvement of information flow and management by encouraging regular coordination meetings and sharing of experiences**																												
1	Implementation of regular coordination meetings	Environment Dept./Mr.Rabin Man																											
E-2-S4	**Introduction of systematic collection and analysis of SW data by database**																												
1	Waste record database	SWMS																											
E-3-S1	**Preparation of TORs for each unit delineating tasks and responsibilities to be undertaken during Action Plan implementation**																												
1	Review of existing tasks and responsibilities of each unit	SWMS/Rajesh Manandhar																											
2	Series of meetings among related units	SWMS/Rajesh Manandhar																											
3	Preparation of TORs for each unit	SWMS/Rajesh Manandhar																											
E-3-S2	**Reassignment of necessary staff (Taking into consideration future resource demands such as for facilities development)**																												
1	Development of reassignment plan	SWMS/ED																											
2	Reassignment of necessary staff	SWMS/ED																											
E-4-S1	**Development of a staffing plan based on HRD program and its application**																												
1	Development of a staffing plan	Environment Dept./Mr.Rabin Man																											
E-4-S2	**Assignment of a Learning Manager for HRD and maintain an inventory of staff skills and knowledge, training history**																												
1	Assignment of a learning manager	SWMS/Rajesh Manandhar																											

SN	Short-term Activities to be Conducted in FY 2062/2063	Responsible Person (Department, Section)	Proposed Budget (NRs)
E-4-S3	**Strengthening of knowledge-sharing mechanism and peer-training sessions for full utilization of existing human resources**		
1	Development of plan of knowledge-sharing mechanism and peer-training sessions	SWMS/Rajesh Manandhar	
2	Implementation of knowledge-sharing meeting and peer-training session	SWMS/Rajesh Manandhar	
F-1-S1	**Dissemination of Medical Waste Management Guidelines**		
1	Obtain of official approval from the municipal board on the Medical Waste Management Guidelines	SWMS/Rajesh Manandhar	
2	Planning of medical waste management system	SWMS/Rajesh Manandhar	
F-1-S2	**Operation of a medical waste treatment facility at Teku**		
1	Public consultation	SWMS/Rajesh Manandhar	
F-1-S3	**Procurement of additional equipment (auto clave)**		
1	Procurement of an auto clave	SWMS/Rajesh Manandhar	3,000,000
F-1-S4	**Training for staff of KMC, private sector, and medical institutions**		
1	Training for KMC staff operators	SWMS/Rajesh Manandhar	60,000
2	Training for health care staff by national dental hospital (USAID funds)	SWMS/Rajesh Manandhar	
F-3-S1	**Review of working conditions of the sweeper population and provision of measures to improve their performance.**		
1	Establishment of a day care center	SWMS/Rajesh Manandhar	
		Total	**50,575,000**

Schedule columns: 2006 / 2007 — July, August, September, October, November, December, January, February, March, April, May, June, July (weeks I, II, III, IV); 2062 / 2063 — Shrawan, Bhadra, Aswin, Kartik, Mangsir, Poush, Magh, Falgun, Chaitra, Baisak, Jestha, Ashadh

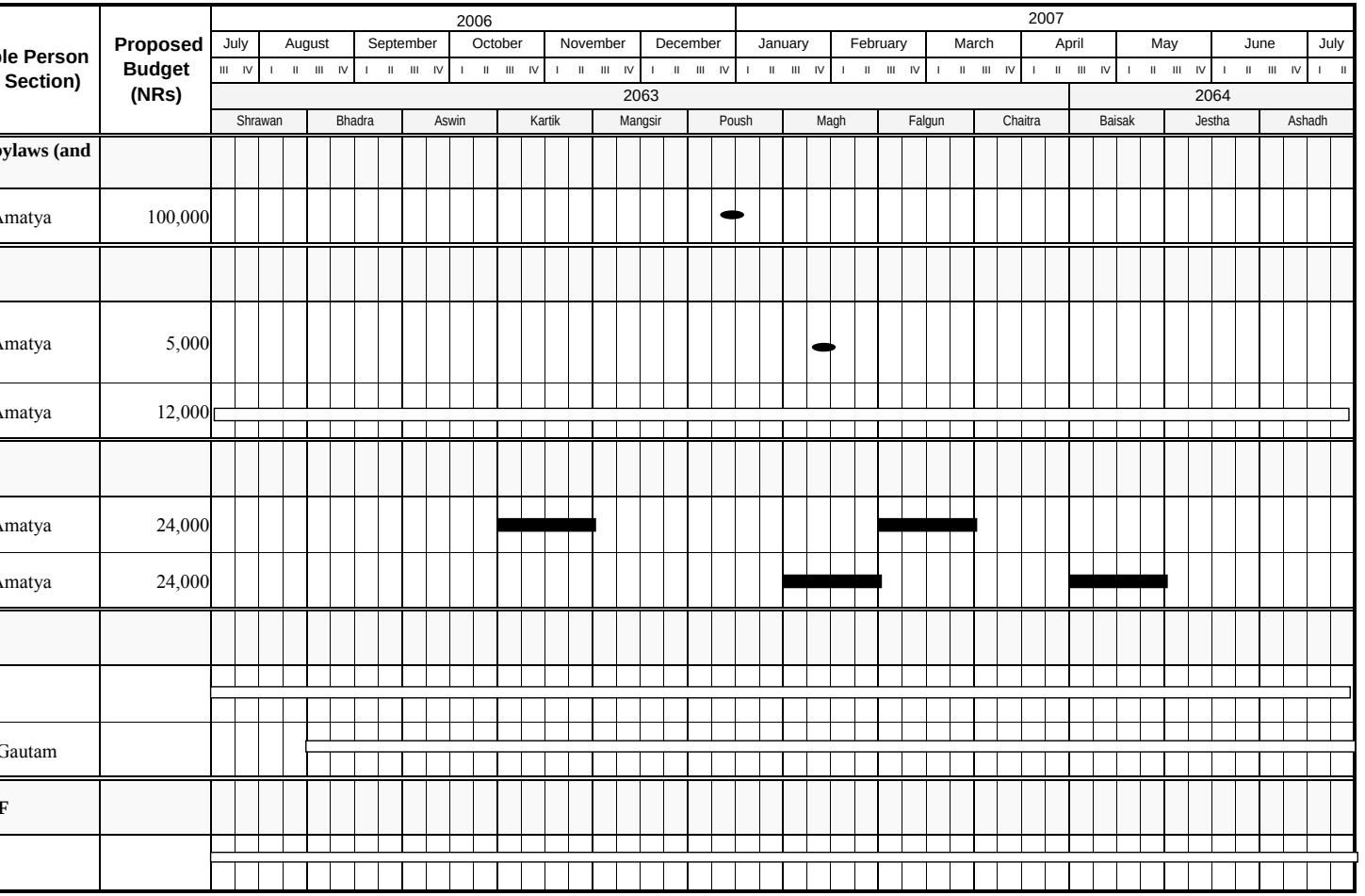
Legend
: Continuous activity
: Intermittent activity
: Spot activity

SWMS: Solid Waste Management Section
MS: Mechanical Section

CMU: Community Mobilization Unit
ED: Environment Department

Annual Work Plan of Fiscal Year of 2006/07 (2063/64) Proposed by Task Force (LSMC)

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Proposed Budget (NRs)
A-1-S1	**Review of existing policy of LSMC and establishment of strong bylaws (and rules) interacting with all stakeholders and its publication**		
1	Half day workshop for PPP is SWM to formulate policy	ES/Pradeep Amatya	100,000
A-1-S2	**Preparation of standard TOR and agreement for PPP concept**		
1	Preparation of standered TOR and agreement.	ES/Pradeep Amatya	5,000
2	Review meeting with private operators	ES/Pradeep Amatya	12,000
A-2-S1	**Implementation of Time and Motion study**		
1	Time and Motion Study	ES/Pradeep Amatya	24,000
2	Quality and Quantity Analysis	ES/Pradeep Amatya	24,000
A-3-S1	**Arrangement for a temporary transfer station (in Afadole) and commencement of temporary transferring**		
1	Public Hearing	CEO	
2	Fencing Work	PWD/Rudra Gautam	
B-1-S1	**Cooperation with SWMRMC and KMC for development of WPF**		
1	Monthly Meetings	TWG	



SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Proposed Budget (NRs)	2006						2007						
				July	August	September	October	November	December	January	February	March	April	May	June	July
				III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II
				2063										2064		
				Shrawan	Bhadra	Aswin	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra	Baisak	Jestha	Ashadh	
B-2-S1	**Distribution of 250 home composting bins and 1 community compost bin**															
1	Procurement of compost bins	PWD/Rudra Gautam	225,000													
2	One day training on home compost bin for community	CDS/Sabina	10,000													
3	Procurement of community compost bin	Rudra Gautam/Pradeep Amatya	10,000													
4	Public Hearing and orientation on community compost bin operation	Pradip Amatya and Sabina	33,000													
5	Preparation and publication of Compost Bin Operation Guideline	Rudra Gautam/Sabina	10,000													
6	Procurement of Vermi Compost Bin and one day training	CDS/Sabina	25,000													
B-3-S1	**Promotion of 3Rs practices by local people**															
1	Hire motivators and rickshaw puller for plastic separation	Pradeep/Sabina	42,000													
2	Plastic reuse training	CDS/Sabina	30,000													
3	Promotion of cotton bags (50 no)	Rudra/Sabina	5,000													
4	Establish Paper Recycling Centre	CDS/Sabina/Pradeep	150,000													
5	Establish Second Hand Shop	CDS/Sabina/Pradeep	50,000													
C-1-S1	**Operation of Sisdol SF with KMC**															
1	Establish water tank and water pump for spraying	Pradeep Amatya	50,000													
2	Purchase of Centranole	Pradeep Amatya	50,000													
C-1-S3	**Closure of Bagmati dumping site**															
1	Closure works (greenery) in Bagmati Dumping site	Rudra Gautam/Pradeep Amatya	100,000													

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Proposed Budget (NRs)	2006						2007						
				July	August	September	October	November	December	January	February	March	April	May	June	July
				III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II
				2063										2064		
				Shrawan	Bhadra	Aswin	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra	Baisak	Jestha	Ashadh	
D-1-S1	**Implementation of public awareness/education activities**															
1	Implementation of exhibition as Public Event (1 time)	CDS/Sabina	110,000			●										
2	Art and essay competition on Waste Management	CDS/Sabina	100,000											●		
3	Cleanup campaign	CDS/Sabina	50,000									▬	▬			
4	Radio Program	CDS/Sabina	120,000					▬	▬	▬	▬	▬	▬	▬	▬	
5	Promotional material development and publication	CDS/Sabina	10,000			●										
6	Drama	CDS/Sabina	22,000			▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	
7	Award Ceremony	Pradeep Amayta/Sabina	25,000											●		
8	Bulletin publication	Rudra Gautam/Ashok Shrestha/Pradeep Amayta	25,000		●											
D-2-S1	**Formation and mobilization of Ward Environment Conservation Committee (WECC) on a pilot basis**															
1	Formation of WECC and provide seed money	CDS/Sabina	22,000		●											
2	One-day training for selected members	CDS/Sabina	30,000					●								
D-2-S2	**Formation and mobilization of Nature/Eco Clubs among children**															
1	Workshop for target school teachers	CDS/Sabina	15,000		●											
2	Camp for target school students and form Nature/Eco Clubs	CDS/Sabina/Pradeep	80,000			●										
3	Support of Nature/Eco Clubs by providing seed money	CDS/Sabina	25,000			▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	
4	Various activities (competition, clean up, field visit, capacity building training)	CDS/Sabina	20,000				▬	▬	▬	▬	▬	▬	▬	▬	▬	
D-2-S3	**Mobilization of youth as City Volunteers (CVs)**															
1	Refresher training (4 day training)	CDS/Sabina	100,000							●						

SN	Short-term Activities to be Conducted in FY 2062/63	Responsible Person (Division, Section)	Proposed Budget (NRs)	2006						2007						
				July	August	September	October	November	December	January	February	March	April	May	June	July
				III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II
				2063										2064		
				Shrawan	Bhadra	Aswin	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra	Baisak	Jestha	Ashadh	
E-1-S1	**Plan for HRD and monitoring including municipal staff/NGOs/CBOs/TLOs**															
1	Environmental Study Visit Program	DEO	210,000													
2	Training to 90 Sweepers and Naike on role and responsibility, waste handling and safety measure	Pradeep Amayta	100,000													
3	Mechanical training for Mechanics and Helper	Pradeep Amayta	25,000													
E-2-S1	**Announcement of SWM overall yearly plan of LSMC at beginning of each fiscal year**															
1	Annual work plan monitoring	Task Force														
2	Monthly Meetings	Rudra Gautam	18,000													
3	Meeting of ward chairpersons and TWG on tariff	Task Force														
E-5-S1	**Collection and arrangement of solid waste data in database**															
1	Improvement in data management based on time and motion study	ES/Pradeep Amatya														
2	Procurement of computer for Transportation Sub Section	ES/Pradeep Amatya	50,000													

Total 2,112,000

Legend

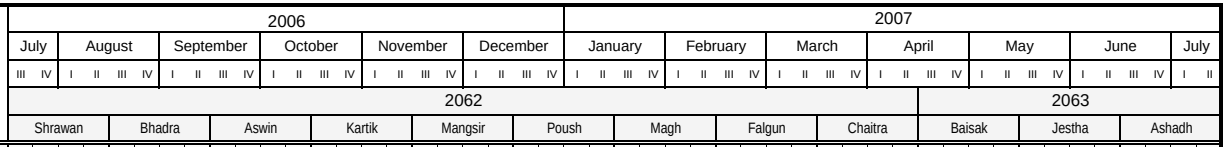
: Continuous activity
: Intermittent activity
: Spot activity

PWD: Public Works Division
ES: Environment Section

CDS: Community Development Section

Annual Work Plan of Fiscal Year of 2006/07(2063/64 Proposed by Task Force (BKM)

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Proposed Budget (NRs)
A-1-S1	**Procurement of Garbage Tipper and Tricycles**		
1	Market study and collect information of garbage collection Tipper	ES, Moti/PS,Dinesh	
2	Procurement of garbage collection Tipper - 2 nos	ES/Moti/PS,Dinesh/SS,Rabid	2,000,000
A-1-S2 (New)	**Operation of existing collection and transportation system**		
1	Salary/Remuneration of SWM staff (Regular and contract basis)	AS,Ratnamaya	16,200,000
2	Overtime for WSM staff	SWMSS,Dilip/AS,Ratnamaya	2,500,000
3	Tiffin Allowance to SWM staff	AS,Ratnamaya	700,000
4	Uniform to SWM staff	SS,Rabid	650,000
5	Cleaning materials	SWMSS,Dilip/SS,Rabid	1,200,000
6	Repair and maintenance of collection vehicles and equipment	SWMSS,Dilip/MSS/SS,Rabid	1,200,000
7	Fuel	SWMSS,Dilip/SS,Rabid	1,600,000
A-2-S1	**Promotion of source separation and collection of organic kitchen waste by formulating users groups at local household level**		
1	Implementation of source separation collection system in Ward No 14 and 17	ES,Moti/PS,Dinesh	
B-1-S3	**Infrastructure development (open trussed shade, garage, parking area, weighbridge, sorting area, screening area, etc.) in existing composting**		
1	Design and estimate for shade, boundary wall and pavement	PS,Laxman	
2	Construction of shade, boundary wall and pavement of bricks	ES,Moti/PS,Laxman	
B-2-S1	**Promotion of waste minimization by making people well known with various methods of waste reduction at sources (e.g.. home compost bins and vermi-composting, gift and educational training tools for school children from waste)**		
1	Training to community groups on home composting (1 group, 1 day)	ES,Moti/SWMSS,Dilip	5,000
2	Distribution of 20 home compost bins	ES,Moti/SWMSS,Dilip	



SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Proposed Budget (NRs)	2006						2007						
				July	August	September	October	November	December	January	February	March	April	May	June	July
				III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II III IV	I II
				2062										2063		
				Shrawan	Bhadra	Aswin	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra	Baisak	Jestha	Ashadh	
B-2-S2 (New)	**Promotion of ''Kawadi"**															
1	Interaction with "Kawadi" on collection of recycled materials	ES,Moti/PS,Laxman			●											
2	Communicate local people about the consensus/agreement made with Kawadi	ES,Moti/PS,Laxman					———	———	———	———	———	———	———	———	———	———
C-1-S3 (New)	**Identification and development of Sanitary LFS**															
1	Information collection on candidate LFS	ES,Moti/PS,Laxman		———	———	———	———	———	———	———	———	———	———	———	———	———
2	Request and coordinate SWMRMC/MLD for long term LFS development	Municipal board														
C-1-S4 (New)	**Operation and closure of temporary LFS**															
1	Select candidate temporary LFS	ES,Moti/SWMSS,Dilip/PS,Laxman														
2	Operation of temporary LFS	ES,Moti/SWMSS,Dilip		———	———	———	———	———	———	———	———	———	———	———	———	———
3	Soil capping	ES,Moti/SWMSS,Dilip/PS,Laxman														
D-1-S1	**Development of training tools/materials for community participation**															
1	Collect/develop promotional and training materials	ES,Moti/SWMSS,Dilip				■■■■										
D-1-S2	**Dissemination of information regarding SWM inclusive collection system (leaflets, brochures, calendars, advertisements in halls before starting of film show)**															
1	Publication of promotional materials (brochures-2000, fles-6 and posters-1000)	ES,Moti/SWMSS,Dilip	15,000			■■■■	■■■■	■■■■								
D-2-S1	**Promotion of Interpersonal Communication and Education program with arrangement of agreement with NGO such as selection of target communities, orientation workshop, baseline information survey in regard to existing knowledge, attitude & practices on SWM, counselor training camp for youth, teachers who support children's activities on SWM at the targeted communities**															
1	Mobilize ward level Solid Waste Management Committee by providing seed money for core groups of W. No. 14, 16 and 17	ES,Moti/SWMSS,Dilip	30,000							———	———					
E-1-S1	**Implementation of training on SWM based on the TNA**															
1	Conduct training program to Ward Inspectors/Secretary on their role	AS,Ambika/PS,Laxman/ES,Moti	3000					●								

SN	Short-Term Activities to be Conducted in FY 2062/63	Responsible Person (Section)	Proposed Budget (NRs)	Shrawan 2062	Bhadra	Aswin	Kartik	Mangsir	Poush	Magh	Falgun	Chaitra	Baisak 2063	Jestha	Ashadh
E-1-S2	**Finalization of organizational restructuring and implement new organization structure**														
1	Fully establish/strengthen SWM Section	Municipal board/AS,Ambika		▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭
2	Physical improvement of SWM Section and Sub sections	PS,Laxman/MSS		▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭
E-1-S3 (New)	**Monitoring and evaluation of SWM activities**														
1	Monitoring SWM annual work plan	CEO/TWG		▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭
E-2-S1	**Collection of relating data for SWM**														
1	Collection of relating data for SWM	ES/(TBN)		▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭	▭
E-2-S2	**Arrangement of the collected data in the database**														
1	Arrangement of the collected data in the database	SWMSS,Dilip								▭	▭	▭	▭	▭	▭

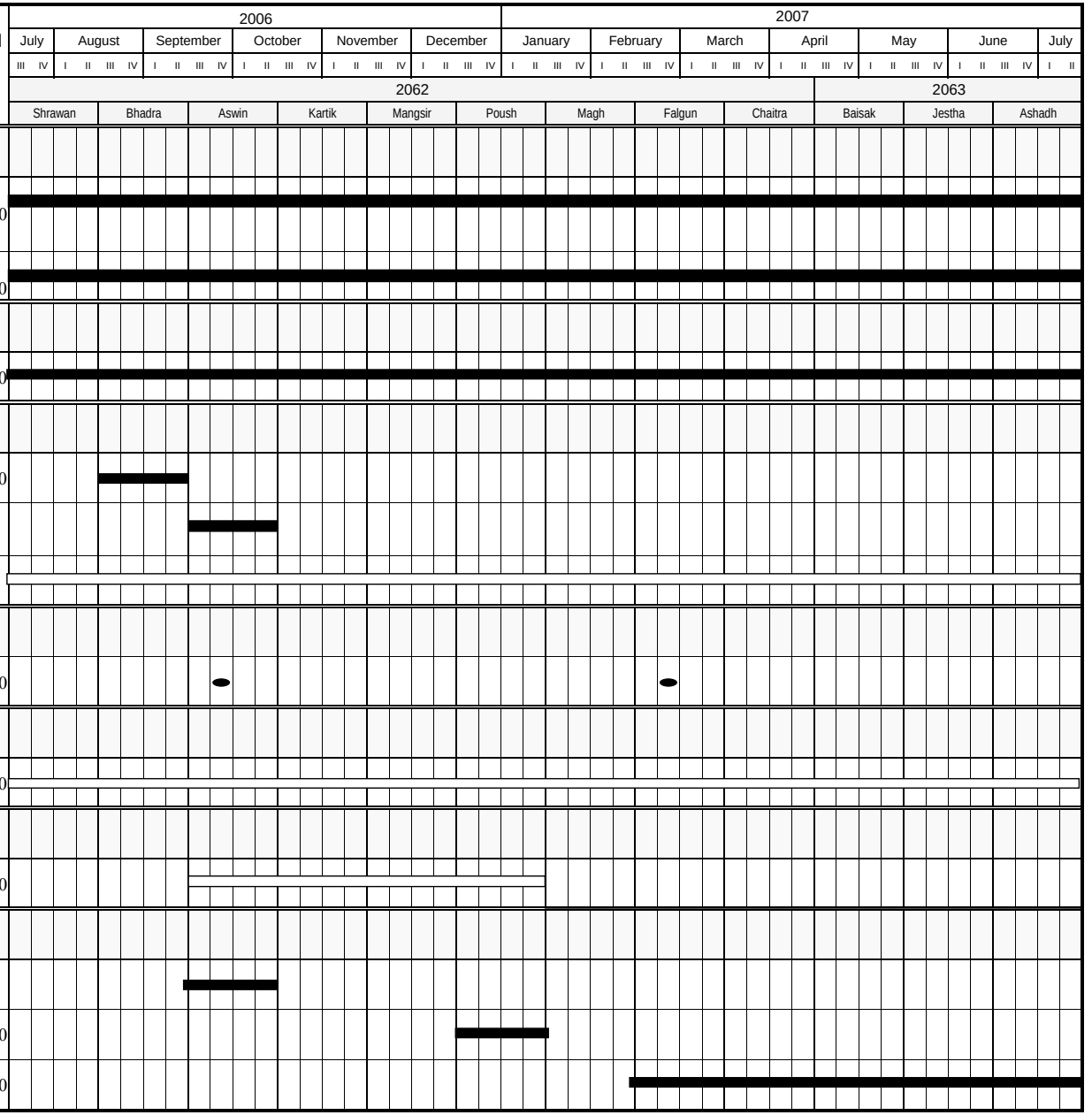
Total 26,100,000

Legend
- ▬ : Continuous activity
- ▭ : Intermittent activity
- ● : Spot activity

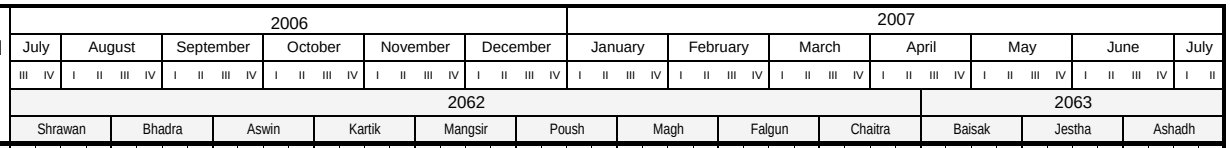
PS: Planning Section
SWMSS: Solid Waste Management Sub Section
AS: Account Section
MSS: Mechanical Sub Section
ES: Environment Section
AS: Administration Section
SS: Store Section

Annual Work Plan of Fiscal Year of 2006/07 (2063/64) Proposed by Task Force (MTM)

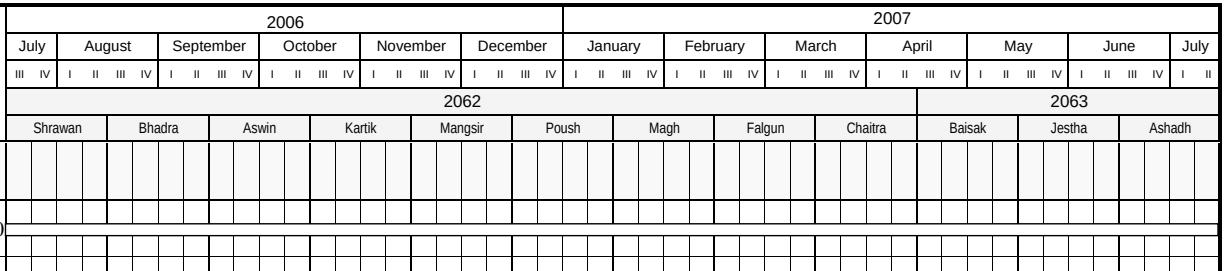
SN	Shor-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
A-1-S1	**Procurement of collection vehicle (s) and assignment of a driver, collectors and loaders**		
1	Arrangement/procurement of a collection vehicle	LS/Keshav	500,000
2	Arrangement of collectors fuel and equipment	CDS/Tulsi	750,000
A-2-S1	**Extension of collection area**		
1	Mobilization of private sector to extend collection in new settlement area (W.No. 2,7,15,16,17 …)	CDS/Tulsi	5,000
A-3-S1	**Preparation of guidelines for private sector collection**		
1	Preparation of detail guidelines for private sector collection and mobilization	LS/Keshav	10,000
2	Signing agreement with existing/new private sectors	LS/Keshav	
3	Monitoring of private sector activity	CDS/Tulsi	
B-1-S1	**Promotion of waste separation at source**		
1	Provide training for 2 community groups	CDS/Krishna	40,000
B-2-S1	**Providing of bags and metal strings (suiros) for separation at source**		
1	Plastic waste collection and separation program with community immobilizers	CDS/Krishna	20,000
B-3-S2	**Operating community composting**		
1	Operation of at least one existing composting chamber	CDS/Krishna	150,000
C-1-S1	**Identification and arrangement of a temporary landfill site**		
1	Nominating candidates temporary LFS and public consultation	PTS/Satya	
2	Preliminary engineering surveys, designing	PTS/Satya	100,000
3	Land acquisition and preparation work	PTS/Satya	400,000



SN	Shor-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
C-2-S1	**Make agreement with BKM for Taikabu LFS and KMC for Teku TS**		
1	Cooperation with BKM/SWMRMC/KMC	LS/Keshav	
D-1-S1	**Raising of public awareness through local radio (FM) and miking**		
1	Broadcasting on local FM on SWM	CDS/Tulsi	
2	Miking regarding SWM	CDS/Tulsi	
D-1-S2	**Implementation of public events**		
1	SWM exhibition (1time for 2 days)	CDS/Tulsi	50,000
D-2-S1	**Development of training tools and promotion materials for community participation**		
1	Development of training tools and promotion materials	CDS/Tulsi	25,000
D-2-S2	**Formation and mobilization of Eco/Nature Clubs at schools**		
1	Eco-clubs formation and mobilization with the support of other supporting agencies	CDS/Krishna	(External: 100000)
D-2-S3	**Formation and mobilization and skills development of community groups for SWM**		
1	Household reuse and composting training (2 times, 3 days)	CDS/Krishna	(External : 50000)
2	Procurement of 50 house hold compost bins	CDS/Tulsi	25,000
3	Community group interaction and feedback collection	CDS/Krishna	5,000
4	Community groups formation, mobilization and partnership	CDS/Krishna	(External: 100000)
5	Refresher training on SWM for existing groups 3 days one time	CDS/Krishna	10,000



SN	Shor-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
D-2-S4	**Implementation of community-based clean up program**		
1	Clean up program (6 times in two months interval)	CDS/Tulsi	40,000
2	Temple and monuments cleaning by mobilizing community and students (3 times)	CDS/Krishna	50,000
3	Municipal area cleaning works	CDSS/Tulsi	200,000
D-2-S5	**Mobilization of youth as city volunteers for SWM**		
1	Selection of city volunteers for promotion and monitoring of SWM activities	CDS/Tulsi	50,000
2	Three-day camp	CDS/Tulsi	20,000
E-1-S1	**Strengthening of SWM Sub-section**		
1	Organizational restructuring of municipality	LS/Keshav	
2	Assignment of staff in SWM Sub section/Unit and office set up	CDS/Tulsi	25,000
E-2-S1	**Collection of relating data for SWM**		
1	Survey of solid waste generation in municipal area	PTS/Satya	50,000
E-2-S2	**Arrangement of the collected data in the database**		
1	Arrangement of the collected data in the database	CDS/Tulsi	



Grand Total 4,775,000

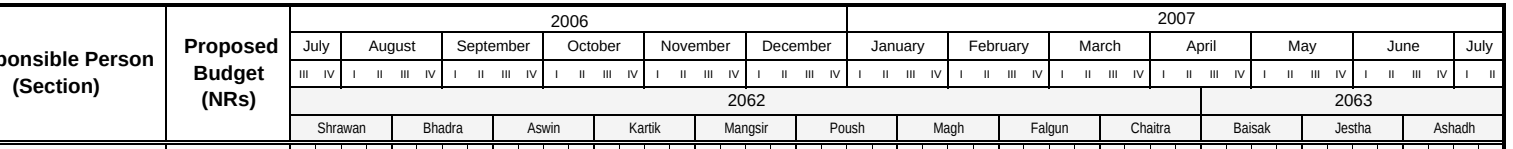
Legend

: Continuous activities
: Intermittent activities
: Spot activities

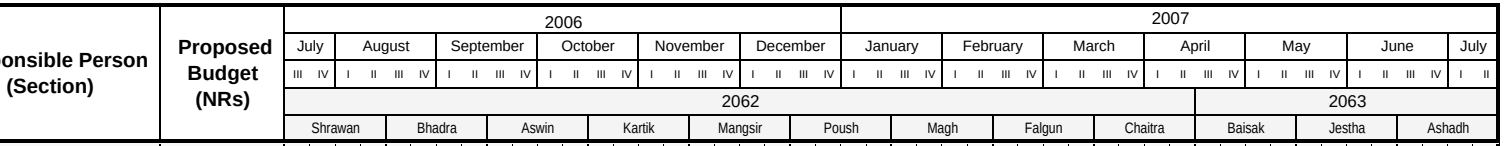
PTS: Planning and Technical Section
LS: Legal Section
CDS: Community Development and Sanitation Section

Annual Work Plan of Fiscal Year of 2006/07 (2063/64) Proposed by Task Force (KRM)

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
A-1-S1	**Preparation of agreements with private sector (NGOs/CBOs) and conclusion of the contracts (up to two parties)**		
1	Signing on the agreement & contracting the work for SWM services	LS/Sujendra, PTS/Bal, CEO	
2	Monitoring of performance of private activities	SWMU/Anuj	10,000
3	Review/analyze transportation cost to Teku TS	SWMU/Anuj	
B-1-S1	**Selection and arrangement of land for a composting facility**		
1	Infrastructure development (fencing, office block, shed, water supply and electricity)	PTS/Bal	755400 (744600 Development Budget)
2	Formulate contract document and agreement with NGO/CBO	LS/Sujendra, SWMU/Anuj, CEO	
3	Handover and monitoring community composting facilities	SWMU/Anuj	
B-2-S1	**Promotion of home composting program (by providing bins, bags)**		
1	Procurement of 100 house hold compost bin	SWMU/Gyan	84,000
2	Two days training to 6 women groups on waste minimization concept (30-40 person each group)	SWMU/Gyan	72,000
3	Facilitating house hold composting by mobilizing motivator/ward secretaries	SWMU/Gyan	18,000
4	Report preparation	SWMU/Gyan	2,000



SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
B-3-S1	**Continuous implementation of separated collection of plastic bags (by providing wires (suiros), etc.)**		
1	Negotiation with "Kawadi" to sale plastic	SWMU/Gyan	
2	Distribution of 500 "Suiro", 360 Jute Bags, and 150 Cloth bags	SWMU/Gyan	37,000
3	Plastic collection and separation work	SWMU/Gyan	9,600
C-1-S1	**Coordination with KMC and SWMRMC for utilization of Teku T/S**		
1	Consultation and agreement with KMC to use Teku TS with the support of SWMRMC	PTS/Bal	
D-1-S1	**Implementation of education program of SWM for school children and households (by promoting home composting, plastic bag separation, etc.)**		
1	Formation of 2 Nature Clubs at school level	SWMU/Anuj	
2	Conduct 1 day orientation program to school teachers	SWMU/Anuj	2,000
3	Conduct 1 day training to 2 Nature clubs	SWMU/Anuj	10,000
E-3-S1	**Collection of related data for SWM from private sector**		
1	Coordination with private sectors to establish information system of waste data	PTS/British	
E-2-S2	**Arrangement of the collected data in the database**		
1	Arrangement of the collected data in the database	PTS/British	



Total 1,000,000

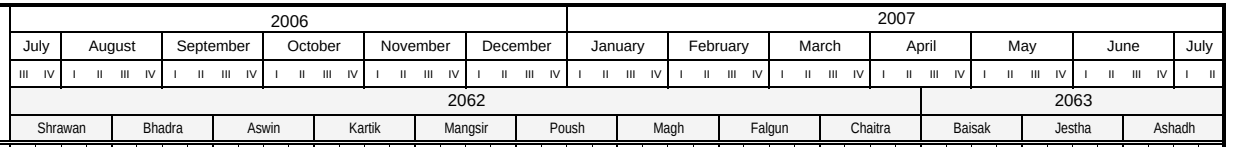
Legend

: Continuous activities
: Intermittent activities
: Spot activities

PTS: Planning and Technical Section
SWMU: Solid Waste Management Unit
LS: Legal Section

Annual Work Plan of Fiscal Year of 2006/07 (2063/64) Proposed by Task Force (SWMRMC)

SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
S1	Clarification of demarcation between SWMRMC and Local Bodies by issuing a new policy and amendment of the Solid Waste Act	Ashok Shahi	
S2	Clarification of legal status and change of jurisdictional area by amendment of the Act	Ashok Shahi	
S3	Establishment of a strategic plan for SWMRMC (future organizational and institutional development plan)	Ashok Shahi	
S4	Chang of name and organization (such as setting up environmental section, training section, etc.)	Ashok Shahi	
S5	Recruitment of skilled personnel and reservation of resource persons (inc. training)	Ashok Shahi	
S7	Implementation of Public Relations (PRs) activities (management of web-site and issue of newsletter, etc.)	Ashok Shahi	
S1	**Development of Sisdol Short-term LF**		
S1-1	Development of Sisdol LF Valley 2	Ram Sharan Maharjan	4,347,000
S1-2	Handover Valley 2 to operator	Ashok Shahi	
S1-3	Periodic environmental monitoring	Ashok Shahi	500,000
S1-4	Post closure works of Valley 1	Ashok Shahi	200,000
S2	**Development of Waste Processing Facility (KMC, LSMC, KRM)**		
S2-1	Land selection	Ashok Shahi	
S2-2	Site investigation works	Ashok Shahi	
S2-3	Land acquisition	Ashok Shahi	
S2-4	Concept design and feasibility study	Ashok Shahi	
S2-5	EIA process	Ashok Shahi	



SN	Short-term Activities to be Conducted in FY2005/06 (2062/63)	Responsible Person (Section)	Proposed Budget (NRs)
S3	**Development of Long-term LF (KMC, LSMC, KRM)**		
S3-1	Construction of access road	Ram Sharan Maharjan	11,968,000
S3-2	Land acquisition	Ram Sharan Maharjan	11,185,000
S3-3	EIA process	Ram Sharan Maharjan	600,000
S3-4	Detailed design		
S4	**Development of Long-term LF (BKM, MTM)**		
S4-1	Site investigation works (EIA, Topography survey, Soil investigation)	Topa Ram Acharya	
S5	**Closure of Bagmati River dumping site**		
S5-1	Design of Bagmati River dumping site closure plan	Ram Sharan Maharjan	
S5-2	Implementation of Bagmati closure plan	Ram Sharan Maharjan	

2006: July (III IV) | August (I II III IV) | September (I II III IV) | October (I II III IV) | November (I II III IV) | December (I II III IV)

2007: January (I II III IV) | February (I II III IV) | March (I II III IV) | April (I II III IV) | May (I II III IV) | June (I II III IV) | July (I II)

2062: Shrawan | Bhadra | Aswin | Kartik | Mangsir | Poush | Magh | Falgun | Chaitra

2063: Baisak | Jestha | Ashadh

Total 28,800,000

Legend

: Continuous activities

: Intermittent activities

: Spot activities

Supporting Report C

Survey Data of Waste Collection/Transportation in BKM and MTM

C-1 Time and Motion of Waste Collection in the Tanani Area

Collection Place	No. of Spot	Tricycle		Stay Time (mts)	Reach Time (mts)	Distance (Km)
		Arrival	Departure			
Compost Plant, BKM			6-00 am			
Tanani (one spot)	1	6-15 am	7-15 am	60 mts	15 mts	0.5 km
Bach to Compost Plant		7-30 am			15 mts	0.5 km
Total		1 hrs 30 mts		60 mts	30 mts	1.0 km

C-2 Organic Waste Data Collected in Tanani Area

Month (Nepal)	Month (English)	Monthly Buckets & Organic Waste Record		Monthly Bucket and Inorganic Waste Record		Monthly Total Bucket & Waste Record		Daily Ave. Bucket Nos. & Waste Record (kg)						
		No. of Green Bucket	Organic Waste (kg)	No. Red of Bucket	Inorganic Waste (kg)	No. of Bucket	Organic & Inorganic Waste (kg)	Green Buckets	Red Buckets	Green & Red Buckets	Organic Waste	Inorganic Waste	Organic & Inorganic	Organic Waste/ HHs (kg)
Shrawan	Jul.-Aug.	415	283	411	130	826	414	13.0	12.8	25.8	8.9	4.1	12.9	0.683
Bhadra	Aug.-Sept.	442	365	397	158	839	523	14.3	12.8	27.1	11.8	5.1	16.9	0.825
Ashwin	Sept.-Oct.	428	353	393	167	821	520	13.8	12.7	26.5	11.4	5.4	16.8	0.825
Kartic	Oct.-Nov.	398	341	397	186	795	527	13.7	13.7	27.4	11.7	6.4	18.2	0.856
Mansir	Nov.-Dec.	504	308	402	220	906	529	16.8	13.4	30.2	10.3	7.3	17.6	0.612
Paush	Dec.-Jan.	373	123	377	184	750	307	12.9	13.0	25.9	4.2	6.4	10.6	0.330
Magh	Jan.-Feb.													
	Total	2560	1773	2377	1046	4937	2819	12.1	11.2	23.3	8.4	4.9	13.3	0.693
	Average	12.1	8.4	11.2	4.9	23.3	13.3							

Source: BKM

C-3 Inorganic Waste Data Collected in Tanani Area

Month (Nepal)	Month (English)	Inorganic Waste Collected in Ward No. 14 (kg)											
		Papers	Glass	Ceramic	Textile	Metal	Rubber	Wood	Plastic (Recycl.)	Plastic (Non-Recyl.)	Others	Total	Ave. Waste Daily/ HH
Shrawan	Jul.-Aug.	23.7	22.2	30.7	19.6	0.0	0.0	0.0	13.1	9.2	15.9	134.4	0.327
Bhadra	Aug.-Sept.	30.3	15.9	41.9	20.1	0.0	4.6	11.1	17.3	11.4	5.5	158.1	0.398
Ashwin	Sept.-Oct.	26.5	17.7	36.8	28.4	0.0	4.5	14.3	19.0	9.1	0.0	156.3	0.398
Kartic	Oct.-Nov.	28.8	17.8	61.8	28.6	0.0	3.6	14.4	15.3	9.5	2.6	182.4	0.459
Mansir	Nov.-Dec.	33.6	24.5	44.8	32.3	1.9	4.9	12.0	15.5	10.9	0.0	180.4	0.449
Paush	Dec.-Jan.	32.0	20.6	40.0	31.0	3.0	4.0	12.6	17.8	12.1	0.0	173.1	0.459
Magh	Jan.-Feb.												
Total		174.9	118.7	256.0	160.0	4.9	21.6	64.4	98.0	62.2	24.0	984.7	0.414
Daily Average		0.8	0.6	1.2	0.8	0.0	0.1	0.3	0.5	0.3	0.1	4.6	

C-4 Time and Motion of Waste Collection in the Bharbacho Area

Collection Place	No.of Spot	Tricycle Movement Time		Stay Time (mts)	Reach Time (mts)	Distance (Km)
		Arrival	Departure			
Compost Plant, BKM			6-00 am			
Bharbhacho (5 spots)	1	6-15 am	6-25 am	10 mt	15 mts	0.5 km
	2	6-27 am	6-37 am	10 mt	2 mts	0.1 km
	3	6-39 am	6-49 am	10 mt	2 mts	0.1 km
	4	6-51 am	7-01 am	10 mt	2 mts	0.1 km
	5	7-03 am	7-13 am	10 mt	2 mts	0.1 km
	6	7-15 am	7-25 am	10 mt	2 mts	0.1 km
Compost Plant, BKM		7-40 am			15 mts	0.5 km
Total		1 hrs 40 mts		60 mts	40mts	1.5 km

C-5 Quantity of Organic Waste Collected from Source Separation

Month (Nepal)	Month (English)	Monthly Buckets & Organic Waste Record		Monthly Bucket and Inrganic Waste Record		Monthly Total Bucket & Waste Record		Daily Ave. Bucket Nos. & Waste Record (kg)						
		No. of Green Bucket	Organic Waste (kg)	No. Red of Bucket	Inorganic Waste (kg)	No. of Bucket	Organic & Inorganic Waste (kg)	Green Buckets	Red Buckets	Green & Red Buckets	Organic Waste	Inorganic Waste	Organic & Inorganic	Organic Waste/ HHs (kg)
Shrawan	Jul.-Aug.	1099	1566	1107	351	2206	1917	34.3	34.6	68.9	48.9	11.0	59.9	1.4
Bhadra	Aug.-Sept.	1055		1122	405	2177	405	34.0	36.2	70.2	0.0	13.1	13.1	0.0
Ashwin	Sept.-Oct.	1067	2154	1108	507	2175	2660	34.4	35.7	70.2	69.5	16.3	85.8	2.0
Kartic	Oct.-Nov.	915	1910	260	655	1175	2565	31.6	9.0	40.5	65.9	22.6	88.4	2.1
Mansir	Nov.-Dec.		1493		459	0	1952	0.0	0.0	0.0	49.8	15.3	65.1	
Paush	Dec.-Jan.	364	1315	358	432	722	1747	12.6	12.3	24.9	45.3	14.9	60.2	3.6
Magh	Jan.-Feb.					0	0	0.0	0.0	0.0	0.0	0.0	0.0	
	Total	4500	8437	3955	2808	8455	11246	21.2	18.7	39.9	39.8	13.2	53	1.87
	Average	21.2	39.8	18.7	13.2	39.9	53.0							

C-6 Quantity of Inorganic Waste Collected from Source Separation

Month (Nepal)	Month (English)	Inorganic Waste Collected in Ward No. 17 (kg)											
		Papers	Glass	Ceramic	Textule	Metal	Rubber	Wood	Plastic (Recyclable)	Plastic (Non-Recy.)	Others	Total	Ave. Waste Daily
Shrawan	Jul.-Aug.	1.6	1.0	3.1	1.4	0.0	0.0	0.0	1.6	0.9	1.4	11.0	0.345
Bhadra	Aug.-Sept.	2.0	1.0	4.3	1.7	0.0	0.3	1.0	1.6	0.9	0.3	13.1	0.421
Ashwin	Sept.-Oct.	2.1	1.5	4.9	2.3	0.0	0.8	1.0	1.7	1.4	0.7	16.5	0.533
Kartic	Oct.-Nov.	1.7	1.4	6.9	1.8	0.0	0.6	1.2	1.5	1.3	0.2	16.6	0.574
Mansir	Nov.-Dec.	1.8	1.5	4.8	2.0	0.2	0.7	1.1	1.6	1.4	0.0	15.3	0.510
Paush	Dec.-Jan.	1.8	1.8	3.8	2.2	0.3	0.8	1.1	1.9	1.2	0.0	14.9	0.514
Magh	Jan.-Feb.												
	Total												

C-7 Time and Motion of Collection and Transportation Activities Provided by MTM

S.No.	Place	Arrival	Departure
1	Municipal Chowk/Area	5 : 40 am	6 : 00 am
2	Bahakhabazar	6 : 05 am	6 : 10 am
3	Chapacho	6 : 12 am	6 : 20 am
4	Hatimahakal	6 : 22 am	6 : 30 am
5	Duipokhari	6 : 33 am	6 : 40 am
6	Balkumari	6 : 42 am	6 : 48 am
7	New Thimi, Shankhardhar chowk	6 : 50 am	6 : 55 am
8	Gathaghar	7 : 00 am	7 : 05 am
9	Kausaltar	7 : 10 am	7 : 20 am
10	Lokanthali	7 : 25 am	7 : 30 am
11	Teku Transfer station	8 : 00 am	8 : 15 v

C-8 Time and Motion of Collection and Transportation Activities monitored by JICA Study Team

Collection Place	No. of Spot	Van Movement Time (am)		Collection Time (mts)	Reach Time (mts)	Distance (Km)	Record Meter (km)*
		Arrival	Departure				
Municipaloty Chouk/Area	1	5:25	5:35	10			392.7
Bahakhabazar	2	5:40	5:43	3	5	0.2	392.9
Chapacho	3	5:45	5:50	5	2	0.2	393.1
Hatimahakal	3	5:55	6:00	5	5	0.1	393.2
Duipokhari	2	6:05	6:10	5	5	0.3	393.5
Balkumari	2	6:15	6:19	4	5	0.3	393.8
New Thimi (Shankhardhar Chowk)	1	6:24	6:28	4	5	0.1	393.9
Gathaghar	1	6:32	6:35	3	4	1.8	395.7
Kausaltar	1	6:37	6:39	2	2	0.4	396.1
Lukanthali	1	6:41	6:44	3	2	0.7	396.8
Transfer Station,Teku		7:05	7:18	13	21	7.4	404.2
Total	17	1 hr 53 mts		57	56	11.5	11.5

Note: 1. Distance measuring by Motorcycle meter

2. Date: March 12, 2006.

Supporting Report D

Meetings and Workshop Records of Follow Up Works on DBMS

D-1 Meetings and Visits to the Municipalities

Date/Time	Venue	Participation	Discussed Matters
12 Feb	KMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Rajesh Manandhar	Current situation of Database Management System
12 Feb	LSMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Pradeep Amatya Mr. Raju	Current situation of Database Management System
12 Feb	BKM	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Dinesh Rajbhanari (On Phone call)	Current situation of Database Management System
14 Feb	KRM	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. British Singh	Current situation of Database Management System
12 Feb	MTM	SWDM Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Tulsi B. Tato	Current situation of Database Management System
14 Feb	Center	SWDM Team Mr. Binod Kumar Kachhapati Center office Mr. Nirmal	Discussion on the requirements of Solid Waste Web Site updating
23 Feb	KRM	SWDM Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. British Singh	Analysis of Database , additional query required on the present Database for Modification, workshop preparation
24 Feb	BMC	SWDM Team Mr. Binod Kumar Kachhapati Municipalities C/P	Requirement of additional query of Database to Modification, workshop preparation and further enquiry on present status of database

Date/Time	Venue	Participation	Discussed Matters
		Mr. Dinesh Rajbhanari Mr. Laxmi pd. Duwal Mr. Bharat Awal Mr. Ram Suwal Mr. Krishna Prasad Suwal	
25 Feb	MTM	SWDM Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Tulsi Tako	Requirement of additional query of Database to Modification, workshop preparation and further enquiry on present status of database
26 Feb	KMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Rajesh Manandhar	Requirement of additional query of Database to Modification, workshop preparation and further enquiry on present status of database
27th Feb	LMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Pradeep Amatya Mr. Raju	Requirement of additional query of Database to Modification, workshop preparation and further enquiry on present status of database
28 Feb	Silt	SWDM Team Mr. Binod Kumar Kachhapati	Preparation for workshop
1st March	Center hall	SWDM Team Mr. Binod Kumar Kachhapati	Workshop
3rd March	BMC	SWDM Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Dinesh Rajbhanari Mr. Laxmi pd. Duwal Mr. Bharat Awal Mr. Krishna Prasad Suwal	• Demonstration Training on Database for new operators • Possibility of Use Existing Database for Bucket system
8th March	Silt	SWDM Team Mr. Binod Kumar Kachhapati	• Preparation of Draft reports on modification of Database Management System
8th March	LMC	SWDM Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Pradeep Amatya	Demonstration of modified database management system

Date/Time	Venue	Participation	Discussed Matters
		Mr. Raju Shakya	
8th March	KMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Rajesh Manandhar	Demonstration of modified database management system
11TH March	KMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Ram Krishna Karki	Update and demonstration training of modified database management.
12TH March	BMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Laxmi pd. Duwal Mr. Krishna Prasad Suwal	Update and demonstration training of modified database management.
14TH March	LMC	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Raju	Update and demonstration training of modified database management.
15TH March	KRM	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Ms. Chandra Maya Mr. Gyan Bazra Mr. Anuj Pradhan	Update and demonstration training of modified database management.
15TH March	MTM	SWDMT Team Mr. Binod Kumar Kachhapati Municipalities C/P Mr. Tulshi Tako	Update and demonstration training of modified database management.

D-2 RECORDS OF WORKSHOP UNDER FOLLOW UP WORKS ON DBMS

Subject:	Follow up Works for Waste Data Management (Phase-I)	
Date:	March 1, 2006	
Time:	10:30 – 15:00	
Venue:	Solid Waste Management and Resource Center Meeting Hall	
Participants:	SWMRMC	Mr. N. D. Acharya, Civil Engineer
	KMC	Mr. R. Manandhar, Chief, Solid Waste Management Unit
	LSMC	Mr. P. Amatya, Chief, Environment Section
	BKM	Mr. D. Rajbhandari, Sanitary Engineer, Planning and Technical Section
	MTM	Mr. T. B. Tako, Community Development Assistant
	KrM	Mr. B. Sing, Junior Engineer
	JICA Study Team	Mr. S. Soeda
	SILT Consultants	Mr. D. N. Chalise
		Mr. B.K. Kachhapati

1. Agenda

1.1 Introduction of Workshop

1.2 Presentation on Present Status of Solid Waste Database Management System of each municipality.

1.3 Discussion between Municipality Representatives and CKV Study Team on any further modifications needed in DBMS, including use of DBMS for estimation of waste data generation and reporting formats.

1.4 Finalization of modification of the Solid Waste Database Management System and Commitment by all Municipalities to use the System

1.5 Finalization of Focal Person in each municipality for the DBMS Training Staff of CKV Study Team to meet operation of DBMS and assist their staff to use and operate the DBMS.

2. Record of Discussion

2.1 Mr. S. Soeda, from CKV Study Team introduced the workshop, explained the purpose of the workshop and presented the Scope of Works of the Follow-up works of Solid Waste Data Base Management System (Phase-I)

2.2 Mr. B. K. Kachhapati, Program developer of SILT Consultants (P) ltd presented the current situation and present status of the DBMS prepared previously.

2.3 Discussions were held between the municipalities regarding the modifications required in the existing data base and the followings were agreed and confirmed:

2.3.1 Modifications to be conducted within the scope of follow up works of DBMS (Phase I)

- All the existing reports to be updated as per shift system (Morning and Evening)
- Following additional query in the yearly and monthly reports to be added
  - by vehicle ID

- by vehicle type
- by organization
- by ward No.
- by area

- Additional query of daily reports by time schedule
- Reported data to be converted into Metric Tons instead of Kg
- To add a column of weight by trip in monthly and yearly report
- For Bhaktapur municipality prepare format for recording details of household collection using bucket by the use of vehicle ID in the present DBMS
- Add report presenter, supervisor and name of each municipality in the present reporting format.

2.3.2 Need for the up gradation of DBMS in future

- Additional machine required for the data recording of weighing bridge at Teku Transfer Station, the recording system of which shall be compatible with the Computers data recording system.
- Preparation of Data merging and integration system with the recording system of weighing bridge at Sisdol Land Fill Site and Teku Transfer Station with the DBMS used by the municipalities.
- Include Nepali date on the recording system
- Bhaktapur municipality has demand of additional data entry for the followings:
  - Data of door to door collection in bucket system
  - Data on household
  - Data on Compost Plant
  - Data regarding the Pilot Project
- At the final stage of the DBMS particularly KMC has demanded for fully automatic data recording from weighing bridges at Sisdol and Teku through online network basis.

2.3.3 Need of the follow up training on DBMS

- All the municipalities requested for the follow up training for their DBMS operators.
- The need of the follow-up training is for the sustainable use of the DBMS and continued up dating of the DBMS.
- The training need included initially the training of basic computer skills particularly in ACCESS program so that the municipality staff can always use the DBMS and can update themselves and also can generate any type of query required.
- The training period shall be of one month with 3 hrs a day for two participants from each municipality.
- The training module shall include basic training on ACCESS and practice on the present DBMS.

2.3.4 Focal Person of each municipality for the DBMS was confirmed as follows:

KMC	Mr. Ram Krishna Karki
	Mr. Sanjaya KC
LSMC	Mr. Raju shakya
BKM	Mr. Dinesh Rajbhandari
MTM	Mr. Tulasi Toku
KrM	Mr. British Sing

3. Distributed/Used Materials

Presentation Materials from the JICA Study Team and SILT

D-3 Details of Follow up Training on Solid Waste Database Management

Date	Municipalities/ Name of Trainee	Training Provided	Achievements	Training Output
June 22 (Thursday)	LMC **Trainee Name:** ▪ Raju Shakya	• Knowledge on Windows Operating System including fundamental of computer and computer system • Tricks and tips on computer to operate faster using third party software. • Knowledge on File Handling including user files, system files and files backup.	• Trainee has Knowledge on the Operating system and they can use easily. • Knowledge on third party's application like tray command, garbage cleaner and others which enable to work faster in computer. • Files are kept in organized way, by making the folder and its subfolder (Previously files were saved any where in the computer like desktop and other places)	❖Trainees can solve the small problems on the computer. ❖Trainees can use third party's computer application smoothly. ❖Trainees are able to organizes Folder and Files System
June 23 (Friday)	LMC **Trainee Name:** ▪ Raju Shakya	• Tricks and tips on Ms office Package including Ms word and Ms Excel • Making queries on Ms Excel using Filter, Data Sorting, Data Form and Making Charts. • Theoretical Knowledge on MS Access and DBMS (Database Management System). • Knowledge on converting manual database(paper base data) to computerized database	• Most of the data are kept in Excel and they are able to handle these data properly. • Knowledge on Database Management system. • Knowledge on Tables, reports and their Relationship.	❖ Trainees can analyze Excel data to make reports. ❖ Can convert manual data to computerized data. ❖Can generate Database System.
June 25 (Sunday)	LMC **Trainee Name:** ▪ Raju Shakya	• Short briefing on Solid Waste Database Application. • Knowledge on SQL (Structure Query Language) including SELECT STATEMENT and Condition operators.	• Concept on SQL • Concept on Select Statement and its components. • Generate details and summary reports	❖ Able to generate all types repots (including annual repots) by SQL statement query.
June 26 (Monday)	LMC **Trainee Name:** ▪ Raju Shakya	• Continue on SQL • Virus and Protection	• Knowledge on Virus Protection	❖ Able to protect computer from Virus

Date	Municipalities/ Name of Trainee	Training Provided	Achievements	Training Output
June 27 (Tuesday)	MTM **Trainee Name:** ▪ Tulshi Bhakta Tako ▪ Krishna Shrestha	• Knowledge on Windows Operating System including fundamental of computer and computer system • Tricks and tips on computer to operate faster using third party software. • Knowledge on File Handling including user files, system files and files backup.	• Trainee has Knowledge on the Operating system and they can use easily. • Knowledge on third party's application like tray command, garbage cleaner and others which enable to work faster in computer. • Files are kept in organized way, by making the folder and its subfolder (Previously files were saved any where in the computer like desktop and other places)	❖ Trainees can solve the small problems on the computer. ❖ Trainees can use third party's computer application smoothly. ❖ Trainees are able to organizes Folder and Files System
June 28 (Wednesday)	MTM **Trainee Name:** ▪ Tulshi Bhakta Tako	• Theoretically Knowledge on MS Access and DBMS (Database Management System) • Knowledge on converting manual database(paper base data) to computerized database	• Knowledge on Database Management system • Knowledge on Tables, reports and their Relationship	❖Can convert manual data to computerized data in future ❖Can generate Database System in Ms Access.
June 29 (Thursday)	BKM **Trainee Name:** ▪ Rameshor Koju ▪ Shree Krishna Nyaichyai	• Knowledge on Windows Operating System including fundamental of computer and computer system • Tricks and tips on computer to operate faster using third party software. • Knowledge on File Handling including user files, system files and files backup.	• Trainee has Knowledge on the Operating system and have conception of the system. • Knowledge on third party's application like tray command, garbage cleaner and others which enable to work faster in computer. • Files are kept in organized way, making the folder and its subfolder (Previously file are save every where in the computer like desktop and other place Files are kept in organized way, by making the folder and its subfolder (Previously files were saved any where in the computer like desktop and other places)	❖ Trainees can use third party's computer application but need more practice. ❖ Trainees are able to organizes Folder and Files System with more practice.
June 30 (Friday)	BKM	• Virus and Protection • Theoretically Knowledge on MS Access	• Knowledge on Database Management system	❖Can convert manual data to computerized

Date	Municipalities/ Name of Trainee	Training Provided	Achievements	Training Output
	Trainee Name: ▪ Shree Krishna Nyaichyai ▪ Rameshor Koju ▪ Ramesh Twitwi ▪ Ram Krishna Prajapati	and DBMS (Database Management System) • Knowledge on converting manual database(paper base data) to computerized database	• Knowledge on Tables, reports and their Relationship	data.
July 2 (Sunday)	MTM **Trainee Name:** ▪ Tulshi Bhakta Tako ▪ Krishna Shrestha	• Short briefing on Solid Waste database. • Knowledge on SQL (Structure Query Language) including SELECT STATEMENT and Condition operators.	• Concept on SQL • Concept on Select Statement and it's components. • Generate detail and summary reports	❖Able to generate all types repots (including annual repots) by SQL statement query. ❖ Able to protect computer from Virus
July 3 (Monday)	MTM **Trainee Name:** ▪ Tulshi Bhakta Tako ▪ Krishna Shrestha	• Continue on SQL • Virus and Protection		
July 5 (Wednesday)	BKM **Trainee Name:** ▪ Rameshor Koju ▪ Shree Krishna Nyaichyai	• Training on Solid Waste Database • Changing exiting manual Forms (To make easy to input the data).	• Knowledge on Solid Waste Database inputting and reports.	❖Now BKM has started inputting Solid Waste Database. ❖Can generate reports (yearly, monthly, Daily) from exiting application
July 9 (Sunday)	KMC **Trainee Name:** ▪ Ram Krishna Karki ▪ Sanjay K.C.	• Knowledge on Windows Operating System including fundamental of computer and computer system • Tricks and tips on computer to operate faster using third party software. • Knowledge on File Handling including user files, system files and files backup.	• Trainee has a Knowledge on the Operating system and they can use easily. • Knowledge on third party's application like tray command, garbage cleaner and others which enable to work faster in computer. • Files are kept in organized way, by making the folder and its subfolder (Previously files were saved any where in the computer like desktop and other places)	❖ Trainees can solve the small problems on the computer. ❖ Trainees can use third party's computer application smoothly. ❖ Trainees are able to organizes Folder and Files System

Date	Municipalities/ Name of Trainee	Training Provided	Achievements	Training Output
July 13 (Thursday)	BKM **Trainee Name:** ▪ Rameshor Koju ▪ Shree Krishna Nyaichyai	• Data inputting on Solid Waste Database	• Knowledge on data inputting and reports.	❖Can input Solid Waste Data in the application. ❖Can generate reports (yearly, monthly, Daily) from existing application , but need more practice.
July 16 (Sunday)	KRM **Trainee Name:** ▪ Chandra Maya Maharjan	• Knowledge on Windows Operating System including fundamental of computer and computer system • Tricks and tips on computer to operate faster using third party software. • Knowledge on File Handling including user files, system files and files backup.	• Trainee has a good Knowledge on the Operating system and they can use easily. • Knowledge on third party's application like tray command, garbage cleaner and others which enable to work faster in computer. • Files are kept in organized way, making the folder and its subfolder (Previously file are save every where in the computer like desktop and other place Files are kept in organized way, by making the folder and its subfolder (Previously files were saved any where in the computer like desktop and other places)	❖ Trainees can solve the small problems on the computer. ❖ Trainees can use third party's computer application smoothly. ❖ Trainees are able to organizes Folder and Files System
July 17 (Monday)	KRM **Trainee Name:** ▪ Chandra Maya Maharjan	• Theoretically Knowledge on MS Access and DBMS (Database Management System) • Knowledge on converting manual database(paper base data) to computerized database	• Most of the data are kept in Excel and they are able to handle these data properly. • Knowledge on Database Management system • Knowledge on Tables, reports and their Relationship	❖Trainees can analyzed these excel data to make reports. ❖ Can convert manual data to computerized data in future ❖Can generate Database System in Ms-Access.
July 18 (Tuesday)	KRM **Trainee Name:** ▪ Chandra Maya Maharjan	• Short briefing on Solid Waste database. • Knowledge on SQL (Structure Query Language) including SELECT STATEMENT and Condition operators.	• Concept on SQL • Concept on Select Statement and it's components. • Generate details and summary reports	❖ Able to generate all types repots (including annual repots) by SQL statement query.

Date	Municipalities/ Name of Trainee	Training Provided	Achievements	Training Output
July 19 (Wednesday)	KRM **Trainee Name:** ▪ Chandra Maya Maharjan	• Continue on SQL		
July 20 (Thursday)	KMC **Trainee Name:** ▪ Ram Krishna Karki ▪ Sanjay K.C.	• Virus and Protection • Short briefing on Solid Waste database. • Knowledge on SQL (Structure Query Language) including SELECT STATEMENT and Condition operators	• Good Knowledge on Virus Protection • Knowledge on SQL • Knowledge on Select Statement and it's components. • Generate detail and summary reports • New Manual form system will generate easy data to store in the computer.	❖Makes daily update of virus definition ❖Able to generate all types repots (including annual repots) by SQL statement query.
July 21 (Friday)	KMC **Trainee Name:** ▪ Ram Krishna Karki ▪ Sanjay K.C.	• Continue on SQL		
July 23 (Sunday)	KMC **Trainee Name:** ▪ Ram Krishna Karki ▪ Sanjay K.C.	• Continue on SQL • Changing the manual forms to get more information from collection.		
July 22 (Saturday)	BKM **Trainee Name:** ▪ Rameshor Koju	• Support inputting data in Solid waste Database Application		

D-4 Records of Workshop under Follow up works on DBMS

Subject: Follow up Works for Waste Data Management (Phase-II)

Date: July 31, 2006

Time: 10:30 – 14:30

Venue: Hall C, LDTA

Participants:		
	KMC	Mr. R. Manandhar, Chief, Solid Waste Management Unit
		Mr. Prashanna M. Pradhan
		Mr. Ram Krishna Karki
		Mr. Sanjay K.C.
	LSMC	Mr. Raju Shakya
	BKM	Mr. D. Rajbhandari, Sanitary Engineer, Planning and Technical Section
		Mr. Rameshor Koju
		Mr. Shree Kirshna Nyaichyai
	MTM	Mr. T. B. Tako, Community Development Assistant
	KRM	Mr. British. Sing, Junior Engineer
		Ms. Chandra Maya Maharjan
	JICA Study Team	Mr. S. Soeda
	SILT Consultants	Mr. D. N. Chalise
		Mr. B.K. Kachhapati

1. Agenda

   1.1 Introduction of Workshop

   1.2 Presentation on Present Status of Solid Waste Database Management System.

   1.3 Presentation of the sample annual report and discussions and feedback on the skill of trained personnel of each municipality regarding generating annual report.

   1.4 Finalization of requirements of SWM Annual Report of each municipality.

   1.5 Finalization of Focal Person in each municipality for the DBMS Staff and commitments from each municipality to meet operation of DBMS, prepare final annual report and to use and operate the DBMS.

2. Record of Discussion

   2.1 Mr. S. Soeda, from CKV Study Team introduced the workshop, explained the purpose of the workshop and presented the Scope of Works of the Follow-up works of Solid Waste Data Base Management System (Phase-II)

   2.2 Mr. B. K. Kachhapati, Program developer of SILT Consultants (P) ltd presented the current situation and present status of the DBMS prepared previously.

2.3 Mr. B. K. Kachhapati, Program developer of SILT Consultants (P) ltd presented the sample annual report on SW Data of LMC and MTM.

2.3 Discussions were held between the municipalities regarding the modifications required in the sample annual report format and the followings were agreed and confirmed:

2.3.1 Additional query needed.

- By Route
- By Station

2.3.2 Additional field needed

- Wastage source

2.4 The skill for generating annual report was demonstrated by working on sample annual report by the participants of the training.

3. Distributed/Used Materials

- Presentation Materials from the JICA Study Team and SILT

D-4 Annual Reports by Station in LSMC and MTM

Lalitpur Sub Metropolitan City (LSMC)
Annual Reports (January - June 2006)

weight in tons

PARTICULAR	*JANUARY*	*FEBRUARY*	*MARCH*	*APRIL*	*MAY*	*JUNE*
Transfer Station						
Transfer Station To Land Fill Site						
Remaining						
Land Fill Site	1978.45	1802.02	2113.26	1415.27	1724.11	1194.52
Total Weight	1978.45	1802.02	2113.26	1415.27	1724.11	1194.52

Madhyapur Thimi Municipality

Annual Reports (January - June 2006)

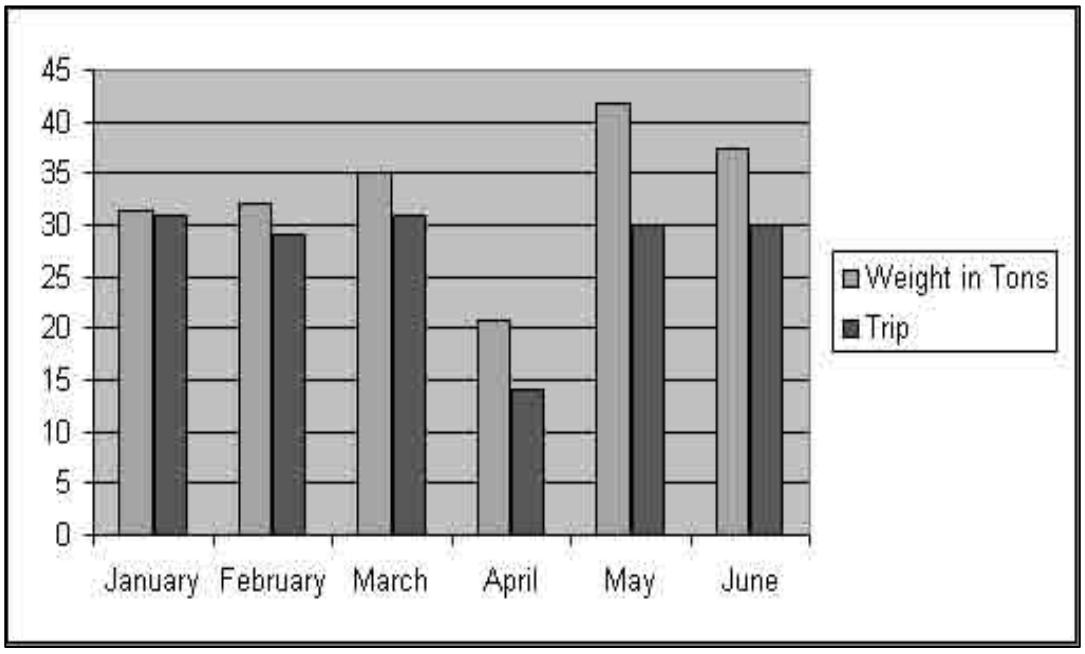
weight in tons

PARTICULAR	*JANUARY*	*FEBRUARY*	*MARCH*	*APRIL*	*MAY*	*JUNE*
Transfer Station	31.28	31.99	35.06	20.99	41.77	37.47
Transfer Station To Land Fill Site	0	0	0	0	0	0
Remaining	31.28	31.99	35.06	20.99	41.77	37.47
Land Fill Site	0	0	0	0	0	0
Total Weight	31.28	31.99	35.06	20.99	41.77	37.47

Madhyapur Thimi Municipality
Annual Report by Vehicle ID of Year 2006

weight in tons

Vehicle Id	*Vehicle Name*	*Jan*	*Trip*	*Feb*	*Trip*	*Mar*	*Trip*	*Apr*	*Trip*	*May*	*Trip*	*Jun*	*Trip*
1	Ba.1.Kha 4889	31.28	31	31.99	29	35.06	31	20.86	14	41.76	30	37.47	30
	Total	31.28		31.99		35.06		20.86		41.76		37.47	

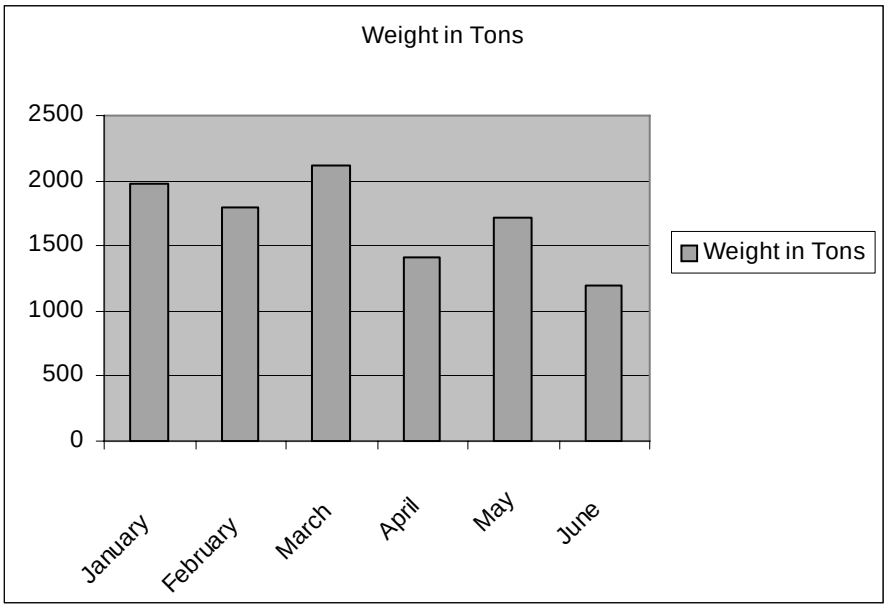


Lalitpur Sub Metropolitain City (LSMC)

Annual Report by Vehicle ID of Year 2006

Vehicle Id	*Vehicle Name*	*Jan*	*Trip*	*Feb*	*Trip*	*Mar*	*Trip*	*Apr*	*Trip*	*May*	*Trip*	*Jun*	*Trip*
1	Ba.a.Gh349	425.52	197	453.6	210	555.48	257	265.68	123	151.2	70	4.32	2
2	U.A 804	192.78	119	155.52	96	199.26	123	127.98	79	173.34	107	30.78	19
6	U.A 802	158.76	126	102.06	81	107.1	85	91.98	73	110.88	88	31.5	25
7	U. A 791	128.52	102	97.02	77	122.325	97	63	50	128.52	102	61.74	49
8	U.A 790	99.54	79	100.8	80	118.44	94	79.38	63	126	100	118.44	94
9	U.A 795	119.7	95	94.5	75	110.88	88	95.76	76	64.26	51	5.04	4
10	U.A 798	161.28	128	162.54	129	151.515	120	94.5	75	119.7	95	152.46	121
11	U.A800	137.34	109	99.54	79	102.06	81	76.86	61	103.32	82	93.24	74
12	U.A 803	98.28	78	86.94	69	76.86	61	91.98	73	110.88	88	73.08	58
13	U.A.801	88.2	70	105.84	84	129.885	103	75.6	60	131.04	104	97.02	77
14	U.A788	0	0	15.12	12	11.34	9	59.22	47	36.54	29	109.62	87
15	U.A796	0	0	0						56.7	45	97.02	77
16	U.A799	100.8	80	98.28	78	146.16	116	94.5	75	137.34	109	109.62	87
17	U.A 797	136.08	108	120.96	96	146.16	116	94.5	75	138.6	110	105.84	84
18	Ba.A.Ha1172	64.584	78	60.444	73	67.896	82	57.96	71	73.692	89	56.304	68
19	Ba.A.Ha.1175	67.068	81	48.852	59	67.896	82	46.368	56	62.1	75	44.712	54
		1978.45		1802.02		2113.26		1415.27		1724.11		1190.74	

Months	**Weight in Tons**
January	1978.45
February	1802.02
March	2113.26
April	1415.27
May	1724.11
June	1190.77



Summary Reports by Vehicle Type in MTM

Madhyapur Thimi Municipality

Solid Waste Database Management System

Summary Report of Transfer Station by Vehicle Type

From: 1/1/2006 ***To:*** 6/6/2006

VEHICLE ID	*TOTAL WEIGHT (in Metric Tons)*	*TOTAL TRIP (per Trip)*	*AVERAGE WEIGHT*
Mini truck	169.96	141	1.21
Total	169.96	141	1.21

Tulsi Bhakta Tako

Prepared By ***Supervised By***

Summary Reports by Vehicle Type in LMC

Lalitpur Sub Metropolitan City

Solid Waste Database Management System

Summary Report of Landfill Site By Vehicle Type

From: 1/1/2006 ***To:*** 6/6/2006

VEHICLE ID	*TOTAL WEIGHT (in Metric Tons)*	*TOTAL TRIP (per Trip)*	*AVERAGE WEIGHT*
Big Container	1851.48	857	2.16
Container	850.50	525	1.62
Tipper	5967.89	4736	1.26
Tractor	636.73	770	.83
Total	9306.59	6888	5.87

Raju Shakya
Prepared By

Pradeep Amatya
Supervised By

Summary Reports by Vehicle in MTM

Madhyapur Thimi Municipality

Solid Waste Database Management System

Summary Report of Transfer Station By Vehicle

From: 1/1/2006 ***To:*** 6/6/2006

VEHICLE ID	*VEHICLE NUMBER*	*TOTAL WEIGHT*	*TOTAL TRIP*	*AVERAGE WEIGHT*
	(in Metric Tons)	***(per Trip)***		
1	*Ba.1.Kha 4889*	169.94	141	1.21
	Total	169.94	141	1.21

Tulsi Bhakta Tako

Prepared By ***Supervised By***

Summary Reports by Vehicle in LMC

Lalitpur Sub Metropolitan City

Solid Waste Database Management System

Summary Report of Landfill Site By Vehicle

From: 1/1/2006 ***To:*** 6/6/2006

VEHICLE ID	*VEHICLE NUMBER*	*TOTAL WEIGHT*	*TOTAL TRIP*	*AVERAGE WEIGHT*
		(in Metric Tons)	***(per Trip)***	
1	*Ba.a.Gh349*	1851.48	857	2.16
2	*U.A 804*	850.50	525	1.62
6	*U.A 802*	570.78	453	1.26
7	*U. A 791*	557.03	442	1.26
8	*U.A 790*	548.10	435	1.26
9	*U.A 795*	490.14	389	1.26
10	*U.A 798*	723.55	574	1.26
11	*U.A800*	544.32	432	1.26
12	*U.A 803*	476.28	378	1.26
13	*U.A.801*	549.46	436	1.26
14	*U.A788*	148.68	118	1.26
15	*U.A796*	89.46	71	1.26
16	*U.A799*	604.80	480	1.26
17	*U.A 797*	665.28	528	1.26
18	*Ba.A.Ha1172*	338.65	410	.83
19	*Ba.A.Ha.1175*	298.08	360	.83
	Total	9306.59	6888	20.56

Raju Shakya Pradeep Amatya

Prepared By ***Supervised B***

Supporting Report E

Topography, Geological Study and Soil Investigation for Banchare Danda Long-Term Landfill Site

Supporting Report E: Topography, Geological Study and Soil Investigation for Banchare Danda Long-Term Landfill Site

1. Regional Geology

The proposed Banchare Danda long-term landfill site is located at the northern flank of the Mahabharat Synclinorium in its western central sector. The Mahabharat Synclinorium is one of the major geological structures in Central Nepal (Figure 1.1). The main orographic and tectonic zones of the Himalaya in Central Nepal from north to south are as follows:

- The High Himalaya, composed of the Tibetan sedimentary zone and the underlying crystalline zone
- The Lesser Himalaya, composed of the Midland sedimentary zones and the Mahabharat Range and
- The Sub-Himalaya or Siwalik zone, composed of sedimentary rocks.

According to Stocklin and Bhattarai (1981), the rocks of the Lesser Himalaya in Central Nepal are divided into Nawakot Complex and Kathmandu Complex (Table 1.1). The rocks of the Kathmandu Complex are thrust over the Nawakot Complex along the Mahabharat Thrust. The Banchare Danda long-term landfill site is underlain by Tistung Formation of Kathmandu Complex.

Table 1.1 Lithostratigraphic Division of the Lesser Himalaya, Central Nepal

Complex	Group	Formation	Age	Lithology
		Godavari Limestone	Devonian	Green-purple argillaceous limestones
		Chitlang Formation	Silurian	Dark-violet slates and white quartzites
	Phulchauki	Chandragiri Limestone	Cambrian-Ordovician	Fine-grained yellow-brown limestones
		Sopyang Formation	Cambrian	Dark argillaceous limestones and marly slates
		Tistung Formation	Early- Late Cambrian	Grey slate, meta-sandstones and phyllites
Kathmandu	----------	----------	----------	---------Transitional Contact----------
		Markhu Formation		Schists, quartzites and marbles (50%)
		Kulekhani Formation		Fine-grained biotite schists and micaceous quartzites
	Bhimphedi	Chisapani Quartzite	Precambrian	White of pale green quartzites
		Kalitar Formation		Dark grey-green mica schists and quartzitea
		Bhainsedobhan Marble		Coarse-grained white marbles
		RaduwaFormation		Coarse-grained dark green-grey garnetiferous schists
_____	_____	_____	_____	____Mahabharat Thrust (MT)_____
		Robang Formation		Green-grey sericitic-chloritic phyllites & white quartzites
	Upper Nawakot	Malekhu Limestone	Post-Early Paleozoic	Light yellow - dark grey dolomitic limestones
		Benighat Slate		Dark argillaceous slates
	----------	**********	----------	*****Unconformity**********
		Dhading Dolomite		Light bluish grey stromatolitic dolomites
		Nourpul Formation		White-pink strongly ripple marked quartzites & phyllites
		Dandagaon Phyllite		Dark green phyllites
Nawakot	Lower Nawakot	Fagfog quartzite	Lower Paleozoic	Orthoquartzites with several phyllite intercalations
		Kuncha Formation		Green phyllites, phyllitic metasanstones and gritstones

Reference: Stocklin and Bhattarai (1981)

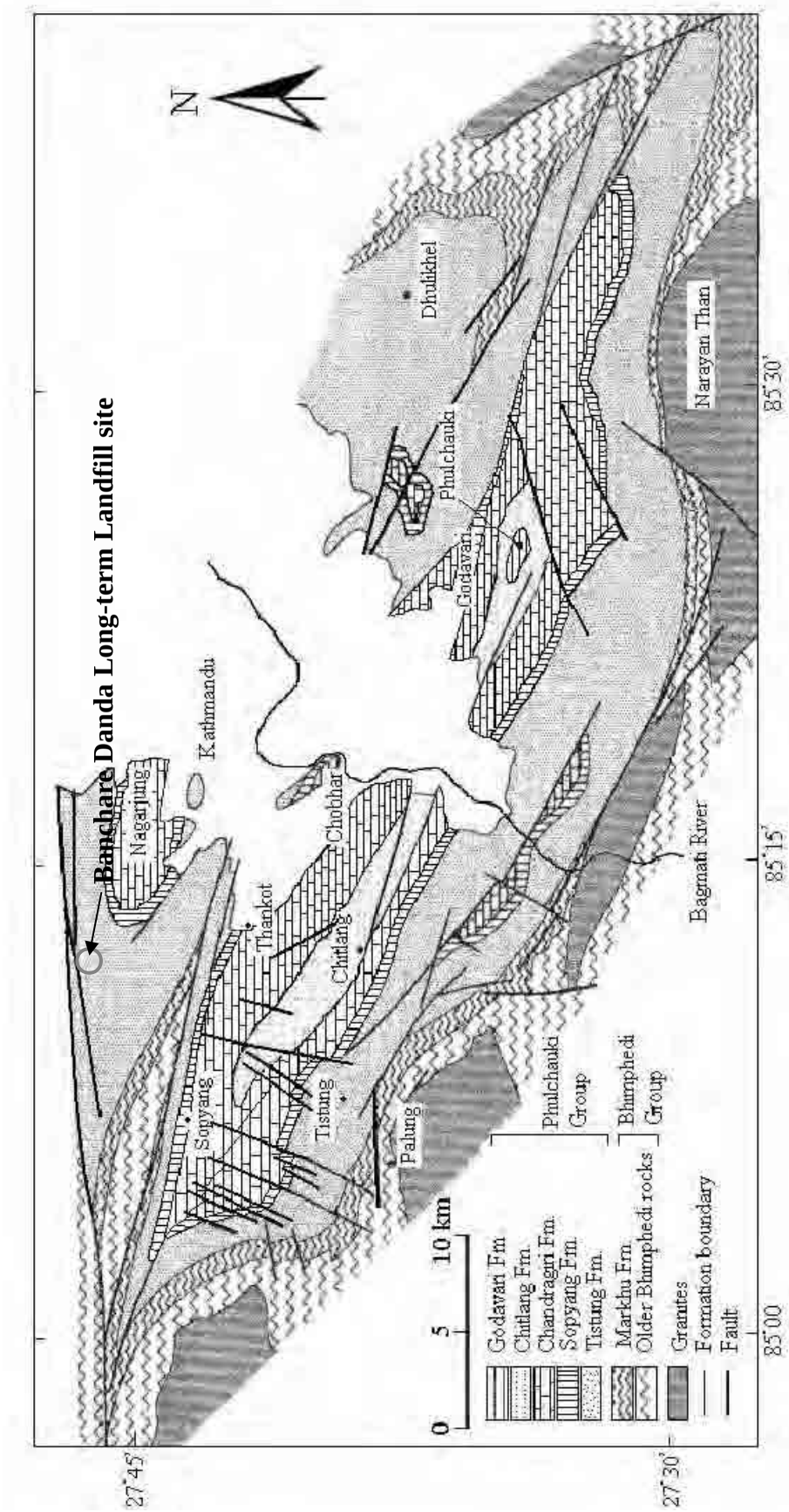


Figure 1.1 Regional geological map of Kathmandu area (Reference: Stöcklin 1980, Funakawa 2001)

2. Site Geology

2.1 Topography

The Kolpu Khola River rises on the west slope of about 2,200 m high mountain area at the north west edge of Kathmandu Valley, forms a steep V-shape valley, meanders and flows westward around the Banchare Danda long-term Landfill site. The landfill site will be constructed on the riverbed of the Kolpu Khola River about 10 km westward of Kathmandu City after changing river channel.

The riverbed with 20 m in width is at an elevation of approximately 85-95 m at the proposed waste storage dam site, while about 100 m in width at the waste landfill area.

The inclinations of the both banks of 85-200 m and above 200 m in elevation are about 45 degrees and 20 degrees respectively.

Two small terraces of about 3 m and 7 m in height above riverbed respectively occur on the center ridge of the site.

2.2 Geological Component

The Banchare Danda long-term landfill site is underlain mainly by meta-sandstone and schist belonging to Tistung Formation of the Kathmandu Complex .

The ratio of meta-sandstone/schist is about 70/30 at riverbed of the Kolpu Khola, whereas the ratio of meta-sandstone decreases to the northern mountainous area.

Less than 5 m thick blocks or lenses of quartzite and gneiss are intercalated by meta-sandstone or schist, and a fairly large dyke of pegmatite is found in the middle flank of the northern slope of the proposed landfill site. These intercalated thin layers are generally highly weathered and deteriorated.

Two small terraces of 3 m and 7 m in

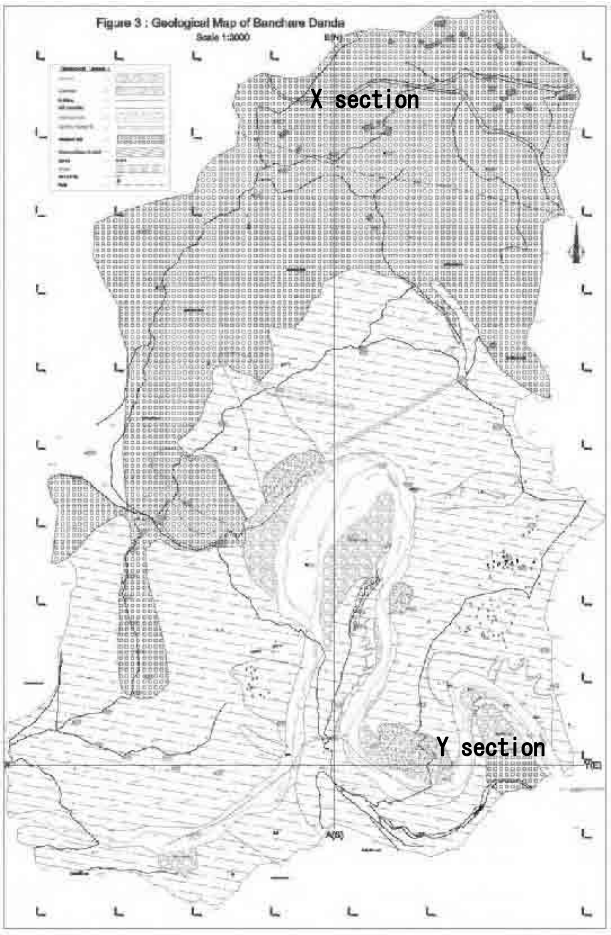


Figure 2.1 Geological Map of Banchare Danda Long-term Landfill Site
Source: JICA Study Team

height above riverbed covered with thin deposits are on the center ridge of the site.

Colluvium covering north-side and west-side slope is less than one meter in general. Relatively thick, partially 3-5 m thick colluvium covers west-side hill area.

Alluvium occurs along the recent river, less than four meters thick in general, while relatively extended deposited on the riverbed at the west side of the landfill site.

Geological Map and geological sections are given in Figure 2.1 and Figure 2.2 respectively. Stratigraphy of the Banchare Danda long-term Landfill site is shown in Table 2.1.

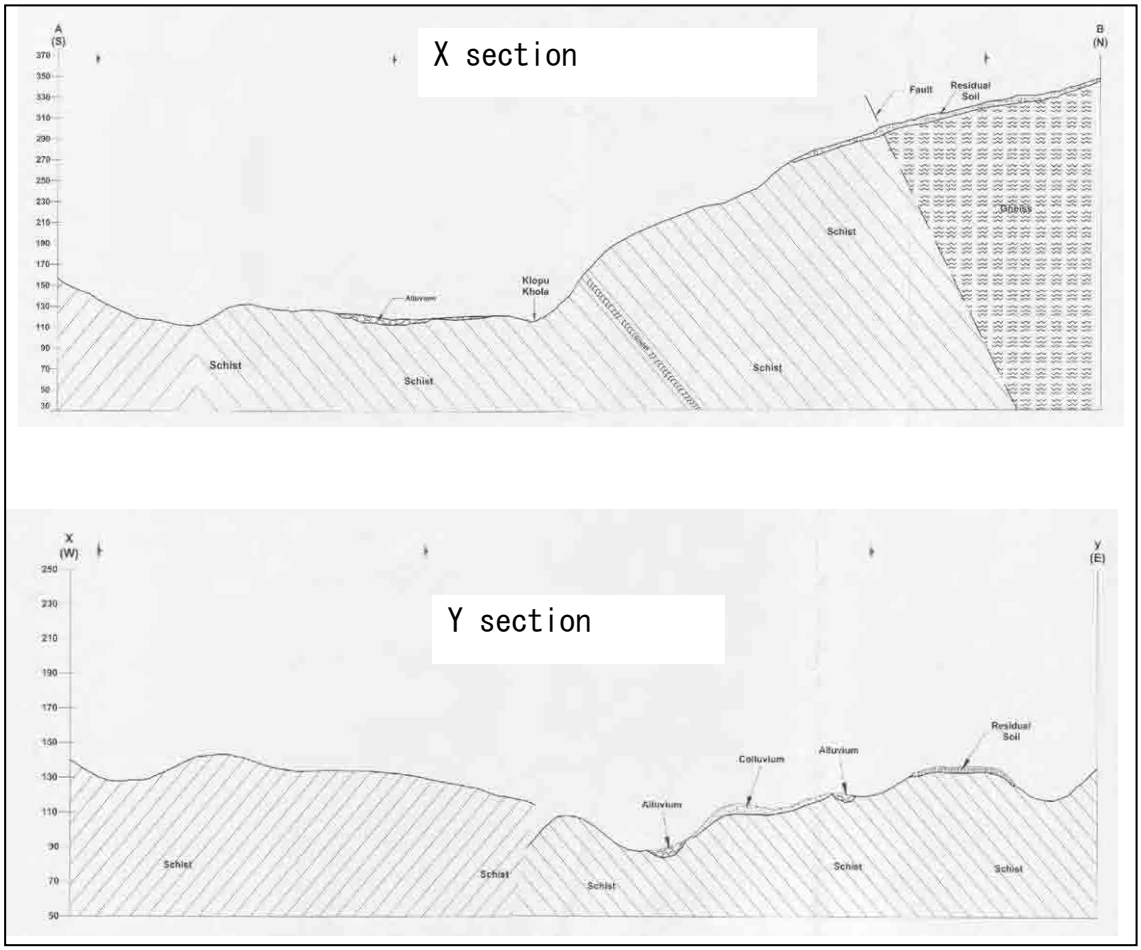


Figure 2.2 Geological Section of Banchare Danda Long-term Landfill Site

Source: JICA Study Team

Table 2.1 Stratigraphy of Banchare Danda Long-term Landfill Site

Geological Age（Ma）	Formation	Description
Holocene (0.00-0.01)	Alluvium	Sand and gravel, loose. Less than four meters thick in general, while relatively extended deposited on the riverbed at the west side of the landfill site.
	Colluvium	Soil with gravel, loose in general. Less than one meter thick on north-side and west-side slope of the proposed landfill site. Relatively thick colluvium covers west-side hill area.
Pleistocene (0.01-1.64)	Terrace deposit	Soil with rounded gravels, relatively loose. Small terraces of 3 m and 7 m in height above riverbed covered with thin deposits are on the center ridge of the site.
Lower Paleozoic (500 ?)	Tistung Formation	
	Rock Types of Tistung Formation in the Banchare Danda long-term Landfill Site (No stratigraphic order implied)	
	Alternation of Meta-sandstone and schist	(Meta-sandstone portion) Gray color, solid. Crack spacing ranges 5-10 cm in general, and the rock is relatively resistant to weathering and hard. (Schist portion) Dark gray, moderately solid Crack spacing is less than 5 cm in general. Weak and brittle biotite rich portions are distributed mainly on the northern part of the proposed landfill site.
	Gneiss (Quartzite)	Light grey color, highly weathered and deteriorated in general. Less than 5 m thick blocks or lenses.
	Pegmatite	Light grey color, highly weathered and deteriorated in general. Less than 5 m thick dykes.

Source: JICA Study Team

2.3 Structure

The strikes of the bedding planes of the project area are basically extending E-W to ENE-WSW direction.

The bedding plans of meta-sandstone and schist dip 70-80 degrees northward at the proposed waste storage dam side, whereas dip about 50 degrees north-westward at the north side slope of the proposed landfill site.

An anticline structure is anticipated at the neck of the small ridge on which diversion facilities will lie.

2.4 Fault

No visible and continuous fractures are detected in the Banchare Danda long-term landfill

site except for small scale and minor discontinuities.

An E-W trending fault separating the Tistung Formation of low-grade metamorphic rocks from gneissic rocks (high-grade metamorphic rocks) is inferred to lie to the north of the landfill site.

3. Geological Investigation

3.1 Quantities of Geological Investigation

Geological investigations of the Banchare Danda long-term Landfill site started by JICA in 2005, and additional geological investigations were carried out in this stage. Quantities of the existing survey carried out in Banchare Danda long-term Landfill site are listed in Table-3.1

Table-3.1 Quantities of Geological Investigation

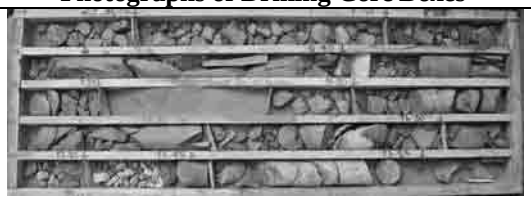
Survey Item		**Quantities**
Core drilling (2005)	DH-1 (Vertical)	L=15 m
	DH-2 (Vertical)	L=15 m
	DH-3 (Vertical)	L=15 m
	DH-4 (Vertical)	L=15 m
	DH-5 (Vertical)	L=15 m
	DH-6 A(Vertical)	L=7 m
	DA-6B(Vertical)	L=8 m
	DH-7 (Inclined)	L=15 m
Core drilling (2006)	DH-8 (Horizontal)	L=25 m
	DH-9 (Vertical)	L=15 m
	DH-10 (Vertical)	L=25 m
	DH-11 (Vertical)	L=25 m
	DH-12 (Vertical)	L=35 m
Standard Penetration Test	DH-9,DH-11,DH-12	12 nos.
Permeability Test	DH-8~DH-12	23 nos.
Laboratory test	For Soil	
	Grain size analysis	5 nos.
	Specific gravity	5 nos.
	Plastic limit, Liquid limit	3 nos.
	Natural water content	3 nos.
	For Rock	
	Point Load test	5 nos.
	Water Content	5 nos.

3.2 Criteria for Rock Classification

The bedrocks of the Banchare Danda long-term landfill site are composed of meta-sandstone and schist classified into CM-CL class, and weathered gneiss and pegmatite classified into CL-D class on the basis of a criteria developed by CRIEP (Tanaka, 1964).

The features and expectable physico-mechanical properties of the rock classes are shown in the following table.

Table 3.2 Summary of Rock Classification

Class	Photographs of Drilling Core Boxes	Drilling Core Condition (expectable)
CM	 DH-3	- Fresh and solid - Sound by hammer brow is clear to somewhat dim - Crack spacing about 5-10cm (except cracks caused by core drilling) - Cracks are closely adhered, no deterioration nor discoloration in general, limonite adhered along cracks in partly
CL	 DH-8	- Soft rock fragments with clayey to sandy materials - Sound by hummer blow is dim - Crack spacing less than 5 cm - Thin clay is sandwiched along the opening.
D	 DH-2	- Clayey and sandy materials with soft rock fragments - Easy to dig by a pick hummer.

Reference: a criteria developed by CRIEP (Tanaka, 1964)

3.3 Results of Geological Investigation

Results of Drilling Survey are summarized in Table 3.3. Location map of drill holes is shown in Figure 3.1.

Table 3.3 Summary of Geological Investigation

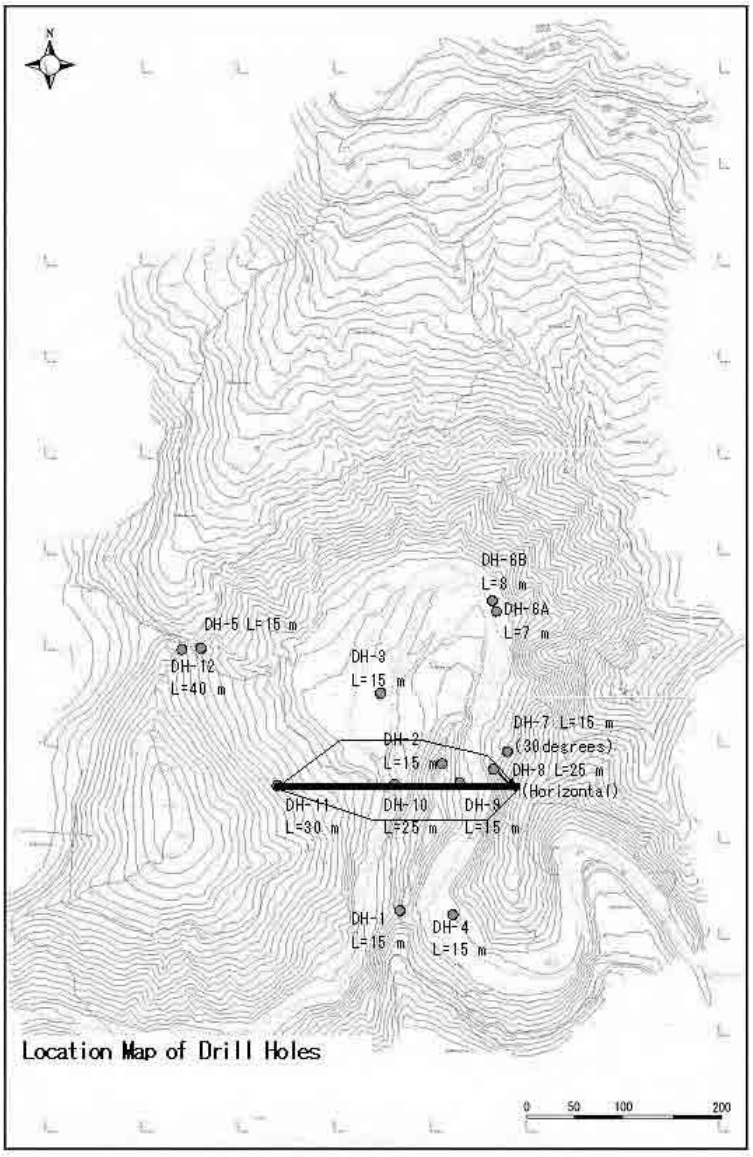
Drill hole	Geology	Rock class	Permeability
DH-1 L=15 m	0.0-0.5 m soil 0.5-5.5 m pelitic schist 5.5-15.0 m meta-sandstone	0.0-1.5 m D class 1.5-5.5 m CL class 5.5-15.0 m CM class	- ground water: none
DH-2 L=15 m	0.0-1.0 m soil 1.0-15.0 m pelitic schist	0.0-2.0 m D class 2.0-7.5 m CL class 1.0-4.5 m highly weathered 4.5-7.5 m medium weathered 7.5-15.0 m CM class	- ground water: none
DH-3 L=15 m	0.0-3.0 m sand/gravel 0.5-13.5 m meta-sandstone 13.5-15.0 m quortzo-schist	0.0-3.0 m D class 3.0-15.0m CM class	- ground water level: 2.1 m
DH-4 L=15 m	0.0-3.6 m sand/gravel 3.6-15.0m pelitic schist	0.0-4.85m D class 4.85-7.0m CL class 7.0-15.0 CM class	- ground water level: 2.0 m
DH-5 L=15 m	0.0-1.0m soil 1.0-5.0 m pelitic schist 5.0-15.0 m gneiss	0.0-5.0 m D class 5.0-15.0 m CL class	- ground water: none

DH-6A L=7 m	0.0-3.5 m sand/gravel 3.5-7.0 m pelitic schist	0.0-3.5 m D class 3.5-7.0 m CL class	- ground water level: 1.15 m
DH-6B L=8m	0.0-2.4 m sand/gravel 2.4-7.0 m meta-sandstone/schist	0.0-2.4 m D class 2.4-7.0 m CM class	- ground water level: 1.3 m
DH-7 L=15 m	0.0-1.0m gravel/soil 1.0-5.0 m pelitic schist 5.0-15.0 m meta-sandstone/schist	0.0-1.0m D class 1.0-5.0 m CL class 5.0-15.0 m D class	- ground water: none
DH-8 L=25 m	0.0-0.42 m gravel/soil 0.42-16.6 m pelitic schist 16.6-25.0 m meta-sandstone/schist	0.0-1.0 m D class 1.0-16.6 m CL class 16.6-25.0 m CM class	5.4-6.8 Lu ground water: none
DH-9 L=15 m	0.0-3.35 m sand/gravel 3.35-15.0 m meta-sandstone/schist	0.0-3.35 m D class 3.35-15.0 m CM class	4.5-7.5 Lu ground water level: 0.4 m
DH-10 L=25 m	0.0-25.0 m meta-sandstone/schist	0.0-2.0 CL class 25.0 m CM class (partially CL class)	0-10 m 2-4 Lu 10 m~ 1-2 Lu ground water level: 1.75 m (10 Aug)
DH-11 L=30 m	0.0-4.35 m gravel/soil 4.35-30.0 m schist/meta-sandstone	0.0-8.0 m D class 8.0-13.0 m CL 13.0-30.0 m CL-CM class	0-15 m more than30 Lu 15-30 m 10-15 Lu groundwater level: 16 m (10 Aug)
DH-12 L=40 m	0.0-3.90 m gravel/soil 3.90-40.0 m weathered gneiss	0.0-3.9 m D class 3.9-40.0 m CL-D class	7-20 m 3.7-5 Lu 20-40 m 0.5-1 Lu ground water level: 33.9 m (10 Aug)

Table 3.4 Summary of Laboratory Test

Laboratory Test	Quantity	Results of Tests
Soil Sample (Colluvium)		
Grain Size Analysis (river sand)	3	Boulder 24-31% Gravel 55-68% Sand 8-23% Mud 0-1%
Specific gravity (river sand)	3	2.59
Liquid limit	3	NP <BH-12>
Plastic limit	3	23.86-27.90 <BH-12>
Natural Water Content	3	1.20<BH-8>, 0.57<BH-9>, 0.36<BH-10>, 5.12<BH-12>
Riverbed Deposits		
Grain Size Analysis	2	
Specific gravity	2	
Rock Sample		
Point Load test	Meta-sandstone 4 Weathered gneiss 3	Meta-sandstone Diametrically: 2.52-7.49 (5.59)MPa Axially: 2.25-5.07 (3.65) MPa Weathered gneiss Diametrically: 0.22-3.27 (1.27) MPa Axially: 0.21-2.67 (1.03) MPa
Water Content	5	

Number in parentheses shows average value.



Source: JICA Study Team

Figure 3.1 Location Map of Geological Investigation

4. Engineering Assessment

4.1 Waste storage dam

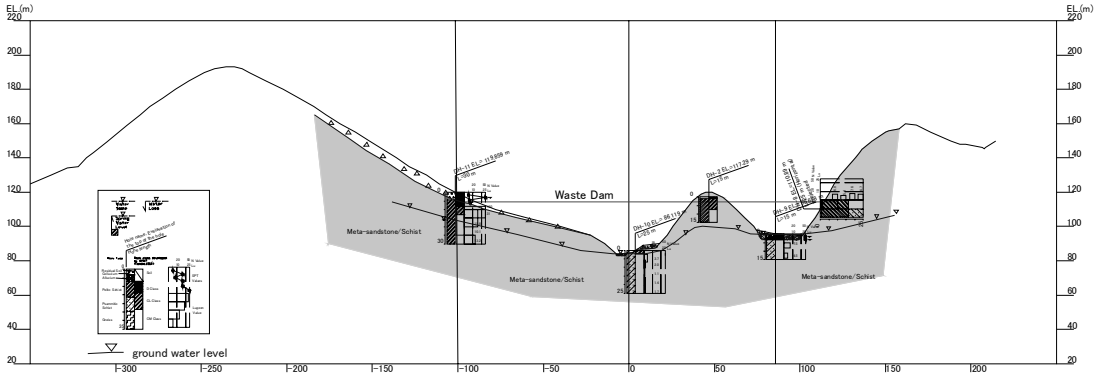
(1) Site Geology

Waste storage dam site is underlain by alternation of meta-sandstone and schist dipping about 80-90 degrees northward. Relatively thick colluvium of about four meters covers right bank of the waste storage dam (See Figure 4.1). Site condition of the waste storage dam site is summarized as below.

Table 4.1 Summary of Geological Condition of Waste storage dam Site

Location	Right Bank	Riverbed	Left Bank
Rock Type	Meta-sandstone, schist Dips 80-90 degree northward 0-4.35 m colluvium	Meta-sandstone, schist Dips 80-90 degree northward	Meta-sandstone, schist Dips 80-90 degree northward
Rock Condition	0-4.35 m colluvium 4.35-8 m D class 8-13 m CL class 13 m~ CM-CL class	River deposits 3.5 m upstream 0-1 m downstream Bedrock CM class	0-5~6 m CL class 5-6m~ CM class
Permeability	(10-15 Lu)	Less than 2 Lu 10 m~ about 1Lu	About 5 Lu

Note: High Lugeon values of right bank are probably caused by leakage during the permeability test.



Source: JICA Study Team

Figure 4.1 Geological Section of Waste storage dam Axis (View from Downstream side)

(2) Engineering Assessment

Expected Shear Strength

Expected shear strength of each rock class is as follows:

CM class : $\tau_0 =$ 10 kgf/cm^2
CL class : $\tau_0 =$ 4 kgf/cm^2

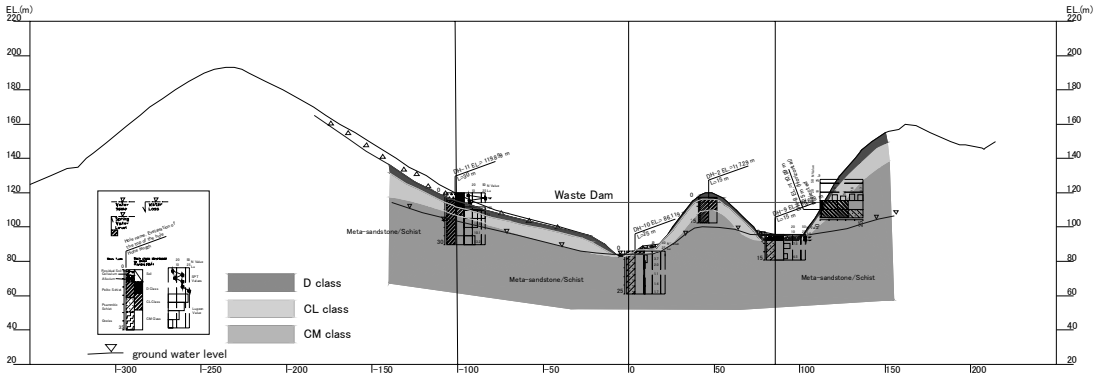
The bed rocks distributed around the proposed dam site are classified into regional metamorphic rocks according to the past experience in Japan as shown in the following table. The values of the above expected shear strength lie in the safety side of the range in the table.

Table 4.2 Expected Shear Strength Based on Rock Type

Rock Type		Rock Class											
		B			CH			CM			CL		
		τ_0	φ	f	τ_0	φ	f	τ_0	φ	f	τ_0	φ	f
Paleozoic/ Mesozoic Sedimentary Rocks	Ave	28	50	1.2	20	50	1.2	19	45	1.0	7	45	1.0
	Upper limit	34	53	1.3	31	57	1.5	29	53	1.3	13	51	1.2
	Lower limit	22	48	1.1	12	44	1.0	10	39	0.8	5	33	0.7
Regional Metamorphic Rocks	Ave	(35)	(50)	(1.2)	24	50	1.2	14	45	1.0	6	45	1.0
	Upper limit	(47)	(50)	(1.2)	39	55	1.4	25	53	1.3	7.5	49	1.2
	Lower limit	(28)	(50)	(1.2)	11	50	1.2	8	41	0.9	4	40	0.8
Plutonic Rocks	Ave				44	51	1.2	30	47	1.1	22	45	1.0
	Upper limit				82	52	1.3	68	50	1.2	40	45	1.0
	Lower limit				20	50	1.2	14	46	1.0	8	45	1.0
Volcanic Rocks	Ave	30	51	1.2	27	47	1.1	19	45	1.0	7	40	0.8
	Upper limit	44	54	1.4	35	53	1.3	26	50	1.2	11	44	1.0
	Lower limit	14	50	1.2	15	45	1.0	13	44	1.0	3	35	0.7
Volcanic deposits/ Sedimentary rocks	Ave				35	51	1.2	19	51	1.2			
	Upper limit				48	56	1.5	28	55	1.4			
	Lower limit				22	50	1.2	11	50	1.2			

Note: τ_0: kgf/cm^2 φ: inner friction angle

Source: Public Works Research Institute Report vol. 1899 (1983)



Source: JICA Study Team

Figure 4.2 Rock Condition of Waste storage dam Axis (View from Downstream side)

Foundation Treatment

Impermeable layer of the bedrock (permeable coefficient: about 1.0 x 10 $^{-5}$ cm/s, less than 1 Lu), occurs at the depth of about 10 m below riverbed. In addition, geological structure of bedrocks parallel to dam axis and dipping 80-90 degrees will contributes conditions

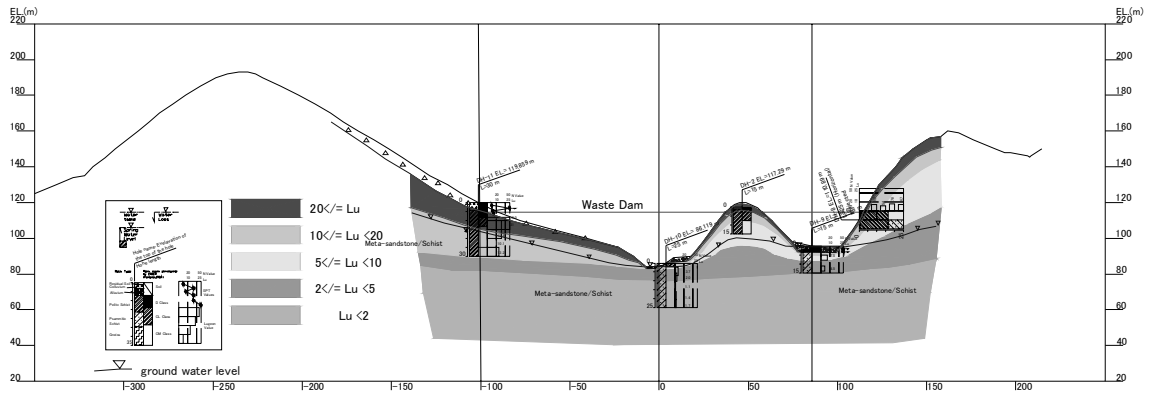
towards effective water shielding.

Vertical liner system with grouting works will be applicable both in technical and economical for foundation treatment, although additional drilling works to check the permeability of foundation of the waste storage dam are required.

It should be noted that shifting downstream ward of dam axis of the right bank side is preferable for the dam foundation, since the right bank of the waste storage dam are covered by relatively thick colluvium and relatively permeable.

Grouting holes would be 15-20 m in depth according to the results of permeability tests.

The above foundation treatment plan will be devised in the course of the detailed investigation based on new findings in detailed design stage.



Source: JICA Study Team

Figure 4.3 Lugeon Map of Waste storage dam Axis (View from Downstream side)

4.2 Landfill Area

(1) Site Geology

Proposed landfill lies on meta-sandstone and schist dipping northward steeply near the riverbed and relatively brittle biotite schist dipping 40-50 degrees north-westward dominates at the northern portion.

A thin layer of highly weathered gneiss extends west-eastward at the west side saddle of the landfill site.

(2) Engineering Assessment

Leakage Risk of Polluted Water

There is a possibility of polluted water leakage in the following cases.

- Ground water surface of the outside is lower than impoundment level in the landfill site
- Permeable layers (Permeable coefficient: more than -5 order) continues from inside of landfill area to outside.

There is no possibility of the polluted water leakage from north and east side, because permanent spring is observed at the flanks of the slopes and ground water level will be higher than impoundment level of landfill site (See Figure 4.4).

However, according to the results of the drilling survey (DH-12) at the saddle of west-side slope, leakage risk from landfill site through the saddle of west-side hill can not be denied due to low groundwater level, and oxidized and unsaturated condition of drilling cores (See Figure 4.5).

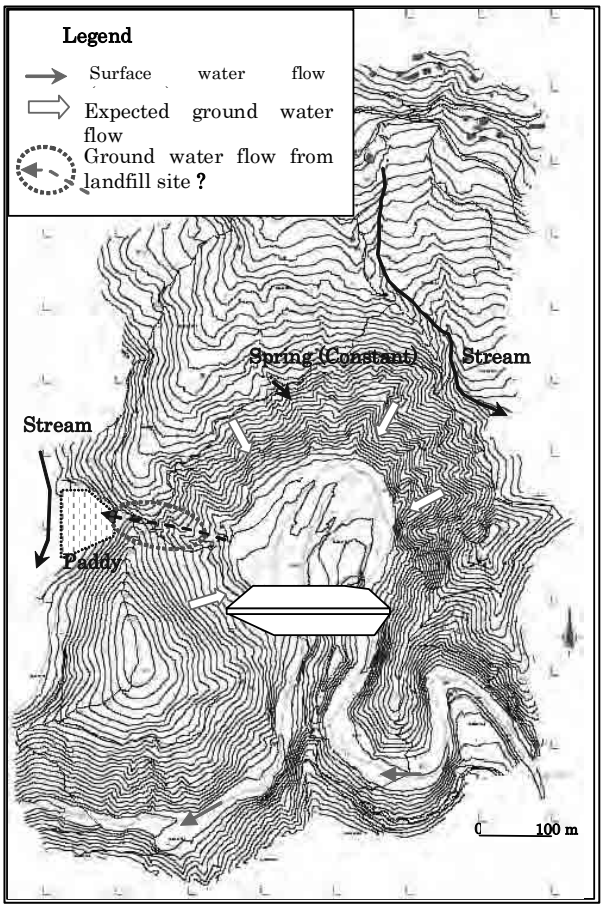


Figure 4.4 Image of Groundwater Flow at Banchare Danda Long-Term Landfill Site

Source: JICA Study Team

Therefore, seepage control works at the saddle area to prevent infiltration of polluted water of the landfill site by using impermeable clay etc. will be required to secure environmental conservation, although almost impermeable condition (Permeable coefficient: 10^{-4} to less than 10^{-5} order) of the saddle portion indicates low leakage risk.

Weathered gneiss layers intercalated schist rocks extending E-W direction at the saddle probably contribute to low groundwater level. Additional geological investigations including drilling works and trenching will be required to clarify hydrogeological characteristics at the saddle of west-side hill and to determine seepage control area.

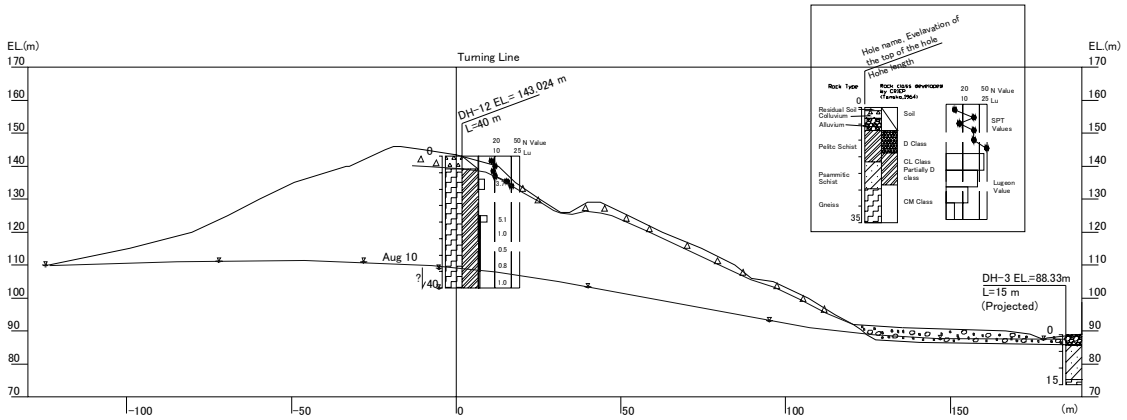


Figure 4.5 Geological Section at the Saddle Portion of Banchare Danda long-term Landfill Site (Source: JICA Study Team)

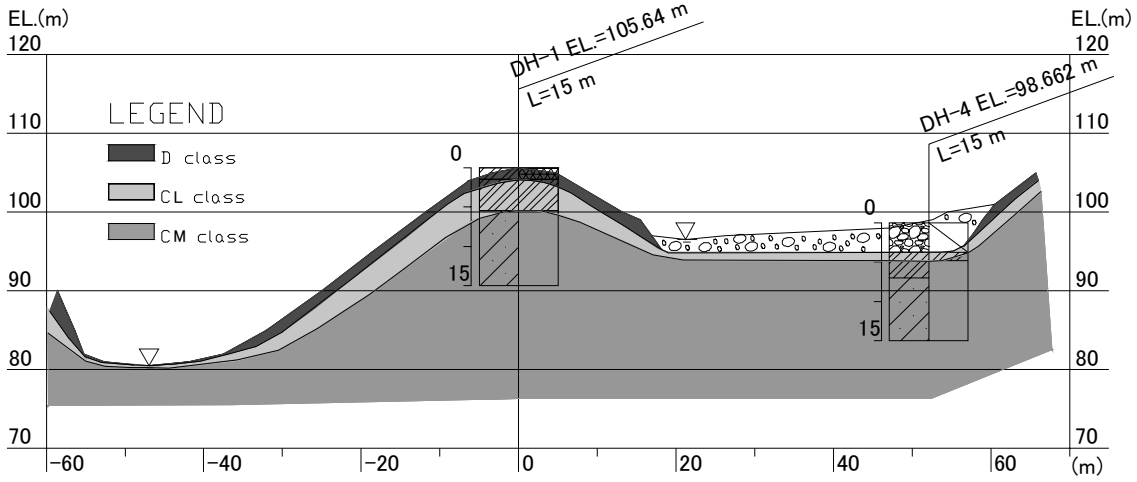
Slope Stability

No large-scale landslides which are harmful to waste landfill works are detected in the landfill area.

4.3 Diversion

(1) Site Geology

Diversion facilities site is underlain by meta-sandstone and schist rocks, whose fresh portions (CM class) are solid and suitable for the foundation of the diversion facilities (See Figure 4.6).



Source: JICA Study Team

Figure 4.6 Rock condition along the Center Line of Diversion

(2) Engineer Assessment

Recommendable stable gradient for cut slope based on field geotechnical assessment and the experiences in Japan is:

D class	H:V=1.0:1.0
CL class	H:V=1.0:0.8
CM class	H:V=1.0:0.6

Above stable gradient might be revised based on the observation on the cut slope.

Table 4.3 Standard gradients of cut slopes

Character of soil or bedrock		Height (m)	Gradient (V:H)
Hard rock (CM class)			1:0.3 ~ 1:0.8
Soft rock (CL class)			1:0.5 ~ 1:1.2
Sand	Those not dense, not solid and of bad grade distribution.		1:1.5 ~
Sandy soil	Those are dense and solid.	Less than 5 m	1:0.8 ~ 1:1.0
		5~10 m	1:1.0 ~ 1:1.2
	Those not dense, not solid.	Less than 5 m	1:1.0 ~ 1:1.2
		5~10 m	1:1.2 ~ 1:1.5
Sandy soil mixed with gravel or rock mass	Those that are dense and solid or of good grade distribution.	Less than 10 m	1:0.8 ~ 1:1.0
		10~15 m	1:1.0 ~ 1:1.2
	Those not dense, not solid or of bad grade distribution.	Less than 10 m	1:1.0 ~ 1:1.2
		10~15 m	1:1.2 ~ 1:1.5
Cohesive soil		Less than 10 m	1:0.8 ~ 1:1.2
Cohesive soil mixed with rock mass or cobble stones		Less than 5 m	1:1.0 ~ 1:1.2
		5~10 m	1:1.2 ~ 1:1.5

Reference: Manual for Slope Protection (Japan Road Association)

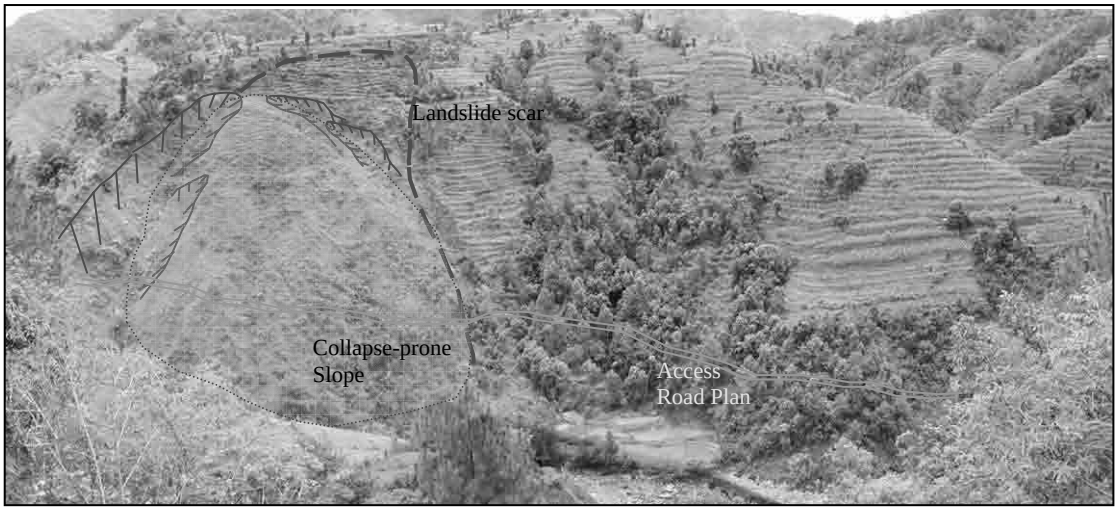
4.4 Construction Materials

River deposits are suitable for concrete aggregates. However, obtainable quantities are roughly estimated to be 20,000 m^3 and river deposits alone will be insufficient in quantity for the material resources. Excavated materials during the construction are also utilizable, although yield loss will be high since relatively thin bedded meta-sandstone dominated around the waste storage dam site.

Soil materials to cover solid wastes will be obtained at the west side hill of the landfill site.

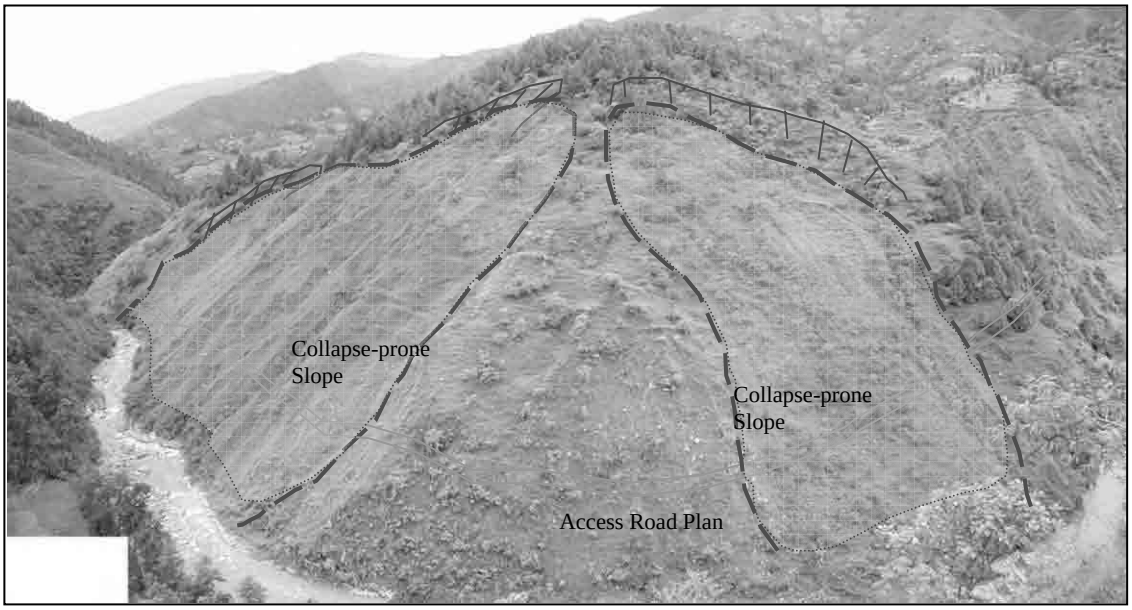
4.5 Access Road

Although solid meta-sandstone and schist rocks are exposed on the riverbed, old landslide scars are distributed on the flank of the Kolpu Khola immediately downstream of the Banchare Danda long-term landfill site and some slopes are covered by loosened materials. The road excavation at the toe of the slope would trigger slope failures. The access road of the left bank of Kolpu Khola is not recommendable technically and economically. The approach road from the north side of the site is recommendable in slope stability.



Alternative Access Road Route on the Left Flank of Kolpu Khola Immediately Downstream of Banchare Danda Long-term Landfill Site, Landslide scar 50-70 m wide and 100 m long

Banchare Danda Long-term Landfill Site and Old Landslide Scar on the Left Flank of the Kalpu Kola River



Alternative Access Road Route on the Right Flank of Kolpu Khola Immediately Downstream of Banchare Danda long-term Landfill Site, Landslide scars (20-30 m W x 50-70 m L, 50-70 m W x 50-70 m L)

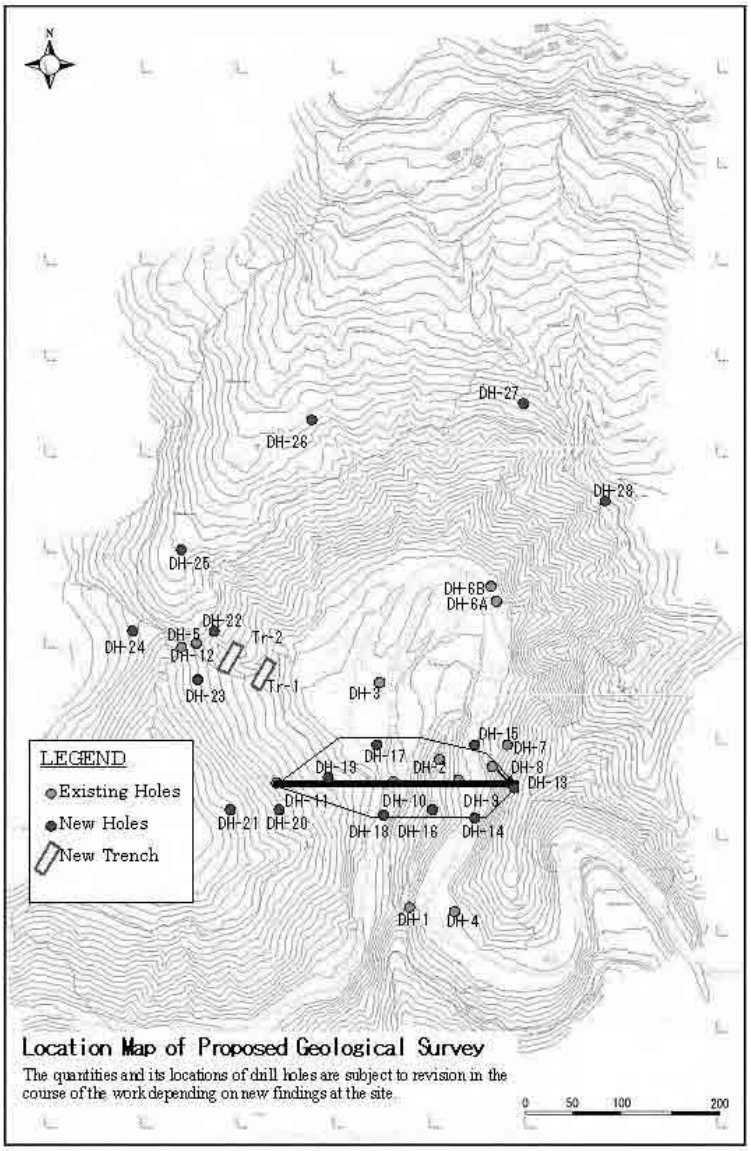
5. Recommendation

The additional geological investigations as shown in Table 5.1 are recommendable in the detailed design stage for Banchare Danda long-term landfill site. Location map of geological investigation is shown in Figure 5.1. In addition to the investigations mentioned in Table 5.1, quality check of groundwater also is necessary during/after the waste storage operation to ensure the environmental conservation.

Table 5.1 Summary of Proposed Geological Investigation

Geological Investigations	Quantities	Location	Purpose
Drilling Survey (including SPT and permeability test)	9 holes, 270 m (total length) DH-13~DH-21	Waste storage dam site	- To check the suitability of the rock condition for waste storage dam foundation - To clarify hydrogeological characteristics of the dam foundation to evaluate the feasibility of vertical liner system
	3 holes, 120 m (total length) DH-22~DH-24	Saddle at the side hill	- To clarify hydrogeological characteristics at the saddle of west-side hill to evaluate the leakage risk of polluted water from landfill site
	4 holes, 120 m (total length) DH-25~DH-28	North-side & East side slope	- To clarify hydrogeological characteristics of north-side and west-side hill to evaluate the leakage - risk of polluted water from landfill site
	9 holes, 240 m (total length)	Access road	- To secure slope stability of the access road
	2 holes, 40 m (total length)	Bridge site	- To check the geological condition of the proposed bridge site for bridge design
Trenching Survey	2 trench, 10m (L) x 2 m (D)	Saddle at the west side hill	- To clarify geological characteristics at the saddle of west-side hill

	Tr-1 and Tr-2		- To evaluate the leakage risk of polluted water from the landfill site - To determine seepage control area to prevent infiltration of polluted water of the landfill site by using impermeable clay etc.
Laboratory Test	1 set	Waste storage dam/Material resources	- To estimate physical/mechanical of the foundation - To evaluate construction materials



(Source: JICA Study Team)

Figure 5.1 Location Map of Proposed Geological Investigation (Drilling points for access road and bridge will be determined after comparison of the road design plans)

List of Annex

Annex-1: Bore Hole Logs (DH-1)

BOREHOLE NO : BH # 1
Sheet 1 of 2

PROJECT: **Clean Kathmandu Valley Project**
LOCATION: **Banchare Danda (Mountain)**
FEATURE:
DRILLING METHOD: **Rotatory**
GROUND LEVEL: **105.636 m**
COORDINATES: **N 8928.696** **E 5377.842**
GROUND WATER TABLE: **Dry**
MACHINE: **Koken**
CORE BARREL: **Double Tube**
OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
1/6/06															
0	NX up 7.5 m		From 0.00m to 0.40m: Top soil consisting of silty soil, with rock fragments						loss						N/A
			From 0.40m to 1.00m: Overburden deposit consisting of angular to subangular gravel and pebbles of grey coloured schist.				40		"						
1			Colluvium consisting of subangular pebbles and cobbles of grey coloured schist.				60		"						
1/7/06		Dry													
1.50		Dry	Colluvium consisting of subangular pebbles of grey coloured schist.				47		"	50/5cm	30/3cm				
2															
2.35			Core consists of subangular gravel and pebbles sized grey coloured schist.				35		"						
3			The core consists of subangular pebbles and cobbles of grey coloured schist.				50		"	40/5cm	40/10cm				
4			The core consists of subangular pebbles of grey coloured schist.				48		"						
1/8/06		Dry													
4.50		Dry	The core consists of subangular pebbles of grey coloured schist.				66		"	40/5cm	40/5cm				
5			The core consists of subangular to subrounded pebbles and cobbles of grey coloured schist.				27		"						
6			The core consists of subangular and sunrounded gravel, pebble and cobble of grey coloured schist in the matrix of silty soil. The silty soil is collected as sludge.				64		"	18	10	16	22	16	
6.90			Bedrock is encountered at the depth of 6.90m.												
7			Slight weathered, hard to moderately hard, fractured, fine grained, grey coloured SCHIST with iron stain along the fracture plane.				95	0	"						
7.50			Slight weathered, hard to moderately hard, moderately jointed, fine grained, grey coloured SCHIST with iron stain along the joint planes. Joint planes are rough and planar.		60° 30°	10	83	18	"	80/4cm					
1/9/06		7.30 m Dry													
8.10			Slight weathered, strong, highly jointed, fine grained, grey SCHISTwith iron stain along the joint planes. Joint planes are rough, irregular and stepped.		60° 30°	15	100	27	"						
8.65			Fresh to slight weathered, strong, hard, highly jointed, grey SCHIST with iron stain along the joint planes.		60° 40°	17	100	37	"						
9			Fresh to slight weathered, strong, moderately hard, slightly to moderately jointed, fine grained, grey coloured SCHISTwith iron stain along the joint planes. Core loss from 9.90 to 10.00m due to mechanical breakage.		60° 40°	6	90	65	"						
10															

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : January 6, 2006 Date Completed: January 10, 2006

Figure No

Annex-1: Bore Hole Logs (DH-1)

BOREHOLE NO : BH # 1
Sheet 2 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (Mountain)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **105.636 m** | COORDINATES: **N 8928.696** | GROUND WATER TABLE: **Dry**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Vertical** | **E 5377.842**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
meter															
			Fresh to slight weathered, highly jointed, fine grained, grey SCHIST with iron stain along the joint planes. Joint planes are rough, irregular and undulating.		70° 30°	15	100	0	loss						N/A
10.45			Fresh, slightly to moderately jointed, strong, hard,fine grained, grey SCHIST,.Mechanical breakage from 10.45 to 10.55m. Joint planes are rough, planar and undulating.		60°	11	100	66	"						
11			Fresh, highly jointed, strong, hard,fine grained, grey coloured SCHIST. Joint planes are rough and planar.		60°	13	100	19	"						
11.90			Fresh, fracrued, strong, fine grained, grey coloured SCHIST. Joint planes are rough and planar with silt filling.Mechanical breakage from 12.30m to 12.40m.		40° 30°	>20	100	0	"						
12 1/10/06		Dry Dry													
12.50			Fresh to slightly weathered, moderately jointed, strong, hard, fine grained, grey coloured SCHIST. Joint planes are rough, planar and undulating with silt filling and iron stain.		60° 25°	13	100	47	"						
13															
13.25			Fresh to slightly weathered, moderately jointed, strong, hard, fine grained, grey coloured SCHIST. Joint planes are rough, planar and irregular with silt filling at places.		60° 30° 10° 5°	13	98	22	"						
14															
14.55			Fresh to slightly weathered, moderately jointed, strong, fine grained, grey SCHIST. Joint planes are rough, planar		30° 40°	13	60	15	"						
15			Termination of hole at the depth of 15.00m.												

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : January 6, 2006 Date Completed: January 10, 2006

Figure No

Annex-1: Bore Hole Logs (DH-2)

BOREHOLE NO : BH # 2
Sheet 1 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (Mountain)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **117.286 m** | COORDINATES: **N 9092.069** **E 5411.620** | GROUND WATER TABLE: **Dry**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
#######									Loss						
0	HW upto 7.5 m		Colluvial deposit consisting of partly cohesive brownish coloured silty soil with little portion of angular to subangular gravel.												
1			Colluvium consisting of angualr gravel and pebbles of white quartzite in the matrix of brown coloured silty soil.				50		Yes, Pinkinsh						
1.50			Colluvial deposit consisting of angualr gravel and pebbles of quartzite in the matrix of brown coloured silty soil.				60		Yes, Yellowish	1	3	1	2	73/9cm	
2			Colluvial deposit consisting of angualr gravel and pebbles of quartzite and schist in the matrix of brownish coloured silty soil.				70		"						
2.50			Colluvial deposit consisting of angualr gravel and pebbles of quartzite and schist.				28		"						
3			Colluvial deposit consisting of angualr pebbles of quartzite in the matrix of coarse grained sand.				41		Yes, Whitish	30	13	16	21/6 cm		
3.85			Angualr pebbles of schist in the matrix of medium to coarse grained sand				23		Yes, Yellowish						
4		Dry													
1/13/06		Dry													
4.50			Angualr pebbles of schist and quartzite.				30		Yes, Greyish	1	2	14	18	25	
5									"						
6			Angualr pebbles of schist and quartzite.				18		"	1	7	72/5cm			
1/15/06		1.15 m													
6.85	NX upto 8.10 m	Dry	Angualr pebbles of schist.				15		Yes, Whitish						
7															
7.50			Angualr pebbles and cobbles of schist. Maximum size is of 10cm (schist).				58		"	80/3cm					
8			Bedrock at 8.10m.												
8.10			Slightly weathered, fractured, moderately hard, fine grained, grey coloured schist. 8.10m to 8.90m.: fractured rock, not possible to measure joint plane orientation. Fracture planes are rough, planar and with iron stain.			>20	72	0	Yes, Greyish "						
9			Slightly to moderately weathered, fractured, moderately hard, medium strong, fine grained, grey schist. Joint planes are rough, planar and with excessive iron stain.		70° 40° 10°	>20	100	0	"						
9.65			Slightly weathered, fractured, moderately hard, strong, fine grained, grey schist.		15°										
10															

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : January 12, 2006 Date Completed: January 16, 2006

Figure No

Annex-1: Bore Hole Logs (DH-2)

BOREHOLE NO : BH # 2
Sheet 2 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (Mountain)** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: **117.286 m** | COORDINATES: **N 9092.069** | GROUND WATER TABLE: **Dry**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical** | **E 5411.620**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D. %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
10			Slightly weathered, fractured, moderately hard, medium strong, fine grained, grey schist. Joint planes are rough and planar with iron stains.		15°	>20	63	0	Yes, Greyish						
11			Fresh to slightly weathered, fractured, moderately hard, medium strong, fine grained, grey schist. Joint planes are rough and planar with iron stains.		10°	>20	100	0	Yes, Greyish						
1/16/06		4.55 m 11.50 m													
12			Fresh to slightly weathered, fractured, moderately hard, medium strong, fine grained, grey schist. Joint planes are rough and planar with iron stains.		10° 5°	>20	86	0	Yes, Greyish						
12.70			Fresh to slightly weathered, fractured, moderately hard, medium strong, fine grained, grey schist. Joint planes are rough and planar with iron stains.		10° 5°	>20	79	0	Yes, Greyish						
13															
13.60			Fresh to slightly weathered, fractured, moderately hard, medium strong, fine grained, grey coloured schist. Joint planes are rough and planar with iron stains.		10°	>20	71	0	Yes, Greyish						
14															
14.30			Fresh , fractured, moderately hard, medium strong, fine grained, grey coloured schist. Joint planes are rough and planar with silt as filling material.		10° 20°	>20	86	0	Yes, Greyish						
		Dry	Termination of hole at the depth of 15.00m.												
15															

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : January 12, 2006 Date Completed: January 16, 2006

Figure No

Annex-1: Bore Hole Logs (DH-3)

BOREHOLE NO : BH # 3
Sheet 1of 1

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (River bed)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **88.826 m** | COORDINATES: **N 9151.843** | GROUND WATER TABLE: **2.04 m**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical** | **E 5347.269**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
1/31/06															
0	HW up to 2.67 m		Alluvial deposit consisting of fine grained SAND in the matrix of subrounded gravel and pebbles of quartzite, schist and gneiss				92		Greyish						conducted at 0.65 m depth, Permeability = 0.005604 cm/sec
0.65			Alluvial deposit consisting of medium to coarse grained SAND in the matrix of subrounded pebbles and cobbles of schist and pegmatite				29		"						
1															
1.20			Alluvial deposit consisting of subrounded pebbles and cobbles of schist.				50		"	2	29	49/8cm			
1.50			Alluvial deposit consisting of fine grained micaceous SAND in the matrix of subrounded to subangular gravel, pebbles and cobbles of quartzite, schist and pegmatite				41								
2															
2.50			Alluvial deposit: subangular fragments of quartzite.				100		"						
2.70															
2/1/06		0.50	Total core loss,fine grained micaceous SAND as sludge				0		"						
		1.90	Bedrock at the depth of 3.00m.												
3			Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	30	0							
3.50			Cores are in the form of broken pieces due to the presence of fracture zone and mechanical breakage. Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	25	0	Dark Greyish						
4															
4.10			Broken cores, Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	20	0							
4.60			Broken cores. Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	25	0							
5			Broken cores. Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	38	0							
5.45			Broken cores. Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	23	0							
6															
6.10			Broken cores. Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	44	0							
6.60			Broken cores. Fresh, highly fractured, medium strong, grey coloured, fine grained SCHIST.			FZ	83	0							
7			Fresh, highly jointed, strong, grey, fine grained schist.		10°	19	100	0							
7.25			Fresh, highly jointed, strong, grey coloured, fine grained SCHIST. Joint planes are rough and planar.		20°	17	100	0							
7.85															
8		2.53	Fresh, fractured, strong, grey coloured, fine grained SCHIST. Joint planes are rough and planar.			FZ	98	0							
2/2/06		1.85													
8.25			Fresh, fractured, strong, grey coloured, fine grained SCHIST. Joint planes are rough and planar.		20° 50°	FZ	85	0							
8.90															
9			Fresh, fractured, strong, grey coloured, fine grained SCHIST. Joint planes are rough and planar. From 8.90 to 9.10m, rock is highly fractured.		30° 45°	FZ	82	0							
9.35			Fresh, fractured, strong, grey coloured, fine grained SCHIST. Fragmented core is due to the presence of fracture zone and the occurrence of mechanical breakage.			FZ	68	0							
10		1.85													

Abbreviation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : Janury 31, 2006 Date Completed: February 12, 2006

Figure No

Annex-1: Bore Hole Logs (DH-3)

BOREHOLE NO : BH # 3
Sheet 2 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (River bed)** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: **88.826 m** | COORDINATES: **N 9151.843** | GROUND WATER TABLE: **2.04 m**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical** | **E 5347.269**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D. %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
2/11/06															
10.00		2.10	Fresh to slightly weathered, strong hard, dark grey, fine grained, moderately jointed SCHIST with silt filling, Joint planes are rough, undulating, planner.				84	0	Dark grey						
10.50			Do		30^0 75^0	7	84	0	"						
11.00			Do		35^0 70^0	4	74	58	"						
11.50			Do		45^0 70^0	5	76	0	"						
12.00			Do				46	0	"						
12.50			Do		5^0-10^0 20^0 70^0	6	66	0	"						
13.00			Fresh to slightly weathered, strong hard, dark grey to white, fine grained, moderately jointed SCHIST, Quartzo- schist with garnet, Joint planes are rough, undulating, planner.				70	0	"						
13.50			Fresh to slightly weathered, strong hard, dark grey to white, fine grained, moderately jointed SCHIST, Quartzo- schist with garnet, Joint planes are rough, undulating, planner.				72	0	"						
2/12/06		1.80													
14.00		2.10	Fresh, strong hard, white, fine grained, moderately jointed Quartzo- SCHIST with mica, garnet. Joint planes are rough, undulating, planner.				68	0	"						
14.50															
15.00									"						
			Termination of hole at the depth of 15.00m.												
20.00															

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : January 31, 2006 Date Completed: February 12, 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-4)

BOREHOLE NO : BH # 4
Sheet 1 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (River bed)** | FEATURE:
DRILLING METHOD: **Rotatory** | GROUND LEVEL: **98.662 m** | COORDINATES: **N 8919.095 E 5429.656** | GROUND WATER TABLE: **0.85 m**
MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints no. per run	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
2006/2/15															
0.00	HW upto 2.14 m		Alluvium deposits of light brown, dark to light grey & greenish, fine grained silty sand and pebble, cobble, boulder of light to dark grey, greenish schist, quartzite, silt stone, gneiss, schistose gneiss.				77		Grey						conducted at 0.65 m depth, permeability = 0.08458 cm/sec
0.65			Do				23		"						
1.50										4	17	15	18	26/5cm	
			Do				46		"						
2006/2/17		0.50 m 0.75 m													
2.20	NX upto 7.0 m		Do				55		"						
3.00										1	9	41	29/8cm		
			Do				17		"						
3.75			Do				35		Dark grey						tested at 3.75 m depth and permeability = 0.03353 cm/sec
2006/2/18		0.85 m 0.78 m	BEDROCK is encountered at the depth of 4.35m.												
4.35			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST.		5^0 15^0 30^0 65^0	>13	46	0	"						
4.85			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST with silt, mica.		5^0 35^0 60^0	>20	38	0	"						
5.75			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST with iron strain.		5^0 10^0 30^0 70^0	>20	80	0	"						
6.35			Do		10^0 35^0 70^0	>20	54	0	"						
7.30		0.90 m 0.80 m	Fresh, strong hard, light to dark grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST. Fz : 7.70 to 8.40 m.		5^0 15^0 30^0 70^0	16	63	0	"						
2006/2/19															
7.70			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST and fracture obtained.		5^0 20^0 35^0 70^0	13	94	21	"						
8.40			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST		5^0-10^0 25^0 40^0 70^0	17	73	14	"						
9.10			. Total core loss. Dark grey, fine grained sand found as sludge.				0	0	"						
10.00		1.95 m													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Logged By

Date Started : February 15, 2006 — Date Completed: February 21, 2006 — Figure No

Annex-1: Bore Hole Logs (DH-4)

BOREHOLE NO : BH # 4
Sheet 2 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (River bed)** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: | COORDINATES: | GROUND WATER TABLE:

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
2006/2/20															
10.00		0.81 m	Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST with quartz vein.		10^0 25^0 60^0	9	21	0	Dark grey						
10.80			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST with mica, quartz vein.		10^0 25^0 60^0 75^0	18	96	0	"						
11.50			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST with mica, quartz vein.		5^0 15^0 35^0 65^0	18	65	0	"						
12.30			Fresh, strong hard, light grey, fine grained, highly jointed, silt filling with joints planes are rough, undulating SCHIST.		10^0 20^0 65^0	13	34	0	"						
12.80			Fresh, strong hard, light grey, fine grained, highly jointed, fragmented, silt filling with joints planes are rough, undulating SCHIST with quartz vein.		10^0 20^0 65^0	16	42	0	"						
2006/2/21		2.00 m 0.79 m													
13.45			Fresh, strong hard, light grey, fine grained, moderately jointed, silt filling with joints planes are rough, undulating SCHIST.		15^0 35^0 75^0	12	100	25	"						
13.85			Fresh, strong hard, light grey, fine grained, jointed, silt filling with joints planes are rough, undulating SCHIST with quartz vein.		15^0 35^0 75^0	9	100	66	"						
14.50			Fresh, strong hard, light grey, fine grained, moderately jointed, fractured, silt filling with joints planes are rough, undulating SCHIST with quartz vein.		5^0-10^0 30^0 65^0	16	100	0	"						
15.00			Termination of hole at the depth of 15.00m.												

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : February 15, 2006 Date Completed: February 21, 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-5)

BOREHOLE NO : BH # 5
Sheet 1 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (Mountain)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **141.664 m** | COORDINATES: **N 9208.129, E 5150.707** | GROUND WATER TABLE: **Dry**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints no. per run	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
2006/2/5															
0.00	HW upto 2.64 m		Top soil consisting of colluvium deposits of dark to light brown greyish, fine to medium grained silty sand / sand with pebble of light grey schist, gneiss, quartz.				62		Dry Drill						N/A
1.00			Do (UD sample from 1.00 to 1.35 m)				94		"						
1.50			Do				100		"	2	8	12	19	9/3 cm	
2.00			Do				83		Yellowish						
2.30			Do				28		"						
3.00			Do				50		"	4	9	12	17	8/4cm	
3.50			Do				36		Yellowish						
4.00			Do				40		"						
4.50			Do (Total core loss, sludge collected)				0		Milky white	13	37/5cm				
2006/2/6	NX upto 5.0 m	1.80 m 4.40 m	BEDROCK is encountered at the depth of 5.00m.												
5.00			Decomposed, soft, yellowish grey, medium grained, jointed GNEISS with mica. Joint planes are irregular rough.		70^0	4	38	0	"						
5.50			Do		35^0 70^0	6	32	0	"						
6.00			Total core loss. Light brown / grey, fine grained sand found as sludge.				0	0	Milky white & grey	19	61/4cm				
6.50			Highly weathered to decomposed, soft, yellowish grey, medium grained, jointed GNEISS with mica. Joint planes are irregular rough.		25^0 75^0	4	28	0	"						
7.00			Do		10^0 50^0 70^0	3	26	0	"						
7.50		0.80 m 1.95 m	Do		5^0 20^0 60^0	3	1	0	"	38	29	13/2cm			
8.00			Total core loss. Light brown / grey, fine grained sand found as sludge.				0	0	"						
8.50			Decomposed, soft, yellowish grey, medium grained, jointed gneiss with mica. Joint planes are irregular rough.		15^0 35^0 60^0	3	8	0	"						
9.00			Decomposed, soft, dark brown / grey, fine grained sand found as sludge.				21	0	"	14	36	30/4cm			
9.70			Total core loss. dark brown / grey, fine grained sand found as sludge.				0	0	"						
10.00															

Abbreviation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Logged By

Date Started : February 5, 2006 | Date Completed: February 8, 2006

Figure No

Annex-1: Bore Hole Logs (DH-5)

BOREHOLE NO : BH # 5
Sheet 2 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (Mountain)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **141.664 m** | COORDINATES: **N 9208.129 E 5150.707** | GROUND WATER TABLE: **Dry**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
meter															
10.00			Total core loss. Dark brown / grey, fine grained sand found as sludge.				0	0							
10.50		5.42 m Dry	Decomposed, soft, yellowish grey, medium grained, jointed gneiss with mica. Joint planes are irregular rough.		30^0 75^0	7	38	0		52	28/7cm				
2006/277 11.00			Do		35^0 70^0	4	68	58							
11.50	BX up to 12.0 m		Decomposed, soft, yellowish grey, medium grained, jointed gneiss with mica, iron strain. Joint planes are irregular rough.		45^0 70^0	5	40	0							
12.00		9.00 m Dry	Total core loss. Dark grey, fine grained sand found as sludge.				0	0							
2006/278 12.50			Highly weathered to decomposed, soft, yellowish grey, medium grained, jointed gneiss with mica, iron strain. Joint planes are irregular rough.		5^0-10^0 20^0 70^0	6	25	0							
13.25			Total core loss. Light brown, fine grained sand found as sludge.				0	0							
13.70			Decomposed, soft, yellowish grey, medium grained, jointed gneiss with mica, iron strain. Joint planes are irregular rough.				9	0							
14.50			Total core loss. Light brown to grey, fine grained sand found as sludge.				0	0							
15.00			Termination of hole at the depth of 15.00m.						9	71/1cm					

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : February 5, 2006 Date Completed: February 8, 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-6)

BOREHOLE NO : BH # 6"A"
Sheet 1of 1

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (River bed)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **92.531 m** | COORDINATES: **N 9248.869** | GROUND WATER TABLE: **0.40 m**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Vertical** | **E 5480.337**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
2006/1/24															
0	HW upto 3.67 m		From 0.00 to 0.80m: Alluvial deposit consisting of subrounded to rounded gravel in the matrix of medium to coarse grained micaceous sand. From 0.80m to 1.00m: subrounded pebbles of quartzite, marble and pegmatite.						Greyish						conducted at 2.75 m depth, permeability = 0.010184 cm/sec
1			Alluvial depsoit consisting of gravel and pebbles of quartzite in fine to medium grained micaceous sand.				100								
1.50			Alluvial depsoit consisting of gravel and pebbles of quartzite and pegmatite in fine to medium grained micaceous sand.				100			80/5cm					
2			Alluvial depsoit consisting of gravel and pebbles of quartzite and schist in the matrix of fine to medium grained micaceous sand.				67								
2006/1/25		0.0 m 0.35 m													
2.75			Alluvial depsoit consisting of fine grained sand.						Dark Geyish						
3			Alluvial depsoit consisting of fine grained micaceous sand up to 3.30m and then there is coarse grained micaceous sand up to 4.00m.						5	19	29	27/2cm			
	NX upto 4.0 m														
4			Bedrock is encountered at depth of 4.0 m						Greyish						
4.20		1.15 m	Grey schist. Cores in the form of broken pieces.				50	0							
2006/1/25		0.85 m	Fresh, fractured, grey schist. Cores in the form of broken pieces. Not possible to measure joint angles.				33	0							
4.50			Fresh, fractured, grey schist. Cores in the form of broken pieces. Joint plane is rough and undulated.		40°		57	0							
4.85			Fresh, fractured, fine grained, grey schist. Cores in the form of broken pieces. Not possible to measure joint angle.						Dark Geyish						
5							30	0							
5.35			Grey schist. Cores in the form of broken pieces.				67	0							
5.50			Fresh, fractured, fine grained, grey schist. Cores in the form of broken pieces. It is impossible to measure joint angle.				40	0							
6			Fresh, fractured, fine grained, grey schist. Cores in the form of broken pieces.				80	0							
2006/1/26															
6.50			Fresh, fractured, fine grained, grey schist. Cores in the form of broken pieces.				40	0	Geyish						
			Termination of hole at the depth of 7.00m.												
7															
8															
9															
10															

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : January 24, 2006 Date Completed: January 26, 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-6)

BOREHOLE NO : BH # 6"B"
Sheet 1 of 1

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (River bed)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **92.531 m** | COORDINATES: **N 9248.869** | GROUND WATER TABLE: **0.26m**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: V**ertical** | **E 5480.337**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
2006/1/27															
0	HW upto 3.14 m		From 0.00 to 0.25m: Alluvium consisting of coarse grained micaceous sand. From 0.25m to 0.50m: pebbles and cobbles of pegmatite, schist and gneiss.				56		Loss						conducted at 0.50 m depth, permeability = 1.0001 cm/sec
0.50			Alluvial deposit consisting of subrounded pebbles of subrounded pebbles of gneiss and schist in the matrix of coarse grained micaceous sand.				15		Greyish						
1									"						
1.50			Alluvial deposit consisting of subrounded pebbles of subrounded pebbles of gneiss, quartzite and schist in the matrix of fine to medium grained micaceous sand.							11	28	40	1/1cm		
2							33		"						
2.40			Alluvial deposit consisting of subrounded pebbles of subrounded pebbles of gneiss, quartzite and schist in the matrix of fine to medium grained sand.				25		"						
2006/1/28		0.40 m 0.70 m													
3	NX upto 3.5 m		Bedrock is encountered at depth of 3.0 m Fresh, fractured, hard, strong, fine to medium grained GNEISS. Broken cores because of the fracture.		10° 40°		93	0	Whitish "	6	74/5cm				
3.40			Fresh, fractured, hard, strong, fine to medium grained, light grey coloured GNEISS. Joint planes are rough, planar and undulated. Broken cores are due to fracture zone and mechanical breakage.		10° 40°		50	0	"						
4			Fresh to slightly weathered, fractured, hard, strong GNEISS. Cores are broken because of the fracture zone		40°		75	0	"						
4.40			Fresh, fractured, hard, strong, fine to coarse grained, light grey GNEISS.		5° 40°		88	0	"						
4.80			Fresh, fractured, hard, strong, fine to coarse grained, light grey GNEISS. Not possible to measure joint angle.				33	0	Whitish/ Greyish						
5															
5.10			Fresh, hard, fractured, light grey coloured GNEISS. Core pieces are of gravel and pebble size.				40	0	"						
5.40			Cores are broken in gravel and pebble size. Fresh, fractured, hard, strong, fine to coarse grained, light grey GNEISS. Not possible to measure joint plane angle.				33	0	"						
2006/1/29		1.3 m 1.18 m													
6			Cores are broken in gravel and pebble size. Fresh, fractured, hard, strong, fine to coarse grained, light grey GNEISS. Not possible to measure joint plane angle.				24	0	"						
6.50			Fresh, fractured, hard, strong, fine to coarse grained, light grey GNEISS. Not possible to measure joint plane angle. Cores are broken in gravel and pebble size.				32	0	"						
7			Fresh, fractured, hard, strong, fine to coarse grained, light grey coloured GNEISS. Cores are broken in gravel and pebble size. Joint plane is rough and planar.		60°		80	0	"						
7.50			Fresh, fractured, hard, strong, fine to coarse grained, light grey coloured GNEISS. Presence of fracture zone and mechanical breakage caused broken cores.				50	0	"						
8			Termination of hole at the depth of 8.00m.												
9															
10															

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : January 27, 2006 Date Completed: January 29, 2006

Figure No

Annex-1: Bore Hole Logs (DH-7)

BOREHOLE NO : BH # 7
Sheet 1of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda (Mountain)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **110.890 M** | COORDINATES: **N 9095.349** | GROUND WATER TABLE: **N/A**

MACHINE: **Koken** | CORE BARREL: **Double Tube** | OREINTATION: **Horizontal (90 deg) NE 120 deg** | **E 5477.527**

meter	Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 5 cm	10 cm	10 cm	10 cm	15 cm	Permeability Test
0	2006/1/19	HW upto 4.67 m (horizontal)	Dry	Top Soil consisting of silty soil with few proportion of angular gravel of schist.												
1				The core consists of slightly weathered schist. This is a part of colluvial deposit.				77		Yes, Greyish						
2																
2.30				The core consists of fragments of schist as a part of colluvial deposit.				100		"						
3	2006/1/20		"													
3.30				The core consists of fragments of schist as a part of colluvial deposit.				100		"						
3.70				Colluvial depost consisting of fragments of schist.				100		"						
4		NX upto 7.5 m														
5				Colluvium consisting of fragments of schist.				64		"						
6																
6.25				Colluvium consisting of fragments of schist.				67		"						
7																
7.50	2006/1/21		"	Bedrock at the depth of 7.50m.						Yes, Whitish/ Greyish						
8				Fresh to slightly weathered, highly jointed, hard to moderately hard, strong, fine grained, grey coloured SCHIST with interbedded phyllitic quartzite. Joint planes are rough and planar with iron stain.		50° 20° 45°	16	85	14							
8.50				Fresh to slightly weathered, slightly jointed, hard, strong, fine grained, grey coloured PHYLLITIC QUARTZITE. Joint planes are rough,planar and with iron stain at places. Core loss at the lower part of the run.		55° 30°	4	53	31	"						
9																
9.25				Slightly weathered, fractured grey PHYLLITIC QUARTZITE and SCHIST. Cores are in the form of broken pieces. It is shear affected zone up to 9.90m. Slickenside is noted.			>20	60	0	"						
9.75				Shear affected zone. Clearly observed up to 9.90m. Same lithilogy as in the previous run.												
10																

Abbrebiation:

Remarks:

Logged By

Date Started : January 19, 2006 Date Completed: January 22, 2006

Figure No

Annex-1: Bore Hole Logs (DH-8)

BOREHOLE NO : BH # 8
Sheet 1 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Kolpu Khola (Right Mountain)** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: **107.725 m** | COORDINATES: **9090.367 N, 5471.773 E** | GROUND WATER TABLE: **Not encountered.**

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Horizontal**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
23-Jun-06													
0.0	HW up 7.00 m		From 0.00m to 0.42m: Top soil consisting of brownish silty soil, with angular rock fragments predominantly of schist.				100		Yes				
0.5			Colluvial deposit consisting of Angular to sub-rounded pebble to cobble size rock fragments of schist with very few amount of brownish coloured silt soil.				55						
1.0			Colluvial deposit consisting of Angular to sub-rounded pebble to cobble size rock fragments of schist in the matrix of brownish coloured silt soil, maximum size of rock fragment of 8 cm.				45						
1.5													
2.0			Colluvial deposit consisting of Angular pebble to cobble size rock fragments predominantly of schist, maxi,um size of 8 cm.				76						
2.5													
3.0			Colluvial deposit consisting of angular gravel to cobble sized schist in the matrix of grey coloured silty sand. The silty sand is collected as sludge material. The sand is medium to coarse grained, Maximum size: 8cm				27						
3.5													
4.0			Colluvial deposit consisting of Angular gravel and pebbles sized fragments of schist in the matrix of grey coloured silty sand. The sand is fine grained.				30						
4.5			Colluvial deposit consisting of Angular pebble to cobble sized rock fragments of schist.				100						
24-Jun-06		Dry											
5.0			Colluvial deposit consisting of Gravel to cobble sized, angular rock fagments of Schist.				100						
5.5													
6.0			Colluvial deposit consisting of Angular, gravel to cobble sized rock fragments of Schist. Total core loss from 6.10 to 6.40m				70						
			Colluvial deposit consisting of Angular, gravel to cobble sized rock fragments of Schist.										
6.5			From 6.75 to 7.00m, there is only gravel sized rock fragments.										
			Bedrock is encountered at the depth of 7.0 m.										
7.0			Slightly weathered, highly fractured, medium strong, moderately hard, strong, fine grained, grey coloured SCHIST From 7.00 to 7.40m: Good core is collected, maximum size is 11cm.				100						From 7.0 to 10.0m permeability = 1.596 x 10 -4
7.50			From 7.40 to 8.00m there is only gravel sized rock fragments.										
8.0			Slightly weathered, highly fractured, medium strong, moderately hard, strong, fine grained, grey coloured SCHIST, Angular, gravel to cobble sized rock fragments, From 8.00 to 8.20m: core loss.				29						
8.5			From 8.30 to 8.78m grey coloured silty sand is collected as sludge material.										
9.0			Fresh to slightly weathered, fractured, medium strong, hard to moderately hard, strong, fine grained, grey coloured SCHIST , rough and planer joint plane		50°	>20	33	0					
			D0, Fom 9.33 to 10.00m: grey coloured silty sand collected as sludge material.										
10.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : June 23, 2006 Date Completed: June 28, 2006

Figure No

Annex-1: Bore Hole Logs (DH-8)

BOREHOLE NO : BH # 8
Sheet 2 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Kolpu Khola (Right Mountain)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **107.725 m** | COORDINATES: **9090.367 N, 5471.773 E** | GROUND WATER TABLE: **Not encountered**

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Horizontal**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
25-Jun-06													
10.0		Dry	Slightly weathered, moderate hard, medium strong, fractured, fine grained, grey coloured SCHIST, Mechanical breakage is also observed. Difficult to measure joint angles.				100	0	Yes				
10.5													
11.0			From 11.00 to 11.27m: Fresh to slightly weathered, fine grained, grey coloured phyllitic quartzite SCHIST. Joint angle 40° with rough, planar surfac D0, From 11.27 to 11.50m.: silty sludge sample From 11.50 to 11.70m: core loss section From 11.70 to 12.00m: fresh, fine grained, grey coloured schist. 5 no. of joint, with 25 , rough and planar surface.		40° 20°-25°	>20	57	0					
11.5													
12.0			Fresh to slightly weathered, highly fractured, medium hard, fine grained, grey coloured SCHIST Joint plane is rough and planar with iron stain at some places. From 12.00 to 12.52m: broken core sample. From 12.52 to 13.00m: silty sludge sample.		5°	>20	52	0					From 12.0 to 15.0m permeability = 1.071 x 10 -4
12.5													
13.0			Slightly weathered, fractured, medium strong, fine grained, grey coloured SCHIST. Iron stain is noticed along the joint planes. Joint planes are rough and planar. From 13.00 to 13.85m: broken core sample.		5° 70° 60°	>20	85	0					
13.5			Note: From 13.75 to 13.85m, some subrounded pebble size cores are collectd. From 13.85 to 14.00m: core loss.										
14.0			Slightly weathered, highly fractured hence not possible to measure joint angles, fine grained, grey coloured SCHIST.			>20	100						
14.5													
26-Jun-06													
15.0		Dry	Do			>20	100	0					
16.0			Slightly weathered, highly fractured, fine grained, grey coloured SCHIST. In the section of 16.65 to 16.90m, the core is in comparatively good shape. The largest core sample is of 7cm.			>20	100	0					
17.0			Fresh to slightly weathered, medium strong, fine grained, grey coloured SCHIST. Total number of joints in the section 17.25 to 18.00 is 12. RQD is measured in this section. From 17.00 to 17.25m: It is highly fracture section. From 17.25 to 18.00m: some good cores are collected. Joint plane is rough and planar with some iron stain.		20° 40° 5°		100	17					From 17.0 to 20.0m permeability = 7.177 x 10 -5
27-Jun-06		Dry											
18.0			Fresh to slightly weathered, hard, medium strong, grey coloured, fine grained SCHIST, Joint number within 18.33 to 18.87m section is 8. Joint plane is rough and planar. From 18.00 to 18.33: broken pieces of core. From 18.33 to 18.87: comparatively good cores. RQD is measured. From 18.87 to 19.00m: Broken pieces, not possible to count joint no.		5° 30°		100	12					
19.0			Fresh to slightly weathered, hard, medium strong, grey coloured, fine grained SCHIST, Joint number within 19.75 to 20.00m section is 5. Joint plane is rough and planar. From 19.00 to 19.75: extremely broken pieces of cores From 19.75 to 20.00m: comparatively good cores		5° 30°		100	0					
20.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : June 23, 2006 Date Completed: June 28, 2006

Figure No

Annex-1: Bore Hole Logs (DH-8)

BOREHOLE NO : BH # 8
Sheet 3 of 3

PROJECT: **Clean Kathmandu Valley Project**
LOCATION: **Kolpu Khola (Right Mountain)**
FEATURE:
DRILLING METHOD: **Rotary**
GROUND LEVEL: **107.725 m**
COORDINATES: **9090.367 N, 5471.773 E**
GROUND WATER TABLE: **Not encountered**
MACHINE: **Koken**
CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter**
OREINTATION: **Horizontal**

Drilling Process	Casing Size & Depth	water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
			Fresh to slightly weathered, medium hard, medium strong, grey coloured, fine grained micaceous SCHIST, Joint plane is rough and planar in nature. Joint angles are measured in this section. Little iron stain is noticed along joint planes. From 20.00 to 20.75m: comparatively good core samples. From 20.75 to 20.90m: highly broken core pieces		5° 30°	>20	85	0	Yes				
20.5													
			From 20.90 to 21.00m: core loss										
21.0			Fresh to slightly weathered, hard, medium strong, grey coloured, fine grained micaceous SCHIST with iron stains along joint planes. From 21.00 to 21.55m: Comparatively good core samples. From 21.55 to 21.80m: broken core samples		5° 10°	>20	80	0					
21.5													
28-Jun-06		Dry	From 21.80 to 22.00m: core loss										
22.0			Fresh to slightly weathered, moderate hard, medium strong, grey coloured, fine grained micaceous SCHIST. From 22.00 to 22.15m: core loss. From 22.15 to 23.00m: extremely broken core pieces.			>20	85	0					From 22.0 to 25.0m permeability = 5.564 x 10 -5
22.5			Tints of iron stain are noticed in the core sampels.										
23.0			Fresh to slightly weathered, moderate hard, medium strong, grey coloured, fine grained micaceous SCHIST with some iron stain along the joint planes. From 23.00 to 23.20m: broken cores From 23.20 to 23.90m: core loss From 23.90 to 24.00m: broken cores		20°	>20	30	0					
23.5													
24.0			Fresh to slightly weathered, moderate hard, medium strong, grey coloured, fine grained micaceous SCHIST			>20	45	0					
24.5													
25.0			Termination of hole at the depth of 25.00m.										

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : June 23, 2006 Date Completed: June 28, 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-9)

BOREHOLE NO : BH # 9
Sheet 1 of 2

PROJECT: **Clean Kathmandu Valley Project**
LOCATION: **Banchare Danda**
FEATURE:
DRILLING METHOD: **Rotatory**
GROUND LEVEL: **95.628 m**
COORDINATES: **9061.439 N, 5443.562 E**
GROUND WATER TABLE: **0.40 m**
MACHINE: **Koken**
CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter**
OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
11-Jun-06													
0.0	NX upto 3.5 m	GWL	From 0.00m to 0.25m: Top soil consisting of brownish silty sand, with rock fragments				100		Yes				
		0.40m	Alluvial deposit, strong, hard, rounded, fine grained Boulder/Cobble of Quartzite, Schist, with little light grey Silty Sand				96						
0.5													
1.0			Alluvial deposit, strong, hard, rounded, fine grained Boulder/Cobble of Quartzite, Schist										
12-Jun-06		0.40											
1.50		0.40	Alluvial deposit of light grey, Sandy Gravel of Quartzite, Schist, fne grained sand				100			80/14 cm			
			Alluvial deposit, light to dark grey, fine to medium grained Boulder/Cobble of Quartzite, Gneiss and Schist				23						
2.0			Very loose from 2.0 to 2.5 m and recovered as Sludge of dark grey silty sand										
2.5			Alluvial deposit of dark grey, fine grained Sand with fine gravel (Pebble) of Quartzite, Schist				100						
3.0			Dark grey fine grained Sand from 3.0 to 3.35 m							80/10 cm			
			Bedrock is encountered at the depth of 3.35m.										
3.5			Slightly weathered, hard & strong, darkgrey fine grained, moderatly jointed Quartzite-SCHIST		10° 35° 50° 80°		41	0					
			core loss from 3.67 to 3.92m.										
4.0			Slightly weathered, medium hard, light grey, fined grained, lightly jointed Quartzite-SCHIST		15° 35° 65°		30	0					
4.50			core loss from 4.09 to 4.44m.										
			Slightly weathered, medium hard, light grey, fined grained, lightly jointed Quartzite-SCHIST		60° 15° 30° 65°		22	0					
			core loss: 4.56 to 4.95m.										
5.0			Slightly weathered, medium hard, light grey, fined grained, lightly jointed Quartzite-SCHIST		60° 15° 30° 65°		50	20					From 5.5 to 8.5 m permeability = 8.353 x 10-5
5.5			Slightly weathered, medium hard, light grey, fined grained, lightly jointed Quartzite-SCHIST		60° 15° 30° 65°		50	0					
13-Jun-06		0.40											
6.0		0.40	Slightly weathered, medium hard, light to dark grey, fined grained, highly jointed Quartzite-SCHIST		10° 35° 60°		100	30					
6.4			Fracture zone: 6.00 to 6.12m. Total core loss from 6.4 to 7.0 m, due to weak and highly jointed rock & recovered as sludge				0	0					
7.0			Fresh, hard & strong, medium grey, fine grained, moderately jointed Quartzite-SCHIST		20° 35° 65° 80°		100	0					
7.50			Fresh, hard & strong, medium grey, fine grained, moderately jointed Quartzite-SCHIST		20° 35° 65° 80°		100	0					
14-Jun-06		0.40											
8.0		0.40	Fresh, hard & strong, medium grey, fine grained, highly jointed Quartzite-SCHIST		10° 35° 65° 80°		100	0					
8.5			Fresh, hard & strong, medium grey, fine grained, highly jointed Quartzite-SCHIST		10° 35°		72	0					
			core loss from 8.79 to 8.91m.										
9.0			Fresh, hard & strong, medium grey, fine grained, moderately jointed Quartzite and Quartzite-SCHIST		20° 45° 60° 80°		100	0					
10.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : June 11, 2006 Date Completed: June 14, 2006

Figure No

Annex-1: Bore Hole Logs (DH-9)

BOREHOLE NO : BH # 9
Sheet 2 of 2

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Banchare Danda** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **95.628 m** | COORDINATES: **9061.439 N, 5443.562 E** | GROUND WATER TABLE:

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D. %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
meter													
			Fresh, medium hard, medium grey, fine grained, highly jointed Quartzite and Quartzite-SCHIST										
10.5			core loss from 10.00 to 10.67m.				33	0	Yes				
					5° 15° 30°								
11.0			Total core loss from 11.0 to 12.0 m due to loose sediments, dark grey sand was recovered as sludge										From 11.0 to 14.0 m permeability = 5.111 x 10-5
11.5							0	0					
12.0			Fresh, medium hard, medium grey, light grained, highly jointed Quartzite-SCHIST										
12.5			core loss from 12.00 to 12.77m.				23	0					
13.0			Fresh, medium hard, medium grey, light grained, highly jointed Quartzite-SCHIST		5° 30° 65° 80°								
13.5							55	0					
14.0			Fresh, medium hard, medium grey, light grained, highly jointed Quartzite-SCHIST		5° 30° 65° 80°								
14.5							80	0					
15.0			Termination of hole at the depth of 15.00m.										

Annex-1: Bore Hole Logs (DH-10)

BOREHOLE NO : BH # 10
Sheet 1 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Left bank of Kolpu Khola** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: **86.119 m** | COORDINATES: **9068.279 N, 5364.180 E** | GROUND WATER TABLE: 1.50 m

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
8-Jul-06													
0.0	HW up 2.00 m		Bedrock is exposed at the surface. Fresh to slightly weathered, hard, medium strong, fine grained, grey coloured SCHIST with intercalation of slate. Joint planes are rough and planar with iron stain at places. Joint spacing ranges from 3cm to 9cm. Core loss is noted from 0.81m to 1.00m, Fracture zone is noted from 0.47m to 0.56m.		35° 80°	22	81	0	Yes				
1.0			Fresh, hard, medium strong, fine grained, dark to light coloured SCHIST. Joint surface is predominantly rough. Joint spacing ranges from 1cm to 13cm. Core loss is noted from 1.00m to 1.15m. While mechanical breakage is at 1.78m.		5° 20° 65° 80°	15	85	13	Yes				
10-Jul-06		2.0											
2.0		2.0	Fresh, hard, medium strong, fine grained, light grey coloured SCHIST. Joint surface is smooth to rough. Joint spacing ranges from 1cm to 16cm. Core loss is noted from 2.72m to 3.00m.		10° 25° 65° 80°	22	72	16	Yes				From 2.5 to 7.0 m permeability = 5.441 x 10-5
3.0			Fresh, hard, medium strong, fine grained, light grey coloured SCHIST. Joint surface is irregular. Joint spacing ranges from 1cm to 5cm. Core loss is noted from 3.11m to 3.86m.		10° 30° 75°	13	25	0	Yes				
4.0			Fresh, hard, medium strong, fine grained, light grey coloured SCHIST. Joint spacing ranges from 1cm to 12cm Joint surface is irregular and smooth.		15° 40° 65° 80°	25	100	12	Yes				
5.0			Fresh, hard, medium strong, fine grained, dark grey coloured QUARTZITE with calcareous slate. Joint spacing is 9cm. Joint surface is irregular. coreloss is from 5.10m to 6.00m. Silty sludge sample is collected.		10° 45° 70°		10	0	Yes				From 5.7 to 10.2 m permeability = 3.882 x 10-5
6.0			Fresh to slightly weathered, medium hard, medium strong, fine grained, dark grey coloured SCHIST with intercalation of slate. Joint spacing ranges from 1cm to 4cm. Joint plane is rough and smooth. Core loss is noted from 6.00m to 6.84m.		5° 10° 35° 70°		16	0	Yes				
11-Jul-06		2.0											
7.0		2.0	Fresh to slightly weathered, medium hard, medium strong, fine grained, dark grey coloured SCHIST with intercalation of Slate. Joint spacing ranges from 1cm to 10cm. Joint plane is irregular and smooth. Fracture zone is from 7.00 to 7.28m. Core loss is noted from 7.28m to 8.00m.		5° 25° 75°	>20	28	0	Yes				
8.0			Fresh , hard, medium strong, fine grained, light grey to greenish coloured SLATE. Joint spacing ranges from 1cm to 7cm. Joint plane is irregular and rough. Core loss is noted from 8.00m to 8.40m.		5° 40° 80°	>20	30	0	Yes				
13-Jul-06		2.0											
9.0		2.0	Slightly weathered , hard, medium strong, fine grained, dark grey oloured SCHIST. Joint spacing ranges from 1cm to 3cm. Joint plane is smooth and rough. Core loss is noted from 9.00m to 10.10m.		5° 10° 80°	>20	8	0	Yes				
10.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : July 8th 2006 Date Completed: 17th July 2006

Figure No

Annex-1: Bore Hole Logs (DH-10)

BOREHOLE NO : BH # 10
Sheet 2 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Left bank of Kolpu Khola** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **86.119 m** | COORDINATES: **9068.279 N, 5364.180 E** | GROUND WATER TABLE: 1.50m.

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
meter													
10.2			Total core loss zone due to presence of highly fractured and soft rock strata of SCHIST. Sludge consists of micaceous silty material.				0	0	Yes				From 10.7 to 15.2 m permeability = 2.552 x 10-5
11.0													
11.70													
12.0			Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHIST with intercalation of calcareous slate. Joint spacing ranges from 2cm to 17cm. Joint surface is smooth and irregular. Core loss is noted from 11.70m to 12.77m. Mechanical breakage is noted at the depth of 13.14m.		10° 35° 80°	13	29	11	Yes				
13.0													
14-Jul-06		2.0											
13.2		2.0	Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHISTwith intercalation of calcareous slate. Fracture zone is from 13.56m to 13.81m. Joint plane surface is irregular and smooth.		10° 15° 35° 70°	24	100	33	Yes				
13.75													
14.0			Fresh, medium hard, medium strong, fine grained, light to dark grey coloured SCHIST with intercalation of calcareous slate. Core loss is from 14.00m to 14.71m. Joint plane is rough and smooth. Joint spacing ranges from 1cm to 7cm.		5° 25° 45° 85°	12	51	0	Yes				
15.0													
15-Jul-06		2.0											
15.2		1.5	Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHIST with intercalation of calcareous slate. Some quartz veins are also noted. Core loss is from 15.27m to 15.61m. Fracture zone is from 15.61 to 16.00m. Joint spacing ranges from 1cm to 9cm. Joint plane surface is rough and smooth.		10° 15° 40° 85°	21	58	0	Yes				From 15.9 to 20.4 m permeability = 3.661 x 10-5
16.0			Fresh, hard, medium strong, fine grained, light grey coloured calcareous SLATE. Joint plane is rough. Joint spacing ranges from 2cm to 20cm. Mechanical breakage is noted at 16.29m.		10° 30° 65° 80°		100	50	Yes				
16.40			Fresh, hard, medium strong, fine grained, light grey coloured calcareous SLATE Joint plane is irregular. Joint spacing ranges from 1cm to 16cm.		50° 85°	17	100	27	Yes				
17.0			Fresh, hard, medium strong, fine grained, dark grey coloured SCHIST. Joint plane is irregular. Joint spacing ranges from 1cm to 3cm. Core loss is from 17.00m to 17.56m.		5° 15° 40° 70°	17	25	0	Yes				
17.75													
18.0			Fresh, hard, medium strong, fine grained, dark grey coloured SCHIST. Joint plane is irregular and smooth. Joint spacing ranges from 1cm to 17cm. Core loss is from 18.00m to 18.72m. Fracture zone is noted from 18.72m to 19.35m.		5° 10° 40° 80°	9	55	11	Yes				
19.0													
16-Jul-06		1.5											
19.35		1.5	Fresh, hard, medium strong, fine grained, dark grey coloured SCHIST. Joint plane is smooth and irregular. Spacing ranges from 1cm to 10cm. Fracture zone is noted from 19.35m to 19.78m.		5° 10° 40° 80°	22	100	15	Yes				
20.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : July 8th 2006 Date Completed: 17th July 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-10)

BOREHOLE NO : BH # 10
Sheet 3 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Left bank of Kolpu Khola** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **86.119 m** | COORDINATES: **9068.279 N, 5364.180 E** | GROUND WATER TABLE: 1.50m.

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Packer Test
meter													
20.0			Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHIST. Joint plane is irregular and smooth. Spacing ranges from 2cm to 7cm. Fracture zone : 20.00m to 20.40m.		5° 10 80° 58°	8	100	0	Yes				
20.4			Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHIST with intercalation of slate. Joint plane is and smooth and irregular. Joint spacing ranges from 1cm to 22cm. Core loss is from 20.40m to 21.30m. Fracture zone ranges from 21.52m to 22.20m.		5° 10° 20° 80°	12	50	12	Yes				From 20.5 to 25.0 m permeability = 3.880 x 10-5
21.0													
22.0													
22.2			Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHIST. Core samples are collected only from 23.42m. Joint plane is and smooth and rough Core loss is from 22.20m to 23.42m. Sludge is collected from the core loss zone.		5° 10° 20° 80°		21	0	Yes				
23.0													
23.75			Fresh, hard, medium strong, fine grained, light to dark grey coloured SCHIST. Core samples are collected only from 24.65m. Joint plane is and smooth and rough Core loss is from 23.75m to 24.65m. Sludge sample is collected from the core loss zone.		5° 10° 20° 80°		28	0	Yes				
24.0			End of hole at the depth of 25.00m.										
25.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : July 8th 2006 Date Completed: 17th July 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-11)

BOREHOLE NO : BH # 11
Sheet 1 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Right bank slope of Kolpu Khola** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: **119.859 m** | COORDINATES: **9073.893 N, 5253.180 E** | GROUND WATER TABLE:

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
3-Aug-06													
0.0	HK up to 8.20 m		Top soil consisting of dark brown coloured silty soil, partly cohesive with angular gravel of schist (residual soil)				80		Yes				
0.50			Colluvial depsoit consisting of dark brown coloured silty soil with angular gravel of SCHIST.				60						
1.0			Colluvium consisting of brown coloured silty, partly cohesive soil with angular gravel and pebbles of pegmatite and SCHIST.				100						
1.50			Colluvium consisting of brown coloured silty soil with angular gravel and pebbles of pegmatite and SCHIST.				60			4	5	7	
2.0			Colluvium consisting of brown coloured silty soil with angualr gravel of SCHIST.										
2.50			The deposit is partly cohesive in nature.				100						
3.0			Colluvium consisting of brown coloured silty soil with angualr gravel of SCHIST. The soil is partly cohesive in nature.				100			18	26	30	
3.5			Colluvium consisting of dark grey colour silty soil with sub angular gavel and pebbles.				100						
4-Aug-06		1.7											
4.0		1.5	Colluvium consisting of dark grey colour silty soil with subrounded gavel and pebbles.				100						
4.50			Colluvia deposit consisting of brownish silty soil.				100			5	6	8	
5.0			Colluvial depsoit consisting of brownish silty soil wuith subrounded pebbles of SCHIST and quartzite.				100						
5.5			Colluvial deposit consisting of brownish silty soil.				100						
6.0			Colluvium consisting of brownish silty soil with subrounded gravel and pebbles of SCHIST.				80			4	7	9	
6.5			Colluvial soil consisting of brownish coloured silty soil.				80						
7.0			Colluvial depsit consisting of dark grey coloured soil with subrounded gravel and pebbles of SCHIST.				100						
7.50			Colluvium consisting of dark grey coloured silty soil with subrounded cobbles of SCHIST.				100						
5-Aug-06		2.7											
8.0		4.5	Bedrock is encountered at 8.00m.										
	NX up to 15.0 m		Fresh, soft, very weak, fine grained, predominantly grey coloured SCHIST Core loss from 8.00 to 8.50 m				0						
8.5			Sludge samples only. Core loss from 8.50 to 9.00 m				0						
9.0			Disappearance of cohesive soil and continuity of sludge sample of similar physical properties from 8m onward make it possible to envisage it as bedrock. Core loss: 9.00 to 9.50 m				0						
9.5			Only gey coloured sludge of SCHIST rock fragments recovered Core loss from 9.50 to 9.76 m				48						
10.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : Aug. 3, 2006 Date Completed: Aug 10, 2006

Figure No

Annex-1: Bore Hole Logs (DH-11)

BOREHOLE NO : BH # 11
Sheet 2 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Right bank slope of Kolpu Khola** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **119.859 m** | COORDINATES: **9073.893 N, 5253.180 E** | GROUND WATER TABLE:

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
			Fresh, very weak, soft, fine grained, grey coloured SCHIST Core loss from 10.00 to 10.39 m				22		Partially Yes				At 10.0 m permeabilty = 1.67 x 10⁻⁴
10.5			Fresh, very weak, soft, fine grained, grey coloured SCHIST Core loss from 10.50 to 10.81 m				38						
11.0			Only gey coloured sludge of SCHIST rock fragments recovered Core loss : 11.00 to 11.50 m				0						
11.5			Only gey coloured sludge of SCHIST rock fragments recovered. Core loss from: 11.50 to 12.00 m				0						
12.0			Only gey coloured sludge of SCHIST rock fragments recovered. Core loss from 12.00 to 12.50 m				0						
6-Aug-06 12.5		6.5 6.4	Fresh, very weak, soft, fine grained, grey coloured SCHIST Core loss from 12.50 to 12.85 m				10		Yes				
13.0			Fresh, weak, medium strong, fine to medium grained, grey coloured SCHIST		45° 75°	13	100						
13.5			Same rock upto 13.80m and from 18.80 to 14.00m, there is pegmatite. It seems to be of intruded nature.				100						
14.0			Fresh, very weak, soft, fine grained, grey coloured SCHIST Core loss from 14.00 to 14.30 m				40						
14.5			Only gey coloured sludge of SCHIST rock fragments recovered Core loss from 14.50 to 15.00 m				0		Partially Yes				
15.0	BX up to 25.0 m		Only gey coloured sludge of SCHIST rock fragments recovered Core loss from 15.00 to 15.50 m				0						At 15.0 m permeabilty = 1.396 x 10⁻⁴
15.5			only sludge materials. Core loss: 15.50 to 16.00 m				0						
16.0			Fresh, very weak, soft, fine grained, grey coloured SCHIST No core samples only sludge sample. Core loss: 16.00 to 16.50 m				0						
16.5			only sludge materials. Core loss: 16.50 to 17.00 m				0						
17.0			only sludge materials. Core loss: 17.00 to 17.50 m				0						
17.5													
7-Aug-06		9.4 10.0	only sludge materials. Core loss: 17.50 to 18.00 m				0						
18.0			only sludge materials. Core loss: 18.00 to 18.50 m				0						
18.5			Sludge sample with grey coloured, fine grained, broken pieces of SCHIST. Not possible to measure joint orientation. Core loss: 18.50 to 18.93 m				14						
19.0			Sludge sample. Core loss: 19.00 to 19.50 m				0						
19.5			Sludge sample with grey coloured, fine grained, broken pieces of SCHIST. Not possible to measure joint orientation. Core loss: 19.50 to 19.89 m				22						
20.0													

Abbreviation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : Aug. 3, 2006 Date Completed: Aug 10, 2006

Figure No

Annex-1: Bore Hole Logs (DH-11)

BOREHOLE NO : BH # 11
Sheet 3 of 3

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Right bank slope of Kolpu Khola** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **119.859 m** | COORDINATES: **9073.893 N, 5253.180 E** | GROUND WATER TABLE:

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Return	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
7-Aug-06													
			Sludge sample consists of dark grey silty material, i.e. the parenct rock is fresh but very weak, grey coloured, fine grained SCHIST Core loss: 20.00 to 20.67 m		40° 60°		33		Partially Yes				At 20.0 m permeabilty = 1.42×10^{-4}
21.0			Only gey coloured sludge of SCHIST rock fragments recovered Core loss from 21.00 to 22.00 m				0						
22.0			Core in the form to broken pieces and impossible to measure the joint plane angles. Core loss from 22.00 to 22.84 m				16						
23.0			Slightly weathered, medium hard, dark grey, fine grain, jointed SCHIST. Sludge of dark grey silty sand are found. Core loss: from23.00 to 23.72 m		10° 20° 65°		28						
24.0			Only gey coloured sludge of SCHIST rock fragments recovered Core loss from 24.00 to 25.00 m				0						
		15.0											
8-Aug-06		14.6											
25.0			Slightly weathered, medium hard, dark grey, fine grain, jointed anf fragmented SCHIST. Sludge of dark grey silty sand are found. Core loss from 25.00 to 25.95 m		20° 60°		5						At 25.0 m permeabilty = 9.126×10^{-4}
		13.9											
9-Aug-06		14.0											
26.0			Slightly weathered, medium hard, dark grey, fine grain, jointed and fragmented SCHIST with pegmatite. Sludge of dark grey silty sand are found. Core loss from 26.00 to 26.81 m		35° 65°		19						
27.0			Only sludge of dark grey sily sand were found Core loss from 27.00 to 28.00				0						
28.0			Only sludge of dark grey sily sand were found Core loss from 28.00 to 29.00 m				0						
########		16.1											
		15.8											
29.0			Slightly weathered, medium hard, dark grey, fine grain, jointed and fragmented SCHIST. Sludge of dark grey silty sand are found. Core loss from 29.00 to 29.91 m		25° 60°		9						
30.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : Aug. 3, 2006 | Date Completed: Aug 10, 2006

Figure No

Annex-1: Bore Hole Logs (DH-12)

BOREHOLE NO : BH # 12
Sheet 1 of 4

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Thulo Thumko (Saddle point)** | FEATURE:

DRILLING METHOD: **Rotatory** | GROUND LEVEL: **143.024 m** | COORDINATES: **9209.031 N, 5145.660 E** | GROUND WATER TABLE: Not encountered

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Verical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
7-Jul-06													
0.0	HW up 7.0 m		Top soil consisting of brown silty soil with few percent of angular gravel of gneiss (residual soil)				100		Yes				
0.45			Colluvial depsoit consisting of dark brown clayey and silty soil with subangular gravel of schist (residual soil)				7						
1.0			Colluvium consisting of dark brown clayey and silty soil (residual soil).				74						
1.50										7	8	11	
2.0			Colluvial deposit consisting of dark brown clayey and silty soil (residual soil).				97						
3.0			Colluvial deposit upto 3.90m consisting of dark brown silty and clayey soil (residual soil)				63			10	10	13	
			Bedrock encountered at the depth of 3.90m.										
4.0			Moderately to highly weathered, fine to medium grained, browinsh coloured GNEISS. Joint spacing ranges from 3cm to 10.5cm. Joint plane is irregualr with iron stain. Core loss is from 4.25m to 4.50m.		70°		17						
4.50						3				6	9	13	
			Moderately to highly weathered, soft, fine to medium grained, browinsh coloured GNEISS.										
5.0			Joint plane is irregualr with iron stain. Core loss from 4.95m to 6.00m. Sludge sample is collected.				30		Partially Yes				
6.0			Moderately to highly weathered, soft, fine to medium grained, browinsh coloured GNEISS.							8	10	15	
			Joint plane rough and irregualr with iron stain.				30						
7.0	NX upto 12.0 m	6.0	Core loss from 6.45m to 7.50m.										
8-Jul-06		8.7											
7.50										12	17	28	
8.0			There is no core recovery. It may be due to presence of highly to completely weathered GNEISS. Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss from 7.50m to 9.00m.				0						
9.0			Sludge sample consists of dark grey to brownish silty material of GNEISS Core loss from 9.00m to 10.00m.				0			14	20	32	
10.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : July 7, 2006 Date Completed: July 27, 2006

Figure No

Annex-1: Bore Hole Logs (DH-12)

BOREHOLE NO : BH # 12
Sheet 2 of 4

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Thulo Thumko (Saddle point)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **143.024 m** | COORDINATES: **9209.031 N, 5145.660 E** | GROUND WATER TABLE: Not encountered

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss from 10.00m to 11.00m.				0		Partially Yes				
10-Jul-06		10.00 11.35											
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss from 11.00m to 12.00m.				0						
	BX upto 35.0 m		Sludge sample consists of dark grey to brownish coloured silty material. of GNEISS Core loss from 12.00m to 13.00m.				0						
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss from 13.00m to 14.00m.				0						
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss from 14.00m to 15.00m.				0						
12-Jul-06		14.00 16.20											
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss is from 15.00m to 16.00m.				0						
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss is from 16.00m to 17.00m.				0						
			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss is from 17.00m to 18.00m.				0						
			Moderately to highly weathered, soft, brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 1cm to 9cm. Core loss from 18.28m to 19.00m.		15° 80°	9	28						
13-Jul-06		18.00 19.50											
			Sludge sample consists of dark grey to brownish coloured silty and sandy material of GNEISS Core loss from 19.00m to 20.00m.				0						

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Date Started : July 7, 2006 Date Completed: July 27, 2006

Logged By

Figure No

Annex-1: Bore Hole Logs (DH-12)

BOREHOLE NO : BH # 12
Sheet 3 of 4

PROJECT: **Clean Kathmandu Valley Project**
LOCATION: **Thulo Thumko (Saddle point)**
FEATURE:
DRILLING METHOD: **Rotary**
GROUND LEVEL: **143.024 m**
COORDINATES: **9209.031 N, 5145.660 E**
GROUND WATER TABLE: Not encountered
MACHINE: **Koken**
CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter**
OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
20.0			Sludge sample consists of dark grey to brownish coloured silty material of GNEISS Core loss from 20.00m to 21.00m.				0		Partially Yes				At 20.0 m and permeability = 7.297 x 10-3
21.0			Moderately to highly weathered, medium hard to soft, light grey to brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 3cm to 4cm. Core loss from 21.00m to 21.93m.		5° 80°	3	7		Partially Yes				
22.0			Moderately weathered, medium hard to soft, grey to brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 2cm to 24cm.		20° 50° 80°	11	100	36	Yes				
23.0			Moderately to highly weathered, medium hard to soft, grey to brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 1cm to 12cm. Core loss noted from 23.50m to 24.00m.		15° 40° 80°	10	50	12	Partially Yes				
14-Jul-06		23.0 23.1											
24.0			Moderately to highly weathered, medium hard to soft, grey to brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 1cm to 9cm. Core loss noted from 24.19 to 25.00m.		15° 40° 80°	9	19	0					
25.0		21.4 24.6	Moderately to highly weathered, medium hard to soft, grey to brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 4cm to 5cm. Core loss noted from 25.00m to 25.86m.		35° 80°	4	14	0					At 25.0 m and permeability = 5.164 x 10-3
26.0			Moderately to highly weathered, medium hard to soft, grey to brownish coloured, medium grained GNEISS Joint plane iirregualr and spacing ranges from 3cm to 7cm. Core loss noted from 26.00m to 26.86m.		5° 30° 80°	6	14	0					
27.0			Slightly to moderately weathered, medium hard, grey to brownish coloured, medium grained GNEISS Joint plane irregualr and spacing ranges from 3cm to 18cm. Core loss noted from 27.58m to 28.00m.		15° 40° 80°	8	58	33	Yes				
28.0			Completely core loss zone. It may be due to highly to completely weathered GNEISS				0		Partially Yes				
29.0			There is no core recovery and it may be due to highly to completely weathered GNEISS				0						
30.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : July 7, 2006
Date Completed: July 27, 2006

Figure No

Annex-1: Bore Hole Logs (DH-12)

BOREHOLE NO : BH # 12
Sheet 4 of 4

PROJECT: **Clean Kathmandu Valley Project** | LOCATION: **Thulo Thumko (Saddle point)** | FEATURE:

DRILLING METHOD: **Rotary** | GROUND LEVEL: **143.024 m** | COORDINATES: **9209.031 N, 5145.660 E** | GROUND WATER TABLE: Not encountered.

MACHINE: **Koken** | CORE BARREL: **Double Tube Barrel of 76 and 66 mm diameter** | OREINTATION: **Vertical**

Drilling Process	Casing Size & Depth	Water Level (m)	Description of Strata (Colour, Weathering, Rock Type, Discontinuity/Fractures, Hardness/strength, other pertinent properties)	Graphic Log	Orientation of Joints, deg	Joints per m	Core Recovery, %	R.Q.D, %	Water Recovery	Field Tests: SPT/DCPT No. of Blows Per 15 cm	15 cm	15 cm	Permeability Test
15-Jul-06													
30.0		22.9	There is no core recovery and it may be due to highly to completely weathered GNEISS				0		Partially Yes				At 30.0 m and permeability = 4.296 x 10-3
31.0			There is no core recovery and it may be due to highly to completely weathered GNEISS				0						
32.0			Moderately weathered, medium hard, grey to brownish coloured, medium grained GNEISS with some quartz veins. Joint plane irregualr and spacing ranges from 1cm to 9cm. Core loss noted from 32.63m to 33.00m.		30° 55° 80°		63	0	Yes				
33.0			Moderately weathered, medium hard, grey to brownish coloured, medium grained GNEISS with some quartz veins. Joint plane irregualr and spacing ranges from 3cm to 12cm. Core loss noted from 33.23m to 34.00m.		55° 80°		23	12	Partially Yes				
34.0			There is no core recovery and it may be due to highly to completely weathered GNEISS				0	0					
25-Jul-06		Dry											
35.0			No core recovery. It may be due to highly to completely weathered GNEISS				0	0					At 35.0 m and permeability = 7.227 x 10-3
36.0			No core recovery. It may be due to highly to completely weathered GNEISS				0	0					
37.0			No core recovery. It may be due to highly to completely weathered GNEISS				0	0					
27-Jul-06		Dry											
38.0			No core recovery. It may be due to highly to completely weathered GNEISS				0	0					
39.0			No core recovery. It may be due to highly to completely weathered GNEISS				0	0					At 40.0 m and permeability = x 10-3
			End of the hole at the depth of 4.00m										
40.0													

Abbrebiation:
RQD = Rock Quality Designation
0-25% Very Poor
25-50% Poor
50-75% Fair
75-100% Good & Excellent if >90%

Remarks:

Logged By

Date Started : July 7, 2006 Date Completed: July 27, 2006

Figure No

Annex 2 Results of Permeability Test

Table -1 Packer Test for Permeability of Rock Mass

BH No	Test No	Test Depth (m)		Groundwater Level	Water pressure (kg/cm^2)	Permeability Value (cm/sec)
		from	to			
DH 8	Test # 1	7.0	10.0	Dry	1, 3, 5, 7, 10 and 10, 7, 5, 3, 1	1.596×10^{-4}
	Test # 2	12.0	15.0	dry		1.075×10^{-4}
	Test # 3	17.0	20.0	dry		7.177×10^{-5}
	Test # 4	22.0	25.0	dry		5.564×10^{-5}
DH 9	Test # 1	5.5	8.5	0.36	1, 3, 5, 7, 10 and 10, 7, 5, 3, 1	8.359×10^{-5}
	Test # 2	11.0	14.0	0.40		5.139×10^{-5}
DH 10	Test # 1	2.5	7.0	2.00	1, 3, 5, 7, 10 and 10, 7, 5, 3, 1	5.441×10^{-5}
	Test # 2	5.7	10.2	2.00		3.882×10^{-5}
	Test # 3	10.7	15.2	1.50		2.552×10^{-5}
	Test # 4	15.9	20.4	1.50		3.661×10^{-5}
	Test # 5	20.5	25.0	1.70		3.830×10^{-5}

Table -2 Permeability Test (Constant Head Method)

BH No	Test No	Test Depth (m)	Groundwater Level (m)	Permeability Value (cm/sec)
DH 11	Test # 1	10.0	6.0	1.670×10^{-2}
	Test # 2	15.0	8.2	1.396×10^{-2}
	Test # 3	20.0	11.0	1.420×10^{-2}
	Test # 4	25.0	16.0	9.126×10^{-3}
	Test # 5	30.0	8.5	1.112×10^{-2}
DH 12	Test # 1	20.0	18.1	7.297×10^{-3}
	Test # 2	25.0	21.4	5.163×10^{-3}
	Test # 3	30.0	24.7	4.296×10^{-3}
	Test # 4	35.0	dry	7.226×10^{-3}
	Test # 5	40.0	dry	1.134×10^{-2}

Annex 3 Results of Laboratory Test

Table-3 Laboratory Test Results

BH No.	For Soils Samples							For Rock Samples	
	Grain Size Analysis				Specific Gravity	Liquid Limit/Plastic Limit	Natural Water Content	Water Content	Point Load Strength (Axial)
	Boulder	Gravel	Sand	Silt & Clay		(%)	(%)	(%)	MPa
BH # 8	-	-	-	-	-	-	-	1.20	5.07
BH # 9	-	-	-	-	-	-	-	0.57	2.25
BH# 10	-	-	-	-	-	-	-	0.36	4.85
BH# 11	0	0	78	22	2.812	NP	31.74	1.28	2.41
BH# 12								5.12	0.21
- at 3.0 m	0	0	44	56	2.645	NP	23.86		2.67
- at 4.5 m	0	0	73	23	2.623	NP	27.90		
River Bed									
- SN # 1	31	60	9	0	2.59	-	-	-	-
- SN # 2	20	55	23	1		-	-	-	
- SN# 3	24	68	8	0		-	-	-	-

SPECIFIC GRAVITY TEST OF SOILS

Project : **Clean Kathmandu Valley Project**
Location : **Banchare Danda**
Date : **February 2006**

Sample No.	BH # 1, Depth 0.0 - 1.0 m			BH # 2, Depth 3.0 -3.5 m			BH # 3, Depth 0.0 -0.65 m			BH # 3, Depth 2.7 - 3.3m		
Determination No	1	2	3	1	2	3	1	2	3	1	2	3
1 Temperature, ^{0}c	61	54	45	50	45	41	49	44	40	61	52	40
2 Wt. Of Flask + Water + Soil	749	750.7	752	752.6	753.6	754.5	748.7	751.5	752.5	750	752.8	753.8
3 Wt. Of Flask + Water (From Calib	715.6	717.1	719	718	719	719.8	716.6	717.9	718.9	715.6	717.5	720.1
4 Wt. Of Dry Soil + Container	206			191.9			230			212		
5 Wt. Of Container	154.2			137			178.8			158		
6 Wt. Of Dry Soil	51.8			54.9			51.2			54		
7 Sp. Gr. Of water at t 0 c	0.9827	0.9862	0.9902	0.9881	0.9902	0.9915	0.9885	0.9907	0.9922	0.9827	0.9872	0.9922
8 Sp. Gr. Of soils = (6 x 7)/(3+6-2)	2.7665	2.8069	2.7283	2.6723	2.6779	2.6947	2.6498	2.8820	2.8864	2.7074	2.8507	2.6393
9 Average Sp. Gr.		2.767			2.682			2.806			2.733	

Sample No.	BH # 4, Depth 0.0 - 0.65m			BH # 4, Depth 1.5 - 2.2m			BH # 4, Depth 3.0 - 3.75m		
Determination No	1	2	3	1	2	3	1	2	3
1 Temperature, ^{0}c	58	53	45	56	52	44	51	45	39
2 Wt. Of Flask + Water + Soil	746.3	747.4	748.1	744.5	746.5	748.5	747.3	748.2	749.8
3 Wt. Of Flask + Water (From Calib	716.3	717.4	719	714.8	715.8	717.9	716.1	717.6	719.1
4 Wt. Of Dry Soil + Container	226.5			203.8			207.6		
5 Wt. Of Container	177.8			155.5			158.5		
6 Wt. Of Dry Soil	48.7			48.3			49.1		
7 Sp. Gr. Of water at t 0 c	0.9842	0.9867	0.9902	0.9852	0.9872	0.9907	0.9876	0.9902	0.9926
8 Sp. Gr. Of soils = (6 x 7)/(3+6-2)	2.5631	2.5696	2.4603	2.5583	2.7092	2.7034	2.7090	2.6280	2.6487
9 Average Sp. Gr.		2.531			2.657			2.662	

SPECIFIC GRAVITY TEST OF SOILS

Project : **Clean Kathmandu Valley Project**
Location : **Banchare Danda**
Date : **February 2006**

Sample No.	BH # 5, UD # 1, at 1.0 - 1.35 m			BH # 5, SPT # 1, at 1.5 - 2.0 m			BH # 5, SPT # 2, at 3.0 - 3.5 m			BH # 5, SPT # 3, at 4.5 - 5.0 m		
Determination No	1	2	3	1	2	3	1	2	3	1	2	3
1 Temperature, ^{0}c	58	49	42	58	49	42	57	48	40	53	47	39
2 Wt. Of Flask + Water + Soil	747.0	748.8	750.0	746.5	748.8	749.6	751.5	752.5	754.6	746.2	748	749.6
3 Wt. Of Flask + Water (From Calib	716.3	718.2	719.6	716.3	718.2	719.6	716.5	718.3	720.1	717.4	718.6	721.1
4 Wt. Of Dry Soil + Container	204.6			204.6			195.1			192.6		
5 Wt. Of Container	154.7			154.7			139.5			144.7		
6 Wt. Of Dry Soil	49.9			49.9			55.6			47.9		
7 Sp. Gr. Of water at t 0 c	0.9842	0.9885	0.9915	0.9884	0.9885	0.9915	0.9848	0.9890	0.9922	0.9867	0.9894	0.9926
8 Sp. Gr. Of soils = (6 x 7)/(3+6-2)	2.5579	2.5558	2.5372	2.5037	2.5558	2.4862	2.6580	2.5696	2.6145	2.4745	2.5617	2.4508
9 Average Sp. Gr.		2.550			2.515			2.614			2.496	

Sample No.	BH # 6 (A), Depth 0.0 - 1.0m			BH # 6 (A), Depth 2.5 - 3.0m			BH # 6 (A), Depth 3.5 - 4.0m		
Determination No	1	2	3	1	2	3	1	2	3
1 Temperature, ^{0}c	59	52	42	54	49	41	55	50	40
2 Wt. Of Flask + Water + Soil	748.1	751.2	753.1	753.0	754.5	756.0	747.7	749.7	752.2
3 Wt. Of Flask + Water (From Calib	716.1	717.6	719.6	715.3	716.6	718.6	715	716.3	718.9
4 Wt. Of Dry Soil + Container	189.7			203.3			212.4		
5 Wt. Of Container	138.5			144.3			159.5		
6 Wt. Of Dry Soil	51.2			59.0			52.9		
7 Sp. Gr. Of water at t 0 c	0.9838	0.9872	0.9915	0.9862	0.9885	0.9919	0.9857	0.9881	0.9922
8 Sp. Gr. Of soils = (6 x 7)/(3+6-2)	2.6235	2.8719	2.8681	2.7317	2.7641	2.7094	2.5814	2.6805	2.6779
9 Average Sp. Gr.		2.788			2.735			2.647	

SPECIFIC GRAVITY TEST OF SOILS

Project : **Clean Kathmandu Valley Project**
Location : **Banchare Danda**
Date : **February 2006**

Sample No.	BH # 6 (B), Depth 0.0 - 0.5m			BH # 6 (B), Depth 1.5 - 2.0m			BH # 7, Depth 0. - 1.0m		
Determination No	1	2	3	1	2	3	1	2	3
1 Temperature, ^{0}c	50	45	41	54	52	46	55	49	42
2 Wt. Of Flask + Water + Soil	757.4	758.4	759.2	755.5	757.5	758.4	752.2	755.5	756.6
3 Wt. Of Flask + Water (From Calib	717.9	719	719.9	715.9	718	718.8	716.9	718.1	719.6
4 Wt. Of Dry Soil + Container	216.3			198			192.6		
5 Wt. Of Container	154.7			135.9			135.3		
6 Wt. Of Dry Soil	61.6			62.1			57.3		
7 Sp. Gr. Of water at t 0 c	0.9881	0.9902	0.9919	0.9832	0.9872	0.9898	0.9857	0.9885	0.9915
8 Sp. Gr. Of soils = (6 x 7)/(3+6-2)	2.7542	2.7476	2.7400	2.7136	2.7126	2.7318	2.5673	2.8463	2.7987
9 Average Sp. Gr.		2.747			2.719			2.737	

Sample No.									
Determination No									
1 Temperature, ^{0}c									
2 Wt. Of Flask + Water + Soil									
3 Wt. Of Flask + Water (From Calib.)									
4 Wt. Of Dry Soil + Container									
5 Wt. Of Container									
6 Wt. Of Dry Soil									
7 Sp. Gr. Of water at t 0 c									
8 Sp. Gr. Of soils = (6 x 7)/(3+6-2)									
9 Average Sp. Gr.									

Annex 4 Photographs of Drilling Cores

Photo 1 : Core Box BH-8, Mountain, Depth (0.00 - 4.00) m, Total Depth 25m, Clean Kathmandu Valley Study

Photo 2 : Core Box BH-8, Mountain, Depth (4.00 - 9.00) m, Total Depth 25m, Clean Kathmandu Valley Study

Photo 3 : Core Box BH-8, Mountain, Depth (9.00 - 14.00) m, Total Depth 25m, Clean Kathmandu Valley Study

Photo 4 : Core Box BH-8, Mountain, Depth (14.00 - 19.00) m, Total Depth 25m, Clean Kathmandu Valley Study

Photo 5 : Core Box BH-8, Mountain, Depth (19.00 - 25.00) m, Total Depth 25m, Clean Kathmandu Valley Study

Photo 1 : Core Box BH-9, River Bed, Depth (0.00 - 4.00) m, Total Depth 15m, Clean Kathmandu Valley Study

Photo 2 : Core Box BH-9, River Bed, Depth (4.00 - 8.00) m, Total Depth 15m, Clean Kathmandu Valley Study

Photo 3 : Core Box BH-9, River Bed, Depth (8.00 - 13.00) m, Total Depth 15m, Clean Kathmandu Valley Study

Photo 4 : Core Box BH-9, River Bed, Depth (13.00 - 15.00) m, Total Depth 15m, Clean Kathmandu Valley Study

Photo 1 : Core Box BH-10, River Bed, Depth (0.00 - 4.00) m, Total Depth 25.0m, Clean Kathmandu Valley Study

Photo 2 : Core Box BH-10, River Bed, Depth (4.00 - 8.00) m, Total Depth 25.0m, Clean Kathmandu Valley Study

Photo 3 : Core Box BH-10, River Bed, Depth (8.00 - 11.70) m, Total Depth 25.0m, Clean Kathmandu Valley Study

Photo 4 : Core Box BH-10, River Bed, Depth (11.70 - 16.00) m, Total Depth 25.0m, Clean Kathmandu Valley Study

Photo 5 : Core Box BH-10, River Bed, Depth (16.00 - 20.00) m, Total Depth 25.0m, Clean Kathmandu Valley Study

Photo 6 : Core Box BH-10, Mountain, Depth (20.00 - 25.00) m, Total Depth 25m, Clean Kathmandu Valley Study

Photo 1 : Core Box BH-11, Mountain, Depth (0.00 - 4.00) m, Total Depth 30m, Clean Kathmandu Valley Study

Photo 2 : Core Box BH-11, Mountain, Depth (4.00 - 8.00) m, Total Depth 30m, Clean Kathmandu Valley Study

Photo 3 : Core Box BH-11, Mountain, Depth (8.00 - 13.00) m, Total Depth 30m, Clean Kathmandu Valley Study

Photo 4 : Core Box BH-11, Mountain, Depth (13.00 - 18.00) m, Total Depth 30m, Clean Kathmandu Valley Study

Photo 5 : Core Box BH-11, Mountain, Depth (18.00 - 23.00) m, Total Depth 30m, Clean Kathmandu Valley Study

Photo 6 : Core Box BH-11, Mountain, Depth (23.00 - 30.00) m, Total Depth 30m, Clean Kathmandu Valley Study

Photo 1 : Core Box BH-12, Mountain, Depth (0.00 - 4.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 2 : Core Box BH-12, Mountain, Depth (4.00 - 9.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 3 : Core Box BH-12, Mountain, Depth (9.00 - 14.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 4 : Core Box BH-12, Mountain, Depth (14.00 - 19.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 5 : Core Box BH-12, Mountain, Depth (19.00 - 24.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 6 : Core Box BH-12, Mountain, Depth (24.00 - 29.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 7 : Core Box BH-12, Mountain, Depth (20.00 – 35.00) m, Total Depth 40m, Clean Kathmandu Valley Study

Photo 8 : Core Box BH-12, Mountain, Depth (35.00 - 40.00) m, Total Depth 40m, Clean Kathmandu Valley Study