

DRAFT CONCESSION AGREEMENT

This **CONCESSION AGREEMENT** is entered into on this the ___ day of _____, Two Thousand and ____ at Lucknow;

BETWEEN

The Government of State of Uttar Pradesh, acting through [*****] , (hereinafter referred to as “**State Government**” or “**GoUP**”, which expression shall, unless excluded by or repugnant to the context, be deemed to include its administrators, successors and assigns) of One Part;

AND

Gorakhpur Municipal Corporation, a Municipal Corporation constituted under the _____ Act _____, having its principal office at _____ (hereinafter referred to as “**ULB**” which expression shall unless excluded by or repugnant to the context, be deemed to include its administrators, successors and assigns) of Second Part;

AND

Construction and Design Services, a unit of Uttar Pradesh Jal Nigam, a Government of UP Enterprise, having its main office at T.C. – 38 – V., Vibhuti Khand, Gomti Nagar, Lucknow – 226010 (hereinafter referred to as “**C&DS, UPJN**” or “**Construction Supervisor**” which expression shall unless excluded by or repugnant to the context, be deemed to include its administrators, successors and assigns) of Third Part;

AND

_____, a company incorporated under the provisions of the Companies Act, 2013, having its registered office at _____ (hereinafter referred to as “**the Concessionaire**” which expression shall unless excluded by or repugnant to the context, be deemed to include its successors, permitted assigns and substitutes) of Fourth Part.

WHEREAS:

- A. ULB is the urban local body for the city of Gorakhpur, in the state of Uttar Pradesh, and is responsible for providing municipal and civic services for the benefit of the public residing within its jurisdiction, which includes the collection, segregation, transportation, processing and disposal of Municipal Solid Waste generated within the city.
- B. In accordance with the Municipal Solid Wastes (Management and Handling) Rules, 2000 (“**MSW Rules**”), it is mandatory for every Municipal Authority to implement a scientific municipal solid waste management system wherein Municipal Solid Waste is collected, transported and processed and the remnant waste matter is disposed in accordance with the MSW Rules.
- C. The State Government recognizes that the existing state of MSW management systems in the State is raising public health and sanitation issues, which need to be addressed in public interest. State Government also recognizes in some cases the issues such as non- availability of land, lack of technical know-how and financial resources further creates bottlenecks in the effective implementation of scientific disposal of MSW;
- D. Therefore, in furtherance of public interest and with the aim of improving standards of public health and sanitation in the state of Uttar Pradesh, the State Government has now decided to authorize and support this Agreement for development of the Project;
- E. In furtherance of its objective of improving the solid waste management services in the city of Gorakhpur, C&DS, UPJN on behalf of the ULB invited tenders for private sector participation for design, build, operate, maintain and transfer basis, to undertake the Project for processing and disposal of Municipal Solid Waste.
- F. C&DS, UPJN had prescribed the technical and commercial terms and conditions (the “Request for Proposals” or “RFP”), and invited bids for the ULB which term shall include written clarifications issued to the Bidders and written addendum to the Request for Proposal) from the bidders including the {Selected Bidder/ Consortium comprising [_____] and [_____] (collectively the “**Consortium**”) with [] as its Lead Member}; for implementing the Project;
- G. After evaluation of the bids received, C&DS, UPJN in consultation with the ULB had accepted the bid of the {Selected Bidder / Consortium} and issued its Letter of Award No. [_____] dated [_____] (hereinafter called the “**LOA**”) to the {Selected Bidder / Consortium} requiring, inter alia, the execution of this Concession Agreement;
- H. The Selected Bidder / Consortium has since promoted and incorporated the Concessionaire as a limited liability company under the Companies Act 2013 (a special purpose vehicle), and has requested the C&DS, UPJN / ULB to accept the

Concessionaire as the entity which shall undertake and perform the obligations and exercise the rights of the Selected Bidder/ Consortium under the LOA, including the obligation to enter into this Concession Agreement pursuant to the LOA for executing the Project;

- I. By its letter dated [____], the Concessionaire has also joined in the said request of the Selected Bidder / Consortium to the C&DS, UPJN / ULB to accept it as the entity which shall undertake and perform the obligations and exercise the rights of the Selected Bidder / Consortium including the obligation to enter into this Concession Agreement pursuant to the LOA. The Concessionaire has further represented to the effect that it has been promoted by the Selected Bidder / Consortium only for the purposes hereof;
- J. The Concessionaire has submitted a bank guarantee to C&DS, UPJN dated _____ ref No _____ of an amount _____ issued by _____ Bank towards the Performance Security and C&DS, UPJN acknowledges the acceptance of the same.
- K. ULB has agreed to the said request of the {Selected Bidder / Consortium} and the Concessionaire, and has accordingly along with C&DS, UPJN agreed to enter into this Concession Agreement with the Concessionaire for the execution of the Project, subject to and on the terms and conditions set forth hereinafter.
- L. The Parties hereto are required to enter into this Concession Agreement, the sufficiency and adequacy of which is hereby acknowledged, and intending to be legally bound, being these presents to record the terms, conditions and covenants of the Concession.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

ARTICLE 1

DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively ascribed to them hereunder:

“**Accounting Year**” means the financial year commencing from 1st April of any calendar year and ending on 31st March of the next calendar year except in the first and the last calendar year of the subsistence of this Agreement. In the first year of subsistence of this Agreement, it means the period from the Appointed Date to the 31st March of next calendar year. In the last year of subsistence of this Agreement, it means the period from 1st April to the Termination Date.

“**Act**”/ “**Companies Act**” means the Companies Act, 1956 or Companies Act, 2013, as may be applicable

“**Additional Cost**” shall mean the additional capital expenditure and / or the additional operating costs or both as the case may be, which the Concessionaire would be required to incur as a result of Change in Law.

“**Additional Performance Security**” shall have the meaning ascribed to it in Article 6.1(c).

“**Affected Party**” shall mean the Party claiming to be affected by a Force Majeure Event in accordance with Article 12.

“**Agreement**” or “**Concession Agreement**” means this Agreement including its Recitals, Schedules hereto, as of the date hereof and includes any amendments hereto made in accordance with the provisions hereof.

“**Applicable Laws**” means all laws in force and effect as of the date hereof and which may be promulgated or brought into force and effect by GOI or the GoUP hereinafter in India, including judgments, decrees, injunctions, writs or orders of any court of record, as may be in force and effect during the subsistence of this Agreement and applicable to the Project/Concessionaire.

“**Applicable Permits**” means all clearances, permits, authorizations, no objection certificates, consents, exemptions and approvals required to be obtained and maintained by the Concessionaire under Applicable Laws, in connection with the Project.

“**Appointed Date**” means the date of handing over of the Project Site and Existing Assets as per Article 3 or an earlier date the Parties may mutually consent and determine, and shall be deemed to be the date of commencement of Concession Period. For the avoidance of doubt, every Condition Precedent shall have been satisfied or waived prior to the Appointed Date and in the event all Conditions Precedent are not satisfied or waived, as the case may be, the Appointed Date shall be deemed to occur only when each and every Condition Precedent is either satisfied or waived, as the case may be;

“Approved Valuer” means a firm of valuers recognized as such by the Income Tax Department and having experience of valuing fixed assets and Project Facilities;

“Arbitration Act” means the Arbitration and Conciliation Act, 1996 and shall include any amendment to or any re-enactment thereof as in force from time to time.

“Associate” means, in relation to the Bidder / Consortium Member, a company who controls or is controlled by such Bidder/ Consortium Member (herein referred to as the “Associate”). As used in this definition, the expression “control” means, with respect to a company, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such company or as may be defined in the Companies Act.

“Assured Incoming Waste” shall have the meaning ascribed to it in Article 6.12.

“Bank” means a Nationalised Bank incorporated in India and having a branch in the city of Lucknow, Uttar Pradesh, but does not include a bank in which any Senior Lender has an interest;

“Biodegradable Substance” shall have the meaning as ascribed to it under the MSW Rules.

“Bio-Medical Waste” shall have the meaning ascribed to it in the Bio-Medical Waste (Management and Handling) Rules, 1998 or any amendments and/or modification(s) thereto.

“Book Value” shall mean the cost of the fixed assets, incurred and financed by the Concessionaire for the Project, net of accumulated depreciation computed on written down value method in accordance with the rates specified in the Companies Act, and as determined by an independent firm of chartered accountants mutually agreed upon and appointed by the Parties. For the avoidance of doubt, it is clarified that the Book Value shall not include cost of fixed assets to the extent funded by Capital Grant given by the ULB / C&DS, UPJN, Project Site and the Existing Assets.

“Change in Law” shall have the meaning ascribed thereto in Article 10;

“COD” means the commercial operations date of the Project on which the Construction Supervisor has issued the Provisional Completion Certificate or Completion Certificate in accordance with the provisions of Article 6.4(b).

“Completion Certificate” means the certificate issued by Construction Supervisor, certifying, inter alia, that the Concessionaire has developed, procured, constructed or provided all Project Facilities in accordance with this Agreement for implementing the Project.

“Concession” shall have the meaning ascribed thereto in Article 2.2.

“Concession Period” shall have the meaning ascribed thereto in Article 2.3.

“Conditions Precedent” shall have the meaning set forth in Article 3;

“**Consortium**” shall have the meaning set forth in the Recital F.

“**Consortium Member**” means a company specified in Recital F as a member of the Consortium.

“**C&DS, UPJN**” means the Construction and Design Services, Uttar Pradesh Jal Nigam.

“**Construction Period**” means the period beginning from the Appointed Date and ending on COD.

“**Construction Requirements**” shall mean the requirements in relation to construction / renovation/ up-gradation of the Project Facilities as set out in Schedule D.

“**Construction Supervisor**” means C&DS, UPJN appointed in accordance with Article 5 for supervising and monitoring compliance by the Concessionaire with the Construction Requirements relating to the Project Facilities including MSW Processing Facility and Landfill Facility as per the scope of work determined by the ULB/GoUP.

“**Construction Works**” means all construction, modifications, other works and things required to be undertaken by the Concessionaire in accordance with this Agreement.

“**Contractor**” means any Person with whom the Concessionaire has entered into/may enter into a contract relating to the execution of any works, provision of services and/or operation and maintenance of the Project.

“**Cure Period**” means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Party responsible for such breach or default and shall:

- (a) commence from the date on which a notice is delivered by one Party to the other Party asking the latter to cure the breach or default specified in such notice;
- (b) not relieve any Party from liability to pay penalty, payment or compensation under the provisions of this Agreement; and
- (c) not in any way be extended by any period of suspension under this Agreement;

provided that if the cure of any breach by the Concessionaire requires any reasonable action by the Concessionaire that must be approved by the ULB or the Construction Supervisor or the Independent Engineer hereunder, the applicable Cure Period shall be extended by the period taken by the ULB or the Construction Supervisor or the Independent Engineer to accord their approval.

“**Damages**” shall have the meaning set forth in Article 1.2;

“**Development Plan**” shall have the meaning ascribed to it in Article 3.3.1;

“**Dispute**” shall have the meaning set forth in Article 16;

“Dispute Resolution Procedure” means the procedure for resolution of Disputes set forth in Article 16;

“Drawings” shall mean all of the drawings, detailed designs, calculations and documents pertaining to the Project in accordance with the Construction Requirements and O&M Requirements.

“Effective Date” shall mean the date of signing of this Agreement by all the four Parties. It is agreed that this Agreement shall have no effect and implications against any Party unless this Agreement has been duly executed by all the four Parties mentioned herein.

“Emergency” means a condition or situation or event that is likely to endanger the security of individuals on or about the Project Facilities or which poses an immediate threat of material damage to the Project Facilities or which poses an immediate threat to the health and safety of the residents of the city of Gorakhpur/adjoining areas or which requires immediate attention or action by the ULB.

“Encumbrance” means any encumbrance such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other such obligations and shall include without limitation any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project, physical encumbrances and encroachments on the Project Facilities.

“Engineered Sanitary Landfill” shall mean the area within the Landfill Facility, designed with protective measures against pollution of ground water, surface water and air fugitive dust, windblown litter, bad odor, fire hazard, bird menace, pests or rodents, greenhouse gas emissions, slope instability and erosion, and utilized for disposal of Landfill Waste.

“Estimated MSW Generation” shall mean, the estimated daily MSW generated by the ULB, to be determined by the ULB at least one month before the commencement of every Financial Year, based on the average estimated waste generation in the ULB’s municipality area. In case of the first financial year of the Operation Period, the Estimated MSW Generation shall be 495 TPD for Gorakhpur ULB.

“Event of Default” shall have the meaning ascribed there to in Article 14.

“Existing Assets” shall mean the movable and immovable assets installed and / or put to use at the Project Site and handed over by the C&DS, UPJN / ULB to the Concessionaire on the Appointed Date which has been set out in Schedule C, exclusively for the purpose of implementing the Project;

“Financial Proposal” shall mean the financial offer given by the Selected Bidder / Consortium in response to the RFP released for the Project.

“Financial Assistance” means all funded and non-funded credit assistance including but not limited to loans, advances, lease assistance, letter of credit and guarantees required for the Project.

“Financial Close” means the date on which the Financing Agreements providing for Financial Assistance by the Lenders, equity documents and the documents in respect of debt, if any, committed by the Selected Bidder / Consortium have become effective and the Concessionaire has access to such Financial Assistance;

“Financial Default” means occurrence of a material breach of the terms and conditions of the Financing Agreements or a continuous default in debt service by the Concessionaire for a minimum period of 3 (three) months;

“Financial Plan” means the Financial Plan as envisaged under the Financing Agreement for financing the cost to be incurred for developing the Project submitted by the Concessionaire in accordance with Article 3;

“Financing Agreements” means the agreements executed by the Concessionaire in respect of Financial Assistance to be provided by the Lenders by way of loans, guarantees, subscription to non-convertible debentures and other debt instruments including loan agreements, guarantees, notes, debentures, bonds, indentures, other debt instruments, security agreements, and other documents relating to the financing (including refinancing) the debt component of the cost of the Project, and includes amendments or modifications made in accordance with Article 6.24;

“Financial Year” shall mean the period commencing from April 1 of any given year to March 31 of the succeeding year;

“Fit for Landfilling” shall have the meaning ascribed to it in Schedule E;

“Force Majeure” or **“Force Majeure Event”** shall have the meaning ascribed thereto in Article 12;

“Good Industry Practice” means the exercise of that degree of skill, diligence, prudence and foresight in compliance with the undertakings and obligations under this Agreement which would reasonably and ordinarily be expected from a skilled and experienced Person engaged in the implementation, operation and maintenance or supervision or monitoring thereof or any of them of a project of the type similar to that of the Project;

“GoI” means the Government of India;

“GoUP” means the Government of Uttar Pradesh;

“Government Agency” means GoI, GoUP, C&DS, UPJN, ULB or any state government or governmental department, commission, board, body, bureau, agency, authority, instrumentality, administrative body, central, state, or local, having jurisdiction over the Concessionaire, Project Site, Project thereon and the city of Gorakhpur, or any part thereof, or the performance of all or any of the services or obligations of the Concessionaire under or pursuant to this Agreement;

“Handback Requirements” shall have the meaning ascribed thereto in Article 15;

“Hazardous Wastes” shall have the meaning ascribed to it in the Hazardous Wastes (Management and Handling) Rules, 1989;

“Incoming Waste” shall mean the MSW generated within the municipal limits of the city of Gorakhpur including the surrounding municipalities and collected and transported by ULB or any Person appointed / engaged by the ULB for this purpose and delivered at the entry gate of the MSW Processing Site;

“Independent Engineer” means a reputed Person being a firm, company or a body corporate appointed in accordance with Article 5 for supervising and monitoring compliance by the Concessionaire with the Construction Requirements and O&M Requirements, more particularly to undertake, perform, carry out the duties, responsibilities, services and activities as set forth in Schedule G;

“Insurance Cover” means the aggregate of the maximum sums insured under the insurances taken out by the Concessionaire pursuant to Article 6.9 and when used in the context of any act or event, it shall mean the aggregate of the maximum sums insured and payable in relation to such act or event;

“Landfilling” shall mean disposal of the Landfill Waste in the Engineered Sanitary Landfill in accordance with the terms of this Agreement.

“Landfill Facility” means the Engineered Sanitary Landfill and associated facilities duly designed, built and commissioned by the Concessionaire in accordance with the provisions of the Agreement.

“Landfill Life” shall mean the period commencing from COD and expiring upon completion of activities as per O&M Requirements when the Engineered Sanitary Landfill is fully filled with Landfill Waste and a final cover designed in accordance with the MSW Rules is laid on the Engineered Sanitary Landfill and in accordance with the provisions of this Agreement.

“Landfill Site” shall mean part of the MSW Processing Site excluding the area on which MSW Processing Facility is located.

“Landfill Waste” shall mean the Residual Inert Matter, duly certified as Fit for Landfilling by the Independent Engineer in accordance with the O&M Requirements.

“Lenders” means financial institutions, banks, funds and trustees or bond holders or debenture holders, who provide funds to the Concessionaire for financing the debt component of the cost of the Project.

“MSW Processing Facility” shall mean the facilities for processing of Municipal Solid Waste duly designed, built and commissioned by the Concessionaire with composting as one of the processes in accordance with the provisions of the Agreement.

“MSW Processing Site” means the area of land measuring _____ acres located at _____ (as described in Schedule B) where the MSW Processing Facility and Landfill Facility are to be located and handed over to the Concessionaire by the ULB for the purpose of implementation of the Project.

“Management Control” means the possession, directly or indirectly of the power to direct or cause the direction of the management and policies of the Concessionaire, whether through the ownership of voting securities, by contract or otherwise or the power to elect or appoint more than 50% (fifty percent) of the directors or other individuals exercising similar authority with respect to the Concessionaire in accordance with the Companies Act.

“Material Adverse Effect” means a material adverse effect on (a) the ability of the Concessionaire to exercise any of its rights or perform/discharge any of its duties/obligations under and in accordance with the provisions of this Agreement and/or (b) the legality, validity, binding nature or enforceability of this Agreement.

“Material Breach” means a breach by any of the Party of any of its / their obligations under this Agreement which has or is likely to have a Material Adverse Effect on the Project and which such Party shall have failed to cure.

“Municipal Solid Waste” or “MSW” shall have the meaning ascribed thereto in the MSW Rules.

“MSW Manual” shall mean the Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Municipal Solid Waste Management, 2000 and includes any amendment thereto as in force.

“MSW Rules” shall mean the Municipal Solid Wastes (Management and Handling) Rules, 2000 and includes any amendment thereto as in force.

“Non-Biodegradable Substance” shall mean all substances including packaging material, metal, inerts, plastic, drain silt, street sweeping waste, clothing, rubber, paper products and construction debris excluding Bio-degradable Substance.

“Nominated Company” means a company selected by the Lenders’ Representative and proposed to the Authority for substituting the Concessionaire in accordance with the provisions of the Substitution Agreement;

“O&M Requirements” means the requirements as to operation and maintenance of the Project set forth in Schedule E.

“Operations Period” means the period commencing from COD and ending at the expiry or Termination of the Concession Agreement.

“Parties” means the parties to this Agreement and **“Party”** means any one of them, as the context may admit or require. In the context of a particular clause, it shall mean, the parties referred to in such clause.

“Performance Security” means the guarantee for the performance of its obligations, to be procured and submitted by the Concessionaire in accordance with Article 6.1.

“Person” means (unless otherwise specified or required by the context), any individual, company, corporation, partnership, joint venture, trust, unincorporated organization, government or Government Agency or any other legal entity.

“Post Closure Maintenance Plan” shall have the meaning ascribed thereto in Article 6.21;

“Post Closure Activities” shall mean the activities to be undertaken by the Concessionaire during the Post Closure Period in accordance with the provisions of **Schedule E**.

“Post Closure Period” shall mean the period commencing from the day immediately following the expiry of Landfill Life of the particular cell and ending on the fifteenth anniversary of the said day.

“Preliminary Notice” means the notice of intended Termination by the Party entitled to terminate this Agreement to the other Party setting out, inter alia, the underlying Event of Default.

“Processing” shall mean process by which MSW is transformed into new or recycled products including processes like composting, pelletisation or any other appropriate processes in accordance with relevant Applicable Laws.

“Project” shall mean the processing of Incoming Waste, dumping of Landfill Waste to Landfill Facility and design, financing, procurement, construction, operation, maintenance, expansion, upgradation and management of the Project Facilities in accordance with the provisions of this Agreement.

“Project Account” means an account which the Concessionaire shall open and maintain with a Bank in which all inflows and outflows of cash on account of capital and revenue receipts and expenditures, as the case may be, shall be credited and debited in accordance with the provisions of this Agreement, and includes the sub-accounts of such Project Account;

“Project Account Agreement” shall have the meaning set forth in Article 11.1.2;

“Project Account Default” shall have the meaning set forth in Schedule H;

“Project Agreements” means this Agreement, the Financing Agreements and all material agreements relating to the Project, and any other agreements or material contracts that may be entered into by the Concessionaire with any person in connection with matters relating to, arising out of or incidental to the Project, but does not include the Project Account Agreement and the Substitution Agreement;

“Project Facilities” shall mean the MSW Processing Facility, Landfill Facility together with the Project Site and Existing Assets and all other related facilities located thereon, and any other offsite facilities created for the Project.

“Project Site” collectively means the MSW Processing Site, Landfill Site and land for any other part of the Project Facilities to be provided by ULB, more fully described in Schedule A.

“Provisional Completion Certificate” means the Completion Certificate issued by Construction Supervisor pending completion of the Punch List items in accordance with Article 6.4.

“Punch List” shall have the meaning ascribed thereto in Article 6.4(b).

“Request for Proposals” or “RFP” shall have the meaning set forth in Recital F;

“Residual Inert Matter” shall mean the material left as residue after processing of Municipal Solid Waste and segregation and removal of the organic matter, compost or organic manure therefrom, either wholly or in part, and includes pre-processing rejects.

“Right of Way” means the constructive possession of the Site, together with all way leaves, easements, unrestricted access and other rights to use, howsoever described, necessary for development, financing, operation, maintenance and management of the Project in accordance with this Agreement;

“Rupees” or “Rs.” refers to the lawful currency of the Republic of India.

“SBI PLR” means the prime lending rate of the State Bank of India prevailing as on the date of a payment due from which the computation of interest is required to be made under the Agreement;

“Scheduled Project Completion Date” means 12 (twelve) calendar months from the Appointed Date including any extension thereof provided by the ULB.

“Statutory Auditors” means a reputed firm of chartered accountants acting as the statutory auditors of the Concessionaire under the provisions of the Companies Act, 1956 including any statutory modification or re-enactment thereof, for the time being in force;

“Substitution Agreement” means the agreement substantially in the form set out at Schedule I to be entered into amongst ULB, Lenders and the Concessionaire;

“Suspension” shall have the meaning ascribed to it in Article 13;

“Taxes” means any Indian taxes including excise duties, customs duties, value added tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, materials, equipment and services incorporated in and forming part of the Project charged, levied or imposed by any Government instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income;

“Termination” means termination of this Agreement pursuant to Termination Notice or otherwise in accordance with the provisions of this Agreement but shall not, unless the context otherwise requires, include the expiry of this Agreement due to efflux of time in the normal course.

“Termination Date” means the date specified in the Termination Notice as the date on which Termination occurs.

“Termination Notice” means the notice of Termination by either ULB or the Concessionaire to the other Party, in accordance with the applicable provisions of this Agreement.

“Tests” means the tests to be carried out in accordance with the Construction Requirements or O&M Requirements and “Testing” and “Tested” shall be construed accordingly.

"Tipping Fee" means the amount payable by ULB to the Concessionaire in accordance with Article 9. In case the Tipping fee is negative, the amount shall be receivable by ULB.

1.2 Interpretation

In this Agreement, unless the context otherwise requires,

- a. any reference to a statutory provision shall include such provision as is from time to time modified or re-enacted or consolidated so far as such modification or re-enactment or consolidation applies to, or is capable of being applied to any transactions entered into hereunder;
- b. references to Applicable Laws shall include the laws, acts, ordinances, rules, regulations, notifications, guidelines or bylaws which have the force of law;
- c. the words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal entity);
- d. the headings are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;
- e. the words "include" and "including" are to be construed without limitation;
- f. any reference to day, month or year shall mean a reference to a calendar day, calendar month or calendar year respectively;
- g. the Schedules to this Agreement form an integral part of this Agreement as though they were expressly set out in the body of this Agreement;
- h. any reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference;
- i. references to Recitals, Articles, Sub-articles, or Schedules in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Articles, Sub-articles, and Schedules of or to this Agreement;
- j. any agreement, consent, approval, authorization, notice, communication, information or report required under or pursuant to this Agreement from or by

any Party shall be valid and effectual only if it is in writing under the hands of duly authorized representative of such Party in this behalf and not otherwise;

- k. any reference to any period commencing “from” a specified day or date and “till” or “until” a specified day or date shall include both such days or dates;
- l. the damages payable by any of the Party to the other of them, as set forth in this Agreement, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Party entitled to receive the same and are not by way of penalty (the “**Damages**”).

1.3 Priority of agreements and errors/discrepancies

1.3.1 This Agreement, and all other agreements and documents forming part of this agreement are to be taken as mutually explanatory and, unless otherwise expressly provided elsewhere in this Agreement, the priority of this Agreement and other documents forming part hereof shall, in the event of any conflict or inconsistency between them, be in the following order:

- (a) this Agreement;
- (b) all documents forming part hereof;

i.e., the Agreement at (a) above shall prevail over documents at (b) above.

1.3.2 Subject to the provisions of Article [1.3.1], in case of ambiguities or discrepancies within this Agreement, the following shall apply:

- (a) between two or more Articles of this Agreement, the provisions of a specific Article relevant to the issue under consideration shall prevail over those in other Articles;
- (b) between the Articles of this Agreement and the Schedules, the Articles shall prevail and between Schedules and Annexures, the Schedules shall prevail;
- (c) between any two Schedules, the Schedule relevant to the issue shall prevail;
- (d) between the dimension scaled from the drawing and its specific written dimension, the latter shall prevail; and
- (e) between any value written in numerals and in words, the latter shall prevail.

ARTICLE 2

CONCESSION

2.1 Scope of Work for the Project

The scope of work of the Project (the “**Scope of Work**”) shall mean and include the provision of the following services and facilities within the Project Site, during the Concession Period by the Concessionaire:

- (a) Development, financing, construction and operation & maintenance of the MSW Processing Facility including segregation of MSW, having combination of technologies / systems with composting as one of the main processes and other processes such as Waste to Energy, Resource recycle facility, Refuse Derived Fuel (RDF), plastic / metal separation, inert processing, etc. which would maximize waste recycling/ treatment and ensure that the minimum quantity of Landfill Waste goes to the Landfill Facility in accordance with the Agreement;
- (b) Development, financing, construction and operation and maintenance of the Landfill Facility;
- (c) Expansion and upgradation of the Project Facilities;
- (d) Post Closure Activities of Landfill Facility;
- (e) Augmentation of capacity and provision of ancillary facilities required for implementation of the Project during the Concession Period.
- (f) Deployment of adequate and qualified manpower for procurement /construction, operation, maintenance and management of the Project;
- (g) Procure and/or provide any other support services and facilities required for the Project; and
- (h) Performance and fulfilment of all the obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

During the Concession Period, the Concessionaire shall ensure that all Incoming Waste is segregated, processed and disposed in accordance with Applicable Laws and in accordance with this Agreement.

Primary / secondary collection, primary storage and transportation of MSW to the MSW Processing Facility Gate and street sweeping shall be the responsibility of the ULB.

2.2 Grant of Concession

Subject to and in accordance with the terms, conditions and covenants set forth in this Agreement the Applicable Laws and the Applicable Permits, the ULB hereby

- (i) agrees to hand over to the Concessionaire the possession of the Project Site including the Existing Assets, set forth herein including the exclusive right, licence and permission during the subsistence of this Agreement for the

- (ii) specific and limited purposes of developing the Project; grants to the Concessionaire the exclusive right to develop, finance, operate, maintain and manage the Project; and
- (iii) grants and authorises the Concessionaire to
 - (a) process the Incoming Waste and dump the Landfill Waste at the Landfill Facility;
 - (b) design, engineer, procure, finance, modify, construct, expand, operate, maintain and transfer the Project Facilities; and
 - (c) exercise and/or enjoy the rights, powers, benefits, privileges, authorizations and entitlements as set forth in this Agreement

(hereinafter collectively referred to as “**the Concession**”).

2.3 Concession Period

The Concession hereby granted is for a period of 30 (thirty) years from the Appointed Date or until earlier termination thereof in accordance with the terms of this Agreement (“**Concession Period**”).

Provided that in the event of Termination, the Concession Period shall mean and be limited to the period commencing from the Appointed Date and ending with the Termination Date.

2.4 Exclusivity of the Concession

Without prejudice to the rights of the ULB under this Agreement to take appropriate steps, the Concessionaire shall be the sole and exclusive person entitled to undertake the Project at the Project Site and ULB agrees that no agreement or arrangement permitting the activities as per the Scope of Work for the Project covered under this Agreement by any other party shall be entered into by the ULB during the Concession Period. However, in case of any increase in the Incoming Waste beyond 140% of the installed capacity of the MSW Processing Facility, the ULB shall be entitled to set up a similar facility by inviting bids from other operators subject to providing first right of refusal (FROF) to the Concessionaire to set up such additional facility. The Concessionaire, if agrees to exercise the FROF, shall accept the same in writing within 15 days of offering of such right by the ULB, failing which the ULB shall be entitled to select the developer for such additional Incoming Waste by following a process as may be deemed appropriate by it, without facing any objection and/or hindrance from the Concessionaire. If the Concessionaire conveys its acceptance and agrees to set up similar facility pursuant to exercising FROF, the same shall be set up in accordance with the procedure as laid down herein or any additional terms and conditions as may be laid down by ULB at that point of time. However, in case of such additional facility being set up, the ULB shall still be bound to fulfill its obligations first towards the MSW Processing Facility as defined herein, before sending the MSW to any new facility.

2.5 Acceptance of the Concession

In consideration of the rights, privileges and benefits conferred upon the Concessionaire by ULB and other good and valuable consideration expressed herein, the Concessionaire hereby accepts the Concession and agrees and undertakes to implement the Project and perform/discharge all its obligations in accordance with the provisions hereof.

ARTICLE 3

CONDITIONS PRECEDENT

3.1 Conditions Precedent

Save and except as expressly provided in Articles 3, 4, 6.1, 12, 16 and 22 the respective rights and obligations of the Parties under this Agreement and the grant of Concession shall be subject to the satisfaction in full of the conditions precedent specified in Article 3.2 and Article 3.3 (the “**Conditions Precedent**”).

3.2 Conditions Precedent for Concessionaire

3.2.1 The Concessionaire within a period of [120] [(one hundred twenty)] days from the Effective Date fulfil the following conditions to the satisfaction of the Construction Supervisor and ULB and deliver to the Construction Supervisor appropriate documentary support to confirm that these conditions have been fulfilled:

- (a) deliver to the Construction Supervisor, a legal opinion from the legal counsel of the Concessionaire with respect to the authority of the Concessionaire to enter into this Agreement and the enforceability of the provisions thereof and to confirm that the obligations of the Concessionaire under this Agreement are not in contradiction with the provisions of its Memorandum and Articles of Association and any other agreement to which it is party;
- (b) furnish the copies (certified as true copies by a director of the Concessionaire) of its Memorandum and Articles of Association, duly modified to incorporate the necessary provisions of this Agreement, and the agreement, if any between its shareholders/members of the Consortium;
- (c) furnish all resolutions adopted by the Board of Directors of the Concessionaire (certified as true copies by a director of the Concessionaire) taking note of the RFP and authorizing the execution, delivery and performance by the Concessionaire of each of the Project Agreements;
- (d) furnish a certificate of the Statutory Auditors certifying the shareholding pattern of the Concessionaire;
- (e) furnish the Performance Security as stipulated in Article 6.1;
- (f) furnish atleast 5 (five) copies of its Financial Plan and Financing Agreements for the Project and demonstrate Financial Close. Provided, Financial Close shall be deemed to be achieved if the only condition pending for achievement of Financial Close are those which are required to be fulfilled by the ULB under Article 6.24.2 hereunder;
- (g) furnish atleast 5 (five) copies of its Development Plan including the Drawings for the Project. The Concessionaire shall at its cost, prepare the Development

Plan in conformity with the Scope of Work. The Development Plan shall inter-alia provide:

- (i) Plan for development, operation, maintenance and management of the Project.
- (ii) Detailed break-up of Project Cost in accordance with Good Engineering Practices basing them primarily on UPPWD Rates, CPWD Rates, fully justified market rates and supported with Quotations).
- (iii) Details of capital investment proposed against the Capital Grant being made available to the Concessionaire for development of the Project.
- (iv) Details of additional investment to be made by the Concessionaire for development of MSW Processing Facility and Landfill Facility along with detailed BoQ.
- (v) Details of MSW processing and landfilling technology proposed to be adopted by the Concessionaire for the Project
- (vi) Details of equipment to be procured, erected and installed at the Project Facilities
- (vii) PERT / Gantt chart for development of the Project

In addition to the above, the Concessionaire may be required to provide any further information as may be reasonably required by the Construction Supervisor / ULB.

- (h) apply / obtain Applicable Permits as may be required for development of the Project;
- (i) executed and procured execution of the Project Account Agreement and opened the Project Account;
- (a) executed and procured execution of the Substitution Agreement;
- (j) procured and furnished the following confirmations, in original, from the Selected Bidder/ members of Consortium:
 - (i) it / they shall at all times comply with the provisions of Article 6.20 in respect of their shareholding in the Concessionaire;
 - (ii) it / they has / have the financial standing and resources to fund / raise finances for undertaking and implementing the Project in accordance with this Agreement;

- (iii) the Selected Bidder is / each of the member of the Consortium is duly organized and validly existing under the laws of the jurisdiction of its incorporation, and has requested the ULB and C&DS, UPJN to enter into this Agreement with the Concessionaire and has agreed to and unconditionally accepted the terms and conditions set forth in this Agreement;

3.2.2 Upon written request of the Concessionaire, the Construction Supervisor in consultation with the ULB may, in its discretion, waive any of the Conditions Precedent set forth in this Article fully or partially and/or grant additional time for fulfilment of any or all of the Conditions Precedent set forth in Article [3.2.1] and the Concessionaire shall be bound to ensure compliance within such additional time as may be specified by the Construction Supervisor

3.3 Approval of Development Plan and Drawings

3.3.1 The Concessionaire shall within 60 (sixty) days of the Effective Date, submit to the Construction Supervisor and ULB for their review and approval, a plan (“**Development Plan**”) and Drawings in conformity with the Scope of Work, Construction Requirements and O&M Requirements.

3.3.2 Within 30 (thirty) days of receipt of the Development Plan and Drawings, the Construction Supervisor shall review the same taking into account, inter-alia, comments of the ULB, if any, thereon, and convey its comments/ observations to the Concessionaire on the Development Plan and Drawings, including the need, if any, to modify the same. If the comments/ observations of the Construction Supervisor / ULB require the Development Plan and / or Drawings to be modified, the Concessionaire shall promptly and without any undue delay revise and resubmit the Development Plan and/or Drawings or satisfy the Construction Supervisor with regards to its compliance. The Construction Supervisor shall give its observations and comments, if any, within 15 (fifteen) days of receipt of such revised Development Plan and / or revised Drawings, which shall be taken into account by the Concessionaire while finalizing the Development Plan and Drawings

3.3.3 If, within the period stipulated in the preceding Article 3.3.2, the Construction Supervisor does not respond to the Development Plan / Drawings submitted to it by the Concessionaire, the Concessionaire shall be entitled to proceed with the Project on the basis of such Development Plan and /or Drawings submitted by it to the Construction Supervisor, and intimate the same to ULB and Construction Supervisor. The same should also be highlighted in the periodic reporting by the Concessionaire.

3.3.4 The Concessionaire shall not change the Development Plan and Drawings reviewed and approved by the Construction Supervisor under this Agreement, without submitting such revised Development Plan and Drawings for the review of the Construction Supervisor.

3.3.5 The Concessionaire shall not be entitled to any extension of time for developing the Project or any other relief on account of delay caused due to providing any

clarification or in resubmitting the Development Plan unless otherwise agreed by the Construction Supervisor and ULB.

- 3.3.6 Notwithstanding the review by the Construction Supervisor and / or ULB, the Concessionaire shall be solely responsible for any defect and/or deficiency in the Development Plan and / or Drawings relating to the Project or any part thereof and accordingly the Concessionaire shall at all times remain responsible for its obligations under this Agreement. Approval of the Development Plan by the Construction Supervisor and / or ULB shall not entitle the Concessionaire to raise any claim for any additional payment from Construction Supervisor and / or ULB.
- 3.3.7 The Concessionaire shall in no way represent to any Person that, as a result of any review by the Construction Supervisor and / or ULB, the ULB and the Construction Supervisor have accepted responsibility for the technical or soundness of any work relating to the Project Facilities or part thereof carried out by the Concessionaire and the Concessionaire shall, in accordance with the provisions of this Agreement, be solely responsible for the technical feasibility, operational capability and reliability of the Project Facilities or any part thereof.
- 3.3.8 The Concessionaire shall be responsible for delays in meeting the Construction Requirements caused by reason of any Drawings not being in conformity with the Construction Requirements, and shall not be entitled to seek any relief in that regard from Construction Supervisor / ULB.
- 3.3.9 The Concessionaire shall also in consultation with the Construction Supervisor finalize an implementation schedule for the Construction Works.

3.4 Conditions Precedent for ULB

- 3.4.1 The ULB shall within a period of [15] [(fifteen)] days from the date of fulfilment of Conditions Precedent by the Concessionaire as stipulated in Article 3.2 to the satisfaction of the Construction Supervisor including approval of Development Plan and Drawings by the Construction Supervisor as stipulated in Article 3.3 or any extended time mutually agreed with the Concessionaire, hand over vacant and peaceful possession of the Project Site and Existing Assets, free from all Encumbrances to the Concessionaire in accordance with Article 4. The ULB shall be deemed to have fulfilled its Conditions Precedent on the earlier of (i) on expiry of seven business days from the date when the ULB has offered to hand over the Project Site and Existing Assets to the Concessionaire; (ii) when the Concessionaire has taken over the possession of the Project Site and Existing Assets from the ULB.
- 3.5 All Parties shall make all reasonable endeavors to satisfy the Conditions Precedent within the time stipulated and shall provide the other Parties with such reasonable cooperation as may be required to assist that Party in satisfying the Conditions Precedent for which that Party is responsible.
- 3.6 The Parties shall notify each other in writing at least once a month on the progress made in satisfying the Conditions Precedent. Each Party shall promptly inform the

other Party(ies) when any Conditions Precedent for which it is responsible has been satisfied.

3.7 Consequences of delay / default

- 3.7.1 In the event that (i) the Concessionaire does not fulfil any or all of the Conditions Precedent set forth in Article 3.2 and 3.3 within the period specified (including the extended time, if any) in respect thereof, and (ii) the delay has not occurred as a result of material breach of this Agreement by the Construction Supervisor and / or ULB or due to Force Majeure, the Concessionaire shall be liable to pay to the ULB damages in a sum calculated as [0.1] % of the amount of Performance Security for each day of delay until the fulfillment of the Conditions Precedent subject to a maximum of 10 % (ten) per cent of the Performance Security as per Article 6.1.
- 3.7.2 In the event that the Conditions Precedents are not complied with within the time (including the extended time, if any) in terms of the aforesaid Articles 3.1 to 3.3, this Agreement shall be liable to be terminated. If such termination is on account of failure of the Concessionaire to comply with the Conditions Precedent, the Bid Security shall stand forfeited and in addition the Concessionaire shall be liable to pay damages as provided in Article 3.7.1, however the Construction Supervisor shall be obliged to return the Performance Security upon receiving the said damages. If such termination is on account of failure of the Construction Supervisor and / or ULB, the Construction Supervisor shall be obliged to return the Bid Security/ Performance Security. It is clarified that except for the payment as stipulated in the foregoing Article 3.7.1 and forfeiture in this Article, any of the Party hereto shall have no claims against the other for costs, damages, compensation or otherwise.(For the avoidance of doubt it is expressly agreed that if the Bid Security has been substituted by Performance Security, the Construction Supervisor shall be entitled to encash therefrom an amount equal to Bid Security)

ARTICLE 4

RIGHT OF WAY

4.1 The Project Site

4.1.1 The site of the Project shall comprise of land described in Schedule-A and in respect of which the Right of Way shall be provided and granted by ULB to the Concessionaire as a licensee under and in accordance with this Agreement (the “**Project Site**”). In addition, ULB shall also provide and grant the Concessionaire the exclusive right to use the Existing Assets. It is made clear that the Concessionaire shall only have the rights of licensee i.e. right to use the Project Site and the Existing Assets for development of the Project under this Agreement and no right, title or interest in the Project Site and the Existing Assets are transferred or to be transferred in favour of Concessionaire under any circumstance.

4.2 Licence, access and Right of Way on Project Site and Existing Assets

4.2.1 The ULB hereby grants to the Concessionaire, access to the Project Site and the Existing Assets for carrying out its obligations under this Agreement, it being expressly agreed and understood that the ULB and / or C&DS, UPJN shall have no liability whatsoever in respect of any obligations being carried out or work undertaken by the Concessionaire on or about the Project Site and the Existing Assets pursuant hereto in the event of Termination or otherwise.

4.2.2 In consideration of the diverse obligations, undertakings and covenants of the Concessionaire herein contained, the ULB, in accordance with the terms and conditions set forth herein, hereby grants to the Concessionaire, commencing from the Appointed Date, leave, licence and right to use in respect of the Project Site and the Existing Assets which is described, delineated and shown in Schedule A and Schedule C respectively hereto, on an “as is where is” basis, free of any Encumbrances, to develop, finance, operate and maintain the Project, together with all and singular rights, liberties, privileges, easements and appurtenances whatsoever to the said Project Site and the Existing Assets, hereditaments or premises or any part thereof belonging to or in anyway appurtenant thereto or enjoyed therewith, for the duration of the Concession Period and, for the purposes permitted under this Agreement, and for no other purpose whatsoever.

4.2.3 The licence, access and Right of Way granted by this Agreement to the Concessionaire shall always be subject to existing rights of way and the Concessionaire shall perform its obligations as specified in this Agreement.

4.2.4 It is expressly agreed that the licence granted hereunder shall terminate automatically and forthwith, without the need for any action to be taken by the ULB to terminate the licence, upon the Termination of this Agreement for any reason whatsoever.

4.2.5 The Concessionaire hereby irrevocably appoints the ULB (or its nominee) to be its true and lawful attorney, to execute and sign in the name of the Concessionaire a transfer or surrender of the licensee right granted hereunder at any time after the

Concession Period has expired or has been terminated earlier in terms hereof, a sufficient proof of which will be the declaration of any duly authorised officer of the ULB, and the Concessionaire consents to it being registered for this purpose.

4.2.6 It is expressly agreed that:

- (i) trees on the Project Site are property of the ULB except that the Concessionaire shall be entitled to exercise usufructuary rights thereon during the Concession Period.
- (ii) any archaeological discoveries shall belong to and vest in the ULB and the Concessionaire shall promptly report the discovery thereof to the ULB with a copy to the Construction Supervisor and follow its instructions for safe removal thereof; and
- (iii) mining rights do not form part of the licence granted to the Concessionaire under this Agreement and the Concessionaire hereby acknowledges that it shall not have any mining rights or any interest in the underlying minerals or fossils on or under the Project Site.

4.2.7 The Project Facilities including the Project Site and the Existing Assets are and shall continue to be the property of ULB.

4.2.8 Notwithstanding any of the provisions of this Agreement, ULB shall have the right to put up advertisements on the Project Facilities and retain any and all revenue generated from such activity. The Concessionaire shall provide full support/cooperation to the ULB in the same. For avoidance of doubt, it is clarified that the Concessionaire shall have no rights to display any advertisement on the Project Facilities or part thereof.

4.3 Procurement of the Project Site

4.3.1 The representatives of Construction Supervisor and / or ULB and the Concessionaire shall, on a mutually agreed date and time, inspect the Project Site and Existing Assets and prepare a memorandum containing an inventory of the Project Site and Existing Assets including the vacant and unencumbered land, buildings, any structure, civil structure, roads, plant & machinery, utilities, trees and any other immovable property on or attached to the Project Site. Such memorandum shall have appended thereto an appendix (the "Appendix"). Signing of the memorandum, in three counterparts (each of which shall constitute an original), by the authorised representatives of the ULB, Construction Supervisor and the Concessionaire shall be deemed to constitute a valid licence and Right of Way to the Concessionaire for free and unrestricted use of the vacant and unencumbered Project Site and the Existing Assets during the Concession Period under and in accordance with the provisions of this Agreement and for no other purpose whatsoever. For the avoidance of doubt, it is agreed that valid licence and Right of Way with respect to the parts of the Project Site and the Existing Assets as set forth in the Schedule A and Schedule C respectively shall be deemed to have been granted to the Concessionaire upon vacant access thereto being provided by the ULB to the Concessionaire.

4.3.2 The Concessionaire shall not, use the Project Facilities including the Project Site for any purpose other than to fulfil its obligations under this Agreement and for purposes incidental or ancillary thereto.

4.3.3 The Concessionaire shall in consultation with the Construction Supervisor / ULB prepare an implementation plan for various components to be established on the Project Site and the Existing Assets, which may be required to be used/ accessed by the ULB during the Construction Period and require access by the Concessionaire for fulfilling its obligations under this Agreement.

4.4 Modification to the Existing Assets

4.4.1 The Concessionaire may modify the Existing Assets for efficiently operating and maintaining the MSW Processing Facility and Landfill Facility and/or for complying with any statutory requirements from time to time.

4.4.2 The right, title, interest and ownership of such modification / addition to the Existing Assets shall vest with the ULB and the Concessionaire shall not claim any title, interest, ownership and compensation towards the said modification /addition. Any modification / alteration/ additions shall be undertaken only after the written approval has been granted by the Construction Supervisor.

4.5 Limitation of Liability Relating to Existing Assets within the Project Site

4.5.1 Notwithstanding any of the provisions of this Agreement and subject to anything specifically excluded herein, the Parties hereby agree that, the Project Site and the Existing Assets shall be handed over to the Concessionaire on an “as-is-where-is” basis. The ULB and /or the Construction Supervisor shall, after the Appointed Date have no liability in relation to the any asset forming part of the Project Site and the Existing Assets to the Concessionaire. Further, the ULB and /or the Construction Supervisor shall have no fiscal liability towards the Concessionaire nor shall it be liable for any losses caused to the Concessionaire or its contractors or any other third party arising from or relating to the Project Site / Existing Assets and the implementation of the Project.

4.6 Project Site to be free from Encumbrances

4.6.1 Subject to the provisions of Article 4.3, the Project Site and the Existing Assets shall be made available by the ULB and /or the Construction Supervisor to the Concessionaire pursuant hereto free from all Encumbrances and occupations and without the Concessionaire being required to make any payment to the ULB and the Construction Supervisor on account of any costs, compensation, expenses and charges for acquisition and use of such Project Site and the Existing Assets for the duration of the Concession Period, except insofar as otherwise expressly provided in this Agreement. For the avoidance of doubt, it is agreed that existing rights of way, easements, privileges, liberties and appurtenances to the Project Site and the Existing Assets shall not be deemed to be Encumbrances. It is further agreed that the

Concessionaire accepts and undertakes to bear any and all risks arising out of the inadequacy and physical condition of the Project Site and / or the Existing Assets.

4.7 Protection of Project Facilities from encroachments

4.7.1 During the Concession Period, the Concessionaire shall protect the Project Facilities including the Project Site and the Existing Assets from any and all occupations, encroachments or Encumbrances, and shall not place or create nor permit any contractor or other person claiming through or under the Concessionaire to place or create any Encumbrance or security interest over all or any part of the Project Site or the Project Facilities, or on any rights of the Concessionaire therein or under this Agreement, save and except as otherwise expressly set forth in this Agreement. In the event of any encroachment or occupation on any part thereof on the Project Facilities, the Concessionaire shall report such encroachment or occupation forthwith to the ULB and / or Construction Supervisor, as the case may be and undertake its removal at its own cost and expenses.

4.8 Access to the ULB

4.8.1 The licence, Right of Way and right to the Project Site and the Existing Assets granted to the Concessionaire hereunder shall always be subject to the right of access of the ULB's employees, agents and representatives for inspection, viewing and exercise of their rights and performance of their obligations under this Agreement.

4.8.2 The Concessionaire shall allow access to and use of the Project Site for laying/ installing/ maintaining telegraph lines, electric lines or for such other public purposes as ULB may specify / require from time to time.

4.8.3 Provided that such access or use shall not result in a Material Adverse Effect and that ULB shall, in the event of any physical damage to the Project Facilities on account thereof, ensure that the Project Facilities are promptly restored at its own cost and expenses.

4.8.4 Provided further, that to the extent such access and use allowed by the Concessionaire affects the performance of any of its obligations hereunder, the Concessionaire shall not be deemed or construed to be in breach of its obligations nor shall it incur/suffer any liability on account thereof.

4.9 Peaceful Possession

4.9.1 ULB hereby represents and warrants that:

- (a) The Project Site and the Existing Assets
 - (i) have been acquired through the due process of law; or
 - (ii) belongs to or has been leased to or is vested in ULB,

and that ULB has full powers to hold, dispose of and deal with the same consistent, inter-alia, with the provisions of this Agreement and that the

Concessionaire shall, have no liability regarding any compensation payment on account of land acquisition or rehabilitation/resettlement of any Persons affected directly and/or indirectly thereby or any claim that any third party may have on any of the Existing Assets as provided by the ULB.

- 4.9.2 Upon the Concessionaire observing and performing its obligations, the several covenants, conditions and agreements herein contained and on the part of the Concessionaire to be observed and performed, the Concessionaire shall remain in peaceful possession and enjoyment of the Project Site and / or the Existing Assets during the Concession Period. In the event the Concessionaire is obstructed by any Person claiming any right, title or interest in or over the Project Site and / or the Existing Assets or any part thereof or in the event of any enforcement action including any attachment, distraint, appointment of receiver or liquidator being initiated by any Person claiming to have any interest in/ charge on the Project Site and / or the Existing Assets or any part thereof, the ULB and / or the Construction Supervisor, as the case may be shall, if called upon by the Concessionaire, defend such claims and proceedings at its cost and expense and the Concessionaire shall not be liable for the same in any manner whatsoever.
- 4.9.3 The ULB shall bear all the costs of making available the Project Site and the Existing Assets to the Concessionaire and be liable to remove/relocate at its cost all Persons that may have to be displaced from the Project Site, including the payment of compensation, if any, to such Persons and the Concessionaire shall not be liable in this behalf.

ARTICLE 5

CONSTRUCTION SUPERVISOR AND INDEPENDENT ENGINEER

5.1 Construction Supervisor and Independent Engineer

- (a) The Construction Supervisor and Independent Engineer shall be appointed for the Project.

Provided that in the event Independent Engineer is not appointed by ULB during the Concession Period, then all the roles/ duties/ responsibilities of Independent Engineer as defined in this Agreement shall be undertaken by the ULB on its own.

- (b) The role of the Construction Supervisor shall be as per the provisions of this Agreement and that of Independent Engineer has been detailed in Schedule G. Their respective scope of work are briefly outlined below :

Scope of Construction Supervisor	Scope of Independent Engineer
Review/ oversee the design and supervision of construction / procurement of the Project Facilities including MSW Processing Facility and Landfill Facility until 6 (six) months after the COD. The scope of work will also include processing of claims and payment of the Capital Grant, receiving Performance Security and other related activities as per this Agreement on behalf of the ULB.	Review/ oversee/ supervision of the operation and maintenance of the Project for the entire Concession Period.

5.2 Construction Supervisor

- (a) ULB and the Concessionaire hereby agree that C&DS, UPJN, shall be appointed as the Construction Supervisor for the Project.
- (b) The role and scope of work of C&DS, UPJN and its rights and obligations under this Agreement shall be limited to the role of Construction Supervisor for the Project.
- (c) The term of appointment of the Construction Supervisor shall be limited to the period commencing from the Appointed Date until 6 (six) months after the COD.
- (d) C&DS, UPJN shall not have any role / obligations in the Project subsequent to the period as specified in Article 5.2 (c) above and thereafter it will no longer remain a Party to the Agreement for any other matter except for any rights and

obligations accruing as Construction Supervisor prior to this event and will automatically be substituted by ULB for all future purposes.

- (e) All fees, costs, charges and expenses payable to the Construction Supervisor in accordance with the terms of its appointment shall be borne by the ULB/GoUP. It is clarified that the Concessionaire shall not be responsible for any fees, costs, charges and expenses payable to the Construction Supervisor.

5.3 Procedure for Appointment of Independent Engineer

- (a) ULB shall appoint an Independent Engineer on a fulltime basis for the Project for the Operations Period. ULB shall endeavor to complete the process of appointment of the Independent Engineer atleast 45 (forty five) days before the COD.
- (b) The initial term of the Independent Engineer may extend upto 3 (three) years. On expiry or termination of the aforesaid term, the ULB may in its discretion renew the appointment, or appoint another firm to be the Independent Engineer for another term of 3 (three) years, and such procedure shall be repeated after expiry of each appointment for the duration of the Concession Period

5.4 Payments to Independent Engineer

All fees, costs, charges and expenses payable to the Independent Engineer in accordance with the terms of its appointment (collectively "**the Remuneration**") shall be paid by the ULB and shall be reimbursed by the Concessionaire within one (1) week after the claim for the same being raised by ULB on the Concessionaire. ULB has a right to deduct the amount due towards this from the Tipping Fee payable to the Concessionaire subject to Concessionaire remaining liable and making the payment towards any outstanding on this account.

5.5 Site Office for Independent Engineer and Construction Supervisor

The Concessionaire shall, during the Concession Period provide and maintain a reasonably furnished site office accommodation for the representatives of Independent Engineer/ Construction Supervisor and / or ULB, at the MSW Processing Site. Such a site office shall have work stations including heating and cooling equipment and toilet facilities. All expenses / charges in respect of maintenance of the site office, electricity and power charges shall be borne by the Concessionaire.

ARTICLE 6

CONCESSIONAIRE'S OBLIGATIONS

In addition to and not in derogation or substitution of any of its other obligations under this Agreement, the Concessionaire shall have the following obligations:

6.1. Performance Security

- (a) The Concessionaire shall, for the due and punctual performance of its obligations relating to the Project, deliver to C&DS, UPJN, prior to / simultaneous with the execution of this Agreement, a bank guarantee substantially in the format provided in the Schedule J from a Bank as defined above, ("Performance Security") for a sum of Rs..... Lakhs (Rupees only)¹valid initially for a period of 24 (twenty four) months from the date of submission of Performance Security. The Performance Security shall be kept valid by the Concessionaire throughout the Concession Period by renewal or otherwise
- (b) The Performance Security in favour of C&DS, UPJN shall be kept valid by the Concessionaire for a period of 6 (six) months after the date of COD. Upon expiry of the 6 (six) months after the date of COD, the Concessionaire shall execute and deliver fresh Performance Security as per the requirements outlined in Article 6.1.(a) in favour of ULB and keep the Performance Security valid throughout the Concession Period by renewal or otherwise. Upon the Concessionaire furnishing the fresh Performance Security to ULB, C&DS, UPJN shall return the Performance Security issued in its favour within 30 days subject to C&DS, UPJN's right to receive or recover amounts, if any, due from the Concessionaire under this Agreement,
- (c) Subsequent to the completion of 1 (one) calendar year from the COD, the Concessionaire shall submit and maintain an additional performance security by way of a bank guarantee, issued by a Bank as defined above ("Additional Performance Security") of an amount equivalent to the 10% of the total Tipping Fee payable for a year to the Concessionaire, which shall be calculated based on the Tipping Fee payable during the immediately preceding calendar year. The amount of the Additional Performance Security shall be computed on an annual basis for the incremental amount and kept valid by the Concessionaire throughout the Concession Period plus Post Closure Period by renewal or otherwise. The Additional Performance Security shall be submitted to the ULB, within 30 days of the commencement of each operations and maintenance year.

¹ 5% of the Total Project Cost (Including Concessionaire's part of investment)

Provided that if the Agreement is terminated due to any event other than a Concessionaire Event of Default, the Performance Security if subsisting as of the Termination Date shall, subject to the ULB's right to receive or recover amounts, if any, due from the Concessionaire under this Agreement, be duly discharged and released to the Concessionaire.

- (d) In case, the Performance Security and / or Additional Performance Security have been invoked in part or full in accordance with the terms of this Agreement, the Concessionaire undertakes to forthwith furnish a top up guarantee or replenish the Performance Security and / or Additional Performance Security in the manner such that the aggregate value of the performance guarantee equals the original value of Performance Security and / or Additional Performance Security as per Article 6.1 (a) and (d) above

6.2. Applicable Permits

The Concessionaire shall in respect of the Project, procure the Applicable Permits and be in compliance thereof at all times during the Concession Period.

In case the Concessionaire establishes the MSW processing facilities with Waste to Energy technology, the Concessionaire shall also be sole responsible for making all applications, execution of all agreements including power purchase agreements, obtaining approvals from the concerned competent authorities and /or electricity regulatory commissions etc.

With a view to facilitate the implementation of the Project, the C&DS, UPJN on behalf of the ULB has already approached Uttar Pradesh Pollution Control Board (UPPCB), for obtaining the requisite clearance for implementation of the Project and has obtained the same. It is however clarified that the Concessionaire shall be solely responsible for obtaining, maintaining and renewing such clearances in the beginning and from time to time for the duration of the Concession Period. Concessionaire shall provide to UPPCB all the required information and documents that may be required to grant/renew the pollution clearance permission(s) /certificate in its name.

6.3. Financing Arrangement

The Concessionaire shall at its cost, expenses and risk make all such financing arrangements as would be necessary to implement the Project and to meet all of its obligations under this Agreement, in a timely manner.

6.4. Project Implementation

(a) Construction Works

- (i) No Construction Works shall begin until the Construction Supervisor has assumed charge.
- (ii) The Concessionaire shall adhere to the Construction Requirements and achieve COD on or before the Scheduled Project Completion Date.

Provided that, on the written request by the Concessionaire for extension of Scheduled Project Completion Date due to reasons solely attributable to the Concessionaire, Construction Supervisor / ULB may consider such a request, subject to the Concessionaire agreeing to pay an amount of 0.5% of the Capital Grant per week of extension as liquidated damages. However, such extension shall in no case exceed 90 (ninety) days from Scheduled Project Completion Date. In order to ensure good progress of the works to achieve the Scheduled Project Completion Date as prescribed in this Agreement, the Concessionaire shall be bound to complete one fourth of the whole of the works before one fourth of the whole time allowed for construction under this Agreement has elapsed, one half of the works before one half of such time has elapsed and three fourth of such work before three fourth time as elapsed. In the event of the Concessionaire failing to comply with this condition he shall still be liable to pay as compensation the liquidated damages as mentioned above. In the event Concessionaire is not able to achieve COD within such extended period, it shall be treated as a Concessionaire Event of Default.

- (iii) The Concessionaire may undertake Construction Works by itself or through a Contractor possessing requisite technical, financial and managerial expertise/ capability; but in either case, the Concessionaire shall remain solely responsible to meet the Construction Requirements.

Prior to commencement of construction, renovation/ repair of any of the Project Facilities, the Concessionaire shall have obtained all such Applicable Permits as are necessary to commence construction/ renovation/ repair of such facilities.

- (iv) The Concessionaire shall, during the Construction Period be well organized and designate and appoint suitable officers/ representatives as it may deem appropriate to supervise the Project, to deal with the Construction Supervisor/ ULB and to be responsible for all necessary exchange of information required pursuant to this Agreement;

(b) Completion Certificate and Provisional Completion Certificate

- (i) The Concessionaire shall carry out all necessary and periodical Tests under the supervision of the Construction Supervisor, for the purposes of determining that the Construction Works are being undertaken in accordance with the Construction Requirements. The Concessionaire shall maintain proper record of such Tests and the remedial measures taken to cure the defects or deficiencies, if any, indicated by the Test results.
- (ii) If the Tests are successful and the Project Facilities can be safely and reliably operated, the Construction Supervisor shall issue within 10

days the Completion Certificate for Project Facilities including the MSW Processing Facility and, Landfill Facility.

Provided, notwithstanding that certain works or things forming part of Construction Works are not complete, if following Tests, the Construction Supervisor determines that the Project Facilities including MSW Processing Facility and, Landfill Facility can be safely and reliably operated, the Construction Supervisor may issue Provisional Completion Certificate for them to the Concessionaire. The Provisional Completion Certificate shall have appended thereto a list of outstanding items ("**Punch List**"). All Punch List items shall be completed by the Concessionaire within such time as may be determined by the Construction Supervisor not exceeding 3 (three) weeks of the date of issue of the Provisional Completion Certificate or such time as may be prescribed by the Construction Supervisor in consultation with the ULB. Upon satisfactory completion of all Punch List items, the Construction Supervisor shall promptly and in any case within 7 (seven) days thereof, issue Completion Certificate.

- (iii) If the Concessionaire fails to complete the Punch List items within the said period as prescribed in Article 6.4 (b) (ii) above, the Construction Supervisor / ULB may, without prejudice to any other rights or remedy available to it under this Agreement, have such items completed at the risk and costs of the Concessionaire. The cost incurred by Construction Supervisor/ ULB in completing the Punch List items, as certified by them shall be reimbursed by the Concessionaire to Construction Supervisor and / or ULB, as the case may be within 7 (seven) days from the date of receipt of a claim in respect thereof from the ULB / Construction Supervisor. Thereupon, the Construction Supervisor may issue Completion Certificate. If the Concessionaire fails to reimburse within time specified, the ULB/Construction Supervisor will be entitled to recover the same by encashing the Performance Security and any remainder by having a claim against the Concessionaire.
- (iv) The Construction Supervisor may, by written notice, require the Concessionaire to suspend forthwith for such period as considered necessary, the whole or any part of the Construction Works, if in its reasonable opinion the same is being carried on in a manner that is not in conformity with the Construction Requirements.
- (v) The Project Facilities shall be deemed to be complete and ready only when the Provisional Completion Certificate or the Completion Certificate is issued for the complete Project Facilities, by the Construction Supervisor in accordance with the provisions hereof. However, the COD shall take place only on the date when Provisional Completion Certificate or Completion Certificate has been issued by Construction Supervisor.

Provided if COD is delayed beyond 90 (ninety) days of the Scheduled Project Completion Date, C&DS, UPJN in consultation with the ULB shall be entitled to terminate this Agreement and to appropriate and forfeit the Performance Security.

6.5. Operation and Maintenance

The Concessionaire shall undertake the Project in accordance with the O&M Requirements, O&M Plan and O&M Manual.

- (a) The Concessionaire shall undertake the Operation and Maintenance (O&M) of the Project by itself. However, the Concessionaire may sub-contract part of the O&M activities to a Contractor possessing requisite technical, financial and managerial expertise/ capability; but in either case, the Concessionaire shall remain solely responsible to meet the O&M Requirements.
- (b) During the Operations Period, the Concessionaire shall:
 - (i) well organize and designate and appoint suitable officers/ representatives as it may deem appropriate to supervise the Project, to deal with the Independent Engineer/ ULB and to be responsible for all necessary exchange of information required pursuant to this Agreement;
 - (ii) conduct all Tests to ascertain compliance with the Development Plan, Construction Requirements and the O&M Requirements, as the case may be.
- (c) The Concessionaire shall during the Operations Period in accordance with the O&M Requirements process the Incoming Waste brought to the MSW Processing Site and dump the Landfill Waste at the Landfill Facility.
- (d) The Concessionaire shall
 - (i) not refuse to accept the MSW brought at the MSW Processing Site.
 - (ii) operate the MSW Processing Facility at not less than 50% of the installed capacity at any time during the Concession Period, except in circumstances as specifically excluded in this Agreement and as long as adequate quantity of Incoming Waste is delivered by ULB and / or any Person appointed / engaged by the ULB for this purpose at the entry gate of the MSW Processing Site.
 - (iii) shall expand the installed capacity of the MSW Processing Facility in case the MSW brought at the MSW Processing Facility is 140% more than the installed capacity.

Failure of the Concessionaire to perform any of its obligations as mentioned above for a continuous period of 30 days or failing to propose its plan for

making the necessary amendments shall constitute a Concessionaire Event of Default giving ULB the right to take appropriate actions in the best interest of the Project including the right to substitute the Concessionaire with any other agency capable to performing Concessionaire's obligations under this Agreement.

- (e) The Concessionaire shall develop, construct, operate, maintain and transfer additional waste processing facilities as per the Construction Requirements and O&M Requirements with suitable modifications and as approved by the ULB / Independent Engineer .

6.6. Expansion, Repair and Replacement

- (a) The Concessionaire shall at its cost, plan for replacement, replenishment and renewal as the case may be of the Project Facilities well ahead of the time when the Project Facilities thereof is reasonably expected to expire its operating life or its impending obsolescence and replace the Project Facilities in accordance with Good Industry Practice so as to ensure that the Project commensurate with the requirements of this Agreement, at all times during the Concession Period.
- (b) In case of an irreparable damage to equipment(s), due to any reason (including but not limited to Force Majeure), the Concessionaire shall at its cost, within a maximum period of 30 (thirty) days, replace the damaged equipment.
- (c) The Concessionaire shall not remove from the Project Facilities, any equipment, materials, consumable and non-consumable items that are required for the Project, without the prior written consent of the ULB.
- (d) The Concessionaire shall maintain and complete accurate records of all equipments, materials, consumables and spare parts procured and shall provide copies of such records to the ULB upon request.
- (e) The Concessionaire shall at its own cost and expense provide all additional equipments, capacity addition to the Project Facilities required for the Project during the Concession Period for processing and disposal of MSW generated within the municipal limits of the city of Gorakhpur in accordance with this Agreement.

6.7. Operation And Maintenance Plan and Operation And Maintenance Manual

Atleast 30 (thirty) days prior to making a request for issue of Project Completion Certificate for the Project, the Concessionaire shall, in consultation with ULB/ Independent Engineer, finalize:

- (a) an O&M Plan (“**O&M Plan**”) prepared in line with the Scope of Work of the Project, statutory requirement, Development Plan and in compliance with the requirements of this Agreement.

- (b) a manual for the operations, regular and preventive maintenance of the Project Facilities (“**O&M Manual**”) and shall ensure and procure that at all times during the Concession Period, the Project Facilities are operated and maintained in accordance with the provisions hereof.

6.8. Indemnification Against Accidents

- (a) The Concessionaire shall be solely responsible for and keep the Construction Supervisor / ULB / Independent Engineer indemnified against all claims, damages, expenses, losses or injury to persons or property that may arise during the Concession Period by use of Project Facilities or part thereof.
- (b) On the occurrence of an accident which leads or may lead to human loss, the Concessionaire shall within 24 (twenty four) hours of such accident, report in writing to the ULB clearly stating the facts in sufficient details explaining the circumstances of such accident and the subsequent actions taken by the Concessionaire.
- (c) In the event, compensation may become payable under any act or by judgment of any court/ competent authority thereof whether such compensation becomes payable by the Concessionaire or by the ULB / Construction Supervisor / Independent Engineer, the same shall be borne and paid by the Concessionaire. If Concessionaire fails to pay the requisite compensation, ULB shall have the right to recover the same by encashment of the Performance Security and/ or Additional Performance Security and/ or from the Tipping Fees, if any payable to the Concessionaire.

6.9. Insurance

6.9.1. The Concessionaire shall at its cost and expense, purchase and maintain by due reinstatement or otherwise, during the Concession Period all insurances in respect of the Project Facilities in accordance with the Good Industry Practice and have the same duly certified by the Construction Supervisor / Independent Engineer, as the case may be interalia the following:

- (a) Contractor’s all risk insurance;
- (b) loss, damage or destruction of the Project Facilities, at replacement value;
- (c) comprehensive third party liability insurance including injury or death to personnel of the ULB/ Construction Supervisor / Independent Engineer and others who may enter the Project Facilities;
- (d) workmen’s compensation insurance;
- (e) any other insurance that may be necessary to protect the Concessionaire, its employees, Project Facilities (against loss, damage or destruction at replacement value) including all Force Majeure Events that are insurable and not otherwise covered in items (a) to (d).

The Concessionaire shall effect all such insurances with an insurer and on terms approved by ULB and if required by ULB in its sole discretion, in the joint names of ULB and the Concessionaire.

The Concessionaire shall maintain a register of entry in order of premiums paid towards the insurance and proof of payments made shall be submitted to ULB, whenever requested for.

6.9.2. Application of Insurance Proceeds

The proceeds from all insurance claims, except life and injury, shall be paid to the Concessionaire by credit to the Project Account or project bank account, as the case may be and it shall, notwithstanding anything to the contrary contained in Articles 15.3, apply such proceeds for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project Facilities or any part thereof which may have been damaged or destroyed

6.9.3. Un-insurable Risks

If during the Concession Period, any risk which has been previously insured becomes un-insurable due to the fact that the insurers have ceased to insure such a risk and therefore insurance cannot be maintained/re-instated in respect of such risk, the Concessionaire shall not be deemed to be in breach of its obligations regarding insurance under this Agreement.

6.10. Environmental Compliance

The Concessionaire shall, at all times, ensure that all aspects of the Project and the processes employed in the construction, operation and maintenance of the Project Facilities shall conform to the laws pertaining to environment, health and safety aspects including rules such as MSW Rules, MSW Manual, policies and guidelines related thereto. The Concessionaire shall obtain and maintain from time to time necessary clearances from all Government Agencies and for this purpose shall carry out, in accordance with Applicable Laws, the necessary environmental impact assessment studies and implement appropriate environment management plans and submit necessary reports (including the reports to be submitted by the ULB) as per Applicable Laws.

6.11. Land Use

The Concessionaire shall ensure optimum utilization of the Project Site and shall not use the same for any purpose unconnected or which is not incidental to the Project or related activities.

6.12. Weighment of MSW

6.12.1. Incoming Waste

The Concessionaire shall weigh, in the presence of the Independent Engineer, representative of such Person who has been appointed / engaged by the ULB for delivery of Incoming Waste at MSW Processing Site and authorized representative of ULB, the Incoming MSW received by it at the entry gate to the MSW Processing Site (“Incoming Waste”) in the manner as set out in the O&M Requirements. The record of weighment shall be jointly signed by the Independent Engineer, representative of such Person who has been appointed / engaged by the ULB for delivery of Incoming Waste at MSW Processing Site, and Concessionaire.

6.12.2. Landfill Waste

The Concessionaire shall weigh, in the presence of the Independent Engineer and authorized representative of ULB, the Landfill Waste prior to disposal of the same in the Landfill Facility in the manner as set out in the O&M Requirements. The record of weighment shall be jointly signed by the Independent Engineer and authorized representative of ULB and Concessionaire.

6.12.3. The Concessionaire shall maintain a bona-fide record of weighment of Incoming Waste and Landfill Waste for a period of a minimum of 10 (ten) years. Upon request for inspection of such record by the ULB, such record(s) shall be made available by the Concessionaire to the ULB.

6.13. Acceptance of MSW

6.13.1. The Concessionaire hereby undertakes to accept all Incoming Waste delivered by ULB and / or by such Person who has been authorized/ appointed / engaged by the ULB for delivery of Incoming Waste at MSW Processing Site, except as provided under Article 6.14 and/ or if MSW supplied is more than _____tonnes² on any given day.

The above tonnage of MSW may be revised as mutually agreed between the ULB and the Concessionaire periodically keeping in view the actual waste generated, growth in MSW generated and the requirement of MSW for processing by the MSW Processing Facility.

6.13.2. Except as provided in this Article, the Concessionaire hereby undertakes to accept all MSW supplied by ULB. Where the Concessionaire has failed to accept MSW supplied by ULB and the same is certified by the Independent Engineer, the Concessionaire shall pay to ULB a penalty (“Waste Non-acceptance Penalty”) calculated in the following manner:

$$P = WU * TR * 0.5$$

Where,

² 120% of the MSW generated in the ULB (in TPD)

P, is the Waste Non-acceptance Penalty in Rupees

WU, is the quantity of MSW supplied by the ULB (more than one (1) MT) and not accepted by the Concessionaire and

TR, is the Tipping Fee Rate in Rupees applicable for the particular period.

6.14. Reject Biomedical Waste, Hazardous Waste, Radioactive Waste

In case Biomedical / Hazardous Waste/ radioactive waste are found to be mixed with the MSW, the Concessionaire shall segregate the same and transport it to the location as decided by the ULB for its further disposal by the ULB.

6.15. Processing of MSW

6.15.1. The Concessionaire may adopt such processes and methods as it considers necessary or expedient for Processing of MSW and Landfilling at the Project Facilities, subject to meeting the Construction Requirements and O&M Requirements and that Landfill Waste is not more than 30% of Incoming Waste in the first year of operation after COD, 25% in the second year after COD and 20% from third year onwards after COD.

6.15.2. The Concessionaire shall establish the MSW Processing Facility having combination of technologies / systems with composting as one of the main processes and other processes such as Waste to Energy, Resource recycle facility, Refuse Derived Fuel (RDF), plastic / metal separation, inert processing, etc. which would maximize waste recycling/ treatment and ensure that the minimum quantity of Landfill Waste going to the Landfill Facility are less than the threshold limits as specified in Article 6.15.1.

6.16. Sale/Distribution of Compost and Other Recyclables

The Concessionaire shall be free to sell or dispose of the recyclables, compost or organic manure, RDF, energy (power) and/ or other material recovered after Processing the MSW, at the Project Facilities at such price and to such Persons and using such marketing and selling arrangements and strategies as it may deem appropriate subject to meeting the O&M Requirements.

6.17. Landfilling

The Concessionaire shall carry out Landfilling, including carrying out of relevant Tests, maintenance of records and ensure certification by Independent Engineer, in accordance with O&M Requirements. The Concessionaire shall weigh the Landfill Waste prior to disposal of the same in the Landfill Facility and it shall not be more than the threshold limits as specified in Article 6.15.1 of this Agreement.

6.18. Maintenance of Warranties

The Concessionaire shall honour and preserve all product warranties for machinery and equipment {including the warranties provided by respective original equipment manufacturer (OEM)}. Further the Concessionaire shall take the appropriate action for the same.

6.19. Certified Emission Reductions (CERs) and Verified Emission Reductions (VERs)

The Concessionaire shall endeavor to obtain the fiscal incentives and benefits such as certified emission reductions (CERs) and verified emission reductions (VERs) under Kyoto Protocol/ Climate Change initiative of the Kyoto Protocol for the Project by adopting the greenhouse gas mitigation measures. The benefits of such carbon credits, if and when available, would be retained by the Concessionaire. However, ULB makes no representation or warranty whether express or implied as to whether or not the CER / VER benefits would be available to the Concessionaire and the Concessionaire should carry out its own study in that regard.

6.20. Shareholding

- (a) **Ownership:** The Selected Bidder /Consortium have caused the Concessionaire to be incorporated as a special purpose company with the sole objective of implementing the Project in accordance with this Agreement. The shareholding pattern of Concessionaire/each member of the Consortium in the Concessionaire is as follows:

Name of the shareholder	Number of shares held	Nominal/ face value per share	Percentage in total share capital of the Concessionaire

Equity Lock-In

- (b) The Concessionaire shall ensure that the shareholding in it's issued and paid up equity share capital shall be as per the following:
- (i) Where the Selected Bidder is a sole bidder, it shall hold at least 51% of the issued and paid up equity share capital of the Concessionaire throughout the entire Concession Period;
 - (ii) Where the Selected Bidder is a bidding Consortium, the Lead Member shall hold at least 51% of the issued and paid up equity share capital of the Concessionaire throughout the entire Concession Period. The other Members whose Eligible Experience Criteria and/or Technical Capability and/or Financial Capability have been considered for the purpose of qualification as per the RFP shall hold at least 26% of the issued and paid up equity share capital of the Concessionaire throughout the entire Concession Period.

Provided that no divestment by any member (whether sole or as part of the Consortium) of the Concessionaire is allowed for a period of at least 2 years from the date of the COD (**Lock In Period**).

- (c) If the Selected Bidder, Lead Member or Member, as the case may be, invests through any Associate, the Concessionaire shall ensure that:
 - (i) Such Associate shall be subject to the above equity lock-in as applicable to the Successful Bidder, Lead Member and/or Member, as the case may be.
 - (ii) the Selected Bidder, Lead Member or other Members shall be liable to ensure that the entity that it is relying upon as an Associate to discharge the above equity lock-in requirement continues to be its Associate during the above equity lock-in period as applicable.

6.21. Post Closure Operations of the Landfill Facility

- (a) At least 3 (three) months before the expected expiry of the Landfill Life, the Parties jointly with the Independent Engineer shall, in accordance with Schedule E, discuss and prepare the Post Closure Operating Plan for the maintenance of the Landfill Facility, under the provisions of the applicable statutory regulations (“Post Closure Maintenance Plan”).
- (b) The Concessionaire shall after expiry of the Landfill Life maintain the Landfill Facility in accordance with the Post Closure Maintenance Plan during the Post Closure Period.
- (c) Post Closure care of Landfill Facility shall be conducted for at least 15 years and long-term monitoring and care plan shall be taken care by Concessionaire in accordance with MSW Rules, CPHEEO Manual and any other Applicable Law.

6.22. Books of Account

6.22.1. The Concessionaire shall maintain books of accounts recording all its receipts (including Tipping Fee and other revenues derived/ collected by it from or on account of the Project and/or its use), income, expenditure, payments (including payments from the Project Account) assets and liabilities, in accordance with this Agreement, Good Industry Practice, Applicable Laws and Applicable Permits. The Concessionaire shall provide 2 (two) copies of its Balance Sheet, Cash Flow Statement and Profit and Loss Account along with a report thereon by its Statutory Auditors, within 6 (six) months of the close of the Accounting Year to which they pertain. In addition the Concessionaire shall also submit a statement of fixed assets forming part of the Project Facilities, as on the end of the Accounting Year, duly certified by the Statutory Auditor. The statement of fixed assets shall provide the inventory of fixed assets as on the end of Accounting Year along with a list of

additions and deletions during the period and duly reconciled with the Concessionaire's books of account.

- 6.22.2. ULB or its authorised representatives shall have the right to inspect the records of the Concessionaire during office hours and require copies of relevant extracts of books of accounts to be provided to the ULB and in the event of any discrepancy or error being found, the same shall be rectified by the Concessionaire in its books of account.

6.23. General Obligations

- 6.23.1. Subject to and in accordance with the terms and conditions of this Agreement, the Concessionaire shall to the satisfaction of the ULB / C&DS, UPJN, with due care and diligence, design and execute the Construction Works as is required under the Construction Requirements and carry out its other obligations under and/or in relation to or reasonably to be inferred from the Agreement and provide all personnel and labour, including the supervision thereof, materials, offices, workshops, tools, machinery, equipment and all other resources and things, whether of a temporary or permanent nature, required in or for such design and execution and for carrying out such obligations.

The personnel and labour used by the Concessionaire for the Project shall be responsibility of the Concessionaire and ULB / Construction Supervisor / Independent Engineer shall in no case be responsible, in any manner to such personnel and labour.

- 6.23.2. The Concessionaire shall assume full responsibility for the proper and timely design and execution of the Construction Works in accordance with this Agreement.
- 6.23.3. The Concessionaire shall be fully responsible for the acts or omissions of all its employees, agents, workmen, suppliers, consultants, Contractors and any other persons for whom it is contractually responsible for, as if such acts of omissions were its own.
- 6.23.4. The Concessionaire shall be responsible for maintaining the Project Facilities so as to keep it in good operable conditions which shall include but is not limited to all day-to-day maintenance and repairs of the Project Facilities and replacement of equipments / consumables (irrespective of actual usage and loading levels and irrespective of whether maintenance, repair or replacement work is required because of any defect in the Project Facilities (latent or otherwise) or due to faulty workmanship or defective design or construction or any other reason whatsoever and whether or not it is known to the ULB);
- 6.23.5. The Concessionaire shall at its own cost and expense:
- (a) design, engineer, procure, finance, modify, construct, operate, maintain and transfer the Project Facilities in accordance with the provisions hereof;
 - (b) comply with Applicable Laws at all times during the Concession Period;

- (c) endeavor to improve the ancillary conditions and infrastructure related to the Project, including assistance to informal recycling workers;
- (d) endeavor to sell or otherwise dispose of all recyclables in a manner which is not detrimental to the environment;
- (e) provide uniforms for all its employees/ Contractor's personnel which shall be worn by such employees/personnel while on duty;
- (f) be responsible for transportation of Landfill Waste from MSW Processing Facility to the Landfill Facility;
- (g) procure and maintain in full force and effect, as necessary, appropriate proprietary rights, licenses, agreements and permissions for materials, methods, processes and systems used in or incorporated into the Project;
- (h) make efforts to maintain harmony and good industrial relations among the personnel employed in connection with the performance of its obligations under this Agreement and shall be solely responsible for compliance with all labour laws and solely liable for all possible claims from any third party and employment related liabilities of its staff employed in relation with the Project and hereby indemnifies ULB and / or its employees, advisors, contractors or agents against any claims, damages, expenses or losses in this regard and that in no case and shall for no purpose, the ULB be treated as employer in this regard;
- (i) make its own arrangements for construction materials and observe and fulfill the environmental and other requirements under the Applicable Laws and Applicable Permits;
- (j) be responsible for quality, soundness, durability, safety and the overall Construction Requirements and O&M Requirements;
- (k) be responsible for all the security, environment and safety aspects of the Project at all times during the Concession Period.
- (l) ensure that the Project Facilities remain free from all encroachments and take all steps necessary to remove encroachments, if any;
- (m) upon receipt of a request thereof, afford access to the MSW Processing Site/ Project Facilities to the authorized representatives of ULB for the purpose of ascertaining compliance with the terms, covenants and conditions of this Agreement;
- (n) pay all taxes, duties and outgoings, including utility charges relating to the Project Facilities.
- (o) submit reports regarding matters specified in Schedule D and E.

- (p) ensure and procure that any contract relating to the Project, entered into by the Concessionaire for implementing the Project in accordance with this Agreement contains provisions that would entitle Lenders or a nominee of ULB to step into such contract/s at ULB's discretion, in place and substitution of the Concessionaire, pursuant to the provisions of this Agreement or the Substitution Agreement

6.24. Project Agreements

6.24.1. It is expressly agreed that the Concessionaire shall, at all times, be responsible and liable for all its obligations under this Agreement notwithstanding anything contained in the Project Agreements or any other agreement, and no default under any Project Agreement or agreement shall excuse the Concessionaire from its obligations or liability hereunder.

6.24.2. The Concessionaire shall submit to the ULB with a copy to the Construction Supervisor, the drafts of all Project Agreements or any amendments or replacements thereto for its review and comments, and the ULB / Construction Supervisor shall have the right but not the obligation to undertake such review and provide its comments, if any, to the Concessionaire within 15 (fifteen) days of the receipt of such drafts. Within 7 (seven) days of execution of any Project Agreement or amendment thereto, the Concessionaire shall submit to the ULB and / or the Construction Supervisor a true copy thereof, duly attested by a whole time Director of the Concessionaire, for its record. For the avoidance of doubt, it is agreed that the review and comments hereunder shall be limited to ensuring compliance with the terms of this Agreement. It is further agreed that no review and/or observation of the ULB / Construction Supervisor and/or its / their failure to review and/or convey its observations on any of the Project Agreements or any other document shall relieve the Concessionaire of its obligations and liabilities under this Agreement in any manner whatsoever nor shall the ULB / Construction Supervisor be liable for the same in any manner whatsoever.

6.24.3. The Concessionaire shall not make any replacements or amendments to any of the Financing Agreements without the prior written consent of the ULB / Construction Supervisor if such replacement or amendment has, or may have, the effect of imposing or increasing any financial liability or obligation on the ULB and / or the State Government and / or the Construction Supervisor, and in the event that any replacement or amendment is made without such consent, the Concessionaire shall not enforce such replacement or amendment nor permit enforcement thereof against the ULB and / or the State Government and / or the Construction Supervisor. For the avoidance of doubt, the ULB acknowledges and agrees that it shall not unreasonably withhold its consent for restructuring or rescheduling of the debt of the Project.

6.24.4. The Concessionaire shall procure that each of the Project Agreements contains provisions that entitle the ULB to step into such agreement, in its sole discretion, in substitution of the Concessionaire in the event of Termination or Suspension.

6.25. Damages for shortfall/non-compliance in Operations & Maintenance Performance

- 6.25.1. In the event the ULB, whether from the review of reports submitted by the Concessionaire/ Independent Engineer in accordance with the provisions of this Agreement or otherwise, observes that the Project/Project Facilities do not comply or fall short of performance standards as per the provisions of this Agreement, the ULB may levy the amount of Damages payable by the Concessionaire in accordance with Schedule K of this Agreement and demand the Concessionaire by a notice in writing to pay the same within 30 (thirty) days and on failure of the Concessionaire to pay the same, the ULB shall recover the amount from the Concessionaire from the monthly Tipping Fee invoice and/ or by encashment of the Performance Security and / or Additional Performance Security. Provided that upon receipt of the demand, the Concessionaire may make a written representation to the ULB which shall be considered by the ULB on merits and the ULB may waive the payment of Damages in part or full, if it is satisfied that the Concessionaire has been carrying out its obligations diligently and efficiently and the shortfall to be waived was on account of reasons beyond the control of the Concessionaire. The Concessionaire shall pay such Damages forthwith and in the event that it contests such Damages, the Dispute Resolution procedure shall apply.
- 6.25.2. The ULB shall review the above performance of the Concessionaire and may levy Damages on monthly basis in accordance with Schedule K. However, the Damages shall be leviable only after the expiry of 6 months from COD
- 6.25.3. The Damages set forth in Article 6.25.1 may be assessed and specified forthwith by the Independent Engineer; provided that the ULB may, in its discretion, demand a smaller sum as Damages, if in its opinion, the breach has been cured promptly and the Concessionaire is otherwise in compliance with its obligations under this Agreement.
- 6.25.4. It is clarified that this provision does not prejudice the rights of the ULB upon a Concessionaire Event of Default as set out in Article 14.1 including the ULB's right to terminate this Agreement which shall remain unaffected.

6.26. Breach of O&M Obligations

- 6.26.1. The Concessionaire shall be deemed to be in Material Breach of O&M Requirements, if the Independent Engineer acting reasonably and in accordance with the provisions of this Agreement, has determined that due to breach of its obligations by the Concessionaire:
- (i) there has been failure/ undue delay in carrying out scheduled/ planned maintenance or the scheduled/ planned maintenance has not been carried out in accordance with the O&M Requirements;
 - (ii) The maintenance of the Project Facilities or any part thereof has deteriorated to a level which is below the acceptance level prescribed by the O&M Requirements;

- (iii) There has been a serious or persistent let up in adhering to the O&M Requirements and thereby the Project Facilities or any part thereof is not safe for operations;
- (iv) There has been persistent breach of O&M Requirements.

For the avoidance of doubt, persistent breach shall mean:

- (i) any breach of O&M Requirements by the Concessionaire which has not been remedied by the Concessionaire despite a notice to remedy in respect thereof issued by the Independent Engineer/ ULB;
- (ii) recurrence of a breach by the Concessionaire, during the pendency of notice to remedy by the Independent Engineer/ULB, requiring the Concessionaire to remedy a breach, and
- (iii) repeated occurrence of a breach notwithstanding that earlier breaches have been remedied pursuant to notice to remedy or otherwise.

Upon occurrence of a material breach of O&M Requirements, ULB shall, without prejudice to and notwithstanding any other consequences provided therefor under this Agreement, depending upon the nature of the obligation in respect of which a Material Breach has occurred, be entitled to either levy Damages and thereafter terminate this Agreement, if such breach takes place for 2 consecutive weeks or in respect of breach of obligations by the Concessionaire which are of a serious nature, immediately terminate this Agreement.

6.27. No Breach of Obligations

The Concessionaire shall not be considered to be in breach of its obligations under this Agreement nor shall it incur or suffer any liability if and to the extent performance of any of its obligations under this Agreement is affected by or on account of any of the following:

- (a) Force Majeure Event, subject to Article 12.3;
- (b) ULB Event of Default;
- (c) State Government Event of Default;
- (d) Compliance with the instructions of the Construction Supervisor / Independent Engineer /ULB or the directions of any Government Agency.

Provided that the instructions should not have been issued as a consequence of a breach by the Concessionaire of any of its obligations under this Agreement;

- (e) Closure of the Project Facilities or part thereof with the approval of the ULB.

ARTICLE 7

ULB's OBLIGATIONS

In addition to and not in derogation or substitution of any of its other obligations under this Agreement, ULB shall have the following obligations:

7.1 Specific Obligations

The ULB shall:

- (a) at its own cost, risk and expense, supply the Municipal Solid Waste to the MSW Processing Facility in any given month after Appointed Date till the Termination Date.
- (b) ULB shall endeavor to supply at the entry gate of the MSW Processing Facility in any given month an aggregate minimum quantity of Incoming Waste (herein after referred to as "Assured Incoming Waste"), calculated as follows,

$$\text{Assured Incoming Waste} = 75\% \times 495 \text{ TPD} \times D$$

Where, D is the number of days in such month

- (c) In the event, ULB is not able to deliver the average (estimated over 30 days) Assured Incoming Waste for a period of two (2) consecutive months, it shall pay the Concessionaire for each day of such failure after the two (2) month period, as a pre-agreed reasonable compensation, an amount ("Daily MSW Deficiency Amount") that is determined as follows:

$$A = Q (\text{MSW}) \times T$$

Where, A = Daily MW Deficiency Amount; and

Q (MSW) = The difference between Assured Incoming Waste and the actual Incoming Waste delivered on that day; and

T = Tipping Fee per ton

Provided however, that non-delivery of MSW on a day or quantity of rejected waste during rainy season on account of high moisture content, shall not be considered as a failure on part of ULB to deliver Assured Incoming Waste for the purposes of this sub-clause.

- (d) declare and maintain, or cause to declare and maintain, a no-development zone around the MSW Processing Site in accordance with Applicable Laws.
- (e) grant in a timely manner all such approvals, permissions and authorizations which the Concessionaire may require or is obliged to seek from ULB under

this Agreement, in connection with implementation of the Project and the performance of its obligations.

- (f) subscribe to the Substitution Agreement within 45 days of such written request made by the Concessionaire;
- (g) endeavor not to supply, Bio-medical Waste, Hazardous Waste or radioactive waste.

7.2 General Obligations

The ULB shall:

- (a) upon written request from the Concessionaire and subject to the Concessionaire complying with Applicable Laws, provide reasonable support and assistance to the Concessionaire in procuring Applicable Permits required from any Government Agency for implementation of the Project. It is clarified that, the Concessionaire shall be solely responsible for obtaining all Applicable Permits;
- (b) observe and comply with all its obligations set forth in this Agreement.

7.3 Change in location of Landfill Facility

ULB may upon expiry of active Landfill Life, be entitled to change the location of the Landfill Facility to a new location. In such a case, both the Parties shall hold discussions in good faith and may conduct necessary surveys/studies, to revise the Tipping Fees on mutually agreed terms to account for the differential distance to be travelled by the vehicles for dumping of Landfill Waste.

ARTICLE 8

CAPITAL GRANT

8.1 Capital Grant for the Project

Subject to the provisions of this Agreement and in consideration of the Concessionaire accepting the Concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in this Agreement, ULB and C&DS, UPJN agrees to provide the Capital Grant to the Concessionaire of Rs. _____ lakhs for construction of compost processing plant and Sanitary Landfill (the “**Capital Grant**”)

- (a) Construction Supervisor shall make the payments of the Capital Grant to the Concessionaire as per the following milestones :

Sr. No	Milestone	Prerequisite for Release of payment	% of Capital Grant to be Released
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Sr. No	Milestone	Prerequisite for Release of payment	% of Capital Grant to be Released
1)	<p>Interest bearing mobilization advance payable on Appointed Date (the interest rate shall be 12% p.a. on cumulative basis)</p> <p>The interest on mobilization advance shall be payable by the Concessionaire to the Construction Supervisor on a quarterly basis till the COD.</p>	<p>After submission of Bank Guarantee issued by the Bank equivalent to 110% of the mobilization advance amount</p>	10% of Capital Grant
2)	<p>On completion of all civil structure of the MSW Processing Facility and the Landfill Facility and issue of purchase order for procurement of major plant & machinery</p>	<p>Claim for Capital Grant supported by:</p> <ul style="list-style-type: none"> • A Statutory Auditor certificate certifying the capital expenditure incurred and paid as per the books of account, showing <ul style="list-style-type: none"> • Total capital expenditure till date • Detailed breakup of the expenditure incurred • A statement of work done showing BOQ of the works done and measured quantities by Construction Supervisor and achievement of milestones as duly certified by Construction Supervisor and recommending payment of Capital Grant 	<p style="text-align: center;">30% of the Capital Grant*</p> <p>Provided the said payment should not be more than the total expenditure incurred and paid by the Concessionaire on the Project Facilities till date</p>
3)	<p>On installation of all plant & machinery at MSW Processing Facility and development of Landfill Facility</p>	<p>Claim for Capital Grant supported by:</p> <ul style="list-style-type: none"> • A Statutory Auditor certificate certifying the capital expenditure incurred and paid as per the books of account, showing 	<p style="text-align: center;">50% of the Capital Grant*</p> <p>Provided the said payment should not be more than the total expenditure incurred and paid by the Concessionaire on the Project Facilities till date</p>

Sr. No	Milestone	Prerequisite for Release of payment	% of Capital Grant to be Released
		<ul style="list-style-type: none"> • Total capital expenditure till date • Detailed breakup of the expenditure incurred • Installation and successful trial of plant and machinery issued by the equipment supplier • A statement of work done showing BOQ of the works done and measured quantities by Construction Supervisor and achievement of milestones as duly certified by Construction Supervisor and recommending payment of Capital Grant 	
4)	After completion of six months from the date of successful achievement of COD	<p>Final Claim for Capital Grant supported by:</p> <p>(i) A Statutory Auditor certificate certifying the capital expenditure incurred and paid as per the books of account, showing</p> <ul style="list-style-type: none"> • Total capital expenditure till date • Breakup of the above into compost plant, landfill and other processing facility <p>(ii) Issue of Completion Certificate by Construction Supervisor</p>	Balance (10%) amount of the Capital Grant (* *)

Note

* : Capital Grant shall be paid by the Construction Supervisor after recovery of interest on mobilization advance accrued but not yet paid by the Concessionaire and liquidated damages, if any levied on the Concessionaire

** : Capital Grant would be paid, subject to the following:

- (i) During the Construction Period, in case the actual expenditure incurred on MSW Processing Facility and Landfill Facility is less than Rs lakhs then the Capital Grant would be reduced proportionately.
- (ii) In case the capital expenditure incurred on compost plant and Landfill Facility is more than the Capital Grant during the Construction Period, then Capital Grant, would be Rs. lakhs.
- (iii) Notwithstanding any provisions of this Agreement, no escalation in the above Capital Grant amount would be given to the Concessionaire on account of any reasons for delay in implementation of the Project or any variation of Scope of Work or any Event of Default or occurrence of any Force Majeure event. The amount of Capital Grant for the purpose of this Agreement is fixed at Rs., to be disbursed in the above manner.
- (iv) The Capital Grant for MSW Processing Facility shall be disbursed only for development of compost manufacturing facility and its related building, plant & machinery and other ancillary facilities.

8.2 Mechanism of Payment

- (a) Construction Supervisor shall, within 20 (twenty) days from the date of receipt of the claim for Capital Grant would verify, review and process the claim and release the Capital Grant.
- (b) On submission of final claim by the Concessionaire, Construction Supervisor shall, within 20 (twenty) days from the date of its receipt would verify and review the claim and send it to the ULB for its recommendations to release the final installment of the Capital Grant. ULB shall give its recommendations for release the Capital Grant within 15 (fifteen) days of receipt of duly processed final claim from the Construction Supervisor.
- (c) Construction Supervisor shall, within 10 (ten) days from the date of receipt of recommendation of the ULB for the final claim as mentioned in Article 8.2(b), release the final installment of Capital Grant to the Concessionaire subject to the fulfillment of the conditions as detailed above.

ARTICLE 9

TIPPING FEE

9.1 Payment of Tipping Fee

Subject to the provisions of this Agreement and in consideration of the Concessionaire accepting the Concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in this Agreement, ULB agrees and undertakes to pay Tipping Fee to the Concessionaire as per this Article.

9.2 Tipping Fee³

- (a) The Tipping Fee for the first year of the operation commencing from the COD shall be payable as per the Tipping Fee rate per MT quoted by the Selected Bidder / Consortium in its Financial Proposal. The Tipping Fee for the subsequent operating years shall be payable as per the Tipping Fee rate per MT quoted for the respective subsequent operations and maintenance year in the Financial Proposal. The Tipping Fee per MT quoted by the Selected Bidder for the first year and the subsequent years are reproduced in Schedule F.
- (b) The Concessionaire shall weigh the daily Incoming Waste and Landfill Waste as per Article 6.12.
- (c) The Concessionaire shall prepare a monthly invoice, as duly certified by the authorized representative of ULB responsible for verifying the weighment of MSW and Independent Engineer and submit the monthly invoice by the 7th day of next month. The monthly invoice shall be supported by the original copy of the daily weighment statement duly signed by the authorized representative of ULB responsible for verifying the weighment of Incoming Waste, such Person who has been appointed / engaged by the ULB for delivery of Incoming Waste at MSW Processing Site and the Independent Engineer alongwith the monthly summary statement giving the following:
 - (i) Date wise quantity of Incoming Waste and Landfill Waste for the month
 - (ii) Total quantity of Incoming Waste and Landfill Waste for the month;
 - (iii) Amount of total Tipping Fee for the month calculated at the applicable quoted Tipping Fee rate as set out in Schedule F multiplied with the Incoming Waste.

³ In case the Tipping Fee is negative, instead of ULB making the payment, the Concessionaire shall make the payment to ULB. The consequential changes shall be made in the Agreement accordingly

- (iv) Waste Non-acceptance Penalty receivable by the ULB as per Article 6.13.2
- (v) Daily MSW Deficiency Amount payable by the ULB as per Article 7.1

9.3 Mechanism of Payment

- (a) ULB shall make the payment, within 30 days from the date of receipt of the Tipping Fee invoice.
- (b) ULB shall retain 2.5% of the Tipping Fee invoice amount calculated in Article 9.2 (c) (iii) towards Post Closure Performance. Further, ULB shall be entitled to make deduction if any, required in respect of the amount payable by the Concessionaire as per the terms of this Agreement. The payment of Tipping Fee shall be further subject to Article 6.13.2 of the Concession Agreement.
- (c) Any delay in making any payment in accordance with the Tipping Fee invoice shall, without prejudice to any other consequences under this Agreement, entail payment of interest by the ULB on the amount in default at prevailing medium term prime lending rate of State Bank of India calculated for the duration of delay.

9.4 Post Closure Performance Account

- (a) Within 15 (fifteen) days from the COD, ULB shall open a special account designated as Post Closure Performance Account for making the payments in the succeeding Sub-article.
- (b) ULB shall deposit the amount retained towards Post Closure Performance into a special account designated as "Post Closure Performance Account".
- (c) Subject to the Concessionaire meeting his obligations in respect to the Post Closure Period in accordance with the O&M Requirements, payments from the Post Closure Performance Account shall be made to the Concessionaire in equal quarterly installments of 1/60th of the amount balance on the commencement of the Post Closure Period for the respective cell of the Landfill Facility.

9.5 Penalty on over Disposal of Landfill Waste

- (a) The Landfill Waste shall be maximum of the threshold limits as specified in Article 6.15.1 of this Agreement.
- (b) A penalty of Rs 50 per MT with escalation of 5% per annum (to be reckoned from Year 2 of the Operations Period and computed on cumulative basis) shall be imposed for every MT increase in the Landfill Waste exceeding the maximum limit as specified in the preceding clause.

- (c) The penalty shall be computed taking average performance of the Concessionaire for the Landfill Facility operations for the respective calendar month.
- (d) In case, Landfill Waste is more than 5% (ten per cent) of the threshold limits as specified in Article 6.15.1 regularly for a period of [three months], it may be treated as Concessionaire Event of Default under this Agreement.

9.6 Consequences of Payment Default

- (a) If ULB fails to pay the Tipping Fee payable in accordance with Article 9.3, in part or full to the Concessionaire, the State Government undertakes to deduct the amount owed to the Concessionaire from the [grant funds/ funds designated for distribution pursuant to octroi compensation/funds designated for distribution pursuant to the state financial commission] earmarked for the ULB and pay such amount directly to the Concessionaire within thirty (30) days of default by the ULB.
- (b) Upon occurrence of payment default, the Concessionaire shall establish a special designated account into which State Government shall deposit three months equivalent of Tipping Fee payment of the defaulting ULB. State Government shall have the right to recover the amount from the defaulting ULB by any measure it may deem fit, including but not limited to levy of betterment charges or other levies under relevant law through any agency of State Government to fund the relevant payments.
- (c) In the event of a payment default for a duration of three [3] consecutive months by ULB and State Government, the ULB will not be entitled to the services of the Project and the Concessionaire may at its discretion suspend the acceptance of the Incoming Waste from the defaulting ULB, till such time as the relevant payment default is cured. However, if the default continues for a continuous period of six (6) months, the same shall be treated as ULB Event of Default and State Government Event of Default.

ARTICLE 10

CHANGE IN LAW

10.1 Change in Law shall mean the occurrence or coming into force of any of the following, after the Effective Date:

- (a) The enactment of any new Indian law;
- (b) The repeal, modification or re-enactment of any existing Indian law;
- (c) A change in the interpretation or application of any Indian law by a court of record;
- (d) Any order, decision or direction of a court of record.

Provided that Change in Law shall not include:

- (i) Coming into effect, after the Effective Date, of any provision or statute which is already in place as of the date of execution of this Agreement;
- (ii) Any new law or any change in the existing law under the active consideration of or in the contemplation of any government as of the Effective Date which is a matter of public knowledge;
- (iii) Any change in the rates of the Taxes.

10.2 Subject to Change in Law resulting in Material Adverse Effect and subject to Concessionaire taking necessary measures to mitigate the impact or likely impact of Change in Law on the Project, if as a direct consequence of a Change in Law, Concessionaire is obliged to incur Additional Costs, ULB shall either :

- (i) subsequently reimburse to the Concessionaire 50 % of such Additional Costs, in accordance with this Article 10 or
- (ii) agree to amend this Agreement as per the proposals of Concessionaire in order to make the continued implementation of the Project viable, provided such Additional Cost is not less than Rupees [twenty five lakhs (Rs 25,00,000/-)] per year per item of Change in Law.

10.3 Upon occurrence of a Change in Law, Concessionaire shall notify ULB with a copy to the Construction Supervisor and/ or the Independent Engineer, as the case may be of the following:

- (i) The nature and the impact of Change in Law on the Project;
- (ii) In sufficient detail, the estimate of the Additional Cost likely to be incurred by Concessionaire on account of Change in Law; and
- (iii) The measures, which Concessionaire has taken or proposes to take to mitigate the impact of Change in Law, including in particular, minimizing the Additional Cost.

10.4 Upon receipt of the notice of Change in Law issued by Concessionaire pursuant to preceding sub-clause, ULB and the Concessionaire shall hold discussions and take all such steps as may be necessary including determination/certification by a duly

qualified independent person who is acceptable to both ULB and the Concessionaire, of the quantum of the Additional Cost to be borne and paid by the ULB.

ARTICLE 11

PROJECT ACCOUNT

11.1 Project Account

11.1.1 The Concessionaire shall, within 30 (thirty) days from the date of this Agreement and in any case prior to the Appointed Date, open and establish a Project Account with a nationalised bank in India (the “Designated Bank”) in accordance with this Agreement.

11.1.2 The nature and scope of the Project Account are fully described in the agreement (the “Project Account Agreement”) to be entered into amongst the Concessionaire, the ULB, Construction Supervisor, the Designated Bank and the Senior Lenders through the Lenders’ Representative, which shall be substantially in the form set forth in Schedule H.

11.2 Deposits into Project Account

11.2.1 The Concessionaire shall deposit or cause to be deposited the following inflows and receipts into the Project Account:

- (a) all funds constituting the Financial Package;
- (b) Capital Grant received from the Construction Supervisor and / or ULB;
- (c) all Tipping Fee from or in respect of the Project, including the proceeds of insurance claims, advances and deposits made to the Concessionaire with respect to the Project; and
- (d) all grant / funds / loans received from any Person for development of the Project

11.3 Withdrawals during Construction Period

11.3.1 The Concessionaire shall, at the time of opening the Project Account, give irrevocable instructions to the Designated Bank instructing, inter alia, that deposits in the Project Account shall be appropriated in the following order every month, or at shorter intervals as necessary, and if not due in a month then appropriated proportionately in such month and retained in the Project Account and paid out therefrom in the month when due:

- (a) all taxes due and payable by the Concessionaire;
- (b) all Damages certified by the Construction Supervisor as due and payable to ULB / Construction Supervisor by the Concessionaire
- (c) all payments relating to the construction of the Project, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;

- (d) monthly proportionate provision of Debt Service due in an Accounting Year;
- (e) Debt Service in respect of Subordinated Debt;
- (f) any reserve requirements set forth in the Financing Agreements; and
- (g) balance, if any, in accordance with the instructions of the Concessionaire.

11.3.2 The Concessionaire shall not in any manner modify the order of payment specified in Article 11.3.1, except with the prior written approval of the Construction Supervisor /ULB as the case may be.

11.4 Closure of the Project Account

11.4.1 The Project Account shall be operated and maintained till the date of COD of the Project and thereafter, the Concessionaire shall be entitled to discontinue the same and terminate the Project Account Agreement.

11.5 Withdrawals upon Closure

11.5.1 Notwithstanding anything to the contrary contained in this Agreement, all amounts standing to the credit of the Project Account shall, upon closure, be appropriated in the following order:

- (a) all payments and Damages certified by the Construction Supervisor as due and payable to it by the Concessionaire, including any other payment; and
- (b) balance, if any, in accordance with the instructions of the Concessionaire:

ARTICLE 12

FORCE MAJEURE

12.1 Force Majeure Event

Any of the following events which is beyond the control of the Party claiming to be affected thereby (“**Affected Party**”), and which the Affected Party has been unable to overcome or prevent despite exercise of due care and diligence, and results in Material Adverse Effect shall constitute Force Majeure Event:

- (a) earthquake, flood, inundation, landslide, fire, ionising radiation, contamination by radioactivity from nuclear fuel, any nuclear waste, radioactive toxic explosion, volcanic eruptions caused by reasons not attributable to the Concessionaire or any of the employees, contractors or agents of the Concessionaire
- (b) storm, tempest, hurricane, cyclone, lightning, thunder or other extreme atmospheric disturbances;
- (c) any judgment or order of a court of competent jurisdiction or statutory authority in India made against the Concessionaire or the Contractor in any proceedings which is non-collusive and duly prosecuted by the Concessionaire, and
- (d) acts of terrorism, war, hostilities (whether declared or not), invasion, act of foreign enemy, rebellion, riots, weapon conflict or military actions, civil war;
- (e) strikes, labour disruptions, any other industrial disturbances or public unrest not arising on account of the acts or omissions of the Concessionaire or the Contractor;
- (f) action of a Government Agency having Material Adverse Effect, including but not limited to:
 - (i) acts of expropriation, compulsory acquisition or takeover by any Government Agency of the Project/Project Facilities or any part thereof or of the Concessionaire’s or the Contractor’s rights in relation to the Project,
 - (ii) any unlawful, unauthorized or without jurisdiction refusal to issue or to renew or the revocation of any Applicable Permits, in each case, for reasons other than Concessionaire’s or the Contractor’s breach or failure in complying with the Construction Requirements, O&M Requirements, Applicable Laws, Applicable Permits, any judgment or order of a Governmental Agency or of any contract by which the Concessionaire or the Contractor as the case may be is bound.
- (g) early termination of this Agreement by ULB for reasons of national emergency or national security.

12.2 Notice of Force Majeure Event

- (a) As soon as practicable and in any case within 7 (seven) days of the date of occurrence of a Force Majeure Event or the date of knowledge thereof, the Affected Party shall notify Construction Supervisor / Independent Engineer and the other Party of the same setting out, inter alia, the following in reasonable detail:
 - (i) the nature and extent of the Force Majeure Event;
 - (ii) the estimated Force Majeure period;
 - (iii) the nature of and the extent to which, performance of any of its obligations under this Agreement is affected by the Force Majeure Event;
 - (iv) the measures which the Affected Party has taken or proposes to take to alleviate/mitigate the impact of the Force Majeure Event and to resume performance of such of its obligations affected thereby; and
 - (v) Any other relevant information concerning the Force Majeure Event, and /or the rights and obligations of the Parties under this Agreement.

- (b) As soon as practicable and in any case within 5 days of notification by the Affected Party in accordance with the preceding Sub-article (a), the Parties shall along with the Construction Supervisor or Independent Engineer, meet, hold discussions in good faith and where necessary conduct physical inspection/survey of the Project Facilities in order to:
 - (i) assess the impact of the underlying Force Majeure Event,
 - (ii) to determine the likely duration of Force Majeure period and,
 - (iii) to formulate damage mitigation measures and steps to be undertaken by the Parties for resumption of obligations, the performance of which shall have been affected by the underlying Force Majeure Event.

- (c) The Affected Party shall during the Force Majeure period provide to the other Party and the Construction Supervisor or Independent Engineer regular (not less than weekly) reports concerning the matters set out in the preceding Sub-article (b) as also any information, details or document, which the other Party may reasonably require.

12.3 Performance of Obligations

If the Affected Party is rendered wholly or partially unable to perform any of its obligations under this Agreement because of a Force Majeure Event, it shall be

excused from performance of such obligations to the extent it is unable to perform the same on account of such Force Majeure Event provided that:

- (a) due notice of the Force Majeure Event has been given as required by the preceding Article 12.2 (a);
- (b) the excuse from performance shall be of no greater scope and of no longer duration than is necessitated by the Force Majeure Event;
- (c) the Affected Party has taken all reasonable efforts to avoid, prevent, mitigate and limit damage, if any, caused or is likely to be caused to the Project Facilities as a result of the Force Majeure Event and to restore the Project Facilities, in accordance with the Good Industry Practice and its relative obligations under this Agreement;
- (d) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party and the Construction Supervisor or Independent Engineer written notice to that effect and shall promptly resume performance of its obligations hereunder, the non issue of such notice being no excuse for any delay for resuming such performance;
- (e) the Affected Party shall continue to perform such of its obligations which are not affected by the Force Majeure Event and which are capable of being performed in accordance with this Agreement;
- (f) any insurance proceeds received shall be entirely applied to repair, replace or restore the assets damaged on account of the Force Majeure Event, or in accordance with Good Industry Practice.

12.4 Termination due to Force Majeure Event

(a) **Termination**

- (i) If a Force Majeure Event, excluding events described under Articles 12.1(f), and 12.1 (g), continues or is in the reasonable judgment of the Parties likely to continue beyond a period of 60 (sixty) days, the Parties may mutually decide to terminate this Agreement or continue this Agreement on mutually agreed revised terms. If the Parties are unable to reach an agreement in this regard, the Affected Party shall after the expiry of the said period of 60 (sixty) days, be entitled to terminate this Agreement.

Notwithstanding anything inconsistent contained in this Agreement, if a Force Majeure Event is an event described under Articles 12.1(f) and the same subsists for a period exceeding 180 (one hundred and eighty) days, then either ULB or the Concessionaire shall be entitled to terminate this Agreement.

Provided that ULB may at its sole discretion have the option to terminate this Agreement any time after the occurrence of any event described under Articles 12.1(f).

(b) Termination Notice

If either ULB or the Concessionaire, having become entitled to do so, decides to terminate this Agreement pursuant to the preceding sub-article (a), it shall issue Termination Notice setting out:

- (i) in sufficient detail the underlying Force Majeure Event;
- (ii) the Termination Date which shall be a date occurring not earlier than 30 days from the date of Termination Notice;
- (iii) the estimated Termination Payment including the details of computation thereof; and
- (iv) any other relevant information.

(c) Obligation of Parties

Following issue of Termination Notice either by ULB or the Concessionaire, the Parties shall promptly take all such steps as may be necessary or required to ensure that:

- (i) the Termination Payment, if any, payable by the ULB in accordance with the following sub-article (d) is paid to the Concessionaire on the Termination Date; and
- (ii) the Project Facilities is handed over to the ULB by the Concessionaire on the Termination Date free from any Encumbrance.

(d) Termination Payment

Upon Termination of this Agreement due to a Force Majeure Event, Termination Payment shall be made to the Concessionaire by ULB in accordance with the following:

- (i) If Termination is due to a Force Majeure Event, described under Articles 12.1 (a) to (c), Termination Payment to the Concessionaire, which shall be limited to the 70% (seventy percent) of lower of the following amounts less Insurance Cover.
 - (a) Book Value
 - (b) the replacement value of Project Facilities (excluding the Existing Assets, any other assets funded/ provided by the C&DS, UPJN and / or ULB and the Project Site) as assessed by

an Approved Valuer, who shall be selected and appointed by the ULB, within 15 (fifteen) days of Termination, for submitting his assessment within 30 (thirty) days of his appointment hereunder.

Provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall be included in computation of the amount payable hereunder.

For avoidance of doubt, it is clarified that the Termination Payment shall not be payable towards the Existing Assets, fixed assets funded/ provided by the ULB and / or C&DS, UPJN and the Project Site.

(ii) If Termination is due to the occurrence of any event described under Articles 12.1(d), or 12.1(e), ULB shall make a Termination Payment to the Concessionaire of an amount, which shall be limited to the 100% (one hundred percent) of lower of the following amounts, less Insurance Cover.

(a) Book Value

(b) the replacement value of Project Facilities (excluding the Existing Assets, any other assets funded/ provided by the C&DS, UPJN / ULB and the Project Site), as assessed by an Approved Valuer, who shall be selected and appointed by the ULB, within 15 (fifteen) days of Termination, for submitting his assessment within 30 (thirty) days of his appointment hereunder

Provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall be included in computation of the amount payable hereunder.

For avoidance of doubt, it is clarified that the Termination Payment shall not be payable towards the Existing Assets, fixed assets funded/ provided by the ULB / C&DS, UPJN and the Project Site.

(iii) If Termination is due to the occurrence of the event described under Article 12.1 (f) or 12.1 (g), ULB shall make Termination Payment to the Concessionaire of an amount that would be payable under Article 14.2(g) as if it were ULB Event of Default.

Provided ULB shall be entitled to deduct from the Termination Payment any amount due and recoverable by ULB from the Concessionaire as on the Termination Date.

Provided, no Termination Payment shall be payable to the Concessionaire if the Concessionaire fails to maintain Insurance Cover in accordance with Article 6.9 of this Agreement.

12.5 Liability for other losses, damages etc.

Save and except as expressly provided in this Article, neither Party hereto shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event.

**ARTICLE 13
SUSPENSION OF CONCESSIONAIRE'S RIGHTS**

13.1 Suspension upon Concessionaire Event of Default

13.1.1 Upon occurrence of a Concessionaire Event of Default, the ULB shall be entitled, without prejudice to its other rights and remedies under this Agreement including its rights of Termination hereunder, to (i) suspend all rights of the Concessionaire under this Agreement including (a) development, financing, construction and operation & maintenance of the Project Facilities and (ii) exercise such rights itself or through the substitute and perform / cause to perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension (the “**Suspension**”). Suspension hereunder shall be effective forthwith upon issue of notice by the ULB to the Concessionaire and may extend up to a period not exceeding 180 (one hundred and eighty) days from the date of issue of such notice; provided that upon written request from the Concessionaire and the Lenders, the ULB shall extend the aforesaid period of 180 (one hundred and eighty) days by a further period not exceeding 90 (ninety) days.

13.2 ULB to act on behalf of Concessionaire

13.2.1 During the period of Suspension, the ULB shall have the right to appoint the substitute for the Concessionaire to process all Incoming Waste, dump the Landfill Waste to Landfill Facility and carry out design, financing, procurement, construction, operation, maintenance, expansion, upgradation and management of the Project Facilities under and in accordance with this Agreement. The ULB shall be entitled to appropriate the Tipping Fee and recover the balance amount from the Concessionaire towards costs incurred by it for appointing such substitute or for remedying and rectifying the cause of Suspension. However, it is made clear that the ULB is under no obligation to act on behalf of the Concessionaire or to appoint a substitute in the event of Suspension under Article 13.1.

13.2.2 During the period of Suspension hereunder, all assets and liabilities in relation to the Project Facilities shall continue to vest in the Concessionaire and all things done or actions taken, including expenditure incurred by the ULB for substituting the Concessionaire and getting discharged the obligations of the Concessionaire through the substitute under and in accordance with this Agreement and the Project Agreements, shall be deemed to have been done or taken for and on behalf of the Concessionaire and the Concessionaire undertakes to indemnify the ULB for all costs incurred during such period. The Concessionaire hereby licences and sub-licences respectively, the ULB or any other person authorised by it under Article 13 to use during Suspension, all intellectual property belonging to or licensed to the Concessionaire with respect to the Project Facilities and its design, engineering, construction, operation and maintenance and which is used or created by the Concessionaire in performing its obligations under the Agreement.

13.3 Revocation of Suspension

- 13.3.1 In the event that the Concessionaire shall have rectified or removed the cause of Suspension within a period not exceeding 90 (ninety) days from the date of Suspension, the ULB shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement. For the avoidance of doubt, the Parties expressly agree that the ULB may, in its discretion, revoke the Suspension at any time, whether or not the cause of Suspension has been rectified or removed hereunder.
- 13.3.2 Upon the Concessionaire having cured the Concessionaire Event of Default within a period not exceeding 90 (ninety) days from the date of Suspension, the ULB shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement.

13.4 Substitution of Concessionaire

- 13.4.1 At any time during the period of Suspension, the Lenders shall be entitled to substitute the Concessionaire under and in accordance with the Substitution Agreement, subject to the right of the ULB rejecting such Substitution or appointment of a substitute by itself and upon receipt of notice thereunder from the Lenders, the ULB shall withhold Termination for a period not exceeding 180 (one hundred and eighty) days from the date of Suspension, and any extension thereof under Article 13.1, for enabling the Lenders to exercise its rights of substitution. For the avoidance of doubt, the Parties agree that the Substitution Right of the Lenders is subject to the right of the ULB of substituting the Concessionaire during period of Suspension.

13.5 Termination

- 13.5.1 At any time during the period of Suspension under this Article 13, the Concessionaire may by notice require the ULB to revoke the Suspension and issue a Termination Notice. Subject to the rights of the Lenders to undertake substitution in accordance with the provisions of this Agreement and within the period specified in Article 13.4, the ULB shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with Article 14
- 13.5.2 Notwithstanding anything to the contrary contained in this Agreement, in the event that Suspension is not revoked within 180 (one hundred and eighty) days from the date of Suspension hereunder or within the extended period, if any, set forth in Article 13.1, the Concession Agreement shall, upon expiry of the aforesaid period, be deemed to have been terminated by mutual agreement of the Parties and all the provisions of this Agreement shall apply, mutatis mutandis, to such Termination as if a Termination Notice had been issued by the ULB upon occurrence of a Concessionaire Event of Default.

13.6 Suspension of Construction Works during Construction Period

- 13.6.1 The Construction Supervisor in consultation with ULB may by notice require the Concessionaire to suspend forthwith the whole or any part of the Construction Works

if, in the reasonable opinion of the Construction Supervisor, the work is not in accordance with the Development Plan and / or Drawings.

- 13.6.2 The Concessionaire shall, pursuant to the notice, suspend the Construction Works or any part thereof for such time and in such manner as may be specified by the Construction Supervisor and thereupon carry out remedial measures to rectify the error. The Concessionaire may by notice require the Construction Supervisor to inspect such remedial measures forthwith and make a report whether or not the suspension hereunder may be revoked. Based on the above report, the Construction Supervisor in consultation with ULB shall either revoke such suspension or instruct the Concessionaire to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the Construction Supervisor, and the procedure set forth in this Article 13.6 shall be repeated until the suspension hereunder is revoked.
- 13.6.3 All reasonable costs incurred for maintaining and protecting the Construction Works or part thereof during the period of suspension, shall be borne by the Concessionaire; provided that if the suspension has occurred as a result of any breach of this Agreement by the ULB / Construction Supervisor, such costs shall be borne by the ULB.
- 13.6.4 If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Construction Supervisor in consultation with the ULB shall determine any extension of the Scheduled Project Completion Date to which the Concessionaire is reasonably entitled, and shall extend such Scheduled Project Completion Date. In the event that the Scheduled Completion Date is extended pursuant hereto, the Concession Period shall be deemed to be extended by a period equal in length to the period of extension of the Scheduled Completion Date.

ARTICLE 14

EVENTS OF DEFAULT AND TERMINATION

14.1 Events of Default

Event of Default means either Concessionaire Event of Default or ULB Event of Default or State Government Event of Default or all as the context may admit or require.

(a) Concessionaire Event of Default

Any of the following events shall constitute an event of default by the Concessionaire (“**Concessionaire Event of Default**”) unless such event has occurred as a result of one or more reasons set out in Article 6.27:

- (i) The Concessionaire fails to comply with the Development Plan/ Drawings having a Material Adverse Effect on the Project;
- (ii) The Concessionaire has failed to adhere to the Construction Requirements and such failure, in the reasonable estimation of the Construction Supervisor, is likely to delay achievement of COD beyond 90 days of the Scheduled Project Completion Date or has actually resulted in the Concessionaire not achieving COD within 90 (ninety) days of the Scheduled Project Completion Date;
- (iii) At any time during the Concession Period, the Concessionaire fails to adhere to the Construction Requirements or O&M Requirements and has failed to remedy the same or has failed to take any effective steps to remedy the same within 15 (fifteen) days of receipt of notice from ULB / Construction Supervisor, as the case may be;
- (iv) The Concessionaire has failed to make payment of any sum that has become due and payable to the ULB under the provisions of this Agreement and such amount remains unpaid for a period beyond 45 days;
- (v) The Concessionaire has failed to prepare and submit reports referred to in Schedule D and E in accordance with this Agreement and such failure continues for a period of more than 60 (sixty) days after intimation by ULB;
- (vi) The Concessionaire has failed to ensure minimum shareholding requirements specified in Article 6.20.

- (vii) The Concessionaire is in Material Breach of any of its obligations under this Agreement and the same has not been remedied for more than 30 (thirty) days;
- (viii) The Concessionaire has failed to accept MSW supplied by ULB, subject to Article 6.13 for 30 (thirty) consecutive days or 90 (ninety) days in total in a calendar year.
- (ix) Any representation made or warranty given by the Concessionaire under this Agreement is found to be false or misleading;
- (x) A resolution for voluntary winding up has been passed by the shareholders of the Concessionaire;
- (xi) Any petition for winding up of the Concessionaire has been admitted and liquidator or provisional liquidator has been appointed or the Concessionaire has been ordered to be wound up by Court of competent jurisdiction, except for the purpose of amalgamation or reconstruction with the prior consent of ULB, provided that, as part of such amalgamation or reconstruction the amalgamated or reconstructed entity has unconditionally assumed all surviving obligations of the Concessionaire under this Agreements
- (xii) The Concessionaire has abandoned the Project or the Project Facilities;
- (xiii) a Project Account Default has occurred under the Project Account Agreement and the Concessionaire fails to cure the default within the Cure Period of 15 (fifteen) days:
- (xiv) upon occurrence of a Financial Default, the Lenders' Representative has by notice required the ULB to undertake Suspension or Termination, as the case may be, in accordance with the Substitution Agreement and the Concessionaire fails to cure the default within the Cure Period specified hereinabove;
- (xv) a breach of any of the Project Agreements by the Concessionaire has caused a Material Adverse Effect;
- (xvi) the Concessionaire creates any Encumbrance in breach of this Agreement;
- (xvii) The Concessionaire has unlawfully repudiated this Agreement or has otherwise expressed an intention not to be bound by this Agreement;
- (xviii) The Concessionaire has suffered an attachment levied on any of its assets which has caused or is likely to cause a Material Adverse Effect on the Project and such attachment has continued for a period exceeding 45 (forty five) days;

- (xix) Any representation made or warranties given by the Concessionaire under this Agreement has been found to be false or misleading.
- (xiv) Any other event referred to as Concessionaire Event of Default under the Agreement.

b) ULB Event of Default

Any of the following events shall constitute an event of default by the ULB ("**ULB Event of Default**"), unless caused by a Concessionaire Event of Default or a Force Majeure Event:

- (i) ULB has failed to supply at least 50% of the Assured Incoming Waste for one continuous period of 90 (ninety) days in total in a calendar year;
- (ii) ULB and the State Government has failed to make any payments due to the Concessionaire and more than 180 (one hundred and eighty) days have elapsed since such default;
- (iii) ULB has failed to deliver possession of any of the Existing Assets to the Concessionaire or failed to provide adequate access to or Project Site within 45 (forty five) days from the date of receipt of notice from the Concessionaire in that regard;
- (iv) ULB is in Material Breach of any of its obligations under this Agreement and has failed to cure such breach within 30 (thirty) days of receipt of notice thereof issued by the Concessionaire;
- (v) Upon expiry of life of the Landfill Site, ULB fails to provide land for the new landfill site within the mutually agreed time period;
- (vi) ULB has failed to execute the Substitution Agreement in accordance with Article 19.3 or having executed the same is in breach of any of its obligations there under and such breach has not been cured within 30 days from the date of written notice thereof given by the Concessionaire.
- (vii) ULB has unlawfully repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement;
- (viii) ULB has unreasonably withheld or delayed grant of any approval or permission which the Concessionaire is obliged to seek under this Agreement, and thereby caused or likely to cause Material Adverse Effect; and
- (ix) ULB is in default in the payment of the Tipping Fee in accordance with Article 9.6 (c)

- (x) Any representation made or warranties given by the ULB under this Agreement has been found to be false or misleading.

c) State Government Event of Default

Any of the following events shall constitute an event of default by the State Government ("**State Government Event of Default**"), unless caused by a Concessionaire Event of Default or a Force Majeure Event:

- (i) The State Government is in Material Breach of any of its obligations under this Agreement and has failed to cure such breach within (sixty) 60 days of receipt of notice thereof issued by the Concessionaire; or
- (ii) The State Government is in default in the payment of the Tipping Fee in accordance with Article 9.6 (c)
- (iii) The State Government has unlawfully repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement.

14.2 Termination due to Event of Default

(a) Termination for Concessionaire Event of Default

- (i) Without prejudice to any other right or remedy which ULB may have in respect thereof under this Agreement, upon the occurrence of a Concessionaire Event of Default, ULB may subject to the provisions of the Substitution Agreement, terminate this Agreement in the manner as set out under Article 14.2(a)(ii) and Article 14.2(a)(iii).
- (ii) If ULB decides to terminate this Agreement pursuant to preceding Sub-article (i), it shall in the first instance issue Preliminary Notice to the Concessionaire. Within 30 (thirty) days of receipt of the Preliminary Notice, the Concessionaire shall submit to ULB in sufficient detail, the manner in which it proposes to cure the underlying Event of Default (the "Concessionaire's Proposal to Rectify"). In case of non-submission of the Concessionaire's Proposal to Rectify within the said period of 30 (thirty) days, ULB shall be entitled to terminate this Agreement by issuing Termination Notice, and to forfeit the Performance Security and / or Additional Performance Security, if subsisting and upon certification by the Construction Supervisor / Independent Engineer to the bank where the Post Closure Performance Account is held, amounts in the said account.
- (iii) If the Concessionaire's Proposal to Rectify is submitted within the period stipulated therefor, the Concessionaire shall have further period of 30 (thirty) days to remedy/ cure the underlying Event of Default. If, however the Concessionaire fails to remedy/cure the underlying Event

of Default within such further period allowed, ULB shall be entitled to terminate this Agreement, by issue of Termination Notice and to forfeit the Performance Security and / or Additional Performance Security, if subsisting and upon certification by the Independent Engineer to the bank where the Post Closure Performance Account is held, amounts in the said account.

- (iv) ULB shall, if there be Senior Lenders and /or Secured Lenders, send a copy of its notice of intention to issue a Termination Notice referred to in Article 14.2 (a) (ii) to inform the Lenders' Representative and grant 15 (fifteen) days to the Lenders' Representative, for making a representation on behalf of the Senior Lenders and /or Secured Lenders, as the case may be. In the event, ULB receives a representation on behalf of Senior Lenders and /or Secured Lenders, it shall, in its discretion, either withhold Termination for a period not exceeding 180 (one hundred and eighty) days from the date of such representation or exercise its right of Suspension, as the case may be, for enabling the Lenders' Representative to exercise the Senior Lenders' and /or Secured Lenders' right to cause the Concessionaire to cure the event of default in accordance with this Agreement.
- (v) Provided further that upon written request from the Lenders' Representative and the Concessionaire, ULB shall extend the aforesaid period of 180 (one hundred and eighty) days by such further period not exceeding 90 (ninety) days, as ULB may deem appropriate.

(b) Termination for ULB Event of Default

- (i) Without prejudice to any other right or remedy which the Concessionaire may have in respect thereof under this Agreement, upon the occurrence of ULB Event of Default, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- (ii) If the Concessionaire decides to terminate this Agreement pursuant to preceding Sub-article (i) it shall in the first instance issue Preliminary Notice to ULB. Within 30 days of receipt of Preliminary Notice, ULB shall forward to the Concessionaire its proposal to remedy/ cure the underlying Event of Default (the "ULB Proposal to Rectify"). In case of non-submission of ULB's Proposal to Rectify within the period stipulated therefor, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- (iii) If ULB Proposal to Rectify is forwarded to the Concessionaire within the period stipulated therefor, ULB shall have further period of 30 days to remedy/ cure the underlying Event of Default. If, however ULB fails to remedy/ cure the underlying Event of Default within such further period allowed, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

(c) Termination for State Government Event of Default

- (i) Without prejudice to any other right or remedy which the Concessionaire may have in respect thereof under this Agreement, upon the occurrence of State Government Event of Default, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- (ii) If the Concessionaire decides to terminate this Agreement pursuant to preceding Sub-article (i) it shall in the first instance issue Preliminary Notice to the State Government. Within 30 days of receipt of Preliminary Notice, State Government shall forward to the Concessionaire its proposal to remedy/ cure the underlying Event of Default (the "State Government Proposal to Rectify"). In case of non-submission of State Government's Proposal to Rectify within the period stipulated therefor, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- (iii) If State Government Proposal to Rectify is forwarded to the Concessionaire within the period stipulated therefor, State Government shall have further period of 30 days to remedy/ cure the underlying Event of Default. If, however State Government fails to remedy/ cure the underlying Event of Default within such further period allowed, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

(d) Termination Notice

If a Party having become entitled to do so decides to terminate this Agreement pursuant to the preceding sub-article (a) or (b), it shall issue Termination Notice setting out:

- (i) in sufficient detail the underlying Event of Default;
- (ii) the Termination Date which shall be a date occurring not earlier than 60 days from the date of Termination Notice;
- (iii) the estimated termination payment including the details of computation thereof; and,
- (iv) any other relevant information.

(e) Obligation of Parties

Following issue of Termination Notice by any of the Party, the Parties shall promptly take all such steps as may be necessary or required to ensure that:

- i until Termination the Parties shall, to the fullest extent possible, discharge their respective obligations so as to maintain the continued operation of the Project Facilities,
- ii the termination payment, if any, payable by ULB in accordance with the following Sub-article (f) is paid to the Concessionaire on the Termination Date and
- iii the Project Facilities are handed over to ULB by the Concessionaire on the Termination Date free from any Encumbrance along with any payment that may be due by the Concessionaire to the ULB.

(f) Withdrawal of Termination Notice

Notwithstanding anything inconsistent contained in this Agreement, if the Party who has been served with the Termination Notice cures the underlying Event of Default to the satisfaction of the other Party at any time before the Termination occurs, the Termination Notice shall be withdrawn by the Party which had issued the same.

Provided that the Party in breach shall compensate the other Party for any direct costs/consequences occasioned by the Event of Default which caused the issue of Termination Notice.

(g) Termination Payments

- (i) Upon Termination on expiry of the Concession Period by efflux of time, no Termination Payment shall be due and payable to the Concessionaire.
- (ii) Upon Termination of this Agreement on account of ULB Event of Default and / or State Government Event of Default, ULB shall release the Performance Security, if subsisting, and ULB shall pay to the Concessionaire, by way of Termination Payment, an amount, which shall be limited to the 100% (one hundred percent) of lower of the following amounts, less Insurance Cover:
 - (a) Book Value
 - (b) the replacement value of Project Facilities (excluding the Existing Assets, any other assets funded/ provided by the ULB and / or C&DS, UPJN and the Project Site), as assessed by an Approved Valuer, who shall be selected and appointed by the ULB, within 15 (fifteen) days of Termination, for submitting his assessment within 30 (thirty) days of his appointment hereunder

Provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such

unpaid claims shall be included in computation of the amount payable hereunder.

For the avoidance of doubt, it is clarified that the Termination Payment shall not be payable towards the Existing Assets, any other assets funded/ provided by the ULB / C&DS, UPJN and the Project Site.

Provided further that no Termination Payment shall be due or payable to the Concessionaire on account of a ULB Event of Default relating to non-achievement of Appointed Date.

(iii) Upon Termination of this Agreement on account of Concessionaire Event of Default, ULB shall pay to the Concessionaire, by way of Termination Payment, which shall be limited to the 70% (seventy percent) of lower of the following amounts, less Insurance Cover:

(a) Book Value

(b) the replacement value of Project Facilities (excluding the Existing Assets, any other assets funded/ provided by the ULB and / or C&DS, UPJN and the Project Site), as assessed by an Approved Valuer, who shall be selected and appointed by the ULB, within 15 (fifteen) days of Termination, for submitting his assessment within 30 (thirty) days of his appointment hereunder

Provided that if any insurance claims forming part of the Insurance Cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall be included in computation of the amount payable hereunder.

For avoidance of doubt, it is clarified that the Termination Payment shall not be payable towards the Existing Assets, any other assets funded/ provided by the ULB/ C&DS, UPJN and the Project Site.

For the avoidance of doubt, the Concessionaire hereby acknowledges that no Termination Payment shall be due or payable on account of a Concessionaire Event of Default occurring up to 5 years from the COD. Further, the C&DS, UPJN / ULB shall forfeit Performance Security and would not release any further Capital Grant.

14.3 Rights of ULB on Termination

(a) Upon Termination of this Agreement for any reason whatsoever, ULB shall upon making the Termination Payment, if any, to the Concessionaire have the power and authority to:

(i) enter upon and take possession and control of the Project Facilities and Project Site forthwith;

- (ii) prohibit the Concessionaire and any Person claiming through or under the Concessionaire from entering upon Project Site and/or dealing with the Project Facilities;

- (b) Notwithstanding anything contained in this Agreement, ULB shall not, as a consequence of Termination or otherwise, have any obligation whatsoever including but not limited to obligations as to compensation for loss of employment, continuance or regularization of employment, absorption or re-employment on any ground, in relation to any person in the employment of or engaged by the Concessionaire in connection with the Project, and the handback of the Project Facilities by the Concessionaire to ULB shall be free from any such obligation. It is clarified that only the Project Facilities of the Concessionaire shall be taken over and not the liabilities.

14.4 Concessionaire's Obligations on Termination

- (a) The Concessionaire shall on the Termination Date, hand back vacant and peaceful possession of the Project Facilities including any tools, spares, inventory, machinery and all other movables required for its functioning to ULB and in good operable condition.

- (b) The Concessionaire hereby acknowledges ULB's rights specified in Article 14.3 enforceable against it upon Termination and its corresponding obligations arising therefrom. The Concessionaire undertakes to comply with and discharge promptly all such obligations.

14.5 Accrued Rights of Parties

Notwithstanding anything to the contrary contained in this Agreement, Termination pursuant to any of the provisions of this Agreement shall be without prejudice to accrued rights of any of the Party(ies) including its / their right to claim and recover money damages and other rights and remedies which it may have in law or contract. The rights and obligations of any of the Party(ies) under this Agreement, including without limitation those relating to Termination Payment, shall survive the Termination but only to the extent such survival is necessary for giving effect to such rights and obligations.

ARTICLE 15

HANDBACK REQUIREMENTS

15.1 Ownership

Without prejudice and subject to the Concession, the ownership of the Project Facilities, including all expansion, modifications, renovations and improvements made therein by the Concessionaire, shall at all times remain with ULB.

15.2 Concessionaire's Obligations

(a) Project Facilities

- (i) The Concessionaire shall on the date of expiry of the Concession Period, hand back vacant and peaceful possession of the Project Facilities including any tools, spares, inventory, machinery and all other movables required for its functioning to ULB free of cost and in good operable condition. However, the stock of derived products recovered after Processing the MSW till the date of expiry of the Concession Period including recyclables, compost, RDF etc. as on the expiry of the Concession Period shall be the property of the Concessionaire and the Concessionaire shall be at liberty to dispose of the said stocks in accordance with Applicable Laws. However, the arrangements for storage of such stocks till its disposal could be decided reasonably on mutual understanding between ULB and the Concessionaire
- (ii) At least 6 (six) months before the expected expiry of the Concession Period a joint inspection of the Project Facilities shall be undertaken by ULB, Independent Engineer and the Concessionaire. ULB/ Independent Engineer shall, within 15 (fifteen) days of such inspection prepare and furnish to the Concessionaire a list of minor and petty works/ jobs ("Handback Requirements"), if any, to be carried out so as to conform to the Construction Requirements and O&M Requirements. The Concessionaire shall promptly undertake and complete such works/jobs at least one month prior to the expected expiry of the Concession Period and ensure that the said Project Facilities continues to meet such requirements until the same are handed back to ULB.
- (iii) ULB/ Independent Engineer shall, within 15 (fifteen) days of the joint inspection undertaken under preceding Sub-article prepare and furnish to the Concessionaire a list of items, if any, with corresponding distinctive descriptions, which are to be compulsorily handed back to ULB along with the said Project Facilities

(b) **Landfill Facility**

- (i) During the Post Closure Period, ULB shall provide the Concessionaire necessary access to the Landfill Facility to fulfill its obligation for the period.
 - (ii) The Concessionaire shall after expiry of the Landfill Life maintain the Landfill Facility in accordance with the Post Closure Maintenance Plan.
 - (iii) Upon the expiry of the Post Closure Period, the Concessionaire shall hand back peaceful possession of the Landfill Facility to ULB free of cost and in good condition.
- (c) The Concessionaire hereby acknowledges ULB's rights specified in Article 14.3 enforceable against it upon Termination and its corresponding obligations arising therefrom. The Concessionaire undertakes to comply with and discharge promptly all such obligations.

15.3 ULB's Obligations

- (a) In the event that the Concessionaire has not complied with its obligations with reference to Handback Requirements and/or O&M Requirements, the ULB shall, deduct amounts from the Performance Security and / or Additional Performance Security in proportion to the activities/tasks outlined herein below:
- (i) carrying out works/jobs listed under Article 15.2, which have not been carried out by the Concessionaire,
 - (ii) purchase of items, which have not been handed back to ULB in terms of Article 15.2, and
 - (iii) any outstanding dues, which may have accrued in respect of the Project during the Concession Period,
- duly discharge and release to the Concessionaire, the Performance Security or balance therein after deductions in respect of (i), (ii) and (iii) above, as the case may be, upon issuance of certificate by the Independent Engineer regarding compliance by the Concessionaire with the Handback Requirements.
- (b) The Additional Performance Security shall be released by the ULB on completion of the Concessionaire's Obligations with respect to the Post Closure Activities of the Landfill Facility after the expiry of the Post Closure Period.

ARTICLE 16

DISPUTE RESOLUTION

16.1 Amicable Resolution

- (a) Save where expressly stated to the contrary in this Agreement, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Agreement, including those arising with regard to acts, decision or opinion of the Construction Supervisor and / or Independent Engineer (the "**Dispute**") shall in the first instance be attempted to be resolved amicably in accordance with the procedure set forth in Sub-article (b) below.
- (b) Either ULB or the Concessionaire may require such Dispute to be referred to the District Magistrate, Gorakhpur for amicable settlement. Upon such reference, the District Magistrate, Gorakhpur shall meet the Chief Executive Officer of the Concessionaire and Municipal Commissioner of the ULB, at the earliest mutual convenience and in any event within 15 (fifteen) days of such reference to discuss and attempt to amicably resolve the Dispute. If the Dispute is not amicably settled within 15 (fifteen) days of such meeting, either ULB or the Concessionaire may refer the Dispute to arbitration in accordance with the provisions of Article 16.2 below.

16.2 Arbitration

(a) Procedure

Subject to the provisions of Article 16.1, any Dispute which is not resolved amicably shall be finally settled by binding arbitration under the Arbitration Act. The arbitration shall be by a panel of three arbitrators, ULB and the Concessionaire shall appoint one arbitrator each and the third to be appointed by the two arbitrators appointed by the ULB and the Concessionaire. The Party requiring arbitration shall appoint an arbitrator in writing, inform the other Party about such appointment and call upon the other Party to appoint its arbitrator. If within 30 days of receipt of such intimation, the other Party fails to appoint its arbitrator, the Party seeking appointment of arbitrator may take further steps in accordance with Arbitration Act.

(b) Place of Arbitration

The place of arbitration shall ordinarily be Lucknow but by agreement of the Parties, the arbitration hearings, if required, may be held elsewhere.

(c) English Language

The request for arbitration, the answer to the request, the terms of reference, any written submissions, any orders and awards shall be in English and, if oral hearings take place, English shall be the language to be used in the

hearings.

(d) Enforcement of Award

The Parties agree that the decision or award resulting from arbitration shall be final and binding upon the Parties and shall be enforceable in accordance with the provisions of the Arbitration Act subject to the rights of the aggrieved parties to secure relief from any higher forum.

(e) Performance during Arbitration

Pending the submission of and/or decision on a Dispute and until the arbitral award is published, the Parties shall continue to perform their respective obligations under this Agreement without prejudice to a final adjustment in accordance with such award.

(f) Sharing of Cost of Arbitration

The costs of the arbitration panel shall be equally borne by both ULB and the Concessionaire. Each Party shall bear its own cost of the arbitration provided however, the parties can claim costs as part of the relief sought from the arbitration.

ARTICLE 17

REPRESENTATIONS AND WARRANTIES

17.1 Representations and Warranties of the Concessionaire

The Concessionaire represents and warrants to ULB that:

- (a) it is duly organized, validly existing and in good standing under the laws of India;
- (b) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
- (c) it has taken all necessary corporate and other actions under Applicable Laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;
- (d) it has the financial standing and capacity to undertake the Project;
- (e) this Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
- (f) the execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Concessionaire's charter documents or any Applicable Laws or any covenant, agreement, understanding, decree or order to which it is a party or by which it or any of its properties or assets are bound or affected;
- (g) there are no actions, suits, proceedings or investigations pending or to the Concessionaire's knowledge threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the outcome of which may constitute Concessionaire Event of Default or which individually or in the aggregate may result in Material Adverse Effect;
- (h) it has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Agency which may result in Material Adverse Effect;
- (i) it has complied with all Applicable Laws and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which in the aggregate have or may have Material Adverse Effect;
- (j) subject to receipt by the Concessionaire from ULB of any amount due under any of the provisions of this Agreement, in the manner and to the extent provided for under the applicable provisions of this Agreement, all rights and interests of the Concessionaire in and to the Project Facilities shall pass to and

vest in ULB on the Termination Date free and clear of all Encumbrances without any further act or deed on the part of the Concessionaire or ULB;

- (k) no representation or warranty by the Concessionaire contained herein or in any other document furnished by it to ULB or to any Government Agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;
- (l) no bribe or illegal gratification has been paid or will be paid in cash or kind by or on behalf of the Concessionaire to any person to procure the Concession;
- (m) Without prejudice to any express provision contained in this Agreement, the Concessionaire acknowledges that prior to the execution of this Agreement, the Concessionaire has after a complete and careful examination made an independent evaluation of the Existing Assets and the Project Site, and the information provided by ULB, and has determined to its satisfaction the nature and extent of risks and hazards as are likely to arise or may be faced by the Concessionaire in the course of performance of its obligations hereunder; and
- (n) The Concessionaire also acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth above and hereby confirms that ULB / Construction Supervisor / Independent Engineer shall not be liable for the same in any manner whatsoever to the Concessionaire.

17.2 Representations and Warranties of ULB

ULB represents and warrants to the Concessionaire that:

- (a) ULB has full power and authority to grant the Concession;
- (b) ULB has taken all necessary actions to authorize the execution, delivery and performance of this Agreement;
- (c) This Agreement constitutes ULB's legal, valid and binding obligation enforceable against it in accordance with the terms hereof; and
- (d) There are no suits or other legal proceedings pending or threatened against ULB in respect of the Existing Assets or the Project or the Project Site.
- (e) ULB shall remain solely responsible for any claim that may arise against the Existing Assets pertaining to any period before the execution of this Agreement.

17.3 Obligation to Notify Change

In the event that any of the representations or warranties made/given by a Party ceases to be true or stands changed, the Party who had made such representation or given such warranty shall promptly notify the other of the same.

ARTICLE 18

DISCLAIMER

18.1 Disclaimer

- (a) The Concessionaire acknowledges that prior to the execution of this Agreement, the Concessionaire has, after a complete and careful examination, made an independent evaluation of the Request for Proposal, Scope of Work of the Project, Project Site, local conditions, and all information provided by the ULB/ C&DS, UPJN or obtained, procured or gathered otherwise and has determined to its satisfaction the accuracy, adequacy, correctness, reliability or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course of performance of its obligations hereunder. Save as provided in Article 17.2, the ULB and/or C&DS, UPJN makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy and/or completeness of any assessment, assumption, statement or information provided by it and the Concessionaire confirms that it shall have no claim whatsoever against the ULB and /or C&DS, UPJN in this regard.

- (b) The Concessionaire acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Article (a) above and hereby acknowledges and agrees that the ULB shall not be liable for the same in any manner whatsoever to the Concessionaire, {the Consortium Members and their Associates} or any person claiming through or under any of them.

ARTICLE 19

ASSIGNMENT AND CHARGES

19.1 Restrictions on assignment and charges

19.1.1 Subject to Articles [19.2] and [19.3], the Concessionaire shall not assign in favour of any person this Agreement or the rights, benefits and obligations hereunder, save and except with prior written consent of ULB.

19.1.2 Subject to the provisions of Articles [19.2], the Concessionaire shall not create nor permit to subsist any Encumbrance, or otherwise transfer or dispose of all or any of its rights and benefits under this Agreement or any Project Agreement to which the Concessionaire is a party except with prior consent in writing of the ULB, which consent the ULB shall be entitled to decline without assigning any reason.

19.2 Permitted assignment and charges

The restraints set forth in Article [19.1 and 19.2] shall not apply to:

- (i) liens arising by operation of law (or by an agreement evidencing the same) in the ordinary course of business of the Project;
- (ii) mortgages/pledges/hypothecation of equipment/assets other than Project Facilities, and their related documents of title arising or created in the ordinary course of business of the Project and as security only for indebtedness to the Lenders under the Financing Agreements and/or for working capital arrangements for the Project;
- (iii) assignment of rights, interest and obligations of the Concessionaire to or in favour of the Lenders' Representative as nominee and for the benefit of the Lenders, to the extent covered by and in accordance with the Substitution Agreement as security for financing provided by Lenders under the Financing Agreements; and
- (iv) liens or Encumbrances required by any Applicable Law

19.3 Substitution Agreement

19.3.1 In case of default by the Concessionaire under the Financing Agreements or issue of Termination Notice, the ULB, the Lenders' Representative, on behalf of Lenders, may exercise the right to substitute the Concessionaire in accordance with the agreement for substitution of the Concessionaire (the "**Substitution Agreement**"), which may be entered into amongst the Concessionaire, the ULB and the Lenders' Representative, on behalf of Lenders, substantially in the form set forth in Schedule I.

19.3.2 Upon substitution of the Concessionaire under and in accordance with the Substitution Agreement, the Nominated Company substituting the Concessionaire

shall be deemed to be the Concessionaire under this Agreement and shall enjoy all rights and be responsible for all the obligations of the Concessionaire under this Agreement as if it were the Concessionaire; provided that where the Concessionaire is in breach of this Agreement on the date of such substitution, the ULB shall by notice grant a Cure Period of [120 (one hundred and twenty)] days to the Concessionaire for curing such breach. Provided further that any such substitution shall be for the remaining period of Concession only.

19.4 Assignment by the ULB

Notwithstanding anything to the contrary contained in this Agreement, the ULB may, after giving [60 (sixty) days'] notice to the Concessionaire, assign any of its rights and benefits and / or obligations under this Agreement to an assignee who is, in the reasonable opinion of the ULB, capable of fulfilling all of the ULB's then outstanding obligations under this Agreement.

ARTICLE 20

LIABILITY AND INDEMNITY

20.1 General indemnity

20.1.1 The Concessionaire will indemnify, defend, save and hold harmless the ULB and / or the Construction Supervisor and its / their officers, servants, agents, consultants, Government Agency and State Government owned and/or controlled entities/enterprises, (“the ULB Indemnified Persons”) against any and all suits, proceedings, actions, demands and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of any breach by the Concessionaire of any of its obligations under this Agreement or any related agreement or on account of any defect or deficiency in the construction, operation and management of the Project by the Concessionaire to any person, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, breach or default of this Agreement on the part of the ULB Indemnified Persons.

20.1.2 The ULB will indemnify, defend, save and hold harmless the Concessionaire against any and all suits, proceedings, actions, demands and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of (i) defect in title and/or the rights of the ULB in the Project Site and / or the Existing Assets, and/or (ii) breach by the ULB and / or the Construction Supervisor of any of its / their obligations under this Agreement or any related agreement, which materially and adversely affect the performance by the Concessionaire of its obligations under this Agreement save and except that where any such claim, suit, proceeding, action, and/or demand has arisen due to a negligent act or omission, or breach of any of its obligations under and/or any provision of this Agreement or any related agreement and/or breach of its statutory duty on the part of the Concessionaire, its subsidiaries, affiliates, contractors, servants or agents, the same shall be the liability of the Concessionaire.

20.2 Indemnity by the Concessionaire

20.2.1 Without limiting the generality of Article 20.1, the Concessionaire shall fully indemnify, hold harmless and defend the ULB and the ULB Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:

- (a) failure of the Concessionaire to comply with Applicable Laws and Applicable Permits;
- (b) any physical loss of or damage to Project Facilities or assets of any third party arising by reason of any act or omission of the Concessionaire, save to the extent that such loss or damage arises out of the breach of any express provision of this Agreement by the ULB or any deliberate act or omission of the ULB;

- (c) payment of taxes required to be made by the Concessionaire in respect of the income or other taxes of the Concessionaire's contractors, suppliers and representatives; or
- (d) non-payment of amounts due as a result of materials or services furnished to the Concessionaire or any of its contractors which are payable by the Concessionaire or any of its contractors.

20.2.2 Without limiting the generality of the provisions of this Article [20], the Concessionaire shall fully indemnify, hold harmless and defend the ULB Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which the ULB Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by the Concessionaire or by the Concessionaire's contractors in performing the Concessionaire's obligations or in any way incorporated in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the Concessionaire shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Concessionaire shall promptly make every reasonable effort to secure for the ULB, such licence, at no cost to the ULB, authorising continued use of the infringing work. If the Concessionaire is unable to secure such licence within a reasonable time, the Concessionaire shall, at its own expense, and without impairing the Construction Requirements / O&M Requirements / Good Industry Practice, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

20.3 Notice and contest of claims

20.3.1 In the event that any Party receives a claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity under this Article [20] (the "Indemnified Party") it shall notify the other Party(ies) (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim or demand and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim or demand, it may conduct the proceedings in the name of the Indemnified Party subject to the Indemnified Party being secured against any costs involved, to its reasonable satisfaction.

20.4 Defence of claims

20.4.1 The Indemnified Party shall have the right, but not the obligation, to contest, defend and litigate any claim, action, suit or proceeding by any third party alleged or asserted against such Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and reasonable costs and

expenses thereof shall be indemnified by the Indemnifying Party. If the Indemnifying Party acknowledges in writing its obligation to indemnify the Indemnified Party in respect of loss to the full extent provided by this Article [20], the Indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding, liabilities, payments and obligations at its expense and through the counsel of its choice; provided it gives prompt notice of its intention to do so to the Indemnified Party and reimburses the Indemnified Party for the reasonable cost and expenses incurred by the Indemnified Party prior to the assumption by the Indemnifying Party of such defence. The Indemnifying Party shall not be entitled to settle or compromise any claim, demand, action, suit or proceeding without the prior written consent of the Indemnified Party unless the Indemnifying Party provides such security to the Indemnified Party as shall be reasonably required by the Indemnified Party to secure the loss to be indemnified hereunder to the extent so compromised or settled.

20.4.2 If the Indemnifying Party has exercised its rights under Article 20.3, the Indemnified Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

20.4.3 If the Indemnifying Party exercises its rights under Article 20.3, the Indemnified Party shall nevertheless have the right to employ its own counsel and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of the Indemnified Party, when and as incurred, unless:

- (a) the employment of counsel by such party has been authorized in writing by the Indemnifying Party; or
- (b) the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in the conduct of the defense of such action; or
- (c) the Indemnifying Party shall not, in fact, have employed independent counsel reasonably satisfactory to the Indemnified Party, to assume the defense of such action and shall have been so notified by the Indemnified Party; or
- (d) the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either:
 - (i) that there may be specific defenses available to it which are different from or additional to those available to the Indemnifying Party; or
 - (ii) that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement:

Provided that if Sub-articles (b), (c) or (d) of this Article [20.4.3] shall be applicable, the counsel for the Indemnified Party shall have the right to direct the defense of such claim, demand, action, suit or proceeding on behalf of the Indemnified Party, and the

reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder.

20.5 No consequential claims

Notwithstanding anything to the contrary contained in this Article [20], the indemnities herein provided shall not include any claim or recovery in respect of any cost, expense, loss or damage of an indirect or consequential nature except as expressly provided in this Agreement.

20.6 Survival on Termination

The provisions of this Article [20] shall survive Termination of this Agreement

ARTICLE 21

RIGHTS OVER THE PROJECT SITE / EXISTING ASSETS

21.1 Licensee rights

21.1.1 For the purpose of this Agreement, the Concessionaire shall have rights to the use of the Project Site and Existing Assets as sole licensee subject to and in accordance with this Agreement, and to this end, it may regulate the entry and use of the Project by third parties in accordance with and subject to the provisions of this Agreement.

21.1.2 The Concessionaire shall allow free access to the Project Site at all times for the authorised representatives of the ULB and / or the Construction Supervisor or their authorised representatives, and for the persons duly authorised by any Government Agency to inspect the Project or to investigate any matter within its authority, and upon reasonable notice, the Concessionaire shall provide to such persons reasonable assistance necessary to carry out their respective duties and functions.

21.2 Property taxes

All property taxes on the Project Site shall be payable by the ULB as owner of the Project Site; provided, however, that any such taxes payable by the Concessionaire under Applicable Laws for use of the Project Site shall not be reimbursed or payable by the ULB.

21.3 Restriction on sub-letting

The Concessionaire shall not sublicense or sublet the whole or any part of the Project Site and Existing Assets save and except as may be expressly set forth in this Agreement.

ARTICLE 22

MISCELLANEOUS

22.1 Interest and Right of Set Off

Any sum which becomes payable under any of the provisions of this Agreement by one Party to the other Party shall, if the same be not paid within the time allowed for payment thereof, shall be deemed to be a debt owed by the Party responsible for payment thereof to the Party entitled to receive the same. Such sum shall until payment thereof carry interest at 2% over and above SBI PLR % per annum from the due date for payment thereof until the same is paid to or otherwise realized by the Party entitled to the same, unless specified otherwise in this Agreement. Without prejudice to any other right or remedy that may be available under this Agreement or otherwise under law, the Party entitled to receive such amount shall also have the right of set off.

Provided the stipulation regarding interest for delayed payments contained in this Sub-article shall neither be deemed nor construed to authorize any delay in payment of any amount due by a Party nor be deemed or construed to be a waiver of the underlying breach of payment obligations.

22.2 Governing Law and Jurisdiction

This Agreement shall be governed by the laws of India. The Courts at Lucknow shall have jurisdiction over all matters arising out of or relating to this Agreement.

22.3 Waiver of immunity

Each Party unconditionally and irrevocably:

- (a) agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
- (b) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Party with respect to its assets;
- (c) waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- (d) consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets,

property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

22.4 Depreciation and Interest

22.4.1 For the purposes of depreciation under the Applicable Laws, the property representing the capital investment made by the Concessionaire in the Project shall be deemed to be acquired and owned by the Concessionaire. For the avoidance of doubt, the ULB shall not in any manner be liable in respect of any claims for depreciation to be made by the Concessionaire under the Applicable Laws.

22.4.2 Unless otherwise specified, any interest payable under this Agreement shall accrue on a monthly basis and from the respective due dates as provided for in this Agreement.

22.5 Liability for review of Documents, Reports and Development Plan

Except to the extent expressly provided in this Agreement:

- (a) no review, comment or approval by the ULB or the Independent Engineer or Construction Supervisor of any documents including project agreement(s), periodic reports, financial statements, Development Plan, Drawings, O&M Plan, O&M Manual or any other documents submitted by the Concessionaire nor any observation or inspection of the development, operation or maintenance of the Project nor the failure to review, approve, comment, observe or inspect hereunder shall relieve or absolve the Concessionaire from its obligations, duties and liabilities under this Agreement, the Applicable Laws and Applicable Permits; and
- (b) the ULB shall not be liable to the Concessionaire by reason of any review, comment, approval, observation or inspection referred to in Sub-article (a) above.

22.6 Waiver

- (a) Waiver by any Party of any default by the other Party(ies) in the observance and performance of any provision of or obligations under this Agreement:
 - (i) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions or obligations under this Agreement;
 - (ii) shall not be effective unless it is in writing and executed by a duly authorized representative of such Party; and
 - (iii) shall not affect the validity or enforceability of this Agreement in any manner.
- (b) Neither the failure by any Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation hereunder nor time or other indulgence granted by a Party to the

other Party shall be treated or deemed as waiver/breach of any terms, conditions or provisions of this Agreement.

22.7 Survival

Termination of this Agreement

- (a) shall not relieve the Concessionaire or ULB of any obligations already incurred hereunder which expressly or by implication survives Termination hereof, and
- (b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such Termination.

22.8 Entire Agreement

This Agreement, Annexures and the Schedules together constitute a complete and exclusive statement of the terms of the agreement between the Parties on the subject hereof and no amendment or modification hereto shall be valid and effective unless such modification or amendment is agreed to in writing by the Parties and duly executed by persons especially empowered in this behalf by the respective Parties. All prior written or oral understandings, offers or other communications of every kind pertaining to this Agreement are abrogated and withdrawn. For the avoidance of doubt, the Parties hereto agree that any obligations of the Concessionaire arising from the Request for Proposal, as the case may be, shall be deemed to form part of this Agreement and treated as such.

22.9 Amendments, Modifications or Alterations

No amendments, modifications or alterations of or any additions to the terms and conditions of this Agreement shall be valid unless the same be in writing and agreed to by the Parties.

22.10 Notices

Unless otherwise stated, notices to be given under this Agreement including but not limited to a notice of waiver of any term, breach of any term of this Agreement and termination of this Agreement, shall be in writing and shall be given by hand delivery, recognized international courier, mail, telex or facsimile transmission and delivered or transmitted to the Parties at their respective addresses set forth below:

If to State Government :

If to ULB:

The Commissioner,
Gorakhpur Municipal Corporation
.....
Gorakhpur

If to C&DS, UPJN:

Director
Construction & Design Services,
Uttar Pradesh Jal Nigam
T.C – 38V, Vibhuti Khand, Gomti Nagar
Lucknow – 226010, U.P. (INDIA)

If to the Concessionaire:

Or such address, telex number, or facsimile number as may be duly notified by the respective Parties from time to time, and shall be deemed to have been made or delivered:

- (i) in the case of any communication made by letter, when delivered by hand, by recognized international courier or by mail (registered, return receipt requested) at that address, and
- (ii) in the case of any communication made by telex or facsimile, when transmitted properly addressed to such telex number or facsimile number.

22.11 Severability

If for any reason whatsoever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties shall negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable. Provided, failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise.

22.12 No Partnership

Nothing contained in this Agreement shall be construed or interpreted as constituting a partnership between the Parties. None of the Party shall have any authority to bind the other in any manner whatsoever.

22.13 Third Parties

This Agreement is intended solely for the benefit of the Parties and their respective successors and permitted assigns and nothing in this Agreement shall be construed to create any duty to, standard of care with reference to, or any liability to, any person not a Party to this Agreement.

22.14 Successors and Assigns

This Agreement shall be binding upon, and inure to the benefit of the Parties and their respective successors and permitted assigns.

22.15 Language

All notices required to be given under this Agreement and all communications, documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

22.16 Exclusion of Implied Warranties etc.

This Agreement expressly excludes any warranty, condition or other undertaking implied at law or by custom or otherwise arising out of any other agreement between the Parties and any representation by any Party not contained in a binding legal agreement executed by the Parties.

22.17 Waiver of Sovereign Immunity

Each Party hereto unconditionally and irrevocably:

- (a) agrees that the execution, delivery and performance by it of this Agreement and all other agreements, contracts, documents and writings relating to this Agreement constitute private and commercial acts and not public or governmental acts;
- (b) consents generally in respect of the enforcement of any judgment against it in any proceedings, in any jurisdiction to the giving of any relief or the issue of any process in connection with such proceedings including without limitation the making, enforcement or execution against or in respect of any property irrespective of its use.

22.18 Counterparts

This Agreement may be executed in four counterparts, each of which when executed and delivered shall constitute an original of this Agreement but shall together constitute one and only the Agreement. Further, it is agreed that this Agreement shall have no effect and implications against any Party unless the Agreement has been duly executed by all four Parties mentioned herein.

IN WITNESS WHEREOF THE, PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED SEALED AND DELIVERED

For and on behalf of State Govt. by

Name:

Designation:

SIGNED SEALED AND DELIVERED

For and on behalf of ULB by

Name:

Designation:

SIGNED, SEALED AND DELIVERED

For and on behalf of the C&DS, UPJN by:

Name:

Designation:

SIGNED, SEALED AND DELIVERED

For and on behalf of the Concessionaire by:

Name:

Designation:

In the presence of

1)

2)

SCHEDULES TO THE CONCESSION AGREEMENT

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Enclosures

Enclosure 1 of Schedule A	Map Showing the Boundary of the Project Site
Enclosure 1 of Schedule B	Topographic Survey of the Processing Site
Enclosure 2 of Schedule D	Specifications for Composting and Landfill
Enclosure 3 of Schedule D	Quality Assurance Checklist

SCHEDULE A

PROJECT SITE DETAILS

The Project Site shall be the area falling within the jurisdiction of the Gorakhpur Municipal Corporation. The map showing the boundary of the Project Site is enclosed as Enclosure 1 to this schedule.

SCHEDULE B

MSW PROCESSING SITE

1. Name of the Site:

2. Location of the Site:

3. Area of the Site:

The Topographic Survey of the site is enclosed as Enclosure 1 to this Schedule.

SCHEDULE C

LIST OF EXISTING ASSETS

1. The Existing Assets shall mean the movable and immovable assets installed at the Project Site and shall be handed over by the ULB / Construction Supervisor to the Concessionaire on the Appointed Date.
2. An inventory of the Existing Assets shall be jointly prepared by the ULB / Construction Supervisor and the Concessionaire, and such inventory shall form part of this Schedule C.

SCHEDULE D

CONSTRUCTION REQUIREMENTS

The Construction Requirements to be complied by the Concessionaire has been laid down in this Schedule. The Construction Requirements under this schedule has been divided in the following sections:

- I General
- II Processing Facility
- III Landfill Facility

SECTION I

CONSTRUCTION REQUIREMENTS-GENERAL

1. General

- 1.1 The Concessionaire shall, within 15 days of the Appointed Date and prior to any construction activity, finalize in consultation with the Construction Supervisor:
 - (i) Development Plan.
 - (ii) Quality assurance and quality control procedures to cover all aspects of the Construction Works so as to ensure the desired quality.
- 1.2 The Concessionaire shall give due weightage to the intent of ULB to develop the MSW Processing Facility and Landfill Facility.
- 1.3 The Concessionaire will be responsible to ensure that the Project meets all the Applicable Laws, including MSW Rules 2000, CPHEEO guidelines, pollution norms and other relevant guidelines. The Concessionaire will be responsible to obtain and maintain all the clearances, Applicable Permits and approvals for the Project.
- 1.4 As per the colour coding requirements of the MSW Rules, the entire MSW management system shall have separate components for Biodegradable Waste and Non- Bio degradable Substance.
- 1.5 The Concessionaire shall be responsible for the provision of requisite plant, machinery, vehicles, equipments and other equipments essential for implementation of the Project. This shall also include any redundancy, spare vehicles/ equipments to meet the Construction Requirements and O&M Requirements.
- 1.6 The Concessionaire shall provide additional equipments, for implementation of the Project, in accordance with the terms of this Agreement.
- 1.7 The Concessionaire will be responsible for the provision of intangible assets, technical inputs, consumable materials and required staff for construction, operation, maintenance and management of the Project Facilities. The cost of power & water required during construction and testing period will be borne by the Concessionaire.
- 1.8 The Concessionaire shall adopt such processes and methods as it considers necessary or expedient for Processing of MSW and landfilling at the Project Facilities, subject to meeting the Construction Requirements and Landfill Waste is not more than the threshold limits as specified in Article 6.15.1 of this Agreement. However, the Concessionaire shall use composting of MSW as one of the main processes.
- 1.9 The Concessionaire shall at its own cost and expense provide all additional equipments, capacity addition to the Project Facilities required for the Project during

the Concession Period for processing of the MSW generated at the Project Site in accordance with this Agreement.

- 1.10 A committee shall be formed with representatives of ULB, Concessionaire and Construction Supervisor as members, to ensure that Project Facilities funded from the Capital Grant is procured at the competitive prices.

2. Codes and Standards

The following standards in order of preference shall be adopted in consultation with the Independent Engineer/ Construction Supervisor, unless otherwise specified:

- (i) MSW Rules
- (ii) Central Public Health & Environmental Engineering Organization (CPHEEO) guidelines/ standards / manual
- (iii) Bureau of Indian Standards (BIS)
- (iv) All applicable rules, regulations, acts, guidelines, standards of Central Pollution Control Board (CPCB)
- (v) All applicable rules, regulations, acts, guidelines, standards of Uttar Pradesh Pollution Control Board (UPPCB)
- (vi) Suitable specification/standard devised by the Construction Supervisor / Independent Engineer

3. Procedures

3.1. Before Commencement of Construction

- 3.1.1. Within 60 days of Effective Date, the Concessionaire shall submit and finalize a Development Plan for the Project in consultation with the Construction Supervisor within the timeline specified in Article 3. The Development Plan shall, inter alia, include:

- (i) A detailed schedule of implementation for putting up and operationalising the Project Facilities, which shall specify at least four major milestones;
- (ii) The Critical Path Method (CPM)/ Programme Evaluation and Review Technique (PERT) charts or similar activity planning technique/ method for monitoring. This would cover all stages/ aspects of implementation of the Project Facilities including design and engineering, procurement of materials and equipment, installation, construction and testing;
- (iii) Manpower deployment plan, including the designation of key personnel for the management and supervision of all Project-related activities. (This would include the designation of suitably qualified personnel for areas such as contract administration and supervision, construction management, safety, environmental management, plant and equipment maintenance, procurement, materials management and quality control);
- (iv) Procurement plan including details of equipment and machinery that would be used, their locations, and arrangements for conveying and handling materials
- (v) Details of the quality assurance and quality control procedures.

3.1.2. The Concessionaire shall have:

- (i) Finalized the Development Plan, Drawings in consultation with the Construction Supervisor;
- (ii) Obtained all such Applicable Permits as are necessary to commence construction of such Project Facilities;
- (iii) Mobilized the requisite resources, personnel and organization necessary for the same and designated and appointed suitable officers/ representatives as it may deem appropriate with responsibility to supervise construction of the Project and for exchange of information with the Construction Supervisor and ULB;
- (iv) Finalized in consultation with the Construction Supervisor quality assurance and quality control procedures to cover all aspects of the work so as to ensure the desired quality of Development Plan. This would include establishment of a well-equipped functional laboratory.

3.1.3. The Concessionaire shall immediately upon commencement of Construction Works notify Construction Supervisor / ULB of the same.

3.2. During Construction

3.2.1. The Concessionaire shall:

- a. ensure that the construction/ renovation /rehabilitation of the Project Facilities is undertaken with minimal inconvenience to the public/ ULB operations;
- b. take into consideration the relevant environmental aspects / concerns / rules /guidelines, etc.
- c. take into consideration the rules mentioned by the State Environment Impact Assessment Authority (SEIAA),State Pollution Control
- d. take precautions to avoid inconvenience, damage, destruction or disturbance to any third party's rights and properties;
- e. mobilize adequate numbers of equipment and machinery to ensure adherence to the Development Plan;
- f. deploy adequate number of qualified and competent personnel having relevant experience and skills for implementation of the Project and interaction with the Construction Supervisor/ ULB.

3.3. Positions and Levels

The Concessionaire shall be responsible for:

- (a) The correctness of the positions, levels, dimensions and alignment of all parts of the Construction Works;

- (b) The provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities;

If, at any time during construction of the Project Facilities/ Construction Works, any error is noticed in the position, levels, dimensions or alignment of any part of the Project Facilities/ Construction Works, the Concessionaire, on being asked to do so by the Construction Supervisor or ULB, shall at his own cost, rectify such errors to the satisfaction of the Construction Supervisor / ULB.

3.4. Tests

Various quality control Tests would be undertaken as per the Construction Requirements and standards prescribed by Bureau of Indian Standards. Where no Testing methods are specified by the said standards, details of the Tests to be carried out and specifications to be achieved for the respective Project Facilities/ Construction Works or part thereof shall be agreed upon with the Construction Supervisor prior to construction.

The Tests would be carried out at a location that the Construction Supervisor may reasonably require, at the cost and expense of the Concessionaire.

The Construction Supervisor may from time to time require removal of any material, equipment, machinery which, in its opinion, do not meet the Construction Requirements specified in this schedule and Development Plan.

Where material properties of the Project Facilities/ Construction Works vary from or comply only marginally with the specifications contained in this schedule and Development Plan, the Construction Supervisor may increase the frequency of testing as appropriate at the cost of the Concessionaire.

The Concessionaire shall provide such assistance, labour, electricity, fuels, stores, apparatus and instruments as are normally required for examining, measuring and testing any materials or plant and shall supply samples of materials, as required by the Construction Supervisor to undertake Tests.

Construction Supervisor may from time to time require:

- (a) Removal/substitution of any material, equipment or machinery which, in its opinion, does not meet the standards specified in this schedule from the construction site, within such time as may be specified in its instructions.
- (b) Re-execution, of any or part of the Construction Works which in the opinion of the Construction Supervisor do not meet the standards set out in this schedule;

4. Reporting Requirements during the Construction Period

During the Construction Period, the Concessionaire shall submit to the Construction Supervisor fortnightly progress report (for each calendar month or part thereof) within first 7 calendar days of the report period inter alia, including the following:

- (i) Pre-construction activities - mobilization of equipments, personnel, site office, utility relocation etc.
- (ii) Work done in the last fortnight including any slippages.
- (iii) Review of milestones set out in Development Plan and reasons for delay/ deviations, if any.
- (iv) Details of major equipments purchased.
- (v) Suspension of Construction Works, if any, its reasons, duration and the steps undertaken to resume Construction Works.
- (vi) Brief report of any accident/incident within the construction site, injury/ fatality, property damage, cause of accident and actions taken to avoid recurrence.
- (vii) Notes of meetings between the Concessionaire, the Construction Supervisor and ULB highlighting critical decisions taken or agreements reached.
- (viii) Report on environment health and safety for workers practices followed

5. Procedures after Completion of Construction

Upon completion of construction but prior to issue of the Completion Certificate, the Project Site shall be cleared of all construction equipments, surplus materials, debris and temporary installations and shall be left in tidy and an aesthetically pleasing appearance to the satisfaction of the Construction Supervisor.

SECTION II

CONSTRUCTION REQUIREMENTS: MSW PROCESSING PLANT

1. General

- a) The Concessionaire would be expected to select a combination of technologies / systems having composting as one of the main processes and other processes such as Waste to Energy, Resource recycle facility, Refuse Derived Fuel (RDF), plastic / metal separation, inert processing, etc. which would maximize waste recycling/treatment and would lead to minimum rejects going to Landfill Facility.
- b) The MSW Processing Facility shall be developed with the objective to adhere to the MSW Rules and more specifically Article 5 of Schedule 2 of MSW Rules.
- c) The minimum facilities to be provided in the MSW Processing Facility which is to be implemented by the Concessionaire as part of the Project have been highlighted in this Schedule.
- d) The MSW Processing Facilities shall conform to the minimum design and construction requirements set out in this Schedule and the MSW Rules.

2. Process

- 2.1. The MSW Processing Facility should be designed considering that the incoming MSW would be mixed in nature.
- 2.2. The Incoming MSW should be segregated by upfront segregation generally known as pre-processing. Mechanical segregation should adhere to the following:
 - (a) Mechanical loading of MSW in segregation hoppers
 - (b) Segregation should be done by machines
 - (c) Incoming MSW shall be segregated by screening, magnetic separation, Eddy current separation, ballatic separation, etc.
 - (d) The approximate area (in sqm) required for this process should be 2.5 times of the TPD of the town.
 - (e) The biodegradable material shall go to the compost plant.
 - (f) The non-biodegradable material and rejects from the compost plant shall be processed by other suitable methods including Waste to Energy, RDF, inert processing etc.
- 2.3. The Concessionaire shall install, construct and commission Compost Plant as set out in this schedule.

3. Composting Plant

3.1. The segregated biodegradable waste shall be transported to the compost plant (the “Compost Plant”). The process design for MSW Compost Plant should involve various steps as described below:

- (i) The Concessionaire shall develop the Compost Plant based on aerobic windrow process as mentioned in Draft CPHEEO manual 2014
- (ii) The approximate area of the Compost Plant (in sqm) should be about 30-50 times the TPD of the town. Out of this atleast 30% of the area shall be covered area/ monsoon shed.
- (iii) The Compost plant shall be able to achieve the following conditions for composting:
 - (a) During pre-process stage for initiating the microbial activity, addition of sanitizers/ micro-organisms such as azotobactor and phosphorus solubilizing microbes (PSM) in adequate quantities should be done.
 - (b) Moisture contents should be maintained within the range of 50-60%. Additional water shall be mixed with the bio-degradable waste if required, to keep maintain the moisture level.
 - (c) Sufficient air supply shall be maintained for higher rate of decomposition, removal of carbon dioxide and volatile organic compounds and buffering of the pH.
 - (d) A temperature range of 65-70°C shall be maintained for sanitization of MSW and 30-35°C for maturation and curing of compost.
 - (e) A pH range of 6.5-7.8 should be maintained for composting.
 - (f) A C:N ratio between 25-35 should be maintained for maximum decomposition of organic matter.

3.2. Windrow (Mechanical Composting)

- (a) The pre-processed waste shall be oval, trapezoidal or triangular heaps (windrows) in multiple rows for initiating the microbial activity. The base width of the windrow may be 4.5m to 5.5m and height shall be 2.0 to 2.5 m. These heaps shall be handled using special vehicles to facilitate forming, turning and cropping.
- (b) Sufficient space will be provided between two waste rows for movement of vehicles.
- (c) These waste heaps shall be periodically turned to regulate and control air circulation, moisture content and temperature through self-propelled windrow turners installed on the floor of each row. Water shall be sprayed on the heaps to maintain the desired moisture content.
- (d) After 30 days of formation of windrows, break the windrows and screen the material through series of promells. The rejects will be treated/ processed by

other technologies. The screening shall be cured & processed to make the compost free from silt and other inorganic components.

3.3. Other Infrastructure and Equipment

- (a) The receiving pit shall be constructed or provided in an RCC enclosure which shall have a capacity to store waste equivalent to 3 days of waste generated in the city.
- (b) Impervious CC flooring shall be provided for the entire composting area at a slope of 1:500 with top 100 mm of RCC.
- (c) Leachate collecting drains shall be provided on the floor of the window area for draining of leachates which shall be collected in a sump well 25,000 liter capacity with a facility to recycle the leachate.
- (d) The leachate drainage layer should be 30 cm thick as mentioned in CPHEEO manual
- (e) A monsoon shed of 6 m height consisting of a steel portal structure with 24G corrugated galvanized iron (CGI) sheets shall be constructed.

4. Storm Water Drainage System

The storm water drainage system within the MSW Processing Facility should have trapezoidal or rectangular cross section masonry drain and shall meet the following requirements:

- (i) independent from the Leachate System;
- (ii) the run-off rain water from the hinterland does not enter the Municipal Solid Waste storage and processing area;
- (iii) there is no stagnation of rain water in the Site.

5. Water Supply System

The Concessionaire shall provide a water supply system adequate to meet the requirements for Landfilling, Processing, drinking and washing purposes in accordance with Good Industry Practice.

6. Quality Control

The Concessionaire shall ensure provision of equipment adequate to carry out the following tests and environmental monitoring based on MSW Rules and CPHEEO Manual:

- (i) Air quality (SPM, RPM, CO, Methane, SO_x, NO_x)
- (ii) Ground water and surface water quality
- (iii) Leachate quality
- (iv) Any other quality controls required in accordance with environmental laws

7. Internal Roads

The Concessionaire shall provide good quality motorable roads within the MSW Processing Facility which shall be of minimum 5m width and as per specifications of Ministry of Surface Transport/ NHAI/ Indian Road Congress standards.

8. Lighting

The Concessionaire shall provide,

- (i) adequate lighting system to achieve a minimum lux level of 20 for the working area;
- (ii) street lighting with permanent steel light posts for main internal roads and access roads;
- (iii) movable heavy duty focus lamps depending on the operational requirement.

9. Other Electrical Works

The Concessionaire shall provide any additional electrical equipment and other electrical works in accordance with Good Industry Practices. The Concessionaire shall provide power back-up to ensure operation of at least the following facilities:

- (i) Weigh bridge
- (ii) Lighting of work area
- (iii) Leachate circulation and treatment system
- (iv) Water supply system

10. Office Building

The office building should be a permanent structure. It should be equipped with an office area for facility management and supervisory staff and also include the following:

- a. Office for the facility manager
- b. Office to accommodate working space and desks for the employees.
- c. Office to store landfill drawings and records
- d. Washrooms and shower area.
- e. Bathroom facilities
- f. Lunch room for employees.
- g. First aid station.
- h. Visitor reception area.

11. Weighbridge Facility

The Concessionaire shall provide one weigh bridge with two independent weighing platforms of rated capacity of 40 metric tons each at the entry gate of the MSW Processing Facilities. Each weighing platform shall have minimum dimensions of 12m length and 3m width.

12. Installation of Close Circuit Cameras

The Concessionaire shall install a close circuit camera at each weighbridge to record the vehicles being weighed. The camera shall record clearly the registration details of the vehicle and face of the vehicle driver along with time. At the end of each day a back-up copy of the close circuit camera recording of the day shall be produced on compact disc (CD).

13. Site Fencing

The Concessionaire shall construct a 2.4 m high boundary wall with top 0.6 m being barbed wire fencing with mild steel angles, on the periphery of MSW Processing Site.

14. Quality Control Laboratory

The concessionaire shall establish a quality control laboratory to carry out the following activities;

- (a) Physical and chemical characterization of MSW as per MoEF, MSW Rules and CPHEEO recommendations
- (b) Regular monitoring during implementation, construction, operation and post closure phases as set out in Construction Requirements and O&M Requirements.

The laboratory shall meet the standards of National Accreditation Board for Testing and Calibration Laboratories (NABL) and MoEF. The laboratory shall be accredited by NABL and MoEF within two years of its establishment.

15. Name Board

The Concessionaire shall erect two signboards, one in Hindi and the other in English, of a size not less than 2 ft. by 4 ft each, adjacent to the main entrance to the MSW Processing Facilities in a manner such that it is ordinarily visible to any person using such entrance. The signboard shall prominently display the following text in English (and its translation in Hindi) in black upper case letters on a white/yellow background:

“This property belongs to the Gorakhpur Municipal Corporation and has been handed over to M/s _____ for Developing, Operating and Maintaining Municipal Solid Waste Management Facility”.

The Concessionaire shall ensure that the signboard is maintained in good condition throughout the Concession Period.

16. Green Belt

The Concessionaire shall provide a vegetative cover in a strip of width 10 m all along the fencing. The species of trees for providing vegetative cover shall be approved by the Independent Engineer/ Construction Supervisor, as the case may be.

Effort should be made to provide green belt of higher density using new techniques while keeping in mind that least of the space is used for green belt and maximum space is used for the site to ensure that larger area is being made available for storage and processing of the waste

17. Additional Requirement

The Concessionaire should additionally meet the requirements/ specifications outlined in Enclosure 2 and 3 of this schedule.

SECTION III

CONSTRUCTION REQUIREMENTS: MSW LANDFILL FACILITY

1. General

- (i) The minimum facilities to be provided in the Landfill Facility which is to be implemented by the Concessionaire as part of the Project have been highlighted in this Schedule.
- (ii) The Landfill Facility shall conform to the minimum design and construction requirements set out in this Schedule, the MSW Rules and CPHEEO manual.
- (iii) There shall be only one common entry-cum-exit point into the Landfill Facility from the MSW Processing Facility.
- (iv) The slope of the Landfill cell shall be 1:3 (vertical : horizontal) below the plinth level and 1: 4 above the plinth level.

2. Landfill Area

The Concessionaire shall utilize the MSW Processing Site, excluding the MSW Processing Facility area, for the purpose of setting up the Landfill Facility in accordance with the Development Plan.

3. Composite Liner System

The Concessionaire shall provide a composite liner system at the bottom of the landfill, which shall consist of the following:

- (i) A 900 mm thick compacted soil amended with additives as per IS: 6186-1986 specification for Bentonite to reach the required permeability coefficient, (to leachate) and measured in field, $K < 10^{-7}$ cm/sec.
- (ii) A 1.5mm thick Grade I smooth HDPE liner as per IS: 10889-1984 Specification for High Density Polyethylene Films
- (iii) A 200 mm thick protective silt layer shall be laid over High Density Polyethylene liner
- (iv) Drainage layer of 300 mm thick granular soil material of permeability constant $K > 10^{-2}$ cm/sec.

4. Leachate Collection and Removal System (“LCRS”)

- (i) The Concessionaire shall provide the LCRS, which shall consist of:
 - (a) A leachate drainage layer consisting of 300 mm thick granular soil material of 25-50 mm size rounded gravel with permeability value greater than 10^{-2} cm/sec with a slope of 2%.

- (b) 100mm dia HDPE feeder pipes (“Feeder Pipes”) with a maximum lateral spacing of 30 m.
 - (c) 150mm dia HDPE header pipes (“Header Pipes”) with a maximum lateral spacing of 50 m.
 - (d) an HDPE main header pipe (“Main Header Pipe”) of size 250mm dia, which will collect leachate from the header pipes and discharge into a day sump.
 - (e) leachate treatment tank/s and a leachate collection network which shall meet the O&M Requirements.
- (ii) The leachate from the Landfill Facility should be carried to the Leachate Collection Tank without any stagnation (except in storage/holding tanks)
 - (iii) A protection from clogging in the leachate collection system should be provided by a non-woven geotextile installed above the entire stone drainage blanket.
 - (iv) Overall design of the leachate system should be such as to ensure that there is no percolation of the leachate into the ground and it does not come into contact with any water body.

5. Gas Recovery and Greenhouse Gas Mitigation System (“GRGS”)

The Concessionaire shall provide the GRGS duly approved by the Independent Engineer/ Construction Supervisor, as the case may be, which shall consist of a gas venting layer 300mm thick granular soil material of permeability value of 10^{-2} cm/sec, and adheres to Applicable Law.

6. Final Cover System

The Concessionaire shall provide the Final Cover which shall consist of:

- (a) Drainage Layer of 150mm thick granular soil material of permeability value not greater than 10^{-2} cm/sec
- (b) Barrier Soil Layer of 450mm thick compacted soil amended with additives as per IS: 6186-1986 to achieve a permeability value not greater than 1×10^{-7} cm/sec
- (c) Vegetative Layer of 300mm thick with good clay soil as per MSW Rules and as approved by the Independent Engineer/ Construction Supervisor, as the case may be,

7. Weighbridge Facility

The Concessionaire shall provide one weigh bridge with weighing platforms of rated capacity of 40 metric tonnes at the entry gate of the Landfill Facility. The weighing platform shall have minimum dimensions of 12m length and 3m width.

8. Installation of Close Circuit Cameras

The Concessionaire shall install a close circuit camera at each weighbridge to record the vehicles being weighed. The camera shall record clearly the registration details of

the vehicle and face of the vehicle driver along with time. At the end of each day a back-up copy of the close circuit camera recording of the day shall be produced on compact disc (CD).

9. Storm Water Drainage System

The storm water drainage system within the MSW Landfill Facility should have rectangular/ trapezoidal cross section masonry drain and shall meet the following requirements:

- (a) independent from the Leachate System;
- (b) the run-off rain water from the hinterland does not enter the Municipal Solid Waste storage and processing area;
- (c) there is no stagnation of rain water in the Site.

10. Water Supply System

The Concessionaire shall provide a water supply system adequate to meet the requirements for Landfilling, drinking and washing purposes in accordance with Good Industry Practice.

11. Quality Control

The Concessionaire shall ensure provision of equipment adequate to carry out the following tests and environmental monitoring based on MSW Rules and CPHEEO Manual:

- (a) Air quality (SPM, RPM, CO, Methane, SO_x, NO_x)
- (b) Ground water and surface quality
- (c) Leachate quality
- (d) Any other quality controls required in accordance with environmental laws.

12. Worker Amenities

The Concessionaire shall provide workers amenities in accordance with Good Industry Practice and in accordance with MSW Rules.

13. Internal Roads

The Concessionaire shall provide good quality motorable roads within the MSW Processing Facility and Landfill Facility which shall be of minimum 5m width and as per specifications of Ministry of Surface Transport/ NHAI/ Indian Road Congress standards.

14. Lighting

The Concessionaire shall provide:

- (a) adequate lighting system to achieve a minimum lux level of 20 for the working area;

- (b) street lighting with permanent steel light posts for main internal roads and access roads;
- (c) movable heavy duty focus lamps depending on the operational requirement.

15. Other Electrical Works

The Concessionaire shall provide any additional electrical equipment and other electrical works in accordance with Good Industry Practices. The Concessionaire shall provide power back-up to ensure operation of at least the following facilities:

- (a) Weigh bridge
- (b) Lighting of work area
- (c) Leachate circulation and treatment system
- (d) Water supply system

16. Site Fencing

The Concessionaire shall construct a 2.4 m high boundary wall with top 0.6 m being barbed wire fencing with mild steel angles, on the periphery of MSW Processing Site.

18. Name Board

The Concessionaire shall erect two signboards, one in Hindi and the other in English, of a size not less than 2 ft. by 4 ft each, adjacent to the main entrance to the MSW Landfill Facilities in a manner such that it is ordinarily visible to any person using such entrance. The signboard shall prominently display the following text in English (and its translation in Hindi) in black upper case letters on a white/yellow background:

“This property belongs to the Gorakhpur Municipal Corporation and has been handed over to M/s _____ for Developing, Operating and Maintaining Municipal Solid Waste Management Facility”.

The Concessionaire shall ensure that the signboard is maintained in good condition throughout the Concession Period.

17. Green Belt

The Concessionaire shall provide a vegetative cover in a strip of width 10 m all along the fencing. The species of trees for providing vegetative cover shall be approved by the Independent Engineer/ Construction Supervisor, as the case may be,

18. Additional Requirements

The Concessionaire should additionally meet the requirements/ specifications outlined in Enclosure 2 and 3 of this schedule.

SCHEDULE E

OPERATION AND MAINTENANCE REQUIREMENTS

The O&M Requirements to be adhered to by the Concessionaire has been laid down in this Schedule. The O&M Requirements under this schedule has been divided in the following sections:

- I General
- II Processing Facility
- III Landfill Facility

SECTION I

OPERATION AND MAINTENANCE REQUIREMENTS : GENERAL

1. General

1.1. The Concessionaire shall comply with the O&M Requirements as set out in this Schedule. In doing so, the Concessionaire shall ensure that the Project Facilities are maintained to the standards and specifications as set out in the Construction Requirements and also meet the other requirements, if any, set out in the Agreement. Further, the Concessionaire shall also comply with maintenance requirements as provided in CPHEEO Manual.

1.2. Service Goal

It is ULB's goal to improve the existing standards of public health and environmental quality for the members of the public, through the provision of an efficient integrated municipal solid waste management system services.

1.3. Basic Services

During the Operations Period, the Concessionaire shall, in accordance with this Concession Agreement undertake the following activities on a daily basis (all 365 days in an year) irrespective of quantum of the Incoming MSW, and shall be solely responsible to provide necessary staff and equipment, in a manner consistent with this Agreement and considered Good Industry Practice to the satisfaction of the Independent Engineer and thaub.

- (i) Operation & maintenance of the MSW Processing Facility with composting as one of the main processes. The other processes may include Waste to Energy plant, RDF plant, plastic and metal separators, inert processing plant so as to restrict the quantity of Landfill Waste going to the Engineered Sanitary Landfill are less than the threshold limits as specified in Article 6.15.1 of this Agreement;
- (ii) Operation & maintenance of the Engineered Sanitary Landfill;

During the Concession Period, the Concessionaire shall ensure that all MSW brought to the MSW Processing Facility by ULB or its authorized representative is segregated, processed and disposed in accordance with Applicable Laws and in accordance with this Agreement.

- 1.4. In the design, planning and implementation of all works and functions associated with the operation and maintenance of the Project Facilities, the Concessionaire shall take all such actions and do all such things (including without limitation, organizing itself, adopting measures and standards, executing procedures including inspection procedures, and engaging contractors, if any, agents and employees) in such manner, as will:
 - (i) ensure the safety of personnel deployed on the Project Facilities or part thereof;
 - (ii) permit unimpaired performance of statutory duties and functions of any party in relation to the Project;

- 1.5. During the Operations Period, the Concessionaire shall, in respect of the Project Facilities, ensure that:
 - (i) applicable and adequate safety measures are taken;
 - (ii) adverse effects on the environment and to the owners and occupiers of property and/or land in the vicinity of the Project Facilities, due to any of its actions, is minimized and is limited to standard as per MSW Rules;
 - (iii) any situation which has arisen or likely to arise on account of any accident or other emergency is responded to as quickly as possible and its adverse effects controlled/ minimized;
 - (iv) disturbance or damage or destruction to property of third party by operations of the Project Facilities is controlled/minimized;
 - (v) all materials used in the maintenance, repair and replacement of any of the Project Facilities shall meet the Construction Requirements;

- 1.6. The Concessionaire shall ensure that the MSW Processing Facility shall remain operation for 365 days a year subject to shut down due to planned maintenance. The Concessionaire should endeavor that the MSW Processing Facility shall become operational within 72 hours of its breakdown.

- 1.7. The Concessionaire shall be solely responsible to provide necessary staff and equipment for the above activities in a manner consistent with this Agreement and Good Industry Practice.

2. Operations and Maintenance Manual and O&M Plans

- 2.1. Atleast 45 days prior to making an application for issue of Project Completion Certificate for the Project, the Concessionaire shall finalize in consultation with the Independent Engineer and ULB:
- (i) the O&M Manual (including the formats for the reports to be submitted during the Operations Period and the Post Closure Period). The O&M Manual should be developed in accordance with the MSW Rules and CPHEEO Manual
 - (ii) the O&M Plan for the first year of operations.
- 2.2. Six weeks prior to the anniversary of COD each year, the Concessionaire shall in consultation with the Independent Engineer and ULB finalize an annual O&M Plan for the next year of operations.
- 2.3. The Concessionaire shall also update the O&M Manual every 3 years in consultation with the Independent Engineer and ULB.

3. Codes and Standards

The following standards in order of preference shall be adopted in consultation with the Independent Engineer, unless otherwise specified:

- (i) MSW Rules
- (ii) Central Public Health & Environmental Engineering Organization (CPHEEO) guidelines/ standards/ manual
- (iii) Any other standards specified by statute and Applicable Laws
- (iv) Bureau of Indian Standards (BIS)
- (v) Suitable specification/standard devised by the Independent Engineer
- (vi) Any other standard proposed by the Concessionaire and approved by the Independent Engineer
- (vii) Any other statutory obligation notified by GOI, GoUP/ any other regulatory authority.

4. Routine Maintenance Standards

- 4.1. In order to ensure smooth and uninterrupted operations, routine maintenance of the Project Facilities shall include but not be limited to:
- (i) prompt repairs of the weigh-bridge, windrow platforms, leachate collection drainage and treatment system, electrical items, drains, internal roads, sieving machinery, lighting and fencing;
 - (ii) replacement of equipment/consumables, horticultural maintenance and repairs to equipment, structures and other civil works which are part of the Project Facilities;
 - (iii) maintaining the shape, scope, full cross-section of the storm water drainage system and leachate collection and drainage system;

- (iv) keeping the Project Facilities in a clean, tidy and orderly condition and taking all practical measures to prevent damage to the Project Facilities or any other property on or near the Site;
 - (v) undertaking maintenance works in accordance with the O&M Plan and O&M Manual;
 - (vi) preventing, with the assistance of law enforcement agencies, where necessary, any unauthorized entry to and exit from and any encroachments including any encroachments on the Site;
 - (vii) taking all reasonable measures for the safety of all the workmen, material, supplies and equipments brought to the Site.
- 4.2. The Concessionaire, for the purpose of routine maintenance shall, in consultation with the Independent Engineer, set forth such criteria as to conform to Good Industry Practice for sound maintenance of the Project Facilities.
- 4.3. The Concessionaire shall regularly carry out the necessary preventive maintenance activities for the Project Facilities to ensure adherence to the Construction Requirements/ specifications.

5. Emergency Maintenance

- 5.1. The Emergency Response Protocol (“ERP”) shall be developed by the Concessionaire in consultation with the Independent Engineer. This shall be a part of the O&M Manual developed by the Concessionaire.
- 5.2. The ERP shall set out steps to be taken and measures to be adopted by the Concessionaire in responding to dealing with Emergency including those situations related to vehicle accidents involving personal injuries or fatalities, property damage and force majeure as follows:
- (i) In the event of an Emergency, the Concessionaire shall immediately carry out an inspection of the area affected by the Emergency. Where Emergency has necessitated closure of the Project Facilities or part thereof, the Concessionaire shall promptly carry out any repair works necessary to restore the Project Facilities to safe condition and in any event shall carry out such works before the affected area of the Project Facilities is re-opened for normal operations.
 - (ii) The Concessionaire shall ensure that sufficient staff, plant, equipments and materials, including without limitation medical assistance are available to respond to Emergency within reasonable period at all times during the Operations Period.
- 5.3. In case of Emergency, the Concessionaire shall
- (i) carry out such emergency maintenance and repairs as may be required to repair the damages, if any, in consultation with the Independent Engineer and

where required under the supervision of the police, if required in order to ensure that the Project Facilities are returned to normal operating standards as quickly as possible

- (ii) take all necessary measures to minimize pollution in accordance with the procedure specified in the O&M Plan.

6. Exclusion

The Concessionaire shall not accept e-waste, Hazardous Wastes, Biomedical Waste or radioactive waste and any other such specific waste mentioned in CPHEEO Solid Waste Management manual. In case of any dispute related to the nature of the MSW substance, Independent Engineer's decision shall be final and shall prevail. However, in case bio-medical / hazardous waste is found to be mixed with the MSW, Concessionaire shall segregate the same and transport it to the location as decided by the ULB for its further disposal by thaub.

7. Reporting Requirements

The Concessionaire shall submit to the ULB the following reports duly verified by the Independent Engineer:

- (a) Ward wise quantity of MSW received (to the extent possible) and its characterization
- (b) Leachate generation
- (c) Test reports
- (d) Monthly Tipping Fee invoice in accordance with Article 9 of the Agreement.
- (e) Annual compilation of Monthly tipping fee invoice.
- (f) Monthly compilation of MSW processed and Residual Inert Matter landfilled.
- (g) Monthly compilation of capital expenditure
- (h) Disagreements/ disputes, if any and proposed measures to be taken
- (i) Brief report of any accident/incident related to the Project, injury/ fatality, property damage, cause of accident and actions taken to avoid recurrence
- (j) copies of any reports submitted for purposes of regulatory compliance and of notices received or reports or notices submitted to any competent authority or otherwise
- (k) Any other report that may be reasonably required by ULB for itself or to fulfill any regulatory compliance.

The frequency and formats for the reports to be submitted shall be finalized in consultation with the Independent Engineer and shall form part of the O&M Plan and O&M Manual.

8. Records

- 8.1. The Concessionaire shall maintain and keep all operation & maintenance records (the “Records”) at the location decided in consultation with ULB inter alia including the following:
 - (i) Attendance Cards/ Register of the manpower deployed
 - (ii) Register of issue of the disinfectant liquid
 - (iii) Register of Stock of implements, and other materials and their issue
 - (iv) Record of acceptance of personnel carriers with registration Numbers & timings
 - (v) Register for issue of uniforms and protective gears
 - (vi) Maintenance & operations records of all vehicles
 - (vii) Any other record for regulatory compliance.
- 8.2. The Concessionaire shall finalize the formats for the records in consultation with the Independent Engineer and document the same.
- 8.3. The Concessionaire would keep the Records for a period as per the statutory requirements or for atleast 10 years, whichever is higher.
- 8.4. The Records shall be made available upon the request of the Independent Engineer or the ULB.

SECTION II

OPERATION AND MAINTENANCE REQUIREMENTS: MSW PROCESSING FACILITY

1. Operation & Maintenance of the MSW Processing Facility

1.1 Objective

The objective can be divided into the following:

- (a) Segregation of mixed MSW into biodegradable (wet waste), non-biodegradable (dry waste) and household hazardous waste with normal efficiency of 30% (i.e. 30% non-biodegradable is removed from the mixed MSW) by upfront segregation or pre-processing facility.
- (b) Composting of biodegradable MSW and use of other MSW processing methods/ technologies to reduce the Landfill Waste to less than the threshold limits as specified in Article 6.15.1 of this Agreement.
- (c) The operation and maintenance should cover all the activities mentioned above and also cover the maintenance of all type of machines viz. segregation unit, compost processing units, destoner and gravity separator, trommels, power units, conveyers, vehicles, compost pad, monsoon shed, curing shed, store, etc.

2. Compost Plant

The incoming MSW shall be segregated at the tipping floor and the biodegradable MSW is carried and loaded on the compost pad in the form of windrows. The windrows shall be allowed to decompose in controlled conditions of air, temperature and moisture. The control is exercised by weekly turning of the windrows. Normally, the biodegradable decomposes and stabilizes in windrows within a period of 30 days. Once the biodegradable is stabilized the windrows are broken and screened to separate out the other admixtures. The screened compost is then cured for about 10 days at room temperature of 30-35 degree C. Thereafter, the compost is screened through a fine screen system and the screen are destoned and desilted to obtain the desired product i.e. compost. The refinement section also consist of a feeder conveyor and a trommel with 4 mm perforations. The screen product which is less than 4 mm which is passed through ADS to remove sand and brick.

2.1. Pre-Processing/ Segregation

- (a) The Incoming Waste should be mechanically segregated by upfront segregation or pre-processing.
- (b) The normal efficiency shall be 30% i.e. 30% non-biodegradable is removed from the mixed MSW
- (c) The biodegradable material shall be taken to the compost pad to form windrows for aerobic decomposition.

- (d) The non-biodegradable material and rejects from the Compost Plant shall be processed using other technology/ process e.g. Waste to Energy, RDF, inert processing.

2.2. Windrow (Mechanical Composting)

- (a) The pre-processed biodegradable MSW shall be placed in oval, trapezoidal or triangular heaps (windrows) in multiple rows for initiating the microbial activity. These heaps shall be handled using special vehicles to facilitate turning and aerobic degradation.
- (b) Spray inoculants to accelerate the initiation and composting of biodegradable MSW
- (c) These MSW heaps shall be periodically turned to regulate and control air circulation, moisture content and temperature through self-propelled windrow turners. Water shall be sprayed on the heaps to maintain the desired moisture content.
- (d) After 30 days of the formation of windrows, break the windrows and screen the material through series of trommels. The rejects will be processed using other technology/ process e.g. Waste to Energy, RDF, inert processing. The screening shall be cured & processed to make the compost free from silt and other inorganic components.

2.3. Curing and Drying

- (a) The compost shall be transferred to the mechanical composting unit after maturity
- (b) The fully decomposed organic matter shall be placed on the curing shed for atleast 10 days.

2.4. Compost Refinement, Bagging and Storage

- (a) Cured compost shall be screened mechanically by fine mesh and transferred to destoner and gravity separator to make it free from silt and other inert mix. The rejects again should be processed using other technology/ process e.g. Waste to Energy, RDF, inert processing.
- (b) After the mechanical separation, grading and sieving, fully matured and stabilized compost shall be recovered.
- (c) Quality control shall be done for the physical, chemical, and biological parameters and the finished product is packed in suitable bags for sale.

3. Sampling of Products produced from the MSW Processing Facility

- 3.1. Before selling the end products, the Concessionaire should ensure that the compost and other products produced after Processing is certified as being Fit for Sale by the Independent Engineer in accordance with applicable Codes and Standards.
- 3.2. Unless modified with mutual consent by the Parties, the compost shall be sampled and tested in the manner as set out below:

The compost and other end products proposed to be sold or otherwise disposed of shall be placed in at least ten heaps of almost equivalent size. One random sample from each of these heaps shall be taken. Such random samples shall then be thoroughly mixed and a single random sample taken and tested. In case the composition of this single random sample satisfies the applicable Codes and Standards, it shall be certified as being “Fit for Sale”.

4. Operations and Maintenance Standards

During the Operations Period, the Concessionaire shall operate and maintain the MSW Processing Facilities as follows:

Sl. No.	Facility	Operation and Maintenance Standard
1	Weigh Bridge	<ul style="list-style-type: none"> ▪ Calibration certification from manufacturer/independent certification agency (approved by the Independent Engineer) to be renewed every year ▪ Maximum period of non-operation: 5 days ▪ Data recording and reporting format to be decided in consultation with the Independent Engineer and to form part of the O&M Plan and/or O&M Manual.
2	MSW Platform	<ul style="list-style-type: none"> ▪ Leachate drain around the MSW platform is free from clogging and allows unobstructed flow of leachate. Maintain shape & scope of the leachate drains in the designed manner during the lifetime ▪ No cracks/ruptures in the top CC layer
3	Storm Water Drainage System	<ul style="list-style-type: none"> ▪ All storm water drains are free from clogging and allow unobstructed flow of water ▪ Maintain shape & scope in the designed manner during the lifetime ▪ No stagnation of rain water on the Site
4	Leachate Collection and Drainage System	<ul style="list-style-type: none"> ▪ No overflow of leachate from the Leachate Collection Tanks ▪ Cracks or leaks in the leachate collection and drainage system to be sealed immediately ▪ Should be free from clogging and allows unobstructed flow of leachate
5	Leachate Treatment Plant	<ul style="list-style-type: none"> ▪ Maximum period of shut-down: 24 hrs. ▪ Treated leachate to meet standards as per applicable Codes and Standards ▪ No untreated leachate to be let out from the Site, unless it meets the standards as set out in Table 4.3 of this Schedule
6	Water Supply System	<ul style="list-style-type: none"> ▪ Water for drinking purposes to meet IS:10500 ▪ Water supply for gardening and flushing to meet Inland Surface Water standards as per Central Public Health and Environmental Engineering Organization (CPHEEO)
7	Quality Control	<ul style="list-style-type: none"> ▪ Quality and calibration certification from

Sl. No.	Facility	Operation and Maintenance Standard
	Laboratory	<p>manufacturer/independent certification agency (approved by the Independent Engineer) to be renewed every year</p> <ul style="list-style-type: none"> ▪ Maximum period of non-operation: 5 days ▪ Data recording and reporting format to be decided in consultation with the Independent Engineer and to form part of the O&M Plan and/or O&M Manual.
8	Internal Roads	<ul style="list-style-type: none"> ▪ The roads shall be pot-hole free and in good motorable condition
9	Lighting and other electrical works	<ul style="list-style-type: none"> ▪ Minimum lux level of 20 in the area of operation (in case of 2 shift operations)
10	Boundary Wall and Fencing	<ul style="list-style-type: none"> ▪ Any breach in the boundary wall and fencing to be brought to the notice of the Independent Engineer immediately and to be sealed within 1 day ▪ Boundary wall and fencing to be inspected at least once every week and rejects (paper, plastics etc.), if any, found trapped in the fencing to be removed promptly
11	Green Belt	<ul style="list-style-type: none"> ▪ Maintained in accordance with O&M Plan and O&M Manual
12	Pulverisation & Additive / Binder Storage and Mixing Room and any other place where MSW during any processing cycle is placed	<ul style="list-style-type: none"> ▪ Regular preventive maintenance of conveyors, pulveriser, mixer, drier and other machinery etc ▪ Room shall be regularly maintained for leakage, painting etc

5. Leachate Collection and Removal System (“LCRS”)

- (i) The Concessionaire shall ensure that there is no overflow of leachate from the LCRS.
- (ii) The Concessionaire shall ensure that all leachate drains are free from clogging and allows unobstructed flow of leachate.
- (iii) The Concessionaire shall ensure that leachate is treated at leachate treatment plant comprising of combination of anaerobic and aerobic processes.
- (iv) Only treated leachate to be let out from the site, which meets the standards as prescribed under MSW Rules
- (v) No untreated leachate, which does not meet the applicable Code and Standards, shall be let out from the MSW Processing Site.

6. Quality of Other Products/ Process

The Concessionaire shall use other methods/ process for treatment/ recycling of the MSW to produce other products which should be certified as fit for sale by the Independent Engineer in accordance with applicable Codes and Standards. The Concessionaire shall in accordance with the O&M Plan and/or O&M Manual, operate and maintain such processing plant.

The Concessionaire shall ensure smooth and uninterrupted operations of such processing plant and shall carry out the routine maintenance including but not be limited to following:

- (i) prompt repairs of the components of such processing plant;
- (ii) replacement of equipment/consumables, horticultural maintenance and repairs to equipments, structures and other civil works which are part of such processing plant;
- (iii) maintaining the shape, scope, full cross-section of the storm water drainage system and leachate collection and drainage system;
- (iv) keeping such processing plant in a clean, tidy and orderly condition and taking all practical measures to prevent damage to such processing plant or any other property on or near the Site;

SCHEDULE III

OPERATION AND MAINTENANCE REQUIREMENTS: LANDFILL FACILITY

1. Landfill of Waste

- 1.1. Landfilling shall be restricted to non-biodegradable, inert waste and other Non-hazardous waste that are not suitable either for recycling or for biological processing. Land filling shall be carried out for residues of MSW Processing Facilities and pre-processing rejects.
- 1.2. The Residual Inert Matter brought to the Landfill Facility shall be tested in accordance with applicable Codes and Standards and weighed in the presence of the Independent Engineer. The Residual Inert Matter certified by the Independent Engineer as Fit for Landfilling shall only be Landfilled.

2. Sampling and Testing of Landfill Waste going to Landfill Facility

- 2.1. Unless modified with mutual consent by the Parties, the Residual Inert Matter proposed to be taken to the Landfill Facility shall be placed in at least ten heaps of almost equivalent size. The Independent Engineer shall take ten random samples from each of these heaps. These random samples shall then be thoroughly mixed and a single random sample taken and tested as per applicable Codes and Standards. In case the composition of this single random sample satisfies the specified criteria, it shall be certified as being "Fit for Landfilling".
- 2.2. Any sample which fails to be certified as "Fit for Landfilling" shall be rejected and cause the rejection of all the heaps from which it was sourced and the Concessionaire shall subsequently act in accordance with the direction of the Independent Engineer with regard to such rejected heaps.
- 2.3. Notwithstanding any certification of the Independent Engineer, the Concessionaire shall be solely responsible for the composition of the material disposed in the Landfill Facility.

3. Weighment of Residual Inert Matter Going to Landfill Facility

- 3.1. The Concessionaire shall not take any Residual Inert Matter into the Landfill Facility without having obtained the "Fit for Landfilling" certificate from the Independent Engineer. The Concessionaire shall plan his operations in a manner such that the Landfill Waste is taken into the Landfill Facility only between 9:00 AM and 5:00 PM or as mutually agreed upon between the ULB and the Concessionaire.
- 3.2. The Concessionaire shall record the following minimum data with regard to the Landfill Waste:
 - (i) Date of operation
 - (ii) Total laden weight of the truck

- (iii) Time of entry of the truck
- (iv) Total unladen weight of the truck
- (v) Time of exit of the truck

- 3.3. In the event that the weigh-bridge is not in operation, the Concessionaire shall use the weighbridge provided at the entry gate of the MSW Processing Facility for weighment of the Landfill Waste. Such weighment and transport of the Landfill Waste shall be done only under the direct supervision of the Independent Engineer.
- 3.4. The procedure for weighment and certification by the Independent Engineer shall be as set out in the O&M Plan and the O&M Manual.

4. Landfill Operation

4.1. Daily Cell Cover

The Concessionaire shall, on each day during the Landfill Life, provide the Daily Cell Cover which shall consist of an inert soil compacted properly.

4.2. Special Operational Conditions

Except with specific approval from the Independent Engineer, the Concessionaire shall ensure the following:

- (i) Provide a benching (terrace) of 10m width for every 5 m height of filling within the Engineered Sanitary Landfill.
- (ii) The slope of the Engineered Sanitary Landfill face shall not be less than 1:3 while above the bund level it shall not be less than 1:4.

4.3. Landfill Closure and Final Cover

- (i) Upon reaching a height of the Engineered Sanitary Landfill such that the area at the top of the Engineered Sanitary Landfill is 30% of the area of the base of the Engineered Sanitary Landfill measured at ground level, or before starting the final cover, whichever is earlier, the Concessionaire shall promptly intimate the Independent Engineer and the ULB providing the following details:
 - (i) The estimated quantity of Landfill Waste that can be Landfilled in future
 - (ii) The probable date till which Municipal Solid Waste can be accepted by the Waste Processing Facility
 - (iii) The plan for laying the final cover (“Final Cover”) for the Landfill Facility
- (ii) The Concessionaire shall provide the Final Cover in accordance with the Construction Requirements.

4.4. Vegetative Cover

- (i) The Concessionaire shall, in accordance with MSW Rules ensure the provision of a vegetative cover after laying of the Final Cover.
- (ii) The selection of the varieties of plants and trees to be planted shall be decided in consultation with the Independent Engineer/ULB and shall form part of the Post Closure Maintenance Plan.

4.5. Leachate Collection and Removal System (“LCRS”)

- (i) The Concessionaire shall ensure that there is no overflow of leachate from the LCRS.
- (ii) The Concessionaire shall ensure that all leachate drains are free from clogging and allows unobstructed flow of leachate.
- (iii) The Concessionaire shall ensure that leachate is treated at leachate treatment plant comprising of combination of anaerobic and aerobic processes.
- (iv) Only treated leachate to be let out from the site, which meets the standards as prescribed under MSW Rules
- (v) No untreated leachate, which does not meet the applicable Code and Standards, shall be let out from the Landfill Site.

4.6. Gas Recovery and Greenhouse Gas Mitigation System (“GRGS”)

The Concessionaire shall

- (i) ensure that the greenhouse gas emissions from the Landfill Facility conforms to the permissible limits as per Applicable Law;
- (ii) collect information pertaining to the quantum of greenhouse gases produced from the Engineered Sanitary Landfill.

4.7. Post-Closure Maintenance Plan

- (i) Atleast 3 months before the expected expiry of the Landfill Life, the Parties jointly with the Independent Engineer shall discuss and jointly prepare the Post Closure Operating Plan for maintenance of the Landfill Facility, under the provisions of the prevailing statutory regulations (“Post Closure Maintenance Plan”).
- (ii) The Concessionaire shall maintain the Landfill Facility during the Post Closure Period in accordance with the Post-Closure Maintenance Plan.

- (iii) Post-closure maintenance shall be in accordance with Applicable Laws and shall involve periodical inspections by the Concessionaire, of at least once every three months, of the Landfill Facility to monitor land surface care, leachate collection, and methane control by way of flaring and to maintain flaring equipment.
- (iv) Post-closure maintenance shall also involve investigations for detection of adverse environmental impacts, if any, and implementation of measures for mitigation of the same.
- (v) Upon the expiry of the Post Closure Period, the Concessionaire shall hand back peaceful possession of the Landfill Facility to the ULB free of cost and in good condition.

4.8. Environment Monitoring System

- (i) Monitoring shall be carried out in the following four zones:
 - (a) On and within the Engineered Sanitary Landfill
 - (b) In the unsaturated subsurface zone (vadose zone) around the Engineered Sanitary Landfill.
 - (c) In the ground water (saturated) zone around the Engineered Sanitary Landfill.
 - (d) In the atmosphere/local air above and around the Engineered Sanitary Landfill.
 - (e) The ambient air quality monitoring shall be carried out by consult authority according to the prescribed schedule mentioned in CPHEEO Manual and MSW Rules.
 - (f) The concentration of methane gas generated at landfill site shall not exceed 25% of the Lower Explosive Limit (LEL).
- (ii) The quality of air (at the gas control facilities within the Landfill Site, at buildings on or near the Engineered Sanitary Landfill and along any preferential migration paths) shall meet the applicable Codes and standards.
- (iii) The quality of ground water (one source in the upstream of Engineered Sanitary Landfill and three sources on the downstream of Engineered Sanitary Landfill, within 50 m from the Site and to a depth of 100 m from NGL) in the saturated zones shall meet the applicable Codes and standards.
- (iv) The frequency of monitoring shall be as per following table:

Sl. No.	Description	Frequency
During Landfill Life		
1	Leachate quantity	Daily
2	Leachate quality	Weekly
3	Ground water quality – within the site	Quarterly
4	Ground water quality – outside the site	Half yearly

Sl. No.	Description	Frequency
5	Air Quality	Once in 2 months
During Post Closure Period		
1	Movement of the Engineered Sanitary Landfill cover	Yearly
2	Leachate quantity and quality	Quarterly
3	Ground water quality – within and outside the site	Half yearly
4	Air Quality	Half yearly

- (v) The Concessionaire shall provide the instruments/equipments and undertake the environmental monitoring tests set out hereinabove.

SCHEDULE F

TIPPING FEE (in Rs / MT)

As per the financial Proposal of the Concessionaire providing the Tipping Fee (in response to RFP)

SCHEDULE G

INDEPENDENT ENGINEER

1. Role and functions of the Independent Engineer

- 2.1. The Independent Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- 2.2. The scope of work of the Independent Engineer shall be to review and oversee the operations and maintenance of the Project.
- 2.3. Broadly, the role of the Independent Engineer during the Operations Period is set out in the following paragraphs.
 - 1.1. Independently review, monitor and wherever required by the Agreement, to approve the operation and maintenance of the Project Facilities to ensure compliance by the Concessionaire with the Construction Requirements and O&M Requirements
 - 1.2. Verification and random checks of weighment and Testing of the MSW at the Processing and Landfill Site.
 - 1.3. Verify and submit a monthly report to the ULB on compliance by the Concessionaire with the requirement of the agreement and with Applicable Laws.
 - 1.4. Report to the Parties on the various physical, technical and financial aspects of the Project based on inspections, site visits and Tests,
 - 1.5. Review matters related to safety and environment management measures adopted by the Concessionaire for the Project.

2. Scope of Services of the Independent Engineer

The specific scope of services to be provided by the Independent Engineer in accordance with the applicable provisions of this Agreement is specified below:

2.1 Operations Period

- (i) The Independent Engineer shall aid and advise the Concessionaire in preparing the O&M Manual.
- (ii) In respect of the Operation Plan and other periodic reports received by the Independent Engineer from the Concessionaire for its review and comments during the Operation Period, the provisions of above Paragraph shall apply, mutatis mutandis.

- (iii) The Independent Engineer shall review the periodic status report furnished by the Concessionaire and send its comments thereon to the ULB and the Concessionaire within 7 (seven) days of receipt of such report.
- (iv) The Independent Engineer shall review the activities carried out by the Concessionaire on a weekly basis. It shall make a report of such review (the “Operation & Maintenance Review Report”) stating inter alia the review relating to operations and maintenance of the Project
- (v) The Independent Engineer shall in its Operation & Maintenance Review Report specify the remedial measures that the Concessionaire shall carry out, or cause to be carried out, for the purpose of determining that the operations of the Project is in conformity with the O&M Requirements, Operation Plan, Operation & Maintenance Manual, Applicable Laws and Concessionaire’s obligations as per the Concession Agreement. It shall monitor and review the results of actions taken by the Concessionaire in this behalf.
- (vi) As part of the O&M review, the Independent Engineer shall also determine and recommend the damages / penalties, if any in accordance with the Concession Agreement to be levied on the Concessionaire in view of non-adherence to Concessionaire’s obligations as per the Concession Agreement, Operational Plan, O&M Manual, etc.
- (vii) The Independent Engineer shall monitor and review the curing of deficiencies and non-compliances by the Concessionaire.
- (viii) In the event that the Concessionaire notifies the Independent Engineer of any modifications or expansion / addition / renovation of the Project Facilities and / or procurement of equipment / vehicles, the Independent Engineer shall review the same and send its comments to the ULB and the Concessionaire within 7 (seven) days of receiving the proposal.
- (ix) Conduct random inspections of the Project Facilities by visual assessment with careful observation of the specific object/ item for identification and quantification of the deficiencies or damages to the Project Facilities and operation and maintenance of the Project Facilities.
- (x) In addition to the daily responsibilities, conduct a general inspection of the Project Facilities at least once a month and as and when exigencies require to ascertain conformity with Construction Requirements and O&M Requirements;
- (xi) Monitor Operation and Maintenance activities (including maintenance of Project Facilities and equipment, standards of service, safety and environmental issues) and the overall quality of O&M activities so as to ensure compliance by the Concessionaire with the O&M Requirements, O&M Plan and O&M Manual;

- (xii) Issue “Notice to Remedy” in event of observing non-compliance to O&M Requirements;
- (xiii) Record and report to the ULB on the incidents of Material Breach or Persistent Breach of O&M Requirements;
- (xiv) If during the course or upon review/inspection undertaken by the Independent Engineer or otherwise, it transpires that any of the Parties is in breach/default of any of its obligations under the Agreement, the Independent Engineer shall, under intimation to both the Parties, require the defaulting Party to remedy such breach/default within such time and in such manner as the Independent Engineer may deem fit and in each case the same shall be recorded.
- (xv) Monthly review of the various records and registers maintained by the Concessionaire and suggest suitable remedial measures/ procedures, where necessary;
- (xvi) Provide the services of a full time resident project representative during the period commencing from 3 (three) days from the date of appointment of the Independent Engineer until the expiry of the contract for Independent Engineer’s appointment;
- (xvii) The Independent Engineer shall attend regular meetings (Project Review Meetings) with the ULB’s and the Concessionaire to be held atleast once in every month. During the Operations Period, the Independent Engineer shall report on progress and quality of work performed by the Concessionaire and discuss problems or other pertinent matters relating to the work.

In addition to the above, the specific activities to be carried by the Independent Engineer during the Operation Period are:

Monitoring at MSW Processing Site

The Independent Engineer’s prime responsibility would be to monitor the operations at the weighbridge and waste inspection area at the MSW Processing Facility. For this purpose the Independent Engineer shall undertake, inter alia, the following activities:

- (a) Verification of the weighment and records generated at the weighbridge;
- (b) Verification of the Testing of the MSW in accordance with the O&M Requirements;
- (c) Monitor, in accordance with Good Industry Practice and O&M Requirements, the operations and maintenance activities undertaken by the Concessionaire;
- (d) Review, approve or disapprove drawings, samples and other submissions of the Concessionaire to determine compliance and conformance with the O&M Requirements;
- (e) Inspect and certify the quality of compost / RDF / other products etc being sold or otherwise disposed of, composition of Residual Inert Matter
- (f) Check the quality of materials and the workmanship of the Landfill Facility, including that of the following:

- (i) leachate collection system;
- (ii) intermediate liner system of the Engineered Sanitary Landfill;
- (iii) daily cell cover;
- (iv) gas venting and flaring system;
- (v) slope stability of the Engineered Sanitary Landfill;
- (vi) final cover system.

Conducting Random Inspections

The Independent Engineer shall conduct random inspections of the Project Facilities as well as the operations in the manner as follows:

- (i) The random inspections may be carried out by visual assessment with careful observation of the specific object/item for identification and for quantification of the deficiencies or damages of the Project Facilities and operation and maintenance of the Project Facilities. For this purpose the Independent Engineer can use photographs with time and place on record.
- (ii) During the random inspections, the Independent Engineer would monitor, in accordance with Good Industry Practice, the operations and maintenance activities undertaken by the Contractor so as to ensure compliance with the O&M Requirements;
- (iii) Take certificate from Chartered Accountant for fixed assets verification and then physically verify the fixed assets as per O&M Plan.
- (iv) Issue “Notice to Remedy” in the event of noncompliance to O&M Requirements and recording the same.
- (v) Record and report to thaub on the incidents of Material Breach or Persistent Breach of O&M Requirements;

Random inspection of Project Facilities

The Independent Engineer shall undertake inspection of the Project Facilities atleast once a month, in such sample selection as mentioned in the table below:

S. No	Project Facilities	Sample selection requirement
1	MSW Processing Facility	—
2	Landfill Facility	—
3	Transport and Loading Vehicles	A minimum sample of 10 % of each category of vehicles deployed for the Project. There should not be repetition of the same set of vehicles in the next round of inspection.

3. Post Closure Period

- (a) During the Post Closure Period, the Independent Engineer shall monitor and certify compliance with the Post Closure Maintenance Plan.
- (b) Attend meetings with the ULB and the Concessionaire, to be held at intervals as mutually decided upon by the Parties, to discuss problems or other pertinent matters relating to the Project. The Independent Engineer shall take notes at the meetings and provide a copy of the minutes of such meetings to each person who attended the meeting.
- (c) Approval for Closure of the Landfill Site or part thereof.

4. Handback of Project Facilities to the ULB

At the expiry / termination of the Concession Period and / or at the time of handback of the Project Facilities to the ULB, the Independent Engineer shall:

- (i) Monitor the compliance with the Handback Requirements as provided in Article 15 of this Agreement and
- (ii) Issue a certificate of compliance on satisfactory completion of Handback Requirements by the Concessionaire.
- (iii) Assist in preparation of the Post Closure Maintenance Plan

5. Maintenance of Records

The Independent Engineer would participate in the review meetings/ emergency/ extra-ordinary meetings held by the Parties and assist the Parties in dealing with any problem, Emergency, Force Majeure Event or other exigencies.

The Independent Engineer shall maintain record of the activities undertaken by it in discharge of its functions and responsibilities. This would include records in respect of the following:

- (a) Manpower deployed and other organizational arrangements of the Independent Engineer ;
- (b) Inspections undertaken and notices/instructions issued to the Concessionaire;
- (c) Review compliance by the Concessionaire with the Agreement;
- (d) Force Majeure Events;
- (e) Material and Persistent Breach of O&M Requirements and Events of Default by the Parties; and
- (f) Compliance by the Concessionaire with Handback Requirements

6. Verification and Reporting by Independent Engineer

The Independent Engineer would be required to verify/issue the following reports to the Parties:

Period/ Event	Verification	Applicable report to be issued by the Independent Engineer
Operations Period	<ul style="list-style-type: none"> • Verification of purchase order/s of the major equipment • Review monthly progress report submitted by the Concessionaire • Issue “Notice to Remedy” in event of non-compliance by the Concessionaire 	As per the requirement
Monitoring at Weighbridge	<ul style="list-style-type: none"> • Verify weighment slip • Verify monthly Tipping Fee statement 	Monthly Inspection Report
Monitoring at Waste Inspection Area	<ul style="list-style-type: none"> • Verify recording of Test results • Verify monthly Tipping Fee statement and penalties (if applicable) 	Monthly Inspection Report
Monitoring at Landfill Facility	<ul style="list-style-type: none"> • Verify recording of Test results • Verify quantum of Residue Inert Waste going to Landfill and penalties (if applicable) 	Monthly Inspection Report
Random Inspections of Project facilities	<ul style="list-style-type: none"> • Advise ULB on penalties payable by the Concessionaire 	Monthly Inspection Report
Force Majeure/ Material and Persistent Breach of O&M Requirements/ Events of Default.	<ul style="list-style-type: none"> • Issue “Notice to Remedy” in event on non-compliance • Record Events of Default, Material/Persistent Breach of O&M Requirements, Force Majeure Events 	
Handback of Project Facilities	<ul style="list-style-type: none"> • Specify list of works/jobs to be carried out by the Concessionaire in accordance with Handback Requirements. • Specify list of items to be handed back to ULB by the Concessionaire. • Verify compliance by the Concessionaire with Handback Requirements 	Issue of compliance certificate for Handback Requirements

7. Other Aspects

- (i) The Independent Engineer shall assist the Parties in arriving at an amicable settlement of disputes, if any, and

- (ii) The Independent Engineer shall review safety and environment management related aspects of the Project.
- (iii) The Independent Engineer shall monitor the performance of the Concessionaire and report on incidence of Material and Persistent Breach of O&M Requirements.
- (iv) The Independent Engineer shall devise suitable specification/standard, if required. And approve any other standard proposed by the Concessionaire
- (v) The Independent Engineer shall carry out such other functions as may be specifically assigned to it under the Agreement including certification of adequacy of insurance and verification of termination payments.

SCHEDULE H

PROJECT ACCOUNT AGREEMENT

THIS PROJECT ACCOUNT AGREEMENT is entered into on this the *** day of *** 20**.

AMONGST

- 1 [**** **LIMITED**], a company incorporated under the provisions of the Companies Act, 2013 and having its registered office at **** (hereinafter referred to as the “**Concessionaire**” which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes);
- 2 ****[name and particulars of Lenders’ Representative] and having its registered office at *** acting for and on behalf of the Senior Lenders as their duly authorized agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the “**Lenders’ Representative**” which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes);
- 3 ****[name and particulars of the Designated Bank] and having its registered office at ****(hereinafter referred to as the “**Designated Bank**” which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes);
- 4 Gorakhpur Municipal Corporation, a Municipal Corporation constituted under the _____ Act _____, having its principal office at _____ (hereinafter referred to as “**ULB**” which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes); and
5. Construction and Design Services, a unit of Uttar Pradesh Jal Nigam, a Government of UP Enterprise, having its main office at T.C. – 38 – V., Vibhuti Khand, Gomti Nagar, Lucknow – 226010 (hereinafter referred to as “**C&DS, UPJN**” or “**Construction Supervisor**” which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes).

WHEREAS:

- (A) The ULB has entered into a Concession Agreement dated *** with the Concessionaire (the “**Concession Agreement**”) for development of MSW processing and landfilling facility in Gorakhpur on design, build, finance, operate and transfer (DBFOT) basis and a copy of which is annexed hereto and marked as Annex-A to form part of this Agreement.
- (B) Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.
- (C) The Concession Agreement requires the Concessionaire to establish a Project Account, inter alia, on the terms and conditions stated therein.

NOW IT IS HEREBY AGREED as follows:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

1.2 In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

“Agreement” means this Project Account Agreement and any amendment thereto made in accordance with the provisions contained herein;

“Concession Agreement” means the Concession Agreement referred to in Recital (K) above and annexed hereto as Annex-A, and shall include all of its Recitals and Schedules and any amendments made thereto in accordance with the provisions contained in this behalf therein;

“Cure Period” means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Concessionaire, and shall commence from the date on which a notice is delivered by the Construction Supervisor or ULB or the Lenders’ Representative, as the case may be, to the Concessionaire asking the latter to cure the breach or default specified in such notice;

“Lenders’ Representative” means the person referred to as the Lenders’ Representative in the foregoing Recitals;

“Parties” means the parties to this Agreement collectively and “Party” shall mean any of the Parties to this Agreement individually;

“Payment Date” means, in relation to any payment specified in Article 4.1, the date(s) specified for such payment; and

“Project Account” means a Project account established in terms of and under this Agreement, and shall include the Sub-Accounts;

“Project Account Default” shall have the meaning ascribed thereto in Article 6.1;

“Sub-Accounts” means the respective Sub-Accounts of the Project Account, into which the monies specified in Article 4.1 would be credited every month and paid out if due, and if not due in a month then appropriated proportionately in such month and retained in the respective Sub Accounts and paid out therefrom on the Payment Date(s)

1.2 Interpretation

- 1.2.1 References to Lenders' Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders' Representative, acting for and on behalf of Senior Lenders.
- 1.2.2 The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.
- 1.2.3 References to Articles are, unless stated otherwise, references to Articles of this Agreement.
- 1.2.4 The rules of interpretation stated in Articles 1.2 and 1.3 of the Concession Agreement shall apply, mutatis mutandis, to this Agreement.

2 PROJECT ACCOUNT

2.1 Designated Bank to act as trustee

- 2.1.1 The Concessionaire hereby appoints the Designated Bank to act as trustee for the ULB, Construction Supervisor, the Lenders' Representative and the Concessionaire in connection herewith and authorizes the Designated Bank to exercise such rights, powers, authorities and discretion as are specifically delegated to the Designated Bank by the terms hereof together with all such rights, powers, authorities and discretion as are reasonably incidental hereto, and the Designated Bank accepts such appointment pursuant to the terms hereof.
- 2.1.2 The Concessionaire hereby declares that all rights, title and interest in and to the Designated Account shall be vested in the Designated Bank and held in trust for the ULB and Construction Supervisor, the Lenders' Representative and the Concessionaire, and applied in accordance with the terms of this Agreement. No person other than the ULB, Construction Supervisor, the Lenders' Representative and the Concessionaire shall have any rights hereunder as the beneficiaries of, or as third party beneficiaries under this Agreement.

2.2 Acceptance of Designated Bank

The Designated Bank hereby agrees to act as such and to accept all payments and other amounts to be delivered to and held by the Designated Bank pursuant to the provisions of this Agreement. The Designated Bank shall hold and safeguard the Project Account during the term of this Agreement and shall treat the amount in the Project Account as monies deposited by the Concessionaire, Senior Lenders, Construction Supervisor or ULB with the Designated Bank. In performing its functions and duties under this Agreement, the Designated Bank shall act in trust for the benefit of, and as agent for, ULB, Construction Supervisor, the Lenders'

Representative and the Concessionaire or their nominees, successors or assigns, in accordance with the provisions of this Agreement.

2.3 Establishment and operation of Project Account

- 2.3.1 Within 30 (thirty) days from the date of this Agreement, and in any case prior to the Appointed Date, the Concessionaire shall open and establish the Project Account with the **** (name of Branch) Branch of the Designated Bank. The Project Account shall be denominated in Rupees.
- 2.3.2 The Designated Bank shall maintain the Project Account in accordance with the terms of this Agreement and its usual practices and applicable regulations, and pay the maximum rate of interest payable to similar customers on the balance in the said account from time to time.
- 2.3.3 The Designated Bank and the Concessionaire shall, after consultation with the Lenders' Representative, agree on the detailed mandates, terms and conditions, and operating procedures for the Project Account, but in the event of any conflict or inconsistency between this Agreement and such mandates, terms and conditions, or procedures, this Agreement shall prevail.

2.4 Designated Bank's fee

The Designated Bank shall be entitled to receive its fee and expenses in an amount, and at such times, as may be agreed between the Designated Bank and the Concessionaire. For the avoidance of doubt, such fee and expenses shall form part of the O&M Expenses and shall be appropriated from the Project Account in accordance with Article 4.1.

2.5 Rights of the Parties

The rights of the ULB, Construction Supervisor, the Lenders' Representative and the Concessionaire in the monies held in the Project Account are set forth in their entirety in this Agreement and the ULB, Construction Supervisor, the Lenders' Representative and the Concessionaire shall have no other rights against or to the monies in the Project Account.

2.6 Substitution of the Concessionaire

The Parties hereto acknowledge and agree that upon substitution of the Concessionaire with the Nominated Company, pursuant to the Substitution Agreement, it shall be deemed for the purposes of this Agreement that the Nominated Company is a Party hereto and the Nominated Company shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of substitution of the Concessionaire with the Nominated Company.

3 DEPOSITS INTO PROJECT ACCOUNT

3.1 Deposits by the Concessionaire

- 3.1.1 The Concessionaire agrees and undertakes that it shall deposit into and/or credit the Project Account with:
- (a) all funds constituting the Financial Package;
 - (b) Capital Grant received from the Construction Supervisor and / or ULB;
 - (c) all Tipping Fee from or in respect of the Project, including the proceeds of insurance claims, advances and deposits made to the Concessionaire with respect to the Project; and
 - (d) all grants / funds / loans received from any Person for development of the Project.

3.1.2 The Concessionaire may at any time make deposits of its other funds into the Project Account, provided that the provisions of this Agreement shall apply to such deposits.

3.2 Deposits by Senior Lenders

The Lenders' Representative agrees, confirms and undertakes that the Senior Lenders shall deposit into and/or credit the Project Account with all disbursements made by them in relation to or in respect of the Project; provided that notwithstanding anything to the contrary contained in this Agreement, the Senior Lenders shall be entitled to make direct payments to the EPC contractor/ civil contractor under and in accordance with the express provisions contained in this behalf in the Financing Agreements.

3.3 Interest on deposits

The Designated Bank agrees and undertakes that all interest accruing on the balances of the Project Account shall be credited to the Project Account; provided that the Designated Bank shall be entitled to appropriate therefrom the fee and expenses due to it from the Concessionaire in relation to the Project Account and credit the balance remaining to the Project Account.

4 WITHDRAWALS FROM PROJECT ACCOUNT

4.1 Withdrawals during Concession Period

4.1.1 At the beginning of every month, or at such shorter intervals as the Lenders' Representative and the Concessionaire may by written instructions determine, the Designated Bank shall withdraw amounts from the Project Account and appropriate them in the following order by depositing such amounts in the relevant Sub-Accounts for making due payments, and if such payments are not due in any month, then retain such monies in such Sub-Accounts and pay out therefrom on the Payment Date(s):

- (a) all taxes due and payable by the Concessionaire;
- (b) all payments relating to construction of the Project, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;
- (c) payments due to the Designated Bank;
- (d) Operation and maintenance expenses, subject to the ceiling, if any, set forth in the Financing Agreements;
- (e) monthly proportionate provision of Debt Service due in an Accounting Year;
- (f) Debt Service in respect of Subordinated Debt;
- (g) any reserve requirements set forth in the Financing Agreements; and
- (h) balance, if any, in accordance with the instructions of the Concessionaire.

4.1.2 Not later than 60 (sixty) days prior to the commencement of each Accounting Year, the Concessionaire shall provide to the Designated Bank, with prior written approval of the Lenders' Representative, details of the amounts likely to be required for each of the payment obligations set forth in this Article 4.1; provided that such amounts may be subsequently modified, with prior written approval of the Lenders' Representative, if fresh information received during the course of the year makes such modification necessary.

4.2 Application of insufficient funds

Funds in the Project Account shall be applied in the serial order of priority set forth in Articles 4.1. If the funds available are not sufficient to meet all the requirements, the Designated Bank shall apply such funds in the serial order of priority until exhaustion thereof.

4.3 Application of insurance proceeds

Notwithstanding anything in this Agreement, the proceeds from all insurance claims, except life and injury, shall be deposited into and/or credited to the Project Account and utilized for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project, and the balance remaining, if any, shall be applied in accordance with the provisions contained in this behalf in the Financing Agreements.

4.4 Withdrawals during Suspension

Notwithstanding anything to the contrary contained in this Agreement, the Construction Supervisor / ULB may exercise all or any of the rights of the Concessionaire during the period of Suspension under Article 13 of the Concession Agreement. Any instructions given by the Construction Supervisor / ULB to the Designated Bank during such period shall be complied with as if such instructions were given by the Concessionaire under this Agreement and all actions of the Construction Supervisor / ULB hereunder shall be deemed to have been taken for and on behalf of the Concessionaire.

5 OBLIGATIONS OF THE DESIGNATED BANK

5.1 Segregation of funds

Monies and other property received by the Designated Bank under this Agreement shall, until used or applied in accordance with this Agreement, be held by the Designated Bank in trust for the purposes for which they were received, and shall be segregated from other funds and property of the Designated Bank.

5.2 Notification of balances

7 (seven) business days prior to each Payment Date (and for this purpose the Designated Bank shall be entitled to rely on an affirmation by the Concessionaire

and/or the Lenders' Representative as to the relevant Payment Dates), the Designated Bank shall notify the Lenders' Representative of the balances in the Project Account and Sub-Accounts as at the close of business on the immediately preceding business day.

5.3 Communications and notices

In discharge of its duties and obligations hereunder, the Designated Bank:

- (a) may, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of the Concessionaire upon a certificate signed by or on behalf of the Concessionaire;
- (b) may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;
- (c) shall, within 5 (five) business days after receipt, deliver a copy to the Lenders' Representative of any notice or document received by it in its capacity as the Designated Bank from the Concessionaire or any other person hereunder or in connection herewith; and
- (d) shall, within 5 (five) business days after receipt, deliver a copy to the Concessionaire of any notice or document received by it from the Lenders' Representative in connection herewith.

5.4 No set off

The Designated Bank agrees not to claim or exercise any right of set off, banker's lien or other right or remedy with respect to amounts standing to the credit of the Project Account. For the avoidance of doubt, it is hereby acknowledged and agreed by the Designated Bank that the monies and properties held by the Designated Bank in the Project Account shall not be considered as part of the assets of the Designated Bank and being trust property, shall in the case of bankruptcy or liquidation of the Designated Bank, be wholly excluded from the assets of the Designated Bank in such bankruptcy or liquidation.

5.5 Regulatory approvals

The Designated Bank shall use its best efforts to procure, and thereafter maintain and comply with, all regulatory approvals required for it to establish and operate the Project Account. The Designated Bank represents and warrants that it is not aware of any reason why such regulatory approvals will not ordinarily be granted to the Designated Bank.

6 PROJECT ACCOUNT DEFAULT

6.1 Project Account Default

- 6.1.1 Following events shall constitute an event of default by the Concessionaire (a "Project Account Default") unless such event of default has occurred as a result of Force

Majeure or any act or omission of the Construction Supervisor or the ULB or the Lenders' Representative:

- (a) the Concessionaire commits breach of this Agreement by failing to deposit any receipts into the Project Account as provided herein and fails to cure such breach by depositing the same into the Project Account within a Cure Period of 5 (five) business days;
- (b) the Concessionaire causes the Designated Bank to transfer funds to any account of the Concessionaire in breach of the terms of this Agreement and fails to cure such breach by depositing the relevant funds into the Project Account or any Sub-Account in which such transfer should have been made, within a Cure Period of 5 (five) business days; or
- (c) the Concessionaire commits or causes any other breach of the provisions of this Agreement and fails to cure the same within a Cure Period of 5 (five) business days.

6.1.2 Upon occurrence of a Project Account Default, the consequences thereof shall be dealt with under and in accordance with the provisions of the Concession Agreement.

7 CLOSURE OF PROJECT ACCOUNT AGREEMENT

7.1 Duration of the Project Account Agreement

7.1.1 The Project Account shall be operated and maintained till the date of COD of the Project and thereafter, the Concessionaire shall be entitled to discontinue the same and terminate the Project Account Agreement.

7.1.2 The Designated Bank shall, at the request of the Concessionaire and the Lenders' Representative made on or after the payment by the Concessionaire of all outstanding amounts under the Concession Agreement and the Financing Agreements including the payments specified in Article 4.2, and upon confirmation of receipt of such payments, close the Project Account and Sub-Accounts and pay any amount standing to the credit thereof to the Concessionaire.

7.2 Substitution of Designated Bank

The Concessionaire may, by not less than 45 (forty five) days prior notice to the Designated Bank, Construction Supervisor, ULB and the Lenders' Representative, terminate this Agreement and appoint a new Designated Bank, provided that the new Designated Bank is acceptable to the Lenders' Representative and arrangements are made satisfactory to the Lenders' Representative for transfer of amounts deposited in the Project Account to a new Project Account established with the successor Designated Bank. The termination of this Agreement shall take effect only upon coming into force of a Project Agreement with the substitute Designated Bank.

8 SUPPLEMENTARY PROJECT ACCOUNT AGREEMENT

8.1 Supplementary project account agreement

The Lenders' Representative and the Concessionaire shall be entitled to enter into a supplementary project account agreement with the Designated Bank providing, inter alia, for detailed procedures and documentation for withdrawals from Sub-Accounts pursuant to Article 4.1.1 and for matters not covered under this Agreement such as the rights and obligations of Senior Lenders and lenders of Subordinated Debt, investment of surplus funds, restrictions on withdrawals by the Concessionaire in the event of breach of this Agreement or upon occurrence of a Project Account Default, procedures relating to operation of the Project Account and withdrawal therefrom, reporting requirements and any matters incidental thereto; provided that such supplementary project account agreement shall not contain any provision which is inconsistent with this Agreement and in the event of any conflict or inconsistency between provisions of this Agreement and such supplementary project account agreement, the provisions of this Agreement shall prevail.

9 INDEMNITY

9.1 General indemnity

9.1.1 The Concessionaire will indemnify, defend and hold the Construction Supervisor, ULB, Designated Bank and the Senior Lenders, acting through the Lenders' Representative, harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.

9.1.2 The Designated Bank will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Designated Bank to fulfill its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Designated Bank, its officers, servants and agents.

9.2 Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Article 9.1 or in respect of which it is entitled to reimbursement (the “**Indemnified Party**”), it shall notify the other Party responsible for indemnifying such claim hereunder (the “**Indemnifying Party**”) within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

10 DISPUTE RESOLUTION

10.1 Dispute resolution

10.1.1 Any dispute, difference or claim arising out of or in connection with this Agreement, which is not resolved amicably, shall be decided finally by reference to arbitration to a Panel of Arbitrators comprising one nominee of each Party to the dispute, and where the number of such nominees is an even number, the nominees shall elect another person to such Panel. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the “Rules”) or such other rules as may be mutually agreed by the Parties, and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996.

10.1.2 The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Lucknow and the language of arbitration shall be English.

11 MISCELLANEOUS PROVISIONS

11.1 Governing law and jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the Courts at Uttar Pradesh shall have exclusive jurisdiction over all matters arising out of or relating to this Agreement.

11.2 Waiver of immunity

The ULB / Construction Supervisor unconditionally and irrevocably:

- (a) agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;

- (b) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity from such proceedings shall be claimed by or on behalf of the Construction Supervisor / ULB with respect to its assets;
- (c) waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- (d) consents generally in respect of the enforcement of any judgment or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgment that may be made or given in connection therewith).

11.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

11.4 Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of the Parties.

11.5 Waiver

11.5.1 Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

- (a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
- (b) shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and
- (c) shall not affect the validity or enforceability of this Agreement in any manner.

11.5.2 Neither the failure by any Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by any Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

11.6 No third party beneficiaries

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

11.7 Survival

11.7.1 Termination of this Agreement:

- (a) shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and
- (b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of, or caused by, acts or omissions of such Party prior to the effectiveness of such termination or arising out of such termination.

11.7.2 All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

11.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Article 10.1 of this Agreement or otherwise.

11.9 Successors and assigns

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

11.10 Notices

All notices or other communications to be given or made under this Agreement shall be in writing and shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile. The address for service of each Party and its facsimile number are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on a business day, or on a day that is not a business day, the notice shall be deemed to be received on the first business day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a

notice or communication by facsimile shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

11.11 Language

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

11.12 Authorized Representatives

Each of the Parties shall, by notice in writing, designate their respective authorized representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorized representative by similar notice.

11.13 Original Document

This Agreement may be executed in four counterparts, each of which when executed and delivered shall constitute an original of this Agreement.

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND
DELIVERED
For and on behalf of
CONCESSIONAIRE by:

SIGNED, SEALED AND
DELIVERED
For and on behalf of
SENIOR LENDERS by the
Lenders' Representative:

(Signature)

(Signature)

(Name)

(Name)

(Designation)

(Designation)

(Address)

(Address)

(Fax No.)

(Fax No.)

SIGNED, SEALED AND

SIGNED, SEALED AND

DELIVERED

DELIVERED

For and on behalf of

For and on behalf of

DESIGNATED BANK by:

ULB

(Signature)

(Signature)

(Name)

(Name)

(Designation)

(Designation)

(Address)

(Address)

(Fax No.)

(Fax No.)

SIGNED, SEALED AND

DELIVERED

For and on behalf of

CONSTRUCTION

SUPERVISOR by:

(Signature)

(Name)

(Designation)

(Address)

(Fax No.)

In the presence of:

SCHEDULE I

SUBSTITUTION AGREEMENT

THIS SUBSTITUTION AGREEMENT is entered into on this the ----- day of -----
- (Month) ---- (Year) at -----.

AMONGST,

Gorakhpur Municipal Corporation _____, a municipal corporation constituted under the _____ Act _____, having its principal office at _____ (hereinafter referred to as “**ULB**” which expression shall unless excluded by or repugnant to the context, be deemed to include its administrators, successors and assigns) of the First Part;

AND

_____ Limited, a company incorporated under the provisions of the Companies Act, 2013, having its registered office at _____ (hereinafter referred to as “**the Concessionaire**” which expression shall unless excluded by or repugnant to the context include the successors and permitted assigns), of the Second Part;

AND

YYYY (Financial Institution/ Bank) having its Registered Office/Head Office at -----
----- (hereinafter referred to as “**the Lender**” which expression shall unless excluded by or repugnant to the context include the successors and permitted assigns) through its Legal Representative, of the Third Part;

WHEREAS:

- A. ULB is the Municipal authority of Gorakhpur city responsible for providing municipal and civic services for the benefit of the public residing within such territory, which includes the collection, segregation, transportation and disposal of Municipal Solid Waste generated in the city. ULB currently disposes the collected waste at designated dumping sites, which are, however, inadequate to handle the increasing quantity of waste generated in the city.
- B. ULB is desirous of improving the solid waste management services in the city of Gorakhpur. For meeting the aforesaid objective, ULB has decided to invite private sector participation on Design, Procure, Renovate, Operate, Maintain, and Transfer basis, to carry out the functions of segregation, processing of Municipal Solid Waste and Landfilling of remnants.
- C. By the Concession Agreement dated ----- entered into between ULB and the Concessionaire (hereinafter referred to as “the Concession Agreement”) the

Concessionaire has been granted the Concession to implement the Project on PPP basis;

- D. With a view to facilitate financing of the Project by the Concessionaire, ULB and the Concessionaire have agreed to enter into a Substitution Agreement being these presents with the Lender/s/Lenders' Representative.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH AS FOLLOWS:

ARTICLE 1

DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Agreement the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereafter respectively assigned to them.

“Agreement” means this agreement and includes any amendment or modification made to this agreement in accordance with the provisions hereof.

“Financial Assistance” means the financial assistance set forth in schedule hereto, agreed to be provided by the Lender(s) to the Concessionaire for financing the Project.

“Lender(s)” means the financial institutions/banks whose name(s) and addresses are set out in schedule hereto.

“Residual Concession Period” means the period which shall be the remainder of the Concession Period computed from the date of substitution of the Concessionaire by the Selectee.

“Selectee” means a Person proposed by the Lender/Lender's Representative pursuant to this Agreement and approved by ULB for substituting the Concessionaire for the Residual Concession Period, in accordance with the provisions of this Agreement.

“Suspension Period” means the period commencing from the expiry of the Cure Period specified in the Preliminary Notice and ending on the date on which all formalities connected with the substitution of the Concessionaire by the Selectee including handing over of the Project Facilities, in accordance with this Agreement are completed and the substitution has become effective.

- 1.2 Capitalized terms used in this Agreement but not defined shall have the meaning assigned to them respectively in the Concession Agreement.

ARTICLE 2

SUBSTITUTION OF THE CONCESSIONAIRE BY THE SELECTEE

2.1 Lender's right to Substitute

ULB and the Concessionaire hereby irrevocably agree that upon occurrence of a Concessionaire Event of Default, the Lender(s) shall, without prejudice to any other rights or remedies available to them under law/financing documents and without being required to exercise or exhaust such rights or remedies, have the right to seek substitution of the Concessionaire by Selectee for the Residual Concession Period under the Concession Agreement in accordance with the provisions of this Agreement.

2.2 Preliminary Notice of Termination

ULB shall as soon as possible but in any case not later than 15 days of its knowledge of the occurrence of the Concessionaire Event of Default issue Preliminary Notice of Termination to the Concessionaire in terms of Article 14.2 (d) of the Concession Agreement, with a copy thereof simultaneously to the Lenders.

2.3 Termination of Concession and Takeover of the Project Facilities

The Concessionaire irrevocably agrees that if the Cure Period specified in the Preliminary Notice of Termination lapses without the Concessionaire Event of Default having been cured, the Concession shall from the expiry of such Cure Period stand terminated, without any further notice or other act of ULB being required, and that the ULB shall have the right to enter upon and takeover the Project Facilities and to take all such steps as are necessary for the continuance of the Project, subject to the substitution of the Concessionaire by the Selectee in accordance with this Agreement. The Concessionaire hereby irrevocably consents to the takeover of the Project Facilities by ULB forthwith upon termination becoming effective.

2.4 Substitution Notice

ULB and the Concessionaire hereby irrevocably agree that in the event of the Concessionaire's failure to cure the Event of Default specified in the Preliminary Notice of Termination, the Lender/Lender's Representative may, within 30 (thirty) days of the expiry of the Cure Period specified therein, notify ULB and the Concessionaire about the intention of the Lender(s) to seek substitution of the Concessionaire by the Selectee for the Residual Concession Period (the "Substitution Notice").

2.5 Criteria for selection of the Selectee.

The Lender/Lenders' Representative shall in addition to any other criteria that it may deem fit and necessary, apply the following criteria in the selection of the Selectee:

- (i) the Selectee shall possess the net worth, experience, technical capability and managerial ability to perform and discharge all the residual duties, obligations and liabilities of the Concessionaire in respect of the Project, under the Concession Agreement;

- (ii) the Selectee shall have the capability and shall unconditionally consent to assume the liability for the payment and discharge of dues, if any, of the Concessionaire to ULB under and in accordance with the Concession Agreement, and also payment of amounts due to the Lender(s) under the financing documents, upon terms and conditions as agreed to between the Selectee and the Lenders.

ARTICLE 3

MODALITY FOR SUBSTITUTION

3.1 Modalities for Substitution.

The following modalities shall be followed for substitution of the Concessionaire by the Selectee pursuant to this Agreement:

- (i) The Lender(s)/Lenders' Representative shall be entitled, within a period of 120 (one hundred twenty) days from the date of delivery of the Substitution Notice pursuant to the preceding Article 2.2 to invite or procure offers either through private negotiations or public auction or process of tender or otherwise from the eligible Persons, for the substitution of the Concessionaire by the Selectee and propose to ULB for its approval, the Selectee (the "Proposal"). The Proposal of the Lender/Lender's Representative shall contain the particulars and information in respect of the Selectee, particulars of the amounts due to the Lenders under the financing documents, the terms of Substitution and such data and information as would be necessary and relevant for ULB to decide as to the acceptability of the Selectee. The Lender/Lender's Representative shall provide to ULB such additional information and clarification in respect of any data, particulars or information contained in the Proposal, as ULB may reasonably require.
- (ii) The Proposal shall be accompanied by an unconditional undertaking of the Selectee to the effect that it shall upon acceptance by ULB of the Proposal observe, comply with, perform and fulfill the residual terms, conditions and covenants of the Concession Agreement as if the Selectee had been the Concessionaire under the Concession Agreement, and to assume, take over, discharge and pay the Concessionaire's obligations under the financing documents on the terms and conditions agreed to by the Selectee with the Lenders. The Selectee shall also undertake to enter into such documents and writings with the ULB and the Lender(s) as may be necessary or required to give effect to the substitution of the Concessionaire by the Selectee.
- (iii) ULB shall convey to the Lender/Lenders' Representative its acceptance or otherwise of the Selectee within 30(thirty) days of (a) the date of receipt of the Proposal by ULB, or (b) the date of receipt of the additional information and clarifications in respect of any data, particulars or information comprised in the Proposal, provided by the Lender/Lender's Representative to the ULB, whichever is later.

- (iv) At any time prior to the acceptance of the Selectee by the ULB pursuant to this Agreement, ULB may require the Lender/Lenders' Representative to satisfy it as to the eligibility of the Selectee and the decision of ULB as to acceptance or rejection of any Selectee (which shall be reasonable), shall be final, conclusive and binding on the Lender(s), the Selectee and the Concessionaire. In the event that ULB fails to communicate its acceptance or otherwise or the objections if any it has to the acceptance of the Proposal/ the Selectee within a period of 30 days prescribed in preceding sub-article (iii), ULB shall be deemed to have accepted the Proposal/ the Selectee
- (v) The rejection of the Selectee if made by ULB shall be reasoned and be made after hearing the Lender/Lenders' Representative. Following the rejection of the Proposal, the Lender/Lenders' Representative shall have the right to submit a fresh Proposal, proposing another Selectee, within 30 days of receipt of communication regarding rejection of the Selectee previously proposed. The provisions of preceding sub-article (iii) and (iv) shall apply mutatis mutandis to such fresh Proposal.
- (vi) If ULB accepts the Proposal/fresh Proposal, ULB shall take all necessary steps to substitute the Concessionaire by the Selectee by amendment of the Concession Agreement or by execution of fresh agreement or such other writing as may be required or necessary to give effect to the Substitution of the Concessionaire by the Selectee for the Residual Concession Period.
- (vii) The substitution of the Concessionaire by the Selectee shall be deemed to be complete upon the Selectee executing all necessary documents and writings with or in favor of ULB and the Lender(s) so as to give full effect to the terms and conditions of substitution, subject to which the Selectee has been accepted by the Lender(s) and ULB and upon the delivery by ULB of the Project Facilities to the Selectee. Upon the substitution becoming effective pursuant to this sub-article all the rights of the Concessionaire under the Concession Agreement shall cease to exist. Provided, nothing contained in this sub-article shall prejudice any pending/subsisting claims of the Concessionaire against ULB or any claim of ULB against the Concessionaire and the Selectee shall incur no liability or consequence on account of any previous breach/default and shall subject to the terms and conditions of the substitution, have a period of 90 days to cure any breach/default subsisting on the date of substitution and required or agreed to be cured.
- (viii) The decision of the Lenders and ULB in the selection of the Selectee shall be final and binding on the Concessionaire and shall be deemed to have been made with the concurrence of the Concessionaire. The Concessionaire hereby expressly waives all rights to object to or challenge such selection of the Selectee on any ground whatsoever.

3.2 Termination and Termination Payment.

- (i) Where the Lender/Lenders' Representative (on behalf of all the Lenders) communicates in writing that (i) the Lender/ Lender's Representative does not intend to seek substitution of the Concessionaire, or (ii) that the Lender/Lenders' Representative has not been able to find suitable Selectee or (iii) that ULB has declined to accept the Selectee proposed by the Lender/Lenders' Representative, ULB shall proceed to terminate the Concession and to make Termination Payment, in accordance with the provisions of the Concession Agreement.
- (ii) Nothing contained in these presents shall mean or be interpreted as provision of any guarantee or surety by ULB and it is expressly agreed that ULB has not provided any surety, guarantee or counter guarantee whether directly or indirectly for the recovery of amounts advanced by the Lenders to the Concessionaire.

ARTICLE 4

MODE OF TERMINATION PAYMENTS

4.1 Mode of Payment

ULB and Concessionaire hereby irrevocably agree, and confirm that so long as the liabilities of the Concessionaire under the financing documents are outstanding the Termination Payment and any other amounts due and payable by ULB to the Concessionaire under any of the provisions of the Concession Agreement shall be paid only by way of credit directly to a bank account designated therefor by the Lender(s)/ Lenders' Representative and advised to ULB and the Concessionaire in writing. The Lender(s) shall be entitled to receive and appropriate the same without any further reference to or consent of the Concessionaire towards the satisfaction of the amounts outstanding, due and payable under the financing documents, subject to payment by the Lender(s) of the surplus amount, if any, remaining after discharge of the liabilities of the Concessionaire under the financing documents, to the Concessionaire. Any payment so made shall to the extent of such payment constitute a valid discharge to ULB of its obligations with regard to the Termination Payment and of any other monies due to the Concessionaire under the Concession Agreement.

ARTICLE 5

GENERAL

5.1 General

- (i) The Parties hereto expressly represent and warrant that they are duly empowered to sign and execute this Agreement.
- (ii) Notices under this Agreement shall be sent to the Addresses first hereinabove mentioned. Any change in the address of any Party shall be duly notified by a Registered post acknowledgement due and delivered to the other parties.

- (iii) The expressions “ ULB”, the “Concessionaire”, the “Lender” and the “Lenders’ Representative” herein used shall unless there be anything repugnant to the subject or context include the respective successors, legal representatives, administrators and permitted assigns.
- (iv) This Agreement shall not be affected by reorganization of any Lender, the Concessionaire or ULB and the successor in interest of the Lender or ULB shall have the benefit of this Agreement.
- (v) Any dispute, difference or claim arising out of or in connection with or in relation to this Agreement which is not resolved amicably shall be decided finally by arbitration by a Board of Arbitrators comprising of a nominee of each party to the dispute. Such arbitration shall be held in accordance to and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996. The arbitrators shall issue a reasoned award. The venue of such arbitration shall be Lucknow. The Award shall be final and binding on the Parties. The Parties agree and undertake to carry out the award of the arbitrators (the “Award”) without delay.
- (vi) This Agreement and rights and obligations of the Parties shall remain in full force and effect pending the Award in any arbitration proceeding hereunder. The Courts in Lucknow alone shall have jurisdiction over all matters arising out of or relating to the arbitration agreement contained herein or proceedings arising out of or relating to the arbitration proceedings there under.
- (vii) The consultation, recommendation or approval of the Lenders’ Representative under this Agreement shall always be taken as consultation, recommendation or approval of every concerned Lender and each such Lender shall be bound by the same.
- (viii) This Agreement shall be in addition to and shall not be in derogation of the terms of the financing documents.
- (ix) It shall not be necessary for the Lender(s) or the Lenders’ Representative to enforce or exhaust any other remedy available to them before invoking the provisions of this Agreement.
- (x) No amendment, variation or modification to this Agreement shall be valid and effectual unless made in writing and executed by the duly authorized representatives of all the Parties hereto.
- (xi) All stamp duties or other imposts and charges as are applicable on this Agreement or on amendment of the Concession Agreement or execution of fresh Concession Agreement for the purpose of substitution as aforesaid, irrespective of the Lenders making such payment for the time being, shall be borne by and be to the account of the Concessionaire.
- (xii) The Parties hereby expressly agree that for the purpose of giving full and proper effect to this Agreement, the Concession Agreement and this

Agreement shall be read together and construed harmoniously. The terms of this Agreement shall prevail in the event of any inconsistency with the Concession Agreement.

**SCHEDULE
PARTICULARS OF FINANCIAL ASSISTANCE.**

Name and Address of the Lender	Nature and Amount of Financing Assistance

IN WITNESS WHEREOF THE PARTIES HERETO HAVE SET THEIR HANDS
HEREUNTO ON THE DAY, MONTH AND YEAR HEREINABOVE MENTIONED.

SIGNED AND DELIVERED ON BEHALF OF
-----LIMITED

BY: _____

Name:
Title:

SIGNED AND DELIVERED ON BEHALF OF
GORAKHPUR ULB

BY: _____

Name:
Title:

SIGNED AND DELIVERED ON BEHALF OF THE
LENDERS -----SET FORTH IN SCHEDULE I

BY: _____

Name:
Title:

SCHEDULE J

PERFORMANCE SECURITY (PERFORMA OF BANK GUARANTEE)

THIS DEED OF GUARANTEE executed on this the _____ day of _____ at _____ by _____ (*Name of the Bank*) having its Head/Registered office at _____ hereinafter referred to as “the Guarantor” which expression shall unless it be repugnant to the subject or context thereof include successors and assigns;

In favour of

Gorakhpur Municipal Corporation, a Municipal Corporation constituted under the _____ Act _____, having its principal office at _____ (hereinafter referred to as “**ULB**” which expression shall unless excluded by or repugnant to the context, be deemed to include its administrators, successors and assigns) ;

WHEREAS

- A. By the Concession Agreement (“**CONCESSION AGREEMENT**”) being entered into between ULB and _____, a company incorporated under the provisions of the Companies Act, 1956, having its registered office at _____, (“**Concessionaire**”), the Concessionaire has been granted the Concession to implement the Project envisaging segregation and processing of Municipal Solid Waste at the Project Site and landfilling of remnants on Design, Procure, Renovate, Operate, Maintain and Transfer basis, (hereinafter referred to as “**The Project**”).
- B. In terms of Article 6 of the Concession Agreement, the Concessionaire is required to furnish to the ULB, an unconditional and irrevocable bank guarantee for an amount of Rs. _____ only as security for due and punctual performance/discharge of its obligations under the Concession Agreement, relating to achievement of COD by the Concessionaire.
- C. At the request of the Concessionaire, the Guarantor has agreed to provide bank guarantee, being these presents guaranteeing the due and punctual performance/ discharge by the Concessionaire of its obligations relating to the Project;

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

1. Capitalised terms used herein but not defined shall have the meaning assigned to them respectively in the Concession Agreement.
2. The Guarantor hereby irrevocably guarantees the due and punctual performance by _____ (hereinafter called “**the Concessionaire**”) of all its obligations

relating to the Project and in connection with achievement of COD by the Concessionaire, in accordance with the Concession Agreement.

3. The Guarantor shall, without demur, pay to ULB sums not exceeding in aggregate Rs. _____, within five (5) calendar days of receipt of a written demand therefor from the ULB stating that the Company has failed to meet its obligations under the Concession Agreement. The Guarantor shall not go into the veracity of any breach or failure on the part of the Concessionaire or validity of demand so made by the ULB and shall pay the amount specified in the demand, notwithstanding any direction to the contrary given or any dispute whatsoever raised by the Concessionaire or any other Person. The Guarantor's obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.
4. In order to give effect to this Guarantee, ULB shall be entitled to treat the Guarantor as the principal debtor. The obligations of the Guarantor shall not be affected by any variations in the terms and conditions of the Concession Agreement or other documents or by the extension of time for performance granted to the Concessionaire or postponement/non exercise/delayed exercise of any of its rights by ULB or any indulgence shown by ULB to the Concessionaire and the Guarantor shall not be relieved from its obligations under this Guarantee on account of any such variation, extension, postponement, non exercise, delayed exercise of any of its rights by ULB or any indulgence shown by ULB, provided nothing contained herein shall enlarge the Guarantor's obligation hereunder.
5. This Guarantee shall be irrevocable and shall remain in full force and effect until _____(24 months from the date of the Concession Agreement) unless discharged/released earlier by ULB in accordance with the provisions of the Concession Agreement. The Guarantor's liability in aggregate be limited to a sum of Rs.
6. This Guarantee shall not be affected by any change in the constitution or winding up of the Concessionaire/the Guarantor or any absorption, merger or amalgamation of the Concessionaire/the Guarantor with any other Person.
7. The Guarantor has power to issue this guarantee and discharge the obligations contemplated herein, and the undersigned is duly authorised to execute this Guarantee pursuant to the power granted under _____.

IN WITNESS WHEREOF THE GUARANTOR HAS SET ITS HANDS HEREUNTO ON THE DAY, MONTH AND YEAR FIRST HEREINABOVE WRITTEN.

SIGNED AND DELIVERED

by _____ Bank
by the hand of Shri _____
its _____ and authorised official.

SCHEDULE K

DAMAGES

Notwithstanding anything to the contrary contained in this Agreement, the Damages on the Concessionaire for non-performance of its obligation under this agreement shall be as follows:

Sl. No.	Service Standards	Performance Target	How / When measured by Independent Engineer	Damages ⁴
A.				
<i>Weigh Bridge</i>				
1.	Operation of Weigh Bridge	95% of times MSW brought to weigh bridge	Monthly Inspection of: (i) Log books (ii) Operations	Rs. 0.50 lakh for non-compliance
B.				
<i>MSW Processing Facility</i>				
2.	Uptime of processing facility	100% availability	Monthly Inspection of: (i) Log books (ii) Operations	Rs. 0.50 lakh for non-compliance
C.				
<i>% of Remnants going to Landfill Facility</i>				
3.	<ul style="list-style-type: none"> • < 30% of the Incoming Waste (monthly average) during Year 1 of the Operations Period • < 25% of the Incoming Waste (monthly average) during Year 2 of the Operations Period • < 20% of the Incoming Waste (monthly average) from Year 3 onwards during of the Operations Period 	100% Compliance	Monthly Inspection of: (i) Log books (ii) Operations	As per Article 6.15.1
D				
<i>Non-Acceptance of Incoming Waste</i>				

⁴ The amount of the Damages mentioned in the table shall be increased by 5% per annum.

Sl. No.	Service Standards	Performance Target	How / When measured by Independent Engineer	Damages ⁴
4.	More than 1 MT per day	100% Compliance	Daily Inspection of: (i) Log books (ii) Operations	As per Article 6.13
E	<i>Non-Compliance of Post Closure Obligations</i>			
5.	As per Post Closure Maintenance Plan	100% Compliance	Monthly Inspection of: (i) Log books (ii) Operations	130% of the cost incurred by ULB in carrying out the obligations of the Concessionaire.

Enclosure 1 of Schedule A

MAP SHOWING THE BOUNDARY OF THE PROJECT SITE

Enclosure 1 of Schedule B

TOPOGRAPHIC SURVEY OF THE PROCESSING SITE

Enclosure 2 to Schedule D

SPECIFICATIONS FOR COMPOSTING AND LANDFILL

Chapter 1

PREPARATION OF WORK AREA / CLEARING SITE/ JUNGLE

1. Scope

1.1. This section covers site preparation of the area as indicated in the drawings.

2. General Requirements

2.1. The Concessionaire shall furnish all labor, equipment and materials required for complete performance of the work in accordance with the drawings and specification herein.

3. Clearing of the Site

3.1. Clearing and grubbing operations shall be performed in the entire pond area. The sites should be cleared of all vegetation, trees, stems, roots, bushes, rubbish and all other objectionable or organic matter such as dismantling of RCC, PCC, Brick work, RR masonry and structural steel of abandoned above ground and underground structures alongwith abandoned cables pipes etc. as directed by the Construction Supervisor/ Independent Engineer. Trees of specified girth and/or any other cleared material shall be stockpiled and handed over to the Construction Supervisor/ Independent Engineer or disposed as per direction of the Construction Supervisor/ Independent Engineer.

3.2. The Concessionaire shall obtain all applicable permits required for felling of trees at site.

Chapter 2

STRIPING

1. Scope

- 1.1. This section of the specification covers stripping of foundation for embankment and in the landfill area as described herein:

2. General Requirement

- 2.1. The Concessionaire shall furnish all labour, equipment and materials-required for complete performance of the work in accordance with the drawings and as described herein.

3. Stripping of foundations

- 3.1. The entire area of embankment and pond area as shown in the drawings shall be stripped to 0.15 meter as directed by the Construction Supervisor/ Independent Engineer to remove all unsuitable materials. In the portion of the embankment where ground slope is steep the stripping shall be done in a fashion as directed by the Construction Supervisor/ Independent Engineer.
- 3.2. The unsuitable material shall include all debris, vegetable matter including roots, weathered and disintegrated rocks, organic silts materials, that are unsuitable for use in the permanent construction or that might interfere with the proper binding of the embankment with the foundation, or the proper compaction of the materials in the embankment, or that may be otherwise objectionable.
- 3.3. The stripping shall be kept far enough to ensure that no undesirable material will get mixed with approved embankment material and to allow for inspection and measurement.
- 3.4. The sanitary landfill should not be constructed in marshy areas under such circumstances the local authority should access the regional landfill facility outside the marshy areas
- 3.5. Materials from stripping operations shall be deposited on either side of the embankment away from the heel and toe of the embankment and unsuitable material shall be disposed off beyond 50 m but upto a lead of 500 m to an area identified by the Construction Supervisor/ Independent Engineer.
- 3.6. Should the excavation be done deeper by error, the same shall be made good by filling the same with approved earth in layers and properly compacted as per specifications so that the required formation level is obtained at the Concessionaire's cost except in areas where further excavation is required for laying clay foundation. In such cases the extra excavation under stripping may be considered under excavation if approved by Engineer - in-Charge.

Chapter 3

EXCAVATION & FILLING WORK

1. Scope

- 1.1. This section of specification covers the technical requirement for excavation and filling in areas, and structures around, pipes trenches, wall foundations, pits, drains and similar works. This also covers filling areas and plinth with selected materials, conveyance and disposal of surplus soils and/or stacking them properly as directed by Construction Supervisor/ Independent Engineer.
- 1.2. The Concessionaire shall be fully responsible for proper setting out of works, profiling in excavation, stacking etc. taking adequate safety measures. The Concessionaire shall carry out all works meant within the intent of this specification even if not explicitly mentioned herein. All works shall be executed to the satisfaction of the Construction Supervisor/ Independent Engineer.
- 1.3. Existing trees, shrubs, any other plants, pole, lines, signs, monuments, buildings, pipelines, drains, sewers, facilities within or adjacent to the works being carried out which are not to be disturbed shall be protected from damage by the Concessionaire. The Concessionaire shall provide and install suitable safeguards approved by the Construction Supervisor/ Independent Engineer for this purpose.
- 1.4. During excavation, the Concessionaire shall take all necessary precautions against soil erosion, water and environmental pollution and where required undertake additional works to achieve this objective. Before start of operations, the Concessionaire shall submit to the Construction Supervisor/ Independent Engineer for approval, his work plan and procedure he intends to follow for disposal of waste material etc. and the schedule for carrying out temporary and permanent works However, the approval of the Engineer-in.-Charge shall not absolve the Concessionaire of his responsibility for safe and sound work.

2. General Requirements

- 2.1. The Concessionaire shall furnish all skilled and unskilled labor, plant, tools, tackle, equipment, men, material etc. required for complete execution of the work in accordance with the construction drawings and as described herein and/or as directed by the Construction Supervisor/ Independent Engineer .
- 2.2. The Concessionaire shall control the grade in the vicinity of all excavations so that surface of the ground will be properly sloped to prevent surface water from running into the excavated areas during construction.
- 2.3. All materials obtained from excavation shall remain owner's property. All salvaged materials of archaeological importance or of value (in the opinion of the Construction Supervisor/ Independent Engineer) shall be segregated from the other material and both stacked separately and in a regular manner at locations indicated by the Construction Supervisor/ Independent Engineer

3. Excavation in Soil

- 3.1. Sides and bottoms of excavation shall be sharp and true to line and level. Undercutting shall not be permitted. When machines are used for excavation, the last 300 mm before reaching the required level shall be excavated manually or by such equipment, such that soil at the required final level will be left in its natural condition. Suitability of strata (at the bottom of excavations) for laying the foundation there on shall be determined, by the Construction Supervisor/ Independent Engineer.
- 3.2. Minimum slope inside the sanitary landfill should be followed recommended by CPHEEO Manual.
- 3.3. The bottom of all excavations shall be trimmed to required levels.
- 3.4. The Concessionaire shall ascertain for himself the nature of materials to be excavated and make necessary arrangements i.e. Cofferdams, sheeting, shoring, bracing, maintaining, suitable slopes, draining etc. shall be provided and installed by the Concessionaire, to the satisfaction of the Construction Supervisor/ Independent Engineer.
- 3.5. The Concessionaire shall have to constantly pump out any water collected in excavated pits and other areas due to rain water/ground water, sludge's, springs etc. and maintain dry working conditions at all times until the excavation, placement of foundation/liner arrangement, backfilling etc. is completed. The Concessionaire shall remove all slush/ muck from the excavated areas to keep the work area dry. The Concessionaire, if required, shall employ sludge pumps, for this purpose.
- 3.6. The Concessionaire shall remove all materials arising from excavations from the vicinity to the work either for direct filling, stacking and subsequent filling or for ultimate disposal as -directed by the Construction Supervisor/ Independent Engineer. In no case shall the excavated soil be stacked within a distance of 1.5 m from the edge of excavation or one-third the depth of the excavation whichever is more. Material to be used for filling shall be kept separately.

4. Rock Excavation

- 4.1. Rock, when encountered, shall be removed up to the formation/bed level *or* as otherwise indicated on the Drawings. Where, however, unstable shale's or other unsuitable materials are encountered at the formation/bed level, these shall be excavated to the extent of 500 mm below the formation/bed level or otherwise specified. In all cases; the excavation operations shall be so carried out that at no point on cut formation/bed the rock protrudes above the specified levels.
- 4.2. Where excavation is done to levels lower than those specified, the excess excavation shall be made good to the satisfaction of the Engineer in charge.

- 4.3. Slopes in rock cutting shall be finished to uniform lines corresponding to slope lines shown on the Drawings or as directed by the Engineer. Notwithstanding the foregoing, all loose pieces of rock on excavated slope surface which move when pierced by the crowbar shall be removed.

5. Carriage of excavated materials beyond the initial lead of 50 M

- 5.1. The disposal/stacking areas for excavated materials shall be indicated by the Construction Supervisor/ Independent Engineer. The carriage of excavated materials shall be done by the methods mentioned below :
1. The excavated materials shall be carried beyond the initial lead of 50 m but up to 500 m by manual/animal labor or by mechanical means. If directed by the Construction Supervisor/ Independent Engineer, this material shall be used directly for filling purposes.
 2. For leads exceeding 500 m, the Concessionaire shall transport the excavated materials by mechanical means or as directed by the Construction Supervisor/ Independent Engineer. The Concessionaire shall allow for movements on Kuchha road etc. Providing and maintaining Kuchha road shall be responsibility of the Concessionaire.
 3. The transported material shall be neatly stacked and dressed as directed by Construction Supervisor/ Independent Engineer.

6. Filling

6.1. Materials

1. Materials to be used for filling purpose shall be selected excavated material free from shingle, salts, organic materials, large roots and excessive amount of sod, lumps, concrete or any other foreign substances, which could harm or impair the strength of the substructure in any manner. In any case, the materials to be used for filling purpose shall have the prior written approval of the Construction Supervisor/ Independent Engineer.

6.2. Filling Procedure

1. The composition of base sealing system should be in compliance with the MSW Rules.
2. After completion of foundation, footings, walls and other construction below the elevation of the final grades, and prior to filling, all temporary shoring, timber etc. shall be sequentially removed and excavation cleaned of all trash, debris, and perishable materials. Filling shall begin with the approval of the Construction Supervisor/ Independent Engineer. Also areas identified for filling shall be cleared of all soft pockets, vegetation, bushes, slush etc. In case of plinth and similar filling, the ground shall be dressed and consolidated by ramming and light rolling.
3. Filling materials shall not be dropped directly upon or against any structure or facility where there is danger of displacement or damage. Filling shall be started

after the concrete masonry has fully set and shall be carried out in such a manner so as not to cause any undue lateral thrust on any part of the structure.

4. All space between foundation (concrete or masonry) and the sides of excavation shall be filled to the original surface after making allowance for settlement. Fill shall be placed in horizontal layers not exceeding 200 mm loose thickness. Each layer shall be watered and compacted with proper moisture content and with such equipment as may be required to obtain a compaction/density as specified.
5. Fill adjacent to pipes shall be free of stones, concrete etc. and shall be hand placed and compacted uniformly on both sides of the pipe and where practicable up to a minimum depth of 300 mm over the top of pipes. While tamping around the pipes, care should be taken to avoid unequal pressure.
6. Filling shall be accurately finished to line, slope, cross section and grade as shown on the drawings. Finished surface shall be free of irregularities and depressions and shall be within 20 mm of the specified level.

6.3. Compaction

1. The basic requirement of a compacted clay liner is that it should have permeability below a pre-specified limit (10^{-7} cm/sec) and that this should be maintained during the designed life.
2. Waste subjected to landfill shall be compacted in thin layers using heavy compactors to achieve high density of the waste. In high rainfall areas where heavy compactors cannot be used alternative measures shall be adopted.
3. Compaction to 95% Standard Proctor Density shall be done by mechanical means only. Where access is possible, compaction shall be done by 10 tonne rollers smooth wheeled, sheep foot or wobbly wheeled as directed by the Construction Supervisor/ Independent Engineer. A smaller weight roller may be permitted by the Construction Supervisor/ Independent Engineer in special cases, but in any case not less than 6 passes of the roller will, be accepted for each layer. Each layer shall be wetted or the material dried- by aeration to moisture content of 3-5% above the optimum moisture content to be determined by the Concessionaire. Each layer shall be watered, rammed and compacted to the density as required.
4. For compacting each sand layer, water shall be sprayed over it to flood it and it shall be kept flooded for 24 hours to ensure maximum compaction. Vibro-compactors shall also be used if necessary to obtain the required degree of compaction. Any temporary works required to contain sand under flooded condition shall also be undertaken. The surface of the consolidated-sand shall be dressed to required levels or slope.
5. The degree of compaction of compacted fill in place will be subjected to tests by the Construction Supervisor/ Independent Engineer as the work progresses, and the Concessionaire shall provide the necessary facilities to make such tests. If any test indicates that the compaction achieved is less than the specified degree of

compaction, the Construction Supervisor/ Independent Engineer may require all fill placed subsequent to the last successful test to be removed and re-compacted by the Concessionaire. Compaction procedure shall be amended as necessary to obtain satisfactory results.

7. Sampling, Testing and Quality Control

7.1. General

1. The Concessionaire shall carry out all sampling and testing in accordance with the relevant Indian Standards and/or International Standards and shall conduct such tests as are called for by the Construction Supervisor/ Independent Engineer. Where no specific testing procedure is mentioned, the tests shall be carried out as per the prevalent accepted engineering practice to the directions of the Construction Supervisor/ Independent Engineer. Tests shall be done in the field and at a laboratory approved by the Construction Supervisor/ Independent Engineer and the Concessionaire shall submit to the Construction Supervisor/ Independent Engineer, the test results in triplicate within three days after completion of a test. The Construction Supervisor/ Independent Engineer may, at his discretion, waive some of the stipulations given below, for small and unimportant operations.
2. In case work is found unsuitable for acceptance, it shall be removed and replaced by the Concessionaire. Such work shall be redone as per specification requirements and to the satisfaction of the Construction Supervisor/ Independent Engineer.
3. The Residual Inert Matter proposed to be taken to the Landfill Facility shall be placed in heaps of almost uniform size of sizeable quantity.
4. The chemist shall take ten random samples from each of these heaps. These random samples shall then be thoroughly mixed and a single random sample taken and tested as per the procedure set out in this Agreement in the presence of the Independent Engineer or his authorized representative. In case, the composition of this single random sample satisfies the criteria set out in this Schedule, it shall be deemed as being "Fit for Land filling"
5. The Concessionaire shall be solely responsible for the composition of the inert material disposed in the Landfill Facility

7.2. Quality Assurance Program

1. The Concessionaire shall submit and finalize a detailed field Quality Assurance Program within 15 days from the date of award of the Contract according to the requirements of the specification. This shall include setting up of a testing laboratory, arrangement of testing apparatus/equipment, deployment of qualified/experienced manpower, preparation of format for record, Field Quality Plan etc. On finalized field quality plan, the owner shall identify customer hold

points beyond which work shall not proceed without prior written approval from the Construction Supervisor/ Independent Engineer .

2. Frequency of sampling and testing including the methods for conducting the tests are given in Enclosure 2 to Schedule D. The testing frequencies set forth are the desirable minimum and the Construction Supervisor/ Independent Engineer shall have the full authority to carry out or call for tests as frequently as he may deem necessary to satisfy himself that the materials and works comply with the appropriate specifications.

7.3. Acceptance Criteria

1. Following Acceptance Criteria shall be followed:
 - (i) All individual samples collected and tested should pass without any deviation when only one set of sample is tested.
 - (ii) For re-test of any sample, two additional samples shall be collected and tested, and both should pass without any deviation.
 - (iii) Where a large number of samples are tested for a particular test, then 9 samples out of every 10 consecutive samples shall meet the specifications required.
 - (iv) Construction of the test field should start on the surface with 3 layers of clay. A trial pit shall be installed in the test field for visual check of the quality of the compressed layer

Chapter 4

EXCAVATION OF TRENCHES

1. Scope

- 1.1. This section of the specification covers excavation of trenches for laying HDPE pipes underneath the embankment and other cross drainage works.

2. General

- 2.1. The Concessionaire shall furnish all labour, equipment and materials required for complete performance of the work in accordance with the drawings. Schedule of items and as described herein.

3. Excavation for trench

- 3.1. Drawings for trenches shall be prepared by the Concessionaire and approved by the Construction Supervisor/ Independent Engineer. Trenches as shown in the drawing shall be excavated below the foundation grade and the slopes of the excavation shall be as indicated in the drawings or as directed by the Construction Supervisor/ Independent Engineer. The-alignment and cross-section shown in the drawings will be subject to such changes as may be found necessary by conditions disclosed during the excavation. Excavation of trench shall be carried out in a manner as specified under the clause for the item of "Excavation & Filling work".
- 3.2. Material excavated from the trenches shall, if suitable, be used in the embankment after stock piling as directed. The suitability or otherwise of the material shall be determined by laboratory tests. Material excavated from trench shall not be planned in the embankment till the foundation for the embankment has been cleared, stripped and prepared as specified and adequate arrangements made for watering and rolling the layers of earth fill in the embankment.

Chapter 5

BORROW AREAS

1. Scope

- 1.1. All materials required for the embankment which are not available from trench excavation or from other excavations shall be obtained from approved designated borrow areas. The impervious material required for foundation shall be brought from any approved borrow areas.
- 1.2. The depths of cut in all parts of the borrow areas will be determined by the Construction Supervisor/ Independent Engineer depending on the level of water table at the time of excavation and the cuts shall be made to such depths only. The excavation in borrow areas shall not be done below the water table. The type of equipment used and the operation in the excavation of materials in borrow areas shall be of such type that will produce the required uniformity of mixture of materials for the embankment.
- 1.3. Borrow area shall be opened so as not to impair the usefulness or mar the appearance of any part of the work or any other property. The excavation surfaces and surface of waste materials shall be left in a reasonably smooth and even condition. When the borrow area is located contiguous to the embankment alignment then it must be ensured that the borrow area shall not be opened within a distance of five times the height of embankment contiguous to the heel or the toe of the embankment or 25 meter whichever is more.
- 1.4. The material required for embankment construction and liner foundation shall be free of admixture of stiff clay, refuse, stumps, roots, rock, brush, weeds or other material which would be detrimental to the proper compaction of materials in the embankment.

2. Preparation of Borrow Areas

2.1. Site clearance

All areas required for borrowing earth for embankment shall be cleared of all rank vegetation and stumps, roots, bush, rubbish, and other objectionable material. Particular care shall be taken to exclude all organic matter from the material to be placed in the embankment. All unsuitable materials including rank vegetation, stumps shall be disposed off as specified elsewhere in this specification. The cleared, areas shall be maintained free of vegetation growth during the progress of the work. The unsuitable materials will be filled back, after borrowing earth for earthen embankment construction, as directed by the Construction Supervisor/ Independent Engineer.

2.2. Stripping of Borrow Areas

Borrow areas shall be stripped of topsoil, sod and any other matter which is unsuitable for the embankment construction. Materials from stripping shall be disposed off up to a lead of 500 m at a place and in manner at the discretion of the Construction

Supervisor/ Independent Engineer and as directed by him. The depth of stripping shall be decided by the Construction Supervisor/ Independent Engineer depending upon the nature of topsoil and the vegetation present.

2.3. Borrow Area Watering / Dewatering

The natural moisture content of material in the borrow areas as well as the optimum moisture content corresponding to the Proctor's maximum dry density for the material in the particular borrow area shall be obtained from laboratory tests. Additional moisture if required shall be introduced into the borrow area by watering well in advance of excavation, to ensure uniformity of moisture content. If in any borrow area before or during excavation there is excess moisture, steps shall be taken to reduce the moisture by the selective excavation to secure the materials of required moisture by excavating drainage ditches, by allowing adequate time for drying or by other means. To avoid formation of pools in the borrow areas during excavation operations, drainage ditches from borrow areas to the nearest outlets shall be excavated.

Chapter 6

CAST-IN-SITU CEMENT CONCRETE

1. Scope

- 1.1. This section of the specification deals with cast-in-situ cement concrete plain or reinforced for Leachate collection sump, leak detection sump and other miscellaneous items as shown in the drawings and covers the requirements for concrete materials, their properties, storage, handling, grading, concrete mix design, strength and quality, pouring at all levels, testing, protection, curing, finishing, admixtures, and other associated works.

2. General Requirements

- 2.1. The provision of latest IS:456 shall be complied with unless permitted otherwise and any other Indian Standards Codes shall form the part of the specification to the extent it has been referred to or applicable within this specification.
- 2.2. The Concessionaire shall furnish all labor, materials and equipment to form, place, and compact and finish all structural concrete, plain concrete works for general and architectural works and miscellaneous items complete as indicated on the drawings and as described herein.

3. Materials

3.1. Materials Properties

1. Aggregates

- (i) For reinforced concrete work, aggregate conforming to IS: 383 & 2386 having a maximum size of 20 mm shall be used. However for lean concrete maximum size up to 40mm shall be used.
- (ii) Aggregates (coarse or fine) with a specific gravity below 2.6 shall not be used without special permission of the Construction Supervisor/ Independent Engineer. Machine-made sand will be acceptable provided the constituent is sound, hard, and dense and is acceptable to the Construction Supervisor/ Independent Engineer. Sand natural gravel and crushed rock shall be prepared for use by such screening or washing or both, as necessary to remove all objectionable foreign matter.

2. Cement

- (i) For RCC and PCC work Ordinary Portland Cement as per IS:269 shall be used.

3. Steel

- (i) For RCC work Reinforcement Steel shall be TMT bars as per IS 1786

4. Water

- (i) Water used for mixing and curing concrete shall be clean and free from injurious amounts of oils, acids, alkalis, sugar, organic materials or other substances that may be deleterious to concrete or steel. Potable water is generally considered satisfactory for mixing concrete

3.2. Storage and Handling of Materials

IS: 4082 shall be followed as a general guidance for storage and handling of construction materials at Site and IS: 7969 shall be followed for safety measures.

1. Cement

- (i) The cement shall be stored in leak proof, weather proof enclosed sheds. Different consignments of different types of cement shall be stacked separately with clear identifiable stack numbers. Cement consignments shall be stored as received and shall be consumed in the order of their delivery. The Concessionaire shall make his own arrangement for the storage of adequate quantity of cement.

2. Aggregates

- (i) Coarse and fine aggregates shall be stored separately on brick-soling or on an equivalent platform. The stack height of coarse aggregates shall not exceed 120 cm to avoid coning and segregation.

3.3. Grades of Concrete

All concrete used for RCC work shall be of minimum M 25 grade design mix and in grades designated as specified in Drawing.

3.4. Nominal Mix Concrete

Nominal mix concrete shall be used only for plain cement concrete works and where shown on drawings or specifically allowed by the Construction Supervisor/ Independent Engineer. Such concrete shall not require preparation of trial mixes and all such concrete shall be mixed in a mechanical mixer. Proportions for nominal mix concrete shall be according to Table-9 of IS: 456-2000. In addition standard proportion by volume shall be used wherever specified.

3.5. Design Mix Concrete

Design mix concrete shall only be used for all reinforced concrete works, except where specified otherwise or specially permitted by the Construction Supervisor/ Independent Engineer. The mix proportion for all grades of concrete shall be designed to obtain, the required workability and the characteristic strength not less than the appropriate values given in Table 1 below, using standard deviation specified in IS: 10262. The minimum value of target strength of design mix of various grades of

concrete shall be as per Table 1 below considering the quality control as 'good' as specified in IS: 10262. However, the Construction Supervisor/ Independent Engineer may allow changing the target strength values based on adequate numbers of works test results.

Grade of Concrete

Grade	Compressive strength of a 15 cm 3 at 28 days (in N/Sqm)	
	Preliminary Test Strength or (Target strength of trial mix)	Characteristic strength on works cubes (N/mm²)
M-15	20.8	15
M-20	27.6	20
M-25	33.7	25
M-30	39.9	30
M-35	45.4	35

- (i) In designing the mix proportions of concrete, the quantity of both cement and aggregate shall be determined by mass. The Construction Supervisor/ Independent Engineer may allow the quantity of aggregates to be determined by equivalent volume basis after the relationship between the weight and volume is well established by trial and the same shall be verified frequently.
- (ii) Water shall be either measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean and serviceable condition, and their accuracy periodically checked.
- (iii) To keep the water cement ratio to the designed value, allowance shall be made for moisture contents in both fine and coarse aggregates and determination of the same shall be made in accordance with IS: 2386 (Part-III) as frequently as directed by the Construction Supervisor/ Independent Engineer.

4. Mix Design

- 4.1. Preliminary tests/trial mix as specified or as directed by the Construction Supervisor/ Independent Engineer shall be carried out sufficiently ahead of the actual commencement of the work, to arrive at the grading of aggregates, water cement ratio, workability and the quantity of cement required to give Preliminary (target) compressive strength as specified in Table 1.
- 4.2. Minimum cement contents, from durability consideration, for different exposures and sulphate attack shall be as per IS: 456. In case higher value is obtained from trial mixes from strength consideration, same shall be provided.
- 4.3. At least four trial mixes shall be made and minimum six test cubes shall be taken from each trial mix noting the slump for each type of mix. The cubes shall then be properly cured and three cubes for each mix shall be tested in a laboratory (approved by Construction Supervisor/ Independent Engineer) at 7 days and remaining three at 28 days for compressive strength.

- 4.4. The Concessionaire shall submit the test reports for mix design to the Construction Supervisor/ Independent Engineer, indicating design criteria analysis and proportions of materials etc. The mix proportion by mass and water cement ratio determined on the basis of above reports shall yield the concrete with desired characteristic strength & suitable workability. The mix design to be adopted on the works shall be approved by the Construction Supervisor/ Independent Engineer.

5. Workability

- 5.1. The workability of concrete shall be checked at frequent intervals. Workability of concrete measured in accordance with IS: 1199 shall be recorded with corresponding compressive strength results.
- 5.2. The degree of workability necessary to allow the concrete to be well compacted and to be worked into the corners of form work and around the reinforcement to give the required surface finish shall depend upon the type and nature of the structure and shall be based on experience and tests. The limits of consistency for various types of structures, shall be in accordance with IS: 1199.

6. Batching and mixing plant

- 6.1. A modern dependable batching and mixing plant with two mixers each of 20 cum./hr capacity preferable tilting type capable of producing concrete of specified quality and output required to meet the schedule shall be installed at a centralized location with the approval of the Engineer in Charge. Transporting, handling, and placing equipment shall be provided at a location in a manner approved by Engineer in Charge. The concrete batching and mixing plant shall be completely installed and operated for sufficient length of time prior to scheduled date of placement of first concrete, to enable the Engineer in Charge to assess the performance for its satisfaction.

7. Conveying and Placing Concrete by pumping

7.1. Conveying Concrete

1. The suitably designed concrete will be conveyed by pressure applied by the pump through either rigid pipe or flexible hose and discharged directly in to the desired area. Requisite number(s) of modern dependable concrete pump(s) capable of pumping concrete of specified quality/density at a rate required meeting the schedule, together with a balanced complement of pipe lines, accessories, sparing parts, power controlled placers, experienced pump operators and maintenance staff shall also be provided.
2. The pump shall be of piston type pump with net concrete pumping capacity of not less than 20 m³/hr at a horizontal distance of 400 m and vertical distance of 30 m. The pumps shall be designed with adequate protection against adverse usage, shall be insensitive to rough treatment and operation on construction sites, have sturdy construction and should be easy to maintain.

3. Concessionaires shall make necessary standby (by providing additional spare/standby pumps) or alternate concreting arrangement in the event of failure of pumps.

7.2. Placing Concrete

- (a) Formwork and reinforcement steel shall be approved in writing by the Construction Supervisor/ Independent Engineer before concrete is placed. The formwork in contact with the concrete shall be cleaned and thoroughly wetted and treated with an approved composition before placing the concrete. Care shall be taken that such approved composition is kept out of contact with the reinforcement. Concrete shall be deposited in its final position without segregation, re-handling or flowing. Care should be taken to avoid displacement of reinforcement or movement of formwork while placing concrete. Any drop over 180 cm shall have to be approved by the Construction Supervisor/ Independent Engineer. Concrete when deposited shall have a temperature of not less than 4.5 degrees C and not more than 38° C, it shall be compacted in its final position within 30 minutes of its discharge from the mixer. Once the concrete is deposited in its final position, it shall not be disturbed. IS: 7861 (Part-I) shall be followed for concreting in extreme hot weather.
- (b) The placing of concrete shall be a continuous operation with no interruption in excess of 30 minutes between the placing of continuous portion of concrete. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless proper construction joint is formed as per direction of the Construction Supervisor/ Independent Engineer. Concrete shall be placed in continuous horizontal layers of 150 mm or higher thickness as directed before placing the next layer.
- (c) All excavated areas for concreting shall be kept under dry working conditions until such concrete work is completed. The Concessionaire shall make provisions and furnish equipment as required for such dewatering, subject to the approval of the Construction Supervisor/ Independent Engineer.
- (d) Concrete shall not ordinarily be placed under water. In unavoidable cases, such concreting shall be done only with the specific approval of the Construction Supervisor/ Independent Engineer for the methods, equipment, materials and proportions of the mix to be used and relevant clauses of IS: 456 adhered to. No concrete shall be placed in open while it rains. If there has been any sign of washing of cement and sand, the concrete shall be entirely removed immediately. Suitable precautions shall be taken in advance to guard against rains before leaving the fresh concrete unattended.
- (e) Slabs, beams and similar members shall be poured in one operation normally. Except where otherwise agreed to by the Construction Supervisor/ Independent Engineer, concrete shall be deposited in Horizontal layers, but it

must be ensured that under layer is not already hardened. Holes shall be provided and bolts, sleeves, anchors, fastenings or other fixtures shall be embedded in concrete as shown on the drawings or as directed by the Construction Supervisor/ Independent Engineer.

- (f) After the concrete has been placed, it shall be thoroughly compacted by approved mechanical vibrators to a maximum subsidence without segregation and shall be thoroughly worked around reinforcement or other embedded fixtures into the correct form and a shape. Care must be taken to ensure that the inserts, fixtures, reinforcement and formwork are not displaced or disturbed during compaction of concrete.
- (g) Immersion vibrators shall be a 'no load' frequency amplitude and acceleration as per IS: 2505 depending upon the size of the vibrator. Immersion vibrators shall be operated by experienced men for their use. IS: 3558 shall be followed. Immersion vibrators shall penetrate both the layer poured and the under layer and shall not be allowed to come in contact with steel reinforcement, forms and finished surfaces after start of initial set.
- (h) These vibrators shall be immersed not more than 450 mm apart and withdrawn when air bubbles cease to come to the surface. Such vibrators shall in no case be used to push concrete inside the forms and vibrators shall be withdrawn slowly.

7.3. Construction Joints

- (a) When the concreting work is to be interrupted, the concrete shall be rebated at joint to such shape and size as may be required by the Construction Supervisor/ Independent Engineer or as shown on the drawings. All vertical construction joints shall be made with stop boards, which are suitably fixed, for sufficient lateral rigidity and slotted to allow for the passage of the reinforcement steel. In the case of water and/or underground structures, water stop of approved material shall be provided if so specified on the drawings or as desired by the Construction Supervisor/ Independent Engineer.
- (b) Construction joints shall be provided in positions as shown or described on the drawings. Where it is not described, the joints shall be in accordance with the following:
 - (i) In a column, the joint shall be formed about 75 mm below the lowest offset of the beams framing into it.
 - (ii) Concrete in a beam shall be placed throughout without a joint, but if the provision of a joint is unavoidable, the joint shall be vertical and within middle third of the span.
 - (iii) A joint in a suspended floor slab shall be vertical, at one-quarter point of the span and at right angle to the principal reinforcement.

- (iv) In forming a joint, concrete shall not be allowed to slope away to a thin edge. The location of construction joints shall be planned by the Concessionaire well in advance of pouring and have to be approved by the Construction Supervisor/ Independent Engineer.

- (c) Before fresh concrete is placed, the cement skin of the partially hardened concrete which was poured earlier shall be thoroughly removed and aggregates shall be exposed by wire brushing, backing, water jetting or any other approved method, as directed with Construction Supervisor/ Independent Engineer. The rough surface shall be thoroughly wetted and surface water shall be removed and shall be coated with 10-15 mm thick layer of 1:1 freshly mixed cement sand slurry. Care shall be taken to ensure that the first layer of concrete placed after a construction joint is thoroughly rammed against the existing layer.

7.4. Cleaning and Finishing

- (a) All concrete surfaces shall have an even finish, free from honey combs, air bubbles, fins or other blemishes.

- (b) The formwork joint marks and other projections on concrete work exposed to view shall be rubbed out with carborundum stone and made smooth and air holes, cavities and similar imperfections shall be first saturated with water and filled with cement sand mortar (1:2) and cured.

- (c) Except where a separate finish is to be applied, or where a trowel finish is called for, horizontal concrete surface shall be floated and steel troweled after achieving initial set to prevent excess fine materials from working to the surface.

- (d) Concrete surfaces to be subsequently plastered or where brickwork shall be built against it shall be adequately hacked as soon as the form is stripped off so that proper bond can develop.

8. Curing and Protection of Concrete

- 8.1. Newly placed concrete shall be protected by approved means from rain, sun, and wind. Concrete placed below the ground level be protected from falling earth during and after placing. Concrete placed in ground containing deleterious substances shall be kept free from contact with such ground or with water draining from such ground during placing of concrete and for a period of at least three days or as otherwise instructed by the Construction Supervisor/ Independent Engineer. The ground water around newly poured concrete shall be kept to an approved level by pumping or other approved means of drainage. Adequate steps shall be taken to protect immature concrete from damage by debris, excessive loading, shocks, vibration, abrasion, traffic, rapid temperature changes, mixing with earth or other deleterious material, etc. that may impair the strength and durability of concrete.

- 8.2. As soon as the concrete has hardened sufficiently for the surface to be marked, it shall be covered either with wet sacking, canvas or similar materials and kept continuously wet for at the discretion of the Construction Supervisor/ Independent Engineer, up to fourteen (14) days. Concrete slabs and floors shall be cured by flooding with water of minimum 25 mm depth for the periods mentioned above.
- 8.3. Masonry work over the foundations concrete may be started after 48 hours of its laying but the curing of concrete shall be continued for a minimum period of 7 days.

9. Sampling and Testing Criteria

9.1. General

- (a) Facilities required for sampling & testing materials and concrete in the field and in the laboratory shall be provided by the Concessionaire. All sampling and testing shall be done in accordance with relevant Indian Standards and this specification. Tests shall be done in the field in the presence of the Construction Supervisor/ Independent Engineer and the Concessionaire shall submit the test result in triplicate within 3 days after completion of any test.
- (b) Concrete samples shall be cured under laboratory conditions, except when in the opinion of the Construction Supervisor/ Independent Engineer extreme weather conditions may prevail at which time the Construction Supervisor/ Independent Engineer may require curing under job conditions.
- (c) If the "test strength" of the laboratory controlled cubes for any portion of the concrete work falls below the compressive strength specified, the Construction Supervisor/ Independent Engineer shall have the right to order a change in the proportions or the water content for the remaining portion of the structure, and shall have the right to require provisions for temperature and moisture control, during the period of curing, as necessary to secure the required strength, and may require re-tests on the basis of core test as given in IS: 456.
- (d) Concrete found unsuitable for acceptance shall be removed and replaced by the Concessionaire. The work shall be redone as per specification and to the satisfaction of the Construction Supervisor/ Independent Engineer and at no extra cost to the owner.
- (e) Rebound hammer test shall be carried out for ascertaining the quality of concrete work, as directed by the Construction Supervisor/ Independent Engineer.
- (f) Core test shall be done as described in IS:516. The number of cores required shall be as decided by the Construction Supervisor/ Independent Engineer and shall be represented of whole of the concrete concerned. In no case, however, shall fewer than three cores be tested.

Concrete in the member represented by a core test shall be considered acceptable if the average equivalent cube strength of the cores is equal to at least 85 percent of the cube strength of the grade of concrete specified for the corresponding age and no individual cube has strength less than 75 percent

9.2. Sampling of Concrete

1. Sampling from fresh concrete shall be taken according to IS: 1199 tested as per IS:516. Normally only compressive test shall be performed but the Construction Supervisor/ Independent Engineer may require other tests to be performed in accordance with IS:516.

(i) Trial Mixes

At least four trial mixes shall be made with, minimum 6 test cubes for each.

(ii) Works Tests

- a. The minimum frequency of sampling of concrete of each grade shall be according to clause 15.2.2 of IS: 456-200C. However, after getting continuous satisfactory results and in the case of voluminous concrete works, the Construction Supervisor/ Independent Engineer may at his discretion reduce the frequency of sampling.
 - b. For each grade of concrete, and for each 8 hours (shift) of work or part thereof, at least one sample consisting of six specimens shall be taken from each 50 cum. Of concrete or part thereof, 3 specimens shall be tested at 7 days and remaining 3 shall be tested at 28 days. However, in all cases, the 28 days compressive strength shall alone be the criterion for acceptance or rejection.
2. To control the consistency of concrete from every mixing plant, slump tests and/or compaction factor tests in accordance with IS: 1199 shall be carried out by the Concessionaire every two hours or as directed by the Construction Supervisor/ Independent Engineer. Slumps corresponding to the test specimens shall be recorded for reference.
3. The strength of sample shall be the average of the strength of three specimens. The individual variation should not be more than $\pm 15\%$ of the average.

9.3. Acceptance criteria for concrete

1. The acceptance criteria of concrete shall be in accordance with Clause No. 16 of IS: 456. However, in exceptional circumstances, the Construction Supervisor/ Independent Engineer may at his discretion accept concrete of lower strength than that specified at reduced rates pro-rata to the strength obtained. The concrete shall be deemed to comply with the strength requirements, if :

- Or
- (i) Every sample has test strength not less than the characteristic value
 - (ii) The strength of one or more samples, though less than the characteristic value, in each case is not less than the greater of:
 - a. The characteristic strength minus 1.35 times the standard deviation and
 - b. 0.80 times the characteristic strength: and the average strength of all the samples is not less than the characteristic strength + $[1.65 - 1.65/\text{square root of (No. of Samples)}]$ times the standard deviation.

9.4. Tolerance Limits

Unless otherwise specified, the tolerance in construction shall be as follows :

Description of item/s structural element	Permissible Deviation in mm	
The dimensions of concrete as cast when compared with those on the drawings shall be within the tolerance given below:		
Faces of concrete in foundation and structural members against which backfill is placed	+ 25	-10
Location of footing (for RCC framed structure only)	+ 25	-25
Eccentricity of footing	2 of footing width of direction of misplacement but limited to 50 mm + 5	
Cross sectional dimensions of walls, slabs and similar structural elements	+ 5	- 5
Description of item/s structural element	Permissible Deviation in mm	
Deviation from specified dimensions of cross section of columns and beams	+ 12	-6
Embedded parts (in any direction)	+ 5	- 5
Centers of pockets of grooves with greatest lateral dimension not exceeding 150 mm	+ 10	- 10
Plump	3 mm for every meter subject to a maximum of 10 mm	

Chapter 7

FORMWORK AND STAGING

1. Scope

- 1.1. This section of the specification deals with the requirements for the supply, erection, dismantling of formwork and staging required for cast-in-situ concrete works including for making pockets.

2. General Requirements

- 2.1. The Concessionaire shall supply, fabricate erect and dismantle (after use) all temporary and permanent formwork and staging that is required for all activities covered under the specifications.

3. Materials

- 3.1. Formwork shall compose of steel, plywood or best quality wood. Timber shall be free from significant knots and shall be of medium grain as far as possible and hard woods shall be used as caps. Timber shall be well seasoned, free from sap, worm holes, wraps or other surface defects and shall have smooth finish.
- 3.2. Staging unless specified otherwise shall generally be of mild steel tubes, steel beams and channels etc. or strong sowbellies, 150 mm in diameter or above.

4. Quality of Formwork and Staging

- 4.1. The forms and staging shall be sufficiently strong to carry without undue deformation, the dead weight of the concrete and the effects of vibration. The joints in the formwork shall be sufficiently tight to prevent any leakage of mortar. The formwork shall be such as to ensure a smooth uniform surface free from honeycombs, air bubbles, bulges, fins and other blemishes.
- 4.2. Beveled strips 25 x 25 mm shall be provided to form angels and in corners of columns and beam boxes for chamfering of corners if shown in drawings or directed by the Construction Supervisor/ Independent Engineer .
- 4.3. The Concessionaire shall maintain necessary camber in centering for all floor slabs and beams in all spanning directions, so as to offset the deflection and assume correct shape.

5. Construction Operation

- 5.1. All form shall be thoroughly cleaned of old concrete, wood shavings, saw dust, dirt and dust ticking to them before these are fixed in position. Before formwork is placed in position, the form surface that will be in contact with concrete shall be treated with approved non-staining oil or composition which is insoluble in water and not injurious

to concrete. Care shall be taken that the oil or composition does not come in contact with reinforcing steel or stain the concrete surfaces.

6. Removal of Formwork

- 6.1. The Concessionaire shall begin the removal of formwork only after approval of the Construction Supervisor/ Independent Engineer. He shall place on record the dates on which the concrete is placed in different parts of the work and the dates of the removal of formwork there from. This record shall be checked and countersigned by the Construction Supervisor/ Independent Engineer.
- 6.2. Forms of various types of structural components shall, under normal circumstances, not be removed before the minimum periods specified in clause 11.3 of IS:456-2000, which shall also be subject to the approval of the Construction Supervisor/ Independent Engineer .
- 6.3. In normal circumstances and where ordinary Portland cement is used, forms may generally be removed after the expiry of the following periods, according to clause no. 11.3 of IS:456-2000.

a)	Walls, columns and vertical faces of all structural members As directed by the Construction Supervisor/ Independent Engineer	1 to 2 days
b)	Slabs (Props left under)	3 days
c)	Beams (props left under)	7 days
d)	Removal of props under slabs	
	Spanning up to 4.5 M	7 days
	Spanning over 4.5 M	14 days
e)	Removal of props under Beams	
	Spanning up to 6 M	14 days
	Spanning over 6 M	21 days
	Cantilever Slabs	14 days

- 6.4. In case PPC/PSC is used instead of OPC, the removal of shuttering/support shall be after 50% more time from that being applied for OPC unless otherwise permitted by the Construction Supervisor/ Independent Engineer. For concrete temperature above 40 °C. Stripping time shall be increased.

7. Reuse of Forms

- 7.1. Before reuse, all forms shall be thoroughly scraped, cleaned, holes and leaks satisfactorily plugged, joints examined and inside surfaces treated as specified herein before. Formwork shall not be used/reused, if declared unfit or unserviceable by the Construction Supervisor/ Independent Engineer.

8. Dimensional Tolerance for Formwork

Levels and heights ±6 mm
Plumb 3mm for every meter subject to maximum of 10mm

Unevenness of any surfaces	± 3 mm
Length or breadth	± 12 mm
Diagonals	±15 mm

Chapter 8

REINFORCEMENT

1. Scope

- 1.1. This section of the specification covers the technical requirements for fabricating and placing in position of mild steel High strength deformed steel reinforcement bars or TMT bars for all RCC works as indicated in the drawings and as directed by the Construction Supervisor/ Independent Engineer.

2. General Requirements

- 2.1. The Concessionaire shall arrange for transport, fabricate and place reinforcement to shapes and dimensions as indicated in the approved drawings and specifications and/or as directed by the Construction Supervisor/ Independent Engineer. The reinforcement shall be either mild steel or cold deformed twisted steel bars conforming to relevant IS specifications as specified in Schedule of Items and Drawings.
- 2.2. The Concessionaire shall prepare bar bending schedule on the basis of information furnished in the drawings, approved for construction, and submit the same for approval by the Construction Supervisor/ Independent Engineer. No work shall be commenced without the prior approval of the schedule by the Construction Supervisor/ Independent Engineer.
- 2.3. Any adjustments in reinforcement to suit field conditions, construction joint etc., other than those shown on the drawings shall be subject to the approval of the Construction Supervisor/ Independent Engineer /before placing.

3. Storage and Handling

- 3.1. Reinforcement and structural steel (including steel required for embedment) shall be stored consignment wise and size wise off the ground by at least 150 mm and protected from rusting, oil, grease and distortion by providing suitable cover. The storage area shall be such that water does not accumulate and steel does not get corroded.

4. Bending and Placing

4.1. Bending

- (a) Reinforcing bars supplied bent or in coils shall be straightened in cold without damaging the bars, before these are cut to size.

- (b) Reinforcing steel shall be bent in accordance with procedure specified in IS: 2502 and/or as approved by the Construction Supervisor/ Independent Engineer. Bends and shapes shall comply strictly with the dimensions shown on the approved bar bending schedule and they shall be rechecked by the Concessionaire before bending and he shall be entirely responsible for their correctness. The details of reinforcement shall be in accordance with IS: 5525 and SP: 34. Welding of bars to obtain continuity shall not be allowed particularly for cold twisted bars unless specifically approved by the Construction Supervisor/ Independent Engineer. If welding is unavoidable, the work shall be carried out as per IS: 2751 and IS: 9417 and as directed by the Construction Supervisor/ Independent Engineer.

4.2. Placing in Position

- (a) All reinforcement shall be accurately fixed and maintained in position as shown on the drawings by means of steel chairs and or concrete spacer blocks as per IS:2502. Bars intended to be in contact and crossing points, shall be securely bound together at all such points by two numbers annealed steel wire of 1.2 mm size conforming to IS:280.
- (b) The vertical distance between successive layers of bars shall be maintained by provision of spacer bars, and shall be so spaced that the main bars do not sag perceptively between adjacent spacers.
- (c) Laps and anchorage length of reinforcing bars shall be as shown on the drawings and shall be in accordance with IS: 456.

5. Cover to Reinforcement

- 5.1. Unless shown otherwise on the drawings, minimum clear concrete cover for reinforcement (exclusive of plaster or other finishes) shall be as per provisions of IS: 456, subject to minimum of the following:
 - 6.1.1 For bottom reinforcement in footings, 75 mm, if concrete is laid against the ground or 50 mm if laid on a layer of lean concrete.
 - 6.1.2 For retaining walls, grade beams, top and sides of footings and similar surfaces exposed to weather or ground, 50 mm for bars larger than 16 mm and 40 mm for bars up to 16 mm.
 - 6.1.3 For concrete members exposed to the action of harmful chemicals, acids, alkalis, atmosphere, sulphurous smoke, sea water etc., the cover shall be as shown on the drawings.
- 6.2 For liquid retaining structures 40mm or diameter of main bar which is larger.
- 6.3 Clear distance between reinforcing bars shall be in accordance with IS: 456 or as shown on approved drawings.

Chapter 9

STRUCTURAL STEEL WORK

1. Scope

- 1.1. This section of specification covers the technical requirement for supply, fabrication & erection of structural steel and associated works.
- 1.2. The specification covers structural steel works involving rolled sections, pipes, plates, chequered plates, beams, fixing of embedded parts.

2. General Requirement

- 2.1. The Concessionaire shall furnish all labour, plant, equipments, consumables, scaffolding, tools, tackles, materials etc. required for the completion of work on schedule in accordance with drawings and as described herein and/or as directed by the Construction Supervisor/ Independent Engineer .

3. Safe working

- 3.1. The Concessionaire shall strictly follows, at all stages of fabrication, transportation and erection of steel structures, the stipulation contained in the Indian Standard Safety Code for erection of structural steel work IS:7205 .

4. Detailed Working/ Fabrication Drawings

- 4.1. Fabrication drawings shall be prepared by the Concessionaire based on the scope of drawings supplied by the owner. The detailed working drawings shall indicate complete details of fabrication and erection weld size, lengths etc.

5. Materials

- 5.1. Structural steel rolled sections and plates shall conform to IS: 2062. Pipes shall conform to IS: 1161. Chequered plates shall conform to IS: 3502. All other materials shall be as per the relevant Indian Standards and as specified in IS: 800.

6. Fabrication

- 6.1. Fabrication work shall be carried out in accordance with IS: 800 as well as stipulations contained in these specifications.

- 6.2. All steel materials shall be straightened and/or flattened, wherever required by straightening machine, though minor kinks or bends may be corrected by limited heating under careful supervision.

7. Cutting Plan

The Concessionaire shall prepare cutting plan according to detailed working drawings, taking into consideration the availability of material, the cut pieces generated during work with the objective of minimizing waste

7.1. Straightening and Cutting

All steel materials shall be straightened and/ or flattened, wherever required by straightening machine, though minor kinks or bends may be corrected by limited heating under careful supervision.

7.2. Cutting

Cutting may be effected by shearing, cropping sawing or by gas cutting by mechanically controlled torch. Gas cutting by hand may only be used when specifically authorized in writing by the Construction Supervisor/ Independent Engineer.

7.3. Grinding

All the edges cut by flame shall be ground before they are welded.

7.4. Assembly

The components/ parts shall be assembled in such a manner that they are neither twisted nor otherwise damaged.

7.5. Welding

- (a) Welding shall be carried as per IS: 816 and IS: 9595 and the welding procedure duly approved by the Construction Supervisor/ Independent Engineer.
- (b) All structural welding shall be done by welders who qualify the appropriate tests laid down in IS: 817 and IS: 1181. The entire weld of any structural joint shall be made by one welder.

7.6. Electrodes

- (a) The electrodes used shall be of suitable type and size depending upon specifications of the parent materials, the method of welding and quality of weld desired.
- (b) Where coated electrodes are used they shall meet the requirements of IS: 814. All electrodes shall be stored properly as per manufacturer's recommendations.
- (c) Specific approval of the Construction Supervisor/ Independent Engineer shall be taken by the Concessionaire for the various electrodes proposed to be used on the work before any welding is started.

7.7. Preheating

1. Preheating shall be done wherever required as per IS:9595
 - (i) When base metal not otherwise required to be preheated is at a temperature below 0° C it shall be preheated to at least 20°C.
 - (ii) Thermo-chalk or other approved methods shall be used for measuring the plate temperature.
2. All welding shall be done in a proper sequence.

8. Inspection of Welds

8.1. Visual Inspection

- (a) 100 percent of the welds shall be inspected visually after cleaning the weld surface with steel wire brushes/chisels to remove slag, scales, and the spatter metal. The weld shall be correct in size, length and shall be of regular height and width and shall be free from defects like craters on the surface under cuts, and visible cracks. Weld gauges shall be used to measure the weld sizes.
- (b) Wherever above mentioned defects are noticed, the welds, in such locations shall be removed by gouging process. The joints shall be prepared again by cleaning the burrs and residual matters with wire brushes and grinding and re-welded.

9. Erection Procedure

Before any steel work leaves the Concessionaire's fabrication site it shall be suitably marked in accordance with the approved fabrication drawings.

9.1. Erection Scheme

- (a) The Concessionaire shall submit for approval of the Construction Supervisor/ Independent Engineer his erection scheme giving full details of the method of handling, transport, hoisting and erection including false work/staging, temporary bracing, guying etc.

- (b) Erection shall commence only after approval of the Concessionaire's proposed erection scheme.

9.2. Dismantling of Steel Work

The new structure shall be dismantled wherever called for. Such dismantling shall be done carefully without causing damage to other structures and further modifications shall be done in the fabrication yard.

9.3. Modification

The work of modification may involve cutting of certain portions or gouging of welds, cuttings, grinding, fabrication, welding drilling holes, straightening, removal of bends, painting and touch up painting, transporting the cut and removed parts/items and new steel to be added.

9.4. Re-erection

The work of re-erection includes transportation of structures from field fabrication yard to erection site, lifting of same to the required portion aligning, erection in position, inclusive of erection bolts, tack welding, final welding and touch up painting etc., complete to the satisfaction of the Construction Supervisor/ Independent Engineer.

10. Painting

After inspection and issue of test acceptance certificate, all steel surfaces shall be painted, as per the specifications given in the tender document and to the satisfaction of the Construction Supervisor/ Independent Engineer.

10.1. Surface Preparation

The surface preparation shall be done as per IS: 1477 (Part-I). The surface shall be cleaned, de greased and descaled manually.

10.2. Application of Priming Coat

- (a) The primers shall consist of red oxide zinc chromate conforming to IS:2074. Two coats of primer paint shall be applied first at the shop and the second after the erection is completed.
- (b) Application of primer shall be done by brush or by any other method specified in IS: 1477 (Part-II) Touch up painting shall be done after erection.

10.3. Application of Finishing Coats

- (a) Before application of finishing coats the second coat of primer paint shall be completed.
- (b) Finishing coat shall be synthetic enamel paint conforming to IS: 2932 & IS: 2933. Total coating thickness (DFT) of the painting shall not be less than 100 micron.

10.4. Embedded Parts

The embedded steel parts shall be properly placed in position with lugs. Temporary supports shall be provided to ensure proper installation of the embedded parts and these shall be in plumb and level. Concrete around the embedded parts shall be properly compacted so as to avoid voids or honeycombing. The structure shall be hoisted and placed in position carefully without any damage to itself or to the structure in which it is to be fixed and injury to workmen. If necessary, appliance such as lifting shall be used.

10.5. Hand Railings

Pipe hand rails shall be of standard weight galvanized steel pipes of flush welded construction, ground smooth, using 32 mm nominal bore medium class pipes with double rail, 1.2 meter above platform level and pipe posts spread not more than 1.5 meters apart as per the drawings or instructions of Construction Supervisor/ Independent Engineer .

10.6. Covers

Chequered plates shall be fixed to supporting members by tack welding or by counter sunk bolts. Care shall be taken to avoid distortion of the plate while welding of stiffening angles/vertical stiffening ribs.

11. Bolts

- 11.1. Stainless steel Bolt with a 38 x 6 mm stainless steel flat bar shall be used to bind the HDPE liner with the concrete in leachate collection sump, leachate detection sump etc as shown in the drawings. Bolts shall generally conform to IS: 5624.
- 11.2. All bolts shall be embedded in concrete in plumb and in level at true location. The threads shall be protected by using PVC tape. Hexagonal nuts and locknuts shall conform to IS:4218.

11.3. Permanent Bolts

Permanents bolts used for connection of structural steel members shall conform to IS:1363, IS:13643 and IS:1367. These shall be provided with washers, nuts and locknuts.

Chapter 10

EARTHEN EMBANKMENT

1. Scope

- 1.1. This section of specification covers the earthwork involved in the embankment formation as per the drawings and as mentioned herein.

2. General Requirement

- 2.1. The Concessionaire shall furnish all labour, equipment and materials required for complete performance of the work in accordance with drawings, schedule of items and as described herein.

3. Earthen Embankment

- 3.1. The embankment shall be constructed to the lines and grades shown on the drawings. Placement of fill shall be performed in an orderly way and in an efficient and workman like manner, so as to produce fills having such quantities of density, strength and permeability as will ensure the-highest practicable degree of stability and performance of the embankment.
- 3.2. No bushes, roots, sods or other perishable or unsuitable materials shall be placed in the embankment. The suitability of each part of the foundation for placing embankment materials thereon and of all materials for use in embankment construction shall be determined by the Construction Supervisor/ Independent Engineer. The embankment may be constructed in separate portions, provided that:
- (a) The slopes of the bonding surfaces between the previously completed portions of the embankment and materials to be placed in each zone shall not be steeper than 2 horizontal to 1 vertical along the centerline of the embankment.
 - (b) The embankment is constructed right across the whole section in each portion.

4. Fill Materials

The materials for embankment shall be obtained from the designated borrow areas and available excavated material. In general all materials from the particular borrow area shall be a mixture of materials obtained for the full depth of the cut. Some earth material available from the excavation in the pond area if found suitable will also be used for the embankment construction.

4.1. Placing the fill material

- (a) Before placing the fill the foundation shall be prepared and compacted as per chapter C6. Prior to placing the first layer of embankment on the foundation moistening and compacting the surface by rolling to achieve dry density not

less than 95% of maximum dry density. (Standard Proctor) shall be done. The distribution and gradation of materials throughout the fill shall be as shown in the drawings or as directed. The fills shall be free from lenses, pockets, streaks, or layers of material differing suitably in texture or gradation from the surrounding material. The combined excavation and placing operations shall be such that the materials when compacted in the fill will be blended sufficiently to produce the specified degree of compaction and stability. The earth obtained from a particular borrow area as far as possible shall be used in forming the complete cross-section of the fill for a particular stretch. Sequencing of the placing of fill material shall be such that it shall be possible to identify at all stages of construction which borrow area material is used in which stretch of the fill/embankment.

- (b) No stones cobbles or rock fragments, having maximum dimensions of more than 5 cm shall be placed in the fill. Such stones and cobbles shall be removed either at the borrow pit or after being transported to the site but before the materials in the fill are rolled and compacted. Such stones or cobbles shall be placed in other portions of embankment if found suitable or rejected as directed. The materials shall be placed in the fill in continuous horizontal layers stretching right across the whole section, not more than 20 cm in compacted thickness and rolled as herein specified. During construction a small transverse slope from center towards the edges should be given to avoid pools or water forming due to rains. The surface of materials to be placed thereon shall be moistened and/or worked with harrow, or other suitable equipment in an approved manner to a sufficient depth to provide a satisfactory bonding surface before the next layer of fill material is placed. If the rolled surface of any fill is found to be too wet for proper compaction, it shall be raked up, allowed to dry or shall be worked with a harrow or any other approved equipment to reduce the moisture content to the required amount and then it shall be recompacted before the next layer of earth is placed.

- (c) When compacting the soils against steep rock abutment or walls or masonry of concrete structure the construction surface of embankment shall be sloped away from rock or masonry or concrete structures for a distance of 3 m to 4 m at an inclination not steeper than 6 horizontal to 1 vertical. If the foundation surface is too irregular to allow the use of a large roller directly against a structure or rock out crop, the roller shall be used to compact the soil as close to the structure or the out crop as possible and the portion of the embankment directly against the rock or the structure shall be compacted with pneumatic hand tampers in thin layers. The moisture content of the earth placed against the rock or the structure shall be high enough to allow it to be compacted into all irregularities of the rock. Care shall be taken in placing the first layer of the ii. I so that no damage is caused by the hauling machinery to the base grade as this may get concealed by the spread layer or fill. Sheep foot roller shall not be employed for compacting till the thickness of the layers already compacted by other means is greater by 30 cm than the depth of the feet on the roller drum i.e. soil for the first layer shall be at moisture content sufficient to enable compaction of the fill with the rock surface.

5. Weather Conditions

- 5.1. Embankment materials shall be placed only when the weather conditions are satisfactory to permit accurate control of the moisture content in the embankment materials.

6. Moisture Control

- 6.1. Prior to and during compacting operations, the materials in each layer of earth shall have moisture content about 2% less than the optimum moisture content. Laboratory investigations may impose some restrictions on the lower limits of the practicable moisture contents on the basis of studies of compaction in embankment. As far as practicable the materials shall be brought to the proper moisture content in the borrow area before excavation. If additional moisture content is required, it shall be added by sprinkling water before rolling. The Concessionaire shall make his own arrangements for supply of water in a manner described under water for earth fill work. If the moisture content is greater than required, the material shall be spread and allowed to dry before starting rolling. The moisture content shall be uniform throughout the layer of material and ploughing, disking, harrowing or other methods of mixing may be required to obtain uniform distribution. If the moisture content is more or less than the range of the required particle, moisture content, or if it is not uniformly distributed throughout the layer, rolling shall be stopped and shall be started again only when the above conditions are satisfied.

7. Compaction Equipment

- 7.1. While the specifications provide that equipment of a particular type and size is to be furnished and used, it is to be understood that the use of improved equipment is to be encouraged. Tamping (sheep foot) rollers or pneumatic rollers and vibratory rollers shall be used for compacting cohesive materials and pneumatic rollers and vibratory rollers shall be used for compacting cohesion less materials.

1. Tamping (Sheep foot) Rollers

- (i) Tamping rollers shall conform to the following requirements

2. Roller drums

- (i) Each drum of a roller shall have an outside diameter of not less than 1.5 m and shall not be more than 1.8 m in length. The space between two adjacent drums when on level surface, shall neither be less than 30 cm nor more than 40 cm. Each drum shall be free to pivot about an axis parallel to the direction of travel.

3. Tamping Feet

- (i) At least one tamping foot shall be provided for each 600 cm² of drum surface. The shape measured on the surface of the drum between the centers of any two adjacent tamping feet shall not less than 25 cm.
- (ii) The length of each tamping foot from the outside surface of the drum shall be maintained at not less than 25 cm. The cross sectional area of each tamping foot shall not be more than 60 sq .cm at a plane normal to the axis of the shank 15 cm from the drum surface and shall be maintained at not less than 45 cm² and not more than 60 cm² at a place normal to the axis of the shank 20 cm from the drum surface.

4. Roller Weight

- (i) The weight of a roller when fully loaded shall not be less than 7000 kgs per drum. The loading used in the roller drums and operating of rollers shall be as required to obtain the desired breakdown and compaction of materials. If more than one roller is used on anyone layer of fill, all rollers so used shall be of the same type and essentially of the same dimensions. Tractors used for pulling rollers shall have sufficient power to pull them at a speed of about 4 km per hour with drums fully loaded. During the operation of rolling the spaces between the tamping feet shall be kept clear of materials which could impair the effectiveness of the tamping rollers. If the rollers used are at tandem, the tamper spacing shall be set so that the circumferential rows of the rear drums are in line with the midpoint between the circumferential rows on the forward drums.

5. Pneumatic rollers

- (i) Pneumatic rollers shall have four wheels equipped with pneumatic tyres and a body suitable for ballast loading such that the load per wheel may be varied as necessary from 7000 kgs to 11000 kgs. Tyre pressure shall not exceed 2.5 kgs/ sq. cm. The tyres shall be of such size and ply as can be maintained during rolling operations with tyre pressure not greater than 2.5 kgs/ sq. cm for a 11000 kgs wheel load. The roller wheels shall be located abreast and each wheel and tyre shall be mounted in such a way that all wheels exert approximately equal loads when traversing uneven grounds. The spacing of the wheels shall be such that the distances between the nearest edges of adjacent tyres at the imprint will not be greater than 50 per cent of the width of single tyre. When one pneumatic roller is attached to a tractor, the entire tractor and roller unit shall be capable of executing a 180 deg turn on a 5 m radius.

6. Vibratory Rollers

- (i) Vibratory rollers shall have dead weight 5 to 15 tonnes and the vibrators shall have frequency between 1100 and 1800 pulses per minute and amplitude of vibration shall be between 0.5 mm and 1.5 mm

8. Rolling and Tamping

8.1. Rolling

When each layer of material has been conditioned, so as to have the proper moisture content uniformly distributed throughout the material, it shall be compacted by passing the roller. The exact number of passes shall be decided after necessary field tests. The layers shall be compacted in strips overlapping not less than 0.6 m. The rollers or loaded vehicles shall travel in a direction parallel to the axis of the embankment. Turns shall be made carefully to ensure uniform compaction. Rollers shall always be pulled. Density tests shall be made after rolling and the dry density attained shall be not less than 95% of maximum dry density (Standard Proctor) obtained in the Laboratory for the type of material used.

8.2. Tamping

- (a) Rollers will not be permitted to operate within 1.0m of concrete and masonry structures. In locations where compaction of the earth fill material by means of the roller is impracticable or undesirable, which would be designated at the sole discretion of the Construction Supervisor/ Independent Engineer the earth shall be specially compacted
- (b) Fill shall be spread in layers not more than 20 cm in compacted thickness and shall be moistened to have the required moisture content. When each layer of material has been conditioned to have the required moisture content it shall be compacted to achieve the dry density of not less than 95% of Maximum Dry Density (Standard Proctor) by special rollers mechanical tampers, hand held vibratory tampers or by other approved methods and all equipment and methods used shall be subject to approval based on evidence of actual performance. The moisture control and compaction shall be equivalent to that obtained in the earth actually placed in the embankment in accordance with clause 8.7.0 and 8.9.1.

9. Inspection Test

9.1. Control tests shall be carried out in laboratory from time to time to determine whether the earth produced by methods employed satisfies the requirements of the specifications. Routine field tests shall also be carried out by the Construction Supervisor/ Independent Engineer and the work shall be inspected regularly. Field density test should be particularly and specially made in the following areas.

- (a) Where the degree of compaction is doubtful.
- (b) Where embankment operations are concentrated i.e. where 2 or more layers are placed one over the other on the same day.
- (c) To represent every 1000 cu. meters of embankment placed.

- (d) At least one test for every full or part shift of compaction operations and
- (e) At least one test for every 250 m length of embankment in each layer.

9.2. The Construction Supervisor/ Independent Engineer shall determine whether the desired results are being obtained.

9.3. The Concessionaire shall provide all facilities such as labour conveyance equipment etc. required for collection of samples and to conduct test in situ or at laboratory. Relevant test to be conducted by the Construction Supervisor/ Independent Engineer at his discretion at the borrow area, on embankment and at laboratory are listed out in the Enclosure 2 to Schedule D.

10. Dressing and Trimming of the slopes

10.1. The outer slopes of the embankment shall be neatly dressed to line. Compaction shall extend over the full width of the embankment and the material in the slopes shall be compacted as for the rest of structure. To ensure proper compaction at the outer edge, the fill shall be constructed for a minimum of 0.5 m extra width on either edges or the outer edge dressed to true width and slope after compaction. No earth slope shall be left without trimming to design slope. Slopes shall be maintained until final completion and acceptance. Any material that is lost by weathering or due to any other cause shall be replaced. The trimmed material is permitted for reuse in the embankment. No separate payment will, however be made for forming extra width offsets or trimming the slopes and the unit rates for the embankment work shall therefore provide for the same.

11. Provision for Settlement

11.1. While forming the embankment due allowance shall be made to allow for settlement so as to maintain the top of embankment at designed elevation.

Chapter 11

TURFING

1. Scope

- 1.1. This section of specifications covers turfing on the slope of the embankment as indicated in the tender drawing and mentioned herein with turf sods.

2. General Requirement

- 2.1. The Concessionaire shall furnish all labour, equipment and materials required for the complete performance of the work in accordance with the drawings, schedule of items and as described herein.
- 2.2. Grass turf sods of approved variety shall be used in this work. No direct planting of grass on the embankment slope shall be permitted.

3. Placing

- 3.1. The slope of the embankment including berms if any shall be turf sodded. After the slope has been dressed to line, it shall be slightly roughened and scarified. The entire slope surface shall then be covered with a layer of turf sod consisting of blocks of thin lining grass growth of approved species. The sods shall include a mat of roots and earth. Thick Sod containing an excessive amount of obnoxious weed growth shall be excluded. Sod shall be carefully handled in transportation and placing so that a minimum amount of earth will be lost from the root mass. The blocks of sod shall be laid on the slope in close contact and then tamped firmly in place so as to fill and close the joints between blocks. The interval of time between cutting and laying shall be kept to a minimum and sod shall not be permitted to dry out. Immediately after placing the sods, slope shall be thoroughly wetted and then kept moist for 3 months or till such time the grass establishes itself uniformly on the surface whichever is later. The watering shall be done. The growth of weeds on the turfing shall be prevented by removing them and disposing off. The finished work shall be to the satisfaction of the Construction Supervisor/ Independent Engineer and his decision shall be final in the matter.

Chapter 12

CLAY LINER

1. Scope

- 1.1. This section covers the specifications for the supply, laying and testing of clay liner as per the drawings and specifications mentioned herein to the satisfaction of the Construction Supervisor/ Independent Engineer.
- 1.2. Composite Clay Liner serves as a hydraulic barrier to flow of leachate. The properties required for compacted clay liner as per specs is as follows:
 - (a) Minimum thickness of each composite clay liner/layer shall be 0.60 m (Total ≥ 0.9 m) having permeability of less than 10^{-7} cm/sec.
 - (b) Maximum hydraulic conductivity of 1×10^{-7} cm/ sec. ($k \leq 1 \times 10^{-9}$ m/s).
- 1.3. On a basis of review of liner systems adopted in different countries, it is recommended that for all MSW landfills the following single composite liner system be adopted as the minimum requirement:
 - (a) A leachate drainage layer 30 cm thick made of granular soil having permeability greater than 10^{-2} cm/sec.
 - (b) A protection layer (of silty soil) 20 cm -30 cm thick.
 - (c) A geo-membrane of thickness 1.5 mm or more.
 - (d) A compacted clay barrier or amended soil barrier of 1 m thickness having permeability (K) of less than 10^{-7} cm/sec

2. General Requirements

- 2.1. The soil used in the liner shall meet the following minimum criteria:
 - (a) Be classified under the Unified Soil Classification System CL, CH, SC and OH (IS 2720 Part IV/ASTM Standard D248769)
 - (b) Allow greater than 20 - 30 percent (dry weight) passage through no 200 sieve (75 μ m) (grain size analysis as per IS:2720 Part IV; ASTM Test D1140)
 - (c) Plasticity index greater than or equal to 7 to 10% (IS 2720 Part V)/ Plasticity greater than or equal to 15 units (ASTM Test D424)
 - (d) Gravel content shall not be exceeding more than 30 %
 - (e) Maximum particle size shall be between 20 to 50 mm

- (f) Have a pH of 7.0 or higher
- (g) Have a liquid limit equal to or great than 30 units (IS 2720 Part W ASTM Test D423)
- (h) Moisture Density relationship as per IS: 2720 Part VIII
- (i) Permeability test as per IS: 2720 Part XXXVI.

3. Quality control aspects

3.1. General quality control aspects which shall be adhered to are as follows:

- (a) The material (soil) used for filling shall be free from boulders, lumps, tree roots, rubbish or any organic deleterious matter.
- (b) Pre-processing may be carried out for water content adjustment, removal of oversized, materials, pulverization of any clumps, homogenization of the soils, and introduction of additives such as bentonite.
- (c) Ensure that a sub-grade-on which a compacted clay liner will be constructed is properly prepared by compacting and obtaining required firmness.
- (d) Proper compaction of liner materials is to be carried out to ensure compacted clay liner meets hydraulic conductivity specified above.
- (e) Determine the appropriate thickness (as measured before compaction) of each of the several lifts that will make up the clay liner. Also proper bonding between lifts is to be ensured to avoid formation of preferential pathways.
- (f) Preventive measures to protect compacted layers from desiccation are to be provided during construction.

4. Laying of clay liner

4.1. This specification and the method of measurements described herein are applicable for construction of compact clay liner at the base and on the sides of the landfill.

- (a) The Concessionaire has to identify the borrow soil (if required) area having the requisite properties as mentioned above and make his own approach and access roads (as required) from the borrow area to the demarcated landfill area. No claim shall also be admissible to the Concessionaire on account of his having to take longer leads or routes for earth movement, than envisaged by him, either due to any road cuttings, non-availability of routes, or any other grounds whatsoever.
- (b) In case total filling required in any area consists of earth both from borrow areas and available approved excavated material from within site area or *use* of any amended soil to achieve the stipulated permeability. The necessary

laboratory tests/demonstrations/calculations are to be furnished to Construction Supervisor/ Independent Engineer for approval.

- (c) In the event of filling of soil material as mentioned above, joint levels shall be taken before commencing the filling with earth from borrows areas.
- (d) Prior to the placement of the clay in the desired location, the subgrade under the clay liner shall be checked. This shall be usually performed by proof-rolling the subgrade. Any weak zones shall be removed and appropriately backfilled and all debris should be removed. The clay may then be placed above the subgrade in loose lift.
- (e) Compacted clay liners shall be constructed in a series of thin lifts for proper compaction and homogeneous bonding between lifts. The lift thickness of clay liner shall be 20 to 22.5 cm before compaction and 15 cm after compaction. The soil placed in a loose lift shall be no thicker than about 230 mm. After the soil is placed, a small amount of water may be added to offset evaporative losses, and the soil may be tilled one last time prior to compaction. Each lift of clay liner shall be bonded to the underlying and overlying lifts. The surface of a previously compacted lift must be rough so that the new and old lifts blend into one another.
- (f) Sheeps foot rollers shall be used for compacting the clay liner. The roller with fully penetrating feet (of 22.5 cm shaft length) shall be used for compaction of the liner. The minimum weight of the roller shall be 10000 kg (10 Tonnes). The minimum foot length shall be between 180 to 200 mm and Minimum number of passes shall be 5. A pass shall be reckoned as one pass of the compactor, not just an axle, over a given area, and the recommended minimum of five passes is for a vehicle with front and rear drums. The compaction shall be continued till the specified hydraulic conductivity is obtained and verified by Construction Supervisor/ Independent Engineer.
- (g) Each layer shall be tested in field for Moisture Content and Hydraulic Conductivity (Undisturbed Sample) before laying the next layer. A minimum of 1 test for 500 sq. m for each layer shall be conducted.
- (h) Successive layers of clay shall not be placed until the layer below has been thoroughly compacted to satisfy the requirements laid down in specifications.
- (i) Prior to compaction, the moisture content of material shall be brought to within plus or minus 2 % of the Optimum Moisture Content as described in IS: 2720 Part VII. The moisture content shall preferably be on the wet side for potentially expansive soil.
- (j) After compaction of a lift, the soil must be protected from desiccation, which causes the cracking of the Clay liner. Desiccation shall be minimized by smooth rolling the surface to form a relative impermeable layer at the surface or the soil can be periodically moistened. The protective measures stipulated above shall apply to each lift as well as the completed liner or cover barrier.

- (k) The lifts shall be placed in horizontal layers. For liners to be constructed slopes, the lifts shall be placed parallel to the slope.

Chapter 13

SAND LAYER

1. Scope

- 1.1. This section of the specification covers supplying and laying sand layer in the leachate collection and removal system as shown in the drawings and as mentioned herein.

2. General Requirements

- 2.1. The implementing agency shall furnish all labour and material required for the complete performance of the work in accordance with the drawings, schedule of item and as described herein.

3. Sand Layer

- 3.1. Graded sand filter of 100 mm thickness shall be laid as indicated in the drawing in the landfill area in the leachate collection and removal system and leak detection system.

4. Material

- 4.1. The material for sand layer shall consist of clean, sound and well graded coarse sand. The material shall be free from debris.
- 4.2. Above the gravel bed, clean sand (425 micron to 4.75 mm) shall be placed. The thickness of the sand layer shall be 100 mm. The effective size (d₁₀) of the sand recommended is 0.4 mm with uniformity co-efficient of 1.5. The sand shall be laid on the top of the gravel layer manually and spread to the specified thickness. The minimum thickness of 100 mm shall be ensured after spreading water.
- 4.3. The sand layers shall be well watered and rammed. Care shall be taken that materials of different layers do not get mixed, both at the time of placing and during compaction. The sand material shall be clean, sound, durable and well graded. No debris, wood, deleterious material etc., shall be permitted.

Chapter 14

GRAVEL LAYER

1. Scope

- 1.1. This section of the specifications covers supply and placement of the gravel in the leachate collection and removal system as indicated in the drawings released for the construction or as directed by the Engineer- in -Charge.

2. General requirements

- 2.1. The implementing agency shall furnish all labour, equipment and material required for the complete performance of the work in accordance with the drawings and as described herein.

3. Materials

- 3.1. Gravel layer in the leachate Collection and Removal System.
- 3.2. The gravel shall be rounded, cleaned and free from disintegrated and foreign material. The size of the gravel shall be 4.75 - 80 mm. The gravel shall be stockpiled at site separately and shall be mixed as per the specifications and then laid to the ground. Average density of the gravel recommended is 1600 kg/m³. The gravel shall be well graded as directed by the Construction Supervisor/ Independent Engineer.

4. Placing

- 4.1. Graded gravel shall be constructed as indicated in the drawings. The gravel shall be placed in layers of uniform thickness as shown in the drawings and care shall be taken to avoid segregation of coarse and fine materials and formation of pockets.

Chapter 15

WID'S

1. Scope

- 1.1. This section of specifications covers construction of WID's as per the requirements provided in scope of work, special specifications for civil engineering, and tender drawings to the satisfaction of the Construction Supervisor / Independent Engineer. These are masonry bins for temporary storage of waste collected through the primary collection system.

2. Code and Standards

- 2.1. The design, construction and performance of WID shall comply with all currently applicable statutes, regulations and safety codes in the locality. The equipment shall also conform to the latest applicable Indian standards or equivalent International standards. The equipment shall conform to the requirements of Municipal Solid Waste (Management & Handling) Rules, 2000 and amendments thereof.

3. General Specifications

- 3.1. The WID should be constructed as per the design and as per specifications given in Special Specification. The Tender Document allows for the segregated storage of biodegradable and non-biodegradable MSW.
- 3.2. The WID should be constructed so as to be
- (a) Aesthetic
 - (b) With adequate natural light & ventilation.
 - (c) Allow for convenient and safe dropping of MSW by generators of MSW.
 - (d) Allow for easy cleaning & disinfections operations.
 - (e) Not allow stray cattle, other animals and birds to have access to the waste.
 - (f) Provision of security to prevent unauthorized access to the MSW.
 - (g) To allow for easy monitoring.
- 3.3. The segregated sections should be coded and marked as specified in the MSW Rules.
- 3.4. The maximum height allowed for construction shall be 14 feet. There should be optimal utilization of the space available in the WID.
- 3.5. There should be proper lighting arrangement in the WID.

4. Special Specification

Specifications of WID

Parameter	Size	Description
Gate	2.5 x 2.5	1 mm thick MS Steel Door with Frame of 40 x 40 x 6 thick mm Angle iron
Material of Manufacture		Steel, adhering to BIS Standards
Window	1.2 x 1.2 m	Steel Galvanized fixed window
Opening for Ventilator	1.2 x 05 m	Opening for ventilation

5. Painting and Corrosion Protection

- 5.1. A shop coat of paint shall be applied to all steel and cast iron exposed surfaces as required to prevent corrosion, after release has been given for painting and before dispatch. All parts shall be adequately protected for rust prevention; grease shall not be used on mechanical surfaces.
- 5.2. Prior to painting 2 coats of primer / Red Oxide shall be applied as per the paint. Colour must be of First class quality of standard Brand.

6. Drawings and Manuals

- 6.1. Concessionaire shall furnish the following drawings complete in all respect for ULB approval:
 - (a) A Drawing for construction of WID
 - (b) Cross-sectional drawing

Chapter 16

HDPE LINER

1. Scope

1.1. This section covers the specifications for the supply, laying, jointing and testing of HDPE geomembrane liner as per the drawings and specifications mentioned herein to the satisfaction of the Construction Supervisor/ Independent Engineer

2. Sheet Material

2.1. The HDPE sheet shall conform to the minimum average roll value requirements listed below in Table-2. The minimum width of the roll shall be 8 m and the minimum length shall be 150 m.

Parameter	Test Method	Minimum Values
Thickness, mm	ASTM D 5199	1.5 mm (-5% to +10%)
Color		Black
Permeability	ASTM E 96	2.3×10^{-14} cm/sec
Density	ASTM D 1505	>0.935 gm/cc
Coefficient of Linear Thermal Expansion	ASTM E 831	1.5×10^{-4} °C ⁻¹
Tensile Strength at Yield	ASTM D 638, Type IV Dumb Dell at 2 inch/min	245 N/cm width
Tensile Strength at Break	ASTM D 638, Type IV Dumbbell at 2 inch/min	420 N/cm width
Elongation at Yield	ASTM D 638, Type IV Dumbbell at 2 inch/min	12-13%
Elongation at Break	ASTM D 638, Type IV Dumbbell at 2 inch/min	700%
Carbon Black	ASTM D 4218	2 to 2.5%
Ozone resistance	ASTM D 1149, 168 hrs	No crack
Water absorption	ASTM D 570, 23 deg. C	0.1%
Environmental stress Cracking	ASTM D 1693	> 2000 hrs
Volatile Losses	ASTM D 1203	0.1%
Tear Resistance	ASTMD 1004, A	131 N/mm
Water Vapor Transmission	ASTM E 96	0.024 g/day m*
Puncture Resistance	ASTM D 4833	3500 N/cm
Seam Properties (a) Shear Strength	ASTM D 4437 mod	13.8 MPa
(b) Peel Strength (hot wedge fusion)(c) Peel strength (filled extrusion)		10.3 MPa 9.0 MPa
Change in weight (%)	EPA 9090A, Chemical Compatibility Test	<10

Parameter	Test Method	Minimum Values
Change in volume (%)	EPA 9090A, Chemical Compatibility Test	<10
Change in tensile strength (%)	EPA 9090A, Chemical Compatibility Test	<20
Change in elongation at break (%)	EPA 9090A, Chemical Compatibility Test	<30
Change in modulus (%)	EPA 9090A, Chemical Compatibility Test	<30
Change in hardness (%)	EPA 9090A, Chemical Compatibility Test	<10

3. QA/QC Requirements for Membrane Raw Materials

- 3.1. All raw material supplied to the manufacturer must be supplied with test certification from the raw material supplier. The certification must state the results of tests, which confirm the quality of the resin. The raw material supplier must also confirm that each batch of resin is of the same type and is 100% Virgin. Each batch of resin shall be given an identification (batch) number which shall be used and remain on file to keep track of all rolls manufactured from each batch.
- 3.2. The use of any off specification, recycled or blends of resins shall not be permitted. Prior to the production of the membrane, the membrane manufacturer shall test the raw material batches to certify the raw material suppliers test results and entity of the singular resin. The membrane manufacturer shall provide certificate of raw material supplier as well as its own certificate for raw materials along with the delivery of material to site.

4. QA/QC Requirements for Membrane manufacturing

The manufacturing process shall be a fully automated Flat-Cast extrusion process controlled by a fully computerized system. The control system shall provide for the continuous monitoring of the parameters like; Temperature, Pressure and Speed. The manufacturing process must also provide for the automated continuous monitoring of thickness and sheet quality. Manufacturer shall submit a certificate along with delivery of membrane in this regard.

4.1. Thickness

Each roll shall be tested automatically and evenly over its entire surface area, the minimum parameters acceptable for testing each roll shall be 10 thickness point checks. The acceptable thickness for each roll shall not be greater than -5% to +10% of the specified material thickness.

4.2. Sheet Quality

- (a) Each roll shall be tested automatically for High Voltage Test over its entire surface area for any point of Electrical Continuity through (across) the thickness of the sheet. The high voltage scanner shall be capable of detecting

any pinhole, void or significant reduction of electrical resistance. Any roll detected to have holes or electrically conductive inclusions shall be rejected and not sent to the site.

- (b) Each roll delivered to site shall be provided with a roll test data report, these reports must provide the following information and test results as per the specified ASTM standards, reports must also carry the manufactures laboratory QA/QC approval seal.
- (c) The liner material shall be supplied with a 125mm-film sheet along the roll longitudinal edges in order to keep this zone clean and to stop oxidization. This film shall be removed immediately before welding.
- (d) The overlapping and welding area shall be marked to assure an optimum welding. The HDPE liner shall have a glossy smooth surface.

4.3. Roll Identification

- (a) Roll Number and dimensions
- (b) Production Date
- (c) Roll Length
- (d) Roll Width
- (e) Roll Weight

4.4. Resin Lot Information

1. Batch Number
2. Resin Type
3. Resin Test Results as per following ASTM Test methods.
 - (i) Density D792
 - (ii) Moisture D570
 - (iii) Brittleness D746
 - (iv) Melt index D1238
 - (v) O.I.T D3895

4.5. Membrane Property

The Concessionaire will arrange to carry out the following tests, at their cost, at a reputed and approved laboratory at the time of execution of work to ascertain and assure the quality of material received at Project Site. The tests shall be witnessed by Construction Supervisor/ Independent Engineer/ ULB at their discretion. The frequency of tests for physical and mechanical properties and their conformity norms are indicated in following Table.

Frequency	Property	Norms (ASTM)
1/5000 m ²	Thickness	D-5199
1/5000 m ²	Density	D-7S2
1/5000 m ²	Carbon black content	D01603

Frequency	Property	Norms (ASTM)
1/5090 m ²	Carbon black dispersion	D-5596-94
1/1500 m ²	Mechanical Properties Tensile resistance	D-638 Mod. NSF 43
1/2000 m ²	Shear test (on seam)	D-4437, 6.3 NSF mod.
1/2000 m ²	Peel test (on seam) Rupture test (on seam)	D-4437, 6.2 NSDF mod. US-EPA
Every lct	ESCR	ASTM D-1693-B
1/5000 m ²	Puncture Resistance	ASTM D 4833
1/5000 m ²	Tear Resistance	ASTM D 1004
Note	Sample size for conformity test a meter of the entire width for the Rolland must not be taken in the first thickness	

5. QA/QC at site

5.1. The material shall be inspected after it is delivered at site as follows :

1. Rolls or portions of rolls that appear damaged shall be marked
2. Verification shall be done to ensure that materials are stored in secure place and are protected against dirt, theft, vandalism, and passage or vehicles
3. Rolls shall be property labeled with roll identification and resin lot information

5.2. Any material rejected on site by the Construction Supervisor/ Independent Engineer / ULB shall be jointly inspected by the Construction Supervisor/ Independent Engineer / ULB and the Concessionaire. If required, the material shall be tested and if the material is unable to meet the specification, it shall be replaced by the Concessionaire at his own cost.

6. Preparation for HDPE Liner Deployment:

6.1. Prior to commencement of HDPE liner deployment, layout drawings shall be prepared to indicate the panel configuration and general location of field seams for the project and shall have to be approved by the Construction Supervisor/ Independent Engineer . Each panel used for the installation will be given a number that will be correlated with a batch or roll number.

6.2. Overlap the panels of geo-membrane approximately six (6”) inches prior to welding. Clean the seal area prior to seaming to assure the area is clean and free of moisture, dirt or debris of any kind. No grinding is required for fusion welding.

6.3. Adjust the panels so that the seams are aligned with the fewest possible number of wrinkles and "fish mouth".

6.4. Grind seams overlap prior to welding within one (1) hour of the welding operation in a manner that does not damage the geo-membrane. Grind marks should be covered with extrude whenever possible. In all cases, grinding should not extend more than one quarter inch (1/4") past the edge of the area covered by the extrude welding.

7. Sub-base Preparation

- 7.1. The sub-base must be properly prepared and compacted for installation of HDPE liner. The sub-base must not contain any particles. The sub-base must be checked for footprints or similar depressions before laying the liner. The seaming equipment tends to get caught in such small depressions, causing burnout and subsequent repair. A small piece of the synthetic membrane placed below the membranes that are being seamed (this piece is moved forward along with the seaming equipment) may reduce burnout due to small depressions.

8. Special Instructions

- 8.1. The Concessionaire shall protect the sub soil desiccation, flooding protection, if required, it may consist of a thin plastic protective cover (or other material as approved by Construction Supervisor/ Independent Engineer) installed over the completed sub-soil until such times as the placement of geo-membrane liner begins. Sub soil found to have desiccation cracks greater than half inch ($\frac{1}{2}$ "") in width or depth or which exhibit swelling, heaving or other similar conditions shall be replaced or reworked by the implementing agency to remove these defects.

9. Field Panel Placement

- 9.1. HDPE deployment will generally be not done during rains, in the presence of excessive moisture, in an area of standing water, or during high winds.
- 9.2. Installation of field panels shall be done as indicated on the approved layout drawing keeping the provision for settlement of the soil. If the panels are deployed in a location other than that indicated on the layout drawings, the revised location will be noted in the field. Information relating to HDPE panel placement including date, panel number, and panel dimensions may be maintained on a site-specific basis. If a portion of a roll is set aside to be used at another time, the roll number will be written on the remainder of the roll at several places.
- 9.3. The method and equipment used to deploy the panels must not damage the HDPE or the supporting sub grade surface. No personnel working on the HDPE shall engage in actions that could result in damage to the HDPE. Adequate temporary loading and/or anchoring, (i.e. sandbags, tires) which will not damage the HDPE, will be placed to prevent uplift of the HDPE by wind.
- 9.4. The HDPE will be deployed with adequate allowance for typical thermal expansion.
- 9.5. Any area of a panel seriously damaged (torn, twisted, or crimped) will be marked and repaired as explained in the chapter.

10. HDPE Field Seaming

- 10.1. In general, seams shall be oriented parallel to the slope, i.e. oriented along, not across the slope. Whenever possible, horizontal seams should be located on the base of the cell, not less than five (5) feet from the toe of the slope. Each seam made in the field

shall be numbered. Seaming information shall include seam number, welder ID, machine number, temperature setting & weather conditions.

- 10.2. All personnel performing seaming operations shall be trained in the operation of the specific seaming equipment being used and will qualify by successfully welding a test seam as described herein.

11. Equipment

11.1. Fusion Welding

Fusion welding consists of placing a heated wedge, mounted on a self-propelled vehicular unit, between two (2) over-lapped sheets such that the surface of both sheets are heated above the polyethylene's melting point. After being heated by the wedge, the overlapped panels pass through a set of pre-set pressure wheels, which compress the two (2) panels together to form the weld. The fusion welder is equipped with a device, which continuously monitors the temperature of the wedge.

11.2. Extrusion Fillet Welding

- (i) Extrusion fillet welding consists of introducing a ribbon of molten resin along the edge of the overlap of the two (2) HDPE sheets to be welded. A hot air preheat and the addition of molten polymer causes some of the material of each sheet to be liquefied resulting in a homogeneous bond between the molten weld bead and the surfaces of the overlapped sheets. The extrusion welder is equipped with gauges giving the temperature in the apparatus and a numerical setting for the pre-heating unit.
- (ii) Factors such as the HDPE temperature, humidity, wind, precipitation, etc., can affect the integrity of field seams and must be taken into account when deciding whether or not seaming should proceed.

12. Seam Testing of HDPE

All field seams shall be non-destructively tested over their full length using test equipment and procedures described herein. Seam testing shall be performed as the seaming work progresses, not at the completion of the field seaming

12.1. Air Pressure Testing

The welded seam is composed of a primary seam and a secondary track that creates an unwelded channel. The presence of an unwelded channel permits fusion seams to be tested by inflating the sealed channel with air to a predetermined pressure and observing the stability of the pressurized channel over time.

12.2. Equipment for Air Testing

The equipment required for air testing consists of following components:

- (i) An air pump (manual or motor driven) capable of generating and sustaining a pressure between 20 to 60 psi.
- (ii) A rubber hose with fittings and connections.
- (iii) A sharp hollow needle or other approved pressure feed device with a pressure gauge capable of reading and sustaining a pressure between 0 to 60 psi.

12.3. Procedure for Air Testing

- (a) Both the ends of the seam to be tested should be sealed. Needle or other approved pressure feed device should be inserted into the sealed channel created by the fusion weld.
- (b) Test channel should be inflated to a pressure of approximately 30 psi, and the pressure should be maintained within the range listed in Initial Pressure Schedule given below. Valve should be closed and the initial pressure should be observed and recorded.

INITIAL PRESSURE SCHEDULE*		
Material (MIL)	Min.PSI	Max.PSI
40	24	30
60	27	35
80	30	35
100	30	35

"Initial Pressure settings shall be recorded after an optional two (2) minute stabilization period. The purpose of this 'relaxing period" is to permit the air temperature and pressure to stabilize. The initial pressure reading may be recorded once stabilization has taken place.

- (c) The air pressure should be observed and recorded five (5) minutes after the initial pressure setting is recorded. If loss of pressure exceeds the following or if the pressure does not stabilize.

MAXIMUM PERMISSIBLE PRESSURE DIFFERENTIAL AFTER 5 MINUTES	
MATERIAL (mil)	PRESSURE DIFF.
40	4 PSI
60	3 PSI
80	2 PSI

- (d) At the conclusion of all pressure tests, the end of the air-channel opposite the pressure gauge shall be cut. A decrease in gauge pressure must be observed or the air channel will be considered "blocked" and the test will have to be repeated from the point of blockage. If the point of blockage cannot be found, air channel shall be cut in the middle of the each half and shall be treated as a separate test.
- (e) Pressure feed needle shall be removed and the resulting hole shall be sealed by extrusion welding.

12.4. Procedure for Non-Complying Test

In the event of a Non-complying Air Pressure Test, the following procedure shall be followed:

- (i) Seam end seals should be checked and seams should be retested.
- (ii) If a seam does not maintain the specified pressure, the seam should be visually inspected to localize the flaw.
- (iii) If no flaw is found, area to be vacuum tested should be marked. Entire length of the seam should be vacuum tested as explained in this hereunder:
 - (a) If leak is located by the vacuum test, it should be repaired by extrusion fillet welding. Repair should be tested by vacuum testing.
 - (b) If no leak is discovered by vacuum testing, the seam will be considered to have passed non-destructive testing.

General Air Testing Procedures

- (i) The opposite end of the air channel will in all cases be pierced to assure that no blockages of the air channel have occurred.
- (ii) Whenever possible, seams should be air-tested prior to completing butt seams to avoid having to cut into liner. All cuts through the liner as a result of testing will be repaired by extrusion welding.
- (iii) All needle holes in air channels, within the boundaries of the active cell, will be repaired with an extrusion bead or repaired by patching at the discretion of the Construction Supervisor/ Independent Engineer.

12.5. Air Pressure Testing Documentation

All information regarding air-pressure testing (date, initial time and pressure, final time and pressure, pass/fail designation, and Technicians number) will be recorded.

12.6. Vacuum Testing

This test is used on extrusion welds, or when the geometry of a fusion well makes air pressure testing impossible or impractical, or when attempting to locate the precise location of a defect believed to exist after air pressure testing.

1. Equipment for Vacuum Testing

The equipment required for vacuum testing shall consist of following components:

- (i) Vacuum box assembly consisting of rigid housing with a soft neoprene gasket attached to the open bottom, a transparent viewing window, port hole or valve assembly, and a vacuum gauge.

- (ii) Vacuum pump or Ventura assembly equipped with a pressure controller and pipe connection.
- (iii) A rubber pressure/vacuum hose with fittings and connections.
- (iv) A bucket and means to apply a soapy solution.
- (v) A soapy solution.

2. Procedure for Vacuum Testing

- (i) Excess overlap from the seam, if any, should be trimmed.
- (ii) Vacuum pump/compressor should be turned on to reduce the vacuum Box to approximately 10 inches of mercury, i.e., 5-psi gauge.
- (iii) A strong solution of liquid detergent and water should be applied to the area to be tested.
- (iv) Vacuum box should be placed over the area to be tested and sufficient downward pressure should be applied to "seat" the seal strip against the liner.
- (v) Bleed valve should be closed and vacuum valve should be opened.
- (vi) A minimum of 5-psi vacuum should be applied to the area as indicated by the gauge on the vacuum box.
- (vii) It should be ensured that a leak tight seal is created.
- (viii) The suction should be held for an adequate time to thoroughly examine the HOPE through the viewing window for the presence of soap bubbles.
- (ix) After this period vacuum valve should be closed and bleed valve should be opened, the box should be moved over the next adjoining area with a minimum three inch (3") overlap, and the process should be repeated.

3. Procedure for Non-Complying Test

- (i) All the areas where soap bubbles appear should be marked and repaired
- (ii) The repaired areas should be retested.

4. General Vacuum Testing Procedures

- (i) Vacuum box testing will be performed by qualified construction personnel.
- (ii) Overlap must be trimmed prior to vacuum boxing all seams.
- (iii) Special attention shall be exercised when vacuum testing "T" seams or patch intersections with seams.

Vacuum testing crew will use Mean Streak permanent markers to write online indicating tester's ID number, date, and pass/fail designation on all areas tested. Records of vacuum testing shall be maintained on non-destructive testing form.

12.7. Destructive Testing

The purpose of destructive testing is to determine and evaluate seam strength. These tests require direct sampling and thus subsequent patching. Therefore, destructive testing should be held to a minimum to reduce the amount of repairs to the HDPE liner.

1. Procedure for Destructive Testing

- (i) Destructive test samples shall be marked and cut out randomly at a minimum average frequency of one (1) test location every 1500 m of seam length, unless otherwise specified or agreed.
- (ii) Destructive samples should be taken and tested as soon as possible after the means are welded (the same day), in order to receive test results in a timely manner.
- (iii) Qualified personnel will observe all field destructive testing and record date, time, seam number, location, and test results on Destructive Testing Form.
- (iv) Sample Size**
 - a. The sample should be twelve inches (12") wide with a seam sixteen inches (16") long centered length-wise in the sample. The sample may be increased in size to accommodate independent laboratory testing by the ULB at the ULB's request or by specific project specifications.
 - b. A one-inch (1") specimen shall be cut from each end of the test seam for field-testing.
 - c. Two (2) one inch (1") wide specimens shall be tested on a field tension meter for peel strength. If either field specimen does not pass, it will be assumed the sample would also not pass laboratory destructive testing.

2. Procedure for Non-Complying Destructive Test

- (i) Additional field samples should be cut for peel testing. In the case of a field production seam, the samples must lie a minimum of ten (10) feet in each direction from the location of the initial non-complying sample. A field test should be performed for peel strength. If these field samples pass, then laboratory samples can be cut and forwarded to the laboratory for full testing.
 - a. If the laboratory samples pass, the seam between the two (2) passing sample locations should be repaired according to procedures detailed in this herein.
 - b. If either of the samples is still in non-compliance, then additional samples should be taken in accordance with the above procedure until two (2) passing samples are found to establish the zone in which the seam/seams should be reconstructed.
- (ii) All passing seams must be bounded by two (2) locations from which samples passing laboratory destructive tests have been taken.

- (iii) In cases of repaired seams exceeding 150 consecutive feet, a sample must be taken and pass destructive testing from within the zone in which the seam has been reconstructed.
- (iv) All destructive seam samples shall be numbered and recorded on Destructive Test Form.

3. Laboratory Testing of Destructive Seam Samples

- (i) Seam destructive samples may be sent to laboratory or tested on site when permitted by a site-specific quality control plan or in the event that third party laboratory destructive testing is not being performed.
- (ii) Destructive samples will be tested for "Shear Strength" and "Peel Adhesion". Five (5) specimens shall be tested for each test method. Four (4) out of the five (5) specimens must exhibit for each round of peel and shear testing. In addition, four (4) of the five (5) individual specimens must meet or exceed the strength requirements as listed in Material specification sheet in order for the seam to pass the destructive test.

12.8. Testing for Pinholes, Cuts

Laid HDPE sheet on liner shall be tested for cuts, pinholes, seam leakage's etc. by using modern Geo-electrical leak detection/vacuum box on complete lining profiles before putting the next layer. The implementing agency shall give the detailed methodology for testing. Any defect remediation / repair modification as required by this test shall be carried out by the implementing agency.

12.9. Defects and Repairs

1. Repair Procedures

Any portion of the HDPE or HDPE seam shown a flaw, or having a destructive or nondestructive test in non-compliance shall be repaired. Procedures for repair include the following steps:

(a) Patching

Patching shall be used to repair large holes, tears and destructive sample locations. All patches shall extend at least three inches (3") beyond the edges of the defects and all corners of patches shall be rounded. The total area of patches in no case shall exceed 1.0% of the panel area.

(b) Grinding and Welding

Grinding and welding shall be used to repair sections of extruded fillet seams.

(c) Spot Welding or Seaming

Spot welding or seaming shall be used to repair small tears, pinholes or other minor localized flaws.

(d) Capping

Capping shall be used to repair lengths of extrusion or fusion welded seams.

12.10. Grinding and Welding

Grinding and welding shall be used to repair sections of extruded fillet seams.

12.11. Spot Welding or Seaming

Spot welding or seaming shall be used to repair small tears, pinholes or other minor localized flaws.

12.12. Capping

Capping shall be used to repair lengths of extrusion or fusion welded seams.

12.13. Verification of Repairs

Every repair shall be non-destructively tested. Repairs, which pass the non-destructive test, shall be deemed acceptable. Repairs in excess of 150 consecutive feet of seam shall require a destructive test.

12.14. Control and Verification Tests on Geo-membrane Installation

- (a) These tests will verify the welds' mechanical resistance to peel and shear. No assembling equipment will be used on site without a previous calibration test.
- (b) The Installer must prepare samples of a minimal length of one (1) metre by a width of 300mm, with the weld centered on the sample's width. Two (2) specimens will be taken from each end of the samples of peel and shear. For each sample, two paired peel and shear results will thus be obtained.
- (c) Calibration of all welding equipment must be performed and documented by the installer for each instrument used, at the start of each work shift, following abrupt changes in weather conditions and as requested by the Construction Supervisor/ Independent Engineer.
- (d) Calibration of equipment will be performed by tests on geo membrane samples under the same weather conditions as those expected on site during panel assembling.

- (e) Once removed, samples will be tested on site with a calibrated portable tension meter and must meet with the requirements of welds resistance to peel and shear as described in the Technical specification.
- (f) The Concessionaire shall provide the Construction Supervisor/ Independent Engineer with recent certificates of standardization for ail control instruments (tension meter; speed, tensile level etc.). The Construction Supervisor/ Independent Engineer / ULB reserves the right to demand any additional calibration test at any time.
- (g) All documentation on the calibration tests performed by the Concessionaire shall be submitted to the Construction Supervisor/ Independent Engineer. The installer will identify each calibration test with the following information;
 - (i) Date and time
 - (ii) Identification of destructive test
 - (iii) Identification of weld
 - (iv) Welded panel's identification number
 - (v) Quantified results of peel and shear test
 - (vi) Identification of type of rupture
 - (vii) Quality control technician's identification
 - (viii) Localization on "As-built" plan
- (h) The Quality Assurance technician shall perform small perforations in the lining in order to assess the efficiency of the Installer's non-destructive testing program. The Quality Assurance technician shall perform those perforations with an approximate frequency of one (1) each 1500 meters of weld or at least three (3) instances of the project.
- (i) The Quality Assurance technician shall document those punching or perforations by including at least the following information:
 - (i) Date and time of operation
 - (ii) Identification of weld
 - (iii) Exact location of perforation
 - (iv) Quality Assurance technician's identification
 - (v) Results of Installer's non-destructive tests
 - (vi) Date and time of repair.
- (j) If the Installer's non-destructive testing program fails to find the punching or perforations made, the Installer will repeat non-destructive testing on the faulty weld, as well as on the welds before and after it.
- (k) The Quality Assurance technicians shall perform verification destructive tests at an approximate frequency of one (1) for each 1500 meter of weld. A special testing frequency will be used at the Construction Supervisor/ Independent Engineer discretion when visual observations indicate a potential occurrence of problems. Verification tests may be performed in the following cases:

- (i) Variation on the thickness of the weld
- (ii) Doubtful cleanliness of overlapping
- (iii) Dirty equipment or in poor condition
- (iv) Different personnel than the one authorized
- (v) Adverse weather conditions
- (vi) Welding equipment failure
- (vii) Visible variation in material's quality
- (viii) Close confined or complex working space
- (ix) Beginning and end of panels
- (x) On the Construction Supervisor/ Independent Engineer's request

12.15. Warranty

Written warranties addressing HDPE material and installation workmanship shall be submitted to and approved by Construction Supervisor/ Independent Engineer. The manufacturer's warranty shall state that the installed material meets all requirements of the contract drawings and specifications and that under typical local atmospheric conditions and weather aging, the sheet material is warranted for at least 20 years. The installer's warranty shall state that the HDPE field and factory seams will not fail within at least 20 years of the installation under similar conditions.

Chapter 17

HDPE PIPES

1. Scope

- 1.1. This section covers the specifications for the supply, laying, jointing and testing of HDPE pipes as per the drawings and specifications mentioned herein to the satisfaction of the Construction Supervisor/ Independent Engineer

2. Specifications

- 2.1. The pipe shall conform to the material grade PE-80 of latest edition of IS: 4984. The pressure rating shall be PN-6.
- 2.2. The pipe and fittings shall be chemically resistant and shall be suitable for all pH ranges i.e. 0 to 14.
- 2.3. These shall have smooth internal bore enhancing the hydraulic flow properties with low frictional losses.
- 2.4. The pipes and fittings shall be strong and resilient enough to withstand static and hydrodynamic both with regard to internal as well as external pressures.
- 2.5. The pipe shall have excellent elastic properties and can take sufficient curvature.
- 2.6. The pipes and fittings shall have the property that it can be joined conveniently with no leakage.
- 2.7. The pipe and fittings shall be UV rays resistant and shall also be resistant to wear and abrasion. The pipes flange should be provided wherever required with joints having HDPE long stub ends. The flange shall conform to DIN-PN-10 and drilling shall be to match with the counter flange of valves/pipes/pumps etc.

3. Piping System

- 3.1. All piping systems shall be capable of withstanding the maximum pressure in the corresponding filling lines at the relevant temperatures. The minimum thickness for pipes and fittings shall be adhered to higher thickness in equivalent material is acceptable. However, no credit will be given for higher thickness.
- 3.2. All the piping systems, fittings and accessories supplied under this package shall be designed to operate with normal maintenance for a plant service life of 20 years and shall withstand the operating parameter fluctuations and cycling which can be normally expected during this period.
- 3.3. All piping system shall be properly laid to take care of hydraulic shocks and pressure surges, which may arise in the system during operation. Concessionaire should

provide necessary protective arrangements like anchor blocks / anchor bolts, etc. for the safeguard of the piping system under above-mentioned conditions. External and internal attachments to piping shall be designed so as not to cause flatterings of pipes, excessive bending stresses or harmful thermal gradients of pipe walls.

- 3.4. Pipes and fittings shall be manufactured by an approved firm of repute. They should be truly cylindrical of clear internal diameter as specified in the IS code, of uniform thickness, smooth, and strong, free from dents, cracks and holes and other defects. They shall allow ready cutting, chipping or drilling, welding etc.

Chapter 18

VALVES

1. Scope

- 1.1. This specification covers the design, performance, manufacture, and construction features, testing, packing and forwarding to site erection, commissioning of the Butterfly Valve.

2. Code and Standards

- 2.1. The design, manufacture and performance of valves and specials shall comply with all currently applicable statutes, regulations and safety codes in the locality where the equipment will be installed. The equipment shall also conform to the latest applicable Indian / British / USA standards / or equivalent International standards.

3. Specification for Butterfly Valve

- 3.1. Butterfly valves shall be of double flanged conforming to AWWA-C-504 class or BS: 5155 Class 150. The Butterfly Valves shall be manually operated as well as motor operated as per the requirement of the system. The motor shall be suitable for 415 V, 3 phase, 50 Hz and outdoor service. The motorized operated valves shall also have the manual override.
- 3.2. The various components of butterfly valves shall be of the following material of construction. The specification mentioned below is the minimum requirement; however Concessionaire shall confirm that these are suitable for handling the liquid having pH range of 0 to 10. If any lining etc. is required on the wetted part of the valves, the bidder has to provide.

1.	Body	2% Ni Cast iron – ASTM A 48 Cl. 40; BS: 1452 Gr 220; SG Iron – BS: 2789, Neoprene rubber lined Cast iron – ASTM A 216 Groundwater, WCB; BS: 1504 Eq. Gr, Neoprene rubber lined
2.	Disc	Cast iron – ASTM A 48 Cl. 40; BS: 1452, Gr.200, SG Iron – BS: 2789, Neoprene rubber lined Cast Steel – ASTM A 216 Gr. WCB. BS: 1504 Eq. Gr. Neoprene rubber lined
3.	Shaft	ASTM A 296 Gr. CF 8M/AISI 316; AISI 420; BS: 970 GR. 316S16; BS 970 Gr. 420 S45
4.	Seat rings	Nitrile rubber, EPDM (Ethylene Propylene rubber), Hypalon
5.	Motor	Suitable for 415 V, 3 phase, 50 Hz and outdoor service

- 3.3. Butterfly valves shall be fitted with sleeve type bearing such as PTEF. Valves of 350 NB and above shall be provided with one or two thrust bearing to hold the disc

securely in the centre of valve seat without hydraulic or external axial shaft loads. Sleeve and other bearings fitted into the valves body shall be of self-lubricated materials that do not have any affect on the fluid handled and other components of the valves.

- 3.4. All the manually operated butterfly valves shall be provided with Hand wheel or Hand lever as per the requirements. For larger sizes i.e. 150 NB and above, hand wheel shall be provided. For lever/wrench operated valves, means shall be provided for positively holding the disc is not less than three intermediate positions. Manually operated valves shall be provided with reduction gear unit for valves of size 200 NB and above. All the valves shall be equipped with adjustable mechanical stop-limiting devices to prevent over travel of the valve disc in the open and closed positions. The valve operators (Hand wheel, Gear reduction unit etc) shall be designed as per relevant International Standard.
- 3.5. All the butterfly valves shall be provided with an indicator to show the position of the disc. Flanges shall conform to ANSI B 16.5 Cl 150.

4. Tests

- 4.1. All the valves shall be tested hydro-statically for strength, tightness of seats and tightness of back seating at the pressures specified in relevant code.
- 4.2. The procedure for testing-toe tightness of seats of valves shall be as follows. The valves shall be subjected to water pressure of a minimum 2.812 kg/cm. The pressure shall then be increased to the specified seat test pressure. Valves shall then be cracked open at this pressure to determine the tightness of the seat ring in the body. Butterfly valves shall be tested on both sides of disc. The testing in general shall confirm to the relevant IS standard.
- 4.3. Vendor shall furnish five sets of the following certificates for all types of valves.
- 4.4. Certified physical and chemical analysis certificates, metallurgical test reports of all components of the valves and specialties.
- 4.5. Certified hydrostatic test reports for all body castings.

5. Painting and Corrosion Protection

- 5.1. A shop coat of paint shall be applied to all steel and cast iron exposed surfaces as required to prevent corrosion, after release has been given for painting and before dispatch. All parts shall be adequately protected for rust prevention, grease shall not be used on mechanical surfaces.

6. Drawings and Manuals

- 6.1. Concessionaire shall furnish the following drawings along with datasheet for ULB's approval:
 1. Dimensional outline drawings.

2. Cross section drawing.
3. Instruction manual.

7. Name Plate

- 7.1. All valves shall have permanent name plates indicating the service, type, size of the valves.

Chapter 19

WEIGHBRIDGE

The weigh bridge shall meet the following minimum technical specifications –

Parameter	Specifications
Type	Pitless Design, Fully Electronic Weighbridge
No. of platforms	Two
Capacity	40 MT per platform
Resolution	5 kg (Display Increment)
Size	12m x 3m
Weighing Electronics	Micro-controller type multi-processing of weightment based digital weight indicator with <ul style="list-style-type: none"> ▪ Menu driven Operations ▪ Auto Zero /Auto Zero Maintenance ▪ Auto Gain & Full Digital Calibration ▪ Auto Calibration Check ▪ Programmable Update Rate with adjustable digital averaging and auto latching ▪ A/D Converter: 24 Bit high resolution integrated ▪ Password Security ▪ Parallel Printer Port & Serial EDP port ▪ Real Time Clock ▪ Self & Operator Diagnostics
Printer	80 Column Dot Matrix Parallel Printer
Key Board	105 keys IBM compatible key-board with interface
Display	<ul style="list-style-type: none"> ▪ Dual Display (6 digit 7 segment LED for Weight Display and 2 x 16 Character, LCD Dot Matrix Display for message). ▪ 4 inch Seven segment LED weight display (Jumbo Display) ▪ Polarity Indication: Negative sign in display
Data Storage	Facility to store 2000 truck information in the memory
UPS	Adequate for 1 hour operation of the weigh bridge
Weighbridge Construction	Rugged Fabricated Steel Structure, side girders, 8mm thick Top Deck Chequered Plate, Cross Girders, designed to take 100% Rated Load, 150% Safe Over Load & 200% Ultimate Load
Load Cells	<ul style="list-style-type: none"> ▪ 4 nos double ended shear beam type, IP 68 class protection capacity ▪ 12 VDC/15VDC
Software	To print Weightment slip consisting of Time, Date, Lorry Number, Product, Customer, Tare Weight, Gross Weight, Net Weight.

Chapter 20

PIEZOMETERS

1. Scope

- 1.1. This section of the specifications covers supply and installation of piezometers as indicated in the basic design and engineering report and the drawings to be released for the construction or as directed by the Construction Supervisor/ Independent Engineer.

2. General requirements

- 2.1. The Concessionaire shall furnish all labour, equipment and material required for the complete performance of the work in accordance with the drawings and as described herein.

3. Specifications

- 3.1. Piezometer shall be constructed to monitor the quality of groundwater. Four piezometers shall be constructed on the downstream side of the Jarosite pond i.e. on the eastern side. Two piezometers shall be constructed on the upstream side i.e. on the western side of the Jarosite pond. The groundwater table varies from 1m to 8 m depending upon the season; accordingly the depth of piezometer shall be 10m below ground level. The piezometer consists of a stand pipe made up of stainless steel which shall be screened along the entire aquifer depth i.e. the standpipe shall be screened from a depth of 1 m to 10m. The screened interval shall be encased in a filter zone made up of gravel and sand layer. The function of the filter zone is to allow free flow of groundwater into and out of standpipe and prevent fines from entering the standpipe. Immediately above the screened interval, a clay and bentonite seal shall be placed. The thickness of clay sea: shall be 0.5 m. Above the clay and bentonite seal, a grout seal consisting of cement and bentonite shall be constructed which provides a barrier for preventing surface water and ground water from elsewhere from migrating into the screened interval. At the ground level, a steel casing embedded in concrete pad shall be employed. A cap shall be placed on the top of steel casing to prevent rainwater and surface water from entering into the standpipe. The piezometer shall be constructed at a distance of 7 m from outside edge of the embankment. The location of piezometer is shown in drawing 0: 18009-P-O5

Chapter 21

HORIZONTAL CENTRIFUGAL PUMP SPECIFICATIONS

1. Scope

- 1.1. This specification covers the works of the design, performance, manufacture, construction features, testing and delivery to site of centrifugal pumps. (Non-clog type).

2. Code and Standards

- 2.1. The design, manufacture and performance of the "Horizontal CENTRIFUGAL PUMPS" shall comply with all currently applicable statutes, regulation and safety codes in the locality where the equipment will be installed. The equipment shall also conform to the latest applicable Indian or equivalent international standard. Some of the relevant standards are:

- | | | | |
|-----|---------|---|---|
| (a) | IS 1520 | : | Horizontal centrifugal pump for clear, cold, fresh water |
| (b) | IS 5120 | : | Technical requirement for roto-dynamic special purpose pumps. |
| (c) | IS 5600 | : | Sewage and Drainage pumps. |
| (d) | IS 9137 | : | Code for acceptance tests for centrifugal mixed flow and axial flow pumps - Class "C" |

3. Design Requirements

- 3.1. The equipment shall be capable of developing the required total head at rated capacity for continuous operation.
- 3.2. The total head capacity curve shall be continuously rising towards the shut off with the highest at shut off. Pumps shall be suitable for + 10% to - 25% of rated head.
- 3.3. Pumps of particular category shall be identical and shall be suitable for parallel operation with equal load division. Impellers shall preferably be of non over loading type.
- 3.4. Pumps shall run smooth without undue noise and vibrations. The magnitude of peak to peak vibration at shop will be limited to 75 microns at the bearing housing. The noise level shall not exceed 85 dBA at a distance of one meter.
- 3.5. The name plate KW rating of the pump motor shall be:
- | | |
|-----|--|
| (a) | Sufficient to drive the pump through the entire range of head - capacity curve, and |
| (b) | KW / HP rating of the drive shall be calculated for additional 20% reserve power to take care of over loading on entire operating range. |

- 3.6. The pump shall be capable of developing the specified total head at the specified rated capacity while operating in parallel and be capable of operating continuously at run-out capacity condition.

4. Features of Construction

Pumps shall be of horizontal centrifugal non-clog type with required number of stages suitable for the service conditions. The material of construction shall be as under:

Casing	:	2.5% Ni Cast Iron
Impeller	:	SS CF8M
Shaft	:	Stainless steel BS 970 Gr. 431

4.1. Casing

- (a) Pump casing may be axial or radial split type. The casing shall be of robust construction. Liquid passages in the casing shall be finished smooth. Casing drain and vent connection with valves shall be provided where required.
- (b) Dowels shall be provided. Casing shall withstand without expansion joint the unusual moments and thrusts, for pumps with suction lift, necessary priming connection with valve and funnel shall be provided.

4.2. Impeller (Suitable for non-clog operation)

- (a) The impeller shall be properly balanced so as not to cause any vibration during operation.
- (b) Impeller shall be made in one piece and securely keyed to the shaft. Means shall be provided to prevent loosening during operation including rotation in reverse direction. Impeller fastening nuts (if provided) shall be of cap type and shall tighten in the direction of normal rotation.

4.3. Wearing Rings

Wearing rings shall be of renewable type. These shall be held in place for screwing against rotation, press fit and locked with pins, flanged and screwed. Opposite wear surfaces of hardenable material shall have a hardness difference of at least 50 BHN.

4.4. Shaft

- (a) The shaft shall be finished to close tolerance at the impeller, coupling and bearing diameters. The impeller, pulley and shaft sleeves shall be firmly secured to the shaft by key and / or nuts. The size of the shaft shall be calculated on the basis of maximum combined shear stress. This shear stress shall not exceed 30 percent of the elastic limit σ_y tension or 18 percent of ultimate tensile strength whichever is lower.
- (b) The design of the shaft shall also take into consideration the critical speed of the shaft, which shall be at least 10 percent above / below the operating speed.

4.5. Shaft Sleeves

Replaceable shaft sleeves shall be provided to protect the shaft where it passes through stuffing boxes unless the pump is equipped with mechanical seals in which case sleeves are preferred but not essential. The end of the shaft sleeves shall extend through the packing gland, shaft sleeves shall be securely locked or keyed to the shaft and shaft sleeves be machined and assembled for concentric rotation.

4.6. Bearings

- (a) The bearings may be ball, roller or sleeve type, provision shall be made to the axial and radial loads.
- (b) Where there is a possibility of liquid entering in the bearings, the pump shall be provided with suitable preventive arrangements such as water deflectors.
- (c) Grease lubricated ball bearings are acceptable. The ball bearings are specifically designed for grease lubrication and if operating conditions meet the following requirements.
- (d) Wherever thrust bearing are fitted suitable arrangement for adjusting clearance shall be provided.
- (e) Hydrodynamic searing shall be provided if specifically stated in Data Sheet.
- (f) Bearings shall be easily accessible without disturbing the alignment of pumps.
- (g) Each bearing housing shall have a drain plug.
- (h) Sleeve and thrust bearing shall be fitted with spring loaded thermocouple, if specifically stated in datasheet.

4.7. Stuffing Boxes

- (a) Stuffing Boxes shall be of such design that they can be repacked without removing any part other than the gland and lantern ring. Packed stuffing boxes with lantern ring shall be provided with inlet and outlet piping connections to the lantern ring so as to water cool for services where the pumping temperature exceeds 120 degree C (248 Degree F).
- (b) Stuffing boxes shall be designed so that standard packing can be removed and replaced by mechanical seals, or vice versa when desired.
- (c) In case where lantern ring is used, it shall be sandwiched between rows of packing and shall be removable. Lantern rings shall be axially split type.
- (d) When stuffing box seals for a pump handling clean, cool water called for the seal water line shall be connected to the pump in multistage pumps, to an intermediate stage. An independent sealing arrangement shall be provided for the following conditions:
 - (i) Suction lift in excess of 5 meters.
 - (ii) Delivery head below 10 meters of liquid column.

4.8. Mechanical Seals

- (a) Mechanical seals shall be provided when called for in the datasheet. If the pump is operating at a suction pressure below atmospheric pressure, pump and

seal design shall maintain a pressure above atmospheric at the seal faces to prevent air leakage in to the pump.

- (b) If required by the mechanical seals a flushing line shall be furnished by the supplier, complete with strainer and orifice from the pump discharge to the sealing face. When the pumping liquid is not suitable for this purpose a flushing connection shall be provided so that it can be connected to an external source.

4.9. Couplings

- (a) Pumps shall be furnished complete with an approved type of flexible coupling. Spacer type coupling shall be provided when required to permit disassembling the pump without removing the pipe connections or to permit removal of mechanical seal without disturbing pump and driver. Both halves of the coupling shall be furnished by the pump supplier. Coupling halves shall be bored and keyed to fit shafts of pump and the motor by Concessionaire. Both halves of the couplings shall be much marked.
- (b) Coupling guards made of expanded metal bolted to the base plate shall be furnished for coupled pumps.

4.10. Baseplates

The common base plate for pump and drive shall be in one piece and it shall be made of M.S. Suitable holes shall be provided for grouting and they shall be so located that the base can be grouted in place without disturbing the pump and motor. All pumps and drives shall be properly aligned, bolted and dowelled to the base plates by Concessionaire. Adequate space shall be provided between pump drain connections and base plate for installation of minimum 25 mm draining piping. Pumps shall be supplied with suitable drain pan of drain rim type base plate with tapped drain connection.

4.11. Connections / Nozzles

- (a) Suction and discharge connection shall be flanged and drilled.
- (b) Cast iron flanges shall be flat faced. Flanges shall be full or spot faced on the back side also.

4.12. Accessories

- (a) All accessories required for proper and safe operation shall be furnished with the pumps.
- (b) Each stage of pump, unless self-venting, shall be provided with a suitable vent connection, complete with valves.
- (c) Drain connections shall be provided at low points, valve connections shall be provided for drain.
- (d) Tapping suitably plugged for pressure gauges shall be provided on suction and delivery flanges.

4.13. Drives

Drives shall be furnished and mounted by the pump Concessionaire.

5. Inspection and Testing at Manufacturers Works

Inspection and testing at manufacturer's works shall be carried out as specified below:

All instruments and equipment required for such tests shall be provided by the Concessionaire and the instruments shall be calibrated and certified by an approved independent testing authority and not more than one month prior to the test in which they are used.

5.1. Hydrostatic Test

- (a) A standard hydrostatic test shall be conducted on the pump casing with water at 1.5 times the maximum discharge pressure on the head characteristic curve or twice the rated pressure whichever is higher.
- (b) Cooling passage, jackets for bearing stuffing box etc. shall be tested to minimum 8 kg/cm².
- (c) The hydrostatic test on casing shall be conducted for a minimum duration of 30 minutes.

5.2. Mechanical Balancing

- (a) Static Balancing
 - (i) Major rotating components of the pumps like impellers, shaft etc. shall be individually statically balanced.
- (b) Dynamic Balancing
 - (i) In addition to static balancing, impeller and pump rotating assembly shall be dynamically balanced at rated speed of rotation in the following cases;
 - a. For speed in excess of 1500 RPM and if rated capacity is more than 60 m³/hr. or impeller dia more than 150 mm.
 - b. All pumps of speed 2900 RPM or more.
 - c. Multistage pumps of speed 1500 RPM or more.
 - d. Necessary test certificates shall be furnished by vendor for purchaser's approval.

5.3. Performance Testing

- (a) Each pump shall be tested for its full operating range in accordance with the applicable standard. Site conditions shall be simulated as near as possible.
- (b) Test shall be carried out with minimum NPSH as available at site for rated discharge and maximum discharge. Each pump shall be tested at its rated speed with its own motor for its entire working range.

- (c) During pump testing, reading to the extent possible, shall be taken to correspond to the net effective lift and over its full working- range from its closed valve condition to an output 30% more than of the rated output or corresponding to the output at its minimum head specified, whichever is higher. Head flow and efficiency curves shall be drawn. The curves produced shall be used to determine the capability of pumps sets to meet the guaranteed performance at site.
- (d) Pumps shall be offered for visual inspection to the purchasers before Shipment. Components of pump shall not be painted before inspection.
- (e) The above tests shall be witnessed by the purchaser as stated in the Special Conditions.

5.4. Material Test Certificate

Material test certificates for the various pump components shall be furnished for purchaser's approval.

6. Field Testing

- 6.1. After installation pumps offered may be subjected to testing at field also. If the field performance is found not to meet the requirement then the equipment shall be rectified and / or replaced.

7. Drawings

- 7.1. The following drawings shall be submitted by the Concessionaire:
 - (a) Preliminary outline dimensional drawing showing the details of pump and motor. Suction, discharge connections and foundation details shall be indicated.
 - (b) Performance curves capacity v/s total head efficiency NPSH and KW requirements ranging from run out to pump shut off.
 - (c) Typical cross sectional drawing catalogues showing type of construction.

Chapter 22

VERTICAL CENTRIFUGAL PUMP SPECIFICATIONS

1. Scope

- 1.1. This specification covers the works of the design, performance, manufacture, construction features, testing and delivery to site of vertical centrifugal pumps. (Non-clog type)

2. Code and Standards

- 2.1. The design, manufacture and performance of the "VERTICAL CENTRIFUGAL PUMPS" shall comply with all currently applicable statutes, regulation and safety codes in the locality where the equipment will be installed. The equipment shall also confirm to the latest applicable Indian or equivalent international standard. Some of the relevant standards are:

- (a) IS 1520 : Vertical centrifugal pump for clear, cold, fresh water
- (b) IS 5120 : Technical requirement for roto-dynamic special purpose pumps.
- (c) IS 5600 : Sewage and Drainage pumps.
- (d) IS 9137 : Code for acceptance tests for centrifugal mixed flow and axial flow pumps - Class "C"

3. Design Requirements

- 3.1. The equipment shall be capable of developing the required total head at rated capacity for continuous operation.
- 3.2. The total head capacity curve shall be continuously rising towards the shut off with the highest at shut off. Pumps shall be suitable for + 10% to - 25% of rated head.
- 3.3. Pumps of particular category shall be identical pumps and shall be suitable for parallel operation with equal load division. Impellers shall preferably be of non over loading type.
- 3.4. Pumps shall run smooth without undue noise and vibrations. The magnitude of peak to peak vibration at shop will be limited to 75 micron at the bearing housing. The noise level shall not exceed 85 dBA at a distance of one meter.
- 3.5. The name plate KW rating of the pump motor shall be:
- (a) Sufficient to drive the pump through the entire range of head - capacity curve, and
 - (b) KW / HP rating of the drive shall be calculated for additional 20% reserve power to take care of over loading on entire operating range

- 3.6. The pump shall be capable of developing the specified total head at the specified rated capacity while operating in parallel and be capable of operating continuously at run-out capacity condition.

4. Features of Construction

Pumps shall be of Vertical centrifugal non-clog type with required number of stages suitable for the service conditions. The material of construction shall be as under:

Casing	:	2.5% Ni Cast Iron
Impeller	:	Ss CF8M
Shaft	:	Stainless steel BS 970 Gr. 431

4.1. Casing

- (a) Pump casing may be axial or radial split type. The casing shall be of robust construction. Liquid passages in the casing shall be finished smooth. Casing drain and vent connection with valves shall be provided where required.
- (b) Dowels shall be provided. Casing shall withstand without expansion joint the unusual moments and thrusts, for pumps with suction lift, necessary priming connection with valve and funnel shall be provided.

4.2. Impeller (Suitable for non-clog operation)

- (a) The impeller shall be properly balanced so as not to cause any vibration during operation.
- (b) Impeller shall be made in one piece and securely keyed to the shaft. Means shall be provided to prevent loosening during operation including rotation in reverse direction. Impeller fastening nuts (if provided) shall be of cap type and shall tighten in the direction of normal rotation.

4.3. Wearing Rings

Wearing rings shall be of renewable type. These shall be held in place for screwing against rotation, press fit and locked with pins, flanged and screwed. Opposite wear surfaces of hardenable material shall have a hardness difference of at least 50 BHN.

4.4. Shaft

- (a) The shaft shall be finished to close tolerance at the impeller, coupling and bearing diameters. The impeller, pulley and shaft sleeves shall be firmly secured to the shaft by key and/ or nuts. The size of the shaft shall be calculated on the basis of maximum combined shear stress. This shear stress shall not exceed 30 percent of the elastic limit in tension or 18 percent of ultimate tensile strength whichever is lower.
- (b) The design of the shaft shall also take into consideration the critical speed of the shaft, which shall be at least 10 percent above / below the operating speed.

4.5. Shaft Sleeves

Replaceable shaft sleeves shall be provided to protect the shaft where it passes through stuffing boxes unless the pump is equipped with mechanical seals in which case sleeves are preferred but not essential. The end of the shaft sleeves shall extend through the packing gland, shaft sleeves shall be securely locked or keyed to the shaft and shaft sleeves be machined and assembled for concentric rotation.

4.6. Bearings

- (a) The bearings may be ball, roller or sleeve type, provision shall be made to the axial and radial loads.
- (b) Where there is a possibility of liquid entering in the bearings, the pump shall be provided with suitable preventive arrangements such as water deflectors.
- (c) Grease lubricated ball bearings are acceptable, of the pump if specifically designed for grease lubrication and if operating conditions meet the following requirements.
- (d) Wherever thrust bearing are fitted suitable arrangement for adjusting clearance shall be provided.
- (e) Hydrodynamic bearing shall be provided if specifically stated in Data Sheet.
- (f) Bearings shall be easily accessible without disturbing the alignment of pumps.
- (g) Each bearing housing shall have a drain plug.
- (h) Sleeve and thrust bearing shall be fitted with spring loaded thermocouple, if specifically stated in datasheet.

4.7. Stuffing Boxes

- (a) Stuffing Boxes shall be of such design that they can be repacked without removing any part other than the gland and lantern ring. Packed stuffing boxes with lantern ring shall be provided with inlet and outlet piping connections to the lantern ring so as to water cool for services where the pumping temperature exceeds 120 degree C (248 Degree F).
- (b) Stuffing boxes shall be designed so that standard packing can be removed and replaced by mechanical seals, or vice versa when desired.
- (c) In case where lantern ring is used, it shall be sandwiched between rows of packing and shall be removable. Lantern rings shall be axially Split type.
- (d) When stuffing box seals for a pump handling clean, cool water called for the seal water line shall be connected to the pump in multistage pumps, to an intermediate stage. An independent sealing arrangement shall be provided for the following conditions:
 - (i) Suction lift in excess of 5 meters.
 - (ii) Delivery head below 10 meters of liquid column.

4.8. Mechanical Seals

- (a) Mechanical seals shall be provided when called for in the datasheet. If the pump is operating at a suction pressure below atmospheric pressure, pump and seal design shall maintain a pressure above atmospheric at the seal faces to prevent air leakage in to the pump.

- (b) If required by the mechanical seals a flushing line shall be furnished by the supplier, complete with strainer and orifice from the pump discharge to the sealing face. When the pumping liquid is not suitable for this purpose a flushing connection shall be provided so that it can be connected to an external source.

4.9. Couplings

- (a) Pumps shall be furnished complete with an approved type of flexible coupling. Spacer type coupling shall be provided when required to permit disassembling the pump without removing the pipe connections or to permit removal of mechanical seal without disturbing pump and driver. Both halves of the coupling shall be furnished by the pump supplier. Coupling halves shall be bored and keyed to fit shafts of pump and the motor by Concessionaire. Both halves of the couplings shall be such marked.
- (b) Coupling guards made of expanded metal bolted to the base plate shall be furnished for coupled pumps.

4.10. Baseplates

The common base plate for pump and drive shall be in one piece and it shall be made of M.S. Suitable holes shall be provided for grouting and they shall be so located that the base can be grouted in place without disturbing the pump and motor. All pumps and drives shall be properly aligned, bolted and dowelled to the base plates by Concessionaire. Adequate space shall be provided between pump drain connections and base plate for installation of minimum 25 mm draining piping. Pumps shall be supplied with suitable drain pan of drain rim type base plate with tapped drain connection.

4.11. Connections / Nozzles

- (a) Suction and discharge connection shall be flanged and drilled.
- (b) Cast iron flanges shall be flat faced. Flanges shall be full or soot faced on the back side also.

4.12. Accessories

- (a) All accessories required for proper and safe operation shall be furnished with the pumps.
- (b) Each stage of pump, unless self-venting, shall be provided with a suitable vent connection, complete with valves.
- (c) Drain connections shall be provided at low points, valve connections shall be provided for drain.
- (d) Tapping suitably plugged for pressure gauges shall be provided on suction and delivery flanges.

4.13. Drives

Drives shall be furnished and mounted by the pump Concessionaire.

5. Inspection and Testing at Manufacturers Works

Inspection and testing at manufacturer's works shall be carried out as specified below: All instruments and equipment required for such tests shall be provided by the Concessionaire and the instruments shall be calibrated and certified by an approved independent testing authority and not more than one month prior to the test in which they are used.

5.1. Hydrostatic Test

- (a) A standard hydrostatic test shall be conducted on the pump casing with water at 1.5 times the maximum discharge pressure on the head characteristic curve or twice the rated pressure whichever is higher.
- (b) Cooling passage, jackets for bearing stuffing box etc. shall be tested to minimum 8 kg/cm².
- (c) The hydrostatic test on casing shall be conducted for a minimum duration of 30 minutes.

5.2. Mechanical Balancing

- (a) Static Balancing
 - (i) Major rotating components of the pumps like impellers, shaft etc. shall be individually statically balanced.
- (b) Dynamic Balancing
 - (i) In addition to static balancing, impeller and pump rotating assembly shall be dynamically balanced at rated speed of rotation
- (c) For speed in excess of 1500 RPM and if rated capacity is more than 60 m³/hr. or impeller dia more than 150 mm.
- (d) All pumps of speed 2900 RPM or more.
- (e) Multistage pumps of speed 1500 RPM or more.
- (f) Necessary test certificates shall be furnished by vendor for purchaser's approval.

5.3. Performance Testing

- (a) Each pump shall be tested for its full operating range in accordance with the applicable standard. Site conditions shall be simulated as near as possible.
- (b) Test shall be carried out with minimum NPSH as available at site for rated discharge and maximum discharge. Each pump shall be tested at its rated speed with its own motor for its entire working range.
- (c) During pump testing, reading to the extent possible, shall be taken to correspond to the net effective lift and over its full working range from its closed valve condition to an output 30% more than of the rated output or corresponding to the output at its minimum head specified, whichever is higher. Head flow and efficiency curves shall be drawn. The curves produced shall be used to determine the capability of pumps sets to meet the guaranteed performance at site.

- (d) Pumps shall be offered for visual inspection to the purchasers before shipment. Components of pump shall not be painted before inspection.
- (e) The above tests shall be witnessed by the purchaser as stated in the special Conditions.

5.4. Material Test Certificate

Material test certificates for the various pump components shall be furnished for purchaser's approval.

6. Field Testing

- 6.1. After installation pumps offered may be subjected to testing at field also. If the field performance is found not to meet the requirement then the equipment shall be rectified and / or replaced.

7. Drawings

- 7.1. The following drawings shall be submitted by the Concessionaire:
 - (a) Preliminary outline dimensional drawing showing the details of pump and motor. Suction, discharge connections and foundation details shall be indicated.
 - (b) Performance curves capacity v/s total head efficiency NPSH and KW requirements ranging from run out to pump shut off.
 - (c) Typical cross sectional drawing catalogues showing type of construction.

Chapter 23

PIPE AND FITTING SPECIFICATIONS

1. Scope

- 1.1. This specification covers the design, performance, manufacture, erection, construction features, testing and commissioning of pipes and fittings.

2. Design

- 2.1. All piping systems shall be capable of withstanding the maximum pressure in the corresponding lines at the relevant temperatures. The minimum thickness for pipes and fittings shall be adhered to. Higher thickness in equivalent material is acceptable. However, no credit will be given for higher thickness.
- 2.2. All the piping systems, fittings and accessories supplied under this package shall be designed to operate without replacement and with normal maintenance for a plant service life of 30 years, and shall withstand the operating parameter fluctuations and cycling which can be normally expected during this period.
- 2.3. All piping systems shall be properly designed to take care of hydraulic shocks and pressure surges which may arise in the system during operation. Concessionaire should provide necessary protective arrangement like anchor blocks/anchor bolts, etc. for the safe-guard of the piping systems under above-mentioned conditions. External and internal attachments to piping shall be designed so as not cause flattening of pipes, excessive bending stresses or harmful thermal gradients in pipe walls.
- 2.4. Piping and fittings shall be manufactured by an approved firm of repute. They should be truly cylindrical of clear internal diameter specified of uniform thickness, smooth and strong, free from dents, cracks and holes and other defects. They shall allow easy cutting, chipping or drilling, welding etc.

3. Material of Construction

- 3.1. All centrifugal (spun) cast iron pipes shall conform to IS 1536 class B. The pipes shall have standard weight as specified in above standard. The flanges shall conform to relevant BIS codes to match with flanges of valves / pipes.
- 3.2. All M.S. pipes of sizes below 150 NB shall conform to IS: 1239 Part - 1, heavy grade and for sizes 200 NB and above IS: 3589 Gr. 410 of minimum 8 mm thick shall be applicable. The flanges shall be as per ANSI B 16.5 class 150.
- 3.3. All SS pipes shall be as per ASTM A-312 TP-304 sch.40S. The flanges shall as per ANSI B 16.5 class 150.

4. Transportation and stacking

- 4.1. Transportation of materials to work site and stacking shall be done in a manner to cause minimum inconvenience to the traffic and other construction works. Pipes shall be protected during handling against impact, shocks and free fall to avoid cracks and damage.

5. Lowering

- 5.1. The pipes shall be lowered continuously to prevent disturbance of the bed and sides of the trench. The heavy pipes should be lowered by means of proper shear legs, chain pulley block as directed.
- 5.2. Flanged joints shall be made by painting the facing of flanges with red lead and bolting up evenly in all sides with packing of rubber insertion in between. The packing shall be of full diameter with proper holes to suit the flanges bolt holes. Rubber for flanged joints shall be 3 mm conforming to IS 638 M.S. hexagonal steel bolts and nuts shall conform to IS: 1367.

6. Testing

- 6.1. The pipe line shall be tested to double the working pressure. The pipe line should be tested in suitable section. After all the lines are tested in section, a final test shall be performed commissioning the line.
- 6.2. Test manifolds pumps; connection piping and all other necessary apparatuses for testing shall be installed by the Concessionaire.

7. Procedure for test

- 7.1. The pipe line shall be completely filled with water and it shall be ensured that no air is left in the line; pressure shall be applied with a calibrated pressure gauge. Upon bringing the test pressure, it shall be maintained for sufficient time to permit complete inspection of the system under test, but in no case shall time be less than 10 minutes.
- 7.2. If the pipe line fails to maintain the specified test pressure the Concessionaire shall determine the location of leak and shall repair the leak by replacing pipes, remarking the joints.

Chapter 24

MECHANICAL LEVEL INDICATOR

Type	:	Float and chord
Float	:	SS-316
Chord	:	SS Wire rope
Fittings free Pulleys.	:	Bottom anchor, guide, wire spring tension assembly, friction
Protection	:	Weather proof enclosure for pulley and chord.
Scale position	:	Inside the pump house.
Scale	:	Black graduation on white background with red pointer. Attached to the counter weight.

Chapter 25

PRESSURE GAUGE FOR LOCAL INDICATION

- 1.0 Each sewage / effluent pump shall be provided with suction and discharge pressure gauge. There shall be an additional pressure gauge on each discharge header.
- 2.0 The pressure gauges shall be mounted on a board which will be installed adjacent to the pump / discharge header.
- 3.0 The pressure gauges shall be connected to pressure tapping by SS tubes 15 NB size isolating valves. SS tube and requisite SS compression fittings shall be provided for this purpose.

Type	:	Diaphragm
Sensing element	:	SS 316 diaphragm
Casing	:	Weather proof
Connection	:	Flanged, 25 NB
Accuracy	:	+/-1.5% max. scale value
Dial size	:	6"

Chapter 26

AERATORS

- 1.0 Aerators shall be fixed in each chamber of aeration tank of adequate capacity. The aerator shall be fixed type, slow speed and surface aerators.
- 2.0 The oxygen transfer capacity shall be so designed that it can take an extra load of 20% (Twenty Percent). The speed of the impeller shall not exceed 60 RPM.
- 3.0 All wetted parts shall be painted with 2 coats of zinc rich epoxy primer followed by 3 coats of epoxy paint. Each epoxy coat shall have thickness of ~200, microns. The total thickness shall not be less than 600 microns. Necessary sand blasting before applying epoxy primer shall be done.
- 4.0 Helical type reduction gear box of reputed make with the efficiency not less than 95% (Ninety-five Percent) shall be provided. The service factor for the gear box shall not be less than 2.

The material of construction should be as follows:

- (a) Aerator
 - (i) Impeller : M.S. Epoxy coated
 - (ii) Shaft : M.S. Epoxy coated
- (b) Gear Box
 - (i) Shan : SS 304
 - (ii) Casing : As per LS. 210

Chapter 27

ELECTRICAL WORKS

1. Scope

- 1.1. The scope of electrical works shall cover Design, Engineering, Supply, Erection, Electrical Inspectorate Clearance, Testing & Commissioning of the complete equipment /system within the Battery Limits.
- 1.2. The electrical system selected shall confirm upto date statutory rules and regulations and due consideration has been given to general safety requirements for personnel and plant & machinery.
- 1.3. Any item or any provision/requirement if not included in this section, but is necessary to be provided for the completion of the project and for its functional necessity, the same shall be provided by the Concessionaire.
- 2.** The Electrical scope of work start from the supply of LT Panel (MCC) and further power distribution to Motors including incoming feeding cables to this proposed LT panel from the Purchaser's existing panel.
 - 2.1. The power at 415 V, 3 phase, 50Hz, 3-wire shall be brought to proposed LT panel from existing LT panel located at the nearest distance from Proposed LT panel placed in MCC room.
 - 2.2. The cable sizing shall be done as per the following Criteria:
 - (a) Load of 20% higher of full load of the proposed plant.
 - (b) Voltage Drop within 6% of the rated voltage
 - (c) Voltage Drop within 15% of the rated voltage due to starting current effect.
 - (d) De-rating effect of ambient temperature.
 - (e) De-rating effect of grouping of cables
 - (f) De-rating effect of depth of laying of cables Incoming cables termination at both ends will be in scope of this work.
- 3.** This LT Panel will have one number incoming feeder and will have required outgoing feeders for motors of the plant and also for lighting and control supply feeder with control transformers Separate Lighting transformer shall be provided.
 - 3.1. There will be two nos. control transformers of required capacity. One of two control transformers will be in operation and second will be standby. The standby should come into circuit automatically when operating transformer is stopped.
 - 3.2. LT Panel will be located inside the MCC room. *The* motor feeder for motor up to 7.5HP will be with DOL feeder and above 7.5HP star-delta starter will be used.
 - 3.3. 20% spare feeders will be provided in LT panel.
 - 3.4. There will be one number control panel placed near LT panel for the operation of plant. Only stop push button with mushroom headed and turn to release will be provided on LT panel for emergency stop only. In addition to above, local push button

station will be placed near all the main drives of plant for testing/maintenance and emergency stop purpose.

- 3.5. So all the motors will be started either from Control Panel or from local Push button stations.
- 3.6. The capacitor bank for improvement of power factor is not considered as load of the plant is low.
- 3.7. One number Main LT Panel for complete Plant, which will feed power to individual drive/equipment as indicated in the enclosed SLD. This SLD is only for the reference of Concessionaire.
- 3.8. Short circuit current level for LT panel shall be 30 KA for one second for bus bar selection.
- 3.9. For ease of maintenance, Local Push Button Stations are placed near the drives. The drives shall be started either from Control Panel or from local push button station.
- 3.10. All the drives will be started in sequence as per system requirement. Local / remote selector switch are also provided on Control Panel for selection of control either from Control Panel or from local push button station. In case of remote selection, drives will be controlled from Control Panel and in case of local selection, drives will be controlled from local push button station.

4. Ac Motors

- 4.1. All the motors in this scope of supply shall be energy efficient squirrel cage Induction type, TEFC having degree of protection IP 55. Motor shall be suitable for 415V+/-10%, 50HZ+/-5% and suitable for DOL/star-delta starting. The motors shall generally conform to IS: 325. All motor shall be with class F insulation. Motor rating shall be at least 20% higher than the driven equipment.

5. LT Panel

- 5.1. This will be floor mounted fully draw out type, single front type and shall be fabricated out of 2mm CRCA sheet with multi-tier compartmentalized design with enclosure protection IP-54. The doors and covers will be fabricated out of 1.6mm CRCA sheet. Panel shall be manufactured as per standard manufacturing practice.
- 5.2. Incoming feeder (1 no.) shall be equipped with MCCB, CT/Ammeter with SS. Voltmeter with SS, RYB Lights and Circuit Breaker ON/OFF lamps.
- 5.3. The outgoing feeders are with MPCB/DOL/Star Delta Starter as per motor rating.
- 5.4. The incoming feeder for LT Panel will comprise of the following:

1 no.	:	415V, TP, MCCB
1 set	:	Phase indicating lamps
1 no.	:	Ammeter with selector switch
1 no.	:	Voltmeter with selector switch
1 set	:	Control fuses
1 set	:	CTs of suitable ratio for metering

5.5. The outgoing feeders for motor shall be equipped with MPCB, Power contactor.

5.6. Each DOL starter feeder will comprise of the following:

- 1 no : MPCB
- 1 no. : Power Contactor
- 1 no. : Ammeter
- 1 set : Control DP MCB
- 1 set : ON/OFF/TRIP Lamps
- 1 set : Stop Button
- 1 set : Test Button

5.7. Each RDOL starter feeder will comprise of the following:

- 1 no. : MPCB
- 1 no. : Power Contactor
- 1 no. : Ammeter
- 1 set : Control DP MCB
- 1 set : ON/OFF/TRIP Lamps
- 1 set : Stop Button
- 1 set : Test Button

5.8. Each Star-Delta starter feeder will comprise of the following:

- 1no. : MPCB
- 3nos. : Power Contactor
- 1no. : Timer
- 1no. : Ammeter with CT
- 1set : Control DP MCB
- 1set : ON/OFF/TRIP Lamps
- 1set : Stop Button
- 1 set : Test Button

5.9. Each Control Transformer will be provided with primary and secondary MCB and required interlocking and sector switch.

5.10. The feeders will be provided with one number CT and one number ammeter along with other items for above 11KW motor rating on Y-phase.

5.11. Stop Push Button on LT Panel or Control panel or on Local Push Button Station will be with mushroom headed and turn to release type.

6. Control Panel

6.1. This will be floor mounted, single front type and shall be fabricated out of 2mm CRCA sheet with vertical type design. This will be with enclosure protection IP-54. Panel shall be manufactured as per standard manufacturing practice.

6.2. This will have mimic and fault annunciator on top portion. The mimic will depict the Equipment flow diagram. On each equipment of Mimic, on lamp will be provided.

6.3. The following shall be provided for each motor:

- (a) Local/Remote Selector sw.
- (b) Start Push Button
- (c) Stop Push Button with mush room and turn to release type.
- (d) ON lamp
- (e) OFF lamp
- (f) Annunciation window for trip indication.

6.4. Lamp will be provided for each level and pressure switches. In addition to this very high level will be also annunciated on annunciator window of Control panel

7. Power and Control Cable

Incoming LT cables shall be with 3.5 cores or higher, upto LT Panel based on load shall be provided.

7.1. L.T. Power Cable

The power cable shall be PVC insulated, PVC sheathed, armoured type with 3.5 core for motors, with Aluminum conductor. For motors upto 5.5 KW, the power cable shall be 4Cx4. sq. mm Aluminum.

7.2. Control Cable

The control cable shall be PVC insulated, PVC sheathed, armoured type with copper solid conductor suitable for 1100 V grade and of sizes mentioned below:

- (i) 7C x 1.5 sq. mm
- (ii) 4C x 1.5 sq. mm
- (iii) 2C x 1.5 sq. mm for instruments

8. Earthing System

8.1. The earthing system will be limited to the earthing of equipment which are in this scope of supply.

8.2. Required number of GI Plate Electrode for earth pits will be provided for making over all earth resistance less than 1.0 Ohms. GI strips/wires of required size shall be provided. Earthing system shall be as per IS: 3043.

8.3. 50x6 mm GI strip shall be laid from existing earthing grid and linked to proposed plate electrode. The existing point is 500 metre away from this proposed LT Panel.

8.4. Each electrical equipment shall be earthed at two distinct points.

- 8.5. The inter connection of earth pits, LT PANEL shall be done with 50x6 mm G.I Strips. 25x6mm, 25x3 mm G. I. Strip / 38 sq. mm Gl Wire for motors and boards etc. shall be used. 10 SWG wire for auxiliary or miscellaneous items like Push Button Station etc.

9. Local Push Button Station

- 9.1. The local push button Station shall be placed near the main drive. This will comprise of two nos. push buttons (one for Start and other for stop). Stop push button will be with mushroom headed and turn to release type. This will be fabricated with 1.6 mm steel sheet along with canopy.

10. Lighting System

- 10.1. This lighting system shall be provided for the complete plant including office. The internal lighting will be done with the help of 2x40W Fluorescent Lamps for the room height upto 5 M and beyond above 5M, 250W HPSV lamp will be used.
- 10.2. The outdoor lighting will be with weather proof Street Lighting 70/125 W HPSV Lamps. For lighting the pond area, 10M mast type flood light of 400W HPSV lamps shall be used.
- 10.3. Internal lighting will be done with industrial type lighting fitting with 2x40W Fluorescent Lamps. Office will have decorative type light fitting.
- 10.4. The illumination level for Indoor lighting for MCC room and office will be 250 Lux
- 10.5. Outdoor lighting illumination level will be 25-30 Lux.
- 10.6. There will be one number Main Lighting Board and required sub lighting boards. Main Lighting Board will be fed from lighting transformer by 4core cable of required size and sub-lighting board will be fed from Main Lighting board by 4-core cable of required size.

11. MCC Room

- 11.1. One MCC room shall be provided to accommodate the LT panel, Main Lighting Board and control panel. There will be one office adjacent to MCC room.

12. Instrumentation System

12.1. Level Switches

Separate level switches shall be provided along with each pump for indication/annunciation. The level switches shall be float type.

12.2. Pressure Switches

This will be diaphragm sealed type and will be used on each Delivery Pipe of pumps.

12.3. Pressure Gauge

This will be diaphragm sealed type and will be used in each Delivery Pipe of pumps.

13. Safety Items

- | | | | |
|-----|----------------------------|---|--------------------|
| (a) | Rubber mat (2 M x 1Mx12mm) | : | 1 no. |
| (b) | Shock treatment chart | : | 1no. |
| (c) | Caution board | : | As per requirement |

14. Cable Tray& Cable Accessories

14.1. All cables shall be directly buried underground as per standard, outside the building and cable marker shall be provided. Cable shall be laid overhead cable tray inside the building. All cables shall be neatly dressed and clamped on the trays. Cable shall be provided with the necessary cable gland, lugs Tags etc.

14.2. The cable tray will be ladder type hot dip galvanized to 80 micron and made by 2mm thick CRCA sheet steel.

14.3. The cable tray sizes will be of following sizes:

- | | |
|-----|---------------------|
| (a) | 40 x 150 x 40 x 2mm |
| (b) | 40 x 300 x 40 x 2mm |
| (c) | 40 x 450 x 40 x 2mm |
| (d) | 40 x 600 x 40 x 2mm |

Note: Any item or any provision / requirement if not included in this section, but is necessary to be provided for the completion of the project and for its functional necessity, the same shall be provided by the Concessionaire. The decision of Construction Supervisor/ Independent Engineer /ULB in this regard shall be final and binding on the Concessionaire.

Enclosure 3 of Schedule D

QUALITY ASSURANCE CHECKLIST

1. This checklist is intended to be an aid to the Concessionaire and the Construction Supervisor/ Independent Engineer in identifying aspects of testing materials and workmanship.
2. Results of all tests to be carried out by the Concessionaire shall be submitted to the Construction Supervisor/ Independent Engineer promptly.
3. The following minimum checks/tests shall be carried out for soil, rock material, concrete, RCC works and other works. The Concessionaire shall add the cost of all the tests and facilities to be provided by him to the owner for his testing in the quoted rates for various rates for various items under the Schedule of items.

Item No.	Type of Test of Check	Frequency/ Quantum Norms	Ref. Document for testing	Acceptance
1.	EARTH FILLING AND COMPACTION			
	Suitability of fill material			
	a) Grain size analysis	Once in every 2000 cum for each type and each source subject to a min. sample of two samples	IS:2720 (part-iv)	IS:2720 (part-IV)
	b) Liquid and Plastic limit	-ditto-	IS:2720 (part-V)	IS:2720 (part-V)
	c) Shrinkage limit	Once in every 5000 cum for each type and each source subject to a min. sample of two samples	IS:2720 (part-VI)	IS:2720 (part-VI)
	d) Free swell index	-ditto-	IS:2720 (part-XL)	IS:2720 (part-XL)
	e) Chemical analysis	Once in every	IS:2720	IS:2720 Part-

Item No.	Type of Test of Check	Frequency/ Quantum Norms	Ref. Document for testing	Acceptance
	i)Organic matter ii)Calcium carbonate iii) pH iv)Total soluble sulphate	5000 cum for each type and each source subject to a min. sample of two samples	Part-XXII Part-XXIII Part-XXVI Part-XXVII	XXII Part- XXIII Part- XXVI Part- XXVII
	II) Standard Proctor Test	Once in every 2000 cum for each type and each source subject to a min. sample of two samples	IS:2720 (part-VII)	IS:2720 (part-VII)
	III) Moisture content of fill before compaction	-ditto-	IS:2720 (Part-II)	IS:2720 (Part-II)
	IV) Degree of compaction of fill	-ditto-		
	a) Dry density by core method Or Dry density in place by sand displacement method	i) For foundation filling, one for every ten foundations for each layer. However, each layer for location of important and heavily loaded foundations resting on fill shall be tested. ii) For area filling, one of every 1000 sqm area for each compacted year.	IS:2720 (Part-XXIX, Part-XXVIII)	IS:2720 (Part-XXIX, Part-XXVIII)

Item No.	Type of Test or Check	Frequency/ Quantum Norms	Ref. Document for testing	Acceptance
	b) Relative density (density index)	-ditto-	IS:2720 (Part-XIV)	IS:2720 (Part-XIV)
	c) Dry density by proctor needle penetration	Random check to be carried out for each compacted layer in addition to test mentioned under IV (a) above.	Standard practice	Standard practice
2.	COARSE AGGREGATE FOR CONCRETE			
	a) Check for Gradation	Once per 100 cum or part thereof or each change of source	IS:2386 & IS:383	As per IS:383 for concrete
	b) Specific Gravity	-ditto-	IS:386 & IS:1122	Minimum Sp. Gravity 2.60 for concrete
	c) Crushing Value (for concrete only)	Once for each source	IS:2386 (Part-IV)	As per IS:383
	d) Sulphate Soundness	-ditto-	IS:2386 (Part-V) & IS:1126)	(i) As per IS:383 for concrete. (ii) Max. 10% weight loss after five cycles for filter materials.
	e) Acid & Alkali Reactivity (for concrete only)	-ditto-	IS:2386 (Part-VII) & IS:383	As per IS:2386 Part-VII
	f) Flakiness & Petro graphic Examination (for concrete only)	-ditto-	IS:2386 Part-VII & IS:383	Flakiness Index Max. 15% Aggregate

Item No.	Type of Test or Check	Frequency/ Quantum Norms	Ref. Document for testing	Acceptance
				constituents which are known to cause deleterious chemical reaction with cement/lime should be avoided.
	g) Impact Value	Once for every source	IS:2386	Maximum 30%
	h) Water Absorption	-ditto-	IS:2386	Maximum 2%
	i) Slake Durability	-ditto-	IS:10050	Percentage retained after two 10 minutes cycles shall be more than 85%.
3.	FINE AGGREGATE FOR CONCRETE & SAND FOR MORTAR			
	a) Bulkage A(for concrete only)	Once per week	IS:2386 & IS:383	As per IS:383
	b) Moisture Content (for concrete and mortar only)	-ditto-	-ditto-	-ditto-
	c) Gradation	Once for every source	IS:2386 Part-I, IS:9429 & IS:383	Same as in Sl.no.4a
	d) Specific Gravity	-ditto-	IS:2386 Part-1	Minimum 2.40
	e) Water Absorption & Density (for concrete and mortar only)	Once for every source	IS:2386	Maximum 2.5%
	f) Soundness (for concrete only)	-ditto-	IS:2386 Part-V As per IS:383	-ditto-
	g) Visual Examination	100%	IS:2386 & IS:383	-ditto-

Item No.	Type of Test or Check	Frequency/ Quantum Norms	Ref. Document for testing	Acceptance
4.	WATER FOR MORTAR AND CONCRETE MIXING & CURING			
	a) pH Value	Once for every source	IS:3025 & IS:456	As per IS:456
	b) Turbidity	-ditto-	-ditto-	-ditto-
	c) Sulphate Content	-ditto-	-ditto-	-ditto-
5.	CEMENT			
	a) Fineness	Once for every source	IS:269 & IS:4031	
	d) Setting Time	-ditto-	-ditto-	
	e) Soundness	-ditto-	-ditto-	
	f) Specific Gravity	-ditto-	-ditto-	
	g) Compressive Strength	-ditto-	-ditto-	As per IS code
6.	CONCRETE			
	a) Workability	Minimum 3 samples per batch	IS:11199 & IS:456	
	b) Crushing Strength	One sample of 6 cubes per 150 cum or part thereof.	IS:1199, IS:456, IS: 516 & spec.	As per IS code
	c) Compacting Factor	Once per mix	-ditto-	-ditto-
	d) Water Tightness	Each tank and reservoir	IS:3370	IS:3370
	e) Finished Dimension	All Structure including embankment slopes		As per drawings
7.	BRICK			
	a) Visual Examination	At Random	IS:3495 & IS:1077	
	b) Compressive Strength	One set of samples per 10,000 bricks or	IS:3495 & IS:1077	

Item No.	Type of Test or Check	Frequency/ Quantum Norms	Ref. Document for testing	Acceptance
		part thereof		
	c) Efflorescence	-ditto-	-ditto-	
	d) Water absorption	-ditto-	-ditto-	
	e) Colour and Dimensional Conformity	Once from each stack	-ditto-	
	f) Soundness	-ditto-	-ditto-	
8.	FORM WORK			
	a) Staging	Each member	IS:456 Approved drawing & specification	
	b) Dimensions & Plumb line	-ditto-	-ditto-	
	c) Shape & Alignment	-ditto-	-ditto-	
	d) Ground Support (drawing & specifications)	Each member	IS:456 & approved	
	e) Cleaning & Oiling	100%	-ditto-	
	f) Tightness for mortar	100%	-ditto-	
9.	REINFORCMENT			
	a) Bending			
	b) Joints with right guage of bending wire	-ditto-	-ditto-	
	c) Placement as per levels and covers	-ditto-	-ditto-	
	d) Rust/Loose scales	-ditto-	IS:456	

**CONSTRUCTION AND DESIGN SERVICES,
UTTAR PRADESH JAL NIGAM
GOVERNMENT OF UTTAR PRADESH**

REQUEST FOR PROPOSAL

FOR

**DEVELOPMENT OF MUNICIPAL SOLID WASTE MANAGEMENT FACILITIES
FOR GORAKHPUR MUNICIPAL CORPORATION, U.P.**

July, 2015



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This RFP is not an agreement and is neither an offer nor invitation by the C&DS, UPJN to the prospective Bidders or any other party. The purpose of this RFP is to provide interested parties with information that may be useful to them in making their financial offers pursuant to this RFP (the “Proposal”). This RFP includes statements, which reflect various assumptions and assessments arrived at by the C&DS, UPJN in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP may not be appropriate for all persons, and it is not possible for the C&DS, UPJN, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Bidder(s) is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. C&DS, UPJN accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

C&DS, UPJN, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this Proposal Stage.

C&DS, UPJN, its employees and advisors also accept no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP.

C&DS, UPJN may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.

The issuance of this RFP does not imply that C&DS, UPJN is bound in any manner whatsoever to select a Bidder or to appoint the Selected Bidder for the Project and C&DS, UPJN reserves the right to reject all or any of the Bidders or Proposals without assigning any reason whatsoever.

The Selected Bidder may be required to acknowledge in the Concession Agreement that he has not relied on or been induced to enter into such agreement by any representation or warranty, save as expressly set out in such an agreement.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by C&DS, UPJN or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Bidder and C&DS, UPJN shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Proposal, regardless of the conduct or outcome of the Bidding Process.

C&DS, UPJN, its employees and its advisors undertake no obligation to provide the Bidder(s) with any additional information or update this RFP and reserve the right, at any time and without notice, to change or modify the procedure for bidding, terminate or enter into negotiations on any part of or the entire Bidding Process.

This RFP has not been filed, registered or approved in any jurisdiction. Bidder(s) of this RFP, should inform themselves of, observe and comply with all applicable legal requirements.

GLOSSARY

Bank Guarantee	As defined in Clause 3.21.1
Proposal (s)	As defined in Clause 1.1.8
Bidders	As defined in Clause 2.1.1
Bidding Documents	As defined in Clause 1.1.11
Proposal Due Date	As defined in Clause 1.2.3
Bidding Process	As defined in Clause 1.2
Bid Security	As defined in Clause 1.2.5 and Clause 3.21
Concession	As defined in Clause 1.1.5
Concessionaire	As defined in Clause 1.1.4
Conflict of Interest	As defined in Clause 2.1.2
FDR	As defined in Clause 3.21.2
Government	Government of Uttar Pradesh
LOA	As defined in Clause 4.16.1
Member	Member of a Consortium
PPP	Public Private Partnership
Project	As defined in Clause 1.1.2
Proposal Validity Period	As defined in Clause 1.2.3 and Clause 3.18.1
Re. or Rs. or INR	Indian National Rupee
RFP or Request for Proposals	As defined in the Disclaimer
Selected Bidder	As defined in Clause 1.2.6

The words and expressions beginning with capital letters and defined in this RFP shall, unless the context otherwise requires, have the meaning ascribed thereto herein. The words and expressions beginning with capital letters and not defined herein, but defined in the Concession Agreement, shall, unless the context otherwise requires, have the meaning ascribed thereto therein.

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**CONSTRUCTION AND DESIGN SERVICES,
UTTAR PRADESH JAL NIGAM
GOVERNMENT OF UTTAR PRADESH**

1. INTRODUCTION

1.1 Background

- 1.1.1 The Construction and Design Services, Uttar Pradesh Jal Nigam (hereinafter referred to as “**C&DS, UPJN**”), an enterprise of Government of Uttar Pradesh (hereinafter referred to as “**GoUP**”) has been nominated as a nodal agency by GoUP for development of Municipal Solid Waste (“**MSW**”) management projects in UP and is issuing this RFP document, on behalf of the Gorakhpur Municipal Corporation (hereinafter referred to as “**ULB**”).
- 1.1.2 In furtherance of its objectives to improve the solid waste management services to the residents of the town in compliance with the Municipal Solid Waste (Management & Handling) Rules, 2000, CPHEEO Manual, ULB has decided to undertake development of Municipal Solid Waste Processing and Landfill facilities for the ULB (the “**Project**”) through Public Private Partnership (PPP) framework and has decided to undertake the bidding process for selection of the Bidder to whom the Project may be awarded.
- 1.1.3 During the year 2009-10, C&DS, UPJN / ULB had selected a developer for development of Integrated Solid Waste Management Projects for Gorakhpur ULB on PPP basis. However, C&DS, UPJN / ULB had subsequently terminated the above project due to abandoning / non-performance by the said developer selected for the above project. In view of the above, Government of Uttar Pradesh / C&DS, UPJN now would like to re-invite the tenders for selection of developer for development of MSW Processing and Disposal facilities on DBFOT basis and ULB will carry out their own procurement process for collection and transportation activities of MSW either through it itself or any third agency.
- 1.1.4 The Project would be awarded to the selected bidder (the “**Concessionaire**”), after a competitive bidding process and a Concession Agreement would be entered into by State Government of U.P., ULB and C&DS, UPJN as the party of one side and the Concessionaire as the party of the other side. The Concessionaire would be responsible for design, build, operate and maintain the municipal solid waste processing and landfill facilities for the Project in accordance with the Concession Agreement.
- 1.1.5 An overview of the Project is as follows:

Aspects	Description
ULB's key objectives	<p>ULB's key objective for setting up the Project on PPP basis is to improve municipal solid waste management services.</p> <p>ULB is desirous of selecting a Concessionaire to establish a viable & environmentally sustainable municipal solid waste processing and landfill management system in compliance with the Municipal Solid Waste (Management & Handling) Rules, 2000, CPHEEO Manual and other relevant guidelines/ notifications issued by the competent authorities.</p>
Estimated MSW Generation	The estimated municipal solid waste generated, at present within the ULB area is 495 TPD (approximately).
DPR	<p>The DPR for municipal solid waste management has been prepared by the Consultants to the C&DS, UPJN and approved by GoUP. The copy of the DPR can be accessed by any prospective Bidder in the office of C&DS, UPJN during the working hours and if required prospective Bidder can get the DPR photocopied at its risk, cost and expense.</p> <p>The Concessionaire may however note that the DPR may not cover adequately the equipment/resources/technology to undertake efficiently and comprehensively the activities as defined in the Scope of Work below covering the entire area within the municipal limits or as defined by the ULB. Therefore the Concessionaire may as he deems fit, include such activities/equipment/manpower at its own cost to make good any shortcomings or enhance the techno-economic viability of the Project.</p>
Concession	<p>ULB will provide the Project Site and the Existing Assets to the Concessionaire on "as is where is basis" for development of MSW processing plant and landfill, solely for the purpose of the Project.</p> <p>The Concessionaire shall be responsible for the delivery of the services and provision of the facilities/ equipment/ vehicles in accordance with the provisions of the Concession Agreement.</p> <p>Details of the land to be provided as Project Site are given in Annexure A to this RFP</p>
Concession Period	The concession period for the Project shall be 30 (thirty) years inclusive of the construction period of 12 months.
Scope of Work	<p>The scope of work is to undertake processing and disposal of Municipal Solid Waste on design, finance, procure, operate, manage, maintain and transfer basis.</p> <p>The scope of work for the Project would broadly include:</p>

Aspects	Description
	<p>a. Development, finance, construction and operation & maintenance of the MSW processing facility having combination of technologies / systems with composting as one of the main processes and other processes such as Waste to Energy, Resource recycle facility, Refuse Derived Fuel (RDF), plastic / metal separation, inert processing, etc. which would maximize waste recycling/ treatment and ensure that the minimum quantity of Landfill Waste goes to the Landfill Facility by not more than 30% of Incoming Waste in the first year of operation after COD, 25% in the second year after COD and 20% from third year onwards after COD</p> <p>b. Development, construction, operation and maintenance of the sanitary engineered landfill facility</p> <p>c. Processing and disposal of the MSW supplied by the ULB or any other person appointed by ULB at the processing facility.</p>
Bidding Parameter	The bidding criteria shall be Tipping Fee to be paid by the ULB. Tipping Fee would be payable/ receivable by ULB per MT of MSW received at the MSW Processing Facility.
Agreement structure for the Project	Concession Agreement between ULB, State Government of U.P. and C&DS, UPJN on one side and the Concessionaire on the other side for the construction, operations and maintenance of the Project. The Concession Agreement would also cover the future construction/ renovation works of the Project. The Concessionaire shall be paid Capital Grant under during the construction stage. The Concessionaire shall be paid Tipping Fee under the Concession Agreement;
Financial Structure for the Project	<p>a. One time capital grant with a cap of Rs. 653.00 lakhs would be provided to the Concessionaire under the Urban Infrastructure Development Scheme for Small and Medium Towns for establishment compost processing plant and sanitary landfill in accordance with the terms and conditions of the Concession Agreement. The amount of the Capital Grant shall not be increased for any reason whatsoever.</p> <p>b. The Concessionaire shall also be entitled to receive from ULB the movable and immovable assets installed at the Project Site by the ULB (Existing Assets), if any and the same shall be handed over by the ULB / Construction Supervisor to the Concessionaire on the date of handing over of the Project Site to the Concessionaire in</p>

Aspects	Description
	<p>accordance with the Concession Agreement. A list of the Existing Assets is annexed hereto as Annexure B</p> <p>c. ULB to pay the Tipping fee as per the Financial Proposal of the Selected Bidder. The weighing of MSW shall be done at the processing plant weigh bridge.</p> <p>d. The Concessionaire would have the rights to retain the revenue generated from:</p> <ul style="list-style-type: none"> i. Sale of compost or any other products of the processing plant. ii. Carbon credits
Financing	<p>Excluding the above Capital Grant, the Concessionaire shall bear all other costs and expenses arising from capital investments and O&M expenses of the Project including the capital investments for putting up the Waste to Energy plant, RDF plant, plastic and metal separators and inert processing plant. For clarity purposes, kindly note that the above one time Capital Grant shall not be provided towards the capital expenditure incurred by the Concessionaire for setting up the processing plant for Waste to Energy plant, RDF plant, plastic and metal separators, inert, etc.</p>
Clearances/ Approvals	<p>The Concessionaire shall be solely responsible for obtaining/renewing (if already obtained by C&DS, UPJN) and maintaining all the requisite clearances / approvals for the Project for the entire duration of the Concession Period.</p> <p>C&DS, UPJN / ULB has obtained the environment clearance for the Project. However, the Concessionaire shall have to apply for renewal / re-instatement / maintaining the environment clearance for the Project. It is clarified that the Concessionaire shall be solely responsible for obtaining and maintaining all environmental clearance.</p> <p>In case the Concessionaire establishes the MSW processing facilities with Waste to Energy technology, the Concessionaire shall be sole responsible for making all applications, execution of all agreements including power purchase agreements, obtaining approvals from the concerned competent authorities and /or electricity regulatory commissions etc.</p>
Exclusion	<p>The Concessionaire shall not be responsible for:</p> <ul style="list-style-type: none"> (i) Bio-medical waste (ii) Hazardous waste (iii) Radioactive waste

Aspects	Description
	In case bio-medical / hazardous waste is found to be mixed with the MSW, the Concessionaire shall segregate the same and transport it to the location as decided by the ULB for its further disposal by the ULB.

- 1.1.6 The draft Concession Agreement shall form part of the Bidding Documents. The draft Concession Agreement sets forth the detailed terms and conditions for the grant of the concession to the Concessionaire including the Project details, scope of the services, rights and obligations of both the parties (the “**Concession**”).
- 1.1.7 Interested parties can either download the RFP document from C&DS, UPJN website (www.cdsupjn.org) or purchase the RFP document on or before 14.09.2015 from the office of C&DS, UPJN (as mentioned in Clause 3.9.1 of the RFP document) on submission of non-refundable demand draft of Rs. 21,000/- (including VAT) towards the cost of the RFP Document drawn in favour of "Director, C&DS, U.P. Jal Nigam" payable on any scheduled bank at Lucknow. In case the interested bidder requires RFP document to be sent by post, an additional demand draft of Rs. 500/- towards the postal charges should also needs to be submitted alongwith the above request.
- 1.1.8 Bidders who downloaded the RFP document from the C&DS, UPJN website (www.cdsupjn.org) must submit the non-refundable RFP Document Fee along with their Proposal in the form of a non-refundable demand draft of Rs. 21,000/- (including VAT) towards the cost of the RFP Document drawn in favour of "Director, C&DS, U.P. Jal Nigam" payable on any scheduled bank at Lucknow. Bidders should ensure that date of demand draft should be on or before the last date of purchase of RFP document i.e. 14.09.2015
- 1.1.9 The purpose of the RFP is to invite detailed proposals (the “**Proposal**”) in response to the RFP.
- 1.1.10 The statements and explanations contained in this RFP are intended to provide a proper understanding to the Bidders about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of services and obligations of the Concessionaire set forth in the Concession Agreement or ULB/ C&DS, UPJN’s rights to amend, alter, change, supplement or clarify the scope of work, the Concession to be awarded pursuant to this RFP or the terms thereof or herein contained. Consequently, any omissions, conflicts or contradictions in the Bidding Documents including this RFP are to be noted, interpreted and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by ULB/ C&DS, UPJN.
- 1.1.11 C&DS, UPJN shall receive Proposals, pursuant to this RFP in accordance with the terms set forth in this RFP and other documents to be provided by C&DS, UPJN pursuant to this RFP (collectively the “**Bidding Documents**”), as modified, altered, amended and clarified from time to time by C&DS, UPJN, and all Proposals shall be prepared and submitted in accordance with such terms.

1.2 **Brief Description of Bidding Process**

- 1.2.1 C&DS, UPJN has adopted a single-stage double envelope process (collectively referred to as the “**Bidding Process**”). The Bidders would be required to meet the minimum technical and financial capability criteria and qualify for undertaking the Project as set out in this RFP. The Financial Proposal of only those Bidders that possess the minimum technical and financial capability would be opened and evaluated.
- 1.2.2 Government of India has issued guidelines (refer Appendix XI of RFP) for qualification of bidders seeking to acquire stakes in any public sector enterprise through the process of disinvestment. These guidelines shall apply mutatis mutandis to this Bidding Process. C&DS, UPJN shall be entitled to disqualify the Bidder in accordance with the aforesaid guidelines at any stage of the Bidding Process. Bidders must satisfy themselves that they are qualified to bid and should give an undertaking to this effect in the form at Appendix I.
- 1.2.3 The Proposal shall be valid for a minimum period of 180 (one hundred and eighty) days (the “**Proposal Validity Period**”), which shall be from the date specified in Clause 3.14.1 from the date of submission of the Proposal (the “**Proposal Due Date**”).
- 1.2.4 The Bidding Documents include the draft Concession Agreement for the Project. The draft Concession Agreement and any addenda issued subsequent to this RFP, but before the Proposal Due Date, will be deemed to form part of the Bidding Documents.
- 1.2.5 A Bidder shall submit, along with its Proposal, a bid security in accordance with Clause 3.21 (the “**Bid Security**”). The Proposal shall be summarily rejected if it is not accompanied with the Bid Security.
- 1.2.6 Generally, the Selected Bidder shall be the Bidder offering the lowest Tipping Fee. The Proposals of the remaining Bidders shall be kept in reserve and may, in accordance with the process specified in Section 4 of this RFP, be invited to match the Proposal submitted by the lowest Bidder in case such lowest Bidder withdraws or is not selected for any reason. In the event that none of the other Bidders matches the Proposal of the lowest Bidder, C&DS, UPJN may, in its discretion, invite fresh Proposals from all Bidders or annul the Bidding Process, as the case may be.
- 1.2.7 The Bidders are invited to examine the Project in greater detail, and to carry out, at their cost, such studies as may be required for submitting their respective Proposals for award of the Concession for implementation of the Project.
- 1.2.8 Proposals are invited for the Project on the basis of payment of the Tipping Fee to be made by the ULB to the Bidder for implementing the Project. The Tipping Fee shall constitute the sole criteria for evaluation of Proposals.

1.2.9 Further and other details of the process to be followed at the Proposal Stage and the terms thereof are spelt out in this RFP.

1.2.10 Any queries or request for additional information concerning this RFP or amendment to Bidding Documents shall be submitted in writing or by fax and e-mail to the officer designated in Clause 3.9.1 below in the format as provided in Appendix X. The envelopes/ communication shall clearly bear the following identification/ title:

"Queries/Request for Additional Information: RFP for Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP".

1.3 Schedule of Bidding Process

C&DS, UPJN would endeavor to adhere to the following schedule:

Sr. No	Event Description	Scheduled Date
1.	Issuance of the RFP Document	July 29, 2015
2.	Receipt of Pre Bid Queries	16.08.2015
3.	Pre-Proposal meeting at C&DS, Head Office at 14:30 hours	17.08.2015
4.	Response to the Pre Bid Queries	24.08.2015
5.	Proposal Due Date at C&DS, Head Office (Refer Clause 3.13,5)	Upto 1500 hrs on 15.09.2015.
6.	Opening of Envelope I and II containing Bid Security, Qualification and Other Submissions at C&DS, Head Office at 1600 hours	Upto 16:00 hrs on 15.09.2015
7.	Opening of Financial Proposal	To be Informed Later

2. ELIGIBLE BIDDERS

2.1 Eligible Bidders

2.1.1 The Bidders eligible for participating in the Bidding Process shall be any 1 (one) of the following 2 (two) categories:

Type 1: A Business Entity¹.

Type 2: A combination of a maximum of two (2) Business Entities defined in Type 1. This shall hereinafter be referred as "Consortium".

The term Bidder used hereinafter would therefore apply to all the above mentioned types.

2.1.2 A Bidder or Member of a Consortium should not have a conflict of interest (the “**Conflict of Interest**”) that affects the Bidding Process. Any Bidder or Member of a Consortium found to have a Conflict of Interest shall be disqualified. In case Bidder is a Consortium the entire Consortium shall be disqualified. In the event of disqualification, ULB/ C&DS, UPJN shall forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to C&DS, UPJN for, inter alia, the time, cost and effort of ULB/ C&DS, UPJN, including consideration of such Bidder’s Proposal, without prejudice to any other right or remedy that may be available to ULB/ C&DS, UPJN hereunder or otherwise. Without limiting the generality of the above, a Bidder shall be deemed to have a Conflict of Interest that affects the Bidding Process, if:

- (a) a constituent of such Bidder is also a constituent of another Bidder for the Project;
- (b) such Bidder has a relationship with another Bidder for the Project, directly or through common third parties, that puts them in a position to have access to each others’ information about, or to influence the Proposal of either or each of the other Bidder for the Project;

2.1.3 A Bidder shall be liable for disqualification and forfeiture of Bid Security if any legal, financial or technical adviser of C&DS, UPJN in relation to the Project is engaged by the Bidder in any manner for matters related to or incidental to such Project during the Bidding Process, unless otherwise provided for in the RFP / specifically approved in writing by the C&DS, UPJN.

¹ Business Entity is defined as a

- company incorporated under Indian Companies Act 1956/2013 as the case may be or any entity from outside India under equivalent law; or
- society registered under Society Registration Act 1860; or
- registered public trust under Indian Trusts Act 1882; or
- partnership firm registered under the Indian Partnership Act, 1932; or
- limited liability partnership registered under the Limited Liability Partnership Act, 2008 ; or
- sole proprietorship firm

- 2.1.4 The Bidder should submit a Power of Attorney as per the format at Appendix IV, authorizing the signatory of the Proposal to commit the Bidder.
- 2.1.5 The Bidder should form an appropriate Special Purpose Vehicle, incorporated under the Indian Companies Act 2013 (herein referred to as the “SPV”), to execute the Concession Agreement and implement the Project.
- 2.1.6 The Proposals submitted by a Consortium should comply with the following requirements also:
- (a) the number of Members in the Consortium would be limited to 2 (two) Members;
 - (b) the Proposal should contain the information required from each Member;
 - (c) the Proposal should include a description of the roles and responsibilities of both the Members;
 - (d) a Bidder who has applied for the Project in its individual capacity or as part of a Consortium cannot participate as a Member of any other Consortium applying for the Project;
 - (e) Members of the Consortium shall nominate one Member as the Lead Member (hereinafter referred to as “Lead member”) who shall have an equity share of minimum 51% in the Consortium. The nomination(s) shall be supported by a Power of Attorney, as per the format at Appendix V, signed by all the other Members of the Consortium;
 - (f) the Members of the Consortium shall enter into a Joint Bidding Agreement in the format as given in Appendix XII on a non-judicial stamp paper of relevant value for the purpose of submitting the Proposal. The Joint Bidding Agreement should, inter alia:
 - (i) convey the intent of the Lead Member to set up a SPV with the other Member with shareholding pattern in accordance with above Clause 2.1.6(e) of this RFP. Such SPV would enter into the Concession Agreement and subsequently carry out all the responsibilities as Concessionaire in terms of the Concession Agreement, in case the Concession to undertake the Project is awarded to the Consortium;
 - (ii) clearly outline the proposed roles and responsibilities of all Members of the Consortium;
 - (iii) include a statement to the effect that all the Members of the Consortium shall be liable jointly and severally for the implementation of the Project in accordance with the terms of the Concession Agreement; and
 - (iv) clearly refer to the Project for which the arrangement is made.

A copy of the Joint Bidding Agreement duly notarized should be submitted with the Proposal. The Joint Bidding Agreement entered into between the Members of the Consortium should be specific to the Project and should contain the above requirements, failing which the Proposal shall be considered non-responsive..

- 2.1.7 Any entity which has earlier been barred by GoUP/ UPJN/ any other entity of GoUP/ any urban local body in India from participating in a project would not be eligible to submit a

Proposal, either individually or as member of a Consortium, if such bar subsists as on the Proposal Due Date.

2.1.8 Notwithstanding anything stated elsewhere in the RFP document, C&DS, UPJN shall have the right to seek updated information from the Bidders to ensure their continued eligibility. Bidders shall provide evidence of their continued eligibility in a manner that is satisfactory to C&DS, UPJN. The Bidders may be disqualified if it is determined by C&DS, UPJN, in its sole discretion, at any stage of the process, that the Bidder will be unable to fulfill the requirements of the Project or fails to continue to satisfy the qualification criteria. Supplementary information or documentation may be sought from Bidders at any time and must so be provided within a reasonable timeframe as stipulated by C&DS, UPJN.

2.1.9 The following conditions shall be adhered to while submitting the Proposal:

- (i) Bidders should attach clearly marked and referenced continuation sheets in the event that the space provided in the prescribed forms in the Appendices is insufficient. Alternatively, Bidders may format the prescribed forms making due provision for incorporation of the requested information;
- (ii) information supplied by the Bidders (or other constituent member if the Bidder is a Consortium) must apply only to the Bidder or Member or Associate named in the Proposal .
- (iii) in responding to the qualification submissions, Bidders should demonstrate their capabilities in accordance with the Eligibility and Qualification Criteria as mentioned in Section 4; and
- (iv) in case the Bidder is a Consortium, each Member of the Consortium should satisfy the Qualification requirements as specified in the RFP.

2.2 Credentials of Associates

2.2.1 In computing the Eligible Experience Criteria and Technical Capability of the Bidder/ Consortium Members under Clauses 4.4 and 4.6, the Technical Capability of their respective Associates would also be eligible hereunder. For purposes of this RFP, Associate means, in relation to the Bidder/ Consortium Member, a person who controls or is controlled by, or is under the common control with such Bidder/ Consortium Member (herein referred to as the “**Associate**”). As used in this definition, the expression “control” means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person, whether by operation of law or by contract or otherwise.

2.2.2 In such cases, the Bidder or relevant Consortium Member shall have to provide a certificate (along with the relationship tree) stating the exact relationship with such Associate and control, in line with the definition of ‘Associate’ as given above. The certificate should be as on date which is within 15 (fifteen) days prior to the Proposal Due Date. Such certificate

shall be certified by the Statutory Auditor of the Bidder / relevant Member of the Consortium.

2.3 Change in composition of the Consortium

2.3.1 No change in Consortium will be allowed at any stage during the Bidding Process.

3. INSTRUCTIONS TO BIDDERS

A. GENERAL

3.1 General Terms of Bidding

- 3.1.1 A Bidder is eligible to submit only 1 (one) Proposal for the Project. A Bidder bidding individually or as a Member of a Consortium shall not be entitled to submit another Proposal either individually or as a Member of any Consortium, as the case may be.
- 3.1.2 Unless the context otherwise requires, the terms not defined in this RFP, but defined in the draft Concession Agreement shall have the meaning assigned thereto in the draft Concession Agreement.
- 3.1.3 Notwithstanding anything to the contrary contained in this RFP, the detailed terms specified in the draft Concession Agreement shall have overriding effect; provided, however, that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under the Concession Agreement.
- 3.1.4 The Proposal should be furnished in the formats specified in this RFP, duly signed by the Bidder's authorized signatory.
- 3.1.5 The Bidder should submit a Power of Attorney as per the format at Appendix IV, authorizing the signatory of the Proposal to commit the Bidder.
- 3.1.6 In case the Bidder is a Consortium, the Members thereof should furnish a Power of Attorney in favour of the Lead Member in the format at Appendix V.
- 3.1.7 The Financial Proposal should be furnished in the format at Appendix IX, clearly indicating the bid amount i.e. Tipping Fee in both figures and words, in Indian National Rupees, and signed by the Bidder's authorized signatory. In the event of any difference between figures and words, the lower of the two shall be considered for evaluation.
- 3.1.8 Any condition or qualification or any other stipulation contained in the Proposal shall render the Proposal liable to rejection as a non-responsive Proposal.**
- 3.1.9 The Proposal and all communications in relation to or concerning the Bidding Documents and the Proposal shall be in English language.
- 3.1.10 The Bidding Documents including this RFP and all attached documents are and shall remain the property of ULB/ C&DS, UPJN and are transmitted to the Bidders solely for the purpose of preparation and the submission of a Proposal in accordance herewith. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Proposal. ULB/ C&DS, UPJN will not return any Proposal or any information provided along therewith.

3.1.11 This RFP is not transferable.

3.1.12 Any award of Concession, pursuant to this RFP shall be subject to the terms and conditions of the Bidding Documents.

3.2 Change in Ownership/ Equity Lock in

3.2.1 By submitting the Proposal, the Bidder shall be deemed to have acknowledged that it would be qualified and short-listed on the basis of Technical Capability and/or Financial Capability of the Lead Member who will own at least 51% equity of the Concessionaire and Technical Capability and/or Financial Capability of those of its Consortium Members who will own at least 26% each of the equity of the Concessionaire. The Bidder further acknowledges and undertakes that each of such Consortium Members shall continue to hold at least 26% and the Lead Member shall continue to hold at least 51% of the equity of the Concessionaire, as the case may be until two years after the completion of the Concession Period of the Project under and in accordance with the provisions of the Concession Agreement. However, no divestment in the Concessionaire shall be carried out either by any of the Consortium Member/Sole Bidder at any time until the completion of a period of two years after the COD (**Lock in Period**). The Bidder further acknowledges and agrees that the aforesaid obligation shall be the minimum, and shall be in addition to such other obligations as may be contained in the Concession Agreement, and a breach hereof shall, notwithstanding anything to the contrary contained in the Concession Agreement, be deemed to be a breach of the Concession Agreement and dealt with as such thereunder.

3.2.2 By submitting the Proposal, the Bidder shall also be deemed to have acknowledged and agreed that in the event of a change in control of a Associate whose Technical Capability is taken into consideration for the purposes of short-listing and qualification under and in accordance with this RFP, the Bidder shall inform ULB/ C&DS, UPJN forthwith along with all relevant particulars about the same and C&DS, UPJN shall disqualify the Bidder or withdraw the LOA from the Selected Bidder, as the case may be. In the event such change in control occurs after signing of the Concession Agreement but prior to Financial Close of the Project, it would, notwithstanding anything to the contrary contained in the Concession Agreement, be deemed to be a breach thereof, and the Concession Agreement shall be liable to be terminated without ULB/ C&DS, UPJN being liable in any manner whatsoever to the Concessionaire. In such an event, notwithstanding anything to the contrary contained in the Concession Agreement, ULB/ C&DS, UPJN shall forfeit and appropriate the Bid Security or Performance Security, as the case may be, without prejudice to any other right or remedy that may be available to ULB/ C&DS, UPJN hereunder or otherwise.

3.3 Number of Proposals

Each Bidder shall submit a maximum of 1 (one) Proposal in response to this RFP. Any Bidder who submits or participates in more than one Proposal, either individually or as part of a Consortium, will be disqualified and would cause the disqualification of such consortia.

3.4 **Cost of Bidding**

The Bidders shall be responsible for all of the costs associated with the preparation of their Proposals and their participation in the Bidding Process. ULB/ C&DS, UPJN will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

3.5 **Site Visit and Verification of Information**

Bidders are encouraged to submit their respective Proposals after visiting the site (including processing site, landfill site, etc.) and ascertaining for themselves the site conditions, location, surroundings, access to site, details and review of Existing Assets, review of information / documents, applicable laws and regulations, and any other matter considered relevant by them.

For the purpose of site visit and verification of information, interested Bidders may contact the office of C&DS, UPJN as provided in Clause 3.9.1 for coordinating their site visit and review of information / documents.

3.6 **Acknowledgement by Bidder**

3.6.1 It shall be deemed that by submitting a Proposal, the Bidder has:

- (a) made a complete and careful examination of the Bidding Documents;
- (b) received all relevant information requested from C&DS, UPJN;
- (c) satisfied itself about all matters, things and information including matters referred to in Clause 3.5 hereinabove necessary and required for submitting an informed Proposal, execution of the Project in accordance with the Bidding Documents and performance of all of its obligations thereunder;
- (d) accepted and agreed that any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from C&DS, UPJN, shall not be entertained by C&DS, UPJN or ULB; and
- (e) made a complete and careful examination of the various aspects of the Project including but not limited to:
 - (i) the site including existing facilities and structures;
 - (ii) the condition of the access roads, ground conditions, utilities, availability of water and power supply in accordance with the Project requirements in the vicinity of the site;
 - (iii) conditions affecting the access to site and disposal and;
 - (iv) all other matters that might affect the Bidder's performance under the terms of this RFP.
- (f) agreed to be bound by the undertakings provided by it under and in terms hereof.

3.6.2 ULB/ C&DS, UPJN shall not be liable for any omission, mistake or error on the part of the Bidder in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP, the Bidding Documents or the Bidding Process.

3.7 Right to Accept and to Reject any or all Proposals

3.7.1 Notwithstanding anything contained in this RFP, C&DS, UPJN reserves the right to accept or reject any Proposal and to annul the Bidding Process and reject all Proposals at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof.

3.7.2 C&DS, UPJN reserves the right to reject any Proposal and appropriate the Bid Security if:

- (a) at any time, a material misrepresentation is made or uncovered, or
- (b) the Bidder does not provide, within the time specified by C&DS, UPJN, the supplemental information sought by C&DS, UPJN for evaluation of the Proposal.

Such misrepresentation/ improper response shall lead to the disqualification of the Bidder. If the Bidder is a Consortium, then the entire Consortium shall be disqualified / rejected. If such disqualification / rejection occurs after the Proposals have been opened and the lowest Bidder gets disqualified / rejected, then C&DS, UPJN reserves the right to:

- (i) invite the remaining Bidders to submit Proposals in accordance with Clause 4.15.2 and 4.15.3; or
- (ii) take any such measure as may be deemed fit in the sole discretion of C&DS, UPJN, including annulment of the Bidding Process.

3.7.3 In case it is found during the evaluation or at any time before signing of the Concession Agreement or after its execution and during the period of subsistence thereof, including the Concession thereby granted by ULB, that one or more of the qualification conditions have not been met by the Bidder or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Concessionaire either by issue of the LOA or entering into of the Concession Agreement, and if the Bidder has already been issued the LOA or has entered into the Concession Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by ULB/ C&DS, UPJN to the Bidder, without ULB/ C&DS, UPJN being liable in any manner whatsoever to the Bidder or Concessionaire, as the case may be. In such an event, ULB/ C&DS, UPJN shall forfeit and appropriate the Bid Security or Performance Security, as the case may be, without prejudice to any other right or remedy that may be available to ULB/ C&DS, UPJN.

- 3.7.4 C&DS, UPJN reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP or the Bidding Documents. Failure of C&DS, UPJN to undertake such verification shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the C&DS, UPJN thereunder.
- 3.7.5 Further, C&DS, UPJN reserves the right to visit the actual working facility/ facilities as mentioned by the Bidder in its Qualification and Other Submissions by an expert team of maximum 7 people to witness the process used by the Bidder and to verify the facts and figures submitted with the documents. The cost of travel, boarding and lodging and other incidental expenses for such visits of expert team shall be borne by the Bidder. Failure of C&DS, UPJN to undertake such verification shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of the C&DS, UPJN thereunder.

B. DOCUMENTS

3.8 Contents of the RFP

- 3.8.1 This RFP comprises the Disclaimer set forth hereinabove, the contents as listed below, and will additionally include any Addenda issued in accordance with Clause 3.10.

Invitation for Proposals

- Section 1. Introduction
- Section 2. Eligible Bidders
- Section 3. Instructions to Bidders
- Section 4. Evaluation of Proposals
- Section 5. Fraud and Corrupt Practices
- Section 6. Pre-Proposal Conference
- Section 7. Miscellaneous

Appendices

- I. Letter comprising the Proposal
- II. Details of Bidder
- III. Bank Guarantee for Bid Security
- IV. Power of Attorney for signing of Proposal
- V. Power of Attorney for Lead Member of Consortium
- VI. Board Resolution for the Bidding Company and each member of the consortium
- VII. Format for Technical Capability of the Bidder
- VIII. Format for Financial Capability of the Bidder
- IX. Format of Financial Proposal
- IX. Format for Clarifications/ Amendments on the RFP
- XI. Guidelines of the Department of Disinvestment
- XII. Joint Bidding Agreement
- XIII. Draft Concession Agreement

3.8.2 The draft Concession Agreement (Appendix XIII) provided as part of the Bidding Documents shall be deemed to be part of this RFP.

3.9 Clarifications

3.9.1 Bidders requiring any clarification on the RFP may notify to C&DS, UPJN in writing or by fax latest by the date mentioned in the Schedule of Bidding Process specified in Clause 1.3 to:

Attn. of : Director
Construction and Design Services,
Uttar Pradesh Jal Nigam

Address:
Construction & Design Services, Uttar Pradesh Jal Nigam
T.C – 38V, Vibhuti Khand, Gomti Nagar
Lucknow – 226010, U.P. (INDIA)
Tel: +91 0522-2728985, 2991397 Fax: 0522-2728988, 2991476
Email Id : gmcdslko@gmail.com

3.9.2 C&DS, UPJN would endeavor to respond to the queries within the period mentioned in the Schedule of Bidding Process specified in Clause 1.3. The responses to the queries will be posted on the website www.cdsupjn.org. C&DS, UPJN may also forward its responses, at its sole discretion, to all the Bidders, who have the purchased the RFP document and would include a description of the queries and the response of C&DS, UPJN without identifying the source of the queries.

3.9.3 Notwithstanding anything contrary contained in Clause 3.9.1 or in this RFP, C&DS, UPJN reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring C&DS, UPJN to respond to any question or to provide any clarification. No extension of any time and date shall be granted on the basis or grounds that the C&DS, UPJN has not responded to any question or provided any clarification.

3.9.4 C&DS, UPJN may also on its own motion, if deemed necessary, issue interpretations and clarifications and updates and post them on the website www.cdsupjn.org. C&DS, UPJN may also forward these at its sole discretion to all Bidders, who have the purchased the RFP document. All clarifications and interpretations issued by C&DS, UPJN and posted on the website shall be deemed to be part of the Bidding Documents.

3.10 Amendment of RFP

3.10.1 At any time prior to the deadline for submission of Proposals, C&DS, UPJN may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP by the issuance of Addenda.

- 3.10.2 Any Addendum thus issued will be sent in writing to all the Bidders who have purchased the RFP and may also be posted on the website www.cdsupjn.org.
- 3.10.3 In order to afford the Bidders a reasonable time for taking an Addendum into account, or for any other reason, C&DS, UPJN may, in its own discretion, extend the Proposal Due Date.

C. PREPARATION AND SUBMISSION OF PROPOSALS

3.11 Language, Currency and Communication

- 3.11.1 The Proposal and all related correspondence and documents should be written in the English language. Supporting documents and printed literature furnished by the Bidder with the Proposal may be in any other language provided that they are accompanied by certified translations of the pertinent passages in the English language. Supporting materials, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Proposal, the English language translation shall prevail.
- 3.11.2 The currency for the purpose of the Proposal shall be the Indian Rupees (INR).
- 3.11.3 All correspondence between C&DS, UPJN and the Bidder shall be in writing and sent through registered mail or courier (or fax for advance copy only).

3.12 Format and Signing of Proposal

- 3.12.1 The Bidder shall provide all the information sought under this RFP. C&DS, UPJN will evaluate only those Proposals that are received in the required formats and complete in all respects. Incomplete and / or conditional Proposals may be liable to rejection.
- 3.12.2 The Bidder shall prepare one original of the documents comprising the Proposal and clearly marked "ORIGINAL". In addition, the Bidder shall make one copy of the Proposal, clearly marked "COPY". In the event of any discrepancy between the original and the copy, the original shall prevail.
- 3.12.3 The Bidder shall submit the notarized attested true copy of the following documents in their Proposal provided the original copy of such documents should be submitted in a separate envelop alongwith their Proposal on or before the Proposal Due Date:
- (a) Power of Attorney for signing of Proposal in the prescribed format set out at Appendix IV;
 - (b) If applicable, the Power of Attorney for Lead Member of Consortium in the prescribed format set out at Appendix V;
 - (c) In case of Consortium, copy of the Joint Bidding Agreement executed between the Members of the Consortium;

- (d) Board resolution of the Bidder in the prescribed format set out at Appendix VI, duly certified by the Company Secretary or Director of the Bidder, if applicable;
- (e) Statutory Auditor's certificate certifying the exact shareholding relationship with the Associate (whose Technical credentials have been claimed for meeting the Eligible Experience Criteria and Technical Capability) and control, in line with the definition of 'Associate' in accordance with the RFP.
- (f) Statutory Auditor's certificate mentioning the project details as per Appendix VII
- (g) Statement of Networth as per the format specified in Appendix VIII, duly certified by the Statutory Auditors of the Sole Bidder / Lead Member

3.12.4 The Proposal and its copies shall be typed or written in indelible ink and signed by the authorized signatory of the Bidder who shall also initial and stamp each page, in blue ink. All the alterations, omissions, additions or any other amendments made to the Proposal shall be initialed by the person(s) signing the Proposal, i.e. the authorized signatory. The Proposal shall contain page numbers and shall be properly bound.

3.13 Sealing and Marking of Proposals

3.13.1 The Bidder shall provide all the information as per this RFP and in the specified format. C&DS, UPJN reserves the right to reject any Proposal that is not as per the specified format.

3.13.2 The Proposal shall comprise of four parts as below:

- Part I: Bid Security
- Part II: Qualification and Other Submissions (as detailed below)
- Part III: The draft Concession Agreement with each page stamped and duly initialed by the person signing the Proposal in pursuance to the Power of Attorney referred to in the Qualification and Other Submissions
- Part IV: Financial Proposal

i) Bid Security (Envelope I) - shall be sealed, and marked as "ENVELOPE I- Bid Security for Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP" and shall contain the following:

- (a) Bid Security in the form of a FDR or a Bank Guarantee as per prescribed format at Appendix III;
- (b) Photocopy of the receipt of the payment already made towards the cost of the RFP document. In case the Bidder has downloaded the RFP from the C&DS, UPJN website, demand draft of Rs. 21,000/- (including VAT) drawn in favour of 'Director, C&DS, UPJN', payable on any scheduled bank in Lucknow.

ii) **Qualification and Other Submissions** (Envelope II) shall be sealed, and marked as "ENVELOPE II- Qualification and Other Submissions for Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP" and shall contain the following:

- (a) Letter comprising the Proposal in the format specified at Appendix I
 - (b) Details of Bidder (in case of Consortium, this would need to be provided by all the Members of the Consortium) in the format set out in Appendix II
 - (c) Power of Attorney for signing of Proposal in the prescribed format set out at Appendix IV;
 - (d) If applicable, the Power of Attorney for Lead Member of Consortium in the prescribed format set out at Appendix V;
 - (e) In case of Consortium, copy of the Joint Bidding Agreement executed between the Members of the Consortium;
 - (f) Board resolution of the Bidder in the prescribed format set out at Appendix VI, duly certified by the Company Secretary or Director of the Bidder, if applicable;
 - (g) Copy of Memorandum and Articles of Association of the Bidder / Members of Consortium (including Associates whose credentials have been relied upon);
 - (h) Technical capability statement in the format set out in Appendix VII;
 - (i) Financial capability statement in the format set out in Appendix VIII;
 - (j) Copies of Bidder's/ each Members of Consortium duly audited balance sheet and profit and loss account for the preceding 3 (three) years
- iii) The draft Concession Agreement issued by the C&DS, UPJN with each page stamped and duly initialed by the person signing the Proposal in pursuance of the Power of Attorney referred hereinabove. (Envelope III) shall be sealed, and marked as “ENVELOPE III-Initialed draft Concession Agreement for Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP”.
- iv) **Financial Proposal:** (Envelope IV) shall be sealed, and marked as “ENVELOPE IV-Financial Proposal for Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP” and shall contain the “**Financial Proposal of the Bidder in the format specified at Appendix IX**”.
- 3.13.3 The above 4 (four) envelopes shall then be placed in one outer envelope, sealed and marked as “Proposal for Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP”.
- 3.13.4 All the above envelopes must bear the name and address of the Bidder. In addition, the Proposal Due Date should be indicated on the right hand top corner of each of the envelopes.

3.13.5 Each of the envelopes shall be addressed to:

Attn. of:	Director Construction and Design Services Uttar Pradesh Jal Nigam
Head Office Address:	T.C – 38V, Vibhuti Khand, Gomti Nagar Lucknow – 226010, U.P. (INDIA)
Phone No:	Tel: +91 0522-2728985, 2991397 Fax: 0522- 2728988, 2991476

3.13.6 If the envelopes are not sealed and marked as instructed above, C&DS, UPJN assumes no responsibility for the misplacement or premature opening of the contents of the Proposal submitted.

3.13.7 Proposals submitted by fax, telex, telegram or e-mail shall not be entertained and shall be summarily rejected.

3.14 Proposal Due Date

3.14.1 Proposals should be submitted before 1500 hrs IST on the Proposal Due Date at the address provided in Clause 3.13.5 in the manner and form as detailed in this RFP.

3.14.2 Proposal Due Date shall mean the time and date set out in the Clause 1.3.

3.14.3 C&DS, UPJN may, in its sole discretion, extend the Proposal Due Date by issuing an Addendum in accordance with Clause 3.10.3 uniformly for all Bidders.

3.15 Late Proposals

Proposals received by C&DS, UPJN after the specified time on the Proposal Due Date shall not be eligible for consideration and shall be summarily rejected.

3.16 Modifications/ Substitution/ Withdrawal of Proposals

3.16.1 The Bidder may modify, substitute or withdraw its Proposal after submission, provided that written notice of the modification, substitution or withdrawal is received by C&DS, UPJN prior to Proposal Due Date. No Proposal shall be modified, substituted or withdrawn by the Bidder after the Proposal Due Date.

3.16.2 The modification, substitution or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with Clause 3.13, with the envelopes being additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL", as appropriate.

3.16.3 Any alteration/ modification in the Proposal or additional information supplied subsequent to the Proposal Due Date, unless the same has been expressly sought for by C&DS, UPJN, shall be disregarded.

3.17 Rejection of Proposals

3.17.1 C&DS, UPJN reserves the right to accept or reject all or any of the Proposals without assigning any reason whatsoever. It is not obligatory for C&DS, UPJN to accept any Proposal or to give any reasons for their decision.

3.17.2 C&DS, UPJN reserves the right not to proceed with the Bidding Process at any time, without notice or liability, and to reject any Proposal without assigning any reasons.

3.18 **Validity of Proposals**

- 3.18.1 The Proposals shall specifically indicate that it shall be valid for a minimum period of 180 days from the Proposal Due Date (“**Proposal Validity Period**”). The Proposal Validity Period may be extended by mutual consent of the respective Bidders and C&DS, UPJN. C&DS, UPJN reserves the right to reject any Proposal that does not meet this requirement.
- 3.18.2 Any Bidder may refuse to extend the period of validity of its Proposal without the consequence of forfeiture of its Bid Security. A Bidder extending the period of validity of its Proposal will not be allowed to modify its Proposal, but would be required to extend the validity of its Bid Security for the period of extension and comply with Clause 3.21 of this RFP in all respects.
- 3.18.3 The Selected Bidder shall be required to extend the Proposal Validity Period till the date of execution of the Concession Agreement.

3.19 **Confidentiality**

Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising C&DS, UPJN in relation to, or matters arising out of, or concerning the Bidding Process.

3.20 **Correspondence with the Bidder**

C&DS, UPJN shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any Proposal.

D. BID SECURITY

3.21 **Bid Security**

- 3.21.1 The Bidder shall furnish as part of its Proposal, a Bid Security equivalent to Rs. 15,00,000/- (Rupees Fifteen lakhs only) in the form of a bank guarantee issued by a nationalized bank in India (other than a regional rural banks and cooperative banks), having a branch in Lucknow, drawn in favour of “Director, C&DS, UPJN” in the format at Appendix III (the “**Bank Guarantee**”) and having a validity period of not less than 180 (one hundred and eighty) days from the Proposal Due Date, as may be extended by the Bidder from time to time.
- 3.21.2 Bid Security can also be in the form of a Fixed Deposit Receipt pledged in favour of “Director, Construction and Design Services, Uttar Pradesh Jal Nigam” (the “**FDR**”), drawn on a nationalized bank in India (other than a regional rural banks and cooperative banks), having a branch in Lucknow, and having a validity period of not less than 180 (one

hundred and eighty) days from the Proposal Due Date, as may be extended by the Bidder from time to time.

- 3.21.3 Any Proposal not accompanied by the Bid Security shall be rejected by C&DS, UPJN as non-responsive and shall be summarily rejected.
- 3.21.4 The Bid Security of unsuccessful Bidders will be returned by C&DS, UPJN, without any interest, as promptly as possible on acceptance of the Proposal of the Selected Bidder or when the Bidding process is cancelled by C&DS, UPJN.
- 3.21.5 The Selected Bidder's Bid Security will be returned, without any interest, upon the Bidder signing the Concession Agreement and furnishing the Performance Security in accordance with the provisions thereof.
- 3.21.6 C&DS, UPJN shall be entitled to forfeit and appropriate the Bid Security in any of the events specified in Clause 3.21.7 herein below. The Bidder, by submitting its Proposal pursuant to this RFP, shall be deemed to have acknowledged and confirmed that C&DS, UPJN will suffer loss and damage on account of withdrawal of its Proposal or for any other default by the Bidder during the Proposal Validity Period. No relaxation of any kind on Bid Security shall be given to any Bidder.
- 3.21.7 The Bid Security shall be forfeited and appropriated by ULB/ C&DS, UPJN without prejudice to any other right or remedy that may be available to ULB/ C&DS, UPJN hereunder or otherwise, under the following conditions:
- (a) If a Bidder engages in a corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice as specified in Section 5 of this RFP;
 - (b) If a Bidder withdraws its Proposal during the period of Proposal validity as specified in this RFP and as extended by the Bidder from time to time;
 - (c) In the case of Selected Bidder, if it fails within the specified time limit:
 - i) to pay the Project development expenses to C&DS, UPJN before the execution of the Concession Agreement
 - ii) to sign the Concession Agreement and/or
 - iii) to furnish the Performance Security within the period prescribed therefor herein/ in the Concession Agreement;
 - (c) In case the Selected Bidder, having signed the Concession Agreement, commits any breach thereof prior to furnishing the Performance Security.

4. EVALUATION OF PROPOSALS

4.1 Opening and Evaluation of Proposals

- 4.1.1 C&DS, UPJN shall open the Proposals at the specified time on the Proposal Due Date, at the place specified in Clause 3.13.5 and in the presence of the Bidders who choose to attend.
- 4.1.2 C&DS, UPJN will subsequently examine and evaluate the Proposals in accordance with the provisions set out in this Section.
- 4.1.3 Any information contained in the Proposal shall not in anyway be construed as binding on ULB, C&DS, UPJN, their agents, successors or assigns, but shall be binding against the Bidder if the Project is subsequently awarded to it under the Bidding Process on the basis of such information.
- 4.1.4 C&DS, UPJN reserves the right not to proceed with the Bidding Process at any time without notice or liability and to reject any Proposal without assigning any reasons.

4.2 Clarifications

- 4.2.1 To facilitate evaluation of Proposals, C&DS, UPJN may, at its sole discretion, seek clarifications in writing from any Bidder regarding its Proposal. Such clarification(s) shall be provided within the time specified by C&DS, UPJN for this purpose. Any request for clarification(s) and all clarification(s) shall be in writing.
- 4.2.2 If a Bidder does not provide clarifications sought under Clause 4.2.1 above within the prescribed time, its Proposal shall be liable to be rejected. In case the Proposal is not rejected, C&DS, UPJN may proceed to evaluate the Proposal by construing the particulars requiring clarification to the best of its understanding, and the Bidder shall be barred from subsequently questioning such interpretation of C&DS, UPJN.

4.3 Evaluation Parameters

- 4.3.1 The Bidder's competence and capability is proposed to be established by the following parameters:
 - (a) Eligible Experience Criteria (provided in Clause 4.4)
 - (b) Technical Capability of Bidder in terms of experience of Bidder
 - (c) Financial Capability of Bidder in terms of networth of Bidder

On each of these parameters, the Bidder will be required to meet the qualification evaluation criteria as detailed in subsequent paragraphs. A Bidder meeting Eligible Experience Criteria, Technical and Financial Capability will be qualified for further evaluation of the Proposal.

4.4 Eligible Experience Criteria

The Bidder should meet the following Eligible Experience Criteria for the Project:

Design, construction, commissioning, operation and maintenance experience of development of integrated MSW processing plant and having processed municipal solid waste atleast 75,000 MT in any one of the last three financial years (i.e. FYs 2012-13, 2013-14 and 2014-15).

Note: For the purpose of this RFP, integrated processing plant means multiple resource recovery plant with composting as a mandatory facility and other process may be processing of RDF, recovery of plastics and metals, processing of inert waste, waste to energy plant etc.

4.5 Qualification Evaluation Parameters

4.5.1 Those Bidders who meet the above eligible experience criteria would be qualified for next stage of evaluation.

4.6 Technical Capability

4.6.1 Technical Capability of the Bidders will be evaluated as follows:

Sl. No.	Parameter	Indicator	Marks
1.	Experience in operation and maintenance of integrated MSW processing plant: having processed minimum 75,000 MT of MSW in any of the last three financial years i.e. FYs 2012-13, 2013-14 and 2014-15	1 Project : 20 marks Additional 2.50 marks for each project upto 4 projects	30
2.	Experience in operation and maintenance of integrated MSW processing plant : having processed minimum 40,000 MT of MSW in a single facility in any of the last three financial years i.e. FYs 2012-13, 2013-14 and 2014-15	Methods of processing used <ul style="list-style-type: none"> ▪ Composting ▪ Composting and RDF ▪ Composting, RDF and plastic/ metal separation ▪ Waste to Energy (The maximum marks for each specific processing method shall be given in case the MSW processed is minimum of 40,000 MT per annum for that method. In case of lower	10 15 20 30

Sl. No.	Parameter	Indicator	Marks
		quantity processed, proportionate marks shall be given. The maximum shall not exceed 30)	
3.	Experience in Construction of integrated MSW processing plant: having processed minimum 75,000 MT of MSW processed of the last three financial years i.e. FYs 2012-13, 2013-14 and 2014-15	1 Project : 10 marks Additional 2.5 marks for each project upto 4 projects	20
4.	Quantity of process remnants dumped to landfill from any one MSW processing plant managed by the Bidder in any in any of the last three financial years i.e. FYs 2012-13, 2013-14 and 2014-15	% of the total MSW brought to the landfill site (SLF) <ul style="list-style-type: none"> ▪ upto 20% to SLF: 20 marks ▪ 21 – 25% to SLF: 10 Marks ▪ >26% to SLF: 0 marks 	20

4.6.2 Any Bidder who achieves a score of 60 marks (threshold score) would be deemed to meet the technical experience criterion for qualification.

4.6.3 The Bidders should furnish the details of the eligible experience and Technical Capability and furnish evidence to support its claim as per the formats given in Appendix VII.

4.7 Financial Capability

4.7.1 Financial Capability of the Bidders will be evaluated on the basis of Minimum Network of Rs. 15 crore as at the end of the Financial Year 2014-15

4.7.2 The Bidder should provide the Financial Capability based on its own standalone financial statements. Financial Capability of the Bidder's parent company or its subsidiary or any associate company will not be considered for computation of the Financial Capability of the Bidder

4.7.3 The definitions of the net-worth for the purpose of the evaluation of Network is set out below:

Net-worth =

Equity Share Capital: Issued, Subscribed and Paid -up

(+) Reserves & Surplus (excluding Revaluation Reserves)

(-) Miscellaneous expenses not written off and debit balance in Profit and Loss account

(In case the Business Entity is a Society or a Trust or a Partnership firm or a Sole-proprietorship firm, the net-worth should be derived based on the above principles as per the annual audited accounts).

- 4.7.4 The Bidder should provide the above financial information based on its audited annual accounts for the Financial Year 2014-15. In case of the Consortium, the above financial information shall be based on the audited annual accounts for the Financial Year 2014-15 of the respective Member, whose financial parameter is to be considered for eligibility and evaluation. The financial year would be the same as the one normally followed by the Bidder for its annual financial statement.
- 4.7.5 The Qualification and Other Submissions must be accompanied by the audited annual financial statement of the Bidder in case of the single entity and Member(s) in case Bidder is a Consortium, for the financial year as stated in Clause 4.7.1
- 4.7.6 The Bidder should submit details of Financial Capability and furnish evidence to support its claim as per format given in Appendix VIII.
- 4.7.7 The Bidders shall also enclose a certificate(s) from its statutory auditors certifying the networth as at the end of the Financial Year 2014-15 along with its computation as per the definition of networth given in the RFP.

4.8 Evaluation Criteria for Qualification of a Consortium

- 4.8.1 In case of a Consortium Bid, the technical and financial credentials of the other Member, who has an equity share of atleast 26% in such Consortium shall be considered for taking the combined credentials of the Consortium for evaluation of Eligible Experience Criteria, Technical and Financial Capability as stipulated in Clauses 4.4 to 4.7.
- 4.8.2 In case of a Consortium Bid, for the purpose of evaluation of the Financial Capability, the Net Worth of the Consortium Member(s) shall be taken in proportion to respective equity shareholding of the Members in the Consortium. It is clarified that the Bidders may provide the Net Worth statement duly certified by their respective Statutory Auditors of only those members for whom it is claiming the networth for purpose of evaluation of the Financial Capability. Further, the Bidder shall submit the audited annual financial statements for the last three Financial Years 2012-13, 2013-14 and 2014-15 of all the Consortium Members and shall provide a declaration that the Net-worth of other consortium members whose networth has not been considered for evaluation of Financial Capability is not negative as at the end of the Financial Year 2014-15.

4.9 Proposal Evaluation

The Proposal shall be evaluated in four stages as detailed out in the subsequent paragraphs.

4.10 Proposal Evaluation: Bid Security

- 4.10.1 Envelope I (Bid Security) will be opened first on a pre-disclosed date and time in the presence of Bidders who choose to attend. The Bidders' representatives who are present shall be required to sign and record their attendance.
- 4.10.2 The next Envelope II (Qualification and Other Submissions) shall be opened of only those Bidders who have submitted the Bid Security as specified in Clause 3.21.

4.11 Proposal Evaluation: Qualification and Other Submissions

- 4.11.1 Envelope II (Qualification and Other Submissions) shall be scrutinized for the responsiveness to the requirements of the RFP.
- 4.11.2 Qualification and Other Submissions shall be considered 'responsive' if:
- it is received as per the formats specified in this RFP
 - it is received by the Proposal Due Date including any extension thereof pursuant to Clause 3.14;
 - it is signed, sealed, properly bound and marked as stipulated in Clauses 3.12 and 3.13;
 - it is accompanied by the Power(s) of Attorney as specified in Clauses 3.1.5 and 3.1.6, as the case may be;
 - it contains all the information (complete in all respects) as requested in this RFP and/or Bidding Documents (in formats same as those specified);
 - it mentions the Proposal Validity Period as set out in Clause 3.18;
 - it does not contain any condition or qualification; and
 - it is not non-responsive in terms hereof.
- 4.11.3 C&DS, UPJN reserves the right to reject any Proposal which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by C&DS, UPJN in respect of such Proposal.
- 4.11.4 The Qualification and Other Submissions shall be checked for the Eligible experience criteria as set out in Clause 4.4. The Bidders who meet the Eligibility experience criteria would be further evaluated

- 4.12** The Bidders who meets the Eligibility Experience Criteria would be evaluated on the Technical and Financial Capability based on the criteria set out in the Clause 4.6 and 4.7. The Bidders who meets the technical and the financial capability for qualification shall be declared as qualified bidders ("Qualified Bidders") and be considered for opening and evaluation of the Financial Proposals.

4.13 Proposal Evaluation: draft Concession Agreement

- 4.13.1 The opening and evaluation of the Envelop III containing the stamped and duly initialed draft Concession Agreement shall be taken up only after the contents of the Qualification and Other Submissions are found to be responsive and the Bidder meets the qualification requirements as per this RFP.
- 4.13.2 Before opening of the Financial Proposal, the Envelope III containing the stamped and duly initialed draft Concession Agreement shall be opened for checking that the draft Concession Agreement (including any amendments thereto) issued by the C&DS, UPJN to the Bidders has been submitted.

4.14 Proposal Evaluation: Financial Proposal

- 4.14.1 The Financial Proposal (Envelop IV) of only those Qualified Bidders and who have properly submitted the stamped and duly initialed draft Concession Agreement, as above will be opened for evaluation on a pre-disclosed date and time in the presence of Bidders who choose to attend. The Bidders' representatives who are present shall be required to sign and record their attendance.
- 4.14.2 The Bidders should submit Financial Proposal for the Project in the format set out in Appendix IX.
- 4.14.3 The Bidder shall quote the Tipping Fee per MT for the Project as per the terms of the Concession Agreement.

Note:

- (a) Tipping Fee would be payable/ receivable by ULB per MT of MSW received at the MSW Processing Plant
- (b) No escalation shall be allowed in the Tipping Fee for Processing and Landfill during the entire O&M Period.
- 4.14.4 The Proposal of the Bidders for the Project would be evaluated on the basis of the quoted Tipping Fee by the Bidder in its Financial Proposal. The Bidders would be ranked in ascending order of the lowest Tipping Fee. For example, the Bidder quoting the lowest Tipping Fee would be ranked "L1", the Bidder quoting the next higher Tipping Fee, ranked "L2" and so on.
- 4.14.5 The Bidder quoting the lowest Tipping Fee for the Project shall be declared as the Preferred Bidder for the Project.
- 4.14.6 In the event that two or more Bidders quote the same amount of Tipping Fee (the "**Tie Bidders**") for the Project, the C&DS, UPJN may:

- (a) select the Bidder by draw of lotteries in the presence of the authorized representatives of such Tie Bidders and the authorized representatives of the ULB and/or C&DS, UPJN

OR

- (b) invite fresh Financial Proposals from the Tie Bidders provided that the Bidders will not be allowed to quote higher than the amounts already quoted;

OR

- (c) in its sole discretion, may annul the Bidding Process.

4.15 Selection of Bidder

4.15.1 C&DS, UPJN reserve the right to invite the Preferred Bidder for negotiations. After the above evaluation process and negotiations, the Preferred Bidder may be declared as the selected Bidder (“**Selected Bidder**”) for the Project.

4.15.2 In the event that the lowest Bidder withdraws or is not selected for any reason in the first instance (the “**first round of bidding**”), the C&DS, UPJN may invite all the remaining Bidders to revalidate or extend their respective Bid Security, as necessary, and match the Proposal of the aforesaid lowest Bidder (the “**second round of bidding**”). If in the second round of bidding, only one Bidder matches the lowest Bidder, it shall be the Selected Bidder. If two or more Bidders match the said lowest Bidder in the second round of bidding, then the Bidder shall be selected by draw of lots.

4.15.3 In the event that no Bidder offers to match the lowest Bidder, C&DS, UPJN may, in its discretion, consider the proposal of the Bidder quoting the lowest Tipping Fee in second round of bidding.

4.16 Letter of Award and Execution of Agreement

4.16.1 After selection, ULB/ C&DS, UPJN will notify the Selected Bidder by facsimile and by a letter of Award (the “**LOA**”) in duplicate that its Proposal has been accepted. The Selected Bidder shall, within 7 (seven) days of the receipt of the LOA, sign and return the duplicate copy of the LOA in acknowledgement thereof. In the event the duplicate copy of the LOA duly signed by the Selected Bidder is not received by the stipulated date, C&DS, UPJN may, unless it consents to extension of time for submission thereof, appropriate the Bid Security of such Bidder as mutually agreed genuine pre-estimated loss and damage suffered by C&DS, UPJN on account of failure of the Selected Bidder to acknowledge the LOA, and the next eligible Bidder may be considered.

4.16.2 After acknowledgement of the LOA as aforesaid by the Selected Bidder, it shall execute the Concession Agreement within the period prescribed in the LOA. The Selected Bidder

shall not be entitled to seek any deviation in the draft Concession Agreement. Further, before execution of the Concession Agreement, the Selected Bidder shall:

- i. incorporate an appropriate SPV, under the Indian Companies Act 2013 to execute the Concession Agreement and with the sole purpose of implementing the Project.
- ii. submit a Board resolution of the SPV for execution of Concession Agreement;
- iii. furnish the following confirmations by way of Board resolution by the Selected Bidder /Members of Consortium that:
 - a. We shall at all times comply with the provisions of the Concession Agreement/ in respect of our shareholding in the SPV (i.e. Concessionaire).
 - b. We/ each Member of the Consortium is duly organized and validly existing under the laws of the jurisdiction of its incorporation, and ULB could enter into the Concession Agreement with the SPV(i.e. the Concessionaire) and we agree to and unconditionally accept the terms and conditions set forth in the Concession Agreement.

In case of non-compliance of any obligation under this Clause within the specified time, the Letter of Award shall, notwithstanding anything contrary contained therein or in this RFP, be liable to be terminated, without C&DS, UPJN or the ULB being liable in any manner whatsoever to the Selected Bidder for the same. In such an event C&DS, UPJN shall forfeit and appropriate the Bid Security as mutually agreed genuine pre-estimated compensation and damages payable to C&DS, UPJN for, inter alia, time, cost and effort of C&DS, UPJN, without prejudice to any other right or remedy that may be available to C&DS, UPJN.

4.17 Project Development Expenses

The Selected Bidder shall prior to execution of the Concession Agreement make a payment of Rs. 15,00,000/- (Rupees fifteen lakhs only) plus applicable service tax through a demand draft in favour of “Director, C&DS, UPJN” payable at Lucknow towards Project development expenses

4.18 Contact during Proposal Evaluation

Proposals shall be deemed to be under consideration immediately after they are opened and until such time ULB/ C&DS, UPJN makes official intimation of award/ rejection to the Bidders. While the Proposals are under consideration, Bidders and/ or their representatives or other interested parties are advised to refrain from contacting by any means, ULB/ C&DS, UPJN and/ or their employees/ representatives on matters related to the Proposals under consideration.

5. FRAUD AND CORRUPT PRACTICES

- 5.1 The Bidders and their respective officers, employees, agents and advisers shall observe the highest standards of ethics during the Bidding Process and subsequent to the issue of the LOA and during the subsistence of the Concession Agreement. Notwithstanding anything to the contrary contained herein, or in the LOA or the Concession Agreement, ULB/ C&DS, UPJN shall reject a Proposal, withdraw the LOA, or terminate the Concession Agreement, as the case may be, without being liable in any manner whatsoever to the Bidder or Concessionaire, as the case may be, if it determines that the Bidder or Concessionaire, as the case may be, has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, the ULB/ C&DS, UPJN may forfeit and appropriate the Bid Security or Performance Security as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to ULB/ C&DS, UPJN towards inter-alia, time, cost and effort of the ULB/ C&DS, UPJN, without prejudice to any other right or remedy that may be available to ULB/ C&DS, UPJN hereunder or otherwise.
- 5.2 Without prejudice to the rights of ULB/ C&DS, UPJN under Clause 5.1 hereinabove and the rights and remedies which ULB/ C&DS, UPJN may have under the LOA or the Concession Agreement, if a Bidder or Concessionaire, as the case may be, is found by ULB/ C&DS, UPJN to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, or after the issue of the LOA or the execution of the Concession Agreement, such Bidder or Concessionaire shall not be eligible to participate in any tender or RFP issued by ULB/ C&DS, UPJN during a period of 2 (two) years from the date such Bidder or Concessionaire, as the case may be, is found by ULB/ C&DS, UPJN to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.
- 5.3 For the purposes of this Section 5, the following terms shall have the meaning hereinafter respectively assigned to them:
- (a) “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process;
 - (b) “**fraudulent practice**” means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;
 - (c) “**coercive practice**” means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Bidding Process;

- (d) “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by ULB/ C&DS, UPJN with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and

- (e) “**restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

6. PRE-PROPOSAL CONFERENCE

- 6.1 A common pre-Bid conference of the Bidders shall be convened at the designated date, time and place. Only those persons who have purchased the RFP document shall be allowed to participate in the Pre-Bid Conference. A maximum of 2 (two) representatives of each Bidder shall be allowed to participate on production of an authority letter from the Bidder.
- 6.2 During the course of Pre-Bid conference, the Bidders will be free to seek clarifications and make suggestions for consideration of the C&DS, UPJN. The C&DS, UPJN shall endeavor to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

7. MISCELLANEOUS

- 7.1 The Bidding Process shall be governed by, and construed in accordance with, the laws of India and the Courts at Lucknow shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the Bidding Process.
- 7.2 C&DS, UPJN, in its sole discretion and without incurring any obligation or liability or assigning any reasons, reserves the right, at any time, to;
- (a) suspend and/ or cancel the Bidding Process and/ or amend and/ or supplement the Bidding Process or modify the dates or other terms and conditions relating thereto;
 - (b) consult with any Bidder in order to receive clarification or further information;
 - (c) retain any information and/ or evidence submitted to C&DS, UPJN by, on behalf of, and/ or in relation to any Bidder; and/ or
 - (d) independently verify, disqualify, reject and/ or accept any and all submissions or other information and/ or evidence submitted by or on behalf of any Bidder.
- 7.3 It shall be deemed that by submitting the Proposal, the Bidder agrees and releases ULB, C&DS, UPJN, their employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder, pursuant hereto and/ or in connection herewith and waives any and all rights and/ or claims it may have in this respect, whether actual or contingent, whether present or future.

Appendix I

Letter Comprising the Proposal

Date:

The Director
Construction and Design Services,
Uttar Pradesh Jal Nigam,
T.C – 38V, Vibhuti Khand, Gomti Nagar
Lucknow – 226010

Sub: Proposal for Development of Municipal Solid Waste Processing and Landfill Facilities
For Gorakhpur Municipal Corporation in UP

Dear Sir,

With reference to your RFP document dated *****, I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our Proposal for the aforesaid Project. The Proposal is unconditional and unqualified.

2 We propose to submit our Proposal in individual capacity as _____

Or

We propose to submit our Proposal as a consortium comprising of Members as follows:

1. _____ (Lead Member)
2. _____

3 All information provided in the Proposal and in the Appendices is true and correct and the documents accompanying such Proposal are in original or true copies of their respective originals, as the case may be.

4 This statement is made for the express purpose of qualifying as a Bidder for the design, build, operate, maintain and transfer of solid waste management facilities processing and landfill project at Gorakhpur in UP.

5 We shall make available to C&DS, UPJN any additional information it may find necessary or require to supplement or authenticate the Proposal.

6 We acknowledge the right of C&DS, UPJN to reject our Proposal without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.

- 7 We certify that in the last three years, we/ any of the Consortium Members have neither failed to perform on any contract, as evidenced by imposition of a penalty or a judicial pronouncement or arbitration award, nor been expelled from any project nor contract nor have had any contract terminated for breach on our part.
- 8 We declare that:
- (a) We have examined and have no reservations to the Bidding Documents, including any Addendum issued by C&DS, UPJN.
 - (b) We do not have any conflict of interest in accordance with Clauses 2.1.2 of the RFP document;
 - (c) We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Clause 5.3 of the RFP document, in respect of any tender or request for proposal issued by or any Agreement entered into with C&DS, UPJN or any other public sector enterprise or any government, Central or State; and
 - (d) We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section 5 of the RFP, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.
- 9 We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Proposal that you may receive nor to invite the Bidders to submit a Proposal for the Project, without incurring any liability to the Bidders, in accordance with Clause 3.7 of the RFP document.
- 10 We believe that we/ our Consortium/ proposed Consortium satisfy (ies) the eligibility criteria and meet(s) the requirements as specified in the RFP document.
- 11 We declare that we/ any Member of the Consortium are/ is not a Member of a/ any other Consortium submitting a Proposal for the Project.
- 12 We certify that in regard to matters other than security and integrity of the country, we have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the Project or which relates to a grave offence that outrages the moral sense of the community.
- 13 We further certify that in regard to matters relating to security and integrity of the country, we have not been charge-sheeted by any agency of the Government or convicted by a Court of Law for any offence committed by us or any of our Associates.
- 14 We further certify that no investigation by a regulatory authority is pending either against us or against our CEO or any of our Directors/ Managers/ employees.
- 15 We further certify that we are qualified to submit a proposal in accordance with guidelines

- for qualification of Bidders seeking to acquire stakes in Public Sector Enterprises through the process of disinvestment issued by the GOI vide Department of Disinvestment OM No. 6/4/2001-DD-II dated July 13, 2001 which guidelines apply mutatis mutandis to the Bidding Process. A copy of the aforesaid guidelines forms part of the RFP at Appendix XI thereof.
- 16 We undertake that in case due to any change in facts or circumstances during the Bidding Process, we are attracted by the provisions of disqualification in terms of the guidelines referred to above, we shall intimate C&DS, UPJN of the same immediately.
- 17 [We acknowledge that our Consortium would be qualified and short-listed on the basis of technical and/or financial capability of the Lead Member who will own atleast 51% equity of the Concessionaire and technical capability and/or financial capability of those of its Consortium who will own at least 26% of the equity of the Concessionaire and undertake that each of such Consortium Members shall continue to hold at least 26% of the equity of the Concessionaire for the entire Concession Period of the Project. We further agree and acknowledge that the aforesaid obligation shall be in addition to the obligations contained in the Concession Agreement in respect of Change in Ownership.]
- 18 [We acknowledge and agree that in the event of a change in control of an Associate whose Technical Capability was taken into consideration for the purposes of short-listing and qualification under and in accordance with the RFP, We shall inform C&DS, UPJN forthwith along with all relevant particulars and C&DS, UPJN may, in its sole discretion, disqualify our Consortium or withdraw the Letter of Award, as the case may be. We further acknowledge and agree that in the event such change in control occurs after signing of the Concession Agreement but prior to Financial Close of the Project, it would, notwithstanding anything to the contrary contained in the Agreement, be deemed a breach thereof, and the Concession Agreement shall be liable to be terminated without C&DS, UPJN being liable to us in any manner whatsoever.]
- 19 [We understand that the Selected Bidder shall incorporate a SPV Company under the Indian Companies Act, 2013, prior to execution of the Concession Agreement.]
- 20 We hereby irrevocably waive any right which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by C&DS, UPJN in connection with the selection of the Bidder, or in connection with the Bidding Process itself, in respect of the above mentioned Project and the terms and implementation thereof.
- 21 In the event of my/ our being declared as the Selected Bidder, We agree to enter into a Concession Agreement in accordance with the draft that has been provided to me/us prior to the Proposal Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
- 22 We have studied all the Bidding Documents carefully. We understand that except to the extent as expressly setforth in the draft Concession Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by C&DS, UPJN

- or in respect of any matter arising out of or concerning or relating to the Bidding Process including the award of Concession.
- 23 The Financial Proposal has been submitted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Concession Agreement, our own estimates of costs and after a careful assessment of the site and all the conditions that may affect the Proposal.
- 24 We offer a Bid Security of Rs. 15,00,000/- (Rupees Fifteen lakhs only) to C&DS, UPJN in accordance with the RFP document.
- 25 The Bid Security in the form of a FDR pledged in favour of ‘Director, C&DS, UPJN’/ Bank Guarantee (strike out whichever is not applicable) is attached.
- 26 We agree and understand that the Proposal is subject to the provisions of the Bidding Documents. In no case, we shall have any claim or right of whatsoever nature if the Project / Concession is not awarded to me/us or our Proposal is not opened.
- 27 We confirm that we have the financial standing and resources to fund / raise finances for undertaking and implementing the Project in accordance with the Concession Agreement.
- 28 We (including our Consortium Member) hereby certify and confirm that in the preparation and submission of our Proposal for “Development of Municipal Solid Waste Processing and Landfill Facilities for Gorakhpur Municipal Corporation, UP”, we have not acted in concert or in collusion with any other Bidder or other person(s) and also not done any act, deed or thing which is or could be regarded as anti-competitive. We (including our Consortium Member) further confirm that we have not offered nor will offer any illegal gratification in cash or kind to any person or agency in connection with this Proposal.
- 29 We (including our Consortium Member) hereby certify and confirm that:
- a. We or any of our promoter(s) / director(s) / associates are not barred by any department of the GoUP / or any other entity of GoUP or blacklisted by any urban local body in India from participating in project/s, either individually or as member of a consortium as on date.
 - b. We are aware that, our Proposal would be liable for rejection in case any misrepresentation is made or discovered at any stage of the Bidding Process or thereafter during the Concession Period.
- 30 We agree to keep this offer valid for 180 days (one hundred and eighty) days from the Proposal Due Date specified in the RFP.
- 31 We agree and undertake to abide by all the terms and conditions of the RFP document.

We submit this Proposal under and in accordance with the terms of the RFP document.

Yours faithfully,

Date: (Signature of the Authorized signatory)
Place: (Name and designation of the of the Authorized signatory)
Name and rubber seal of the Bidder/ Lead Member

Note: Paragraphs in square parenthesis may be omitted, if not applicable.

Appendix II

Details of Bidder

1. (a) Name
(a) Country of incorporation/registration
(b) Address of the corporate headquarters and its branch office(s) in India, if any
(a) Date of incorporation/registration and/or commencement of business
2. Brief description of the Bidder including details of its main lines of business and proposed role and responsibilities in the Project.
3. Details of individual (s) who will serve as the point of contact / communication for C&DS, UPJN within the Company:
(a) Name :
(b) Designation :
(c) Company :
(d) Address :
(e) Telephone :
(f) E-mail address:
(g) Fax :
(h) Mobile :
4. Name, Designation, Address and Phone Numbers of Authorised Signatory of the Bidder:
(a) Name :
(b) Designation :
(c) Company :
(d) Address :
(e) Telephone :
(f) E-mail address:
(g) Fax :
(h) Mobile :
5. In case of a Consortium:
 - a. the information in this Appendix should be provided for all the members of the consortium.
 - b. information regarding role of each member should be provided as per table below:

S. No.	Name of Member	Role (Specify whether Lead Member or Other Member)
1.		
2.		

- c. The following information shall also be provided for each Member of the Consortium:

Name of Bidder / member of Consortium:

Sr. No.	Criteria	Yes	No
1	Has the Bidder / member of the Consortium been barred any department of the GoUP / or any other entity of GoUP or blacklisted by any urban local body in India from participating in any project (BOT or otherwise). If the answer is yes, please provide the details.		
2	Has the Bidder / member of the Consortium paid liquidated damages of more than 5% of the contract value in a contract due to delay or has been penalized due to any other reason in relation to execution of a contract, in the last three years?		

6. A statement by the Bidder and each of the Members of its Consortium (where applicable) disclosing material non-performance or contractual noncompliance in past projects, contractual disputes and litigation/ arbitration in the last 5 years is given below (Attach extra sheets, if necessary):

Appendix III

Bank Guarantee for Bid Security

[To be printed on a non judicial stamp paper of appropriate value]

B.G. No.

Dated:

In consideration of you, Construction and Design Services, Uttar Pradesh Jal Nigam, having its office at T.C – 38V, Vibhuti Khand, Gomti Nagar, Lucknow – 226010(hereinafter referred to as the “C&DS, UPJN”, which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the Proposal of _____ [a Company registered under provision of the Companies Act, 1956] and having its registered office at _____ [and acting on behalf of its Consortium, if applicable] (hereinafter referred to as the “Bidder” which expression shall unless it be repugnant to the subject or context thereof include its/their executors administrators, successors and assigns), for the development, financing, procurement, operation, maintenance, management and transfer of Municipal Solid Waste Processing and Landfill Facilities For Gorakhpur Municipal Corporation in UP (hereinafter referred to as “the Project”) pursuant to the RFP document dated ***** issued in respect of the Project and other related documents (hereinafter collectively referred to as “Bidding Documents”), we [Name of the Bank] having our registered office at _____ and one of its branches at _____ (hereinafter referred to as the “Bank”), at the request of the Bidder, do hereby in terms of Clause 3.21 of the RFP document, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfillment and compliance of the terms and conditions of the Bidding Documents (including the RFP document) by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to C&DS, UPJN an amount of Rs. 15,00,000/- (Rupees Fifteen Lacs only) as bid security (hereinafter referred to as the “Bid Security”) as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder if the Bidder shall fail to fulfill or comply with all or any of the terms and conditions contained in the said Bidding Documents.

Any such written demand made by C&DS, UPJN stating that the Bidder is in default of the due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank.

We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of C&DS, UPJN is disputed by the Bidder or not merely on the first demand from C&DS, UPJN stating that the amount claimed is due to C&DS, UPJN by reason of failure of the Bidder to fulfill and comply with the terms and conditions contained in the Bidding Documents including failure of the said Bidder to keep its Proposal open during the Proposal Validity Period as setforth in the said Bidding Documents for any reason whatsoever. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. 15,00,000/- (Rupees Fifty Lacs only).

This Guarantee shall be irrevocable and remain in full force for a period of 180 (one hundred and eighty) days from the Proposal Due Date inclusive of a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between C&DS, UPJN and the Bidder, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.

We, the Bank, further agree that C&DS, UPJN shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfillment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its Proposal open during the Proposal Validity Period set forth in the said Bidding Documents, and the decision of C&DS, UPJN that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between C&DS, UPJN and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.

The Guarantee shall not be affected by any change in the constitution or winding up of the Bidder or the Bank or any absorption, merger or amalgamation of the Bidder or the Bank with any other person.

In order to give full effect to this Guarantee, C&DS, UPJN shall be entitled to treat the Bank as the principal debtor. C&DS, UPJN shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the Proposals or the Proposal Validity Period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfillment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to C&DS, UPJN, and the Bank shall not be released from its liability under these presents by any exercise by C&DS, UPJN of the liberty with reference to the matters aforesaid or by reason of time being given to the said Bidder or any other forbearance, act or omission on the part of C&DS, UPJN or any indulgence by C&DS, UPJN to the said Bidder or by any change in the constitution of C&DS, UPJN or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.

Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.

We undertake to make the payment on receipt of your notice of claim on us addressed to [name of Bank along with branch address] and delivered at our above branch who shall be deemed to have been duly authorized to receive the said notice of claim.

It shall not be necessary for C&DS, UPJN to proceed against the said Bidder before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank,

notwithstanding any other security which C&DS, UPJN may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealized.

We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of C&DS, UPJN in writing.

The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this Guarantee for and on behalf of the Bank.

Signed and Delivered by _____ Bank
By the hand of Mr./Ms _____, its _____ and authorized official.

(Signature of the Authorized Signatory)
(Official Seal)

Appendix IV

Power of Attorney for signing of Proposal

Know all men by these presents, We, _____ (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr. / Ms (Name), son/daughter/wife of _____ and presently residing at _____, who is [presently employed with us/ the Lead Member of our Consortium and holding the position of _____], as our true and lawful attorney (hereinafter referred to as the “Attorney”) to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Proposal for the development, financing, procurement, operation, maintenance, management and transfer of Municipal Solid Waste Processing and Landfill Facilities For Gorakhpur Municipal Corporation in UP including but not limited to signing and submission of all applications, Proposals and other documents and writings, participate in bidders' and other conferences and providing information / responses to C&DS, UPJN, representing us in all matters before C&DS, UPJN, signing and execution of all contracts including the Concession Agreement and undertakings consequent to acceptance of our Proposal, and generally dealing with C&DS, UPJN in all matters in connection with or relating to or arising out of our Proposal for the said Project and/or upon award thereof to us and/or till the entering into of the Concession Agreement with C&DS, UPJN.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, _____, THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS _____ DAY OF _____, 20**.

For _____
(Signature)
(Name, Title and Address)

Witnesses:

- 1
- 2

Accepted

[Notarized]

(Signature)
(Name, Title and Address of
the Attorney)

Notes:

- (a) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s).
- (b) Wherever required, the Bidder shall submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.
- (c) For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostil certificate.

Appendix V

Power of Attorney for Lead Member of Consortium

Whereas C&DS, UPJN has invited Proposals from interested parties for the development, financing, procurement, operation, maintenance, management and transfer of Municipal Solid Waste Processing and Landfill Facilities For Gorakhpur Municipal Corporation in UP (“the Project”).

Whereas, _____, and _____ (collectively the “Consortium”) being Members of the Consortium are interested in bidding for the Project in accordance with the terms and conditions of the Request for Proposal and the Bidding Documents in respect of the Project, and

Whereas, it is necessary for the Members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium’s Proposal for the Project and its execution.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS

We, _____ having our registered office at _____, and M/s. _____, having our registered office at _____, [the respective names and addresses of the registered office] (hereinafter collectively referred to as the “Principals”) do hereby irrevocably designate, nominate, constitute, appoint and authorize M/s _____, having its registered office at _____, being one of the Members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the “Attorney”) and hereby irrevocably authorize the Attorney (with power to sub-delegate) to conduct all business for and on behalf of the Consortium and any one of us during the bidding process and, in the event the Consortium is awarded the Concession, during the execution of the Project, and in this regard, to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the submission of its Proposal for the Project, including but not limited to signing and submission of all applications, Proposals and other documents and writings, participate in bidders’ and other conferences, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of the Proposal of the Consortium and generally to represent the Consortium in all its dealings with C&DS, UPJN, and/ or any other Government Agency or any person, in all matters in connection with or relating to or arising out of the Consortium’s Proposal for the Project and/ or upon award thereof till the Concession Agreement is entered into with C&DS, UPJN.

AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us/ Consortium.

IN WITNESS WHEREOF WE THE PRINCIPALS ABOVE NAMED HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS _____ DAY OF _____ 20....

For _____ (Name & Title)

For _____ (Name & Title)

1

2

(Executants)

(To be executed by all the Members of the Consortium)

Notes:

- (a) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s).
- (b) Wherever required, the Bidder shall submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.
- (c) For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostil certificate.

Appendix VI

Board Resolution for the Bidding Company and each Member of the Consortium

The Board, after discussion, at the duly convened Meeting on _____ [insert date], with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956, passed the following Resolution:

RESOLVED THAT pursuant to the provisions of the Companies Act, 1956 and compliance thereof and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded for investment of percent (..... %) of the total equity share capital requirements of the Project representing the entire amount proposed to be invested by the Company for the development, financing, procurement, operation, maintenance, management and transfer of Municipal Solid Waste Processing and Landfill Facilities For Gorakhpur Municipal Corporation in UP.

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to contribute such further amount over and above the said percentage limit to the extent becoming necessary towards the total equity share obligatory on the part of the Company pursuant to the terms and conditions contained in the Joint Bidding Agreement dated _____ executed by the Company as per the provisions of RFP issued by C&DS, UPJN on _____.**

FURTHER RESOLVED THAT _____, be and is hereby authorized to enter into take all the steps required to be taken by the Company in this regard, including in particular, signing of the Proposal, making changes thereto and submitting amended Proposal, all the related documents, certified copy of this Board Resolution or letter, undertakings etc, required to be submitted to C&DS, UPJN as part of the RFP or such other documents as may be necessary in this regard.

Certified True Copy

Note:

- (a) This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary or any of the authorized Directors of the Company and the rubber stamp for the Company shall be affixed.

****Applicable only for Consortium. To be adopted by Lead Member**

Appendix VII

Technical Capability of the Bidder

(To be submitted on the letterhead of the Bidder/ Lead Member of the Consortium)

Construction Experience

Sr. No	Name of the Operator	Relationship of the Operator with Bidder (Bidder/ Lead Member / Consortium Member or their Associate)	Name of the Urban Local Body	Start Date of Construction / Date of Commissioning of the Project Year of Establishment	Total actual MSW processed /installed capacity of plant operated	Method of MSW Processing Technology	Project cost	Documentary Evidence
1								
2								
3								
4								
5								

2. Operation & Maintenance Experience

Sr. No	Name of the Operator	Relationship of the Operator with Bidder (Bidder/ Lead Member / Consortium Member or their Associate)	Name of the Urban Local Body	Total actual MSW processed / installed capacity of plant operated	Year	Total MSW Processed during the year (separately under MSW Processing Technology)	Method of MSW Processing Technology	Documentary Evidence
1								
2								
3								
4								
5								

3. Quantity of process remnants dumped

Sl. No.	Parameter	Name of the Operator	Relationship of the Operator with Bidder (Bidder/ Lead Member / Consortium Member or their Associate)	Name of the ULB	% of Total MSW Brought to the Landfill Site		Documentary Evidence Provided
					FY: 2012-13, 2013-14 or 2014-15		
1	Quantity of process remnants dumped to landfill from any one MSW processing plant managed by the Bidder in any one of the last three financial years i.e. FY 2012-13, 2013-14 or 2014-15 <i>(the percentage would be computed as total annual quantity of MSW dumped to the landfill site divided by total annual quantity of the MSW received at the processing plant)</i> (Kindly note that the MSW processing plant to be considered for this purpose should have processed a minimum MSW of 75,000 MT in any one of the last three financial years i.e. FY 2012-13, 2013-14 or 2014-15).						
	Name of Project						

(Signature of the Authorized signatory)

Date:

(Name and designation of the of the Authorized signatory)

Place:

Name and rubber seal of the Bidder/ Lead Member

Instruction 1:

- (a) The Bidder should provide the certificate from the concerned urban local body/ies or the independent engineer appointed by such ULB giving details of the project executed with scope of work, installed capacity of the processing plant, year of completion, project cost, quantity of MSW processed separately under each type of MSW processing technology during the last three financial years (i.e. FY 2012-13, 2013-14 or 2014-15) either in Original or notarised attested true copy of such original certificates.
- (b) It is clarified that in case the Bidder provides the certificate issued by the Independent Engineer as per the Instructions given above, then a certificate from ULB should also be provided specifically mentioning the name of the Independent Engineer appointed for the said project, period of its engagement and that the Independent Engineer is authorized to issue such certificates alongwith the copy of their letter of appointment.
- (c) Bidders shall provide the commissioning certificate from relevant authority or the independent engineer appointed by such ULB specifically mentioning the installed

capacity, the year of commissioning, project cost and processes involved and the actual total MSW processed in any one of the last three financial years i.e. FY 2012-13, 2013-14 or FY 2014-15 from such processing facility.

- (d) The certificate issued by the concerned ULBs should be signed by the official of the rank of Executive Engineer or above.
- (e) In this regard, kindly note that in case the Bidder provides the copy of the certificate issued by ULBs or the independent engineer appointed by such ULB and /or copy of the agreements signed with the concerned ULBs, then such documents should either be in original or notarised attested true copy of such original documents.
- (f) For point no 3, the Bidders shall provide the certificate from the concerned ULB, specifically mentioning the % of the actual quantity of process remnants going to landfill in any one of the last three financial years i.e. FY 2012-13, 2013-14 or 2014-15.

Instruction 2:

- (a) The Bidder shall provide information for each of their above mentioned projects in the following format:

1.	Name of Project	
2.	Name, Address & contact numbers of ULB/ concessioning authority	
3.	Name of Entity undertaken the Project	
4.	Scope of work of the project	
5.	Project Cost (Rs. Cr)	
6.	Processing plant capacity (TPD)	
7.	Bidders role in the project	
8.	Mode of Execution: BOT, BOOT, etc	
9.	Concession Period	
10.	Date of award of the contract by ULB	
11.	Status of project	(i) Under construction (ii) Commissioned (provide date of commissioning) (iii) Not yet Implemented
12.	Details of the assistance / funding provided by the ULB	
13.	Delays in commissioning of the project , if any with their reason	
14.	Date of full commissioning of the project	
15.	Total tonnage of MSW Processed per annum	FY 2012-13 FY 2013-14 FY 2014-15
16.	Has the project stopped / failed after commissioning, if any provide reason	

17.	Litigations with the client, if any					
18.	Quantum of MSW processed under type of technology used for the project - Composting, Waste to Energy, RDF, plastic/ metal separation, inert processing, etc	<i>(Quantity of MSW processed in MT)</i>				
		Years	Type of MSW processing Technology			
			Composting	Composting and RDF	Composting RDF and plastic/ metal separation	Waste to Energy
		FY 2012-13				
		FY 2013-14				
		FY 2014-15				
19.	Landfill site: Quantity and % of MSW remnants going to landfill (For FY 2012-13, 2013-14 and 2014-15)	Years	MSW Processed (in MT)	MSW Landfilled (in MT)	% of MSW Land filled	
						FY 2012-13
		FY 2013-14				
		FY 2014-15				
20.	% Equity shareholding of the Bidder in the project					
21.	Remarks / Other Details					

Date:
Place:

(Signature of the Authorized Signatory)
(Name and designation)

Note: C&DS, UPJN may directly contact the contact persons provided in the datasheet.

Appendix VIII

Format for Financial Capability of the Bidder

Name of Bidder / Lead Member of Consortium:

Net worth

Particulars	Amount (Rs. In Crore) - As on March 31, 2015
Equity Share Capital: Issued, Subscribed and Paid –up	
Add Reserves and Surplus	
Less:	
Revaluation Reserve	
Debit balance of Profit & Loss Account	
Miscellaneous expenditure to the extent not written off	
Total	

In case of a Consortium, the Aggregate net worth of the Consortium shall be submitted in the following table along with individual net worth calculations for each Member (as shown above).

Name of Consortium Member	Net worth (Rs. in Crore) - As on March 31, 2015 (A)	% equity in the Consortium (B)	C = A*B
Name of Lead Member			
Name of Consortium Member, if any			
Name of Consortium Member, if any			
Net worth of Consortium (Sum of Column C)			

Further, we confirm the Net-worth of [Name of the other consortium members] whose networth has not been considered above for meeting the Financial Capability is not negative as at the end of the financial year 2014-15. **

Date: _____ (Signature of the Authorized signatory)

(Name and designation of the of the Authorized signatory)

Place: _____ Name and rubber seal of the Bidder/ Lead Member

Instruction 1:

Please provide a Statement of Networth as per the above formats, duly certified by the Statutory Auditors of the Sole Bidder / Lead Member

Instruction 2:

The financial year considered for financial criteria would be the same for all Consortium members.

Instruction 3:

Net-worth =

Equity Share Capital: Issued, Subscribed and Paid –up

- (+) Reserves & Surplus (excluding Revaluation Reserves)
- (–) Miscellaneous expenses not written off and debit balance in Profit and Loss account

(In case the Business Entity is a Society or a Trust or a Partnership firm or a Sole-proprietorship firm, the net-worth should be derived based on the above principles, as per the annual audited accounts)

Instruction 4:

The financial criteria shall be considered based on standalone financial statement. Sole bidder and in case of Consortium, all Members of the Consortium shall provide a copy of their standalone audited annual financial statements for the last three financial years.

Appendix IX

Format for Financial Proposal

Date

To
Director
Construction and Design Services
Uttar Pradesh Jal Nigam
T.C – 38V, Vibhuti Khand, Gomti Nagar
Lucknow – 226010

Sub: Financial Proposal for Development of Municipal Solid Waste Processing and landfill Facilities Project for Gorakhpur Municipal Corporation in UP

Dear Sir,

We are pleased to submit our Financial Proposal for the Development of Municipal Solid Waste Processing and landfill Facilities Project for Gorakhpur Municipal Corporation (ULB) in UP.

1. We offer Tipping Fee for the captioned Project to be paid/ received by the ULB to/ from the Concessionaire as per the terms of the Concession Agreement as follows:

Sl. No	Parameter	Amount (In INR)	Amount (In INR)
1	Tipping Fee for Processing and Landfill per MT (B)	
Total Tipping Fee			

2. The quoted Tipping Fee is exclusive of any taxes (such as Service Tax and Education Cess), if applicable on the Tipping Fee and the same shall be payable by the ULB at actual.
3. We confirm that we shall at all times comply with the provisions of the Concession Agreement.

We hereby declare that our Financial Proposal is unqualified and unconditional in all respects and there are no deviations from the stated terms in the Bidding Documents

The aforesaid Tipping Fee has been quoted by us after taking into consideration all the terms and conditions stated in the Bidding Documents including the RFP, draft Concession Agreement, our own estimates of costs and revenues and after a careful assessment of the Site and all the conditions that may affect the Proposal.

Yours faithfully,

Date:

(Signature of the Authorized signatory)

(Name and designation of the of the Authorized signatory)

Place: Name and rubber seal of the Bidder/ Lead Member

Note:

- (a) The quoted Tipping Fee shall be rounded to the nearest Rupee.
- (b) The contents of this format shall be clearly typed
- (c) No escalation shall be allowed in the Tipping Fee during the Concession Period

Appendix X

Format for Clarifications /Amendments on the RFP

Sl. No.	Document	Clause No. and Existing Provision	Clarification required	Suggested Text for the Amendment	Rationale for the Clarification or Amendment

..... Name of the Bidder

.....Signature of the Authorized Person

.....Name of the Authorized Person

Note : This format shall be used for submission of requests for clarifications/amendments on the draft RFP.

Appendix XI

Guidelines of the Department of Disinvestment

No. 6/4/2001-DD-II
Government of India
Department of Disinvestment

Block 14, CGO Complex
New Delhi.

Dated 13th July 2001.

OFFICE MEMORANDUM

Sub: Guidelines for qualification of Bidders seeking to acquire stakes in Public Sector Enterprises through the process of disinvestment

Government has examined the issue of framing comprehensive and transparent guidelines defining the criteria for bidders interested in PSE-disinvestment so that the parties selected through competitive bidding could inspire public confidence. Earlier, criteria like net worth, experience etc. used to be prescribed. Based on experience and in consultation with concerned departments, Government has decided to prescribe the following additional criteria for the qualification/disqualification of the parties seeking to acquire stakes in public sector enterprises through disinvestment:

- (a) In regard to matters other than the security and integrity of the country, any conviction by a Court of Law or indictment/ adverse order by a regulatory authority that casts a doubt on the ability of the bidder to manage the public sector unit when it is disinvested, or which relates to a grave offence would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community. The decision in regard to the nature of the offence would be taken on case to case basis after considering the facts of the case and relevant legal principles, by the Government of India.
- (b) In regard to matters relating to the security and integrity of the country, any charge-sheet by an agency of the Government/ conviction by a Court of Law for an offence committed by the bidding party or by any sister concern of the bidding party would result in disqualification. The decision in regard to the relationship between the sister concerns would be taken, based on the relevant facts and after examining whether the two concerns are substantially controlled by the same person/ persons.
- (c) In both (a) and (b), disqualification shall continue for a period that Government deems appropriate.
- (d) Any entity, which is disqualified from participating in the disinvestment process, would not be allowed to remain associated with it or get associated merely because it has preferred an appeal against the order based on which it has been disqualified. The mere pendency of appeal will have no effect on the disqualification.

- (e) The disqualification criteria would come into effect immediately and would apply to all bidders for various disinvestment transactions, which have not been completed as yet.
- (f) Before disqualifying a concern, a Show Cause Notice why it should not be disqualified would be issued to it and it would be given an opportunity to explain its position.
- (g) Henceforth, these criteria will be prescribed in the advertisements seeking Expression of Interest (EOI) from the interested parties. The interested parties would be required to provide the information on the above criteria, along with their Expressions of Interest (EOI). The bidders shall be required to provide with their EOI an undertaking to the effect that no investigation by a regulatory authority is pending against them. In case any investigation is pending against the concern or its sister concern or against its CEO or any of its Directors/ Managers/ employees, full details of such investigation including the name of the investigating agency, the charge/ offence for which the investigation has been launched, name and designation of persons against whom the investigation has been launched and other relevant information should be disclosed, to the satisfaction of the Government. For other criteria also, a similar undertaking shall be obtained along with EOI.

sd/-

(A.K. Tewari)

Under Secretary to the Government of India

CLARIFICATION

Note: Vide clarification dated: 10.1.2002 to the above guidelines it has been provided that the following offence be treated as a grave offence:

- (1) Orders of Securities and Exchange Board of India which directly relates to “fraud” as defined in the Securities and Exchange Board of India Act, 1992 and/or regulations made thereunder;
- (2) Orders of Securities and Exchange Board of India which cause a doubt on the ability of the Strategic Partner to manage the Company after the sale of the Transaction Shares by the Government to the Strategic Partner;
- (3) Any conviction by a Court of Law;
- (4) In cases in which Securities and Exchange Board of India also passes a prosecution order, disqualification of the Strategic Partner should arise only on conviction by the Court of Law.

Appendix XII

Annexure XII: Joint Bidding Agreement

(To be executed on Non Judicial Stamp Paper of appropriate value)

THIS JOINT BIDDING AGREEMENT is entered into on this the day of, 20.....

AMONGST

1. { Limited, a company incorporated under the Companies Act, 1956} and having its registered office at (hereinafter referred to as the “ **Party of the First Part**” which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

2. { Limited, a company incorporated under the Companies Act, 1956} and having its registered office at (hereinafter referred to as the “ **Party of the Second Part**” which expression shall, unless repugnant to the context include its successors and permitted assigns)

The above mentioned parties of the FIRST and SECOND PART are collectively referred to as the “**Parties**” and each is individually referred to as a “**Party**”

WHEREAS

- A. Gorakhpur Municipal Corporation i.e. the urban local body (ULB) in the city of Gorakhpur intends to develop municipal solid waste processing facilities and landfill facilities in the city of Gorakhpur (the “**Project**”).
- B. In pursuance of above, the ULB through Construction and Design Services, Uttar Pradesh Jal Nigam (hereinafter referred to as “**C&DS, UPJN**”), an enterprise of Government of Uttar Pradesh (hereinafter referred to as “**GoUP**”) and a nominated nodal agency by GoUP for development of Municipal Solid Waste (“**MSW**”) management projects in UP invited the tender by its RFP No. dated from interested Bidders for **DEVELOPMENT OF MUNICIPAL SOLID WASTE MANAGEMENT FACILITIES FOR GORAKHPUR MUNICIPAL CORPORATION, U.P.**
- C. The Parties are interested in jointly bidding for the Project as members of a Consortium and in accordance with the terms and conditions of the RFP document and other bid documents in respect of the Project, and

- D. It is a necessary condition under the RFP that the members of the Consortium shall enter into a Joint Bidding Agreement and furnish a copy thereof with the Bid.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretations

In this Agreement, the capitalized terms shall, unless the context otherwise requires, have the meaning ascribed thereto in the RFP.

2. Consortium

- 2.1 The Parties do hereby irrevocably constitute a consortium (the “**Consortium**”) for the purposes of jointly participating in the Bidding Process for the Project.
- 2.2 The Parties hereby undertake to participate in the Bidding Process only through this Consortium and not individually and/ or through any other consortium constituted for this Project, either directly or indirectly or through any of their Associates.
- 2.2.3 That the Parties shall form a Special Purpose Vehicle (SPV) with the shareholding commitments expressly stated herein. The said SPV shall not undertake any other business during the Concession Period.
- 2.2.4 That the equity share holding of the Parties in the issued and paid up capital of the SPV shall not be less than that specified herein and as prescribed in the RFP dated, at all time during the Concession Period.
- 2.2.5 That M/s_____, and M/s_____, who are Members of the Consortium commit to hold the following equity stake in the SPV which are in line with the requirements of the RFP dated at all times during the Concession Period:

S. No.	Name of Member	Responsibility of Member	% of Shareholding
1.			
2.			

- 2.2.6 That any dilution in the equity holding by the Parties in the SPV shall be as per the provisions of the Concession Agreement that will be executed on award of the Project to us.
- 2.2.7 That neither of the consortium member shall divest any equity in the SPV for a minimum period of 2 (two) years from the Commercial Operate Date (Lock In Period) of the Project as defined in the Concession Agreement. After the Lock in Period, subject to Lead member continuing to hold 51% and Technical Member fulfilling the Technical Criteria as mentioned below also continuing to hold at least 26% of equity stake in the SPV at all time during the Concession Period, the rest of the equity of the consortium can be divested. That

in case the Lead Member is also the Technical Member, the Lead Member shall continue to hold at least 51% at all time during the Concession Period.

- 2.2.8 The Parties undertake that there shall be no change in respect of the Lead Member in the consortium till the end of the Concession Period.
- 2.2.9 The Parties further undertake to enter into a shareholders agreement immediately after the formation/incorporation of the SPV to incorporate the terms and conditions of their participation in the Concessionaire as per the terms herein and shall and carry out the necessary changes in the Memorandum and Articles of Association of the Concessionaire to adopt such terms of the shareholders agreement within 60 days from the date of incorporation of the Concessionaire. The Parties shall immediately furnish a copy of the shareholders agreement so entered and copy of modified Memorandum and Articles of Association of the Concessionaire to the office of ULB.

3. Covenants

The Parties hereby undertake that in the event the Consortium is declared the Preferred Bidder and awarded the Project, the Parties shall enter into a Concession Agreement (“**Concession Agreement**”) with ULB for performing all the obligations as the Concessionaire in terms of the Concession Agreement.

4. Role of the Parties

The Parties hereby undertake to perform the roles and responsibilities as described below:

- a) Party of the First Part shall be the Lead Member of the Consortium and shall have the power of attorney from all Parties for conducting all business for and on behalf of the Consortium during the selection process;
- b) Party of the Second Part shall be {the ____ Member of the Consortium;}

5. Joint and Several Liability

The Parties do hereby undertake to be jointly and severally responsible for all the obligations and liabilities relating to the Project in accordance with the terms of the RFP document

- 6. Lead Member:** Without prejudice to the joint and several liability of all the Parties, each Party agrees that it shall exercise all rights and remedies under the Concession Agreement through the Lead Member and ULB shall be entitled to deal with such Lead Member as the representative of all Members/Consortium. Each Party agrees and acknowledges that:
- a. any decision (including without limitation, any waiver or consent), action, omission, communication or notice of the Lead Member on any matters related to the Agreement shall be deemed to have been on its behalf and shall be binding on it. ULB shall be entitled to rely upon any such action, decision or communication from the Lead Member;

- b. any notice, communication, information or documents to be provided to the Concessionaire shall be delivered to the authorized representative of the Concessionaire (as designated pursuant to the Agreement) and any such notice, communication, information or documents shall be deemed to have been delivered to all the Parties.
7. **Representation of the Parties:** Each Party represents to the other Party(ies) as of the date of this Agreement that:
- a. Such Party is duly organized, validly existing and in good standing under the laws of its incorporation and has all the requisite powers and authority to enter into this Agreement;
- b. The execution, delivery and performance by such Party of this Agreement has been authorized by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution/ power of attorney in favor of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Party is annexed to this Agreement, and will not, to the best of its knowledge:
- i. require any consent or approval not already obtained;
 - ii. violate any Applicable Law presently in effect and having applicability to it;
 - iii. violate the memorandum and articles of association, by-laws or other applicable organizational documents thereof;
 - iv. violate any clearance, permit, concession, grant, license or other governmental authorization, approval, judgment, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or
 - v. create or impose any liens, mortgages, pledges, claims, security interests, charges or Encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;
- c. this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and
- d. there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement

8. Termination

This Agreement shall be effective from the date hereof and shall continue in full force and effect until the date of signing of the Concession Agreement, in case the Project is awarded to the Consortium. However, in case the Consortium is not selected for award of the Project, this Agreement will stand terminated upon intimation by ULB that it has not been selected and upon return of the Bid Security by ULB.

9. Miscellaneous

9.1 This Joint Bidding Agreement shall be governed by laws of {India}

9.2 The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior written consent of the Lessee

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN

SIGNED, SEALED AND DELIVERED

SIGNED, SEALED AND DELIVERED

For and on behalf of
LEAD MEMBER by:

For and on behalf of
SECOND PART by:

(Signature)
(Name)
(Designation)
(Address)

(Signature)
(Name)
(Designation)
(Address)

In the presence of:

1.

2.

Notes:

1. The mode of the execution of the Joint Bidding Agreement should be in accordance with the procedure, if any, laid down by the Applicable Law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure
2. Each Joint Bidding Agreement should attach a copy of the extract of the charter documents and documents such as resolution / power of attorney in favour of the person executing this

Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member

3. For a Joint Bidding Agreement executed and issued overseas, the document shall be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney has been executed. However, the Joint Bidding Agreement provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostil certificate.

Appendix XIII

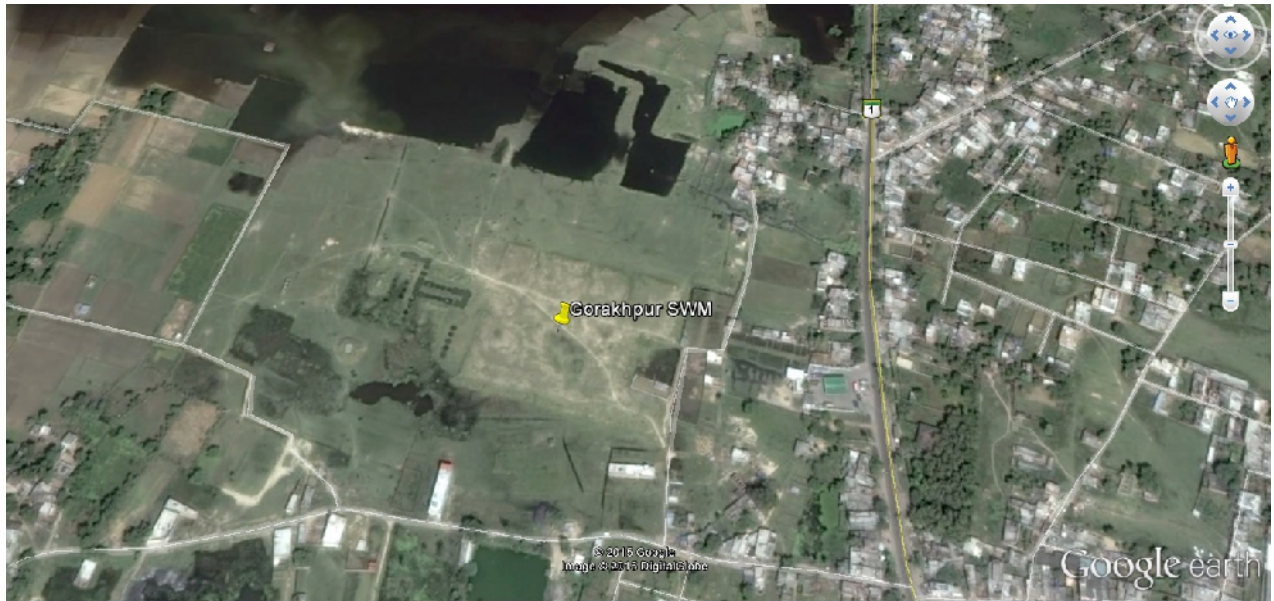
Draft Concession Agreement

(Enclosed Separately)

Annexure A

Details of Land

Village- Jung Bahadur Ali, Gorakhpur(UP)
Location- 26°49'7.01"N, 83°20'50.39"E
Area- 28 Acres Approximate



Annexure B

Details of Existing Assets

Earth filling in Approximately 16000 Sqm area. Detailed survey plan attached.

