

Addendum No. (3)

Reference: SEZAD Tender No. 21/2014 "Design and Construction of an Integrated Waste Treatment Storage and Disposal Facility at Duqm"

Collection date: 28/09/2014

Submission date: 25/11/2014.
Revised New Date: 23rd Dec 2014.

Subject: Responses/Clarifications to Queries

Thank you for your participation to the above tender.

The attached including Excel Sheet BOQ are for your reference and as part use/incorporation in this tender.

NOTES:

- Any tenders submitted after the given Tender Submission Date/Time shall not be accepted.
- All bidders should endorse this addendum and attach it as a part of their tender submission (under Technical Proposal envelope).
- All (any) Queries/Clarifications pertaining to this tender is **CLOSED**. (Tender Submission Date: Tues/23 Dec 2014; 1.00pm, Muscat time).

Yours Sincerely,



**SEZAD,
Tenders and Contracts Dept.**



Response # 2 to Tender Query

Ref:

Dated: 11 December, 2014

TENDER NUMBER: Tender No. 21/2014

TENDER NAME: Design and Construction of an Integrated Waste Treatment, Storage and Disposal Facility in Duqm Zone (SFZ)

| Sr. No. | Ref. RFP Section | Query | Response |
|---------|---|--|--|
| 1 | Part 3, Scope of Work, Pg. no. 44, Clause 2.9.3 | INDUSTRIAL WASTE BASAL LINING SYSTEM: As per clause, High strength geotextiles (CBR \geq 5.5 KN) meeting the particular specifications forming the part of basal lining system. However, we do not find this item in "details of lining system", "particular specifications" and "APPENDIX II, Schedule of Prices". Kindly clarify if we are required to consider it as geotextile (CBR=3.5 KN) or geotextile (CBR=5.5 KN). | <i>Please consider this geotextile layer as type one (CBR 3.5 KN) An amended description of the industrial waste landfill basal lining system is attached (Attachment 1) as well as a hard and soft copy of the amended Schedule of Prices(Attachment 2)</i> |
| 2 | APPENDIX II, Schedule of Prices, TABLE 4.A and 4.B | Table 4. A – GENERAL AND MSW LANDFILL CELL GEOSYNTHETIC LINING SYSTEM and TABLE 4. B – INDUSTRIAL WASTE LANDFILL CELL GEOSYNTHETIC LINING SYSTEM The item "GEOGRID GEOCOMPOSITE" is missing in above tables of Schedule of prices. Kindly include the same. | <i>This item is included in the Earth works, please refer to Tables 2.A.4, 2.A.5, 2.B.4, 2.B.5, 3.A.2, 3.A.3, 3.B.2 and 3.B.3</i> |
| 3 | APPENDIX II, Schedule of Prices, TABLE 5.A | 'INDUSTRIAL WASTE' EVAPORATION PONDS-Geosynthetics lining system This is to be renamed as 'GENERAL and MSW LANDFILL CELL'. | <i>Please read the title of table 5.A as "GENERAL and MSW WASTE EVAPORATION PONDS - GEOSYNTHETICS- LINING - SYSTEM"</i> |
| 4 | APPENDIX II, Schedule of Prices, TABLE 5.A and 5.B | Table 5. A – GENERAL AND MSW LANDFILL - EVAPORATION PONDS-Geo-synthetics lining system and Table 5.B - 'INDUSTRIAL WASTE' EVAPORATION PONDS- Geosynthetics lining system The item TYPE II Geotextile (CBR=10.5 KN) is missing in above tables of Schedule of prices. The drawing of Evaporation pond lining system as per USEPA shows provision of Type II – Geotextile (10.5 KN). Kindly include the same in Schedule of Prices. | <i>Type II Geotextile has been included in the attached amended Schedule of price (Attachment 2). An amended design requirements for the lining system of both evaporation ponds for General and industrial waste landfills is attached (Attachment 3)</i> |
| 5 | Part 2, ITB, Clause 2.34, Pg. 23, Implementation Schedule and key dates | The proposed completion period of one year for project design and construction works is insufficient as project involves lots of civil / infrastructure works and earthworks. Hence, we request you to allow time limit of 16 months (1 year + 4 months) for proposed completion of design and construction works. | <i>Bidders shall comply with the requirements of the RFP. However, Bidders are allowed to propose their best completion time which will be considered during the technical evaluation</i> |

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| 6 | Part 3, Scope of Work, Clause 1.2 | Reference for site layout and topography survey (APPENDIX V) is provided. However, topographic survey is missing in the same. We request be'ah to provide topography (contour) map of the entire site in Autocad format, so we can precisely estimate amount of earthworks required at the site. | <i>The Topographic survey is attached in AutoCAD format</i> |
| 7 | - | Which kind of statutory and regulatory permits and clearances are required to be obtained by the contractor? | <i>Bidder shall be familiar with regulatory permits requirements</i> |
| 8 | - | Kindly provide us schedule of site visit and pre-bid meeting. | <i>A site visit will be arranged, all bidders will be informed with the date and time in a timely manner</i> |
| 9 | NOTICE OF SEZAD on https://duqm.gov.om And Part 2, ITB, Clause 2.4, Submittal location | As per Tender Notice uploaded on https://duqm.gov.om by SEZAD, the tender is required to be submitted at SEZAD's office address whereas as mentioned in tender document, the tender is required to be submitted at be'ah's office address. Kindly clarify where we are required to submit our final bid. | <i>Please refer to addendum No 1 ref.: DA/2/2014/1471 dated on 13 Oct 2014</i> |
| 10 | App – II, Schedule of Prices (SoPs), Table 8, Sr. No. 8.1 AND Part – 3, Scope of Work, Clause 2.8.6 | GENERAL MSW LANDFILL CELL GAS VENTING AND COLLECTION SYSTEM: As per SoP, 150 mm dia of HDPE corrugated perforated solid gas vent pipe is to be installed, whereas contrary to this, in Scope of work, 200 mm dia HDPE corrugated perforated pipe is stated. Kindly confirm size of gas vent pipe. | <i>The size of the gas vent pipe should be not less than 150 mm</i> |
| 11 | App – II, Schedule of Prices (SoPs), Table 13, Sr. No. 13.A.1 AND Part – 3, Scope of Work, Clause 2.8.7 | GENERAL & MSW LANDFILL FACILITY – ADMINISTRATION BUILDING: As per SoP, Administration building having min. area of 275 sq.m is required to be constructed, whereas in Scope of work, area of administration building is stated as 300 sq.m. Kindly confirm area of administration building. | <i>The area of the Admin building should be not less than 300 square meter</i> |
| 12 | App – II, Schedule of Prices (SoPs), Table 14, Sr. No. 14.B.1 AND Part – 3, Scope of Work, Clause 2.9.7 | INDTRIAL WASTE: LAB AND LABOUR FACILITY BUILDING In SoP, area of lab and labour facility building is mentioned as 200 sq.m, whereas in Scope of work, area of lab and labour facility building is stated as 150 sq.m. Kindly confirm area of lab and labour facility building. | <i>The minimum area of the industrial waste lab and labour facility building should be 200 square meter</i> |
| 13 | - | What are the existing site infrastructure facilities (such as weighbridge, fencing, road, etc.) available on site? | <i>None of the mentioned facilities are available. The Contractor has to design and construct all such facilities as a part of his work/project.</i> |
| 14 | Part – 3, Scope of Work, Clause 2.5 (11) | Kindly provide exact length of road connecting to the existing haul road outside the facility (Mahut – Al Duqm road) to the entrance of the facility. | <i>Please refer to Part – 3, Scope of Work, Clause 2.5 (8)</i> |

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| 15 | Part – 3, Scope of Work, Clause 2.3.8 (S) AND Part – 3, Scope of Work, Clause 2.6 (2-A) | As per Clause 2.3.8 (5) – Min. depth between the bottom of the landfill cell and ground water is 2 m, whereas as per clause 2.6 (2-A), Min. distance of basal sealing system of the landfill cell to the max. Ground water level shall be 1 m. Kindly confirm Min. distance of basal sealing system of the landfill cell. | <i>The minimum depth between the bottom of the landfill cell and the highest ground water level should be 2 meters</i> |
| 16 | Part-3 Scope of Work Page no 23 Clause no 2.5 (2) | "Chain link fencing shall be at a minimum 3 meters high and razor wire shall be Installed around the perimeter of the plot." Please clarify about plot area where fencing will be provided. | <i>The entire plot shall be fenced.</i> |
| 17 | Part-3 Scope of Work Page no 28 Clause no 2 .6-Z | "Design a phasing berm towards the extension side with a minimum top width of 2 meters; the lining system layers shall be terminated at the outer edge of the berm to facilitate the extension of the landfill. The minimum height and side slopes of the berm shall be approved by be'ah based on site specific conditions." Please provide height restriction and minimum slope requirement for Phasing berm towards extension of the Landfill | <i>For capacity calculation purposes, the height of berm shall be 2m and the phasing berm sides slopes shall be 1V:2H</i> |
| 18 | Part-3 Scope of Work Page no 31 Clause no 2.8.2 .c | "The capacity of the Phase 1, landfill cell1, shall be calculated In terms of air space provided up to the embankment levels and in compliance with the design limitation provided above in this part of the RFP. Bidder must provide detailed capacity calculation by showing the plan of landfill cell I, bottom levels, top embankment levels, and dimensions of the cell and the embankment, in addition of sections taken E-W and NS. This information In mandatory and shall be submitted with the bid technical proposal. Failure In submission of adequate and precise capacity calculations for landfill cell-1. based on the limitation, directives and criteria presented In this RFP will result In rejection of the bid proposal." Please provide us topographical survey for the proposed Landfill construction area. | <i>The Topographic survey is attached in AutoCAD format</i> |

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| 19 | Part-3 Scope of Work Page no 43 Clause no 2.9.2 (3) | <p>"The area of Phase1 is 100m X 100m with filling height of initially 5 m with possibility to extent the height to 10m."</p> <p>Please clarify height restriction of landfill cell from ground level.</p> <p>Also clarify the area allocated for Phase-1(100 m X 100m) is inclusive of outside perimeter of the landfill surrounding embankment.</p> | <p><i>The cell of 100 *100 m is inside the embankment (minimum bases area 10,000 m²). The embankment height prepared by the contractor shall be minimum 5 m having internal slope of 1V:3H and meeting stability requirements. The prepared capacity shall be minimum 50,000 m³ calculated from bottom of cell to tope of embankment. The cell shall be prepared for possible extension to 10 m, giving a capacity of 100,000 m³, the extension work is however not included in the work of the contractor.</i></p> |
| 20 | Part-3 Scope of Work Page no 43 Clause no 2.9.2 (3) | <p>"The capacity of Phase-1 is thus 50-100,000 m³ ."</p> <p>Please clarify the exact Landfill Capacity requirement for Industrial Landfill cell Phase-1.</p> | <p><i>Refer to item 19</i></p> |
| 21 | Part-3 Scope of Work Page no 43 Clause no 9.2 | <p>Please clarify height restriction criteria for embankment of industrial landfill cell</p> | <p><i>Refer to item 19</i></p> |
| 22 | | <p>The Experience conditions for Contractor as minimum of 3 landfill Projects: What does is mean? 3 (Hazardous and nonhazardous),or 3 landfill projects either hazardous or nonhazardous.</p> | <p><i>Refer to RFP 2.19.1</i></p> |
| 23 | | <p>Since the schedule of prices is in lump sum form, what are the criteria governs the periodic invoices?</p> | <p><i>Monthly progress payment based on progress at site. Refer to RFP</i></p> |

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| 24 | In item 5, section 2.20 Tender Part 02, | It is required to submit a detailed breakdown of all items including Quantity, unit rate to match with the lump sum schedule price. Is that means the work may be quantitvely considered or as lump sum? | <i>This is an EPC lump sum contract and the contractor is fully responsible for any increase in quantities resulting from compliance of design criteria, requirements and be'ah approval of final design during the execution of project. The schedule of prices will form the base of commercial evaluation. However, The breakdown of the estimated quantities and unit rate are only required to demonstrate how bidder arrives to their prices only and will not be considered as fixed quantities but is considered as a general estimation subject to increase. Final approved design meeting the design requirements and criteria as stipulated in the RFP will form the bases for the final quantities and the bidder will be responsible to deliver all requirements and quantities as per the contractual lamp sum price.</i> |
| 25 | | We need the hazardous waste composition. | <i>This is an EPC contract and operation is not part of this tender. Refer to RFP</i> |
| 26 | In part one item 3.2.1 | MSW landfill facility potential future infrastructure, shall we take in our consideration the technical specifications and the cost for this infrastructure or just determine the area which required for them in the layout? If yes, please give us the quantities for each item? | <i>Only locations and estimated areas are required during the tender stage and final sizing to be developed during the design stage.</i> |
| 27 | | Can you please indicate the maximum height of the top of waste within the MSW landfill cell if this is to be limited due to visibility from the nearby road or any surrounding land uses? | <i>Refer clause 2.8.2 of the RFP</i> |
| 28 | | Can you please confirm that the actual location of the site can be taken from the coordinates provided in Site Layout- 1included within Appendix V? | <i>The coordinates provided in Site plot appendix V shall be used for the purpose of the tender.</i> |
| 29 | | Can you confirm that the leak detection system is only required within the hazardous waste cell and both the leachate evaporation ponds and not in the MSW landfill cell? | <i>Yes, Refer to RFP</i> |

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| 30 | Part 3 Scope of Work : 2.3.8 Design Considerations, Clause S (B) | it states that the minimum depth between the bottom of the landfill cell and groundwater should be 2 m; however, in Part 3 Scope of Work: 2.6 landfill Cells Design limitations/Directives and Basic Principles, Clause 2 (A) it states that the minimum distance of the basal sealing system to the maximum ground water level shall be 1m. Please confirm? | <i>The lowest pint along the bottom of the landfill cell shall be at minimum 2m from the encountered subsurface water and or groundwater.</i> |
| 31 | Part 3 Scope of Work: 2.5 Design Responsibilities- On Site Issues, Clause 9 | it states that unpaved roads shall be covered with bitumen to maintain the surface In a stable and erosion free condition. Can you confirm if this is applicable to all unpaved roads and/or is it acceptable that the roads are constructed from compacted granular sub base without the need to install a bitumen surface? | <i>Covering with bitumen is applicable to all unpaved roads.</i> |
| 32 | | Can you indicate if there are any gravel quarries in the vicinity of the site? | <i>Bidder is responsible for the supply of all required soil and gravel to site.</i> |
| 33 | | Should the accredited geotechnical engineer be from OMAN? | <i>Omani firm is preferred. Bidder shall comply with the requirements of the RFP</i> |
| 34 | | For paved road construction, is it necessary to the contractor to have specific experience in road construction | <i>Must have experience in road construction. Refer to RFP.</i> |
| 35 | | Is there any minimum dimensions should be considered for bottom of the MSW landfill cell | <i>The landfill cell shall meet the design capacity and criteria stipulated in the RFP.</i> |
| 36 | | The minimum height and width, and side slopes of the Separation berm(s) shall be approved by be'ah based on site specific conditions. HOW such unexpected variations in quantity may be monetarily considered? | <i>Refer to item 17 above</i> |
| 37 | | The design is only subjected to the minimum of 300m2/200m2 respectively for the total area of buildings. Hence, we would like to investigate about the minimum required areas for the building components (Rooms, Offices, Toilettes, ..etc.) . | <i>This is an EPC contract. Refer to RFP.</i> |
| 38 | | In addition, are there any considerations should be taken into account for the proportions between the lengths to the width of the building like the equipment parking garage. | <i>This is an EPC contract. Refer to RFP;</i> |
| 39 | | The design is only subjected to the minimum of 300m2/150m2 respectively for the total area of buildings. Hence, we would like to investigate about the minimum required areas for the building components (Rooms, Offices, Toilettes,....etc.). | <i>This is an EPC contract. Refer to RFP;</i> |

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| 40 | | In addition, are there any considerations should be taken into account for the proportions between the lengths to the width of the building. | <i>Bidder shall comply with the requirements stipulated in the RFP.</i> |
| 41 | | The laboratory for the labor facility building is recommended to be minimum of 30m2. However, the balance items have not. Also, the same building in the MSWLF has not constrained to this area ... need clarification.. | <i>Bidder shall comply with the requirements stipulated in the RFP.</i> |



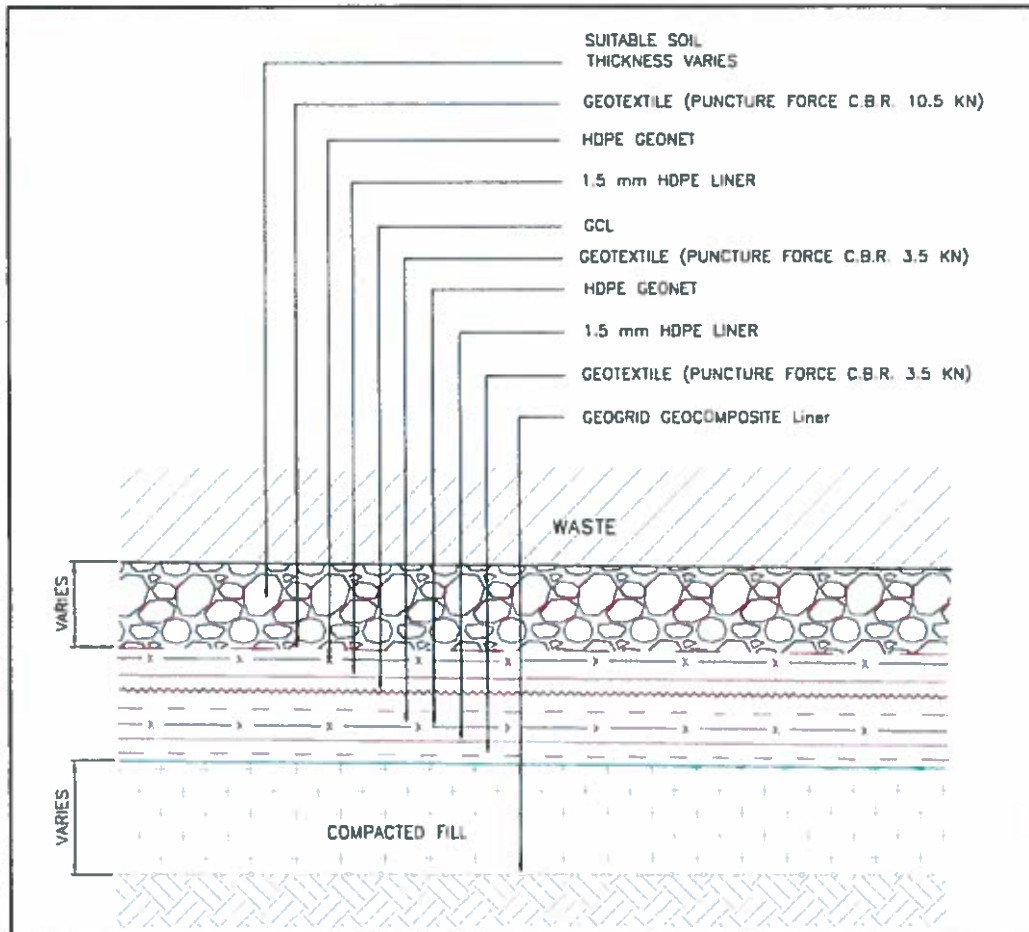
height of initially 5 m with a possibility to extend the height to 10 m. The capacity of phase I is thus 50-100,000 m³.

Therefore, the Contractor must provide the design details for the industrial landfill for 30 years and drawings showing the waste filling sequence and closure plan along with the operational plan and monitoring requirements and plans. Though the landfill design is required for a 30 year period, the Contractor shall be responsible only for the construction of the Phase I cell with the capacity described in 2.9.2 (3) along with the construction of the infrastructure (i.e. Administration building, labour building, equipment repair garage, Storage building, leachate treatment plant, evaporation ponds etc). However, the Contractor shall be required to provide plans and drawings showing the waste filling sequence for each phase and closure plan for each phase along with the operational plan and monitoring requirements and plans.

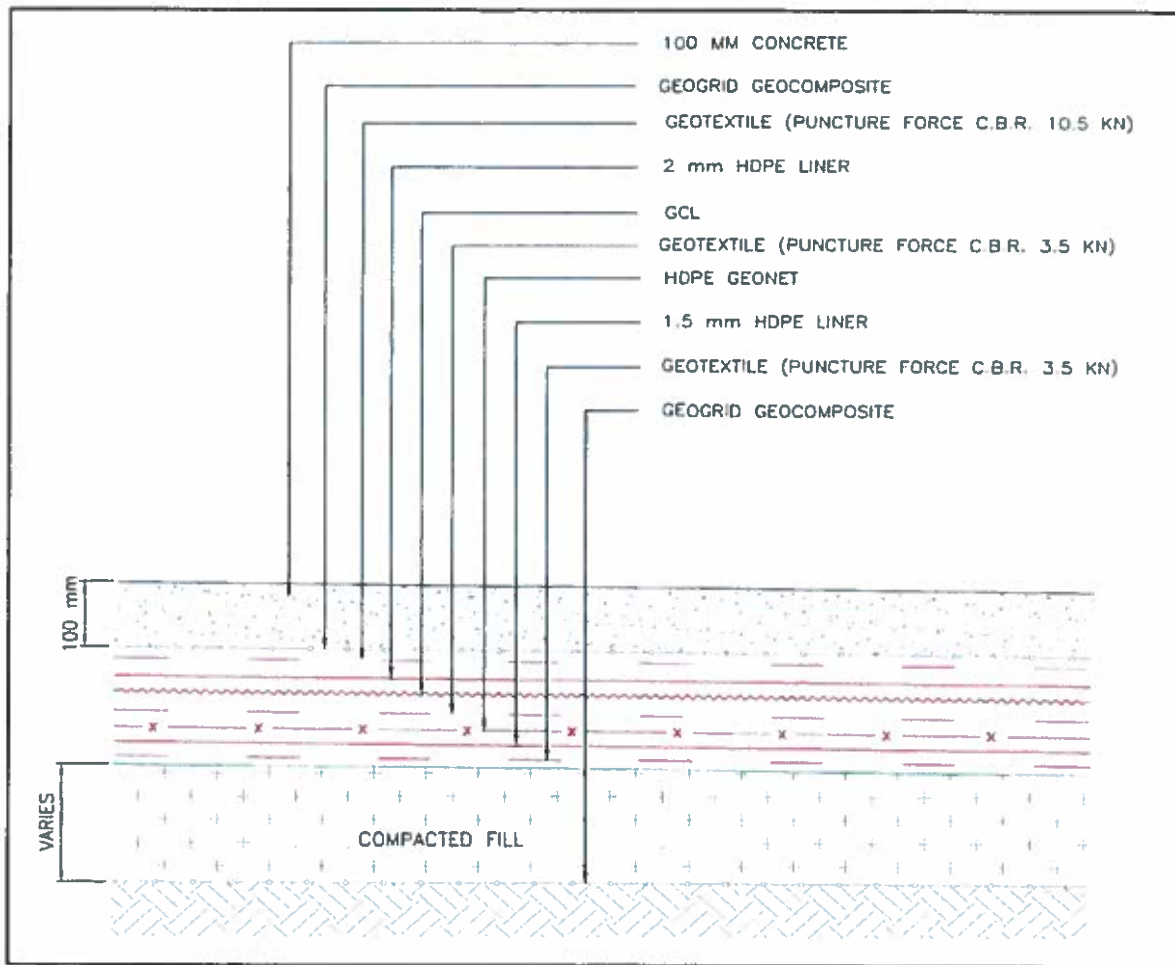
2.9.3 Industrial waste landfill Basal Lining System

- (1) Soil formation level
- (2) **Reinforced soil foundation layer:** (applicable for landfill cells and the evaporation ponds). Due to the nature of the site geology, the landfill cell must be constructed on stable foundation. The foundation layer shall consist of :
 - A- **Geogrid geo-composite;** placed directly on the top of the formation layer to increase the bearing capacity of the soil and to minimize settlement to acceptable level. The Geogrid geo-composite shall comply with the particular specifications
 - B- **Engineered soil foundations** layer placed directly on Geogrid geo-composite layer. The soil shall meet the particular specifications. The thickness of the soil shall be determined based foundation design analyses.
- (3) **Geotextiles layer (CBR 3.5 kN) to be placed directly on the top of the landfill foundation soil and beneath the HDPE (1.5 mm) liner; meeting the particular specifications**
- (4) **1.5 structured HDPE liner along the slope and smooth along the floor meeting the particular specifications**
- (5) HDPE Geonet meeting the particular specifications
- (6) High strength geotextiles (CBR; ≥ 3.5 KN) meeting the particular specifications
- (7) Leachate collection and detection system

- (8) High Shear strength Geosynthetics clay liner (GCL) meeting the particular specifications
- (9) 1.5 structured HDPE liner along the slope and smooth along the floor meeting the particular specifications
- (10) HDPE Geonet meeting the particular specifications
- (11) High strength geotextiles protection layer (CBR. 10.5KN) meeting the particular specifications
- (12) Suitable thickness soil protection layer to allow for the movement of equipment inside the landfill and maintain the integrity of the lining system and meeting the particular specifications



Example: Details of Cell Lining system as per USEPA.

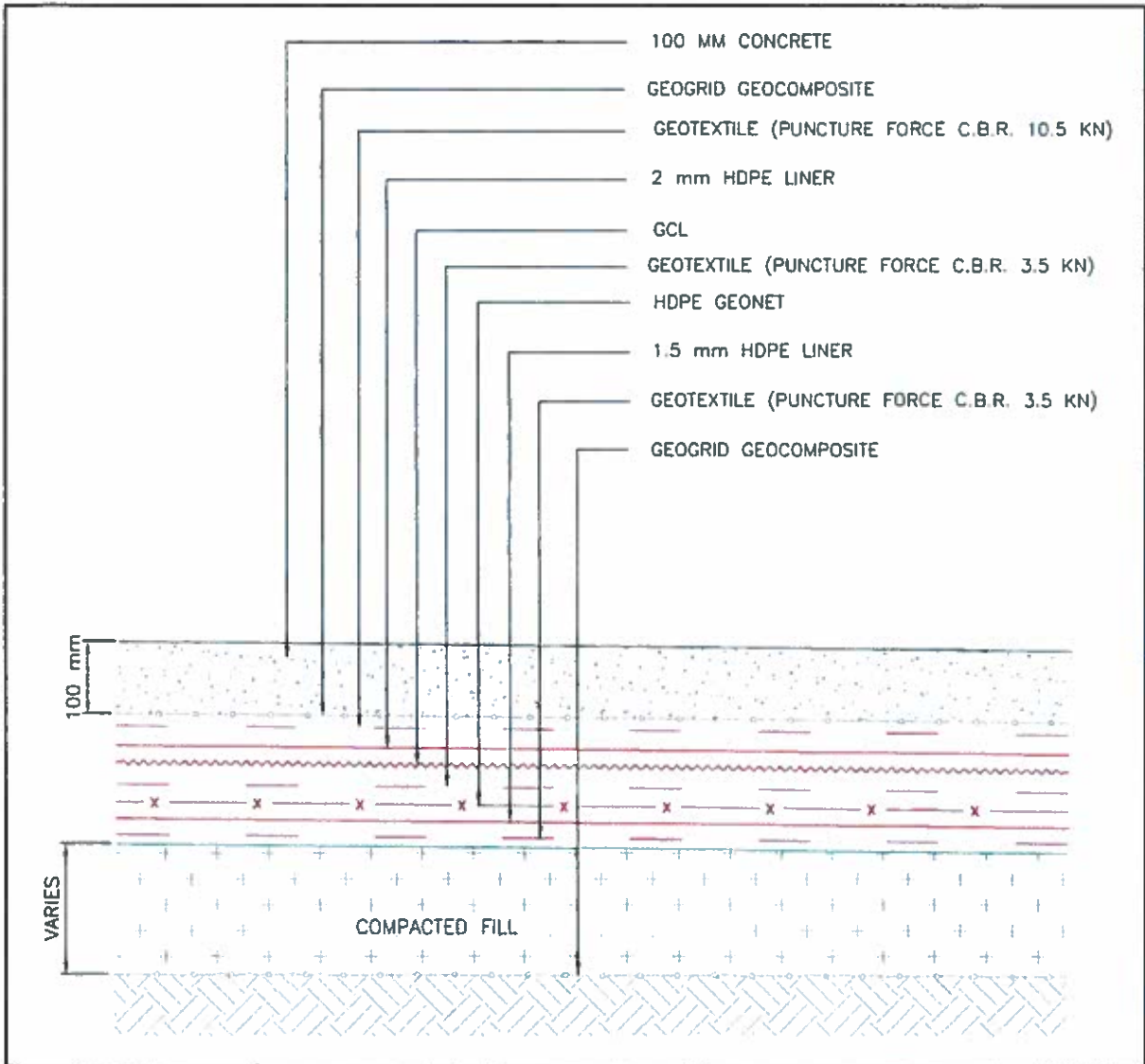


Example: Evaporation pond lining system as per USEPA (for MSW and industrial waste landfills)

2.8.6 Landfill Gas Venting and Collection System

The Contractor shall design venting system for the landfill gas from within the area of the landfill including the following:

- (1) 200 mm inside diameter perforated HDPE pipes to be installed along the slope of the embankment. The pipes shall be spaced at 50 meters between the pipes. Each set of pipes shall extend 6-m along the floor of the landfill from the toe of the slope and the top end of the pipe shall extend 1 meter from the top of the embankment outside the cell. The pipes shall be covered with 10-20 mm clean gravel, wrapped around in geotextile cover with proper apparent opening size calculated to meet the filter design criteria. The geotextile shall BY 100% UV resistance and shall have a minimum puncture force of 10.5 KN.



Example: Evaporation pond lining system as per USEPA (for MSW and industrial waste landfills)