Bid Number: GEM/2025/B/5803599
Dated: 10-02-2025

Bid Corrigendum

GEM/2025/B/5803599-C5

Following terms and conditions supersede all existing “Buyer added Bid Specific Terms and conditions” given in the bid document or any previous corrigendum. Prospective bidders are advised to bid as per following Terms and Conditions:

Buyer Added Bid Specific Additional Terms and Conditions

1. Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.
2. Buyer Organization specific Integrity Pact shall have to be complied by all bidders. Bidders shall have to upload scanned copy of signed integrity pact as per Buyer organizations policy along with bid. Click here to view the file
3. Buyer uploaded ATC document Click here to view the file.

Disclaimer

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization, whereby Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity / restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and / or terms and conditions governing the bid. If any clause(s) is / are incorporated by the Buyer regarding following, the bid and resultant contracts shall be treated as null and void and such bids may be cancelled by GeM at any stage of bidding process without any notice:-

1. Definition of Class I and Class II suppliers in the bid not in line with the extant Order / Office Memorandum issued by DPIIT in this regard.
2. Seeking EMD submission from bidder(s), including via Additional Terms & Conditions, in contravention to exemption provided to such sellers under GeM GTC.
3. Publishing Custom / BOQ bids for items for which regular GeM categories are available without any Category item bunched with it.
4. Creating BoQ bid for single item.
5. Mentioning specific Brand or Make or Model or Manufacturer or Dealer name.
6. Mandating submission of documents in physical form as a pre-requisite to qualify bidders.
7. Floating / creation of work contracts as Custom Bids in Services.
8. Seeking sample with bid or approval of samples during bid evaluation process. (However, in bids for attached categories, trials are allowed as per approved procurement policy of the buyer nodal Ministries)
9. Mandating foreign / international certifications even in case of existence of Indian Standards without specifying equivalent Indian Certification / standards.
10. Seeking experience from specific organization / department / institute only or from foreign / export experience.
11. Creating bid for items from irrelevant categories.
12. Incorporating any clause against the MSME policy and Preference to Make in India Policy.
13. Reference of conditions published on any external site or reference to external documents/clauses.
14. Asking for any Tender fee / Bid Participation fee / Auction fee in case of Bids / Forward Auction, as the case may be.

15. Any ATC clause in contravention with GeM GTC Clause 4 (xiii)(h) will be invalid. In case of multiple L1 bidders against a service bid, the buyer shall place the Contract by selection of a bidder amongst the L-1 bidders through a Random Algorithm executed by GeM system.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

*This document shall overwrite all previous versions of Bid Specific Additional Terms and Conditions.

This Bid is also governed by the General Terms and Conditions

OIL INDIA LIMITED
(A Government of India Enterprise)
P.O. Duliajan, Pin – 786602
Dist-Dibrugarh, Assam

CORRIGENDUM NO. 3 DATED 10.02.2025 to GeM-TENDER NO. GEM/2025/B/5803599: Hiring of Drilling Environment Management Services.

This Corrigendum is issued to notify the following:

1.0 The following clauses has been amended and to be read in place of existing:

Appendix XX			
S.N.	**Clause No.**	**Tender Description**	**Amended Description**
1	**5.1.3.3 (i)**	The centrifuge preferable either of Brant (NOV), Derrick or Swaco.	The centrifuge preferable either of Brant (NOV), Derrick or Swaco or substantially equivalent make.
2	**2.4 & 3.4**	Waste (Dry Cuttings) transportation/disposal to designated place (Regular for in-situ disposal and call out for disposal at another designated place).	Waste (Dry Cuttings) transportation /disposal to designated place (Regular for in-situ Disposal)
3	**3.4**	**WASTE DISPOSAL** Dry Cuttings / Waste transportation /disposal to designated place (Regular for in-situ disposal and call out for disposal at another designated place).	**WASTE DISPOSAL** Dry Cuttings / Waste transportation /disposal to designated place (Regular for in-situ disposal)
4	**5.1.3.1, 5.1.3.2, 5.1.3.3, 5.2.3.1, 5.2.3.2, 5.2.3.3**	Document in Annexure VII-XII (EQUIPMENT)	Annexures VII-XII (EQUIPMENT) have been uploaded.
5	**5.1.3.6 (ii)**	ii) Dry cuttings are to be taken by the contractor to designated site provided by OIL for disposal (or as advised by OIL). This site will be either present drilling site or away from present drilling site where drill cuttings are generated as advised by OIL.	ii) Dry cuttings are to be taken by the contractor to designated site provided by OIL for disposal (or as advised by OIL). This site will be present drilling site.

6	**5.3.1**	**SERVICES REQUIREMENT** iii) To facilitate the oil filled cask/ drum to dispose nearest OIL's designated place**.**	**SERVICES REQUIREMENT** iii) To facilitate the oil filled cask/ drum to dispose at OIL's designated place onsite**.**
7	**5.3.2.5**	**Transportation** To keep the oil filled cask/ drum at OIL's designated place onsite or offsite.	**Transportation** To keep the oil filled cask/ drum at OIL's designated place onsite.
8	**5.4.1.1**	**GENERAL** i) The contractor shall provide waste disposal services with equipment/tools, carrier (Transportation vehicle) and manpower to dispose drill cutting from wellsite. ii) Contractor shall confirm to follow all the norms of waste disposal as prescribed by PCBA or EPA, 1986 and the Rules, Regulations and Statutory Order &Circulars there under. iii) Drill cutting transport (in-situ or outside) will be subject to the issuance of notice/advice from OIL. Maximum distance for transportation of treated cuttings will be 60 KM. iv) Evacuation arrangements like JCB, Carriers or any others equipment required for such evacuations will be arranged by the contractor. v) Minimum 08 Numbers of Drums /Containers per set manufactured to be used for storing waste (drums or bucket with proper cover) will be in good condition, clearly labelled and properly closed when not in use to be provided. The container shall of two types (04 each type) clearly written the following: a) Biodegradable waste. b) Non-Biodegradable waste. Note: The container shall be handed over to the rig operator or kept with the Contractor as advise by OIL. In case of damage during the contract period, contractor shall replace the same but	**GENERAL** i) Contractor shall confirm to follow all the norms of waste disposal as prescribed by PCBA or EPA, 1986 and the Rules, Regulations and Statutory Order &Circulars there under. ii)Minimum 08 Numbers of Drums /Containers (200L capacity) per Set manufactured to be used for storing waste (drums or bucket with proper cover) will be in good condition, clearly labelled and properly closed when not in use to be provided. The container shall be of two types (04 each type) clearly written the following: a) Biodegradable waste.

		limited to 16 Numbers maximum in total including initial supply.	b) Non-Biodegradable waste. Note: The container shall be handed over to the rig operator or kept with the Contractor as advise by OIL. In case of damage during the contract period, contractor shall replace the same but limited to 16 Numbers maximum in total including initial supply.
9	**5.4.1.2 (i)**	i)Testing of Drill Cuttings or Drill Waste (Solid Drill Cutting) under Schedule-2 of Hazardous Wastes (Management & Handling) Rule 1989. [Refer to Appendix: Drilling Cutting Testing].	i)Testing of Drill Cuttings or Drill Waste (Solid Drill Cutting) under Schedule-2 of Hazardous Wastes (Management & Handling) Rule 1989. [Refer to Appendix: Drilling Cutting Testing]
10	**5.5.1**	Table 4: Sl.No 2 **Plant Manager** Education Qualification Graduate Engineer in Chemical/ Mechanical/Diploma in Chemical/ Mechanical Engineering from AICTE recognised institute / Science Graduate with Chemistry as a subject from Govt. recognized University	Table 4: Sl.No 2 **Plant Manager** Education Qualification Graduate Engineer in Electrical /Instrumentation /Chemical/ Mechanical /Diploma in Electrical/ /Instrumention Chemical/ Mechanical Engineering from AICTE recognised

			institute / Science Graduate with Chemistry as a subject from Govt. recognized University
11	**5.7**	*iv)* Preparation of OIL's old pits for disposal of dried cuttings shall be done by Company. However, contractor shall have their own TSD facility for Transport/store/disposal, if OIL asks for the same.	*iv)* Preparation of OIL's old pits for disposal of dried cuttings shall be done by Company.
12	**5.4.1.2** TESTING OF CUTTINGS	Testing of Drill Cuttings or Drill Waste (Solid Drill Cutting) under Schedule-2 of Hazardous Wastes (Management & Handling) Rule 1989. [Refer to Appendix: Drilling Cutting Testing]	SCHEDULE II: Appendix: Drilling Cutting Testing has been uploaded.
13	**4.0** GCC Clause No. 10 (Performance Security)	Upon awarding of the contract, the contractor shall furnish performance security for an amount of 5.00% of Contract Value within thirty (30) days of receipt of LoA with a validity of three (3) months beyond contract period.	Upon awarding of the contract, the contractor shall furnish performance security for an amount of 3.00% of Contract Value within thirty (30) days of receipt of LoA with a validity of three (3) months beyond contract period.
14	**29.0 SCC** **New Clause**	**IP Infringement** Contractor shall indemnify and hold the Company harmless from any third party claims arising on account of intellectual property infringement with respect to its services or products except where such infringement is caused due to: Specific modification or design of Contractor equipment or Services to meet Company's specifications. Combination of Contractor's equipment or Services in combination of other equipment and/ or services not recommended by Contractor, Out of unauthorized additions or modifications of Contractor's equipment or services by Company, or Company's use of Contractor's equipment or Services that does not correspond to Contractor's published standards or specifications; in which case, the Company shall indemnify and hold the Contractor harmless.	

15	**30.0 SCC** **New Clause**	**Intellectual Property Ownership** While performing the Work for the Company, Contractor may utilize expertise, know- how and other intellectual capital (including intellectual property) and develop additional expertise, know-how and other intellectual capital (including intellectual property) which are Contractor's exclusive property and which Contractor may freely utilize in providing services for its other customers. Except where expressly and specifically indicated in writing, and in exchange for appropriate agreed payment, Contractor does not develop any intellectual property for ownership by Company, Contractor retains sole ownership of any such intellectual capital (including intellectual property) created by Contractor during the course of providing the Services.

2.0 Note: Considering urgency of the services of subject tender, Bid Closing Date (B.C.D) shall not be further extended hence, bidders are advised to submit their bid within the current B.C.D. Additionally, queries/clarifications received against the tender within less than 3 days to B.C.D will not be entertained and replied. OIL will not be responsible for non-receipt or late receipt of any bidder's query.

All other terms and conditions of the Bid Document including earlier amendments, if any remain unchanged. Details can be viewed at www.oil-india.com.

SD/-

SR. OFFICER- CONTRACTS (O)

Tender No. GEM/2025/B/5803599 dt 11.1.2025 for Hiring Services of Integrated Drilling Environment Management Services for Drilling Rigs-02 Packages for 04 years.

SPECIFICATION LIST

ANNEXURE: VII: SPECIFICATION OF FEEDING AND DISCHARGE ARRANGEMENT

ANNEXURE: VIII: SPECIFICATION OF VERTICAL CUTTINGS DRYER EQUIPMENT

ANNEXURE: IX: SPECIFICATION OF CENTRIFUGE

ANNEXURE: X: SPECIFICATION OF CHEMICAL SEPARATION UNIT│FLOCCULATION UNIT

ANNEXURE: XI: SPECIFICATION OF DEWATERING UNIT

ANNEXURE: XII: SPECIFICATION OF RO UNIT

ANNEXURE: VII

SPECIFICATION OF FEEDING AND DISCHARGE ARRANGEMENT

(VERTICAL CUTTINGS DRYER PACKAGE)

Sl No	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: FILE & PAGE NO. BY BIDDER
1	Effective feeding arrangement via screw conveyor or progressive cavity cuttings transfer pump or manually by Back Hoe Loader to feed drill cuttings into VCD hopper.		
2	In case of manual handling cutting retainer tank of half-moon shaped to be used for collecting the cuttings.		
3	The size of the half-moon shaped tank shall be capable of handling cuttings generated from desander, desilter and vibrating screen during drilling operation.		
4	Solids separation system in VCD must have effective and automated discharge arrangement with adjustable length (extendable or retractable) and height. Dry cuttings should be stock-piled, away from the VCD system, directly into waste containment bin / jumbo bags.		
5	Solids separation system in VCD must have effective and automated discharge arrangement with adjustable length (extendable or retractable) and height.		

Note:

- Effective arrangement to transfer the solid generated in the centrifuge to be treated in recycle unit and subsequently, the filter pressed output to be disposed as per CPCB guidelines

ANNEXURE: VIII

SPECIFICATION OF VERTICAL CUTTINGS DRYER EQUIPMENT

(VERTICAL CUTTINGS DRYER PACKAGE)

Sl No	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: FILE & PAGE NO. BY BIDDER
1	Vertical Cutting Dryer (VCD) supplied under the contract shall be brand new/ vintage of 5yrs.		
2	Vertical Cutting Dryer must be designed for handling & drying water based mud cuttings. OEM certification shall be required for confirmation in this regard.		
3	Capable of handling semi liquid cuttings of desilter and desander.		
4	Feed capacity 40 - 80 Tone per Hour (10 – 20 kg/s)		
5	Independent VFD Variable Control of Flites and Screen RPM.		
6	Conical Centrate Collection Launder Section to aid in Centrate Discharge from VCD.		
7	Flights of VCD should be Tungsten Carbide or Ceramic lined.		
8	Screen should be Chrome-Hardened Profile Wire.		
9	Coating should be Zinc-Rich Powdered Industrial Coat		
10	Direct Drive Motor Configuration without the use of Belts.		
11	NEMA 7 Class 1 – Division 1or IS/IEC/EN: 60079-1 standard Air-Cooled VFD Control System with PLC-Driven Load Compensation for Drive Motors		
12	Capable of protecting from water ingress and maintenance window to be provided.		
13	Interior should have wear resistant materials to increase life cycle.		
14	Rotor should be made of wear resistant materials like tungsten etc.		
15	Maintenance-Free Oil-Sealed Gearbox that Requires No Active Lubrication Pump,Oil Filter, or External Oil Reservoir.		
16	Design should comply the National Fire Protection Association ("NFPA") Publication 70 for Class I – Division I /		

	60079 series of standards for Class I – Division I, where it deemed to fit		
17	VCD Package should be compact and integrated, mounted on a skid or on trailerized platform. Both configurations include a maintenance and service deck to support the VCD, feed hopper and liquid collecting tank.		
18	A safe staircase is to be provided, along with a secondary emergency ladder with proper railing		
19	Emergency safety interlock/emergency shutdown system should be available.		
20	System should be so designed that unit can be restarted only by manual when it trips.		
21	Catch/Containment tank must be available for collecting the fluid output from the VCD for feeding the same to a Decanter Centrifuge.		

ANNEXURE: IX
SPECIFICATION OF CENTRIFUGE
(VERTICAL CUTTINGS DRYER PACKAGE)

Sl No	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: FILE & PAGE NO. BY BIDDER
1	The centrifuge preferable either of Brant (NOV), Derrick or Swaco or similar type substantially equivalent make.		
2	The Centrifuge should have the capacity for LGS (low gravity solid) separation.		
3	The Centrifuge should have proper safety sensor/indicator/ gauge to monitor vibration, speed, temperature, pressure and torque.		
4	The Centrifuge must have proper control device and emergency shut system.		
5	All the rotating part must be covered.		
6	It should carry certification like ATEX or equivalent for using in hazardous area.		
7	System should be so designed that unit can be restarted only by manual when it trips.		
8	The Centrifuge preferably should have the following basic parameters: *a)* Operating speed : 3000 RPM(Minimum) *b)* G-Force: 1500-3000 G (Minimum) *c)* Hydraulic flow rate : 8 Cubic metre/day (Minimum) *d)* Minimum 14" Bowl		

ANNEXURE: X

SPECIFICATION OF CHEMICAL SEPARATION UNIT | FLOCCULATION UNIT (VERTICAL CUTTINGS DRYER PACKAGE)

Sl No	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: FILE & PAGE NO. BY BIDDER
1	Provision should be available for chambered Chemical treatment for Coagulation and Flocculation of Effluent with Agitator for chemical mixing at desired rate required for various Effluent types. It should consist of Flash Mixer & Flocculator with agitator, corrugated plate interceptor for aiding separation of oil & grease and suspended solid particles from the effluent.		
2	Tube Clarifier chamber, with hopper bottom sludge collection system, for final sedimentation of suspended solid particles, Pressure Sand Filter and Dual Media Filter for filtering the clarified Effluent after the Coagulation-Flocculation, and Clarification stages, Activated Carbon Filter for reduction of Odour, volatile organic compounds, Chlorine, etc. shall be available.		
3	Provision should be available for the chemical dosing as per requirement and capable of monitoring of such dosing conveniently.		
4	Provision should be available for removal of Oil &Grease and smaller solid particles from the separated Effluent after Coagulation and Flocculation.		
5	Unit should have hopper bottom sludge collection system, for periodic removal of the solid particles.		
6	Unit should be capable of removing the turbidity and suspended particles present in the feed water.		

Note:

This unit should be capable of performing the neutralization of effluent and chemical treatment (Coagulation and Flocculation of Effluent). The treated liquid effluent / output must conform to SPCB/CPCB norms, and eligible to be re-used as technical water and for rig utility.

ANNEXURE: XI
SPECIFICATION OF DEWATERING UNIT
(VERTICAL CUTTINGS DRYER PACKAGE)

Sl No	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: FILE & PAGE NO. BY BIDDER
1	A mechanical device (Filter Press) is to be provided for dewatering of sludge produced in chemical separation │flocculation unit.		
2	Minimum daily processing of sludge is 30 m^3 day. However, the capacity of the filter press shall match with the sludge output produced in the VCD and recycle unit, so that the operation of both the units remains unaffected		

Note:
The Solid cakes generated from the dewatering unit to be disposed as described in 6.4 under "Waste Transportation, Store and Disposal".

ANNEXURE: XII
SPECIFICATION OF RO UNIT
(VERTICAL CUTTINGS DRYER PACKAGE)

Sl No	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: FILE & PAGE NO. BY BIDDER
1	Sedimentation, Clarification and Filtration of separated Effluent in a Skid-mounted RO Unit (Reverse Osmosis Unit), with Reverse Osmosis method for desalination of dissolved solids such as Chlorides, Sulphates, etc., which constitute the like sediment, volatile organic compounds (VOCs), taste and odour from the filtered Effluent.		
2	RO unit should consist of pre-treatment set-up of Activated Carbon Filter and Micron Cartridge Filter for removal of impurities not suitable for RO Membranes, SS Feed Pump, Anticipant Dosing system, Membrane cleaning setup, High Pressure Pump, Multiple arrangement of 8 inch dia Sea-water type/other suitable type Membranes for reducing the values of TDS (such as Chlorides, etc.), Hardness, Alkalinity to be within CPCB/SPCB norms for on-shore discharge, and for providing technical water for mud preparation.		
3	The treated output through RO Membranes (Permeate) will be within the SPCB norms, and the trapped dissolved solids/salts/minerals will come out as Rejects, which will be discharged to a separate Pit for natural drying/evaporation. The same may be reinjected by OIL in injection wells at OIL's scope.		
4	Minimum processing capacity of RO should be 150 M^3/ day, however capacity of the RO unit shall match with the output produced in the filter press and recycle unit, so that the operation of both the units remains unaffected.		

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SCHEDULE II

[See rule 3 (1) (17) (ii)]

List of waste constituents with concentration limits

Class A: Based on leachable concentration limits [Toxicity Characteristic Leaching Procedure (TCLP) or Soluble Threshold Limit Concentration (STLC)]

Class	Constituents	Concentration in mg/l
(1)	(2)	(3)
A1	Arsenic	5.0
A2	Barium	100.0
A3	Cadmium	1.0
A4	Chromium and/or Chromium (III) compounds	5.0
A5	Lead	5.0
A6	Manganese	10.0
A7	Mercury	0.2
A8	Selenium	1.0
A9	Silver	5.0
A10	Ammonia	50*
A11	Cyanide	20*
A12	Nitrate (as nitrate-nitrogen)	1000.0
A13	Sulphide (as H_2S)	5.0
A14	1,1-Dichloroethylene	0.7
A15	1,2-Dichloroethane	0.5
A16	1,4-Dichlorobenzene	7.5
A17	2,4,5-Trichlorophenol	400.0
A18	2,4,6-Trichlorophenol	2.0
A19	2,4-Dinitrotoluene	0.13
A20	Benzene	0.5
A21	Benzo (a) Pyrene	0.001
A22	Bromodicholromethane	6.0
A23	Bromoform	10.0
A24	Carbon tetrachloride	0.5
A25	Chlorobenzene	100.0
A26	Chloroform	6.0
A27	Cresol (ortho+ meta+ para)	200.0
A28	Dibromochloromethane	10.0
A29	Hexachlorobenzene	0.13
A30	Hexachlorobutadiene	0.5
A31	Hexachloroethane	3.0
A32	Methyl ethyl ketone	200.0
A33	Naphthalene	5.0
A34	Nitrobenzene	2.0
A35	Pentachlorophenol	100.0
A36	Pyridine	5.0
A37	Tetrachloroethylene	0.7
A38	Trichloroethylene	0.5

(1)	(2)	(3)
A39	Vinyl chloride	0.2
A40	2,4,5-TP (Silvex)	1.0
A41	2,4-Dichlorophenoxyacetic acid	10.0
A42	Alachlor	2.0
A43	Alpha HCH	0.001
A44	Atrazine	0.2
A45	Beta HCH	0.004
A46	Butachlor	12.5
A47	Chlordane	0.03
A48	Chlorpyriphos	9.0
A49	Delta HCH	0.004
A50	Endosulfan (alpha+ beta+ sulphate)	0.04
A51	Endrin	0.02
A52	Ethion	0.3
A53	Heptachlor (& its Epoxide)	0.008
A54	Isoproturon	0.9
A55	Lindane	0.4
A56	Malathion	19
A57	Methoxychlor	10
A58	Methyl parathion	0.7
A59	Monocrotophos	0.1
A60	Phorate	0.2
A61	Toxaphene	0.5
A62	Antimony	15
A63	Beryllium	0.75
A64	Chromium (VI)	5.0
A65	Cobalt	80.0
A66	Copper	25.0
A67	Molybdenum	350
A68	Nickel	20.0
A69	Thallium	7.0
A70	Vanadium	24.0
A71	Zinc	250
A72	Fluoride	180.0
A73	Aldrin	0.14
A74	Dichlorodiphenyltrichloroethane (DDT), Dichlorodiphenyldichloroethylene (DDE), Dichlorodiphenyldichloroethane (DDD)	0.1
A75	Dieldrin	0.8
A76	Kepone	2.1
A77	Mirex	2.1
A78	Polychlorinated biphenyls	5.0
A79	Dioxin (2,3,7,8-TCDD)	0.001

Class B: Based on Total Threshold Limit Concentration (TTLC)

Class	Constituent	Concentration in mg/kg
(1)	**(2)**	**(3)**
B1	Asbestos	10000
B2	Total Petroleum Hydrocarbons (TPH) (C5 - C36)	5,000

Note:

(1) The testing method for list of constituents at A1 to A61 in Class-A, shall be based on Toxicity Characteristic Leaching Procedure (TCLP) and for extraction of leachable constituents, USEPA Test Method 1311 shall be used.
(2) The testing method for list of constituents at A62 to A79 in Class- A, shall be based on Soluble Threshold Limit Concentration (STLC) and Waste Extraction Test (WET) Procedure given in Appendix II of section 66261 of Title 22 of California Code regulation (CCR) shall be used.
(3) In case of ammonia (A10), cyanide (A11) and chromium VI (A64), extractions shall be conducted using distilled water in place of the leaching media specified in the TCLP/STLC procedures.
(4) A summary of above specified leaching/extraction procedures is included in manual for characterization and analysis of hazardous waste published by Central Pollution Control Board and in case the method is not covered in the said manual, suitable reference method may be adopted for the measurement.
(5) In case of asbestos, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state.
(6) The hazardous constituents to be analyzed in the waste shall be relevant to the nature of the industry and the materials used in the process.
(7) Wastes which contain any of the constituents listed below shall be considered as hazardous, provided they exhibit the characteristics listed in Class-C of this Schedule :

1.	Acid Amides
2.	Acid anhydrides
3.	Amines
4.	Anthracene
5.	Aromatic compounds other than those listed in Class A
6.	Bromates, (hypo-bromites)
7.	Chlorates (hypo-chlorites)
8.	Carbonyls
9.	Ferro-silicate and alloys
10.	Halogen- containing compounds which produce acidic vapours on contact with humid air or water e.g. silicon tetrachloride, aluminum chloride, titanium tetrachloride
11.	Halogen- silanes
12.	Halogenated Aliphatic Compounds
13.	Hydrazine (s)

14.	Hydrides
15.	Inorganic Acids
16.	Inorganic Peroxides
17.	Inorganic Tin Compounds
18.	Iodates
19.	(Iso- and thio-) Cyanates
20.	Manganese-silicate
21.	Mercaptans
22.	Metal Carbonyls
23.	Metal hydrogen sulphates
24.	Nitrides
25.	Nitriles
26.	Organic azo and azooxy Compounds
27.	Organic Peroxides
28.	Organic Oxygen Compounds
29.	Organic Sulphur Compounds
30.	Organo- Tin Compounds
31.	Organo nitro- and nitroso compounds
32.	Oxides and hydroxides except those of hydrogen, carbon, silicon, iron, aluminum, titanium, manganese, magnesium, calcium
33.	Phenanthrene
34.	Phenolic Compounds
35.	Phosphate compounds except phosphates of aluminum, calcium and iron
36.	Salts of pre-acids
37.	Total Sulphur
38.	Tungsten Compounds
39.	Tellurium and tellurium compounds
40.	White and Red Phosphorus
41.	2-Acetylaminofluorene
42.	4-Aminodiphenyl
43.	Benzidine and its salts
44.	Bis (Chloromethyl) ether
45.	Methyl chloromethyl ether
46.	1,2-Dibromo-3-chloropropane
47.	3,3'-Dichlorobenzidine and its salts
48.	4-Dimethylaminoazobenzene
49.	4-Nitrobiphenyl
50.	Beta-Propiolactone

CLASS C : Based on hazardous Characteristics

Apart from the concentration limit given above, the substances or wastes shall be classified as hazardous waste if it exhibits any of the following characteristics due to the presence of any hazardous constituents:

Class C1: Flammable- A waste exhibits the characteristic of flammability or ignitability if a representative sample of the waste has any of the following properties, namely:-

(i) flammable liquids, or mixture of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc; but not including substances or wastes otherwise classified on account of their dangerous characteristics), which give off a flammable vapour at temperature less than 60°C. This flash point shall be measured as per ASTM D 93-79 closed-cup test method or as determined by an equivalent test method published by Central Pollution Control Board;

(ii) it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns vigorously and persistently creating a hazard;

(iii) it is an ignitable compressed gas;

(iv) It is an oxidizer and for the purposes of characterisation is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.

Class C2: Corrosive- A waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties, namely:-

(i) it is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5;

(ii) it is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm per year at a test temperature of 55 °C;

(iii) it is not aqueous and, when mixed with an equivalent weight of water, produces a solution having a pH less than or equal to 2 or greater than or equal to 12.5;

(iv) it is not a liquid and, when mixed with an equivalent weight of water, produces a liquid that corrodes steel (SAE1020) at a rate greater than 6.35 mm per year at a test temperature of 55 °C.

Note:

For the purpose of determining the corrosivity, the Bureau of Indian Standard 9040 C method for pH determination, NACE TM 01 69 : Laboratory Corrosion Testing of Metals and EPA 1110A method for corrosivity towards steel (SAE1020) to establish the corrosivity characteristics shall be adopted.

Class C3: Reactive or explosive- A waste exhibits the characteristic of reactivity if a representative sample of the waste it has any of the following properties, namely:-

(i) it is normally unstable and readily undergoes violent change without detonating;

(ii) it reacts violently with water or forms potentially explosive mixtures with water;

(iii) when mixed with water, it generates toxic gases, vapours or fumes in a quantity sufficient to present a danger to human health or the environment;

(iv) it is a cyanide or sulphide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapours or fumes in a quantity sufficient to present a danger to human health or the environmental;

(v) it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

(vi) it is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure;

(vii) it is a forbidden explosive.

Class C4: Toxic- A waste exhibits the characteristic of toxicity, if, :-

(i) the concentration of the waste constituents listed in Class A and B (of this schedule) are equal to or more than the permissible limits prescribed therein;
(ii) it has an acute oral LD50 less than 2,500 milligrams per kilogram;
(iii) it has an acute dermal LD50 less than 4,300 milligrams per kilogram;
(iv) it has an acute inhalation LC50 less than 10,000 parts per million as a gas or vapour;
(v) it has acute aquatic toxicity with 50% mortality within 96 hours for zebra fish (*Brachidanio rerio*) at a concentration of 500 milligrams per litre in dilution water and test conditions as specified in BIS test method 6582 – 2001.
(vi) it has been shown through experience or by any standard reference test- method to pose a hazard to human health or environment because of its carcinogenicity, mutagenecity, endocrine disruptivity, acute toxicity, chronic toxicity, bio-accumulative properties or persistence in the environment.

Class C5: Substances or Wastes liable to spontaneous combustion - Substances or Wastes which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and being then liable to catch fire.

Class C6: Substances or Wastes which, in contact with water emit flammable gases- Substances or Wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

Class C5: Oxidizing - Substances or Wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen cause, or contribute to, the combustion of other materials.

Class C8: Organic Peroxides - Organic substances or Wastes which contain the bivalent O−O structure, which may undergo exothermic self-accelerating decomposition.

Class C9: Poisons (acute) - Substances or Wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.

Class C10: Infectious ~~substances~~ - Substances or Wastes containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.

Class C11: Liberation of toxic gases in contact with air or water - Substances or Wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.

Class C12: Eco-toxic- Substances or Wastes which if released, present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation or toxic effects upon biotic systems or both.

Class C13: Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.