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STATE POLLUTION CONTROL BOARD, ODISHA

(Department of Forest & Environment, Govt. of Odisha)
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012

CONSENT ORDER

No. 4898 / **IND-I-CON- 779** Dt. 31-03-17

Sub : **Consent for discharge of sewage and trade effluent under section 25/26 of Water(P&CP) Act, 1974 and for existing/new operation of the plant under section 21 of Air(P&CP) Act, 1981.**

Ref : Your online application **ID No. 1453865, dt. 30.12.2016**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: **M/s. Paradeep Phosphates Limited**

Name of the Occupier & Designation: **Sri Kapil Mehan, Managing Director**

Address: **At- PPL Township, Po-Paradeep, Dist-Jagatsinghpur**

This consent order is valid for the period from 01.04.2017 to 31.03.2022

This consent order is valid for the product quantity, specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein..

A. Details of Products Manufactured

Sl.No.	Product	Quantity
01	Phosphatic Fertilizer (DAP) / (NPK) (4× 1250TPD)	5000TPD
02	Sulphuric acid (2×1200 TPD)	2400 TPD
03	Sulphuric acid (including 23MW of TG-3)	2000 TPD
04	Phosphoric Acid	1400 TPD
05	Electrical energy	32 MW
06	Zypmite Plant	240TPD

B. Discharge permitted through the following outlet subject to the standard

Out let No.	Description of outlet	Point of discharge	Quantity of discharge KLD	Pre-scribed Standard in mg / l										
				PH	TSS	TDS	BOD	COD	O&G	F	P	NH4-N	N-total	Fecal Colifor
1.	Outlet of ETP (All the plant leakages/ floor washing/contaminated storm water/blow down/spent scrubber liquid)	Creek (only during monsoon) ZLD shall be maintained Rest of the year	887	6.5-8.5	100	2100	30	250	10	2.0	5.0	-	-	-
2	**standards applicable up to 19.04.2017**													
	Outlet of STP	*Gardening , reuse And rest to Creek*	2942	6.5-8.5	100	2100	30	250	10	-	-	-	-	-
	standards applicable w.e.f 20.04.2017													
	Outlet of STP	*Gardening And rest to Creek*	2942	6.5-9.0	not more than 20	-	not more than 10	not more than 50	-	-	-	not more than 5	not more than 10	less tha 100 MPN. 100m
4	Storm water drain a) Drain-I (near zero point) b) Drain-II (Near main gate)	Atharbanki creek(only during monsoon) Shyamakoti creek(only during monsoon)	- -	6.5-8.5	100	2100	30	250	10	2.0	5.0			

C. Emission permitted through the following stack subject to the prescribed Standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission (m^3/hr)	Prescribed Standard (mg/Nm^3)			
				PM	SO2 (kg/T)	Acid mist	Total Fluoride
1	Stack attached to SAP (Plant B)(2 Nos)	120	1,20,000 (each)	-	1.5	50.0	-
2	Stack attached to SAP(Plant C)	120	144819	-	1.0	50.0	

3	Stack attached to PAP	50	1,50,000	100	-	-	25
4	Stack attached to DAP (4 Nos)	50	3,74,000 (each)	100	--	-	25
5	Stack attached to ammonia tank for flaring	70	No discharge under normal condition	-	-	-	-
6	Stack attached to granulator of Zypmite plant	30	--	100			
7	Stack attached to dryer of Zypmite plant	30	--	100			
8	Stack attached to cooler discharge of Zypmite plant	30	--	100			
Chimney Stack No.	**Description of Stack**	**Stack height (m)**	**Quantity of emission (m^3/hr)**	**Prescribed Standard (mg/Nm^3)**			
				PM	**SO2**	**NOx**	
	Emission standards applicable up to 06.12.2017						
9	Stack attached to oil fired boiler	105	97,200	100	--	--	
	Emission standards applicable w.e.f. 07.12.2017						
	Stack attached to oil fired boiler	105	97,200	100	600	600	

D. Disposal of solid waste permitted in the following manner

Sl.No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site(TPD)	Quantity to be reused off site(TPD)	Quantity disposed off (TPYR)	Description of disposal /utilization
1	Gypsum		-	-	5 X 1400TPD	Reused and rest disposed in Gypsum pond

E. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.

4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. . In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during their visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been taped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:

    a) Industrial cooling, spraying in mine pits or boiler feed,
    b) Domestic purpose
    c) Process

13. The applicant shall display suitable caution board at the lace where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.
18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge generated from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank of treatment plant.
22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.
24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner to the meet the prescribed standards by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).

28. The stack and ambient monitoring system installed by the applicant shall be opened for inspection to this Board at any time.

29. There shall not be any fugitive or episodal discharge from the premises.

30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.

31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.

32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurrence.

33. The industry has to ensure that minimum three varieties of indigenous species of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

34. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.

35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
    i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
    ii) Controlled incineration, wherever possible in case of combustible organic material.
    iii) Composting, in case of bio-degradable material.

36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.

37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

38. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.

40 Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

41. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.

42. The industry shall comply to all the conditions stipulated under Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines in a time bound manner as envisaged there in. (if applicable)

43. The industry shall comply to the conditions stipulated in CTE order issued by ODISHA State Pollution Control Board and conditions stipulated in Environmental Clearances issued by MoEF, Govt of India.

44. The industry shall abide by E(P) Act, 1986 and Rules framed there-under

45. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the adequate amount within the period stipulated by the Board the consent order will be revoked without prior notice.

46. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate

GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shall analyse the effluent / emissions and Ambient Air Quality every month through approved laboratory for the parameters indicated in TABLE- 'B', 'C' & Part -'B' as mentioned in this order and shall furnish the report thereof to the Board on monthly basis.

2. The following information shall be forwarded to the Member Secretary on or before 10th of every month.

a) Performance / progress of the treatment plant.

b) Monthly statement of daily discharge of domestic and/or trade effluent.

3. Non-compliance with effluent limitations

a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.

i) Causes of non-compliance

ii) A description of the non-compliance discharge including its impact on the receiving waters.

iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.

iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and

v) Steps to be taken by the applicant too prevent the condition of non-compliance.

b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.

4. Proper housekeeping shall be maintained inside the factory premises including process areas by a dedicated team.

5. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

6. The industry shall engage dedicated qualified manpower to ensure continuous and effective operation of online stack / Ambient Air Quality / Effluent monitoring stations for maintenance of database, real time data transfer to SPCB server, data analysis and co-ordination with concerned personnel of process units for taking corrective measures in case of non-compliances and to respond to the instructions of SPCB in this matter.

SPECIAL CONDITIONS

F-1 : WATER POLLUTION CONTROL

1. Specific water consumption shall not exceed 2m3/ton of fertilizer products generation of wastewater shall not exceed 0.5m3/ton of fertilizer produced (excluding acid plants).
2. Waste water generated from leakages, washing, blow down etc. shall be collected and properly treated before discharge into guard pond.
3. The online continuous effluent quality monitoring system (EQMS) shall be operated effectively and uninterruptedly and the online monitoring data so

generated shall be transmitted to SPCB and CPCB server on a continuous basis.

4. All the raw material such as rock, sulfur, coal etc. shall be properly handled to avoid any spillage or washing.
5. The industry shall strengthen the dyke of garland drain around the gypsum pond and shall make a provision of systematic collection and recirculation of the seepage from garland drain to the gypsum pond. In no case there shall be discharge/seepage/overflow of waste water from garland drain too the nearby water bodies/creek.
6. The industry shall make arrangements for rock phosphate slurry generated from washing of conveyor belt (near zero point) in ETP. In no case there shall be any discharge of the slurry to the nearby water bodies/creek.
7. In jetty area, drains and collection facility for rain water and wash water shall be renovated, cleaned and maintained properly.
8. The industry shall take appropriate measures to restore/reclaim the area around the gypsum pond so as to control acidic seepage water.
9. All the wastewater such as spillage/leakages/floor washing/ blow down etc. from SAP, PAP, DAP shall be taken into ETP for treatment and the treated effluent from ETP shall be stored in masonry guard pond for reuse.
10. The Effluent Treatment Plant (ETP) and the Sewage Treatment Plant (STP) shall be operated effectively and continuously through a dedicated in house team or through valid AMC so as to confirm to the prescribed norms.
11. The flow measuring device installed at the outlets of storm water drains and ETP outlet shall be maintained adequately and logbook shall be maintained to record the flow.
12. The storm water drain shall be maintained separately without being contaminated with industrial effluent or sewage effluent.
13. No condensate from SAP or any other plant shall be discharged to outside without any reuse. The industry shall take steps to collect all condensate in the steam trap and reuse it.
14. The sewage generated from the township and factory shall be treated in STP and the treated water shall meet the standard as mentioned in "B" before using for irrigation and green belt development.
15. The industry shall take all steps to properly utilize the phospo gypsum by supplying the same to authorized user agencies / export to reduce the accumulation of phospo gypsum. All precautionary measures shall be taken to

prevent pollution of surrounding environment during transportation and intermediate storage of phospo gypsum.

16. At least 10 leach pits shall be provided around the gypsum pond, guard pond and sulfur cake disposal site for ground water monitoring to assess any ground water contamination. The ground water at these pits shall be monitored at least once in a week and report shall be submitted to the Board.

17. The unit shall affix water meter with totalizer at each intake and separate meters for different purpose of consumption as categorized in schedules-II of Cess Act (section-4). Flow meter and totalizer shall be installed at the recycling line of treated effluent.

18. The fluoride recovery unit shall be installed to recover fluorine from the reactor off-gases. The recovered hydro fluorosilicic acid shall be utilized for manufacturing of aluminum fluoride or any other fluorine chemical. However two years of time is allowed for commissioning of aluminum fluoride plant.

19. The unit shall submit monthly returns up to date in prescribed format to the cess assessing authority.

20. The unit shall submit Environmental Statement in prescribed format by 30th September of every year.

21. The water quality of any discharge from the premises during exigency and during monsoon months shall confirm to specific parameters as prescribed for discharge to inland surface water.

22. Proper house keeping shall be maintained by a dedicated team.

23. An inventory at least 30% excess spare parts shall be available in the store to meet emergency need of effluent treatment plants/ pollution control systems.

24. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

25. The Board reserves the right to revoke/refuse consent to operate/ to modify or stipulate additional conditions as deemed appropriate at any time during period for which consent is granted.

26. The unit shall comply with all conditions stipulated in the consent to establish order, environmental clearance order issued by the Board.

F-2 : AIR POLLUTION CONTROL

1. All the online continuous stack emission monitoring systems (CEMS) for measurement of particulate matter and gaseous pollutants shall be operated effectively and uninterruptedly the online monitoring data so generated shall be transmitted to SPCB and CPCB sever on a continuous basis.
2. All the online continuous arnbient air quality monitoring stations (CAAQMS) shall be operated effectively and uninterruptedly and the online monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.
3. Stand-by DG set of adequate capacity shall be installed for ammonia refrigeration system.
4. The industry shall provide suitable air pollution control device to arrest fugitive emission generated from discharge hopper and silo during unloading of raw material from ship. The discharge belt conveyor from the hopper to main belt shall be enclosed from all sides to prevent fugitive emission due to wind action.
5. The unit shall provide adequate air pollution control devices in the rock phosphate grinding units, ball mill, mixing unit, granulation unit and conveyor transfer points etc. of PAP to prevent fugitive emission.
6. Adequate safety measures shall be taken to prevent any leakage or emission of ammonia from ammonia storage tank. The level of ammonia in the residential areas shall not exceed 0.1mg/m^3.
7. The fugitive SO_2 emission from sulfur melting plant shall be minimized by adopting proper design, collection and treatment methods. The area around sulfur melting tank shall be cleaned regularly and frequently.
8. An alkali scrubber shall be maintained properly to control SO_2 emission from the stack particularly during startup or any other unstable control condition. The dampers provided at the SAP flue gas circuit shall be pneumatic/mechanically operated and regulated from control room.
9. Suitable mist eliminator shall be provided in the absorption towers for control of acid mist.
10. Online continuous monitoring system with recording facilities shall be maintained & calibrated regularly for monitoring SO2 emission and acid mist in the SAP stacks.
11. The sulfur mixed water/effluent shall pass through a strainer/skimmer before sending it to the guard pond.
12. Digital display board installed at the factory gate shall be made operative to display the real time data from monitoring stations.

13. The unit shall comply with all conditions stipulated in the consent to establish order, environmental clearance order issued by the Board.

14. The industry shall set up a full-fledged environmental monitoring laboratory and environmental management cell with qualified personnel for monitoring and effective management.

15. A detail off-site and on-site emergency plan shall be prepared in consultation with the local authority and other concerned authorities.

16. All air pollution control devices shall be interlocked with manufacturing processes so that at the time of failure of PC device, the manufacturing process will stop.

17. A green belt of adequate width and density preferably with local species along the periphery of the plant shall be raised so as to provide protection against particulates and noise. It must be ensured that at least 33% of the total land area shall be under permanent green cover. The proponent shall ensure the maintenance of green belt throughout the year and for all time to come. It is advised that they may engage professionals in this field for creation and maintenance of the green belt. An action plan for this purpose shall be prepared and shall be submitted accordingly.

18. Separate energy meter shall be installed for all the pollution control equipments and the records shall be maintained for verification of the Board.

19. An inventory at least 30% excess spare parts shall be available in the store to meet emergency need of ESPs /bag filters/other air pollution control systems.

20. The industry shall conduct plant health checkup (piping, vessels, structures etc.) from time to time and the report shall be submitted to the Board.

21. The ambient air quality including ambient noise level shall conform to the standard prescribed under E(P) Act, 1986 for industrial area and residential area. The township as well as the area outside the factory premises shall be treated as residential area and the area inside the factory premises shall be treated as industrial area.

22. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

23. The Board reserves the right to revoke/refuse consent to operate/ to modify or stipulate additional conditions as deemed appropriate at any time during period for which consent is granted.

24. The industry shall take steps for fulfillment of all the stipulations and necessary measures to check pollution.

25. Consent to operate is subject to availability of all other statutory clearances required under relevant Acts/Rules and fulfillment of required procedural formalities.

G - ADDITIONAL CONDITIONS :

1) The industry shall strictly comply to the proceeding of the personal hearing within the stipulated time line, conducted on 16.03.2017 communicated vide Board's letter No. 4356, dtd. 21.03.2017.

The occupier must comply with conditions stipulated in section A,B,C,D,E, F and G to keep this consent order in valid.

To,

The Managing Director
M/s. Paradeep Phosphate Ltd.
PPL Township, Paradeep
Dist – Jagatsinghpur-754145

31/3/17

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

Memo No._____/Dt.

Copy forwarded to :

i) Regional Officer, State Pollution Control Board, **Paradeep**.
ii) District Collector, **Jagatsinghpur**.
iii) D.F.O,**Jagatsinghpur**..
iv) S.E.E., Cess (Head Office)
v) Consent Register
vi) Sr. Env. Scientist (L)

SR. ENV. ENGINEER, L-I (C)
STATE POLLUTION CONTROL BOARD, ODISHA

General Standards for discharge of environment pollutants
PART-A: EFFLUENTS

Sl.No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/Odourless as far as practible	------	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	For process wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	-----	------	
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5^0C above the receiving water temperature	-------	--------	Shall not exceed 5^0C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	----	------	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	------	50
10.	Total Kajeldahl nitrogen (as NH_3) mg/1 max.	100	----	------	100
11.	Free ammonia (as NH_3) mg/1 max.	5.0	----	------	5.0
12.	Biochemical Oxygen Demand (5 days at (20^0C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	----	------	250
14.	Arsenic (as As) mg/1 max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/1 max.	0.01	0.01	------	0.001
16.	Lead (as pb) mg/1 max.	01.	1.0	------	2.0

17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	------	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	--------	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	---------	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	---------	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	---------	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	---------	0.05
23.	Nickel (as Nil) mg/l max.	3.0	3.0	---------	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	---------	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	-------	---------	--------
27.	Sulphide (as S) mg/l max.	2.0	--------	---------	5.0
28.	Phennolic compounds as (C_6H_5OH) mg/l max.	1.0	5.0	---------	5.0
29.	Radioactive materials a. Alpha emitter micro curle/ml. b. Beta emitter micro curle/ml.	 10^7 10^6	 10^7 10^6	 10^8 10^7	 10^7 10^6
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31	Manganese (as Mn)	2 mg/l	2 mg/l	---------	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	---------	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	---------	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	--------	---------	20 mg/l

PART- B:NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke - Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual * 24 Hours **	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3.	Particulate Matter (size less than 10µm) or $PM_{10}\mu g/m^3$	Annual * 24 Hours **	60 100	60 100	-Gravimetric - TOEM - Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual * 24 Hours **	40 60	40 60	-Gravimetric - TOEM - Beta Attenuation
5.	Ozone (O_3) $\mu g/m^3$	8 Hours ** 1 Hours **	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
6.	Lead (Pb) $\mu g/m^3$	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
7.	Carbon Monoxide (CO) mg/m^3	8 Hours ** 1 Hours **	02 04	02 04	- Non Dispersive Infra Red (NDIR) Spectroscopy
8.	Ammonia (NH_3) $\mu g/m^3$	Annual* 24 Hours**	100 400	100 400	-Chemiluminescence - Indophenol Blue Method
9.	Benzene (C_6H_6) $\mu g/m^3$	Annul *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, ng/m^3	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m^3	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m^3	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

** Annual arithmetic mean of minimum I04 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 0I hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

No	No	no
Explosive Material	Corrosive Material	Mutagen
No	Yes	
Unstable Material	Compressed Gas	Others (Specify)
No	yes	

7. SAFE USAGE DATA

Ventilation	General / Mechanical	Well ventilated area preferably with a hood with a forced ventilation
	Local Exhaust	Tonners should always be handled, using a lifting clamp, cradle or carrier
Protective Equipment. Required	Eyes (Specify)	Head mask
	Respiratory (Specify)	SCBA
	Gloves (Specify)	Hand gloves PVC
	Clothing (Specify)	Rubber over coat
	Others (Specify)	Gumboots
Precautions	Handling & Storage	Store in well ventilated areas or outdoors.
	Others (Specify)	Protect against physical damage. Separation from combustible organic or easily oxidisable material. Isolate from Acetylene, Ammonia, Hydrogen, Hydrocarbons, Ether, Turpentine & Finely divided material.

8. EMERGENCY RESPONSE DATA

Fire	Fire Extinguishing Media	Water
	Special procedures	Water curtains
	Unusual Hazards	Poisonous gases emitted on burning
Exposure (inhalation, skin, eye contact and ingestion)	First Aid Measures	Evacuate the contaminated zone. Call a Doctor Affected clothing should be removed and skin should be washed thoroughly with water. In case of unconsciousness transport him to a quiet place and keep him warm, inhale oxygen or give artificial respiration till doctor arrive. Wash thoroughly on contaminated area of the body.
Spills	Steps to be taken	Shut off leaks if without risk. Contain liquid with sand or earth. Prevent the liquid from entering the sewer. Vapours create toxic atmosphere. Knock down vapours with water spray.

Waste Disposal Method	Neutralize small liquid spillages with soda ash and drain with abundant water. Cover pool with protein foam, so that the release of vapour to atmosphere is low and under control.

9. ADDITIONAL INFORMATION

In case of large gas escapes, the presence of cloud can be marked with ammonia with which it will turn into a mist. Run away from the gas clouds in a direction perpendicular to the wind direction. Avoid liquid chlorine from leaking and body contact. Persons with pulmonary diseases should avoid the exposure. A concentration of 3.5 ppm produces a detectable odour; 15 ppm causes immediate irritation of the throat. Concs of 50 ppm are dangerous for even short exposures. 1000 ppm is fatal. Can react to cause fires/explosion on contact with Turpentine, illuminating gas, Polypropylene, Rubber, Sulfamic acid, Acetaldehyde, Alcohols. Bring the leaking portion of the cylinder to the uppermost position, so that only the gas escapes and not the liquid.

10. SOURCES USED

Reference to books, journals, etc

11. MANUFACTURERS/SUPPLIER DATA

Firms Name	
	Standard packing
Mailing Address	
Telephone Number	
Telex Number	
	Others
Telegraphic Address	
Contact person in Emergency	
	Others
Emergency Telephone in Transit Areas	