

ODISHA POWER GENERATION CORPORATION LTD.

(A Government Company of the State of Odisha)

CIN: U40104OR1984SGC001429



2X210MW Thermal Power Station,

IB Thermal Power Station, PS.: Banharpali, Dist.: Jharsuguda-768234, Odisha, Ph.:06645-222252

Web: www.opgc.co.in

Letter No. ITPS/ 3090/WE,

Dt.27-05-2020.

The Additional Director (S)

Ministry of Environment Forests & Climate Change,
Eastern Regional Office,
A/3, Chandrasekharpur,
Bhubaneswar – 751023.

Sub.: Half yearly Environmental Status Report of Ib Thermal Power Station (ITPS) Township, Banharpali, Dist: Jharsuguda for the period from October 2019- March 2020.

Ref.: i. Environmental Clearance of ITPS Township vide Ref. No.243/SEIAA, dated 21.01.2014
ii. MoEF & CC Regional Office File No.106-12, dated 11.05.2020

Dear Sir,

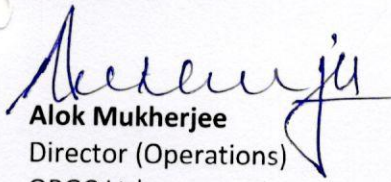
This has reference to the above subject and cited reference.

Kindly find enclosed the half yearly Environmental Status report of Ib Thermal Power Station (ITPS) Township for the period from October 2019 – March 2020.

We have also uploaded the half yearly compliance status for the mentioned period in OPGC **website-www.opgc.co.in** for your ready reference and kind perusal.

Thanking you,

Sincerely yours,


Alok Mukherjee
Director (Operations)
OPGC Ltd

Enclosures as above

cc:

Member Secretary
State Pollution Control Board, Odisha
"Paribesh Bhawan"
A/118, Nilakantha Nagar,
Unit – VIII, Bhubaneswar – 751 012.

Corporate Office, Zone-A, 7th Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar – 751 023, Odisha
Ph.: 0674-2303765-66, Fax: 0674-2303755

ODISHA POWER GENERATION CORPORATION LTD

IB THERMAL POWER STATION TOWNSHIP

COMPLIANCE STATUS OF THE ENVIRONMENTAL CONDITIONS

Environment Clearance No. Ref-243/SEIAA, dated 21.01.2014

Period-October 2019 – March 2020

Sl. No	ENVIRONMENT CLEARANCE CONDITIONS	STATUS REPORT
1	General Conditions	Compliance Status
1.1	The applicant (project proponent) will take necessary measure for prevention control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management as mentioned by them in Form 1, Form 1A and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.	<p><u>Air pollution control measures:</u></p> <ul style="list-style-type: none"> • Approach roads and internal roads of the township are black topped. • Regular sweeping of the roads done to restrict generation of any fugitive dust from roads. • Vehicle speed restricted for fleet management as well as to control fugitive dust. <p><u>Water Pollution Control Measures:</u></p> <ul style="list-style-type: none"> • Domestic effluent is being treated in 1 MLD Sewage treatment plant and the treated effluent is being recycled back for green belt and horticulture <p><u>Land Pollution Control:</u></p> <ul style="list-style-type: none"> • Adequate waste management methodology is being adopted to avoid any sort of land contamination • Bio degradable waste is being processed in 1 TPD Bio gas generation plant for generation of cooking gas. • Non-biodegradable waste is being stored in storage pits for further disposal in an environmental friendly manner to avoid environmental pollution.
1.2	The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of the project as per the prevailing norms of respective authorities.	It is being complied.
1.3	The applicant will submit half yearly compliance report on post environmental monitoring in respect of the stipulated terms and conditions in the Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Odisha, on 1st June and 1st December of each calendar year.	Half yearly compliance progress status report of the conditions mentioned in the Environmental Clearance is being submitted to SEIAA, Odisha.

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Period-October 2019 – March 2020

Sl No	ENVIRONMENT CLEARANCE CONDITIONS	STATUS REPORT
1.4	The project proponent will provide adequate passage all around the building blocks for movement of fire tenders as per provisions of National Building Code (NBC)- 2005	Adequate passage and access has been provided for the movement of fire tenders around the building blocks .
1.5	The project proponent shall comply to all the conditions stipulated by the Fire Prevention Officer, Odisha	It is being complied.
1.6	The applicant will adopt the prescribed norms, and standards provided in the National Building Code of India, 2005, Specially relating to:	
1.6.a	Fire protection and life safety of the occupants of the building.	Requirements for Fire protection and life safety of the occupants has been incorporated in the building construction <ul style="list-style-type: none"> (i) For fire detection alarm system has been installed in the community buildings (ii) For fire protection, adequate capacity water tank and terrace pump has been provided (iii) Fire extinguisher and Hose reel has been provided in the required places (iv) OPGC has its own Fire tender and it is located within the township. That will be used in case of any fire. (v) Suitable exit arrangements (Stair case having suitable width) from the building has been made.
1.6.b	Safety of the personal during construction, operation and demolition of the buildings.	During construction, all required safety measures were adopted at the site.
1.6.c	Day lightings and the natural ventilation of the buildings	Glass windows and walls are installed to facilitate day lighting. Windows and door placing in the building helps in cross ventilation.
1.6.d	Safety from the electrical fire, shock and lightning of the buildings.	These requirements are provided in the building .
1.6.e	Air- conditioning, heating and mechanical ventilation of the buildings.	Air conditioning system is provided at the required places.
1.6.f	Acoustic and noise control of the buildings	It is installed at the required places of the building.
1.6.g	Maintenance and functioning with emission from generators supplying power to common space/ residential	To meet the power failure, common areas have been provided with solar illumination

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	areas in case of power failure along with fuel handling / storage.	<p>as backup. Lifts have been fitted with Automatic Rescue Device (ARD) to land the occupants of the lift in to the nearest platform.</p> <p>D G set has been kept as a backup source of power for Guest House (100 KVA) and Hospital (250 KVA) building/STP and the installation of the DG sets is in line with the Environment requirement.</p>
1.6.h	Installation of lifts and escalators in the buildings.	Lifts and elevators have been provided as required.
1.6.i	Water supply, drainage and sanitation including solid waste management.	<p>Water supply and drainage arrangements have been made.</p> <p>Sanitation including solid waste management: Generated Sewage is sent to OPGC'S existing 1 MLD STP for treatment and further reuse in Green belt development/Garden development/Landscaping purpose.</p> <p>Adequate waste management methodology is being adopted to avoid any sort of land contamination</p> <p>Bio degradable waste is being processed in the 1 TPD Bio gas generation plant for generation of cooking gas.</p> <p>The Non-biodegradable waste is being stored in storage pits for further disposal in an environmentally friendly manner to avoid environmental pollution.</p>
1.6.j	Landscaping of the surrounding areas of the buildings.	Partly existing and further to augment the landscaping, an agency has been engaged for developing the landscape at number of places in the Township.

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Period-October 2019 – March 2020

Sl. No.	ENVIRONMENT CLEARANCE CONDITIONS	STATUS REPORT
	SPECIAL CONDITIONS	
A	CONSTRUCTION PHASE	
1	No ground water shall be extracted for the project work at any stage of during construction phase.	No ground water is being extracted. The complete water requirement of township is being fulfilled from Hirakud Reservoir. OPGC has obtained water drawl permission from Water Resource Dept., Odisha for drawl of water from Hirakud Reservoir.
2	Provision shall be made for the housing of construction labourers within the site with all the necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical healthcare, crèche etc. The housing may be the form of temporary structures to be removed after the completion of the project.	It was compiled during construction phase.
3	A First- Aid room will be provided in the project site both during construction and operation of the project.	First aid facility has been provided at the site. Moreover, OPGC'S own full-fledged hospital is available inside Township campus for providing necessary medical treatment.
4	All the top soil excavated during the construction activities should be stored separately for use in filling, horticulture / land scape development within the project site.	The construction has been completed. The excavated soil has been used in backfilling and landscaping.
5	Some of the existing buildings/houses/structures within the project site are proposed to be demolished. Re-use of the debris at the existing site as far as practicable is recommended with a special care for handling and disposal of asbestos waste, if any. Rest of the waste is to be disposed at landfill disposal site.	Debris generated from the construction and demolition activities has been used for backfilling, levelling. No asbestos waste has been generated.
6	Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and will be disposed of taking the necessary precautions for general safety and health aspects of the people only in approved site with the approval of competent authority.	The muck (i.e.; excavated soil) generated from the construction activities has been used in backfilling and ground levelling work inside the plant premises with adaptation of proper environmental protection measures.

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7	Soil and ground water samples will be tested periodically to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.	Ground water sampling is being carried out. The test results show there is no threat to ground water quality due to construction activity.
8	Construction spoils including bituminous material and other hazardous materials should not be allowed to contaminate water courses, ground water and dump sites by following safe dumping/disposal practice as per statutory rules and norms with necessary approval of Odisha State Pollution Control Board.	Adequate measures have been taken. There is no impact on water course and ground water due to project activity. Ground water test report is enclosed as Annexure-1 .
9	The fuel for the diesel generator sets to be used during construction phase use low sulphur diesel fuel and should confirm to the Environment (Protection) Rules 1986 prescribed for air emission and noise standards.	Commercially available low sulphur fuel oil is being used.
10	The diesel required for operating DG sets shall be stored in underground tanks and, if required, clearances from Chief Controller of Explosive shall be taken.	Diesel storage facility already exists in the plant. The facility is licensed from CCOE.
11	Vehicles used for bringing construction material to the site should be in good condition and should have a pollution check certificate, covered and confirms to the statutory air and noise emission standards and should be operated only during non-peak hours of the day.	It is being complied but not applicable as of now since the construction phase has been completed.
12	Ambient noise level should confirm to residential both during day and night. Incremental pollution on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be taken to reduce ambient air and noise during construction phase, so as to confirm to the stipulated standards by CPCB/OPCB	The township is within the existing premises of OPGC and AAQ and noise monitoring are being carried out as per the statutory guidelines. The AAQ & Noise level is well within the prescribed limit. The monitoring report is attached as Annexure-2 .
13	Fly ash brick should be used as building material in the construction as per the provisions of Fly ash Notification of September, 1999 and as amended thereafter.	Fly ash bricks have been used for construction activity.
14	Ready mixed concrete would be used in building construction.	It had been used but not applicable as of now.
15	Rain water harvesting and its re-use should be as per CGWB and BIS standards for these applications.	Rain water recharge pits based on CGWB guidelines is constructed for new buildings. Settling and Recharge pits is located all around the buildings for easy collection and

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		recharge of roof rain water through down comer pipes
16	Water demand during construction should be optimized by adopting best practices without compromising quality. Separation of treated waste water and Fresh water should be done by the use of dual plumbing line.	It is being complied. But not applicable as of now as the construction phase has been completed. Now, the sewage generated from the Township is being treated in 1 MLD capacity STP and the treated water is being utilised for plantation & gardening.
17	Fixture of showers, toilet flushing and drinking water should be of low flow type and restricted to requirements by the use of aerators, avoiding wastage of pressure reducing devices of sensor based controls.	Urinal & WC flushing system has been installed with sensor-based control in public buildings.
18	Use of glass may be maximum up to 40% of total outer wall area to reduce the energy consumptions and load air-conditioning. If necessary, high quality double glass with special reflective coating may be used in the windows.	Construction has been made keeping the glass area is within 20 to 25% of outer wall area.
19	Roof should meet the prescribed requirement as per Energy Conservation Building Code .	Prescribed requirements of roof have been taken care during construction phase as per Energy conservation building code.
20	Opaque wall should meet prescriptive requirements as per Energy Conservation Building Code.	Opaque wall is designed to meet the requirements of energy conservation.
21	The approval of the competent authority shall be obtained for structural safety of the building due to earthquake, adequacy of firefighting equipments etc. as per National Building Code of India, 2005 including protection measures from lightning etc.	All parameters are incorporated in the design for implementation.
22	Regular supervision of the above and other measures for monitoring should be in place all through the construction phase to avoid disturbances and pollution of the surrounding.	It is being complied. Now the construction phase has been completed.

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B	OPERATION PHASE	
1	The proponent shall treat the effluents in the existing Sewage Treatment Plant of capacity 1 MLD. Treated effluents from STP shall be recycled/ reused to the maximum extent possible after scientific treatment. Treatment of 100% grey water by decentralised treatment should be done. Discharge of unused treated effluent (not exceeding 20% of the water during monsoon season only) shall conform to the norms and standards of Odisha State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.	The sewage generated from the township including partially treated grey water (Treated in septic tanks) is being treated in the existing 1 MLD STP and the treated water is being used for Garden development /Horticulture/Land Scape development.
2	In no case, the treated waste water shall be allowed to accumulate inside the project boundary or outside the project area creating water logging situation in the area.	It is being complied. Treated sewage water is used for Plantation, Garden development, Horticulture, Land Scape development.
3	In no case the waste water shall be allowed to pollute the surrounding area.	Sewage water generated from the Township is being sent to 1 MLD STP for treatment and subsequently the treated water is being used in Garden development, Horticulture, Land Scape development.
4	The STP sludge should not be dried off nor incinerated within the project site and should be disposed off as per the norms of SPCB, Odisha.	The sludge generated from the STP is being collected and stored in Sludge drying bed and subsequently, taken out to use as manure in Gardening, Plantation and Land scape development work.
5	The STP must be technically sound to treat all kinds of pollutants present in the sewage and its capacity should taken into account the entire load of sewage generated by inhabitants.	OPGC has installed a STP of 1 MLD capacity. The STP has been designed adequately and all the sewage generated from the Township is being treated in it for further use in Greenbelt, Garden, Land scape development.

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6	The project proponent will ensure that under no circumstance, the environment is polluted due to non-functioning / under performance of the STP and the sewerage disposal system of the project.	It is being complied.
7	The Solid waste generated should be properly collected and segregated. Wet garbage should be disposed off to be composted and dry/inert solid waste should be disposed through a certified agency for safe disposal. Necessary approval/permission may be obtained from the concerned authorities. In no case it should be left in the premises untreated.	<p>Colour coded bins has been provided at strategic locations for collection and segregation of solid waste generated from the households of township.</p> <p>The Bio-degradable waste generated from the Township is being sent to existing 1 TPD Bio gas generation plant for processing and generation of Cooking Gas.</p> <p>The Non-biodegradable waste is being stored in storage pits for further disposal in an environmental friendly manner to avoid environmental pollution.</p>
8	Diesel power generation sets proposed as source of back-up power for lifts elevators and common area illumination during operation phase should be enclosed type and conforms to Environment Protection (EP) rule 1986. The height of the stack of DG sets should be equal to the height needed for the capacity of all proposed sets should be equal to the height needed for the combined capacity of all proposed DG sets put together and should be more than the highest building height. Low sulphur diesel should be used. The location of the DG sets may be decided in consultation with Odisha State Pollution Control Board. Care may be taken to avoid disposal of smoke/Pollutants from DG sets in the residential area. Low sulphur diesel oil (LDO or HSD) will be used in DG sets.	<p>To meet the power failure, common areas have been provided with solar illumination as backup. Lifts have been fitted with Automatic Rescue Device (ARD) to land the occupants of the lift in to the nearest platform.</p> <p>2 nos of D G set have been kept as a backup source of power for Guest House (100 KVA) and Hospital/STP (250 KVA) building and the installation is in line with the Environment requirements. Consent to Operate Permission has been taken from Odisha State Pollution Control Board (OSPCB) for the installation and operation of D.G.sets.</p> <p>Commercially available low sulphur fuel oil is being used.</p>
9	Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time, the noise level measured at the boundary of the site shall be restricted to the permissible level to comply with the prevalent regulations.	<p>It is being complied.</p> <p>The Noise monitoring report of the Township area is enclosed as Annexure -1.</p>

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10	As substantial area included in the project site is still legally Reserved Forest, necessary permission from the competent authority (the local DFO) should be obtained for felling of trees and the forest growth whenever required.	It is being complied.
11	Since substantial forest cover exists within the project boundary i.e. Both Reserve forest and Revenue land with fresh re-growth and the forest cover has improved in density and quality, a proper plan may be prepared in consultation with the local DFO and regular forest cleaning/brush wood cutting need to be carried out to prevent occurrence of fire and maintain forest hygiene.	Noted for compliance.
12	It is suggested that a dedicated forestry trained official may be positioned for maintenance of the existing forest and creation of new forest area to compensate the loss of forest cover.	Facility Management officials has been assigned with the task. They take care of the existing forest and enhance forest coverage by way of further tree plantation. This is done in consultation with local forest officials. 265 nos of saplings have been planted in the FY 2019-20. Proposal have been moved to plant 8000 nos of saplings inside the boundary of OPGC.
13	Lay out of the proposed township and roads etc. shall be made in such a way that it shall cause minimum disturbance to the existing flora and fauna. Appropriate green belt shall be developed to compensate the habitat loss of trees for clearing. The greening program shall include plantation of indigenous species only.	The point has been considered during the design. <ul style="list-style-type: none"> • To augment the existing greenbelt, in the financial year (2019-20), 265 nos of saplings have been planted excluding distribution of sapling to local villagers. • District Plantation monitoring committee lead by Ex. Vice Chancellor Sambalpur University & Wild Life Warden along with Additional Chief Conservator of Forest, Asst. Director Horticulture, Asst. Environment Engineer OSPCB & Chief Co-ordinator Eco Club of Jharsuguda has verified the plantation/green belt status through site visits which comes to be 34.6%.
14	Professional landscape architect should be engaged to design the green layout to provide for multitier plantation and green fencing all around, mitigating various environmental pollutants like dust, noise emission etc. Plantation raised should be well maintained under supervision of experienced personnel.	34.6 % green cover exists within OPGC boundary. Further, an agency has been engaged to augment the green cover.

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Period-October 2019 – March 2020

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15	Rain water harvesting for the roof runoff and surface runoff should be implemented as per submitted plan. Every building of the township shall have rain water harvesting facilities. Before recharging the run-off, pre-treatment must be done to remove suspended matter, oil, grease and other soluble components as per norms. Rainwater recharge should be through specific recharge of required numbers. The surface runoff water should be stored suitably treated and reused for landscaping. The bore well for rainwater recharging should be kept at least 5 mts. above the highest ground water table. The technology may be preferably be adopted from a registered commercial firm with performance guarantee.	It is being complied. Rain water recharge pits based on CGWB guidelines is being constructed for new buildings. Settling and Recharge pits is located all around the buildings for easy collection and recharge of roof rain water through down comer pipes
16	Weep holes in the compound wall shall be provided to ensure natural drainage of excessive rain water in the project area during monsoon period after the harvesting season operation. Care must be taken so that there is no water logging in the territory and drainage is 100 %.	Drainage channel exist to ensure natural drainage of excessive rain water.
17	The ground water level and its quality should be monitored regularly in consultation with Central/State Ground water Authority.	Noted for compliance.
18	Traffic congestion near the entry and the exit point from the road adjoining the proposed project site must be avoided. Traffic congestion shall be avoided inside the project site. The area ear- marked for parking shall not be used for any other purpose. Alternate entry and exit must be provided to handle excess traffic and emergency situation.	To avoid traffic congestion adequate measures have been taken at site.
19	A report on Energy conservation measures confirming to energy conservation norms finalised by Bureau of Energy Efficiency should be prepared incorporating details about building materials and technology, R and U factors etc. and submitted to SEIAA, Odisha in three months time before operation/habitation.	Noted for compliance.
20	Provisions of solar hot water storage/supplies at the roof top may be made as per statutory norms of CPCB/MoEF/SPCB, Odisha.	Solar heating water storage facility has been provided at buildings. Also, building common area lighting facility has been constructed with Solar lighting facility.

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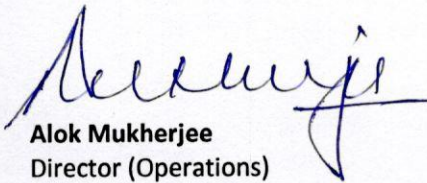
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21	Energy Conservation Measures like installation of CFLs/TFLs for lighting the areas outside the building should be integral part of the project before commissioning. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid toxic contamination. Use of solar panels be adopted to the maximum extent possible, especially for street lights.	It is being implemented at site. LED/CFL lights have been installed. Building common area lighting facility has been constructed with Solar lighting facility.
22	The building blocks should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.	Building blocks has been constructed by keeping adequate distance between them.
23	The funds earmarked for the environmental protection measures shall be judiciously utilized. Under no circumstance this fund shall be diverted for the other purposes like Annual Allocation and maintenance/monitoring etc. and expenditure for this fund should be reported to the SEIAA, Odisha on regular basis.	Noted for compliance.



Alok Mukherjee
Director (Operations)

ANNEXURE-II								
ODISHA POWER GENERATION CORPORATION LTD								
IB THERMAL POWER STATION								
ENVIRONMENTAL MONITORING REPORTS								
Period-October 2019 to March 2020								
A. AMBIENT AIR QUALITY								
PARAMETER	INTERNAL MONITORING				THIRD PARTY MONITORING			
	NORM	MAX.	MIN.	AVE.	MAX.	MIN.	AVE.	
PM ₁₀ (µg/m ³)	100	91	11	48	89	55	66	
PM _{2.5} (µg/m ³)	60	57	6	33	46	34	38	
SO ₂ (µg/m ³)	80	18	9	11	12	6	10	
NO ₂ (µg/m ³)	80	30	8	18	21	16	18	
B. AMBIENT NOISE LEVEL								
	INTERNAL MONITORING				THIRD PARTY MONITORING			
	RESIDENTIAL NOISE LEVEL, dB(A)				RESIDENTIAL NOISE LEVEL, dB(A)			
	Day time		Night time		Day time		Night time	
NORM	55		45		55		45	
Minimum	49		44		11		40	
Maximum	39		36		54		44	
Average	43		40		46		42	
C. GROUND WATER QUALITY								
PARAMETERS	UNIT	Essential Characteristics		Trace/heavy and other elements				
		NORM	RESULT	PARAMETERS	UNIT	NORM	RESULT	
Colour	Hazen	5	CL	Copper as Cu	mg/l	0.05	BDL	
Odour	-	Agreeable	U/O	Manganese as Mn	mg/l	0.1	BDL	
Taste	-	Agreeable	AL	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001	BDL	
Turbidity	NTU	1	0.6	Mercury as Hg	mg/l	0.001	BDL	
Temperature °C	-	°C	25.5	Cadmium as Cd	mg/l	0.003	BDL	
pH	-	6.5-8.5	8	Selenium as Se	mg/l	0.01	BDL	
Sp conductance (EC) µS/cm(25)°C	µS/cm(25)°C	1500	484	Arsenic as As	mg/l	0.01	BDL	
HCO ₃	mg/l	300	207	Cyanide as CN	mg/l	0.05	ND	
Chloride(as Cl)	mg/l	250	21	Lead as Pb	mg/l	0.01	BDL	
Sulphate as SO ₄	mg/l	200	30	Zinc as Zn	mg/l	5	BDL	
Nitrate as NO ₃	mg/l	45	18	Anionic Detergents as MBAS	mg/l	0.2	ND	
Fluoride as F	mg/l	1	0.4	Chromium as Cr+	mg/l	0.05	BDL	
Total Hardness (as CaCO ₃)	mg/l	200	175	Mineral oil	mg/l	0.01	ND	
Alkalinity	mg/l	200	77	Aluminium as Al	mg/l	0.03	BDL	
Calcium as Ca	mg/l	75	68	Boron	mg/l	0.5	BDL	
Magnesium as Mg	mg/l	30	30	Poly Aromatic Hydrocarbon as PAH	µg/l	0.0001	BDL	
Sodium as Na	mg/l	No guideline	No guideline	Pesticides	µg/l	Absent	Absent	
Potassium as K	mg/l	No guideline	No guideline					
Iron as Fe	mg/l	0.3	0.3					
Total dissolved solid	mg/l	500	500					
Residual Free Chlorine	mg/l	0.2	0.2					

UK Pahl
Head-EHS