

## Status of Implementation of Action plans for Haldia area as on September 2016

## Short Term Action points

## M/s. Indian Oil Corporation Ltd. - Haldia Refinery

Action Points	Status as on September, 2016	Compliance Status	Remarks
<p>Continuous on-line monitoring system for all relevant stacks to be installed. The data generated will be transferred to CPCB through SPCB.</p> <p>Currently VOC monitoring in IOC and the adjacent area through VOC meter.</p> <p>This program will be further augmented by commissioning one additional Continuous Ambient Air Quality Monitoring System.</p>	<ul style="list-style-type: none"> <li>Continuous on-line monitoring system has been provided for all relevant stacks</li> <li>Additional 02 nos. VOC monitoring meters installed &amp; in service. Presently, monitoring carried out for about 8,000 points covering the entire Refinery. Reports are generated quarterly.</li> <li>Existing continuous Ambient Air Quality Monitoring System is connected with CPCB server for online data transfer.</li> <li>Setting up of another AAQMS is planned along with the forthcoming DCU project for which EC &amp; NOC have already been obtained by the Refinery.</li> </ul>	Complied	<p>Operating satisfactorily</p> <p>In regular operation</p>
Two more High Volume Samplers to be installed in Township	<ul style="list-style-type: none"> <li>Installed and in operation since March,2011</li> </ul>	Complied	In regular operation
A part of FO may be replaced by low-Sulphur fuel gas.	<ul style="list-style-type: none"> <li>Major part of the FO is replaced by low Sulphur Naphtha firing in the GT for better performance of the refinery.</li> <li>Fuel gas generated from refinery process is consumed by the refinery after de-sulphurisation. Off gases are also de-sulphurised and reused.</li> </ul>	Complied	Implemented

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On-line stack monitoring system to be installed for the incinerator stack.	<ul style="list-style-type: none"> <li>The incinerator at Haldia Refinery has been kept idle since May, 2011.</li> </ul>	Incinerator not in operation	At present Disposal of sludge done through CHWTSDF at Haldia
Out of 900 m stretch of Green Belt Canal (GBC) previously earmarked, 500 m has been de-silted, the rest portion i.e. 400m to be de-silted and to be bio-remediated, if possible	The unit has constructed a guard pond and redeploying two nos. of 35000 KL tanks to arrest slippage of oily water from the refinery premises to GBC. Carrying capacity of the Canal (GBC) is no more utilized by the Refinery. De-silting of around 500 M stretches was carried out in FY'2008-09 and next 400 M de-silting was carried out in FY' 2013-14. Another 2.5 KM stretch of Green belt Canal (up to Refinery Gate) desilting job has already been started in 2014 and is on the verge of completion.	Complied	Action taken to arrest discharge of oily water. Work for de-silting of 900 m completed. Desilting job for another 2.5 km stretch of Green belt Canal has already been started.
High emissivity ceramic coating to be applied in crude distillation section of unit no. 2	<ul style="list-style-type: none"> <li>Complied as on March, 2011.</li> </ul>	Complied	Performance satisfactory.

M/s. Haldia Petrochemicals Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Nitrogen blanketing in Internal Floating Roof Tank with installation of Pressure Control Valve to arrest venting of hydrocarbon vapour.	<ul style="list-style-type: none"> <li>Implemented. Benzene transport by ships is an additional action taken by the industry.</li> </ul>	Complied	Performance satisfactory.

Action Points	Status as on September, 2016	Compliance Status	Remarks
Program for reusing the treated water for various plant purposes like gardening, maintaining green belt, road washing, etc., in order to reduce total water consumption.	<ul style="list-style-type: none"> <li>Treated waste water is used for gardening, road washing and partially discharged.</li> </ul>	Complied	Implemented
Usage of metallic gaskets in all pressurized hydrocarbon pipeline/flange/pump joints	<ul style="list-style-type: none"> <li>Already Achieved</li> </ul>	Complied	Complied satisfactorily
Connection of all PSVs/TSVs to 120 m high Flare Stack	<ul style="list-style-type: none"> <li>Already Achieved</li> </ul>	Complied	In regular operation
Benzene Recovery Unit for collection of benzene vapors during loading	<ul style="list-style-type: none"> <li>Already installed and in operation</li> </ul>	Complied	Implemented

Note: Plant was kept under shut down from 06.07.2014 due to financial crisis and operation resumed in January 2015.

**M/s. MCCPTA India Corporation Pvt. Ltd.-**

Action Points	Status as on September, 2016	Compliance Status	Remarks
Monitoring system & off-gas burning system for VOC reduction for the old plant to be completed	<p>Monitoring of fugitive emission is being done on regular basis. Regular LDAR monitoring is being done for old plant.</p> <p>Off gas burning unit is already installed in the new plant. The operation of new plant is yet to achieve stabilisation at 100% of rated capacity. So the efficiency operability of the already installed off gas burning unit at peak rate of the plant operation could not be judged. Subsequently, on the basis of the performance of OGBU in the new unit, similar OGBU to be installed for old plant.</p>	Mostly Complied	---
Program for reusing the treated water for various plant purposes like gardening, maintaining green belt, road washing, etc., in order to reduce total water consumption.	Wastewater discharge reduced. Reduced water demand by 1.9% and waste water discharge to river by 5%.	Complied.	Implemented

Action Points	Status as on September, 2016	Compliance Status	Remarks
Will set up AAQ monitoring station.	On-line ambient air quality monitoring station including VOC monitoring station is in operation.	Complied	In regular operation

**M/s. Dhunseri Petrochem & Tea Ltd. (formerly M/s. South Asian Petrochemicals Ltd.)-**

Action Points	Status as on September, 2016	Compliance Status	Remarks
Continuous on-line monitoring systems with real time reading to be installed for the stack connected to TFHs.	<ul style="list-style-type: none"> <li>Opacity meter installed for TFH and also for CPP boiler.</li> </ul>	Complied	Operating satisfactorily
Leak Detection & Repair (LDAR) program along with installation of gas sensors to be explored.	<ul style="list-style-type: none"> <li>Working satisfactorily</li> <li>For conveying part total conveying system is under N2 blanketing. For any leakage it comes to know immediately through DCS system.</li> <li>Besides the industry carry out Helium leak detection test for various reactors before plant start up.</li> </ul>	Complied	Various LDAR programs are being carried out on regular basis.
Will set up AAQ monitoring station.	<ul style="list-style-type: none"> <li>Automatic air quality monitoring stations has been installed and under commissioning stage.</li> </ul>	Complied	In regular operation
Program for reusing the treated water for various plant purposes like gardening, maintaining green belt, road washing, etc., in order to reduce total water consumption.	<ul style="list-style-type: none"> <li>Waste water discharge reduced.</li> <li>ETP treated water is being used for gardening purpose</li> <li>Now treated water/ RO reject water is used for dust suppression in road and as well as coal handling area.</li> </ul>	Complied	<p>Initiative taken to reduce water demand and effluent load to the recipient water body.</p> <p>Air Cooled Condenser based 10 MW Captive Power Plant installed to reduce water consumption and now it is under operation.</p>
Steam stripping of effluent to reduce effluent load	<ul style="list-style-type: none"> <li>Complied</li> </ul>	Complied in new plant	In regular operation

Action Points	Status as on September, 2016	Compliance Status	Remarks
On-line stack monitoring of Coal Heater	<ul style="list-style-type: none"> <li>Implemented</li> </ul>	Complied	In regular operation

M/s. Electrosteel Castings Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Another 7 nos. DFS to be installed in different locations	Installed at different locations	Complied	Operating satisfactorily
Off-line bag filter for Product House is under progress and expected to be completed	Installation completed	Complied	Operating satisfactorily
Total unpaved road to be concreted	Entire unpaved road has been concreted.	Complied	Implemented
More green belt to be developed	New plantation program in progress	Approximately 31000 saplings have been planted with 3 tier covering along the periphery of the industry.	Progress is satisfactory
Will install automatic AAQ monitoring station with real-time reading.	Installation of AAQ monitoring system completed	Complied AAQ monitoring is being done on every month	---
Continuous on-line stack monitoring systems to be installed for the stacks connected to the rotary kilns & the coke ovens.	Installed four opacity meters in four combustion stacks	Complied	Operating satisfactorily
Will install monitoring system for Benzo (a) pyrene.	Monitoring system for Benzo(a)pyrene has been installed at three different locations	Complied	In regular operation

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M/s Exide Industries Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Minimization of water consumption to be explored through reuse of water.	<ul style="list-style-type: none"> <li>• Re-use of RO reject water in ETP for lime mixing</li> <li>• Re-use of ETP treated water in vacuum pump for cooling purpose instead of raw water</li> <li>• Recycle of cooling water through Cooling Tower</li> <li>• Use of RO reject and lagoon discharge for shop floor &amp; road wash, toilet flush</li> <li>• Use of RO reject as make-up water in Jar formation / charging cooling system</li> <li>• STP – treated water in gardening purpose</li> <li>• Installation of push type valves in Toilets</li> <li>• Rainwater harvesting in Canteen and PE building area</li> </ul>	Complied.	The raw water consumption per MT of lead used has further come down from 10.5 KL in FY 2009- 10 to approx. 4.08 KL in FY 2014-15 (till December 2014)
Use of NaOH in place of lime in the ETP to be explored for minimization of sludge generation.	<p>The focus area is to reduce the effluent generation through methods like -</p> <ul style="list-style-type: none"> <li>• Installation of Acid Recovery System in Industrial Factory</li> <li>• Installation of Wash Water Recovery System in Industrial Factory</li> <li>• Reuse of positive plate wash water</li> <li>• Installation of RO system before DM Plant</li> <li>• Enhancement of ETP efficiency by</li> <li>• Use of Sand filter Bed after clarifier in ETP</li> <li>• Installation of Automatic Lime dosing in Traction ETP</li> <li>• Use of higher active content in neutralizing agent</li> <li>• Dosing of additives to enhance efficiency</li> <li>• Use of dryer before disposal of waste, which is sent to authorized hazardous waste management organization.</li> </ul>	Partially Complied	ETP sludge generation per MT of lead has been reduced from 78.9 Kg in FY 2009- 10 to approx. 59.1 Kg in FY 2014- 15 (till December 2014)

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**M/s Shree Renuka Sugars Ltd.-**

<b>Action Points</b>	<b>Status as on September, 2016</b>	<b>Compliance Status</b>	<b>Remarks</b>
Continuous on-line stack monitoring system to be installed for the stack connected to the 90 TPH pulverized coal-fired boiler.	<ul style="list-style-type: none"> <li>Complied</li> </ul>	Continuous online stack monitoring system is installed with boiler.	Implemented
Continuous effort to be made to minimize spillage & leakage from the process to reduce effluent generation	<ul style="list-style-type: none"> <li>All inside drains are blocked to avoid spillages of raw sugar in storm water drain</li> </ul>	Treated effluent is sent to the Green Belt Canal through pipeline	
Necessary steps for abatement of odour arising out of spillage of raw sugar during transportation/ unloading to be taken	<ul style="list-style-type: none"> <li>The industry is continuously maintaining the various steps adopted for controlling spillage of raw sugar.</li> </ul>	Complied	Implemented

**M/s Ennore Coke Ltd.-**

<b>Action Points</b>	<b>Status as on September, 2016</b>	<b>Compliance Status</b>	<b>Remarks</b>
The unit has already installed 2 WHRBs for 2 (out of 3) coke ovens. It will provide WHRB for the 3rd coke oven also.	<ul style="list-style-type: none"> <li>The unit has completed civil foundation for 3rd WHRB.</li> </ul>	Yet to comply ( the unit was closed for long time)	According to industry's submission installation of third WHRB will be completed in first quarter of 2015.
Will install monitoring system for Benzo (a) pyrene.	<ul style="list-style-type: none"> <li>Benzo (a) pyrene concentration was being monitored at regular intervals.</li> </ul>	Complied	Benzo (a) pyrene concentration is being monitored at regular intervals and results are within permissible limit.

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M/s. TATA Chemicals Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Continuous on-line stack monitoring systems to be installed for monitoring of particulate matter emission & Interlocking facility shall be provided with the APCD.	<ul style="list-style-type: none"> <li>Already installed on-line stack monitoring system for measuring SO<sub>2</sub> with interlocking facility for both sulphuric acid plants</li> <li>SPM analyser could not be installed due to high moisture content and fluoride content in of the tail gas. Stack monitoring is done on regular basis</li> </ul>	Complied	Implemented
Continuous on-line stack monitoring system for monitoring of NO <sub>x</sub> to be provided for the stack connected to the Rotary Kiln of the STPP plant stack.	<ul style="list-style-type: none"> <li>For measuring the NO<sub>x</sub> concentration, NO<sub>x</sub> Analyser has been installed in STPP. However the STPP plant was not in operation due to market scenario resulting into decrease in pollution load.</li> </ul>	Complied	Non-operation of STPP resulting into decrease in pollution load
Facility for monitoring ambient air quality at least in 3 locations shall be developed.	<ul style="list-style-type: none"> <li>The ambient air quality monitoring is carried out twice at three different locations both upstream and downstream of the site on regular basis</li> </ul>	Complied	Implemented
ETP to be upgraded to meet permissible limit for Fluoride.	<ul style="list-style-type: none"> <li>On-line pH meter has been installed at different points of ETP (flash mixer 1 &amp; 3 and ETP outlet). Dosing of chemical done at regular interval to maintain norms.</li> </ul>	Partial compliance.	Activity regarding installation of online fluoride measuring monitor and also phosphate, BOD, COD & TSS measuring monitor in ETP In progress. Technical specification from manufacturer has been received and technical evaluation of the same is in progress.



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M/s United Phosphorous Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Continuous on-line stack monitoring systems to be installed for the 8 TPH coal-fired boiler.	<ul style="list-style-type: none"> <li>Continuous online monitoring system was installed in December 2011. But in October 2012 the same got damaged by lightning. Commitment regarding operating the system within May 2014 has been submitted.</li> </ul>	Achieved earlier but presently non-functional	According to submission of industry new system will be installed within December 2014. Action initiated for implementation
ETP will be augmented and upgraded for handling existing as well as incremental waste-water load.	<ul style="list-style-type: none"> <li>The unit has chemical and biological treatment facility in ETP</li> <li>Some infrastructure development work has been completed in ETP area</li> </ul>	Action taken for compliance	Under implementation

M/s Rohit Ferro Tech Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Dry Fog Dust Suppression Systems For Controlling Fugitive Emission to be installed.	Dry Fog Dust Suppression Systems already installed in all the ground hoppers. Other fugitive emission prone zones like conveyers and conveyer junctions (where water mist is a problem) are enclosed from all directions to avoid dust pollution.	Complied	Implemented
Bag-House Collection Hoppers to be enclosed on all sides with opening door for removal of bag-filter dust.	Bag-House Collection Hoppers already installed. The Bag House was completely enclosed from the sides with an opening for removal of Bag-Filter Dust. Recently the place and structure is being modified (work in progress) for easier work and better results.	Complied	Implemented

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M/s Modern India Concast Ltd.-

Action Points	Status as on September, 2016	Compliance Status	Remarks
Will install Dry Fog Dust suppression systems for controlling fugitive emission.	Already installed dry fog system for controlling fugitive emission	Complied	Implemented
The unit has multi-Cyclone & Bag-filter as the APCDs for the Sub-merged Electric Arc Furnaces. Will enclose collection hoppers of bag houses on all sides with opening door for removal of bag-filter dust	<ul style="list-style-type: none"> <li>Multi-Cyclone and Bag Filters have been installed. The hoppers of the bag houses are completely enclosed.</li> <li>To control secondary fugitive emissions, covered top with movable door in all the furnaces and also canopy in all tap holes have been provided to direct the fumes into the atmosphere through pollution control system. As a practice, all internal roads of units have been concreted. Further, regular water sprinkling is carried out by tankers and sprinklers in all the internal roads and also shop floor of the furnaces.</li> </ul>	Complied	Implemented

M/s Manaksia Ltd.

Action Points	Status as on September, 2016	Compliance Status	Remarks
Continuous on-line stack monitoring systems to be installed for the stack connected to Aluminium melting furnaces.	The opacity meter is already installed with the stack connected to aluminium melting. The same is running successfully.	Complied	Implemented
The neutralized effluent from the neutralizing chamber to be passed through an Iron-removal filter prior to discharge/reuse of the effluent which is to be installed.	An ETP is constructed with iron removal facility before discharge.	Complied.	The effluent treatment plant in steel mill is upgraded and treated water is used in process and domestic purpose.

Note: Presently the unit is closed.

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M/s Tata Steel Ltd - Hooghly Met Coke Div.

Action Points	Status as on September, 2016	Compliance Status	Remarks
All unpaved roads including loading and unloading area must be concreted and movable water tanker fitted with water sprinkler as dust suppression system should be provided	<ul style="list-style-type: none"> <li>• All the roads in the material handling area (approx 2 KM) have been paved and movable water tanker of capacity of 17000L (approx) with sprinkling arrangement is used for water sprinkling purpose in the road within factory and in the periphery area.</li> <li>• The mechanised Mobile Vacuum Cleaning system is being used regularly for arresting the fugitive emission.</li> </ul>	Complied	Implemented
The mineral stock yard should be guarded with boundary walls and in case of storage of fine or dusty materials it must be covered with tarpaulins when not in use and provision of water sprinkling arrangements / Dry fog systems should be there when in use	<ul style="list-style-type: none"> <li>• All around the stock yard the boundary wall has been constructed. The average height of the wall is 5 mt.</li> <li>• 30 numbers of the "Rain Gun Water Sprinklers" have been installed in the coal yard to prevent the generation of fugitive emission from the coal heap. These sprinklers rotate at 360<sup>o</sup> and can spray the water at a radius of 15 meter</li> <li>• Dust suppression systems "dry fogging" for coal and coke handling to restrict particulate emission to within 10 mg per cu m have been installed at The Wagon tippler unit, coal crusher unit, Coal / coke transfer points like different Junction Houses, screen house etc.</li> </ul>	Complied	Implemented
Wash water should be treated in sedimentation tank for re-use / re-cycle instead of direct discharge	<ul style="list-style-type: none"> <li>• The coke quenching water is re-cycled. The water after quenching is being stored in the settling pond which is added up with make-up water and re-used for quenching purpose.</li> </ul>	Complied	Implemented

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Action Points	Status as on September, 2016	Compliance Status	Remarks
<p>During transportation of material by trucks / trippers etc. through public roads or inside the factory premises, the material should be properly covered with tarpaulin sheets in order to prevent the spreading of dust</p>	<ul style="list-style-type: none"> <li>• There is no transportation of material by trucks / trippers through the public road.</li> </ul> <p>Coal is being unloaded through fully covered wagon tippler and transported to the coal yard through covered conveyor belts. Inside the factory also there is no transportation of micro fine material. Only the material (e.g coke / coke sludge etc.) having moisture of 10-12% is being transported. For which Tarpaulin cover is not needed as no dust generated because of this transportation</p>	Complied	Implemented
<p>Monitoring system for Benzo(a)pyrene to be installed</p>	<ul style="list-style-type: none"> <li>• The technology uses “non-recovery type of coke oven gas” so no coal tar is being generated and recovered from the process, so the generation of Benzo(a)pyrene does not take place from the process.</li> <li>• Testing for Benzo(a)pyrene in the ambient air has been done by the third party and the results are found Below the desired limit.</li> </ul>	Complied	Implemented

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Vegetable Oil Processing Units - M/s Adani Wilmar Ltd., M/s Ruchi Soya Industries Ltd., M/s Gokul Refoils & Solvent Ltd., M/s K.S. Oils Ltd., M/s Emami Bio-Tech Ltd.

Action Points	Status as on September, 2016	Compliance Status	Remarks
Continuous on-line monitoring systems for stacks (connected to coal/oil-fired boiler/TFH with real time reading to be installed.	<ul style="list-style-type: none"> <li>M/s Adani Wilmar Ltd. - The online stack monitoring system has been installed and working successfully.</li> </ul>	Complied	Implemented
	<ul style="list-style-type: none"> <li>M/s Ruchi Soya Industries Ltd. - has installed online stack monitoring system.</li> </ul>	Complied	Implemented
	<ul style="list-style-type: none"> <li>M/s Gokul Refoils &amp; Solvent Ltd. - has installed online stack monitoring system with the boiler stack</li> </ul>	Complied	Implemented
	<ul style="list-style-type: none"> <li>M/s K.S. Oils Ltd. – The unit is presently closed.</li> </ul>	M/s. K.S Oils Ltd- Presently closed.	
	<ul style="list-style-type: none"> <li>M/s Emami Bio-Tech Ltd. has installed online stack monitoring system for 18 TPH and 16 TPH boilers, 15 lakh and 10 lakh kcal TFH and 20 lakh Kcal SFTS</li> </ul>	Complied	Implemented
Pneumatic Ash handling system to be adopted for collection and disposal of ash from the bottom of the APCDs (ESP/Bag-filter/Cyclone Separator etc)	<ul style="list-style-type: none"> <li>M/s Adani Wilmar Ltd. – Installed and working successfully</li> </ul>	Complied	Implemented
	<ul style="list-style-type: none"> <li>M/s Ruchi Soya Industries Ltd. - Pneumatic ash handling system in unit -3 is already installed and in operation</li> </ul>	Complied	Implemented
	<ul style="list-style-type: none"> <li>M/s Gokul Refoils &amp; Solvent Ltd. - has installed the pneumatic ash conveying system for its boiler and the same is running smoothly</li> </ul>	Complied	Implemented
	<ul style="list-style-type: none"> <li>M/s K.S. Oils Ltd. – The unit is presently closed.</li> </ul>	The unit is presently closed.	Implemented
	<ul style="list-style-type: none"> <li>M/s Emami Bio-Tech Ltd. - Pneumatic ash conveying system installed with all pollution control device. Now all fly ash disposed by tanker after proper conditioning of ash</li> </ul>	Complied	

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Vegetable Oil Processing Units - M/s Adani Wilmar Ltd., M/s Ruchi Soya Industries Ltd., M/s Gokul Refoils & Solvent Ltd., M/s K.S. Oils Ltd., M/s Emami Bio-Tech Ltd.

Action Points	Status as on September, 2016	Compliance Status	Remarks
Dust extraction system shall be installed in the coal crushing section.	<ul style="list-style-type: none"> <li>• <b>M/s Adani Wilmar Ltd.</b>- Installed and working successfully</li> <li>• <b>M/s Ruchi Soya Industries Ltd.</b> - Manual water spraying system is provided for dust suppression.</li> <li>• <b>M/s Gokul Refoils &amp; Solvent Ltd.</b> - Dust extraction system is installed and working smoothly. In order to increase efficiency an additional dust extraction system is installed in coal crushing system of boiler and the same is in operation.</li> <li>• <b>M/s K.S. Oils Ltd.</b> – The unit is presently closed.</li> <li>• <b>M/s Emami Bio-Tech Ltd.</b> - Installed and working satisfactorily</li> </ul>	<p>Complied</p> <p>Complied</p> <p>Complied</p> <p>-----</p>	<p>Implemented</p> <p>Implemented</p> <p>Implemented</p> <p>Implemented</p>
Treated water shall be reused for various purposes like gardening / maintaining green belt, sprinkling in dust prone area, etc.	<ul style="list-style-type: none"> <li>• <b>M/s Gokul Refoils &amp; Solvent Ltd.</b> - Treated water is being reused for various purposes like gardening / maintaining green belt, sprinkling in dust prone area &amp; road cleaning etc.</li> <li>• <b>M/s Ruchi Soya Industries Ltd.</b> – the use of treated water in gardening/maintenance of green belt and sprinkling in dust prone area in proper working mode</li> <li>• <b>M/s Emami Bio-Tech Ltd</b> – ETP treated water is used in ash conditioning before loading the ash from silo, quenching of dust on road, for maintaining green belt inside factory and as make up water for barometric cooling tower after conditioning</li> <li>• <b>M/s Adani Wilmar Ltd.</b>- ETP treated water is being used for sprinkling and gardening</li> </ul>	<p>Complied</p> <p>Complied</p> <p>Complied</p> <p>Complied</p>	<p>Implemented</p> <p>Implemented</p> <p>Implemented</p> <p>Implemented</p>

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• Long term action points

Action Points (including source & mitigation measures)	Responsible Stake Holders	Status as on September, 2016	Compliance Status	Remarks
<p>Will install 2 additional WHRBs for the 2 coke oven plants.</p> <p>Green belt to be developed over at least 33% of the plant premises.</p>	M/s Electrosteel Castings Ltd	<ul style="list-style-type: none"> <li>Installation of 2 nos. of additional WHRBs is uneconomical, as reported.</li> <li>Green belt is developed over 55000 square metre area along the periphery of the plant which is more than 33% of uncovered area.</li> </ul>	<p>Installation of additional WHRB is techno-economically not viable</p> <p>complied</p>	Implemented
Wet collection of gypsum in gypsum pond to be phased out and gypsum to be collected in dry form for use in cement industries and other purpose	M/s Tata Chemicals Ltd.	Though the gypsum produced by Central Prayon Process (CPP) is dry gypsum, as a part of process during start-up for stabilisation of plant and during shutdown to avoid choke-up wet dehydrate gypsum is generated and transferred to existing gypsum pond. Hence wet collection of gypsum partially continues even with new CPP process.	Partial compliance	Presently the STPP plant is not in operation.
Green belt to be developed over at least 33% of the plant premises.	M/s Modern India Concast Ltd	<ul style="list-style-type: none"> <li>Green belt has been developed by planting 7771 no. of saplings within plant premises</li> <li>4 acres of water body inside the plant premises has been used for storing of rain water and beautified with plantation of trees.</li> </ul>	Complied	Implemented
Green belt to be developed over at least 33% of the plant premises.	M/s Rohit Ferro Tech Ltd	<ul style="list-style-type: none"> <li>Green belt has been developed over 32% of factory land area. Balance 1% of plantation will be completed in the coming monsoon.</li> </ul>	Mostly complied	Almost implemented

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Facility for Rain water harvesting to be implemented  Green belt to be developed over at least 33% of the plant premises.	M/s. Tata Steel Ltd. Hooghly Met Coke Division	<ul style="list-style-type: none"> <li>Rainwater is being collected to the storm water pond and is being reused in the quenching tower for coke quenching.</li> <li>Total 25000 trees have been planted within the premises. In the south side of the factory 5 tier tree of length approx. 10 feet have been planted. Those trees are leafy for dust absorption. Additional 1000 trees planted in the public road.</li> </ul>	Complied  Complied	Implemented
Automatic grid caster to be installed	M/s Exide Industries Ltd	<ul style="list-style-type: none"> <li>As informed automatic grid caster is not suitable for the existing plant.</li> </ul>	Yet to comply	Not suitable for the existing plant. Will be considered in future up gradation project.
Green belt to be developed over at least 33% of the plant premises.	M/s United Phosphorous Ltd	<ul style="list-style-type: none"> <li>Plantation programme is being done on regular basis. Green belt has been developed in a new area behind fire pond covering about 700 square meter area.</li> </ul>	Under compliance	Mostly implemented
Future proposal of re-utilization of treated effluent in process.		<ul style="list-style-type: none"> <li>As informed, there is a proposed plan for using treated effluent for gardening purpose. For this work the unit has installed necessary equipment. Part of treated effluent is used in gardening purpose.</li> </ul>	Under compliance	Mostly implemented



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• Long term action points

Action Points (including source & mitigation measures)	Responsible Stake Holders	Status as on September, 2016	Compliance Status	Remarks
Facility for rain water harvesting to be implemented	Individual industry	<ul style="list-style-type: none"> <li>Majority of industries have made arrangements for harvesting the rain water.</li> </ul>	Mostly complied.	Mostly implemented
De-siltation of Greenbelt canal and new drainage facility is to be made to link with the Greenbelt canal.	IOC & KPT.	<ul style="list-style-type: none"> <li>Major portion of greenbelt canal (GBC) has been de-silted. Desiltation of remaining portion of GBC is under progress.</li> </ul>	Under compliance	Implementation under progress
Development of infrastructure such as improvement of road conditions, railway flyover, construction of Truck terminals and parking facility.	Railway Authority, KPT, Haldia Municipality and NHAI.	<ul style="list-style-type: none"> <li>Haldia Municipality has completed 90% of road work (concrete/ bituminous) in the region under its jurisdiction (110 Km<sup>2</sup> areas).</li> <li>The work for fly over at Railway Crossings is under active consideration as reported by CEO, HDA.</li> <li>Kolkata Port Trust has provided land on license basis to HDA at City Centre for establishment of Truck Terminus and presently it is operational.</li> <li>Construction of 15.5 km Bituminous Road has been completed.</li> <li>Construction of 23.0 km concrete road has been completed.</li> <li>Construction of 5.0 km road with paver blocks has been completed.</li> <li>Additional construction of roads has been approved by the Board of HDA.</li> <li>Construction of NH-41 completed and in operation</li> <li>Very recently proposal has been taken under</li> </ul>	Under compliance	Progress of implementation is satisfactory

		AMRUT and SMART CITY projects for construction of 400 KM of various types of road widening		
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• Long term action points

Action Points (including source & mitigation measures)	Responsible Stake Holders	Status as on September, 2016	Compliance Status	Remarks
Proper infrastructure for Collection, transportation, segregation, treatment and disposal of Municipal solid waste	M/s. WBWML and Haldia Municipality	<ul style="list-style-type: none"> <li>M/s WBWML is collecting the MSW from 26 wards of Haldia. (MSW - 75 Ton/ day, Household- 35000)</li> <li>At primary level MSW is collected in a hydraulic auto tippler and further it is transferred to dumper placer and transported to WBWML site.</li> <li>Segregation is done in WBWML site.</li> <li>Compost produced at WBWML site is taken by external agency for agricultural use.</li> <li>Non-biodegradable MSW is disposed at the Sanitary land-fill facility.</li> </ul>	Complied	Implemented
Development of adequate Greenbelt along the periphery of each individual industry as well as industrial estate.	Concerned industry and Municipal Authority	<ul style="list-style-type: none"> <li>Haldia Municipality is developing green belt at residential area as well as at industrial zone jointly with Forest Department.</li> </ul>	Complied	Implemented
Training / Awareness Program for off-site emergency	District Administration Haldia Municipality and HDA	<ul style="list-style-type: none"> <li>Various types of training/ awareness programmes are being organised by District Administration, Haldia Municipality and Haldia Development Authority for local populace.</li> <li>Industries are also taking active part and initiative to spread such type of awareness in collaboration with Municipality, Development Authority, Confederation of Indian Industries, Bengal Chamber of Commerce and others.</li> <li>HDA has associated itself with the district administration, Bengal</li> </ul>	Under compliance	Implemented. This is a continuous process

		Chamber of Commerce and Industries of CII in organizing mock drill and awareness programmes. However, HDA has not done any such training from its end.		
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• Long term action points

Action Points (including source & mitigation measures)	Responsible Stake Holders	Status as on September, 2016	Compliance Status	Remarks
Setting up of Automatic air quality monitoring stations including introduction of VOC monitoring in strategic location especially Chemical and Petro-Chemical industries.	Individual industries	<ul style="list-style-type: none"> <li>Setting up of Automatic Air Quality Monitoring Stations have been either already achieved or nearing completion/ commissioning by the Large Units.</li> <li>Monitoring of VOC at strategic locations of the Chemical/Petrochemical Units are being done.</li> </ul>	Mostly complied	Mostly implemented
<p>To materialize the Co-processing of hazardous waste in long run</p> <p>To install similar Off-gas burning unit in the existing plant based on the performance of the present installation with an investment of 2.6 Million US \$.</p> <p>To install similar Alkaline scrubber in the existing plant for flue gas cleaning for reduction of SO<sub>x</sub> based on the performance of the present installation.</p>	M/s. MCCPTA	<ul style="list-style-type: none"> <li>Co-processing of some hazardous waste has been started with M/S Ambuja Cement. The co-processing of hazardous waste is being carried out in their Chhattisgarh Cement Plant. CPCB has issued permission for Co-processing of hazardous waste of MCCPTA. The regular Co-processing activity has been started from 2nd quarter of 2013 and is going on regular basis. So the Incineration operation was stopped from 1st Oct'13.</li> <li>Off gas burning unit (OGBU) is already installed in the new plant. The operation of the new plant is yet to achieve stabilization at 100% of the rated capacity so that the efficiency of the OGBU can be judged. Subsequently, on the basis of the performance similar unit to be installed for the old plant.</li> <li>Both PTA plants are operating using "Grid Power" and stopped DEG operations from April-2015. Hence Alkaline Scrubber Installation (for SO<sub>x</sub> reduction) is not required.</li> </ul>	<p>Complied</p> <p>Partially complied</p> <p>Complied</p>	<p>Implemented</p> <p>Partially Implemented</p> <p>To be implemented</p>

To upkeep the existing green belt & landscaping with new plantation.		<ul style="list-style-type: none"> <li>Maintaining the existing green belt and also regular plantation programs are taken up.</li> </ul>	Complied	Implemented
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• Long term action points

Action Points (including source & mitigation measures)	Responsible Stake Holders	Status as on September, 2016	Compliance Status	Remarks
Laying of sewerage system and sewage treatment plant	HDA & Haldia Municipality	<ul style="list-style-type: none"> <li>Oxidation pond already exists for the township area which caters to about 25% of the populace under Haldia Municipality.</li> <li>Sewerage Master Plan for Haldia Municipal area has already been prepared by HDA. It includes the design, collection, conveyance and treatment plant for sewerage for an area of 34.9 sq. km. at an estimated cost of 213.93 crore. The plan has been prepared by IIT, Kharagpur, HDA will implement the Master Plan in a phased manner from the next financial year (2014-15).</li> </ul>	Action initiated for compliance	To be implemented
Storm water management	HDA, Haldia Municipality and Irrigation Department.	<ul style="list-style-type: none"> <li>HDA has already constructed drainage system in almost all the areas for storm water management.</li> <li>Construction of internal drains at 8 nos. rehabilitation colonies has been completed by HDA.</li> <li>Construction of 700 mts. Drain along the road vis Adani Wilmar Ltd. has been completed.</li> <li>Construction of 500 mtr. Drain at Azad Hind Nagar area has been completed.</li> <li>NIT for construction of 4 km long drain along HPL Ling Road to Mansatala Canal is being invited and the work is under progress (beyond tender quotation).</li> <li>The desiltation of Chunamara canal has been done by Haldia Municipality with the financial assistance of HDA. Project desiltation of Manansatala Canal has been taken up by HAD through I&amp;WD Deptt. The de-silting of Mansatala Green Belt, Horekhali, Bhagyabantapur and Atafala Canals and repairing of lock-gates and sluice-gates of the respective canals will be taken up soon.</li> <li>3 km long drain along HPL Link Road from Mansatala Canal to Kshudiram Square (Manjushree More) is under progress.</li> <li>Survey work completed for the first phase for the stretch from Manjushree More to Atafola</li> </ul>	Positive steps initiated for compliance	Mostly complied and further implementation is going on.

Action Points (including source & mitigation measures)	Responsible Stake Holders	Status as on September, 2016	Compliance Status	Remarks
		<p>Khal and in the second phase the stretch from Manjushree More to Bhagyabantapur along SH-4. De-siltation of the Chunamara Khal is completed.</p> <ul style="list-style-type: none"> <li>It is decided that the primary drains as per Master Plan would be constructed by HDA and the secondary and tertiary drains would be constructed by Haldia Municipality.</li> <li>Very recently proposal has been taken under AMRUR project for construction of near about 300KM drain of various types</li> </ul>		

• Long term action points

Creation of Green Belt within Haldia	HDA	<ul style="list-style-type: none"> <li>Planting of trees at the following area has been completed:</li> <li>Both sides of HPL link road from City Centre to Khudiram Square (Manjushree More) (about 6 km each side).</li> <li>Median Plantation on the NH-41 from Nandakumar to Ranichak Railway Crossing (about 25 km.)</li> <li>Both sides of the road from HPL Link Road to the factory of Emami Biotech Ltd. via Adani Wilmar Ltd. and Shamol Ispat Ltd. (about 1 km each side).</li> <li>Along the roads at Gandhinagar and Bhabanipur Rehabilitation Colony (about 5 km)</li> <li>Plantation in one side of the road from HPL Link Road to the factory of Electrosteel Castings Ltd. via factory of IPCL has already been done.</li> <li>HDA held meetings with the representative of various industries to increase the green cover in Haldia area. Haldia Dock complex, Haldia Energy Ltd. (CESC Ltd.) and Tata Chemicals have already started planting of trees in and around their industrial complex.</li> <li>Plantation of about 30000 saplings has been completed under 'GREEN HALDIA CLEAN HALDIA' mission till date.</li> </ul>	Mostly complied	Progress of implementation is satisfactory
Plantation in front of various industries for beautification and increasing green cover	HDA & individual industries	<ul style="list-style-type: none"> <li>Service corridor of HDA in front of most of the industries is being beautified by planting of trees. HDA has given permission to industries to take up the work. Many of the industries have already started such work.</li> </ul>		

### Summary of Compliance Status:

During assessment of the progress made in implementation of Action Plans and subsequent improvement in the environmental condition of Haldia area, following points have been noticed:

- The implementations of Short Term Action Plans by the individual industries are either over or under final stage of completion.
- Positive steps initiated by various stake holders namely HDA, Haldia Municipality, NHAI and Industries for infrastructural development programs like drainage, sewage system, national highway, green belt development etc. as per action plans.
- Major portion of the Long Term Action Plans either completed or under compliance stage.
- The following positive measures have been initiated till September 2016:
  - ✓ Major stretch of the GBC has been de-silted. Other canal namely Chunamara Khal has also been de-silted.
  - ✓ Plantation in one side of the road from HPL Link Road to the factory of Electrosteel Castings Ltd. via factory of IPCL has already been taken up by HDA.
  - ✓ Most of the industries have started beautification of Service corridor of HDA in front of the individual industries by planting of trees; HDA has issued permission to all such industries for initiating such beautification process.
  - ✓ Work for construction of drain along HPL Link Road to Mansatala Canal is under progress.
  - ✓ Plantation of about 30000 saplings has been completed under 'GREEN HALDIA CLEAN HALDiA' mission till date.
- It has been observed that there is a decreasing trend in CEPI score (61.58) during April, 2013 as compared to CEPI score (75.43) during 2010, both calculated by CPCB (available in CPCB website). Efforts will be continued in future for further improvement of environmental quality and a lower CEPI.