



झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद्
Jharkhand State Pollution Control Board
HIG-1, Housing Colony, Dhanbad-826001

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Letter No. 1199.....

Dated ... 29/09/2020

From,

Regional Officer,
Dhanbad

To,

The Member Secretary,
Jharkhand State Pollution Control Board,
H.E.C., Dhurwa, Ranchi.

Sub: Submission of inspection report of M/s. Chandrapura Thermal Power Station in the matter on O.A. No. 18/2020(EZ) Praveen Kumar Singh Vs. Damodar Valley Corporation & Ors.

Ref: H.Q. Ranchi, Ref No. B-1349, dated 08.09.2020

Sir,

With reference to above noted subject, Please find enclosed herewith Inspection report of M/s. Chandrapura Thermal Power Station visit done by committee for the compliance of Hon'ble NGT order dated 15.06.2020 in the matter on O.A. No. 18/2020(EZ) Praveen Kumar Singh Vs. Damodar Valley Corporation & Ors.

Encl : A/a.

Your's faithfully,

(Regional Officer)
Dhanbad

**INSPECTION REPORT of M/s Chandrapura Thermal Power Station (CTPS),
Chandrapura, Jharkhand on Oil Spill**

**In the matter OA 18/2020/EZ (Praveen Kumar Singh Vs Damodar Valley
Corporation & Ors)**

As per direction of Hon'ble NGT, a team was constituted to assess the extent of Oil Leakage and Assessment of environmental damage caused by the Oil Spill.

Details of Team Members are following:

1. Sri R. N. Choudhary, Regional Officer, JSPCB, Dhanbad (Nodal Agency for Coordination)
2. Dr Sreemanta Pramanik, Senior Principal Scientist, NEERI, KZC(nominated by Dr. Deepanjan Majumdar, Principal Scientist & Head NEERI, KZC and an expert member of the committee. Dr. Majumdar could not go as he was suffering from fever.)
3. Sri Sandeep Roy, Scientist D, CPCB, Kolkata

IIT, Roorkee was also intimated (by JSPCB- Nodal Agency) about the above Inspection & Assessment work however Expert member (Dr Sudipta Sarkar) from IIT Roorkee could not join team on 22nd September 2020 due to engagement in Online Classes of the Institute.

Details of Officials from M/s CTPS present during the Inspection & Assessment work:

1. Sri P. K. Sikdar, Chief Engineer & Project Head
2. Sri Subhash Singh, Dy Chief Engr (Operation)
3. Sri M. K. Jha, Dy Chief Engr (Civil)
4. Sri Abhay Kr. Shrivastava, Dy Chief Engr (Mech) & DGM
5. Sri Raushan Kr Singh, EE (Mech)
6. Sri D. Das, Dy Chief Engr (Mech), Fuel

About the CTPS

The CTPS has started Power Generation in the Year 1964. Presently 2 Units i.e. Unit 7 & 8 (capacity 250 MW each) are operational. Unit # 1, 2, 3, 4, 5 & 6 had already been De-Commissioned in phased manner.

The Fuel oil is used in the Boiler during Lit up & for stability of flame during running of unit as per requirement. Specific Oil consumption for Power Generation is 0.3 ml/Kwh (approx).

As informed, the Oil is transported through Small Truck Tankers up to the Plant which is not economical, so M/s CTPS transported the Oil to Plant using Railway Rake (Oil Tankers) which generally happen once in a year or as per requirement and further stored in Oil

Panel

Praveen

[Signature]

Storage Tank (capacity 2000 KL x 2, 890 KL x 3). M/s CTPS has imported the Fuel Oil using Railway Rake on 4th April 2018 and 14th October 2019.

The Incident- Oil Leakage:

The incident of Oil Leakage occurred in the wee hours of 15th October 2019. As informed Rail Rake from IOCL, Haldia reached inside the plant and oil was being unloaded at CTPS site through new unloading system but considerable delay was being noticed in the system due to some technical reasons. Consequent upon non functioning of new system, it was later unloaded through the old system. During this shifting, some quantity of spillage of Fuel oil occurred which was allowed to be collected in a sump tank and to be ultimately pumped into main storage tank. However, the connecting hume pipe developed crack and oil leaked from hume pipe and ingress in the nearby drainage system which is constructed to collect the Storm / Rain water and finally meets to River Damodar. However, said drain passes through an oil Catcher system which is between the said oil unloading system and confluence point of River Damodar.

As soon as the Oil Leakage detected, M/s CTPS started necessary measures to collect the spilled oil from Drainage Channel and River in presence of JSPCB officials. M/s CTPS also constituted a team to monitor the said incident. As per the direction of JSPCB, this Oil Loading/ Unloading system is not in operation since 15th October 2019.

Quantity of Oil Leakage:

The spilled Oil was collected from Drainage Channel & River and stored in Oil Drums. Fly Ash was also used to soak spilled oil to control spillage of Oil. The data provided by Unit regarding Oil spillage and recovery of spilled Oil is as follows:

Sl No.	Activity	Qty (KL)	Remark
1	Total Qty of Oil in the Storage Tanks (before filling) as on 14/10/2019	210.09	
2	Qty of Fuel Oil received through Railway Rake (Oil Tanker)	1351.99	Fuel oil dispatched by M/s IOCL, Haldia (Invoice No. 20202121B021478 Dt 12/10/2019)
3	Total Qty of Oil in the Storage Tanks (after filling) as on 15/10/2019	1559.37	
4	Qty of Oil Leaked out during Incident	2.7	
5	Qty of Oil Collected from Drainage Channel & River Bed and stored in Oil Drums	1.950	Collected oil is stored in 18 Nos. of Oil Drums and kept at a secured place.

6	Qty of Oil collected using Soak Material i.e. Flyash/ Dust	0.150	The Oil soaked Flyash is stored in Concrete Tank
7	Qty of Oil Leaked and ingress into River Damodar	0.600	
**The qty of Oil in each activity is observed and calculated by In-House committee of M/s CTPS.			

During inspection, as decided by the Committee members, Water samples were collected by NEERI and CPCB.

Sampling details are following:

SI No.	Location of the Sampling	Geographic Location** (Latitude & Longitude)
1	Oil Catcher sump	23° 44' 20" N, 86° 8' 2" E
2	Discharge to River Damodar	
3	Confluence Point of River Damodar	23° 43' 43" N, 86° 08' 06" E
4	U/s of R Damodar (Bhandaridah)	23° 44' 54" N, 86° 3' 6" E
5	D/s of R Damodar (Budhidih)	23° 42' 54" N, 86° 11' 44" E
6	D/s of R Damodar (Jharia)	23° 42' 33" N, 86° 22' 30" E

****All Location has been recorded using smart phones (Compass App)**

The Affected Area

The Committee visited the affected areas and finally concluded with below mentioned findings:

- Hardly any sign of released hydrocarbon could be observed or noteworthy to mention. Possibly leakage of Fuel oil i.e. Hydrocarbon when released into the environment undergo various fate like Volatilization, Chemical Oxidation, Bio accumulation, adsorption to soil particle, leaching and microbial degradation.
- Visit to the nearby area revealed no such environmental damages to the nearby Agricultural field or wild plants growing nearby observed any remnant of burning due to the contamination of Fuel oil.
- Apart from this, it is needless to mention that Fuel oil is considered to be less toxic. It has an immediate effect on the vegetation but the long term effects needs an extended in-depth study.
- Fresh discharge has immediate effect like inhibition of trans location probably by physical interference which can not be viewed after such a long time.
- Spillage may kill fishes in the River or Water animals which is usually an immediate effect.

Environmental Compensation

To assess the Environmental Damages caused due to the Oil Leakage/ Spillage incident, JSPCB had constituted a High- Level Committee with following Expert Members:

1. Dr Ajay Mandal, Professor & HOD Petroleum Engineering, IIT-ISM Dhanbad
2. Sri Nitish Kumar, IFS (Attached officer- Dumka)
3. Sri Vikas Meena, IFS (Attached officer- ChatraSouth)

The High- Level committee visited the affected area on 27th January 2020. During visit, Regional Officer, JSPCB, Dhanbad and Representatives of M/s CTPS, Chandrapura were also present.

The committee submitted their report to JSPCB considering various aspects (i.e. Response Cost, Socio- Economic Cost, Environmental Cost) and accordingly necessary direction was issued to M/s CTPS for payment of Environmental Compensation.

Their expertise may be accepted as an Authority of its own and the best judge for the Environmental Compensation calculation.

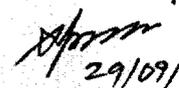
The data provided by M/s CTPS may be cross verified as the data provided by the unit is assessed by their *In-House committee* in the month of June 2020, about 8 months after the incident. The Unit was directed by JSPCB to dispose collected Oil and Oil contaminated ash and other materials in environmentally sound manner as per Hazardous waste rules within stipulated time. Considerable time has passed since the Oil spill incident happened but Unit have not yet disposed collected Oil and oil soaked Fly Ash.

The present team after inspection and as per the above observation is unable to challenge the previous visit and also found the Area and River quite Eco-friendly.

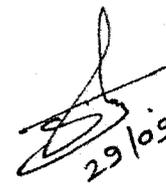
By and large the study or entire exercise should have been completed within 15 days of Spillage. The analysis result of water samples (annexure-1) also indicates no sign of present oil contamination and parameters were found below limits. However, if any restoration of the affected area of concerned is the Soil and Sediment component, this definitely requires in-depth study for a minimum of 6 Month duration.


29/09/2020
(R.N Choudhary)

Regional Officer, JSPCB
Regional Office, Dhanbad


29/09/2020
(Dr S Pramanik)

Senior Principal Scientist,
NEERI, Kolkata


29/09/2020
(Sri Sandeep Roy)

Scientist D,
CPCB, Kolkata

Annexure-1

Location**	Parameter				
	pH	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	O&G (mg/l)
L1	7.3	< 2.5	12	6.5	< 5
L2	7.5	< 2.5	8	7.0	< 5
L3	7.6	< 2.5	24	63.5	< 5
L4	7.6	< 2.5	10	56	< 5
L5	7.7	< 2.5	16	40.5	< 5
L6	7.4	< 2.5	11	52	< 5

****Sampling Location:**

- L1 : Before oil catch pit
- L2 : After oil catch pit
- L3 : Confluence point
- L4 : U/s of River Damodar (Bhandaridah)
- L5 : D/s of River Damodar (Budidih)
- L6 : D/s of River Damodar (Jharia-Jambadoba)

Annexure-2

Location**	Parameter				
	Temp. (°C) (measured at site)	DO (mg/l) (measured at site)	EC (µS/cm) (measured at site)	Total Coliform (MPN/ 100 ml)	Free Ammonia (mg/l)
L1	30.0	5.73	750.0	-	4.88
L2	29.9	6.73	522.0	-	3.52
L3 ^a	29.0	7.12	421.0	Not detected	1.06
L4 ^a	29.2	7.23	207.1	Not detected	1.18
L6	28.2	7.00	288.0	-	-

****Sampling Location:**

- L1 : Before oil catch pit
L2 : After oil catch pit
L3 : Confluence point
L4 : U/s of River Damodar (Bhandaridah)
L6 : D/s of River Damodar (Jharia-Jambadoba)

^a Water at these locations can be classified as Class B [suitable for Outdoor Bathing (Organised)], C [Suitable for Drinking water source after conventional treatment and disinfection] and D [suitable for Propagation of Wild life and Fisheries] as per CPCB classification (<http://cpcbenvi.nic.in/waterpollution/criteria.htm>)

(Please refer to water quality data given in Annexure 1 and 2 in this report)