भारत सरकार / Government of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
एकीकृत क्षेत्रीय कार्यालय/Integrated Regional Office
पता: द्वितीय तल, झारखण्ड राज्य आवास बोर्ड मुख्यालय, हरमू चौक, राँची, झारखण्ड - 834002
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सत्यमेव जयते

मिसिल सं0 **FP/JH/min/38798/2019/** 1014 दिनांक 03.04.2023

सेवा में,

सहायक वन महानिरीक्षक, (FC Division)
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय,
इंदिरा पर्यावरण भवन, अलीगंज,
जोरबाग रोड, नई दिल्ली–110003

विषयः पकरी–बरवाडीह कोल माईन प्रोजेक्ट, मेसर्स नेशल थर्मल पॉवर कार्पोरेशन लिमिटेड जिला हजारीबाग स्थित का स्थल निरीक्षण एकीकृत क्षेत्रीय कार्यालय, राँची द्वारा किए जाने के संबंध में।

सन्दर्भः पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार के पत्र संख्या 8–56/2009–एफ.सीpt दिनांक 07/03/2023

महोदय,

उपरोक्त विषयान्तर्गत श्रीमान् के संदर्भित पत्र के आलोक में परियोजना से संबंधित वांछित स्थल निरीक्षण FAC द्वारा गठित उप–समिति के सदस्यों द्वारा दिनांक 17.03.2023 को किया जाकर तैयार प्रतिवेदन को विभागाध्यक्ष के अनुमोदनोपरांत उनकी संस्तुति के साथ संलग्न प्रेषित की जा रही है।

संलग्नः यथा उक्त

भवदीय

3/4/23

(शशि शंकर)
सहायक वन महानिरीक्षक
एकीकृत क्षेत्रीय कार्यालय, राँची

Site Inspection Report of Pakri-Barwadih Coal Mining North West Project.

An FC Proposal with proposal no. FP/JH/MIN/38798/2019 is applied by user agency-NTPC limited in Hazaribagh West Forest Division in Hazaribagh West District Jharkhand for diversion of 331.198 ha. of forest land towards Pakri-Barwadih Coal Mining North West Project.

While processing the proposal, Ministry vide its letter dated 7.07.2022 requested Integrated Regional Office Ranchi to inspect the site and to submitted the site inspection report. The site inspection report was to include the inspection of area proposed for diversion, area identified for raising Compensatory Afforestation (CA, DFL) as well as to assess the status of compliance of condition stipulated in the approval dated 17.09.2010 granted earlier for an area of 1026.43 ha. (FP/JH/MIN/693/2009) for the same project within the lease. Ministry vide its letter dated 23.02.2022 also has earlier requested IRO Ranchi to take appropriate action as per provision of FC guideline handbook para 1.21 (3) towards reported partial compliance/non-compliance in the latter case. Accordingly, Integrated Regional Office inspected the site on 28.10.2022 and put up the comprehensive report to ministry vide its letter dated 25.11.2022 which included inspection reports of area proposed for diversion, that of area proposed for compensatory afforestation (CA) as well as assessment of non-compliance of conditions imposed in final FC approval accorded for area of 1026.43 ha. as per FC guideline handbook para 1.21.

The proposal was examined /discussed in FAC meeting held on 09.12.2022 in light to the modification sought by user agency in the condition of stage-II. In the meeting sub-committee was constituted to visit the area with the following objective.

I. Assessment of hydrological regimes of the area and impact of ongoing mining operations of the user agency in general and Dumuhani Nallah in particular and changes brought in by the User Agency and its impact on the ecology of the area.
II. Efficacy of mitigation measures, if any, undertaken by the user agency in their lease area
III. Holistic assessment of 1787 ha of forest land involved in the mining lease of the user agency, its present status and legitimacy of future use proposed by the User agency.

The sub-committee consisting of the following members visited the area on 17.03.2023:-

1. Deputy Director General of forests IRO, Ranchi
2. Assistant Inspector General of Forests IRO Ranchi
3. Divisional Forest Officer, Hazaribagh (West) Division, Jharkhand
4. Dr. Anshumali, Professor & Head, Department of Environment science and Engineering, IIT(ISM), Dhanbad- 826004, Jharkhand (Technical Expert member of the Sub-Committee)

The visit was specific to the query and mandate given by FAC to the Sub-committee. The Expert member of the Sub-Committee Dr. Anshumali, thoroughly inspected the examined the area in the context of the objective and has presented the technical report which is annexed herewith (Annexure-I).

The findings of the sub-committee towards the aforesaid objectives are presented point-wise as follows:

I. **Assessment of hydrological regimes of the area and impact of ongoing mining operations of the user agency in general and Dumuhani Nallah in particular and changes brought in by the User Agency and its impact on the ecology of the area:** The technical expert of the sub-committee after exhaustive visit of the area and after extensive study of the region opined that the hydrologic regime of the area is being impacted/has been impacted more by other anthropogenic activities like agriculture, sand/soil mining and brick kilns than the contextual coal mining and its related ancillary activities. It has been emphasised in his report that Khorra Nalla (in west of active mining area) and Pakwa Nalla (east) were present along with a few small tributaries at the time of inspection; and the mining activities or haul road boundary are at distance from these Nallas having no visible impact. This epitomises NTPC Pakribarwadih Coal Mine adhering with the guidelines.

It is further added that present watershed status of the Khorra Nalla (west) and Pakwa Nalla (east) are not matching with related Survey of India Toposheet no. 73E/1. This irreversible damage to the natural boundaries of the Nallas are majorly attributed to other anthropogenic activities than mining in the area.

The central Dumuhani Nalla was found to be realigned with Khorra Nalla (west) and Pakwa Nalla (east) according to the landscape gradient by NTPC Pakribarwadih Coal Mine in the upstream to the mining lease area and maintained distance from the OB sites. Therefore, all the first order streams contribution that originated before the lease in the hilly terrain has been taken due care and has been diverted to the two of the Nallas. Therefore, all the hilly runoff is joining the realigned portion of Dumuhani Nalla. Further, certain portion of the upstream Dumuhani Nallah was found straightened by the user agency to optimize the coal extraction, OB management and haul road maintenance.

It is also highlighted that the hydrological status of the Dumuhani Nallah in lease area, which is yet to be mined out, is highly affected due to the agriculture activities, sand mining, soil mining, and brick manufacturing. The present watershed status of the Dumuhani Nallah is not matching with corresponding Survey of India toposheet no. 73 E/1.

Therefore, prima-facie the three watersheds (Khorra, Pakwa and Dumuhani) have been subject to extreme diversion by locals for their livelihood amelioration well before the mining activities begun in the region. Since, the lease area is under different stages of mining development by the user agency and all people have to shift from the leased area, the diverted streams do not account/contribute for water deficit for habitations beyond the lease area. The leased area is dedicated for the coal mining while livelihood options and ecosystem services for the local people are compensated or will be compensated by the user agency. Therefore, retaining the Dumuhani Nalla and developing green belt in between extensive and intensive coal mining plan does not hold good. Hence, the technical expert member suggests that the green belt development can be notified for Khorra Nalla instead of Dumuhani Nalla (a tributary of Khorra Nalla).

Therefore, the hydrological expert member of the committee, after taking into consideration the holistic approach, has concluded with the recommendation of (i) diversion of the Dumuhani Nalla (a tributary of Khorra Nalla) for coal mining and (ii) restoration and conservation of the Khorra Nalla (west) and Pakwa Nalla (east)

watersheds on priority basis under supervision of the forest department and expert hydrologists/agencies and develop their watershed status as per the Survey of India toposheet no. 73 E/1.

2 **Efficacy of mitigation measures, if any, undertaken by the user agency in their lease area:** The representatives of user agency present at the time of inspection informed the inspecting committee that mining in the area started in the year of 2016 and simultaneously the impact mitigating measures were also kept in place with more emphasis on plantation/green belt development, soil moisture and water conservation.

The following mitigation measures have been under taken by the user agency:

- Fencing and maintenance of around four and a half kilometre long safety zone along Khorra Nalla by planting around 32000 saplings.
- Pakwa Nalla side area is rich in vegetation, there has been protection of existing vegetation as well as planting of about 5000 saplings along it.
- They have also informed that they have taken multiple sapling distribution drive among locals to increase the green cover in the vicinity.
- To check the runoff from the area and to ensure prolong inundation of these Nallas (Khorra and Pakwa) user agency has constructed 12 units of Check dams.
- User agency has apparently undertaken measures to protection of removed top-soil and unsolicited flaring of overburden dump by taking up plantation activities over them.

The details of water conservation measures undertaken by user agency as stated by them at the site is produced as Annexure- II.

The user agency has informed that their mitigative measures have accounted for recharge of groundwater to the tune of 1,48,796 cum/year. Similarly, 16.18 Lakh cum of water capacity creation has been acclaimed by user agency by way of created Check dams.

These claims of user agency need to be studied for ascertaining the efficiency of the mitigative measures adopted by it. Considering the gestation period of these measure spread to a larger temporal context too, this study becomes imperative.

3 **Holistic assessment of 1787 ha of forest land involved in the mining lease of the user agency, its present status and legitimacy of future use proposed by the User agency.**

As informed by user agency according to the mine Plan total mining lease area is 4695 ha and out of that 1787 ha is the forest land. Out of total forest area located within the lease, 1699.4 ha of forest land is within the prospective mining area (coal-bearing) and rest 87.6 ha forest land is outside the proposed/intended mining area which shall be used for development of ancillary infrastructure.

Further, out of the 1787 ha of forest land, 1026.438 ha forest land have already been diverted vide Stage-I and Stage -II FC no.: F. No. 8-56/2009-FC dated 11.05.2010 and 17.09.2010 respectively. This 1026.438 ha of the forest land is being used for opencast mining, coal evacuation corridor and development of the mine infrastructures necessary to operate the mine.

In addition, 6.291 ha of forest land was diverted for development of the railway siding vide FC No. – Stage-I vide lr no. FP/JH/ RAIL/ 16048/ 2012/ 518 dated 26.05.2016 and stage-II vide Lr no. FP/JH/ RAIL/ 16048/ 2012/ 2686 dated 31.10.2018.

Forest area amounting 333.193Ha remains un-diverted in the lease.

Future use of the Forest Land: The Project Proponent have applied for diversion of the 331.198 ha of forest land for Pakri Barwadih North-West quarry vide application no. F.No. FP/JH/MIN/38798/2019 dated 07.02.2019.

Further, 89.88 ha of forest land shall be used for development of the Underground mining after obtaining the forest clearance in due course of time. It was informed by the project proponent that the Geological Report is under preparation for the underground mining in dip side of the coal block and application shall be made for diversion of the 89.88 ha of the forest land after preparation of the detailed mining plan for Underground Mining. A forest area of 11.212 Ha is being managed as safety zone in the lease.

It was further informed by the project proponent that the rest of 321.981 ha of forest land in the mining lease area shall be used as green belt for the time being and, if required, application shall be made for diversion of the same as per the requirement. All the un-diverted forest land within the coal blocks is under administrative control of the state forest department.

The present and future use of the 1787 ha of forest land as informed by user agency is presented as Annexure-III.

Specific recommendations:

Based on the site visit by the sub-committee and the recommendation made by the technical expert member of it it is concluded that the study of hydrologic regime of an area in both temporal as well as sectoral manner depends on the differential aspects of versatile field parameters.

Therefore, the appraisal of the mining activities and the mitigating efforts adopted thereupon towards the hydrologic regime needs to be undertaken on parallel basis against the project implementation phase. This would not only help to estimate the detrimental effect, but also to enhance the efficacy of mitigative measures adopted.

Hence the following is recommended by the sub-committee:-

- A team of specialists from field of soil Engg, agriculture Engg, Hydrology, GIS & Geology may be constituted under chairpersonship of DFO who shall continuously study the area for assessing the impact of on-going mining on various environmental/ecological parameter and shall submit finding report to IRO annually.
- U/A shall generate drone survey Data on spatial and seasonal status of Khorra Nalla & Pakwa Nalla watersheds for having first-hand information on the current status of the

Khorra and Pakwa Nalla watershed parallel to the ongoing mining activities. The data hence collected shall help user agency to design and develop green belt under super vision of Forest Department. For this purpose a reported institute, preferably located in the state, may be engaged for data collection, processing and interpretation in effective and exclusive manner. The institute can also be requested to study the entire region of 10 km from the lease boundaries for temporal land use and its changes.

- Study of river-aquafer interaction using non-invasive geo-physical technique in 10 km radius of NTPC Pakribarwadih Coal mine site. The study may help in delineation of groundwater potential zones, ground water variation in these zone and may help in water budgeting to the surrounding

The report of the subcommittee is hence hereby being put along with the Technical expert member's annexed with it for perusal and necessary action please.

31/3/2023

Saba Alam Ansari
(DFO, Hazaribagh West)

Shashi Shankar
(AIGF, IRO Ranchi)

The report is prepared under my guidance and the same is approved by me for submission to Forest Advisory Committee as per the directions received.

31/3

Santosh Tewari
(Dy.DGF, & Head- IRO Ranchi)

Annexure - I

Department of Environmental Science and Engineering
Indian Institute of Technology (Indian School of Mines) Dhanbad-826004, Jharkhand

- Report on conduct of Site Visit of the Pakaribarwadih Coal Mine Site on 17.03.2023

The sub-committee on the recommendation of the Forest Advisory Committee constituted by the MoEF&CC (FAC held on 09/12/2022; Ministry's letter no. 8-56/2009-FCpt dated 17/02/2023) visited NTPC Pakaribarwadih Coal Mine Site on 17.03.2023 from 10.00 AM to 5.00 PM (Letter No. FP/JH/MIN/38798/2019/975 dated 15.03.2023). The following members of the sub-committee (FAC) visited the Pakaribarwadih Coal Mine Site on 17.03.2023 (Photo Plate 1):

1. Deputy Director General of Forest, IFS, MoEF&CC, IRO (Central), Ranchi, Jharkhand
2. Assistant Inspector General of Forest, IFS, MoEF&CC, IRO (Central), Ranchi, Jharkhand
3. Divisional Forest Officer, IFS Hazaribagh (West) Division, Jharkhand
4. Dr. Anshumali, Professor & Head, Department of Environmental Science and Engineering, IIT(ISM), Dhanbad-826004, Jharkhand

Photo Plate 1

The undersigned carried out **qualitative** "Assessment of hydrological regimes of the area and impact of on going mining operations of the user agency in general and Dumuhani Nallah in particular and changes brought in by the User Agency and its impact on the ecology of the area" (Photo Plate II and III).

The undersigned put forward the following field observations for kind perusal and necessary action:

(1) The two streams viz Khorra Nalla (west) and Pakwa Nalla (east) were present at time of inspection along with a few small tributaries. The mining activities and haul road boundary are at a distant from the natural river boundary without any visible impact. It is showing that NTPC Pakaribarwadih Coal Mine is adhering with the guidelines. The green belt development is going on and visible to the sub-committee members.

Further, agriculture activities, sand mining, soil mining, and brick manufacturing are irreversibly damaging the natural boundaries of the Khorra Nalla (west) and Pakwa Nalla (east) and may be responsible for complete disappearance and marginalisation of the river boundaries in near future. The present watershed status of the Khorra Nalla (west) and Pakwa Nalla (east) are not matching with Survey of India toposheet no. 73 E/1.

(2) The central Dumuhani Nallah (a tributary of Khorra Nalla) was present at the time of inspection without its streams of different orders.

During site inspection, the central Dumuhani Nallah was found realigned with the Khorra Nalla (west) and Pakwa Nalla (east) according to the landscape gradient by the NTPC Pakaribarwadih Coal Mine, in the upstream to the mining lease area and maintained distance from the OB sites (Photo Plate II). All the hilly runoff is joining the realigned portion of the Dumuhani Nallah (Photo Plate III). Certain portion of the upstream Dumuhani Nallah was found straightened by the user agency to optimize the coal extraction, OB management, and haul road maintenance.

20/3/2023

The hydrological status of the Dumuhani Nallah in lease area, which is yet to be mined out, is highly affected due to the agriculture activities, sand mining, soil mining, and brick manufacturing. The present watershed status of the Dumuhani Nallah is not matching with Survey of India toposheet no. 73 E/1 (Photo Plate IV to VII).

Impression:
The qualitative observations give first impression about extreme diversion of the three watersheds (Khorra, Dumuhani and Pakwa) by local people for their livelihood, well before the inception of the coal mining activities.

Since, the lease area is under different stages of mining development by the user agency and all people have to shift from the leased area. The leased area is dedicated for the coal mining while livelihood options and ecosystem services for the local people are compensated or will be compensated by the user agency. Therefore, retaining the Dumuhani Nalla and developing green belt in between extensive and intensive coal mining plan does not hold good. Hence, the undersigned suggest that the green belt development can be notified for Khorra Nalla instead of Dumuhani Nalla (a tributary of Khorra Nalla).

Conclusion:
In view of the above, the undersigned taken into consideration the holistic approach while recommending the following:

(1) diversion of the Dumuhani Nalla (a tributary of Khorra Nalla) for the coal mining.

(2) restoration and conservation of the Khorra Nalla (west) and Pakwa Nalla (east) watersheds on priority basis under supervision of the forest department and expert hydrologists/agencies and develop their watershed status as per the Survey of India toposheet no. 73 E/1.

Specific Recommendation
The undersigned is recommending following studies to be conducted so that trade-off between water-food-energy nexus and minimize social conflicts and environmental degradation can be addressed:

(i) The user Agency must generate Drone Survey Data on the spatial and seasonal status of Khorra Nalla (west) and Pakwa Nalla (east) watersheds.

This will provide first hand information on the current status of the Khorra Nalla (west) and Pakwa Nalla (east) watersheds parallel to the on-going mining activities. This will help user agency to design and develop green belt under the supervision of the Forest Department.

(ii) LiDAR based or Drone based LiDAR reconnaissance of watersheds and sub-watersheds in the 10 km radius of the NTPC Pakaribarwadih Coal Mine Site.

This study envisages the impact of land use and land cover changes on the natural ecosystems (forests, watersheds, rivers, streams, aquifers, flora and fauna etc.) and man-made ecosystems (agriculture, villages, peri-urban centres, urban centres, infrastructure, industries including mining etc.). This will insure and secure long-term runoff management, agriculture productivity, aquifer recharge, groundwater availability etc., upstream, midstream and downstream of the Khorra Nalla (west) and Pakwa Nalla (east) watersheds.

(iii) Study on river-aquifer interaction using non-invasive geophysical techniques in the 10 km radius of the NTPC Pakaribarwadih Coal Mine Site.

This study envisages the spatial and seasonal variations in the river-aquifer interaction, delineation of the groundwater potential zones, modelling of the groundwater contamination transport, vulnerability risk assessment etc.

20/3/2023

(Anshumali)

Dr. Anshumali
Professor & Head
Deptt. of Environmental Sc. & Engg.
Indian Institute of Technology
(Indian School of Mines) Dhanbad
Jharkhand-826004, India

Annexure-II

Measure for Water Conservation at NTPC Pakri Barwadih Coal Mining Project (PBCMP)

1. Drainage in the core zone has been planned to be regulated in a manner so that impact on surface water bodies is minimized and the drainage pattern of the area is not affected.

2. Catchment drain on the North side of the present mining pit area has been made to route them to the settling pond and to the main tank which will flow finally to the Khora & Pakwa nallahs.

3. Water management (including storm water drainage) scheme (by a network of garland drains/ diversion ditches and catch-pits) has been planned and implemented.

4. In PBCMP, 4.89 Km Garland drains have been constructed wherever required on sides of quarries and external dumps (depending on contours). The garland drains have been routed through catch pits and settling tanks to settle out suspended solids in discharged water and the storm water. The clarified water is being discharged to natural watercourses. Retaining walls / toe wall with gabion have been built all-around the topsoil dump which will have weep holes for passage of storm water to join garland drains. External dump is in moving phase. After reaching the final limit, retaining walls will be made.

5. Top surface of the dumps are slightly sloped to collect water in garland drains in a systematic manner.

6. Small grasses and bushes in drains hold back solid particles from draining away.

7. Small stone barriers across the drain will check water current and arrest solids.

8. Stone pitching has been made at suitable places to regulate water flow.

9. Some of the drains, which will serve for a long time, have been made pucca.

10. Settling pits and drains are being de-silted periodically.

11. Seven (7) Nos. of rock fill Check dam and garland drains are also constructed to avoid any siltation in the nearby area. Regular cleaning of the check dams and siltation ponds are also being done.

17/03/2023
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अपर महाप्रबंधक / ADDL. GENERAL MANAGER
(पर्यावरण प्रबंधन) / (ENVIRONMENT MANAGEMENT)
कोयला खनन परियोजनाएँ/ COAL MINING PROJECTS
एनटीपीसी लिमिटेड/ NTPC Limited
हजारीबाग / HAZARIBAG

12. NTPC is constructing 12 check dams in Khora and Pakwa nala based on the detailed study completed by Central Water and Power Research Station.

13. Mines has established an ETP of 125 KLD capacity for treatment of workshop effluents with the electro-mechanical technology for Mine workshop. HEMMs are being washed in this designated area. The clarified effluents are being used for vehicle washing.

14. Effluents from the canteen and rest areas is being diverted through drains for green belt development. Sanitary sewage generated in office area etc is being treated in septic tanks and soak pit.

15. Ground water, surface water and drinking water Monitoring and analysis is being done through NABL accredited lab in consultation with the State Pollution Control Board and ground water levels are being carried out manually at 20 nos. of dug-wells/bore-wells around mining lease. Apart from manual monitoring of water level 6 nos. of automated Piezometers have been installed.

16. The project has constructed and installed a 1.5 MLD STP (Sewage Treatment Plant) at Dhenga for treatment of domestic waste water.

17. Further, to avoid soil erosion plantation has been carried out on external dump at an area of about 23 Ha along with Mixed grass variety seeds and root shoots of ***Vertiver*** grass. Also, 6.2 km toe wall followed by garland drain of 6.2 km are also constructed to avoid any siltation in the nearby area. The garland drain ultimately connected to the settling pit.

18. For ground water recharge 18 nos. of village pond have been desilted & deepened and 10 nos. of new ponds have been made in different location of Pakri Barwadih Coal Mining Project. Roof top rain water harvesting system has been installed at the site office, langathu, mines workshop and dispensary. Thereby, about 1,48,796 m3 per year ground water can recharged. Details as under -

Sl No	Name of village	Water Recharge Activity	Surface area (Sq M)	GPS Coordinates		Water storage Capacity (Cum)	Description of pond in			Volume of Pond in m3	Annual Ground Water Recharge in m3
				Latitude	Longitude		Length	Width	Avg. Depth		
1	Dadikala	Tari Ahar talab	2982	23°52'52.1"	85°12'30.22"	7455	65	24	2.01	3135.6	3657.36384
2	Chepakala	Chepa Ahar talab	30415	23°90'60.05"	85°21'38.11"	76037.5	160	55	3.5	30800	35925.12
3	Pakri-Barwadih	Barka Ahra talab deepening and desilting	13200	23°86'35.23"	85°22'43.19"	33000	126	35	3	13230	15431.472

17/05/2023
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कोयला खनन परियोजनाएं/ COAL MINING PROJECTS
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4	Urub	Padeo bagi Arhar pond (Bada talab) deepening and check dam repair	20000	23°53'59.63"	85°11'16.92"	50000	184	34	3.2	20019.2	23350.39488
5	Garikala	Japotva Ahar pond deepening	4940	23°52'30.31"	85°09'54.74"	12350	92	28	2.5	6440	7511.616
6	Kusumbha	Purna Ahar talab repair and deepening	6862	23°94'81.61''	85°27'82.54''	17155	87	32	2.5	6960	8118.144
7	Banka	Banka talab	2900	23°98'13.9"	85°29'13.9"	7250	64	24	2.4	3686.4	4299.81696
8	Petto	Badi talab	3816	23°86'33.39"	85°06'92.95"	9540	56	35	2	3920	4572.288
9	Kodwe	Kodwe Talab	1280	23°26'48.16"	85°47'10.74"	3200	36	18	2	1296	1511.6544
10	Langathu	New Water Recharge Pond construction	400	23°52'15.52"	85°12'43.27"	1000	28	11	2.09	643.72	750.835008
11	Langathu	Roof top water recharge system	1500	23°52'19.49"	85°12'49.30"	1800					1152
12	Hazaribagh	Zheel park desilting and repair (One side)	36000	24°00'98"	85°36'30''	108000	225	54	3	36450	42515.28
											148795.99

17/03/2023
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अपर महाप्रबंधक / ADDL. GENERAL MANAGER
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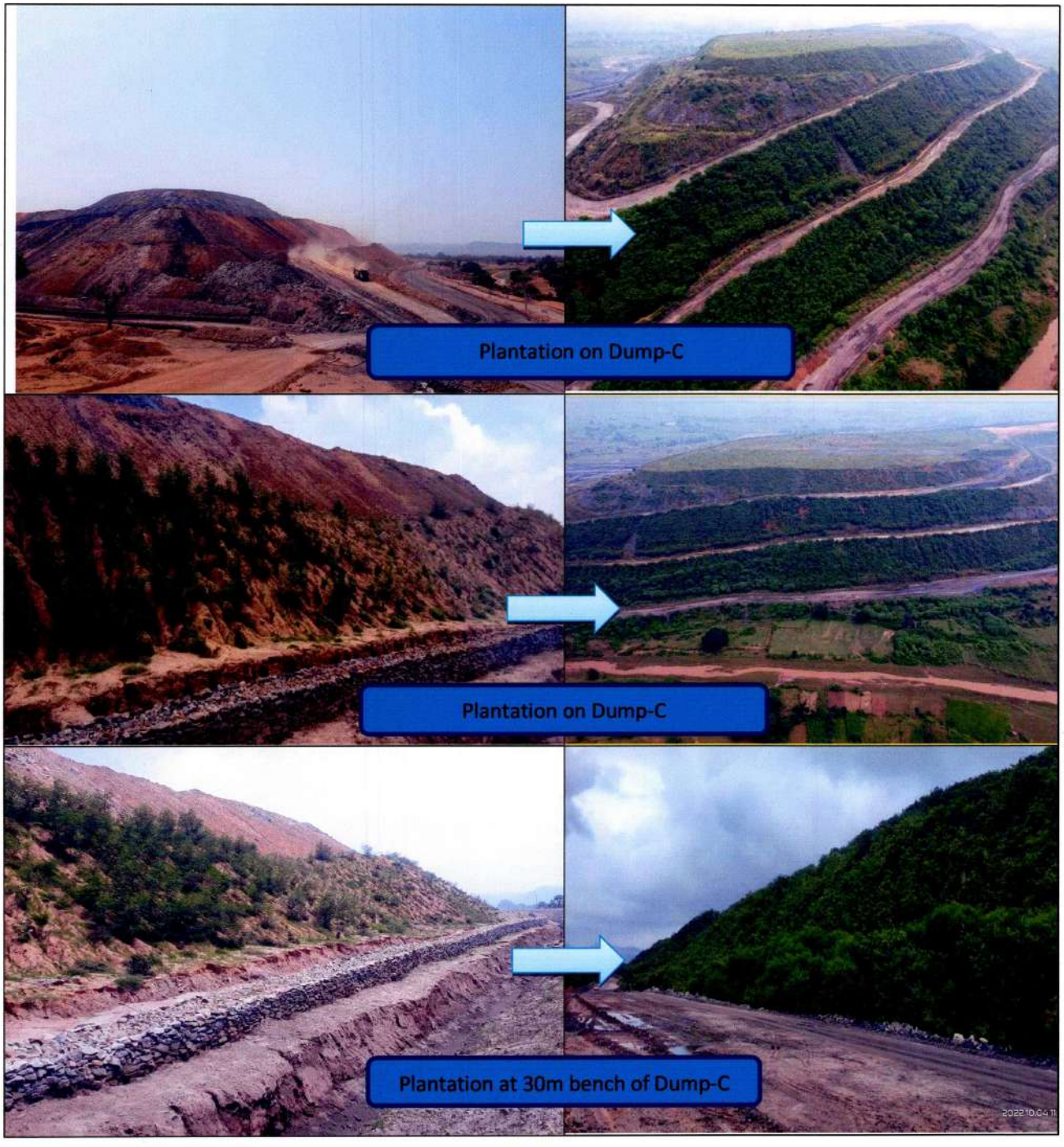
कोयला खनन परियोजनाएँ / COAL MINING PROJECTS
एनटीपीसी लिमिटेड / NTPC Limited
हजारीबाग / HAZARIBAG

1. Plantation photographs –



17/03/2023
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अपर महाप्रबंधक / ADDL. GENERAL MANAGER
(पर्यावरण प्रबंधन) / (ENVIRONMENT MANAGEMENT)
कोयला खनन परियोजनाएँ / COAL MINING PROJECTS
एनटीपीसी लिमिटेड / NTPC Limited
हजारीबाग / HAZARIBAG

Plantation along Khorra Nala

Plantation at 90m Dump-C

Plantation along Khorra Nalla

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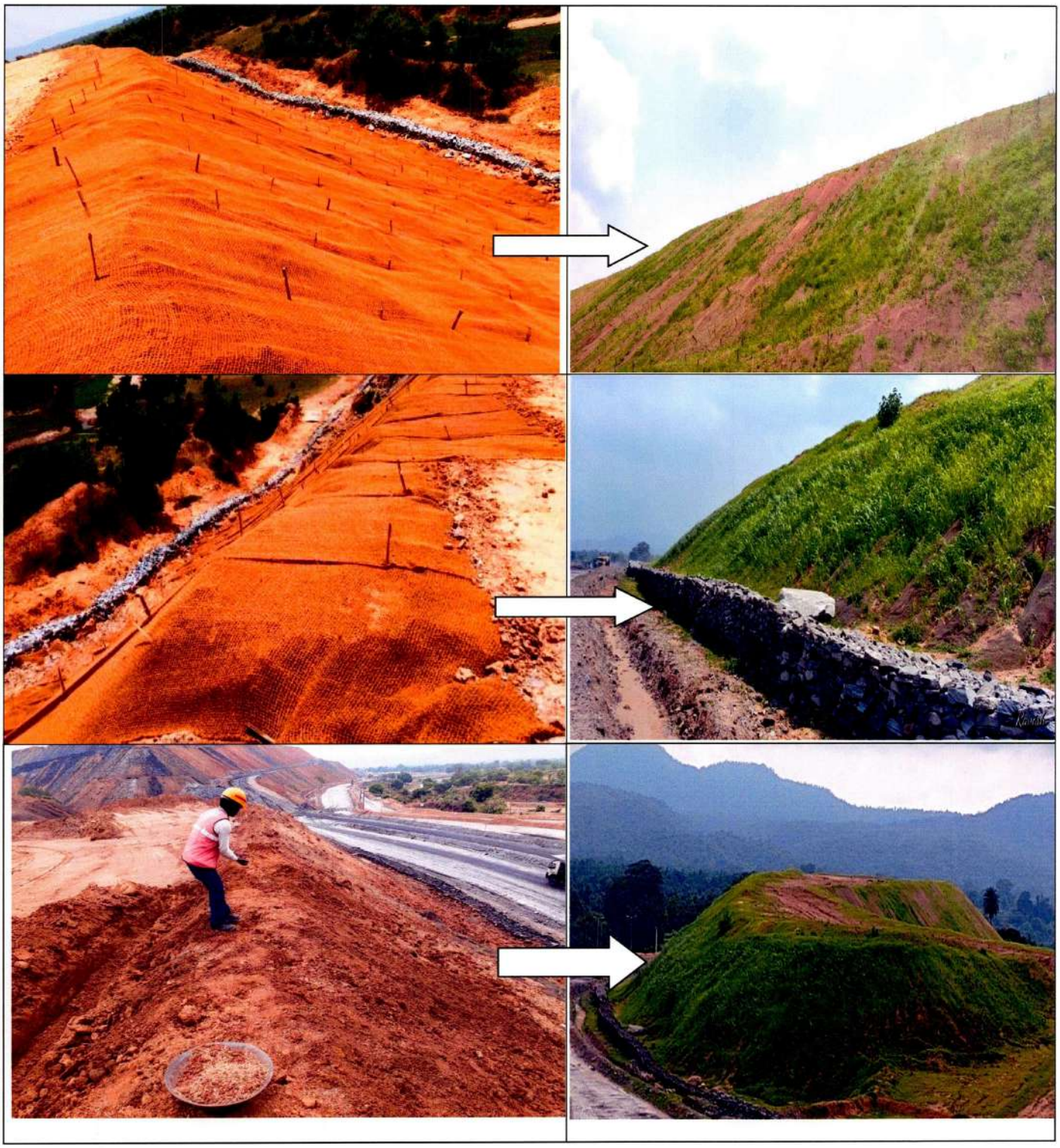
2. Soil Erosion Protection Measure –



17/05/2023
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अपर महाप्रबंधक / ADDL. GENERAL MANAGER
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3. Rain-water Harvesting structure in PBCMP–

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4. Recharge ponds –

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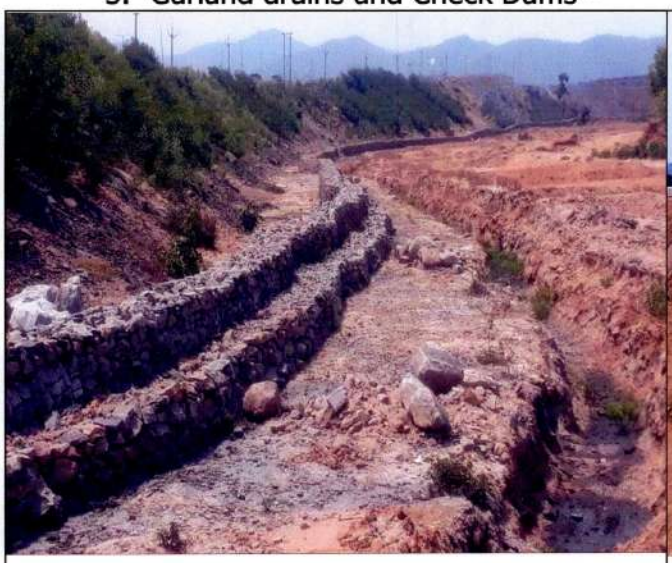
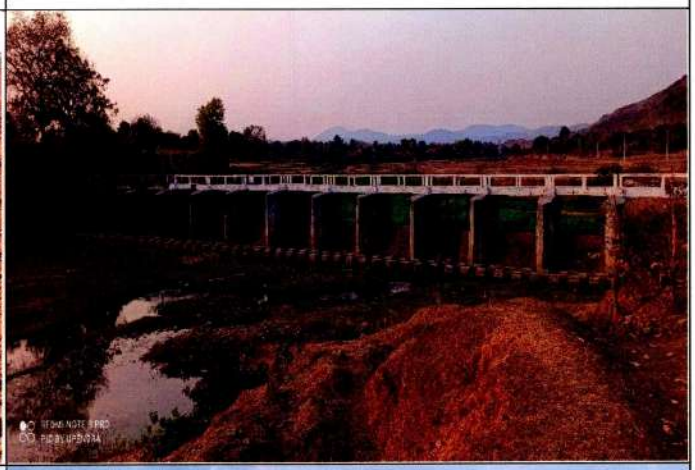
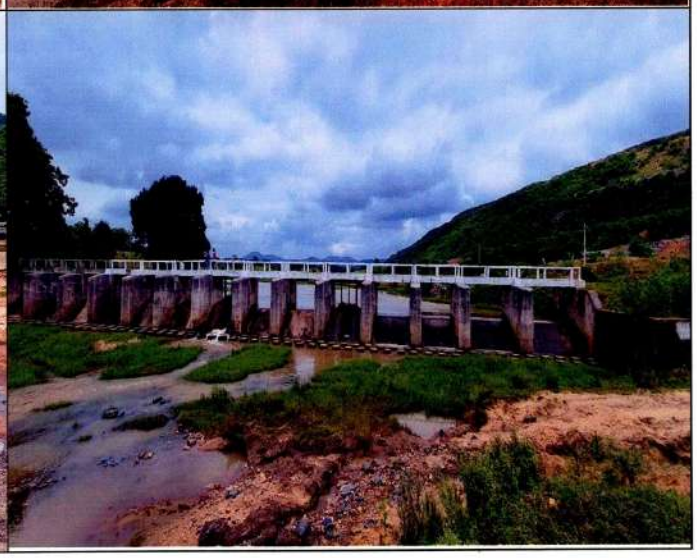
5. Garland drains and Check Dams –







17/09/2023
वीरेन्द्र कुमार / BIRENDRA KUMAR
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Annexure-III

Holistic Assessment of 1787 Ha Forest Land Involved in the Mining Lease of the user agency, its present status and legitimacy of future use proposed by the user agency.

As per the approved mining plan total mining lease area is 4695 ha and out of that 1787 ha is the forest land. Out of 1787 Ha forest land, 1699.4 ha forest land is within the prospective mining area and 87.6 ha forest land is outside the prospective mining area and shall be used for development of ancillary infrastructure.

Present use of the Forest Land: Out of the 1787 ha of forest land 1026.438 ha forest land have already been diverted vide stage-I and stage -II FC no.: F.No. 8-56/2009-FC dated 11.05.2010 and 17.09.2010 respectively. This 1026.438 ha of the forest land is being used for opencast mining, coal evacuation corridor and development of the ancillary mine infrastructures.

Further, 6.291 ha of forest land was diverted for development of the railway siding vide FC No. –Stage-I vide lr no. FP/JH/ RAIL/ 16048/ 2012/ 518 dated 26.05.2016 and stage-II vide Lr no. FP/JH/RAIL/ 16048/2012/ 2686 dated 31.10.2018.

Further, 11.212 ha of forest area have been identified and allocated as safety zone and as per condition no 2b of stage-II FC no.: F.No. 8-56/2009-FC dated 17.09.2010, fencing and plantation are being done in this area.

Future use of the Forest Land: NTPC Ltd has applied for diversion of the 331.198 ha of forest land for Pakri Barwadih North-West quarry vide application no. F.No. FP/JH/MIN/38798/2019 dated 07.02.2019.

Further, 89.88 ha of forest land shall be used for development of the underground mining after obtaining the forest clearance in due course of time. At present, Geological Report is under preparation for the underground mining and application shall be made after preparation of the detailed mining plan for Underground Mining.

Further, left out 321.981 ha of forest land shall not be used in near future. However, application shall be made for diversion as per the requirement, if any.

All the un-diverted forest land within the mining lease is under administrative control of the state forest department.

The present and future use of the 1787 ha of forest land is tabulated below:

Sl. No.	Description of Use	Present Use (in Ha)	Future Use (in Ha)	Total Area (in Ha)
1	Opencast Area (PB. PB-NW, Coal evacuation corridor, Mine Infra etc.)	1026.438	331.198	1357.636
2	Underground (GR under Preparation)	0.000	89.880	89.880
3	Safety zone of PB-CMP	11.212	0.000	11.212
4	Outside Block (Railway Siding)	6.291	0.000	6.291
5	Un-utilized(future use as per requirement)	0.000	321.981	321.981
Grand-total		**1043.941**	**743.059**	**1787.000**

AGM(Mining)/Agent

PakriBarwadih Coal Mining Project

माईन एजेन्ट / MINE AGENT
एनटीपीसी लिमिटेड/ NTPC Limited
पकरी बरवाडीह कोयला खनन परियोजना
Pakri Barwadih Coal Mining Project
हजारीबाग / Hazaribag

मनीष राव कोल्हे/ MANISH RAO KOLHE
प्रबंधक (खान सर्वे)/ MANAGER (Mine Survey)
पकरी बरवाडीह / Pakri Barwadih
कोयला खनन परियोजना / Coal Mining Project
एन टी पी सी लिमिटेड / NTPC Limited
जिला- हजारीबाग/ Dist-Hazaribag

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