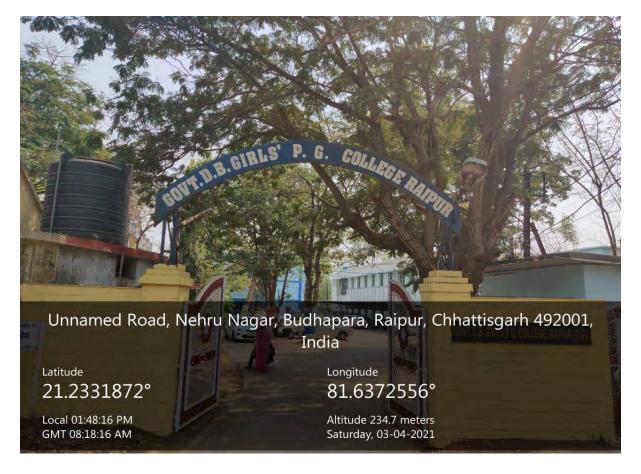
GOVT. D.B. Girl's P.G. College, Raipur GREEN AUDIT REPORT –II 2015-16 to 2019-20





Complied by

Students of M.Sc. (Botany)

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DAG

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Govt. D.B. Girl's P.G. Autonomous College, Raipur, (C.G.)

Report of Green Audit

2015-2020

Introduction:-

Biosphere is a thin layer a few hundred meters above the earth surface and a few meters below the earth surface. Green Plants are responsible to build up oxygen and reduce carbon dioxide in the biosphere. Human being is adapted to the present day condition in the biosphere. Any significant change in any or many of the parameters in the biosphere may have detrimental effect on human being. Increase in the concentration of carbon dioxide is the one such parameter causing increase in global temperature. Sequestration of carbon through green plant is the best method to reduce the concentration of carbon dioxide in the atmosphere. Therefore it is important to carry out green audit of as many places or ecosystems as possible. Present studies have been made to set as an example of green audit of the Govt. D.B. Girl's P.G. Autonomous College, Raipur.

A long term study will give an idea of dynamics of vegetation of a place as well as will provide data about carbon sequestration.

College Campus:-

The Govt. D.B.Girl's P.G.Autonomous College, Raipur is located in the middle of Raipur city adjoining to the largest pond of the city the Budha Talab (recently named Vivekanand Sarover). The college is situated in the area of 4.47 Acare. The college campus is surrounded with wall from all the sides. In the college apart from college buildings, four small gardens are situated (one in front of the office, second in front of the main college building, third one is in the old hostel and fourth is in front of Hindi, History, Dance & Music Department). Vegetation of college campus consists of both wild and cultivated plants of various habits i.e. trees, herbs, shrubs, climbers (annual and perennial),

while some plants grow on the roofs and walls of college building. Plant diversity is the maximum in the Rainy season and very less in the summer season. So many potted plants are also in the college campus and Hostel. Some potted plants are also there presented by U.G. and P.G. students of the Botany as a part of the project of *ex-situ* conservation. Trees of college campus are old to young. Phytosociological studies of vegetation were made by the students of B.Sc. IIIrd year Botany and M.Sc. Botany every year as a part of their regular practical course.

In vegetation of college economically important plants include following economically important plants:

- Non-wood forest produces (NWFPs)
- Medicinal Plants
- Ornamental and wild plants
- Aromatic Plants

The campus has elevated and sloping terrain. The campus is well protected from cattle. However, free movement of students in different other activities as sports, constructions all over the campus has hampered the growth of natural vegetation, like the listing of vegetation,

With the study of green audit the study of visiting animal, birds done by the students of zoology with the help of departmental members as the part of their course. Some migratory birds also come here regularly bats and Owl also resides here permanently on the Imli tree.

Soil:-

The underlying rock of the college campus belong to cuddapah system. Rock formation of Raipur series mainly consist of lime stone with irregular bands of shale covered by lateritic capping with yellow soil. Soil is of Matasi and Bhata type.

Methodology:-

Study for green audit on the vegetation of the college campus was started in 2009 and is being continued till date. First report was submitted in 2014 at the time of NACC 2nd Cycle.

- I. Studies of the herb layer was made with the help of square quadrate of 100 sqr.cm
- II. Complete survey was made of the shrub and trees.
- II. Photographs of the vegetation of the college campus.

Climate-

Climate of Raipur as for other parts of the country is divisible into three seasons viz. rainy, winter and summer each of about four months duration. To describe the climate of a particular area, it is customary to give the yearly or monthly means of maximum and minimum temperature and relative humidity, and the total average annual rainfall. But from an ecological point of view, these may have very little significance. Extremes of climatic conditions and their duration have a controlling effect on the distribution of plants.

Rainfall:

Average annual rainfall at Raipur is 1224.00 mm (based on data of 2015 to 2020 Most of the rainfall (>80%) occurred during rainy seasons (i.e. from June to September). November to January, March and May months are either completely dry or have experienced only very little rain.

. Temperature:

The temperature exhibit seasonal phenomena Maximum temperature was recorded in June. It decreases abruptly in July with more or less a decreasing trend till December when the lowest temperature was recorded. This is followed by an increasing trend till the maximum of May. Diurnal range of temperature is lowest during rainy season while it increases after the retreat of monsoon.

Relative humidity:

Relative humidity is one of the most important factors governing the growth of the plants as well as the decompose the dead plant parts. During July to September the maximum value of relative humidity is maintained which together with the higher temperature favour very luxuriant growth of the plants as well as a higher rate of decomposition. During winter months, a higher value of relative humidity than the summer months was obtained, but it is mainly due to lower temperature prevailing during this time. The higher value does not seem to have any influence either on the growth of the plants or the decomposition. In March, the value decreases abruptly and is maintained at a lower level throughout the summer season. However, occasional rains during this period increase the relative humidity temporarily, which is not reflected in monthly averages. This temporary increase in relative humidity has sometimes considerable influence on the revival of growth of the perennial species and favour the rapid disappearance of dead plant parts. During study period minimum monthly relative humidity was recorded in the month of May for each year. Maximum monthly relative humidity was recorded in the month of July to September every year.

Soil:

The soil type is loam and Sandy loam. The colour of the soil is reddish due to iron content. The A-I horizon farms only a few cm. of top soil, which is grey to blackish gray to brownish in colour and is very pours. It is followed by yellowish to reddish soil which become more reddish in deeper layers. This soil is generally quite soft and is rich in sexsquioxide contents. The depth of this layer may be up to 3 to 4 meters at some places. pH value of such soils are 6.0 to 6.8

OBSERVATION & RESULT:-

LIST OF PLANTS

Grasses: Family Graminae (Poaceae)

1	<i>Cynodon dactylon</i> L.	(Doob Ghans)
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2	Dactyloctenium aegyptium L.
3	Dichanthium annulatum Forssk.
4	Digitaria marginata Retz.
5	Digitaria stricta Roth.
6	Echinochloa sps. L.
7	Eleusine indica L.
9	Eragrostis SpsL.
8	Eragrostis tenella Walf
10	Oplimenus burmanii Gaetrn
11	Panicum trypheron Schult.
12	Setaria glauca auct.
13	Sporobolus diander Retz.

Table 2. Herb, Shrub Climber

S.No	Botanical name	Wild/Cultivated	Vernacula r name	Family
1.	Abutilon indicum L.	Wild	Kanghi	Malvaceae
2.	Acalypha indica L.	Wild	Kuppi	Euphorbiaceae
3.	Acalypha wilkesiana Mull.Arg	Cultivated		Euphorbiaceae
4.	Achyranthes aspera L.	Wild	Chirchitta	Amaranthaceae
5.	Adenium arboretum Roem & Schult	Cultivated	Desert Rose	Apocynaceae
6.	Adhatoda vasica Nees.	Cultivated	Vasak	Acanthaceae
7.	<i>Aeruva lanata</i> Juss. Ex Schult	Wild		Amaranthanceae
8.	Agave vivipera Roxb.	Cultivated	Sisal	Liliaceae
9.	Ageratum conyzoides L.	Wild	Koobhi	Asteraceae
10.	Alternanthera sessilis L.	Wild	Kamcher	Amaranthaceae
11.	Alysicarpus longifolius L.	Wild		Leguminosae

12.	Alysicarpus monolifer L.	Wild		Leguminosae
13.	Alysicarpus vaginalis L.	Wild		Leguminosae
14.	Amaranthus gangeticus Linn.	Cultivated	Lalbhaji	Amaranthus
15.	Amaranthus paniculatus L.	Wild	Cholai	Amaranthaceae
16.	Andrographis echioides L.	Wild	Birkubat	Acanthaceae
17.	Anisochilus carnosus Wall	Wild		Labiateae
18.	Antigonon leptopus Hook.	Wild	Coral Creeper.	Polygonaceae
19.	Argemone mexicana L.	Wild	Pilikateri	Paperveraceae
20.	Asparagus racemosus L.	Cultivated	Dashmul	Liliaceae
21.	Barleria prionitis L.	Wild	Kesraiya	Acanthaceae
22.	Biophytum sensitivum	Wild		Oxilidiaceae
23.	Blumea lacera D.C.	Wild	Kakranda	Compositae
24.	Boerhaavia diffusa L.	Wild	Punarnava	Nyctaginaceae
25.	<i>Bougainnvillea glabra</i> Comm. ex Juss.	Cultivated/Ornamental	Kagajphool	Nyctaginaceae
26.	Borreria articularis L.F.	Wild		Rubiaceae
27.	Borreria stricta L.F.	Wild	Madanghanta	Rubiaceae
28.	Bryophyllum pinnatum Kurz.	C/W	Patharchatta	Crassulaceae
29.	Calliandra brevipes Meisn.	Cultivated	Calliandra	Leguminoseae Sub Family Mimosoideae
30.	Calotropis procera R.Br.	Wild	Madar	Asclepiadaceae
31.	Canna indica L.	Cultivated	Vaijanti	Cannaceae
32.	Cassia tora L.	Wild	Charota	Leguminosae
33.	Catharanthus pussilus G.Don.	Cultivated	Sadabhar (White)	Apocynaceae
34.	Catharanthus roseus G.Don.	Cultivated	Sadabhar	Apocynaceae
35.	Cleome viscosa L.	Wild	Hurhur	Capparidaceae
36.	Clerodendron fragrance	Cultivated	Chaal mogra	Verbinaceae

37.	Coleus blumei Lour	Cultivated Co	oleus	
				Labiatae
				(Lamiaceae)
38.	Commelina benghalensis L.	Wild Ka	anchara	Commelinaceae
39.	Convolvulus arvensis. L.	Wild Be	eri	Convovulaceae
40.	<i>Cordyline fruticosa</i> Goeppert	Cultivated Co	ordyline	Liliaceae
41.	Cosmos bipinnatus Cav.	Cultivated Co	osmos	Compositae
42.	Crotalaria prostrata Rottl.	Wild Sa	ina	Leguminosae
43.	Croton sparsiflorum Morong.	Wild Ch	hucka	Euphorbiaceae
44.	Cyanotis cristata L.	Wild		Commelinaceae
45.	Cyperus rotundus L.	Wild Na	agarmotha	Cyperaceae
46.	Desmodium triflorum L.	Wild Ku	udaliya	Leguminosae
47.	Dracena sps. L.	Cultivated		Liliaceae
48.	Eclipta alba L.	Wild Bł	nringraj	Compositae
49.	<i>Euphorbia geniculata</i> Ortega.	Wild		Euphorbiaceae
50.	Euphorbia hirta L .	Wild Du	udhi	Euphorbiaceae
51.	<i>Euphorbia microphylla</i> Heyne.	Wild Ch	hota kerwa	Euphorbiaceae
52.	Euphorbia roylena Boies	Cultivated Th	ıor	Euphorbiaceae
53.	Euphorbia tirucalli L.	Cultivated Se	chund	Euphorbiaceae
54.	Evolvulus alsinoides L.	Wild Sh	nankhpushpi	Convolvulaceae
55.	Gomphrena celosioides Mort.	Wild		Amarantaceae
56.	Heliotropium indicum L.	Wild Ha	athajuri	Boraginaceae
57.	Hemelia patens sps. L.	Cultivated		Rubiaceae
58.	Hibiscus rosa-sinensis L.	Cultivated Gu	udhal	Malvaceae
59.	Hyptis suaveolens L.	Wild Ja	ngli Tulsi	Labiateae
60.	Indigofera linifolia L.F.	Wild To	orki	Leguminosae
61.	Ipomoea pes-tigridis L.	Wild Ba	ailapadoi	Convovulaceae
62.	Ixora coccinia L.	Cultivated Ru	ukhmani	Rubiaceae
63.	Kyllinga biceps L.	Wild		Cyperaceae

64.	Kyllinga triceps Rottb.	Wild		Cyperaceae
65.	Lagascea mollis Cav.	Wild		Compositae
66.	Lawsonia inermis L.	Wild	Mehndi	Lythraceae
67.	Lantana camara L.	Wild	Raimunia	Verbenaceae
68.	Launaea nudicaulis auct.	Wild		Asteraceae
69.	Leportea interrupta	Wild	Utigun	Urticaceae
70.	Leucas aspera L.	Wild	Chota halkusa	Labiatae (Lamiaceae)
71.	Martynia diandra Gloxin.	Wild	Bichchhu	Pedaliaceae
72.	<i>Merremia emarginata</i> Burm.f.	Wild	Muskaine	Convolvulaceae
73.	Mimosa pudica L.	Wild	Chuimui	Mimosaceae
74.	Mirabilis jalapa L.	C/ Wild	Gulabbas	Nyctanginaceae
75.	Mollugo stricta L.	Wild	Khetpapara	Molluginaceae
76.	Murraya paniculata L.	Cultivated	Madhukamini	Rutaceae
77.	Ocimum americanum L.	Wild	Memri	Labiatae (Lamiaceae)
78.	Ocimum klimendeshchericum L	Wild	Dauna	Labiatae (Lamiaceae)
79.	Ocimum sanctum L.	Wild	Tulsi	Labiatae (Lamiaceae)
80.	Oldenlandia corymbosa L.	Wild		Rubiaceae
81.	Oxalis corniculata L.	Wild	Khatti buti	Oxalidaceae
82.	Parthenium hysterophosus L.	Wild	Gajar ghas	Compositae
83.	Peristrophe bicalycalata Retz.	Wild	Atrilal	Acanthaceae
84.	Phyllanthus acidus Skeels	Wild	Jarmala	Euphorbiaceae
85.	Phyllanthus niruri auct.	Wild	Bhui amla	Euphorbiaceae
86.	Plumeria pudica Jacq.	Cultivated	Nagchampa	Apocynaceae
87.	Plumeria rubra L.	Cultivated	Champa	Apocynaceae
88.	Poinsettia pulcherima Willd.	Cultivated	White	Euphorbiaceae
89.	Psorelea corlyfolia L.	Wild	Babchai	Papilionaceae

90.	Quisqualis indica L.	Cultivated	Madhumalti	Combretaceae
91.	Rhynchosia minima D.C	Wild		Leguminosae Sub Family Papilionoideae
92.	Ruellia prostrata Poir.	Wild	Mundichot	Acanthaceae
93.	Ruellia tuberosa L.	Wild	Mundichot	Acanthaceae
94.	Rungia repens L.	Wild	Kharmor	Acanthaceae
95.	Russelia coccinea Welts	Cultivated		Sarphulariaceae
96.	Scoparia dulcis L.	Wild	Vishnujadi	Scrophulariaceae
97.	Sida acuta Burm.f.	Wild	Bariera	Malvaceae
98.	Sida cordifolia L.	Wild	Bala	Malvaceae
99.	Solanum nigrum L.	Wild	Makoi	Solanaceae
100.	Solanum xanthocarpum Schrad	Wild	Bhaskatia	Solanaceae
101.	Sonchus arvensis auct.	Wild	Sahdevi Badi	Compositae
102.	Tegetus erectus L.	Cultivated	Genda	Compositae
103.	Tegetus petula L.	W/Cultivated	Chandeni Genda	Compositae
104.	Tinospora cordifolia L.	Cultivated	Giloy	Menispermaceae
105.	<i>Trichodesma zeylanicum</i> Burm.f.	Wild	Tarmuriya	Boranginaceae
106.	Trichosanthes palmata L.	Wild	Indrayan	Cucurbitaceae
107.	Tridax procumbens L.	Wild		Compositae
108.	Vandellia bracteata L.	Wild		Scrophulariacea e
109.	Verbena Sps. L.	Cultivated		Verbenaceae
110.	Vernonia cinerea L.	Wild	Sahdevi	Compositae
111.	Xanthium strumarium L.	Wild	Gokharu	Compositae
112.	Zerbera jamesanii Hooker.	Cultivated	Zerbera	Compositae
113.	Zornia gibbosa Span.	Wild	Roonkari	Leguminosae

3. Trees

S.No	Botanical name	W/C	Vernacular Name	Family
1	Acacia arabica F.	Wild	Babool	Leguminosae (Sub- family Mimosoideae)
2	Acacia biglandolosa Roxb.	Wild	Parkiya	Leguminosae (Sub- family Mimosoideae)
3	Aegle marmelos L.	Wild	Bel	Rutaceae
4	Ailanthus excelsa Roxb.	Wild	Maha neem	Simaroubaceae
5	Albizia procera Roxb.	Wild	Shiris	Leguminosae
6	Alstonia scolaris L.	Cultivated	Chhatim	Apocynaceae
7	Azadirachta indica A.Juss	Cultivated	Neem	Meliaceae
8	Annona squamosa L.	Cultivated	Sitaphal	Annonaceae
9	Bauhinia purpurea L.	Wild	Kachnar	Leguminosae
10	Bombax malabaricum L.	C/ Wild	Semal	Bombaceae
11	Cassia fistula L.	C/ Wild	Amaltas	Leguminosae
12	Caesalpinia pulcherrima L.	C/ Wild	Krishnachura	Leguminosae
13	Calotropis gigantea L.	Wild	Madar	Asclepiadaceae
14	Carica papaya L.	Cultivated	Papita	Caricaceae
15	Dalbergia sissoo Roxb.	Cultivated	Shisham	Leguminosae
16	Delonix regia Raf.	Planted	Gulmohar	Leguminosae
17	Eucalyptus lanceolatus L.	Planted	Nilgiri	Myrtaceae
18	Ficus benghalensis L.	Planted	Bargad	Moraceae
19	Ficus religiosa L.	Planted	Peepal	Moraceae
20	Ficus virens Ait.	Planted	Gasti	Moraceae
21	Lagerstroemia speciosa auct.	Planted	Jharul	Lythraceae
22	Mitragyna parvifolia L.	Planted	Mundi	Rubiaceae
23	Mangifera indica L.	Planted	Aam	Anacardiaceae
24	Millingtonia hortensis L.	Planted	Neemchameli	Bignoniaceae

25	Nyctanthes arbor-tristis L.	Planted	Parijat	Oleaceae
26	<i>Peltophorum ferrugineum</i> Benth.	Planted	Copper pod	Leguminosae
27	Pithocelobium dulce L.	Wild	Gangaimli	Leguminosae
28	Polyalthea longifolia L.	Planted	Druping Ashok	Leguminosae
29	Pongamia pinnata L.	Planted	Karanj	Leguminosae
30	Phyllanthus emblica L.	Planted	Amla	Euphorbiaceae
31	Psidium guajava L.	Planted	Amrud	Myrtaceae
32	Sapindus trifoliatus Hiern.	Planted	Reetha	Sapindaceae
33	Semaruba glauca DC.	Planted	Laxmitru	Semarubaceae
34	Spathoda companalata L.	Planted	Jaimangal	Bignoniaceae
35	Sterculia foietida DC.	Planted		Sterculiaceae
36	Syzygium jambolena L.	Planted	Jamun	Myrtaceae
37	Tamarindus indica L.	Wild	Imli	Leguminosae
38	Tecoma stans L.	Planted	Tecoma	Bignoniaceae
39	Ziziphus zujube Lamk.	Wild	Ber	Rhamnaceae
40	Ziziphus mauritiana Lamk.	Wild	Jharberi	Rhamnaceae

Other Plant Group:

Aquatic Plants:

1.Pistia Sps 2.Hydrilla vercililata

S. No	Bryophytes	Pteridophytes	Gymnosperms
1.	Funaria sps	Adiantum sps	Cycas sps
2.	Cythodium sps.	Nephrolepis sps	Araucaria sps.
3.	Riccia Sps	<i>Pteri</i> sSps	Juniperus sps
4			Thuja occidentalis
5			Zemia floribunda

Gynoderma leucidum on old tree trunks

No. of Plant Species recorded under, grasses, herb, shrub and tree were Grasses-13, Herbs & Shrubs- 113, Trees- 40

SN	YEAR	NO. OF POTTED PLANTS
1	2015-16	90
2	2016-17	170
3	2017-18	190
4	2018-19	300
5	2019-20	300

Potted plants in college campus and hostel:

Observation and Results of Green Audit:-

Table: Herb layer biomass (Dry weight g/m^2) in rainy, winter & summer season.

S. No	Year	Month		
		August	November	April
1	2015-16	265.8g/m ²	211g/m^2	158g/m ²
2	2016-17	374.6g/m^2	238g/m ²	164.2g/m^2
3	2017-18	345.4g/m ²	234.0g/m ²	155.0g/m ²
4	2018-19	370.56.4g/m ²	237.0g/m ²	164.4.0g/m ²
5	2019-20	380.2g/m^2	241.0g/m ²	170.4g/m ²

Herb Layer Biomass is calculated by the students of M.Sc. Botany during their part of botany ecology practical, every year.

1.Grasses & Herbs-

No. of grasses are 13 and herb shrubs and climbers 112, Trees 41

- The site shows variation in number of plant sps. of grasses and herbs in three different seasons, mainly, rainy, winter and summer.
- It was observed that the no.of sps. grasses and herbs exhibite a trend rainy < winter< summer.
- In rainy season herbs are more in number than the grasses. The same trend was observed in the winter and summer season also. However during the summer the grasses were almost negligible.

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1- Shrubs:-

- Perennial plants sps. in the category of shrubs are.18 in number.
- Shrubs are located in the garden and few are growing wildly.
- Most of the shrubs are bushy in nature, their height ranges from 3.5 feet to 5.5 feet.
- Garden shrubs are grow for ornamental and for the Botany Practical purpose.
- 2- Trees:-

- The campus has84.no. of tree sps.
- In all 84 trees are identified which to belongs to 41. no. of sps.
- The average age of trees is 5-40 years.
- Identifications of plants done with the flora.
- Herbarium and photographs of the vegetation of college campus done.
- Name plats of the Botanical names, family with their vernacular names, tagged on each tree of college campus.
- Flexes of the vegetation prepared by the deptt. with the red cross society of the college.
- 1st list of the vegetation submitted by the students of M.Sc. Botany 2009-10 during their project.
- Green Audit report 1 up to the 2014 has been submitted in NACC Visit.
- During the survey of animals approximate 31 animals reported.
 LIST OF VERTEBRATES AND INVERTEBRATES FOUND IN THE CAMPUS Following study was carried out by M.Sc. Zoology students from the Year 2015-2020

S.NO.	COMMON NAME	ZOOLOGICAL NAME	VERTEBRATE/ INVERTEBRATE
Α		MAMMALS	
1.	DOG	Canis familiaris	VERTEBRATE
2.	CAT	Felis catus	VERTEBRATE
3.	BLACK RAT	Rattus rattus	VERTEBRATE
4.	BAT	Pteropus	VERTEBRATE
5.	SQUIRREL	Funambulus palmarus	VERTEBRATE
В		BIRDS	
6.	PARROT	Psittacula	VERTEBRATE
7.	SPARROW	Passer domesticus	VERTEBRATE
8.	СИСКОО	Eudynamys scolopaceus	VERTEBRATE
9.	CROW	Corvus splendens	VERTEBRATE
10.	EAGLE	Clanga hastata	VERTEBRATE
11.	OWL	Bubo bengalensis	VERTEBRATE
12.	HEN	Gallus gallus domesticus	VERTEBRATE
13.	PIGEON	Columba livia	VERTEBRATE
	GREY HERON		
	(Seasonal		
14.	migratory bird)	Ardea cinerea	VERTEBRATE
	LITTLE EGRET		
	(Seasonal		
15.	migratory bird)	Egretta garzetta	VERTEBRATE
С		REPTILES	- 1
16.	LIZARD	Hemidetylus frenatus	VERTEBRATE
17.	COBRA	Naja naja	VERTEBRATE
18.	KRAIT	Bungarus	VERTEBRATE
D		INSECTS	
19.	ANT	Formica rufa	INVERTEBRATE
20.	MOSQUITOES	i)Anopheles	INVERTEBRATE

		ii)Culex iii)Aedes	
		,	
21.	SPIDER	Parasteatoda tepidariorum	INVERTEBRATE
22.	COCKROACH	Periplaneta americana	INVERTEBRATE
23.	BUTTERFLY	Danaus plexippus	INVERTEBRATE
24.	HONEY BEE	Apis indica	INVERTEBRATE
25.	HOUSEFLY	Musca domestica	INVERTEBRATE
26.	FRUITFLY	Drosophila melanogaster	INVERTEBRATE
27.	GRASS HOPPER	Melanoplus differentialis	INVERTEBRATE
28.	WASP	Ropalidia marginata	INVERTEBRATE
29.	TERMITE	Coptotermes formosanus	INVERTEBRATE
	FLEAS	Xenopsylla	INVERTEBRATE
30.			
31.	BEETLES	Heterorrhina elegans	INVERTEBRATE

Conclusion:

Most of the area of the college campus under in the constricted area of college building, sport complex and sport ground. So greenery can increase only by increasing in the number of potted plants and indoor plants, climbers.

The open area of the college campus is 6048.38 sq. M on which vegetation is found. Apart from open area, so many potted plants are also in Botany deptt., College campus, in hostel

- Greenery can be improved within the college campus to keep one potted plant on every 10 feet.
- A ecofriendly seminar hall propose to make in front of the terrace of Botany deptt.
- Present seminar hall and auditorium can be make eco friendly by keeping potted plants including perennial climbers like species of *Pothos*, indoor plants.
- Plantation programmes have been organising every year.
- Potted plants are submitted by students of B.Sc II And III year bio and M.Sc botany from this year with their projects.
- The plants not only synthesise the carbohydrate with this, they gave fresh air by produce Oxygen as by product of photosynthesis

with this they control the pollution absorb the sound and give aesthetic sense and do bio-air conditioning.

Future Planning -

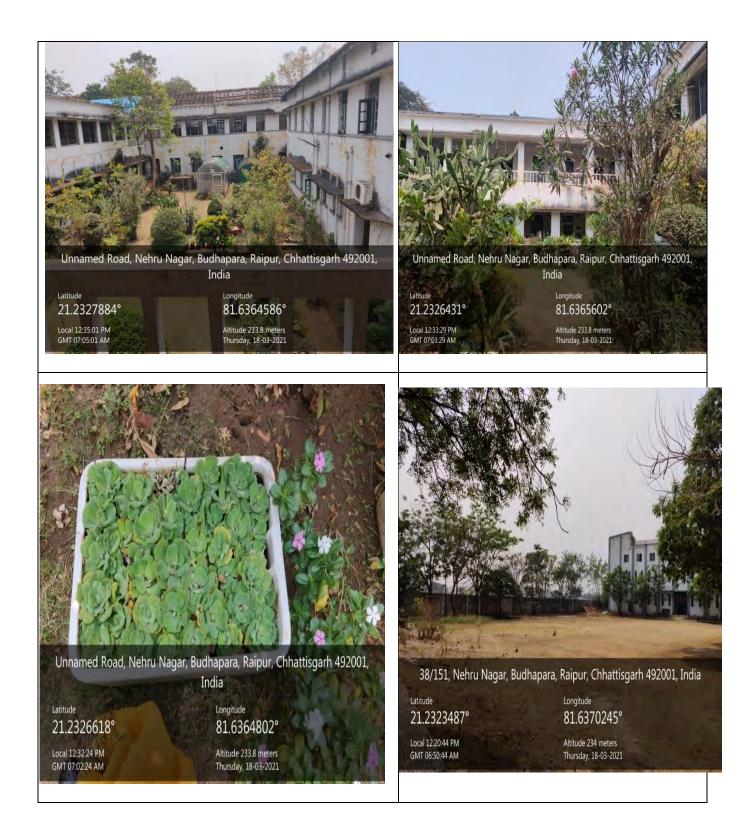
- Green audit will be done regularly with updating the list of vegetation of college campus and surroundings.
- In future Botany Department will start the consultancy for green audit and plant Identification.

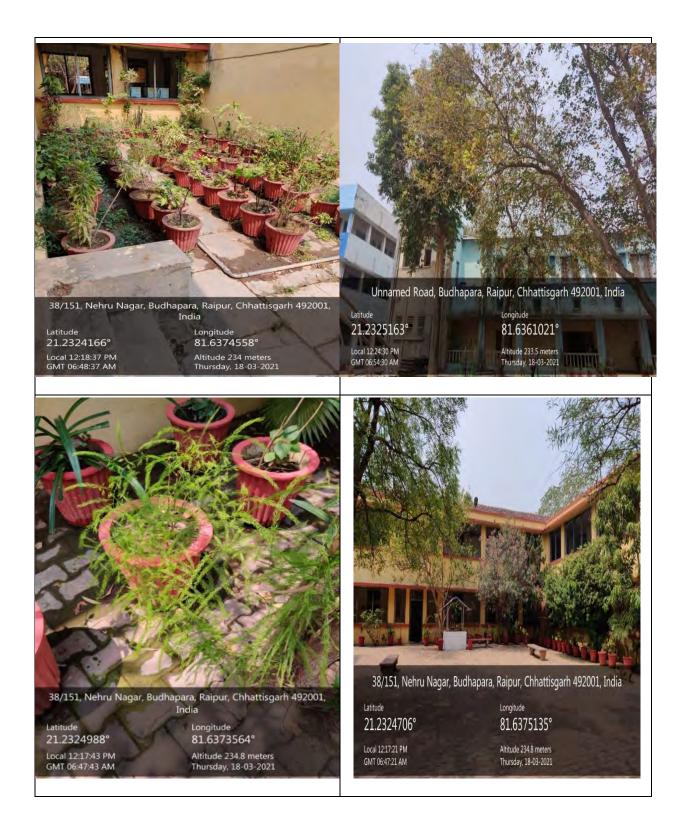
Actually the Green Audit is to express the most important role of plants for the survival of Biosphere.

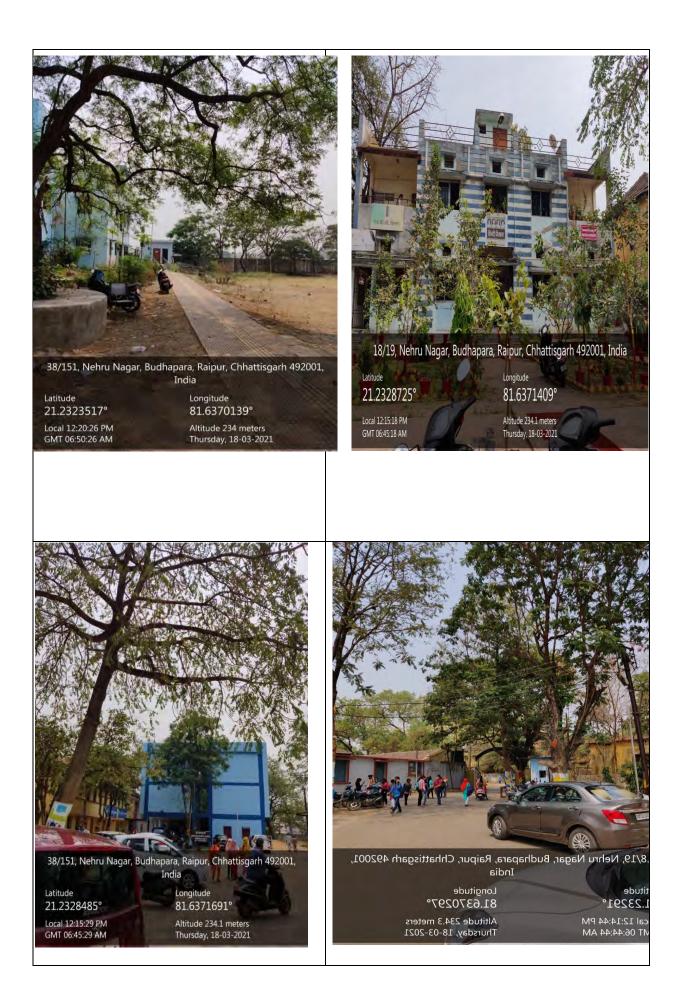


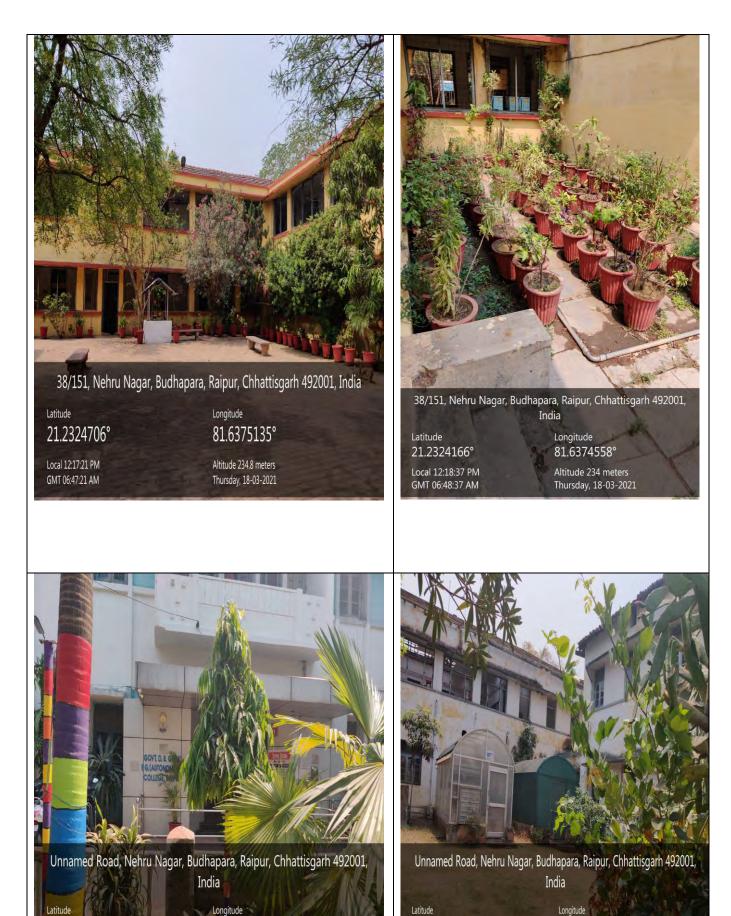
Principal Govt. D. B**/GI/C/P/4G**, College, Raput, Omininger College RAIPUR, (Chhottingarh)

Vegetation of College Campus









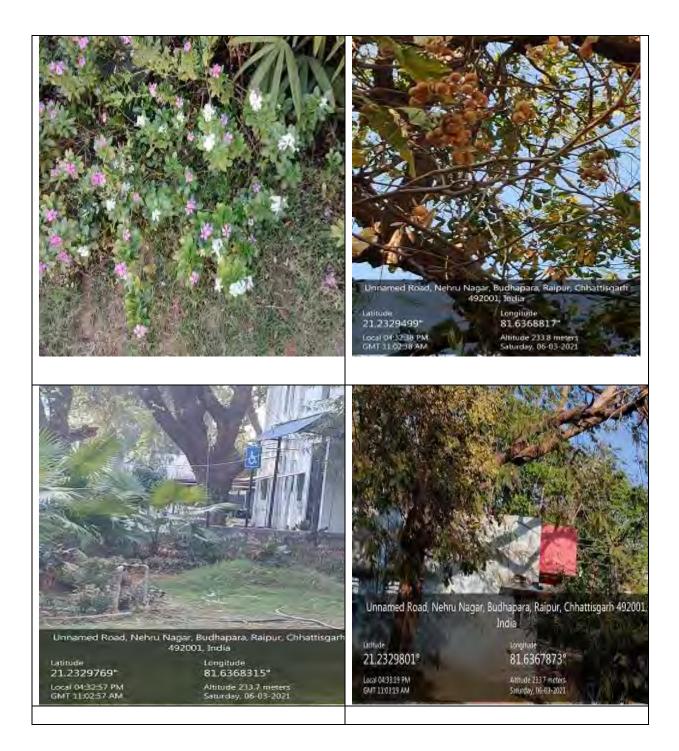
81.6366874° Altitude 234 meters Saturday, 03-04-2021

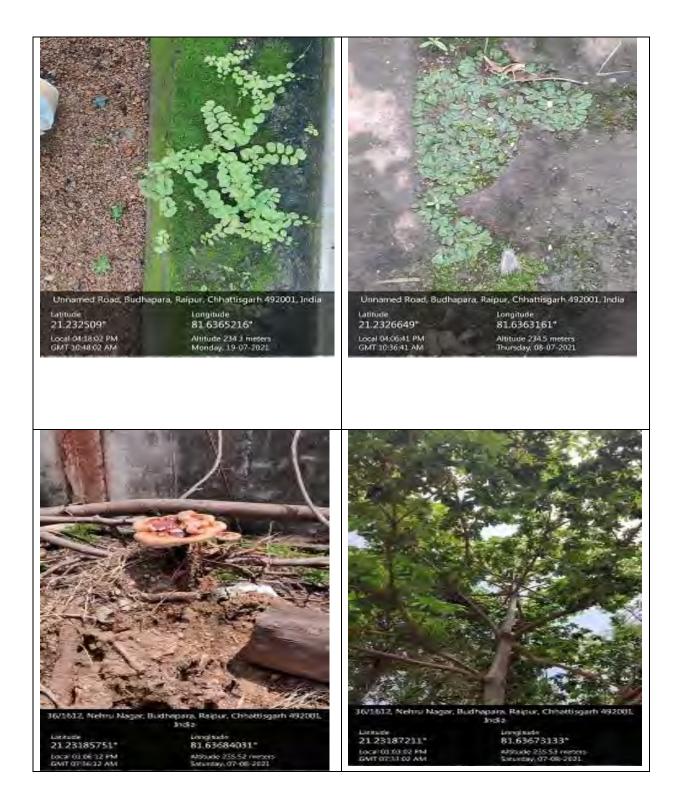
21.2329856°

Local 01:46:56 PM GMT 08:16:56 AM 21.232659° Local 12:33:17 PM GMT 07:03:17 AM 81.6365668° Altitude 233.8 meters

Thursday, 18-03-2021





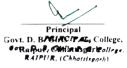












7.1.6 1. Green audit

2. Energy audit

Department of Physics



2019-2020

SUBMITTED IN PARTIAL FULFILLMENT OF

REQUIRMENT FOR THE MASTER DEGREE

OF SCIENCE IN (PHYSICS)

PROJECT WORK

ON

"ENERGY AUDIT"

GUIDED BY

Dr. Ragini Pandey

Department of physics

SUBMITTED BY

Roll no. 16524

Principal BASINCIPAL College, P. OHIA BERICOILA . (Chhatilsearh

Today the energy consumption of every country are increased very sharply. In all sector energy is very much important for country economy. The energy demand is increasing very



Varsha soni

fast with the development of society. The prices and demand of energy is increasing with time so to control the price and demand a more effective and sustainable energy system becomes necessary. The aim of this project is to make an energy survey of the college campus, evaluating different sources of energy supply and losses in the campus.

An energy audit is a study to determine how and where energy is used and to identify methods for energy savings. There is now a universal recognition of the fact that new technologies and much greater use of some that already exist provide the most hopeful prospects for the future. The opportunities lie in the use of existing renewable energy technologies, greater efforts at energy efficiency and the dissemination of these technologies and options.

This energy audit of the Govt. D.B.Girls P.G.Autonomous College is carried out by the student of M.Sc.(IV) semester, Physics every year since 2018. This report is just one step, a mere mile marker towards our destination of achieving energy efficiency and we would like to emphasize that an energy audit is a continuous process. We have compiled a list of possible action to conserve and efficiently utilize our scarce resources and identified their saving potential. The next step would be to prioritize their implementation. We look forward with optimism that the institute authorities, staff and student shall ensure the maximum execution of the recommendation and the success of this work. Energy auditing in an integral part of energy conservation and energy management is also part and parallel of conservation ... The next generation yet to come will be completely light blind in absence of electrical energy. To avoid the energy calamity proposed auditing report use the innovative energy utilization scheme

INPUT

Source	Tube	Fan	CFL	Computer	printer	AC	Refrigerator
	Light						

Load in watt	20	50	10	100	350	3500	150
No of equipment	545	408	97	129	48	7	5
Per day consumption (5hr)	545	102	4.85	38.7	50.4	122.5	18
Per month consumption (22days)	1199	2244	106.7	851.4	1108.8	2695	540
Per year consumption (244days)	13298	24888	1183.4	9442.8	12297.6	29890	6570
Bill per month Rs.	9532.05	17839.8	848.265	6768.63	8814.96	21425.25	4293
Bill per year Rs.	105919.1	141826.41	6743.706	53810.60	70078.93	170330.73	34129.35

RESULT AND DISCUSSION

As far concerning the energy audit, electricity audit is main concerning regarding educational institution . we have collected data by considering the tube light , fan , computer

, AC miscellaneous in college most of the energy required for miscellaneous which is31.045% out of total energy . AC utilized 30.81% printers required 12.1% computer required 9.7% fan required 25.6% tube light required 13.7%

Below the diagram shows the contribution 0f tube light, fan, PC,AC, printer and miscellaneous in total use of energy.

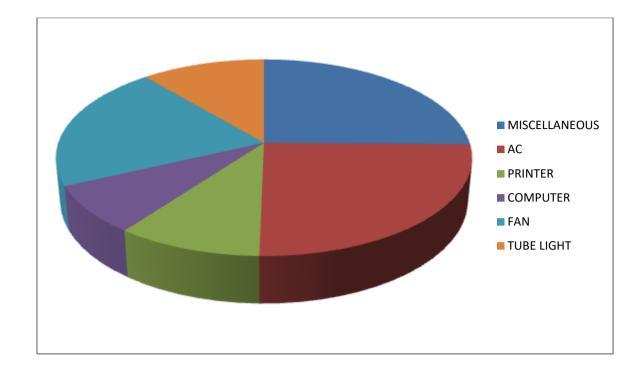


Figure- Contribution of tube light ,AC, fan ,PC, printer, miscellaneou

TOTAL UNIT COST UTILIZED BY COLLEGE AND COST IN RUPEE ALL DATA COLLECT IN BETWEEN APRIL 2019 TO 2020

Month	Meter no. 100604604	bill	Meter no. 1000604605	bill	Meter no.1000604539	bill	Total unit	Bill
April	1850	14830	2435	18920	4120	33020	8405	66770
May	750	10550	2586	20270	1790	22840	5126	57470
June	1810	18700	3000	20300	3675	36890	8485	75890
July	1650	14650	2420	23150	3106	32650	7176	70450
Aug	1410	15820	3460	32610	3610	37000	8480	85430
Sep	2050	21140	3240	31010	4330	42620	9620	94770
Oct	1550	17220	5170	47270	4250	42070	10970	106560

Nov	760	10680	3270	31238	2717	30060	6747	71987
Dec	705	10740	2960	28650	2620	30250	6285	69640
Jan	1209	13150	2868	27890	2870	32320	6947	73360
Feb	1600	12750	2830	26310	2750	30300	7180	69360
March	2170	17100	5027	39970	6060	48160	13257	105230
April	1677	13310	2510	19950	2601	20800	6788	54060

ENERGY SAVING CALCULATION

Cost Analysis of LED light with Conventional tub light.

- Total no. of conventional tube light in campus = 351
 - Conventional tube light average power = 40W
 - LED tube light average power = 20W
- Difference in power saved per tube =(40-20)W=20W
 - Total power saving =351*20W=7020W=7.02kw
 - Average use of tube light per year =244*5h=1220h
 - Energy saved per year =7.02*1220=8564.4kwh
 - Per year saving =8564.4*7.95= Rs. 68086.98
 - New LED light average cost = Rs. 450
- Total cost of replacing all conventional tube light =351*450=Rs. 157950

Cost analysis of new fan with old fan

• Total no. of old fan in campus =110

- old fan average power =75W
- new fan average power=50W
- Difference in power saved per fan =(75-50)W=25W
 - Total power saving 110*50W=5500W=5.5kw
 - Average use of fan per year =244*5h=1220h
 - Energy saved per year =5.5*1220kWh=6710kwh
 - Per year saving=6710*7.95=Rs53,344.5
 - New fan average cost = Rs.1345
- Total cost of replacing all old fan =110*1345=Rs. 147,950

Replacing of CRT monitor with LCD monitor

In the college campus computer with CRT monitor are 97 in numbers and the power consumption of CRT monitor are 520W which is very large. The power consumption of LCD monitor is 250W so the difference between CRT monitor and LCD monitor is large but LCD monitor is costlier than CRT monitor this saving of 250W per computer is very large.

LCD monitor cost analysis with CRT monitors

- total no. of computer with CRT monitor =97
 - CRT monitor average power = 520W
 - LCD monitor average power = 250W
- Difference in power saved per monitor = (520-250)W=270W
 - Total power saving =97*270W=26190W=26.19kw
 - Average use of monitor per year =5*244=1220h
- Energy saving by monitor per year =26.19*1220=31951.8kwh
 - Saving in rupee per year =31951.8*7.95=Rs.254016.81
 - Cost for replacing monitor =Rs. 4500
 - Total cost of replacing monitor =97*4500=Rs. 436500



Principal Govt D. B. ALACIPAL College. P. OHER BORT Poller



NABL Accredited, CECB Approved & ISO Certified Laboratory Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

> Ref. No. : UES/21-22/0093 Date : 16/10/2021

To The Principal, Government Dudhadhari Bajrang Girls, Post-Graduate Autonomous College, Kalibadi Chowk, Nehru Nagar, Budhapara, Raipur, Chhattisgarh, 492001.

SubjectSubmission of An Environmental Study of Government D.B Girls, P.G. Autonomous
College, Raipur (C.G.)ReferenceWork Order No.: 708, Dated: 13/10/2021.

Respected Madam,

Thanks a lot for conforming your much awaited valuable order.

With reference to personal discussion held in Department of Botany, D.B. Girls P.G. College on 10.10.2019, we have succeeded in achieving above mentioned work order no. 708, dated 13/10/2021.

After samples collection, we have analyzed various environmental parameters of college premises twice i.e. on 11.12.2019 & 12.12.2020. The results were evaluated & tabulated.

We have also collected information of Health Care Facilities, Medical Facility, Cleanliness Awareness Program, Fire and Safety Facilities, Awareness Programmes to Protect Environment, Plantation Programmes, Energy Conservation, Water Conservation, and Non Conventional Source of Energy / Renewable Energy (An Alternative Source of Energy), Efforts for Carbon Neutrality, Hazardous Waste Management, Waste Disposal and Management

Two copies of the environmental study are attached here for your kind consideration.

Regards

For, Ultimate Envirolytical Solutions.

16/10/2021

Leela Verma (C.R.O)

Encl:

- 1. Two copies of An Environmental Study of Government D.B Girls, P.G. Autonomous College.
- 2. Copy of Invoice as per work order.

272 HDD, PHASE III, KABIR NAGAR RING ROAD No - 2, RAIPUR(C.G.) - 492099 PHONE : 0771 - 4027777 / 8959991234 ; EMAIL ID - ultimatenviro@gmail.com, info@ueslab.com ; www.ueslab.com

UES Continuation Sheet...

OUR OBSERVATIONS

We have collected samples of Air, Soil, Water, Waste-Water and Noise as per sampling procedure, prescribed in Indian Standard.

Following are the details of sample collection-

S.No.	Date of Sampling	Date of	D-4- CD 4	
	Dure of Samping	Start	End	Date of Report
01	09.12.2019 and 10.12.2019	11.12.2019	16.12.2019	16.12.2019
02	11.12.2020 and 12.12.2020	12.12.2020	14.12.2020	14.12.2020

We have also collected data of Waste management, Green belts, Health Facilities, Water conservation and Composting. We have found that all the facilities have been provided by the institution in proper manner which contributes to ecologically balanced campus.

Nidhi Yadav Study Co-ordinator

Pramod Choubey Chief Chemist

AN ENVIRONMENTAL STUDY

OF

GOVERNMENT DUDHDHARI BAJRANG GIRLS POST-GRADUATE AUTONOMOUS COLLEGE

KALIBADI CHOWK, NEHRU NAGAR, BUDHAPARA, RAIPUR, CHHATTISGARH, 492001



PREPARED BY M/s Ultimate Envirolytical Solutions HDD - 272, Phase - III, Near JP Square, Kabir Nagar, Raipur (C. G.) Tel : 0771-4027777 E-mail : ultimatenviro@gmail.com

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ABOUT THE COLLEGE

- In the decade of fifties, when access to higher education for women was limited by social factors, the State Government took the pioneering step of establishing a college exclusively for women in Raipur since 1958.
- Rajeshree Vaishnav Das ji Mahant, Hon'ble Head of Shri Dudhadhari Math Raipur came forward to contribute a land parcel of 4.47 acres within city area for the establishment of the College, which has been named after his Hon'ble Guru and former head of the Math Rajeshree Dudhadhari Bajrang Das Ji Mahant. Hon'ble Math had also contributed an amount of Three Lakh One Hundred and One Rupee along with a large parcel of cultivated land sizing three hundred and one acres to ensure adequacy of resources for the noble cause of women's education.
- The College had been initially affiliated to University of Sagar, and later to Pt. Ravishakar Shukla University Raipur since 1971. The college has been granted status of Autonomous Institution since 1988, and recognized as a "College with Potential for Excellence" in 2010.
- In the Golden Jubilee Year of its foundation 2008, the first Woman President of India Hon'ble Smt. Pratibha Devi Singh Patil blessed the Institution with her visit, which was a rare honour for any College in the State.
- The college has the distinction of being the only Institution in the state chosen by University Grants Commission to establish a Centre dedicated to Women related issues in Chhattisgarh. The "Women Study Centre" has come into existence since April 1st, 2016.
- Currently more than 3500 women students are enrolled in the College under various study programs ranging from under-graduate to doctorate level, in the faculties of Science, Arts, Commerce, Home Science and Physical Education. The campus is made accessible for differently able people and a sizeable number of such students are enrolled in different programs. The campus is also marked under Sugamya Bharat Abhiyan (2016) (Accessible India Campaign).

 Students of this College have received accolades in studies as well as in the fields of NCC, NSS, Youth Red Cross Society and others, and alumni could be found across the world contributing in various roles like academicians, bureaucrats, scientists, soldiers and many more.

FOUNDATION OF SRIDUDHADHARI MATH

From the historical, religious and archaeological point of view, the heart of the holy land Chhattisgarh is located in the capital city of Raipur, "**Sridudhadhari Math**", which was established in 1610 by the lotus tax of the supreme sage Rajeshree Mahant Balabhadra Das ji.

The name of this place became famous by the name of Shridudhadhari Math because of taking only milk diet for whole life. This is a very famous Peeth not only in Chhattisgarh but all over India. There is only Sridudhadhari Math in India, where Mahantji has been given the title of Rajeshree Mahantji.

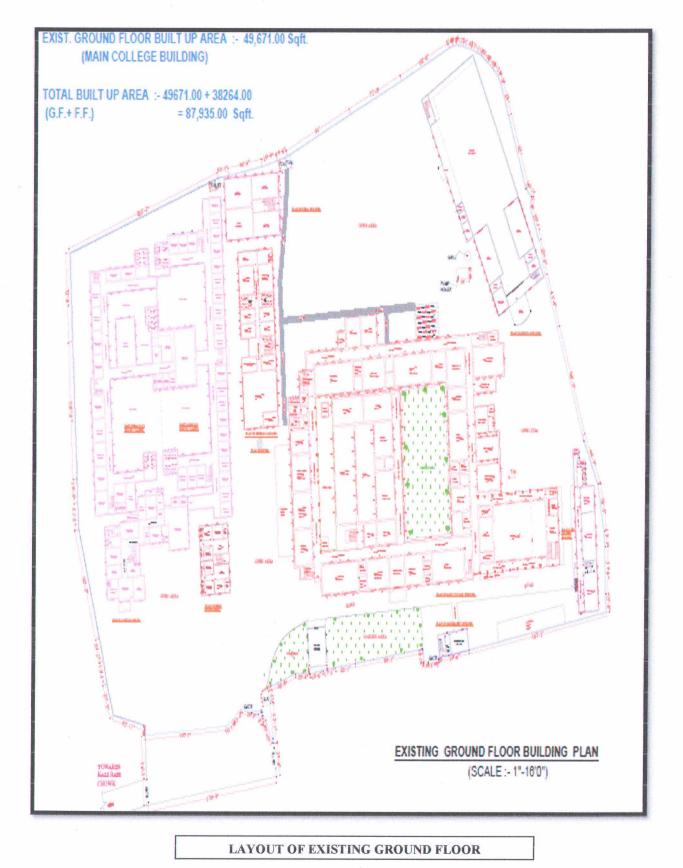
After a few years, Rajeshree Mahant Balabhadra Das ji, giving the responsibility of service to his disciple Shri Swami Sitaram Das ji, became meditative while remembering God. The operation of this monastery is carried out by the disciple tradition, which is as follows-

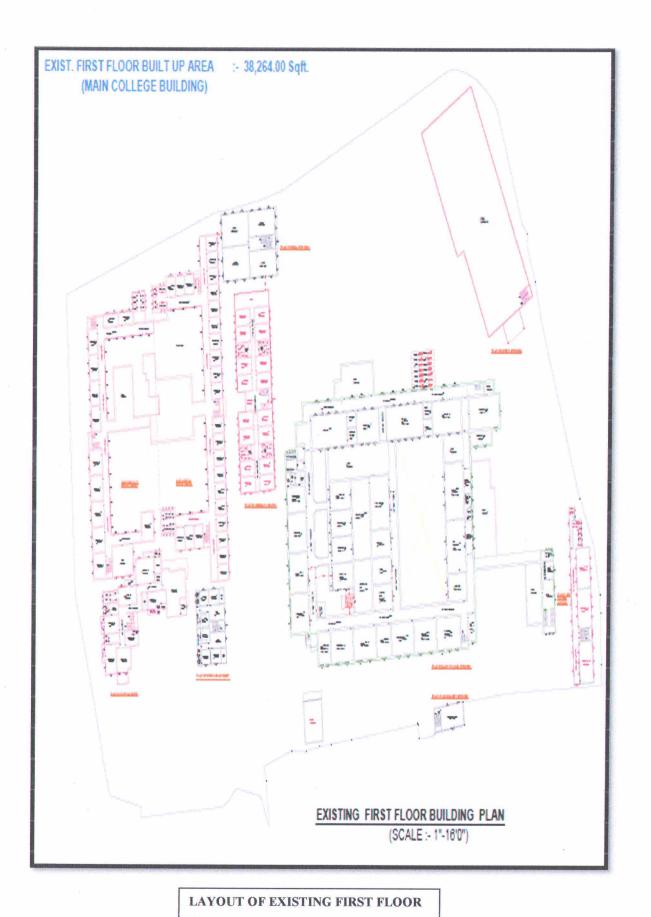
- 1. Rajeshree Mahant Valbhadra Das Ji (Sri Dudhadhari Ji) Maharaj.
- 2. Rajeshree Mahant Sitaram Das Ji Maharaj.
- 3. Rajeshree Mahant Arjun Das Ji Maharaj.
- 4. Rajeshree Mahant Ramcharan Das Ji Maharaj.
- 5. Rajeshree Mahant Saryu Das Ji Maharaj.
- 6. Rajeshree Mahant Lakshnam Das Ji Maharaj.
- 7. Rajeshree Mahant Bajrang Das Ji Maharaj.
- 8. Rajeshree Mahant Vaishnav Das Ji Maharaj.
- 9. Rajeshree Dr. Mahant Ramsunder Das Ji Maharaj.

CONTRIBUTION OF MATH IN VARIOUS FIELDS-

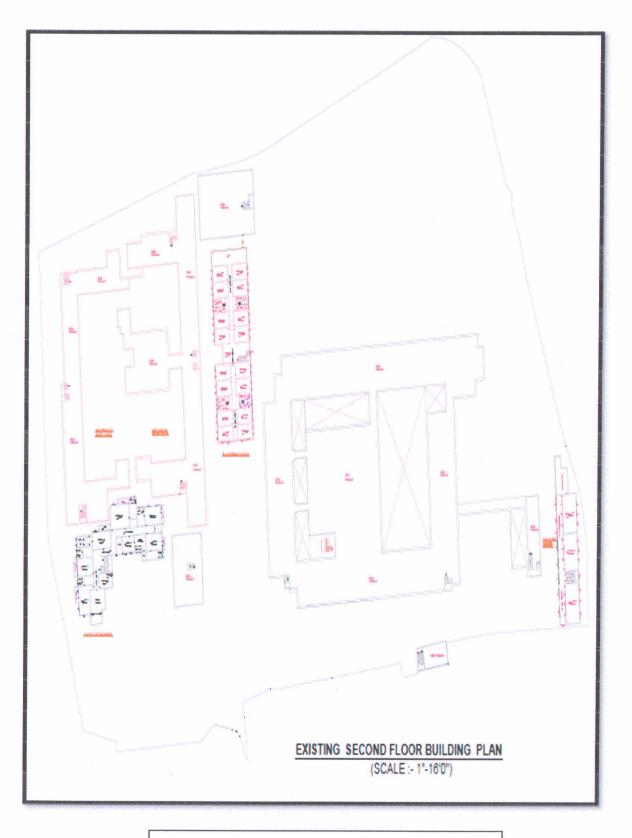
- To provide pure drinking water to the residents of Raipur, 27 acres of land was donated for setting up a water purification plant in Ravana Bhatha, adjacent to the Math.
- Satsang Bhawan was constructed in Sridudhadhari Math.
- Sanskrit Vidyalaya was established in 1939 on 24.04.1936 for the promotion of Sanskrit education.Establishment of Vidya Mandir in village Pipraud district-Raipur.
- Establishment of Higher Secondary School at Abhanpur- On October 2, 1955, on the auspicious occasion of the birth anniversary of the Father of the Nation, Mahatma Gandhi, Shri Dudhadhari Vaishnav Sanskrit Mahavidyalaya, Raipur was established with the lotus blessings of the first President of India, Dr. Rajendra Prasad, and 101 acres of agricultural land was donated for its operation.
- There has been a tradition of cooperating with this Math from time to time on natural calamities like earthquake, tsunami, flood prone, drought prone.
- Establishment of Mahila Mahavidyalaya- In order to advance women's education in the society, Shri Dudhadhari Bajrang Mahila Mahavidyalaya was established in Kalibadi Raipur in the year 1958. Three lakh one hundred one rupees and three hundred one acres of cultivable land were donated in village Pendri (Bhatapara) to strengthen this college financially.







5 | Page



LAYOUT OF EXISTING SECOND FLOOR BUILDING

VISION AND MISSION

MOTTO - "आरोह तमसो ज्योति" - From darkness to light. The vision is to be a preeminent centre of excellence, generating & imparting knowledge. Empower girls through quality education. Equal opportunity to all students, no matter from where they belong to.

The primary aim is to provide quality education and thus empower the girl students as majority of students come from rural, tribal and socially- backward strata of society. The focus is to provide free accessibility to education and to treat the students equally without any discrimination of caste, creed or economic status.

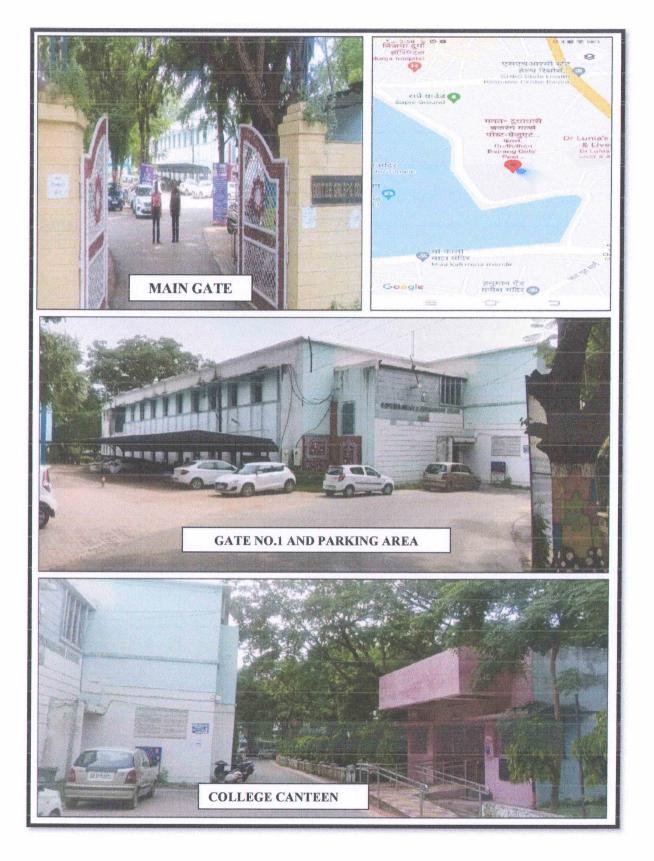
VISION-

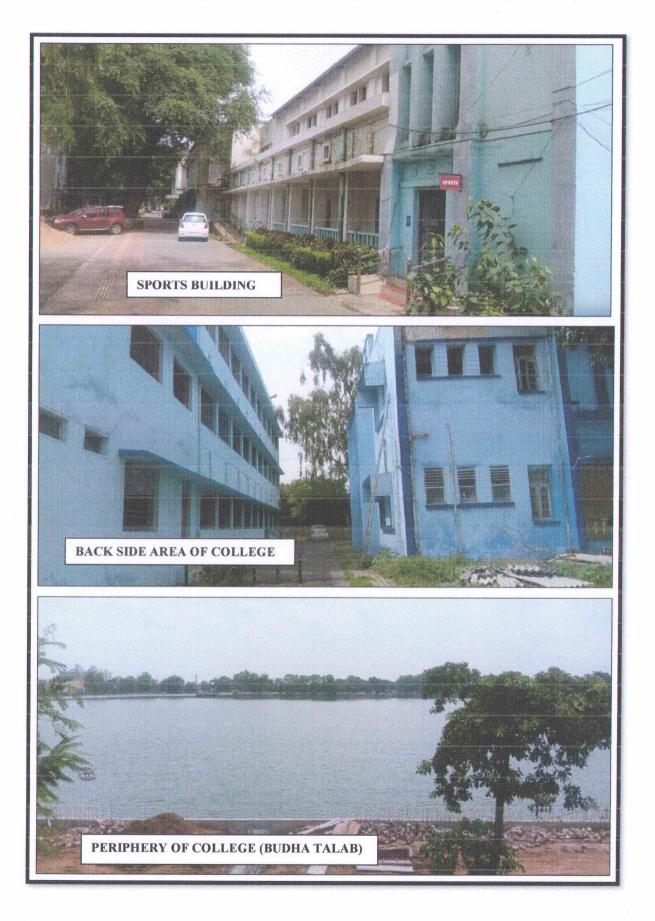
- Quality enhancement through motivation and confidence building through learning.
- To mould students into well-meaning citizens through a socially committed, value driven and future oriented paradigm of learning.
- To prepare students to encounter the academic challenges with confidence, to develop indigenous techniques/methods to solve various problems i.e., subject related and real-life problems.

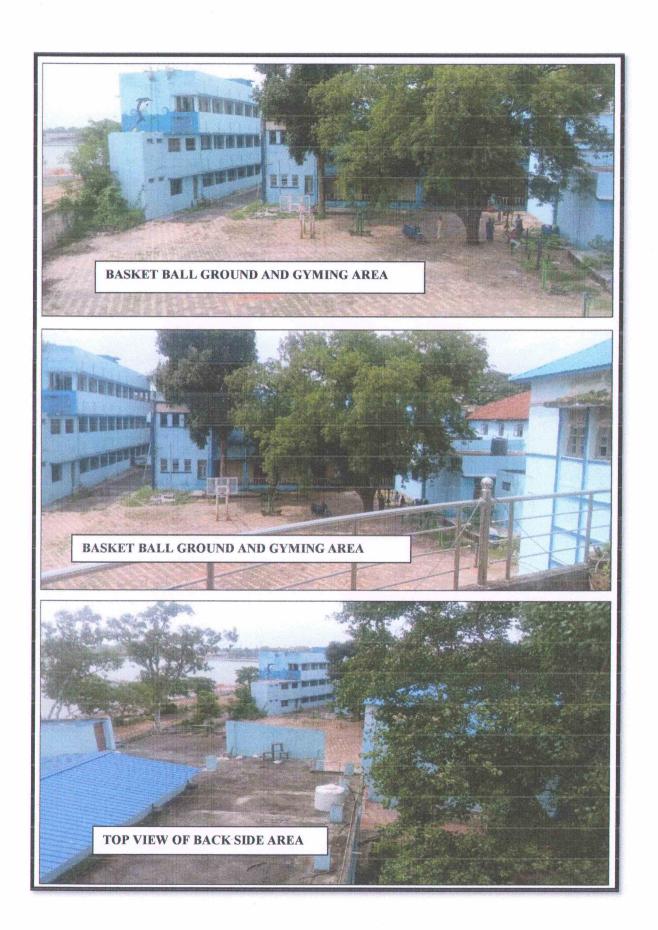
MISSION- In order to translate the vision into reality our mission is as follows:

- To create a teaching learning environment and research attitude conducive to the pursuit of higher knowledge, relevant skills and experience.
- To provide quality education to girl students by synchronizing tradition with modernity and blending professional and vocational education with traditional courses for their development.
- To foster self and community development by sensitizing the students on socio-economic issues emphasizing on gender, religious harmony, environment and human rights by including related topics into the curriculum and through co-curricular activities.

COLLEGE CAMPUS AT A GLANCE







An Environment Study Report Of Govt. Dudhadhari Bajrang Girls Post-Graduate Autonomous College



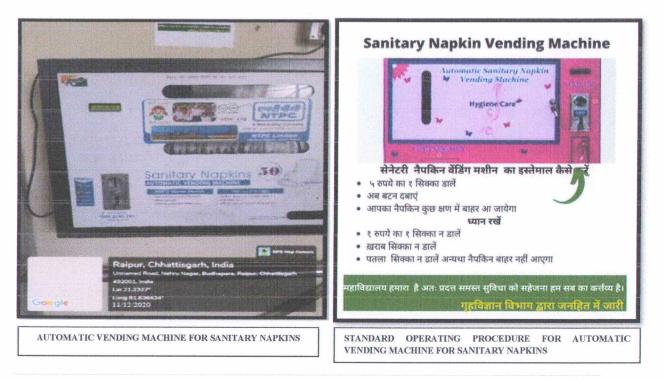
GIRLS HOSTEL

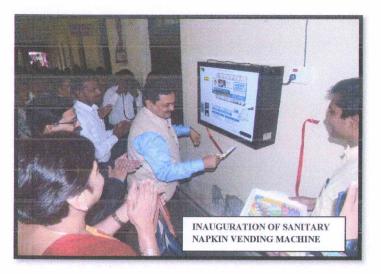
INFORMATION RELATED TO THE LAND AND BUILDING OF THE COLLEGE

Establishment date	12 August, 1958
Installation status	Official
College area	47 Acres (20,760 square meters)
Total area of the building	40,380 Square meters
Total lecture hall in the college	40 Rooms
Total laboratory room in the college	24 Rooms
Principal Room, Office Room, Store Room	03 Rooms (Isolated)
DESCRIPTION OF LABORAT	ORY ROOMS
Chemistry	05 Rooms
Physics	03 Rooms
Zoology	04 Rooms
Botany	03 Rooms
Geography	02 Rooms
Psychology	04 Rooms
Home Science	04 Rooms
Computer lab	02 Rooms
Grand Total	24 Rooms
	Installation status College area Total area of the building Total lecture hall in the college Total laboratory room in the college Principal Room, Office Room, Store Room DESCRIPTION OF LABORAT Chemistry Geography Geography Home Science Computer lab

ENVIRONMENTAL STATUS-

- HEALTH CARE FACILITIES- Good health and well-being is the right of every human. 3rd goal of United Nations 17 SDG support the theme. Health and hygiene of women is always a big task for planners. More than 40% women are still suffering health related issues. Most of the women suffer problems related to menstrual cycle. Even in recent times girls' are forced to use unhygienic cloth during this period. Menstrual cycle is a natural phenomenon in every woman's life. Regular changing of pad in this period is necessary to prevent Reproductive Tract Infections (RTI). They also feel embarrassed to borrow the napkin. Sometimes it is not possible for a girl to carry napkins; therefore sanitary vending machine at schools, colleges, airports, hospitals and work place, can be good option for girls in difficult situation. This guarantees comfort to the women who do not have to hesitate in times of their periods. In the year 2011, Ministry of Health and Family Welfare, Government of India launched the menstrual hygiene scheme (MHS) for rural adolescent girls with the objectives -
 - 1. To increase awareness among adolescent girls on Menstrual Hygiene.
 - 2. To increase access to and use of high quality sanitary napkins to adolescent girls in rural areas.
 - 3. To ensure safe disposal of Sanitary Napkins in an environmentally friendly manner.



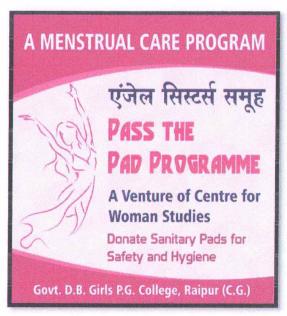


It is convenient to pick up pad with hassle free operation. The motive of vending machine to promote menstrual health of girls' which ensure to provide the sanitary napkin at any time on their need and to them against encourage using traditional methods. The institution in collaboration with NTPC and CITCON initiated this drive to

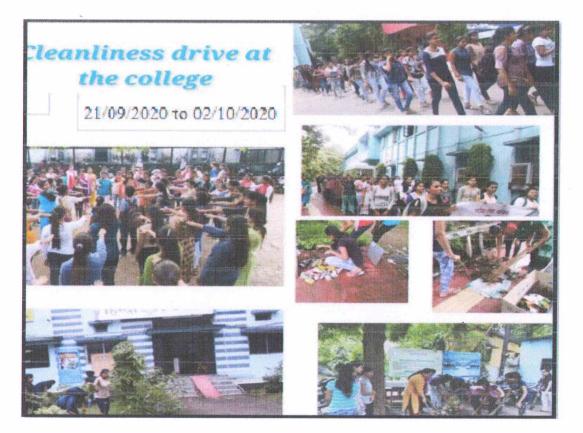
provide essential facility to all learners. Since last 3 years sanitary napkin vending machine and incinerator are successfully working in the institution. Furthermore, we found that, the incinerator is completely destroying the napkins and the ash content is used as manure for gardening purpose. The gases released during the incineration process are dispersed through fumigation pipe. There are total 3 sanitary vending machines available in institution, out of which 2 are placed in girls' hostel, 1 is installed in main building and 1 is installed at first floor of new building. One sanitary napkin vending machine can hold 50 napkins at a time. One who wants napkin have to pay only Rs.5/for one napkin. The amount collected is kept by the HOD of Home Science department. The collected money will be used for further purchasing of napkins



INSTALLATION OF INCINERATOR



- <u>MEDICAL FACILITY</u>- Medical facility is also available for hostellers, where the doctors visit weekly and on call basis during emergency. First aid boxes are available in the office and autonomous cell of the college. Health camps, Nutrition week, Vaccination camps etc. were organized by home science department.
- CLEANLINESS AWARENESS PROGRAM- PM Modi in his programme Mann Ki Baat (35th Edition) has called upon the countrymen to initiate a Campaign called Swachchata Hi Sewa (Cleanliness is Service). The programme should begin at least 15 days prior to Gandhi Jayanti (2nd October). He said," Let's create an environment of cleanliness in the entire country." For that he urged all (leaders/ officials/ students) to be the part of this mission. Under this programme, all the students participated with great zeal and enthusiasm. Even teachers' were the essential part of this drive. As a part of this Cleanliness Drive, they had to clean the whole campus. The sweepers of the school had to be the observers. Thereafter Principal delivered the speech telling them the importance of sanitation. She also honoured the sweepers of the school for their noble job. In the end they all took oath of keeping their home, locality and city clean. It was a unique experience for all students. They were curious to be the part of this great drive that could have transformed the face of our country for ever.



• **<u>FIRE AND SAFETY FACILITIES</u>**- Fire safety is the set of practices intended to reduce the destruction caused by fire. Fire safety measures include those that are intended to prevent ignition of an uncontrolled fire, and those that are used to limit the development and effects of a fire after it starts. Fire safety measures include those that are planned during the construction of a building or implemented in structures that are already standing, and those that are taught to occupants of the building. Threats to fire safety are commonly referred to as fire hazards. A fire hazard may include a situation that increases the likelihood of a fire or may impede escape in the event a fire occurs. To avoid or to control such hazardous situation, the institution had installed fire extinguishers in different location of the campus. Faculties and students were trained to use fire extinguisher by expertise.

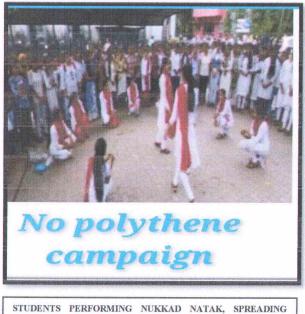


AWARENESS PROGRAMMES TO PROTECT ENVIRONMENT -

Prime Minister Narendra Modi in his vision for India 2021 shared that our country must phase out the use of single-use plastics by 2022 to help the environment thrive better. Union Environment Minister, Prakash Javadekar said, "Considering the adverse impacts of littered single-use plastic items on both terrestrial and aquatic ecosystems, Hon'ble Prime



Minister, Shri Narendra Modi gave a clarion call to phase out single-use plastics by 2022, and the government has taken effective measures to manage plastic waste." Keeping this in view, the institute have taken several initiatives to achieve the said goal by campaigning against the use of polythene. Under this campaign, different medium of awareness were used such as Nukkad natak, Paper banner/ Banner on Tree leaves/ Banner on Cloth were used during the awareness program. All took oath to minimize the use of single use plastics from their daily life.



THE HARMFUL EFFECTS

OF

AWARNESS

POLYTHENE.

ABOUT



ALL THE FACULTY MEMBERS AND STUDENTS TAKING OATH TO PROTECT THE ENVIRONMENT, TAKING CARE OF CLEANLINESS AND TO AVOID USE OF POLYTHENE

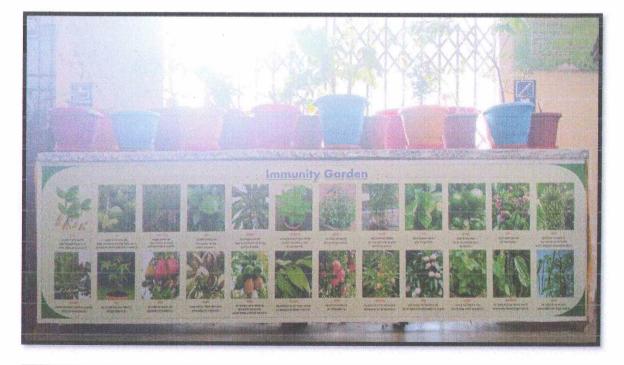
- PLANTATION PROGRAMMES A programme was chalked out to maintain greenery. The green audit report of this year has been discussed with environmental experts of Raipur with suggestions to increase greenery in campus. Extra efforts have been taken by the college to create environment consciousness amongst students. One major step in this regard is the extensive plantation programmes was organized by NSS and NCC in the last four years. NGO's like Jankalyan Parishad, Ambikapur provide a grant of ten thousand rupees per year for plantation. Plantation is encouraged by all departments to increase greenery and reduce carbon emission effects. Existing gardens are maintained, renovation of the garden at the entrance was done with financial support from Jan Bhagidari Samiti in the year 2008. Conferences on issues related to environment are also organized.
- The management has chosen such species of flora which have large leaf index with high canopy to absorb more carbon dioxide. Thus, resultant is higher pure oxygen



PLANTATION PROGRAM TO CREATE ENVIRONMENT CONSCIOUSNESS AMONGST STUDENTS, ORGANIZED BY NSS AND NCC.



PLANTATION PROGRAM TO CREATE ENVIRONMENT CONSCIOUSNESS AMONGST STUDENTS, ORGANIZED BY NSS AND NCC.

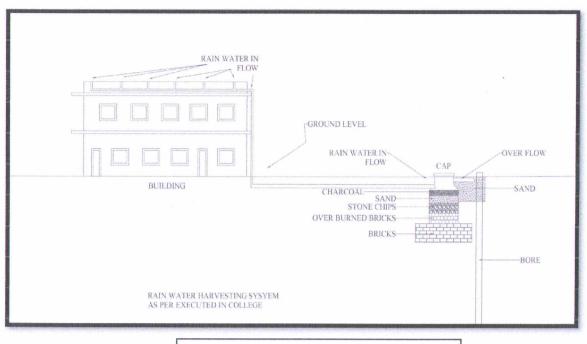


A GREAT INCITIATIVE TAKEN BY THE COLLEGE SPREADING AWARENESS ABOUT THE NATURAL SOURCE OF IMMUNITY ENHANCING PLANTS.



STUDENTS PAINTED THE WALL TO SPREAD AWARNESS ABOUT THE ASTHETIC VALUE OF ENVIRONMENT

- ENERGY CONSERVATION Energy audit has been under taken by department of Physics with the support of CREDA, Government of Chhattisgarh. It has been planned to draw 50% energy through solar energy in the upcoming year. Active consideration is given to replace old fans to cut down electricity bills. The institution is using CFL bulbs. A proposal to replace LPG in hostel-kitchen by solar cooking system is under consideration.
- <u>WATER CONSERVATION</u>- Conservation of water means sustainable use of water. Students were made aware to conserve water as it is a precious natural resource. One of the most effective method is **Rainwater harvesting.** In this system, the rainwater is collected by allowing it to flow from the rooftop through pipes in a storage tank. This water may contain some soil particles from the roof. So it should be filtered before use. It is allowed to flow into a pit in the ground to recharge or refill the groundwater.



LAYOUT OF RAINWATER HARVESTING



- NON CONVENTIONAL SOURCE OF ENERGY/ RENEWABLE ENERGY (AN ALTERNATIVE SOURCE OF ENERGY) - A proposal has been sent to Government of Chhattisgarh to provide solar energy light system. The proposal is under consideration. Water harvesting Water harvesting has been done in the PG Hostel building of the college. As a result the water crisis faced at the onset of summer season is avoided to a large extent. Check dam construction The College has an old well which is a water reservoir. The campus has five interconnected submersible pumps at different locations and all are connected to this well. This serves as a lifeline of the college. The well-water is purified by adding potassium permanganate from time to time. Drinking water points of college and hostels are connected with aqua-guards.
- EFFORTS FOR CARBON NEUTRALITY The carbon emission of college has been made to negligible by plantation in the campus. Most of the students use bicycles. Plantation the college units of NCC and NSS regularly conduct plantation programme. The department of Botany has developed an open terrace garden for medicinal and ornamental plants. Besides NCC and NSS, plantation is also done in collaboration with State Bank of India and other NGO's like Jankalyan Parishad, Ambikapur provide a grant of ten thousand rupees per year for plantation. In hostel, birthdays are celebrated by giving saplings of plants to the birthday girls in order to inculcate care for plants in them.
- <u>HAZARDOUS WASTE MANAGEMENT</u> Extra care is taken for the safe disposal of hazardous waste. Carcinogenic chemicals used in DNA extraction technique by the department of Botany and Biotechnology is dumped deep into the soil after using it. E-waste management Computer department looks after the safe disposal of e-waste.
- <u>WASTE DISPOSAL AND MANAGEMENT</u>- Environment awareness, environment education is the need of the hour. Safe disposal of biodegradable and non-biodegradable waste is a major threat to the environment at all levels. Vermicomposting is an eco-friendly way of disposal of biodegradable waste in which the earth-worms convert the biodegradable waste into usable organic fertilizer and

conserve the nature. Use of Inorganic fertilizers has disturbed the whole agriculture system and now it is affecting the yield of the farm and the quality of the soil. So there is a dire need to maintain the quality and productivity of soil. Hence the institute initiated the use of Vermi-composting for the proper and safe disposal of biodegradable waste in the college campus. For sewage treatment, we have discussed this point with higher authority and they have assured that proper treatment plant and filters will be installed soon. The treated quality of that effluent will meet Indian Standard norms specified by CPCB and the same would be efficiently utilized inside the college premises for plantation purpose. This practice is serving some very useful purposes:

- To spread awareness among millennials about the problems of environment and at the same time educating them about this modern technique of Vermicomposting.
- Inculcating eco-friendly culture which is the major concern of the generation of 21st century and Opening of new avenue for self-employment.

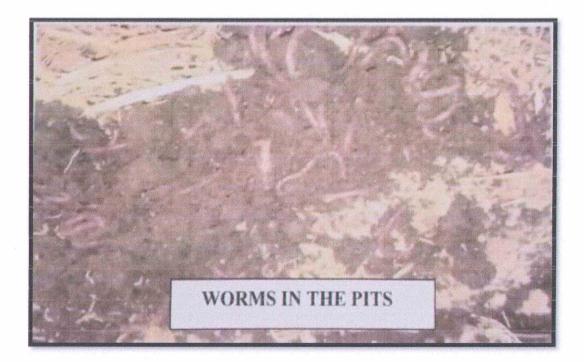


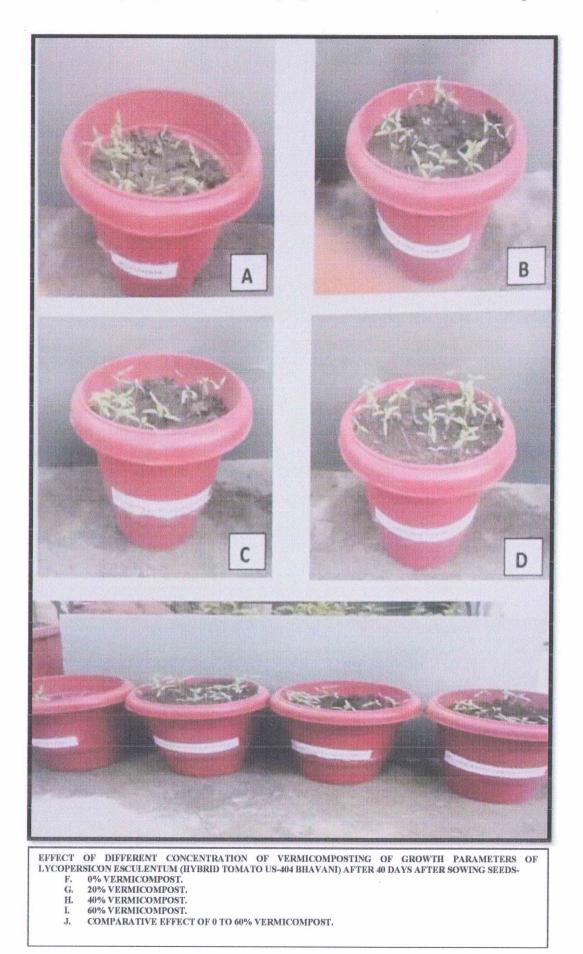
COLOUR CODED DUSTBINS WERE PLACED IN COLLEGE CAMPUS TO SEGGREGATE DRY WASTE AND WET WASTE

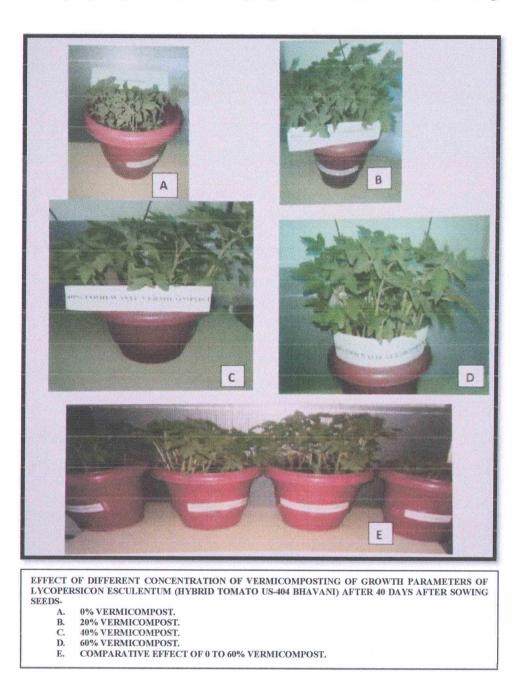
The department of zoology has worked on the Conservation of Herons, and life cycle of seasonal butterflies and insects. They have also formed a museum of butterflies. A herbarium of seasonal plants is prepared by the botany department. Tips on water and electricity conservation are given to students for energy conservation. A UGC sponsored project on Hostel Waste Management through Vermi-compost is taken up by Botany department. As per the directives of Supreme Court a paper on environment studies has been made compulsory, focusing on environmental problems and related issues.



BIODEGRADABLE WASTE PRODUCTS WERE COLLECTED FROM COLLEGE CANTEEN TO CONVERT INTO COMPOST







- QUALITY TESTING OF ENVIRONMENTAL PARAMETERS Furthermore, the qualities of environmental samples have been monitored by Ultimate Envirolytical solutions, a NABL accredited laboratory & approved by Ministry of Environment, Forest and Climate Change. The samples were collected from different location of the campus for analysis. The samples has been analysed as per Indian standard method, prescribed by Bureau of Indian standard (BIS). Following environmental samples has been taken under observation
 - a) Water (Bore-well water) and Waste water (Effluent water).
 - b) Ambient Air.
 - c) Soil.
 - d) Noise level.

1. WATER QUALITY TESTING PARAMETERS AND THEIR METHOD OF ANALYSIS-

S.No.	Parameter	IS Method	Analysis Method
01	pН	IS:3025 (Part-11) RA 2017	Electrometric Method
02	Electrical Conductivity (in µS/cm)	IS:3025 (Part-14) 1984 RA 2013	Electrometric Method
03	Total Dissolved Solids (in mg/L)	IS:3025 (Part-16) 1984; RA 2019	Gravimetric Method
04	Total Suspended Solids (in mg/L)	IS:3025 (Part-17) 1984; RA 2016	Gravimetric Method
05	Turbidity (in NTU)	IS:3025 (Part-10) 1984; RA 2012	Nephlometric Method
06	Chloride (in mg/L)	IS:3025 (Part-32) 1988; RA 2019	Argentometric Method (Titrimetric Method)
07	Total Hardness (in mg/L)	IS:3025 (Part-21) 2009; RA 2019	Titrimetric Method
08	Calcium (in mg/L)	IS:3025 (Part-40) 1991; RA 2019	Titrimetric Method
09	Magnesium (in mg/L)	APHA 23 rd Edition 3500-Mg-E	Calculation Method
10	Total Alkalinity (in mg/L)	IS:3025 (Part-23) 1986; RA 2019	Titrimetric Method
11	Fluoride (in mg/L)	IS:3025 (Part-60) 2008; RA 2013	Electrometric method
12	Sulphate (in mg/L)	IS:3025 (Part-24) 1989; RA 2019	Turbidity method (Spectroscopic Method)
13	Sodium (in mg/L)	IS:3025 (Part-45) 1993; RA 2019	Flame photometric method
14	Potassium (in mg/L)	IS:3025 (Part-45) 1993; RA 2019	Flame photometric method
15	Chemical Oxygen Demand (in mg/L)	IS:3025 (Part-58) 2006; RA 2017	Open Reflux Method
16	Biochemical Oxygen Demand (in mg/L)	IS:3025 (Part-44) 1993; RA 2019	Oxygen Depletion Method

2. SOIL QUALITY TESTING PARAMETERS AND THEIR METHOD OF ANALYSIS-

S.No.	Parameter	IS Method	Analysis Method
01	Moisture (%)	Agricultural Soil Manual	Oven dry Method
02	рН	IS:2720 (Part-26) 1987; RA 2016	Electrometric method
03	Electrical Conductivity (in µS/cm)	IS:14767:2000;RA2021	Electrometric method
04	Sodium (in Meq/L)	UES/SAP/Soil/03/Na	Flame photometric method
05	Available Potassium (in Kg/Ha)	UES/SAP/Soil/04/K	Flame photometric method
06	Available Phosphorous (in Kg/Ha)	UES/SAP/Soil/05/P	Spectroscopic Method
07	Available Nitrogen (in Kg/Ha)	Agricultural Soil Manual	Kjeldahl Method
08	Exchangeable Calcium (Meq/100g)	Agricultural Soil Manual	Titrimetric Method
09	Exchangeable Magnesium (Meq/100g)	Agricultural Soil Manual	Titrimetric Method
10	Organic Matter (in %)	Agricultural Soil Manual	Walkley and black method (Titrimetric Method)

THEIR METHOD OF ANALYSIS -							
S.No.	Parameter	IS Method	Analysis Method				
01	Particulate Matter (PM ₁₀)	IS:5182(Part-23):2006	Cyclonic flow technique (Gravimetric Method)				
02	Particulate Matter (PM _{2.5})	IS:5182(Part-24):2019	Gravimetric Method				
03	Sulphur Dioxide (SO ₂)	IS:5182(Part-23):	Improved West and Geak method.				

3. AMBIENT AIR QUALITY MONITORING PARAMETERS AND THEIR METHOD OF ANALYSIS -

4. NOISE LEVEL MONITORING- Noise level is measured by using sound/Noise meter.

IS:5182(Part-06):

Nitrogen Dioxide

 (NO_2)

04

(Spectroscopic Method)

(Spectroscopic Method)

Hochheiser method.

Jacob

and

Modified



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Name & Address Of The Custo	omer	REPORT NO	UES/TR/20-21/02782			
То,		LAB REF NO	UES/20-21/AAQM/0			
The Principal Govt. Dudhdhari Bajrang Girls Post- Graduate Autonomous College Kalibadi Chowk, Nehru Nagar, Budhapara, Raipur (C. G.) 492001		DATE OF SAMPLING	11/12/2020 to 12/12	2/2020		
		DATE OF RECEIPT	12/12/2020	1		
		DATE OF REPORT	15/12/2020			
		DATE OF ANALYSIS	START: 12/12/2020	END: 14/12/2020		
		SAMPLE DETAILS				
Monitoring For	Ambient Air Quality Monitoring	Ambient Air Quality Monitoring.				
Sampling Location	1. Near Rusa Building 2. Near Old Sports Gro	und				
Customer Ref.	Verbal Communication & By M	ail Confirmation.				
Sample Collected By	Laboratory Chemist					
Sampling Procedure	As Per Standard Method					
Sample Quantity/Packing	Each Sampling Site: Filter Paper (PM ₁₀): 1X3 No.(24) SO ₂ : 30mlX6 (4hr) PVC Bottle, N		.(24hr)			

TEST REPORT

Chemical Testing Ambient Air Quality Monitoring

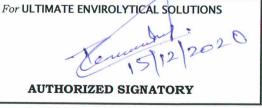
		NAMON		Results		
Parameter	Unit NAAQM Standard Method Reference		Near Rusa Building	Near Old Sports Ground		
Particulate Matter (PM ₁₀₎	µg/m³	100	IS:5182(Part 23):2006	56.64	52.4	
Particulate Matter (PM _{2.5)}	µg/m³	60	UES/SAP/A/02/PM2.5:2019	22.17	19.18	
Sulphur Dioxide (SO ₂₎	µg/m³	80	IS 5182 (Part 2): 2001	9.32	8.41	
Nitrogen Dioxide (NO ₂₎	µg/m³	80	IS 5182 (Part 6): 2006	21.86	14.66	

REMARKS:UES/SAP/A/02/PM2.5:2019 :As Per CPCB Guideline

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- > This is for information as the party has asked for above test(s) only.

REVIEWED BY



-----End of the test report-----End of the test report-----

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Name & Address Of The Cus	stomer	REPORT NO	UES	/TR/20-21/02782	1	
То,	LAB REF NO		UES/20-21/W/04820			
THE PRINCIPAL GOVT. DUDHDHARI BAJRANG GIRLS POST- GRADUATE AUTONOMOUS COLLEGE KALIBADI CHOWK, NEHRU NAGAR, BUDHAPARA, RAIPUR (C. G.) 492001		DATE OF SAMPLING	12/1	12/2020		
		DATE OF RECEIPT		12/2020		
		DATE OF REPORT	15/1	15/12/2020		
		DATE OF ANALYSIS START: 12/12/2020 END		END: 14/12/2020		
	SAMPL	E DETAILS				
CUSTOMER SAMPLE ID	EFFLUENT WATER	CUSTOMER REF.		VERBAL COMM MAIL CONFIRM		
SAMPLE TYPE	EFFLUENT WATER	SAMPLE CONDITION AT RECEIPT	Г	ОК		
PACKING OF SAMPLE	PLASTIC BOTTLE	SAMPLE COLLECTED BY		CUSTOMER		
OTHERS DETAILS	SEALED	QUANTITY RECEIVED		APPROX 5 LTR.		

TEST REPORT Chemical Testing 1. Water							
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT			
1	pH value at 25.6°C	_	IS:3025:(Part-11):1983, RA 2012	7.67			
2	Total Suspended Solids	mg/l	IS:3025:(Part-17):1984, RA 2012	128.5			
3	Chemical Oxygen Demand	mg/l	IS:3025:(Part-58):1988, RA 2006	274.0			
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/l	IS:3025:(Part-44):1989	39.4			
5	Total Dissolved Solids	mg/l	IS:3025:(Part-16):1984, RA 2017	346.8			
REMA	Note: mg/lit.: milligram per Liter. RKS:RESULTS ARE AS ABOVE						

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For ULTIMATE ENVIROLYTICAL SOLUTIONS 2020 2020 AUTHORIZED SIGNATORY REVIEWED

End of the test report-



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	Address Of The Customer REPORT NO		REPORT NO		UES/TR/20-21/02783		
THE PRINCIPAL			UES/20-21/W/04821				
GOVT. DUDHDHARI BAJRANG GIRLS POST- GRADUATE AUTONOMOUS COLLEGE KALIBADI CHOWK, NEHRU NAGAR,		DATE OF SAMPLING	12/1	2/2020			
		DATE OF DECENT		2/2020			
		DATE OF REPORT	15/12/2020				
	AIPUR (C. G.) 492001	DATE OF ANALYSIS	STAF	RT: 12/12/2020	END: 14/12/2020		
	SAMPLI	E DETAILS					
CUSTOMER SAMPLE ID	BOREWELL WATER	CUSTOMER REF.		VERBAL COMM MAIL CONFIRM			
SAMPLE TYPE	GROUND WATER	SAMPLE CONDITION AT RECEIPT		ок			
PACKING OF SAMPLE	PLASTIC BOTTLE	SAMPLE COLLECTED BY		CUSTOMER			
OTHERS DETAILS	SEALED	QUANTITY RECEIVED		APPROX 5 LTR.			

TEST REPORT Chemical Testing 1. Ground Water							
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT			
1	pH value at 25.3°C	_	IS:3025:(Part-11):1983, RA 2017	7.77			
2	Conductivity	µS/cm	IS:3025:(Part-14):1988, RA 2013	713.6			
3	Total Dissolved Solids	mg/l .	IS:3025:(Part16):1984, RA 2017	430.0			
4	Chloride (as Cl ⁻)	mg/l	IS:3025:(Part-32):1988, RA 2014	71.9			
5	Total Alkalinity (as CaCO ₃)	mg/l	IS:3025:(Part-23):1986, RA 2014	116.0			
6	Total Hardness (as CaCO ₃)	mg/l	IS:3025:(Part-21):2009, RA 2014	264.0			
7	Calcium (as Ca)	mg/l	IS:3025:(Part-40):1991 RA 2014	46.4			
8	Magnesium (as Mg)	mg/l	APHA 22 ND EDITION :3500-MG-B	35.9			
9	Turbidity	NTU ·	IS:3025:(Part-10):2010	0.57			

 W_2



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Name & Address Of The Cu	stomer	REPORT NO	UES	/TR/20-21/02783		
To,		LAB REF NO	UES	UES/20-21/W/04821		
THE PRINCIPAL		DATE OF SAMPLING		12/2020		
GOVT. DUDHDHARI BAJRANG GIRLS POST- GRADUATE AUTONOMOUS COLLEGE		DATE OF RECEIPT	12/1	12/2020		
	DATE OF REPORT	15/1	12/2020			
KALIBADI CHOWK, NEHRU NAGAR, BUDHAPARA, RAIPUR (C. G.) 492001		DATE OF ANALYSIS	STA	RT: 12/12/2020	END: 14/12/2020	
	SAMPLE	DETAILS				
CUSTOMER SAMPLE ID	BOREWELL WATER	CUSTOMER REF. VERBAL COMMUNICATI MAIL CONFIRMATION.				
SAMPLE TYPE	GROUND WATER	SAMPLE CONDITION A RECEIPT	Т	ОК		
PACKING OF SAMPLE	PLASTIC BOTTLE	SAMPLE COLLECTED BY	(CUSTOMER		
OTHERS DETAILS	SEALED	QUANTITY RECEIVED		APPROX 5 LTR.		
Chemical Tes		REPORT				

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
10	Sulphate (SO4 ²⁻)	mg/l	IS:3025:(Part-24):1986, RA 2014	48.97
11	Fluoride (as F)	mg/l	IS:3025:(Part-60):2008, RA 2013	0.10
12	Sodium (as Na)	mg/l	IS:3025:(Part-45):1993, RA 2003	16.30
13	Potassium (as K)	mg/l	IS:3025:(Part-45):1993, RA 2003	2.31
14	Iron (as Fe)	mg/l	IS 3025 (part 53):2003 RA 2019	0.11
	Note: mg/lit.: milligram per Liter.	•.		

REMARKS:RESULTS ARE AS ABOVE

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Name & Address Of The Customer To, The Principal Govt. Dudhdhari Bajrang Girls Post-		REPORT NO	UES/TR/20-21/0280	JES/TR/20-21/02802		
		LAB REF NO	UES/20-21/S/04846			
		DATE OF SAMPLING	12/12/2020			
Graduate Autonomo	duate Autonomous College DATE OF F		12/12/2020			
Kalibadi Chowk, Nehru Nagar, Budhapara, Raipur (C. G.) 492001		DATE OF REPORT	15/12/2020			
		DATE OF ANALYSIS	START: 12/12/2020	END: 14/12/2020		
		SAMPLE DETAILS				
Monitoring For	Soil					
Sampling Location	Near Office Garden					
Customer Ref.	Verbal Communication 8	By Mail Confirmation				
Sample Collected By	Laboratory Chemist	• • • • •				
Sampling Procedure	Manual On Soil, Plant &	Water Analysis				
Sample Quantity/Packing	3.0 Kg(Approx)					

	TEST REPORT						
Sr. No.	Parameter	Unit	Method Reference	Result			
1	Moisture	%	AGRICULTURE SOIL MANUAL	12.8			
2	pH Value(1.5 Aq. Extraction)	-	IS: 2720:(PART-26):1987 RA 2011	7.11			
3	Conductivity(µs/cm) (1.5 Aq. Suspension)	μS/cm	IS: 14767:2000 RA 2016	178.2			
4	Available Nitrogen (as N)	kg/ha	AGRICULTURE SOIL MANUAL	28.2			
5	Available Phosphorus (as P)	kg/ha	AGRICULTURE SOIL MANUAL	322.0			
6	Available Potassium (as K)	kg/ha	AGRICULTURE SOIL MANUAL	4 <mark>5</mark> 6.0			
7	Exchangeable Calcium	Meq/100g	AGRICULTURE SOIL MANUAL	2.68			
8	Exchangeable Magnesium	Meq/100g	AGRICULTURE SOIL MANUAL	16.2			
9	Organic Matter	%	AGRICULTURE SOIL MANUAL	1.48			
-	Texture						
10	a) Sand	%	AGRICULTURE SOIL MANUAL	18.0			
10	b) Slit	%	AGRICULTURE SOIL MANUAL	56.0			
	c) Clay	%	AGRICULTURE SOIL MANUAL	26.0			

N.D.:-NOT DETECTED

REMARKS: RESULTS ARE AS ABOVE

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For ULTIMATE ENVIROLYTICAL SOLUTIONS 2020 2020 2 **REVIEWED BY AUTHORIZED SIGNATORY** End of the test report-

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Name & Address Of The Customer To,		REPORT NO.	UES/TR/20-21/02803
The Principal Govt. Dudhdhari Bajrang Girls Post-Graduate Autonomous College Kalibadi Chowk, Nehru Nagar, Budhapara, Raipur (C. G.) 492001		LAB REF NO.	UES/20-21/N/04847
		DATE OF REPORT	15/12/2020
		DATE OF SAMPLING	11/12/2020 TO 12/12/2020
	SAMPLE	DETAILS	
MONITORING FOR	NOISE LEVEL MONITORING	_	
SAMPLING LOCATION	INSIDE AREA (AS DESCRIBED BEI	LOW)	
CUSTOMER REF.	VERBAL COMMUNICATION & BY	(MAIL CONFIRMATION.	
SAMPLE COLLECTED BY	LABORATORY CHEMIST		
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTIO	N	
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

TEST REPORT						
LOCATION	UNIT	RESULT DAY TIME NIGHT TIME		LIMIT (RESI	DENTIAL ZONE)	
LOCATION	UNIT	15.12.2021	15.12.2021		PENTIAL ZONE)	
NEAR RUSA BUILDING	dB(A)	44.3	40.2	T		
NEAR OLD SPORTS HALL	dB(A)	49.0	40.6	55 dB(A) 45 dB	45 dB(A)	
NEAR MAIN BUILDING (GATE NO.01)	dB(A)	45.0	42.3		, , , , , , , , , , , , , , , , , , ,	
NEAR MAIN GATE	dB(A)	48.0	46.5			

REMARKS: THE RESULTS ARE AS ABOVE.

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Name & Address Of The Custo	317147	REPORT NO	UES/TR/19-20/2341	R/19-20/2341	
То,		LAB REF NO	UES/19-20/AAQM/5395-5396		
The Principal Govt. Dudhdhari Bajrang Girls Post- Graduate Autonomous College Kalibadi Chowk, Nehru Nagar, Budhapara, Raipur (C. G.) 492001		DATE OF SAMPLING	09/12/2019 to 10/12	2/2019	
		DATE OF RECEIPT	10/12/2019		
		DATE OF REPORT	16/12/2019		
		DATE OF ANALYSIS	START: 11/12/2019	END: 16/12/2019	
		SAMPLE DETAILS			
Monitoring For	Ambient Air Quality Monitorin	Ambient Air Quality Monitoring.			
Sampling Location	1. Near Rusa Building 2. Near Old Sports Gro	und			
Customer Ref.	Verbal Communication& By Ma	ail Confirmation.			
Sample Collected By	Laboratory Chemist				
Sampling Procedure	As Per Standard Method				
Sample Quantity/Packing	Each Sampling Site: Filter Paper (PM ₁₀): 1X3 No.(24 SO ₂ : 30mlX6 (4hr) PVC Bottle, N	hr.), Filter Paper (PM _{2.5}): 1X1 No. NO ₂ : 30mlX6(4hr) PVC Bottle	.(24hr)	-	

TEST REPORT Chemical Testing Ambient Air Quality Monitoring								
		NARON		Re	sults			
Parameter	Unit	NAAQM Standard	Method Reference	Near Rusa Building	Near Old Sports Ground			
Particulate Matter (PM ₁₀₎	µg/m³	100	IS:5182(Part 23):2006	54.18	48.48			
Particulate Matter (PM _{2.5)}	µg/m³	60	UES/SAP/A/02/PM2.5:2019	23.84	20.26			
Sulphur Dioxide (SO ₂₎	µg/m³	80	IS 5182 (Part 2): 2001	8.26	9.46			
Nitrogen Dioxide (NO ₂₎	µg/m³	80	·IS 5182 (Part 6): 2006	20.48	18.24			

REMARKS: UES/SAP/A/02/PM2.5:2019: As Per CPCB Guideline

Terms & conditions

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For ULTIMATE ENVIROLYTICAL SOLUTIONS 6 12 2019 AUTHORIZED SIGNATORY **REVIEWED BY**

-----End of the test report-----



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Name & Address Of The Cu	stomer	REPORT NO	UES	/TR/19-20/2342	
To,	LAB REF NO		UES/19-20/W/5397		
THE PRINCIPAL GOVT. DUDHDHARI BAJRANG GIRLS POST- GRADUATE AUTONOMOUS COLLEGE KALIBADI CHOWK, NEHRU NAGAR,		DATE OF SAMPLING	09/	12/2019	
		DATE OF RECEIPT	10/	12/2019	
		DATE OF REPORT	16/	16/12/2019	
	AIPUR (C. G.) 492001	DATE OF ANALYSIS	STA	RT: 11/12/2019	END: 16/12/2019
	SAMPL	E DETAILS			
CUSTOMER SAMPLE ID	EFFLUENT WATER	CUSTOMER REF. NO.		VERBAL COMM MAIL CONFIRM	
SAMPLE TYPE	EFFLUENT WATER	SAMPLE CONDITION AT RECEIPT	•	ок	
PACKING OF SAMPLE	PLASTIC BOTTLE	SAMPLE COLLECTED BY		CUSTOMER	
OTHERS DETAILS	SEALED	QUANTITY RECEIVED		APPROX 5 LTR.	

TEST REPORT

Chemical Testing

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
1	pH value at 25.6°C	_	IS:3025:(Part-11):1983, RA 2012	7.59
2	Total Suspended Solids	mg/l	IS:3025:(Part-17):1984, RA 2012	116.0
3	Chemical Oxygen Demand	mg/l	IS:3025:(Part-58):1988, RA 2006	28.5
4	Bio-chemical Oxygen Demand at 27°C for three day	mg/l	IS:3025:(Part-44):1989	33.6
5	Total Dissolved Solids	mg/l	IS:3025:(Part-16):1984, RA 2017	368.0

REMARKS:RESULTS ARE AS ABOVE

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For ULTIMATE ENVIROLYTICAL SOLUTIONS 019 12 2 100 6 AUTHORIZED SIGNATORY **REVIEWED BY**

-----End of the test report-----



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	Name & Address Of The Customer To, THE PRINCIPAL GOVT. DUDHDHARI BAJRANG GIRLS POST- REPORT NO LAB REF NO DATE OF SAMP		UES/TR/19-20/2343	
			UES/19-20/W/5398	
			DATEO	
GRADUATE AUTONOMOUS COLLEGE		DATE OF RECEIPT	10/12/2019	
	KALIBADI CHOWK, NEHRU NAGAR,		16/12/2019	
	AIPUR (C. G.) 492001	DATE OF ANALYSIS	START: 11/12/2019	END: 16/12/2019
	SAMPLI	E DETAILS		
CUSTOMER SAMPLE ID	BOREWELL WATER	CUSTOMER REF. NO. & DATE	VERBAL COMM MAIL CONFIRM	
SAMPLE TYPE	GROUND WATER	SAMPLE CONDITION AT RECEIPT	ок	
PACKING OF SAMPLE	PLASTIC BOTTLE	SAMPLE COLLECTED BY	CUSTOMER	
OTHERS DETAILS	SEALED	QUANTITY RECEIVED	APPROX 5 LTR.	

TEST REPORT Chemical Testing 1. Ground Water						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT		
1	pH value at 25.2°C		IS:3025:(Part-11):1983, RA 2017	7.64		
2	Conductivity	µS/cm	IS:3025:(Part-14):1988, RA 2013	698.2		
3	Total Dissolved Solids	mg/l	IS:3025:(Part16):1984, RA 2017	423.1		
4	Chloride (as Cl^-)	mg/l	IS:3025:(Part-32):1988, RA 2014	64.9		
5	Total Alkalinity (as CaCO ₃)	mg/l	IS:3025:(Part-23):1986, RA 2014	98.0		
6	Total Hardness (as CaCO ₃)	mg/l	IS:3025:(Part-21):2009, RA 2014	224.0		
7	Calcium (as Ca)	mg/l	IS:3025:(Part-40):1991 RA 2014	36.4		
8	Magnesium (as Mg)	mg/l	APHA 22 ND EDITION :3500-MG-B	24.2		
9	Turbidity	NTU	IS:3025:(Part-10):2010	0.86		

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Name & Address Of The Customer To, THE PRINCIPAL GOVT. DUDHDHARI BAJRANG GIRLS POST- GRADUATE AUTONOMOUS COLLEGE KALIBADI CHOWK, NEHRU NAGAR, BUDHAPARA, RAIPUR (C. G.) 492001		REPORT NO UES		S/TR/19-20/2343		
		LAB REF NO	UES/1	5/19-20/W/5398		
		DATE OF SAMPLING	09/12	09/12/2019		
		DATE OF RECEIPT	10/12	10/12/2019		
		DATE OF REPORT				
		DATE OF ANALYSIS			END: 16/12/2019	
	SAMPL	E DETAILS				
CUSTOMER SAMPLE ID	BOREWELL WATER	CUSTOMER REF. NO. & DATE		VERBAL COMMUNICATION & MAIL CONFIRMATION.		
SAMPLE TYPE	GROUND WATER	SAMPLE CONDITION AT RECEIPT		ОК		
PACKING OF SAMPLE	PLASTIC BOTTLE	SAMPLE COLLECTED BY		CUSTOMER		
OTHERS DETAILS	SEALED	QUANTITY RECEIVED		APPROX 5 LTR.		

TEST REPORT

Chemical Testing

1. Ground Water

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	RESULT
10	Sulphate (SO4 ²⁻)	mg/l	IS:3025:(Part-24):1986, RA 2014	42.64
11	Fluoride (as F)	mg/l	IS:3025:(Part-60):2008, RA 2013	0.08
12	Sodium (as Na)	mg/l	IS:3025:(Part-45):1993, RA 2003	18.6
13	Potassium (as K)	mg/l	IS:3025:(Part-45):1993, RA 2003	2.68
14	Iron (as Fe)	mg/l ·	IS 3025 (part 53):2003 RA 2019	0.16
-	Note: mg/lit.: milligram per Liter.			

REMARKS:RESULTS ARE AS ABOVE

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2019 REVIEWED



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End of the test report-----



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Name & Address Of The Customer To, The Principal Govt. Dudhdhari Bajrang Girls Post- Graduate Autonomous College Kalibadi Chowk, Nehru Nagar, Budhapara, Raipur (C. G.) 492001		REPORT NO				
		LAB REF NO				
		DATE OF SAMPLING				
		DATE OF RECEIPT				
		DATE OF REPORT	E OF REPORT 16/12/2019			
		DATE OF ANALYSIS	START: 11/12/2019	END: 16/12/2019		
		SAMPLE DETAILS				
Monitoring For	Soil	•				
Sampling Location	Near Office Garden	Near Office Garden				
Customer Ref.	Verbal Communication&	Verbal Communication& By Mail Confirmation.				
Sample Collected By	Laboratory Chemist	Laboratory Chemist				
Sampling Procedure	Manual On Soil, Plant &	Manual On Soil, Plant & Water Analysis				
Sample Quantity/Packing	3.0 Kg(Approx)					

TEST REPORT						
Sr. No.	Parameter	Unit	Method Reference	Result		
1	Moisture	%	AGRICULTURE SOIL MANUAL	8.96		
2	pH Value(1.5 Aq. Extraction)	-	IS: 2720: (PART-26):1987 RA 2011 7			
3	Conductivity(µs/cm) (1.5 Aq. Suspension)	μS/cm	IS: 14767:2000 RA 2016			
4	Available Nitrogen (as N)	kg/ha	AGRICULTURE SOIL MANUAL	22.4		
5	Available Phosphorus (as P)	kg/ha	AGRICULTURE SOIL MANUAL	298.0		
6	Available Potassium (as K)	kg/ha	AGRICULTURE SOIL MANUAL	428.0		
7	Calcuim	Meq/100g	AGRICULTURE SOIL MANUAL	2.28		
8	Magnesium	Meq/100g	AGRICULTURE SOIL MANUAL 1			
9	Organic Matter	%	AGRICULTURE SOIL MANUAL	1.28		
	Texture					
10	a) Sand	%	AGRICULTURE SOIL MANUAL	16.0		
	b) Slit	%	AGRICULTURE SOIL MANUAL	58.0		
	c)Clay	%	AGRICULTURE SOIL MANUAL	26.0		

REMARKS: RESULTS ARE AS ABOVE

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For ULTIMATE ENVIROLYTICAL SOLUTIONS 019 2019 2 6 **REVIEWED BY AUTHORIZED SIGNATORY** End of the test report-



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Name & Address Of The Customer To, The Principal Govt. Dudhdhari Bajrang Girls Post-Graduate Autonomous College Kalibadi Chowk, Nehru Nagar,		REPORT NO. LAB REF NO. DATE OF REPORT	UES/TR/19-20/2345 UES/19-20/N/5400-5403 16/12/2019 09/12/2019 TO 10/12/2019		
Budhapara, Raipur (C.		DATE OF SAMPLING	03/12/2013 10 10/12/2013		
MONITORING FOR	NOISE LEVEL MONITORING				
SAMPLING LOCATION	INSIDE AREA (AS DESCRIBED BELOW)				
CUSTOMER REF.	VERBAL COMMUNICATION & BY MAIL CONFIRMATION.				
SAMPLE COLLECTED BY	LABORATORY CHEMIST				
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION				
SAMPLE QUANTITY/PACKING	NOT APPLICABLE				

TEST REPORT						
		RE	RESULT			
LOCATION	UNIT	DAY TIME 09.12.2019	NIGHT TIME 10.12.2019	LIMIT (RESIDENTIAL ZON		
NEAR RUSA BUILDING	dB(A)	48.6	42.6	55 dB(A)	45dB(A)	
NEAR OLD SPORTS HALL	dB(A)	46.2	38.8			
NEAR MAIN BUILDING (GATE NO.01)	dB(A)	44.5	36.5			
NEAR MAIN GATE	dB(A)	50.7	43.8			

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2019



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---End of the test report-----