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Six-Monthly Environmental Compliance Report of Stipulated Conditions of Environmental Clearance

(April 2016 to September 2016)

FOR

Group Housing Project “CASA GREEN-1”
At Plot No. 04A, Sector-16, Greater Noida,
Gautam Budh Nagar, U. P.

Submission to:
Ministry of Environment and Forests (MOEF)

Submitted by:
M/s Radhey Krishna Techno Build (P) Ltd.
Sector-63, Noida, Uttar Pradesh

December, 2016

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CHAPTER-1

INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

The Group Housing project **"CASA GREEN-1",** at plot No. 04A, Sector-16, Greater Noida, G.B. Nagar, U.P. is being developed by M/s Radhey Krishna Techno Build (P) Ltd. The proposed project having spread of 18445.17 sq m falls under the Jurisdiction of Greater Noida Industrial Development Authority (GNIDA), U.P. This project has been granted environmental clearance vide letter no. 1755/parya/SEAC/1575/2013/DD(D), dated 11th October, 2013 (attached as **Annexure-1)** by the State Level Environment Impact Assessment Authority, Uttar Pradesh.

1.2 Project Description

Salient Features:

The plot area is 18445.17 sq. m. and total built up area is 87315.15 sq. m. 02 nos of basement are proposed with total area 30,385.62 sqm. The FAR permissible is 2.75 (50724.22 sqm) and FAR proposed to be achieved is 2.745 (50723.91 sqm).Total Green area proposed is 7192.18 Sqm (39% of the total plot area).

Water Supply:

The total water requirement is 352 KLD and the requirement will be met from Municipal Water supply. Total fresh water requirement is 252 KLD.

Waste Water:

The quantity of waste water generated from the project will be about 287 KLD which will be treated in STP of 345 KLD capacity & this treated water will be reused.

RWH:

The proposed quantity of RW to be harvested is 7686.11 M3/A. The volume of RWH pits is proposed as 22.62 M3, where as total no of proposed RWH pits are 40.

Parking:

The building will have adequate parking facilities. Parking facility is required for 634 ECS and proposed for 832 ECS.

Electricity:

Total power requirement is proposed as 2161 KW to be supplied by UPPCL. 2x1000 kVA of DG sets are proposed for power supply/ power backup.

1.3 Present Status

Project site is in constructional phase.

1.4 Purpose of the Report

This six-monthly report is being submitted as per the condition stipulated in the Environmental Clearance letter.

Further, the study will envisage the environmental impacts that have generated in the local environment due to the project.

The environmental assessment is being carried out to verify:-

- That the project does not have any adverse environmental impacts in the project area and it's surrounding.
- Compliance with the conditions stipulated in the Environmental Clearance Letter.
- That the Project Management is implementing the environmental mitigation measures as suggested in the approved Form-1, Form-1A, Environmental Management Plan (EMP) and building plans.
- The project proponent is implementing the environmental safeguards in true spirit.
- Any non-conformity in the project with respect to the environmental implication of the project.

CHAPTER-2

COMPLIANCE OF STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE

Name of Project: Group Housing project "CASA GREEN-1", at plot NO-04A, Sector-16, Greater Noida, G.B. Nagar, U.P by Radhey Krishna Techno Build (P) Ltd

Clearance No. : 1755/parya/SEAC/1575/2013/DD(D), dated 11th October, 2013

Period of compliance report: April 2016 to September 2016

PART A – GENERAL CONDITIONS

S. No.	Conditions of Environmental Clearance	Reply
1.	It shall be ensured that all standards related to ambient environmental quality and the emission/effluent standards as prescribed by the MoEF are strictly complied with.	The construction phase of the project is in progress. Necessary environmental safeguards are being taken care of.
2.	It shall be ensured to obtain the no objection certificate from the UP pollution control board before start of construction.	No objection certificate from the UP pollution control board has been applied.
3.	It shall be ensured that no construction work or preparation of land by the project management except for securing the land is started on the project or the activity without the prior environmental clearance.	Work started after receipt of environmental clearance from SEIAA, UP.
4.	The proposed land use shall be in accordance to the prescribed land use. A land use certificate issued by the competent Authority shall be obtained in this regards.	The proposed project is in accordance with the land use prescribed by Greater Noida.
5.	All trees felling in the project area shall be as permitted by the forest department under the prescribed rules. Suitable clearance in &is regard shall be obtained from the competent Authority.	Tree felling is not involved in this project.
6.	Impact of drainage pattern on environment should be provided.	There would be no impact due to runoff as the storm water drainage network would be developed & connected to RWH pits. Surplus rain water if any would flow into storm water drainage system of GNIDA.
7.	Surface hydrology and water regime of the project area within 10 km should be provided.	Already submitted with EIA report.
8.	A suitable plan for providing shelter, light, fuel water and wastewater disposal for construction labour during the construction phase shall be provided along with the no. of propose workers.	It has already been provided.
9.	Measures shall be undertaken to recycle and reuse treated effluents for horticulture and plantation. A suitable plan for waste water recycling shall be submitted.	Same has already been submitted to SEIAA & in the previous compliance.
10.	Obtain proper permission from competent authorities regarding enhanced traffic during and due to construction and operation of project.	Not Applicable.
11.	Obtain necessary clearances from the competent authorities on the abstraction and use of ground water during the construction and operation of phase.	No ground water shall be extracted for the project. If required, permission will be taken from the concerned authority.

12.	Hazardous/inflammable/explosive materials likely to be stored during the construction and operation phases shall be as per standard procedure as prescribed under law, necessary clearances in this regard shall be obtained.	Since, this is a building constructional project; no major hazardous/inflammable/explosive materials will be used. However material including paints, fuels, and lubricants will be stored securely as per material handling guideline.
13.	Solid waste shall be suitably segregated and disposed. A separate and isolated municipal waste collection center should be provided. Necessary plans should be submitted in this regards.	Solid waste will be collected by the municipal authority for disposal into authorized disposal ground developed by them. The same has already been submitted to SEAC with intimation to SEIAA, UP with EC application processes.
14.	Suitable rain water harvesting systems as per designs of ground water department shall be installed. Complete proposal in this regard should be submitted.	RWH design system has been prepared as per the design norms of CGWA and had been submitted with the EIA report.
15.	The emissions and effluents etc from machines, instruments and transport during construction and operation phases should be according to the prescribed standards. Necessary plans in this regard shall be submitted.	During construction phase all equipment machines and transportation vehicle have pollution under control certified. During operation phase only emission from DG sets will occur and the same will be managed by inbuilt APCM.
16.	Water sprinklers and other dust control measures should be under taken to take care of dust generated during construction and operation phases Necessary plans in this regard shall be submitted.	Water sprinkling is being done during construction phase through tankers. Dust generation from the site into the surrounding area is minimized.
17.	Suitable noise abatement measures shall be adopted during the construction and operation phases in order to ensure that the noise emissions do not violet the prescribed ambient noise standards. Necessary plans in this regard shall be submitted.	No construction activity is carried out during night time. All vehicles, equipments and construction machines are idle when not in use.
18.	Separate stock piles shall be maintained for excavated top soil and the top soil should be utilized for the preparation of green belt.	Excavated top soil is stored for using in landscaping.
19.	Sewage effluents shall be kept separate from rain water collection and storage systems and separately disposed. Other effluents should not be allowed to mix with domestic effluents.	Sewage effluent system has been kept separate from Rain Water Collection and Storage Systems.
20.	Hazardous/solid wastes generated during construction and operation phases should be disposed off as prescribed under law. Necessary clearance in this regard shall be obtained.	Waste generated in the form of spent oil will be handed over to the authorized recyclers for disposal in accordance with the rule.
21.	Alternative technologies for solid waste disposal (like vermin-culture etc.) should be used in consultation with expert organizations.	Project is under construction. This aspect will be taken care of during operation phase.
22.	No wetland should be infringed during construction and operation phases. Any wetland coming in the project area should be suitably rejuvenated and conserved.	Not applicable as no wetland falls under project area.
23.	Pavements shall be so constructed as to allow infiltration of surface run-off rain water. Fully impermeable pavements shall not be constructed. Construction of pavements around trees shall be as per scientifically accepted principles in order to provide suitable watering, aeration and nutrition to the tree.	Porous/ Green pavers shall be used in parking lots to increase infiltration of surface water.

24.	The green building concept suggested by Indian green Building Council, which is a part of CII-Godrej GBC, shall be studied and followed as far as possible.	Noted. Actions are being taken accordingly as the following practices are in the focus; -Effective solid waste management, -solar light for the common, -solar water heater, -green area would be 32.3% of the total plot area, -use of the cisterns and sensor based Fixtures to ensure less consumption of water etc.
25.	Compliance with the safety procedures, norms and guidelines as outlined in NBC 2005 shall be compulsory ensured.	Safety procedure norms laid down in NBC 2005 shall be complied, likewise; -Proper Lighting and Ventilation facility -Electrical and Allied Installations -Installation of Lifts -Water Supply, Drainage and Sanitation (including Solid Waste Management) -Landscape Planning and Design according to the rules -Building plan is in accordance to the seismic zone IV. -Provision of RWH.
26.	Ensure usage of dual flush systems for flush cisterns and explore options to use sensor based fixtures, waterless urinals and other water saving techniques.	Dual flushing system will be provided in the proposed development.
27.	Explore of options for use of dual pipe plumbing for use of water with different qualities such as municipal supply, recycle water ground water etc.	Dual Plumbing system has been provided in this project. However, flushing and horticulture water requirement will be met from the waste water treated in onsite STP.
28.	Ensure usage of measures for reducing water demand for landscaping and use xeriscaping, efficient irrigation equipments and controlled watering systems.	Plant species selected for the project are mostly indigenous type with less water demand.
29.	Make suitable provisions for using solar energy as an alternative source of energy. Solar energy applications should be in corporate for illumination of common areas, lighting for gardens and street lighting in addition to provision for solar heating. Present a detailed report showing how much percentage of backup power for institution can be provided through solar energy so that use and polluting effects of DG sets can be minimized.	Solar lighting has been proposed, however installation shall be taken up during site development stage of the project.
30.	Make separate provision for segregation, collection, transport and disposal of e-waste.	Separate provision of E-waste will be done during operation phase for segregation, collection, transportation. The e-waste generated will be handed over to the authorized e-waste recyclers
31.	Educate citizens and other stake holders by putting up hoardings at different places to create environmental awareness.	Signages for environmental awareness will be displayed at appropriate locations within the project site.
32.	Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.	Fully internalized parking has been provided. No traffic congestion near the entry and exit point will occur.
33.	Prepare and present disaster management plan.	Fire fighting plan is submitted in EIA report. IS 1893 guidelines will be followed for building design.

34.	A report on the energy conservation measures confirming the energy conservation norms finalize by BEE should be prepare incorporating details about building materials and technology, R & U factors etc.	Energy conservation measures confirming to ECBC norms submitted with EC application. R&U values as per ECBC guidelines will be followed and the same has already been submitted to SEIAA & in the previous compliance.
35.	Fly ash should be used as building material in the construction as per the provision of fly ash notification of September 1999 and amended as on August 2003 (the above condition is applicable only if the project lies within 100 km of thermal power station.)	Fly ash is being used as building materials for construction.
36.	The DG sets to be used during construction phase should use low sulphur diesel type and should confirm to E.P. rules prescribed for Air and Noise emission standard.	Low sulphur diesel will be used for DG operation as per availability.
37.	Alternate technologies to chlorination (for disinfection of waste water) including methods like ultra violet radiation, ozonization, etc. shall be examined and report submitted with justification for selection technology.	Same will be complied.
38.	The green belt design along the periphery of the plot shall be achieved attenuation factor conforming to the day and night noise standard prescribed for residential landuse .The open spaces inside the plot should be suitably landscaped and covered with vegetation of indigenous variety.	Proper green belt has been designed with peripheral shelter belt. Desired Noise level within the site will be maintained. Landscape and covered vegetation proposed are of indigenous variety. List of proposed plants have already been submitted to SEIAA & with previous compliance.
39.	The constructions of the building and the consequent increased traffic load should be such that the micro climate of the area is not adversely affected.	Plantation, vegetation and shading shall minimize effect on microclimate.
40.	The building should be designed so as to take sufficient safeguard regarding seismic zone sensitivity.	The building has been designed for seismic zone IV as per NBC 2005.
41.	High rise building should be obtaining clearance from aviation department or concerned authority.	Height clearance has been obtained and attached as **Annexure 2.**
42.	Suitable measures shall be taken to restrain the development of small commercial activities or slum sin the vicinity of the complex. All commercial activities should be restricted to special area earmarked for the purpose.	This is controlled residential development in accordance with master plan (Land use Plan) hence commercial activities are not allowed.
43.	It is suggested that literacy program for weaker section of society/women/adults (including domestic help) and under privileged children could be providing in a formal way.	Measures for social, women and under privileged children's will be carried out by the Resident Welfare association.
44.	The use of compact fluorescent lamps should be encouraged. A management plan for the safe disposal of use/damaged CFLs should be submitted.	The project will use energy efficient luminaries like CFL and disposal of the CFL will be along with the e-waste.
45.	It shall be ensured that all street and park lighting is solar power 50% of the same may be provide with the dual (solar/electrical) alternative.	The same will be complied.
46.	Solar water heater shall be installed to be maximum possible capacity. Plants may be drawn up accordingly and submitted with justification.	Since it is Group housing, RWA will facilitate to install solar water heater to maximum households.

47.	Treated effluents shall be maximally reused to aim for zero discharge. Where ever not possible a detailed management plan for disposal should be provide with quantities and quality of waste water.	Waste water will be treated in onsite STP. Treated water shall be reused if any surplus treated water available shall be discharged in the GNIDA Sewage collection line with permission.
48.	The treated effluents should be normally not be discharged into public sewer with terminal treatment facilities as the adversely affect hydraulic capacity of STP /If unable necessary permission from authorities should be taken.	Excess treated water will be discharged in the GNIDA Sewage collection line with permission.
49.	Construction activities including movements of vehicles should be so managed so that no disturbance is caused to nearby residents.	All precaution to avoid disturbance shall be taken. No construction activity in the night.
50.	All necessary statutory clearance should be obtained and submitted before start of any construction activity and if this condition is violated the clearance, if and when given shall be automatically deemed to have been cancelled.	Statutory clearances have already been obtained.
51.	Parking areas should be accordance with the norms of MOEF, GOI Plans may be drawn up accordingly and submitted	Parking area provided meets the requirement of MoEF as well as local building byelaws.
52.	The location of the STP should be such that it is away from human habitation and does not cause problem of odor. Odorless technology options should be examined and report submitted.	Details of onsite STP - Location, capacity, process & technology already submitted along with EC application.
53.	The environment management plan should also include the break up costs on various activities and the management issues also so that the residents also participate in the implementation of the environment management plan.	Well prepared EMP & Budget with breakup of cost already submitted along with EC application & in the previous compliances.
54.	Detailed plans for safe disposal of STP sludge shall be provided along with ultimate disposal location, quantitative estimates and measures proposed.	Yes, shall be complied at appropriate stage of project.
55.	Status of the project as on date shall be submitted along with photographs from north, south, west and east side facing camera and adjoining areas should be provided.	Project is under construction.
56.	Specific location along with dimensions with reference to STP, parking open areas and green belt etc. should be provided on the layout plan.	Parking, Open Areas, Green Belt, plans have already submitted along with the EC Report.
57.	The DG sets shall be so installed so as to confirm to prescribed stack height and regulation and also to the noise standards as prescribed .Details should be submitted	Proposed DG set will be installed during operation phase and stack height of DG set will be as per CPCB norms.
58.	E-waste management should be done as per MOEF guidelines.	E-waste will be segregated and disposed through UPPCB authorized recycler as per MoEF guideline.
59.	Electrical-waste should be segregated and disposed suitably as not to impose environmental risk.	Electrical waste generated from the project site will be segregated and disposed off suitably without having any environmental risk
60.	The use of suitably processed plastic waste in the constructions of road should be considered.	Processed plastic waste will be used in constructions of road.
61.	Displaced persons shall be suitably rehabilitated as per prescribed norms.	There is no displacement of any person.
62.	Dispensary for First Aid will be provided.	We are under process for the same.

63.	Safe disposal arrangements of used toiletries items in hotels should be ensured .toiletries items could be given complimentary to waste, adopting suitable measures.	This condition is not applicable, as this is residential group housing project.
64.	Diesel generating set stacks should be monitored for CO and HC.	During operation phase, DG Stack monitoring will also include CO and HC parameters.
65.	Ground water downstream of rain water harvesting pit nearest to STP should be monitored for bacterial contamination .Necessary hand pump Should be provided for sampling .The monitoring is to be done both in pre and post monsoon ,season.	The same will be done during operation phase.
66.	The green belt shall consist of 50% trees, 25% shrubs and 25% grass as per MoEF norms.	Green belt development scheme based on guideline has already been submitted for EC Clearance
67.	A separate electric meter shall be provided to monitor consumption of energy for the operation of sewage/effluent treatment in tanks.	The same will provided during operation phase
68.	An energy audit should be annually carried out during the operation phase and submitted to the authority.	Shall be complied.
69.	Project proponents shall endeavor to obtain ISO: 14001 certification. All general and specific conditions mentioned under this environmental clearance should be included in the environmental manual to be prepared for the certification purposes and compliance.	Will be complied as per the management policy and SEIAA and MoEF Guidelines.
70.	Appropriate safety measures should be made for accidental fire.	Fire fighting and safety measures have been proposed in EIA report under EMP.
71.	Smoke meters should be installed as warning measures for accidental fires.	At sensitive locations smoke meters and warning signs will be installed.

PART B – SPECIFIC CONDITIONS

S. No.	Conditions of Environmental Clearance	Reply
1.	This environmental clearance is subjected to owner ship of the site by the project proponents in confirmation with approval Master plan for Noida by the competent Authority. In case of violation, It would not be effective and would automatically stand cancelled.	Noted.
2.	You are also directed to ensure that the proposed site is not a part of any no-development zone as required/prescribed/identified under law. In case of violation, this permission shall automatically deem to be Invalid and cancelled. Also, In the event of any dispute on ownership or land use of the proposed site, this clearance shall automatically deem to be cancelled.	Proposed development does not come under the purview of the said condition. If any, due permission will be obtained from the concerned agency.
3.	Plan should get approved from Greater Noida Authority prior to start of construction. A copy of approval should be submitted to SEIAA.	The same is being complied.
4.	Plan for construction of 02 basements which includes dewatering should be done in construction or otherwise.	Will be complied.

5.	Sprinkler to be used for curing and quenching during construction phase.	Sprinkler is being used for curing and quenching during construction phase.
6.	Height of the stack should be provided as discussed based on combined DG seats capacity and be at least 6m higher than the tallest building	Stack height Will be as per CPCB Guidelines.
7.	100% wastage water should be treated in captive STP conforming to prescribed standards of receiving body for designated use.	100% wastage water will be treated in captive STP conforming to prescribed standards.
8.	Permission of discharge of excess treated waste water into public drainage system shall be taken from the competent authority prior to any discharge.	Noted, permission of discharge of excess treated waste water into public drainage system shall be taken from the competent authority prior to any discharge.
9.	Dedicated power supply for STP is to be ensured. During operation sludge of STP is to be used in house for horticulture and surplus manure should be managed by giving to end users.	Will be complied.
10.	All entry exit point should be bell mouth. All internal roads should not be less than 9 meter wide. Wheel wash arrangement is to be made at exit point	Has been complied with.
11.	Wheel wash arrangement is to be made at exit point during construction phase	Wheel wash arrangement has been provided at exit point during construction phase.
12.	Use of LEDs should be explored in the place of CFL. Solar light should be provided in the common areas with 50% of them may be with dual provision.	Solar lights will be provided in the common areas and along the road side.
13.	100% provision of rain water Harvesting is to be made. RWH shall be initially done only from the roof top roof. RWH from green and other open areas shall be done after permission of CGWB.	Will be complied.
14.	Rain Water Harvesting shall be done only from the roof top. RWH from green and other open area as shall be done only after permission from CGWB.	Noted, Rain Water Harvesting shall be done only from the roof top. RWH from green and other open area as shall be done only after permission from CGWB.
15.	Environmental Corporate Responsibility (ECR) plan along with budgetary provision amounting to 2% of total project cost shall be submitted (within the month) on need base assessment study in the study area. Income generating measures which can help in up-liftmen of weaker section of society consistent with the traditional skills of the people identified. The programme can include activities such as old age homes, rain water harvesting provisions in nearby areas, development of fodder farm, fruit bearing orchards, vocational training etc. In addition, Vocational training for individuals shall be imparted so that poor section of society can take up self employment and jobs. Separate budget for community development activities and income generating programmers shall be specified.	Same will be complied.

16.	Suitable protection should be provided at terrace/ balcony area beyond second floor in view of safety of residents.	Will be complied.
17.	Crèche, convenient shopping provision shall be provided during the operation and construction phase.	Crèche and convenient shopping provision shall be provided
18.	A dedicated space/ room for senior citizens at club / recreation hall with suitable facilities shall be provided.	Dedicated space for senior citizens at club / recreation hall with suitable facilities shall be provided during operation phase.
19.	Green cover shall be provided as per CPCB norms	Noted, the green cover shall be provided as per CPCB norms
20.	Make separate provision for the temporary storage of MSW and E-Waste for two days.	Same shall be complied as per the e-waste management rule.
21.	Operation of the project shall be started only after commissioning of related sewerage system by the greater Noida Authority.	Will be complied.
22.	Ground water should not be extracted for the purpose of construction or otherwise. In case of default the Environmental Clearance is deemed to be cancelled.	Tanker water will be used for construction purposes.
23.	Land use of project site should be in accordance to approved Master plan and possession of site should be with project proponent.	Will be complied.
24.	In case of any legal dispute regarding the ownership of site, the environmental clearance shall deem to be cancelled.	Will be complied.
25.	The total excavated soil will be completely utilized at project site for living and back filling. The top soil generated during basement construction will be used for plantation and green area development. The management of surplus soil, if any , will transported and managed in Eco- friendly manner and the plan will be submitted within 01 months	Excavated soil will be completely used at project site for living and back filling. The top soil generated during basement construction will be used for plantation and green area development.
26.	Provision of separate dedicated room to be made for senior citizens commensurate with proper amenities (TV, music, system, indoor games etc) for and user in and around the club house.	The same will be complied during operation phase.
27.	Digging of basement shall be undertaken in consultation with District Administration/ Mining Department in view of structural safety of adjacent buildings.	Noted.

CHAPTER-3

DETAILS OF ENVIRONMENTAL MONITORING

3.1 AMBIENT AIR QUALITY MONITORING

3.1.1 Ambient Air Quality Monitoring Stations

Ambient air quality monitoring has been carried out at one location in the month of September, 2016 near site office to assess the ambient air quality of Project Site. This will enable to have an analytical understanding about air quality and the changes in the air environment in the study area with respect to the condition prevailing. The location of the ambient air quality monitoring station is given in **Table 3.1**.

Table 3.1 Details of Ambient Air Quality Monitoring Stations

S. No.	Location Code	Location Name/ Description	Environmental Setting
1.	AAQ-1	Near Site Office	Residential

3.1.2 Ambient Air Quality Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

- Particulate Matter 2.5 (PM 2.5)
- Particulate Matter 10 (PM 10)
- Sulphur Dioxide (SO_2)
- Oxides of Nitrogen (NO_2)
- Carbon Monoxide (CO)

The duration of sampling of PM2.5, PM10, SO_2 and NOx was 24 hourly continuous sampling per day and CO was sampled for 1 hours continuous, thrice in 24 hour duration monitoring. The monitoring was conducted for one day at the location. This is to allow a comparison with the National Ambient Air Quality Standards.

The air samples were analyzed as per standard methods specified by Central Pollution Control Board (CPCB) and IS: 5182. The techniques used for ambient air quality monitoring and minimum detectable levels are given in **Table 3.2**.

Fine Particulate Sampler APM 550 instruments have been used for monitoring Particulate Matter 2.5 (PM2.5 i.e. <2.5 microns), and Respirable Dust Sampler APM 450 was used for sampling Respirable fraction (<10 microns), gaseous pollutants like SO2, and NOx. Bladder and Aspirator bags were used for collection Carbon monoxide samples. Gas Chromatography techniques have been used for the estimation of CO.

Table 3.2 Techniques used for Ambient Air Quality Monitoring

S. No.	Parameter	Technique	Technical Protocol
1	Particulate Matter 2.5	Fine Particulate Sampler APM 550, Gravimetric Method	IS-5182 (Part-IV)
2	Particulate Matter 10	Respirable Dust Sampler APM 450, with cyclone separator, Gravimetric Method	IS-5182 (Part-23)

S. No.	Parameter	Technique	Technical Protocol
3	Sulphur dioxide	Modified West and Gaeke	IS-5182 (Part- II)
4	Nitrogen dioxide	Jacob & Hochheiser	IS-5182 (Part-VI)
5	Carbon Monoxide	Gas Chromatography	IS-5182 (Part-X)

3.1.3 Ambient Air Quality Monitoring Results

The detailed on-site monitoring results of PM 2.5, PM 10, SO_2, NO_x and CO are presented in **Table 3.3**.

Table 3.3 Ambient Air Quality Monitoring Results

S. No.	Location Code	Location	PM10 (µg/m^3)	PM2.5 (µg/m^3)	SO_2 (µg/m^3)	NO_x (µg/m^3)	CO (mg/m^3)
		Limit	**100**	**60**	**80**	**80**	**4**
1.	AAQ1	Near Site Office	182	90	12	34	1.02

3.1.4 Discussion on Ambient Air Quality in the Study Area

The level of PM10 and PM2.5 near site office is higher than the permissible limit of 100 µg/m^{3}and 60 µg/m^3 (for residential, rural and other areas as stipulated in the National Ambient Air Quality Standards). SO_2, NOx and CO was observed within the corresponding stipulated limits (Limit for SO_2 and NOx: 80 µg/m^3 and limit for CO: 4.0 mg/m^3). Parameter-wise variation of ambient air quality has been pictorially shown in **Figure 3.1.**

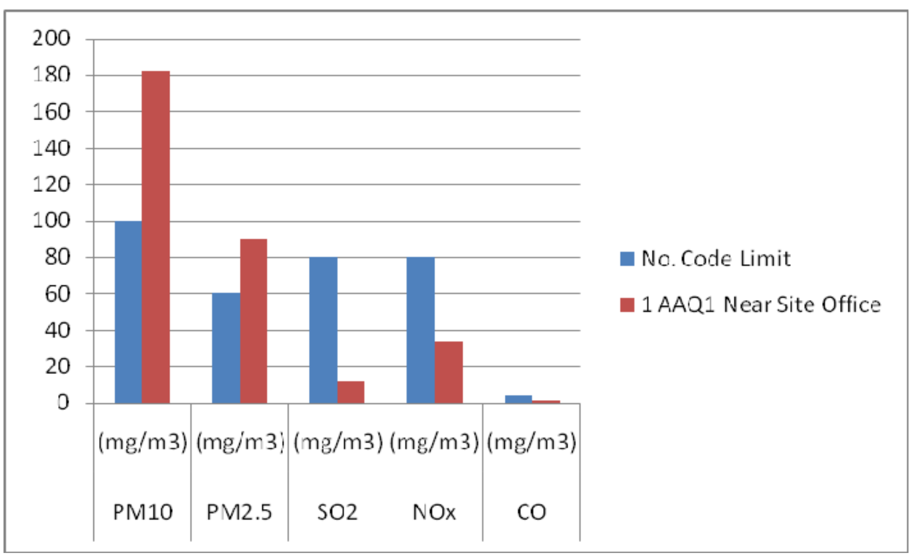


Figure 3.1 Location-wise Variation of Ambient Air Quality

3.2 AMBIANT NOISE MONITORING

3.2.1 Ambiant Noise Monitoring Locations

The main objective of noise monitoring in the study area is to assess the present ambient noise levels in project site due to various construction allied activities and increased vehicular movement. A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Ambient noise monitoring was conducted at 1 locations in the month of September, 2016, as given in **Table 3.4**.

Table 3.4 Details of Ambient Noise Monitoring Stations

S. No.	Location Code	Location Name/ Description	Present Landuse
1.	L-1	Site Office	Residential

3.2.2 Methodology of Noise Monitoring

Noise levels were measured using integrated sound level meter manufactured by Quest Technologies. The integrating sound level meter is an integrating/ logging type with Octave filter attachment with frequency range of 31.5 to 16000 Hz. This instrument is capable of measuring the Sound Pressure Level (SPL), Leq and octave band frequency analysis.

Noise level monitoring was carried out continuously for 24-hours with one hour interval starting at 0030 hrs to 0030 hrs next day. The noise levels were monitored on working days only. During each hour Leq were directly computed by the instrument based on the sound pressure levels. Lday (Ld), Lnight (Ln) and Ldn values were computed using corresponding hourly Leq. Monitoring was carried out at 'A' response and fast mode.

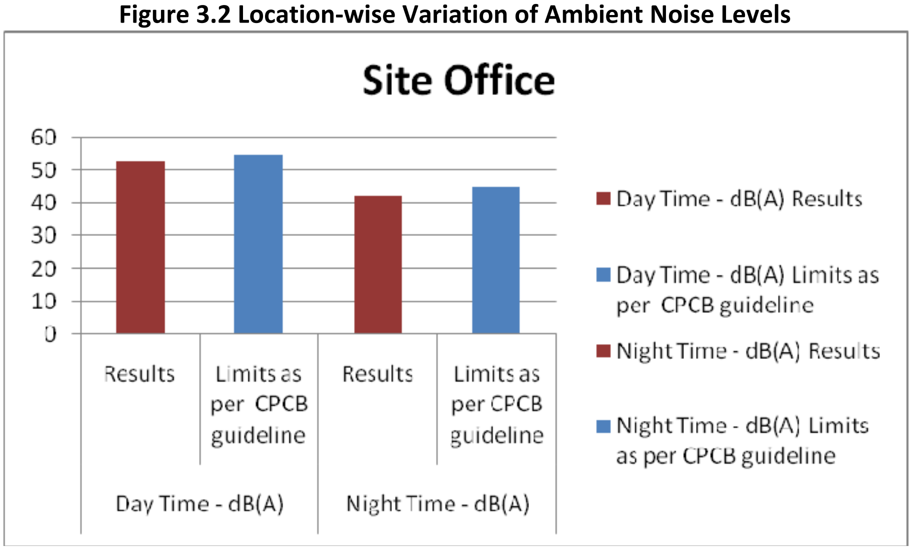
3.2.3 Ambient Noise Monitoring Results

The locations wise ambient noise monitoring result are summarized in **Table 3.5**. The location-wise variation of noise levels are graphically presented in **Figure 3.2**.

Table 3.5 Ambient Noise Monitoring Results

Sr. No.	Test Locations	Day Time - dB(A)		Night Time - dB(A)	
		Results	Limits as per CPCB guideline	Results	Limits as per CPCB guideline
L-1	Site Office	52.8	55	42.1	45

Figure 3.2 Location-wise Variation of Ambient Noise Levels



3.2.4. Discussion on Ambient Noise Levels in the Study Area

Day Time Noise Levels (L_{day}):
The day time noise level was found within the limit prescribed for Residential area i.e. 55 db(A).

Night Time Noise Levels (L_{night}):
The night time noise level was found within the limit prescribed for Residential area i.e. 45 dB (A).

3.3 GROUNDWATER QUALITY MONITORING

3.3.1 Groundwater Quality Monitoring Locations

Keeping in view the importance of groundwater as an important source of drinking water to the local population, sample of ground water was collected from near by village around project site for the assessment of impacts of the project on the groundwater quality.

Water sample was collected from one location near the project site. The sample was analyzed for various parameters to compare with the standards for drinking water as per IS: 10500 for ground water sources. The details of water sampling locations are given in **Table 3.6**.

Table 3.6 Details of Water Quality Monitoring Station

S. No.	Location Code	Location Name/ Description
1.	GW 1	Ground water collected from nearby village from project site

3.3.2 Methodology of Groundwater Quality Monitoring

Sampling of ground water was carried out on September, 2016. Samples were collected as grab sample and sampling forms are filled in as per the sampling plan. The preservative sample were properly added to preserve as per standard operating procedures (SOP) and stored immediately in ice boxes, which were ensured for appropriate temperatures. Sample for chemical analysis was collected in polyethylene carboys. Sample collected for metal content were acidified to <2 pH with 1 ml HNO_3. A sample for bacteriological analysis was collected in sterilized glass bottles.

Soon after the completion of sampling, chain of custody sheets for the samples are filled in and then they were transported by road to IR&DH, Noida for further analysis. Proper care was taken during packing and transportation of samples. All the samples reached the central laboratory within the holding times for different parameters. After ensuring the same the samples were forwarded immediately for analysis.

The samples were analyzed as per the standard procedures specified in 'Standard Methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA) and CPCB. The analytical techniques and the test methods adopted for testing of ground water are given in **Table 3.7**.

3.3.3 Groundwater Quality Monitoring Results

The detailed groundwater quality monitoring results are presented in **Table 3.7**.

Table 3.7 Groundwater Quality Monitoring Results

S No.	Parameter	Test Protocol	Results	Unit	Requirements as per IS 10500- 2012	
					Acceptable Limit (Max)	Permissible limits(Max)
1.	pH	IS 3025 P-11 1983	8.20	--	6.5-8.5	No Relaxation
2.	Turbidity	IS 3025 P-10 (1984)	0.80	NTU	1	5
3.	Free Residual Chlorine	IS 3025 P-26 (1986)	<0.2	mg/l	0.2	1
4.	Total Hardness	IS 3025 P-21 (2009)	512.0	mg/l	200	600
5.	Total Dissolved Solids (TDS)	IS 3025 P-16(1984)	842.0	mg/l	500	2000
6.	Calcium as Ca	IS 3025 P-40 (1991)	99.2	mg/l	75	200
7.	Magnesium as Mg	IS 3025 P-46 (1994)	64.15	mg/l	30	100
8.	Total Alkalinity as $CaCO_3$	IS 3025 P-23 (1986)	396.0	mg/l	200	600
9.	Chloride as Cl	IS 3025 P-32 (1988)	128.0	mg/l	250	1000
10.	Barium as Ba	Annex F of IS:13428	<0.05	mg/l	0.7	No Relaxation
11.	Ammonia as N	IS 3025 P-34 (1988)	<0.1	mg/l	0.5	No Relaxation
12.	Sulphate as SO_4	IS 3025 P-24 (1986)	116.0	mg/l	200	400
13.	Nitrate as NO_3	IS 3025 P-34 (1988)	12.2	mg/l	45	No Relaxation
14.	Fluoride as F	IS 3025 P-60 (2008)	0.20	mg/l	1	1.5
15.	Iron as Fe	IS 3025 P-53 (2003)	0.11	mg/l	0.3	No Relaxation
16.	Aluminium as Al	IS 3025 P-55(2003)	BDL	mg/l	0.03	0.2
17.	Anionic Detergent	Annex K of IS:13428	<0.05	mg/l	0.2	1
18.	Phenolic Compounds	IS 3025 P-43 (1992)	<0.01	mg/l	0.001	0.002
19.	Boron as B	IS 3025 P-57 (2005)	<0.1	mg/l	0.5	1
20.	Chromium as Cr	IS 3025 P-52	BDL	mg/l	0.05	No Relaxation
21.	Lead as Pb	IS 3025 P47 (1994)	BDL	mg/l	0.01	No Relaxation
22.	Copper as Cu	IS 3025 P42 (1992)	<0.02	mg/l	0.05	1.5
23.	Mercury as Hg	IS 3025 P-48 (1994)	BDL	mg/l	0.01	No Relaxation
24.	Manganese as Mn	IS 3025 P-59 (2006)	<0.05	mg/l	0.1	0.3

25.	Zinc as Zn	IS 3025 P-49 (1994)	<0.05	mg/l	5	15
26.	Arsenic as As	IS 3025 P-37 (1988)	BDL	mg/l	0.01	0.05
27.	Nickel as Ni	IS 3025 P-54 (2003)	<0.05	mg/l	0.02	No Relaxation
28.	Cadmium as Cd	IS 3025 P-41 (1992)	BDL	mg/l	0.003	No Relaxation

* BDL: below detection limit, ( ): detection limit

3.3.4 Discussion on Groundwater Quality in the Study Area

All the monitoring has been done as per the prescribed standard.

3.4 SOIL MONITORING

3.4.1 Soil Monitoring Locations

The objective of the soil monitoring is to identify the impacts of ongoing project activities on soil quality and also predict impacts, which have arisen due to execution of various constructions allied activities. Accordingly, a study of assessment of the soil quality has been carried out.

To assess impacts of ongoing project activities on the soil in the area, the physico-chemical characteristics of soils were examined by obtaining soil samples from selected points and analysis of the same. One sample of soil was collected from the project site for studying soil characteristics, the location of which is listed in **Table 3.8**.

Table 3.8 Details of Soil Quality Monitoring Location

S. No.	Location Code	Location Name/ Description
1.	S1	Site Office

3.4.2 Methodology of Soil Monitoring

The sampling has been done in line with IS: 2720 & Methods of Soil Analysis, Part-1, 2nd edition, 1986 of American Society for Agronomy and Soil Science Society of America. The homogenized samples were analyzed for physical and chemical characteristics (physical, chemical and heavy metal concentrations). The soil samples were collected in the month of September, 2016.

The samples have been analyzed as per the established scientific methods for physico-chemical parameters. The heavy metals have been analyzed by using Atomic Absorption Spectro-photometer and Inductive Coupled Plasma Analyzer.

3.4.3 Soil Monitoring Results

The physico-chemical characteristics of the soil, as obtained from the analysis of the soil sample, are presented in **Table 3.9**.

Table 3.9 Physico-Chemical Characteristics of Soil in the Study Area

S.No.	Parameter	Test Method	Results	Unit
1.	pH	IS 2720 P-26 (1987)	7.88	--
2.	Conductivity	IS 14767 (2002)	496.0	µS/cm
3.	Moisture	IS 2720 P-22 (1972)	9.52	% by mass
4.	Water Holding Capacity	USDA Method	26.0	%
5.	Specific Gravity	IS 2720 P-3 (1980)	1.61	-
6.	Bulk density	USDA Method	1.40	gm/cc
7	Chloride	USDA Method	152.0	mg/kg
8	Calcium	USDA Method	1872.0	mg/kg
9	Sodium	USDA Method	212.0	mg/kg
10.	Potassium	USDA Method	114.0	mg/kg
11.	Magnesium	USDA Method	198.0	mg/kg
12.	Organic matter	IS 2720 P-22 (1972)	0.62	% by mass
13.	Cation Exchange Capacity(CEC)	IS 2720 P- 24 (1976)	13.9	meq/100gm
14.	Available nitrogen	USDA Method	122.0	mg/kg
15.	Available Phosphorous	USDA Method	6.0	mg/kg
16.	Zinc as Zn	USDA Method	0.46	mg/kg
17.	Iron as Fe	USDA Method	0.38	mg/kg
18.	Boron as B	USDA Method	0.03	mg/kg
19.	Copper as Cu	USDA Method	0.40	mg/kg
S.No.	Parameter	Test Method	Results	Unit
1.	pH	IS 2720 P-26 (1987)	7.88	--
2.	Conductivity	IS 14767 (2002)	496.0	µS/cm
3.	Moisture	IS 2720 P-22 (1972)	9.52	% by mass
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17.	Iron as Fe	USDA Method	0.38	mg/kg
18.	Boron as B	USDA Method	0.03	mg/kg
19.	Copper as Cu	USDA Method	0.40	mg/kg
20.	Texture	IS 2720 P-4 (1985)		% by mass
	Sand		61.4	
	Clay		21.8	
	Silt		16.8	
21.	Sodium Absorption Ratio(SAR)	USDA Method	1.24	By calculation

4.4 Discussion on Soil Characteristics in the Study Area

All the monitoring has been done as per the standard. The soil quality in the project area has not been affected by the project activities.

State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.
Vineet Khand-1, Gomti Nagar, Lucknow - 226 010
Phone : 91-522-2300 541, Fax : 91-522-2300 543
E-mail : doeuplko@yahoo.com
Website : www.seiaaup.com

To,

Mr. Naveen Goyal,
Director,
M/s Radhey Krishna Techno Build (P) Ltd.
Sector- 63, Noida, U.P.

Ref. No...7.5.5./Parya/SEAC/1575/2013/DD(D) Date: 11 October,2013

Sub: Environmental Clearance for Group Housing Project "CASA GREEN-1", at Plot No-04A, Sector-16, Greater Noida, G.B.Nagar, U.P. -Regarding.

Dear Sir,

Please refer to your letter dated 24-04-2013 addressed to the Secretary, SEAC and Directorate of Environment Govt. of UP on the subject as above. A presentation was made a by Project proponent along with the consultant M/s IND Tech House Consult, Delhi in the State Level Expert Appraisal Committee (SEAC) meeting dated 08-10-2013.

The Project proponent, through documents (submitted to SEAC) and presentation made during meeting, has informed to the SEAC that:-

1- The Environmental Clearance is sought for Group Housing Project "Casa Green 1"at plot No. 04A, Sector-16, Noida Extension, Greater Noida, U.P.
2- The total plot area is 18445.17 sqm and total built-up area is 87315.15 sqm.
3- 02 nos of basements are proposed with total area 30,385.62 sqm.
4- The FAR permissible is 2.75 (50724.22 sqm) and FAR proposed to be achieved is 2.745 (50723.91sqm).
5- The quantity of earth to be excavated is proposed as - 120000 M3.
6- The project includes 07 towers, 23 residential blocks with maximum 02 basements+ground+23 floors, 01 community center and commercial area.
7- Total no. of dwelling units is 747.
8- Height of the highest tower will be 74.65 m.
9- The total water requirement is proposed as 352 KLD from municipal supply. Total Fresh water requirement is proposed as 252 KLD.
10- The total waste water generation is proposed as 287 KLD to be treated in STP of 345 KLD capacity.
11- Parking facility is required for 634 ECS and proposed for 832 ECS.
12- Total power requirement is proposed as 2161 KW to be supplied by UPPCL/Concerned authority.
13- 2x1000 No of DG Sets are proposed for power supply/power backup.
14- Green area is proposed 7192.18 sqm (39 % of the total plot area).
15- Quantity of MSW to be generated is proposed as 1.67 TPD
16- Quantity of sludge from STP to be generated is proposed as 68 Kg/D
17- Quantity of e-waste to be generated is proposed as 5 Kg/D
18- Quantity of hazardous wastes to be generated is proposed as 400 KgPA
19- The proposed quantity of RW to be harvested is 7686.11 M^3/A. The volume of RWH pits is proposed as 22.62 M3, whereas the total no of proposed RWH pits are 40.
20- All internal roads are proposed to be at least 09 meter wide.
21- Project proposal falls under category - 8(a) of EIA Notification, 2006 (as amended).
22- The matter was discussed in SEAC meeting dated 30/05/2013 and SEIAA in its meeting dated 27/06/2013 asked the project proponent to submit the some information regarding the matter.
23- Regarding the SEIAA query dated 27-06-2013 the Project proponents submitted the replies through letter dated 01/10/2013 through which they have informed that as per the soil investigation report the ground water table at the project site ranges. In the pre-monsoon and post monsoon ground water table varies from 17 m below ground level and 8.1 m below ground level. The project proponent have also informed that they will ensure

construction of basement in the lean season, i.e. during pre-monsoon season and encountering ground water during excavation and dewatering activity is negligible. In any case, clearance from CGWB will be ascertained before starting of the excavation.

Based on the recommendations of the State Level Expert Appraisal Committee Meeting held on 30-05-2013 & 08-10-2013 the State Level Environment Impact Assessment Authority in its Meeting held on 11-10-2013 decided to grant the Environmental Clearance to the project subject to the effective implementation of the following general and specific conditions:-

a. **General Conditions:**

1. It shall be ensured that all standards related to ambient environmental quality and the emission/effluent standards as prescribed by the MoEF are strictly complied with.
2. It shall be ensured that obtain the no objection certificate from the U P pollution control board before start of construction.
3. It shall be ensured that no construction work or preparation of land by the project management except for securing the land is started on the project or the activity without the prior environmental clearance.
4. The proposed land use shall be in accordance to the prescribed land use. A land use certificate issued by the competent Authority shall be obtained in this regards.
5. All trees felling in the project area shall be as permitted by the forest department under the prescribed rules. Suitable clearance in this regard shall be obtained from the competent Authority.
6. Impact of drainage pattern on environment should be provided.
7. Surface hydrology and water regime of the project area within 10 km should be provided.
8. A suitable plan for providing shelter, light and fuel, water and waste disposal for construction labour during the construction phase shall be provided along with the number of proposed workers.
9. Measures shall be undertaken to recycle and reuse treated effluents for horticulture and plantation. A suitable plan for waste water recycling shall be submitted.
10. Obtain proper permission from competent authorities regarding enhanced traffic during and due to construction and operation of project.
11. Obtain necessary clearances from the competent Authority on the abstraction and use of ground water during the construction and operation phases.
12. Hazardous/inflammable/Explosive materials likely to be stored during the construction and operation phases shall be as per standard procedure as prescribed under law, Necessary clearances in this regards shall be obtained.
13. Solid wastes shall be suitably segregated and disposed. A separate and isolated municipal waste collection center should be provided. Necessary plans should be submitted in this regards.
14. Suitable rainwater harvesting systems as per designs of groundwater department shall be installed. Complete proposals in this regard should be submitted.
15. The emissions and effluents etc. from machines, instruments and transport during construction and operation phases should be according to the prescribed standards. Necessary plans in this regard shall be submitted.
16. Water sprinklers and other dust control measures should be undertaken to take care of dust generated during the construction and operation phases. Necessary plans in this regard shall be submitted.
17. Suitable noise abatement measures shall be adopted during the construction and operation phases in order to ensure that the noise emissions do not violate the prescribed ambient noise standards. Necessary plans in this regard shall be submitted.
18. Separate stock piles shall be maintained for excavated top soil and the top soil should be utilized for preparation of green belt.
19. Sewage effluents shall be kept separate from rain water collection and storage system and separately disposed. Other effluents should not be allowed to mix with domestic effluents.
20. Hazardous/Solid wastes generated during construction and operation phases should be disposed off as prescribed under law. Necessary clearances in this regard shall be obtained.
21. Alternate technologies for solid waste disposals (like vermin-culture etc.) should be used in consultation with expert organizations.

22. No wetland should be infringed during construction and operation phases. Any wetland coming in the project area should be suitably rejuvenated and conserved.
23. Pavements shall be so constructed as to allow infiltration of surface run-off of rain water. Fully impermeable pavements shall not be constructed. Construction of pavements around trees shall be as per scientifically accepted principles in order to provide suitable watering, aeration and nutrition to the tree.
24. The Green building Concept suggested by Indian Green Building Council, which is a part of CII-Godrej GBC, shall be studied and followed as for as possible.
25. Compliance with the safety procedures, norms and guidelines as outlined in National Building Code 2005 shall be compulsorily ensured.
26. Ensure usage of dual flush systems for flush cisterns and explore options to use sensor based fixtures, waterless urinals and other water saving techniques.
27. Explore options for use of dual pipe plumbing for use of water with different qualities such as municipal supply, recycled water, ground water etc.
28. Ensure use of measures for reducing water demand for landscaping and using xeriscaping, efficient irrigation equipments & controlled watering systems.
29. Make suitable provisions for using solar energy as alternative source of energy. Solar energy application should be incorporated for illumination of common areas, lighting for gardens and street lighting in addition to provision for solar water heating. Present a detailed report showing how much percentage of backup power for institution can be provided through solar energy so that use and polluting effects of DG sets can be minimized.
30. Make separate provision for segregation, collection, transport and disposal of e-waste.
31. Educate citizens and other stake-holders by putting up hoardings at different places to create environmental awareness.
32. Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be 0fully internalized and no public space should be utilized.
33. Prepare and present disaster management plan.
34. A report on the energy conservation measures confirming to energy conservation norms finalize by Bureau of Energy efficiency should be prepared incorporating details about building materials and technology, R & U Factors etc.
35. Fly ash should be used as building material in the construction as per the provision of fly ash notification of September, 1999 and amended as on August, 2003 (The above condition is applicable only if the project lies within 100 km of Thermal Power Station).
36. The DG sets to be used during construction phase should use low sulphur diesel type and should conform to E.P. rules prescribed for air and noise emission standards.
37. Alternate technologies to Chlorination (for disinfection of waste water) including methods like Ultra Violet radiation, Ozonation etc. shall be examined and a report submitted with justification for selected technology.
38. The green belt design along the periphery of the plot shall achieve attenuation factor conforming to the day and night noise standards prescribed for residential land use. The open spaces inside the plot should be suitably landscaped and covered with vegetation of indigenous variety.
39. The construction of the building and the consequent increased traffic load should be such that the micro climate of the area is not adversely affected.
40. The building should be designed so as to take sufficient safeguards regarding seismic zone sensitivity.
41. High rise buildings should obtain clearance from aviation department of concerned authority.
42. Suitable measures shall be taken to restrain the development of small commercial activities or slums in the vicinity of the complex. All commercial activities should be restricted to special areas earmarked for the purpose.
43. It is suggested that literacy program for weaker sections of society/women/adults (including domestic help) and under privileged children could be provided in a formal way.
44. The use of Compact Fluorescent lamps should be encouraged. A management plan for the safe disposal of used/damaged CFLs should be submitted.

45. It shall be ensured that all Street and park lighting is solar powered. 50% of the same may be provided with dual (solar/electrical) alternatives.
46. Solar water heater shall be installed to the maximum possible capacity. Plans may be drawn up accordingly ad submitted with justification.
47. Treated effluents shall be maximally reused to aim for zero discharge. Where ever not possible, a detailed management plan for disposal should be provided with quantities and quality of waste water.
48. The treated effluents should normally not be discharged into public sewers with terminal treatment facilities as they adversely affect the hydraulic capacity of STP. If unable, necessary permission from authorities should be taken.
49. Construction activities including movements of vehicles should be so managed so that no disturbance is caused to nearby residents.
50. All necessary statutory clearances should be obtained and submitted before start of any construction activity and if this condition is violated the clearance, if and when given, shall be automatically deemed to have been cancelled.
51. Parking areas should be in accordance with the norms of MOEF, Government of India. Plans may be drawn up accordingly and submitted.
52. The location of the STP should be such that it is away from human habilitation and does not cause problem of odor. Odorless technology options should be examined and a report submitted.
53. The Environment Management plan should also include the break up costs on various activities and the management issues also so that the residents also participate in the implementation of the environment management plan.
54. Detailed plans for safe disposal of STP sludge shall be provided along with ultimate disposal location, quantitative estimates and measures proposed.
55. Status of the project as on date shall be submitted along with photographs from North, South, West and East side facing camera and adjoining areas should be provided.
56. Specific location along with dimensions with reference to STP, Parking, Open areas and Green belt etc. should be provided on the layout plan.
57. The DG sets shall be so installed so as to conform to prescribed stack heights and regulations and also to the noise standards as prescribed. Details should be submitted.
58. E-Waste Management should be done as per MoEF guidelines.
59. Electrical waste should be segregated and disposed suitably as not to impose Environmental Risk.
60. The use of suitably processed plastic waste in the construction of roads should be considered.
61. Displaced persons shall be suitably rehabilitated as per prescribed norms.
62. Dispensary for first aid shall be provided.
63. Safe disposal arrangement of used toiletries items in Hotels should be ensured. Toiletries items could be given complementary to guests, adopting suitable measures.
64. Diesel generating set stacks should be monitored for CO and HC.
65. Ground Water downstream of Rain Water Harvesting pit nearest to STP should be monitored for bacterial contamination. Necessary Hand Pumps should be provided for sampling. The monitoring is to be done both in pre and post monsoon, seasons.
66. The green belt shall consist of 50% trees, 25% shrubs and 25% grass as per MoEF norms.
67. A Separate electric meter shall be provided to monitor consumption of energy for the operation of sewage/effluent treatment in tanks.
68. An energy audit should be annually carried out during the operational phase and submitted to the authority.
69. Project proponents shall endeavor to obtain ISO: 14001certification. All general and specific conditions mentioned under this environmental clearance should be included in the environmental manual to be prepared for the certification purposes and compliance.
70. Appropriate safety measures should be made for accidental fire.
71. Smoke meters should be installed as warning measures for accidental fires.

b. Specific Conditions:

1. This environmental clearance is subject to ownership of the site by the project proponents

in confirmation with approved Master Plan for Noida by the competent Authority. In case of violation, it would not be effective and would automatically stand cancelled.

2. You are also directed to ensure that the proposed site is not a part of any no-development zone as required/prescribed/identified under law. In case of violation, this permission shall automatically deem to be invalid and cancelled. Also, in the event of any dispute on ownership or land use of the proposed site, this clearance shall automatically deem to be cancelled.
3. Plans should get approved from Greater Noida Authority prior to start of construction. A copy of approval should be submitted to SEIAA.
4. Plan for construction of 02 basements which includes dewatering should be done in consultation with CGWB in view of NGT direction regarding no extraction of water for construction or otherwise.
5. Sprinkler to be used for curing and quenching during construction phase.
6. Height of the stack should be provided as discussed based on combined DG sets capacity and be at least 6 m higher than the tallest building.
7. 100% waste water should be treated in captive STP conforming to prescribed standards of receiving body for designated use. Monitoring of STP to be done weekly till its stabilization.
8. Permission for discharge of excess treated waste water into public drainage system shall be taken from the competent authority prior to any discharge.
9. Dedicated power supply for STPs is to be ensured. During operation sludge of STP is to be used in-house for horticulture and surplus manure should be managed by giving to end users.
10. All entry/exit point should be bell mouth shaped. All internal roads should be minimum 9 meter wide.
11. Wheel wash arrangement is to be made at exit point during construction phase.
12. Use of LEDs should be explored in place of CFL. Solar light is to be provided in the common areas with 50% of them may be with dual provision.
13. 100 % provision of Rain Water Harvesting is to be made. RWH shall be initially done only from the roof top. RWH from green and other open areas shall be done only after permission from CGWB.
14. Rain Water Harvesting design shall be approved from CGWB. A Plan showing plot Area available for the purpose of rain water harvesting after reduction of plot area which has been utilized for construction of basement along with approved plans to this Authority prior to start of construction.
15. Environmental Corporate Responsibility (ECR) plan along with budgetary provision amounting to 2% of total project cost shall be submitted (within 03 month) on need base assessment study in the study area. Income generating measures which can help in up-liftment of weaker section of society consistent with the traditional skills of the people identified. The program me can include activities such as old age homes, rain water harvesting provisions in nearby areas, development of fodder farm, fruit bearing orchards, vocational training etc. In addition, vocational training for individuals shall be imparted so that poor section of society can take up self employment and jobs. Separate budget for community development activities and income generating programmers shall be specified.
16. Suitable protection/fencing should be provided at terrace/balcony area beyond second floor in view of safety of residents.
17. Crèche, convenient shopping provision is to be provided during construction and the operation phase.
18. A dedicated space/room for senior citizens at club/recreation hall with suitable facilities shall be provided.
19. Green cover shall be provided as per CPCB norms.
20. Make separate provision for the temporary storage of MSW and E-Waste for two days.
21. Operation of the project shall be started only after commissioning of related sewage system by the Greater Noida Authority.
22. Ground water should not be extracted for the purpose of construction or otherwise. In case of default the Environmental Clearance will deem to be cancelled.

23. Land use of project site should be in accordance to approved Master Plan and possession of site should be with project proponent.
24. In case of any legal dispute regarding the ownership of site, the environmental clearance shall deem to be cancelled.
25. The total excavated soil will be completely utilized at project site for leveling and back filling. The top soil generated during basement construction will be used for plantation and green area development. The management of surplus soil, if any, will be transported and managed in Eco- friendly manner and the plan will be submitted within 01 month.
26. Provision of separate dedicated room to be made for senior citizen commensurate with proper amenities (TV, music system, indoor games etc.) for and user in and around the club house.
27. Digging of basement shall be undertaken in consultation with District Administration/Mining Department in view of structural safety of adjacent buildings.

This Environmental Clearance is subject to ownership of the site by the project proponents in confirmation with approved Master Plan for Greater Noida. In case of violation, it would not be effective and would automatically be stand cancelled.

You are also directed to ensure that the proposed site is not a part of any no-development zone as required/prescribed/identified under law. In case of violation, this permission shall automatically deem to be cancelled. Also, in the event of any dispute on ownership or land use of the proposed site, this clearance shall automatically deemed to be cancelled.

The project proponent will have to submit approved plans and proposals incorporating the conditions specified in the Environmental Clearance within 03 months of issue of the clearance. The SEIAA/MoEF reserves the right to revoke the environmental clearance, if conditions stipulated are not implemented to the satisfaction of SEIAA/MoEF. SEIAA may impose additional environmental conditions or modify the existing ones, if necessary. Necessary statutory clearances should be obtained and submitted before start of any construction activity.

These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006 including the amendments and rules made thereafter.

This is to request you to take further necessary action in the matter as per provision of Gazette Notification No. S.O. 1533(E) dated 14.9.2006, as amended and send regular compliance reports to the authority as prescribed in the aforesaid notification.

(J. S. Yadav)
Member Secretary, SEIAA

No.................... /Parya/SEAC/1575/2013/DD(D) Dated: As above

Copy with enclosure for information and necessary action to:

1. The Principal Secretary, Department of Environment, Govt. of Uttar Pradesh, Lucknow.
2. Advisor, IA Division, Ministry of Environment & Forests, Govt. of India, Paryavaran Bhavan, CGO Complex, Lodhi Road, New Delhi.
3. Chief Conservator, Regional Office, Ministry of Environment & Forests, (Central Region), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow.
4. District Magistrate, G.B. Nagar.
5. The Member Secretary, U.P. Pollution Control Board, PICUP Bhawan, Gomti Nagar, Lucknow.
6. Deputy Director, Regional office, Meerut, Directorate of Environment.
7. Regional officer, Regional office, U.P. Pollution Control Board, Greater Noida.
8. Copy to Web Master/ guard file.

(O. P. Varma)
Secretary, SEAC/
Director (I/C), Environment

IND RESEARCH & DEVELOPMENT HOUSE PVT. LTD.

NABL ACCREDITED LABORATORY

(ISO 9001:2008/ISO14001/OHSAS/18001:2007)

C-10, 2nd Floor, Sector-6, Noida-201301 (U.P.)
Tel. : +91 120 4215489, E-mail : contact.irdh@gmail.com

TEST REPORT
(Ambient Air)

Report No	IRDH-1016-COM-AAQ-377
Date of Reporting	08/10/2016
Name and Address	M/s Ind Tech House Consult, G-8/6, Ground Floor, Sector-11, Rohini, Delhi-110085,
Project Name	Group Housing project "CASA GREEN 1" at Plot No.-04A, Sector-16, Greater Noida, Uttar Pradesh
Location	Project site
Date of Sampling	27/09/2016 To 28/09/2016
Type of Monitoring	Ambient Air Monitoring
Parameters to be sampled	PM2.5, PM10, SO2, NO2, CO
Weather condition	Clear sky
Method of sampling	As per standard Method
Duration of Monitoring	24 hourly

RESULTS

S.No	Parameter	Method	Results	Unit	Requirement (CPCB limits)*
1.	Particulate Matter as $PM_{2.5}$	IRDH/SOP/AAQM/01	90.0	µg/m³	60
2.	Particulate Matter as PM_{10}	IS 5182 P- 23 (2006)	182.0	µg/m³	100
3.	Sulphur dioxide as SO_2	IS 5182 P-02 (2001)	12.0	µg/m³	80
4.	Nitrogen dioxide as NO_2	IS 5182 P-06 (2006)	34.0	µg/m³	80
5.	Carbon monoxide as CO	IS 5182 P-10 (1999)	1.02	mg/m³	4.0

****Gazette notification published by MoEF&CC, New Delhi on 18 Nov. 2009***

End of Report

Ind Research & Development House Private Limited ★ NOIDA

Authorized Signatory

1- Test Report is limited to the invoice raised
2-Test Report cannot be reproduced in a part or as whole in court without laboratory permission.
3- Samples shall be retained for 4 weeks after test report submitted.

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TEST REPORT

(Water)

Report No.	IRDH-1016-COM-WQ-377
Date of Reporting	08/10/2016
Issued to	M/s Ind Tech House Consult, G-8/6, Ground Floor, Sector-11, Rohini, Delhi-110085,
Project Name	Group Housing project "CASA GREEN 1" at Plot No.-04A, Sector-16, Greater Noida, Uttar Pradesh
Nature of Sample	Ground Water
Identification of Sample	Ground water collected from nearby village in 2 litre can
Date of Sampling	27/09/2016
Method of sampling	IS 3025- Part 1(1987)
Date of testing:	28/09/2016 To 05/10/2016
Sampled by	IRDH-Team

RESULTS

S No.	Parameter	Test Protocol	Results	Unit	Requirements as per IS 10500- 2012	
					Acceptable Limit (Max)	Permissible limits(Max)
1.	pH	IS 3025 P-11 1983	8.20	--	6.5-8.5	No Relaxation
2.	Turbidity	IS 3025 P-10 (1984)	0.80	NTU	1	5
3.	Free Residual Chlorine	IS 3025 P-26 (1986)	<0.2	mg/l	0.2	1
4.	Total Hardness	IS 3025 P-21 (2009)	512.0	mg/l	200	600
5.	Total Dissolved Solids (TDS)	IS 3025 P-16(1984)	842.0	mg/l	500	2000
6.	Calcium as Ca	IS 3025 P-40 (1991)	99.2	mg/l	75	200
7.	Magnesium as Mg	IS 3025 P-46 (1994)	64.15	mg/l	30	100
8.	Total Alkalinity as $CaCO_3$	IS 3025 P-23 (1986)	396.0	mg/l	200	600
9.	Chloride as Cl	IS 3025 P-32 (1988)	128.0	mg/l	250	1000
10.	Barium as Ba	Annex F of IS:13428	<0.05	mg/l	0.7	No Relaxation
11.	Ammonia as N	IS 3025 P-34 (1988)	<0.1	mg/l	0.5	No Relaxation
12.	Sulphate as SO_4	IS 3025 P-24 (1986)	116.0	mg/l	200	400
13.	Nitrate as NO_3	IS 3025 P-34 (1988)	12.2	mg/l	45	No Relaxation

Head Office: G-8/6, Ground Floor,
Sector-11, Rohini, Delhi-110085
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E-mail : ithconsult@hotmail.com

Report No. - IRDH-1016-COM-WQ-377

S No.	Parameter	Test Protocol	Results	Unit	Requirements as per IS 10500- 2012	
					Acceptable Limit (Max)	Permissible limits(Max)
14.	Fluoride as F	IS 3025 P-60 (2008)	0.20	mg/l	1	1.5
15.	Iron as Fe	IS 3025 P-53 (2003)	0.11	mg/l	0.3	No Relaxation
16.	Aluminium as Al	IS 3025 P-55(2003)	BDL	mg/l	0.03	0.2
17.	Anionic Detergent	Annex K of IS:13428	<0.05	mg/l	0.2	1
18.	Phenolic Compounds	IS 3025 P-43 (1992)	<0.01	mg/l	0.001	0.002
19.	Boron as B	IS 3025 P-57 (2005)	<0.1	mg/l	0.5	1
20.	Chromium as Cr	IS 3025 P-52	BDL	mg/l	0.05	No Relaxation
21.	Lead as Pb	IS 3025 P47 (1994)	BDL	mg/l	0.01	No Relaxation
22.	Copper as Cu	IS 3025 P42 (1992)	<0.02	mg/l	0.05	1.5
23.	Mercury as Hg	IS 3025 P-48 (1994)	BDL	mg/l	0.01	No Relaxation
24.	Manganese as Mn	IS 3025 P-59 (2006)	<0.05	mg/l	0.1	0.3
25.	Zinc as Zn	IS 3025 P-49 (1994)	<0.05	mg/l	5	15
26.	Arsenic as As	IS 3025 P-37 (1988)	BDL	mg/l	0.01	0.05
27.	Nickel as Ni	IS 3025 P-54 (2003)	<0.05	mg/l	0.02	No Relaxation
28.	Cadmium as Cd	IS 3025 P-41 (1992)	BDL	mg/l	0.003	No Relaxation

Note: BDL means Below Detection limit

End of Report

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TEST REPORT
(Soil)

Report No. :	IRDH-1016-COM-SQ-377
Date of Reporting	08/10/2016
Issued to	M/s Ind Tech House Consult, G-8/6, Ground Floor, Sector-11, Rohini, Delhi-110085,
Project Name	Group Housing project "CASA GREEN 1" at Plot No.-04A, Sector-16, Greater Noida, Uttar Pradesh
Nature of Sample	Soil
Identification of Sample	Soil sample collected from Project site
Date of Sampling	27/09/2016
Method of sampling	USDA method
Date of testing:	28/09/2016 To 05/10/2016
Sampled by	IRDH - Team

RESULTS

S.No.	Parameter	Test Method	Results	Unit
1.	pH	IS 2720 P-26 (1987)	7.88	--
2.	Conductivity	IS 14767 (2002)	496.0	µS/cm
3.	Moisture	IS 2720 P-22 (1972)	9.52	% by mass
4.	Water Holding Capacity	USDA Method	26.0	%
5.	Specific Gravity	IS 2720 P-3 (1980)	1.61	-
6.	Bulk density	USDA Method	1.40	gm/cc
7	Chloride	USDA Method	152.0	mg/kg
8	Calcium	USDA Method	1872.0	mg/kg
9	Sodium	USDA Method	212.0	mg/kg
10.	Potassium	USDA Method	114.0	mg/kg
11.	Magnesium	USDA Method	198.0	mg/kg
12.	Organic matter	IS 2720 P-22 (1972)	0.62	% by mass
13.	Cation Exchange Capacity(CEC)	IS 2720 P- 24 (1976)	13.9	meq/100gm
14.	Available nitrogen	USDA Method	122.0	mg/kg
15.	Available Phosphorous	USDA Method	6.0	mg/kg
16.	Zinc as Zn	USDA Method	0.46	mg/kg
17.	Iron as Fe	USDA Method	0.38	mg/kg
18.	Boron as B	USDA Method	0.03	mg/kg
19.	Copper as Cu	USDA Method	0.40	mg/kg

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S.No.	Parameter	Test Method	Results	Unit
20.	Texture	IS 2720 P-4 (1985)		% by mass
	Sand		61.4	
	Clay		21.8	
	Silt		16.8	
21.	Sodium Absorption Ratio(SAR)	USDA Method	1.24	By Calculation

End of Report

Research & Development House Private Limited NOIDA

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TEST REPORT
(AMBIENT NOISE)

Report No	IRDH-1016-COM-ANQ-377
Date of Reporting	08/10/2016
Name and Address	M/s Ind Tech House Consult, G-8/6, Ground Floor, Sector-11, Rohini, Delhi-110085
Project Name	Group Housing project "CASA GREEN 1" at Plot No.-04A, Sector-16, Greater Noida, Uttar Pradesh
Location	Project site
Date of Sampling	27/09/2016 To 28/09/2016
Type of Monitoring	Ambient Noise Monitoring
Method of sampling	As per standard Method
Sampling Protocol	IS:9876-2004; IS 9989-2003
Duration of Monitoring	24 hourly
Sample drawn by	IRDH Laboratory

RESULTS

Sr. No.	Locations	Day Time (Lday) 06:00AM - 10:00PM	Night Time (Lnight) 10:00PM - 06:00AM
ANQ -1	Project site	52.8	42.1

CPCB Limits			
Sr. No		*Day Time*	*Night Time*
1.	*Industrial area*	*75*	*70*
2.	*Commercial area*	*65*	*55*
3.	*Residential area*	*55*	*45*
4.	*Silence Zone*	*50*	*40*

End of Report

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भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

AAI/NOC/2013/106/ 1089 BY REGD./SPEED POST Dated: 17/04/2013

Mr. Naveen Goel,
C/o M/s Radhey Krishna Techno Build (P) Ltd.
B-49, Sector-63,
Noida (UP)-201301.

SUBJECT: NO OBJECTION CERTIFICATE - (FOR HEIGHT CLEARANCE ONLY)

Sir,

Please refer to your letter no. NIL Dated 18/03/2013 on the subject mentioned above.

This office has no objection to the construction of the proposed Group Housing by M/s Radhey Krishna Techno Build (Pvt.) Ltd., herein after referred to as the applicant(s) at location Plot No. GH-04, Sector-16, Greater Noida Extn. UP (Coordinates - 28 36 [illegible] N 77 28 13 E) for a height of 98.45 Mts. (in figure) Ninety Eight Decimal Four Five Mts. (in words) above ground level so that the top of the proposed structure when erected shall not exceed 209.00 Mts. (in figure) Two hundred Nine Decimal Zero Mts. (in words) (site elevation) plus (+) 98.45 Mts. (in figure) Ninety Eight Decimal Four Five Mts. (in words) (height of structure) = 307.45 Mts. (in figure) Three hundred Seven Decimal Four five Mts. (in words) above mean sea level.

This no objection certificate is being issued on the express understanding that the site elevation (height above mean sea level) viz. 209.00 Mts. relative location of the proposed building/structure & its distances and bearings from ARP/Runway ends, as tendered by the applicant(s) are correct. If, however, at any stage it is established that the said data as tendered & which could adversely effect aircraft operations, the structure or part(s) thereof in respect of which this 'No Objection Certificate' is being issued will have to be demolished at his own cost as may be directed by the Airports Authority of India. The Applicant(s) are therefore advised in his /their own interest to verify the elevation and other data furnished for the site, before embarking on the proposed construction.

The issue of this 'NOC' is further subject to the provisions of Section 9-A of the Indian Aircraft Act, 1934 and those of any notifications issued there under from time to time and under which also the applicant may be called upon by the Airports Authority of India (National Airports Division) to demolish in whole or in part the structure now being authorized vide this 'No Objection Certificate'.

The use of electric fire or oil fired furnace is obligatory.

This certificate is valid for a period of five years from the date of issue. If the building /structure /chimney is not constructed & completed within the above mentioned period of five years, you will be required to obtain a fresh 'No Objection Certificate' from the Airports Authority of India (National Airports Division) and/or the General Manager, Aerodromes, Northern Region. The date of completion of the building structure/chimney should be intimated to the Airports Authority of India and/or the General Manager, Aerodromes, Northern Region.

No light or a combination of lights which by reason of its intensity, configuration or colour may cause confusion with the aeronautical ground lights of the Airport shall be installed at the site at any time during or after the construction of the building.

Day & Night markings with secondary power supply may be provided as per ICAO Standard.

"The permissible top elevation/height includes height for superstructures (eg. Wireless, TV antennas, mumties, lift machine room, overhead water tank cooling towers etc.)"

NOTE: THE SITE IS EXAMINED W.R.T. IGI AIRPORT AND SAFDARJUNG AIRPORT ONLY.

(AJAY SHIVAL)
JT. GENERAL MANAGER (ATM-NOC)
NORTHERN REGION

Copy to: 1. The Chairman, Airports Authority of India, Rajiv Gandhi Bhawan, SAP, N.D-110003
2. The Chief Architect Town Planner, 169, Chitvan Estate, Sector-Gamma-II, Greater Noida-201308(UP).
3. The Chief Executive Officer, DIAL, New Udaan Bhawan, International Terminal-I, Opp. ATS Complex, IGI Airport, New Delhi-110037
4. The General Manager (Carto), AAI, Rajiv Gandhi Bhawan, SAP, N.Delhi-110003

JT. GENERAL MANAGER (ATM-NOC) NR