EXECUTIVE SUMMARY

OF

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

PUBLIC HEARING

OF

Naokari Limestone Mine

(ML Area 1030.58 ha)

Expansion in Limestone & Shale

Production Capacity from 5.0 MTPA to 7.6 MTPA

At

Villages –Awarpur, Bakardi, Naokari, Palgoan & Talodi, Taluka - Korpana, District - Chandrapur (Maharashtra)

APPLICANT

ADITYA BIRLA

UltraTech

UltraTech Cement Limited

(An Aditya Birla Group Company)

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1.0 PROJECT DESCRIPTION

1.1 Introduction

UltraTech Cement Ltd. is a flagship company of Aditya Birla Group and it is the largest cement manufacturing company in India and the 10th largest in the world ranking with present annual capacity of 59 Million Ton Per Annum (MTPA) including 3 MTPA capacity outside India. The production units are spread across 12 integrated plants, 13 grinding units besides 5 bulk terminals in India. In the year 2011, the Group was ranked 4th globally and 1st in the Asia-Pacific region as top company for leaders in a study conducted by Aon Hewitt Associates, RBL Group and Fortune magazine. In India, the Group has been adjudged the best employer in India and among the top 20 in Asia by the Hewitt-Economic Times and Wall Street Journal Study 2007.

1.2 Type of Project

Awarpur Cement Works, a unit of UltraTech Cement Ltd. (UTCL) has an existing Cement plant of capacity 4.48 MTPA and Captive Mine of limestone production capacity 5.0 MTPA. Now, UTCL has proposed expansion in Cement Plant (Clinker 3.3 to 4.5 MTPA and Cement 4.48 to 6.0 MTPA) within the existing premises and to meet the additional limestone requirement for the proposed expansion in the clinker and cement capacity, UTCL is now proposing expansion in Limestone and Shale production capacity from 5.0 to 7.6 MTPA at Naokari Limestone Mine (ML Area : 1030.58 ha) at Villages Awarpur, Bakardi, Naokari, Palgaon & Talodi, Taluka - Korpana, District - Chandrapur (Maharashtra).

As per EIA Notification dated 14th September, 2006 and amended as on date; the project falls under S. No.'1' (Mining of Minerals), Project or Activity -1(a)-(3) , Category "A" and therefore requires Environmental Clearance from MoEF, New Delhi.

The project was considered by EAC (M) for TOR approval on 15.05.2013. Terms of Reference (TOR) have been issued by MoEF, New Delhi for preparation of EIA/EMP report vide letter no vide letter no. J-11015/95/2013/IA-II (M) dated 30th March, 2015

1.3 Need for the Project

UTCL has proposed expansion in Cement Plant (Clinker 3.3 to 4.5 MTPA and Cement 4.48 to 6.0 MTPA) and to meet the additional limestone requirement for the proposed expansion in the clinker and cement capacity, UTCL is now proposing expansion in Limestone and Shale production capacity from 5.0 to 7.6 MTPA at Naokari Limestone Mine (ML Area : 1030.58 ha) at Villages Awarpur, Bakardi, Naokari, Palgaon & Talodi, Taluka - Korpana, District - Chandrapur (Maharashtra).

Besides this, the project has proven/will prove beneficial in terms of socio economic development as it has provided/will provide employment to locals. Further, the average income level, which is the indicator of socio – economic status of house hold is expected to increase, which will ultimately result in the better standard of living of the people.

1.4 Brief Description of the Project

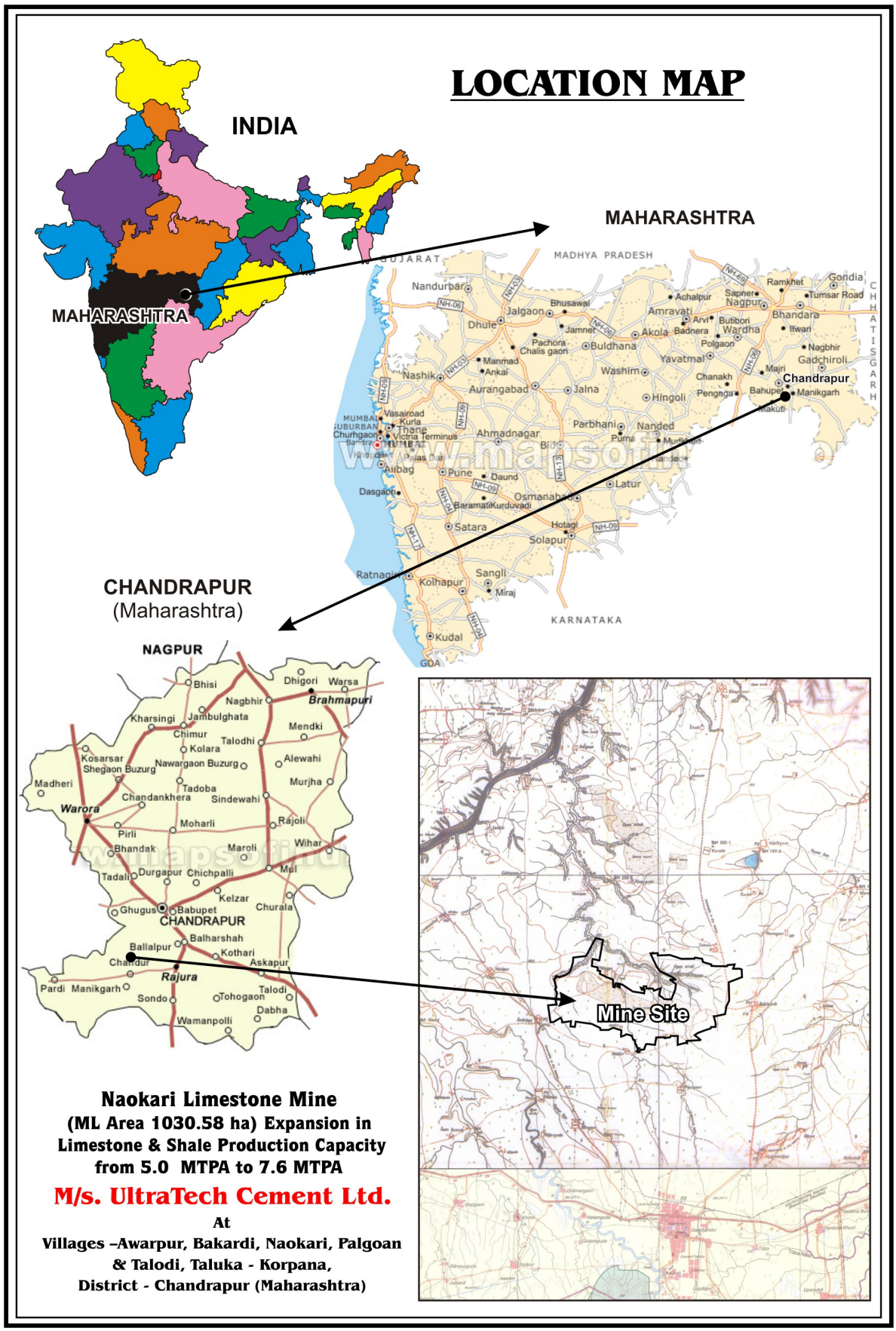
Table – 1
Brief Description of the Project

S. No.	Particulars	Details
A.	**Nature of project**	Limestone Mining Project
B.	**Size of project**	
(i)	**Mining Lease area**	1030.58 ha
(ii)	Proposed Limestone Production capacity	Expansion in Limestone and Shale Production Capacity from 5.0 MTPA to 7.6 MTPA (including 0.3 MTPA of Shale)
C.	**Project Location**	
(i)	Villages	Awarpur, Bakardi, Naokari, Palgaon & Talodi
(ii)	Taluka	Korpana
(iii)	District	Chandrapur
(iv)	State	Maharashtra
(v)	Latitude & Longitude	19^0 47'00"N to 19^0 48'01"N 79^0 07'30"E to 79^0 11'00"E
(vi)	Toposheet No.	56 M/1& 56 M/2
D.	**Environmental Setting Details (with approx. aerial distance & direction from the mining lease boundary)**	
(i)	Nearest Village	Naokari (~200m in South Direction), Palgaon (~200m in North Direction
(ii)	Nearest Town	Chandrapur (~20 km in NE direction)
(iii)	Nearest National Highway	➢ NH – 7 (~60.0 km in W direction) ➢ SH-236 (~ 5.0 km in SSW direction)
(iv)	Nearest Railway Station	➢Gadchandur Railway Station (~5.0 km in South direction) ➢Manikgarh Railway Station located on the Kazipet - Ballarshah section of the South Central Railway (~27 km towards east direction)
(v)	Nearest Airport	Nagpur (~150 km in NNW direction)
(vi)	National Parks, Wild Life Sanctuaries, Biosphere Reserves etc.	None, within 10 km radius area of the mine lease boundary.
(vii)	Reserved / Protected Forests within 10km radius	Manikgarh Reserved Forest exist at ~6.65 Km from mine in South direction
(viii)	Nearest Water Body	➢ Penganga River (~5.5 km in NW direction) ➢ Wardha River(~9.0 km in NNW direction)

		➢ Bop Nallah flows across the ML area on East A Block ➢ Amal Nallah (~2.5 km in SW direction) ➢ Amalnala Dam (~ 9.5 km in South direction) ➢ Chandanvayi Nala (~8.0 km in SE direction) ➢ Tutra Nala (~8.0 km in SE direction) ➢ Lokhandi Nala (~5.0 km in South direction)
(ix)	Archaeological Important Site (within 10 km radius)	None within 10 km radius
(x)	Seismic Zone	Zone – III [as per IS 1893 (Part-I): 2002]
E.	**Cost Details**	
(i)	Total Project Cost	₹ 93.0 Crores/-
(ii)	Cost for Environmental Protection Measures	Capital Cost – ₹ 1.0 Crores/- Recurring Cost – ₹ 20.0 Lacs/annum
F.	**Requirements for the project**	
(i)	Land requirement	Proposed expansion will be done within the existing ML area of 1030.58 ha. No additional land will be acquired for the proposed expansion.
(ii)	Water requirement	425 KLD Source: Captive Power Plant blow down water & Amal Nallah
(iii)	Manpower requirement	129
(iv)	Power requirement	3.70 MW Source: Captive Thermal Power Plant and MSEB Grid

Source: *Site Visit & Pre-feasibilty Report*

1.5 Location Map



1.6 MINE DESCRIPTION

1.6.1 Mining Lease Status

The Mining Lease for Limestone & Shale, over 1030.58 Ha. area in Villages Awarpur, Bakardi, Naokari, Palgaon & Talodi, Taluka Korpana Dist. Chandrapur was earlier granted in 1979 to M/s Larsen & Toubro Limited, Mumbai, for a period of 20 years and the same was renewed for another 20 years from 12.02.2000 to 11.02.2020. Subsequently the Lease was transferred to M/s UltraTech Cement Limited, and transfer Lease Deed was executed on 21st April, 2006 for the balance period of the Lease.

The limestone produced from Naokari Mining Lease is/will be totally captive to the proposed expansion in its existing Integrated Cement Project (Clinker from 3.3 to 4.5 MTPA & Cement from 4.48 to 6.0 MTPA) at Awarpur Cement Works, Village - Awarpur, Taluka - Korpana District - Chandrapur (Maharashtra).

1.6.2 Mining Details

Table – 2
Mining Details

S. No.	PARTICULARS	DETAILS
1.	Method of Mining	Opencast Fully Mechanized
2.	Proposed Limestone Production per year	Limestone Production 7.3 MTPA & Shale Production 0.3 MTPA
3.	Total Mineable Reserves & Resources	Limestone- 203.22Million Tonnes Shale-15.50 Million Tonnes
4.	Life of Mine	28 years
5.	Bench Height	7-9 m
6.	Bench Width	30 - 50m
7.	Elevation Range	200 – 220 m RL
8.	Ground Water Table	10- 14 mbgl
9.	General Ground level	200mRL
10.	Ultimate Working Depth	Block A – 86 mbgl (122mRL) Block B – 90mbgl (137mRL)
11.	Overall Pit Slope	Block A - 19^0 Block-B - 29^0
12.	Number of Working Days	300
13.	Number of shifts per day	03
14.	Total waste generation	At the end of 5^{th} year of mine – 8.24 Million Tonne At the end of life of mine – 45.88 Million Tonne

Reference: *Scheme of Mining*

1.6.3 Method of Mining

Mining is/will be carried out by mechanized opencast method to produce limestone by deploying heavy earth moving machinery and deep hole drilling & blasting. Limestone from Naokari Mine is/will be transported from mine up to the crusher by dumpers and to cement plant via covered belt conveyor.

1.6.4 Extent of Mechanization

Table - 3

Machinery & Equipments

S. No.	Machinery	Nos.	Capacity
1	DTH Drill	2	540 cfm
2	DTH Drill	1	670 cfm
3	DTH Drill	1	600 cfm
4	Hydraulic Excavators	6	4.00 cu.m.
5	Hydraulic Excavator	1	6.5 cu.m.
6	Rock Breaker	1	20 Ton
7	Wheel loader	1	7.1 m3
8	Dumpers	10	35 tons
9	Dumper	2	35 tons
10	Dumper	2	60 tons
11	Dozer with Ripper	2	4m x 2m
12	Water Sprinkler	2	20 KL
13	Water Sprinkler	2	28 KL
14	Explosive Van	2	10 tons
15	Diesel Tanker	1	6 KL
16	Lube Van	1	6 tons
17	JD	1	1.0 m3

Source: *Scheme of Mining*

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 Presentation of Results (Air, Noise, Water & Soil)

Baseline study of the study area was conducted during Post Monsoon Season, – October-December, 2013.

The concentrations of PM_{10} and $PM_{2.5}$ for all the 11 AAQM stations were found between 51.1 to 75.7 µg/m^3 and 20.1 to 35.7 µg/m^3, respectively., SO_2 ranges between 5.0 to 8.7 µg/m^3 and NO_2 ranges between 13.1 µg/m^3 to 20.3 µg/m^3.

Ambient noise levels were measured at 11 locations around the Mine site. Noise levels varies from 47.0 to 56.2 Leq dB(A) during day time and during night time noise levels ranges from 38.7 to 44.2 Leq dB(A).

The ground water analysis for all the 8 sampling stations shows that pH varies from 6.96 to 7.87 total hardness varies from 301.60 mg/l to 532.40 mg/l & total dissolved solids varies from 452.00 mg/l to 758.00 mg/l.

The analysis results for soil shows that soil is neutral to moderately alkaline in nature as pH value ranges from 7.58 to 7.92 & is silty loam in texture. The concentration of Nitrogen has been found to be in better amount in the soil samples.

2.2 Biological Environment

Flora: species which are most commonly found in the study area are Neem *(Azadiracta indica)*, Pipal *(Ficus religiosa)*, Amaltas (*Cassia fistula),* Bargad (*Ficus benghalensis),* Kejri (*Prosopis cinerea)* etc.

Fauna: Commonly found animal in the study area are Langur *(Presbytis entallus),* Hare *(Lepus nigricollis),* Common Garden Lizard *(Calotes versicolor),* Indian Carp *(Catla catla),* Indian fly fox *(Pteropus giganteus),* Indian Bull Frog *(Rana tigerinus),* House crow *(Corvus splendens), etc.*

2.3 Socio-Economic Environment

The population as per 2011 Census records is 111479 (for 10 km radius buffer zone). Scheduled Caste population of the study area (10 km) is 13939 (15.39%) and Scheduled Tribe is 17154 (12.50%).

Percentage of literacy is 84.84 % and that of workers those actually engaged in occupation is 40.50 % and rest 59.50 % of the total population, are considered as non-workers. Total no. of household in the area is 26365.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

- **Impact on Air Environment -** The key air emissions from the mining activities (drilling, blasting, loading, haulage and transportation) are Particulate Matter, Oxides of Nitrogen (NO_2) and Sulphur dioxide (SO_2). Gaseous emissions are being/will be generated from HEMM, crusher & transportation of vehicles. Use of proper mitigation measures are being/will be taken like water sprinkling during transport activities & development of green area along the road sides to control fugitive emissions.
- **Impact on Water Environment** - Bop Nallah flows across the ML area on East A Block. Protective bunds along both sides of the Bop Nallah constructed and stabilized by plantation. There is/will be no outside discharge of liquid effluent from the mine site. Therefore, no significant impact on surface water bodies is anticipated due to mining operations.

  Mine working has intersected the water table. Hydrogeology study for the same has been conducted. Mineral is non – toxic in nature.
- **Impact of Noise -** Major noise generating sources of the mining activity are/will be drilling, blasting, crushing and HEMM movement used for transportation of limestone. The instant noise level from blasting are/will be high but for a very short duration. The plantation and the green belt around the mining lease boundary also check propagation of noise in the surrounding areas.

- **Impact on Land Environment** – Opencast mining activities may alter the landscape of the lease area but will not have any effect on the surface features of the surrounding areas.

  At the conceptual stage, total excavated area will be 275.50 ha which will be converted into water reservoir to store rainwater. At the end of life of mine, total green belt and plantation will be carried out on 345.40 ha area; out of which 46.10 ha area comes under Greenbelt development around mine lease boundary and safety zone, 80.52 ha area comes under top benches plantation, 187.78 ha area comes under matured dump plantation, 15.22 ha area comes under reject dump plantation, 9.62 ha area comes under haul road plantation and 6.16 ha area comes under statutory building area plantation

4.0 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

Table 4

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Meteorological Data	Daily
2.	Ambient Air Quality at mine site	Quarterly/ Half Yearly
3.	Water Quality	Quarterly/ Half Yearly
4.	Noise Level Monitoring	Quarterly/ Half Yearly
5.	Soil Quality	Half Yearly/Yearly
6.	Monitoring of Agricultural crops	Yearly
7.	Socio – economic status of nearby area	Yearly

5.0 ADDITIONAL STUDIES

The Additional Studies as per the Terms of References issued vide vide letter no. J-11015/95/2013/IA-II (M) dated 30th March, 2015 are covered in Draft EIA/EMP Report.

6.0 PROJECT BENEFITS

The proposed expansion project activity will help in meeting the growing demand of cement & hence will help in the economic growth of the country. It will result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Quality Management

- Efficient in-built wet drilling system has been provided in the drills.
- Controlled blasting is being done.

- Rock breaker is being used to avoid secondary blasting.
- Haulage road are adequately sprayed with water by either water tanker or water sprinkler.
- HEMMs are provided with closed AC cabin for Operators. Dust masks are provided to the workers.
- Green belt has been developed along the mine lease boundary and plantation has been/ will be done along the haul roads, reclaimed area etc. to arrest dust.
- Periodical monitoring of ambient air quality is being carried out.
- Same practices will be carried out during proposed expansion project.

7.2 Water Quality Management

Adequate control measures are being adopted to check not only the wash-off from soil erosion but also uncontrolled flow of mine water. The measures to be adopted are:

- Bop Nallah flows across the ML area on East A Block. Protective bunds of width 7m provided along both sides of the Bop Nallah have been stabilized by plantation.
- Garland drains are provided all along the periphery of pits to prevent the water carrying the wash-offs entering the mine.
- The excess water collected in the water sump at the bottom of the pit is discharged into settling tank on the north side of the "A" block covering an area about 0.39 Ha. and then overflows into the Bop nallah.
- Waste water generated at mines workshop is treated with the help of oil- water separator and the treated water is being / will be used for dust suppression on conveyor belt.
- Waste water generated from mine office is sent to STP installed at Plant. However, crusher canteen waste water is being disposed of in soak pits via septic tanks.
- Periodical testing of mine water is being carried out to check its quality.
- Same practices will be carried out during proposed expansion project.

7.3 Noise Management

All precautions are being taken to keep noise levels within the prescribed standards:

- Drilling machines are having closed AC cabins, operators have been provided with earplugs/earmuffs for use during drilling operation.
- Noise generated due to blasting is of impulse type which is controlled by putting adequate stemming column.

- Rock breakers are used for reduction of oversized boulders thereby avoiding secondary blasting, which generates noise.
- Persons working in high noise zone are equipped with earplugs/earmuffs.
- Regular measurement of noise level is proposed near drilling equipment and other heavy earth moving machinery & steps will be taken to improve maintenance of all equipments so that noise level remain within permissible limits.
- Green belt has been developed along the mine lease boundary and plantation has been/ will be done along the haul roads, reclaimed area etc. to attenuate noise levels.

7.4 Solid Waste Management

- Top soil will be stacked properly and will be used in plantation.
- OB/ Dolomite generated will be stacked separately and dumped in the non-mineralized area within the lease area.
- Dumps will be stabilized followed by plantation after maturation.
- Garland drains have been made around the dumps to check wash off during rainy season and channelized to the mine sump.

7.5 Management of Land Use Pattern

At the conceptual stage of mining following activities will be carried out:

- The worked out pit of 275.50 ha will be converted in to water reservoir.
- Greenbelt will be developed on 345.40 ha area,
- About 187.78 ha will be covered under dumps and reclaimed by plantation.
- About 15.22 ha will be covered under dumps of mineral reject plantation.
- About 46.10 ha area will be covered green belt around the mining lease area.
- Plantation will be done on 5.41ha area covered under protective bunds.
- 6.16 ha area will be utilized for building and Shed construction and road construction on about 9.62 ha area.

7.6 Greenbelt Development and Plantation Program

- Approximately 168453 trees have been planted on 67.17 ha area under Green belt development / Plantation.
- At the end of life of mine, total green belt and plantation will be carried out on 345.40 ha area; out of which 46.10 ha area comes under Greenbelt development around mine lease boundary and safety zone, 80.52 ha area comes under top benches plantation, 187.78 ha area comes under matured dump plantation, 15.22 ha area comes under

reject dump plantation, 9.62 ha area comes under haul road plantation and 6.16 ha area comes under statutory building area plantation

- Local species are being/will be planted as per CPCB guidelines.
- The following species have been/will be planted in the Green belt Karnja, Neem, Sisu, Black sirus, Cassia etc.

7.7 Socio-Economic Environment

Better education facilities, proper health care, road infrastructure and drinking water facilities are basic social amenities for better living standard of any human being. UTCL has conducted and provided such facilities to the nearby villagers and will further improve the facilities in the area, which will help in uplifting the living standards of local communities.