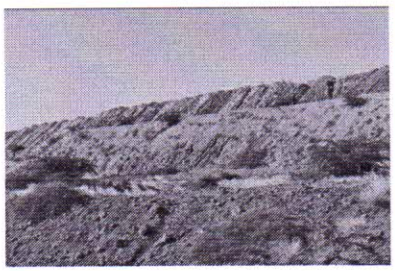
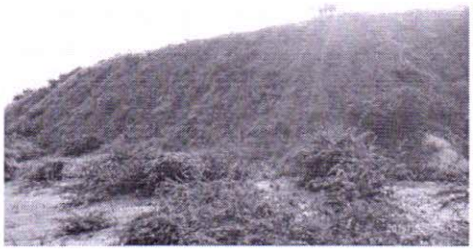
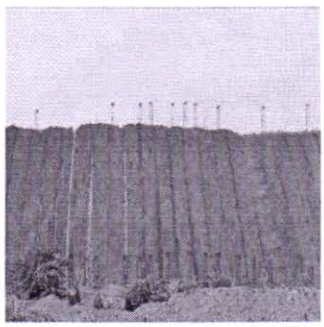
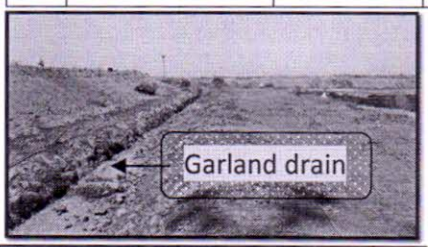
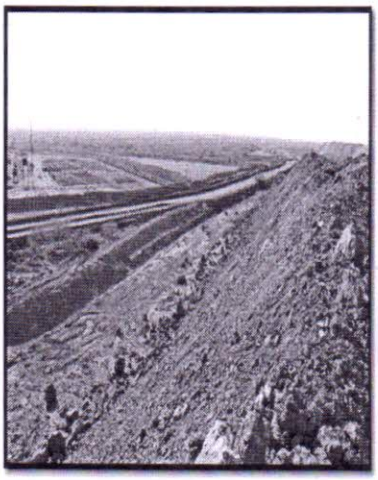
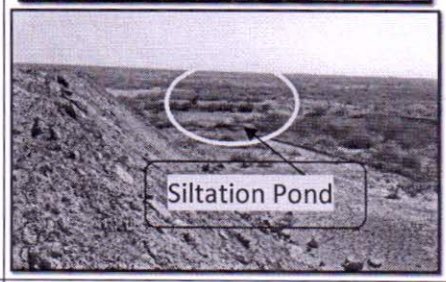
Compliance status of Environmental clearance of Umarsar Mines of Gujarat Mineral Development Corporation

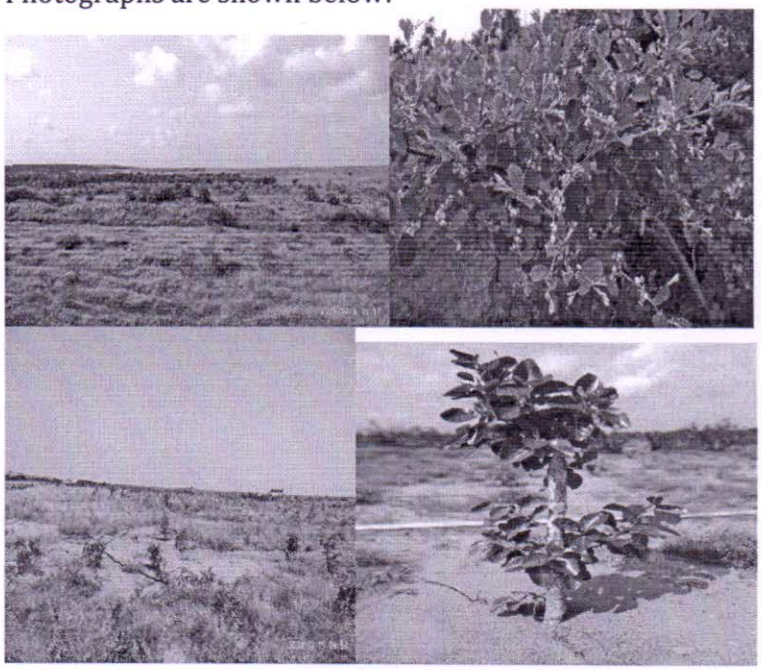
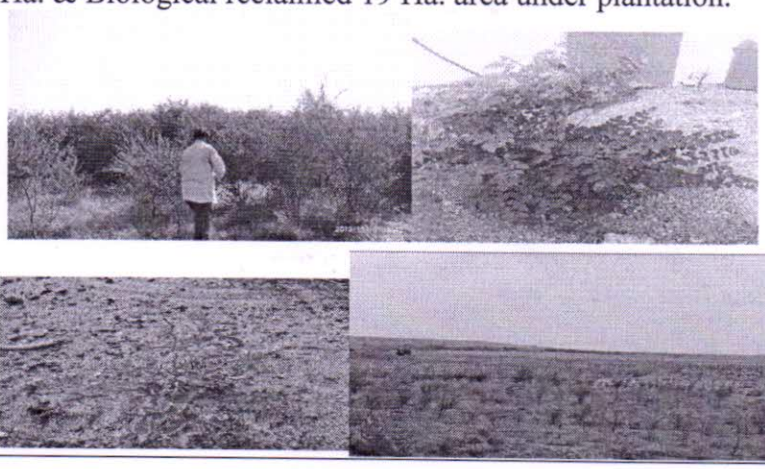
Time Period: April 2019 to September2019

A. Specific conditions

Sr.no	Conditions	Compliance Status
1	The project proponent shall obtain the prior approval of the national wildlife board of India before start mining operations	Complied Permission has been obtained from The chief wild life warden, Gandhinagar vide letter no. WLP/32/B/7820-25/2012-13 dated 16/03/2013 Attached letter
2	No mineral Transportation shall be undertaken through the sanctuary of area falling within the mine and the sanctuary, which is buffer to the mine along the sanctuary	Complied No route for Mineral transportation has been within sanctuary area.
3	The wild life conservation plan prepared for conservation of wildlife in the Narayan Sarovar sanctuary shall be implemented in consultation with chief wildlife warden, govt. of Gujarat the funds for the plan shall be maintained in a separate fund of Rs. 129.50 Lacs towards capital costs and 33 Lacs as revenue expenditure. The status of implementation of the various activities there under such as fencing, development of plantation, construction of van talavadis , and other water recharge measures , water holes and ponds, eco-awareness programmes for local villagers , shall be regularly submitted to the regional office of the MoEF, Bhopal as a part of compliance report.	Complied We have carried out the plantation activity in mine lease area and surrounding also we have time to time contribute to Forest Department towards NSSL conservation. Eco awareness programme conducted two times in this time periods for local people and employee under the World Environment day & Van Mahotsav celebration. GMDC have allocated 341.33 Lacs funds earlier for Development of Green belt, making biological task force, Barbed wire fencing construction of hawada, check dams, van talavadi and interpretation center for conservation & Development of Narayan sarovar Sanctuary.

<table>
<tr><td>4</td><td>A mine drainage plan with surface drainage design of the mine resulting from surface run off and diversion of rivers Moti, seasonal nalahs and ponds found within the active mining area and for the mine discharge water based on a peak rain fall data shall be prepared and implemented.</td><td><u>Complied</u>
The plan has been
prepared and incorporated in progressive mine closure plan.
Mine closure plan for Umarsar Lignite Block was approved on 17/10/2006 by the Government of India, Ministry of Coal (MOC), vide letter no. 34011/13-2011 – CPAM dated 25th October 2013 with a production target of 1MTPA</td></tr>
<tr><td>5</td><td>The plan for diversion and realignment of the nala and modification of the natural surface drainage and design of the diversion canal shall be done in consultation and approval of the concerned state flood and and irrigation department. dimension and depth of the nala should be used for reclamation and development of green belt.</td><td><u>Complied</u>
The plan for diversion of nala has been prepared and incorporated in progressive mine closure plan.
The approval of Nala diversion will be taken before the actual implementation.</td></tr>
<tr><td>6</td><td>Top soil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.</td><td><u>Complied</u>
Top soil has been stacked at earmarked placed.
<table>
<tr><th>Sl no</th><th>Location</th><th>Storage Area (in Ha)</th><th>Volume (in Lac m³)</th><th>Slope</th></tr>
<tr><td>1</td><td>West side</td><td>2.77</td><td>2.896</td><td>28</td></tr>
</table>
Top Soil is then utilized in Green belt development and reclamation of mined out area. 8.5 lac m³ top soil has already been used for physical reclamation of area

 </td></tr>
<tr><td>7</td><td>OB shall be stacked at earmarked external OB dump site within ML area and shall be a maximum height of 50m only each. The ultimate slope of the dump shall not exceed</td><td><u>Complied</u>
There are 01 external dumps in the present scenario, the details of which is furnished below
<table>
<tr><th>Sl no</th><th>Dump</th><th>Height</th><th>Slope</th></tr>
<tr><td>1</td><td>West side of mines</td><td>15</td><td>25⁰</td></tr>
</table></td></tr>
</table>

	28* Monitoring and management of existing reclaimed dump sites shall continue until the vegetation becomes self. compliance status shall be submitted to the ministry of environment & forests and its regional office located at Bhopal on yearly basis.	Height of each deck of the dump does not exceed 10m & total height is 30 m & Over all slope of dump does not exceed 25^0 as shown in table above. Backfilling has started in April 2016 and still the Dumping is in progress. Monitoring and management of existing reclaimed dumpsites is being continued until the vegetation becomes self sustained.  
8	Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps .The water so collected shall be utilized for watering the mine area ,roads, green belt development etc. the drains shall be regularly de-silted and maintained properly. Garland drains (size, gradient and length)and sump capacity shall be designed keeping 50% safety over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site sump capacity shall also provided adequate retention period to allow proper setting of silt material.	Complied We have developed Garland drains and connected all garland drains into pond, the water from pond is utilized for sprinkling in mining area to control dust particle in air and green belt development. **S.n** | **Garland Drain** | **Length(in m)** | **Breadth (in m)** | **Depth (in m)** 1 | Garland Drain no.1 | 3500 | 2 | 2 2 | Garland Drain no.2 | 3800 | 1.5 | 1.5 3 | Garland Drain no.3 | 4200 | 1.5 | 1.5 4 | Siltation Pond | 250 | 132 | 2   
9	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to catch run off and siltation shall be based on the rainfall data.	Complied As mining activity was started from march 2015 and only little area of earmarked for OB dump site was utilized. Further company is agreed to construct retaining wall when it will be necessary.

10	Water sprinkling system shall be provided to check fugitive emissions, haulage roads transfer points.	Complied We have 04 Nos. dedicated sprinkler for sprinkling water round the clock to control the fugitive emission.
11	All approach roads, major haul roads and roads to village umarser being diverted shall be black topped.	Complied We have provided Metal with suitable clay on the Road in mining area. Water is also provided by sprinkler system. Road leading to village Umarsar was carpeted with asphalt.
12	No drilling and blasting shall be carried out.	Complied The mine is with soft strata. Hence no drilling and blasting activity was carried out.
13	A 50 m wide green belt shall be created along the lease boundary using native species. In addition grassland shall be developed within the core zone in un distributed areas, using native grass species. Area brought under Afforestation shall not be less than 1067 ha which includes reclaimed external OB dump(107 ha),backfilled area(849.45 ha) ,along ML boundary ,along roads, green belts,in undistributed area by planting native species in consultation with the local DFO/Agriculture department .The density of the trees shall be around 2500 plants per ha.	Complied The plantation activity is being carried out in phase manner. Plantation activity has already been carried out on 36 Ha as Green belt & 19 Ha. area reclaimed as biological in Backfilled area with Total Plantation of 127740 , with 2300 Plants /Ha. Photographs are shown below: 
14	A progressive closure plan shall be implemented by reclamation of quarry area of which 849.45 ha shall be backfilled and afforested by planting, native plant species in consultation with the local DFO/Agriculture Department. The density of the tree shall be around 2500 plant per ha. The balance 23.47 has of de-coaled area being	Complied The backfilled area is 198 ha. Out of it Physical reclaimed 198 Ha. & Biological reclaimed 19 Ha. area under plantation. 

	converted into a water reservoir shall gently sloped along the upper benches and stabilized and reclaimed with plantation.	
15	No mining shall be carried out below 50m depth below ground level . No ground water shall be used for mining operations. Additional water required, if any shall be met by recycling/reuse of the water from the existing activities and from rainwater harvesting measure.	**Noted and complied** The mining was not carried out below 50 m depth. Company is not using any ground water for mining activity.
16	Mine pit water which is high in TDS shall be treated in an RO plant to prescribed limits before discharge into natural water/land. The brine concentrate from the RO plant shall be stored in a concrete lined pit.	Complied We have installed ETP Plant to treat Mine pit water before use or discharge in natural water body / course. This year decent rain and thus around 1 lac cu.m water get accumulated in pit which is being treated before use. .
17	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quality shall be done four times a year in pre-monsoon (May), monsoon (August), post monsoon (November) and winter (January) seasons and for quality (including TDS and add mine water) in May. Date links collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	Complied Recently we have Developed 04 Piezometer in surrounding Mines Lease and Results of the Ground water monitoring is attached here with **Annexure-II**
18	The company shall put up artificial ground water	Complied We are doing the work of conservation of water with the help

	recharge measures such as check dams within and adjoining the lease for augmentation of ground water resource in case monitoring indicates decline in water table. The project authorities shall meet water requirement of nearby village(s) in case line village wells go dry due to dewatering of mine.	of irrigation & agriculture department and self on the demand of villagers. The work of deepening of ponds and construction of check dams in area is being carried out by GMDC under CSR activity. This year Under Gujarat Government Sujalam Suflam Drive for Water harvesting Structure Development we contribute 25.20 Lacs towards water harvesting.
19	ETP shall also be provided for workshop, and CHP, effluents shall be treated to conform to prescribed standards, particularly for PH and TDS in case of discharge in to any water course outside the lease.	Complied Waste water generated from work shop is being discharge through septic tank after the removal of oil & grease. Water is not being discharged in to any water course outside the lease.
20	Land ousts shall be compensated as per norms not below that laid out under the National R& R policy. Activities under CSR for the ten villages in the buffer zone shall be not less than a capital outlay of Rs. 2.0 crores.	Complied GMDC has Implemented National R&R policy for rehabilitation of Umarsar village in buffer zone. The periods CSR Expenses around 10 Lacs and Some works are under progress.
21	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project and end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series) and the report submitted to MoEF and its Regional office at Bhopal.	Complied The project has been started in Nov 2014, hence work of satellite imagery tender is floated work will be awarded very soon for same . After Study and report collection we will be submitted.
22	A final mine closure plan along with details of corpus fund shall be submitted to the ministry	Complied Presently mine is in progressive stage.

	of Environment & Forests for approval 5 years in advance of final mine closure for approval. The habitat Restoration plan shall include plan for development of 622 ha for agro- pastoral land use using/reintroducing a mix of native grass and shrub special from the original ecosystem, which are conserved by insitu and ex-situ method of conservation.	

B. GENERAL CONDITIONS

Sr. no.	Conditions	Remarks
1	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forest	Complied We have already submitted the process plan to MOEF and Gujarat pollution control Board at the time of CC&A.
2	No change in the calendar plan including excavation quantum of mineral lignite and waste shall be made.	Agreed and Noted To cater the demand of nearby power plants along with small scale industries of Gujarat, Production has slight gone up. The Production is 7.138 Lac MT against 6 Lac.
3	Four ambient air quality monitoring stations shall be established in the core zone as well in the buffer zone for monitoring SPM, RPM, SO2, NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. In addition heavy metals such as Hg, As, Pb, Cd etc shall also be monitored twice in a year.	Complied We have developed four stations within core zone area of mines. Monitoring of heavy metals is carried out . The results of same is attached as **annexure-I**
4	Fugitive dust emissions (SPM and RSPM and heavy metals such as HG, Pb, Cr, As etc.) from all the sources shall be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon, loading, dump trucks (loading and unloading) points shall be provided and properly maintained.	Complied We have 04 nos. dedicated sprinkler tanker for spraying water.
5	Data on ambient air quality (SPM, RSPM, SO2, NOx and heavy metals such as Hg,Pb,Cr,As etc) shall be regularly	Complied Data has been Regularly

	submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months	sent with EC compliance and state pollution control board on regular basis. – **Attached As Annexure-I**
6	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Complied Noise is within limit and AC cabin is provided in mining machineries.
7	Industrial wastewater (workshop and waste water from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents	Complied Waste water generated from work shop is being discharge through septic tank after the removal of oil & grease.
8	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Complied We have already developed system for covering the every trucks before dispatched and check at out gate. No truck is allowed to pass without it.
9	Environmental laboratory shall be established with adequate number and type of pollution monitoring and analysis equipment in Consultation with the State Pollution Control Board.	Complied All the sampling and analysis of air and noise is being carried out through consultant.
10	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contraction due to dust and to take corrective measures, if needed.	Complied Workers used PPE. And awareness has been Provided on job & VTC center. Health surveillance has been carried out time to time.
11	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company	Complied Separate Environmental cell is established and which is report to head of the projects. Further there is Environmental Cell at corporate level.
12	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhopal	Complied We have kept separate budget provision for environment protection measure every year. The provision for year 2019-20 is 299.25 lacs.
13	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities shall extend full co-operation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Noted with esteem

14	A copy of the EC will be marked to concerned Panchayat /local NGO, if any, from whom any suggestion/representation has been received while processing the proposal	Complied
15	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.	Complied
16	The project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in. The compliance status shall also be uploaded by the project authorities in their website and regularly updated at least once in six months so as to bring the same in the public domain. The monitoring data of Env. Quality (air, water, noise and soil) shall also be displayed at the entrance of the project premises and mines office and in corporate office and also on the company's website.	Complied.

For, GMDC LTD,

Prepared By

23.10.19

Authorized Signature.

General Manager (PP)

Annexure-I - Ambient Air Monitoring Umarsar lignite mines project.

APR-19 to sep -19			Perameter								
Sr. No	Location	Month	PM10 (µg/m^3)	PM2.5 (µg/m^3)	SO2 (µg/m^3)	NO2 (µg/m^3)	CO (mg/m^3)	Arsenic (ng/m3)	Lead (ng/m3)	Mercury (µg/m3)	Cadmium (µg/m3)
1	Nr. Adm Office	APR	65.0	26.3	7.1	10.8	BQL	0.7	BQL	BQL	BQL
2	Nr. Dispatch Weight Bridge	APR	83.4	42.2	25.6	19.9	1.3	1	BQL	BQL	BQL
3	Nr. Wadh Ghat Weight Bridge	APR	86.5	44.2	28.3	31.8	1.2	0.8	BQL	BQL	BQL
4	Nr. View Point	APR	78.5	30.4	17.5	21.2	1.1	0.7	BQL	BQL	BQL
5	Nr. Time Office	APR	79.7	37.9	22.3	20.2	BQL(QL=1)	0.9	BQL	BQL	BQL
6	Nr. Flura Gate	APR	70.6	26.2	7.7	13.8	BQL(QL=1)	0.5	BQL	BQL	BQL
1	Nr. Admin Office	MAY	70.5	29.6	10.3	7.9	BQL(QL=1)				
2	Nr. Dispatch Weight Bridge	MAY	87.1	33.3	17.3	12.5	1.1				
3	Nr. Wadh Ghat Weight Bridge	MAY	91.6	42.1	22.0	34.7	1.5				
4	Nr. View Point	MAY	88.4	40.4	21.5	25.2	1.2				
5	Nr. Time Office	MAY	73.0	33.8	18.5	14.3	BQL(QL=1)				
6	Nr. Flura Gate	MAY	76.7	30.4	11.4	15.8	BQL(QL=1)				
1	Nr. Admin Office	JUN	82.1	39.7	27.0	12.4	BQL(QL=1)				
2	Nr. Dispatch Weight Bridge	JUN	96.5	29.1	24.0	20.5	BQL(QL=1)				
3	Nr. Wadh Ghat Weight Bridge	JUN	97.4	31.0	17.8	10.8	BQL(QL=1)				
4	Nr. View Point	JUN	86.0	24.4	29.2	12.1	BQL(QL=1)				
5	Nr. Time Office	JUN	91.4	28.4	19.5	25.4	BQL(QL=1)				
6	Nr. Flura Gate	JUN	94.5	31.5	33.3	16.5	BQL(QL=1)				
1	Nr. Admin Office	JULY	83.7	35.2	13.8	23.5	BQL(QL=1)				
2	Nr. Dispatch Weight Bridge	JULY	83.1	33.6	14.4	23.5	BQL(QL=1)				
3	Nr. Wadh Ghat Weight Bridge	JULY	83.4	36.1	14.7	25.6	BQL(QL=1)				
4	Nr. Umarsar school	JULY	84.4	34.8	13.3	25.6	BQL(QL=1)				
5	Nr. Time Office	JULY	83.4	25.7	15.3	23.5	BQL(QL=1)				
6	Nr. Flura Gate	JULY	73.6	29.0	14.8	15.9	BQL(QL=1)				
1	Nr. Admin Office	AUG	61.8	26.3	21.1	17.9	BQL(QL=1)				
2	Nr. Dispatch Weight Bridge	AUG	62.9	25.6	18.2	19.4	BQL(QL=1)				
3	Nr. Wadh Ghat Weight Bridge	AUG	58.7	23.2	26.9	24.3	BQL(QL=1)				
4	Nr. Umarsar school	AUG	54.0	23.2	28.3	19.2	BQL(QL=1)				
5	Nr. Time Office	AUG	57.1	29.2	22.3	18.7	BQL(QL=1)				
6	Nr. Flura Gate	AUG	63.2	23.2	25.1	21.0	BQL(QL=1)				
1	Nr. Adm Office	Sep-19					BQL	1.0	BQL	BQL	BQL
2	Nr. Dispatch Weight Bridge	Sep-19					1.6	1.3	BQL	BQL	BQL
3	Nr. Wadh Ghat Weight Bridge	Sep-19					BQL	1.2	BQL	BQL	BQL
4	Nr. View Point	Sep-19					BQL	1.1	BQL	BQL	BQL
5	Nr. Time Office	Sep-19					BQL	1.7	BQL	BQL	BQL
6	Nr. Flura Gate	Sep-19					BQL	1.1	BQL	BQL	BQL

AM-Environment

23.10.19
General Manager(P)

Annexure-II -Ground Water Analysis Results of Umarsar From jun-19						
	Parameter	Unit	jun'19			
Sr.No			GW Borwell	Ground Water-open well	ground water - observation well	Ground Water-02
1	pH at 25 °C	-	7.86	7.79	6.36	7.20
2	Total Suspended Solids(TSS)	mg/L	86.0	18.0	62.0	39642.0
3	Total Dissolved Solids(TDS)	mg/L	17210.0	2894.0	19644.0	76.0
4	Chloride	mg/L	6228.1	1004.7	5838.2	112.0
5	Acidity	mg/L	104.0	88.0	132.0	236.0
6	Alkalinity	mg/L	95.0	142.0	102.0	3789.0
7	Total Hardness as caco3	mg/L	2540	710	2400	1.3
8	calcium as ca	mg/L	613	116.2	529.1	BQL
9	Manganese (As Mg)	mg/L	245.4	102.1	262.4	BQL
10	sulphate	mg/L	1217.2	146.2	907.1	0.6
11	Nitrate	mg/L	2.1	BQL(QL=0.5)	7	BQL
12	Iron	mg/L	0.24	0.18	7.9	1.4
13	Fluoride	mg/L	1.1	BQL(QL=0.2)	BQL(QL=0.2)	BQL
14	Phosphate as po4	mg/L	0.29	0.26	0.58	0.64
15	cadmium as cd	mg/L	BQL(QL=0.4)	BQL(QL=0.4)	BQL(QL=0.4)	BQL
16	Arsenic as As	mg/L	BQL(QL=0.01)	BQL(QL=0.01)	BQL(QL=0.01)	BQL
17	Zinc as zn	mg/L	BQL(QL=0.2)	BQL(QL=0.2)	BQL(QL=0.2)	BQL
18	Lead as PB	mg/L	BQL(QL=0.22)	BQL(QL=0.22)	BQL(QL=0.22)	1.1
19	Nickel as nil	mg/L	BQL(QL=0.5)	BQL(QL=0.5)	BQL(QL=0.5)	BQL
20	Total Chromium	mg/L	BQL(QL=1)	BQL(QL=1)	BQL(QL=1)	4021.0
21	Mercury as hg	mg/L	BQL(QL=0.1)	BQL(QL=0.1)	BQL(QL=0.1)	BQL
22	Manganese (As Mn)	mg/L	BQL(QL=0.5)	BQL(QL=0.5)	BQL(QL=0.5)	BQL
23	Berylim as Be	mg/L	BQL(QL=0.01)	BQL(QL=0.01)	BQL(QL=0.01)	BQL
24	selenium as se	mg/L	BQL(QL=0.001)	BQL(QL=0.001)	BQL(QL=0.001)	
25	cobalt as co	mg/L	BQL(QL=0.001)	BQL(QL=0.001)	BQL(QL=0.001)	
26	Barium as ba	mg/L	BQL(QL=1)	BQL(QL=1)	BQL(QL=1)	

AM-Environment

23.10.19
General Manager(P)