FORM 1

(1) **Basic Information**

S. N.	Item	Details
01	Name of the Projects	Mohanpura Major Irrigation Project
02	S.N. in the schedule	1(c) River Valley Project
03	Proposed capacity/area/ tonnage to be handled/command area/lease area/number of wells to be drilled	Catchment Area – 3726Sq km Gross Storage Capacity 616.27 MCM Live Storage Capacity 539.42 MCM Gross Command Area – 181000 Ha Cultivable Command Area – 125000 Ha
04	New/Expansion/Modernization	Expansion of command area.
05	Existing Capacity/Area etc.	Existing CCA is 65000 ha. The case is put-up for additional CCA of 60000 ha, without increasing capacity of reservoir by adopting Micro-Irrigation method.
06	Category of Project i.e. "A" or "B"	"A"
07	Does it attract the general condition? If yes, please specify	No
08	Does it attract the specific condition? If yes, please specify	No
09	Location	Latitude 23^0 57'54'' Longitude $76^0$46'37''
	Plot/Survey/Khasra No.	-
	Village	Banskhedi
	Tehsil	Rajgarh
	District	Rajgarh
	State	Madhya Pradesh
10	Nearest Railway Station/Airport along with distance in kms.	Nearest Railway station is Biaora which is 25 km and Bhopal airport is at a of distance 145 km.
11	Nearest town, city, district headquarters along with distance in km.	Rajgarh 15 km.

<table>
<tr><td>12</td><td>Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)</td><td>1. Village Banskhedi
2. Village Panchayat Pipliya Panchayat
Tehsil Rajgarh
M: 94250 97651
3. Janpad Panchayat Rajgarh J P
Dist. Rajgarh
07372-255089
4. Zila Panchayat Rajgarh
07372-255075</td></tr>
<tr><td></td><td>Name of the applicant</td><td>Department of Water Resources
Government of M.P.</td></tr>
<tr><td>14</td><td>Registered address</td><td>Department of Water Resources
Government of M.P.
Vallabh Bhavan Bhopal
Dist. Bhopal (M.P.)</td></tr>
<tr><td rowspan="8">15</td><td>Address for correspondence:</td><td>Engineer- in- Chief
Department of Water Resources
Tulsi Nagar Bhopal (M.P.) 462003</td></tr>
<tr><td>Name</td><td>Shri Rajiv Kumar Sukalikar</td></tr>
<tr><td>Designation (Owner/Partner/CEO)</td><td>Engineer- in- Chief</td></tr>
<tr><td>Address</td><td>Engineer- in- Chief
Department of Water Resources
Tulsi Nagar Bhopal (M.P.) 462003</td></tr>
<tr><td>Pin Code</td><td>462003</td></tr>
<tr><td>E-mail</td><td>eincwrbpl@mp.nic.in</td></tr>
<tr><td>Telephone No.</td><td>0755-2573522 , 2573523 , 2573526 , 2573525</td></tr>
<tr><td>Fax No.</td><td>0755-2573522</td></tr>
<tr><td>16</td><td>Details of Alternative Sites Examined , if any Location of these sites should be shown on a topo sheet</td><td><table><tr><td>Village</td><td>District</td><td>State</td></tr><tr><td>Banskhedi</td><td>Rajgarh</td><td>M.P.</td></tr></table></td></tr>
<tr><td>17</td><td>Interlinked Projects</td><td>Independent Project</td></tr>
<tr><td>18</td><td>Whether separate application of interlinked project has been submitted</td><td>NA</td></tr>
<tr><td>19</td><td>If yes , date of submission</td><td>NA</td></tr>
<tr><td>20</td><td>If no, reason</td><td>Being an Independent Project, not applicable</td></tr>
<tr><td>21</td><td>Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given.
a. The Forest (Conservation) Act, 1980?
b. The Wildlife (Protection Act, 1972?
c. The C.R.Z. Notification, 1991?</td><td>

Nil

Nil

Nil</td></tr>
<tr><td>22</td><td>Whether there is any Government Order/ Policy relevant/relating to the site?</td><td>No</td></tr>
<tr><td>23</td><td>Forest land involved (hectares)</td><td>Nil</td></tr>
</table>

24	Whether there is any litigation pending against the project and /or land in which the project is proposed to be set up? a. Name of the Court b. Case No. c. Orders/directions of the Court, if any and its relevance/with the proposed project.	No litigation is pending against the project and/ or land in which the project is proposed to set up. NA NA NA

(II) Activity

1. Construction operation or decommissioning of the project involving actions which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S. N.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	Only irrigation system is proposed to be modified, and hence C.C.A. has been proposed to increase from 65000 ha to 125000 ha. There will be no change in catchment area, submergence area. Land Acquisition, Resettlement and Rehabilitation of the project, i.e. the components of Head works shall not be altered. As per EC letter issued, the details of the Main Dam are as under: The submergence area at FRL is 7056.718 ha. The irrigation intensity works out to be 136%. Height of the dam is 47.90 m high and length is 2174 m to have live storage capacity of 539.42 MCM.
1.2	Clearance of existing land, vegetation and building?	Yes	The original as well as revised submergence is 7056.718 ha and the details are as below :- (i) Forest land 0 ha (ii) Govt. Land 1674.191 ha

			(iii) Private Land 5382.527 ha
1.3	Creation of new land uses?	Yes	The left bank and the right bank will irrigate 125000 ha CCA through pressurized piped irrigation.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Bore hole drilling, construction materials testing, soil sampling etc. are proposed as a part of investigation-activities.

1.5	Construction works?	Yes	The complete project comprises the following :- Composite dam having Concrete gravity dam, Earthen dam, Gated Ogee type spillway, , and Energy Dissipater in the form of bucket or stilling basin at Dam toe, irrigation sluices, canal network for gravity flow and pressure irrigation, pump house, electric sub-station, rising main, distribution chamber, etc. Construction and development of residential complex and offices and other infra-structure facilities.
1.6	Demolition works?	Yes	Acquired structures, if any, are to be demolished to the extent required. The exact number shall be identified during the construction stage.
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	About 5 ha for construction works for housing of construction workers and construction activities.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations.	Yes	Same as mentioned under 1.5
1.9	Underground works including mining or tunneling?	NO	Not applicable here
1.10	Reclamation works?	Yes	Reclamation of land will be done by cut and fill, as per the site-specificity. The sites so reclaimed will be landscaped to integrate with the natural surroundings.
1.11	Dredging?	No	-
1.12	Offshore structures?	No	-
1.13	Production and manufacturing processes?	Yes	The production and manufacturing processes will be restricted solely to the making of concrete, mortar and akin products and process, required for the construction of project work.
1.14	Facilities for storage of goods or materials?	Yes	Facility for temporary storage of cement, steel, E&M Heavy Machinery equipments, aggregate/sand, etc., will be created.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	During construction phase, labour colonies are proposed to be located at various locations, close to major construction sites. About 800 laborers

			and 200 technical staff are likely to congregate in the area during construction phase. The increase in Population is expected to be of the order of 1000. The average per capita solid waste generated is of the order of 210 gm/day/person. The solid waste likely to be generated from labor camps shall be of the order of 0.21 tons /day. Adequate facilities of, collection, conveyance and disposal of solid waste will be developed. For solid waste collection, number of masonry storage tanks will be constructed at appropriate locations in various labor camps. These tanks will be emptied at regular intervals and the collected waste will be transported to landfill sites. Covered trucks to collect the solid waste from common collection point and its transfer to the disposal sites will be put in practice. Suitable land fill site will be identified, to contain municipal waste from various project township, and labor colonies etc., in consultation with the local administration. One community latrine can be provided per 20 persons. The sewage from the community latrines can be treated at sewage treatment plant (STP) companion aerated lagoon and secondary tank. For each labor camp, a sewage treatment plant can be commissioned. The treated water from the STP can be disposed in the nearby water body. The drinking water facilities and water disposal sites will be located at a safe distance from each other.
1.16	Facilities for long-term housing of operational workers?	Yes	A colony of about 20 quarters for long-term phase besides infrastructure facilities, potable water supply, sewage treatment, solid waste management, etc., will be provided.
1.17	New road, rails or sea traffic during construction or operation?	Yes	During construction stage, road traffic will increase due to transportation of construction material, equipments, machines. However, these roads will be in the form of temporary roads or haul roads.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations,	Yes	A total of about 8 km long approach road will be constructed for dam site and approximately 40 km road will be constructed along canals.

	ports, airports etc?		
1.19	Closure or diversion of existing transport infrastructure leading to changes in traffic movements?	Yes	Road coming under submergence will be re-routed to other major roads, and spiral road-plan will be prepared.
1.20	New or diverted transmission lines or pipelines?	Yes	Transmission lines coming under submergence, will be re-erected and new transmission lines for villages will be provided.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	Yes	Impoundment and damming in the proposed project are on a non-perennial river. Hence the anticipated adverse changes in the hydrology of watercourses will be bare minimum whereas the release of environmental flows will ensure the beneficial changes in hydrology.
1.22	Stream crossings?	Yes	The same shall be identified during the process of detailed investigations for approach roads, aquaduct, etc.
1.23	Abstraction or transfers of water form ground or surface waters?	Yes	The proposed project will involve consumptive use of water available at Mohanpura Dam to facilitate irrigation, and fulfill industrial and drinking water requirements.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	The proposed project will change the waterbodies on account of reservoir formation as a result of construction of dam. The land use will also change on account of increased water availability for irrigation. Green cover will improve on account of increased soil-moisture availability. The increased water availability could lead to increased water-logging in the nearby lands in a very small way as good natural drainage exists. Additionally, it will have a collateral benefit of addressing fluorosis in the area, as increased water availability will dilute the excessive fluoride content in the drinking water. The above aspects will be covered in details as a part of the EIA study.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	The construction materials will be brought from the local sources in trucks/dumpers. The workers required for construction activities are available in the vicinity of the project area and will be using existing mode of communication i.e., cycles, buses, two wheelers, three wheelers, tempos, etc.
1.26	Long-term dismantling or	NO	N.A.

	decommissioning or restoration works?		
1.27	On-going activity during decommissioning which could have an impact on the environment?	NO	N.A.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	About 200 technical and 800 construction staff will be employed during construction phase. The workers required for construction activities are available in the vicinity of the project area. Technical staff shall stay in various camps or colonies close to the major construction sites.
1.29	Introduction of alien species?	NO	-
1.30	Loss of native species or genetic diversity?	NO	-
1.31	Any other actions?	NO	-

2. Use of Natural resources for construction or operation of the project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S. N.	Information/Checklist confirmation	Yes /No	Details there of (with approximate quantities/rates, wherever possible) with source of information data
2.1	Land especially un-developed or agricultural land (ha)	Yes	Land will be acquired for construction of various project appurtenances including submergence area. The majority of land coming under submergence is barren land, stony wasteland and agricultural land. The land will be acquired in a manner which involves minimum acquisition and parts of land under temporary use will be reused in post-construction phase.
2.2	Water (expected source & competing users) unit KLD	Yes	The quantity of water required during construction and operation phases would be approximately 357 KLD and approximately 517 KLD, respectively. During construction and operation phases, potable water for laborers and technical staff would be analyzed and adequately treated, if needed.
2.3	Minerals (MT)	Yes	Construction material in the form of metal manufactured from basaltic rocks and sand will be used in concrete dam and canal network. The quantum of the minerals is given below – Metal 2.8 Million Ton Sand 0.7Million Ton
2.4	Construction material-stone, aggregates, and soil (expected source-MT)	Yes	The quantity of aggregate / rock required to be produced for the construction of concrete dam, Earthen dam and other

			estimated structures of the project has been estimated to be around 30 million cubic meter. Estimated requirement of various construction materials is under: i. Coarse Aggregate : 1.0 million ton ii. Fine aggregate : 0.6 lakh cum iii. Clay for earthen dam : 0.8 million ton iv. Other material : 0.15 million ton Borrow areas and rock queries have been identified near the project vicinity to provide construction materials in the form of soil, coarse and fine aggregate the sand deposits and its tributaries in the close proximity of projects will also be used for construction purpose.
2.5	Forest and timber (source-MT)		No forest land will be required in Mohanpura Major Project. Since the work force is local hence there will be no use of timber as fuelwood. However, unavoidable timber use for fuelwood, if needed will be procured from forest depot legally.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)		The total requirement of construction power will be about 500 KW at different sites, are :- Dam site : 200 KW Plant stores & fabrication shops : 200KW Other construction sites : 100KW Total : 500 KW Provisions exist for installation of 2 No silent DG sets, 5 MVA, and 66/11 kv transformers at switchgear. Emergency power supply arrangements to meet the requirement of emergency power supply, in case of grid failure, provision of 2 No 200 KW phase silent DG sets have been provided in the power station. These diesel power station are proposed to be retained after completion of the construction work of the project for meeting the emergency supply requirements of the auxiliaries of the power station and starting of the generating units in case of grid failure. The power generated by silent DG sets at -230 volts will be supplied to the Unit Auxiliary Boards after the construction work.
2.7	Any other natural resources (use appropriate standard units)	NO	-

3. Use, storage, transport, handling or production of substance or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health

S. N.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substance or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna and water supplies)	No.	Use of substance or materials, hazardous to human health or the environment is not envisioned in this project.
3.2	Changes in occurrence of affect disease vectors (e.g. insect or water borne disease)	Yes	Normally an irrigation project increases the incidence of water-borne diseases owing to increased water availability, as it leads to the formation of stagnant pools of water in command area, canals, etc. This could result in preponderance of mosquitoes, eventually leading to increased frequency and incidence of water-borne diseases, especially malaria. This aspect will be studied as a part of EIA and adequate measures to be implemented during project construction and operation phases.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	The details of various welfare schemes for local populations shall be outlined as a part of area development activities and the details will be covered in the EIA report.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly, etc.	Yes	Use of substance or materials, hazardous to human health or the environment is not envisioned in this project. Still, such vulnerable groups/individuals will be identified and suitable protection measures will be taken to insulate them from any plausible adverse effects.
3.5	Any other causes	Yes	Majority of people living in the proposed project area belong to BPL, whose primary livelihood is farming and as daily wagers. Special attention will be paid to the relocation of these people on the adjoining government land and ensure their rehabilitation.

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S. N.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	Yes	In this project, it is proposed to collect the construction waste from various construction sites, and disposed at sites identified in consultation with the district

			administration. Various construction sites would be properly leveled. The leveling or reclamation of various construction sites, shall be made mandatory for the contractor, involved in the construction work. The details of the same shall be covered as a part of EMP to be presented as a part of the EIA report.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	About 800 labour and 200 technical staff is likely to congregate in the area during construction phase, increasing temporary population by 1000. The average per capita solid waste generated is of the order of 210 gm/day/person. The solid waste likely to be generated from camps shall be of the order of 0.21 ton/day. Adequate facilities for collection, conveyance and disposal of solid waste will be developed. For solid waste collection, number of masonry storage tanks will be constructed at appropriate locations in camps. These tanks will be emptied at regular intervals and the collected waste will be transported to landfill sites. Covered trucks to collect the solid waste from common collection point and its transfer to the disposal site will be put to practice. A suitable landfill site to contain municipal waste from various project camps will be identified in consultation with the local administration. The details will be suggested as a part of EIA study.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	NO	No hazardous waste will be generated.
4.4	Other industrial process wastes	NO	
4.5	Surplus product	NO	
4.6	Sewage sludge or other sludge from effluent treatment	Yes	During construction phase, sludge generated from secondary settling tank will be dried in sludge drying beds. The dried sludge will be disposed at land filling sites or sold to the farmers, to be used as fertilizers.
4.7	Construction or demolition wastes	Yes	Construction or demolition waste from various construction sites will be disposed at sites identified in consultation with the district administration.
4.8	Redundant machinery or equipment	Yes	Redundant machinery equipments will be taken out from the project sites, after completion of construction activities.
4.9	Contaminated soils or other	NO	No contamination of soil is foreseen in

	materials		the project.
4.10	Agricultural wastes	Yes	The proposed project envisages enhancement of irrigation intensity in the Rajgarh district, Madhya Pradesh, which will increase agriculture-production, thereby increasing agricultural waste. Appropriate measures for the reuse and recycling of agricultural waste will be suggested as a part of the EIA study.
4.11	Other solid wastes	NO	-

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. N.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	The operation of various construction equipments requires combustion of fuels, commonly diesel. The major pollutant, emitting from diesel-combustion is SO_2. The short-term increase in SO_2 is expected to be quite low, even assuming all the equipments are operating at a common point. Thus no adverse impacts on ambient air quality are anticipated.
5.2	Emissions from production processes	No	Production process of concrete/mortar and earthwork are mostly emission-free except feeble emissions from diesel operated machineries.
5.3	Emissions from materials handling including storage or transport	Yes	During construction phase vehicular movement will increase. Construction materials will be brought and stored at various sites. Prevailing wind may carry minuscule parts of these materials in the atmosphere, especially during dry environment. However, its scale is not expected to be significant to cause any adverse impact.
5.4	Emissions from construction activities including plant and equipment	Yes	The operation of various construction equipments requires combustion of fuels, commonly diesel. The major pollutant, emitting from diesel-combustion is SO_2. The short-term increase in SO_2 is expected to be quite low, even assuming all the equipments are operating at a common point. Thus no adverse impacts on ambient air quality are anticipated.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Regular sprinkling of water on all haul roads will be done, to reduce the dust. Suitable sewage plants for make-shift arrangements will be installed together with installing of compost pits to address the sewage and organic waste.
5.6	Emissions from incineration	NO	No incinerator/s are planned to be

	of waste		installed in the project
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	NO	No burning of any construction-waste is required.
5.8	Emissions from any other sources	NO	-

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S. N.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	The operation of various construction equipments will generate noise. As a part of the EIA, detailed non-use modeling study will be conducted to determine increase in noise level due to various construction activities (like operation of various construction equipments, increased vehicular traffic, etc). The location of silent DG sets and crushers etc. will be planned in a manner to have bare minimum noise pollutions.
6.2	From industrial or similar processes	Yes	Though at present there is no generation of noise and vibration, and emissions of light and heat, since the industrial development is at its minimum. However, with the provision of 05 MCM water ear-marked for industrial use, industrial growth will be accelerated and correspondingly generation of noise and vibration, and emissions of light and heat will also increase. This will be taken care of by suitable site selection of industrial cluster and strict enforcement of adequate pollution control measures.

6.3	From construction or demolition	Yes	Noise level due to various construction activities (like operation of various construction equipments, increased vehicular traffic, etc) are expected from construction and demolition. Appropriate steps will be taken to minimize such levels as per the prevailing rules and regulations.
6.4	From blasting or piling	Yes	During blasting or piling operations noise levels of 80 to 90 DB (A) will be generated. To minimize generation of noise levels, blasting will be restricted only to a very limited period in morning and will be mostly controlled-blasting.
6.5	From construction or operational traffic	Yes	During construction, there will be an increase in vehicular movement due to transportation of construction materials. Based on past experiences, impacts on ambient noise levels due the operation of construction equipment, and increased vehicular movement is not expected to be significant. However, this aspect will be covered in detail as a part of the EIA.
6.6	From lighting or cooling systems	Yes	For lightening purpose at the project sites, small units of silent DG sets will be installed. The project does not envisage involvement of any cooling systems.
6.7	From any other sources	NO	-

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, costal waters or the sea:

S. N.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	-
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	Sewage generated from temporary camp will be treated through aerated lagoons, secondary setting tank, and disposed on land or water (post treatment) at sites identified in consultation with the respective district administration. Bio-degradable waste will be converted to organic manure in compost pits and will be utilized for the plantation proposed at the project area.
7.3	By depositions of pollutants emitted to air into the land or into water	Yes	The solid waste generated from the temporary camps and work-site shall be suitably collected, disposed by land

			filling as mentioned earlier. The details of the solid waste disposal facilities will be covered as a part of the EIA.
7.4	From any other sources	No	No pollutants are expected from any other sources.
7.5	Is there a risk of long-term build up of pollutants in the environment from these sources?	No	Since the gestation period is confined to 5/6 years, during which pollutants from make-shift arrangements will be disposed as per the prevailing rules and regulations. Hence, there is no potential risk of any long-term build up of pollutants in the environment.

8. Risk of accidents during construction or operation of the project, which could affect human health or the environment

S No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	Explosives will be used carefully by the experienced licensed persons. Blasting will be done in accordance with the existing provisions of law, applicable to such work confirming all codes in respect of safety of human beings and other objects.
8.2	From any other causes	Yes	All mandatory safety provisions for labour work-force, technical staff and villagers inhibiting nearby areas will be strictly enforced.
8.3	Could the project be affected by natural disasters causing environment damages (e.g. floods, earthquakes, landslides, cloudburst, etc.)	Yes	• The project has been designed for extreme flood condition (PMF) for a catchment area of 3726 sq km, to take care of any potential cloudburst, which may occur in a particular area. • The project design, as mentioned above, will also take care in absorption of high flood peaks. • The proposed project is located in the area categorized as ZONE II as per Seismic Zoning Map of India (IS 1893:2002), which is one of the safest seismic zones. • No landslides have been reported from the area in the past.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. N.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data

9.1	Lead to the development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries • other	YES	The development of supporting facilities, ancillary development and industrial development will be stimulated by the project. These developments will have impacts on the environment and adequate measures will be taken to safeguard environment as per the norms, regulations, rules and guidelines of Central Pollution Control Board and M P Pollution Control Board. These will be a part of Environment Management Plan. Since 5 MCM water is earmarked for industrial use, it will be made mandatory to install water treatment and recovery plants in the industries which will be supplied water from the project.
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	Mostly make-shift arrangements will be made at the site during the construction phase which will be dismantled after completion of the project as per the prevailing norms and guidelines. Very little permanent creation will be done and that will be utilized for post-construction operation and management.
9.3	Set a precedent for later developments	Yes	**Increase in agriculture production** The significant increase in cropping and irrigation intensities during project operation phase will increase the agricultural production, accompanied with an increased economic return from agriculture. The increased income levels will have a quantitative effect on the quality of demand for various facilities, eventually improving the infrastructure sector. **Fluoride Mitigation** The area suffers from high fluoride content in drinking water, posing a health hazard of fluorosis. The project will lead to fluoride mitigation due to the rise in the general ground water level, thereby diluting fluoride. **Improvement in livestock** The improvement in the socio- economic status of the population in the command area will indirectly improve the quality of livestock. The betterment in the infrastructure facilities in the area will also lead to the supply and availability of the veterinary services. During project operation phase, food production will increase significantly. The Increase in agriculture would

			correspondingly increase the availability of agriculture byproducts. Assuming even 20-30% of agriculture byproduct is usable as fodder, a large quantity of fodder will be available. It will reduce the pressure of the existing forests or vegetation of the area in a significant positive manner. The Project will also improve the waste availability for livestock. This is likely to improve the overall livestock status of the area. **Employment generation** The increase in the irrigation intensity in the command area would improve the employment scenario to a large extent. The introduction of irrigation requires a greater amount of labour in fields. This would improve the employment scenario for the local farmers, on the one hand, and will increase the demand for agricultural labours, on the other hand as it is a well established fact that with the introduction of irrigation, the manpower requirement per unit of agricultural land increases. On an average, labour demand in irrigated and un-irrigated agricultural fields is 200 man-days/year/ha and 100 man-days/year/ha, respectively. Thus the increased irrigation intensity will ensure employment to a large number of rural populations, which is a significant positive impact. **Urbanization** The commissioning of the project will increase the gross money-flow in the command area, leading to significant impacts in the project area. The area will have increased demands for services, such as sewerages system communication transportation, medical and educational facilities etc. It is presumed that all these developments would result in the generation of additional employment in secondary and ancillary sectors. Thus with the increased income level, there will be a greater impact of urbanization in the command area. **Industrialization**

			The area is suitable for industrial development as the land is available and it is very near to proposed DMIC project, having rail/road connectivity (NH3). A provision of 5 MCM water for industrial use in the project is made. The cropping pattern proposed for the command area envisages significant increase in the production of wheat and horticultural crops. The increased production will lead to mushrooming of small scale agro-industries. The increased level of industrialization would provide greater employment opportunities. The industrialization will also increase the demands for improvement in infrastructure facilities. This will lead to improvement in roads, communication, markets, storage yards, service-yards, etc. as ancillary benefits. **Other Changes** With the improvement in irrigation intensity, there will be an increase in the agricultural production of the command area. This, subsequently, will increase the money-flow in the command area as well as in the surrounding areas, as spill-over effects. The increased agricultural production will automatically lead to industrialization and demand for better infrastructural facilities. There will be an increased migration towards the command areas, as it will provide better economic avenues, compared to the surrounding areas. The influx of migrants in the area will slightly change the population. The influx of migrants, along with the increasing pressure on land and grater influx of money in the command area, will lead to diversification of occupational profits. Small scale industrial units and commercial units are likely to be established in the area. The command area will have increased demands for services, such as sewerage system, communication, transportation, recreation, schools, hospital etc. The benefits of all these developmental activities will be generation of additional employment. This array of services can

			provide amenities hitherto lacking and stimulate changes in the tasks performed by women in society and to the status of women within the society. The details of the above referred impacts will be assessed and quantified to the extent possible as part of EIA.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	Yes	Another moderately-sized major project Kundalia Major project is planned in the vicinity of Mohanpura Major project on river Kali Sindh. However, both of these project have their own well-defined catchment and command areas as well as users and water-use. For instance, water from Kundalia will be used by industries mostly in Shajapur whereas water from Mohanpura will be used by industries in Rajgarh district. Though in both of the command areas, the characteristic trait of the soil is free-draining, but taking extra-precaution to thwart any potential waterlogging, provision of pressure irrigation ranging from 25% to 75% of total command area has been made, as per the suggestions of the honorable members of the committee, given in the 52nd meeting. Furthermore, the entire canal-network will be lined upto 40 ha chak to reduce seepage and leakage, to prevent even the slightest chance of waterlogging.

(III) Environmental Sensitivity

S. N.	Areas	Name/Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	N A	No protected area under international conventions, national or local legislation for their ecological, landscape, cultural or other related value is falling, within 15 km zone of proposed project location boundary
2	Areas which are important or sensitive for ecological regions-Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountain-forests	N A	The project is not affecting any ecological regions-Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountain-forests.

3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	N A	The land area is not used by any important or sensitive flora or fauna species for breeding, nesting, foraging, resting, over wintering, migration. The list of flora and fauna species, from the Forest Action Plan, District Rajgarh clearly shows that the land area is not used by any important or sensitive flora or fauna species. Furthermore, The latest Red List of IUCN also does not include any of the flora and fauna species found within 15 km of Proposed project location boundary.
4	Inland, coastal, marine or underground waters		There is no coastal or marine waterbody. Underground water table in the area specified exists at 40-50 meters depth. There are no natural lakes, springs or any other waterbodies. However there are 7 small irrigation tanks (less than 3 MCM), solely used for irrigation purposes.
5	State, National boundaries	NO	No state or national boundary exists within 15 km radius of proposed project location boundary. However, the boundary of the state of Rajasthan adjoins 35-40 km downstream of the command area of the proposed project location boundary.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	NO	Routes or facilities to recreation or other tourist, pilgrim areas do not fall within 15 km radius of the proposed project location boundary. Furthermore, the proposed creation of reservoir will not obstruct any routes or facilities even beyond 15 km radius of the proposed project location boundary.
7	Defence installations	NO	There are no defence installations within 15 km radius of the proposed project location boundary.
8	Densely populated or built up area	NO	There are no densely populated or built up areas, within 15 km zone of the proposed project location boundary. However, the district headquarter Rajgarh city, and Biaora falls within the specified zone of 15 km. However, both the towns have a very low population density. For instance the district headquarter town Rajgarh has a population of 27,000, spread over 30 sq km area.
9	Areas occupied by sensitive man-made		The city of Rajgarh and Biaora falling within 15 km radius have hospitals,

	land uses *(hospitals, schools, places of worship, community facilities)*		schools, places of worship, community facilities but they will not be affected in the slightest by the proposed project. Furthermore, the creation of waterbody, upstream of Rajgarh, will improve the prevailing overall ecological and environmental situation, thereby addressing the environmental sensitivity of the area.
10	Areas containing important, high quality or scarce resources (*ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)*	NO	• The groundwater table in the specified zone of 15 km area is at 40-50 meters depth. The creation of reservoir will address the scarcity of groundwater through natural recharge. • The mother surface resource i.e., the land, in the specified 15 km radius at present is highly under-productive: feeble humus content, low agricultural yield, devoid of major natural vegetation, rocky outcrops, etc. Creation of waterbody will immensely improve the land quality and its 'land use capability' class. • Though there are no forest falling under submergence, but some forest located on the right bank of the river Newaj, downstream of the dam, where the proposed Right Bank Canal ends. This will enrich the humid content of soil moisture zone and lead to qualitative improvement of forest. • At present most of the agriculture in the proposed project area is rain-fed having very low per unit yield and poor agriculture-intensity. Creation of the waterbody will lead to the qualitative and quantitative improvement of agricultural yield, eventually leading to sustainable family economy. • At present, river Newaj has only seasonal flow. Creation of reservoir with assured release of environmental flows in non-flowing periods, the river will be transformed into perennial one. This will lead to development of fisheries as well as promotion of

			aquatic flora and fauna. • The proposed project does not have any tourism spot within 15 km of proposed project location boundary. The creation of a reservoir has potential to develop it as a tourism center. • There is no surface or sub-surface minerals within 15 km of proposed project location boundary. It is corroborated by the geological map of the area.
11	Areas already subjected to pollution or environmental damage (*those where existing legal environmental standards are exceeded).*	Yes	The specified area of 15 km of proposed project location boundary does not have any polluted or environmentally damaged patch. Due to lack of water resources there is no major industry in the area, which is considered a 'backward' area. So no existing legal environmental standards are exceeded. However, within 15 km of proposed project location boundary, the fluoride content in the groundwater exceeds the legal limits of 1.5 mg/liter. The nitrate content in per unit also crosses the permissible limit within 15 km of proposed project location boundary. Creation of the waterbody will immensely dilute the fluoride content in groundwater and effectively eradicate the ill-effects of fluorosis. It needs to be specifically mentioned here that increasing quantum of water is the best way to mitigate fluorosis. Ending this natural hazard, will bring well-being and happiness in the lives of thousands of affected families in the area.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (*earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)*	Yes	• The area falls in the 'Seismic Zone II' considered as one of the safest seismic zones. Furthermore, the site-specific seismic investigations will be conducted by IIT Roorkee and appropriate seismic safety measure will be incorporated in the project design, as suggested by IIT Roorkee. Secondly, in terms of water storage and depth of column it is a moderate-sized major project. Thirdly, the dam is to be built on the basaltic rocks, good for the foundation. Thus

			ample precautions are being taken to insulate dam from seismic event in future, if any. • There have been no recorded cases of subsidence in the area. Similarly, no landslides have been reported from the area in the past. • The area is susceptible to erosion from air. Availability of water will enable creation of wind-shields of plants providing protection against wind-erosion. Lack of water has resulted lack of erosion and weathering by water. Adequate protection against water-erosion will be taken up by creating soil and water conservation measures in the command area. • The area is occasionally affected by floods during extra-ordinarily excessive monsoon. Creation of the project will provide as a buffer against the flooding. • A drought is manifestation of extreme adverse climatic condition and is a common phenomenon in the area. Creation of a moderately-sized waterbody will shrink the frequency and intensity of droughts in the area.