EXECUTIVE SUMMARY (ENGLISH)

For

SAND MINING (MINOR MINERAL) FOR FOLLOWING VILLAGES

SR.NO	NAME OF SANDGHAT	VILLAGE NAME	KHASRA NO	TOTAL LEASE AREA	Total Production/ Brass (TPA)	TOTAL PROJECT COST
1.	JODPARALI	JODPARALI RIVER SAND MINE AT PURNA RIVER	24, 52, 53, 54, 55, 61, 62, 63, 64, 65, 272, 276, 284, 285, 286, 287, 288, 293	2.88	5080	1,34,06,120
2.	KASHTAGAON	KASHTAGAON RIVER SAND MINE AT DUDHANA RIVER	26, 27, 28, 29, 34, 37, 38, 39,40, 42, 43, 186, 187,188, 189, 190,191, 192	0.60	1060	27,97,340
3.	NANDGAON KHURD	NANDGAON KHURD RIVER SAND MINE AT PURNA RIVER	362, 363,368, 370, 371, 372	2.28	4028	1,06,29,892
4.	PIMPALGAON TONGA	PIMPALGAON TONGA RIVER SAND MINE AT PURNA RIVER	07, 13, 14	1.40	2473	65,26,247
5	SAVANGI KHURDA	SAVANGI KHURDA RIVER SAND MINE AT PURNA RIVER	10, 11, 12, 13, 21, 22, 23, 24, 25, 26, 27	0.50	883	2330237

OF

TALUKA:-PARBHANI, DISTRICT – Parbhani (Maharashtra)

Lease Validity:-2019-2020 (1 YEAR), Study Period:-Nov, Dec & January

FOR

ENVIRONMENTAL CLEARANCE (PUBLIC HEARING)

("B" under category 1(a) of EIA Notification dated 2006, S.O. 141(E) dated 15. 01. 2016, MoEF & CC, S.O. 3611(E), Dated 25.07.2018, Sustainable Sand Mining Management Guidelines 2016, Guidelines for Mining Policy 2020

Applicant District Mining Officer, Parbhani
Government of India

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Accredited by NABET: No.: - NABET/EIA/1619/RA0060/ April 19, 2020)

February – 2020

1.0 Introduction:

Executive summary is the brief of report prepared for Environmental Management Plan of Sand Spot Mines of Minor Minerals of Parbhani District, Tehsil Parbhani by M/s. District Mining Office, Parbhani, Maharashtra (Govt. of Maharashtra). The mining is confined to extraction of sand in surrounding villages of Jodparali (2.88 Ha), Kashtagaon (0.60Ha), Nandgaon Khurd (2.28 Ha), Pimpalgaon Tonga (1.40 Ha), Savangi Khurda (0.50 Ha). Sand is exposed in the lease area, the deposit is being done by opencast manual mining method without drilling and blasting.

1.1.1 Project Identification

The sand is one of the minor minerals occurred in Parbhani district. The proposed project of sand mine by opencast method in the applied lease area of **(**2.88 **Ha), located near village** Jodparali (0.60 Ha) located near village Kashtagaon**, (**2.28 **Ha) located near village** Nandgaon Khurd **and (**1.40 **Ha) located near village** Pimpalgaon Tonga**,** (0.50 Ha) located at Savangi Khurda, **Tehsil Parbhani** , District:-Parbhani (Maharashtra). Mining Plan along with PMCP under Rule 16 (1) of MCR 2016 and PMCP under Rule 23B of MCDR 1988 is approved by Deputy Director, Directorate of Geology and Mining, Regional Office , Aurangabad vide letter no. STC-10/2020(M.P. Sand) 52 dated 04/02/2020. Proposed lease area is Government land.

1.1.2 Identification of Project Proponent

Table 1: Name and address of the Applicant

Applicant
District Mining Officer, Parbhani **(Govt. of Maharashtra)** **Gandhi Park, Parbhani, Maharashtra 431401** **Mob No:-7218655211** **Email Id:-dmocollectorpbn@gmail.com**

1.1.3 Location of Project

Table 2: Details of Project Location

Particulars	JODPARALI	KASHTAGAON	NANDGAON KHURD	PIMPALGAON TONGA	SAVANGI KHURDA
Name of the applied mine area	**JODPARALI RIVER SAND MINE AT PURNA RIVER**	**KASHTAGAON RIVER SAND MINE AT DUDHANA RIVER**	**NANDGAON KHURD RIVER SAND MINE AT PURNA RIVER**	**PIMPALGAON TONGA RIVER SAND MINE AT PURNA RIVER**	**SAVANGI KHURDA RIVER SAND MINE AT PURNA RIVER**
Near village	**Mandwa,**	**Wadgaon**	**Parbhani,**	**Parbhani ,**	**Parbhani ,**

	Manwat	**Tarf Takli, Karla, Kumbhari**	**Purna , Manwath , Pathri**	**Manwath , Pathri , Sailu**	**Purna , Manwath , Pathri**
Tehsil	**Parbhani**				
District	**Parbhani**				
State	**Maharashtra**				
Toposheet no.	**56A/15**	**56A/11**	**56A/15**	**56A/15**	
Latitude (N)	**19°23'18.69"N**	**19°23'35.81"N**	**19°17'13.82"N**	**19°19'9.47"N**	
Longitude (E)	**76°54'4.89"E**	**76°38'52.55"E**	**76°54'13.79"E**	**76°53'49.65"E**	

1.1.4 NEED OF THE PROJECT

The sand and gravel are one of the most important construction materials. Ensuring their availability is vital for the development of the infrastructure in the country. As the requirement of these construction materials is on rise, and as entire Parbhani district comes under the Purna-Godavari and Godavari basin the district is covered by basaltic rock due to weathering activity by river Godavari and Purna by transportation, deposition and erosion has been taken place of pre existing rock form well sorted granular sand in Parbhani district which is favorable for building construction work. This indicates enough gaps between demand & supply which provides opportunities for Government of Maharashtra to increase its production.

1.2 PROJECT DESCRIPTION

Description of Applied Lease and Mining Process

Local geology: Parbhani districts large part is occupied of rocks of Deccan trap formation, represented by of most horizontal lava flows of basaltic composition, thought to have been emplaced from fissures towards the close of the Mesozoic era, on to the lower tertiary era.

Table 3: Available Brass and Life of Mine

Name of Village	**JODPARALI**	**KASHTAGAON**	**NANDGAON KHURD**	**PIMPALGAON TONGA**	**SAVANGI KHURDA**
Quantity of sand for Excavation (Brass)	**5080**	**1060**	**4028**	**2473**	**883**
Life of Mine	**1 YEAR**	**1 YEAR**	**1 YEAR**	**1 YEAR**	**1 YEAR**

Proposed Working

Opencast Manual Mining Method will be adopted for extraction of Sand deposits in Purna , Dudhana River Bed.

Opencast Mine Working:-

As the mine lease is located in the River Bed and mineral is replenished every year. As per The Modified River bed Sand Mine Working Guidance No.11(1X) and 12 of the Notification of Revenue and Forest Department, Mantralaya Mumbai, The Government of Maharashtra vides Government Decision No. Gaukhani-10/0615/Pra. Kra. 289/Kha dated 03.01.2018; mining will be done manually only with the use of labours, man heads, spades (Pawadas), ghamelas/pans.

Each cycle of operation shall consist of the following operation.

i) Over Burden Removal: No overburden is anticipated. So there is no need of removal of Overburden.

ii) Digging of Sand: Digging of Sand will be done by manually by Labours with the help of Spades (Pawadas).

iii) Loading of Tractor Trolley: Loading of Tractor Trolley will be done by manually with the help of Man heads, Labours with the help of Spades (Pawadas) & Pans (Ghamelas) combination.

iv) Transportation of Sand by Tractor Trolley from River Bed Mine/Sand Ghat to Stack yard: Mine Owner will prepare the Stack yard outside the River bed or Sand Ghat on nearer road. By the use of Tractor Trolley the material will be transported from Sand Ghat to Stockyard.

v) Transportation of Sand from Stack yard to Customers: Transportation of Sand will be done by the use of tractors trolleys from Stack yard to various Customers with permissible quantity. Transportation will be done as per the rules and regulations.

vi) Reclamation: Applicant will do scientific mining so that in Monsoon the Mine Lease area will be automatically backfilled. Only plantation will be done by the applicant on the both bank side of the River and other free places.

Extent of Mechanization:

Mining Operations will be done by manual means only. No Mechanization. Services

1.3 DESCRIPTION OF THE ENVIRONMENT

The one time environmental monitoring was carried out during winter season of year December 2019. The various environmental components which are thoroughly studied during the study period include:

BASELINE ENVIRONMENT STATUS

1.3.1 Meteorological condition

During winter season (December 2019 -meteorological data has been collected). Maximum temperature recorded 32 °C & Minimum temperature 21°C and wind blows from east and north. during winter season.

1.3.2 Ambient Air Quality

The mining operations will be carried out by manual method and no machinery, drilling & Blasting will be carried out. Hence impact on air quality is not envisaged. Only tractor-trolley will be used for transportation of the sand from the ghat to nearby depot or desired destination.

1.3.3 Ambient Noise Level

Preliminary survey was undertaken at different four Locations during study period to identify the baseline noise level in the study area. Summary of noise level data of different location are given below:-

Conclusion:- During the study period ambient noise level were monitored and observed maximum level was: 58.4 at Village Kashtgaon during day-time & minimum was 34.8 at Village Nandgaon Khurd during night-time. From the baseline monitoring results, it is observed that ambient noise level is within prescribed limit.

1.3.4 Water Quality

Ground Water Quality

- It is observed that pH of the ground water samples are range of 6.50 to 7.96, which is between the acceptable pH limit for drinking water.
- Concentration of Total dissolved solids (TDS) & Total hardness observed in different groundwater samples are in range of permissible category stipulated by Bureau of Indian Standards.
- Fluoride Concentration is in between 0.1 to 0.4 mg/l. The desirable limit of 1 mg/l and permissible limit of 1.5 mg/l.

Surface water quality

- Biochemical oxygen Demand - All surface water samples have BOD ranging 1.4 to 3.3 which indicate very low organic pollution load. All BOD values are within prescribed limit (<30.0 mg/lt as in IS 10500 :2012).
- Chemical oxygen demand (COD) - All surface water samples have COD values ranging from <5 to 45.5 which indicates low level of organic pollution load in term of COD.

- From the analysis data it is observed all parameters are within permissible limit of drinking water standard.

1.3.5 Soil Characteristics

The pH values of the collected samples were in the range of 6.86 to 8.50, organic matter in the range of 0.786(%) to 1.96 (%), water holding capacity in the range of 5.56 to 7.70%, potassium in the range of 0.07 to 173, total nitrogen in the range of 0.012 to 0.013 %, bulk density in the range of 1.22 to 1.45gm/cc. These all parameter indicate that soil is not so fertile in this area.

TABLE 4: LAND USE PATTERN OF THE CORE AREA

S. No.	Particulars	JODPARALI		KASHTAGAON		NANDGAON KHURD		PIMPALGAON TONGA		SAVANGI KHURDA	
		As on Today in Ha	After 1 Years in Ha	As on Today in Ha	After 1 Years in Ha	As on Today in Ha	After 1 Years in Ha	As on Today in Ha	After 1 Years in Ha	As on Today in Ha	After 1 Years in Ha
1.	Area of top soil spread for a forestation	-	-	-	-	-	-	-	-	-	-
2.	Storage for top soil	-	-	-	-	-	-	-	-	-	-
3.	Green Belt	-	-	-	-	-	-	-	-	-	-
4.	Over burden Dump	-	-	-	-	-	-	-	-	-	-
5.	Mineral Storage	-	-	-	-	-	-	-	-	-	-
6.	Infrastructure (Workshop, Admin. Building etc.)	-	-	-	-	-	-	-	-	-	-
7.	Mine road in Mine lease area	-	-	-	-	-	-	-	-	-	-
8.	Utilized area for Sand	-	-	-	-	-	-	-	-	-	-

	Mining										
9.	Virgin lease area for Sand Mine & Other Uses	**0.000**	**2.88**	**0.000**	**060**	**0.000**	**2.28**	**0.000**	**1.40**	**0.000**	**0.50**
10.	Road	**2.88**	**0.000**	**0.60**	**0.000**	**2.28**	**0.000**	**1.40**	**0.000**	**0.50**	**0.000**
11.	Railway	-	**-**	**-**	-	**-**	**-**	-	**-**		
12.	Tailing Pond	-	**-**	**-**	-	**-**	**-**	-	**-**		
13.	Effluent Treatment Plant	-	**-**	**-**	-	**-**	**-**	-	**-**		
14.	Mineral separation plant	-	**-**	**-**	-	**-**	**-**	-	**-**		
15.	Township Area	-	**-**	**-**	-	**-**	**-**	-	**-**		
16.	Others to specify	-	**-**	**-**	-	**-**	**-**	-	**-**		
17.	**Ownership**	Government River	Government River	Government River	Government River	Government River	Government River	Government River	Government River	Government River	Government River
Total		**2.88**	**2.88**	**0.60**	**0.60**	**2.28**	**2.28**	**1.40**	**1.40**	**0.50**	**0.50**

1.3.6 Biological Environment

Flora - The study area is mainly dominated by Southern Dry Mixed Deciduous Forests & the study area vegetation is dominated by Aam, Babul, Bel, Bor, Chandan, Jambhul, Karnj, Neem etc.

Fauna - The faunal species commonly encountered during study within the study area are Hare, Rat, Indian fox, etc. No endemic endangered or threatened species of flora & fauna observed during study period.

1.3.7 Demography and Socio- Economics

As per census of India 2011, study area consists of 848 nos. of villages with total population of 307,170 nos. The number of households in the study area is 44,934.

1.4 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

10.4.1 Impact on Air Quality

The mining operations will be carried out by manual method and no machinery, drilling & Blasting will be carried out. Hence impact on air quality is not envisaged. Only tractor-trolley will be used for transportation of the sand from the ghat to nearby depot or desired destination.

The transport routes are capable for handling this additional traffic.

Mitigative Measures: Following care will be taken for air pollution control.

- Water sprinkling will be done on the roads regularly. This will reduce dust emission further by 75%.
- Care will be taken to prevent spillage by covering the carrying vehicles with tarpaulin and sprinkling of water, if dry.
- Fortnightly scraping of road in order to keep the roads almost levelled. This will ensure smooth flow of vehicles and also prevent spillage.
- Overloading will be strictly prohibited.
- Proper tuning of vehicles to keep the gas emissions under check.

Plantation of trees along the roads to help reduce the impact of dust in the nearby villages.

10.4.2 Impact on Noise Quality:-

No significant noise will be generated due to sand mining as entire operation will be carried out manually. Noise will be generated only due to tractor trolley being used in sand transportation.

Mitigation measures: The off-site receptors are not significantly affected as noise generated by sand ghat is insignificant but some disturbances due to vehicle movement may not be avoidable. The tractor trolley will be maintained in good running condition so that noise will be reduced to minimum possible level.

Speed limits will be imposed on tractor trolleys used for sand transport.

10.4.3 Impact on Water Environment:-

Mining of sand from within or near a streambed has a direct impact on the stream's physical habitat characteristics. As the project activity is carried out in the dry part of the river bed, none of the project activities affect the water environment or riparian habitats. In the projects, it is not proposed to divert or truncate any stream. No proposal is envisaged for pumping of water either from the river or tapping the ground water. In the lean months, the proposed sand mining will not expose the base

flow of the river and hence, there will not be any adverse impact on surface hydrology and ground water regime due to this project. The proponent will adhere all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

Mitigation measures: The deposits occur in the middle/bottom of the river. During the lease period, the deposit will be worked from the top surface to approved depth of mining within the demarcated lease area only.

10.4.4 Impact on land Environment-

LAND ENVIRONMENT: The mining and allied activities involved in river bed mining are creation of temporary haul roads / transportation track and formation of mined pits inside river, etc. This sand mining project does not involve any waste generation. Thus no waste dump sites are needed for the project.

Mitigative Measures:

- The mining will not be carried out below the water table.
- The contractor with the satisfaction of competent authority will provide drinking water, rest shelter, first aid box and welfare facilities as per prevailing laws.
- The river bed areas dug during dry season i .e. other than rainy season will get replenished during monsoon.
- Sand/Gravel deposit in rainy season in which the material so deposited will be available for fresh quarrying.
- The contractors will abide by the Maharashtra Minor Mineral Extraction Development and Regulation) Rules, 2013.

10.4.5 Impact on Biological Environment

Anticipated impact and mitigation measures for biological environment

Impact Predicted	Suggestive measure
Disturbance to free movement /living of wild fauna viz. Birds, Reptiles etc.	• If birds are noticed crossing the core zone, they will not be disturbed at all; • Labourers will not be allowed to discard food, polythene waste etc., which can attract animals/birds near the core site; • Only low polluting vehicles having PUC will be allowed for carrying mining materials. • Noise level will be maintained within permissible limit (silent zone-50dB (A) during day time or residential zone 55dB (A)) as per

Impact Predicted	Suggestive measure
	Noise Pollution (Regulation and Control) Rules 2000, CPCB norms
Disturbance of riparian ecosystem/ wetlands	The riparian ecosystem or the wetlands will not be desturbed by the workers.
Monitoring of upstream and downstream water quality	Water quality will be monitored from upstream and downstream area once every month to assess the impact on water quality and mining activity will be controlled to maintain the clean water conditions.

Ecological Impacts: Excessive and unscientific riverbed sand mining results in the destruction of aquatic and riparian habitat through large changes in the channel morphology. Impacts include bed degradation, bed coarsening, lowered water tables near the streambed, and channel instability. These physical impacts cause degradation of riparian and aquatic biota and may lead to the undermining of bridges and other structures. Continued extraction may also cause the entire streambed to degrade to the depth of excavation.

Sand mining generates extra vehicle traffic, which negatively impairs the environment. Where access roads cross riparian areas, the local environment may be impacted.

Mitigation measures: As the proposed mining will be carried out in a scientific manner as mentioned before, not much significant impact is anticipated, however, the following mitigation measure will be taken to further minimize it:

1. The activity will mainly be carried out manually to minimize associate loss, as stated earlier.
2. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season.
3. As the mining site has no vegetation, no clearance of vegetation is required.
4. No mining will be carried out in the vicinity of important structure like bridges, dam and other structures if any.
5. Mining will be carried out on the dry part of the lease area to avoid disturbance to the aquatic habitat and movement of fish species.
6. No mining will be carried out during the rainy season to minimize impact on aquatic life.
7. The mining activity will deploy a tractor for transportation of sand from the mine to desired destination that may cause some loss to riparian habitat. Safe site / site having least impact will be selected for transportation, all the vehicles employed for transportation purpose will be PUC certified. On closure of mining operations / during the rainy season the eroded bank will be restored / reclaimed to minimize negative impacts.
8. No lighting will be allowed in the lease area.
9. No piling of sand will be allowed in the area.

10. No discard of food, polythene waste etc. will be allowed in the lease area which would distract/attract the wildlife.
11. No night time mining will be allowed which may catch the attention of wild life.
12. Access roads will not encroach into the riparian zones and no riparian vegetation cleared off for the mining transportation of sand.

10.5. ANALYSIS OF ALTERNATIVES

10.5.1. Site Alternatives- The mine is located along the where the sand exists in enough quantity to be economically extracted. Mining locations are preferred near the markets or along the transportation route.

10.5.2 Technology alternatives: - No alternative technology only opencast Manual Mining Method will be adopted for extraction of Sand deposits.

10.6 ENVIRONMENT MONITORING PROGRAM

During the execution of the project activity, the sampling & analysis of various environmental attributes will be carried out as per guidelines of central pollution control board & State pollution control board Rajasthan. An Environment Management Cell will be set-up to implement the said program.

10.7 ADDITIONAL STUDIES

10.7.1 Risk Studies-Hazard identification and risk analysis involves identification of undesirable events that leads to a hazard, the analysis of hazard mechanism by which this undesirable event could occur and usually the estimation of extent, magnitude and likelihood of harmful effects

10.7.2 Disaster Studies:-

Proper disaster planning should be done to meet any emergency situation arising due to fire, explosion, sudden leakage of gas etc. Firefighting equipment and other safety appliances should be kept ready for use during disaster/emergency situation including natural calamities like earthquake/flood.

10.9 ENVIRONMENT MANAGEMENT PLAN

Opencast mining operation comprises of various activities related to digging and material handling which may be potential sources of environment pollution. The Sand Mine will be developed by systematically formed benches with over all pit slopes of 45° or angle of response which stabilizes the benches. Efforts will be made to suppress the

dust at source by adequate watering. For this a mobile water of 2000 liters capacity will be engaged throughout the working shift.

Environmental Issue	Management Measures	Implementation
Air Environment	• To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis. • Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets. • The Green Belt development will be prepared along the haul roads, which will act as a pollution sink. • To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters	Project authorities through regular monitoring.
Noise & Vibration	• Phasing out of old and worn out tractor trolleys. • Provision of green belts along the road networks. • Care will be taken to produce minimum sound during sand loading. • Use of Backhoe and ear plugs may be provided to protect the labors working at the site.	Project authorities through regular monitoring.
Water environment	• Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the river bed. • River stream will not be diverted to form in active channels. • Utmost care will be taken to minimize or control leakage vehicles to be used for sand. • Transportation. • The washing of tractor trolleys in the river will be avoided. • The contractor will follow all guidelines and rules for proper and scientific	Project authorities through regular monitoring.

	method of • mining during the period of extracting the sand.	
Biological Environment	• Mining activities will be restricted to day-time so that fauna will not disturb at night. • Material will be covered with tarpaulin during transportation. • Water sprinkling will be done on haul roads to control fugitive emissions.	Project authorities through regular monitoring.
Occupational health & safety & public Health & safety.	• Regular water sprinkling on haul roads. • Dust mask will be provided to the workers. • Safety of the employee during mining will be taken care as per Mine regulations. • Medical records will be keep maintained.	Project authorities through regular monitoring.
Socio economic environment	• Employment will be given to local people. • Regular medical camps will be organized. • Funds will be provided for development activities in nearby villages.	Regular monitoring by Project authorities.

TABLE 6: COST ESTIMATES OF EMP IMPLEMENTATION
(Investment and recurring cost in lacs /year)

S.No	Particulars	JODPARALI		KASHTAGAON		NANDGAON KHURD		PIMPALGAON TONGA		SAVANGI KHURDA	
		Capital cost Rs. in Lacs	Operational and Maintenance cost (Rs. in Lacs/year)	Capital cost Rs. in Lacs	Operational and Maintenance cost (Rs. in Lacs/year)	Capital cost Rs. in Lacs	Operational and Maintenance cost (Rs. in Lacs/year)	Capital cost Rs. in Lacs	Operational and Maintenance cost (Rs. in Lacs/year)	Capital cost Rs. in Lacs	Operational and Maintenance cost (Rs. in Lacs/year)
1	Environmental Monitoring programme	1.5	1.50	1.00	1.50	2.50	2.50	1.50	3.00	1.50	3.00
2	Water Pollutio	1.3	5.00	1.00	5.00	0.50	6.50	1.50	5.50	1.50	5.50

	n Control										
3	Green belt & Maintenance	0.50	Nil	0.50	Nil	0.50	Nil	0.50	Nil	0.50	Nil
4	Noise pollution	1.00	0.50	1.50	0.50	1.50	0.50	2.00	0.50	2.00	0.50
5.	Occupational Health & safety	-	1.00	-	1.00	-	1.50	-	1.00	-	1.00
TOTAL		**4.3**	**8.00**	**4.00**	**9.00**	**5.00**	**11.00**	**5.5**	**10.00**	5.5	**10.00**

TABLE 7: MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

Particulars	Monitoring Frequencies	Duration of Station	Important Monitoring Parameters
Surface water / Tube well	Twice in a year	Grab	pH, SS, TDS, Iron, Hardness, Alkalinity Chlorides, Nitrates Sulphate & Fluorides
Ambient air monitoring	Twice in a year	24 hr.	PM10, PM2.5, SOx and NOx
Noise Pollution	Twice in a year	-	Level in dB(A) and dB(C)
Working environment	Once in a year	-	PH, Conductivity, Sulphate, Nitrate, Phosphates, Alkalinity & texture