ANNUAL REPORT
2014-2015

GERI

GUJARAT ENGINEERING RESEARCH INSTITUTE
VADODARA – 390007

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INTRODUCTION

Gujarat Engineering Research Institute (GERI) is one of the leading research institutes of the country. It has the distinction of being adjudged as one of the best research stations of the country as evidenced by honours bestowed upon it by CBIP in the year 1989. GERI is working under Narmada Water Resources, Water Supply & Kalpasar Department. The Institute aims at providing research and development inputs to the activities of the Gujarat State in the field of water resources, irrigation and roads & buildings. To this end it has its activities centered on construction materials, soil, rocks, grouting materials etc. The activities are for investigations, testing, consultancy, training, and quality control in addition to R & D as stated above. It extends facilities to Government of Gujarat/ inter-state Government, public and private sector bodies in the above different activities.

Making a humble beginning as sub division in 1950, GERI developed into a research division in 1957. By 1960 when the Gujarat State was formed, it attained the status of State Research Institute with 3 divisions as materials, soil-mechanics and highway engineering.

Then onwards, GERI progressively expanded its activities in the subsequent decades and has now blossomed into 13 divisions.

The institute is headed by Director who is of the rank of a Chief Engineer. There are two posts of Joint Directors manned by the officers of the rank of Superintending Engineer and one post of Superintending Engineer, Soil, Drainage and Reclamation Circle, Vadodara, who look after the works related to Soil Survey, Reclamation and Drainage. Joint Director (Road) is from Road and Building Department, looks after the works related to Roads and Buildings. Joint Director (Irrigation) is from Narmada, Water Resources, Water Supply and kalpasar Department, looks after the works of the local divisions, R & D works relating to Irrigation, Dam Safety and Model Studies.

The research work is organized in various divisions by the respective Research Officers who are of the rank of Executive Engineer including Geologist (Senior-Class-I officer) of Engineering Geology Division. Suitable technical and scientific staff assist them. In addition to main laboratories at Vadodara, the institute has regional research/testing divisions at Surat, Rajkot and Gandhinagar.

There are set up of District Laboratories under each regional laboratory.

PRELUDE

It gives me immense pleasure in presenting this Annual Report of Gujarat Engineering Research Institute (GERI) for the year 2014-2015.

GERI is a premier R & D Institute of Government of Gujarat working under Narmada Water Resources, Water Supply and Kalpsar Department. It is entrusted with the work of Research, Investigation and Testing Consultancy & Training in Various disciplines of civil engineering which includes Soil Mechanics, Material Testing, Geo mechanics Grouting Technology, Engineering Geology, Remote Sensing, Seismology, Hydraulic Model Studies, Sedimentation Surveys, Road & Traffic Engineering, Dam Safety, Soil surveys etc.

On research side, GERI has completed 5 state sponsored research schemes & carried out research study for 14 state sponsored research schemes under various disciplines, 6 new schemes proposed. 2 schemes completed 1 scheme under Hydrology Project-II & 1 scheme of Department of Science & Technology (DST) is under progress. Also, model study for 14 hydraulics structures has been carried out during the year.

About 50404 samples were tested in various laboratories of GERI during the year. Dam Safety Organisation of GERI has inspected 53 large dams and 50 gated dams and recommended safety measures to the project authorities. During the year about 17.20 lac ha GCA pre & post irrigation survey has been carried out by Soil drainage reclamation Circle under GERI. To enrich and update the technical knowledge of state engineers/scientists, GERI has organized 13 symposiums/workshops/one days Seminar. Also GERI personnel have attended 14 Training programs. During the year, 35 new books were added in GERI library.

The Annual Report presented here is a nutshell of activities of the institute carried out during the year 2014-2015. I wish to place on record the sincere and hard efforts made by each one in GERI for doing appreciable work. Suggestions and comments on the works reported herein are most welcome.

V. P. Kapadia
Chief Engineer & Director,
GERI, Vadodara.

SECTION-A

RESEARCH WORKS

1.0 A Centrally Sponsored Research Schemes under progress.

1.1 Establishment of 10 New Seismological observatories in peninsular Shield region.

Seismic monitoring in the seismological observatory established at Dharoi project, north Gujarat, under World Bank Aided DST, New Delhi's project, is being carried out. The data is being collected from this Broad Band Seismological Observatory and also being online transmitted to National Geophysical Research Institute, Hyderabad through VSAT communication system, for further analysis and studies.

1.2 Kalpasar Seismic project

(a) Process of LAQ was initiated. Form no. 7-12 along with plan map for various site locations collected and submitted to Kalpasar Department.
Administrative approval from Kalpasar Department is awaited.

1.3 Hydrology Project-II Study

India is agriculture country and our water resources are limited. Govt. is developing water resources in form of dam, weirs, barrages & canal system. Excess use of water in irrigation results in less yield, water logging & salinity problems. Demand of water for drinking, industrial & irrigation purpose has increased; hence study for proper utilization is necessary. This scheme is approved by Ministry of water recourses and Dam safety and T.S. is accorded by Joint Director (DSO) GERI. GERI has taken up study on crop water requirement / evaporation for optimum utilization of irrigation water in Karajan taluka, village Khandha of Vadodara district which is surrounded by Narmada canal network. Meteorological data is collected for 14 years and analyzed on weekly, monthly and yearly basis. These observations and analysis will be useful in other areas for scientific use of water so it can be used scientifically.

It is therefore a right time to focus on such study which will direct attention of all water managers to such a problem and ultimately actual quantity of water as per the requirement of crop will be utilized.

The aim of the study is to work out principal crop water requirement of the study area and to implement it on site and observe it's out come and use the same methodology for the other areas so as to optimize use of water for agricultural purpose. This will require agricultural data, meteorological parameters and soil data for working out crop water requirement.

At present

(1) Automatic Weather Station (AWS) for collecting Data, Computer & peripheral are procured & installed.

(2) Meteorological data for the last 14 years and soil data for study area are collected.

(3) Renovation of old pump room near existing weather station is completed.

Evaluation of study has been prepared & Final report is submitted to New Delhi.

1.0 B Centrally Sponsored Research Schemes under H.P.-II Completed.

1. To study the trend in water quality of the locations identified as hot spot.

Objective:

The scheme is to assess the pollution due to human activity in terms of nutrients and industrial pollutants.

Methodology:

There are eight locations to be identified and water samples to be collected every month for two years. Water samples will be tested for 25 parameters for pre monsoon and 15 parameters post monsoon.

Final Report is accepted by Technical Assistant Management Committee(TAMC) of HP-II and completed in all respect.

2. Study of Water Quality Fluctuation in Vishwamitri River

Objective:

The scheme is to study the effect of water quality along the length of river Vishvamitri passes through Vadodara City.

Methodology:

There are eleven locations for surface water and seven locations for ground water are to be identified nearby Vishwamitri River. Water samples are to be collected bi-monthly and will be tested for 20 parameters.

Final Report is accepted by Technical Assistant Management Committee (TAMC) of HP-II and completed in all respect.

2.0 STATE SPONSORED RESEARCH SCHEMES.

2.1 SOIL MECHANICS DIVISION

(A) Abstract of State sponsored research schemes under progress.

New Scheme

(I) Title: Analysis of soil testing results for earth dams of Kutch region.

Objective:

To create data base of soil samples of Kutch region.

Methodology:

(1) More than 10000 soil samples of Kutch region have been tested in various GERI laboratories.
(2) Data entry of the above work is done in predetermined format for analysis work.
(3) To draw soil depth profile of various dams of available test result at various location.
(4) To create data base for borrow area for further future construction.

(II) Title: Effect of fly ash, sand and lime on expansive soil

Objective:

South Gujarat and some part of Saurashtra /Kutch consists of highly expansive soil where CNS material is not available in near area hence it is required to prepared CNS material by adding other ingredient. To study the effect of additives on workability of soil.

Methodology:

- Testing of various parameter of existing soil samples
- Re-testing after adding required other ingredient in various proportions.
- Comparison with existing test results.

(III) Title: Comparison of shear parameter with and without Geotextile in CI type of soil.

Objective:

To know the behavior of shear strength of soil with Geotextile and without Geotextile. Geotextile allow the drainage of water from it and restrict the soil articles.

(B) Abstract of completed state sponsored research scheme. - NIL -

2.2 GEOMECHANICS DIVISION:

(A) State sponsored research schemes under progress.

1 Title: Design of plastic concrete mix for slurry trench diaphragms used as under seepage control technique. (Grouting Lab.)

Objective:

The study is to develop the standard method for design of plastic concrete mix which is to be used for construction of slurry trench diaphragms

Position:

Collection of literature and data completed. Study is under progress & after completion of study, reporting shall be taken up.

2 Title: State of art report on Design and construction of diaphragms as under seepage control measures (Grouting Lab.)

Objective:

The study is to cover the details of selection of type of diaphragms wall for different geological conditions, heterogeneity/permeability of sub-surface strata, anticipated stress and deformations due to construction and filling of reservoir etc. Design of mix considering different physical and engineering properties in the laboratory construction method etc. It will cover the current methods for design and construction of diaphragm wall in our country as well as abroad. This attempt of compiling techno-feasible data specifications. (On diaphragms wall as a seepage control measures) etc., will provide a comprehensive guide line to the designers and field engineers at a glance and will be proved as a hand book on diaphragms wall.

Position:

Collection of literature and data completed.

Study is under progress & after completion of study, reporting shall be taken up.

3 Title: Preparation of chart for correcting the values of compressive strength of the core samples with L/D ratio less than two for sand stone. (RM.Lab)

Objective:

The scheme is to study effect of varying L/D ratio on Uniaxial compressive strength for sandstone available in Gujarat and thereby to develop co-relation between them. Different types of sandstone available in Gujarat collected in ample quantity, so as to obtain minimum 375 samples from each locations, Samples should have diameter @ 54 mm and L/D ratio varying from 1.20 m to 2 with an increase of 0.20. All samples are to be tested in dry and oven dry wet conditions. The selected chunk should be of least apparently homogeneous, free from cracks or any sort of discontinuities. Specimens are to be prepared in the laboratory reforming guide line IS-9179-1991 and IS-9143-1991.

It is proposed to conduct petro graphical studies and all other studies like physical properties etc. if, felt necessary.

Position:

Report submitted & is under approval.

4Title: State of art report on shear strength parameters of rock (R.M. Field)

Objective:

Objective of art report on shear strength parameters of rock will cover the details of equipment and testing procedures followed in past. It will also cover the current procedure followed in the country as well as abroad.

Position:

Literature and data pertains to study area are collected. Study is under progress.

Abstract of completed state sponsored research scheme. - NIL -

2.3 MATERIAL TESTING DIVISION:

(A) State Sponsored Scheme under progress. NIL

(B) State Research Schemes Completed : NIL

(C) EDP Centre Activities:

- MIS (Management Information system)

Facilitating invoice preparation through MIS to all district laboratories of GERI. Trouble shooting by Remote Desktop Access using Team Viewer software Maintenance of servers & customized software

- GSWAN (Gujarat State Wide Area Network)

Providing & maintaining wireless connectivity. Arranging alternative facility at other office to carry out relevant work. Interaction & doing needful for installation of BSNL lease line

- GERI Web site

Updation & maintenance

Action for revamping / new website for GERI to fulfill WCAG 2.0 norms prescribed by state government

Recommendation & action for merging GERI web pages in department's website

- Provision of internet facility through LAN (Local Area Network) in GERI campus
- Providing & maintaining common Fax facility for administration & technical work
- Facilitating & renewal of Anti Virus solutions to all computers in GERI campus
- AMC for computers & allied hardware and trouble shooting for network issues
- Planning periodical training to staff, officials & arranging support for trainees from other offices imparting workshops in GERI campus

2.4 ENGINEERING GEOLOGY DIVISION.

(A) State Sponsored Scheme under progress. NIL

Engineering Geology unit

(A) Drill Holes and Trial Pits Location:

Drill Holes and Trial Pits are proposed for the big check dams i.e. Kakalpur, Mendra, Dahikot, Kasanpur, and Dhamnod check dam of Panam Project Division Godhra, vide letter no. Geo/ PB/Panam check dam/612 of 2014 dated 04/12/2014. (Visited on 20/11/2014).

(B) Geological investigation :

Detail Geological investigation (with the help of 6 nos. of Drill Holes and 5 nos. of Trial Pits) carried out for the proposed check dam across river Orsang near Chhotaudepur Ta. & Dist. Chhotaudepur. (Period from 04/12/2014 to 19/02/2015). The report prepared and submitted to the project authority i.e. The Executive Engineer, Pipeline Project Division No.1, Chhotaudepur, vide this office letter no. Geo/PB/ Orsang check dam/ 150 of 2015 dated 12/02/2015.

(C) Foundation Assessment:

1. Pit no.1 of aqueduct on Bochad Kotar at ch. 2945.00m. Of 29/R Distributory was inspected geologically and inspection note submitted to the project authority i.e. The Executive Engineer, Panam Project Division, Godhra, vide this office letter no. Geo/PB/12 of dated 06/01/2015. (Visited on 01/01/2015)

2. Foundation inspection for u/s key, Body wall, Apron & End Sill (from ch. 23.00 mt. to 78.00 mt.) of Pareva check dam across river Machhan Ta. Zalod, Dist. Dahod. was done and report submitted to The Executive Engineer, Panchayat Irrigation Division, Dahod vide this office letter no. Geo/PB/Pareva check dam/65 of 2015 dated 22/01/2015. (Visited on 30/12/20114).

2.5 HYDRAULIC DIVISION:

Final report of revised capacity Survey of Uben reservoir by remote sensing method is submitted.

2.6 NARMADA HYDRAULIC DIVISION:

During the year following Model Studies are carried out

A) Study of Narmada Basin Hydraulic Models

(1) Model Study of Garudeshwar Weir (D/S of Sardar Sarovar Dam)

a) 2- D SECTIONAL MODEL STUDIES

The 2- D sectional model with G.S.S. 1:60 for Garudeshwar weir constructed for slopping apron at GERI, Gotri Campus, Vadodara .The officers from Narmada designs circle of Vadodara along with team of officers from CWC New Delhi visited the model site at Gotri, Vadodara on dated 14-11-2014. They witness the performance of slopping apron type energy dissipater with solid end sill slope from 16.00 mt to 12.00 mt and additional apron length of 20.00 mt at different discharges corresponding tail water levels controlled at Ch. 600 mt d/s. The performance of apron with 60.00 mt length is found satisfactory .The CWC officers had suggested to see the performance of the slopping apron by reducing 10 m length i.e.50.60 mt. Study with construction of the reduced length slopping apron is carried out and report will be submitted .Further study will be carried out as per field officials.

(b) 3 -D COMPOSITE MODEL STUDIES

Earlier the composite model for Garudeshwar weir was constructed to G.S.S. 1:150, the performance at 10 to 100 % different discharges of 22.18 lakh cusecs is found satisfactory. So 60.60 mt slopping apron type energy dissipater having solid end sill (Slope 16.0m to 12.0 m) with additional apron of 20 mt d/s of end sill is constructed.

The officers from Narmada designs circle of Vadodara along with team of officers from CWC New Delhi visited the model site at Gotri, Vadodara on dated 14th Nov-2014. They witness the performance of this model. Study is carried out with Observation taken at different design discharges of 10 to 100 %. Report is being prepared and will be submitted soon.

Bhadbhut barrage on Narmada river (Kalpsar Department)

(a)

Estimate prepared by GERI for model study of Bhadbhut barrage is approved by Kalpasar dept and with meeting with national level consultant, distorted model is selected and model is prepared with horizontal scale 1:250 and vertical scale 1:50. Calibration and the validation runs of the model are completed .as per suggestion of consultants

(i) **Phase-I (Virgin Condition) Study** of river is completed & Report is submitted to Kalpsar Department.

(2) **Phase-II Study without flood embankment on left bank of Narmada River for** Bhadbhut barrage completed and the report is submitted.

(3) **Phase III study with flood embankment on left bank & right Bank u/s of barrage** is under progress. The honorable secretary of Kalpasar department has visited the model and report Phase III is submitted as per his suggestions. With reference to letter dtd 15/04/2015 from Kalpasar deptt. The further study is in progress with alternate alignment of left bank flood protection embankment towards river.

(b) 2-D Sectional model study of Bhadbhut barrage on Narmada River

The sectional model was constructed with G.S.Scale 1.30 scale .as per suggestion of national level consultants Shri Khatsuriya & Shri D N Deshmukh for reproducing two Spans.

- The studies at various discharges with the d/s rigid bed, d/s mobile bed (Sand) are completed in free flow condition.
- The studies at various discharges with the d/s mobile bed & different combinations of gate operations are carried out and report is submitted.

(c) 2-D Sectional model study of Narmada Diversion Canal Structure from Bhadbhut Barrage on Narmada River

Necessary data is awaited from Kalpasar deptt. for study of Narmada Diversion Canal Structure from Bhadbhut barrage on Narmada River

B) Study of Sabarmati Basin Hydraulic Models

(a) Composite model study for bank Protection work on Banks of River Sabarmati at village Nabhoi & Rinza

Model study for the work of bank protection for Nabhoi & Rinza villages on river Sabarmati is proposed by Executive Engineer, Petlad Irrigation Division, and Dist Anand. The data & other detail for model study are received in May 2013. The model construction & reproduction of topography work is completed.The new revised additional data are awaited to initiate the model runs.

(b) Composite model study for bank Protection work on Banks of River Sabarmati at village Ingoli

In march 2014 S.E. Ahmadabad Irrigation Project Circle, Ahmadabad has suggested to carry out the Composite Model study of Bank protection work at Village Ingoli.On receiving the other data like Index plan Elevation, Cross Section, Complete detailed drawings, Contour map and D/s location of weir, Topographical data , terms of reference etc ,the estimate will be prepared and on receiving fund, the study will be initiated.

(c) Composite model study of Bank Protection work on River Sabarmati at village Kasindra

In March 2014 S.E., Ahmadabad Irrigation Project Circle, Ahmadabad has suggested to carry out the Composite Model study of Bank protection work at Village Kasindra. On receiving the other data like Index plan Elevation, Cross Section, Complete detailed drawings, Contour map,U/s and D/s location of weir, Topographical data , terms of reference etc ,the estimate will be prepared and on receiving fund, the study will be initiated.

(d) Composite model study for Construction work of Protection work on bank

Of River Sabarmati from Shahpur Bridge to d/s of Gift City

In Gujarat state Gujarat International Finance Tec City (GIFT) is being developed as a global financial and IT hub in Gandhinagar, first of its kind in India. GIFT will encompass an area of 886 acres (358 hect.) Mostly located on banks of river Sabarmati. Therefore it is prone to considerable erosion of bank from Gift City to Shahpur Bridge during the flood. So river bank protection work is necessary. Preliminary proposal is received for carrying out the model study of bank protection work from field officers..The necessary data is received and construction of model is under progress.

(e) Study of new bridge at village Vataman (GSRDC Dept)

Necessary data is received and estimate is submitted to concern dept. On receipt of fund further progress will be done.

C) Study of Tapi River Works

(1) Study of river Tapi from Ukai Dam to its confluence with the Sea

As suggested by field officials the 3-D physical model of Tapi River with horizontal scale 1:300 and vertical scale 1:80 has been constructed at GERI, Vadodara, simulating river reach from downstream of Ukai dam to sea and the topography of surrounded area of

Surat city with the latest topographical details and study with different design discharge from 25 % to 100 % in different conditions is completed.

Interim Report III of the model studies are Submitted to the Govt. and the field officers which are substantial aid for providing the protection works along the river from kathor bridge to Magdalla bridge considering the static maximum astronomical tide level of the sea as + 5m .

After that the Superintending Engineer Surat Irrigation Circle, Surat has further submitted a proposal vide letter No SIC/ PB-5/ Tunki Bharimata/ Nehru bridge/1890 dated 12/04/2011 to carryout physical model studies of river reach from Singanpore weir to Nehru bridge with proposed protection work (RE Wall and gabions) from Tunki Bharimata to Nehru bridge about the length of 720 mt on the left bank with top RL 16.00 mt. The design and drawings of the proposal is prepared by Maccaferri Environmental Solutions.The physical model was updated by reproducing the protection work as per the sectional drawing prepared by CDO, It was desired by the CDO to assess the effect in the flow pattern on the opposite bank (Right bank) due to provision of the proposed protection work on the left bank. The model was operated for 3.0 lakh cusecs, 5.0 lakh cusecs, and 6.73 lakh cusecs, flood without and with the protection work for study. The brief report (Interim Report - IV covering the model observations, comparison of velocities and interpretation of the results is submitted to project authorities.

Further studies will be carried out as per the suggestion & guidance of National level consultants and comments from field officers. The installation of ATG system is in progress, CWPRS official made visit to GERI from 2-4-2013 to 7-4-2013.

2) Study of Balloon Barrage

The proposal for physical model study of Rubber Balloon Barrage on Tapi River at Mogdalla, Surat is received from project authority,

(a) For Composite model, the Data ,TOR ,Funds are received and the transferring of data using existing Tapi model is done with permission of SE,SIC,Surat.

(b) For Sectional Model, The Data, TOR, Funds are received and construction of flume is completed and study in progress.

D) Study Of Protection work on Banks of River Vatrak at village Vautha

The proposal for carrying out the model study of flood protective work on river Watrk near Vautha has been received along with the drawings, data & details. The model is constructed with G.S.Scale of 1:80. Due to meandering in river Vatrak the banks are severely affected by flood in d/s at junction with river sabarmati so flood protection works is studied with maximum flood of 10956 cusecs.

The studies with the modified alignment of bank protection bund are completed and report is submitted.

Physical model study of Irrigation Projets Of Other State

(D) 2-D and 3-D model study of Rajgarh Irrigation Projet (Rajasthan State)

- For 2-D model study construction of flume is completed and report is submitted.
- 3 D model study with geometrical scale 1;80 at 500 mt d/s of dam at three different places with different discharges and water profile is suggested by the authority but after receipt of necessary data and fund further study will be initiated.

(F) Study of Narmada Main Canal Aqvaduct on River Orasang

Superintending Engineer, Narmada Project Design Circle, Gandhinagar has suggested the study of Protection work of Narmada main canal aquaduct on river Orasang and river banks wide letter dtd-11/08/2014.

On receipt of some missing data is from field staff, construction work of the model will be initiated.

(G) Creating Coastal structure testing facilities at Gotri campus.

Gujarat state is having 1600 Km long coastal belt, within which some area is heavily eroded due to sea tide. This erosion happens continuously. Now it becomes necessary to take bank protection measure in the form of seawall or other pitching / Gabion work.

Before proposing a suitable measure as an anti sea erosion structure the design of the structure is required to be tested by menace of model study.

At present no where this type of the testing facilities are available in Gujarat state. Central Water Power Research Station (CWPRS) Pune is the only institute having expertise in such type of testing and CWPRS agreed to provide technical support & consultancy services in this regards to create such facilities at GERI. CWPRS, Pune had supplied estimate ofamounting Rs.1.07 crores for creating random and Monochromatic /regular sea waves generation facilities at GERI, Vadodara. Narmada, water resources dept (Govt. of Gujarat) has approved the proposal & OTS is granted by Chief Engineer & Director. GERI

The execution work of extension of coastal shed at Gotri campus to accommodate 3.0 mt wide, 76.00 mt long and 1.05 mt deep flume for random wave generating purpose and 0.8 mt wide, 45.00 mt long and 1.00 mt deep flume for regular sea wave generating system is completed.

The installation of the system will be taken up in guidance with CWPRS.

The entire project will be executed as per guideline of CWPRS. Flume is constructed as per their proposal and further work will be carried out after getting specification for machinery.

State Rewarded Research Schemes:

(a) Defining the ill effects of improper information of roller in the roller bucket type of energy dissipater

The objective of the scheme is to define safety & proper functioning of dam structure & fool proof behavior of spillway & its energy dissipater at its toe. Literature study as well as construction of flume model has been completed and experimental work is started

(b) Establishing concepts for change of model bed material effect on observation with the change of energy dissipater

The objective of the scheme is to study the effect of different bed material with the change of energy dissipater for proper formation of energy dissipating arrangement for spillway structures. Literature study as well as construction of flume model is completed with sand as bed material. Experimental work is started.

(c) Assessing the D/S nappy profile procedures of the spillways and weirs under free flow, submerged flow and partially operated gate condition as apply.

The objective of study is to evaluate the submergence effect on upper nape under free flow, submerged flow and partially operated gate flow. Literature study, data collection work and construction of one flume is completed. The construction of second flume of model work is started along with the Experimental work on first flume.

(d) Evolving an effective and economical section of Tidal Regulator

The objective of the scheme is to ascertain the economical section of low level flexible structure constructed by locally available material using blocks or gabions on u/s & d/s side. The literature study is completed and experimental work on flume model using blocks as protective work is started.

2.7 ROAD RESEARCH DIVISION 1 & 4.

(A) Abstract of state sponsored Research Scheme under progress.

(1) Traffic census on Vadodara – Savli Road (Dumad Chowkadi) District Vadodara

Objective: The main objectives of this study are:

(A) To know the present traffic pattern

(B) To understand the efficiency of existing road.

(C) To determine growth rate of traffic flow, based on traffic data available over the past year (From R&B Dept.)

(D) To determine the volume of traffic that enters into city and exit from city.

(E) To determine the solution of stagnation of traffic flow.

Methodology :

Data collection:

The traffic survey was conducted at count post at Dumad junction. Traffic Census for this road was conducted by "Manual method". The survey was conducted for seven days twice in a year from 4/2/2013 to 10/2/2013, 25/11/2013 to 1/12/2013 and 19/11/2014 to 25/11/2014 round the clock. For the purpose of counts a day was divided in three shifts of 8 hours each and separate enumerators were posted for each direction of travel. The manual recording of hourly flows was recorded in plate I (Field Data Sheet) as described in IRC :9-1972.

Analysis of Data:

Traffic data of Plate I was compiled in Plate II (Daily Traffic Summary) as described in IRC: 9-1972. The highest peak hour traffic in the day was highlighted in the

summary sheet. The information collected in daily summary sheet was transferred to the weekly traffic summary form as shown in Plate III as described in IRC :9-1972. The average daily traffic for the week was determined. Moreover, following analysis was carried out.

1. Heavy Commercial Vehicle per day (HCV) i.e. bus and truck
2. Light Commercial Vehicle per day (LCV) i.e. Car, jeep, tempo, rickshaw, motorcycle etc.
3. Slow Moving Vehicle (SMV) i.e. cycle, animal drawn cart
4. Passenger Car Unit per day (PCU)
5. Commercial Vehicle per day (CVD)
6. Peak Hour traffic volume in PCUs.

Recommendations:

Interchange is required at this junction to handle the volume of traffic resulting in serious congestion and frequent choking of the intersection

The work of Interchange – Bridge has been started by NHAI Authority.

Position: Analysis under progress. Fourth Traffic Census will be conducted in November 2015.

(2)Road Safety Audit Study on Vadodara-Savli road.(S.H.-158) Km. 9/6 to 32/0

Scope & Objectives:

The main objective is to identify the black spots on study stretch and to suggest the remedial measures and ensure safety. The short term low cost remedial measures to minimize the number of accidents will be prepared for smooth movement of traffic.

Methodology:

Data collection:

The traffic accident data for seven years i.e. from 2008 to 2014 was collected from Police Stations under jurisdiction of Vadodara Taluka & Savli Taluka. As recommended by IRC, road accident was collected in Road Accident form A-1 in order to have correct information for the purpose of analysis. The data so collected was compiled according to form 4.

Data Analysis:

The data will be analysed as per primary causes, types of collision, km. wise accidents to find out Accident Prone Locations (APL) etc.

Study of APL:

The accident prone locations shall be studied & evaluated and remedial measures for their improvement will be suggested.

Position: Data collection was completed.

(3) Road Safety Audit Study on Vadodara-Dabhoi road. (S.H.64) Km. 8/3 to 31/0

Scope & Objectives:

The main objective is to identify the black spots on study stretch and to suggest the remedial measures and ensure safety. The short term low cost remedial measures to minimize the number of accidents will be prepared for smooth movement of traffic.

Methodology:

Data collection:

The traffic accident data for seven years i.e. from 2008 to 2014 was collected from Police Stations under jurisdiction of Vadodara Taluka & Dabhoi Taluka. As recommended by IRC, road accident was collected in Road Accident form A-1 in order to have correct information for the purpose of analysis. The data so collected was compiled according to form 4.

Data Analysis:

The data will be analysed as per primary causes, types of collision, km. wise accidents to find out Accident Prone Locations (APL) etc.

Study of APL:

The accident prone locations shall be studied & evaluated and remedial measures for their improvement will be suggested.

Position: Data collection was completed.

(B) Completed state sponsored Research Schemes

1) Title: Road Safety Audit Study on Vadodara-Padra-Jambusar road.

Objective:

The main objective is to find out the black spots on study stretch and to suggest the remedial measures and ensure safety. The short term low cost remedial measures to minimize the number of accidents will be prepared for smooth movement of traffic**.**

Methodology:

Data collection:

The traffic accident data for six years i.e. from 2005 to 2010 were collected from Jambusar, Makrpura, Padra & Vedaj Police Stations. As recommended by IRC, Road Accident form A-1 & 4 was sent to concern Police authorities in order to have correct information for the purpose of analysis. The data so collected was compiled according to form 4.

Data Analysis:

The data were analysed as per primary causes, types of collision, km. wise accidents to find out Accident Prone Locations (APL) etc.

Study of APL:

5 Nos. of APL were identified & were studied & evaluated and remedial measures for their improvement were suggested.

Position: Completed.

2) Title: Evaluation of Zycosoil as an additive for Bituminous Road works.

Position:

The final report of study was submitted to Chief Engineer & Addl.Sec.R & B Dept. Sachivalaya, Gandhinagar vide Joint Director (Roads), GERI, Vadodara's letter no. JD(R)/PB/Zycosoil/92/of 2014 dtd. 26-06-2014

3) Title: Use of waste plastic in construction of Roads

Position:

The field work for the research study is completed and the final report is prepared and is under finalization

4) **Title: Terrasil nanotechnology for multilayer waterproofing treatment of soil in Road construction at Bharthana-Bharthali road, Taluka-Karjan, District-Vadodara**

Position:

The final report of study was submitted to Chief Engineer & Additional Secretary R&B Department Panchayat Sachivalaya Gandhinagar vide Joint Director (Roads), GERI, Vadodara's letter no. JD(R)/PB/86/14 dtd.19/6/2014.

5) **Title: Terrasil nanotechnology for multilayer waterproofing treatment of soil in Road construction at bridge approach on Jhambua river Tarsali-Dhaniavi road , Taluka- Vadodara, District-Vadodara**

Position:

The performance study on said road has been completed. The final report was prepared & it is under scrutiny.

C) Abstract of proposed research scheme.

There is no research scheme proposed during the year under review by this division however the proposal for following research schemes were sent for approval.

1) **Title: Use of Geotextile in Road.**

Position:

GERI has proposed experimental stretches of 200meter length each on different Roads of different regions in a state Gujarat for the purpose individually or combindly. It is proposed to provide road section in Surat R & B circle or Vadodara circle for B.C. soil area Ahmadabad circle for sandy soil area and Marshy soil in Rajkot-circle. The proposal is sent to Govt. for approval vide JD(R) letter no JD (R) /PB/Geo syn/100/2010 dated 16/02/2010.

2) **Title: Effect of flakiness and elongation indices on bituminous mix.**

Position:

The scheme proposal in prescribed format is submitted in to IRC, New Delhi for approval vide letter No. JD(R) / PB /296 / 'of 2010, Dated: 23 : 04 : 2010

3) **Title: Effect of moisture content on strength behavior of Black cotton soil - Rice Husk Ash –Lime mixes.**

Expansive soils are residual soils with high plasticity characteristic. Due to seasonal moisture variation pavements on expansive soil sub-grade are subjected heaving & cracking, which causes difficulty in movement of vehicular traffic. Major part of the south Gujarat region consists of Black cotton soil which indicates poor sub-grade.

Studies have proved that strength of weak expansive soil can improve by the addition of stabilizing agents. Moisture content is the prime parameter in driving the strength & performance of stabilized weak expansive soil. Therefore the soil should be improved by substituting it with Rice husk ash, Lime, Blast furnace stag etc.

Rice husk ash is a potentially useful waste which can be used with Lime to improve physical, engineering & strength properties of Black cotton soil. The plasticity characteristics of Black cotton soil should be improved by addition of RHA & Lime.

Broad objectives to be achieved:

(1) Moisture content & strength development of stabilized soil with age have been well studied.

(2) Performance evaluation of pavements making use of these materials under field condition.

Position:

The proposal for Approval of this research scheme is submitted to MORTH, New Delhi vide letter no. JDR/PB/329/2010 dtd. 7-5-2010. Approval is awaited.

2.8 Deputy Director's Office:

Submission of Annual Report 2013-14 of GERI to get approval from office of the Joint Director (Irrigation), GERI, Vadodara.After getting approval the same was uploaded on GERI website.

2.9 SOILS, DRAINAGE AND RECLAMATION CIRCLE

This circle is engaged in different types of soil survey in irrigation command areas for major and medium irrigation project of the state. Pre-irrigation surveys are needed at project appraisal stage. Post-irrigation investigations are carried out after execution of the project.

At present 44 major and medium irrigation schemes are under observation for sub soil water table and quality, twice in a year i.e. pre & post monsoon, covering 17.20 lakhs ha. G.C.A.

During the year 2014-2015, soil survey and sub soil water table observations work in different irrigation projects and its details are as under:

(A) Pre/ Post Irrigation Soil Survey (D.S.S / Reco. S.S etc.)

Sr. No	Name of project	Type of Work	Total area in ha.	Work done during the Year 2014-15(Area in ha)
1	Setrunji	Soil Monitoring	64,651	--
2	Und-I	Soil Monitoring	17,800	--
3	Vartu-II	Soil Monitoring	15,485	--
4	Khodiyar	Soil Monitoring	11,607	--
5	Phophal-I	Soil Monitoring	7,021	--
6	Hathmati	D.S.S.	49,530	--
7	Kim Branch	D.S.S.	27,960	--

(B) Sub Soil Water Table Observations:-

Twice in a year i.e. Pre & Post Monsoon (2013-14)

Sr. No	Name of project	Type of Work	Total area in ha.	Work done during the Year 2014-15 (Area in ha)
1	Bhadar	S.S.W.T.	36842	36842
2	Machhu	"	18211	18211
3	Brahmani	"	17600	17600
4	Demi-II	"	4765	4765
5	Aji - II	"	3150	3150
6	Vartu	"	3500	3500
7	Ghee	"	2833	2833
8	Sasoi	"	5250	5250
9	Moj	"	12146	12146
10	Shetrunji	"	64651	64651
11	Machhundri	"	8095	8095
12	Kalubhar	"	6050	6050
13	Damanganga	"	77935	77935
14	Juj	"	8950	8950
15	Kelia	"	5599	5599
16	Ukai L.B.C	"	116918	116918
17	Kakarapar	"	302783	302783
18	Lakhigam	"	1061	1061
19	Ukai R.B.C	"	85873	85873
20	Karjan	"	79724	79724
21	Pigut	"	2227	2227
22	Ver-II	"	7590	7590
23	Mahi R.B.C	"	272610	272610
24	Rani	"	2150	2150
25	Fatewadi	"	129555	129555
26	Hathmati	"	49530	49530
27	Kharikat	"	24282	24282
28	Meswo	"	12788	12788
29	Waidy	"	2820	2820
30	Sabarmati	"	97424	97424
31	Watrak	"	25910	25910
32	Mazam	"	8000	8000
33	Dantiwada	"	81000	81000
34	Mukteshwar	"	11302	11302

Sr. No	Name of project	Type of Work	Total area in ha.	Work done during the Year 2014-15 (Area in ha)
35	Sipu	"	17937	17937
36	Lakaroda	"	3600	3600
37	Panam	"	58273	58273
38	K.L.B.C	"	15500	15500
39	Bhadar(p)	"	15500	15500
40	Huduf	"	8772	8772
41	Machhnala	"	3944	3944
42	Umaria	"	4148	4148
43	Kabutari	"	2230	2230
44	Edalwada	"	1612	1612
			Total.....	**17,20,140**

2.10 DAM SAFETY ORGANISATION

The Dam safety Organization, GERI jointly deals with other offices 632 large dams (As per CWC criteria,(i) if height of the dam is more than 15 m from its deepest foundation to the crest it will be considered as large dam & (ii) If the height of a dam is between 10 to 15 m from its deepest foundation is also included in the classification of a large dam provided it complies with one of the following conditions :(a) length of the crest of the dam is not less than 500m or (b) capacity not less than 1MCM or (c) Spillway discharge not less than 2000 cumecs or (d) the dam has specially difficult foundation problems, or (e) the dam is of unusual design) which are under Panchayat & State for determining the status of safety in respect of Civil, Mechanical and Electrical aspects assessing hazard potential and determining priority for repairs and suggesting remedial measures in consultation of CDO,Gandhinagar to improve them.

Dam Safety Organization (DSO) publishes annual report on health status of all the dams inspecting, incorporating the activities of dam safety organization every year. It also acts as a link between Central Water Commission (CWC) and owners of dams.

1.0 The details of large dams inspected during 1st April'2014 to 31st March'2015

Sr. No.	Type of Dams	Nos of Inspection of Dam by respective wing during year 2014-15	
		By Civil Wing	By Mech.& Elect. Wing gated dams)
1.	Large Dams (As per CWC guideline)	53	50

2.0 The proposal of pre-monsoon inspection of Ajwa, Pratappura & feeder channel for the year 2014 was received from VMSS on dated 12-5-14. The inspection was carried out on dated 3.6.2014 and the inspection note was furnished on dated 17-6-2014 to VMSS.

SECTION-B

1.1 Tests conducted on various materials are as under.

Sr. No	Materials / Test	Total No. of test conducted during the year 2014-2015								
		SM Dn.	MT Dn	GM Dn	RRD1	RRD4	SGRD Surat	NGRD G'nagar	SRD, Rajkot	SDR, Circle
1	2	3	4	5	6	7	8	9	10	11
1	Admixture	-	-	-	-	-	-	-	-	-
2	Aggregate/ coarse ggregate	-	622	-	-	489	6381	21048	-	-
3	Asphalt	-	-	-	-	-	-	982	-	-
4	Asphalt Mix Design	-		-	-	-	38	-	-	-
5	Bentonite	-		-	-	-	-	-	-	-
6	Binder content	-		-	-	128	18	14	-	-
7	Bitumen	-		-	-	33	260	-	404	-
8	Bitumen Mix	-		-	-	-	-	-	-	-
9	Bitumen Mix Design	-		-	-	-	-	-	58	-
10	Brazilian Tensile Strength	-		-	-	-	-	-	-	-
11	Bricks/Air Bricks	-	181	-	-	-	559	2207	671	-
12	Building Stone	-	7	-	-	-	-	-	-	-
13	C.C.Block	-	-	-	-	-	64	-	231	-
14	C. C. Cube	-	2418	-	-	-	15051	41920	24072	-
15	C.M. Cube	-	-	-	-	-	-	24	176	-
16	Casting and testing	-	-	-	-	-	-	-	-	-
17	CBR test	-	-	-	-	-	-	868	-	-
18	Cement mortar	-	-	-	-	-	-	-	-	-
19	Cement mortar compression	-	-	-	-	-	-	-	-	-
20	Cement(chemical)	-	-	-	-	-	-	-	-	-
21	Cement(physical)	-	434	-	-	-	1937	5402	3222	-
22	Chemical analysis of Sand/Fine Aggregate	-	8	-	-	-	-	-	-	-
23	Chemical analysis of Coarse Aggregate	-	10	-	-	-	-	-	-	-
24	Chemical analysis of Soil.	-	82	-	-	-	-	-	-	-
25	Concrete core Testing	-	42	-	-	-	-	-	-	-

Sr. No	Materials / Test	Total No. of test conducted during the year 2014-2015								
		SM Dn.	MT Dn	GM Dn	RRD1	RRD4	SGRD Surat	NGRD G'nagar	SRD, Rajkot	SDR, Circle
1	2	3	4	5	6	7	8	9	10	11
26	Concrete mix design	-	46	-	-	-	249	-	403	-
27	Concrete Rebound Hammer Test	-	-	-	-	-	-	-	-	-
28	Core sample/ Core density & B.C.	-	-	-	-	-	230	52	-	-
29	Curing compound	-	170	-	-	-	-	87	-	-
30	Density & Porosity	-	-	22	-	-	-	-	-	-
31	Emulsion	-	-	-	7	-	-	-	-	-
32	Epoxy material	-	-	-	-	-	-	-	-	-
33	Epoxy mortar	-	-	-	-	-	-	-	-	-
34	FDD/FMC @ Lab.(Proctor)	-	-	-	-	-	-	-	-	-
35	Fine aggregate	-	469	-	-	-	1859	-	-	-
36	Flyash	-	1	-	-	-	-	-	-	-
37	Flush door	-	-	-	-	-	7	-	-	-
38	Geo Synthetic	4	-	-	-	-	-	-	-	-
39	GSBM design	-	-	-	-	-	21	-	-	-
40	Harden concrete	-	6	-	-	-	-	-	-	-
41	Impact	-	-	-	-	-	-	-	-	-
42	Masonary mortar	-	-	-	-	-	-	-	-	-
43	Metal	-	-	-	-	-	-	-	9883	-
44	Misc./lime	-	4	-	-	-	-	-	-	-
45	Mix design (Asphalt)	-	-	-	-	-	-	33	-	-
46	Mix design (Concrete)	-	-	-	-	-	-	289	-	-
47	Marshal Mould	-	-	-	-	-	511	658	-	-
48	Modified Bitumen/Industrial Bitumen	-	-	-	5	-	-	-	-	-
49	Over size B.T. metal	-	-	-	-	-	-	-	-	-
50	Permeability	-	8	-	-	-	-	-	-	-
51	Physical properties	-	-	-	-	-	-	-	-	-
52	Plastic Concrete mix design	-	-	-	-	-	-	-	-	-
53	Point load index test	-	-	-	-	-	-	-	-	-
54	Point load test	-	-	-	-	-	-	-	-	-
55	Precast beam	-	-	-	-	-	-	-	-	-

Sr. No	Materials / Test	Total No. of test conducted during the year 2014-2015								
		SM Dn.	MT Dn	GM Dn	RRD1	RRD4	SGRD Surat	NGRD G'nagar	SRD, Rajkot	SDR, Circle
1	2	3	4	5	6	7	8	9	10	11
56	Pressure gauge	-	-	-	-	-	-	-	-	-
57	Proving ring	-	-	-	-	-	-	-	-	-
58	Retroreflective Sigbboard	-	-	-	-	-	-	-	-	-
59	Rock/ Core	-	-	-	-	-	-	-	123	-
60	Rock core cutting	-	-	8	-	-	-	-	-	-
61	Rock core drilling	-	-	31	-	-	-	-	-	-
62	Rock core polishing	-	-	31	-	-	-	-	-	-
63	Rock Durability	-	-	-	-	-	-	-	-	-
64	Roller compact conc mix design	-	-	-	-	-	-	-	-	-
65	Rubble	-	-	-	-	-	162	-	-	-
66	Sand	-	-	-	-	-	-	5753	2603	-
67	Soil	1627	-	-	29	128	845	876	35	570
68	Soil Road (Murrum)		-					589	1213	
69	Slake Durability		-	6						
70	Steel		1207				1724	2765	2253	
71	Stone / Rubble							217	248	
72	Testing of bentonite							153		
73	Tiles								53	
74	Triaxil test			8			108			
75	True Specific gravity			24						
76	Ultrasonic									
77	Unconfined comp. strength test			23						
78	Water		145				132	271		14433
79	Water / Hydrology water sample		392							
80	Water Absorption			20						
81	Waterproofing material									
82	WMM design						14			
83	Wood								114	
	Total	**1631**	**1762**	**151**	**34**	**128**	**3517**	**11604**	**16525**	**15003**
	Grand Total									**50355**

1.2 Field tests conducted by various divisions

Sr N	Field tests	SM Dn.	MT Dn	GM Dn	RRD1	RRD4	SGRD Surat	NGRD G'nagar	SRD, Rajkot	SDR, Circle
1	2	3	4	5	6	7	8	9	10	11
1	Core cutter	-	-	-	-	-	-	8	-	-
2	Field test on soil	-	-	-	-	-	9	-	1	3
3	Field test on rock (Anchor pull test)	-	-	-	-	-	-	-	134	-
4	Field test on road/bridge aggregate	-	-	-	-	12	1	-	149	-
5	Drilling work including supervision on existing structure/ Bridge	112 mt. 75mt.	-	-	-	-	-	122.8 mt.	-	-
6	Drilling work including supervision on building	137 mt.	-	-	-	-	-	-	-	-
7	Drilling work including super vision on check dam	242 mt.	-	-	-	-	-	-	-	-
8	Benkelmen Beam Deflection test	-	-	-	-	-	-	52 km.	-	-
9	Drilling Work including supervision on soil	-	-	-	-	-	-	-	-	-
10	Drilling Work including supervision on Bridge	-	-	-	-	-	-	-	-	-
11	UDC by core cutter on soil shelby	93	-	-	-	-	-	-	-	-
12	UDC by core cutter on existing structure	-	-	-	-	-	-	-	-	-

Sr N	Field tests	SM Dn.	MT Dn	GM Dn	RRD1	RRD4	SGRD Surat	NGRD G'nagar	SRD, Rajkot	SDR, Circle
1	2	3	4	5	6	7	8	9	10	11
13	Rebound hammer	-	-	-	-	-	-	-	-	-
14	FMC test	-	-	-	-	-	-	-	-	-
15	Hand Augering on Check Dam	42	-	-	-	-	-	-	-	-
16	Hand Augering on Road	-	-	-	-	-	-	-	-	-
17	Hand Augering on Building	40	-	-	-	-	-	6.9 mt	-	-
18	Investigation of Roads	-	-	-	-	-	-	-	-	-
19	Performance evaluation of road	-	-	-	-	-	-	-	-	-
20	Undisturbed (U/D) by core cutter check dam	-	-	-	-	-	-	-	-	-
21	Undisturbed (U/D) by shelby on Bridge	49	-	-	-	-	-	-	-	-
22	Undisturbed (U/D) by shelby on Building	157	-	-	-	-	-	143 No,	-	-
23	Undisturbed (U/D) by shelby on Existing structure	72	-	-	-	-	-	-	-	-
24	Undisturbed (U/D) by shelby on Check Dam	86	-	-	-	-	-	-	-	-
25	Standard Penetration Test (SPT) on Check Dam	45	-	-	-	-	-	69	-	-
26	Standard Penetration Test (SPT) on Bridge	25	-	-	-	-	-	-	-	-

Sr N	Field tests	SM Dn.	MT Dn	GM Dn	RRD1	RRD4	SGRD Surat	NGRD G'nagar	SRD, Rajkot	SDR, Circle
1	2	3	4	5	6	7	8	9	10	11
27	Standard Penetration Test (SPT) on Building	73	-	-	-	-	-	-	-	-
28	Standard Penetration Test (SPT) on Existig structure	50	-	-	-	-	-	-	-	-
29	B.I.testing	-	-	-	-	-	-	-	-	-
30	Retro Reflectometer	-	-	-	-	7 samples	-	-	-	-
31	Traffic census on NH sections	-	-	-	-	-	-	-	-	-
32	Traffic census at Chhayapuri	-	-	-	-	-	-	-	-	-
33	Ultrasonic Concrete Testing Non destructive test	-	350 points	-	-	-	-	-	-	-
34	Water replacement	-	-	-	-	-	-	2	-	-
35	Distrubed sample	-	-	-	-	-	-	10	-	-
36	CBR	-	-	-	-	-	-	-	-	-

1.3 Petrological Laboratory Unit

Sr.No.	Name of test	No.of sample tested
1	Megascopic examination of Rock & Microscopic examination of rock	87 Nos.
2	Petrographic analysis of Natural Aggregates (Including crushed aggregates)	49 Nos.

SECTION C

(i) Details @ consultancy services offered by GERI.

(ii) Within the state :

Report about classified volume count of non-tolled vehicle at R.O.B. Chhayapuri for four spells

1. 7th June-2014 to 13th June-2014 was submitted to G.S.R.D.C., Gandhinagar.
2. 17th September-2014 to 23th September-2014 was submitted to G.S.R.D.C., Gandhinagar
3. 09th December-2014 to 15th December-2014 was submitted to G.S.R.D.C., Gandhinagar.
4. 11th March-2015 to 17th March-2015. Report is under preparation.

(ii) Outside the state:Nil

Technical Papers.

Two papers were submitted for publication in 'Navnirman'.

1. Title : Necessity of seismic studies around Kalpasar project, Gujarat state

Authors: Sanjay Srivastava, Senior Scientific Assistant, E.G. Dn.

Abdul Hameed, Senior Scientific Assistant, E.G. Dn.

2. Title: Roller Compacted Concrete

Authors: Smt.P.S.Chari, Research Officer, M.T. Dn.

Shri R.M.Jain, Assistant Engineer, M.T. Dn.

SECTION –D

1.0 (A) Investigation and testing reports:

1. Cons. of box type V.R.B. at Ch.26400 ft. of Karamsad Bhandrej Drain
2. Testing of Soil Sample for Cons. Of PSQ Cat.B 64 Bhutadi Zampa Police line Vadodara
3. Cons. Of RMSA School Building at Ekalbara Ta .Padra vadodara.
4. Cons. Of new Building at Jambusar Narmada Colony.
5. Cons. Of New Building at Padra Narmada Colony.
6. Constructing Lift bank main canal with structures from ch. 16950m t0 25830m of PHCL project.
7. Const of judicial quarters at Gotri, vadodara.
8. Const of Madhav Park, vadodara.
9. Testing of soil samples for (1) Resectioning of Motipura- Simaliya canal off taking 15700m from Jojwa feeder(2)Constructing Pansoli minor off-taking ch.4132m from Moipura- Simaliya canal(T)from motipura

10. Testing of soil Samples for (i) Constructing Distribution network(Sub Minor) of Pansoli minor.(ii) Constructing sub minor of Motipura- Simaliya off-taking 15700m of Motipura Simaliya canal @ DOL-8
11. Testing of soil samples for Beautification of Pond fo Umreth, S. No. 1/A/1
12. Constructing of Jilla Seva Sadan Building at Chhota udepur.
13. Testing of Soil Samples of Pratappura Tank, Dist. Vadodara.
14. Testing of Soil Samples of Embankment of Matariya Tank, Bharuch
15. Testing of Soil Samples for Providing Casing to the HR Box Vonduit of Karad Right Bank Canal Project.
16. Const. of Checkdam at Village Alali Ta. Kalol
17. Testing of soil samples for the work of karjan dam rajpipla
18. Testing of soil samples for improvement of khuper barshan tank Dediapada
19. Repairing of work f remedial measary for sarface crack developed on top of saddie no 3 ch. 60to 450m of sukhi reservior project
20. Gabion protection work of AJWA 62 gates
21. Const. now check dam of village Saganpura
22. Construction of cat B-32 units at padra dist - vadodara
23. Const. of check Dam on Goma River at Bakrol
24. Testing of soil sample of Atladra Majalpur Conneeted River over bridge
25. Saputara Reservor Project
26. Geotechnical investigation required for design of spur as per model study of river Heran at canal syphon @ch.29.833 km of Narmada main canal.
27. Const. of checkdam near village Rangpur. Dist.chhotaudepur.
28. Testing of soil sample of Simaliya village tank
29. Testing of soil samples for over burden material for Rockfill Dam of Garudeshver Weir
30. Testing of soil samples for Savni Yojana Link-2/Package-2
31. Testing of soil samples for const. of Barrack at P.T.S. Vadodara
32. Const. of New box type V.R.B.@ch.83500 ft on Petlad Branch canal
33. Testing of soil samples for Pav(chhapari Falia)Village tank Renovation
34. Testing of Borrow pit soil sample for the work of earth filling for 1800" M W Wanakbori.
35. Testing of soil samples for Const. of R.O.B. on Karjan Byepass Road L.C. no.213
36. Testing of Soil Sample for Cons. Of PSQ Cat.B 96 &C32 Units Of Central Jail Vadodara
37. Const. of Bridge a/c Kim river on Pansoli- Luna road

38. Jamunimata check dam , Village –Darsadi Ta. Mandvi BHUJ
39. Const. of Aqueduct in Karjan right bank high level recharge canal
40. Earthen dam of Savli M I tank Ta. Kapadvanj @ Ch.1240 m.
41. Const. of Judicial Quarters at Gotri, Vadodara
42. Providing cusing to the H.R box ,conduct of karad right bank canal project.
43. Const. of Judicial Quarters at Gotri, Vadodara
44. Const. of RCC SWD at dahej , Bharuch
45. Const. of residential Flat,Multistoried flat, including development work at Kanbivaga, Bharuch
46. Pratap pura tank, Vadodara
47. Const. of fllod protection wall at Kim River, near village shethi. Ta.Mangrol
48. Saputara Reservoir project, Ahwa,Dang
49. Project/Manufacturer test of site compacted soil for structural foundation.Dahej, vagera
50. Sauni yojana link-2 pck-3 Bhavnager
51. Const. of ITI building at Karjan , Vadodara
52. Const. of eardhen dam at Saputara
53. S B C of wing wall at Rajpipla
54. Testing Of Soil Samples Of K.R.B.H.L.R.Canal between Ch.8490 mt to 16230 mt.
55. Interim Report on Classification of either Baseline / Trend location – April 2014
56. Comparision of Compressive strength from C.C.Cube, Concrete Core & N D T observation
57. R.T. Wall at Utran to Magdalla bridge BH No. (30,31,32)
58. R.T. Wall at Utran to Magdalla bridge BH No. (33,34,35,36,14)
59. Constn. Of R.M.S.A. schhol at Gadit Tal: Nandod Dist: Narmada
60. Constn. Of R.M.S.A. schhol at Gadit Tal: Nandod Dist: Narmada
61. Constn. Of R.M.S.A. schhol at Kareli Tal: Nandod Dist: Narmada
62. Constn. Of R.M.S.A. schhol at Zarvani Tal Nadod Dist: Narmada
63. Constn. Of R.M.S.A. schhol at indore Tal : Zaghadiya Dist: Bharuch
64. Constn. Of Training cum Production center at Vyara Dist: Tapi
65. Const.Low Level Bridge across Rupen River on Pilundra -Bamosana Road
66. Const.of Sardar Patel Higher Secondary School Building(Govt.) at Sector-7, Gandhinagar.
67. Const.of Govt.Arts & Commerce College at Kathlal
68. Const.C.D.Works on Ladol Distry & Bhavsor Distry to crossing railway line(Vijapur)

69. Const.of "G" Type 60 Units (2) "KH" Type 30 Units and (3) "K" Type 20 Units , "G" Type 24 Units (Two Blocks) Sector -9 Gandhinagar.
70. Const.of New Govt.Boys Hostel (S.C.) at Idar
71. Const.of Adarsh Nivasi School (School + Hostel Building) for Boys at Vavol, Gandhinagar
72. Const.D-1 Type 7 Units at New Karkoon Chawl , Mehsana.
73. Const.E-1 Type Judicial Quarters 6 units at Mehsana
74. Const.Cat E Type 10 Units at Ambajipura Vasahat at Mehsana
75. Const.Low Level Bridge across Rupen River on Pilundra -Bamosana Road
76. Const.of Sardar Patel Higher Secondary School Building(Govt.) at Sector-7, Gandhinagar.
77. Const.of Govt.Arts & Commerce College at Kathlal
78. Const.C.D.Works on Ladol Distry & Bhavsor Distry to crossing railway line(Vijapur)
79. Const.of "G" Type 60 Units (2) "KH" Type 30 Units and (3) "K" Type 20 Units, "G" Type 24 Units (Two Blocks) Sector -9 Gandhinagar.
80. Const.of New Govt.Boys Hostel (S.C.) at Idar Const.of Adarsh Nivasi School (School + Hostel Building) for Boys at Vavol, Gandhinagar
81. Const.D-1 Type 7 Units at New Karkoon Chawl , Mehsana.
82. Const.E-1 Type Judicial Quarters 6 units at Mehsana
83. Const.Cat E Type 10 Units at Ambajipura Vasahat at Mehsana

1.0 (B) Investigation and testing under progress:

1. Saputara (Navagam) Reservoir project, Ahwa,Dang

1.0 (C) Crust design by CBR.

- R&B Panchayat Sub-Dn Lunavada
  Pandarvada-Lambhu-Kaliyakuva road Km. 0/000 to 9/800
- R&B Panchayat Sub-Dn Rajpipla
  Khamar-virpor road Km. 0/000 to 6/243

2.0 Sub Soil Water Table (S.S.W.T.) Reports of the following Irrigation Projects are published

Sr.No.	Name of Project	Report for the year	Date of published
1	Hathmati	2012-13	04-04-14
2	Kharicut	"	04-04-14
3	Edalwada	"	04-04-14
4	Kabutari	"	04-04-14
5	Umaria	"	04-04-14
6	Fatewadi	"	19-06-14

Sr.No.	Name of Project	Report for the year	Date of published
7	Hadaf	"	19-06-14
8	Machchannala	"	19-06-14
9	Watrak	"	19-06-14
10	Mazam	"	19-06-14
11	Panam	"	19-06-14
12	Bhadar-P	"	19-06-14
13	Lakroda	"	08-07-14
14	Dantiwada	"	08-07-14
15	Sabarmati	"	21-07-14
16	Mukteshwar	"	21-07-14
17	Bhadar-S	"	05-08-14
18	Machhu-I	"	05-08-14
19	Moj	"	05-08-14
20	Brahmani	"	05-08-14
21	Vartu-I	"	05-08-14
22	Machhundari	"	05-08-14
23	Shetrunji	"	05-08-14
24	Kalubhar	"	05-08-14
25	Aji-II	"	05-08-14
26	Demi-II	"	05-08-14
27	Ghee	"	05-08-14
28	Sasoi-I	"	05-08-14
29	Kakrapar	"	22-09-14
30	MahiRBC	"	22-09-14
31	MahiRBC	2004-05	01-11-14
32	MahiRBC	2005-06	01-11-14
33	MahiRBC	2006-07	18-12-14
34	MahiRBC	2007-08	18-12-14
35	MahiRBC	2008-09	09-01-15
36	MahiRBC	2009-10	09-01-15
37	MahiRBC	2010-11	09-01-15
38	Hathmati	2013-14	05-02-15
39	Meshwo	"	05-02-15
40	Waidy	"	05-02-15
41	Mazam	"	05-02-15
42	Watrak	"	05-02-15
43	Kharicut	"	05-02-15
44	Damanganga	"	12-02-15

Sr.No.	Name of Project	Report for the year	Date of published
45	UkaiLBC	"	20-02-15
46	Fatewadi	"	10-03-15
47	Bhadar-P	"	10-03-15
48	Edalwada	"	10-03-15
49	Kabutari	2013-14	10-03-15
50	Umaria	"	10-03-15
51	Sipu	"	31-03-15
52	Lakroda	"	31-03-15
53	Dharoi	"	31-03-15
54	Hadaf	"	31-03-15
55	KadanaLBC	"	31-03-15
56	Panam	"	31-03-15
57	Machhannala	"	31-03-15

Executive Summary (S.S.W.T.)

Sr.No.	Name of Project	Report for the year	Date of published
1	**2**	**3**	**4**
1	Aji-II	2013-14	19-02-2015
2	Demi II	2013-14	19-02-2015
3	Brahmani I	2013-14	19-02-2015
4	Machhu I	2013-14	19-02-2015
5	Bhadar	2013-14	19-02-2015
6	Moj	2013-14	19-02-2015
7	Ghee	2013-14	19-02-2015
8	Vartu I	2013-14	19-02-2015
9	Sasoi -I	2013-14	19-02-2015
10	Machhunadri	2013-14	19-02-2015
11	Kalubhar	2013-14	19-02-2015
12	Shetrunji	2013-14	19-02-2015
13	Kakarapar	2013-14	13-02-2015
14	U.R.B.C	2013-14	13-02-2015
15	U.L.B.C.	2013-14	13-02-2015
16	M.R.B.C.	2013-14	13-02-2015
17	Damanganga	2013-14	13-02-2015
18	Karjan	2013-14	13-02-2015
19	Jhuj	2013-14	13-02-2015
20	Keliya	2013-14	13-02-2015
21	Ver -II	2013-14	13-02-2015

Sr.No.	Name of Project	Report for the year	Date of published
22	Pigut	2013-14	13-02-2015
23	Lakhigam	2013-14	13-02-2015
24	Rami	2013-14	13-02-2015
25	Panam	2013-14	25-02-2015
26	Machhnala	2013-14	25-02-2015
27	Edalwada	2013-14	25-02-2015
28	Bhadar-(P)	2013-14	25-02-2015
29	Umaria	2013-14	25-02-2015
30	K.L.B.C	2013-14	25-02-2015
31	Kabutari	2013-14	25-02-2015
32	Hadaf	2013-14	25-02-2015
33	Hatmati	2013-14	25-02-2015
34	Fatewadi	2013-14	25-02-2015
35	Meshwo	2013-14	25-02-2015
36	Waidy	2013-14	25-02-2015
37	Kharicut	2013-14	25-02-2015
38	Sabarmati	2013-14	25-02-2015
39	Watrak	2013-14	25-02-2015
40	Mazam	2013-14	25-02-2015
41	Dantiwada	2013-14	25-02-2015
42	Lakroda	2013-14	25-02-2015
43	Mukteshwar	2013-14	25-02-2015
44	Sipu	2013-14	25-02-2015

3.0 Deputation to Symposium/Conference/Seminar workshop/training etc. Attended by GERI Officer during year 2014-15

Sr. No.	Period	Place	Subject	Name of officer who attended
1	17th to 21st Nov 2014	STC Gandhinagar	Training of Module II (Dam)	Shri. B. H. Chaudhari, R.O, S.M. Dn. Shri H.D.Rathwa, A.R.O., S.M.Dn.
2	19th to 23rd Jan 2015	STC Gandhinagar	Training of Module III (Canal)	Shri H.D.Rathwa, A.R.O., S.M.Dn.
3	14.03.2015 to 15.03.2015	IGS – Chapter Vadodara	Training of 5IYGES	Shri B. H. Chaudhari Shri H.D.Rathwa, Shri J. B. Makwana, Shri. S. J. Rajan, Shri A.R.Shah Shri I.M.Dukandar

Sr. No.	Period	Place	Subject	Name of officer who attended
4	16.03.2015 20.03.2014	WALMI Anand	Training of AutoCad	Shri H.D.Rathwa Shri. S. J. Rajan
5	4/8/14 to 8/8/14	CSIR-SRRI, New Delhi	Traffic Engineering & Road Safety Audit	R.O.,RRD-4
6	23/6/14 to 27/6/14	STC, Gandhinagar	Module-I (Administration)	Huma Siddeqiu, AE Chitra Chudasama AE
7	14/7/14 to 18/7/14	STC, Gandhinagar	AutoCAD	Huma Siddeqiu, AE Chitra Chudasama AE
8	4/8/14 to 7/8/14	ESCI, Hydrabad	Testing of civil engineering materials	Huma Siddeqiu, AE Chitra Chudasama AE
9	7/10/14 to 11/10/14	STC, Gandhinagar	Module-4, Building	Huma Siddeqiu, AE Chitra Chudasama AE
10	November 13-17,2014	Parul Institute of Technology, Vadodara	GIS and Remote Sensing with QGIS-An Open Source Desktop Software"	Sanjay Srivastava, S. S. A. Seismology Unit, E.G. Dn
11	06-06-14 to 07-06-14	I G S, Vadodara Chapter	Geotechnical Consideration for Power equipment.	Smt. P.S.Chari RO. MT
12	November 13-17,2014	Parul Institute of Technology, Vadodara	GIS and Remote Sensing with QGIS-An Open Source Desktop Software"	S.P.Patel A.R.O Sedi. Survey Unit-(II)
13	02-05-2014	Conference Room, CWC, 5th Floor, Sewa Bhawan, R.K.Puram, New Delhi	10th meeting of Hydrological Information System Management Group – Technical Presentation of PDS under Hydrology Project-II	Smt. P.S.Chari (RO.MT) Ku.B.D.Akbari (A.E.CU)
14	18-03-2015	SAP Indra prasth, New Delhi Gandhinagar	National Seminar on Revision of draft proposed for National Building Code -2005	Shri V.H.Vyas. ARO(BRU)

4.0 Workshop/ Seminars / Training / Organised by GERI during the year 2014-15

Sr. N.	Subject	Date	Organizes by
1	Field test of Soil For Ukai (Civil) Circle, Ukai @ Valod	23/01/15	Team Leader Shri.B.H.Chaudhari. RO, SM Dn. Faculty, Shri I.M.Dukandar. JSA,SMD.
2	QC In Earth work For Kadana Project Circle, Diwada colony @ Diwada colony	25/02/15	Team Leader, Shri.B.H.Chaudhari. RO,SM Dn. Faculty , Shri J.B.Makwana. AE,SMD.
3	QC In Earth work & SM For Bhavnagar Irrigation Project Circle, Bhavnagar @ Bhavnagar	03/03/15	Team Leader, Shri.B.H.Chaudhari. RO,SM Dn. Facultiy, Shri J.B.Makwana. AE, SMD.
4	QC In Earth work & SM For DamanGangaa Irrigation circle @ valsad	27/04/15	Team Leader Sh.B.H.Chaudhari. RO, SM Dn. Shri J.B.Makwana. AE, SMD.
5	Quality Control in Civil Engineering Construction pertains to Water Resources Field" at K.P.C., Kadana	25.02.2015	Shri D.N.Patel Jr. Geologist, E.G. Dn.
6	Quality Control in Civil Engineering Construction pertains to Water Resources Field at S.I.P.C., Bhavnagar	03.03.2015	Smt. D.Y.Mehta Geologist-II, E.G. Dn.
7	Technical Seminar on Testing of durability of concrete by RCPT Method as per ASTM Methodology	16-12-2014	Shri Vikram Thambevekar Contech Conslatant Mumbai, M.T. Dn.
8	Quality control in concrete works Ukai Circle@Valod	23-01-2015	Smt. P.S.Chari, RO Shri R.M.Jain, AE.
9	Quality control in concrete works Kadana Circle @Diwada Colony	25-02-2015	Smt. P.S.Chari, RO Shri R.M.Jain, AE.
10	Quality control in concrete works Bhavnagar Irri. Circle @Bhavnagar	03-03-2015	Smt. P.S.Chari, RO Shri R.M.Jain, AE.
11	Rock Mechanics – Laboratory Testing & Field Testing, Ukai Circle@Valod	23-01-2015	Shri S B Pimplaskar, A.R.O. (I/C)
12	Rock Mechanics – Laboratory Testing & Field Testing, Kadana Circle @Diwada Colony	25-02-2015	Shri S B Pimplaskar, A.R.O. (I/C)
13	Rock Mechanics – Laboratory Testing & Field Testing Bhavnagar Irri. Circle @Bhavnagar	03-03-2015	Shri S B Pimplaskar, A.R.O. (I/C)

5.0 <u>Techanical Forum Organised by GERI</u> ----NIL---

6.0 Equipment procured during the year. -----NIL-----

7.0 Visits by Dignitaries to Field Hydraulic Laboratory, GERI, Gotri, Vadodara During the 01/04/2014 to 31/03/2015

Date	Visitors
03/04/2014	<u>For Navagam Stage 3D Model</u> Shri R.J.Shah DE.E. and S.S.N.N.L.Staff
04/04/2014	<u>For Navagam Stage 3D Model</u> Chief Engr shree.Dam & canal Shri R.J.Shah DE.E. and S.S.N.N.L.Staff Shri Jawa sir , Consultant
05/04/2014	Visit of 46 Engineering Students from Jivraj Mehata Inst of Tech. Mogar.
09/04/2014	Student visit from Sant Kabir school, Vadodara.
21/05/2014	Shri Kanungo S.E ,SSNNL officers Shri R.J.Shah (D.E.E),Shri Garasia (DEE), Technical Students
07/07/2014 & 08/07/2014	<u>For Bhadbhut 2 D & 3D model</u> Shri Rabadia C.E. - Kalpsar Shri A B Thakkar Superintending Engineer Shri Ted Murthy Shri D N Deshmukh ,Consultant, Bhadbhut Model study Shri Khatsuriya ,Consultant, Bhadbhut Model study Shri A K Patel. Executive Engineer.
08/08/2014	<u>For Navagam Stage 3D Model</u> Shri R.J.Shah D.E.E. and S.S.N.N.L.Staff
14/08/2014	<u>For Tapi & Ukai Model</u> Shri Dholakiya sir and staff of Surat municipal corporation
06/09/2014	<u>For Bhadbhut 3D model</u> Shri Desai Sir (Retd. Secy) Shri A. B. Thakkar S.E.Shri A. K. Patel. E. E. and staff
11/09/2014	<u>For Garudeshwar 3D model</u> Team of Geologist from Jaipur for SSNNL
24/09/2014	<u>For Bhadbhut 2D model & Sant Sarovar 3D Model</u> Visit of 140 Students and staff from L.D.Engg college, Ahmedabad
15/10/2014	Visit of Students from Parul Institute ,Limda,vadodara.
16/10/2014	Visit of Students from S.V.I.T. Vasad
13/11/2014	<u>For Tapi model</u> C.E. (Kalpsar)
14/11/2014	<u>For Garudeshwar 2D & 3D model</u> CWC Officers Shri Kanungo Superintending Engineer, Shri Garasia E E and staff

Date	Visitors
23/02/2015	Visit of 70 Students from Sarvajanik engg.college, surat
26/02/2015	For Bhadbhut 3D model Shri Rabadia sir C.E. Kalpsar Shri R D Soni, Consultant, Bhadbhut Model study & Shri A K Patel. (I/C) S E .
26/02/2015	Visit of 70 Students from polytechnic college. Valsad
12/03/2015	For Bhadbhut 3D model Shri Kapadia sir, (Director ,GERI) Shri B.H.Chaudhari (J.D.)
13/03/2015	Visit of 75 Students from Om Institute , Vanta vachhoda Tal. Shahera
17/03/2015	Visit of 55 Students from engg college, Valsad
20/03/2015	Visit of 55 Students from Ganapat college,Mahesana. Visit of P.G. Students from M.S.University, Vadodara
25/03/2015	Visit of Students from R.M.S. polytechnic college. Valsad
26/03/2015	Visit of Students from R.M.S. polytechnic college. Valsad

8.0 Library publications

(a) Nos. of books procured 35 nos.

Indian authors 35 nos.

Foreign authors -NIL-

(b) Nos. of journals / periodicals subscribed

Indian authors 08 nos.

Foreign authors 03 nos.

(c) Nos. of research film procured ---NIL---

(d) Nos. of technical film procured ---NIL---

List of Indian Journals

1	Bhagirath
2	Civil Engineering & Construction Review
3	Indian Journal of Power & River Valley Development
4	ISH Journal of Hydraulics Engineering
5	Journal of Instt of Engineers (India)
6	Science Reporter
7	Standards India
8	Yojana

List of foreign journals

1	Geo-synthetics
2	Roads & Transport Research
3	Traffic Engineering & Control

9.0 Budget provision and expenditure for the year 2014-2015_(Rs. In lacs.)

Sr. No.	Head of Account	FMG		Expenditure	
		Plan	Non-Plan	Plan	Non-Plan
1.	4701 C.O. on Medium Irr. 800 Other Exp. 46 IRG-NHP With externally aid Plan	-	-	-	-
2.	2701 Major & Medium Irr. 80 General 004 Research Plan	575	-	574.25	-
3.	2701 Major & Medium Irr. 001 Dir. & Adm. 01 Dir. Non Plan	-	1837.02	-	1822.67
4.	2701 Major & Medium Irr. 001 Dir. & Adm. 02 Adm. Non Plan (Sedimentation/Dam safety)	-	226.28	-	218.77
5.	5054 Co. on R & R 80 General 800 Other Expdr. Planning & Res. Plan	100	-	94.69	-
6.	3054 R & B 001 Dir & Adm. (02) Adm. Non Plan	-	1120.81	-	1115.29
7.	5054 Co. on R& B 03 State Highways 317 Road Work (11) Original Works CRF Non Plan	-	-	-	-
8.	Demand No.84 2059 P,W 053 M & E State Division W/C Salary (NP)	-	300.87	-	296.18
9.	2701 Medium Irr. 80 General 800 other expenditure 01 Information Technology 52 M & E	-	-	-	-

SECTION-E

1.0 Research Personnel.

Following officers were working in GERI during year 2014-2015 for the period shown against them.

Name	Designation	Qualification	Period
Shri U. K. Sarvaiya	C.E. & Director	M. E. (Civil)	1.4.14 to 2.4.14
Shri P. C. Vyas	C.E. & Director	M. E. (Civil)	3.4.14 to 31.8.14
Shri R. H. Fefar	C.E. & Director I/C	B. E. (Civil)	1.8.14 to 15.9.14
Shri P. C. Vyas	C.E. & Director	B. E. (Civil)	16.9.14 to 28.1.15
Shri V. P. Kapdia	C.E. & Director	M.E. (Civil)	29.1.15 to 31.3.15
Shri R. H. Fefar	J. D. (Irrigation)	B. E. (Civil)	1.4.14 to 16.12.14
Shri B. H. Chaudhari	J. D.(Irrigation) I/C	B. E. (Civil)	17.12.14 to25.12.15
Shri R. H. Fefar	J. D. (Irrigation)	B. E. (Civil)	26.12.14 to 1.3.15
Shri B. H. Chaudhari	J. D.(Irrigation) I/C	B. E. (Civil)	2.3.15 to 15.3.15
Shri R. H. Fefar	J. D. (Irrigation)	B. E. (Civil)	16.3.15 to 31.3.15
Shri A. K. Patel	J. D. (Roads) I/C	B. E. (Civil)	1.4.14 to 19.8.14
Shri D. N. Chaudhari	J. D. (Roads)	B. E. (Civil)	20.8.14 to 31.3.15
Shri H. L. Patel	Deputy Director	B. E. (Civil)	1.4.14 to 27.11.14
Shri R. J. Rao	Deputy DirectorI/C	B. E. (Civil)	28.11.14 to14.12.14
Shri H. L. Patel	Deputy Director	B. E. (Civil)	15.12. 14 to 4.2.15
Shri D. A. Rathod	Deputy DirectorI/C	B. E. (Civil)	5.2.15 to 15.2.15
Shri H. L. Patel	Deputy Director	B. E. (Civil)	16.2.15 to 31.3.15
Shri M. R. Ray	A.R.O.(civil)	B. E. (Civil)	1.4.14 to 30.11.14
Shri H. D. Vakil	A.R.O.(civil) I/C	B. E. (Civil)	1.12.14 to 31.3.15
Material Testing Division			
Smt. P.S.Chari	Research Officer	B.E. (Civil)	1-4-14 to 31-3-15
Shri V.H.Vyas	A. R. O.	B.E. (Civil)	1-4-14 to 31-3-15
Shri R.M.Jain	A.R.O. I/C	B.E. (Civil)	1-4-14 to 31-3-15
Shri U.C.Shukla	A.R.O.	B.E. (Civil)	1-4-14 to 31-3-15
Geomechanics Division			
Ms. T N Vaidya	Research Officer	M.Sc.	01.04.14to03.07.14
Ms. P S Chari	Research Officer /C	B.E. (Civil)	04.07.14to27.07.14
Ms. T N Vaidya	Research Officer	M.Sc.	28.07.14to31.01.15
Ms .P S Chari	Research Officer /C	B.E. (Civil)	01.02.15to31.03.15
Mr. R M Parekh	A.R.O. I/C	B.Sc.	01.04.14to30.06.14
Mr. K D Mudholkar	A.R.O. I/C	B.E. (Civil)	01.07.14to25.12.14
Mr. S B Pimplaskar	A.R.O. I/C	M.E. (Civil)	26.12.14to31.03.15
Soil Mechanics Division			
Shri B. H. Chaudhari	R. O.	B. E. (Civil)	1.4.14 to 15.06.14
Smt. P.S. Chari	R. O. (I/C)	B. E. (Civil)	16.6.14 to 27.06.14

Name	Designation	Qualification	Period
Shri B. H. Chaudhari	R. O.	B. E. (Civil)	28.06.14 to 3.12.14
Smt. P.S. Chari	R. O. (I/C)	B. E. (Civil)	04.12.14to09.12.14
Shri B. H. Chaudhari	R. O.	B. E. (Civil)	10.12.14to19.02.15
Smt. P.S. Chari	R. O. (I/C)	B. E. (Civil)	20.02.15to24.02.15
Shri B. H. Chaudhari	R. O.	B. E. (Civil)	25.02.15to31.03.15
Smt. N. S. Patel	A.R.O-I	B. E. (Civil)	01.04.14 o11.05.14
Shri. J. B. Makwana	A.R.O-I (I/C)	B. E. (Civil)	12.05.14to15.06.14
Smt. N. S. Patel	A.R.O. - I	B. E. (Civil)	16.06.14to31.12.14
Shri. H. D. Rathwa	A.R.O. - I (I/C)	B. E. (Civil)	1.01.15 to 16.01.15
Smt. N. S. Patel	A.R.O. - I	B. E. (Civil)	17.01.15to31.03.15
Shri. R. M. Parekh	A.R.O. - II	M.Sc.	01.04.14to30.06.14
Shri. A. V. Kaulgud	A.R.O- II (I/C)	B. E. (Civil)	01.07.14to30.09.14
Shri. H. D. Rathwa	A.R.O. - II	B. E. (Civil)	1.10.14 to 31.03.15
Shri. A. V. Kaulgud	A.R.O- III	B. E. (Civil)	01.04.14to18.05.14
Shri. S. J. Rajan.	A.R.O-II(I/C)	B. E. (Civil)	19.05.14to31.05.14
Shri. A. V. Kaulgud	A.R.O- III	B. E. (Civil)	01.06.14to31.03.15
Engineering Geology			
Shri K.G.Patel	Geologist (Sr)	M.Sc.(Geology)	01.04.13to30.06.14
Shri M.C. Dandiwala	Geologist (II) (I/C)	M.Sc.(Geology)	01.04.14to31.08.14
Smt D Y Mehta	Geologist (Sr) (I/C)	M.Sc.(Geology)	02.09.14to31.03.15
Smt D Y Mehta	Geologist (II)	M.Sc.(Geology)	01.04.14to31.03.15
Shri Sanjay Srivastava	A.R.O.(I/C)	M.Sc.Tech.(Geophysics)	01.04.14to31.03.15
Shri V.V.Mistry	Geologist (II) (I/C)	B.Sc. (Geology)	01.04.14to31.03.15
Road Research Division 1			
Shri A.K.PATEL	R.O	B.E.Civil	01.04.14 to 31.03.5
Shri S.V. Vanjara	A R.O.	B.E. (Civil)	01.04.14 to16.04.14
Shri R. S. Vasava	A.R.O.(I/C)	D.C.E.	17.04.14 to12.05.14
Shri S.V. Vanjara	A R.O.	B.E. (Civil)	13.05.14 to27.05.14
Shri S.S. Murjani	A.R.O.(I/C)	B.E. (Civil)	28.05.14 to07.06.14
Shri S.V. Vanjara	A R.O.	B.E. (Civil)	08.06.14 to31.03.15
Shri S.S.Murjani	A.R.O.	B.E. (Civil)	01.04.14 to03.05.14
Miss M.M.Vyas	A.R.O.(I/C)	B.E.(Civil)	04.05.14 to18.05.14
Shri S.S.Murjani	A.R.O.	B.E.(Civil)	19.05.14 to15.06.14
Miss M.M.Vyas	A.R.O.(I/C)	B.E. (Civil)	16.06.14 to29.06.14
Shri S.S.Murjani	A.R.O.	B.E.(Civil)	30.06.14to15.11.14
Miss M-M-Vyas	A.R.O.(I/C)	B-E- (Civil)	16.11.14 to07.12.14
Shri S-S-Murjani	A.R.O.	B-E-(Civil)	08.12.14 to31.12.14
Shri S-V-Vanjara	A.R.O.(I/C)	B-E-(Civil)	01.01.15 to31.03.15

Name	Designation	Qualification	Period
Road Research Division 4			
Shri R.T. Rohit	R O	M.Tech.	1.4.14 to 31.03.15
Shri K.R.Shah	A.R.O.	B.E. (Civil)	1.4.14 to 31.03.15
Shri F.M.Hui	A.R.O.	B.E. (Civil)	1.4.14 to 31.03.15
Dam Safety Organisation			
Shri B.H.Chaudhari	Ex. Engr. (C) (I/C)	B. E. (civil)	1.4.14 to 09.10.14
Shri.K.K.Sharma	Ex. Engr. (C) (I/C)	B. E. (civil)	10.10.14to26.10.14
Shri R.J.Rao	Ex. Engr. (C)	M. E. (civil)	27.10.14to31.03.15
Shri.K.K.Sharma	D. E. E. Unit-O	B E (Civil)	1.4.14 to 31.03.15
Shri M.R.Ray	D.E.E.Unit-N (I/C)	B. E. (civil)	1.4.14 to 30.11.14
Shri.K.K.Sharma	D.E.E.Unit-N (I/C)	B E (Civil)	1.12.14 to 31.03.15
Shri.R.B.Sikarwar	A.E.(Civil) Unit-O	B E (Civil)	1.4.14 to 4.10.14
Shri P.N.Nagpal	A.E.(Civil) I/C	B E (Civil)	4.10.14 to 19.10.14
Shri.R.B.Sikarwar	A.E.(Civil) Unit-O	B E (Civil)	20.10.14to31.03.15
Shri B.S.Desai	Ex. Engr. (M)	B. E. (Mech.)	1.4.14 to 15.09.14
Shri B.H.Chaudhari	Ex. Engr. (M) (I/C)	B. E. (civil)	16.09.14to31.10.14
Shri B.S.Desai	Ex. Engr. (M)	B. E. (Mech.)	1.11.14 to 30.11.14
Shri R.J.Rao	Ex. Engr. (M) (I/C)	M. E. (civil)	01.12.14to31.03.15
Shri A.H.Joshi	D. E. E. Unit-M (I/C)	B. E. (Civil)	1.4.14 to 31.03.15
Smt. N. N. Malavia	Ex. Engr. (E)	B. E. (Elect)	1.4.14 to 30.11.14
Ms. P.S.Chari	Ex. Engr. (E) (I/C)	B. E. (civil)	01.12.14 to 5.12.14
Shri G.R.Adhyaru	Ex. Engr. (E) (I/C)	B. E. (Elect)	06.12.14to31.03.15
Hydraulics Division			
Shri S.B. Rao	Research Officer	B.E. (Civil)	1.4.14 to 11.6.14
Shri P.B. Chaudhari	Research Officer I/C	B.E. (Civil)	12.6.14 to 12.10.14
Shri D.A. Rathod	Research Officer	A.M.I.E. (Civil)	13. 10.14 to 31.3.15
Shri A.C. Parmar	A. R. O.Hyd. Sub. Div.	B.E. (Civil)	1.4.14 to 31.5.14
Shri R.S. Contractor	A.R.O.Hyd. Sub. dn.I/C	B.E. (Civil)	1.6.14 to 31.3.15
Shri S.P. Patel	A.R.O.S. S.Unit-(II)	B.E. (Civil)	1.4.14 to 31.3.15
Shri H.D. Desai	A.R.O.S.S.Unit-(I)	M.Sc.	1.4.14 to 30.9.14
Shri B.M. Khatri	A.R.O.S.S.Unit-(I) I/C	B.E. (Civil)	1.10.14 to 31.3.15
Narmada Hydraulic Division			
Shri P.B. Chaudhari	Research.Officer	B.E. (Civil)	1.4.14 to 31.3.15
Shri S P Patel	ARO - I (I/C)	B.E. (Civil)	1.4.14 to 31.3.15
Shri M.Khan	ARO- II (I/C)	M. E. (Civil)	1.4.14 to 31.3.15
Shri M C Patel	A.R.O-III	M. Sc. (Chem.)	1.4.14 to 31.3.15
North Gujarat Research Division, Gandhinagar			
Smt. J.M.Shroff	R.O.	M.Sc.(Chem.)	1.4.14 to 31.3.15
Shri M.R.Dave	A.R.O.(I/C) ,	D.C.E.(civil)	1.4.14 to 31.3.15
Shri K.P.Desai	A.R.O.(I/C) Stl2	B.Sc.	1.4.14 to 31.3.15

Name	Designation	Qualification	Period
Shri B.V.Delasaniya	A.R.O. M.T. SubDn.	D.C.E.	1.4.14 to 31.10.14
Shri S.K.Verma	A.R.O(I/C)M.T.Sub Dn	B.E.(civil)	1.11.14 to 31.3.15
Shri S.A.Lala	A.R.O.(I/C)RRD8	B.E.(civil)	1.4.14 to 31.5.14
Shri A. S. Thakkar	A.R.O.(I/C) RRD8	B.E.(civil)	1.6.14 to 31.3.15
Shri B.A.Patel	A.R.O.,Dist. Lab. Ahmedabad	D.C.E	1.4.14 to 31.3.15
Shri H. B. Shah	A.R.O.(I/C) Dist. Lab. Nadiad	B.E.(Civil)	1.4.14 to 31.3.15
Shri R.S.Patel	A.R.O. Dist. Lab. Mehsana	D.C.E.	1.4.14 to 31.5.14
Shri A. M. Patel	A.R.O. Dist. Lab. Mehsana	B.E.(Civil)	1.6.14 to 31.1.15
Shri S. N. Patel	A.R.O. Dist. Lab. Mehsana	B.E.(Civil)	1.2.15 to 31.3.15
Shri A. M. Patel	A.R.O. Dist. Lab. Palanpur	B.E.(civil)	1.4.14 to 31.1.15
Shri G. D. Patel	A.R.O.(I/C) Dist. Lab. Palanpur	B.E.(civil)	1.2.15 to 31.3.15
Shri A. M. Patel	A.R.O.(I/C) Dsl, Himatnagar	B.E.(civil)	1.4.14 to 31.1.15
Shri B.J.Upadhyay	A.R.O.(I/C) Dsl,Himatnagar	D.C.E.(civil)	1.2.15 to 31.3.15
Shri S.K. Verma	A.R.O.Dist. Lab. Bhuj	B.E.(civil)	1.4.14 to 1.11.14
Shri P. H. Digva	A.R.O.Dist. Lab. Bhuj	B. Sc.	2.11.14 to 31.3.15
Shri M. C. Patel	A.R.O. I/C Dist. Lab. Godhara	B.E.(civil)	1.4.14 to 3.3.15
Shri A.H.Patel	A.R.O.(I/C)W.Q.T. Dn. SWDC, Gandhinagar	M.Sc.(Agri)	1.4.14 to 31.3.15
South Gujarat Research Division, Surat			
Shri M.R. Parmar	R. O.	B. Sc. (Chem.)	01.04.14to30.06.14
Shri M.A.Lohani	R. O. I/C	B. E. (Civil)	01.07.14to31.01.15
Shri M.N.Tank	R. O. I/C	B. E. (Civil)	01.02.15to28.02.15
Shri B.H.Chaudhri	R. O. I/C	B. E. (Civil)	01.03.15to31.03.15
Shri D.I. Gandhi	A.R.O., M.T. Sub Dn. Surat	B. E. (Civil)	01.04.14to31.03.15
Shri D.I. Gandhi	A.R.O. I/C, R.R. Sub Dn.7, Surat	B. E. (Civil)	01.04.14to31.03.15
Shri M.N.Tank	A.R.O., S.M.. Surat	B. E. (Civil)	01.04.14to28.02.15
Smt. G.N.Patel	A.R.O., S.M.,. Surat		01.03.15to31.03.15
Shri M.A.Lohani	A.R.O.Soil R& B Surat	B. E. (Civil)	01.04.14to31.01.15
Smt. G.N.Patel	A.R.O. Soil R& B Surat		01.02.15to31.03.15

Name	Designation	Qualification	Period
Shri J.C.Surti	A.R.O.Dist. Lab., Bharuch		01.04.14to31.03.15
Shri P.S. Karkhanis	A.R.O. Dist. Lab., Valsad		01.04.14 to 4.08.14
Shri M.N.Tank	A.R.O. Dist. Lab., Valsad	B.E. (Civil)	05.08.14to17.11.14
Shri J.C.Surti	A.R.O. Dist. Lab., Valsad		18.11.14to05.12.14
Shri B.K.Ahir	A.R.O. Dist. Lab., Valsad	B. Sc.	06.12.14to21.01.15
Smt. G.N.Patel	A.R.O.Dist. Lab., Valsad		22.01.15to31.03.15
S.D. & R. Circle, Vadodara			
Shri R.H.Fefar	S.E.(S.D.&R) Adl.Charge	B.E.Civil	01.04.14 to16.12.14
Shri B.H.Chaudhari	S.E.(S.D.&R) I/C	B.E.Civil	17.12.14 to25.12.14
Shri R.H.Fefar	S.E.(S.D.&R) Adl.Charge	B.E.Civil	26.12.14 to01.03.15
Shri B.H.Chaudhari	S.E.(S.D.&R) I/C	B.E.Civil	02.03.15 to15.03.15
Shri R.H.Fefar	S.E.(S.D.&R) Adl.Charge	B.E.Civil	16.03.15 to31.03.15
Shri S.N.Panchal	P.S. to SE.SDR &Dy.s.s.o.	D.C.E.	01.04.14 to02.01.15
Shri R.G.Shah	P.S. to SE.SDR &Dy.s.s.o.	D.C.E.	03.01.15 to11.01.15
Shri S.N.Panchal	P.S. to SE.SDR & Dy.s.s.o.	D.C.E.	12.01.15 to31.03.15
SOIL SURVEY DIVISION SURAT			
Shri M.R.Parmar	SS Officer , I/C	B.Sc.(Chem.)	01.04.14 to26.05.14
Shri R.N.Rathod	SS Officer , I/C	D.C.E.	27.05.14 to31.03.15
SOIL SURVEY SUB DIVISION SURAT			
Shri N.M.Kinariwala	Dy. Officer I/C	B.Sc. (Chem)	01.04.14 to31.12.14
Shri P.D.Patel	Dy. SS Office	D.C.E.	01.01.15 to31.03.15
SOIL SURVEY SUB DIVISION VALSAD			
Shri.Y.A.Shaikh	Dy.SS Officer (I/C)	B.Sc. (Chem)	01.04.14 to31.03.15
SOIL SURVEY SUB DIVISION BHARUCH			
Shri K.V.Sharma	Dy.SS Officer I/C	D.C.E	01.04.14 to31.03.15
SOIL SURVEY SUB DIVISION VADODARA			
Shri R.G.Shah	Dy.SS Officer I/C	D.C.E.	01.04.14to31.03.15

Name	Designation	Qualification	Period
SOIL SURVEY DIVISION RAJKOT			
Shri S.B.Chandarana	Dy. SS Officer Add. Charge	M.Sc. (Chem.)	01.04.14 to27.02.15
Shri R.G.Mathukia	Dy. SS Officer	M.Sc.(Agri.)	28.02.15 to15.03.15
Shri S.B.Chandarana	Dy. SS Officer Add. Charge	M.Sc. (Chem.)	16.03.15 to31.03.15
SOIL SURVEY SUB DIVISION RAJKOT			
Name	**Designation**	**Qualification**	**Period**
Shri R.G.Mathukia	Dy. SS Officer	M.Sc.(Agri.)	01.04.14 to31.03.15
SOIL SURVEY SUB DIVISION JAMNAGAR			
Shri S.B.Chandarana	Dy. SS Officer	M.Sc. (Chem)	01.04.14 to26.02.15
Shri B.R.Patel	Dy. SS Officer	B.E.Civil	27.02.15 to15.03.15
Shri S.B.Chandarana	Dy. SS Officer	M.Sc. (Chem)	16.03.15 to31.03.15
SOIL SURVEY SUB DIVISION BHAVNAGAR			
Shri N.B.Patel	Dy. SS Officer I/C	B.Sc. (Agri)	01.04.14 to31.03.15
SOIL SURVEY SUB DIVISION JUNAGDH			
Shri C.P. Bhogani	Dy. SS Officer I/C	D.C.E.	01.04.14 to31.03.15
SOIL SURVEY DIVISION GHANDHINAGAR			
Shri R.N.Rathod	SS Officer	D.C.E.	01.04.14 to31.03.15
SOIL SURVEY SUB DIVISION GHANDHINAGAR			
Shri I.H.Khokhar	Dy.SS Officer	M.Sc. (Org.Chem)	01.04.14 to31.03.15
SOIL SURVEY SUB DIVISION MAHESANA			
Shri M.P.Patel	Dy.SS Officer I/C	D.C.E.	01.04.14 to31.03.15
SOIL SURVEY DIVISION PALANPUR			
Shri N.R.Trivedi	Dy.SS Officer I/C	B.Sc. (Chem) &LLB	01.04.14 to31.07.14
Shri V.M.Chauhan	Dy.SS Officer I/C	B.E.Civil	01.08.14 to31.03.15
SOIL SURVEY DIVISION GODHARA			
Shri R.P.Patel	Dy.SS Officer I/C	B.Sc. (Chem)	01.04.14 to30.06.14
Shri D.J.Patel	Dy.SS Officer I/C	D.C.E.	01.07.14 to31.03.15

2.0 ABBREVIATION USED IN THE REPORT

ADT	Average Daily Traffic
APL	Accident Prone Location
BSG	Built up Spray Grout
CBIP	Central Board of Irrigation & Power
CBR	California Baring Ratio
CWC	Central Water Commission
DBM	Dense Bitumen Macadam
DOS	Department Of Space
DST	Department of Science and Technology
FCC	False Colour Composite
FM	Fineness Modules
GCA	Gross Command Area
GERI	Gujarat Engineering Research Institute
HDPE	High Density Polyethylene
ICAR	Indian Council of Agricultural Research
IMSD	Integrated Mission for Sustainable Development
INCCMS	Indian National Committee on Construction Material and Structures
INCGE	Indian National Committee on Geotechnical Engineering
INCRMTT	Indian National Committee on Rock Mechanics and Tunneling Technology
IRS-1 C	Indian Remote sensing Satellite -1C
KLBMC	Kakarapar Left Bank Main Canal
LDPE	Low Density Polyethylene
MOST	Ministry Of Surface Transport
NH-8	National Highly - 8
NMC	Narmada Main Canal
NRSA	National Remote Sensing Agency
PMT	Pressure Meter Test
PP WAX	Poly Propylene Wax
PVC	Poly Vinyl Chloride
R & D	Research and Development
RESECO	Remote Sensing and Communication Center
SH-41	State Highway - 41
SSNNL	Sardar Savor Narmada Nigam Limited.
TAP	Traffic Aid Post
TBM	Tinna Overseas Limited Bitumen Modifier (Brand Name).
WRI	Water Resources Investigation