

CHAPTER-1
INTRODUCTORY

1.0 INTRODUCTORY.

1.1 Disaster Management Plan (Flood Memorandum) :

1.1.1 Disaster Management Plan (Flood Memorandum) consists of flood forecasting system for various rivers of State, instructions & functions to be performed by various officers at the time of flood in the river during monsoon period. The system of flood forecasting consists of four phases viz.,

- a) Observation and collection of operational data means:- Collection of field data regarding rainfall, water levels of gauge sites, etc., by different field officers at different places as described hereafter.
- b) Transmission of data to forecast centers means :- Transmission of data collected as above to the concerned officers in charge of formulation of forecast.
- c) Formulation of forecast means :- The formulation of flood forecast on the basis of the data collected above along with necessary data from the I.M.D.
- d) Issue of forecast :- All officers formulating the forecast are authorized to issue the forecast.

The complete list of gauge stations from where Hydro Meteorological data are being collected, danger level/F.R.L. of the stations and the officers in-charge with their telephones nos. are given vide Annexure 1-A and Flood Telephone Directory of the current year respectively. The warning and danger levels for the important gauge stations are also appended vide Annexure 1-B

1.2 Telephone Nos.

1.2.1 The Telephone Nos. of the concerned officers are given in Flood Telephone Directory of the current year

1.3 Meteorological Center and Flood Meteorological Officer.

1.31. Meteorological Center and Flood Meteorological office stationed at Ahmedabad collects information regarding meteorological situation of the State. These Hydro Meteorological data are transmitted by flood meteorological office to the Executive Engineer, Mahi Division, (C.W.C.) at Gandhinagar and Executive Engineer, Tapi Division (C.W.C.) Surat as per their specific requirements. Meteorological center also issue heavy rainfall warnings to those officers of N.W.R.W.S.& Kalpsar Dept. and Revenue Departments of Government of Gujarat who have specifically got their names registered with Meteorological Center, Ahmedabad for receipt of heavy rainfall warning by giving their specific requirements in the prescribed proforma known as "Album Page". **The information and terminology regarding WEATHER BULLETINS, COASTAL BULLETINS and POST LAND FALL**

OUTLOOK specified by India Meteorology Department are given on Page No.(I) to (XIX) with Telephone Nos. The address of Meteorological Center and Flood Meteorological office are as under:

TABLE - 1.3.1

a)	Director I/c Meteorological Center/Flood Meteorological Office, RS/RW Building, Airport, Ahmedabad – 382475	Note:- Please see Flood Telephone Directory of current year for Telephone Nos.
b)	Meteorological Center Office, RS/RW Building, Airport, Ahmedabad 382475	
c)	Flood Meteorological Office RS/RW Building, Airport, Ahmedabad 382475	

1.4 Central Water Commission Offices

1.4.1 Government of India has set up two Divisions, **Tapi Division, (C.W.C.), Kshetrapal Health Centre, Sangrampur, Surat – 395 002 and Mahi Division, (C.W.C.), 3rd Floor, Narmada Tapi Bhavan, Sector-10-A, Gandhinagar-382043**, working under Superintending Engineer, Hydrological Observation Circle, (C.W.C.) Gandhinagar for issuing flood warnings of six inter-state rivers viz. (1) Damanganga (2) Tapi (3) Narmada (4) Mahi (5) Sabarmati and (6) Banas. The inflow forecast and flood level forecast for the above basins are to be conveyed by Executive Engineer, Tapi Division, (C.W.C.) Surat and Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar to Focal Officers; Flood Control Cell, Gandhinagar and respective project officers well in advance. The details of warnings and danger level for important stations of above **six inter state rivers are given in Annexure - 1(B)**.

The names of Officer in-charge of above basins are as under:

TABLE - 1.4.1

Name Of Officer	Name of Basins
Executive Engineer Tapi Division (C.W.C.) Surat	(a) Damanganga (b) Tapi (c) Narmada
Executive Engineer Mahi Division (C.W.C.) Gandhinagar	(a) Mahi (b) Sabarmati (c) Banas

1.5 Appropriate Authorities (Focal Officers) :

1.5.1 The State Government has considered the officer of the rank of Superintending Engineer or Collector of concerned districts or Municipal Commissioners, as Appropriate Authorities (Focal Officers) for various basins/regions during monsoon period (as per the

Gujarat State Disaster Management Act-2003). The Focal Officer can nominate any Executive Engineer/Officers in his area as his second in command who will act as Sub-Focal Officer for discharging duties of Focal Officer. He will inform the name, address and telephone Nos. of sub-focal officer to all concerned. List of **Gauge Stations & Officer In Charge with telephone nos**, for monitoring the flood are given vide **Annexure-1(A)**. The Focal Officers are responsible for :-

1.5.2 Keeping constant watch over the flood situation, flood warning, monitoring flood discharges through concerned project authorities, formulating flood forecast as and when required conveying these warning including conveying inflow forecast and flood level forecast from C.W.C. or the case may be in advance to the concerned Revenue and Police authorities for alerting and evacuating people of the area likely to be affected by the incoming floods if necessary. On receipt of flood warning the revenue authorities will in turn take necessary actions for alerting and evacuating the people likely to be affected in accordance with warning as per Flood Memorandum.

1.5.3 Whenever heavy outflow is likely to be let off from the dam/weir or whenever bursting of dam is anticipated, warnings are also be communicated by the Focal Officer/Executive Engineer either to the Assistant Engineer of Railway or to the Station Master of the nearest railway station or Divisional Railway Managers as per list below :

TABLE - 1.5.3

Divisional Railway Manager Western Railway

(a) Mumbai	Note: Please see Flood Telephone Directory of current year for Telephone Nos.
(b) Vadodara	
(c) Ratlam	
(d) Bhavnagar para	
(e) Rajkot	

Further the Divisional Railway Manager, Western Railway, Vadodara vide his letter No. W. 694/i/vol.V(W13) Dated 28-2-95 has requested that the Focal Officer should inform the control room of Vadodara Division wherever it is contemplated to release water from the Dams & in case, advance warning is received by the Railway authority in time it will be possible to take preventive measures to regulate the running of trains & to protect the Railway property, staff and passengers. The Chief Bridge Engineer, North-West Railway, Jodhpur and The Chief Bridge Engineer, Churchgate Mumbai office has requested to instruct the field engineers to carry out necessary inspections and execute required maintenance works well before next monsoon so that any damage to railway track on this account can be avoided. Also requested to contact on phone No. **22114588** Chief Area Manager @ **Ahmedabad & 2638081** Vadodara Divisional Railway Manager @ **Vadodara in case of any emergency.**

1.5.4 During flood emergency, in any of the rivers it is duty of the Focal Officer of the basin to intimate the full situation of the flood including measures taken etc. to the *Principal Secretary, Water Resources, Water Supply & Kalpsar Department, Secretary (Narmada), Chief Engineer (Central Gujarat) and Additional Secretary, concerned Chief Engineer and Additional Secretary of the Project and the Flood Control Cell, Gandhinagar.*

1.5.5 During emergency flood messages are also conveyed by Focal Officer or any officer authorised by him and **Collector of the District to All India Radio/Doordarshan Kendra** for necessary broadcast. The said messages should also be conveyed to the Flood Control Cell, Gandhinagar, confirmation copies thereof are to be sent to **All India Radio/Doordarshan Kendra and Flood Control Cell** by return of post as per **Annexure 2-B**.

1.5.6 All concerned Focal Officers should prepare a drill to be followed during monsoon at the time of various floods including catastrophic flood and fix duties of all concerned persons at that moment. The rehearsal of this drill should be made before the onset of monsoon.

1.5.7 Following are the **Appropriate Authorities (Focal Officers) for Various Basins/Areas**.

TABLE - 1.5.7.

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer	Telephone Nos.	
			Office	Residence
1.	Damanganga Basin	Superintending Engineer, Damanganga Project Circle, 2 nd Floor, Damanganga Bhavan, Behind Jilla Seva Sadan-1 Valsad – 396 001	Note:- Please see Flood Telephone Directory of current year	
2.	Tapi Basin	Superintending Engineer, Surat Irrigation Circle, Near M.T.B. College, Surat		
3.	Narmada Basin	Superintending Engineer, N.P- Designs (Dam & Power House.) Circle, Narmada Bhavan A- Block, 3rd Floor Indira Avenue, Vadodara		
4.	Rami & Sukhi (Sub Basins of Narmada)	Superintending Engineer Vadodara Irrigation Circle, New Kothi Building, Vadodara.		
5.	Karjan Basin (Sub Basins of Narmada)	Superintending Engineer Vadodara Irrigation Circle, New Kothi Building, Vadodara.		
6.	Mahi Basin	Superintending Engineer Mahi Irrigation Circle Nadiad Sarkari Vasahat Mission Road, Nadiad		
7.	Sabarmati Basin	Superintending Engineer Ahmedabad Irrigation Project Circle L.D. Engineering College Campus Ahmedabad – 380 015		
7a.	Sub Basin of Sabarmati Mohar & Shedhi River	Superintending Engineer Mahi Irrigation Circle Nadiad Sarkari Vasahat Mission Road, Nadiad		

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer	Telephone Nos.	
			Office	Residence
8.	River of Sabarkatha District	Superintending Engineer Himatnagar Irrigation Project Circle, "Sinchai Bhavan" Himatnagar	Note :- Please See Flood Telephone Directory of current year	
9.	Banas Basin	Superintending Engineer Sujlam Suflam Circle No.2 Kherva, Mehsana		
10.	Vishwamitry & Deo Basins	Superintending Engineer Vadodara Irrigation Circle Near Kothi Building, Vadodara.		
11.	Saraswati Basin	Superintending Engineer Sujlam Suflam Circle No.2 Kherva, Mehsana		
12.	Rivers of Panchmahals & Dahod District	Superintending Engineer, Panam Project Circle Civil Lines, Behind Collector Office, Godhra-389001.		
13.	Rivers of Rajkot, Morbi, Jamnagar, Dev Bhumi Dwarka Surendranagar & Some projects under SE, RIPC, Rajkot of Junagadh and Gir Somnath Districts.	Superintending Engineer, Rajkot Irrigation Circle Opp. Hotel Mohit, Race Course Rajkot.		
14.	Rivers of Bhavnagar, Amreli, Junagadh, Porbandar, Botad & Gir Somnath Districts.	Superintending Engineer, Bhavnagar Irrigation Project Circle , S-3, Jila Seva Sadan-2, Bhavnagar		
15.	Rivers of Kachchh District.	Superintending Engineer Kachchh Irrigation Circle "Sinchai Sadan", Near Jubilee Park, Bhuj.		

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer	Telephone Nos.	
			Office	Residence
16.	Minor Irrigation Projects of Districts.			
	(A)			
1.	Gandhinagar	Superintending Engineer		
2.	Mehsana	Gandhinagar Panchayat		
3.	Surendranagar	Irrigation Circle.		
4.	Ahmedabad	Patnagar Yojna Bhavan		
5.	Kheda	Sector No. 16, Gandhinagar		
6.	Sabarkanta			
7.	Aravalli			
8.	Anand			
9.	Banaskantha			
10.	Patan			
	(B)			
1.	Rajkot	Superintending Engineer		
2.	Jamnagar	Rajkot Panchayat Irrigation Circle.		
3.	Junagadh	M.S. Building, Race Course, Rajkot		
4.	Amreli			
5.	Bhavnagar			
6.	Porbandar			
7.	Morbi			
8.	Dev Bhumi Dwarka			
9.	Gir Somnath			
10.	Botad			
	(C)			
1.	Vadodara	Superintending Engineer		
2.	Bharuch	Vadodara Panchayat Irrigation Circle,		
3.	Surat	M.S. Building, Indira Avenue Road, Vadodara		
4.	Valsad			
5.	Tapi			
6.	Dangs			
7.	Panchmahals			
8.	Navsari			
9.	Narmada			
10.	Dahod.			
11.	Chhotaudepur			
12.	Mahisagar			
	(D)			
1.	Kachchh District	Superintending Engineer Kachchh Irrigation Circle "Sinchai Sadan", Jubilee Ground, Bhuj.		

Note :-
Please See Flood Telephone
Directory of current year

17. Water Supply Schemes:

- (A)**
- 1 Tappar Superintending Engineer
Public Health Circle
Bhuj.
- (B)**
1. Hasnapur Municipal Commissioner, Junagadh
Municipal Corporation, Junagadh
2. Khambhala Superintending Engineer,
3. Phodarness Public Health Circle, Junagadh
- (C)**
1. Ajwa Municipal Commissioner,
2 Prappura Vadodara Municipal
Corporation, Vadodara
- (D)**
1. Nyari-I Municipal Commissioner,
Rajkot Municipal Corporation
Rajkot.
- (E)**
- 1 Ranjit Sagar Municipal Commissioner
Jamnagar Municipal
Corporation, Jamnagar.

1.5.8 Where Government has not nominated any officer of Narmada, Water Resources Water Supply and Kalpsar Department as Focal Officer, the Collector of the District will be responsible for all the situations arising out of floods, heavy rains etc. for taking all necessary steps regarding rescue and relief operations. He may obtain meteorological data from I.M.D. directly.

TABLE – 1.5.8.
District Collectors.

Sr. No.	Name of Districts	Telephone Nos.	
		Office	Residence
1.	Ahmedabad		
2.	Amreli		
3.	Anand		
4.	Banaskantha (Palanpur)		
5.	Bharuch		
6.	Bhavnagar		
7.	Dangs (Ahwa)		
8.	Dahod		
9.	Gandhinagar		
10.	Jamnagar		
11.	Junagadh		
12.	Kheda		
13.	Kachchh (Bhuj)		
14.	Mehsana		
15.	Narmada (Rajpipla)		

16. Navsari
17. Panchmahals (Godhra)
18. Patan
19. Porbandar
20. Rajkot
21. Sabarkantha (Himatnagar)
22. Surat
23. Surendranagar
24. Tapi
25. Vadodara
26. Valsad.
27. Daman (Union Territory)
28. Dadra & Nagar Haweli (U.T).
29. Chhotaudepur
30. Morbi
31. Dev Bhumi Dwarka
32. Gir Somnath
33. Mahisagar
34. Botad
35. Aravalli

1.6 Control Room

1.6.1 As a part of “**Flood Warning Arrangement**” a Flood Control Cell under the control of Superintending Engineer, Sujlam Suflam Circle No.1, State Water Data Centre, Sector - 8, Gandhinagar, is to be set up from 1st June to 31st October or up to one week after withdrawal of monsoon by I.M.D. or as directed by Govt. of Gujarat. Accordingly the Flood Control Cell, shall be setup at 1st Floor, State Water Data Centre Building, Sector - 8, CH-2 Road, Gandhinagar. The Telephone No/Fax No. for any detail related to the flood in Gujarat State is 079-23240553. This is the coordinating unit between the Focal Officers of various river basins and the Government. The Flood Control Cell works round the clock during the monsoon period. The Flood Control Cell collects gauge levels of inter State rivers viz. Damanganga, Tapi, Narmada, Mahi, Sabarmati and Banas from Tapi and Mahi Divisions of C.W.C. and maintains up-to-date records of three hourly water levels during monsoon and hourly water levels during floods. The cell also collects information of other Major/Medium Projects and informs the officers of the Narmada Water Resources, Water Supply & Kalpsar Department & Revenue Department of the state at Sachivalaya, Gandhinagar about the situation of floods in various rivers of the State. The Flood Control Cell, Gandhinagar also obtains the weather forecast and rainfall data etc. from Indian Meteorological Department. The water levels and forecast is conveyed in morning after 8.00 A.M. to the following officers.

- i) Secretary, Narmada, Water Resources, Water Supply and Kalpsar Department
- ii) Secretary(Narmada), Sardar Sarovar Narmada Nigam Ltd. Gandhinagar
- iii) Secretary , Roads and Buildings Department (If necessary)
- iv) Chief Engineer, (Central Gujarat) and Addl. Secretary, Narmada, Water Resources, Water Supply and Kalpsar Department
- v) Chief Engineer and Addl. Secretary of concerned projects of Narmada, Water Resources, Water Supply and Kalpsar Department
- vi) Superintending Engineer, Sujlam Suflam Circle No.1, Gandhinagar.
- vii) Officer on Special Duty(W.R.) Narmada, Water Resources, Water Supply and Kalpsar Department

1.6.2 The Collectors, District Superintendents of Police and Focal Officers who open the Control Room and issue flood warning and flood forecast, should intimate the opening of the flood cell with proper Address, Telephone Nos., etc. to the Executive Engineer, Tapi Division, (C.W.C.), Surat/Executive Engineer, Mahi Division (C.W.C.)Gandhinagar as per their jurisdiction and also to the Flood Control Cell, 1st Floor, State Water Data Centre Building, Sector - 8, Gandhinagar.

1.6.3. In addition to this when heavy rainfall warnings are received or when flood level is likely to cross White Signal in any of the rivers in the state, the information will be conveyed to the above officers immediately at Sr. No. (i) to (vii) of Para 1.6.1 and Flood Control Cell, Gandhinagar by the concerned Officer-In-Charge of the concerned control room.

1.6.4. During heavy rainfall i.e. more than 65 mm/hour intensity, rainfall data and other messages are conveyed at an interval of one hour in the morning session i.e. 6.00 to 10.00 A.M. and also in evening session after 6.00 PM at the residence of Officer on Special Duty (W.R.). The same are conveyed to his office during office hours i.e. 10.30 A.M. to 6.10 P.M. who in turn conveys the same to the above said officers appearing at Sr. (i) to (v) of para 1.6.1.

1.6.5 All the Officers-In-Charge of control rooms are requested to see that their Control Rooms must be manned by responsible officers of Gazetted rank even on holidays.

1.6.6. As a part of Flood Warning Arrangements, the Narmada Water Resources, Water Supply and Kalpsar Department has been linked with point to point speech circuit (i.e. Hot line) with the following control rooms during **1st June to 31st October.**

1 The Flood Control Cell Gandhinagar to:

- 1. Office of The Chief Engineer (Central Gujarat) & Additional Secretary, Narmada, Water Resources, Water Supply and Kalpsar Department, Block No. 9, 1st Floor, New Sachivalaya, Gandhinagar (Local)**
- 2. Officer on Special Duty(WR), Narmada, Water Resources, Water Supply and Kalpsar Department, Block No. 9, 3rd Floor, New Sachivalaya, Gandhinagar (Local)**
- 3. The Superintending Engineer, Rajkot Irrigation Circle, Multi Storied Building, Race Course Road, Rajkot**
- 4. The Superintending Engineer Bhavnagar Irrigation Project Circle, S-3, Jila Seva Sadan-2, Bhavnagar**
- 5. The Executive Engineer, Mahi Division (C W C) Sector-10-A, Near to Ch-3 Circle, Gandhinagar (Local)**
- 6. The Executive Engineer, Tapti Division (C W C) Kshetrapal Health Centre, Sangrampur Society, Surat.**

7. **The Executive Engineer and Sub Focal Officer, Surat Canal Dn, Athwa lines, M.T.B. College Road, Surat.**
 8. **The Executive Engineer and Sub Focal Officer, Dharoi Canal Division No.3, Dharoi Colony Rest House, Visnagar, District: Mehsana.**
 9. **The Superintending Engineer and Focal Officer, Kachchh Irrigation Circle "Sinchai Sadan" Nr. Jubilee Ground, Bhuj -- Kachchh.**
 10. **The Superintending Engineer and Focal Officer, Panam Project Circle, Civil Lines, Behind Collector Office, Godhra Dist. Panchmahals.**
 11. **The Superintending Engineer, Ukai (Civil) Circle, Ukai, Via: Songadh, Taluka: Vyara, District: Surat**
 12. **The Superintending Engineer, Kadana Project Circle, Diwada Colony, Via. Santrampur. Dist. Panchmahals (Dahod)**
2. **Superintending Engineer, and Focal Officer, Rajkot Irrigation Circle, Rajkot i.e., Flood Control Cell Rajkot to,**
 - a) Deputy Executive Engineer, Surendranagar Irrigation Sub-Division, Surendranagar.
 - b) Executive Engineer, Jamnagar Irrigation Division, Jamnagar.
 3. **Superintending Engineer, and Focal Officer, Bhavnagar Irrigation Project Circle, Bhavnagar i.e., Flood Control Cell Bhavnagar, to :**
 - a) Executive Engineer, Amreli Irrigation Dn. Amreli.
 - b) Executive Engineer, Junagadh Irrigation Dn. Junagadh.
 4. **Superintending Engineer and Focal Officer, Surat Irrigation Circle, i.e., Flood Control Cell, to :**
 - a) Ukai Flood Control Cell. (Ukai)
 5. **Superintending Engineer and Focal Officer, Damanganga Project Circle, Valsad to:**
 - a) Damanganga Project Division No. 1, Madhuban Colony.

1.7 Miscellaneous

1.7.1 All the officers concerned with flood warning should see that necessary correspondence in connection with flood warning and flood forecasting with all officers of Tapi Division (C.W.C.) Surat/Mahi Division, (C.W.C.), Gandhinagar and other Central Government Officers are made in Hindi or English only.

1.7.2 The data will be conveyed in metric units by Executive Engineer, Tapi Division, (C.W.C.) Surat/Executive Engineer, Mahi Division, (C.W.C.), Gandhinagar.

1.7.3 In the event of any news items appearing in the news papers regarding flood damages including inundation etc. in any area, the concerned Superintending Engineer

should immediately take stock of situation and issue necessary press release clarifying the actual situation. Intimation to this effect should immediately be sent to Flood Control Cell, Gandhinagar, Chief Engineer (Central Gujarat) and Additional Secretary and Chief Engineer & Additional Secretary of the project concerned.

1.7.4 Whenever the assistance of Air Force is required during the natural calamities and grave emergencies, the State Authorities are requested to liaison immediately in writing with local (Air Force) Station Commander/HQ Station Western Air Command, Gandhinagar (Phone No.079-23255725).

1.7.5 Whenever the assistance of military is required during the natural calamities and grave emergencies, the state Revenue Authorities are requested to liaison immediately to the nearest Military (H.Q) (Phone No.079-22867280).

1.7.6. In the case of emergency, the flood forecast and flood warning shall also be sent to the Secretary, Narmada, Water Resources, Water Supply and Kalpsar Department, Secretary (Narmada), Principal Secretary Roads and Buildings Department, Chief Engineer, (Central Gujarat) and Additional Secretary and Chief Engineer & Additional Secretary concerned project of the Government of Gujarat, Gandhinagar by the Appropriate Authorities (Focal Officers) of various basins, Focal Officers and Collectors of the District shall also convey the warning during emergency to the nearest Station Director, All India Radio/Doordarshan Kendra, for the broadcasting the said warning.

1.7.7. The provisions of offences and penalties will be applicable as per chapter XV para 38.1 of Gujarat Disaster Management Act-2003.

TABLE - 1.7.6

Name and Head Quarters of the Authorities :

Sr. No.	Name of Officer	Residence Address	Telephone Nos.	
			Office	Residence
1	Shri S.J. Desai Secretary, Narmada, Water Resources, Water, Supply & Kalpsar Dept.	B-1, Anupam Appartment Near Vastrapur Tank, Vastrapur, Ahmedabad	Note:- Please see Flood Telephone Directory of current year	
2.	Shri. S.J. Desai (I/C) Special Secretary, Narmada, Water Resources, Water, Supply & Kalpsar Dept.	B-1, Anupam Appartment, Near Vastrapur Tank, Vastrapur, Ahmedabad.		
3	Shri P. N. Jain Secretary, R & B Department	14, Bandhu Samaj Society Nr. Panchshil Bus Stand Usmanpura, Ahmedabad		
4	Shri. S.J. Desai (I/C) Secretary(Narmada)	B-1, Anupam Appartment, Near Vastrapur Tank, Vastrapur, Ahmedabad.		
5	Shri R. G. Bhatt (I/C) C.E.(Central Gujarat) & Addl. Secretary	10/A, Divya Van-1, Sumangalam Society, Opp. Drive In Cinema, Nr. Asia School., Bodakdev, Ahmedabad		
6	Shri M.P. Raval C.E. (South Gujarat) & Addl.Secretary	Plot No.1075/A Sector No. 2D, Gandhinagar		
7	Shri U.K. Sarvaiya C.E.(Panchayat) & Addl. Secretary	3, Nikunj Apt., Kalpana Colony Behing Municipal Market, Navarangpura, Ahmedabad		
8.	Shri C.V. Nadpara C.E.(Saurashtra) & Addl. Secretary	K-520 Bunglow, Sector - 20, Gandhinagar		
9.	Shri M. K. Jadav C.E. (North Gujarat) & Addl. Secretary	K - 507, Sector - 20, Gandhinagar		
10.	Shri A. P. Bhavsar Chief Engineer (Q.C.) & Addl. Secretary	B/2, Kunal Duplex, Opp. Sarthi Bunglows, Gurukul Road, Memnagar, Ahmedabad		

Sr. No.	Name of Officer	Residence Address	Telephone Nos.	
			Office	Residence
11.	Shri C.V. Nadpara C. E. (Mech.) & A.S. (Incharge)	K-520 Bunglow, Sector-20, Gandhinagar	Note :- Please See Flood Telephone Directory of current year	
12.	Station Director All India Radio Ahmedabad	M-31/264, Vidhyanagar Flat, 132' Ring Road, Ahmedabad		
13.	Dy. Station Director All India Radio, Ahmedabad.	3-B, Azadnagar, Fatewadi, B/h Rishikesh Vidhyalaya, Sarkhej, Ahmedabad		
14.	Station Director All India Radio Rajkot.	21/A, Suryoday Colony Ahmedabad		
15.	Station Engineer All India Radio, Godhra	D/1, Staff Qtrs., AIR Civil Lines, Godhra-389001		
16.	Station Director Doordarshan Kendra Ahmedabad	A/1, Akash Parshan Colony, Nr. Ashopalav Bunglow, Bhaikakanagar, Thltej, Ahmedabad		

1.7.7 All the Project Officers, who are in-charge of the Irrigation Projects under construction as well as in case of completed schemes, shall remain more vigilant during monsoon. In case of Irrigation tank or reservoirs, which are to be filled in for the first time, after construction, the field officer shall keep close watch and vigil during monsoon for safety of the Irrigation tank or reservoir. The field officer should follow the initial filling criteria given in **C.W.C. letter No. L/25/86-DSS/509 dated 13th May 1986, (Annexure 1-D)**. In case of any apprehension of danger to the scheme the same shall be immediately informed to the Chief Engineer and Add. Secretary, Superintending Engineers concerned of the project and Government officers at Sr. No. 1 to 10 under para 1.7.6 including Flood Control Cell, Gandhinagar and necessary remedial steps shall be taken to stop the danger and the safety of the structure.

1.7.8 The flood forecasting & flood warning arrangements for following water supply projects under **Municipal Corporation/ Gujarat Water Supply & Sewerage Board is being looked after by Municipal Commissioner/Superintending Engineer of the concerned projects**. They shall directly collect Weather Bulletin/H.R.W. from Indian Meteorological Department, Ahmedabad or Revenue Control Room of the concerned district and shall formulate the flood forecast and convey to the concerned Collector regarding the area likely to be affected for alerting and evacuation of the people as warranted by flood, simultaneously, they shall convey the flood forecast and action taken by them to the Flood Control Cell, (Irrigation) nearest to them.

TABLE 1.7.8

Sr. No.	Name of Water Supply Scheme	Officer In-charge of Scheme	Telephone Nos.	
			Office	Residence
1.	Tappar	Superintending Engineer Public Health Circle Bhuj for Telephone Nos.	Note: Please see Flood Telephone Directory of current year	
2.	Hasnapur	Muni. Commi., Junagadh		
3.	Khambhala	Public Health Circle		
4.	Phodarness	Junagadh		
5.	Ajwa	Municipal Commissioner		
6.	Prattapura	Vadodara Municipal Corporation, Vadodara		
7.	Nyari-I	Municipal Commissioner Rajkot Municipal Corporation, Rajkot		
8.	Ranjit Sagar	Municipal Commissioner Jamnagar Municipal Corporation, Jamnagar		

1.7.9 DRAINS.

There are many drains in the state. These drains are linked up with inter taluka or inter-districts. Several drains are long and having a large capacity. Several drains are also passing from near by villages or town. Due to heavy to very heavy rainfall in the catchment areas of drain, the drains causes damages to land, crops, property, cattle of the adjoining areas. Sometimes it is difficult to approach the drain sites, particularly when the drain overflows and makes breaches in the banks of the drains.

The Executive Engineer, in charge of drain has to function as a "FOCAL OFFICER" and has to take the necessary action. The Deputy Executive Engineer now called as "Sub-Focal Officer" who is physically in-charge of the drains, has to take necessary action and make efforts to control the situation.

The Sub-Focal Officer in-charge of the drains has to intimate his higher authorities and revenue authorities like Mamlatdar, Prant Officer, Collectors, Police Authorities, Home Guard Authorities regarding the situation. All authorities are requested to extend the help required by the sub-focal officer to over come the situation.

1.7.10 The Narmada ,Water Resources ,Water Supply and Kalpsar Department, Gandhinagar has setup the flood fighting units for Monsoon, equipped with various machinery @ various locations of Gujarat, Saurashtra and Kachchh as per para 30 of Chapter - 3 as per Annexure - 3.

1.8 Operation of gates and rule curve levels for Irrigation Projects

1.8.1 The detailed guidelines for gate operation with graphs of (1) Spillway discharges at different reservoir levels and gate opening and (2) Rate of change in storage to decide inflow based on rise/fall in Reservoir level in unit duration are prepared by CDO under NWR, WS & K .D. for almost all the projects and are furnished to concerned Project Officers. These guidelines may be followed for operation of reservoir, (Rule levels are appended in Annexure 1C).

1.8.2. The rule levels are prepared considering following points.

(i) There is no specific flood storage space provided in any of the dams in the State. Due to this, if the provision of artificial flood control space is proposed to be kept for flood moderation by keeping lower rule levels whenever feasible, then there may be a risk of non filling of reservoir full up to FRL. If in later part of the monsoon, the availability as assumed is less and in turn as its repercussions, the irrigation requirements as planned thereafter may not be fulfilled.

(ii) For dams completed recently the initial filling criteria given in C.W.C. letter No. L/25/86-DSS/509 dated 13/5/86 should be followed. The same is also reproduce in the Flood Memorandum for ready reference. While following the CWC's criteria for initial filling, the concerned Superintending Engineer/Executive Engineer should assess the behavior of the structure on the basis of observed data of instruments provided in dams at different stages of filling as well as seepage through dams and review the decision for further filling of reservoir accordingly in consultation with CDO, Gandhinagar.

(iii) For the safety measures against the existence of hidden damages of dams restored recently or to be restored before June-2013, the initial reservoir filling criteria given in CWC's letter dated 13/05/1986 no. L-25-86-DSS-509 is advisable to be followed.

(iv) As an advance precaution to safe guard against occurrence of any abnormal condition required goods and materials like sand, rubble stone, empty cement bags wire cats, etc. should be stacked at suitable places. Gates, Hoists and other mechanical accessories, wireless sets, lighting arrangement, alternative arrangement in absence of electricity supply, D.G. set etc. approach road, should be kept in working condition. For further information Govt. Circular included in Chapter No.3 of this Flood Memorandum may kindly be referred.

(v) In case of reservoir, which releases water for hydro power generation and the same water is utilized through down stream weir, as far as possible, the releases from reservoir should be made critically and economically in accordance with the actual irrigation demand at the weir site, so that, undue wastage of water through overflow over the weir can be avoided.

(vi) There may be restriction in filling the reservoir due to other aspects like leakage for which remedial measures may be in progress / likely to be taken up etc. This point may also be considered while deciding rule levels. the concerned SEs are requested to submit the proposal to Govt. for approval from the respective Chief Engineer and Additional Secretary for this restricted filling of reservoir.

1.8.3 In case of the reservoir proposed for restricted filling due to reasons mentioned in Para No. 1.8.2 above concerned Superintending Engineer are requested to submit proposal to the Government and get it approved before on set of monsoon.

1.8.4 The proposed Rule Levels are tentative and concerned project officers are requested to give their comments/views based on their past experiences of observed storms, the down stream hazards, safe carrying capacity of the down stream channel and other restrictions, if any. The project officers are also requested to review and finalise the Rule Levels for this monsoon based on the inflow data, water requirements for irrigation, water supply and power generation for the year reservoir losses etc. in consultation with C.D.O. and get it approved from the Government.

1.8.5 When the proposed Rule Levels are reached and the position is such that water is to be stored above the rule level, in that case or water is to be released for the purpose other than irrigation before Rule Levels are reached, the concurrence from the concerned Chief Engineer & Addl. Secretary may please be obtained. While deciding the above parameters, following points should be examined critically by the concerned field officers in consultation with respective Chief Engineer & Addl Secretary.

- (i) Prevailing overall conditions of the rainfall during the monsoon.
- (ii) Storage capacity and safety of dam structure and U/s -D/s Structures, flood cushion available in the reservoir above the rule level of the particular time.
- (iii) Efficiency of the existing network of flood forecasting system and flood warning arrangement along with communication system and actual experiences of the same in past to reduce the downstream hazard potential.

1.8.6 When two or more reservoirs are to be operated on the same river basin, gate regulation should be done in such a way that the maximum water can be stored without risk to the safety of upstream and downstream of the dams along with consideration of floods moderation to suit the downstream safe channel carrying capacity such that there is minimum hazarded potential in downstream areas.

1.8.7 Release of water from the dam (outflow), is to be decided by the Superintending Engineer, Ukai Circle (Civil), Ukai. When there is release of water in the river through spillway, the Superintending Engineer, Ukai Circle (Civil), Ukai has to submit the hourly information to concern Chief Engineer & Add. Secretary, Chief Engineer (Central Gujarat) & Addl. Secretary, Gandhinagar and Flood Control Cell, Gandhinagar in the Proforma attached vide **Annexure 1-F**.

1.8.8 The details of the Spillway/Weir and the maximum discharge capacity of the Spillway/Weir are also mentioned in the Scheme. The maximum discharge released after the year 1990 from the major project is mentioned in **Annexure-1- G**

ANNEXURE - 1(E)

MAXIMUM DISCHARGE CAPACITY AND THE DETAILS OF SPILLWAY OF THE SCHEMES

Sch No.	Name of District and Name of Scheme	Type of Scheme	F.R.L Meter	Crest Level Meter	Spillway Length Meter	Details of Gates		Max. Discharge (Cum)
						Nos.	Size Meter	
<u>BANASKANTHA</u>								
3.	Mukteshwar	Gated	201.65	193.37	104.00	7	12.50 x 8.23	4698
4.	Dantiwada	Gated	184.10	175.91	165.00	11	12.50 x 8.23	7504
						14	18.29 x 4.87	7787
5.	Sipu	Gated	186.43	178.15	180.00	12	12.50 x 8.23	8603
<u>NARMADA</u>								
6	Karjan	Gated	115.25	101.23	172.00	9	15.545 x 14.02	17286
8.	Chopadvav	Un Gated	187.40	186.30	70.00	-	-	863
11.	Kakdi-Amba	Un Gated	187.71	186.71	100.00	-	-	822
<u>BHARUCH</u>								
7.	Dholi	Un Gated	136.00	-	260.00	-	-	1085
9.	Baldeva	Un Gated	141.50	-	198.00	-	-	918
10.	Pigut	Un Gated	139.70	-	125.00	-	-	285
<u>MAHISAGAR</u>								
12.	Wanakbori	Un Gated	69.30	-	735.00	-	-	46978
<u>KHEDA</u>								
202.	Varansi	Gated	81.00	76.43	159.68	14	9.14 x 4.57	1503
<u>MEHSANA</u>								
13.	Dharoi	Gated	189.59	178.92	219.04	12	14.94 x 11.28	21662
<u>PANCHMAHALS</u>								
14.	Panam	Gated	127.41	116.74	182.00	10	14.93 x 11.28	10075
15.	Deo	Gated	89.65	81.40	120.00	8	12.50 x 8.23	4118
16.	Hadaf	Gated	166.20	155.53	89.00	5	14.43 x 10.67	5324
<u>DAHOD DISTRICT</u>								
17.	Kadana (Additional Spillway)	Gated	127.71	113.72 113.72	406.00	27	15.50 x 14.00	49497
18.	Patadungri	Un Gated	170.84	170.84	137.00	-	-	878
19.	Bhadar (P)	Gated	123.72	115.52	89.00	6	12.48 x 8.25	5706
20.	Karad	Fuse Gate	140.08	140.08	107.00	36	1.80 x 1.00	934
21.	Machhanala	Un Gated	277.64	-	260.00	-	-	363
22.	Kabutri	Un Gated	186.35	-	104.00	-	-	1232
23.	Wankleshwar- Bhey.	Ungated	223.57	223.57	137.00	-	-	961
24.	Umaria	Un Gated	280.00	280.00	70.00	-	-	2010

Sch No.	Name of District and Name of Scheme	Type of Scheme	F.R.L Meter	Crest Level Meter	Spillway Length Meter	Details of Gates Nos. Size Meter		Max. Discharge (Cum)
25.	Edalvada	FuseGate	237.30	235.70	60.00	20	1.60 x 2.85	1033
26.	Kali - II	Un Gated	257.00	257.00	98.50	-	-	95
<u>SABARKANTHA</u>								
28.	Guhai	Gated	173.00	164.77	89.00	6	12.50 x 8.23	4380
32.	Javanpura	Gated	91.00	86.43	-	15	9.15 x 4.57	-
33.	Harnav – II	Gated	332.00	323.77	43.00	3	12.50 x 8.23	1632
197.	Khedva	Gated	259.70	253.60	55.50	5	9.15 x 6.10	1651
201.	Gorthiya (Mota Chekhala)	Gated	110.43	105.25	101.80	9	9.14 x 5.18	3774
<u>ARAVALLI</u>								
27.	Watrak	Gated	136.25	128.00	89.00	6	12.50 x 8.23	5669
29.	Mazam	Gated	157.10	151.00	102.00	9	9.15 x 6.10	3313
30.	Hathmati	Un Gated	180.74	-	241.00	-	-	2943
31.	Lank	Gated	111.55	105.45	-	5	9.15 x 6.10	-
34.	Meshwo	Un Gated	214.59	-	62.00	-	-	2067
35.	Waidy	Un Gated	199.20	-	122.00	-	-	1090
<u>TAPI</u>								
36.	Ukai	Gated	105.156	91.135	425.19	22	15.54 x 14.78	46269
36.a	Kakrapar	Ungated	48.77	-	613.38	-	-	1083
37.	Doswada	Un Gated	123.44	-	207.00	-	-	899
<u>SURAT</u>								
38.	Ver – II	Gated	115.80	109.73	90.00	8	9.10 x 6.10	2155
39.	Lakhigam	Un Gated	74.10	-	25.00	-	-	434
<u>CHHOTAUDEPUR</u>								
40.	Sukhi	Gated	147.82	139.59	145.66	10	12.50 x 8.23	7899
41.	Rami	Un Gated	196.35	-	222.00	-	-	660
<u>VALSAD</u>								
42.	Damanganga	Gated	79.86	65.83	138.00	10	15.55 x 14.00	22040
<u>NAVSARI</u>								
43.	Jhuj	Un Gated	167.50	-	97.00	-	-	1554
44.	Kelia	Un Gated	113.40	-	113.00	-	-	1225
<u>KACHCHH</u>								
45.	Tapper (W.S))	Gated	40.85	-	159.71	14	9.14 x 5.47	4182
46.	Godhatad	Un Gated	23.00	-	55.00	-	-	1641
47.	Sanandro	Un Gated	59.74	-	152.00	-	-	1466
48.	Rudramata	Un Gated	66.44	-	436.00	-	-	6788
49.	Nara	Un Gated	27.43	-	152.00	-	-	1840
50.	Niruna	Un Gated	43.58	-	274.00	-	-	2997
51.	Bhukhi	Un Gated	73.00	-	80.00	-	-	1490
52.	Kankavati	Un Gated	131.67	-	457.00	-	-	1893
53.	Mathal	Un Gated	82.78	-	550.00	-	-	1260
54.	Kaila	Un Gated	79.25	-	191.00	-	-	1760
55.	Suvi	Un Gated	42.67	-	122.00	-	-	1557
56.	Kaswati	Un Gated	51.20	-	175.00	-	-	934
57.	Gajod	Un Gated	90.82	-	152.00	-	-	1612
58.	Jangadia	Un Gated	38.60	-	70.00	-	-	1447

Sch No.	Name of District and Name of Scheme	Type of Scheme	F.R.L Meter	Crest Level Meter	Spillway Length Meter	Details of Gates Nos. Size Meter		Max. Discharge (Cum)
59.	Fatehghadh	Un Gated	22.70	-	35.00	-	-	1196
60.	Berachiya	Un Gated	70.40	-	250.00	-	-	1337
61.	Gajansar	Un Gated	30.00	-	430.00	-	-	1601
62.	Kalaghogha	Un Gated	37.00	-	82.00	-	-	1342
63.	Don	Un Gated	47.75	-	61.00	-	-	999
64.	Mitti	Un Gated	18.65	-	235.00	-	-	5328
AMRELI								
65.	Khodiar	Gated	202.68	196.58	102.00	9	9.15 x 6.10	2409
66.	Thebi	Gated	126.00	119.90	136.58	12	9.15 x 6.10	3794
67.	Dhatarwadi	Un Gated	81.23	-	329.00	-	-	4342
68.	Raidy	Gated	50.85	44.75	102.00	9	9.15 x 6.10	2265
69.	Vadia	Gated	130.25	124.15	55.50	5	9.15 x 6.10	1556
70.	Vadi	Gated	134.00	127.90	90.23	8	9.15 x 6.10	2195
71.	Shell-Dedumal	Gated	179.50	173.40	55.50	5	9.15 x 6.10	1408
72.	Munjiasar	Un Gated	62.93	-	366.00	-	-	1184
73.	Sankroli	Un Gated	44.20	-	243.82	-	-	1848
74.	Surajwadi	Un Gated	130.50	-	320.00	-	-	1396
75.	Dhatarwadi-II	Gated	34.41	30.76	651.47	32	18.29 x 3.66	8370
93.	Ghelo – I	Un Gated	166.72	-	213.00	-	-	1190
BHAVNAGAR								
76.	Shetrunji	Gated	55.55	54.63	646.00	59	8.84 x 0.91	7080
77.	Rajawal	Gated	56.75	50.65	95.00	8	9.15 x 6.10	4294
80.	Kharo	Gated	54.12	48.02	163.00	14	9.15 x 6.10	3592
81.	Malan	Gated	104.25	102.74	448.00	46	9.15 x 1.50	1334
82.	Ranghola	Gated	62.50	60.98	549.00	47	10.98 x 1.55	2396
83.	Limbali	Gated	128.10	122.00	136.57	12	9.15 x 6.10	5394
84.	Lakhanka	Gated	44.22	38.22	44.00	4	9.15 x 6.10	1182
85.	Hamirpura	Gated	87.80	81.70	32.00	3	9.15 x 6.10	661
86.	Hanol	Gated	90.10	87.05	148.20	13	9.15 x 3.05	1296
88.	Pingli	Gated	51.30	45.20	43.90	4	9.15 x 6.10	1061
90.	Bagad	Un Gated	60.41	-	242.00	-	-	2929
91.	Rojki	Un Gated	99.08	-	314.00	-	-	1094
196.	Jaspara-Mandva	Ungated	40.25	-	142.00	-	-	841
BOTAD								
1.	Khambhada	Gated	50.35	46.69	140.00	7	18.29 x 3.66	1817
2.	Utavali (Gunda)	Gated	49.30	45.64	304.19	15	18.29 x 3.66	3862
78.	Kalubhar	Gated	60.36	54.26	183.00	16	9.15 x 6.10	7983
79.	Malpara	Gated	78.10	72.00	90.28	8	9.15 x 6.10	2148
87.	Kaniyad	Gated	102.25	99.20	78.69	7	9.15 x 3.05	963
89.	Goma	Un Gated	126.50	-	164.00	-	-	1189
92.	Bhimdad	Un Gated	104.87	-	110.00	-	-	975
182.	Sukhbhadar	Gated	109.20	103.10	236.50	20	9.15x6.10	10750
JAMANAGAR								
94.	Und-I	Gated (Addl. Spillway)	98.00	91.90 89.77	219.00	11 6	9.15x6.10 12.50x8.23	15866
96.	Sasoi	Ungated	28.96	-	1037.00	-	-	2921
98.	Fulzar-I	Ungated	24.69	-	305.00	-	-	1274
99.	Dai-Minsar	Ungated	75.40	-	135.00	-	-	1982
101.	Vijarkhi	Ungated	30.48	-	533.00	-	-	453
102.	Puna	Ungated	24.38	-	135.00	-	-	963
103.	Umiyasagar	Gated	71.05	66.48	217.63	19	9.14 x 4.57	6119

Sch No.	Name of District and Name of Scheme	Type of Scheme	F.R.L Meter	Crest Level Meter	Spillway Length Meter	Details of Gates		Max. Discharge (Cum)
						Nos.	Size Meter	
105.	Ruparel	Ungated	48.20	48.20	142.10	Ogee shaped spillway		898
106.	Und-II	Gated	18.25	12.15	623.00	54	9.14x6.10	16450
107.	Kankawati	Gated	30.50	27.75	133.00	10	9.15x2.74	1557
108.	Rangmati	Gated	43.20	37.10	56.00	5	9.15x6.10	1125
110.	Fulzar(KB)	Gated	95.85	89.75	136.55	12	9.15 x 6.10	5456
111.	Aji-IV	Gated	20.40	14.30	658.00	57	9.14 x 6.10	18354
112.	Demi - III	Gated	25.60	19.50	206.03	18	9.14 x 6.10	5516
113.	Phophal-II	Ungated	129.33	129.33	110.00	-	-	1220
114.	Sapda	Ungated	32.77	-	344.00	-	-	807
116.	Fulzar-II	Ungated	52.12	-	277.00	-	-	1076
119.	Wadisang	Ungated	76.50	-	371.70	-	-	3204
120.	Rupavati(Lalpur)	Ungated	77.30	-	164.00	-	-	653
121.	Und-III	Ungated	110.60	-	123.00	-	-	1048
DEV BHUMI DWARKA								
95.	Sani	Gated	17.25	11.15	192.06	17	9.15x6.10	7019
97.	Ghee	Ungated	40.54	-	107.00	-	-	671
100.	Vartu	Ungated	39.01	-	350.52	-	-	1557
104.	Gadhaki	Ungated	30.00	30.00	100.00	Ogee shaped spillway		607
109.	Vartu-II	Gated	39.95	33.85	368.20	32	9.15 x 6.10	10801
115.	Sonmati	Ungated	78.50	78.50	145.00	-	-	1540
117.	Shedhabhadthari	Ungated	32.50	-	274.00	-	-	1093
118.	Veradi	Ungated	85.15	-	175.00	-	-	1390
122.	Sindhani	Ungated	16.35	-	125.00	-	-	1391
123.	Kabarka	Ungated	96.85	96.85	150.00	-	-	917
194.	Veradi-II	Ungated	65.40	65.40	269.00	-	-	1795
195.	Minsar(V)	Ungated	91.80	91.80	136.50	-	-	845
JUNAGADH								
128.	Uben	Ungated	107.61	-	160.00	-	-	1550
129.	Madhuvanti	Ungated	165.19	-	183.00	-	-	750
130.	Prempara	Ungated	127.50	-	-	-	-	
131.	Hasnapur(W.S.)	Ungated	148.17	-	62.00	-	-	488
132.	Ozat-II	Gated	77.50	69.27	378.26	25	12.50 x 8.23	14890
133.	Vrajmi	Gated	94.00	90.95	102.00	9	9.15x3.05	1175
134.	Ambajal	Gated	182.31	176.21	49.00	4	9.15x6.10	1030
135.	Draphad	Gated	124.00	117.90	125.00	11	9.15x6.10	3073
136.	Bantva-Kharo	Gated	16.25	13.20	183.00	16	9.14 x 3.05	1764
137.	Ozat-Weir Sahpur (Tilting Gate)	Gated	32.80	29.80	233.40	23	9.00 x 3.00	10581
138.	Ozat-Weir (Vanthli)	Gated	27.50	25.00	202.80	12	9.14 x 3.05 (Vertical)	7170
139.	Mota Gujariya	Ungated	140.02	140.02	150.00	-	-	1320
141.	Jhanjeshri	Ungated	149.96	-	137.00	-	-	935
198.	Sabali	Gated	43.75	39.95	125.00	11	9.14 x 3.05 (Vertical)	1159
GIR SOMNATH								
124.	Shingoda	Gated	141.58	133.33	90.00	6	12.50 x 8.23	3309
125.	Hiran-II	Gated	71.26	63.03	183.00	7	12.50x8.23	3559
126.	Raval	Gated	148.85	140.60	124.00	6	12.50x8.23	2774
127.	Machhundri	Ungated	109.50	-	350.00	-	-	5506
140.	Hiran-I	Ungated	44.20	-	194.00	-	-	1034

Sch No.	Name of District and Name of Scheme	Type of Scheme	F.R.L Meter	Crest Level Meter	Spillway Length Meter	Details of Gates Nos. Size Meter		Max. Discharge (Cum)
<u>PORBANDAR</u>								
142.	Phodarness(W.S)	Ungated	93.59	-	27.00	-	-	204
143.	Khambhala(W.S.)	Ungated	39.63	-	107.00	-	-	344
144.	Sorthi	Ungated	95.50	-	157.00	-	-	1932
145.	Amipur	Gated	5.64	3.23	20.00	4	2.44x2.86	139
146.	Kalindri	Ungated	52.23	-	168.00	-	-	1445
147.	Advana	Ungated	24.00	-	153.00	-	-	604
199.	Saran	Gated	37.00	33.95	182.00	16	9.14 x 3.05 (Vertical)	1748
<u>RAJKOT</u>								
148.	Bhadar	Gated	107.90	106.07	378.00	29	10.67x1.83	16504
149.	Bhadar - II	Gated	53.10	42.43	405.52	22	14.93x10.67	25380
151.	Aji-III	Gated	53.15	44.92	272.00	18	12.50x8.23	17571
152.	Moj	Gated	72.54	71.02	329.00	27	9.14x1.52	7243
153.	Venu-II	Gated	55.00	48.91	229.00	20	9.15x6.10	9866
154.	Nyari-II	Gated	88.50	82.40	160.00	14	9.15x6.10	4826
155.	Karmal	Gated	169.00	162.90	79.00	7	9.15x6.10	3588
156.	Veri	Gated	142.04	141.12	427.00	75	3.05x0.91	1642
157.	Karnuki	Gated	164.50	161.45	183.00	16	9.14x3.05	2486
159.	Phophal	Ungated	81.76	-	417.00	-	-	10580
160.	Aji-I	Ungated	147.52	-	335.00	-	-	1785
161.	Nyari-I(W.S.)	Ungated	103.50	-	54.00	-	-	396
162.	Lalpari	Ungated	137.46	-	733.31	-	-	2095
163.	Aji-II	Gated	73.76	67.66	183.00	16	9.15x6.10	5644
165.	Chhaprawadi-II	Gated	98.38	90.15	89.00	6	12.50x8.23	6219
167.	Motisar	Gated	143.00	141.00	151.00	15	9.10x2.00	759
168.	Khodapipar	Gated	55.27	52.22	113.40	10	9.15x3.05	1339
169.	Survo	Gated	99.85	93.75	187.76	16	9.14x6.10	5748
170.	Dondi	Gated	103.72	100.67	101.81	9	9.14x3.05	1354
171.	Sodvadar	Ungated	76.70	76.70	100.00	-	-	1183
173.	Gondali	Ungated	45.80	-	350.00	-	-	948
174.	Ghelo-S	Ungated	135.10	-	213.00	-	-	878
175.	Vachhapari	Ungated	43.89	-	183.00	-	-	535
176.	Phardangbeti	Ungated	189.25	-	190.00	-	-	2370
177.	Ishwaria	Ungated	157.30	-	211.00	-	-	1377
179.	Kabir Sarovar	Ungated	32.45	32.45	295.00	-	-	2350
180.	Dhari	Ungated	49.07	-	84.00	-	-	651
181.	Malgadh	Ungated	159.37	-	140.00	-	-	760
<u>MORBI</u>								
150.	Machhu-II	Gated (Addl. Spillway)	57.30	49.09 51.20	508.00	20 18	12.50x8.23 9.15x6.10	26650
158.	Machhu-I	Ungated	135.33	-	488.00	-	-	3313
164.	Demi-II	Gated	48.00	41.90	192.00	17	9.14x6.10	3568
166.	Ghodadharoi	Gated	98.30	92.20	102.00	9	9.15x6.10	2618
172.	Demi-I	Fuse Gate	60.35	59.35	244.00	135	1.80 x 1.00	4044
178.	Bangawadi	Fuse Gate	42.65	41.05	200.00	69	2.85 x 1.60	2405
189.	Brahmani	Ungated	64.62	-	247+548A	-	-	2950
200.	Brahamani-II	Gated	44.50	36.27	271.58	18	12.50 x 8.23	11896

Sch No.	Name of District and Name of Scheme	Type of Scheme	F.R.L Meter	Crest Level Meter	Spillway Length Meter	Details of Gates		Max. Discharge (Cum)
						Nos.	Size Meter	
<u>SURENDRANAGAR</u>								
183.	Nayaka	Gated	101.80	99.36	671.00	20	9.15x2.44	2097
						14	9.15x2.44	
184.	Dholidhaja	Ungated	80.47	-	450.00	-	-	1839
185.	Falku	Gated	107.00	103.00	182.50	16	10.00x4.00	4275
186.	Nimbhani	Gated	134.50	131.45	113.00	10	9.14 x 3.05	1463
187.	Limbi Bhogavo II	Gated	76.00	69.90	322.00	28	9.15 x 6.10	10530
188.	Vansal	Ungated	100.70	100.70	220.00	-	-	736
190.	Limbi-Bhogavo	Ungated	46.02	-	463.20	-	-	1471
191.	Morsal	Ungated	177.00	-	106.00	-	-	1271
192.	Saburi	Ungated	129.50	-	255.00	-	-	1446
193.	Triveni Thanga	Ungated	208.00	-	207.00	-	-	1795

Note: There is no important scheme in Ahmedabad, Gandhinagar, Patan, Anand, Dang & Vadodara Districts

ANNEXURE-1 (A)

Note : Please see Flood Telephone Directory of the current year

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5

1. GUJARAT REGION

A. Damanganga Basin

- Executive Engineer
Tapi Division
(C.W.C.) Surat
- Superintending Engineer
Damanganga Project Circle,
Valsad
(Focal Officer)

Valsad District

1.	Madhuban Dam	82.40 (270.27)	79.86 (261.94)	Executive Engineer Damanganga Project
2.	Madhuban Dam D/S	49.45(162.20)	— (—)	Dn. No. 1, Madhuban Colony
3.	Vapi (R.G.) (N. H.No. Bridge)	19.20 (62.98)	— (—)	
<u>Union Territory</u>				
4.	Daman (R.G.)	3.40 (11.159)	— (—)	Collector, Daman
5.	Silvassa (R.G.) (Athal Bridge)	30.00 (98.43)	— (—)	Collector, DNH Silvassa

B. Tapi Basin

- (1) Executive Engineer
Tapi Division
(C.W.C), Surat
- (2) Superintending Engineer
Surat Irrigation
Circle, Surat
(Focal Officer).

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
<u>Narmada District</u>				
1.	Chopadvav Dam	188.80 (619.44)	187.40 (614.85)	Executive Engineer, Ver - II Project, Division Vyara (Surat),
2.	Kakdiamba Dam	188.71 (619.15)	187.71 (616.53)	
<u>Tapi District.</u>				
3.	Ukai Dam	106.984(351.00)	105.15(345.00)	Executive Engineer, Ukai Division No.1, Ukai.
<u>Surat District.</u>				
4.	Lakhigam Dam	75.90 (249.02)	74.10 (243.11)	Executive Engineer, Ver - II Project Division, Vyara (Surat District)
5.	Ver - II Dam	118.00 (387.15)	115.80 (379.93)	
6.	Ver - I Dam	64.16 (210.50)	60.96 (200.00)	
<u>Tapi District.</u>				
7.	Kakrapar Weir	53.66 (176.05)	48.77 (160.00)	Executive Engineer, Surat Canal Division, Surat
8.	Ghala (R.G.)	— (—)	— (—)	Executive Engineer Tapi Division
9.	Surat Nehru Bridge (R.G.)	9.50(31.16)	— (—)	(C.W.C.) Surat
C. <u>Narmada Basin</u>				
1.	Executive Engineer Tapi Division, (C.W.C.) Surat.			
	Superintending Engineer - Designs Narmada Project (Dam & Power House) Vadodara (Focal Officer)			
	Superintending Engineer Vadodara Irrigation Circle, Vadodara. (Focal Officer for Sukhi/Rami)			
<u>Bharuch & Narmada Districts</u>				
1.	Bharuch Golden Bridge (R.G.)	7.315 (24.00)	— (—)	Executive Engineer Tapi Division
2.	Garudeshwar Bridge (C.W.C.) Surat (R.G.)		31.09 (102.00)	— (—)
3.	Dholi Dam	136.00 (446.22)	136.00 (446.22)	Executive Engineer Irri. Proj. Dn.No.4 Rajpipala
4.	Karjan Dam	116.10 (380.50)	115.25 (378.13)	Executive Engineer Irrigation Project Dn. No. 4, Rajpipla

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
<u>Chhotaudepur District</u>				
5.	Rami Dam	197.87 (649.21)	196.35 (644.22)	Executive Engineer Pipe Line Project Dn.No.1 Chhotaudepur
6.	Sukhi Dam	148.30 (486.57)	147.82 (485.00)	Executive Engineer Irri.Proj.Dn.No.2, Bodeli
7.	Wadhvana	56.39 (185.00)	55.63 (182.50)	Executive Engineer Vadodara Irrigation Division,Vadodara
D.	<u>Mahi Basin</u>			Executive Engineer Mahi Division (C.W.C.) Gandhinagar Superintending Engineer Mahi Irrigation Circle, Nadiad (Focal Officer)
<u>Mahisagar District</u>				
1.	Wanakbori Weir	74.98 (246.00) (Danger Level)	67.234 (220.60) (Hydro Fuse Gate)	Executive Engineer Nadiad Irrigation Division, Nadiad
<u>Kheda District</u>				
2.	Varansi dam	81.20(266.34)	81.00(265.68)	Executive Engineer WatrakProject Canal Dn. Modasa
<u>Panchmahals District</u>				
3	Kadana Dam	127.71 (419.00) (Danger Level) 126.18 (414.07) (Warning Level)	127.71 (419.00)	Executive Engineer Kadana Dn. No. 1 Divda Colony
4.	Panam Dam	128.00 (420.00)	127.41 (418.00)	Executive Engineer Panam Project Division, Godhra.
<u>Vadodara District</u>				
5.	Mahi Weir at Sindhrot	19.50 (63.98) (HFL)		Executive Engineer Vadodara Irrigation Division,Vadodara
E	<u>Sabarmati Basin</u>			Executive Engineer Mahi Division (C.W.C.) Gandhinagar Superintending Engineer Ahmedabad Irrigation Project Circle Ahmedabad (Focal Officer) Superintending Engineer Hlmatnagar Irrigation Project Circle, Himatnagar (Focal Officer)

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
<u>Ahmedabad District</u>				
1	Subhash Bridge	45.34 (148.76) (Danger Level) 44.09 (144.65) (Warning Level)	— (—) (R.G.)	Executive Engineer Ahmedabad Irrigation Dn. Ahmedabad
<u>Kheda District</u>				
2.	Dakor Bridge(R.G.)	7.05 (23.13)	— (—)	Executive Engineer
3.	Kathlal Bridge(R.G.)	6.49 (21.30)	— (—)	Shedhi Irrigation Dn. Nadiad
4.	Ladvel Bridge(R.G.)	5.27 (17.30)	— (—)	Executive Engineer
5.	Kheda Bridge(R.G.)	6.57 (21.56)	— (—)	Mahi Division (C.W.C.) Gandhinagar
<u>Mehsana District</u>				
6.	Dharoi Dam	192.24 (630.70) (Danger Level) 187.06 (613.72) (Warning Level)	189.59 (622.00)	Executive Engineer Dharoi Head Works Division No.1, Dharoi Colony
7.	Derol Bridge(R.G.)	— (—)	100.23(328.85)	Executive Engineer Mahi Division (C.W.C.) Gandhinagar
<u>Sabarkantha District</u>				
8.	Himatnagar Weir(R.G.)	— (—)	134.05(439.82)	Executive Engineer
9.	Harnav Weir(R.G.)	— (—)	234.76 (—)	Mahi Division
10.	Ratanpur Bridge(R.G.)	9.63(31.60)	— (—)	(C.W.C.) Gandhinagar
11.	Raska Weir (R.G.)	38.17(125.20)	— (—)	
12.	Guhai Dam	174.02 (570.78)	173.00(567.44)	Executive Engineer
13.	Javanpur Rech. MI Sch.	94.70 (310.62)	91.00 (298.48)	P.C. Division No. 3 Himatnagar
14.	Harnav Stage II Dam	332.25(1090.11)	332.00 (1088.96)	-do-
15.	Khedva Dam	259.70(851.82)	259.70(851.82)	-do-
16.	Gorthiya	113.75(373.21)	113.75(373.21)	Executive Engineer Suj. Suf. Spre.Ch. Dn. No. 1 Himatnagar
<u>Aravalli District</u>				
17.	Hathmati Dam	183.18 (601.00)	180.79 (593.00)	Executive Engineer
18.	Meshwo Dam	219.16(718.86)	214.59 (703.86)	H'nagar Irrigation
19.	Waidy Dam	201.10 (659.80)	199.20 (653.57)	Division, Himatnagar
20.	Mazam Dam	158.44 (519.83)	157.10 (515.29)	Executive Engineer
21.	Watrak Dam	140.49 (460.95)	136.25 (447.00)	Irrigation Project
22.	Lank Weir (R.G.)	111.55 (365.67)	111.55 (365.67)	Division, Modasa

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
F. <u>Banas Basin</u>				
				Executive Engineer Mahi Division (C.,W.,C.) Gandhinagar Superintending Engineer Sujlam Suflam Circle No.2, Kherva (Focal Officer)
<u>Rajasthan State</u>				
1.	Abu Road (R.G.)	265.00 (869.47)	— (—)	Executive Engineer Mahi Division (C.W.C.) Gandhinagar
2.	Swaroopganj (R.G.)	335.35 (1100.28)	— (—)	
<u>Banaskantha District</u>				
3.	Bhakhudar (R.G.)	163.87(537.66)	— (—)	Executive Engineer Mahi Division (C.W.C.) Gandhinagar
4.	Chitrasani (R.G.)	195.00 (639.80)	— (—)	
5.	Sarotri (R.G.)	192.00(629.95)	— (—)	
6.	Dantiwada Dam	185.06 (607.00)	184.10(604.00)	Executive Engineer
		(Danger Level)		
		182.88 (600.00)		
		(Warning Level)		
7.	Deesa Road Bridge (R.G.)	123.75(406.00)	— (—)	Deesa Irrigation Division, Deesa
8.	Sipu Dam	186.48 (611.84)	186.43 (611.68)	Executive Engineer Sipu Project Dn. Palanpur.
G. <u>Vishwamitry Basin & Deo Basin</u>				
				Superintending Engineer Vadodara Irrigation Circle, Vadodara (Focal Officer)
<u>Vadodara District</u>				
1.	Ajwa (W.S.) (Gauge)	64.31 (211.00)	— (—)	Municipal Commissioner Vadodara Municipal Corp. Vadodara
2.	Pratappura (Gauge)	69.69 (228.63)	— (—)	
3.	City Bridge (R. G.)	30.57 (100.27)	— (—)	
4.	Bhaniara (Gauge)	— (—)	— (—)	Executive Engineer Vadodara Irrigation Division, Vadodara
5.	Dhanora (Gauge)	62.18 (204.00)	— (—)	
6.	Ghansarvav (Gauge)	34.75 (114.00)	— (—)	
7.	Haripura (Gauge)	65.84 (216.00)	— (—)	
8.	Vadadala (Gauge)	58.52 (191.95)	— (—)	
9.	Shivrajpur (Gauge)	90.15 (295.78)	— (—)	
<u>Panchmahals District</u>				
9.	Halol (Gau.ge)	— (—)	— (—)	Executive Engineer Vadodara Irrigation Division, Vadodara
10.	Deo Dam	90.15 (295.77)	89.65 (294.14)	Executive Engineer Vadodara Irrigation Division Vadodara

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
H. <u>Saraswati Basin</u>				
Superintending Engineer Sujlam Suflam Circle No.2, Kherva (Focal Officer)				
<u>Banaskantha District</u>				
1.	Mukteshwar Dam	202.12 (663.11)	201.65 (661.57)	Executive Engineer Sipu Project Dn. Palanpur.
<u>Patan District</u>				
2.	Saraswati Barrage	85.39 (280.11)	84.40 (277.00)	Executive Engineer Deesa Irri. Dn., Deesa
I. <u>Bharuch District</u>				
1.	Baldeva Dam	— (—)	141.50 (464.26)	Executive Engineer
2.	Pigut Dam	— (—)	139.70 (458.36)	Irri.Proj.Dn.No.4 Rajpipala
J. <u>Panchmahals & Dahod District</u>				
Superintending Engineer Panam Project Circle Godhra . (Focal Officer except Kadana Dams)				
1.	Bhadar (P) Dam	128.35 (421.00)	123.72 (406.00)	Executive Engineer Kadana Division No. 1 Diwda Colony
2.	Hadaf Dam	168.32 (552.09)	166.20 (545.30)	Executive Engineer Panam Proj. Dn. Godhra
3.	Patadungri Dam	172.97 (567.50)	170.84 (560.50)	Executive Engineer
4.	Wankleshwar Bhey Dam	225.24 (739.00)	223.57 (733.50)	Dahod Irri.Dn., Dahod
5.	Edalwada Dam	238.78 (783.20)	237.30 (778.58)	Executive Engineer
6.	Machhanala Dam	281.33 (923.04)	279.05 (915.56)	Machhanala Proj.Dn.D' Colony
7.	Umaria Dam	284.24 (932.31)	280.00 (918.68)	Dahod Irr. Dn. Dahod
8.	Kabutri Dam	189.56 (621.75)	186.30 (611.25)	
9.	Kali - II Dam	269.90 (885.54)	257.00 (843.22)	
10.	Karad Dam	141.43 (454.00)	140.08 (459.60) (With fuse gate) 138.50 (454.30) (Without fuse gate)	Executive Engineer Panam Irrigation Division, Godhara
11.	Padardi	149.65 (491.00) Max. Water Level		Executive Engineer Mahi Dn., G'nagar
12.	Cheklia	230.20 (755.29) Max. Water Level		Executive Engineer Mahi Dn., G'nagar
13.	Anas P.S.	160.00 (524.96) Max. Water Level		Executive Engineer Mahi Dn., G'nagar
14.	Santroad Weir	150.64 (494.25)	144.50 (474.11)	Executive Engineer Panam Proj. Dn., Godhra

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
K. <u>Tapi District</u>				
1.	Dosawada Dam	— (—)	123.44 (405.00)	Executive Engineer Ver - II Project Dn. Vyara (Surat District)
L. <u>Navsari District</u>				
1.	Kelia Dam	115.12 (377.59)	113.40 (371.85)	Executive Engineer
2.	Jhuj Dam	171.25 (561.70)	167.50 (549.40)	Jhuj Project Canal Division Vansda, (Dist. Navsari)
II. <u>KACHCHH REGION</u>				
<u>Kachchh District</u>				
1.	Fatehgadh Dam	25.15 (82.49)	22.70 (74.48)	EE, WRI Dn., Bhuj
2.	Gajansar Dam	31.89 (104.60)	31.08 (102.00)	EE, Salinity Control Dn., Bhuj
3.	Gajod Dam	94.90 (311.27)	90.82 (297.98)	EE, Kachchh Irri Dn., Bhuj
4.	Godhatad Dam	27.99 (91.81)	23.00 (75.46)	EE, Salinity Control Dn., Bhuj
5.	Kaila Dam	81.74 (268.11)	79.25 (260.02)	EE, Kachchh Irri Dn., Bhuj
6.	Kalaghogha Dam	41.19 (135.10)	37.00 (121.40)	EE, Kachchh Irri Dn., Bhuj
7.	Kankawati Dam	133.95 (439.36)	131.67 (432.01)	EE, Kachchh Irri Const. Dn., Bhuj
8.	Kaswati Dam	53.73 (176.23)	51.20 (167.99)	EE, Kachchh Irri Const. Dn., Bhuj
9.	Nara Dam	32.54 (106.73)	27.43 (90.00)	EE, Salinity Control Dn., Bhuj
10.	Niruna Dam	47.83 (156.88)	43.58 (142.99)	EE, Salinity Control Dn., Bhuj
11.	Rudramata Dam	69.88 (229.21)	66.44 (217.99)	EE, Kachchh Irri Dn., Bhuj
12.	Sanandro Dam	63.32 (207.69)	59.74 (196.01)	EE, Salinity Control Dn., Bhuj
13.	Suvi Dam	46.37 (152.09)	42.67 (140.00)	EE, WRI Dn., Bhuj
14.	Tappar (W.S)Dam	41.90 (137.43)	40.85 (134.00)	Executive Engineer, Public Health Division Bhuj Kachchh.
15.	Bhukhi Dam	77.15 (253.05)	73.00 (239.44)	EE, Salinity Control Dn., Bhuj
16.	Berachiya Dam	73.99 (241.69)	70.40 (230.98)	EE, Kachchh Irri Const. Dn., Bhuj
17.	Don Dam	54.33 (178.20)	47.75 (156.67)	EE, Kachchh Irri Const. Dn., Bhuj
18.	Jangadia Dam	42.81 (140.42)	38.60 (126.64)	EE, Kachchh Irri Const. Dn., Bhuj
19.	Mathal Dam	84.87 (278.37)	83.18 (272.83)	EE, Salinity Control Dn., Bhuj
20.	Mitti Dam	23.00 (75.44)	18.50 (60.68)	EE, Kachchh Irri Const. Dn., Bhuj
III <u>SAURASHTRA REGION</u>				
A	<u>Under Flood Control Cell, Rajkot.</u>			Superintending Engineer Rajkot Irrigation Circle, Rajkot (Focal Officer)

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
(1) Amreli District				
1.	Sankroli Dam	46.60 (152.88)	44.20 (145.00)	Executive Engineer Rajkot Irrigation Division, Rajkot.
(2) Jamnagar District				
1.	Dai Minsar Dam	78.61 (257.62)	75.40 (247.39)	Executive Engineer Jamnagar Irrigation Division, Jamnagar.
2.	Fulzar - I Dam	26.52 (87.00)	24.69 (81.00)	
3.	Fulzar - II Dam	53.65 (176.00)	52.12 (171.00)	
4.	Puna Dam	25.60 (84.00)	24.38 (80.00)	
5.	Rangmati Dam	43.20 (141.74)	43.20 (141.74)	
6.	Sapada Dam	34.14 (112.00)	32.77 (107.52)	
7.	Sasoi Dam	30.48 (100.00)	28.96 (95.00)	
8.	Vjarkhi Dam	31.39 9103.00)	30.48 (100.00)	
9.	Kankavati Dam	31.68 (103.91)	30.50 (100.00)	E. E., Jam. Irr. Dn. Jamnagar
10.	Und - I Dam	102.92 (337.57)	98.00 (321.54)	E. E., Jam. Irr. Dn. Jamnagar
11.	Rupavati(Lalpur)Dam	78.80 (258.54)	77.30 (253.62)	E. E., Jam. Irr. Dn. Jamnagar
12.	Umiyasagar Dam	73.63 (241.58)	71.05 (233.11)	E. E., Und Canal Dn. Jamnagar
13.	Ruparel Dam	50.20 (164.66)	48.20 (158.10)	E. E., Und Irr. Dn. Jamnagar
14.	Ranjit-Sagar(W.S) Dam	---- (---)	--- (----)	Municipal Commissioner Municipal Corporation Jamnagar
15.	Und - II Dam	19.11 (62.68)	18.25 (59.88)	E. E., Und Irr. Dn. Jamnagar
16.	Wadisang Dam	79.00 (259.12)	76.50 (250.92)	E. E., Jam. Irr. Dn. Jamnagar.
17.	Fulzar(KB) Dam	98.12 (321.83)	95.85 (314.38)	E. E., Und Canal Dn. Jamnagar
18.	Und - III Dam	113.10 (371.08)	110.60(362.87)	E. E., Irr. Dn. Rajkot
19.	Phophal - II Dam	132.33 (434.19)	129.33 (424.30)	E. E., Irr. Dn. Rajkot
20.	Demi - III Dam	25.60 (83.99)	25.60 (83.99)	E. E., Proj. Const. Dn. 3 Rajkot,
21.	Aji - IV Dam	20.40 (66.91)	20.40 (66.91)	E. E., Und Canal Dn. Jamnagar
(3) Dev Bhumi Dwarka District				
1.	Ghee Dam	42.73 (140.20)	40.54 (133.00)	E. E., Jam. Irr. Dn. Jamnagar
2.	Sonmati Dam	81.04 (265.88)	78.50 (257.56)	E. E., Jam. Irr. Dn. Jamnagar
3.	Vartu -I Dam	41.15 (135.00)	39.01 (127.98)	E. E., Jam. Irr. Dn. Jamnagar
4.	Sani Dam	18.68 (61.27)	17.25 (56.58)	E. E., Jam. Irr. Dn. Jamnagar
5.	Sindhani Dam	18.42 (60.41)	16.35 (53.62)	E. E., Jam. Irr. Dn. Jamnagar
6.	Shedhabhadthari Dam	34.00 (111.55)	32.50 (106.63)	E. E., Jam. Irr. Dn. Jamnagar
7.	Vartu - II Dam	40.55 (133.00)	39.95 (131.04)	E. E., Und Irr. Dn. Jamnagar
8.	Gadhaki Dam	32.00 (104.96)	30.00 (98.40)	E. E., Und Irr. Dn. Jamnagar
9.	Veradi -I Dam	87.52 (287.06)	85.15(287.29)	E. E., Und Canal Dn. Jamnagar
10.	Kabarka Dam	98.85 (324.33)	96.85 (317.76)	E. E., Und Irr. Dn. Jamnagar
11.	Veradi-II (W.R.)	67.50 (221.40)	65.40 (214.51)	E. E., Und Canal Dn. Jamnagar
12.	Minsar(V) (W.R.)	93.80 (307.66)	91.80 (301.10)	E. E., Und Irr. Dn. Jamnagar
(4) Porbandar District				
1.	Sorthi Dam	98.82 (324.21)	95.50 (313.32)	E. E., Jam. Irr. Dn. Jamnagar

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
(5) Rajkot District				
1.	Nyari – I (W.S.) Dam	105.75 (346.96)	103.50 (339.58)	Municipal Commissioner, R.M.C. Rajkot
2.	Aji – I Dam	149.35 (490.00)	147.52 (484.00)	E.E., RID, Rajkot
3.	Bhadar Dam	112.74 (369.88)	107.90 (354.00)	E.E., RID, Rajkot
4.	Gondali Dam	47.24 (155.00)	45.80 (150.25)	Executive Engineer
5.	Kabir–Sarovar Dam (Chhapparwadi-I)	34.52 (113.25)	32.45 (106.46)	Irr. & Maintenance Dn. Rajkot
6.	Lalpari Dam	138.71 (455.08)	137.46 (451.00)	Executive Engineer
7.	Moj Dam	76.50 (251.00)	72.54 (238.00)	Rajkot Irr. Dn.
8.	Phophal Dam	86.44 (283.60)	81.76 (268.23)	Rajkot.
9.	Vachhapari Dam	45.57 (149.50)	43.89 (144.00)	Executive Engineer
10.	Veri Dam	143.41 (470.50)	142.04 (466.00)	Irr. & Maintenance
11.	Chhapparwadi-II Dam	100.44 (329.44)	98.38 (322.78)	Division. Rajkot.
12.	Dhari Dam	51.51(169.00)	49.07 (161.00)	EE, S'nagar Irr. Dn., Rajkot
13.	Ishwaria Dam	159.30 (522.66)	157.30 (516.10)	Irr. & Maintenance
14.	Karmal Dam	170.94 (560.68)	169.00 (554.49)	Division. Rajkot
15.	Motisar Dam	143.00 (469.18)	143.00 (469.18)	E.E., Rajkot Irr. Dn., Rajkot
16.	Nyari – II Dam	88.50 (290.28)	88.50 (290.28)	E.E., Rajkot Irr. Dn., Rajkot
17.	Bhadar - II Dam	53.10 (174.22)	53.10 (174.22)	E.E., Rajkot Irr.Proj Dn., Rajkot
18.	Dondi Dam	103.72 (340.31)	103.72 (340.31)	E.E., Rajkot Irr.Proj Dn., Rajkot
19.	Survo Dam	99.85 (327.61)	99.85 (327.61)	E.E., Rajkot Irr.Proj Dn., Rajkot
20.	Sodvadar Dam	79.20 (259.86)	76.70 (251.65)	E.E., Rajkot Irr.Proj Dn., Rajkot
21.	Venu – II Dam	56.91 (186.71)	55.00 (180.46)	Executive Engineer
22.	Aji – II Dam	74.72 (245.14)	73.76 (242.00)	Rajkot Irr. Dn. Rajkot.
23.	Phadangbeti Dam	191.94 (629.76)	189.25 (620.93)	EE, S'nagar Irr. Dn., Rajkot
24.	Aji – III Dam	55.34 (181.56)	53.15 (174.38)	E.E., Rajkot Irr. Dn., Rajkot
25.	Karnuki Dam	164.50 (539.72)	164.50 (539.72)	E.E., Rajkot Irr.Proj Dn., Rajkot
26.	Khodapipar Dam	55.27 (181.34)	55.27 (181.34)	E. E., I & M Dn. Rajkot
(6) Surendranagar District				
1.	Dholidhaja Dam	82.22 (269.75)	80.47 (264.00)	EE, S'nagar Irr. Dn., Rajkot
2.	Limdi Bhogovo-I Dam	47.55 (156.00)	46.02 (151.00)	EE, S'nagar Irr. Dn., Rajkot.
3.	Nayka Dam	101.80 (334.00)	101.80 (334.00)	EE, S'nagar Irr. Dn., Rajkot
4.	Falku Dam	107.00 (351.06)	107.00 (351.06)	EE, S'nagar Irr. Dn., Rajkot
5.	Morsal Dam	179.50 (588.94)	177.00 (580.74)	EE, S'nagar Irr. Dn., Rajkot
6.	Saburi Dam	131.00 (429.81)	129.50 (424.89)	EE, S'nagar Irr. Dn., Rajkot
7.	Vansal Dam	102.55 (336.36)	100.70 (330.40)	EE, S'nagar Irr. Dn., Rajkot
8.	Nimbhani Dam	134.50 (441.29)	134.50 (441.29)	EE, S'nagar Irr. Dn., Rajkot
9.	Limdi Bhogavo-II Dam	76.00 (249.35)	76.00 (249.35)	E. E., Proj. Const. Dn. 4 Rajkot,
10.	Triveni - Thanga Dam	210.00(688.50)	208.00(682.24)	E. E., Proj. Const. Dn. 4 Rajkot,

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5

(7) **Morbi District**

1.	Bangawadi Dam	44.20 (145.00)	42.65 (139.90)	E.E., I & M Dn, Rajkot
2.	Demi – I Dam	63.20 (207.35)	60.35 (198.00)	E.E., I & M Dn, Rajkot
3.	Godhadharoi Dam	100.49 (329.60)	98.30 (322.52)	Executive Engineer
4.	Machhu – I Dam	137.46 (451.00)	135.33 (444.00)	
5.	Machhu – II Dam	57.30 (187.94)	57.32 (188.00)	E.E., I & M Dn., Rajkot
6.	Demi – II Dam	48.78 (160.05)	48.00 (157.49)	E.E., I & M Dn., Rajkot.
7.	Brahmani Dam	66.14 (217.00)	64.62 (212.00)	EE, S'nagar Irr. Dn., Rajkot
11.	Brahmani-II	44.50 (146.00)	44.50(146.00)	E. E., Proj. Const. Dn. 4 Rajkot,

SAURASHTRA REGION

B Under Flood control Cell, Bhavnagar

Superintending Engineer
Bhavnagar Irrigation Project Circle
Bhavnagar (Focal Officer)

1) Botad District.

1.	Khambhada Dam	50.35 (165.14)	50.35 (165.14)	Executive Engineer Irri. & Maintenance Division, Bhavnagar.
2.	Utavali Dam	49.30 (161.70)	49.30 (161.70)	Executive Engineer Bhavnagar Irri. Proj.Dn. Bhavnagar

(2) Amreli District

1.	Dhatarwadi Dam	84.45 (277.00)	80.83 (265.19) (FG not Restored)	Executive Engineer Irri. & Maintenance Division Bhavnagar
2.	Khodiar Dam	202.68 (665.00)	202.68 (665.00)	Executive Engineer
3.	Munjiasar Dam	64.46 (211.50)	62.93 (206.50)	Amreli Irrigation
4.	Vadia Dam	130.25(427.35)	130.25 (427.35)	Division Amreli
5.	Raidy Dam	50.85 (166.78)	50.85 (166.78)	Executive Engineer
6.	Shell-Dedumal Dam	179.50(588.76)	179.50(588.76)	Amreli Irrigation Division Amreli
7.	Surajwadi Dam	51.80 (169.69)	50.30 (165.03)	Executive Engineer Bhavnagar Irri. & Maintenance Division Bhavnagar
8.	Vadi Dam	134.00 (439.52)	134.00 (439.52)	Executive Engineer
9.	Thebi Dam*	126.40 (414.59)	126.00 (414.38)	Amreli Irrigation
10.	Dhatarwadi-II Dam	34.41 (112.89)	34.41 (112.89)	Division, Amreli
11.	Ghelo(Itaria) Dam	168.59 (553.00)	166.76 (546.97)	EE, BIMDn, Bhavnagar

" * **Thebi gate pier damaged - Restriction for filling**

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge	
1	2	3	4	5	
(3) Bhavnagar District					
1.	Shetrunji Dam	57.68 (189.25)	55.55 (182.20)	Executive Engineer Bhavnagar Irrigation Division, Bhavnagar	
2.	Hamirpura Dam	87.80 (288.07)	87.80 (288.07)		
3.	Kharo Dam	54.25 (177.99)	54.12 (177.57)		
4.	Rajawal Dam	58.49 (191.91)	56.76 (186.23)		
5.	Lakhanka Dam	44.98 (147.58)	44.22 (145.08)		
6.	Bagad Dam	63.28 (207.62)	60.41 (198.21)		Executive Engineer Irri. and Maintenance Division, Bhavnagar
7.	Malan Dam	104.25 (342.04)	104.25 (342.04)	Executive Engineer Bhavnagar Irri.Project Division, Bhavnagar	
8.	Ranghola Dam	62.80 (206.05)	62.50 (205.06)		
9.	Rojki Dam	100.91 (331.09)	99.08 (325.08)		
10.	Limbali Dam**	128.44 (421.28)	122.00 (400.16)		
11.	Hanol Dam	90.10 (295.52)	90.10 (295.52)		
12.	Pingali Dam	51.30 (168.26)	51.30 (168.26)		
13.	Jaspara-Mandva	42.25 (138.58)	40.25 (132.02)		
" ** " <u>Limbali gate pier damaged - Restriction for filling</u>					
(4) Botad District					
1.	Bhimdad Dam	107.31 (352.08)	104.87 (344.08)		Executive Engineer Irri. and Maintenance Division, Bhavnagar
2.	Goma Dam	128.81 (422.63)	126.50 (415.05)		
3.	Kalubhar Dam	62.84 (206.11)	60.36 (198.04)		
4.	Malpara Dam	78.10 (256.17)	78.10 (256.17)		
5.	Kaniyad Dam	102.25(335.38)	102.25 (335.38)		
6.	Sukhbhadar Dam	110.73 (363.20)	109.23 (358.28)	Executive Engineer Irrigation & Maintenance. Dn. Bhavnagar.	
(5) Junagadh District					
1.	Hashanpur (WS) Dam	150.30 (493.00)	148.17 (486.15)	Muni. Commissioner Muni. Corporation Junagadh	
2.	Varjami Dam (Salinity)	94.40 (309.62)	94.00 (308.41)	Executive Engineer Salinity Control Division, Porbandar	
3.	Ambajal Dam	182.30 (597.94)	182.30 (597.94)	Executive Engineer Junagadh Irrigation Division Junagadh	
4.	Hiran – I Dam	46.27 (151.80)	44.20 (145.00)		
5.	Hiran – II Dam	71.26 (233.80)	71.26 (233.80)		
6.	Jhanjeshri Dam	152.25 (499.50)	149.96 (492.00)		
7.	Madhuvanti Dam	167.02 (548.00)	165.19 (542.00)		
8.	Uben Dam	110.98 (364.12)	107.61 (353.06)		
9.	Shingoda Dam	141.58 (464.52)	141.58 (464.52)		
10.	Dhrafad Dam	124.00 (406.84)	124.00 (406.84)		
11.	Machhundri Dam	112.91 (370.34)	109.50 (359.16)		
12.	Raval Dam	150.45 (493.48)	148.85 (488.38)		Executive Engineer Junagadh Irri. Dn. Junagadh

Sr No	Name of River Gauge Station	Danger level H.F.L. in Meter(Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
13.	Bantwa-Kharo Weir	16.25(53.30)	16.25 (53.30)	E. E., Porbandar Irrigation Division, Porbandar
14.	Ozat-Weir(Shapur)	35.77 (117.32)	32.80 (107.58)	E.E., Junagadh Irr.Proj Dn.Junagadh
15.	Ozat-II Dam	77.59 (254.49)	77.50 (254.28)	E.E., Junagadh Irr.Proj Dn.Junagadh
16.	Ozat-Weir(Vanthli)	28.80 (94.46)	27.50 (90.20)	E.E., Junagadh Irr.Proj Dn.Junagadh
17.	Mota Gujariya	142.52(467.46)	140.02(459.26)	E.E., Junagadh Irr.Proj Dn.Junagadh
18.	Sabali	43.75 (143.54)	43.75 (143.54)	E.E., Junagadh Irr.Proj Dn.Junagadh
(6) <u>Porbandar District</u>				
1.	Khambhala (WS) _{Dam}	41.15(135.00)	39.63(130.00)	Executive Engineer
2.	Phodarness(WS) _{Dam}	96.63(317.04)	93.59(307.00)	Public Health Works Dn. Porbandar.
3.	Amipur Dam	6.34(20.80)	5.64(18.50)	Executive Engineer S.C. Dn. Porbandar
4.	Kalindri Dam	54.96 (180.30)	52.22(171.28)	E.E., S.C. Dn. Porbandar
5.	Advana Dam	25.50 (83.66)	24.00(78.72)	E. E., Porbandar Irr. Dn. Porbandar
6.	Saran	37.00 (121.40)	37.00 (121.40)	E. E., Porbandar Irr. Dn. Porbandar
(7) <u>Rajkot District</u>				
1.	Ghelo (s) Dam	136.66 (448.25)	136.66 (448.25)	Executive Engineer
2.	Malgadh Dam	161.25 (528.90)	159.37 (522.73)	Irri. & Maintenance Division, Bhavnagar

ANNEXURE - 1 (B)

LIST OF IMPORTANT GAUGE STATIONS List showing the Danger Level and Warning Level in Mt. (Ft)

SR No.	NAME OF GAUGE STATION	<u>DANGER LEVEL</u>		<u>WARNING LEVEL</u>	
		IN Meter	IN Feet	IN Meter	IN Feet
1	2	3	4	5	6
1. <u>DAMANGANGA BASIN</u>					
1.	Madhuban Dam Site (Damanganga Dam)	82.40	(270.27)	79.86	(261.94)
2.	Madhuban Dam D/S	49.45	(162.20)	48.30	(158.42)
3.	Daman(Moti Daman-Nani Daman Bridge)	03.40	(11.16)	2.60	(8.53)
4.	Vapi(National High way No.8 Bridge)	19.20	(63.00)	18.20	(59.71)
5.	Silvasa(Athal Bridge)	30.00	(98.43)	29.00	(95.15)
2. <u>TAPI BASIN</u>					
1.	Ukai	105.15	(345.00)	103.32	(339.00)
2.	Kakrapar	53.66	(176.05)	53.15	(174.33)
3.	Surat Nehru Bridge	9.50	(31.16)	8.50	(27.88)
3. <u>NARMADA BASIN</u>					
1.	Garudeshwar	31.09	(102.00)	30.48	(100.00)
2.	Bharuch	7.315	(24.00)	6.71	(22.00)
4. <u>MAHI BASIN</u>					
1.	Kadana	127.71	(419.00)	126.18	(414.00)
2.	Panam	128.00	(420.00)	126.18	(414.00)
3.	Wanakbori	74.98	(246.00)	71.93	(236.00)
5. <u>SABARMATI BASIN</u>					
1.	Dharoi	192.24	(630.70)	187.06	(613.72)
2.	Subhash Bridge	45.34	(148.76)	44.09	(144.65)
6. <u>BANAS BASIN</u>					
1.	Dantiwada	185.06	(607.00)	182.88	(600.00)
2.	Deesa Road Bridge	123.75	(406.00)	122.95	(403.40)

Note: The Danger Level and Warning Level values can be subjected to change by State Govt.

ANNEXURE - 1 (B-1)
LIST OF GAUGE STATIONS FOR INFORMATION
List showing the Danger Level and Warning Level in Mt. (Ft)

SR No.	NAME OF GAUGE STATION	DANGER LEVEL/ HFL		"0" Gauge R.L.	
		IN Meter	IN Feet	IN Meter	IN Feet
1	2	3	4	5	6
<u>1. NORTH GUJARAT REGION</u>					
<u>A. SABARMATI RIVER</u>					
1.	Derol Bridge (R. G)	100.23*	328.85	89.00	292.00
2.	Hathmati Weir-Balochpur (R.G.)	146.40	480.34	142.50	467.54
3.	Wasana Bridge (R.G.)	41.75	137.00	38.09	125.00
**" Before Const. of Dharoi Dam, {95.83 mt. (314.42 ft.) After Const. of Dharoi Dam}					
<u>B. Rupen River (Mehsana)</u>					
1.	At Delwada Site	51.61	169.33	46.26	151.73
<u>C. WATRAK RIVER</u>					
1.	Ratanpur Bridge	44.62	146.40	39.12	128.35
2.	Dabha Bridge	83.20	272.98	71.19	233.57
<u>D. MESHWO RIVER</u>					
1.	Raska Weir	38.17	125.24	35.61	116.85
<u>E. SHEDHI RIVER</u>					
1.	Dakor Bridge	53.51	175.51	45.01	147.63
<u>F. MOHAR RIVER</u>					
1.	Kathlal Bridge	45.09	147.90	36.94	121.16
<u>2. CENTRAL GUJARAT REGION</u>					
<u>G. PANAM RIVER</u>					
1.	Santroad Bridge	152.02	498.63	143.06	469.24
<u>H. VISHWAMITRI RIVER</u>					
1.	Pilol	104.00	341.12	93.18	305.63
2.	City Bridge	30.57	100.30	22.64	74.28
<u>3. SOUTH GUJARAT REGION</u>					
<u>I. KARJAN RIVER</u>					
1.	Rajpipla Bridge	30.45	99.90	19.75	64.80
<u>J. ORSANG RIVER</u>					
1.	Bodeli Bridge	81.70	267.98	74.75	245.18
<u>K. PURNA RIVER</u>					
1.	Wankla	57.42	188.34	46.37	152.09
<u>L. Ambika River</u>					
1.	Unai (Vansda)	58.45	191.72	46.45	152.36
2.	Waghai (Ahwa)	105.91	347.49	99.66	327.00
<u>M. AURANGA RIVER</u>					
1.	Bhervi (Chikhali)	42.08	138.02	31.58	103.58

Note: The Danger Level and Warning Level values can be subjected to change by State Govt.

ANNEXURE - 1 (C)

Statement Showing The Tentative Rule Levels of Water Resources Project of Gujarat State for Monsoon -2014

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2014 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
001	Khambhada	46.69	50.35	49.50	50.10	50.25		50.35
002	Utavali (Gunda)	45.64	49.30	49.00	49.30	49.30		49.30
003	Mukteshwar	193.37	201.65	196.00	199.00	200.50		201.30
		Remark: F.O. has suggested to fill up the dam upto FRL 201.65 m on Dt.16/10/2014						
004	Dantiwada	175.91	184.10	182.00	182.50	183.00		184.10
005	Sipu	178.15	186.43	180.00	183.50	185.02		186.24
		Remark: F.O. has suggested to fill up the dam upto FRL 186.43 m on Dt.16/10/2014						
006	Karjan	101.23	115.25	103.23	107.55	110.50	113.00	115.25
013	Dharoi	178.92	189.59	188.06	188.37	188.67		189.28
		Remark: F.O. has suggested to fill up the dam upto FRL 189.59 m on Dt.16/10/2014						
014	Panam	116.74	127.41	125.00	125.88	127.41		127.41
015	Deo	81.40	89.65	87.50	88.00	88.50		89.65
016	Hadaf	155.53	166.20	164.00	164.50	166.20		166.20
017	Kadana	113.71	127.71	124.50	126.00	126.80		127.71
019	Bhadar (P)	115.52	123.72	121.50	122.50	123.72		123.72
027	Watrak	128.00	136.25	133.50	134.50	136.00		136.25
028	Guhai	164.77	173.00	171.00	172.25	173.00		173.00
029	Mazam	151.00	157.10	155.00	155.50	156.75		157.10

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2014 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
031	Lank	105.45	111.55	105.45	110.00	111.25		111.55
032	Javanpura (Minor Recharge Scheme)	86.43	91.00	Gate open	Gate open	91.00		91.00
033	Harnav-II	323.77	332.00	330.00	330.50	332.00		332.00
036	Ukai	91.14	105.16	96.32	99.37	102.11	103.64 (15/09/14)	105.16
		Remark: Rule Level for Ukai Dam is incorporated as per Govt. of Gujarat, N.W.R.W.S. & K. Dept. letter No.Ukai/2006/23/Part-1/J Dtd.09-04-2014						
038	Ver-II	109.73	115.80	111.00	113.00	115.00		115.80
040	Sukhi	139.59	147.82	145.50	146.50	147.32		147.82
042	Damanganga (Madhuban Dam)	65.83	79.86	70.00	72.00	76.00	78.00	79.86
045	Tappar	36.27	40.85	40.15	40.85	40.85		40.85
065	Khodiar	196.58	202.68	201.00	202.25	202.50		202.68
066	Thebi	119.90	126.00	119.90	124.00	125.00		125.50
		Remark: The reservoir is to be filled up to crest level 119.90 m in case restoration works are not completed. F.O. has suggested to fill up the dam upto FRL 126.00 m on Dt. 16/10/2014						
068	Raidy	44.75	50.85	49.00	49.55	50.55		50.85
069	Vadia	124.15	130.25	130.25	130.25	130.25		130.25
070	Vadi	127.90	134.00	133.50	134.00	134.00		134.00
071	Shell-Dedumal	173.40	179.50	175.50	177.50	178.50		179.50
075	Dhatarwadi-II	30.76	34.42	33.00	33.50	34.00		34.42
076	Shetrunji	54.63	55.54	55.25	55.25	55.54		55.54
077	Rajaval	50.65	56.75	56.00	56.50	56.75		56.75

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2014 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
078	Kalubhar	54.26	60.36	58.50	59.00	59.36		59.36
		Remark: Rule Level, as per instruction given by CDO Vide his letter No: B/CDO/RAD/GTS/Kalubhar/13 dtd.25-02-2008.						
079	Malpara	72.00	78.10	77.80	77.80	77.80		78.10
080	Kharo	48.02	54.12	53.50	53.50	54.12		54.12
081	Malan	102.74	104.25	104.25	104.25	104.25		104.25
082	Ranghola	60.98	62.50	62.50	62.50	62.50		62.50
083	Limbali	122.00	128.10	-	-	-		-
		Remark: Restoration to spillway work at Limbali project is under progress.						
084	Lakhanka	38.12	44.22	44.22	44.22	44.22		44.22
085	Hamirpara	81.70	87.80	87.00	87.00	87.50		87.80
086	Hanol	87.05	90.10	89.50	90.10	90.10		90.10
087	Kaniyad	99.20	102.25	101.75	102.25	102.25		102.25
088	Pingli	45.20	51.30	50.20	50.70	51.10		51.30
094	Und-I	91.90 89.77	98.00	97.00	97.50	98.00		98.00
095	Sani	11.15	17.25	16.50	17.00	17.25		17.25
103	Umiyasagar	66.48	71.05	66.48	66.48	66.48		71.05
106	Und-II	12.15	18.25	17.75	17.75	18.25		18.25
107	Kankavati	27.75	30.50	30.20	30.50	30.50		30.50
108	Rangmati	37.10	43.20	42.60	42.90	43.20		43.20
109	Vartu-II	33.85	39.95	38.95	39.00	39.95		39.95
		Remark: Problem occur in gate operation of gate no.12 last year, left side arm assembly both arm bend – buckling.						

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2014 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
110	Fulzar (KB)	89.75	95.85	94.85	94.85	95.35		95.85
111	Aji-IV	14.30	20.40	17.00	18.00	19.00		20.00
		Remark: The reservoir will be charged up to 17.00 m. level if R&R of Jaragadh not completed.						
112	Demi - III	19.50	25.60	24.60	25.30	25.60		25.60
124	Shingoda	133.33	141.58	139.73	140.23	141.00		141.58
125	Hiran-II	63.03	71.26	70.00	70.75	71.26		71.26
126	Raval	140.60	148.86	146.50	147.50	148.55		148.86
132	Ozat-II	69.27	77.50	73.50	75.00	77.00		77.50
133	Vrajmi	90.95	94.00	92.00	93.00	93.50		94.00
134	Ambajal	176.21	182.31	181.80	181.80	182.00		182.31
135	Draphad	117.90	124.00	122.50	123.00	123.50		124.00
136	Bantva-Kharo	13.20	16.25	15.75	16.00	16.25		16.25
137	Ozat-Weir (Shahpur)	29.80	32.80	29.80	29.80	29.80		29.80
		Remark: Godbole automatic gates have been damaged heavily in previous year and also hoist platform has been removed hence operation of gates will not be charged with post monsoon flow by manually gate operation. F.O. has suggested to fill up the dam upto FRL 32.50 m on Dt.16/10/2014						
138	Ozat-Weir (Vanthali)	25.00	27.50	25.00	25.00	25.00		27.50
148	Bhadar - I	106.07	107.90	107.30	107.60	107.90		107.90
149	Bhadar - II	42.43	53.10	50.50	51.00	52.00		53.10
150	Machchhu-II	51.20 49.07	57.30	57.00	57.30	57.30		57.30
151	Aji-III	44.92	53.15	52.55	52.85	53.15		53.15

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2014 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
152	Moj	71.02	72.54	72.54	72.54	72.54		72.54
153	Venu-II	48.91	55.00	54.00	54.50	55.00		55.00
154	Nyari-II	82.40	88.50	88.50	88.50	88.50		88.50
155	Karmal	162.90	169.00	168.70	169.00	169.00		169.00
157	Karnuki	161.45	164.50	163.50	164.00	164.50		164.50
163	Aji - II	67.66	73.76	73.70	73.76	73.76		73.76
164	Demi - II	41.90	48.00	47.70	48.00	48.00		48.00
165	Chhapparwadi-II	90.15	98.38	98.00	98.38	98.38		98.38
166	Ghodadhroi	92.20	98.30	98.00	98.30	98.30		98.30
168	Khodapipar	52.22	55.27	55.20	55.27	55.27		55.27
169	Survo	93.75	99.85	99.00	99.50	99.85		99.85
170	Dondi	100.67	103.72	102.80	102.80	102.80		102.80
		Remark: 102.80m restricted due to protection work of U/S village Mota Vada is not completed due to agitation by the villagers.						
182	Sukhbhadar	103.10	109.20	108.20	108.70	109.20		109.20
183	Nyka (Wadhavan Bhogavo-I)	99.36	101.80	101.80	101.80	101.80	101.80	101.80
		Remark: 20 No. of gates are vertical, 14 No. of gates are automatic						
186	Nimbmani	131.45	134.50	134.20	134.50	134.50		134.50
187	Lim-Bhogavo-II	69.90	76.00	74.50	75.00	75.45		75.45
		Remark: Restricted level upto FSL of Botad branch canal						
197	Khedva	253.60	259.70	255.00	257.00	257.50		258.25
		Remark: Reservoir is not proposed to be filled up to FRL 259.70 m. as the rehabilitation of people under submergence is yet not completed.						

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2014 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
198	Sabali	40.70	43.75	41.50	42.50	43.50		43.75
199	Saran	33.95	37.00	36.50	36.50	37.00		37.00
200	Brahmani-II	36.27	44.50	42.50	43.00	43.00		43.00
		Remark: Restricted level upto FSL of Dhagadhra branch canal and also khatedar has not shifting of village Sundergadh due to rehabilitation problem						
201	Gorathiya (Mota Chekhala) Recharge Scheme	105.25	110.43	105.25	106.25	108.25		110.43
		Remark: The water is stored upto RL 110.43m during monsoon-2013 and 110.10 m. during monsoon 2012.						
202	Varansi	76.43	81.00	76.43	79.50	80.00		81.00

ANNEXURE - 1-D

Accompaniment to G.O.I. C.W.C's letter No. L/25/86-DSS/509 dated 13th May 1986.

CRITERIA AND GUIDELINES FOR EVACUATING STORAGE RESERVOIR SIZING LOW LEVEL OUTLETS AND INITIAL FILLING OF RESERVOIRS.

General :

All dams should be provided with low level outlets of adequate capacity to lower the reservoir water level to a specified elevation for inspection, maintenance and repairs to control the rate of reservoir pool rise during initial filling and for emergency draw down.

The draw down levels and the evacuation time shall be set forth for each project.

Criteria for evacuating facilities.

For lowering the water level for inspection and repairs when necessary the requirement would be to evacuate a major portion of the reservoir in such time so that after the water level is lowered, sufficient time is available for repairs before the water level rises due to higher inflows. For such a consideration the outlets should be at the lowest possible level and sufficient cater for the anticipated inflows.

Other factors to be taken into account are:

1. To control the rate of reservoir rise during initial filling and if necessary subsequently also.
2. To hold the reservoir at pre-determined levels for stage-wise initial filling.
3. Emergency draw down during initial filling or at a future date when distress conditions are noticed.

The low level outlets should be sized to maintain specific reservoir filling rates and also to hold the reservoir level reasonably constant at specified elevations during initial filling to accomplish a predetermined monitoring programme. The period during which the initial reservoir filling is to be done has to be decided and a detail programme drawn up. Flood routing studies with different frequency floods (lower floods) will have to be done. As such the low level outlets works should have discharge capacity sufficient to maintain reservoir filling rate to a pre-specified programme and to hold the reservoir levels reasonably constant for elevations above fifty percent of the height. Inflows in the reservoir should include a reasonable frequently flood which would be dependent on the anticipated filling period.

The capacity and level of low level outlets for emergency draw down during initial filling or at a future date when distress conditions are noticed has to be evaluated in each individual case separately.

For Structural safety the reduction in height of water which gives relief is important. For very large reservoirs this would mean very large capacity outlets for prompt evacuation. Sizing of outlets works should be accomplished in a systematic way considering the following aspects.

1. Project release requirements.
2. Economic benefits that can be derived from using the outlet works in routing the inflow design flood. This study may result in increase in outlet works capacity.
3. Initial filling required.
4. Evacuation Criteria:- This study to meet the evacuation criteria may result in further increase in capacity which may turn be beneficial in routing the inflow design flood.
5. After the above requirements are satisfied a study to take the advantage of the outlets works capacity for diversion requirements during construction and the multistage construction of outlet works is made.

Initial Filling of Reservoirs :

Initial reservoir filling is the first test of a dam to perform its, intended functions. As the sizing of the outlet works to meet the probable outflow requirements during initial filling has to be fixed during designs. The information on the desired rates of pool rise must also be available at the time their design requirements are established.

In order to monitor reservoir performance, the rate of filling should be controlled to the extent feasible to allow in accomplishing a pre-determined monitoring programme. Low level outlets should be located and sized to provide discharge capacity sufficient to maintain the reservoir filling rates specified by the initial filling criteria to hold reservoir levels reasonably constant for elevation above 50 percent of the hydraulic heights of the dam. Inflow into the reservoir should be assumed as the average of the mean monthly inflow in the selected filling period and reasonable frequency flood.

Reservoir filling criteria are established on dam. In general the objective as already stated above is to provide a planned programme with adequate time for monitoring and evaluating performance of the dam and its foundation as the reservoir is being filled for the first time.

The major factors to be considered in establishing initial filling criteria are as under:

- 1) Type of dam namely Concrete, Earth and Rockfill.
- 2) Geology of the dam foundation and reservoir and land-slide potential along the banks of the reservoir.
- 3) Hazard potential
- 4) Inflow characteristics controlled or uncontrolled.
- 5) Hydrology - flood patterns and seasonal based flows.
- 6) Release provisions for projects requirements flood release and emergency evacuation.
- 7) Type of instrumentation and provision for monitoring reading and evaluation time needed and response time.
- 8) Safe channel capacities down stream of the dam.
- 9) Characteristics of reservoir Storage.

Filling rates for concrete dams are much less restricted and are not normally specified for the bottom half of the depth of the reservoir impounded of the dam. Broadly the stage wise filling to be done as under .

The first stage consists of filling the reservoir upto MDDL. This filling can be done without restraint as there is no hazard potential to the public and economic development downstream of the dam. The second stage consists of filling the reservoir from MDDL to the crest of the spillway. The rate of the filling should be controlled and it has to be specified. The third stage consists of filling above the crest of the spillway upto the full reservoir level (FRL) which has also to be conducted in stages.

Concrete Dams

The first stage consists of filling the reservoir upto Minimum Draw Down Level (MDDL). This filling can be done without restraint.

The second stage consists of filling the reservoir from MDDL to the crest of spillway. The reservoir above MDDL should be gradually built up at a rate not exceeding 3 meters per fortnight depending upon the height of the dam and held at the level of crest of spillway in order to assess the behaviour of the structure on the basis of observed data and to take a decision about further storage.

This third stage consists of filling above the crest of the spillway and upto full reservoir level (FRL). Above the crest level of spillway the building upto the reservoir should be restricted to 0.3 meters (1 ft) in 48 hours and the same should be temporarily held at half the height between the crest of spillway and FRL to monitor and assess the behaviour of structure before further filling is resumed. The period for which the reservoir is held at this level will depend on the instrument response time.

In case of concrete dams having high earthen flanks the procedure suggested for earthen dams should be followed.

Earthen Dam :

The first stage consists of filling the reservoir upto MDDL. This filling can be done without restrain.

The second stage consists of filling the reservoir from MDDL to the crest of spillway. In case of earthen and rockfill dam, this stage filling shall be done in two parts.

The reservoir above MDDL should be gradually built at a rate not exceeding 3 meters per fortnight and filling should be temporarily stopped at 50 percent elevation from MDDL to crest of spillway in order to assess the behaviour of the structures on the basis of observed values and to take a decision about further storage.

After a decision is taken to continue the filling further building upto the storage should be done in gradual sub stage of 2 to 3 meters depending upon the height of the dam. Observations of pore pressure cells, uplift pressures, seepage quantum other instrumentation data should be carried out at each stage after allowing a suitable establishing period before going on to the next sub stage of filling.

The third stage consists of filling above the crest of the spillway upto the full reservoir level (FRL).

The rate of reservoir filling crest of spillway should be restricted to 0.3 meters (1 feet) in 48 hours. the reservoir should be temporarily held at half the height between FRL and crest of spillway for sufficient time for monitoring and evaluation performance of dam also taking into account instrument response time and to take a decision about further storage.

Evacuation Time :

Guidelines on this aspect should generally take into account the assessment of hazard potential and risk potential of the dam. However, in the Indian conditions where population growth in downstream areas is not controllable the hazard potential at the initial stage and its subsequent increase can not be assessed. In most cases, the dams would come under high hazard category.

Similarly risk is very difficult to classify because of many combinations of adverse conditions that may be involved at particular dam site and the type of dam. Classification is also recommended to be based on the height of dams so far as determination of risk potential is concerned and dams with a height of more than 50 meters are to be considered more important than those of height less than 50 meters.

For evacuating storage reservoirs sizing low-level outlets, three categories have been suggested is given in the table below. These assume a general balance between hazard and risk could be adjusted on the basis of detailed site specific studies.

Evacuation Time (in days):

Sr. No	Depth of Evacuation (from initial pool level)	Degree of Hazard or risk (Evacuation time in days)		
		High	Significant	Low
1.	25 percent	20	30	50
2.	50 percent	40	50	70
3.	75 percent	80	90	100

The above evacuation periods would generally be within the overall requirement to draw down the reservoir within a period of one to four months allowing sufficient time for carrying out inspection and repairs, before the water level rises due to higher inflows of monsoon.

In some exceptional case it may not be technically possible and economically feasible to provide the required draw down capability to meet the above criteria because of the size of the project (unusually small or large) or because some of special feature. In such a case the criteria regarding draw down level or the evacuation time could be altered to suit the site specific case if the result of studies so indicate.

ANNEXURE - 1 (F)

Hourly Information to be submitted to the concern Chief Engineer & Add. Secretary,
Chief Engineer (Central Gujarat) & Add. Secretary & Flood Control Cell, Gandhinagar.

District :-

Date :

Name of Scheme :-
& Scheme No. :-

Rule Level :-

Full Reservoir Level :-

Date & Time (1)	PWL in Meter (2)	<u>Gate Position</u> No. (3)	Opening in Mt (4)	Inflow (Cumecs) (5)	Outflow (Cumecs) (6)	Remarks (7)
08.00						
09.00						
10.00						
11.00						
12.00						
13.00						
14.00						
15.00						
16.00						
17.00						
18.00						
19.00						
20.00						
21.00						
22.00						
23.00						
24.00	And Up to 07.00 Hrs. of Next Day.					

Seal and Signature of
Superintending Engineer
Ukai Circle (Civil), Ukai

ANNEXURE - 1 (G)

Maximum Release Made After the Year 1990 in Major Dams of The Gujarat State

Sr. No.	District	Name of Dam	Date	Maximum Flood Discharge in Cumecs
1	Valsad	Damanganga	03-08-2004	17443.00
2	Tapi	Ukai	09-08-2006	25774.00
3	Narmada	Sardar Sarovar	07-09-1994	62296.00
4.	Narmada	Karjan	19-06-1994	4451.00
5	Chhotaudepur	Sukhi	23-08-1990	3510.00
6	Dahod	Kadana	12-08-2006	27079.00
7	Panchmahals	Panam	07-09-1994	9590.00
8	Mahisagar	Wanakbori	12-08-2006	32568.00
9	Aravalli	Watrak	07-09-2006	3398.00
10	Mehsana	Dharoi	17-07-1993	8920.00
11	Banaskantha	Dantiwada	07-09-2006	6800.00
12	Rajkot	Bhadar	07-08-2007	4496.00
13	Morbi	Machchhu-II	15-07-1994	3205.00
14	Bhavnagar	Shetrunji	30-07-2006	3024.00
15	Banaskantha	Sipu	09-07-2007	566.33
16	Aravalli	Hathmati	19-08-2006	365.66
17	Aravalli	Meshwo	20-08-1994	155.02
18	Jamnagar	Und-I	14-07-1994	6900.00
19	Morbi	Machhu-I	18-09-2008	1297.00