

केवल शासकीय कार्य हेतु
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सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
जल शक्ति मंत्रालय
MINISTRY OF JAL SHAKTI



केन्द्रीय जल आयोग
CENTRAL WATER COMMISSION
नर्मदा बेसिन संगठन, भोपाल
NARMADA BASIN ORGANISATION, BHOPAL
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एकीकृत जल वर्ष पुस्तिका
जून 2019 – मई 2020
Integrated Water Year Book
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प्रस्तावना

राष्ट्रीय जल नीति में जल संसाधन से संबंधित आँकड़ों के एकत्रीकरण एवं उनकी उपलब्धता हेतु सूचना केंद्र के मानकीकरण पर जोर दिया गया है ताकि इस कार्य में संलग्न केंद्र सरकार एवं राज्य सरकार के विभिन्न विभागों के उच्च स्तरीय आँकड़ें सुगमता से उपलब्ध हो सकें तथा इन आँकड़ों के विश्लेषित किये जाने की क्षमता बढ़ाई जा सके। इसका महत्त्व इसलिए भी है कि इससे जल संसाधनों के अधिकतम उपयोग हेतु विभिन्न कार्यों के लिए लगातार बढ़ती माँग के परिपेक्ष्य में प्रभावीयोजनाएँ बनाई जा सकती हैं।

केंद्रीय जल आयोग जल संसाधनों के विकास में संलग्न भारत सरकार, जल शक्ति मंत्रालय, जल संसाधन, नदी विकास एवं गंगा संरक्षण विभाग के अंतर्गत देश की एक शीर्षस्थ तकनीकी संस्था है। इस संस्था के द्वारा जल वैज्ञानिकी आँकड़ों के एकत्रण से लेकर परियोजनाओं के मूल्यांकन, अभिकल्पन, प्रबोधन तथा परिचालन से संबंधित कार्य किये जा रहे हैं। नर्मदा एवं उनकी सहायक नदियों पर स्थित 14 स्थलों पर नर्मदा बेसिन संगठन के अंतर्गत नर्मदा मंडल, भोपाल द्वारा एवं नर्मदा बेसिन पर स्थित 2 स्थलों पर माही तापी बेसिन संगठन, गांधीनगर के अंतर्गत कार्यरत तापी मंडल, सूरत द्वारा जल वैज्ञानिकी आँकड़े एकत्रित किये जाते हैं, जिनका संकलन इस पुस्तिका में किया गया है। इन आँकड़ों के अतिरिक्त मध्य प्रदेश के जल संसाधन विभाग के अंतर्गत नर्मदा बेसिन में स्थित स्थल बिजौरा के आँकड़ों के साथ कुल 17 जल वैज्ञानिकी स्थलों के आँकड़े इस पुस्तिका में संकलित किये गए हैं।

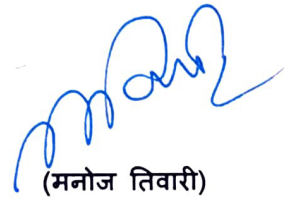
इस पुस्तिका में जल संसाधन सूचना प्रणाली का विकास (DWRIS) के अंतर्गत स्थापित किये गए 32 नवीन जल वैज्ञानिक प्रेक्षण स्थलों के आँकड़े भी प्रथम बार सम्मिलित किये गए हैं।

जल वर्ष पुस्तिका 2019-20 को नदी आँकड़ा निदेशालय, केंद्रीय जल आयोग, नई दिल्ली के द्वारा जारी किये गए मार्गदर्शन के अनुसार तथा जल संसाधन सूचना प्रणाली (WIMS) सॉफ्टवेयर के द्वारा संकलित व परिष्कृत कर प्रदर्शित किया गया है।

इस पुस्तक की समस्त जानकारी के एकत्रण, संकलन, विश्लेषण एवं संपादन से सम्बद्ध केंद्रीय जल आयोग के अधिकारियों एवं कर्मचारियों के द्वारा किया गया अथक परिश्रम एवं समर्पण सराहनीय है। मैं, केंद्र एवं राज्य सरकार के विभिन्न विभाग यथा- केंद्रीय भू जल बोर्ड, केंद्रीय प्रदूषण नियंत्रण बोर्ड, जनगणना विभाग, नर्मदा घाटी विकास प्राधिकरण तथा पर्यावरण प्रदूषण नियंत्रण संगठन आदि के साथ उन सभी का आभारी हूँ, जिन्होंने इस पुस्तक से संबंधित विविध जानकारियाँ उपलब्ध कराने तथा प्रकाशन में सहयोग एवं सहायता प्रदान की गई।

अगस्त 2021

स्थान : भोपाल



(मनोज तिवारी)

अधीक्षण अभियंता (समन्वय)

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LIST OF SYMBOLS

CWC	:	Central Water Commission
IMD	:	India Meteorological Department
WRD of GoMP	:	Water Resources Department of Government of Madhya Pradesh
NCA	:	Narmada Control Authority
MCM	:	Million Cubic Metres
Cumec	:	Cubic Metre Per Second
Ha	:	Hectare
ha ²	:	Square Hectare
ha ³	:	Cubic Hectare (Million cubic metres)
M.S.L.	:	Mean sea level
F	:	Float Observation
FF	:	Flood forecasting
G	:	Gauge
GTS	:	Great Trigonometrical Survey
Hrs	:	Hours
IWYB	:	Integrated Water Year Book
Hm ³	:	Hectometre Cube = Million Cubic Metre
Mm	:	Millimetre
M	:	Metre
m ³ /s	:	Cubic Metre Per Second
°	:	Degree (00°)
'	:	Minute (00')
”	:	Second (00”)
80 key	:	80 key Hydrological Station Scheme
67 key	:	67 key Hydrological Station Scheme

1 Introduction

1.1 General

Central Water Commission (CWC) is conducting hydrological observations on major river basins under National Network which was initially started under 80 Key Stations, 163 Key Stations and Flood Forecasting schemes. Presently hydrological sites are operated under Plan & Non Plan schemes named "*Development of Water Resources Information Systems*" and "*Flood Forecasting*" of Central Water Commission. This Water Year Book presents data of 49 hydrological observation stations for the year 2019-20 in Narmada basin. The data of 49 hydrological observation sites, which is presented in this publication, have been collected by Narmada Division, Bhopal & Tapi Division, Surat of CWC. Out of 49 sites in Narmada Basin, 02 sites viz., Orsang at Chandwada and Narmada at Garudeshwar are being maintained by Tapi Division, Surat; 01 site named Narmada at Bijora is being maintained by WRD, Govt of Madhya Pradesh; while the remaining 46 sites are being maintained by Narmada Division, Bhopal. Jurisdiction of Narmada Division is as given in Figure 2- 3.

State Government Sites in Madhya Pradesh are operated by the Director (Hydromet), WRD, Bhopal. The data of one site i.e. Narmada at Bijora have been obtained from the State Government and included in the Water Year Book.

The classification and scheme wise distribution of hydrological observation stations is presented in Table 1. 1 and Table 1. 2 respectively.

Table 1. 1 Classification of Hydrological Observation Stations

S. No.	Site	River	Basin	Code	Type
1	Narmada at Dindori	Narmada	Narmada	CW1NAU000672	GDQ
2	Narmada at Manot	Narmada	Narmada	CW1NAU000378	GDSQ
3	Burhner at Mohgaon	Burhner	Narmada	CW1NAU000390	GDSQ
4	Banjar at Bamni	Banjar	Narmada	CW1NAU000781	GDSQ
5	Hiran at Patan	Hiran	Narmada	CW1NAU000530	GDQ
6	Sher at Belkhedi	Sher	Narmada	CW1NAU000395	GDQ
7	Narmada at Barmanghat	Narmada	Narmada	CW1NAU000188	GDSQ
8	Shakkar at Gadarwara	Shakkar	Narmada	CW1NAU000391	GDSQ
9	Narmada at Sandia	Narmada	Narmada	CW1NAU000450	GDSQ
10	Narmada at Hoshangabad	Narmada	Narmada	CW1NAM000278	GDSQ
11	Ganjal at Chhidgaon	Ganjal	Narmada	CW1NAM000379	GDQ
12	Narmada at Handia	Narmada	Narmada	CW1NAM000392	GDSQ
13	Kundi at Kogaon	Kundi	Narmada	CW1NAM000442	GDQ

S. No.	Site	River	Basin	Code	Type
14	Narmada at Mandleshwar	Narmada	Narmada	CW1NAM000189	GDSQ
15	Narmada at Garudeshwar	Narmada	Narmada	CW1NAL000434	GDSQ
16	Orsang at Chandwada	Orsang	Narmada	CW1NAL000513	GDSQ
17	Narmada at Bijora	Narmada	Narmada	--	GD
18	Matiyarai at Katangatola	Matiyarai	Narmada	CW1NAU001464	GD
19	Hiran at Singaldeep	Hiran	Narmada	CW1NAU001483	GD
20	Saner at Chargwan	Saner	Narmada	CW1NAU001451	GD
21	Belkund at Ghughra	Belkund	Narmada	CW1NAU001457	GD
22	Gaur at Bhalwara	Gaur	Narmada	CW1NAU001445	GDQ
23	Chakrar at Gadasarai	Chakrar	Narmada	CW1NAU001456	GD
24	Silgi at Kotrai	Silgi	Narmada	CW1NAU001468	GD
25	Tenduni at Maheshwar	Tenduni	Narmada	CW1NAU001470	GD
26	Machhrewa at Bakori	Machhrewa	Narmada	CW1NAU001444	GD
27	Dudhi at Panagar	Dudhi	Narmada	CW1NAU001478	GD
28	Palakmati at Sohagpur	Palakmati	Narmada	CW1NAU001484	GD
29	Denva at Matkuli	Denva	Narmada	CW1NAU001473	GD
30	Indra at Khapariya	Indra	Narmada	CW1NAU001467	GD
31	Sher at Kachhara	Sher	Narmada	CW1NAU001463	GD
32	Hathed at Misrod	Hathed	Narmada	CW1NAM001475	GD
33	Jamner at Sandalpur	Jamner	Narmada	CW1NAM001480	GD
34	Machna at Shahpur	Machna	Narmada	CW1NAU001482	GD
35	Sip at Dholpur	Sip	Narmada	CW1NAM001454	GD
36	Kolar at Mahgaon	Kolar	Narmada	CW1NAM001471	GD
37	Datuni at Dudhwas	Datuni	Narmada	CW1NAM001455	GD
38	Machak at Barangi	Machak	Narmada	CW1NAM001446	GD
39	Chhota Tawa at Bhamgarh	Chhota Tawa	Narmada	CW1NAM001450	GD
40	Kalimachak at Charuwa	Kalimachak	Narmada	CW1NAM001452	GD

S. No.	Site	River	Basin	Code	Type
41	Tawa at Tawakathi	Tawa	Narmada	CW1NAU001485	GD
42	Karam at Dahiwar	Karam	Narmada	CW1NAM001453	GD
43	Borad at Thikri	Borad	Narmada	CW1NAM001486	GD
44	Man at Gopalpura	Man	Narmada	CW1NAM001459	GD
45	Deb at Khajuri	Deb	Narmada	CW1NAM001465	GD
46	Abna at Khandwa	Abna	Narmada	CW1NAM001466	GD
47	Choral at Barwah	Choral	Narmada	CW1NAM001449	GD
48	Kaner at Mendhikheda	Kaner	Narmada	CW1NAM001474	GD
49	Beda at Satwadi	Beda	Narmada	CW1NAM001481	GD

Table 1.2 Schemewise Distribution of Sites

S. No.	Name of Site	Station Code No.	Scheme
I	2711 Flood Forecasting		
1.	Narmada at Dindori	CW1NAU000672	Plan
2.	Narmada at Manot	CW1NAU000378	Plan
3.	Burhner at Mohgaon	CW1NAU000390	Plan
4.	Banjar at Bamni	CW1NAU000781	Plan
II	2701 –DWRIS-Data Collection		
5.	Orsang at Chandwada	CW1NAL000513	Non Plan
6.	Hiran at Patan	CW1NAU000530	Non Plan
7.	Sher at Belkhedi	CW1NAU000395	Non Plan
8.	Narmada at Barmanghat	CW1NAU000188	Non Plan
9.	Shakkar at Gadarwara	CW1NAU000391	Non Plan
10.	Narmada at Sandia	CW1NAU000450	Non Plan
11.	Narmada at Hoshangabad	CW1NAM000278	Non Plan
12.	Ganjal at Chhidgaon	CW1NAM000379	Non Plan
13.	Narmada at Handia	CW1NAM000392	Non Plan
14.	Kundi at Kogaon	CW1NAM000442	Non Plan
15.	Narmada at Mandleshwar	CW1NAM000189	Non Plan
16.	Narmada at Garudeshwar	CW1NAL000434	Non Plan
III	XII Five Year DWRIS Plan		

17.	Matiyarai at Katangatola	CW1NAU001464	Plan
18.	Hiran at Singaldeep	CW1NAU001483	Plan
19.	Saner at Chargwan	CW1NAU001451	Plan
20.	Belkund at Ghughra	CW1NAU001457	Plan
21.	Gaur at Bhalwara	CW1NAU001445	Plan
22.	Chakrar at Gadasarai	CW1NAU001456	Plan
23.	Silgi at Kotrai	CW1NAU001468	Plan
24.	Tenduni at Maheshwar	CW1NAU001470	Plan
25.	Machhrewa at Bakori	CW1NAU001444	Plan
26.	Dudhi at Panagar	CW1NAU001478	Plan
27.	Palakmati at Sohagpur	CW1NAU001484	Plan
28.	Denva at Matkuli	CW1NAU001473	Plan
29.	Indra at Khapariya	CW1NAU001467	Plan
30.	Sher at Kachhara	CW1NAU001463	Plan
31.	Hathed at Misrod	CW1NAM001475	Plan
32.	Jamner at Sandalpur	CW1NAM001480	Plan
33.	Machna at Shahpur	CW1NAU001482	Plan
34.	Sip at Dholpur	CW1NAM001454	Plan
35.	Kolar at Mahgaon	CW1NAM001471	Plan
36.	Datuni at Dudhwas	CW1NAM001455	Plan
37.	Machak at Barangi	CW1NAM001446	Plan
38.	Chhota Tawa at Bhamgarh	CW1NAM001450	Plan
39.	Kalimachak at Charuwa	CW1NAM001452	Plan
40.	Tawa at Tawakathi	CW1NAU001485	Plan
41.	Karam at Dahiwar	CW1NAM001453	Plan
42.	Borad at Thikri	CW1NAM001486	Plan
43.	Man at Gopalpura	CW1NAM001459	Plan
44.	Deb at Khajuri	CW1NAM001465	Plan
45.	Abna at Khandwa	CW1NAM001466	Plan
46.	Choral at Barwah	CW1NAM001449	Plan
47.	Kaner at Mendhikheda	CW1NAM001474	Plan
48.	Beda at Satwadi	CW1NAM001481	Plan
III	Govt. of Madhya Pradesh		
49.	Narmada at Bijora	..	State Govt. Site

The river basin description is given in Section-2

1.2 Organisation of the Water Year Book

The Water Year Book gives detailed description of river basin, its river system, climatic characteristics, geology along with methodology of stream flow data collection, its availability and hydrological data observed at various stations during the year. The station wise data sheet presents various parameters like monthly flow summary, 10-daily as well as monthly mean flows besides peak flow results. The analyzed data has also been presented in form of charts and maps.

The Year Book runs under four sections as given below.

Section-1: Introduction

Section-2: Basin Description

Section-3: Stream Flow Data

Section-4: Hydrological Data

1.3 New Sites Under NBO

Under XII Five Year Plan following new sites were opened under scheme DWRIS which are shown in Table 1.3.

Table 1.3 List of New Sites.

S.No.	Name of Site	State	District	HO/FF/Both	River on which located	River Basin	Type - G/GD/GDS/GDSQ/GQ	Latitude	Longitude
1	Katangatola	M.P.	Mandla	HO	Matiyarai	Narmada	GD	22°31'03"	80°24'23"
2	Narayanganj	M.P.	Mandla	HO	Balai	Narmada	G	22°50'02"	80°14'60"
3	Singaldeep	M.P.	Jabalpur	HO	Hiran	Narmada	GD	23°23'16'	79°54'54"
4	Matamar	M.P.	Jabalpur	HO	Pariyat	Narmada	G	23°13'37"	80°01'25"
5	Chargwan	M.P.	Jabalpur	HO	Saner	Narmada	GD	23°03'20"	79°35'55"
6	Ghughra	M.P.	Jabalpur	HO	Belkund	Narmada	GD	23°29'21"	80°11'52"
7	Bhalwara	M.P.	Jabalpur	HO	Gaur	Narmada	GDQ	23°06'32"	79°58'18"
8	Maalpur	M.P.	Dindori	HO	Narmada	Narmada	GQ	23°03'32"	80°50'23"
9	Gadasarai	M.P.	Dindori	HO	Chakrar	Narmada	GD	22°49'35"	81°19'28"
10	Gidha	M.P.	Dindori	HO	Machrar	Narmada	G	22°54'31"	81°11'38"
11	Kotrai	M.P.	Dindori	HO	Silgi	Narmada	GD	22°59'07"	80°35'46"
12	Baratola	M.P.	Mandla	HO	Halon	Narmada	G	22°36'26"	80°42'16"
13	Parasatola	M.P.	Mandla	HO	Phen	Narmada	G	22°31'44"	80°59'30"
14	Gorakhpur	M.P.	Dindori	HO	Narmada	Narmada	GQ	22°46'12"	81°27'17"
15	Maheshwar	M.P.	Raisen	HO	Tenduni	Narmada	GD	22°58'45"	78°19'15"
16	Barna Dam	M.P.	Raisen	HO	Barna	Narmada	G	23°03'00"	78°03'36"
17	Bakori	M.P.	Narsingpur	HO	Machhrewa	Narmada	GD	22°50'31"	79°21'42"
18	Panagar	M.P.	Narsingpur	HO	Dudhi	Narmada	GD	22°50'13"	78°36'10"
19	Sohagpur	M.P.	Hoshangabad	HO	Palakmati	Narmada	GD	22°42'26"	78°11'39"
20	Matkuli	M.P.	Hoshangabad	HO	Denva	Narmada	GD	22°35'08"	78°27'33"
21	Imaliya	M.P.	Narsingpur	HO	Umar	Narmada	G	22°59'53"	79°25'47"
22	Naseerabad	M.P.	Hoshangabad	HO	Narmada	Narmada	G	22°49'08"	77°58'12"
23	Khapariya	M.P.	Hoshangabad	HO	Indra	Narmada	GD	22°44'45"	78°09'33"
24	Kachhara	M.P.	Narsingpur	HO	Sher	Narmada	GD	22°49'26"	79°27'27"
25	Misrod	M.P.	Hoshangabad	HO	Hathed	Narmada	GD	22°38'34"	77°33'49"

S.No.	Name of Site	State	District	HO/FF/Both	River on which located	River Basin	Type - G/GD/GDS/GDSQ/GQ	Latitude	Longitude
26	Sandalpur	M.P.	Dewas	HO	Jamner	Narmada	GD	22°34'49"	76°58'22"
27	Shahpur	M.P.	Betul	HO	Machna	Narmada	GD	22°11'43"	77°53'54"
28	Dholpur	M.P.	Sehore	HO	Sip	Narmada	GD	22°36'21"	77°11'44"
29	Mahgaon	M.P.	Sehore	HO	Kolar	Narmada	GD	22°41'50"	77°21'60"
30	Awalghat	M.P.	Sehore	HO	Narmada	Narmada	G	22°38'58"	77°29'18"
31	Dudhwas	M.P.	Dewas	HO	Datuni	Narmada	GD	22°28'20"	76°47'14"
32	Barangi	M.P.	Harda	HO	Machak	Narmada	GD	22°13'14"	76°56'38"
33	Bhamgarh	M.P.	Khandwa	HO	Chhota Tawa	Narmada	GD	21°50'36"	76°30'16"
34	Charuwa	M.P.	Harda	HO	Kalimachak	Narmada	GD	22°04'26"	76°54'53"
35	Veerpur	M.P.	Sehore	HO	Kolar	Narmada	G	22°58'15"	77°20'47"
36	Tawakathi	M.P.	Betul	HO	Tawa	Narmada	GD	22°12'02"	77°57'21"
37	Dahiwar	M.P.	Dhar	HO	Karam	Narmada	GD	22°13'40"	75°31'06"
38	Thikri	M.P.	Barwani	HO	Borad	Narmada	GD	22°04'30"	75°24'18"
39	Gopalpura	M.P.	Dhar	HO	Man	Narmada	GD	22°16'18"	75°06'17"
40	Indirasagar Dam	M.P.	Khandwa	HO	Narmada	Narmada	G	22°16'56"	76°28'14"
41	Khajuri	M.P.	Barwani	HO	Deb	Narmada	GD	21°58'15"	75°15'29"
42	Khandwa	M.P.	Khandwa	HO	Abna	Narmada	GD	21°48'55"	76°20'20"
43	Barwah	M.P.	Khargone	HO	Choral	Narmada	GD	22°14'46"	76°03'06"
44	Mendhikheda	M.P.	Khargone	HO	Kaner	Narmada	GD	22°24'31"	76°13'11"
45	Satwadi	M.P.	Khargone	HO	Beda	Narmada	GD	21°58'59"	75°42'13"

2 Narmada Basin Description

2.1 Geographical Description of Narmada Basin

The Narmada is the largest West flowing and fifth largest river of India. It drains a large area in Madhya Pradesh besides some area in the states of Maharashtra and Gujarat. The Narmada basin lies between East Longitudes 72° 32' to 81° 45' and North Latitudes 21° 20' to 23° 45'. It flows through Deccan trap in between Vindhya and Satpura ranges of hills before falling into the Gulf of Cambay in the Arabian Sea.

The Narmada drains an area of 98796 sq. km. out of which nearly 87% lies in Madhya Pradesh. The state wise distribution of drainage area is shown in Table 2.1.

Table 2.1 State wise Distribution of Drainage Area

S. No.	Name of State	Drainage Area (sq. km)	Percentage
1.	Madhya Pradesh	85859	86.9
2.	Maharashtra	1538	1.5
3.	Gujarat	11399	11.6
	Total	98796	100

The details of CWC hydrological observation stations are given in Table 2.2 Further, there are 31 gauge/gauge and discharge sites being maintained by State Government of Madhya Pradesh and 12 gauge/gauge and discharge sites being maintained by State Government of Gujarat in Narmada basin. The details of the sites maintained by the State Government of Madhya Pradesh are given in Table 2.3 The line diagram of Narmada basin showing the observation stations is given in Figure 2-1.

Table 2.2 Central Water Commission and Govt. of MP Sites.

S. No.	Name of Site	Station Code No.	Scheme
1.	Narmada at Dindori	CW1NAU000672	2711 Flood Forecasting (Plan)
2.	Narmada at Manot	CW1NAU000378	2711 Flood Forecasting (Plan)
3.	Burhner at Mohgaon	CW1NAU000390	2711 Flood Forecasting (Plan)
4.	Banjar at Bamni	CW1NAU000781	2711 Flood Forecasting (Plan)
5.	Narmada at Bijora	--	Govt. of MP

S. No.	Name of Site	Station Code No.	Scheme
6.	Hiran at Patan	CW1NAU000530	2701 DWRIS Data Collection (Non Plan)
7.	Sher at Belkhedi	CW1NAU000395	2701 DWRIS Data Collection (Non Plan)
8.	Narmada at Barmanghat	CW1NAU000188	2701 DWRIS Data Collection (Non Plan)
9.	Shakkar at Gadarwara	CW1NAU000391	2701 DWRIS Data Collection (Non Plan)
10.	Narmada at Sandia	CW1NAU000450	2701 DWRIS Data Collection (Non Plan)
11.	Narmada at Hoshangabad	CW1NAU000450	2701 DWRIS Data Collection (Non Plan)
12.	Ganjal at Chhidgaon	CW1NAM000379	2701 DWRIS Data Collection (Non Plan)
13.	Narmada at Handia	CW1NAM000392	2701 DWRIS Data Collection (Non Plan)
14.	Kundi at Kogaon	CW1NAM000442	2701 DWRIS Data Collection (Non Plan)
15.	Narmada at Mandleshwar	CW1NAM000189	2701 DWRIS Data Collection (Non Plan)
16.	Narmada at Garudeshwar	CW1NAL000434	2701 DWRIS Data Collection (Non Plan)
17.	Orsang at Chandwada	CW1NAL000513	2701 DWRIS Data Collection (Non Plan)
18.	Matiyarai at Katangatola	CW1NAU001464	DWRIS Data Collection (Plan)
19.	Hiran at Singaldeep	CW1NAU001483	DWRIS Data Collection (Plan)
20.	Saner at Chargwan	CW1NAU001451	DWRIS Data Collection (Plan)

S. No.	Name of Site	Station Code No.	Scheme
21.	Belkund at Ghughra	CW1NAU001457	DWRIS Data Collection (Plan)
22.	Gaur at Bhalwara	CW1NAU001445	DWRIS Data Collection (Plan)
23.	Chakrar at Gadasarai	CW1NAU001456	DWRIS Data Collection (Plan)
24.	Silgi at Kotrai	CW1NAU001468	DWRIS Data Collection (Plan)
25.	Tenduni at Maheshwar	CW1NAU001470	DWRIS Data Collection (Plan)
26.	Machhrewa at Bakori	CW1NAU001444	DWRIS Data Collection (Plan)
27.	Dudhi at Panagar	CW1NAU001478	DWRIS Data Collection (Plan)
28.	Palakmati at Sohagpur	CW1NAU001484	DWRIS Data Collection (Plan)
29.	Denva at Matkuli	CW1NAU001473	DWRIS Data Collection (Plan)
30.	Indra at Khapariya	CW1NAU001467	DWRIS Data Collection (Plan)
31.	Sher at Kachhara	CW1NAU001463	DWRIS Data Collection (Plan)
32.	Hathed at Misrod	CW1NAM001475	DWRIS Data Collection (Plan)
33.	Jamner at Sandalpur	CW1NAM001480	DWRIS Data Collection (Plan)
34.	Machna at Shahpur	CW1NAU001482	DWRIS Data Collection (Plan)
35.	Sip at Dholpur	CW1NAM001454	DWRIS Data Collection (Plan)
36.	Kolar at Mahgaon	CW1NAM001471	DWRIS Data Collection (Plan)
37.	Datuni at Dudhwas	CW1NAM001455	DWRIS Data Collection (Plan)
38.	Machak at Barangi	CW1NAM001446	DWRIS Data Collection (Plan)
39.	Chhota Tawa at Bhamgarh	CW1NAM001450	DWRIS Data Collection (Plan)
40.	Kalimachak at Charuwa	CW1NAM001452	DWRIS Data Collection (Plan)
41.	Tawa at Tawakathi	CW1NAU001485	DWRIS Data Collection (Plan)
42.	Karam at Dahiwar	CW1NAM001453	DWRIS Data Collection (Plan)
43.	Borad at Thikri	CW1NAM001486	DWRIS Data Collection (Plan)
44.	Man at Gopalpura	CW1NAM001459	DWRIS Data Collection (Plan)
45.	Deb at Khajuri	CW1NAM001465	DWRIS Data Collection (Plan)
46.	Abna at Khandwa	CW1NAM001466	DWRIS Data Collection (Plan)
47.	Choral at Barwah	CW1NAM001449	DWRIS Data Collection (Plan)

S. No.	Name of Site	Station Code No.	Scheme
48.	Kaner at Mendhikheda	CW1NAM001474	DWRIS Data Collection (Plan)
49.	Beda at Satwadi	CW1NAM001481	DWRIS Data Collection (Plan)

Table 2.3 State Government Sites

S. No.	Station Name	Type	S. No.	Station Name	Type
1	Narmada at Mortakka	GDS	17	Beda at Lower Beda	GD
2	Narmada at Sankalghat	GD	18	Undri at Gadigatter	GD
3	Narmada at Jansighat	GD	19	Jamner at Sandalpur	GD
4	Narmada at Jamtara	GD	20	Ganjal at Chhidgaon	G
5	Narmada at Bargi	GD	21	Beda at Upper Beda	GD
6	Narmada at Mandla	GD	22	Kolar at Satrana	GD
7	Narmada at Manot	GD	23	Kolar at Lawakheda	G
8	Narmada at Bijora	GD	24	Barna at Bareli	GD
9	Hathni at Tikola	G	25	Tawa at Bagratawa	G
10	Hathni at Hatnia	GD	26	Tendoni at Maheshwar	GD
11	Sukari at Sukkad	G	27	Banjar at Hirdayanagar	G
12	Deb at Lingwa	G	28	Pariyat at Tikheria	G
13	Man at Ajandiman	GD	29	Banjar at Bamni Banjar	G
14	Kundia at Badi	G	30	Burhner at Parastala	G
15	Kundi at Dejla Dewda	G	31	Kharmer at Shakkar	G
16	Man at Man Project	GD			

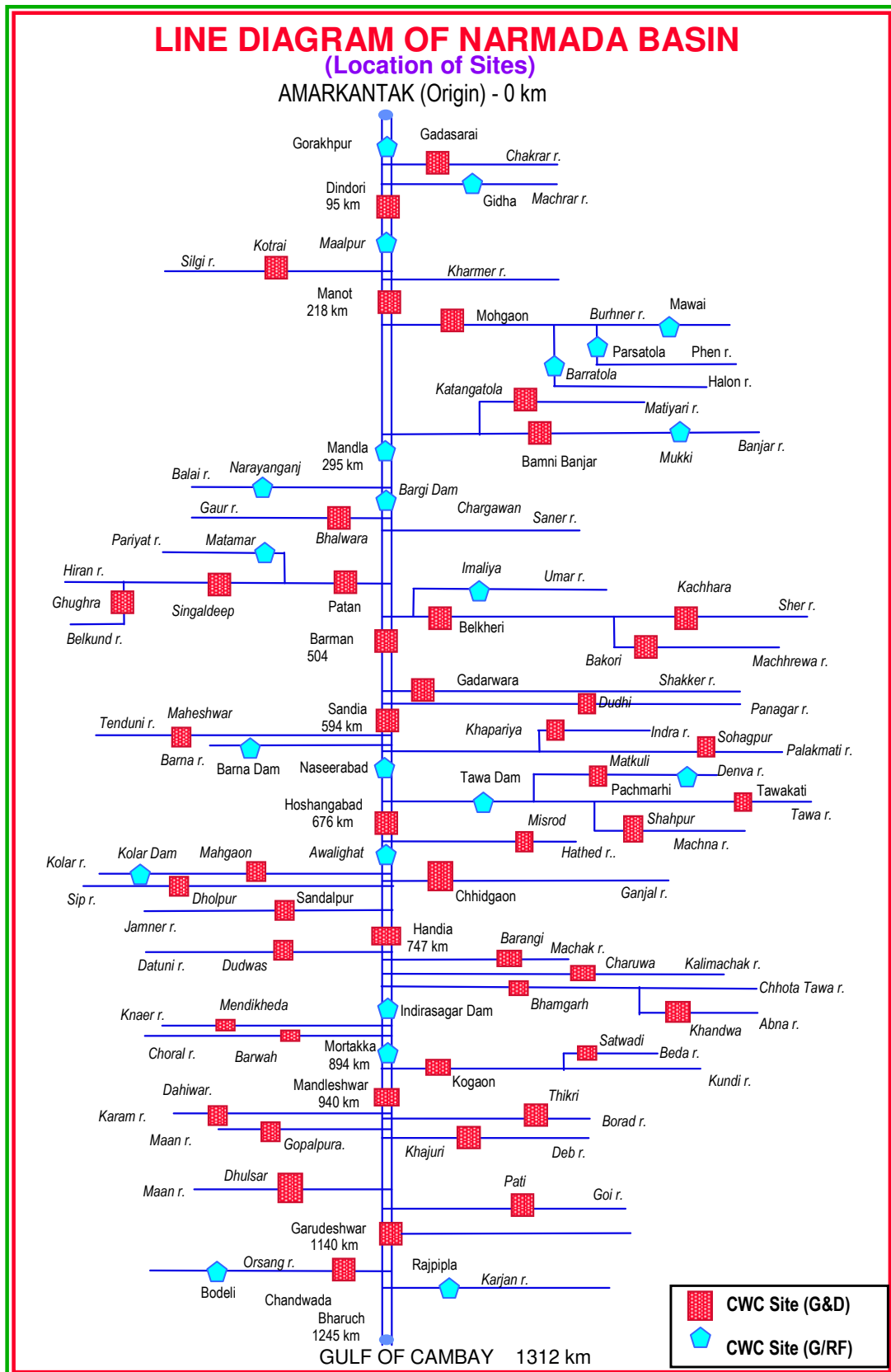


Figure 2-1 Line Diagram of Narmada Basin (Location of Sites and Code Numbers)

2.2 Description of the River System

The Narmada originates from a Kund (spring) at an elevation of 1057 m at Amarkantak in the Maikal hill in Anuppur district of Madhya Pradesh and flows through Madhya Pradesh, Maharashtra and Gujarat between Vindhya and Satpura hill ranges before falling into the Gulf of Cambay in the Arabian Sea, about 10 km north of Bharuch, Gujarat. The total length of this west flowing river from its origin to its outfall into the Arabian Sea is 1312 km. For the first 1079 km it flows in Madhya Pradesh and thereafter forms the common boundary between Madhya Pradesh and Maharashtra for 35 km, and Maharashtra and Gujarat for 39 km. In Gujarat State it stretches for 159 km.

There are 41 important tributaries to the Narmada river. Significant among them are Burhner, Banjar, Hiran, Tawa, Chhota Tawa, Orsang and Kundi which are major tributaries having catchment area more than 3500 sq. km. The remaining tributaries are having catchment area ranging from 500 to 2500 sq. km the catchment area, length and elevation of the origin of the important tributaries are indicated in Table 2.4.

Table 2.4 Important Tributaries

S. No	Tributary	Bank	Elevation of Origin above MSL (m)	Catchment Area (km ²)	Total length from origin (km)
1	Kharmer	Left	-	557	64.0
2	Silgi	Right	-	531	65.0
3	Burhner	Left	900	4228	177.0
4	Banjar	Left	600	3282	183.0
5	Balai	Right	-	531	46.0
6	Temur	Left	550	892	54.0
7	Gaur	Right	690	1107	79.5
8	Soner	Left	-	581	51.0
9	Hiran	Right	500	4795	188.0
10	Sher	Left	650	2903	129.0
11	Biranjo	Right	-	1172	62.0
12	Shakkar	Left	900	2294	161.0
13	Dudhi	Left	900	1542	129.0
14	Sukhri	Left	-	609	39.0
15	Tendoni	Right	500	1633	177.0
16	Barna	Right	450	1789	105.0
17	Tawa	Left	600	6338	172.0
18	Hather	Left	-	645	37.5
19	Kolar	Right	600	1348	101.0
20	Ganjaj	Left	700	1931	89.0
21	Sip	Right	-	879	45.0

S. No	Tributary	Bank	Elevation of Origin above MSL (m)	Catchment Area (km ²)	Total length from origin (km)
22	Jamner	Right	470	671	30.0
23	Chankesher	Right	600	1249	30.0
24	Anjal	Left	-	1203	62.5
25	Machak	Left	550	1112	87.5
26	Chhota Tawa	Left	400	5055	169.0
27	Khari	Right	-	754	41.0
28	Kenar	Right	-	1581	62.5
29	Kaveri	Left	-	954	32.5
30	Choral	Right	-	601	55.0
31	Kharkia	Left	-	1099	24.0
32	Kundi	Left	900	3973	120.0
33	Karan	Right	-	858	45.0
34	Board	Left	-	866	62.5
35	Man	Right	550	1529	89.0
36	Deb	Left	350	969	82.5
37	Uri	Right	-	2004	74.0
38	Goi	Left	800	1892	129.0
39	Hatni	Right	350	1944	30.0
40	Orsang	Right	300	3946	101.0
41	Karjan	Left	200	1490	93.0

2.3 Climate Characteristics

2.3.1 Temperature

Temperature of Narmada Basin varies like any other part of Central India. The difference between the maximum & minimum temperature, in any part of the basin, is quite pronounced. The temperature is maximum in the month of May and minimum in the month of January. In general, the upper Narmada Basin records lower temperature as compared to middle basin. In lower section of the basin, the influence of the sea is prominent, and temperature though lower than the middle basin, is still higher than the upper reaches of Narmada River. The temperature profile in the basin is given in the Figure 2-4 and Table 2.5.

Table 2.5 Temperature Data of Narmada Basin (From 2009 -2019.)

Month/ Location	Mean Monthly Maximum Temperature (°C)					Mean Monthly Minimum Temperature (°C)				
	HO	BET	KHN	JA	VA	HO	BET	KHN	JA	VA
January	27	27	29	27	30	12	15	16	13	18
February	32	30	33	31	34	15	18	20	17	21
March	36	34	37	35	37	20	22	24	21	25
April	41	39	41	40	41	25	26	28	27	28
May	43	40	42	43	41	30	29	31	31	30
June	38	35	38	39	37	29	27	29	30	29
July	31	28	31	32	32	25	24	25	25	27
August	30	27	30	30	31	23	22	24	24	26
September	31	29	32	31	32	22	22	24	23	26
October	33	30	33	32	35	19	20	22	20	26
November	30	29	32	30	33	16	18	20	17	23
December	28	27	30	27	30	12	15	17	13	19
Annual Mean	33.3	31.3	34	33.1	34.4	20.7	21.5	23.3	21.8	24.8

Source- www.worldweatheronline.com

HO : HOSHANGABAD

BET : BETUL

KHN : KHANDWA

JA : JABALPUR

VA : VADODARA

2.3.2 Rainfall

Rainfall is heavy in the upper hilly and upper plains areas of the basin. It gradually decreases towards the lower plains and the lower hilly areas and again increases towards the coast and south-western portions of the basin Figure 2-5.

In the upper hilly areas, the annual rainfall, in general, is more than 1400 mm but it goes up to 1650 mm in some parts. In the upper plains, near Jabalpur to near Punasa dam site, the annual rainfall decreases from 1400 mm to less than 1000 mm with the high rainfall zone around Pachmarhi where the annual rainfall exceeds 1800 mm. In the lower plains the annual rainfall decreases rapidly from 1000 mm at the eastern and to less than 650 mm around Barwani. This area represents the most arid part of the Narmada Basin. In the lower hill areas, the annual rainfall again increases to a little over 750 mm (Source: www.nca.gov.in). A major portion of the precipitation in the basin takes place during the southwest monsoon, and accounts for about 85% to 95% of the total precipitation. The post monsoon accounts for about 9% of the

precipitation whereas the winter and the pre-monsoon, together account for about a maximum of 10% of the total precipitation.

Nearly 90% of this rainfall is received during the five monsoon months from June to October and about 60% is received in the two months of July & August.

2.3.3 Wind

The average monthly wind speed in the Narmada Basin varies between about 1.4 km/h and 16 km/h in the post -monsoon & pre monsoon seasons, the wind speed is generally higher. The maximum percentage of calm occurs between October & December. The predominant wind direction is NW followed by SW and W.

2.3.4 Evaporation

The process of evaporation depends upon wind velocity, altitude, temperature and humidity. In summer, evaporation loss in the upper Zone of Narmada is between 6.0-10.0 mm/d. In Jabalpur region monitored at Jamtara, evaporation loss is considerably less i.e. between 4.0-7.0 mm/d. It is due to increase of humidity level by nearby Bargi Reservoir. Evaporation loss immediately increases at Barmanghat (Narsinghpur region) where it is between 6.0-12.0 mm/d. In middle zone monitored at Hoshangabad, evaporation loss is also less and is between 4.0-7.0 mm/d. Tawa reservoir and Barna dam are nearer to this place. Evaporation loss is more in lower Zone of Narmada monitored at Rajghat near Barwani. It is between 12.0-28.0 mm/d. In winter, evaporation loss is less in upper and middle Zone of Narmada and is between 1.0-3.0 mm/d. In lower Zone, evaporation loss is between 6.0-9.0 mm/d in winter season.

2.3.5 Humidity

The relative humidity in basin varies between 92% and 27% in the morning and between 88% and 15% in evening, depending upon the season. The relative humidity is naturally maximum during the monsoon months and is around 80% to 90%. In the winter months of December and January, the relative humidity comes down to around 30%. The variation in relative humidity between upper, middle and lower sections of the basin is not very pronounced.

2.4 Geology

About 270 million years ago, the continents existed in two large masses and India was a part of the southern continental mass commonly known as Gondwana Land. Between the two continents, a large sea, Tethys existed. Presently the Himalayas and the Tibetan Plateau have taken the position of the ancient Tethyan Sea. The Gondwana Land was intruded by few large marine transgressions. A deep gulf or sea existed along the sindh-balochistan and the Kutchh. At one time, a marine ravine penetrated the very centre of Peninsular India through a narrow inlet along the present valley of Narmada. During this time India was divided into two halves by narrow strips of marine transgressions and there was no land communication between the Peninsular and northern India.

Along the Narmada Valley, several patches of sediments have been deposited which contains ancient remains of animals. These fossils are similar to those found along the tracts of Tapi river. Such similarity probably suggests that even about 3 million years ago, Narmada and Tapi were confluent and the separate fate of these two rivers was decided by recent earth movements.

The bhedaghat falls of Narmada, near Jabalpur, was probably created during one such movement which appears to be a recent one.

The geological sequence in the basin is presented in Table 2.6 The Archaean group of rocks in the Narmada basin is represented by the Chilpighat series. These rocks wedge in at the eastern end between the Vindhyan and granitic gneisses and expand in the Narmada valley in strips. The Dharwadian rocks consisting mainly of quartzites, feldspar grits, shales and slates with intercalated traps occur in Balaghat, Chhindwara, Jabalpur districts of Narmada valley. In Jabalpur area, the series is distinguished by perfectly crystalline dolomitic limestone. The famous "marble rocks" of Jabalpur belong to this series.

Table 2.6 Geological Sequence in Narmada Basin

Major Groups	Dominant Rocks	Age in Million Years.
Recent Alluvium	Alluvium	2-3
Deccan trap	Basalt	60-135
Lametas	Limestone, Sandstone	135-150
Gondwanas	Sandstone, Volcanics	150-400
Vindhyan	Sandstone, Shales	600-4500
Bijawars	Quartzites, Sandstone	600-4500
Archaeans	Quartzites, Shales, Slates	600-4500

On the upturned edges of the Archaeans, the Cuddapahs were deposited and the Narmada Valley is represented by Bijawars. The Bijawars occur in series of out crops extending from Bundelkhand to the south of Narmada and has thickness of less than 240m at some places. These rocks are generally characterised by quartzites, sandstones and sometimes conglomerates. Bijawars are found in Dhar and Jabalpur districts. In Jabalpur, however, Bijawars are represented by somewhat different rock assemblages like phyllites, mica, schists, calcitic and dolomitic marbles. There is, however, some controversy over the age of the rocks and some geologists feel that they are older than Cuddapahs and should be classified along with upper Archaeans i.e. Dharwadian rocks.

The Cuddapahs were succeeded by rocks of Vindhyan system after a time interval marked by earth movement and erosion. The Vindhyan rock characterised by Bhandar Sandstones, shales, limestones and Ganurgarh shales are exposed in the north of Hoshangabad town and extends upto Bhopal. Between Dewas and Khandwa in Parnakheri, thick Vindhyan are exposed along the banks of Narmada mainly characterised by Bhandar group of rocks and unclassified upper Vindhyan.

After the deposition of Vindhyan rocks and their uplift, there was a great hiatus in the stratigraphical history of the peninsula. At the end of Palaeozoic era, a series of changes took place which were also responsible for the mountain building movements called the Hereynian or Variscan orogeny. Due to this movement, the continents separated to the present configuration. The deposits during this period are called Gondwana and is exposed in the south of Hoshangabad. Thick Gondwana sediments are also found near Jabalpur, Rewa, Pachmarhi etc. The Gondwana formation ended in Cretaceous era i.e. about 135 million years ago. The

end of cretaceous was marked by enormous lava flows which spread over vast areas of central and eastern India. These lavas of basaltic composition are found in the Khandwa, Khargone, Dhar, Dhule areas till practically up to the lower Narmada region. The interesting geological episode in the Narmada valley are the Lameta beds, which occur in Lameta ghats near Jabalpur. The Lameta beds represent the fluvial or estuarine deposits just below the trap basalts. The mouth of the Narmada witnesses thick sedimentary deposits of recent age. These sediments are often saline but otherwise support bumper crops.

2.5 Soils

Soil is composed of minerals, mixed with some organic matter, which differ from its parent materials in terms of its texture, structure, consistency, color, chemical, biological and other characteristics. Information on the soil profile is also required for simulating the hydrological character of the basin.

The available information on soil survey conducted in the basin indicates that black soils are predominant in the basin. The coastal plains are composed of alluvial clays with a layer of black soil on top.

In the upper basin, the majority of the soil are characterised by shallow black soils. These soils are erosional products of trap basalts. The black soils are rich in smectite clays having a high water holding capacity. These clay lattices expand when they absorb water and thus reduce the water drainage. The organic matter is generally less than 5% in black soils. The black soils in the upper basin are generally in-situ or colluvial. These soils are often interspersed with red sandy or laterite soils. The profile is generally shallow and mainly covers the hilltops and plateau regions. The red soils are the result of intense chemical leaching of basalts whereby all the minerals in the rock are leached out except the oxides of silica, iron and aluminium. Due to intense leaching, these soils have a reasonably good drainage but lacking in nutrients essential for plant growth.

The soils in the Vindhyan and Satpura plateau region of the middle basin range from shallow black soils to medium black soils. Around Hoshangabad, recent alluviums with varied thickness can be witnessed. This soil is extremely fertile and supports cotton, Jawar and wheat.

In the lower part of the basin, the major soils of the valley and southern plateau are medium deep black soils. On the other hand mixed red and black soils occur in the northern plateau. In the mouth of the Narmada, Pliocene rocks along with recent alluviums are seen. These alluvial soils are mostly sandy loams with good drainage. They are extremely fertile and support good crops.

More than 50 % of the basin is covered with soil of Fine texture followed by the medium texture soil (approx.45%) as shown in Figure 2-6.

Soil erosion is fairly severe in the upper hilly and upper plains regions in the Narmada basin. Severe erosion also occurs throughout course of the river in the lower plains. Else, the soil erosion in the middle and lower plain areas in the basin is of moderate intensity Figure 2-7.

The major portion of the basin is with gentle slope accounting to more than 40% as shown in Figure 2-8.

Nearly 20% of soil is highly productive and maximum of approx.28 % is moderately productive soil Figure 2-9.

2.6 Land use/land cover

Land Cover is defined as observed physical features on the Earth's surface. When an economic function is added to it, it becomes Land Use.

The major land use/ cover classes of Narmada Basin are- Agriculture, Forest, Wasteland, Waterbodies and the Builtup as shown in .Figure 2-12.

The agricultural area spreads over 56.90% of the basin. In the basin 3 types of cultivation is observed 1) the kharif crop, 2) the rabi and 3) the summer/ Zaid crop. Wherever irrigation facilities exist, perennial and eight-monthly crops are cultivated. Cultivation is by a system of rotation of crops and the major crop seasons are the kharif and the rabi. Paddy is the most common crop especially in the upper sections of the basin, where the rainfall is more and soil infiltration is poor. Wheat cultivation is more in the middle and lower sections of the basin. Districts like Hoshangabad, Raisen, Sagar, Dhar, Sehore etc. wheat cultivation is more popular than the paddy. Other cereals like Jawar, Bajra, Maize, Barley etc. are also cultivated and in some districts like Chhindwara, Dhar, Dewas, Jhabua, Khargone and Dhule, they constitute a major share of the crops.

In the basin, forests occupy 32.88 % of the total geographical area (Land Use / Land Cover 2005-06). In the upper reaches of basin, the forests are of tropical, moist, deciduous type, whereas in the middle and lower basins, the vegetation is of tropical dry and deciduous type. Bamboo is common in both upper and middle reaches, especially in the district of Mandla which hosts the famous Kanha National Park. The forests along the Narmada in Maharashtra and Gujarat belong to southern dry, deciduous types

Wasteland covers 6.13 % of the basin. Large patches of Scrub lands are prominently visible in the lower part of the basin. Some barren, rocky wastelands are also observed in the basin.

Narmada and its tributaries have contributed to the land cover class waterbodies by 2.95 %. Few large waterbodies i.e. Indira Sagar, Bargi, Tawa etc. with considerable reservoir area/ submergence area has also contributed to the same.

The Built-up land (Includes Urban and Rural class) covers 1.13 % of the basin. Jabalpur is the biggest urban centre in the basin. The important urban centres are Bharuch and Ankleshwar in Gujarat; Murwara (Katni), Jabalpur, Khandwa, Betul, Hoshangabad, Itarsi and Khargone in Madhya Pradesh.

Table 2.7 Land use / land cover statistics (2005-06)

S. No.	Category	Area (Sq. Km.)	% of Total Area
1	Built up Land	1114.36	1.13
2	Agriculture	56243.09	56.9
3	Forest	32483.29	32.88
4	Grassland	2.2	0.01
5	Wasteland	6033.74	6.13
6	Waterbodies	2919.32	2.95

2.7 Minerals

The minerals found in the basin are bauxite, clay, coal, dolomite, graphite, iron ore, manganese, talc, limestone etc. The mineral map of Narmada Basin is given in Figure 2-10..

2.8 Ground Water

The occurrence of ground water generally depends upon the rainfall, drainage, topography and the geological conditions of the area. The ground water in upper, middle and lower basin occurs in distinct horizons with characteristic aquifers.

In the upper basin, the geological formation is mainly the older rocks belonging to the Archaeans and Vindhya and are characterised by good water potential. The ground water within part of the basin occurs mainly in the weathered zones of the rocks. The quality and quantity of the ground water is reasonably good.

In the middle part of the basin where Gondwana rocks are predominant, the ground water occurs in varied quantities in the pores of sandstones. The occurrence mainly depends on the grain size of the rocks. In the coarse grained rocks, the ground water availability is substantial. However, in the sections of the basin where the trap rocks are exposed, the ground water conditions are rather erratic. In the trap basalts, ground water occurs in patchy aquifers and often these aquifers are not interconnected.

A significant part of the lower basin is occupied by trap basalts where the ground water occurs in patchy aquifers. However, near the mouth of the river, the coastal alluvials are predominant. The coastal alluvials contain highly permeable aquifers with good quantities of water. Their yield is generally excellent, with good recharge characteristics. The ground water in this area occurs mainly in unconfined aquifers with varying depths. However, ground water in alluvials is susceptible to seasonal water table fluctuations. In thickly populated areas, these aquifers are often contaminated.

Table 2.8 gives the ground water recharge and draft characteristics. The data suggests that the average ground water utilisation in the Narmada basin is about 45%. The draft in Sehore, Khandwa, Damoh, Dhar, Dewas, Raisen, Sagar, and Khargone is above 50%. In fact, these districts account for major ground water draft in the basin. In the rest of the area, the ground water remains under-utilised, and there is scope for further ground water development.

Table 2.8 Ground Water Recharge and Draft Characteristics in the Districts of Narmada Basin

S. No.	District	Net Ground Water availability (ham)	Total Annual Ground Water Draft (ham)	Net Ground Water availability for Future Irrigation (ham)
1	Sehore	77172	57394	18664
2	Hoshangabad	201888	35617	164889
3	Rajnandagaon	1123.84	50.1	1073.74
4	Shahdol	63909	4083	59067
5	Mandla	53779	8205	44658
6	Chhindwara	138594	71239	65615
7	Balaghat	91248	13361	77083
8	Betul	113970	53622	59227
9	Khandwa	76949	47583	27417
10	Raisen	75209	38165	35863
11	Sagar	112807	66079	44859
12	Damoh	36385	22000	13305
13	Dhar	97163	80451	15212
14	Seoni	79239	20456	57784
15	Khargone	77219	55848	19999
16	Dewas	79141	63383	14849
17	Jhabua	20134	9305	10051

Source: Dynamic Ground Water Resources of Madhya Pradesh (As on March 2009) published by State Ground Water Survey and Central Ground Water Board North Central Region, February 2012

2.9 Water resource projects

Water resources projects are broadly categorized into irrigation projects and hydroelectric projects. The surface water development in the basin had been very insignificant during the pre-plan period. Tawa, Barna and Sukha are the important projects completed during the plan period. With the award of the Narmada Water Disputes Tribunal, the basin is poised of all-round development in the water resources front. Among the projects which are on-going in the basin, Sardar Sarovar, Indira Sagar, Bargi and Omkareshwar are the most important. (Source: Narmada Basin 2.0 Year 2014)

The Narmada Water Disputes Tribunal has allocated the Narmada water (75% dependable utilisable flow of 34.54 cubic Km at Sardar Sarovar dam) amongst the States as under:

Madhya Pradesh-22.51 Cubic Km

Gujarat-11.10 Cubic km

Rajasthan-0.62 Cubic km

Maharashtra-0.31 Cubic km

(Source: Narmada Basin 2.0 Year 2014)

2.10 Major and medium irrigation projects

There are 21 Major and 23 Medium irrigation projects in the basin. Some of the Major Irrigation Projects in the basin are described below:

1. Sardar Sarovar Major Irrigation Project Gujarat: This is an on-going project located on the main river Narmada near Rajpipla. The culturable command area and the ultimate irrigation

potential of the project is 2120 Th ha and 1792 Th ha respectively. The gross and live storage capacity of the Sardar Sarovar reservoir is 9500 MCM and 5800 MCM respectively.

2. Tawa Major Irrigation Project: This project is located on river Tawa, a tributary of river Narmada, 9 km from Bagra Tawa railway station in Hoshangabad District. The culturable command area of the project is 247 Th ha. The gross and live storage capacity of the Tawa reservoir is 2312 MCM and 2050 MCM respectively. About 2.47 lakh ha of land is being irrigated through 187 km length of canal.

3. Bargi Diversion Major Irrigation Project: This is an ongoing project located on the main river Narmada near Jabalpur. The culturable command area of the project is 245 Th ha. The gross and live storage capacity of the Bargi reservoir is 3924.8 MCM and 3238.4 MCM respectively.

4. Bargi (Rani Avanti Bai Lodhi Sagar) Major Irrigation Project: This project is located on the main river Narmada near Jabalpur. The culturable command area of the project is 157 Th ha and Ultimate Irrigation Potential is 219.80 Th ha.

5. Omkareshwar Major Irrigation Project: This is an ongoing project located on the Narmada River near Khandwa. The culturable command area of the project is 146.80 Th ha and Ultimate Irrigation Potential is 283.32 Th ha. The gross and live storage capacity of the Omkareshwar reservoir is 987 MCM and 299 MCM respectively.

6. Indira Sagar /Narmada Sagar Project Major Irrigation Project: This is an ongoing project located on the Narmada River near Khandwa. The culturable command area of the project is 123 Th ha and Ultimate Irrigation Potential is 169 Th ha. The gross and live storage capacity of the Indira Sagar reservoir is 12200 MCM and 9750 MCM respectively

7. Barna Major Irrigation Project: This project is located on river Barna, a major tributary of river Narmada about 20 km from Bareilly in Raisen District. The culturable command area of the project is 57.90 Th ha and Ultimate Irrigation Potential is 62 Th ha. The gross and live storage capacity of the Barna reservoir are 539 MCM and 455.8 MCM respectively.

8. Karjan Major Irrigation Project: This project is located on river Karjan, a major tributary of river Narmada near village Jitgadh in district Bharuch. The culturable command area of the project is 51 Th ha and Ultimate Irrigation Potential is 70.38 Th ha. The gross and live storage capacity of the Karjan reservoir is 630 MCM and 581 MCM respectively.

9. Kolar Major Irrigation Project: This project is located on river Kolar, a tributary of river Narmada near village Lavakhedi (Birpur) about 32 km southwest of Bhopal. The culturable command area of the project is 45.10 Th ha and Ultimate Irrigation Potential is 60.90 Th ha. The gross and live storage capacity of the Kolar reservoir is 270 MCM and 265 MCM respectively.

10. Sukta (Bhagwant Sagar) Major Irrigation Project: The project is located on river Sukta, a tributary of Narmada river in East Nimar district of Madhya Pradesh. The culturable command area of the project is 16.59 Th ha and Ultimate Irrigation Potential is 18.58 Th ha. The gross and live storage capacity of the Sukta reservoir is 89.5 MCM and 78 MCM respectively.

11. Man Major Irrigation Project: The project is located on Man river, a major tributary of Narmada river in Dhar district of Madhya Pradesh. The culturable command area of the project is 15 Th ha and Ultimate Irrigation Potential is 17.7 Th ha. The gross and live storage capacity of the Man reservoir is 145 MCM and 127 MCM respectively.

12. Jobat (Shahid Chandra Shekhar Azad Sagar) Major Irrigation Project: The project is located on Hatni river, a major tributary of Narmada river in Dhar district of Madhya Pradesh.

The culturable command area of the project is 9.85 Th ha and Ultimate Irrigation Potential is 12.5 Th ha. The gross and live storage capacity of the Jobat reservoir is 77.84 MCM and 70.04 MCM respectively.

13. Punasa Lift Irrigation Project: The project is located on Chhota Tawa river and consists of 8 lifts/pumps in 3 stages. The culturable command area of the project is 35.01 Th ha and Ultimate Irrigation Potential is 36.76 Th ha. The district benefitted through this irrigation scheme is Khandwa.

14. Baneta Lift Irrigation Project: The project is located on main Narmada river and consists of one lifting station in Sehore district of Madhya Pradesh. It is an ongoing project.

15. Remodelling Of Bohri Bund Project: Located on Bhuta Nalla, the project is a remodelling of Bohribund medium irrigation project. The additional culturable command area of the project is 2.0 Th ha with an ultimate irrigation potential of 3.6 Th ha. The gross and live storage capacity of Bohribund reservoir is 36.98 and 34.52 MCM respectively. Jabalpur is the district benefitted through this scheme. (Annexure IV: F)

Details of Major and Medium irrigation projects are given in Annexure IV: C and D. List of type and number of water resources projects is given in the Table 7 below.

Table 2.9 Number of Water Resources Projects

S. No.	Types of Project	Number of Projects
1	Major Irrigation Projects	21
2	Medium Irrigation Projects	23
3	ERM Projects	1
4	Hydro-Electric Projects	5

2.11 Hydro Electric projects

As per latest assessment, the total Installed capacity of the hydro-power projects in the basin is 3498.5 MW. There are total 6 Hydro-electric projects with 9 power houses in the basin out of which 4 are Major hydro-power projects. The total installed capacity of Major operational power projects is 3060 MW. (Indira Sagar Hydroelectric Project-1000 MW, Omkareswar Hydroelectric Project-520 MW, Rani Avanti Bai Sagar (Bargi) Hydroelectric Project-100 MW, Sardar Sarovar Hydroelectric Project-1450 MW).

1. Sardar Sarovar Hydroelectric Project: The major operational hydro-power project of the basin which involves power sharing between 3 states namely-Gujarat (16%), Madhya Pradesh (57%) and Maharashtra (27%). The total installed capacity of the project is 1450 MW, involves 2 power houses located in Narmada district of Gujarat and 11 no. of turbines/units (50 MW*5 + 200 MW*6).

2. Omkareswar Hydroelectric Project: A major operational hydro-power project involving 1 power house which is located on main Narmada river in East Nimar district of Madhya Pradesh. With 8 no. of turbines and 65 MW capacity of each turbine, the total installed capacity of the project is 520 MW (65 MW*8).

3. Indira Sagar Hydroelectric Project: This is a major hydro-power project located on main Narmada river with a total installed capacity of 1015 MW. The project consists of 2 power

houses located in East Nimar district of Madhya Pradesh. A total of 11 no. of turbines are part of the hydro-power project (125 MW*8 + 5 MW*3).

4. Rani Avanti Bai Sagar (Bargi) Hydroelectric Project: A major hydro-electric power project located on main Narmada river with an installed capacity of 90 MW. The project involves 2 power houses located in Jabalpur district of Madhya Pradesh (45 MW*2 + 5 MW*2)

5. Maheshwar Hydroelectric Project: A major under construction HE project with installed capacity of 400 MW and 8 turbines/units. The project consists of 1 power house located on Main Narmada River in West Nimar district of Madhya Pradesh (40 MW*10).

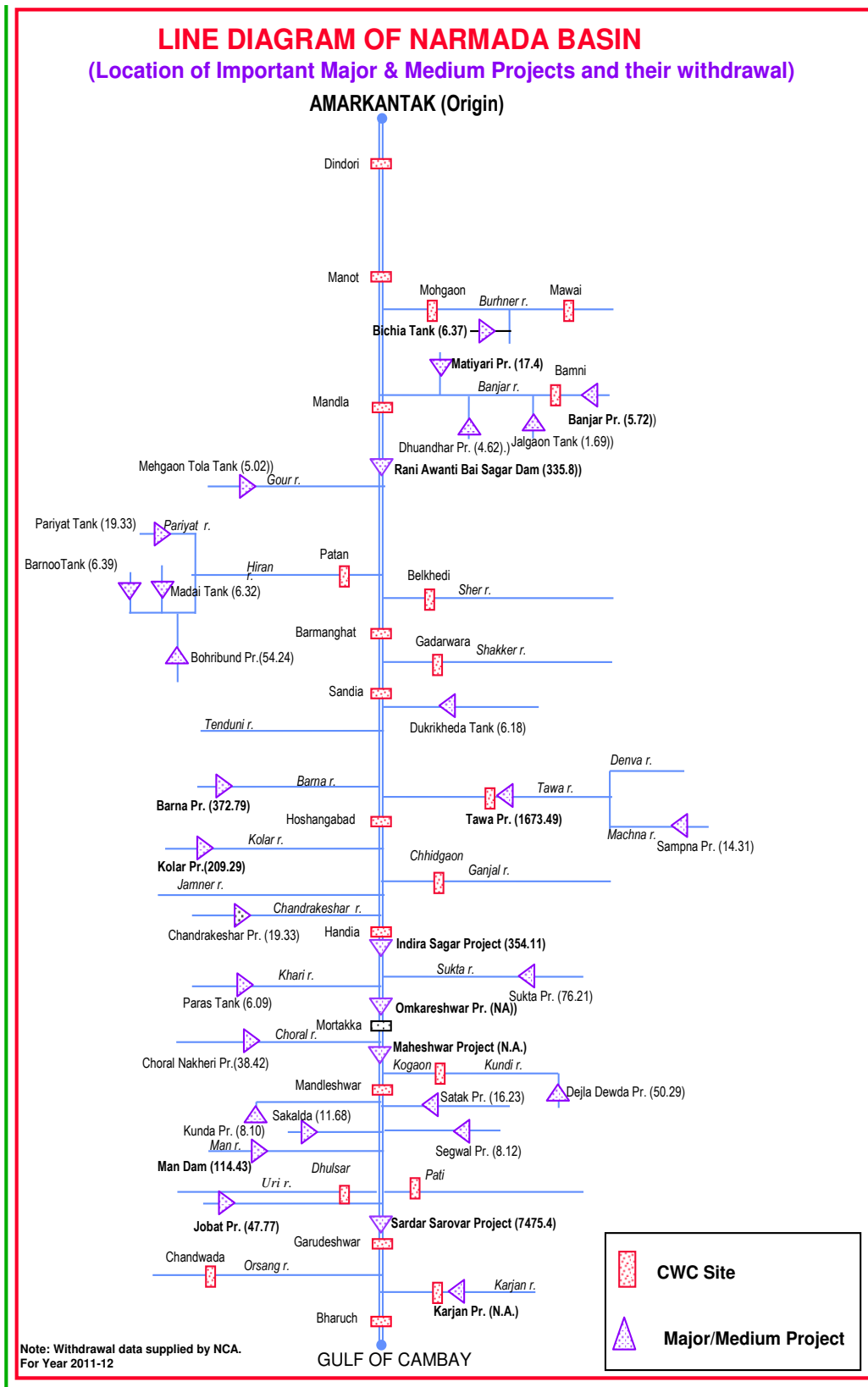


Figure 2- 2 Line Diagram of Narmada Basin (Location of Major & Medium Projects and their Withdrawal)

Note: Withdrawal in case of Bargi, I.S.P., O.S.P & S.S.P consists of utilisation for irrigation through canals in addition to spillway/power house release. Figure in the bracket against the project shows the Withdrawal from project in MCM

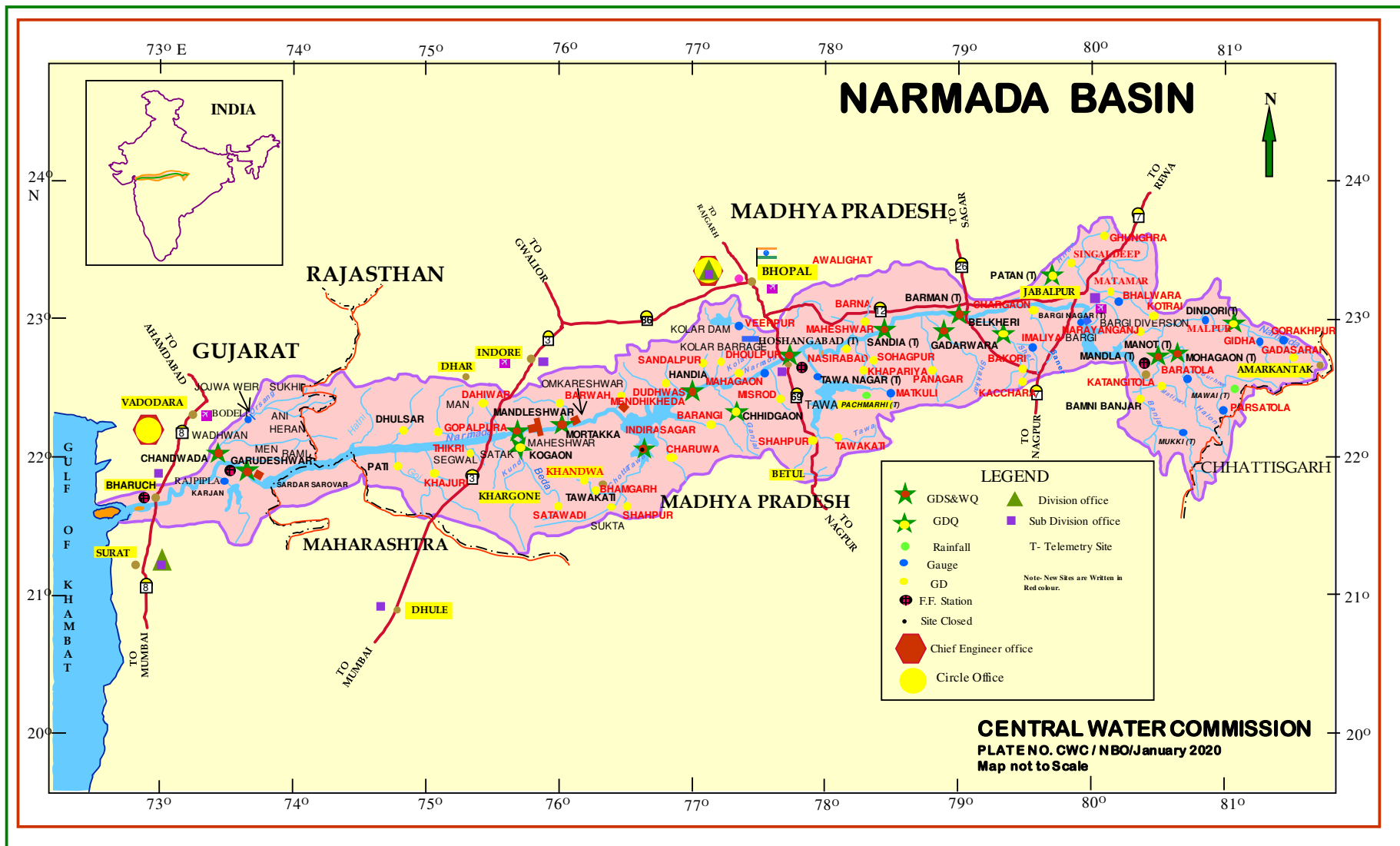


Figure 2- 3 Narmada Basin Map

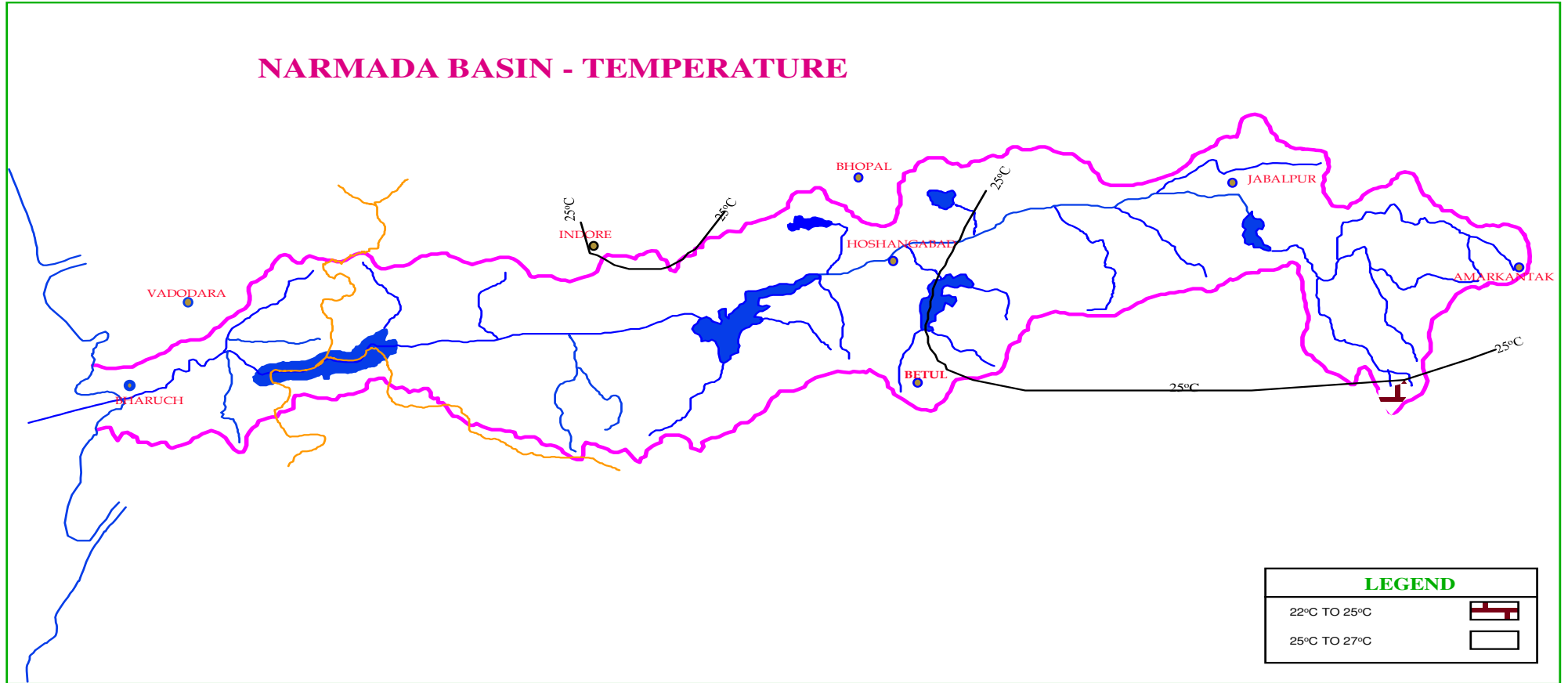


Figure 2-4 Narmada Basin - Temperature

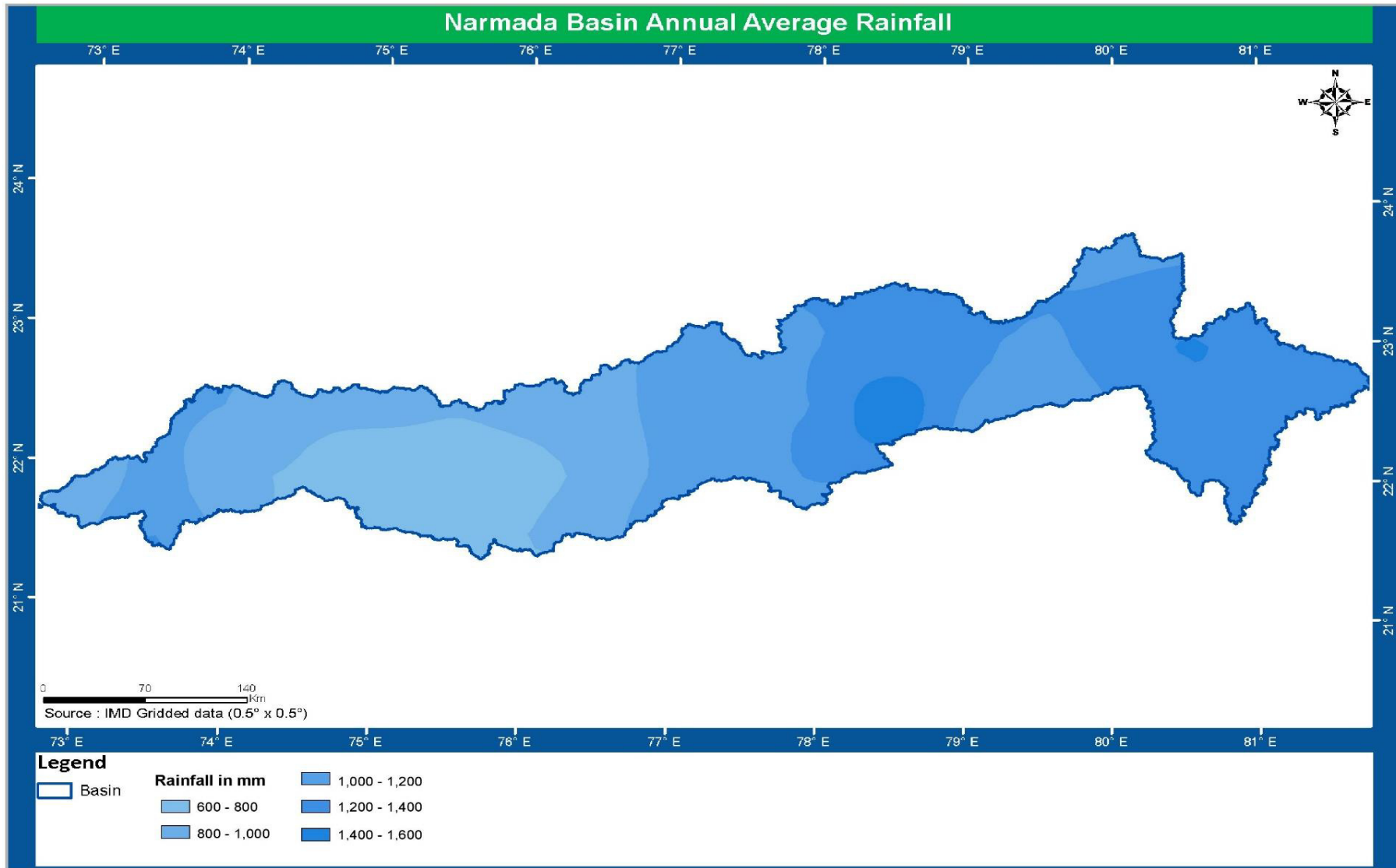


Figure 2-5 Narmada Basin – Average Annual Rainfall

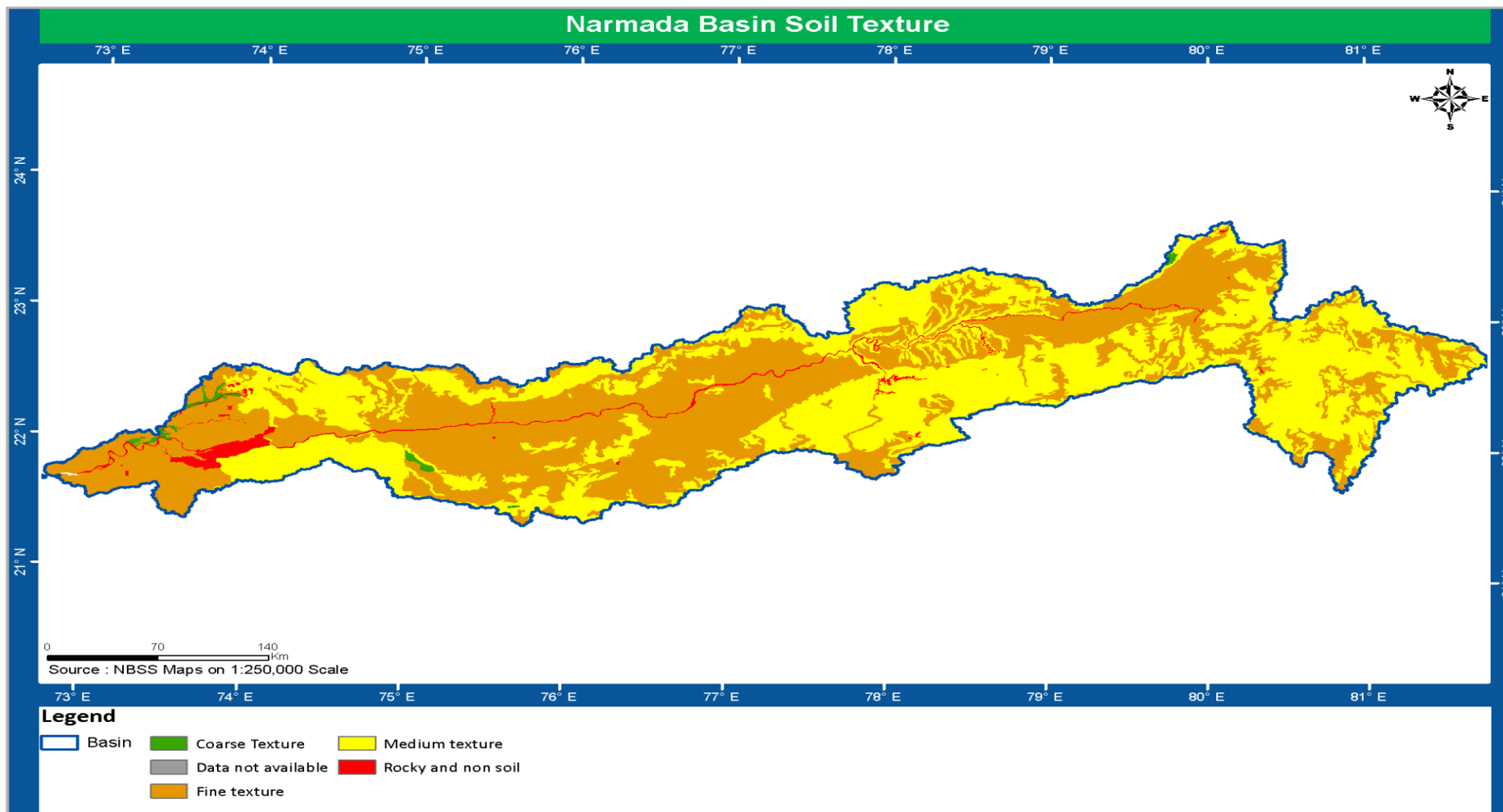


Figure 2-6 Narmada Basin – Soil Texture

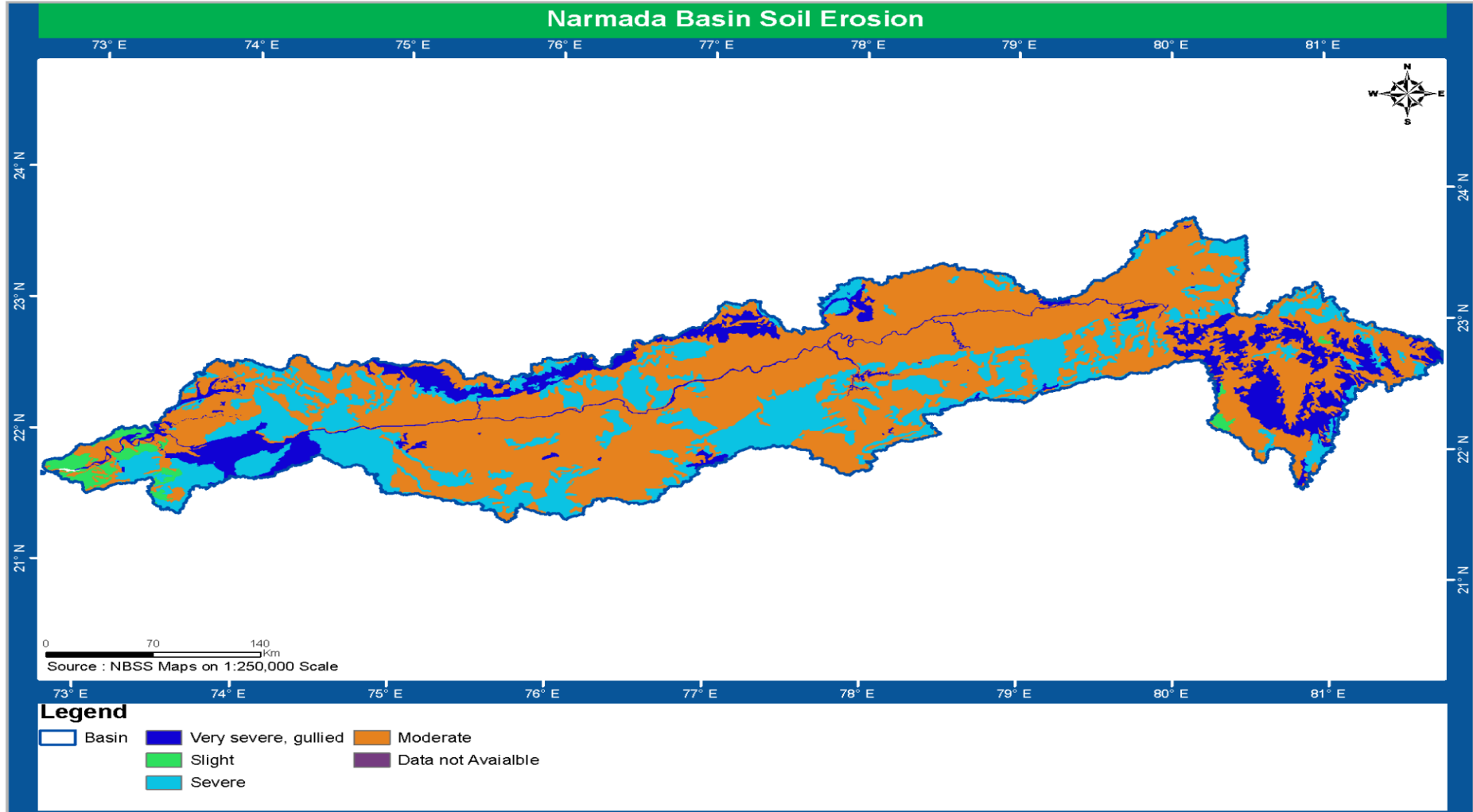


Figure 2-7 Narmada Basin – Soil Erosion.

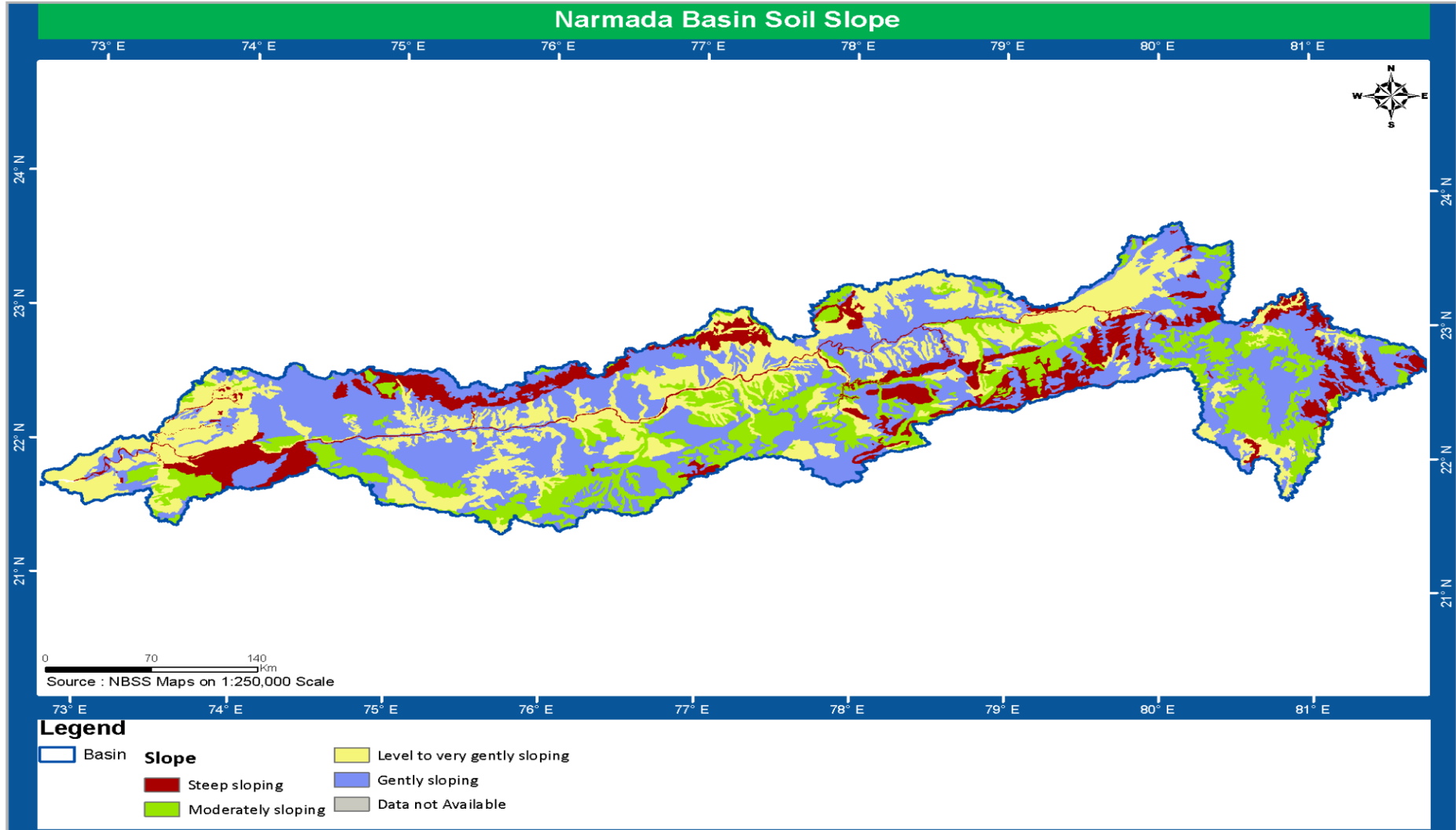


Figure 2-8 Narmada Basin – Soil Slope.

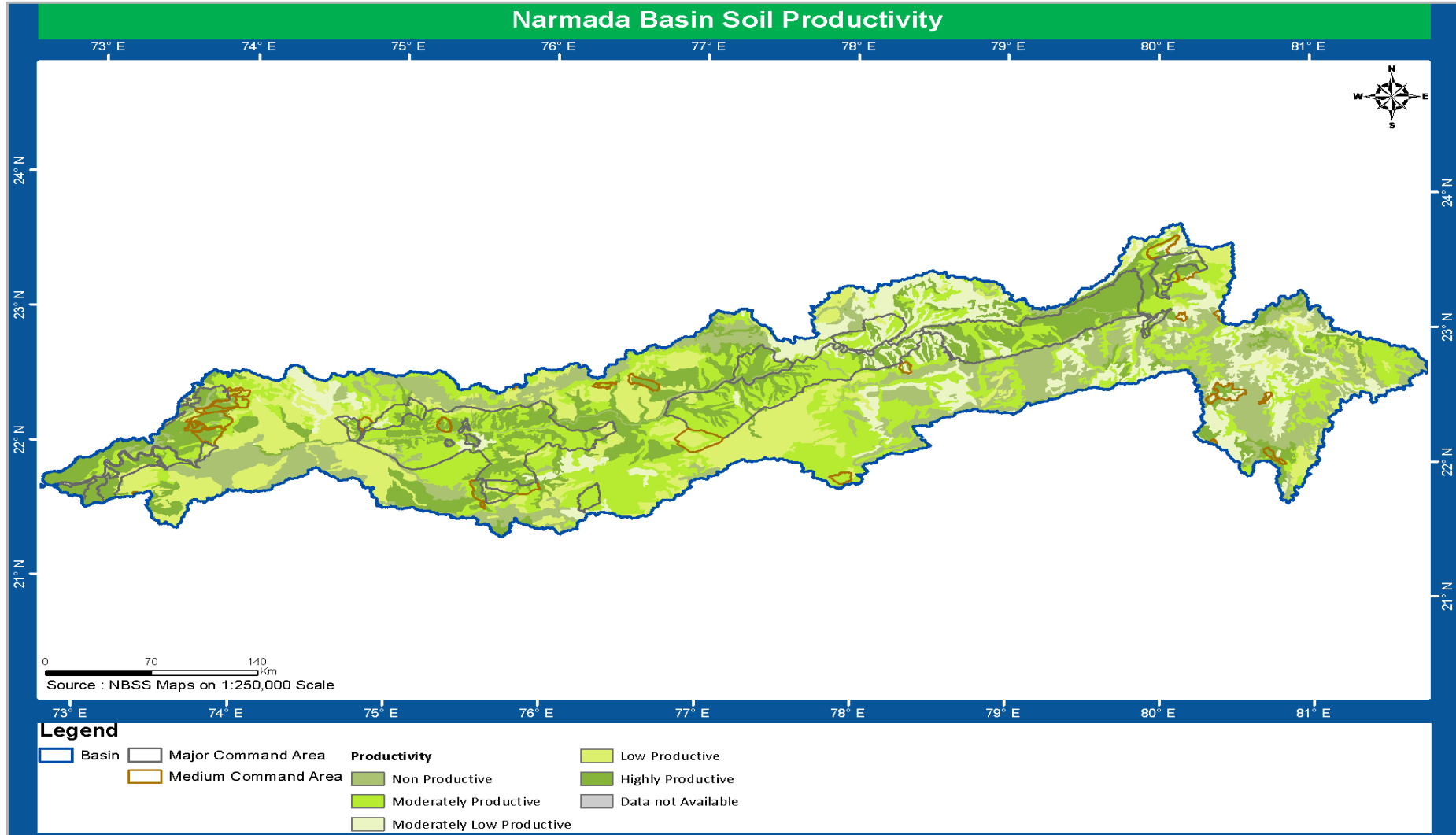


Figure 2-9 Narmada Basin – Soil Productivity.

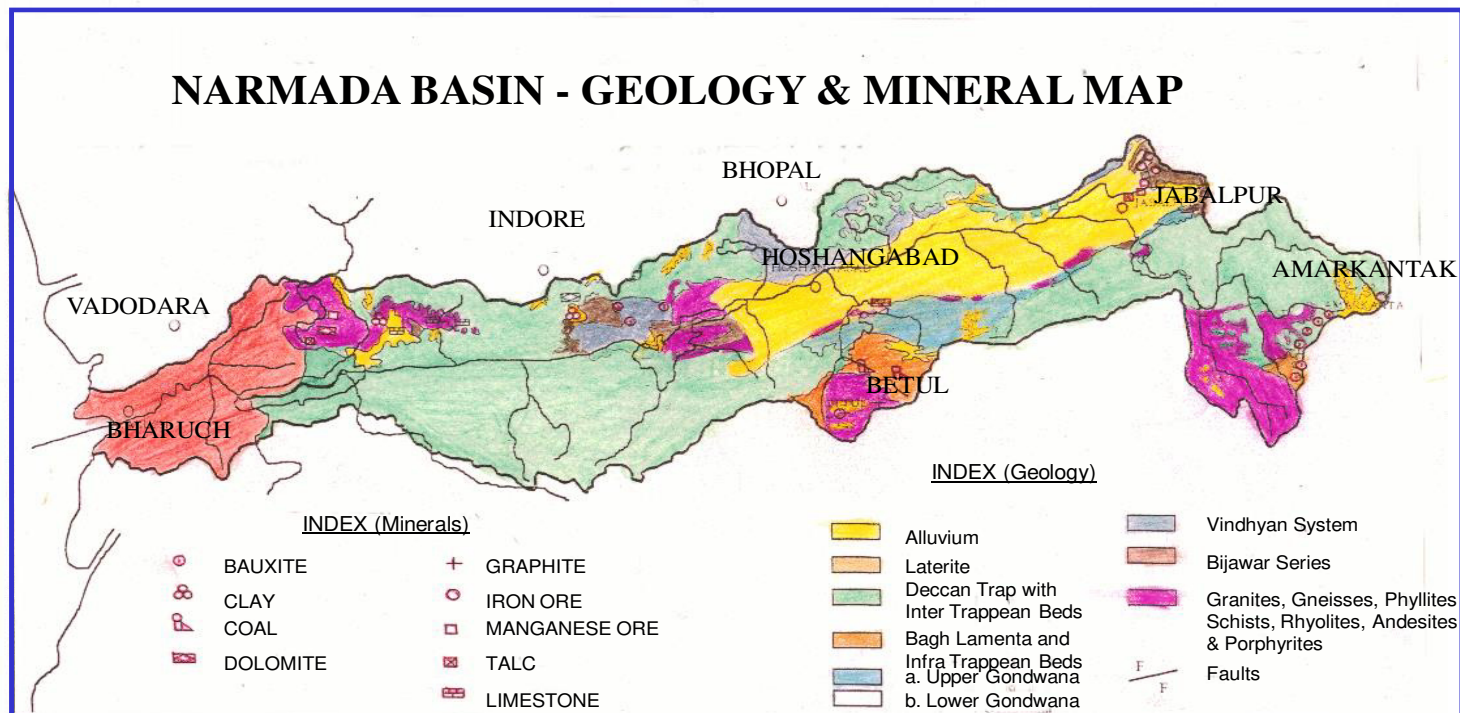


Figure 2-10 Narmada Basin – Geology & Mineral Map

Major water resources structures and projects

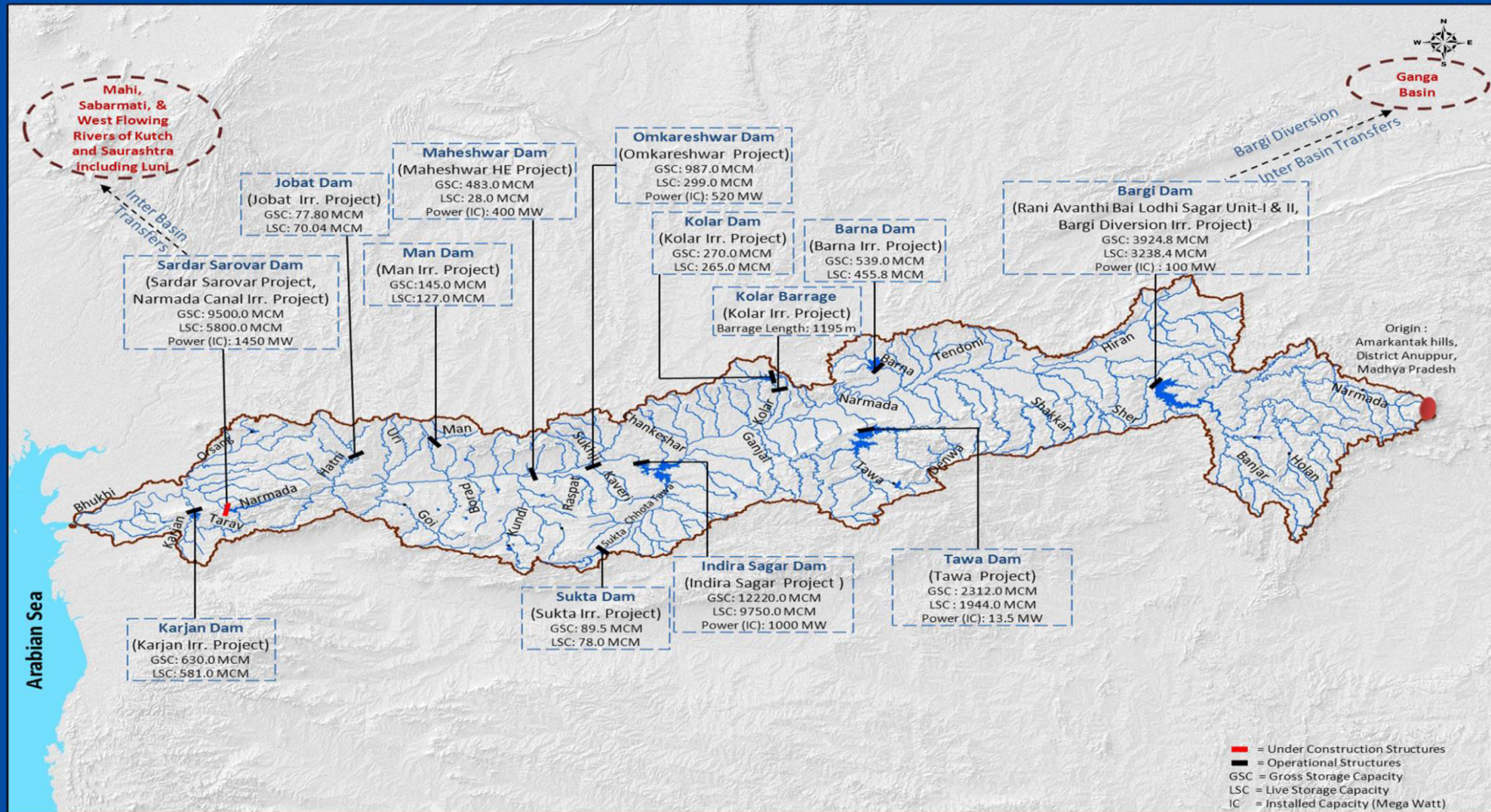


Figure 2-11 Narmada Basin – Major water resources structures and projects

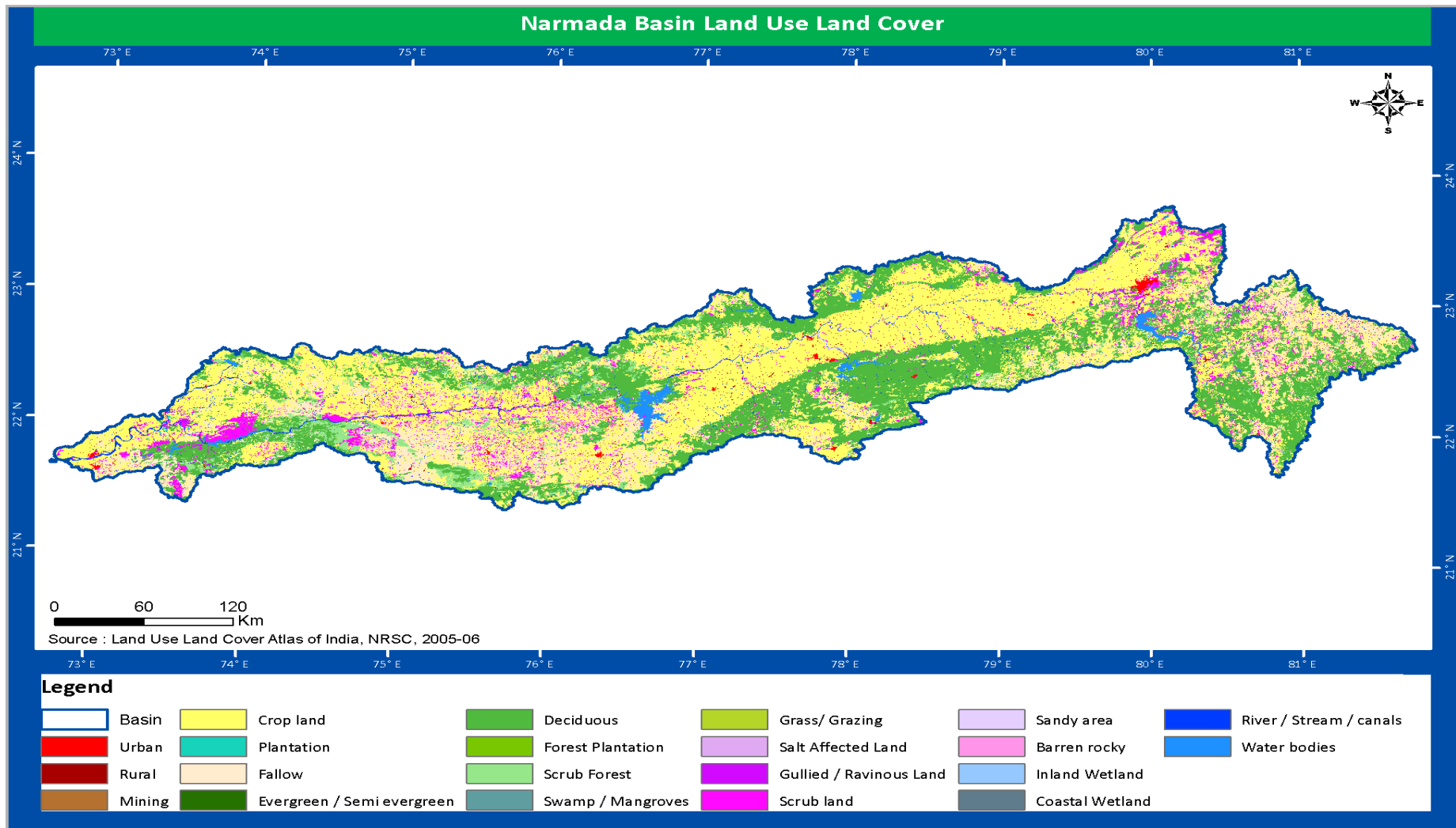


Figure 2-12 Land use/land cover (2005-06)

3 Stream Flow Data

3.1 Methodology

3.1.1 Gauge Measurement

Water level or stage of river is measured as its elevation above the G.T.S. datum. Water level measurement is conducted by reading non-recording gauges as specified in IS 4080-1967. Series of vertical staff gauges have been fixed at three sections at every site. The gauge posts are generally of wood or concrete with cut and ease water arrangement and fixed securely in vertical position by anchoring them in M-15 concrete base of suitable size. Enamelled vertical gauge plates with metric markings are fixed on the gauge posts so that the gauges can be read up to 0.005 m.

Out of the three gauge lines the Central one is used as Station Gauge line and the readings of other two gauge lines are used for calculation of water surface slope. During non-monsoon season, gauges are read thrice daily (0800, 1300 and 1800 hrs) and during monsoon, gauges are read hourly at the station gauge line.

3.1.2 Discharge Observations

Discharge is observed once a day starting from 0800 hrs at all the sites by area velocity method except on Sundays and holidays. For non-observation days, the discharge values are computed from the Stage and Discharge relation prepared from the observed data for the water year 2019-20.

The stream width is divided into 15 to 25 segments based on the degree of accuracy as outlined in IS 1192-1981. The width of the river is measured by steel tape/ metallic tape or wire/nylon rope stretched across the river with markings indicated there on, when the river width and depth permitted wading. For large width and deep flow conditions segmentation is done using simple trigonometric method for which pivot point and segment blocks have been constructed at each site.

The depth is measured by using sounding rod 3 to 6 metre long adopting specifications given in IS 3912-1966. When the river flow is very deep and swift, lead lines/ echo sounders are used. Necessary Airline correction and Wet line corrections are made to the sounding observation as provided in IS 1192-1981. The velocity is measured as per IS 3918-1966 by using a cup type current meter conforming to specifications given in IS 3910-1966. The current meter is lowered at the requisite depth (0.6d) vertically at every segment by suspension arrangement as specified in IS 6064-1971. In high velocities, boats fitted with power engines or motor launches are used. Drift is measured and correction for the same is made. Where observations by boat or launch are not possible, measurement of velocity is conducted from bridge or cableway.

When the above procedures are not possible then velocity is measured by float observations. The observations are recorded in a standard format for calculation of total river flow.

3.3 Data Availability

Data availability at various sites in Narmada basin is given in Table 3.1

Table 3.1 Data Availability at CWC Sites

S. No.	Station Name	Type	Data Available		Station code No.
			From (Year)	To (Year)	
1	Narmada at Dindori	G/D/Q	88/88/90	2020	CW1NAU000672
2	Narmada at Manot	G/D/S/Q	76/76/79/80	2020	CW1NAU000378
3	Narmada at Aamgaon	G/D	99/01	2006	NCA
4	Burhner at Mohgaon	G/D/S/Q	77/77/92/86	2020	CW1NAU000390
5	Banjar at Bamni	G/D	99/99	2020	CW1NAU000781
6	Banjar at Mukki	G	88	2020	CW1NAU000671
7	Banjar at Hirdayanagar	G/D/S/Q	76/76/92/86	2002	01 02 15 006
8	Narmada at Mandla	G	75	2020	CW1NAU000781
9	Narmada at Jamtara	G/D/S/Q	71/72/72/79	2001	010215008
10	Hiran at Patan	G/D/Q	79/79/86	2020	CW1NAU000530
11	Sher at Belkhedi	G/D/Q	77/77/86	2020	CW1NAU000395
12	Narmada at Barmanghat	G/D/S/Q	70/71/72/79	2020	CW1NAU000188
13	Shakkar at Gadarwara	GDSQ	77/77/78/79	2020	CW1NAU000391
14	Narmada at Sandia	G/D/S/Q/R	78/78/78/79	2020	CW1NAU000450
15	Tenduni at Maheshwar	G/D	84/84	1993	CW1NAU001470
			2019/2019	2020	
16	Barna at Bareli	G/D	84/84	1993	010215015
17	Tawa at Tawanagar (Tawa Dam)	G	74	2020	CW1NAU000314
18	Tawa at Manegaon	G/D/Q	76 /76/76	1991	010215018

S. No.	Station Name	Type	Data Available		Station code No.
			From (Year)	To (Year)	
19	Tawa at Tawakati	G/D	99/01	2006	NCA
			2019/2019	2020	CW1NAU001485
20	Machna at Shahpur	G/D	99/00	2006	NCA
			2019/2019	2020	CW1NAU001482
21	Narmada at Hoshangabad	G/D/S/Q	72/72/72/79	2020	CW1NAU000450
22	Ganjal at Chhidgaon	G/D/Q	76/76/86	2020	CW1NAM000379
23	Jamner at Sandalpur	G/D	87/87	1993	CW1NAM001480
			2019/2019	2020	
24	Narmada at Handia	G/D/S/Q	77/77/77/79	2020	CW1NAM000392
25	Chhota tawa at Ginnore	G/D/Q	71/71/72/79	1999	010215023
26	Narmada at Mortakka	G/D/Q	99/99/99	2020/2007/2007	CW1NAM000782
27	Kundi at Kogaon	G/D/Q	78/78/86	2020	CW1NAM000442
28	Narmada at Mandleshwar	G/D/S/Q	70/71/72/79	2020	CW1NAM000189
29	Man at Ajandiman	G/D	84/84	1993	010215027
30	Narmada at Rajghat	G/D/S/Q	71/72/72/79	2007	010215028
31	Uri at Dhulsar	G/D	99/99	2017	NCA
			2019/2019	2020	CW1NAM000779
32	Goi at Pati	G/D	99/99	2017	NCA
			2019/2019	2020	CW1NAM000778
33	Hathni at Jobat	G/D	2000	2006	NCA
34	Hathni at Tikola	G/D	84/84	2002	010215029

S. No.	Station Name	Type	Data Available		Station code No.
			From (Year)	To (Year)	
35	Narmada at Garudeshwar	G/D/S/Q	71/72/73/77	2020	CW1NAL000434
36	Orsang at Chandwada	G/D/S/Q	79/79/88/80	2020	CW1NAL000513
37	Matiyarai at Katangatola	G/D	2019	2020	CW1NAU001464
38	Balai at Narayanganj	G	2019	2020	CW1NAU001476
39	Hiran at Singaldeep	G/D	2019	2020	CW1NAU001483
40	Pariyat at Matamar	G	2019	2020	CW1NAU001472
41	Saner at Chargwan	G/D	2019	2020	CW1NAU001451
42	Belkund at Ghughra	G/D	2019	2020	CW1NAU001457
43	Gaur at Bhalwara	G/D	2019	2020	CW1NAU001445
44	Narmada at Maalpur	G	2019	2020	CW1NAU001469
45	Chakrar at Gadasarai	G/D	2019	2020	CW1NAU001456
46	Machrar at Gidha	G	2019	2020	CW1NAU001458
47	Silgi at Kotrai	G/D	2019	2020	CW1NAU001468
48	Halon at Barratola	G	2019	2020	CW1NAU001447
49	Phen at Parsatola	G	2019	2020	CW1NAU001479
50	Narmada at Gorakhpur	G	2019	2020	CW1NAU001460
51	Tenduni at Maheshwar	G/D	2019	2020	CW1NAU001470
52	Barna Dam	G	2019	2020	CW1NAU001448
53	Machhrewa at Bakori	G/D	2019	2020	CW1NAU001444
54	Dudhi at Panagar	G/D	2019	2020	CW1NAU001478
55	Palakmati at Sohagpur	G/D	2019	2020	CW1NAU001484
56	Denva at Matkuli	G/D	2019	2020	CW1NAU001473

S. No.	Station Name	Type	Data Available		Station code No.
			From (Year)	To (Year)	
57	Umar at Imaliya	G	2019	2020	CW1NAU001461
58	Narmada at Naseerabad	G	2019	2020	CW1NAU001477
59	Indra at Khapariya	G/D	2019	2020	CW1NAU001467
60	Sher at Kachhara	G/D	2019	2020	CW1NAU001463
61	Hathed at Misrod	G/D	2019	2020	CW1NAM001475
62	Sip at Dholpur	G/D	2019	2020	CW1NAM001454
63	Kolar at Mahgaon	G/D	2019	2020	CW1NAM001471
64	Narmada at Awalighat	G	2019	2020	CW1NAM001443
65	Datuni at Dudhwas	G/D	2019	2020	CW1NAM001455
66	Machak at Barangi	G/D	2019	2020	CW1NAM001446
67	Chhota Tawa at Bhamgarh	G/D	2019	2020	CW1NAM001450
68	Kalimachak at Charuwa	G/D	2019	2020	CW1NAM001452
69	Kolar at Veerpur (Kolar Dam)	G	2019	2020	CW1NAM001487
70	Karam at Dahiwar	G/D	2019	2020	CW1NAM001453
71	Borad at Thikri	G/D	2019	2020	CW1NAM001486
72	Man at Gopalpura	G/D	2019	2020	CW1NAM001459
73	Indirasagar Dam	G	2019	2020	CW1NAM001462
74	Deb at Khajuri	G/D	2019	2020	CW1NAM001465
75	Abna at Khandwa	G/D	2019	2020	CW1NAM001466
76	Choral at Barwah	G/D	2019	2020	CW1NAM001449
77	Kaner at Mendhikheda	G/D	2019	2020	CW1NAM001474
78	Beda at Satwadi	G/D	2019	2020	CW1NAM001481

3.3.1 Explanatory Notes

The explanatory notes given here under are designed to assist in the interpretation of hydrological parameters contained in the data presented. The notes are therefore applicable in so far as the data presented in this book.

1. Water year covers the period from June 1st of one calendar year to May 31st of the next calendar year and covers one complete hydrological cycle.
2. Discharge is given in cubic metre per second.
3. Discharges given are actual observed/computed discharges.
4. The zero of gauge is datum level/R.L. fixed for a given site, which is kept 1 m or 2 m lower than the lowest water level recorded in a perennial stream. In a non-perennial stream it is kept 1 or 2 m lower than the lowest bed level of the stream.
5. Maximum and minimum discharges are taken from the daily observed flows.
6. Runoff in "mm" is the notional depth of water in millimetres over the catchment area equivalent to annual runoff calculated at the discharge measurement station. It is computed using the relation.

$$\text{Runoff (mm)} = \frac{\text{Annual flow (hm}^3\text{)}}{\text{Catchment area (km}^2\text{)}} \times 1000$$

7. Peak and lowest flow correspond to the highest and lowest water levels recorded during the period of record.
8. Measuring authority refers to the field Division responsible for the operation of the gauging station.
9. The gauging station code number is a unique nine column numeric reference number which facilitates storage and retrieval of flow data in data banks. The first two columns are identifier of measuring authority. Third and fourth columns are for zone/basin. Fifth and sixth columns are for independent river and last three i.e. seventh, eighth and ninth columns are for station numbers.
10. The month and the year from which data are available in the data bank is indicated in Table 3.1.

3.3.2 Method of Presentation

The data presented in this book are processed discharge data obtained from application of SWDES and WIMS.

In the following pages, station wise hydrological data are presented comprising history sheet, daily flow table and pictorial summary. The sequence of hydrological stations is arranged from its origin to its outfall giving inter-priority to an intermediate tributary station in a similar fashion.

History sheets give concise description of the hydrological station. The flow tables present daily observed flows together with 10 daily, monthly and annual summaries.

The pictorial summary shows monthly hydrograph of the current year for each individual gauging station which is superimposed on the corresponding maximum, minimum and mean values for the period of record i.e. up to the previous year. Thus maximum represents monthly maximum average discharge, minimum represents monthly minimum average discharge and mean represents mean of the 10 daily average discharges for the period of past record. The period of data considered is from inception of the site to the previous water year. Flow below 0.1 cumec is not represented in the pictorial summary because log scale has been used for plotting hydrographs.

The hydrological data presented here mainly consists of the following :

- 1 **History sheet:** It mainly consists of some salient features of the particular site as its location ,its drainage area, tributary, opening dates and the maximum and minimum discharge values and their corresponding water levels with the exact dates of their occurrence.
- 2 **Stage discharge curve:** It gives a relationship between the stage of the river at a given time and the corresponding discharge.
- 3 **Stage discharge sheet:** It consists of the stage-discharge data (both observed and that calculated from the stage discharge curve) for all the days of the current water year, peak observed and computed discharge, lowest observed discharge and the total runoff for the current water year.
- 4 **Histogram hydrograph:** It is a discharge –time graph which shows the mean monthly discharge based on the historical data ,mean monthly discharge for the current water year, minimum and maximum discharge based on the historical data.
- 5 **Annual Runoff:** It gives the values of the annual runoff (in MCM) for all the years from the opening of the site upto the current year.
- 6 **Monthly Average Runoff:** This chart shows the monthwise distribution of runoff based on the historical data of the site.
- 7 **Monthly Runoff:** This chart shows the monthwise distribution of runoff for the current water year.
- 8 **Pre-Monsoon & Post-Monsoon X-Section for Water Year :** It gives the pre-monsoon & post-monsoon cross sectional profile of the river ,maximum and minimum water levels occurred during the current year with the date of their occurrence.
- 9 **Water Level vs. Time - Graph** of Highest Flood Peak during the current Year
- 10 **Water Level vs. Time - Graph** of 2nd Highest Flood Peak during the current Year
- 11 **Water Level vs. Time - Graph** of 3rd Highest Flood Peak during the current Year

4 Hydrological Data

In the following pages, station wise hydrological data are presented comprising history sheet, daily flow table and pictorial summary. The sequence of hydrological stations is arranged from its outfall to its origin giving inter-priority to an intermediate tributary station in a similar fashion. Data of following stations are given in the following pages

1. Orsang at Chandwada
2. Narmada at Garudeshwar
3. Man at Gopalpura
4. Deb at Khajuri
5. Borad at Thikri
6. Karam at Dahiwar
7. Narmada at Mandleshwar
8. Beda at Satwadi
9. Kundi at Kogaon
10. Choral at Barwah
11. Kaner at Mendhikheda
12. Abna at Khandwa
13. Chhota Tawa at Bhamgarh
14. Kalimachak at Charuwa
15. Machak at Barangi
16. Datuni at Dudhwas
17. Narmada at Handia
18. Jamner at Sandalpur
19. Sip at Dholpur
20. Ganjal aht Chhidgaon
21. Kolar at Mahgaon
22. Hathed at Misrod
23. Narmada at Hoshangabad
24. Machna at Shahpur
25. Tawa at Tawakathi
26. Denva at hMatkuli

- 27. Palakmati at Sohagpur**
- 28. Indra at Khapariya**
- 29. Tenduni at Maheshwar**
- 30. Narmada at Sandia**
- 31. Dudhi at Panagar**
- 32. Shakkar at Gadarwara**
- 33. Narmada at Barmanghat**
- 34. Machhrewa at Bakori**
- 35. Sher at Kachhara**
- 36. Sher at Belkhedi**
- 37. Belkund at Ghughra**
- 38. Hiran at Singaldeep**
- 39. Hiran at Patan**
- 40. Saner at Chargwan**
- 41. Gaur at Bhalwara**
- 42. Banjar at Bamni**
- 43. Matiyarai at Katangatola**
- 44. Burhner at Mohgaon**
- 45. Narmada at Manot**
- 46. Silgi at Kotrai**
- 47. Narmada at Dindori**
- 48. Chakrar at Gadasarai**
- 49. Narmada at Bijora**

4.1 Orsang at Chandwada.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	CHANWADA		Code	:	CWINAL000513	
State	:	Gujarat		District	:	Vadodara	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	Orsang		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Orsang	
Division	:	Executive Engineer, Tapi Division, Surat		Sub-Division	:	Lower Narmada Sub- Division, Bharuch	
Drainage Area	:	3846.0 Sq. Km.		Bank	:	Right	
Latitude	:	22°30'00"		Longitude	:	73°27'55"	
Current Zero of Gauge (m)	:	18					
CATEGORY		Opening Date		Closing Date			
Gauge	:	11/09/1979					
Discharge	:	01/11/1979					
Sediment	:	01/08/1988					
Water Quality	:	15/03/1980					
Reduced Level		Opening Date		Closing Date			
		18.0	10/01/1979				

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1979-1980	63.6	21.785	22/11/1979	0	0	05/07/1979
1980-1981	1128	23.35	23/08/1980	0.1	20.02	28/01/1981
1981-1982	7824	29.2	10/08/1981	0.1	19.47	30/03/1982
1982-1983	1210.1	23.585	17/08/1982	0.1	19.55	07/06/1982
1983-1984	4080	27.6	18/08/1983	0.1	19.89	16/03/1984
1984-1985	5000	28.86	20/08/1984	0.1	19.945	10/03/1985
1985-1986	970	23.165	06/08/1985	0.1	20.02	04/10/1985
1986-1987	585	25.2	16/08/1986	0.1	20.058	23/07/1986
1987-1988	750	23.5	25/08/1987	0.02	20.145	01/08/1987
1988-1989	4650	27.2	04/08/1988	0.1	0	15/06/1988
1989-1990	4100	26.95	20/08/1989	0.05	0	31/10/1989
1990-1991	8900	33.45	24/08/1990	0.01	19.605	30/06/1990
1991-1992	1890	24.3	31/07/1991	0.05	19.57	10/07/1991
1992-1993	1600	24	07/09/1992	0.28	19.44	30/11/1992
1993-1994	2475	25.5	17/07/1993	0.01	19.285	09/11/1993
1994-1995	9070	33.55	07/09/1994	0.05	19.18	07/03/1995
1995-1996	1265	23.6	03/09/1995	0.1	19.29	06/11/1995
1996-1997	4600	29	27/07/1996	0	18.99	04/01/1997
1997-1998	4360	28.9	01/08/1997	0	18.92	08/02/1998
1998-1999	2600	30	16/09/1998	0	18.95	02/02/1999
1999-2000	1675	25.94	22/09/1999	0.03	18.63	04/09/1999
2000-2001	255	20.4	14/07/2000	0.01	18.8	31/08/2000
2001-2002	2790	23.8	05/08/2001	0.02	18.56	05/10/2001
2002-2003	2420	26.8	04/09/2002	0.01	18.64	29/10/2002
2003-2004	2050	25.5	25/06/2003	0.25	18.85	09/12/2003
2004-2005	4800	28.8	14/08/2004	0.36	18.65	03/07/2004
2005-2006	2379.72	23.2	04/07/2005	1.61	18.17	29/06/2005
2006-2007	6125.55	31.2	07/08/2006	0.92	18.655	03/07/2006
2007-2008	4085.92	27	02/07/2007	1.61	18.17	29/06/2007
2008-2009	2135.29	23.2	12/08/2008	1.27	18.43	25/07/2008
2009-2010	779.8	20.8	30/08/2009	0	18.28	04/11/2009
2010-2011	2068.97	23.35	05/08/2010	0	0	21/12/2010
2011-2012	979.68	22.325	09/08/2011	0	0	17/06/2011
2012-2013	2726.26	25	07/09/2012	0	0	22/06/2012
2013-2014	3665.13	26.8	24/09/2013	0.81	18.04	31/05/2014
2014-2015	1425.74	22.8	09/09/2014	0	0	25/06/2014
2015-2016	470.64	20.7	28/07/2015	0	0	04/02/2016

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2016-2017	475.18	19.6	11/08/2016	0	18.01	03/01/2017
2017-2018	172.82	18.95	30/08/2017	0	0	01/06/2017
2018-2019	215.05	19.15	18/08/2018	1.19	35.63	22/10/2018
2019-2020	1844.92	25	09/08/2019	4.25	17.36	25/12/2019

Stage Discharge Sheet for Orsang at Chandwada for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	17.1	\$	17.63	223.42	20	75	18.6	123.86	19	53.97	17.99
2	\$	17.07	57.6	18.46	135.84	18.95	80	18.7	95	18.8	33.58	17.72
3	\$	17.06	22.11	17.85	123.64	18.85	100.92	18.72	94.84	18.71	sunday	17.7
4	\$	17.06	55.96	18.1	390	20.5	114.18	18.75	75.28	18.62	30.25	17.69
5	\$	17.06	197.61	19.6	399.12	20.6	103.3	18.73	58.54	18.5	27.63	17.61
6	\$	17.06	421.71	20.85	276.96	20	95.25	18.7	60	18.52	26.23	17.55
7	\$	17.06	Sunday	19.3	141.86	19	136.03	18.9	68.07	18.6	23.87	17.45
8	\$	17.06	150.96	18.95	1264.73	22.5	150	18.78	61	18.53	25.61	17.5
9	\$	17.06	59.61	17.9	1844.92	25	sunday	20.5	60.9	18.51	28.07	17.58
10	\$	17.06	35.44	17.4	969.84	22	back water	22	53.62	18.48	sunday	17.58
11	\$	17.06	14.38	17.3	150	19.5	GH	24	49.8	18.45	24.91	17.46
12	\$	17.06	13.92	17.22	141	19	back water	23.65	45.28	18.44	GH	17.45
13	\$	17.13	13.6	17.22	91.95	18.93	back water	23.8	50	18.4	24.04	17.45
14	\$	17.12	\$	17.36	80.9	18.85	back water	22.5	57.21	18.36	23.55	17.44
15	\$	17.12	\$	17.32	75	18.81	130	23.5	54.87	18.34	23.51	17.44
16	\$	17.07	\$	17.3	72.61	18.75	308.22	20.1	56.14	18.35	18.14	17.6
17	\$	17.05	\$	17.25	188.7	19.1	133.28	18.9	53.75	18.33	sunday	17.6
18	\$	17.04	\$	17.24	70	18.7	87.72	18.89	51.9	18.28	17.57	17.59
19	\$	17.15	\$	17.21	101.86	18.75	396.08	19.9	50.24	18.26	16.97	17.57
20	\$	17.13	\$	17.21	136.78	18.88	229.31	19.1	35	18.24	16.55	17.56
21	\$	17.13	\$	17.21	95.67	18.71	470.85	20.1	35.06	18.24	16.53	17.56
22	\$	17.13	\$	17.55	88.15	18.65	125	18.9	32.61	18.21	16.05	17.55
23	\$	17.1	\$	17.47	74.8	18.6	125.55	18.9	31.69	17.71	16.02	17.55
24	\$	17.1	\$	17.47	64.03	18.5	96.64	18.7	30.84	17.7	sunday	17.55
25	\$	17.24	\$	17.46	60	18.4	78.96	18.55	30.92	17.7	14.7	17.51
26	\$	17.21	\$	17.48	137	18.95	74.35	18.5	29.65	17.68	14.67	17.51
27	\$	17.2	\$	17.57	390	20.5	233.07	19.1	28	17.68	14.58	17.51
28	\$	17.15	\$	17.43	462.43	21.5	95.33	18.8	28.55	17.66	14.56	17.51
29	\$	17.2	\$	17.43	151.44	19.5	96	18.7	30.84	17.7	14.03	17.49
30	\$	17.65	\$	17.6	142.12	19	70.43	18.55	34.21	17.75	13.58	17.48
31				17.65	95.38	18.7			57.58	17.98		
Ten-Daily Mean												
I Ten-Daily	0	17.06	116.1	18.6	577.03	20.74	85.47	19.24	75.11	18.63	24.92	17.64
II Ten-Daily	0	17.09	4.19	17.26	110.88	18.93	250.1	21.43	50.42	18.35	16.52	17.52
III Ten-Daily	0	17.21	0	17.48	160.09	19.18	146.62	18.88	33.63	17.82	13.47	17.52
Monthly												
Min.	0	17.04	13.6	17.21	60	18.4	70.43	18.5	28	17.66	13.58	17.44
Max.	0	17.65	421.71	20.85	1844.92	25	1216.41	24	123.86	19	53.97	17.99
Mean	0	17.12	40.1	17.78	282.67	19.62	160.73	19.85	53.05	18.26	18.31	17.56

Annual Runoff in MCM :1474.52 Annual Runoff in mm : 383.39
Peak Observed Discharge = 1844.92 cumecs on 9/8/2019 Corres. Water Level 25 m
Lowest Observed Discharge = 0 cumecs on 01/06/2019 Corres. Water Level 17.10 m

“\$”- No Flow

Note- Zero of the gauge Change proposal has been sent to office.

Stage Discharge Sheet for Orsang at Chandwada for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	13.5	17.47	\$	17.34	\$	17.28	\$	17.37	**		\$	17.32
2	13.06	17.46	\$	17.34	\$	17.28	\$	17.37	**		\$	17.31
3	13.05	17.46	\$	17.34	\$	17.28	\$	17.36	**		\$	17.31
4	12.73	17.45	\$	17.33	\$	17.27	\$	17.36	**		\$	17.31
5	12.71	17.45	\$	17.33	\$	17.27	\$	17.36	**		\$	17.31
6	12.7	17.45	\$	17.33	\$	17.27	\$	17.36	**		\$	17.31
7	13.07	17.46	\$	17.32	\$	17.27	\$	17.36	**		\$	17.31
8	13.00	17.46	\$	17.31	\$	17.27	\$	17.36	**		\$	17.31
9	13.05	17.46	\$	17.3	\$	17.27	\$	17.36	**		\$	17.31
10	12.69	17.45	\$	17.29	\$	17.27	\$	17.36	**		\$	17.31
11	12.69	17.45	\$	17.28	\$	17.26	\$	17.36	**		\$	17.31
12	12.7	17.45	\$	17.28	\$	17.26	\$	17.36	**		\$	17.31
13	13.07	17.46	\$	17.27	\$	17.26	\$	17.38	**		\$	17.31
14	5.97	17.43	\$	17.27	\$	17.26	\$	17.38	**		\$	17.31
15	5.5	17.41	\$	17.27	\$	17.26	\$	17.38	**		\$	17.31
16	5.25	17.4	\$	17.26	\$	17.26	\$	17.38	**		\$	17.31
17	5.12	17.39	\$	17.26	\$	17.26	\$	17.38	**		\$	17.31
18	4.97	17.38	\$	17.26	\$	17.26	\$	17.37	**		\$	17.31
19	4.96	17.38	\$	17.26	\$	17.26	\$	17.37	**		\$	17.31
20	4.63	17.37	\$	17.26	\$	17.26	\$	17.39	\$	\$	\$	17.35
21	4.62	17.37	\$	17.26	\$	17.26	\$	17.38	\$	\$	\$	17.4
22	4.65	17.37	\$	17.26	\$	17.25	\$	17.38	\$	\$	\$	17.38
23	4.61	17.37	\$	17.26	\$	17.4	\$	17.38	\$	\$	\$	17.33
24	4.27	17.36	\$	17.26	\$	17.37	\$	17.38	\$	\$	\$	17.32
25	4.25	17.36	\$	17.26	\$	17.37	**		\$	17.33	\$	17.32
26	\$	17.35	\$	17.26	\$	17.37	**		\$	17.33	\$	17.31
27	\$	17.35	\$	17.26	\$	17.37	**		\$	17.32	\$	17.31
28	\$	17.35	\$	17.28	\$	17.37	**		\$	17.32	\$	17.31
29	\$	17.35	\$	17.28	\$	17.37	**		\$	17.32	\$	17.3
30	\$	17.35	\$	17.28			**		\$	17.32	\$	17.3
31	\$	17.34	\$	17.28			**		\$		\$	17.3
Ten-Daily Mean												
I Ten-Daily	12.96	17.46	0	17.32	0	17.27	0	17.36	0	0	0	17.31
II Ten-Daily	7.49	17.41	0	17.27	0	17.26	0	17.37	0	1.73	0	17.31
III Ten-Daily	2.04	17.36	0	17.27	0	17.35	0	6.32	0	17.33	0	17.33
Monthly												
Min.	4.25	17.34	0	17.26	0	17.25	0	17.36	0	17.32	0	17.3
Max.	13.5	17.47	0	17.34	0	17.4	0	17.39	0	17.34	0	17.4
Mean	7.49	17.41	0	17.29	0	17.29	0	13.69	0	6.35	0	17.32

Peak Computed Discharge = 390 cumecs on 4/8/2019 Corres. Water Level 20.5 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019 Corres. Water Level 17.07 m

⌘- No Flow
 **- Lockdown

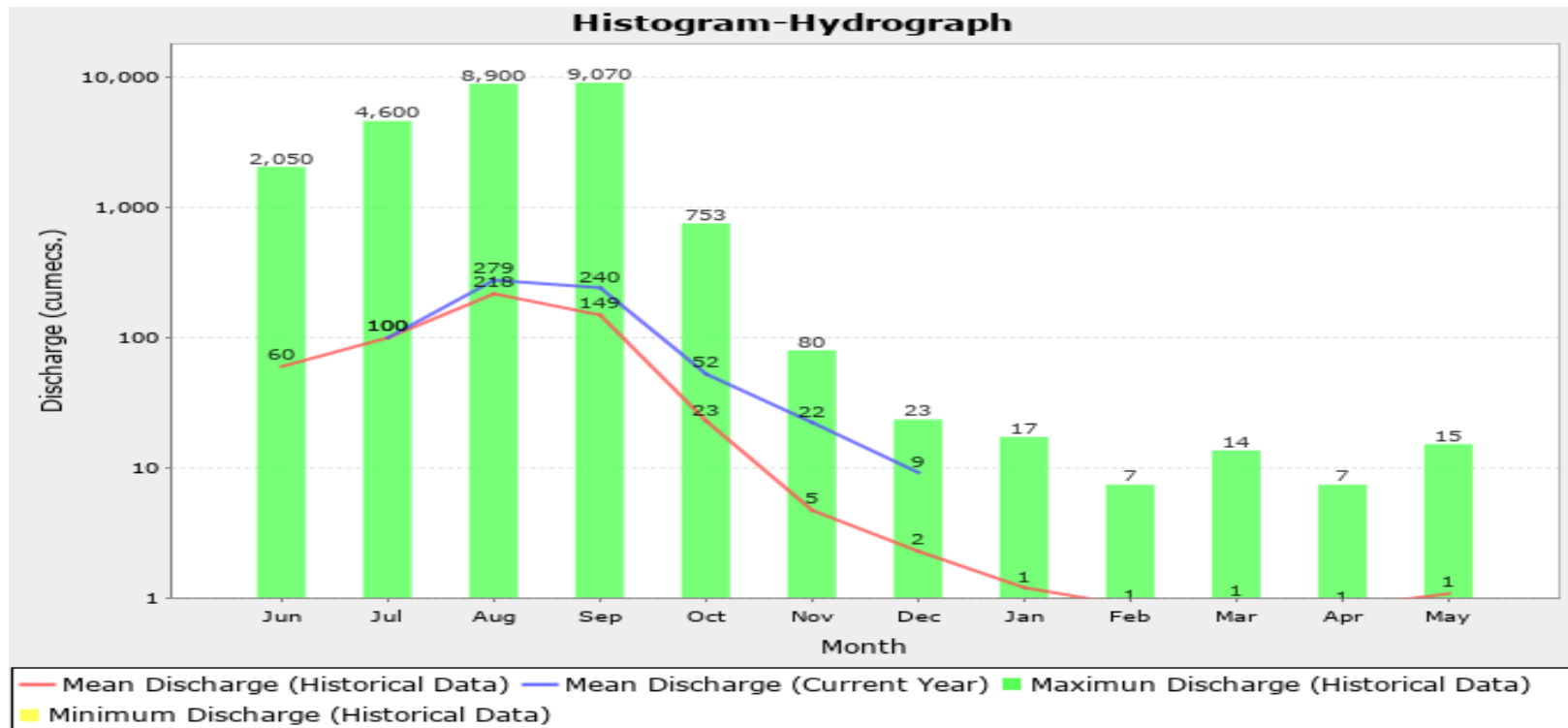
Histogram - Hydrograph for Water Year: 2019-2020 (Data considered: 1981-2020)

Station Name: Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Orsang

Sub-Division: LNSD, CWC Bharuch



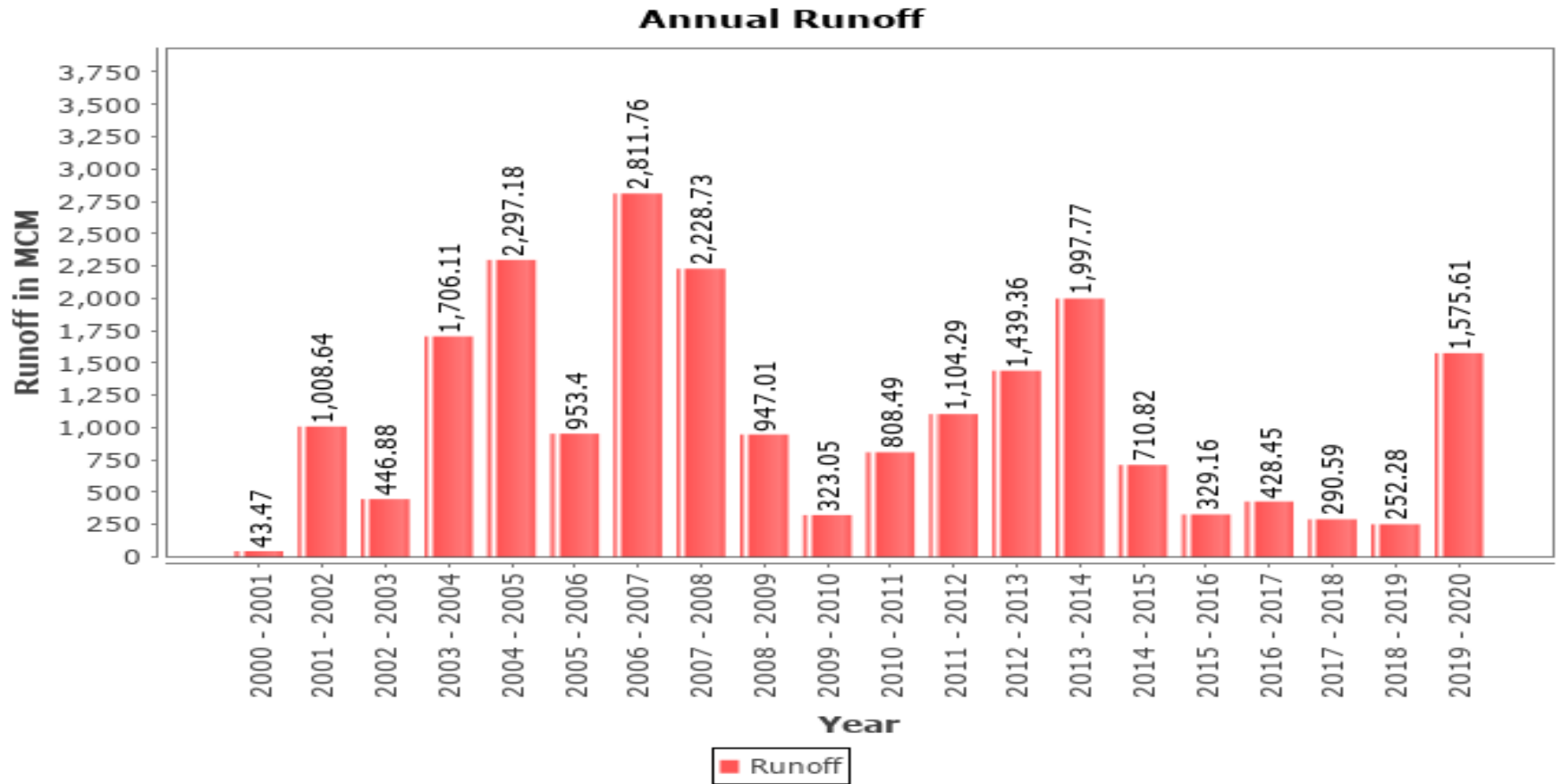
Annual Runoff Values for the period (2000 – 2020)

Station Name: Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Orsang

Sub-Division: LNSD, CWC Bharuch



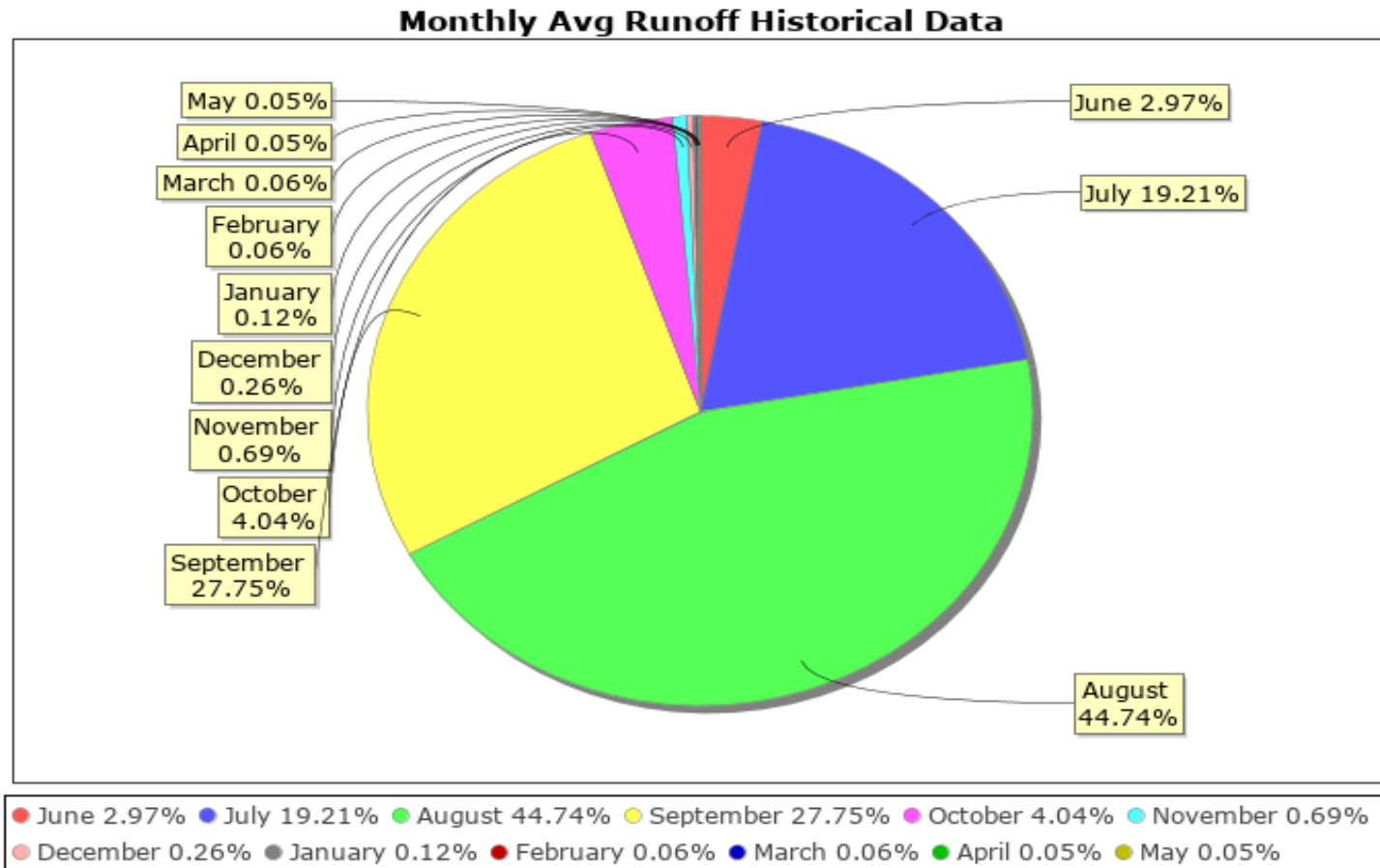
Monthly Average Runoff based on period (1981 – 2020)

Station Name: Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Orsang

Sub-Division: LNSD, CWC Bharuch



Monthly Runoff for the Year (2019-2020)

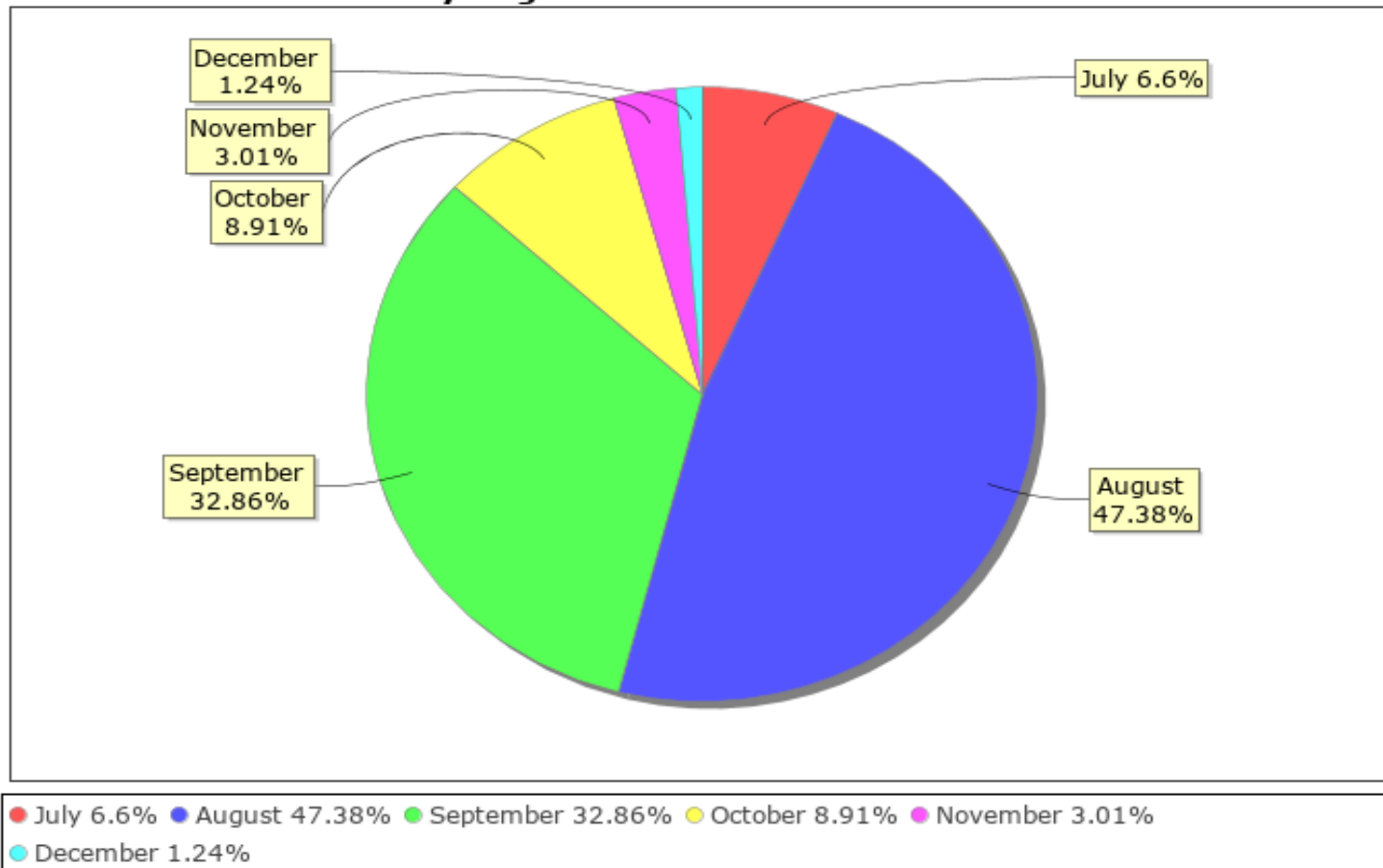
Station Name: Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Orsang

Sub-Division: LNSD, CWC Bharuch

Monthly Avg Runoff Water Year: 2019-2020



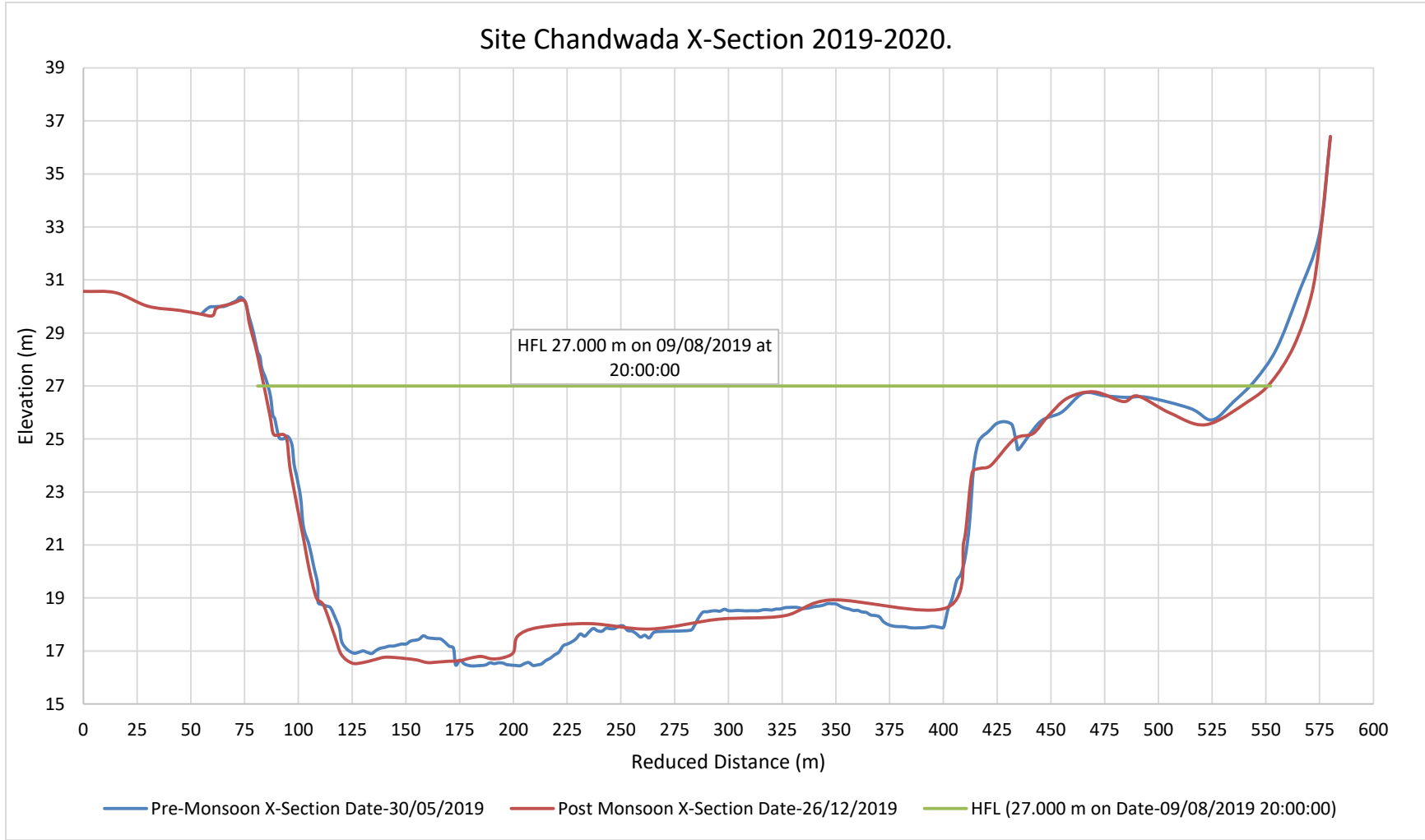
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-2020)

Station Name: Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Orsang

Sub-Division: LNSD, CWC Bharuch



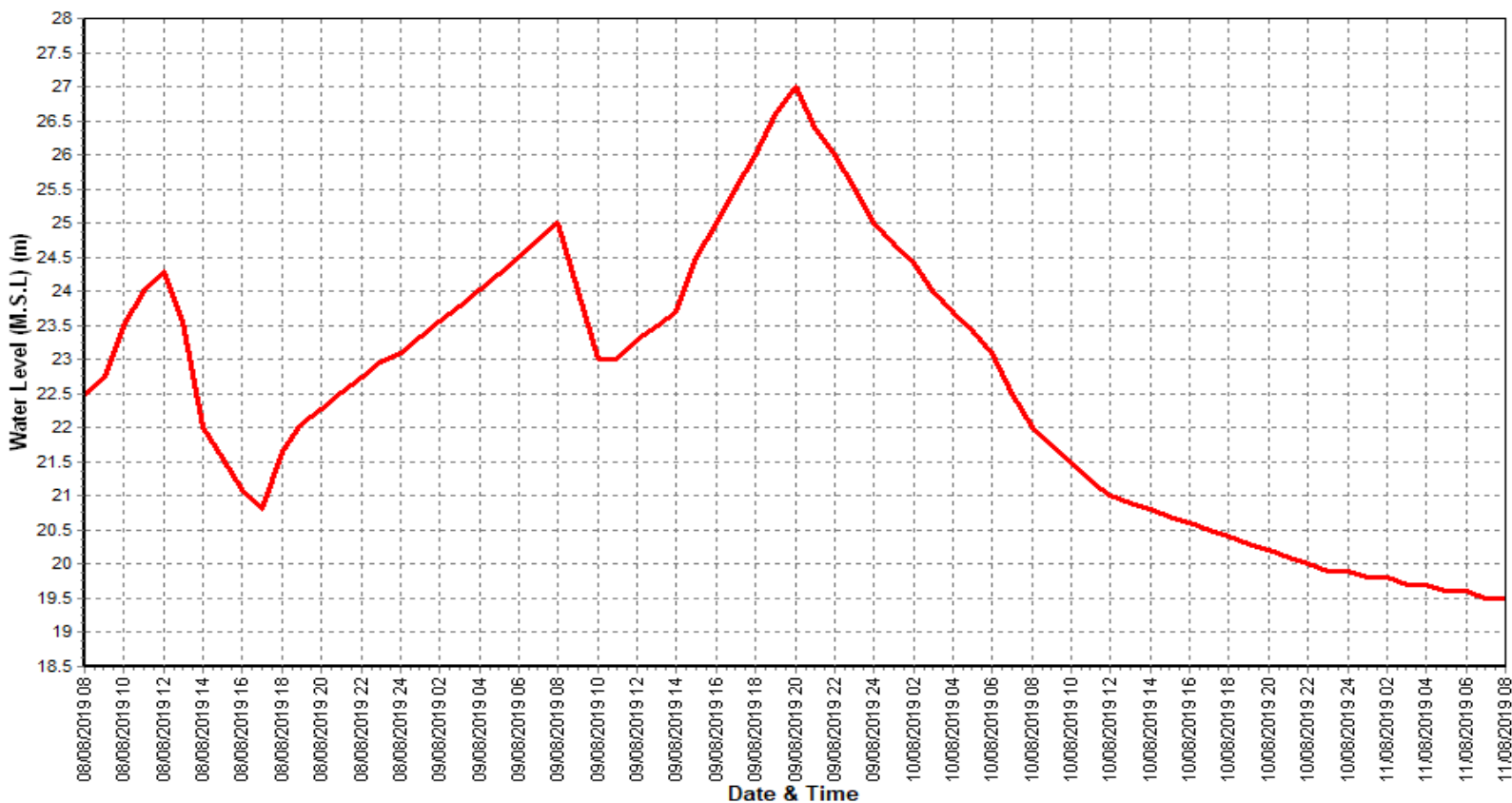
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-2020)

Station Name: : Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



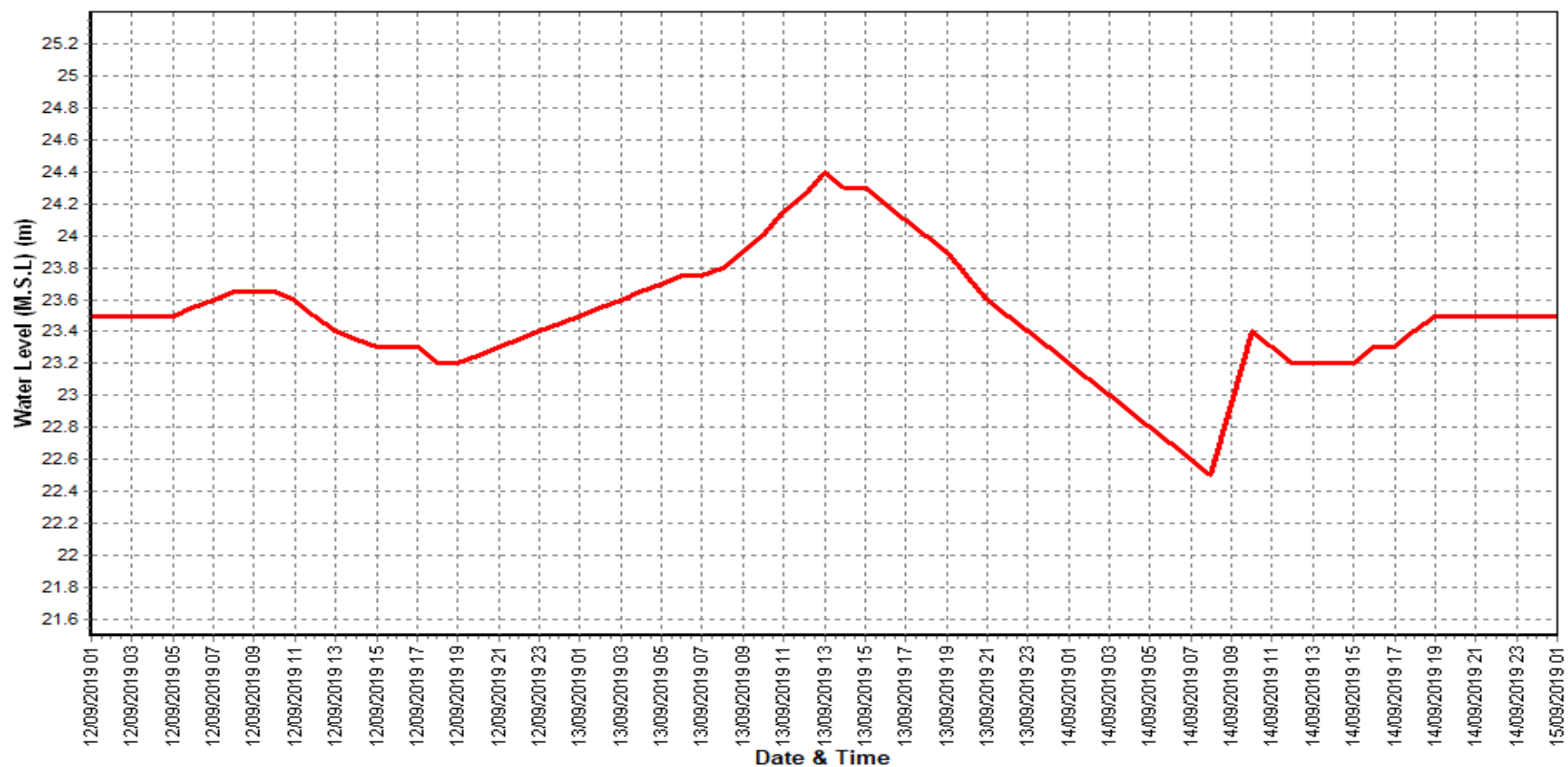
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-2020)

Station Name: : Orsang at Chandwada

Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



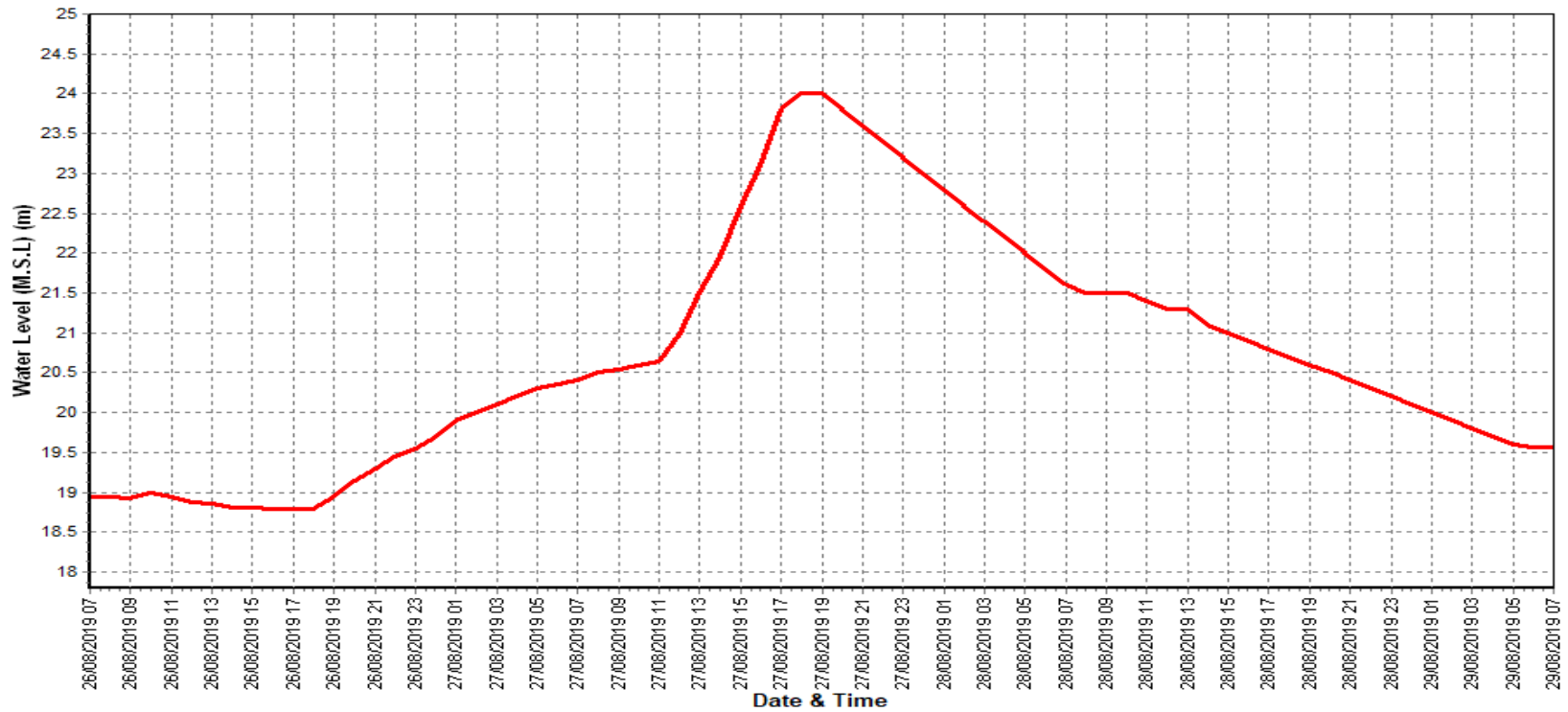
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-2020)

Station Name: : Orsang at Chandwada

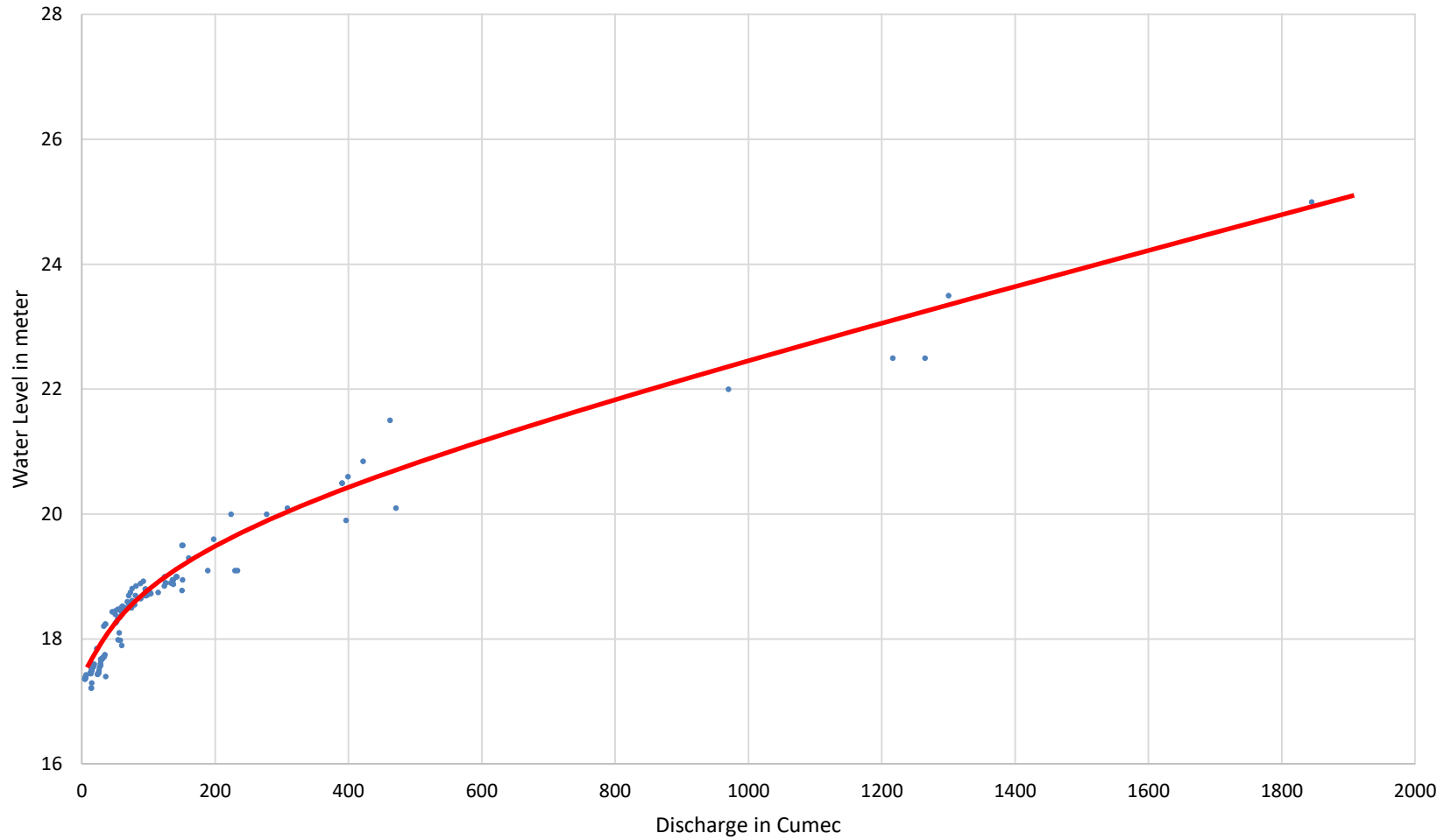
Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



Site Chandwada Stage Discharge Curve 2019-2020.



4.2 Narmada at Garudeshwar.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)					
				Water Year	: 2019 - 2020
Site	:	Garudeshwar		Code	: CW1NAL000434
State	:	Gujarat		District	: Narmada
Basin	:	Narmada		Independent River	: Narmada
Tributary	:	-		Sub Tributary	: -
Sub-Sub Tributary	:	-		Local River	: Narmada
Division	:	Executive Engineer, Tapi Division, Surat		Sub-Division	: Lower Narmada Sub-Division, Bharuch
Drainage Area	:	87892 sq. km.		Bank	: Right
Latitude	:	21°53'11"		Longitude	: 73°39'16"
Current Zero of Gauge (m)	:	10			
CATEGORY		Opening Date		Closing Date	
Gauge	:	22/11/1971			
Discharge	:	23/03/1972			
Sediment	:	21/03/1973			
Water Quality	:	15/06/1977			
Reduced Level		Opening Date		Closing Date	
10.0		22/12/1971			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1971-1972	122.5	14.260	22/03/1972	24.5	14.145	24/05/1972
1972-1973	1085	16.625	24/09/1972	22.3	14.370	31/05/1973
1973-1974	40428.2	39.625	31/08/1973	21.7	14.365	04/06/1973
1974-1975	29904.8	32.195	21/08/1974	24	14.265	31/05/1975
1975-1976	30476.9	31.025	13/09/1975	23.2	14.273	03/06/1975
1976-1977	16374.5	26.490	05/08/1976	35.5	13.950	24/05/1977
1977-1978	24700	27.600	08/08/1977	30.3	14.000	09/06/1977
1978-1979	40745	34.212	30/08/1978	32.6	14.100	07/06/1978
1979-1980	27475	31.245	11/08/1979	14.6	14.300	31/05/1980
1980-1981	23138	28.100	31/08/1980	14.5	14.310	03/06/1980
1981-1982	22883.4	29.850	11/08/1981	24.7	14.305	16/06/1981
1982-1983	15722.4	25.803	24/08/1982	19.9	14.180	28/05/1983
1983-1984	18150	27.180	12/09/1983	19.1	14.150	01/06/1983
1984-1985	49500	35.880	20/08/1984	21.7	14.185	01/06/1984
1985-1986	14500	24.740	11/08/1985	11.5	14.450	22/03/1986
1986-1987	34700	31.010	16/08/1986	22	14.235	08/06/1986
1987-1988	10800	21.630	29/08/1987	16.2	14.010	24/05/1988
1988-1989	22600	27.270	05/08/1988	26.6	14.070	31/05/1989
1989-1990	14200	23.630	09/08/1989	26	14.020	04/06/1989
1990-1991	52000	36.100	24/08/1990	122	14.170	17/06/1990
1991-1992	22500	27.120	31/07/1991	66	13.730	27/04/1992
1992-1993	10150	22.100	19/08/1992	63.5	13.730	13/06/1992
1993-1994	20973	29.770	17/07/1993	19.17	13.620	25/02/1994
1994-1995	60642	39.780	07/09/1994	88	13.920	31/05/1995
1995-1996	11168	24.100	04/09/1995	44.21	13.810	29/06/1995
1996-1997	28200	33.100	28/07/1996	23.18	13.500	17/10/1996
1997-1998	21849	31.160	27/07/1997	107.2	13.840	23/06/1997
1998-1999	25600	33.800	16/09/1998	54.71	13.480	29/12/1998
1999-2000	23400	30.970	21/09/1999	85.23	13.780	14/06/1999
2000-2001	4460	18.680	01/08/2000	1.84	13.210	16/03/2001
2001-2002	8200	22.160	17/08/2001	5.98	13.580	29/04/2002
2002-2003	18250	29.390	04/09/2002	3.44	13.310	31/05/2003
2003-2004	9850	22.540	30/07/2003	2.88	13.350	27/12/2003
2004-2005	10550	23.500	26/08/2004	3.73	13.400	25/10/2004
2005-2006	7549.75	20.820	06/08/2005	5.54	13.510	11/06/2005
2006-2007	22226.45	31.200	07/08/2006	25.76	13.800	30/01/2007

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2007-2008	10600.78	21.700	09/08/2007	1.27	13.640	03/02/2008
2008-2009	741.13	15.600	16/06/2008	16.92	13.710	16/10/2008
2009-2010	10684.21	22.970	12/09/2009	11.42	13.700	27/12/2009
2010-2011	4542.92	18.830	10/09/2010	2.15	13.720	29/06/2010
2011-2012	11631.56	25.600	28/08/2011	30.36	13.610	30/10/2011
2012-2013	26586.36	29.350	09/08/2012	17.38	13.440	03/03/2013
2013-2014	32056.75	34.560	25/08/2013	38.44	13.570	03/06/2013
2014-2015	10016.13	23.145	09/09/2014	18.56	13.160	27/10/2014
2015-2016	4804.97	18.740	07/08/2015	17.39	13.540	07/07/2015
2016-2017	8995.63	21.975	10/08/2016	29.8	13.56	22/12/2016
2017-2018	503.51	15.405	24/06/2017	18.89	13.710	15/05/2018
2018-2019	21071	29.580	18/08/2018	13.44	13.670	09/10/2018
2019-2020	22611	28.925	13/09/2019	12.54	13.800	07/03/2020

Stage Discharge Sheet for Narmada at Garudeshwar for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	42.45	14.27	23.16	14.37	126.04	14.64	3500	18.58	4079	18.40	495.63	14.91
2	43	14.44	22.73	14.20	99.86	14.52	3500	18.50	7000	19.85	700	15.16
3	42.68	14.30	21.98	14.17	148.17	14.79	1742	17.46	5589	19.55	500	14.97
4	23.2	14.22	21.08	14.11	180	14.96	1502	16.23	3734	18.10	460	14.84
5	21	14.03	28.94	14.27	710	15.29	13728	24.05	2072	17.02	379.5	14.85
6	20.71	13.90	28.69	14.26	178.12	14.93	6808	20.65	3000	17.60	358.17	14.81
7	17.04	13.95	29	14.27	104.48	14.56	5931.39	20.98	1538	16.50	571.58	14.87
8	17.37	13.96	33.3	14.43	91.26	14.47	8000	22.35	2000	16.80	218.2	14.70
9	18.5	14.06	29.45	14.28	18420	27.08	15695	26.30	1529	16.35	196.88	14.57
10	18.57	14.06	28.34	14.25	13620	24.92	18000	27.60	2065	16.73	190	14.58
11	20.1	14.09	26.13	14.26	4600	19.46	21071	28.67	2023	16.55	205.57	14.63
12	20.27	14.12	22.92	14.20	4500	19.35	18772	27.70	1376	16.15	700	15.05
13	18.29	14.05	21.2	14.14	3418	18.02	22611	28.92	1300	16.10	770.6	15.20
14	22.67	14.15	21	14.15	3686	18.67	19000	27.75	1181	15.75	733.4	15.05
15	23.55	14.22	20.96	14.15	1900	17.55	21000	29.30	1265	15.80	729.53	15.04
16	43.6	14.51	21.97	14.17	3386	18.03	13958	24.42	1106	15.65	469.1	14.80
17	42.84	14.50	21.88	14.17	3775	18.75	8461	20.17	1008	15.44	200	14.78
18	42.9	14.51	18.76	13.91	10000	21.60	11469	21.88	733	15.05	232.52	14.76
19	32.6	14.40	19.8	13.98	8722	20.67	11775	22.61	471.9	14.90	516.81	14.92
20	34.66	14.44	20.29	14.05	10040	21.45	8667	21.98	700	15.00	715.65	14.99
21	30.31	14.33	21	14.13	8319	20.08	11832	22.75	514.7	14.93	705.3	15.00
22	31.37	14.36	27.97	14.22	3516	18.35	9000	23.65	503	14.90	536.9	14.96
23	32.5	14.40	27.1	14.21	1924	17.80	5635	19.50	367.51	14.65	385.5	14.87
24	31.33	14.36	26.7	14.19	3714	18.75	2282	16.90	353.35	14.64	450	14.90
25	32.78	14.40	24.49	14.17	8000	19.90	3550	18.33	351.43	14.65	534.46	14.97
26	32.59	14.45	22.45	14.15	13748	25.05	3188	17.80	260.13	14.52	508.08	14.96
27	32.48	14.40	28.28	14.23	15319	26.35	3562	18.40	35	14.37	457.62	14.90
28	31.36	14.38	100	14.50	13531	26.00	5900	20.00	20.98	14.01	492.1	14.94
29	32.93	14.45	28.82	14.32	10916	24.75	6000	19.55	13.31	13.94	444.34	14.89
30	31	14.37	30.32	14.37	9276	21.40	8033	21.00	21.63	14.16	491.68	14.95
31			23.11	14.11	3565	18.92			386.69	14.85		
Ten-Daily Mean												
I Ten-Daily	26.45	14.12	26.67	14.26	3367.79	17.02	7840.64	21.27	3260.6	17.69	407	14.83
II Ten-Daily	30.15	66.85	21.49	14.12	5402.7	19.36	12374.26	25.34	1116.39	15.64	527.32	14.92
III Ten-Daily	31.86	14.39	32.75	14.24	8348	21.58	5898.2	19.79	257.07	14.51	500.6	14.93
Monthly												
Min.	17.04	13.90	18.76	13.91	91.26	14.47	21.07	16.23	13.31	13.94	190	14.57
Max.	43.6	14.51	100	14.50	18420	27.08	22611	29.30	7000	19.85	770.6	15.20
Mean	29.49	31.79	26.97	14.21	5706.16	19.32	8704.37	22.13	1544.69	15.95	478.3	14.89

Annual Runoff in

MCM : **47203**

Annual Runoff in mm : **537**

Peak Observed Discharge = **22611 cumecs on 13/9/2019** Corres. Water Level **28.92 m**

Lowest Observed Discharge = **12.54 cumecs on 7/3/2020** Corres. Water Level **13.8 m**

Stage Discharge Sheet for Narmada at Garudeshwar for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	400	14.83	342.11	14.61	334	15.02	27	14.10	**		243.42	14.77
2	452.26	14.94	336	14.56	300	14.83	27	14.06	**		245	14.81
3	520.58	15.00	325	14.55	308.1	14.90	215	14.43	**		240	14.78
4	503.23	14.98	315.1	14.56	288.8	14.86	36.86	14.20	**		230.85	14.76
5	459.78	14.95	250	14.40	286.53	14.86	24.58	14.05	**		224.2	14.71
6	425.61	14.94	205	14.43	291.15	14.87	16.35	14.01	**		203.28	14.50
7	388.07	14.86	193	14.39	299.84	14.90	12.54	13.80	**		180	14.43
8	400	14.96	197.3	14.42	289.53	14.90	13	13.95	**		200.8	14.49
9	438.38	14.95	191.69	14.41	280	14.82	265.19	14.86	**		210	14.54
10	452.85	15.02	189.57	14.38	289	14.88	300	15.20	**		200	14.50
11	446.38	15.02	179.72	14.35	280	14.77	12.77	13.94	**		218.52	14.61
12	423.23	14.98	200	14.39	285.4	14.87	356.1	15.37	**		204.43	14.52
13	399.63	14.98	335.1	14.82	283	14.87	365	15.37	**		219.55	14.69
14	403.93	14.99	379.18	14.97	281.8	14.85	261.48	14.89	**		221.85	14.70
15	400	14.97	350	14.91	260.33	14.78	250	14.82	**		257.12	14.81
16	403.52	14.99	322.23	14.82	270	14.75	248	14.83	**		250	14.80
17	406.95	15.02	319.44	14.77	261.07	14.75	235.44	14.60	**		250	14.80
18	394.2	15.02	311	14.72	281.76	14.84	258.72	14.84	**		255.35	14.93
19	384.1	14.95	300	14.71	261.67	14.78	259.25	14.95	**		256.93	14.92
20	393.1	14.96	303.24	14.73	277	14.85	296.52	15.09	**		258.73	14.92
21	395	15.01	311.73	14.77	268	14.82	319	15.19	**		254	14.91
22	400	14.94	296.88	14.74	278	14.85	300	15.08	210	14.52	254.18	14.92
23	408	14.99	270.25	14.66	270	14.81	250	14.84	315.1	15.08	250	14.85
24	404	14.97	273.26	14.66	281	14.89	*	14.30	660.39	15.44	250	14.82
25	400	14.83	247.21	14.60	247.71	14.70	*	14.21	350	15.25	200	14.70
26	363.85	14.60	250	14.58	240	14.69	*	14.17	300	15.18	214.1	14.70
27	354.5	14.59	256.83	14.61	241.5	14.70	**		259.45	14.97	191.1	14.50
28	343.31	14.48	261.54	14.73	254.54	14.72	**		257.3	14.96	12.72	13.75
29	300	14.60	319.44	14.99	27.41	14.00	**		245.18	14.88	13.72	13.80
30	339.65	14.56	294.12	14.90			**		228.35	14.73	13	13.90
31	347	14.53	318.18	14.98							13	13.89
Ten-Daily Mean												
I Ten-Daily	444.08	14.94	254.48	14.47	296.69	14.88	93.75	14.27	0	0.00	217.75	14.63
II Ten-Daily	405.5	14.99	299.99	14.72	274.2	14.81	254.33	14.87	0	0.00	239.25	14.77
III Ten-Daily	368.66	14.74	281.77	14.75	234.24	14.69	112.64	7.98	302.58	14.95	151.44	14.43
Monthly												
Min.	300	14.48	179.72	14.35	27.41	14.00	12.54	13.80	200	14.50	12.72	13.75
Max.	520.58	15.02	379.18	14.99	334	15.02	365	15.37	660.39	15.44	258.73	14.93
Mean	406.08	14.89	278.75	14.65	268.38	14.79	153.57	12.37	100.86	4.98	202.81	14.61

Peak Computed Discharge = 21000 cumecs on 15/9/2019 Corres. Water Level 29.3 m
 Lowest Computed Discharge = 13 cumecs on 8/3/2020 Corres. Water Level 13.95 m

**- Shortage of staff
 ***- Lockdown

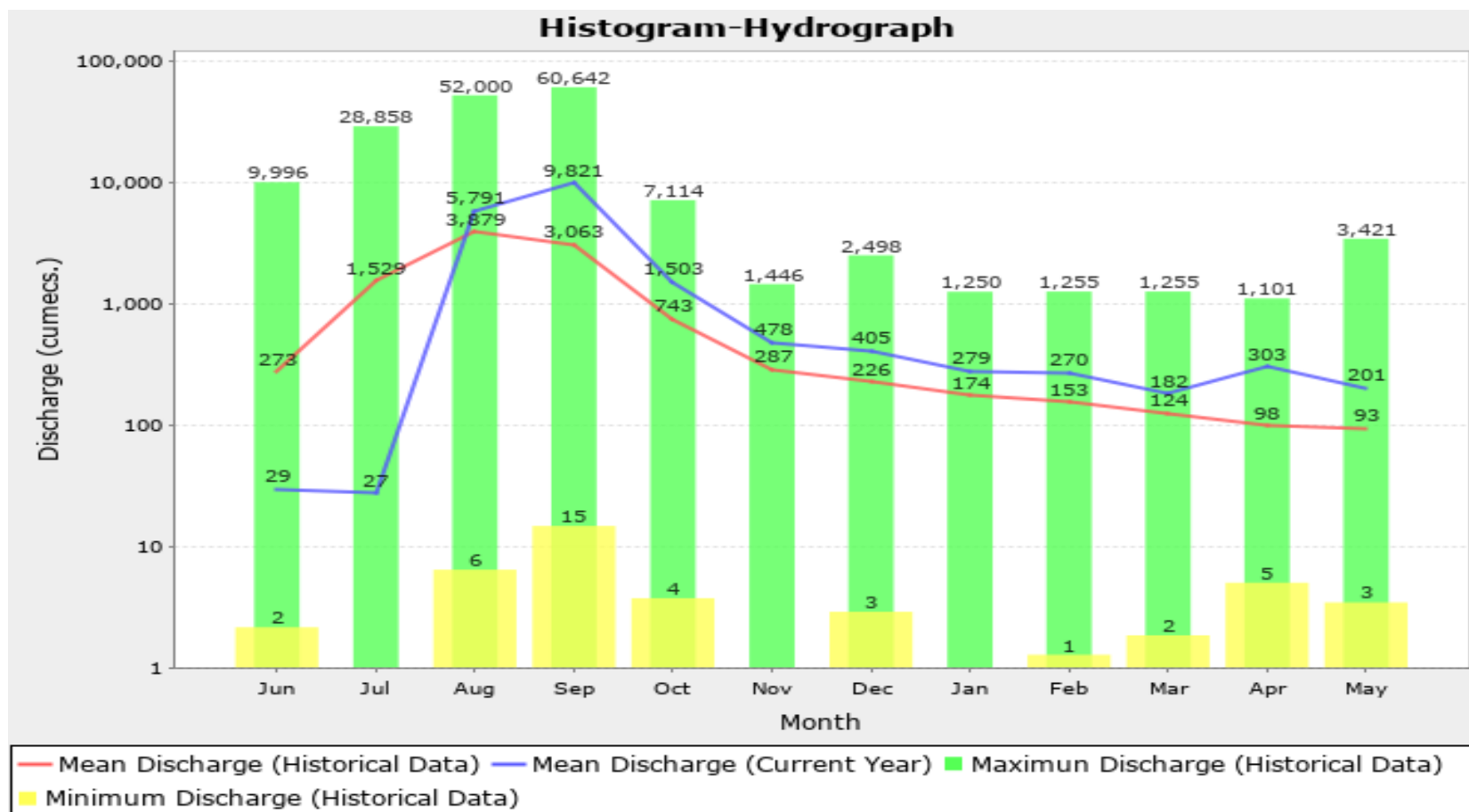
Histogram - Hydrograph for Water Year: 2019-2020 (Data considered: 1972-2019)

Station Name: Narmada at Garudeshwar

Division: Tapi Division, Surat

Local River: Narmada

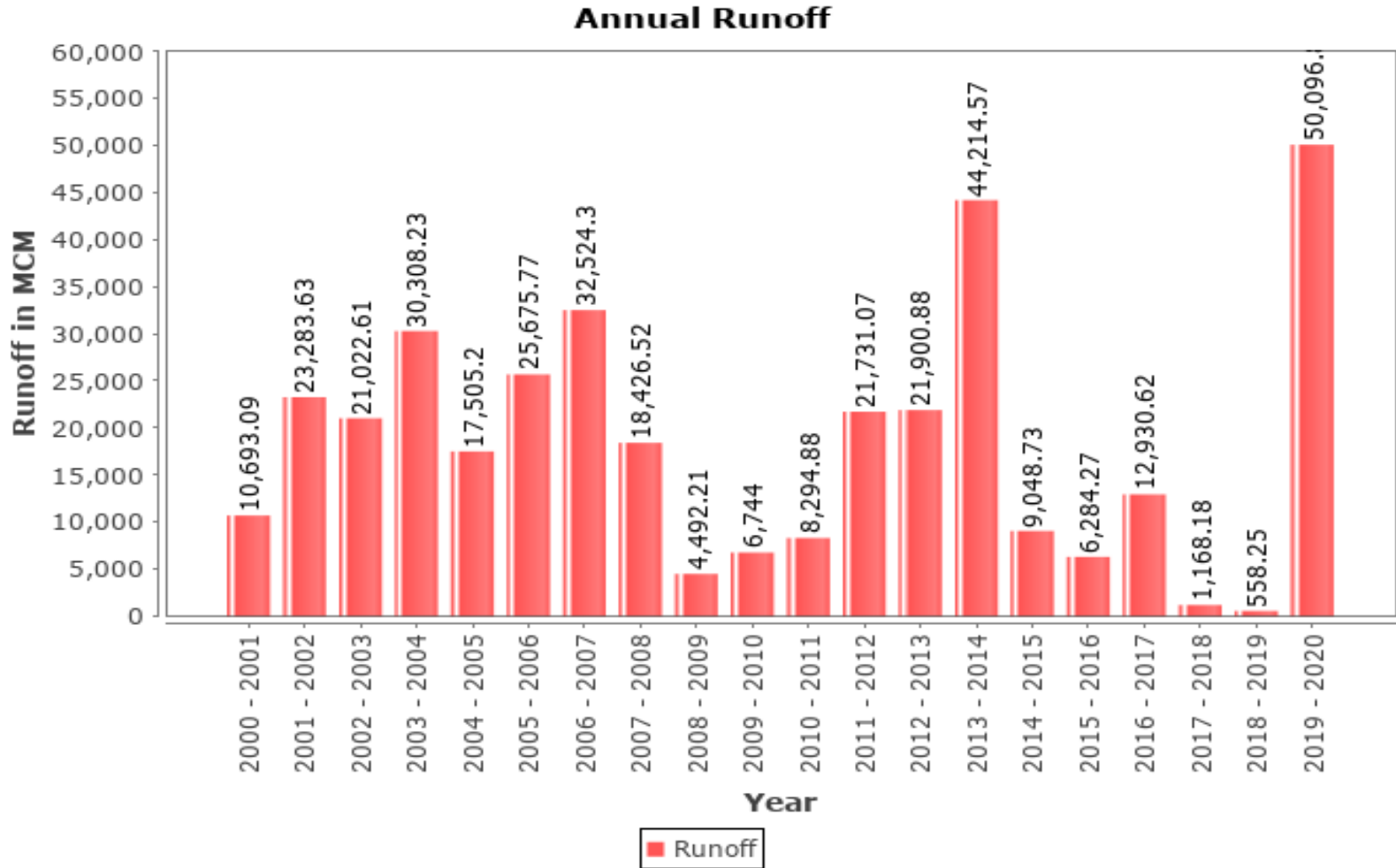
Sub-Division: LNSD, CWBharuch



Annual Runoff Values for the period (2000 – 2020)

Station Name: Narmada at Garudeshwar
Local River: Narmada

Division: Tapi Division, Surat
Sub-Division: LNSD, CWBharuch



Monthly Average Runoff based on period (1972 – 2020)

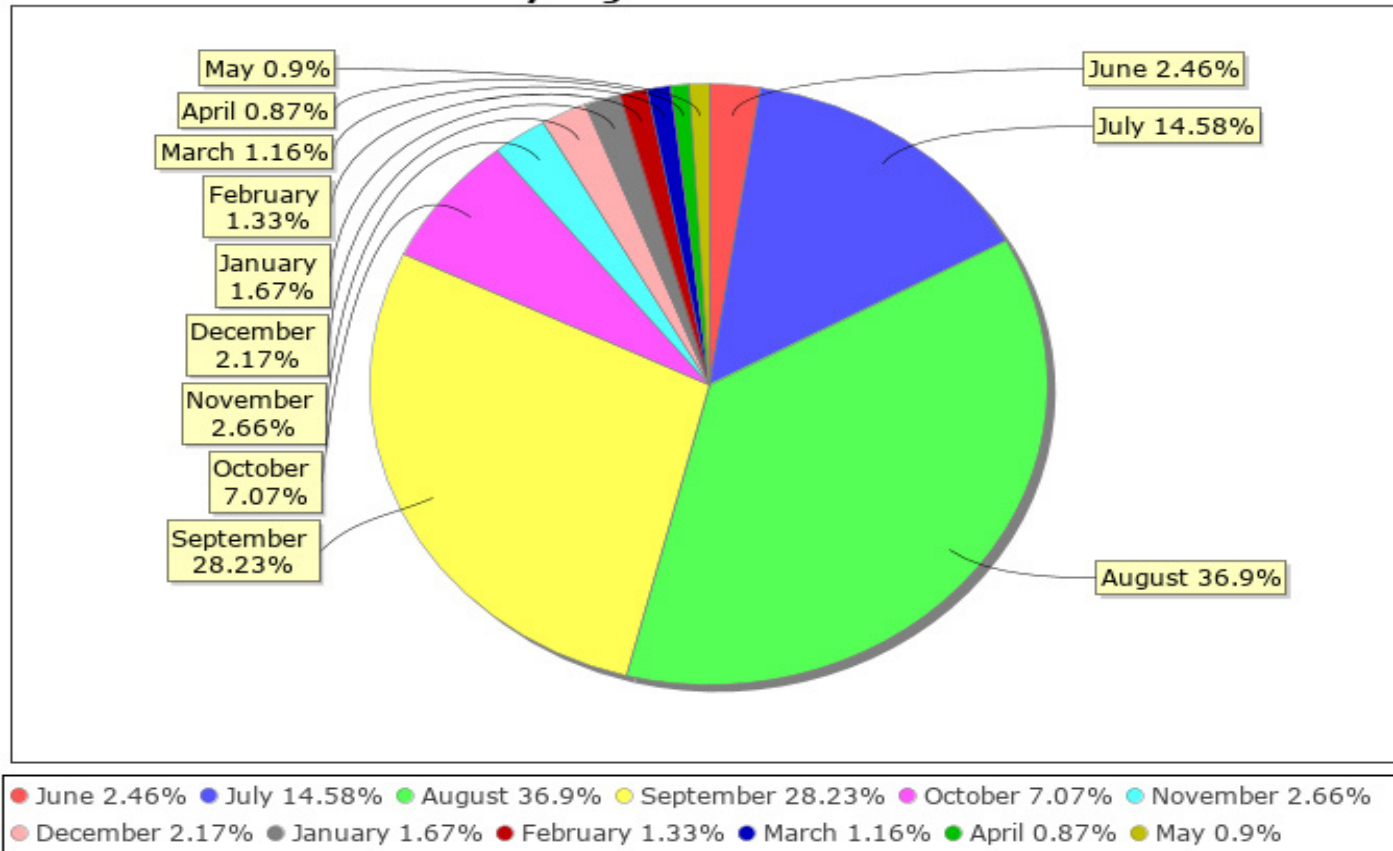
Station Name: Narmada at Garudeshwar

Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch

Monthly Avg Runoff Historical Data

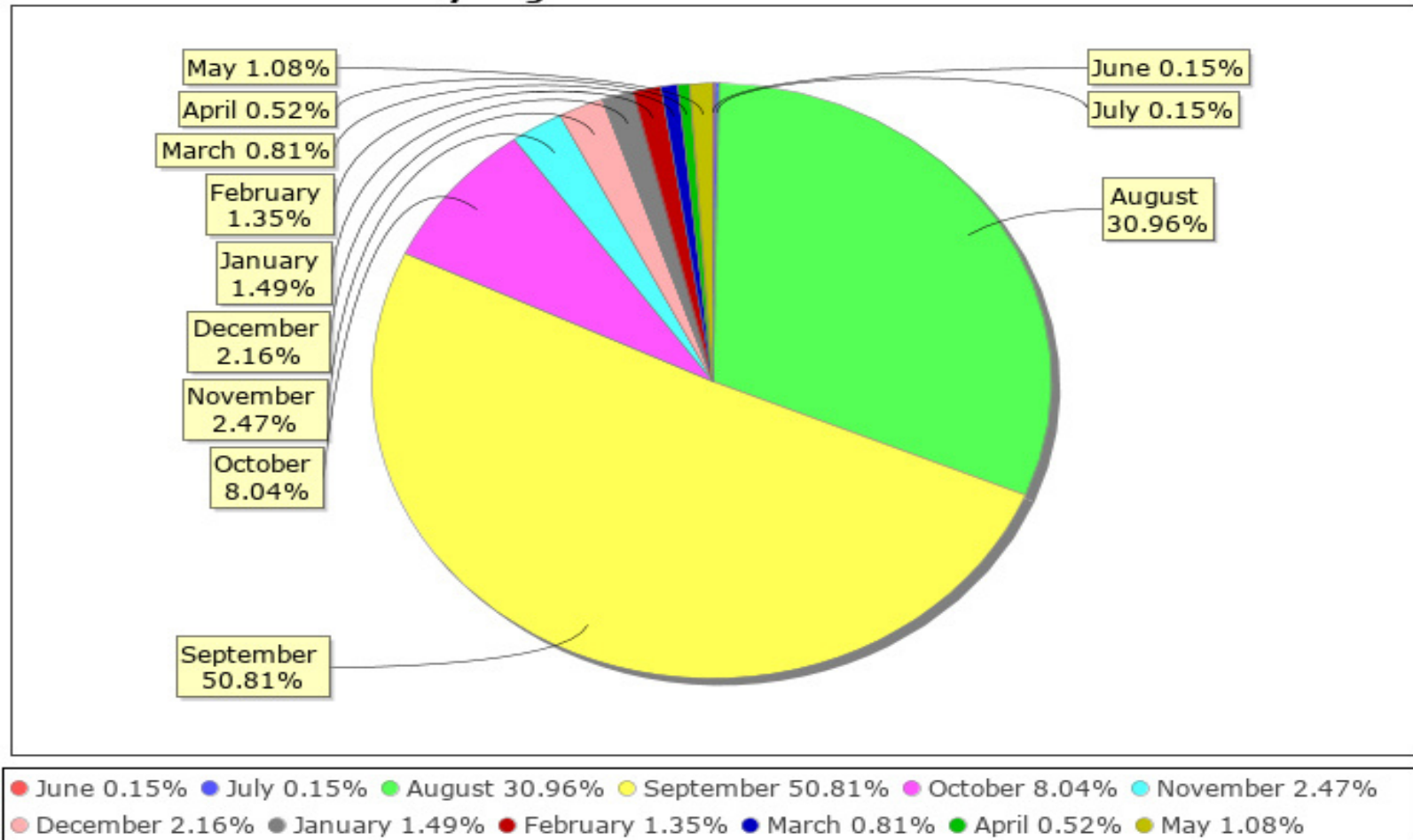


Monthly Runoff for the Year(2019-20)

Station Name : Narmada at Garudeshwar
Local River : Narmada

Division : Tapi Division, Surat
Sub-Division : LNSD, CWC Bharuch

Monthly Avg Runoff Water Year: 2019-2020



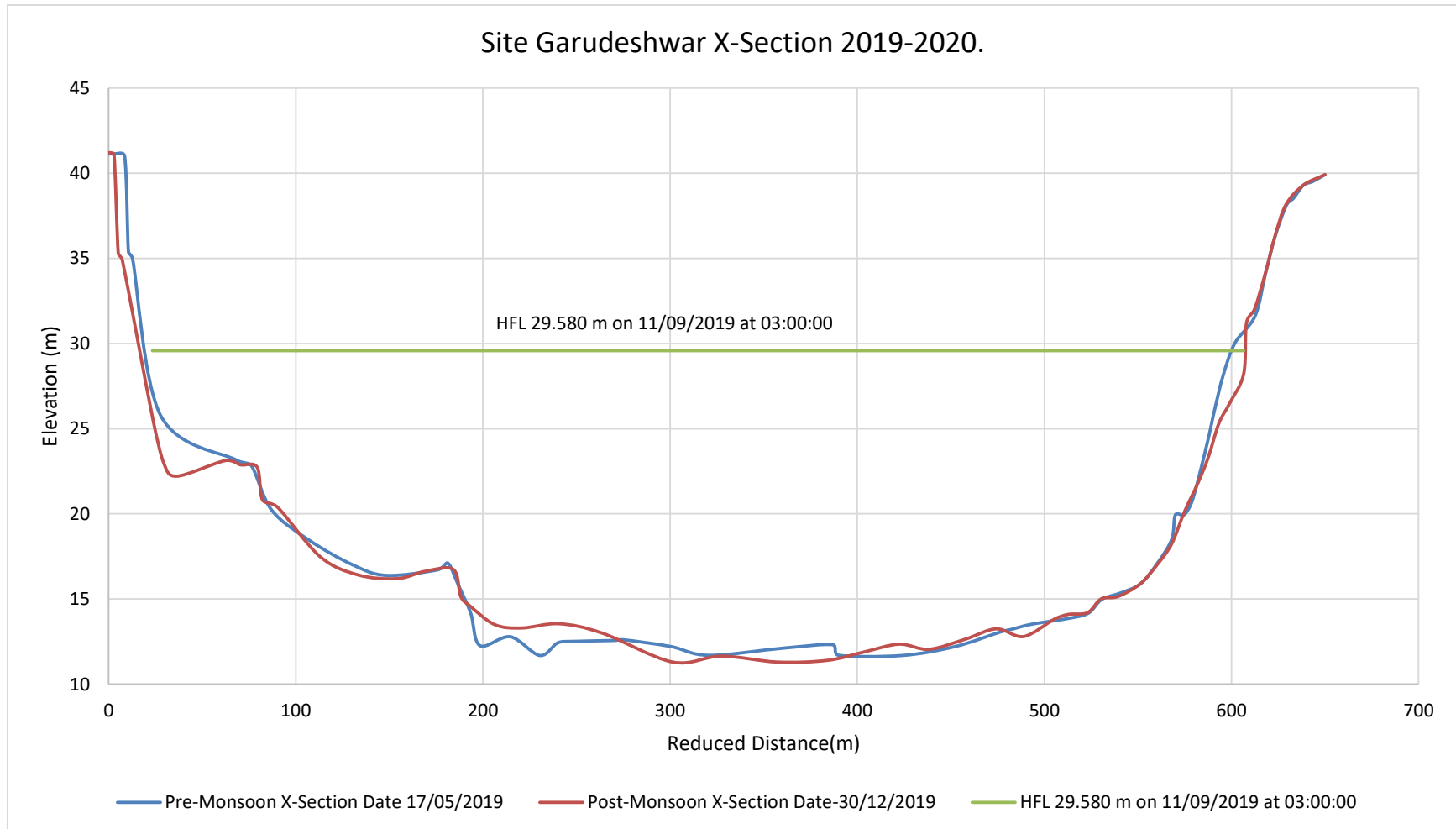
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-2020)

Station Name: Narmada at Garudeshwar

Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



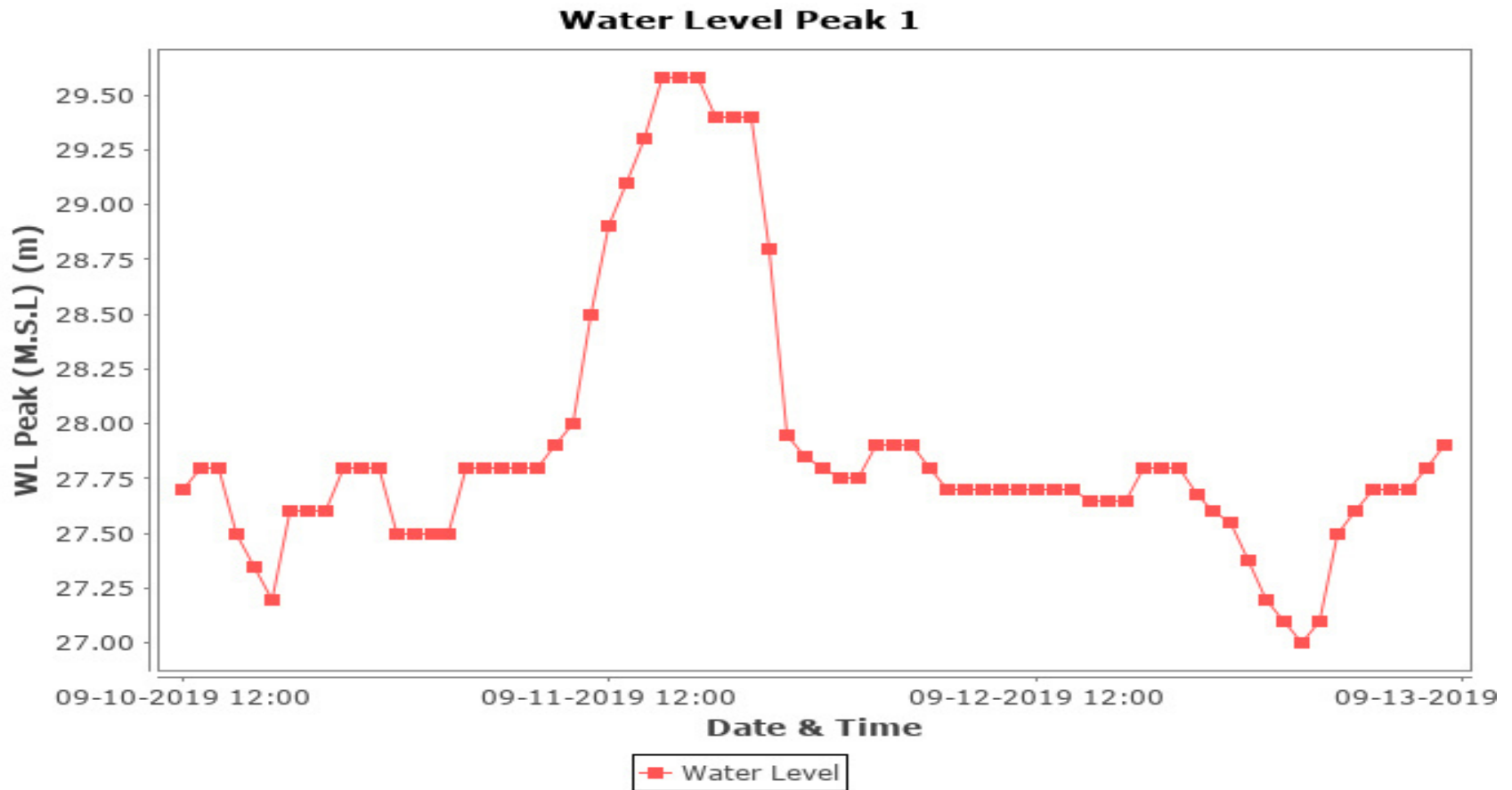
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-2020)

Station Name: Narmada at Garudeshwar

Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



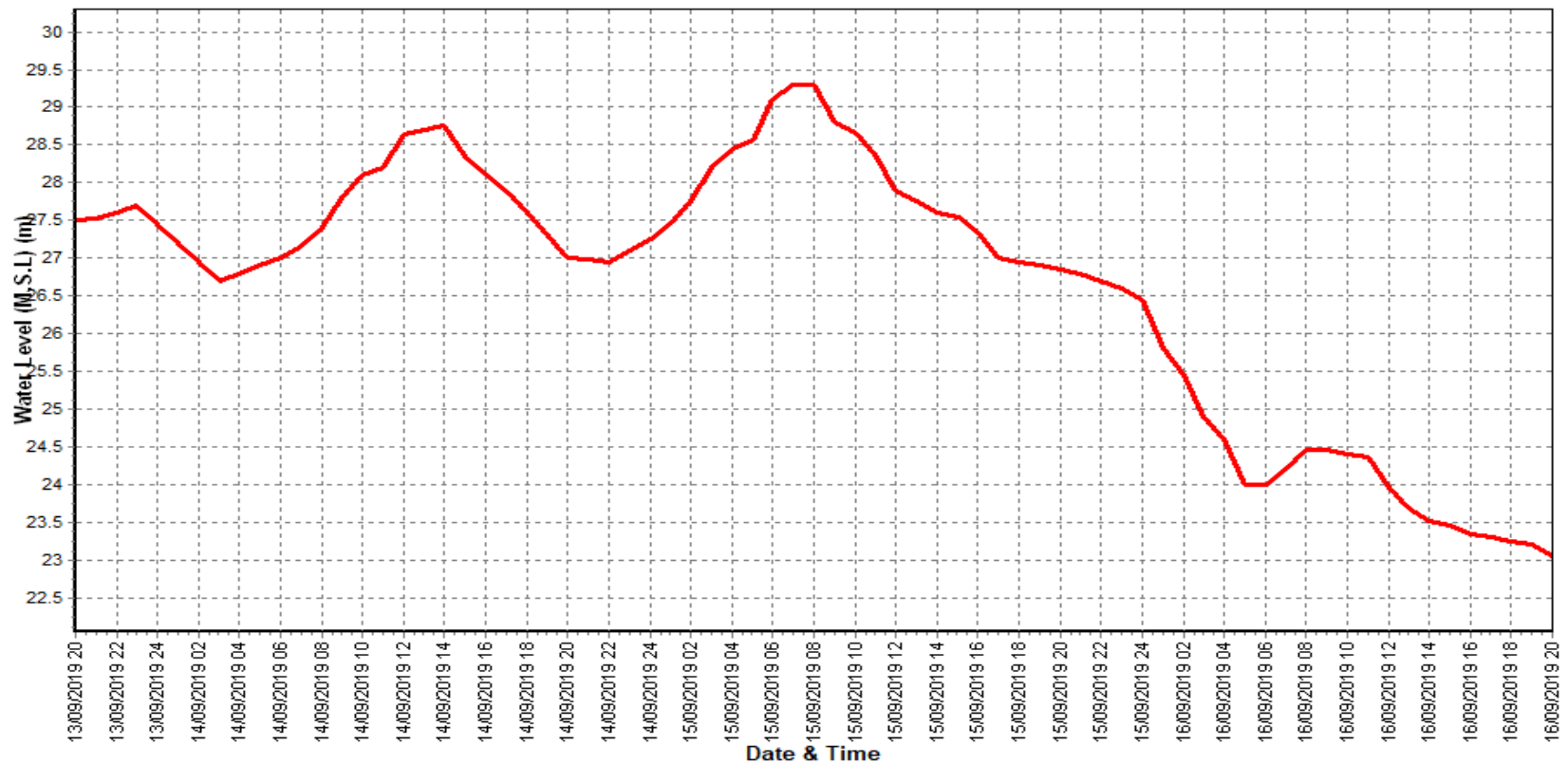
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-2020)

Station Name: Narmada at Garudeshwar

Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



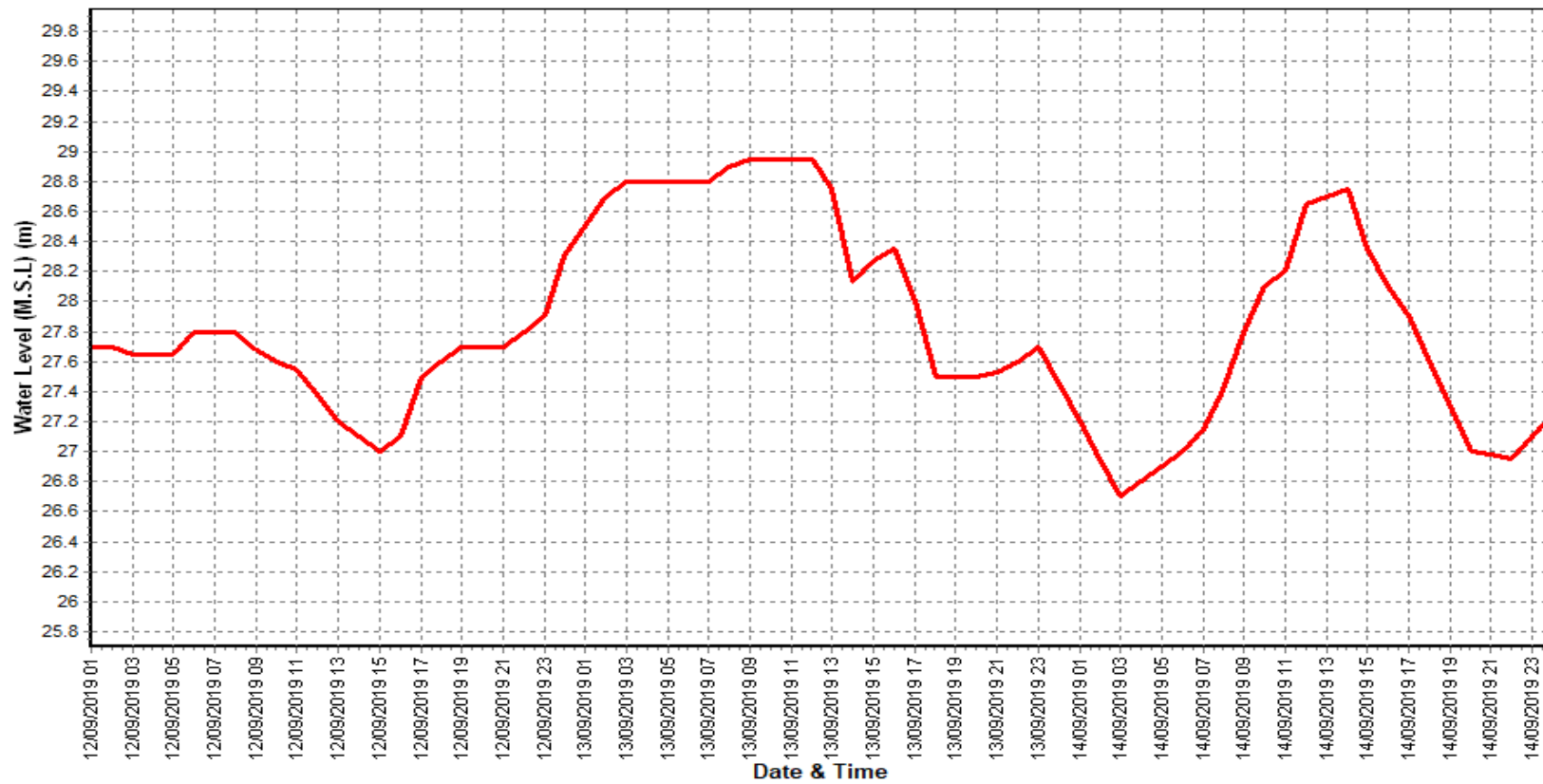
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-2020)

Station Name: Narmada at Garudeshwar

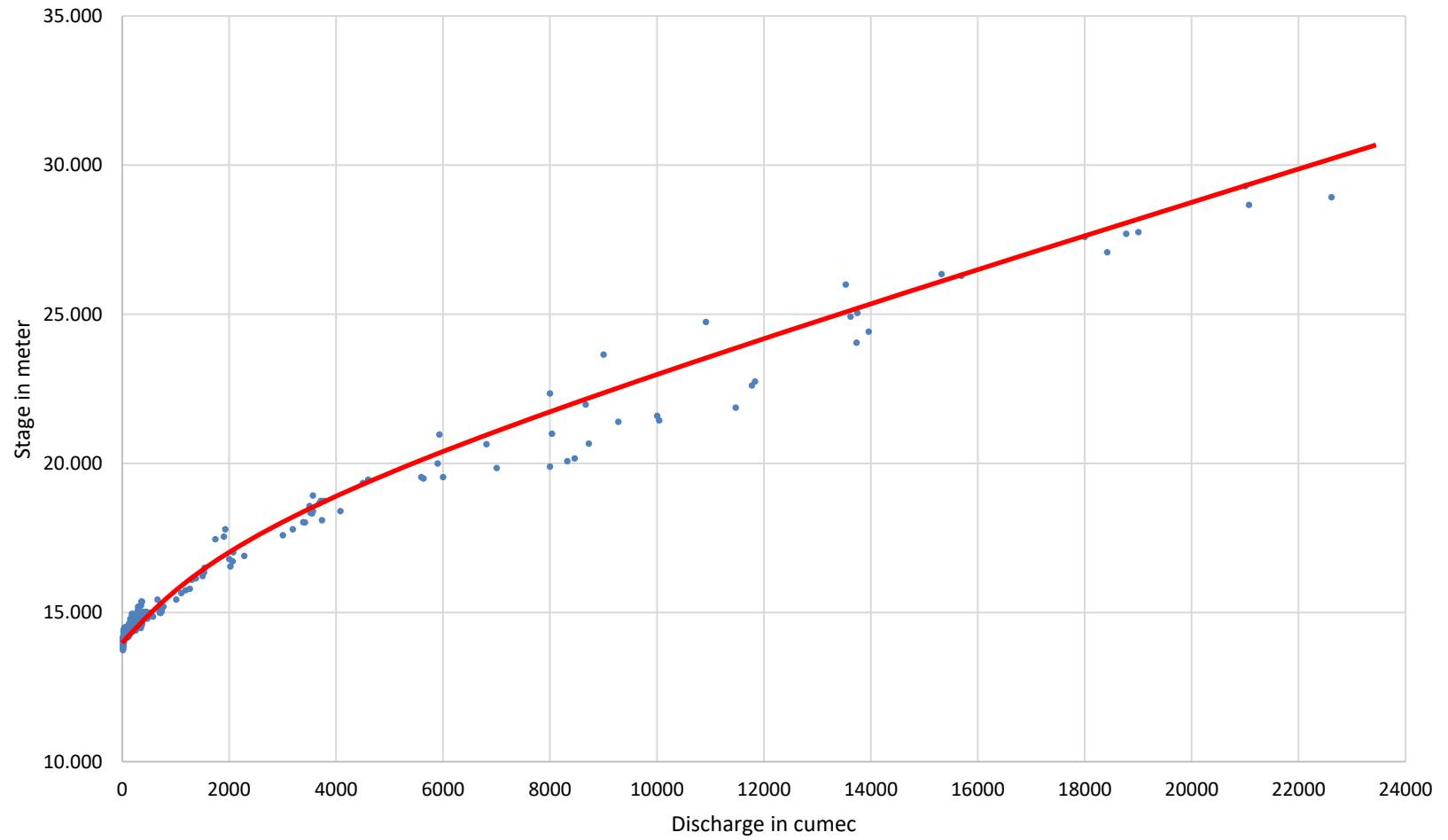
Division: Tapi Division, Surat

Local River: Narmada

Sub-Division: LNSD, CWC Bharuch



Site Garudeshwar Stage-Discharge Curve 2019-2020.



4.3 Man at Gopalpura.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Man at Gopalpura		Code	:	CW1NAM001459
State	:	Madhya Pradesh		District	:	DHAR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Man		Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Man
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	957 Sq. Km.		Bank	:	Right
Latitude	:	22°16'18.0"		Longitude	:	75°60'17.0"
Current Zero of Gauge (m)	:	190				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
190.0		13/11/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	285	195.7	11/08/2019	0	192.300	01-02-2020

Stage Discharge Sheet for Man at Gopalpura for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	13.00	192.53	16.26	192.58	34.27	193.00	105.00	193.90	34.27	193.70	36.31	193.10
2	13.60	192.54	18.36	192.62	48.39	193.34	38.89	193.15	22.28	192.70	0.00	192.30
3	13.60	192.54	19.33	192.63	45.23	193.30	20.50	192.66	30.39	192.90	4.48	192.40
4	14.19	192.55	20.35	192.65	55.45	193.40	21.41	192.68	17.49	192.60	10.53	192.50
5	14.19	192.56	21.00	192.67	28.06	193.55	19.82	192.64	4.48	192.40	20.35	192.60
6	14.83	192.56	21.84	192.69	34.27	193.70	20.56	192.66	4.48	192.40	23.07	192.74
7	14.19	192.55	22.73	192.71	36.21	193.80	20.56	192.66	26.91	192.83	25.41	192.80
8	14.19	192.55	23.63	192.73	155.00	194.40	76.00	193.61	28.02	192.85	20.35	192.65
9	13.60	192.54	23.07	192.74	215.00	195.00	27.29	192.84	32.24	192.95	22.28	192.70
10	13.60	192.54	23.58	192.75	275.00	195.00	41.24	193.20	43.32	193.25	10.53	192.50
11	13.60	192.54	24.44	192.77	285.00	195.70	23.58	193.45	52.31	193.38	17.49	192.60
12	13.60	192.54	24.91	192.78	250.00	197.35	36.21	193.80	49.34	193.35	22.28	192.70
13	13.60	192.54	24.07	192.76	265.00	195.50	138.00	194.23	38.89	193.15	28.02	192.85
14	14.19	192.55	23.10	192.74	45.23	194.00	30.29	194.60	45.23	193.30	17.49	192.60
15	13.60	192.54	23.07	192.74	165.00	194.50	41.24	193.20	23.58	193.45	22.28	192.70
16	13.60	192.54	23.63	192.73	176.00	194.61	13.60	192.54	30.39	193.60	21.84	192.69
17	13.60	192.54	23.63	192.73	145.00	194.30	45.23	193.30	33.77	193.68	23.58	192.75
18	14.19	192.55	23.07	192.74	80.00	193.65	165.00	194.50	34.27	193.70	25.41	192.80
19	13.60	192.54	23.16	192.72	32.24	193.65	43.32	193.00	34.91	193.75	28.02	192.85
20	13.60	192.54	23.73	192.71	49.34	193.35	36.21	193.80	65.00	193.50	30.39	192.90
21	13.60	192.54	21.00	192.67	55.45	193.40	34.27	193.00	36.31	193.10	17.49	192.60
22	14.19	192.55	21.00	192.67	34.27	193.70	0.00	192.35	25.41	192.80	14.19	192.55
23	14.19	192.55	24.44	192.77	45.23	194.00	0.00	192.35	17.49	192.60	22.28	192.70
24	14.83	192.56	24.91	192.78	165.00	194.50	31.30	192.92	4.48	192.40	25.41	192.80
25	14.19	192.55	24.07	192.76	55.45	194.10	29.15	192.88	0.00	192.20	17.49	192.60
26	14.83	192.56	24.44	192.77	41.24	193.20	32.24	192.95	0.00	192.20	14.19	192.55
27	15.57	192.57	26.91	192.83	25.41	193.50	30.39	192.90	4.48	192.40	23.58	192.75
28	16.26	192.58	25.41	192.80	30.39	193.60	35.21	193.78	17.49	192.60	22.28	192.70
29	15.57	192.57	26.41	192.82	49.39	193.35	115.00	194.00	17.49	192.60	25.41	192.80
30	16.26	192.58	25.89	192.81	31.66	193.64	28.85	193.57	0.00	192.30	30.39	192.90
31			26.41	192.82	55.45	194.10			0.00	192.20		
Ten-Daily Mean												
I Ten-Daily	13.9	192.55	21.01	192.68	92.69	193.85	39.13	193	24.39	192.86	17.33	192.63
II Ten-Daily	13.72	192.54	23.68	192.74	149.28	194.66	57.27	193.64	40.77	193.49	23.68	192.74
III Ten-Daily	14.95	192.56	24.63	192.77	53.54	193.74	33.64	193.07	11.2	192.49	21.27	192.7
Monthly												
Min.	13	192.53	16.26	192.58	25.41	193	0	192.35	0	192.2	0	192.3
Max.	16.26	192.58	26.91	192.83	285	197.35	165	194.6	65	193.75	36.31	193.1
Mean	14.19	192.55	23.11	192.73	98.5	194.08	43.35	193.24	25.45	192.94	20.76	192.69

Annual Runoff in MCM : 652.98

Annual Runoff in mm :682.32

Peak Observed Discharge = 55.45 cumecs on 21/8/2019 Corres. Water Level 193.4 m

Lowest Observed Discharge = 0 cumecs on 01/02/2020 Corres. Water Level 192.3

m

Stage Discharge Sheet for Man at Gopalpura for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	30.39	192.9	17.49	192.60	\$	192.30	\$	192.16	\$	192.11	\$	192.11
2	29.15	192.88	10.53	192.50	\$	192.30	\$	192.16	\$	192.11	\$	192.09
3	26.51	192.86	4.48	192.40	\$	192.30	\$	192.16	\$	192.11	\$	192.07
4	27.29	192.84	\$	192.38	\$	192.27	\$	192.16	\$	192.11	\$	192.05
5	26.41	192.82	\$	192.37	\$	192.27	\$	190.16	\$	192.11	\$	192.05
6	25.41	192.8	\$	192.37	\$	192.27	\$	192.16	\$	192.11	\$	192.04
7	24.91	192.78	\$	192.36	\$	192.25	\$	192.16	\$	192.11	\$	192.03
8	24.07	192.76	\$	192.36	\$	192.25	\$	192.14	\$	192.11	\$	192.00
9	23.07	192.74	\$	192.36	\$	192.25	\$	192.14	\$	192.11	\$	192.00
10	23.16	192.72	\$	192.35	\$	192.24	\$	192.14	\$	192.11	\$	192.00
11	22.28	192.7	\$	192.35	\$	192.24	\$	192.14	\$	192.11	\$	192.00
12	21.41	192.68	\$	192.35	\$	192.24	\$	192.14	\$	192.11	\$	192.00
13	20.56	192.66	\$	192.34	\$	192.23	\$	192.13	\$	192.11	\$	192.00
14	19.82	192.64	\$	192.34	\$	192.23	\$	192.13	\$	192.11	\$	192.00
15	18.36	192.62	\$	192.34	\$	192.21	\$	192.13	\$	192.11	\$	192.00
16	18.36	192.62	\$	192.34	\$	192.21	\$	192.13	\$	192.11	\$	192.00
17	18.36	192.62	\$	192.33	\$	192.21	\$	192.13	\$	192.11	\$	192.00
18	19.82	192.64	\$	192.33	\$	192.20	\$	192.13	\$	192.11	\$	192.00
19	19.33	192.63	\$	192.33	\$	192.20	\$	192.12	\$	192.11	\$	192.00
20	19.37	192.63	\$	192.33	\$	192.20	\$	192.12	\$	192.11	\$	192.00
21	20.35	192.65	\$	192.33	\$	192.19	\$	192.12	\$	192.11	\$	192.00
22	20.35	192.65	\$	192.32	\$	192.19	\$	192.12	\$	192.11	\$	192.00
23	19.82	192.64	\$	192.32	\$	192.19	\$	192.12	\$	192.1	\$	192.00
24	19.82	192.64	\$	192.32	\$	192.18	\$	192.12	\$	192.1	\$	192.00
25	20.35	192.65	\$	192.32	\$	192.18	\$	192.12	\$	192.1	\$	192.00
26	20.35	192.65	\$	192.31	\$	192.16	\$	192.12	\$	192.1	\$	192.00
27	20.56	192.66	\$	192.31	\$	192.16	\$	192.12	\$	192.11	\$	192.00
28	20.35	192.65	\$	192.31	\$	192.16	\$	192.12	\$	192.11	\$	192.00
29	19.33	192.63	\$	192.31	\$	192.16	\$	192.12	\$	192.12	\$	192.00
30	18.36	192.62	\$	192.31			\$	192.12	\$	192.11	\$	192.00
31	17.46	192.60	\$	192.30			\$	192.12			\$	192.00
Ten-Daily Mean												
I Ten-Daily	26.04	192.81	3.25	192.41	0	192.27	0	191.95	0	192.11	0	192.04
II Ten-Daily	19.77	192.64	0	192.34	0	192.22	0	192.13	0	192.11	0	192
III Ten-Daily	19.74	192.64	0	192.31	0	192.17	0	34.93	0	192.11	0	192
Monthly												
Min.	17.46	192.6	4.48	192.3	0	192.16	0	190.16	0	190.11	0	192
Max.	30.39	192.9	17.49	192.6	0	192.3	0	192.16	0	192.12	0	192.11
Mean	21.85	192.7	1.08	192.35	0	192.22	0	192.12	0	70.37	0	192.01

Peak Computed Discharge = 285 cumecs on 11/8/2019 Corres. Water Level 195.7 m
 Lowest Computed Discharge = 0 cumecs on 09/02/2020 Corres. Water Level 192.250 m

Note-
 \$- No Flow

Monthly Runoff for the Year (2019-2020)

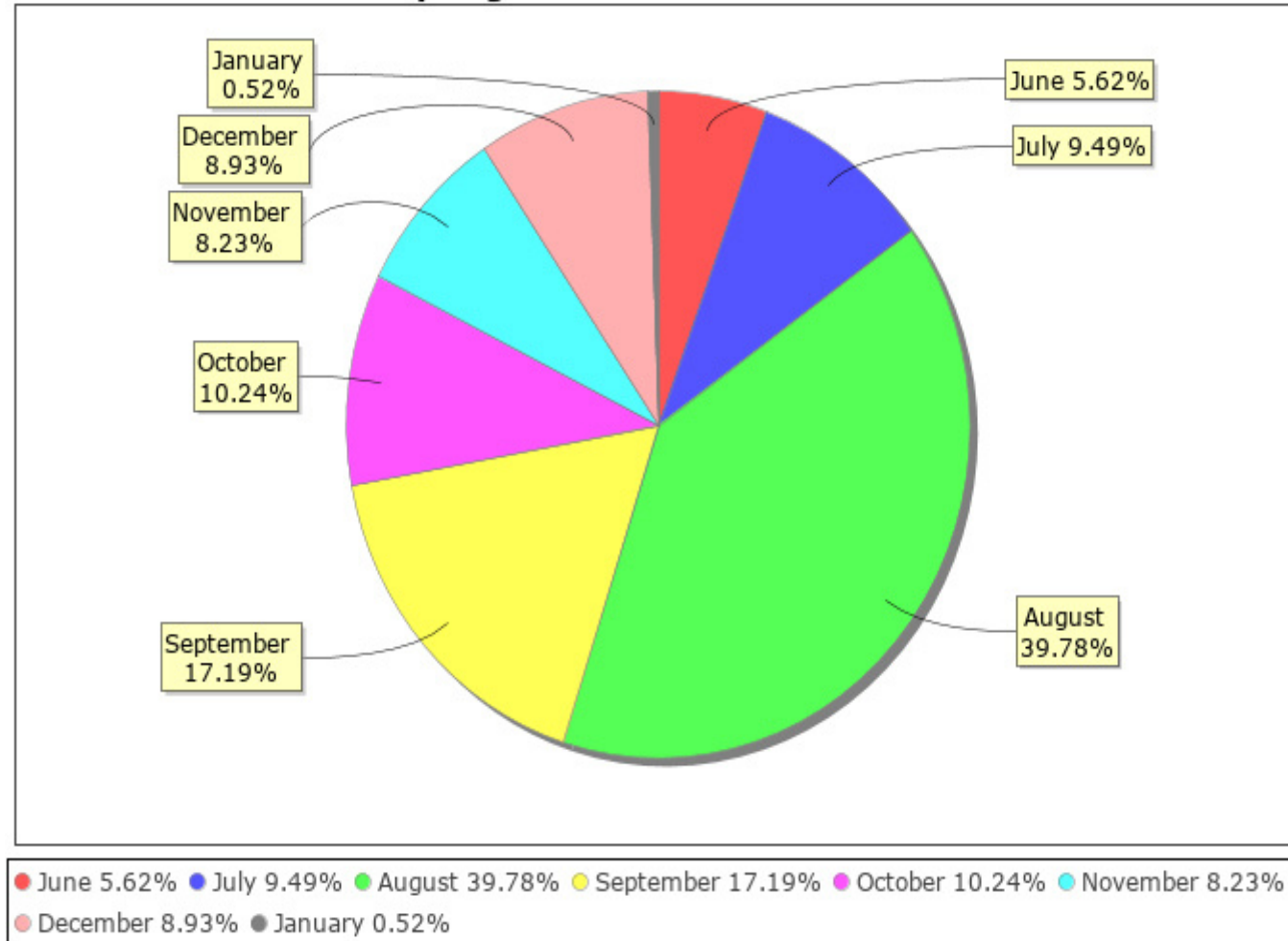
Station Name: Man at Gopalpura

Division: Narmada Division, Bhopal

Local River: Man

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



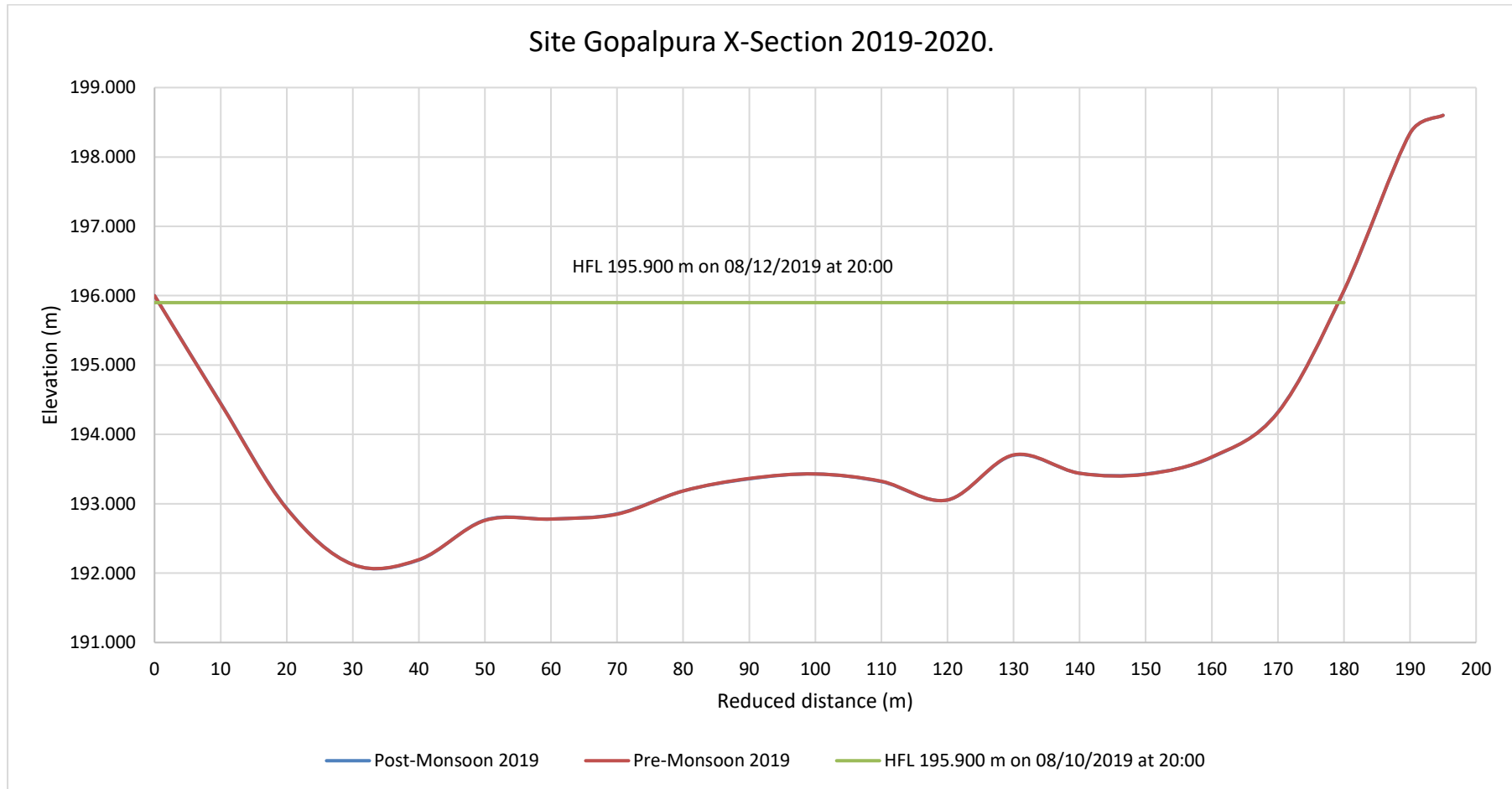
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Man at Gopalpura

Division: Narmada Division, Bhopal

Local River: Man

Sub-Division: MNSD-III, CWC Indore



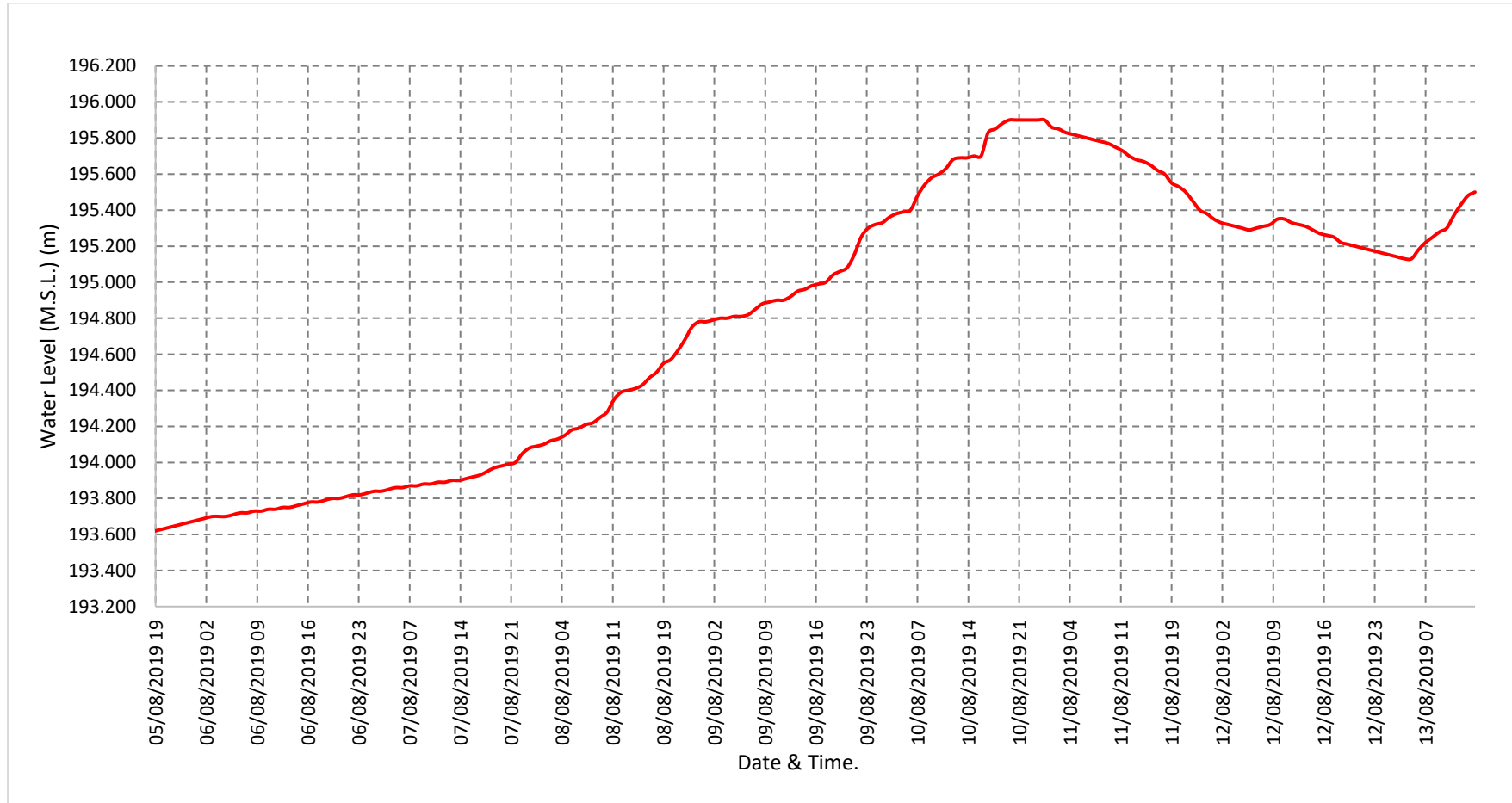
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Man at Gopalpura

Division: Narmada Division, Bhopal

Local River: Man

Sub-Division: MNSD-III, CWC Indore



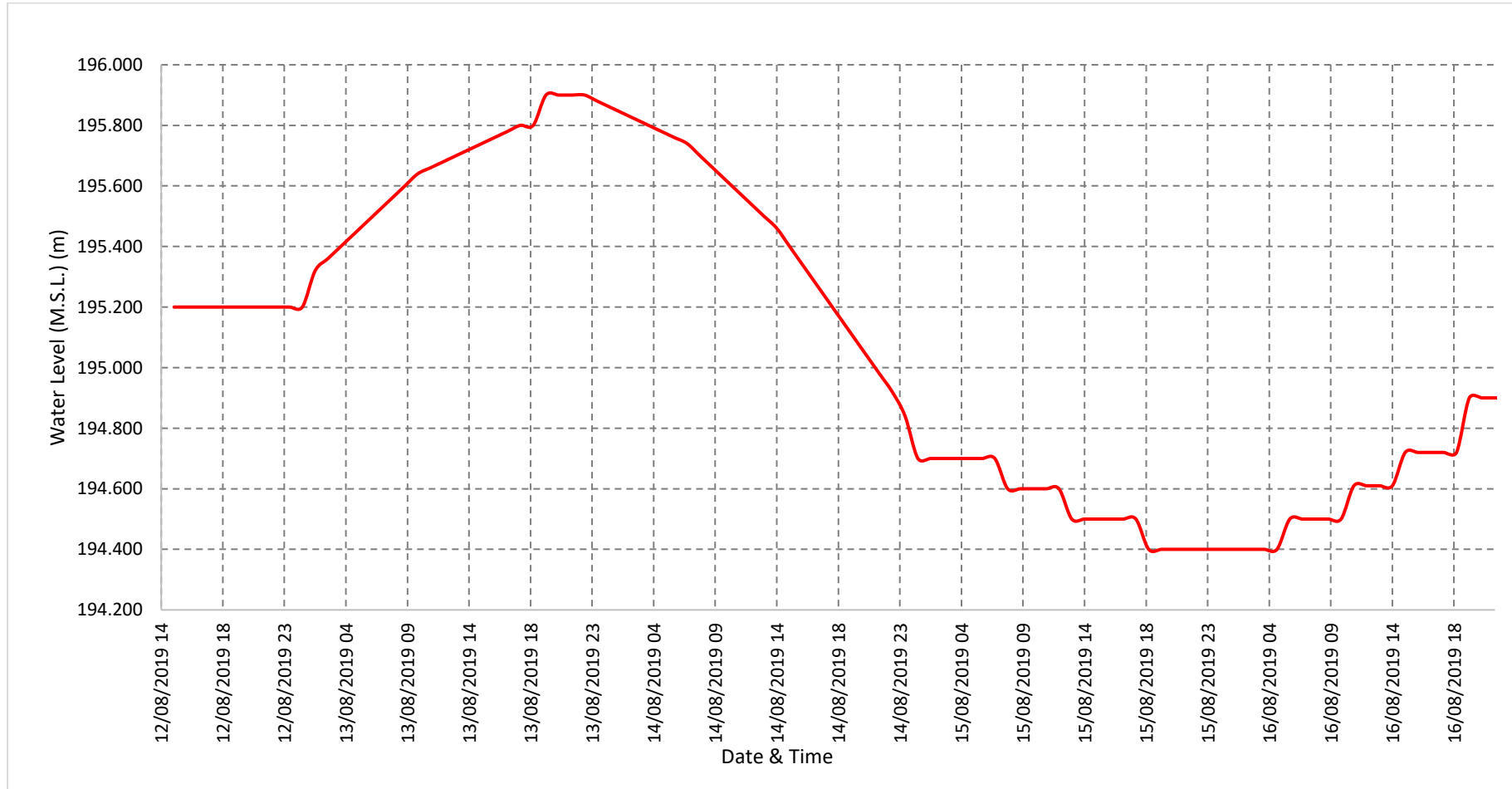
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Man at Gopalpura

Division: Narmada Division, Bhopal

Local River: Man

Sub-Division: MNSD-III, CWC Indore



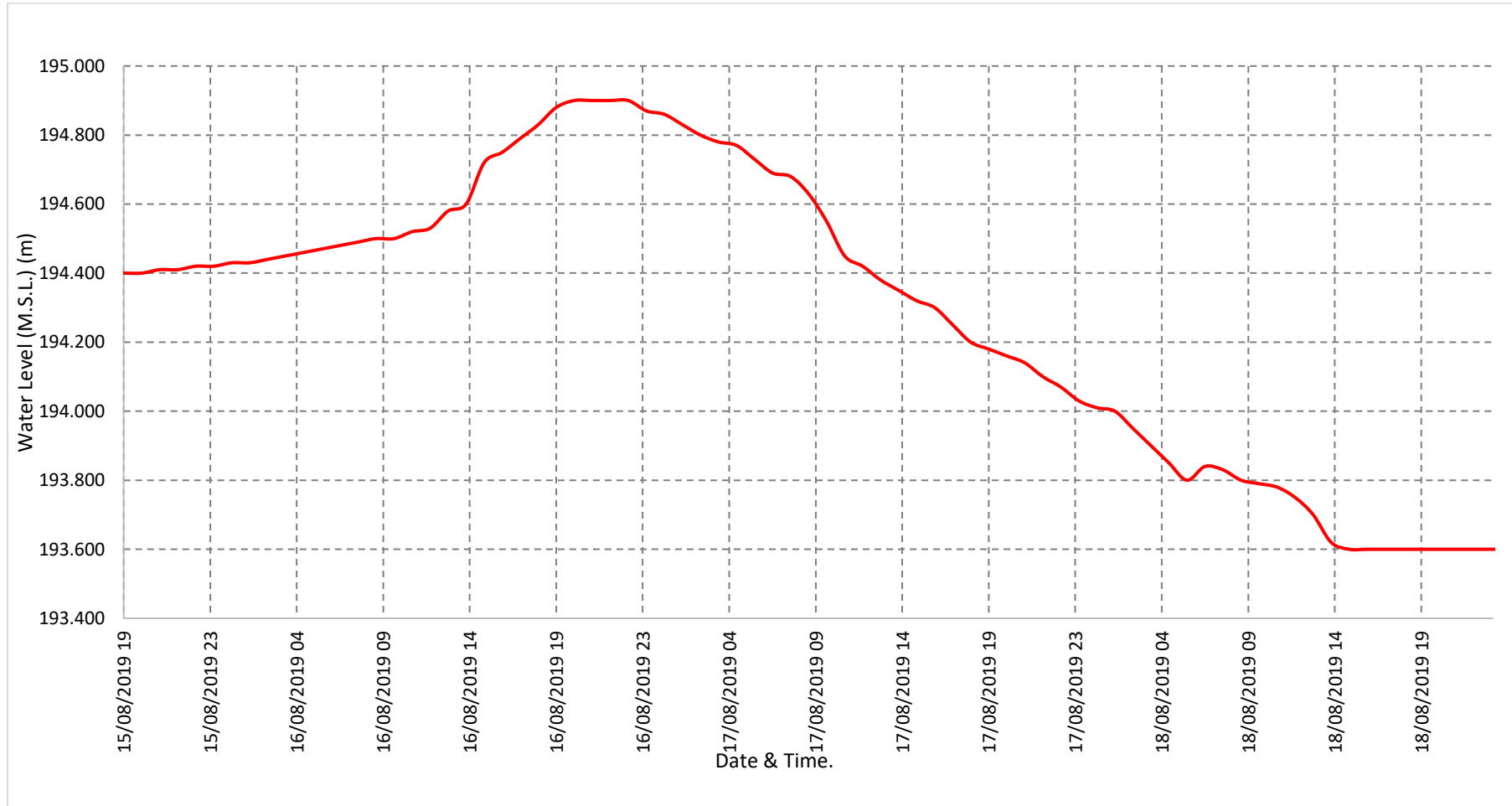
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Man at Gopalpura

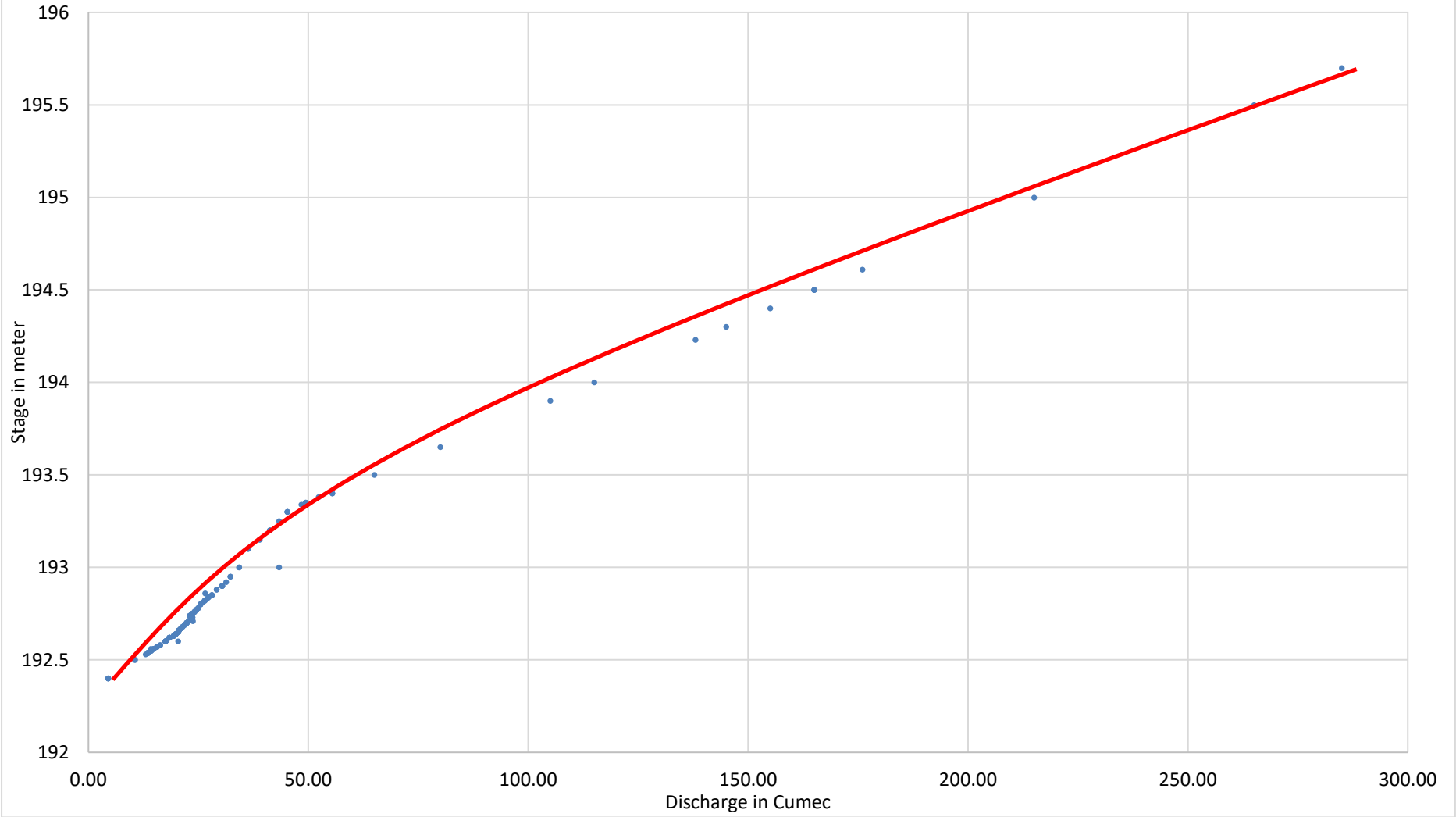
Division: Narmada Division, Bhopal

Local River: Man

Sub-Division: MNSD-III, CWC Indore



Site Gopalpura Stage-Discharge Curve 2019-2020.



4.4 Deb at Khajuri.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Deb at Khajuri		Code	:	CW1NAM001465
State	:	Madhya Pradesh		District	:	BARWANI
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Deb		Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Deb
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	676 sq. km.		Bank	:	Right
Latitude	:	21°58'10"		Longitude	:	75°15'30"
Current Zero of Gauge (m)	:	174				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15/01/2019				
Discharge	:	01/06/2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
174.0		11/11/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		60.5	179.585	10/08/2019	0	176.385

Stage Discharge Sheet for Deb at Khajuri for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	176.04	\$	176.51	0	176.38	26.5	177.88	22.56	177.68	16.76	177.30
2	\$	176.05	\$	176.51	0	176.21	24.43	177.79	23.66	177.74	16.76	177.30
3	\$	176.07	\$	176.52	0	176.29	26.5	177.88	21.16	177.59	16.5	177.29
4	\$	176.07	\$	176.52	0	176.35	22.56	177.68	19.93	177.49	16.38	177.29
5	\$	176.09	4.62	176.79	0	176.40	21.16	177.59	22.56	177.68	15.97	177.26
6	\$	176.10	4.62	176.79	2.59	176.63	24.43	177.79	24.50	177.79	15.59	177.24
7	\$	176.10	\$	176.57	11.98	177.09	34.5	178.29	21.82	177.63	15.36	177.24
8	\$	176.12	\$	176.55	55.5	179.34	32.5	178.18	21.16	177.59	15.36	177.24
9	\$	176.12	\$	176.48	58.5	179.49	26.5	177.88	22.56	177.68	15.12	177.23
10	\$	176.13	\$	176.43	60.5	179.59	24.43	177.79	23.66	177.74	15.1	177.23
11	\$	176.15	\$	176.40	54.5	179.29	22.56	177.68	24.23	177.79	14.66	177.21
12	\$	176.18	\$	176.38	50.5	179.09	19.93	177.49	22.56	177.68	14.66	177.21
13	\$	176.18	\$	176.38	50.5	179.09	28.5	177.99	20.50	177.59	13.76	177.16
14	\$	176.16	\$	176.38	46.5	178.88	32.5	178.18	19.93	177.49	12.18	177.10
15	\$	176.15	\$	176.35	41.5	178.63	26.5	177.88	19.37	177.43	12.18	177.10
16	\$	176.15	\$	176.35	36.5	178.38	24.43	177.79	16.38	177.29	11.98	177.09
17	\$	176.16	\$	176.34	30.3	178.07	22.56	177.68	16.38	177.29	12.00	177.09
18	\$	176.18	\$	176.32	28.3	177.98	21.16	177.59	18.15	177.38	11.57	177.07
19	\$	176.18	\$	176.30	26.5	177.88	32.5	178.18	19.37	177.38	11.05	177.04
20	\$	176.18	\$	176.29	21.16	177.59	30.5	178.09	17.20	177.43	10.75	177.04
21	\$	176.21	\$	176.26	14.19	177.18	22.56	177.68	16.38	177.29	10.75	177.04
22	\$	176.24	\$	176.24	9.22	176.99	22.5	177.68	16.38	177.29	10.75	177.04
23	\$	176.26	\$	176.24	19.93	177.49	26.5	177.88	17.22	177.34	10.47	177.02
24	\$	176.29	\$	176.23	24.43	177.79	32.5	178.18	18.15	177.38	10.50	177.02
25	\$	176.34	\$	176.23	32.5	178.18	28.5	177.99	21.16	177.59	10.17	177.01
26	\$	176.37	\$	176.40	40.5	178.59	24.43	177.79	21.82	177.63	9.90	177.01
27	\$	176.38	\$	176.45	46.5	178.88	24.43	177.79	24.50	177.79	9.90	177.01
28	\$	176.41	2.59	176.63	42.5	178.68	28.5	177.99	28.50	177.99	9.22	176.99
29	\$	176.45	11.98	177.09	36.5	178.38	24.5	177.79	27.50	177.93	9.22	176.99
30	\$	176.49	3.24	176.68	30.5	178.09	22.56	177.68	26.50	177.88	9.90	177.01
31				176.43	28.5	177.99			24.43	177.79		
Ten-Daily Mean												
I Ten-Daily	0	176.09	0.92	176.57	18.91	177.38	26.35	177.88	22.36	177.66	15.89	177.26
II Ten-Daily	0	176.17	0	176.35	38.63	178.49	26.11	177.86	19.41	177.47	12.48	177.11
III Ten-Daily	0	176.34	1.38	176.44	29.57	178.02	25.7	177.84	22.05	177.63	10.08	177.01
Monthly												
Min.	0	176.04	0	176.23	0	176.21	19.93	177.49	16.38	177.29	9.22	176.99
Max.	0	176.49	11.98	177.09	60.5	179.59	34.5	178.29	28.5	177.99	16.76	177.3
Mean	0	176.2	0.77	176.45	29.03	177.96	26.05	177.86	21.27	177.59	12.82	177.13

Annual Runoff in MCM

: 256.47

Annual Runoff in mm

: 379.39

Peak Observed Discharge = 60.5 cumecs on 10/8/2019 Corres. Water Level 179.59 m

Lowest Observed Discharge = 0 cumecs on 1/8/2019 Corres. Water Level 176.38 m

Stage Discharge Sheet for Deb at Khajuri for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	9.9	177.01	4.01	176.76	#	#	#	#	#	#	#	#
2	9.22	176.99	4.01	176.76	#	#	#	#	#	#	#	#
3	8.97	176.98	3.98	176.74	#	#	#	#	#	#	#	#
4	8.15	176.96	3.92	176.73	#	#	#	#	#	#	#	#
5	8.29	176.95	3.9	176.71	#	#	#	#	#	#	#	#
6	7.26	176.90	3.92	176.73	#	#	#	#	#	#	#	#
7	7.03	176.90	3.88	176.71	#	#	#	#	#	#	#	#
8	7.0	176.90	3.88	176.71	#	#	#	#	#	#	#	#
9	6.57	176.88	4.84	176.79	#	#	#	#	#	#	#	#
10	6.36	176.87	4.62	176.79	#	#	#	#	#	#	#	#
11	5.98	176.85	#	#	#	#	#	#	#	#	#	#
12	5.48	176.82	#	#	#	#	#	#	#	#	#	#
13	5.48	176.82	#	#	#	#	#	#	#	#	#	#
14	5.05	176.80	#	#	#	#	#	#	#	#	#	#
15	5.05	176.80	#	#	#	#	#	#	#	#	#	#
16	4.84	176.79	#	#	#	#	#	#	#	#	#	#
17	4.84	176.79	#	#	#	#	#	#	#	#	#	#
18	4.62	176.79	#	#	#	#	#	#	#	#	#	#
19	4.41	176.77	#	#	#	#	#	#	#	#	#	#
20	4.2	176.76	#	#	#	#	#	#	#	#	#	#
21	4.2	176.76	#	#	#	#	#	#	#	#	#	#
22	4.4	176.77	#	#	#	#	#	#	#	#	#	#
23	4.2	176.76	#	#	#	#	#	#	#	#	#	#
24	4.41	176.77	#	#	#	#	#	#	#	#	#	#
25	4.2	176.76	#	#	#	#	#	#	#	#	#	#
26	4.2	176.76	#	#	#	#	#	#	#	#	#	#
27	4.62	176.79	#	#	#	#	#	#	#	#	#	#
28	4.62	176.79	#	#	#	#	#	#	#	#	#	#
29	4.4	176.77	#	#	#	#	#	#	#	#	#	#
30	4.2	176.76	#	#			#	#	#	#	#	#
31	4.01	176.76	#	#			#	#			#	#
Ten-Daily Mean												
I Ten-Daily	7.88	176.93	4.1	176.74	0	0	0	0	0	0	0	0
II Ten-Daily	5	176.8	0	0	0	0	0	0	0	0	0	0
III Ten-Daily	4.31	176.77	0	0	0	0	0	0	0	0	0	0
Monthly												
Min.	4.01	176.76	0	0	0	0	0	0	0	0	0	0
Max.	9.9	177.01	4.84	176.79	0	0	0	0	0	0	0	0
Mean	5.73	176.83	1.37	176.21	0	0	0	0	0	0	0	0

Peak Computed Discharge = 54.5 cumecs on 11/8/2019 Corres. Water Level 179.29 m
 Lowest Computed Discharge = 0cumecs on 4/8/2019 Corres. Water Level 176.35 m

Note-
 #-Dry

Monthly Runoff for the Year (2019-2020)

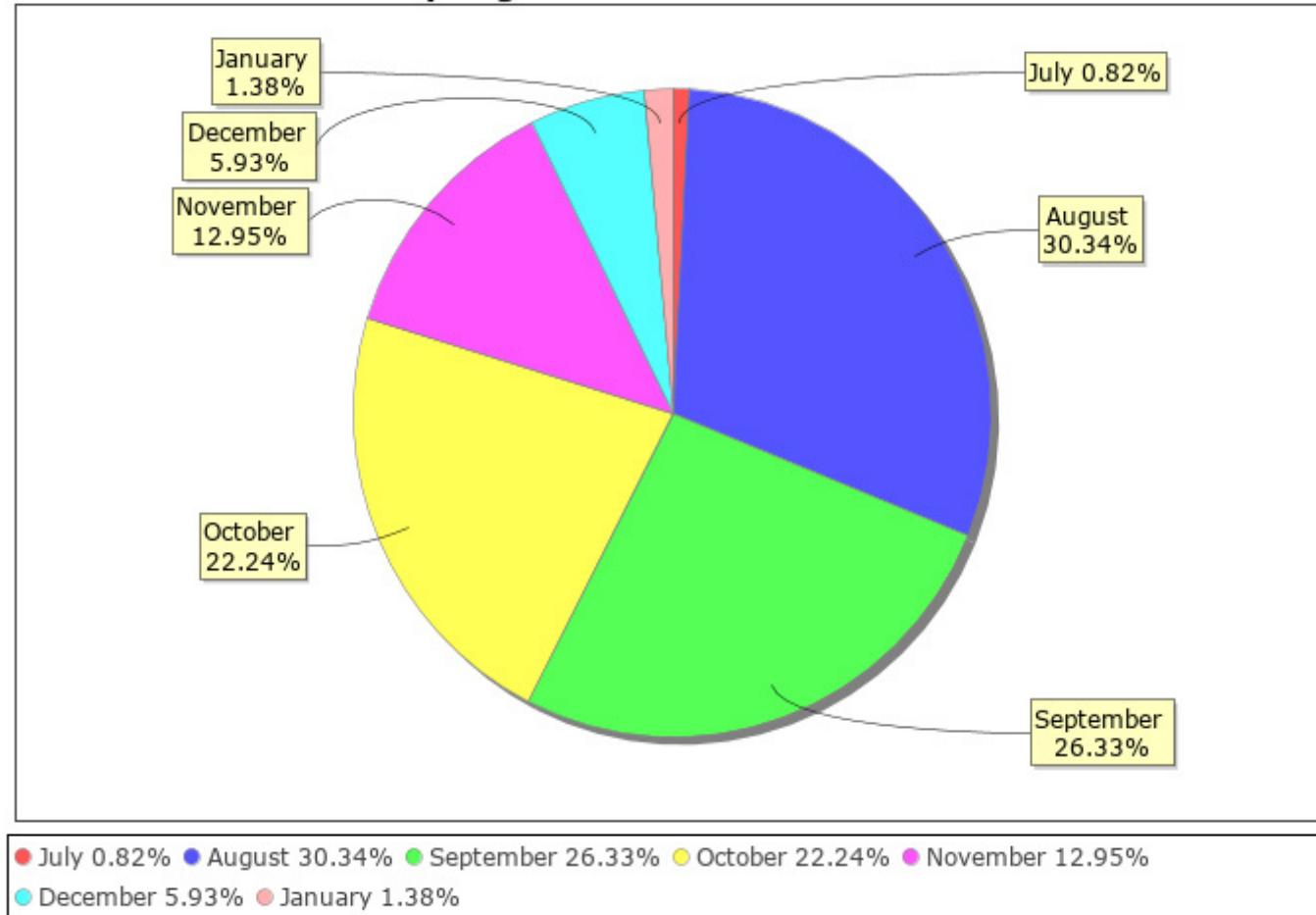
Station Name: Deb at Khajuri

Local River: Deb

Division: Narmada Division, Bhopal

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



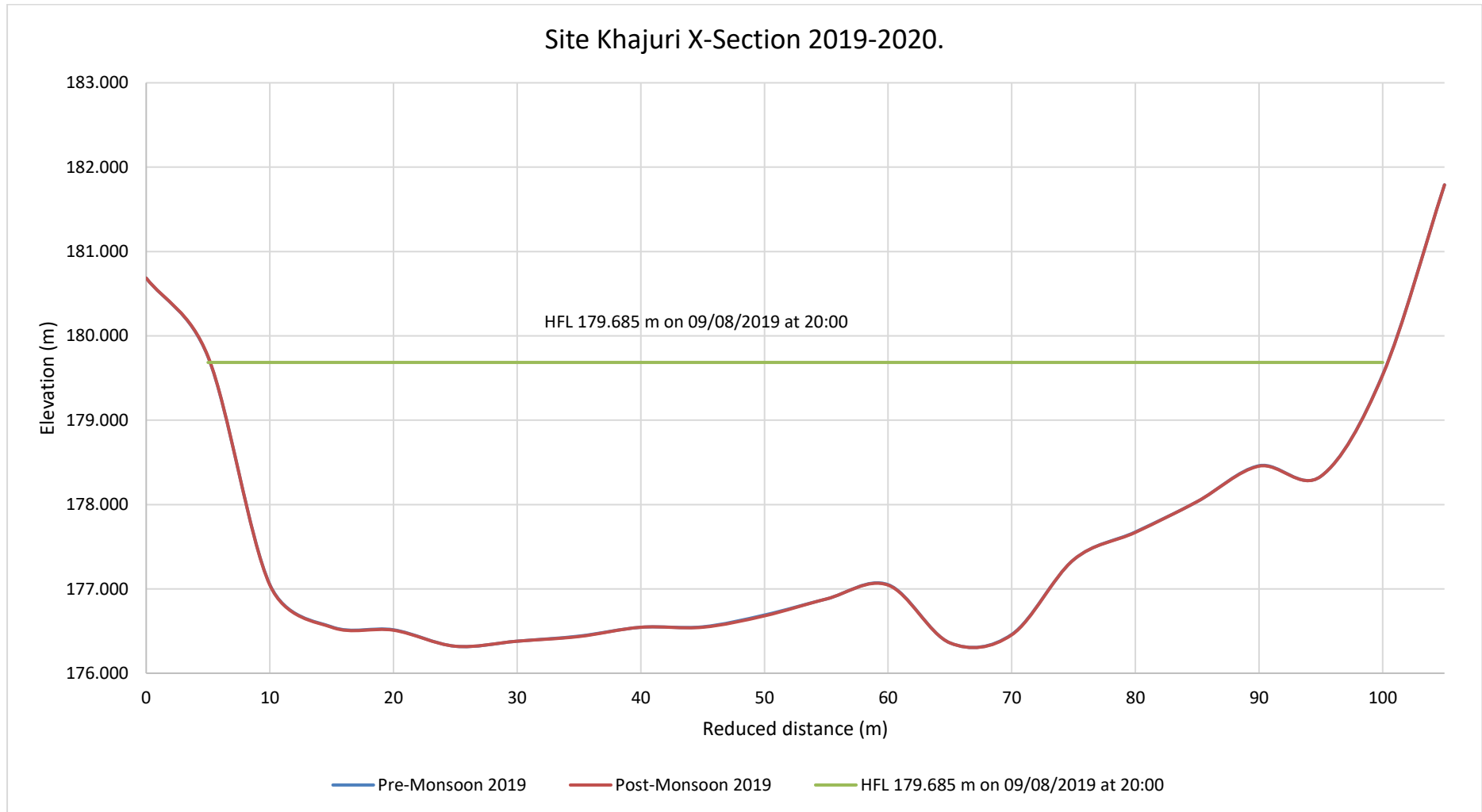
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Deb at Khajuri

Division: Narmada Division, Bhopal

Local River: Deb

Sub-Division: MNSD-III, CWC Indore



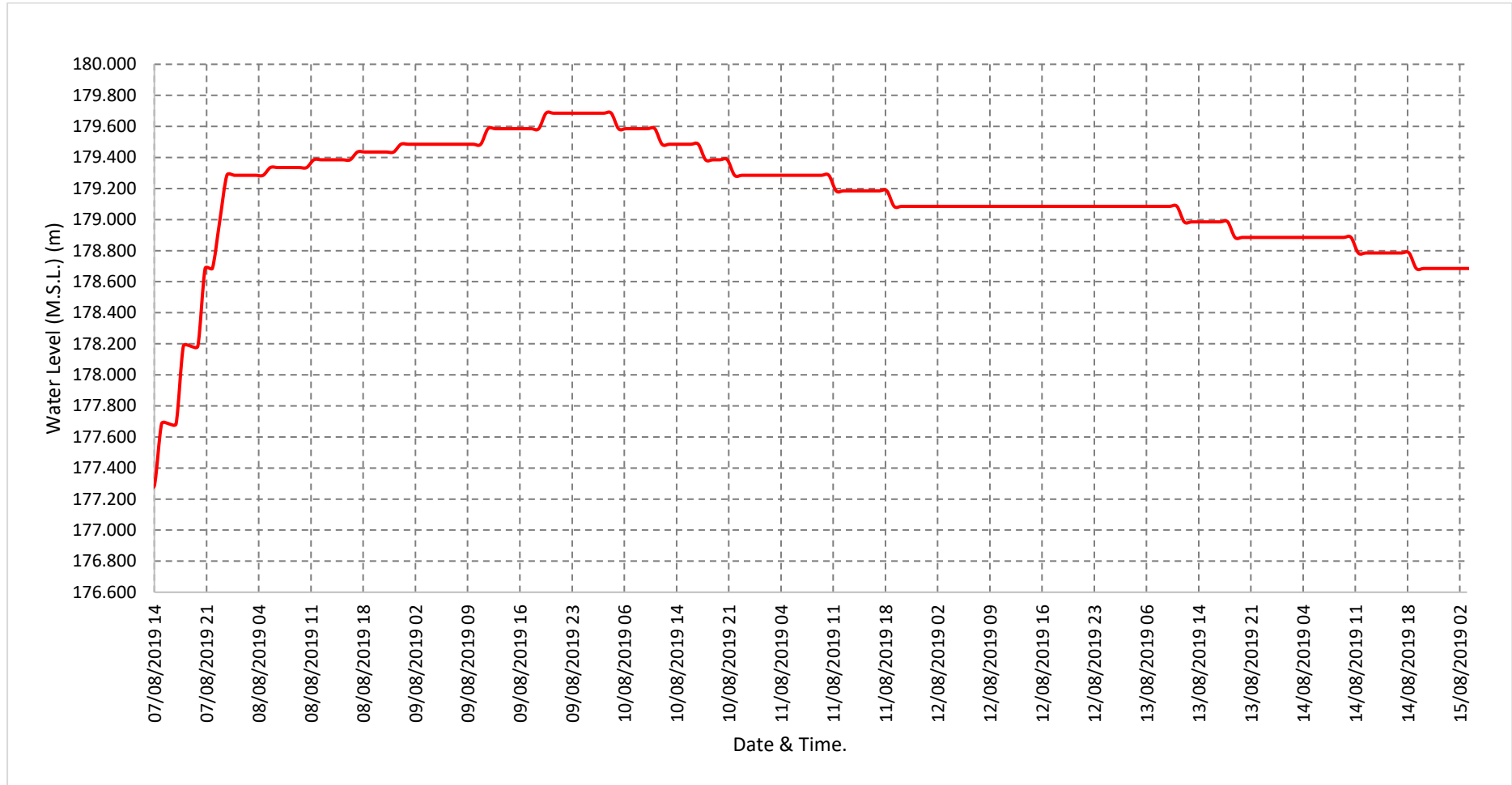
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Deb at Khajuri

Division: Narmada Division, Bhopal

Local River: Deb

Sub-Division: MNSD-III, CWC Indore



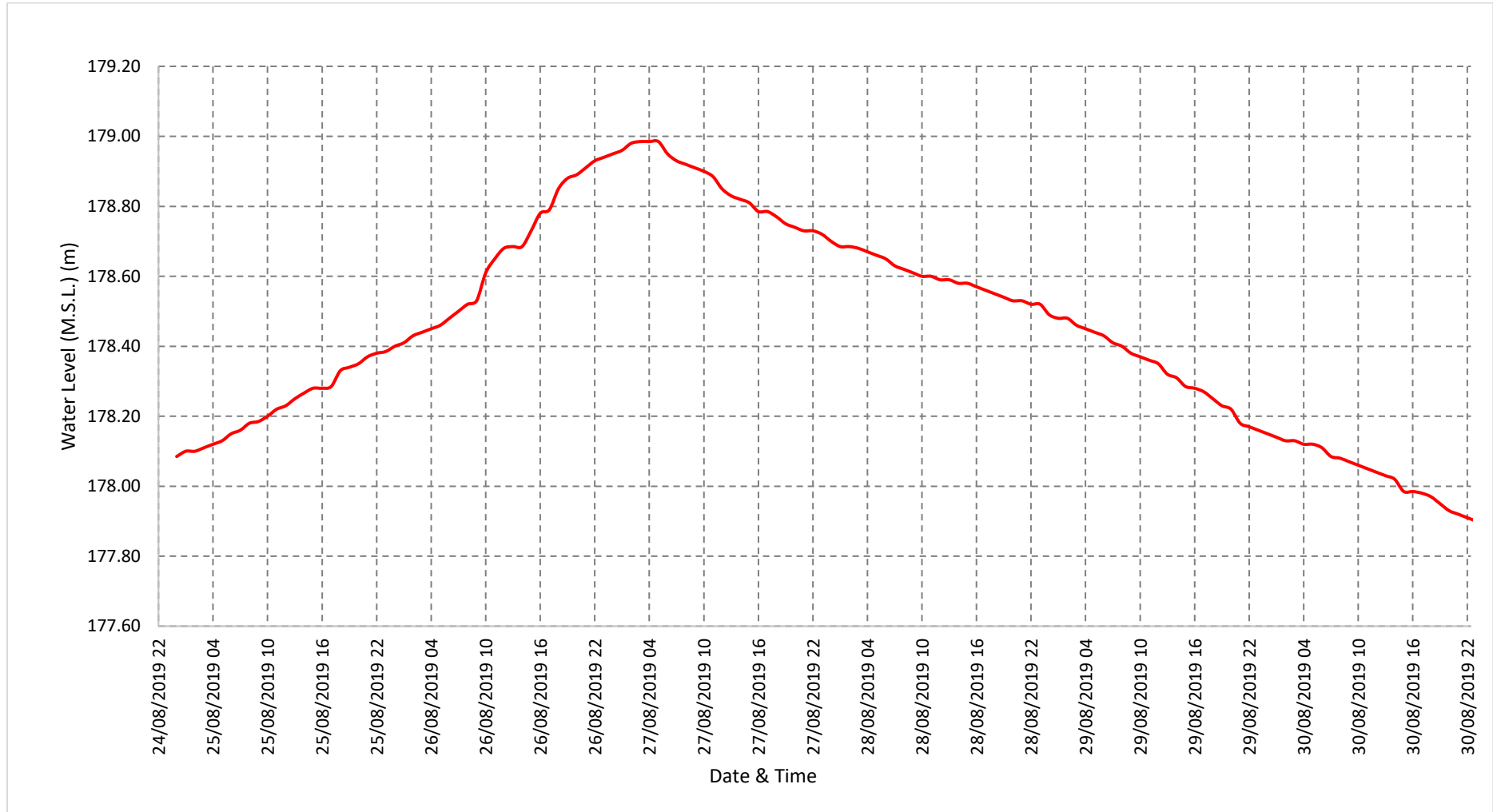
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Deb at Khajuri

Division: Narmada Division, Bhopal

Local River: Deb

Sub-Division: MNSD-III, CWC Indore



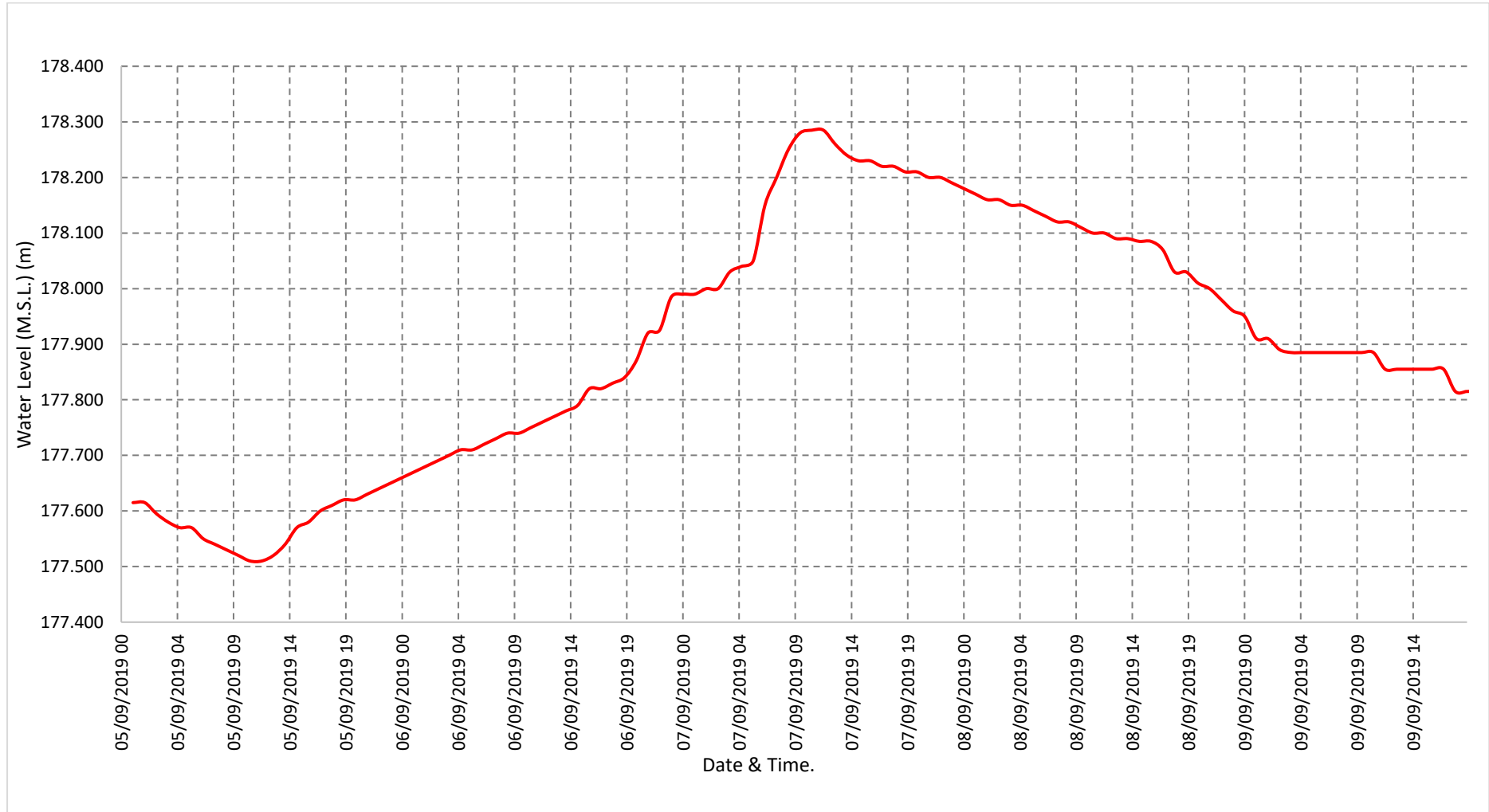
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Deb at Khajuri

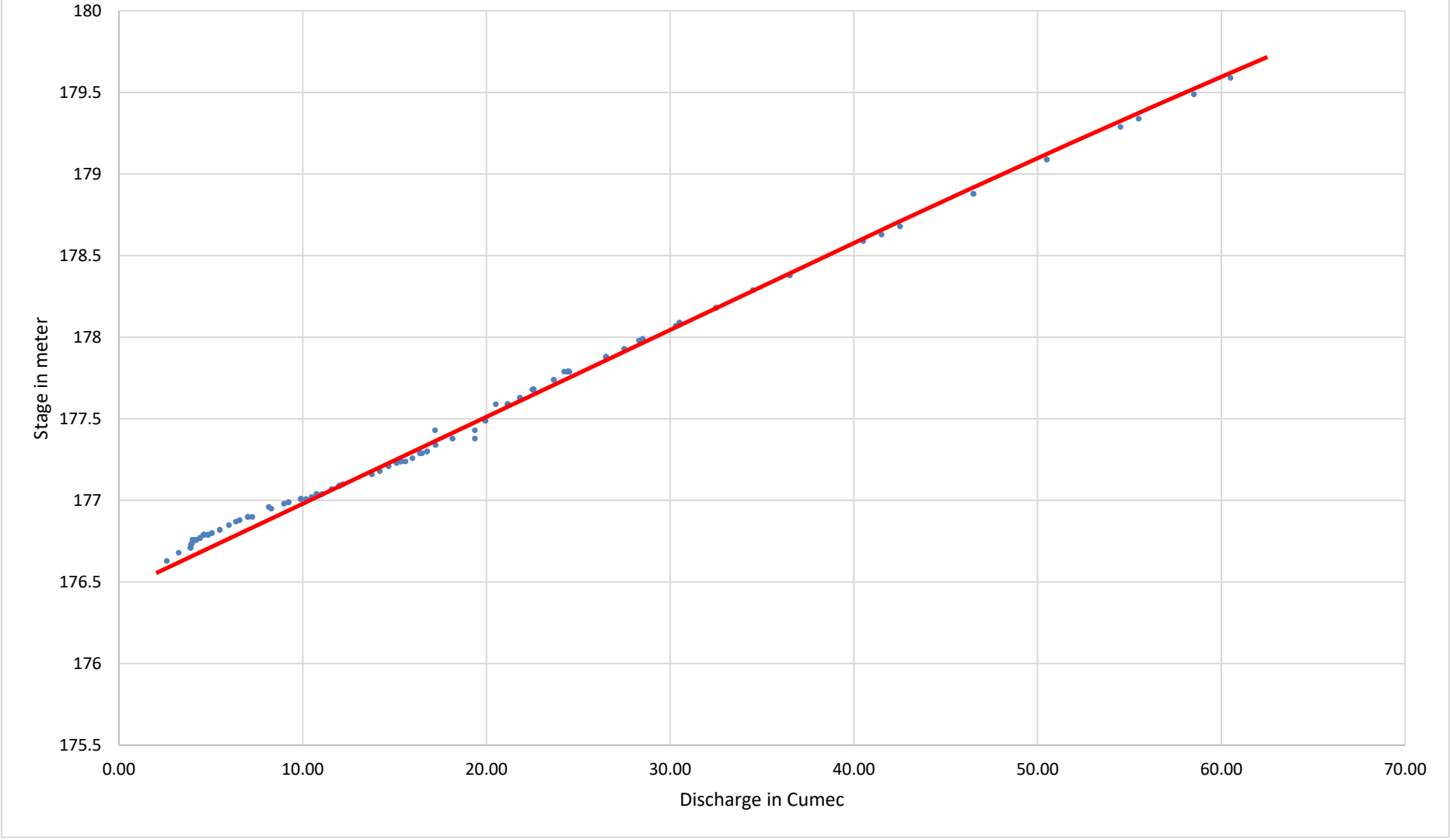
Division: Narmada Division, Bhopal

Local River: Deb

Sub-Division: MNSD-III, CWC Indore



Site Khajuri Stage-Discharge Curve 2019-2020.



4.5 Borad at Thikri.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Borad at Thikri		Code	:	CW1NAM001486
State	:	Madhya Pradesh		District	:	BARWANI
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Borad		Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Borad
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	649.0 Sq. Km.		Bank	:	Right
Latitude	:	22°04'30"		Longitude	:	75°24'18"
Current Zero of Gauge (m)	:	160				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
160.0		12/11/2020				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		132	165.555	08/08/2019	5.3	161.905

Stage Discharge Sheet for Borad at Thikri for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	6.04	161.96	10.25	162.15	12.49	162.3	26.83	162.96	23.7	162.85	26.83	162.99
2	6.16	161.96	10.5	162.16	12.77	162.35	23.7	162.85	19.72	162.76	28.68	163.02
3	6.04	161.96	10.61	162.18	13.34	162.51	16.9	162.65	16.9	162.65	28.42	163.01
4	6.04	161.96	10.85	162.18	16.9	162.65	23.7	162.85	18.12	162.71	26.83	162.96
5	5.8	161.95	11.1	162.21	22.02	162.8	14.54	162.55	16.72	162.65	25.21	162.91
6	5.63	161.93	11.18	162.21	28.13	163.01	12.77	162.35	15.26	162.6	28.42	163.01
7	6.16	161.96	10.25	162.15	43.7	163.35	14.54	162.35	15.26	162.6	27.65	162.99
8	6.35	161.98	10.85	162.18	132	165.55	23.7	162.85	14.54	162.55	27.45	162.98
9	6.6	161.99	10.61	162.18	124	165.35	26.83	162.96	19.72	162.76	27.65	162.99
10	6.6	161.99	10.25	162.15	112	165.05	29.93	163.05	18.12	162.71	26.83	162.96
11	7.05	162.01	9.99	162.15	100	164.76	23.7	162.85	14.54	162.55	26.15	162.93
12	7.21	162.01	9.79	162.13	100	164.76	13.02	162.55	14.54	162.55	25.51	162.91
13	7.21	162.01	9.59	162.12	87.7	164.46	26.83	162.96	13.34	162.51	28.83	162.93
14	7.36	162.02	9.3	162.12	81.7	164.3	35.32	163.15	13.02	162.46	25.25	162.9
15	7.36	162.02	8.8	162.1	67.7	163.96	51.7	163.55	14.54	162.55	24.12	162.88
16	7.36	162.02	8.8	162.1	55.7	163.65	29.93	163.05	15.26	162.6	23.7	162.85
17	7.47	162.04	8.43	162.07	43.7	163.35	39.7	163.26	16.9	162.65	23.7	162.85
18	7.47	162.04	8.15	162.05	35.7	163.15	29.93	163.05	15.26	162.6	23.32	162.85
19	7.82	162.04	7.82	162.04	28.13	163.01	47.7	163.46	13.34	162.51	22.93	162.84
20	8.15	162.05	7.47	162.04	19.72	162.76	29.93	163.05	13.02	162.46	22.02	162.8
21	8.43	162.07	7.2	162.01	13.34	162.51	26.83	162.96	12.77	162.55	22.02	162.8
22	8.43	162.07	7.05	162.01	13.02	162.46	16.9	162.65	16.9	162.65	21.31	162.79
23	7.82	162.04	7.05	162.01	35.32	163.15	39.7	163.26	18.12	162.71	21.31	162.79
24	8.15	162.05	7.47	162.04	29.93	163.05	43.7	163.35	23.7	162.85	23.31	162.79
25	8.54	162.09	8.26	162.07	23.7	162.85	39.7	163.26	26.83	162.96	21.31	162.79
26	9.14	162.1	9.46	162.12	14.54	162.55	43.7	163.35	25.25	162.9	20.86	162.77
27	9.59	162.12	9.99	162.15	12.77	162.35	51.7	163.55	23.7	162.85	20.86	162.77
28	9.99	162.15	10.6	162.18	9.14	163.1	35.32	163.15	19.72	162.76	20.05	162.76
29	9.99	162.15	11.29	162.23	5.3	161.9	39.93	163.05	22.02	162.8	20.05	162.76
30	10.25	162.15	11.69	162.26	5.3	161.9	23.7	162.85	25.25	162.9	19.72	162.76
31			12.11	162.27	104	164.85			26.83	162.96		
Ten-Daily Mean												
I Ten-Daily	6.14	161.96	10.64	162.18	51.73	163.49	21.34	162.74	17.81	162.68	27.4	162.98
II Ten-Daily	7.45	162.03	8.81	162.09	62	163.82	32.78	163.09	14.38	162.54	24.55	162.87
III Ten-Daily	9.03	162.1	9.29	162.12	24.21	162.79	36.12	163.14	21.92	162.81	21.08	162.78
Monthly												
Min.	5.63	161.93	7.05	162.01	5.3	161.9	12.77	162.35	12.77	162.46	19.72	162.76
Max.	10.25	162.15	12.11	162.27	132	165.55	51.7	163.55	26.83	162.96	28.83	163.02
Mean	7.54	162.03	9.58	162.13	45.98	163.37	30.08	162.99	18.03	162.68	24.34	162.88

Annual Runoff in
MCM :

479.9

Annual Runoff in
mm :

739.45

Peak Observed Discharge = 132 cumecs on 8/8/2019 Corres. Water Level 165.55 m

Lowest Observed Discharge = 5.3cumecs on 29/8/2019 Corres. Water Level 161.9 m

Stage Discharge Sheet for Borad at Thikri for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	19.72	162.76	13.96	162.54	15.56	162.62	#	#	#	#	#	#
2	19.17	162.74	13.96	162.54	15.87	162.62	#	#	#	#	#	#
3	19.01	162.74	14.54	162.55	16.24	162.63	#	#	#	#	#	#
4	18.74	162.73	14.57	162.57	16.58	162.65	#	#	#	#	#	#
5	18.53	162.71	14.54	162.55	16.58	162.65	#	#	#	#	#	#
6	18.12	162.71	14.25	162.54	16.24	162.63	#	#	#	#	#	#
7	17.84	162.7	14.57	162.57	16.24	162.63	#	#	#	#	#	#
8	17.6	162.68	14.57	162.57	16.9	162.65	#	#	#	#	#	#
9	17.36	162.68	14.78	162.57	16.58	162.65	#	#	#	#	#	#
10	17.1	162.66	15.03	162.6	17.1	162.66	#	#	#	#	#	#
11	16.9	162.65	14.95	162.59	16.9	162.65	#	#	#	#	#	#
12	16.58	162.65	14.95	162.59	16.9	162.65	#	#	#	#	#	#
13	16.24	162.63	14.78	162.57	16.24	162.63	#	#	#	#	#	#
14	15.87	162.62	14.57	162.57	16.24	162.63	#	#	#	#	#	#
15	15.5	162.62	14.95	162.59	15.87	162.62	#	#	#	#	#	#
16	15.26	162.6	15.03	162.6	15.87	162.62	#	#	#	#	#	#
17	15.03	162.6	15.26	162.6	15.56	162.62	#	#	#	#	#	#
18	14.54	162.55	14.95	162.59	15.56	162.62	#	#	#	#	#	#
19	13.96	162.54	14.78	162.57	15.26	162.6	#	#	#	#	#	#
20	13.59	162.52	14.78	162.57	15.87	162.62	#	#	#	#	#	#
21	13.59	162.52	15.03	162.6	15.56	162.62	#	#	#	#	#	#
22	13.96	162.54	15.03	162.6	16.24	162.63	#	#	#	#	#	#
23	13.59	162.52	15.26	162.6	16.58	162.65	#	#	#	#	#	#
24	14.25	162.54	15.56	162.62	16.9	162.65	#	#	#	#	#	#
25	14.25	162.54	15.56	162.62	17.1	162.66	#	#	#	#	#	#
26	14.54	162.55	15.03	162.6	17.1	162.66	#	#	#	#	#	#
27	14.54	162.55	15.26	162.6	17.36	162.68	#	#	#	#	#	#
28	14.25	162.54	15.56	162.62	17.36	162.68	#	#	#	#	#	#
29	14.54	162.55	15.87	162.62	17.61	162.68	#	#	#	#	#	#
30	14.25	162.54	16.24	162.63			#	#			#	#
31	13.96	162.54	15.56	162.62			#	#			#	#
Ten-Daily Mean												
I Ten-Daily	18.32	162.71	14.48	162.56	16.39	162.64	0	0	0	0	0	0
II Ten-Daily	15.35	162.6	14.9	162.58	16.03	162.63	0	0	0	0	0	0
III Ten-Daily	14.16	162.54	15.45	162.61	16.87	162.66	0	0	0	0	0	0
Monthly												
Min.	13.59	162.52	13.96	162.54	15.26	162.6	0	0	0	0	0	0
Max.	19.72	162.76	16.24	162.63	17.61	162.68	0	0	0	0	0	0
Mean	15.94	162.62	14.94	162.58	16.43	162.64	0	0	0	0	0	0

Peak Computed Discharge = 100 cumecs on 11/8/2019 Corres. Water Level 164.76 m
 Lowest Computed Discharge = 6.16cumecs on 2/6/2019 Corres. Water Level 161.96 m

Note-
 #-Dry

Monthly Runoff for the Year (2019-2020)

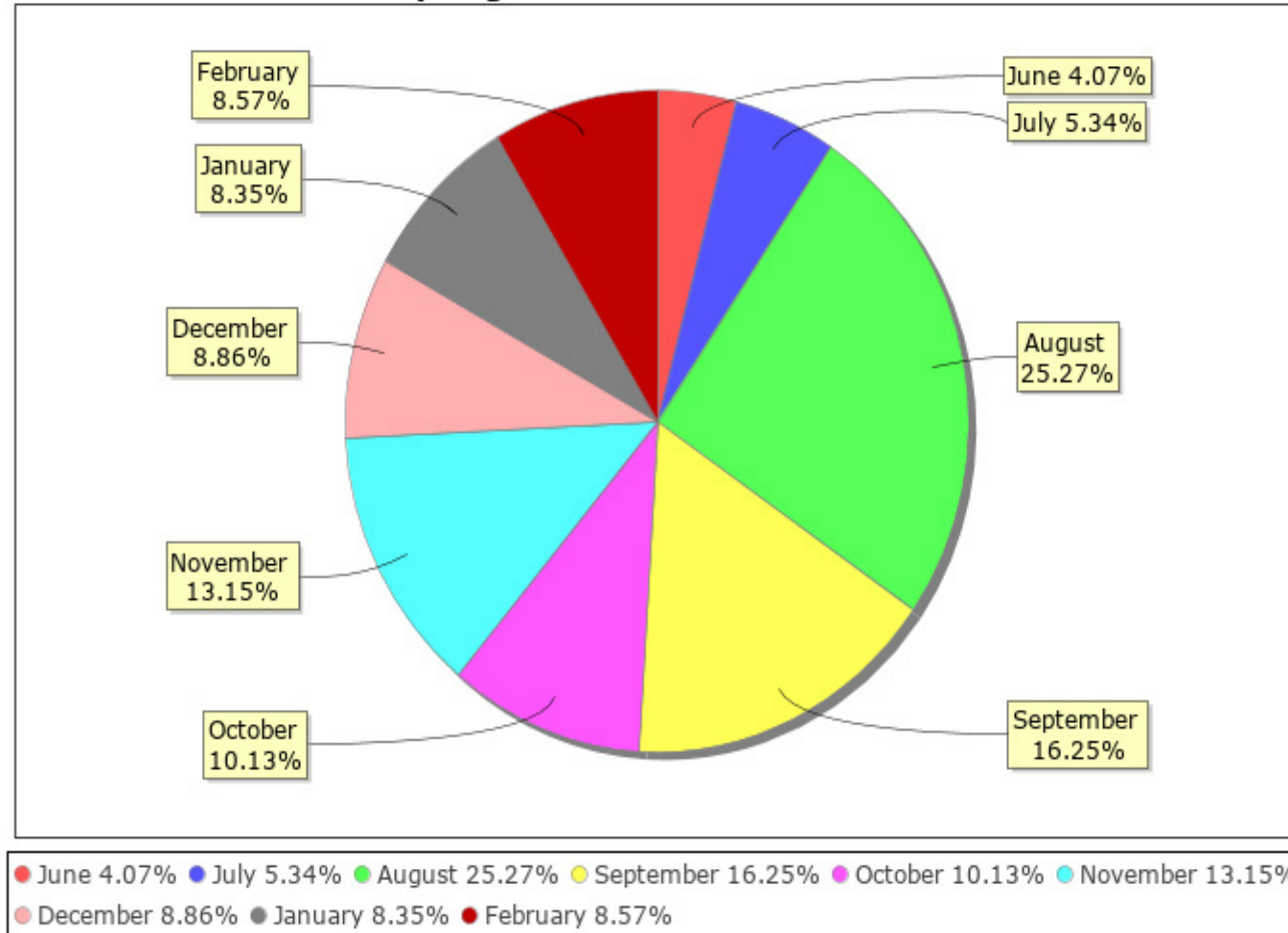
Station Name: Borad at Thikri

Local River: Borad

Division: Narmada Division, Bhopal

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



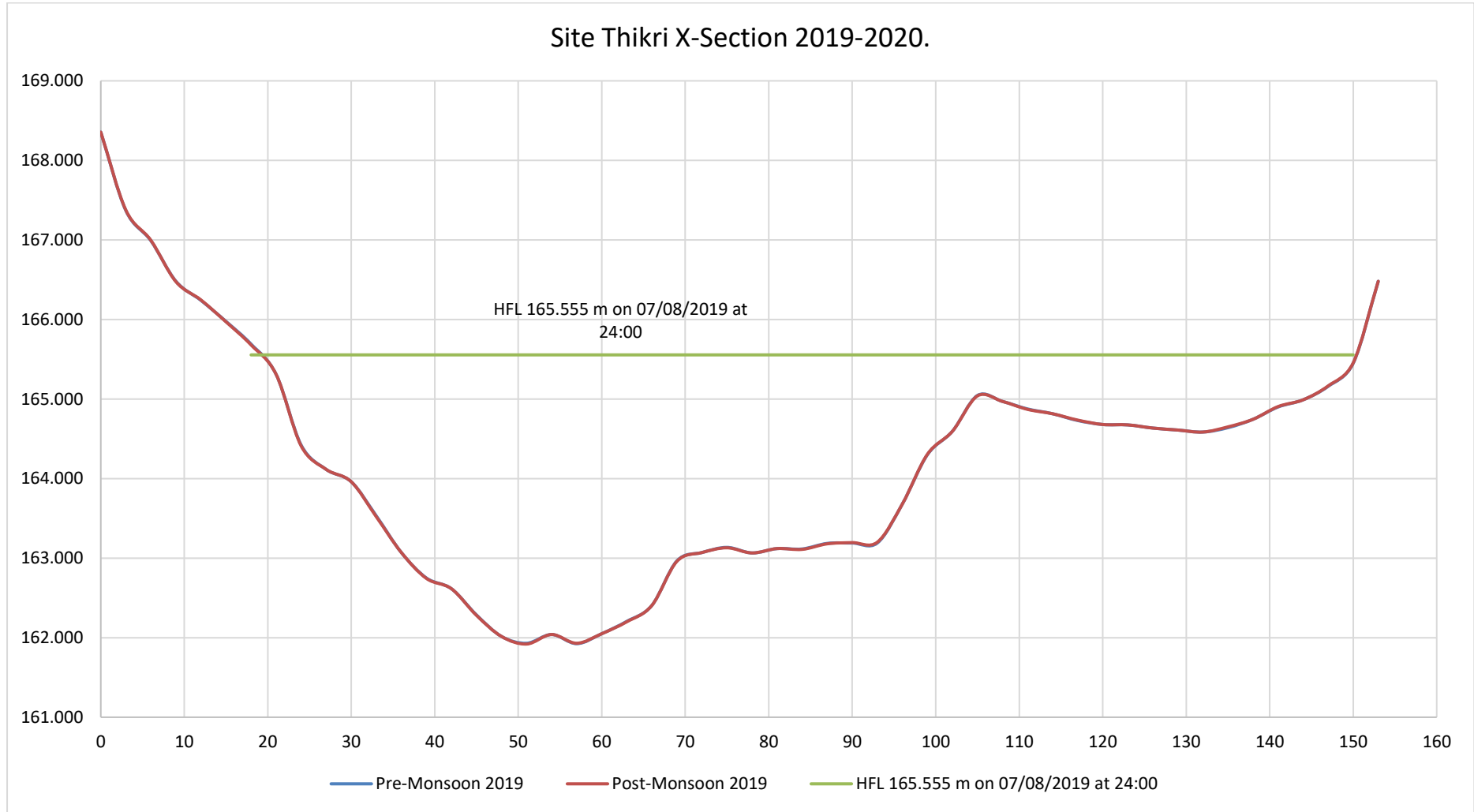
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Borad at Thikri

Division: Narmada Division, Bhopal

Local River: Borad

Sub-Division: MNSD-III, CWC Indore



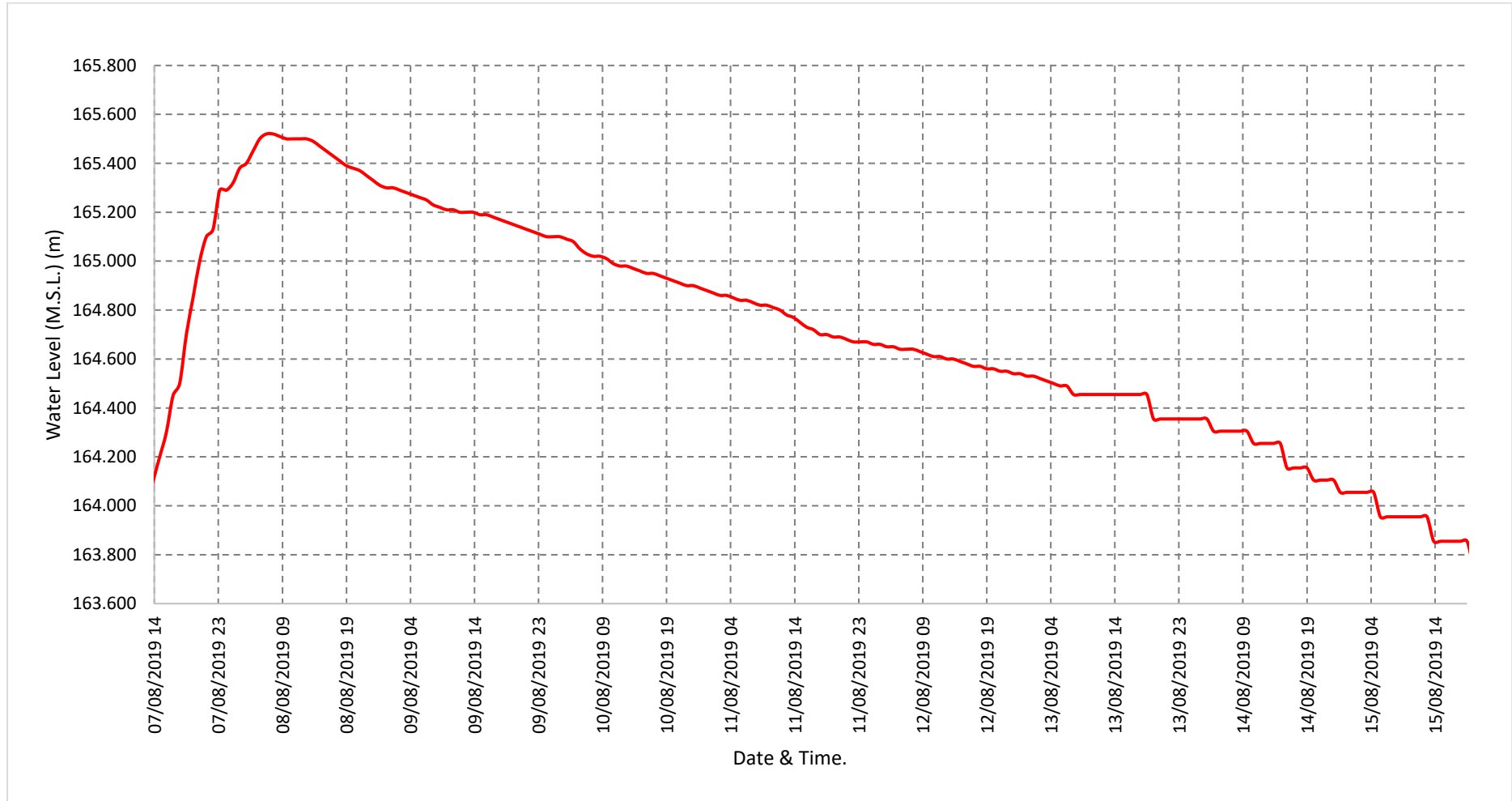
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Borad at Thikri

Division: Narmada Division, Bhopal

Local River: Borad

Sub-Division: MNSD-III, CWC Indore



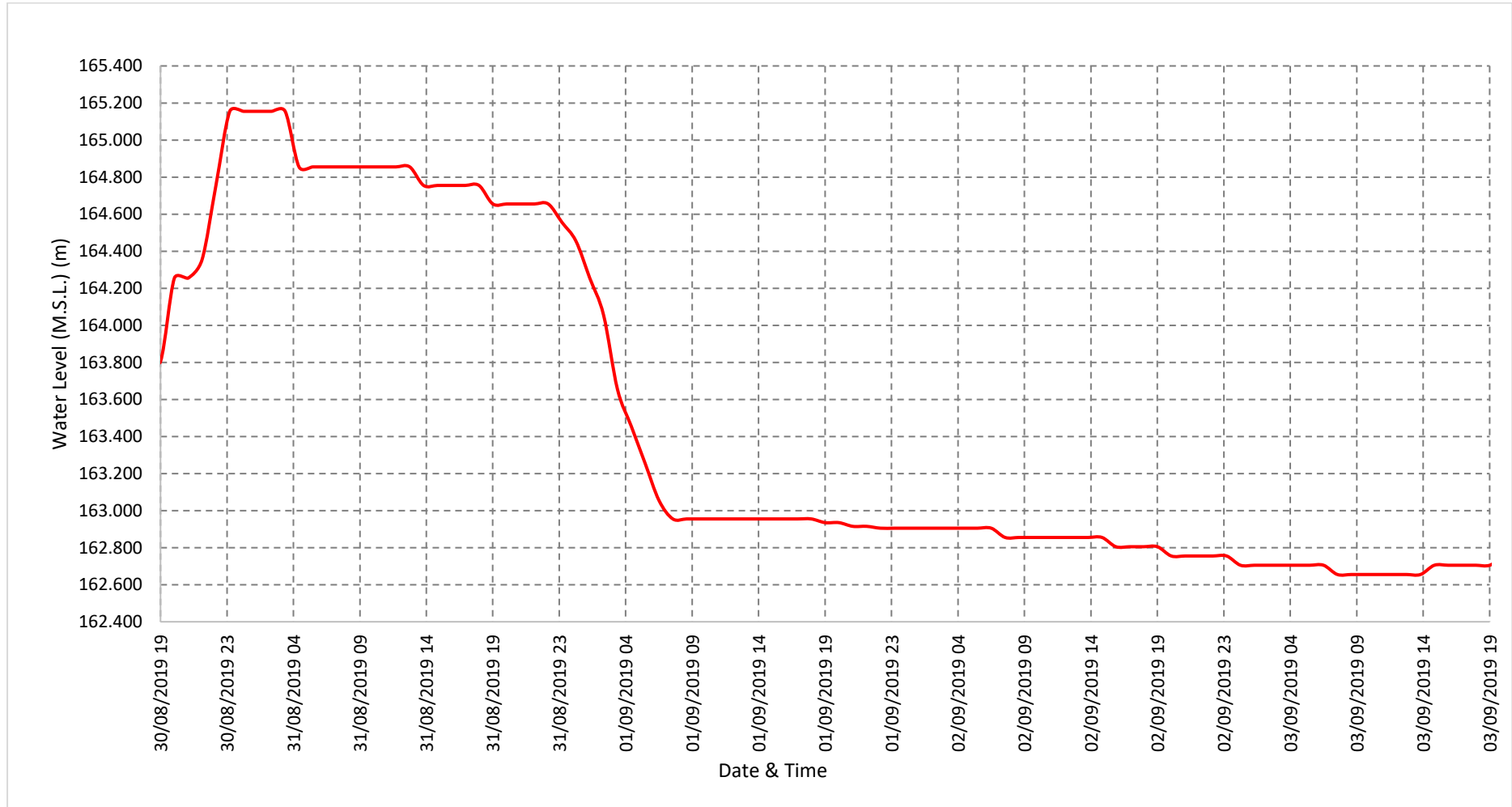
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Borad at Thikri

Division: Narmada Division, Bhopal

Local River: Borad

Sub-Division: MNSD-III, CWC Indore



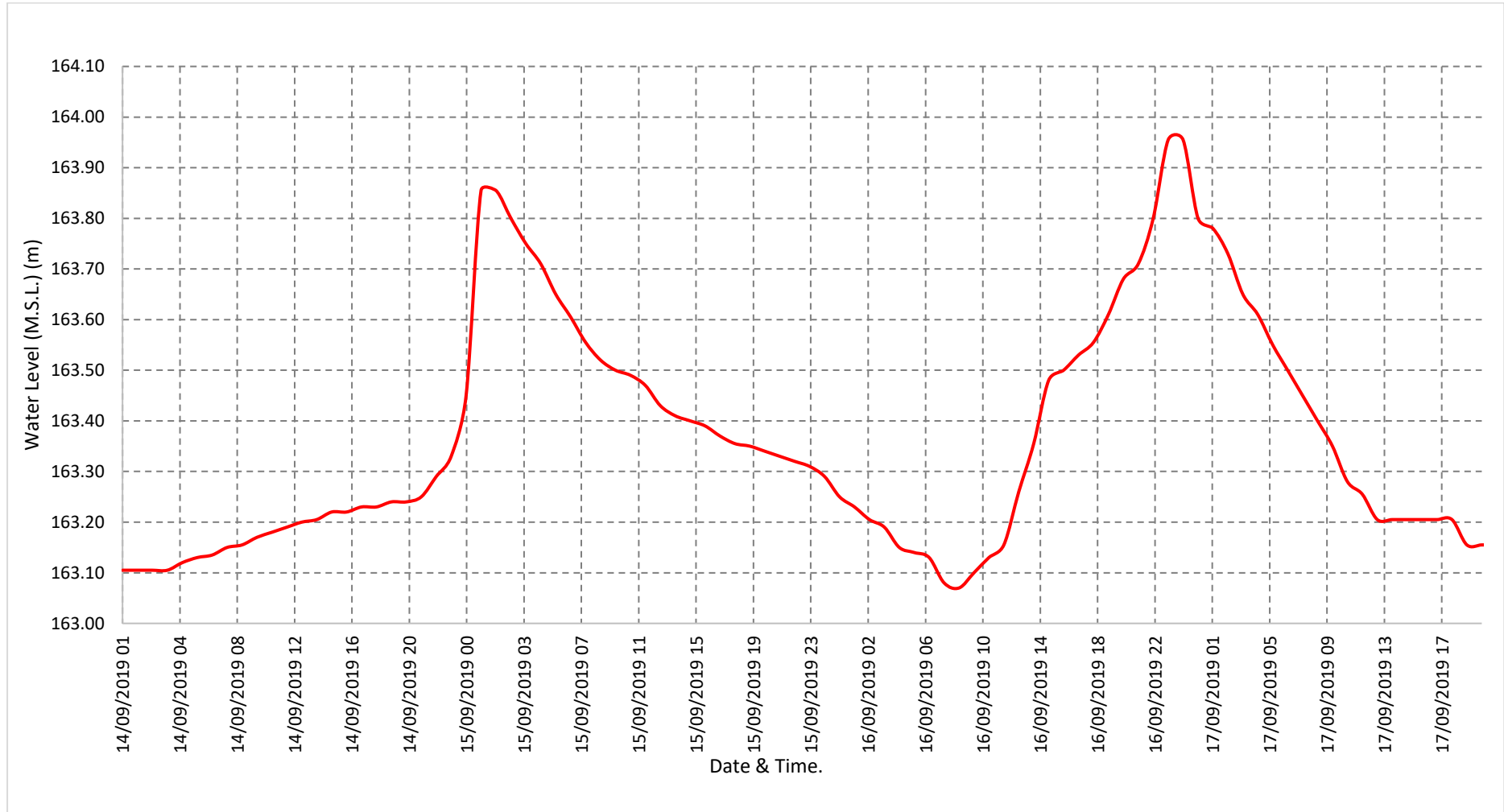
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Borad at Thikri

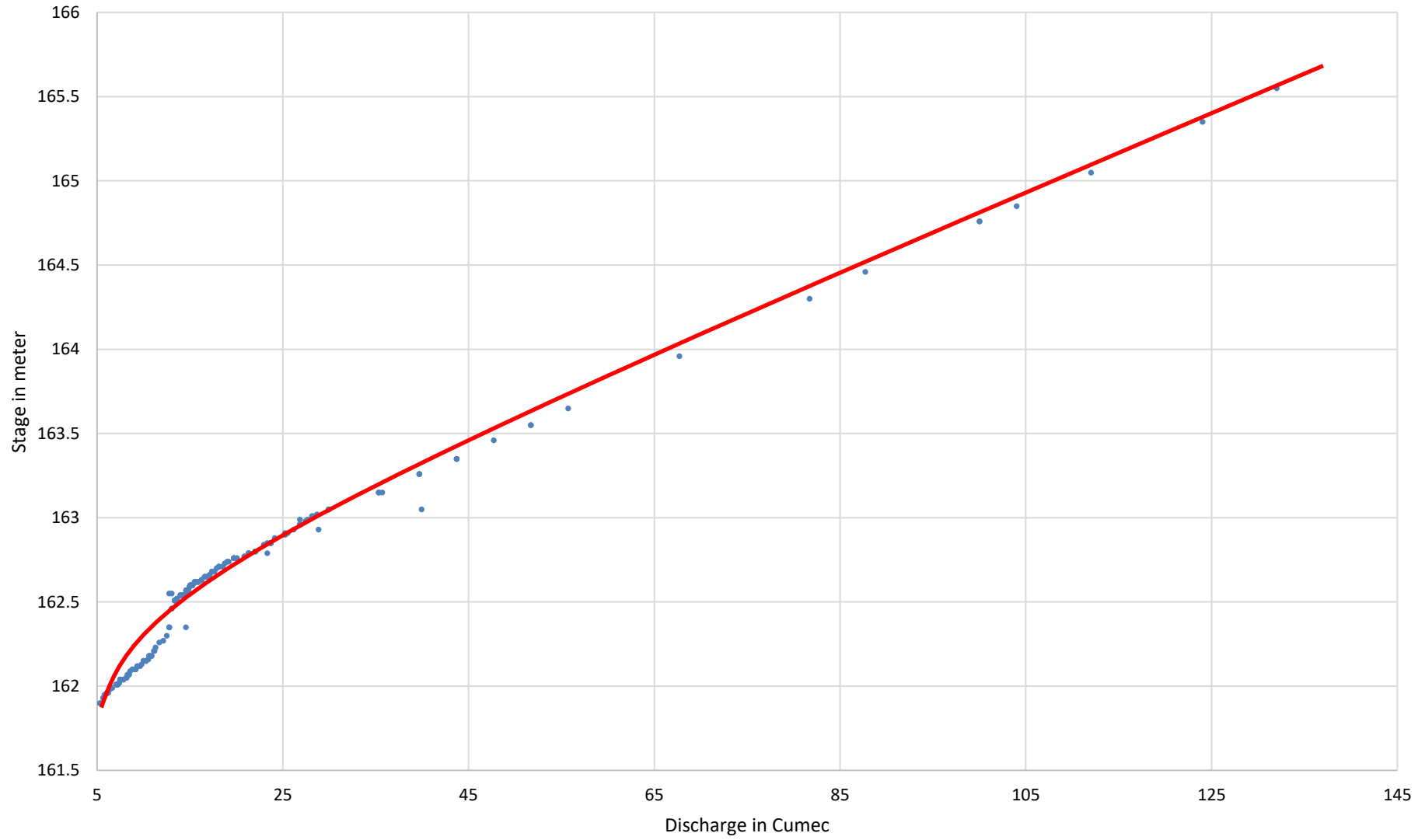
Division: Narmada Division, Bhopal

Local River: Borad

Sub-Division: MNSD-III, CWC Indore



Site Thikri Stage-Discharge Curve 2019-2020.



4.6 Karam at Dahiwar.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Karam at Dahiwar		Code	:	CW1NAM001453
State	:	Madhya Pradesh		District	:	DHAR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Karam
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	670 Sq. Km.		Bank	:	Right
Latitude	:	22°13'40"		Longitude	:	75°31'06"
Current Zero of Gauge (m)	:	164				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
164.0		10/11/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	150	166.675	30/08/2019	0	-	01-06-2019

Stage Discharge Sheet for Karam at Dahiwar for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0.00	164.82	0.00	165.32	22.71	165.43	54.00	165.71	55.82	165.73	55.82	165.73
2	0.00	164.82	0.00	165.26	33.63	165.51	50.61	165.68	63.52	165.80	45.02	165.62
3	0.00	164.82	0.00	165.24	50.61	165.68	50.61	165.68	60.35	165.77	52.00	165.68
4	0.00	164.82	0.00	165.29	50.61	165.68	50.61	165.68	55.82	165.73	35.31	165.52
5	0.00	164.82	0.00	165.30	65.43	165.88	0.00	165.24	45.02	165.62	28.72	165.48
6	0.00	164.82	9.58	165.32	74.30	165.93	0.00	165.27	54.00	165.62	22.71	165.43
7	0.00	164.82	0.00	165.32	85.69	166.02	16.27	165.38	49.37	165.66	19.20	165.40
8	0.00	164.82	0.00	165.30	105.79	166.23	20.50	165.40	45.02	165.66	19.20	165.40
9	0.00	164.82	14.43	165.35	115.72	166.32	22.71	165.43	40.85	165.57	19.20	165.40
10	0.00	164.82	21.96	165.41	125.00	166.43	28.72	165.48	35.31	165.52	9.58	165.32
11	0.00	164.82	17.77	165.38	135.00	166.52	40.85	165.57	17.77	165.38	0.00	165.29
12	0.00	164.82	0.00	165.30	125.00	166.43	85.69	166.02	50.61	165.68	0.00	165.27
13	0.00	164.82	0.00	165.24	95.71	166.12	105.79	166.23	55.82	165.73	0.00	165.27
14	0.00	164.82	0.00	165.29	85.69	166.02	105.79	166.23	22.71	165.43	0.00	165.27
15	0.00	164.82	9.58	165.32	85.69	166.02	65.43	165.82	15.40	165.37	0.00	165.27
16	0.00	164.82	21.96	165.41	145.00	166.62	65.43	165.82	17.77	165.38	0.00	165.26
17	0.00	164.82	25.92	165.45	22.71	165.43	65.43	165.82	9.58	165.32	0.00	165.26
18	0.00	164.82	30.25	165.49	9.58	165.32	50.61	165.68	28.72	165.48	0.00	165.26
19	0.00	164.82	36.70	165.54	45.02	164.82	50.61	165.68	9.58	165.32	0.00	165.26
20	0.00	164.82	42.42	165.60	105.79	166.23	65.43	165.82	15.40	165.37	0.00	165.23
21	9.58	165.32	47.00	165.63	115.72	166.32	65.43	165.82	19.20	165.40	0.00	165.23
22	11.56	165.34	53.00	165.70	85.69	166.02	65.43	165.82	14.43	165.35	0.00	165.23
23	11.56	165.34	57.68	165.74	74.30	165.93	130.00	166.57	0.00	165.32	0.00	165.20
24	16.27	165.38	59.07	165.76	74.30	165.93	74.30	165.93	0.00	165.23	0.00	165.20
25	14.43	165.35	54.32	165.71	95.71	166.12	85.69	166.02	9.58	165.32	0.00	165.20
26	15.40	165.37	49.37	165.68	95.71	166.12	69.37	165.88	17.77	165.38	0.00	165.18
27	0.00	165.29	44.03	165.62	105.79	166.23	77.34	165.96	0.00	165.30	0.00	165.18
28	0.00	165.32	40.00	165.57	115.72	166.32	85.69	166.02	0.00	165.23	0.00	165.15
29	11.56	165.34	30.25	165.49	95.71	166.12	105.79	166.23	9.58	165.32	0.00	165.15
30	19.20	165.49	31.81	165.49	150.00	166.68	37.98	165.54	8.72	165.48	0.00	165.15
31			27.88	165.46	150.00	166.68			50.61	165.68		
Ten-Daily Mean												
I Ten-Daily	0.00	164.82	4.60	165.31	72.95	165.91	29.40	165.49	50.51	165.67	30.68	165.50
II Ten-Daily	0.00	164.82	18.46	165.40	85.52	165.95	70.11	165.87	24.34	165.45	0.00	165.26
III Ten-Daily	10.96	165.35	44.95	165.62	105.33	166.23	79.70	165.98	11.81	165.36	0.00	165.19
Monthly												
Min.	0.00	164.82	0.00	165.24	9.58	164.82	0.00	165.24	0.00	165.23	0.00	165.15
Max.	19.20	165.49	59.07	165.76	150.00	166.68	130.00	166.57	63.52	165.80	55.82	165.73
Mean	3.65	165.00	22.67	165.45	87.93	166.03	59.74	165.78	28.88	165.49	10.23	165.32

Annual Runoff in

MCM : 566.36

Annual Runoff in

mm : 845.3

Peak Observed Discharge = 150 cumecs on 30/8/2019 Corres. Water Level 166.68 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019 Corres. Water Level 164.820 m

Stage Discharge Sheet for Karam at Dahiwar for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	165.12	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
2	0	165.12	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
3	0	165.13	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
4	0	165.13	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
5	0	165.15	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
6	0	165.15	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
7	0	165.15	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
8	0	165.15	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
9	0	165.16	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
10	0	165.16	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
11	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
12	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
13	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
14	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
15	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
16	0	165.2	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
17	0	165.21	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
18	0	165.2	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
19	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
20	0	165.18	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
21	0	165.15	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
22	0	165.12	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
23	0	165.1	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
24	0	165.07	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
25	0	165.04	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
26	0	165.02	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
27	0	165.01	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
28	0	164.99	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
29	0	164.96	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82	0.00	164.82
30	0	164.95	0.00	164.82			0.00	164.82	0.00	164.82	0.00	164.82
31	0	164.93	0.00	164.82			0.00	164.82			0.00	164.82
Ten-Daily Mean												
I Ten-Daily	0	165.14	0	164.82	0	164.82	0	164.82	0	164.82	0	164.82
II Ten-Daily	0	165.19	0	164.82	0	164.82	0	164.82	0	164.82	0	164.82
III Ten-Daily	0	165.03	0	164.82	0	164.82	0	164.82	0	164.82	0	164.82
Monthly												
Min.	0	164.93	0	164.82	0	164.82	0	164.82	0	164.82	0	164.82
Max.	0	165.21	0	164.82	0	164.82	0	164.82	0	164.82	0	164.82
Mean	0	165.12	0	164.82	0	164.82	0	164.82	0	164.82	0	164.82

Peak Computed Discharge = 135 cumecs on 11/8/2019 Corres. Water Level 166.52 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019 Corres. Water Level 164.820 m

Monthly Runoff for the Year (2019-2020)

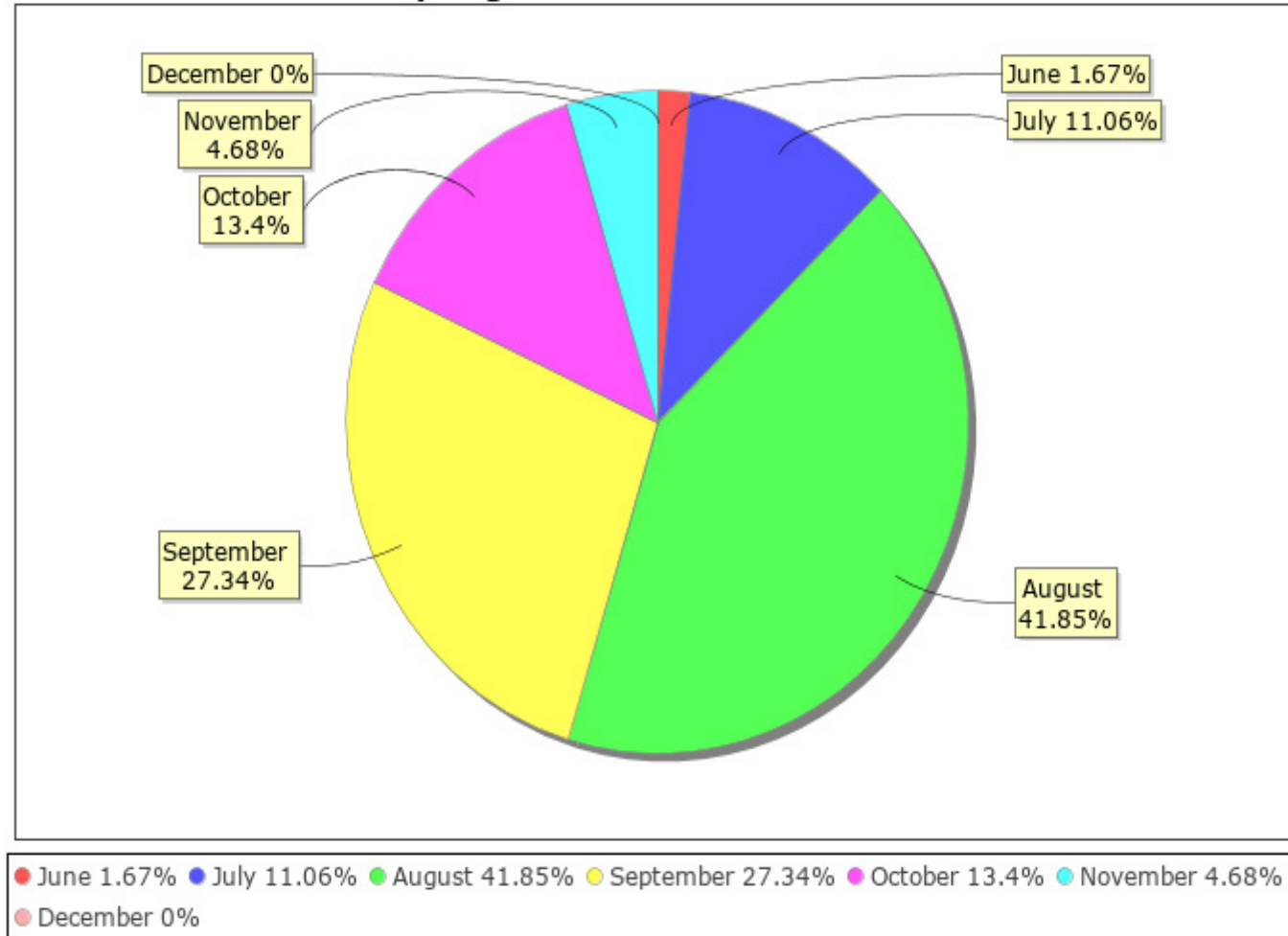
Station Name: Karam at Dahiwar

Local River: Karam

Division: Narmada Division, Bhopal

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



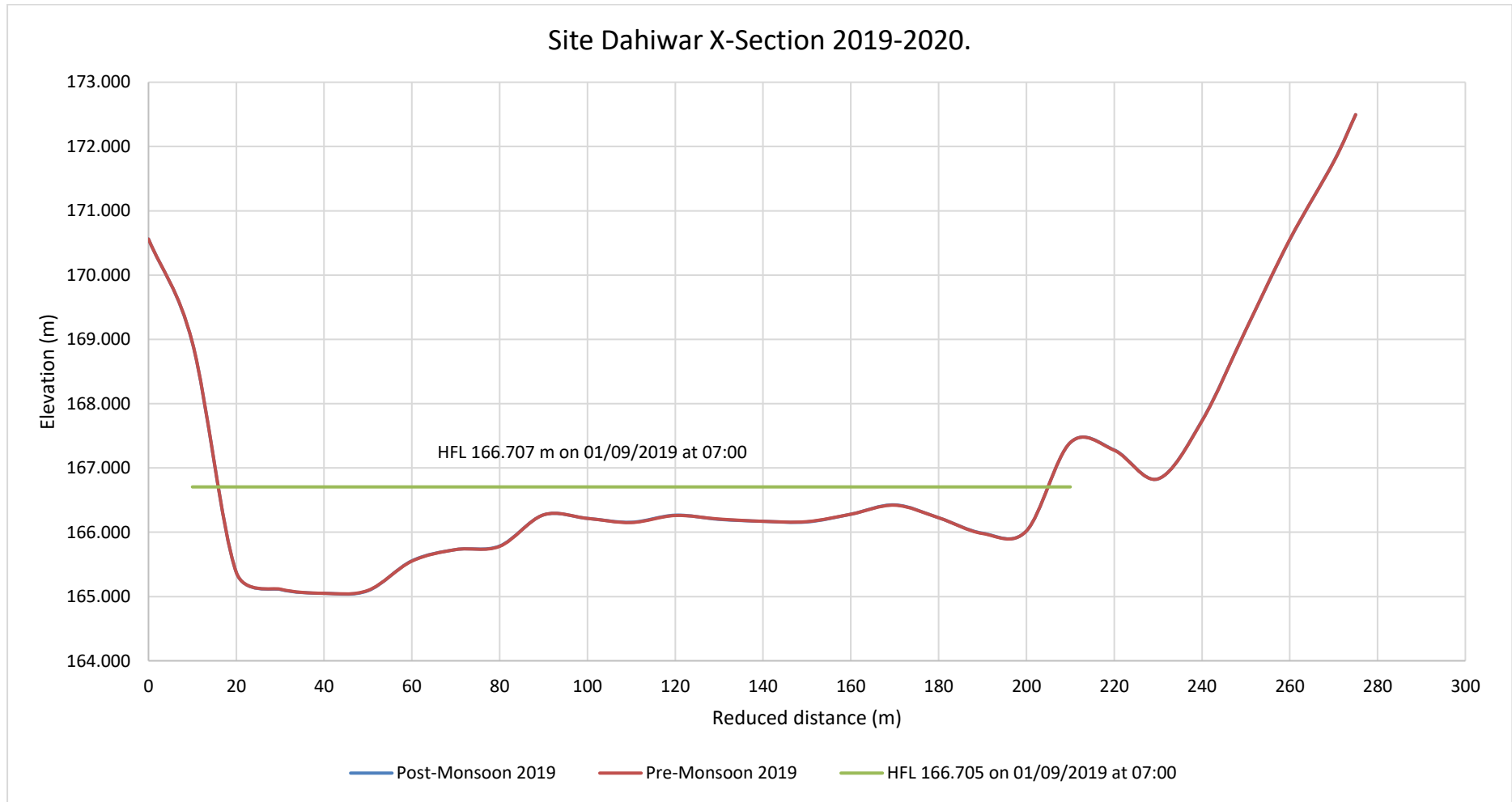
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Karam at Dahiwar

Division: Narmada Division, Bhopal

Local River: Karam

Sub-Division: MNSD-III, CWC Indore



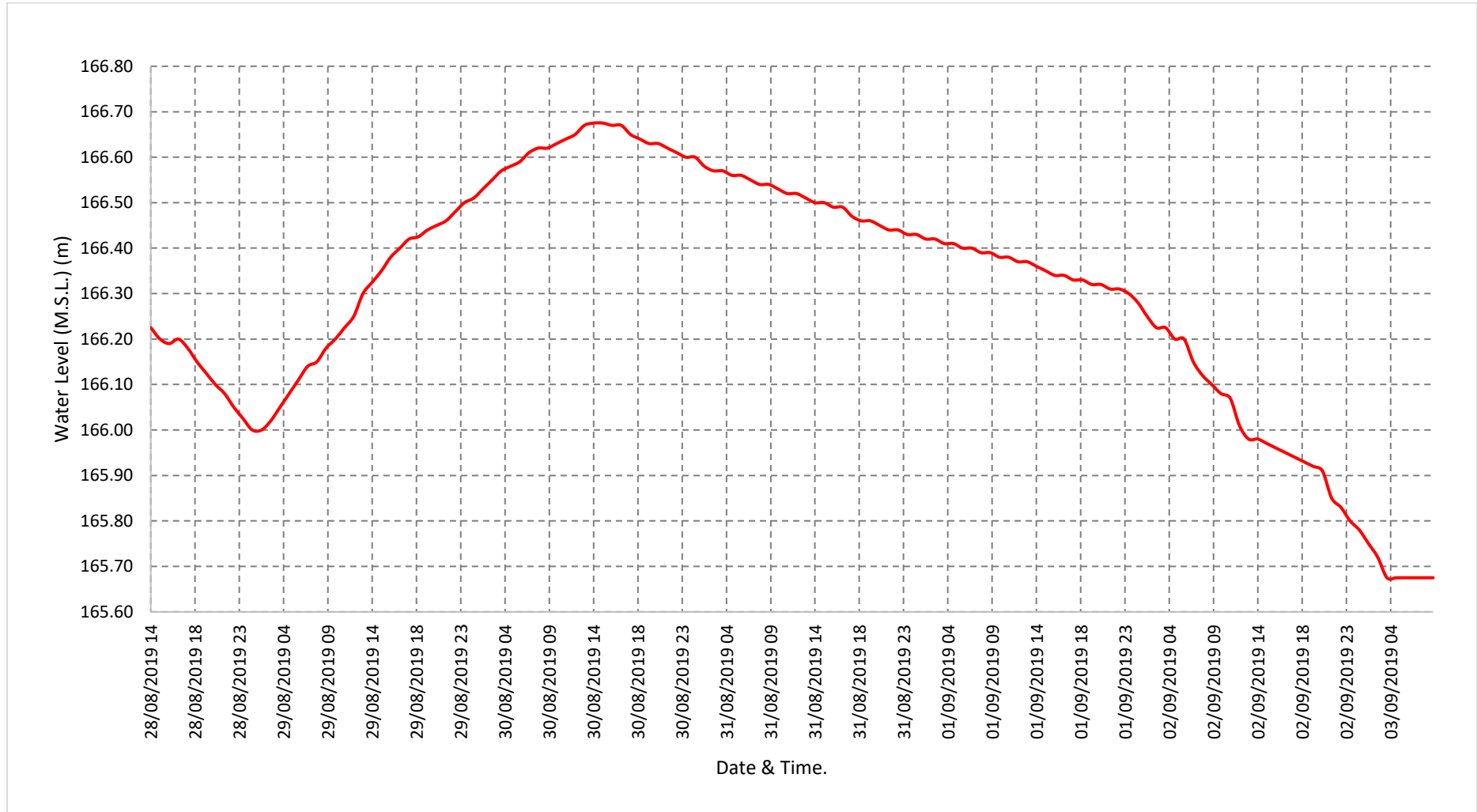
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Karam at Dahiwar

Division: Narmada Division, Bhopal

Local River: Karam

Sub-Division: MNSD-III, CWC Indore



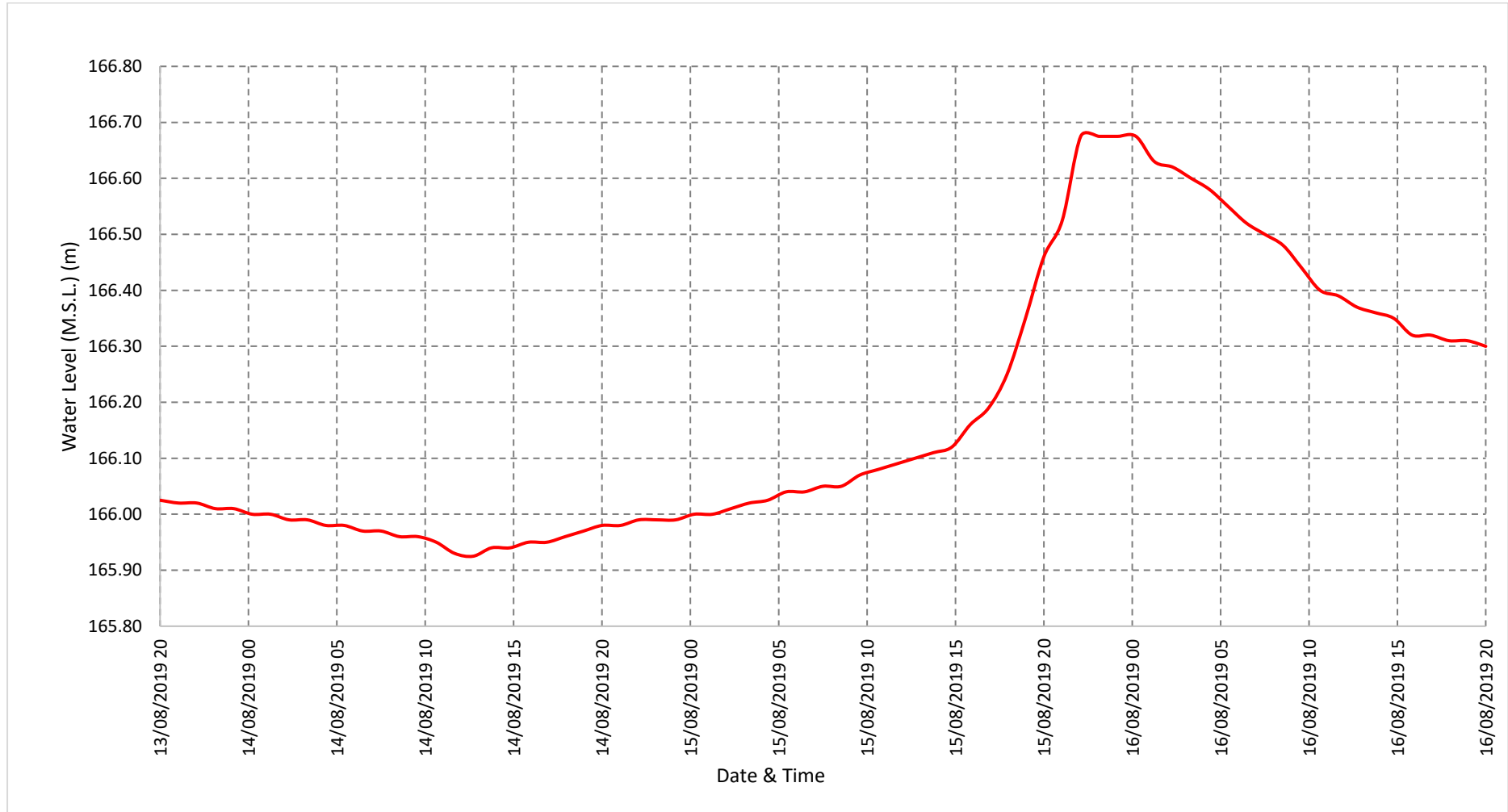
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Karam at Dahiwar

Division: Narmada Division, Bhopal

Local River: Karam

Sub-Division: MNSD-III, CWC Indore



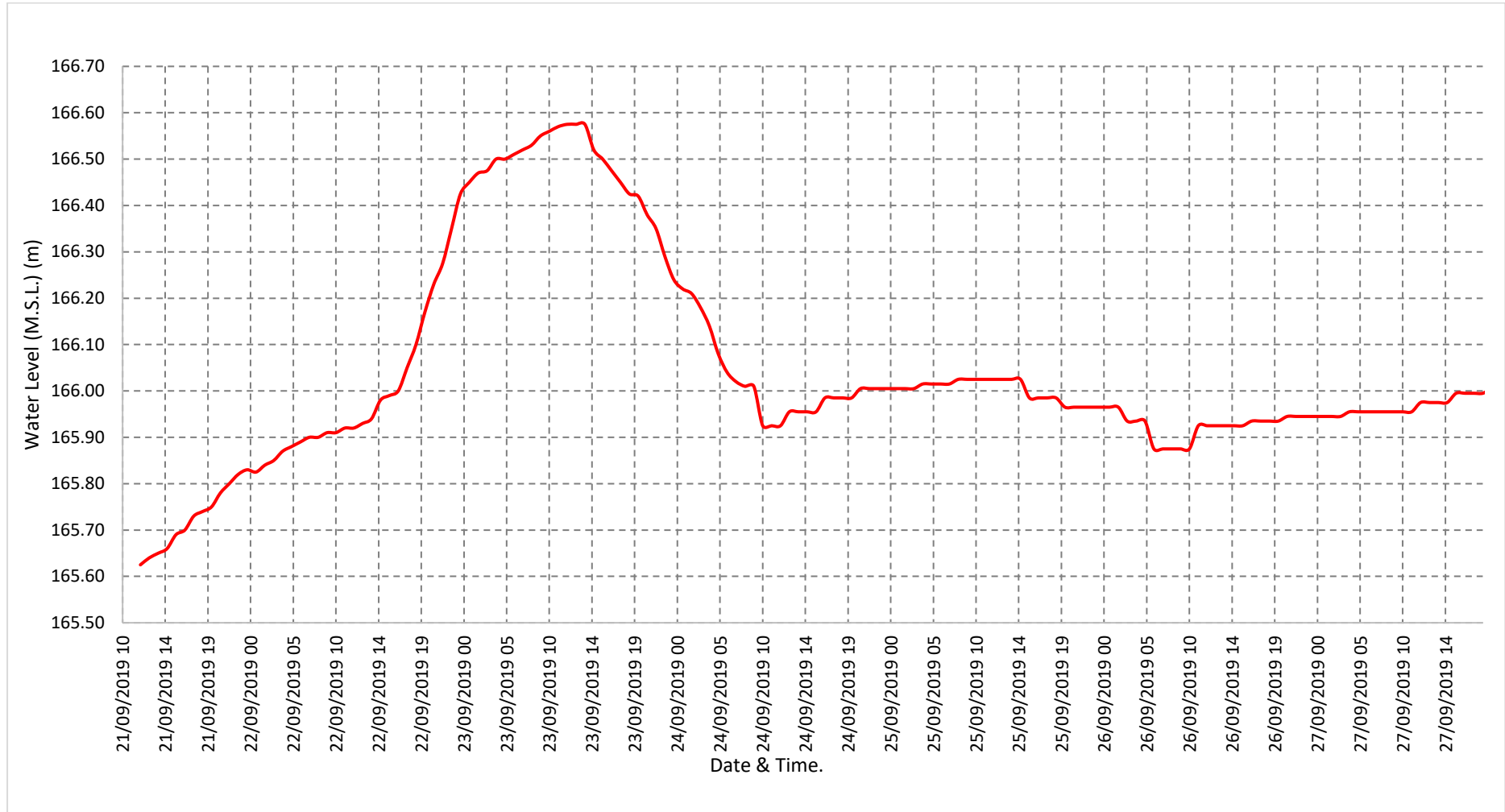
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Karam at Dahiwar

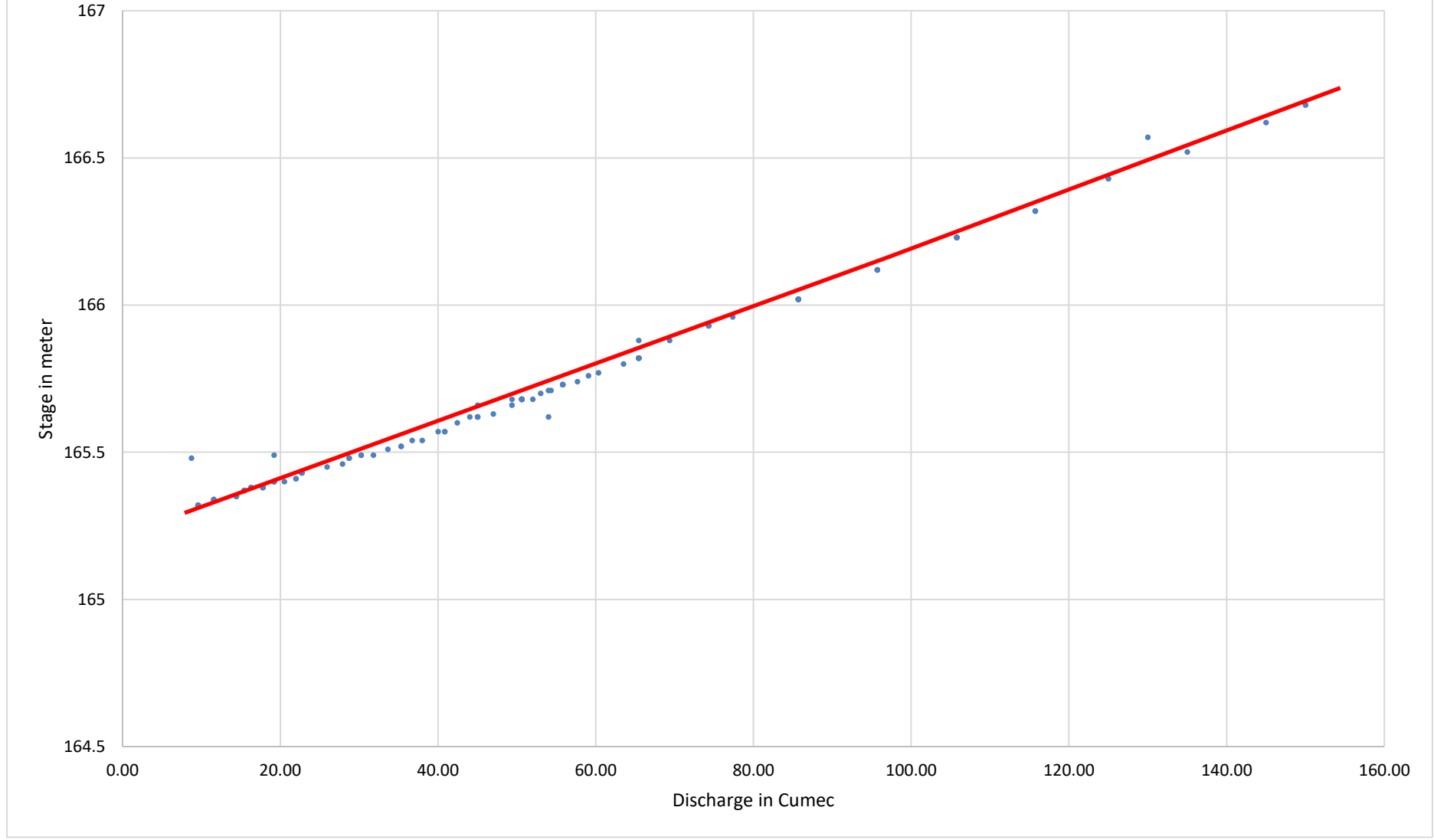
Division: Narmada Division, Bhopal

Local River: Karam

Sub-Division: MNSD-III, CWC Indore



Site Dahiwar Stage-Discharge Curve 2019-2020



4.7 Narmada at Mandleshwar.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	Mandleshwar		Code	:	CW1NAM000189	
State	:	Madhya Pradesh		District	:	KHARGONE	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	-		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Narmada	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub- Division-III, Indore	
Drainage Area	:	72809.0 Sq. Km.		Bank	:	Right	
Latitude	:	22°10'18"		Longitude	:	75°39'39"	
Current Zero of Gauge (m)	:	138					
CATEGORY		Opening Date		Closing Date			
Gauge	:	16/12/1970					
Discharge	:	28/08/1971					
Sediment	:	14/04/1972					
Water Quality	:	18/06/1979					
Reduced Level		Opening Date		Closing Date			
138.0		16/12/1970					

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1970-1971	0	139.235	23/05/1971	0	139.235	23/05/1971
1971-1972	13019	148.610	07/09/1971	30.9	139.185	30/05/1972
1972-1973	18973.7	149.713	02/09/1972	26.5	139.135	28/05/1973
1973-1974	44900	157.100	31/08/1973	28.2	139.225	25/05/1974
1974-1975	31454	153.215	20/08/1974	32.4	139.140	30/05/1975
1975-1976	32213.6	152.685	12/09/1975	19.1	139.186	16/06/1975
1976-1977	12927.9	147.073	06/08/1976	11	139.505	30/12/1976
1977-1978	24844	150.100	15/09/1977	55.4	139.245	26/05/1978
1978-1979	27373.4	150.575	30/08/1978	49.9	139.215	08/06/1978
1979-1980	32084.3	151.600	10/08/1979	34.5	139.090	26/05/1980
1980-1981	21843.6	149.750	30/08/1980	37.5	139.260	02/06/1980
1981-1982	27983.8	151.905	10/08/1981	39.2	139.275	17/05/1982
1982-1983	17050	147.935	23/08/1982	36.3	139.235	28/05/1983
1983-1984	19420	148.970	11/09/1983	24.6	139.160	10/06/1983
1984-1985	46000	155.550	19/08/1984	33.9	139.190	31/05/1985
1985-1986	13850	147.710	10/08/1985	30.2	139.235	26/05/1986
1986-1987	32600	152.550	15/08/1986	31.8	139.220	11/06/1986
1987-1988	21313	149.190	28/08/1987	16.43	139.120	31/05/1988
1988-1989	21400	149.200	05/08/1988	11.92	139.080	06/06/1988
1989-1990	13650	147.070	08/08/1989	16	139.100	04/06/1989
1990-1991	37750	153.200	23/08/1990	108	139.500	14/06/1990
1991-1992	21750	149.200	31/07/1991	22.6	139.770	08/06/1991
1992-1993	9900	145.680	18/08/1992	40	139.400	09/06/1992
1993-1994	29000	151.800	17/07/1993	47.15	139.290	14/06/1993
1994-1995	48200	157.230	06/09/1994	118.2	139.660	19/05/1995
1995-1996	12500	147.000	25/07/1995	58	139.370	26/05/1996
1996-1997	31025	152.000	28/07/1996	69.48	139.420	26/06/1996
1997-1998	33500	153.150	26/07/1997	70	139.370	12/06/1997
1998-1999	27900	151.150	15/09/1998	54.14	139.290	31/05/1999
1999-2000	30150	151.660	21/09/1999	39.91	139.290	10/06/1999
2000-2001	5790	143.980	31/07/2000	55.15	139.390	05/05/2001
2001-2002	11725	146.000	16/08/2001	51.69	139.360	04/06/2001
2002-2003	14950	147.980	03/09/2002	57	139.420	25/05/2003
2003-2004	11905	146.660	29/07/2003	3.46	138.820	27/11/2003
2004-2005	12100	146.740	25/08/2004	12	139.030	14/04/2005
2005-2006	8793.7	145.300	04/08/2005	51.53	139.380	30/03/2006

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2006-2007	18482.74	148.550	20/08/2006	15.3	139.300	22/04/2007
2007-2008	10691.59	145.820	08/08/2007	69.9	139.400	20/06/2007
2008-2009	1583.65	141.650	20/07/2008	149.81	139.780	09/06/2008
2009-2010	15828.13	147.750	12/09/2009	82.57	139.780	12/11/2009
2010-2011	10257.83	145.990	09/09/2010	84.86	139.520	23/06/2010
2011-2012	17698.74	148.750	27/08/2011	266.55	139.940	08/05/2012
2012-2013	33479.3	153.150	06/09/2012	46.27	139.490	17/02/2013
2013-2014	46398.29	154.575	24/08/2013	214.02	139.575	12/05/2014
2014-2015	10407.92	145.750	08/09/2014	3.17	139.090	11/07/2014
2015-2016	2311.07	142.120	17/08/2015	138.94	139.420	30/05/2016
2016-2017	10200	146.070	09/08/2016	106.3	139.510	29/06/2016
2017-2018	2620.52	142.290	15/09/2017	21	139.15	02/03/2018
2018-2019	4856.07	143.28	17/08/2018	29.3	139.19	05/08/2018
2019-2020	21150	150.300	13/09/2019	89	139.440	30/06/2019

Stage Discharge Sheet for Narmada at Mandleshwar for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	890.24	140.860	195.87	139.850	326.93	140.190	3248	142.730	4783.97	143.570	855.68	140.820
2	241	139.970	288.44	140.090	323.37	140.170	6810	144.610	7605	145.000	644.61	140.580
3	369.65	140.240	417.97	140.350	206.2	139.880	3219.86	142.740	5454.63	143.910	635	140.570
4	341.48	140.200	198.79	139.860	521	140.450	4203.23	143.180	4720.2	143.530	626.36	140.560
5	142	139.650	214.67	139.900	614.28	140.550	13990	147.570	2986.87	142.580	1065.79	141.050
6	156.25	139.700	354.76	140.230	313.76	140.150	6580	144.500	2960	142.560	577.05	140.500
7	183.82	139.810	1920	141.730	162.06	139.720	6766	144.580	2400.14	142.160	588.79	140.520
8	109.48	139.520	228.3	139.940	190.27	139.850	8010	145.200	2290	142.070	371.46	140.230
9	142	139.650	203.25	139.870	1900.6	141.770	17870	149.100	2218.66	142.040	334.88	140.160
10	118.24	139.570	176.78	139.780	2486.38	142.240	18170	149.220	2255.22	142.040	510	140.410
11	122.6	139.570	132.69	139.610	2318	142.100	20510	150.100	1622.02	141.500	431.38	140.340
12	158.97	139.710	323	140.160	2420	142.180	20120	149.900	1267.04	141.200	461	140.370
13	346.21	140.220	533.02	140.470	2207.53	142.010	21150	150.300	432	140.370	514.05	140.430
14	145.45	139.660	228	139.940	2757.75	142.410	17870	149.100	1564.5	141.450	530.7	140.450
15	104.05	139.450	174.25	139.770	2669	142.350	17520	149.000	1511.6	141.400	206.59	139.800
16	142	139.650	195.96	139.850	2579.56	142.300	10200	146.100	1161.41	141.140	193.91	139.750
17	103.95	139.500	314.79	140.110	4358.53	143.290	4631.35	143.350	810.69	140.760	199	139.770
18	206.79	139.880	1211.32	141.150	6950	144.740	11660	146.650	978.02	140.970	265.21	140.000
19	139.83	139.640	2468.73	142.240	7700	145.030	6925	144.660	624.47	140.550	383.03	140.220
20	459.71	140.320	2244.62	142.040	7525	144.960	6533.97	144.400	826	140.780	396.34	140.260
21	777.68	140.740	1895	141.750	5240	143.900	6901.28	144.510	536.2	140.460	440.56	140.360
22	243.24	139.980	633.02	140.570	4183.8	143.160	5792	144.140	253.64	140.000	536.37	140.460
23	179	139.800	2233.22	142.030	2662.05	142.350	3666.85	142.880	625.1	140.550	807.17	140.780
24	131.05	139.600	1510.94	141.400	2955.89	142.550	3273.47	142.760	540.66	140.480	795	140.750
25	190.09	139.830	148.54	139.680	8750	145.500	4709.9	143.520	327.3	140.180	380.58	140.220
26	122.42	139.570	99.02	139.390	10980	146.380	6096.92	144.140	324.26	140.140	340.97	140.150
27	101.66	139.490	103.39	139.430	11355	146.530	4752.98	143.550	170	139.750	305.58	140.080
28	118.35	139.560	119	139.500	4947.75	143.670	4947.75	143.670	328.02	140.150	280.14	140.030
29	130.9	139.600	298.09	140.100	8800	145.470	4910	143.640	913.77	140.880	394.71	140.250
30	89	139.440	786.43	140.740	5540	144.050	4888.48	143.630	707.91	140.650	368.55	140.200
31			310.37	140.140	3907.28	143.000			815.12	140.780		
Ten-Daily Mean												
I Ten-Daily	269.42	139.920	419.88	140.160	704.49	140.500	8886.71	145.340	3767.47	142.950	620.96	140.540
II Ten-Daily	192.96	139.760	782.64	140.530	4148.54	143.140	13712	147.360	1079.78	141.010	358.12	140.140
III Ten-Daily	208.34	139.760	739.73	140.430	6301.98	144.230	4993.96	143.640	503.82	140.360	464.96	140.330
Monthly												
Min.	89	139.440	99.02	139.390	162.06	139.720	3219.86	142.730	170	139.750	193.91	139.750
Max.	890.24	140.860	2468.73	142.240	11355	146.530	21150	150.300	7605	145.000	1065.79	141.050
Mean	223.57	139.810	647.42	140.370	3718.33	142.620	9197.57	145.450	1783.69	141.440	481.35	140.340

Annual Runoff in MCM :48788.18

Annual Runoff in mm :670.08

Peak Observed Discharge = 6901 cumecs on 21/0 9/2019 Corres. Water Level 144.510 m

Lowest Observed Discharge = 98.97cumecs on 26/7/2019 Corres. Water Level 139.39 m

Stage Discharge Sheet for Narmada at Mandleshwar for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	306	140.080	378.65	140.200	437.44	140.300	594	140.470	655	140.600	259.79	139.970
2	337.16	140.140	432.16	140.320	511	140.410	226.2	139.840	593.4	140.380	182.37	139.700
3	264.62	140.000	550.27	140.470	347.89	140.150	617.97	140.500	486	140.200	187	139.710
4	244.65	139.960	450.47	140.320	411.55	140.260	789.99	140.700	554	140.310	219.44	139.830
5	385.29	140.240	260.2	139.980	346.4	140.150	398.1	140.230	431	140.370	187.39	139.710
6	353.9	140.180	455.72	140.380	393.81	140.230	293.87	140.120	514	140.400	909.78	140.820
7	434.56	140.320	407.98	140.250	319.85	140.100	320.15	140.100	556	140.470	180	139.680
8	433	140.320	472.98	140.360	235.7	139.870	336	140.140	723	140.690	754.6	140.640
9	402.78	140.270	413.29	140.260	280	140.030	502.1	140.400	639	140.550	190.97	139.720
10	486.28	140.380	421.13	140.270	340.35	140.140	427	140.280	436	140.080	698	140.600
11	310.94	140.090	402.22	140.240	275.99	140.020	415.82	140.260	576	140.340	147.6	139.650
12	384.97	140.240	557	140.480	307.57	140.080	414.81	140.260	339	140.570	725.78	140.590
13	284.36	140.050	439.06	140.300	215.3	139.800	427.49	140.280	358	140.000	554.81	140.470
14	269.22	140.010	407.81	140.250	236.83	139.850	433.86	140.290	560	140.320	543.15	140.490
15	279	140.030	307.76	140.080	239.44	139.900	502	140.400	225	139.800	196.19	139.750
16	200.71	139.780	361.11	140.170	308	140.080	514.29	140.410	195	139.680	245.93	139.930
17	254.23	139.980	303.35	140.070	248.93	139.950	425.2	140.280	486	140.200	291	140.050
18	199.85	139.780	258.22	139.980	301.55	140.070	433.24	140.290	518	140.240	428.07	140.280
19	373.82	140.220	372	140.190	233.16	139.900	403.54	140.240	435	140.300	600.17	140.520
20	248.05	139.900	301.95	140.070	211.68	139.800	474.48	140.340	488.25	140.360	235.93	139.900
21	363.66	140.200	258.09	139.980	1075	140.970	329.12	140.120	840.22	140.760	488.51	140.360
22	246	140.000	358.15	140.170	501.99	140.360	425	140.280	1589.67	141.430	211.87	139.790
23	242.5	139.960	361.23	140.170	518	140.370	481.12	140.350	556.61	140.470	197.79	139.750
24	338.58	140.150	506.37	140.400	354.75	140.150	774.61	140.680	253.12	139.970	538	140.440
25	242	139.960	437.88	140.300	217.6	139.810	666	140.500	446	140.310	325	140.110
26	298.06	140.070	430	140.320	191.04	139.720	487	140.200	322	140.100	521.22	140.430
27	317.64	140.130	300.94	140.070	449.99	140.330	485	140.180	228.99	139.870	197.18	139.760
28	316.77	140.120	406.33	140.260	1193.28	141.140	371	139.950	487.9	140.360	425.86	140.270
29	380	140.230	303.5	140.080	562.1	140.430	190	139.790	427.68	140.280	465.2	140.330
30	312.39	140.110	356.82	140.170			461	140.150	242.81	139.920	225.27	139.840
31	388.46	140.220	400.06	140.240			671	140.510			1549	141.000
Ten-Daily Mean												
I Ten-Daily	364.82	140.190	424.28	140.280	362.4	140.160	450.54	140.280	558.74	140.410	376.93	140.040
II Ten-Daily	280.51	140.010	371.05	140.180	257.84	139.940	444.47	140.300	418.02	140.180	396.86	140.160
III Ten-Daily	313.28	140.100	374.49	140.200	562.64	140.360	485.53	140.250	539.5	140.350	467.72	140.190
Monthly												
Min.	199.85	139.780	258.09	139.980	191.04	139.720	190	139.790	195	139.680	147.6	139.650
Max.	486.28	140.380	557	140.480	1193.28	141.140	789.99	140.700	1589.67	141.430	1549	141.000
Mean	319.54	140.100	389.94	140.220	394.29	140.160	460.18	140.280	505.42	140.310	413.84	140.130

Peak Computed Discharge = 21150 cumecs on 13/9/2019 Corres. Water Level 150.300 m
 Lowest Computed Discharge = 89 cumecs on 30/6/2019 Corres. Water Level 139.44 m

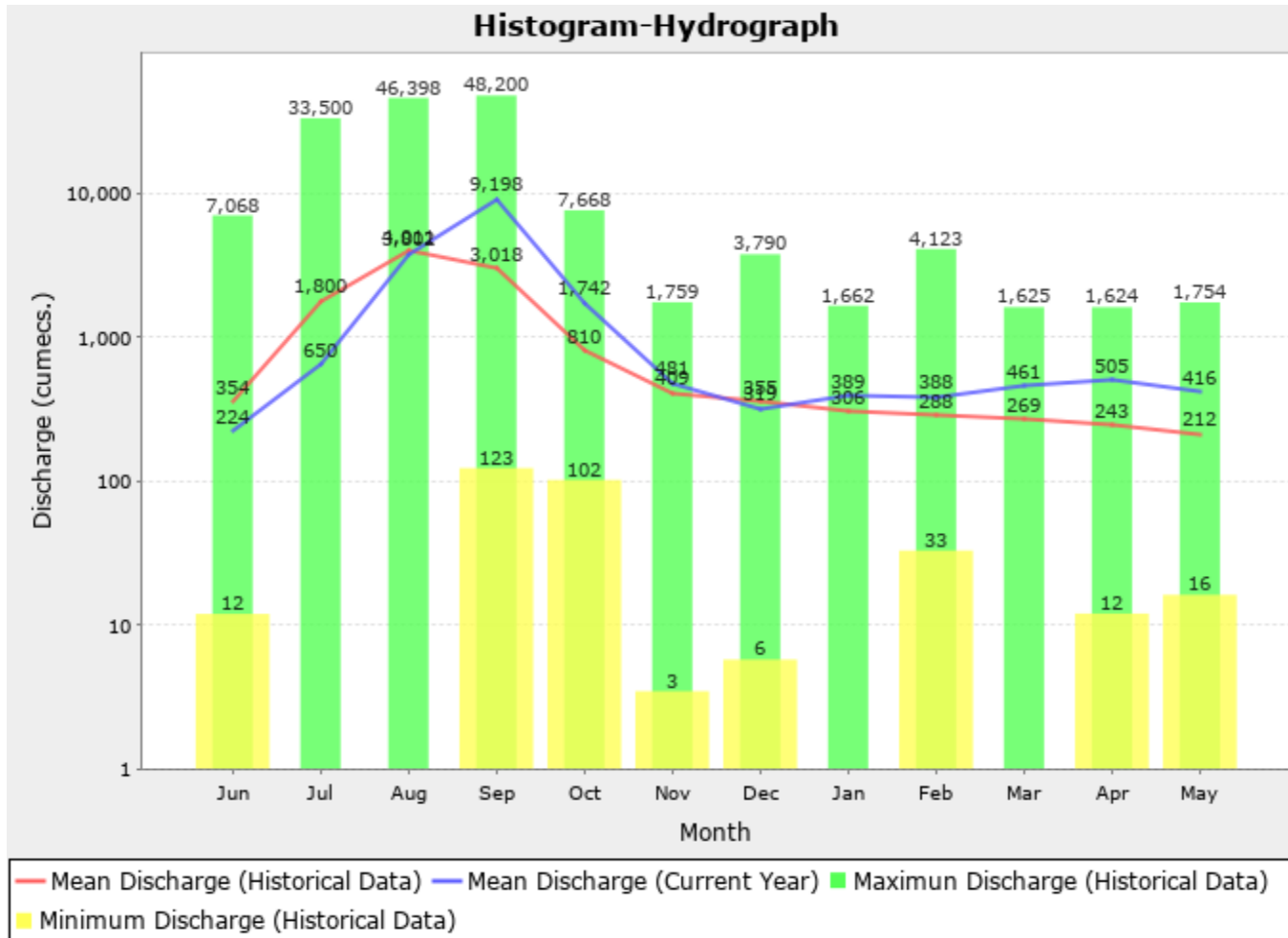
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1972-2020)

Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore



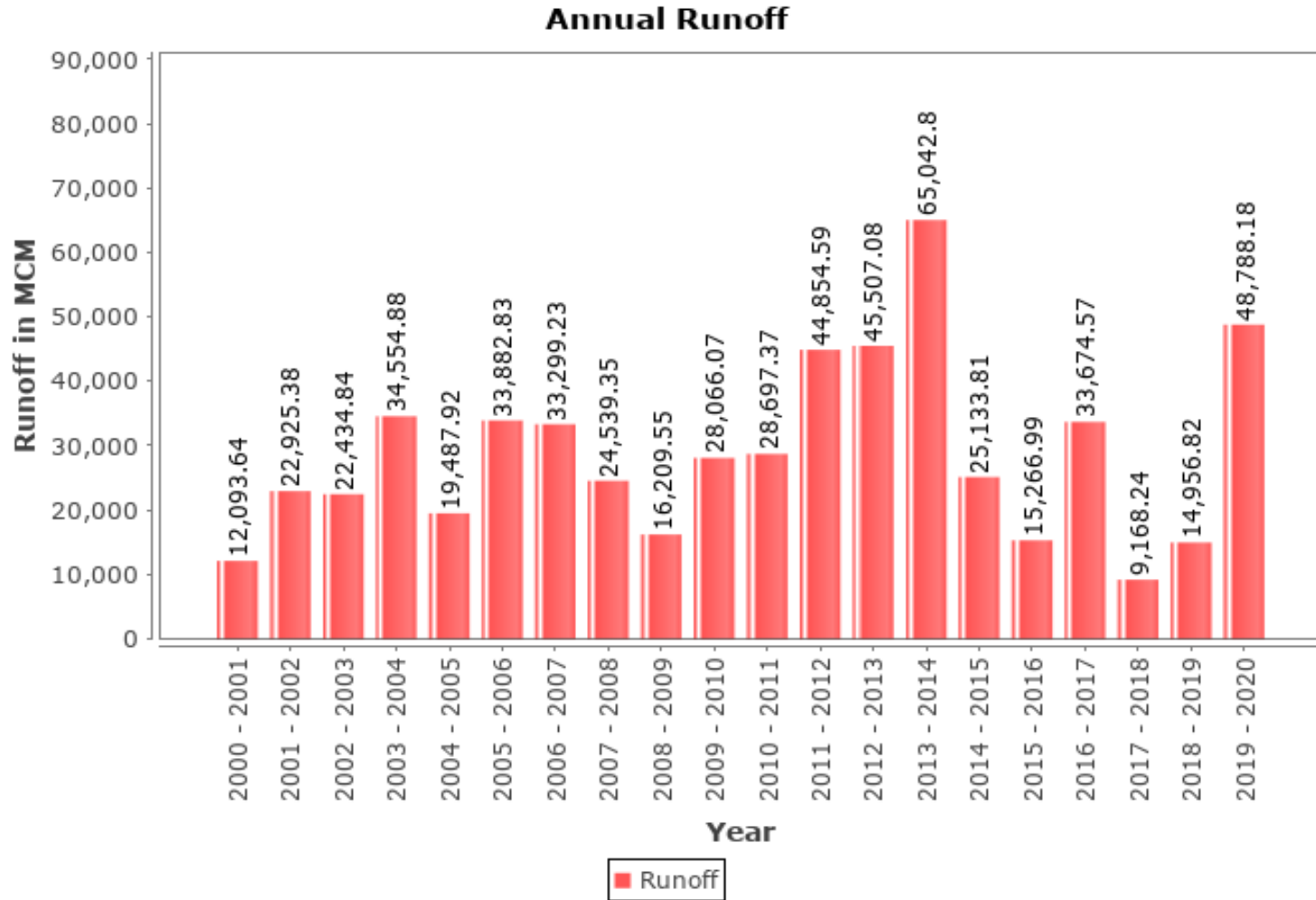
Annual Runoff Values for the period (2000 – 2020)

Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore



Monthly Average Runoff based on period (1972 – 2020)

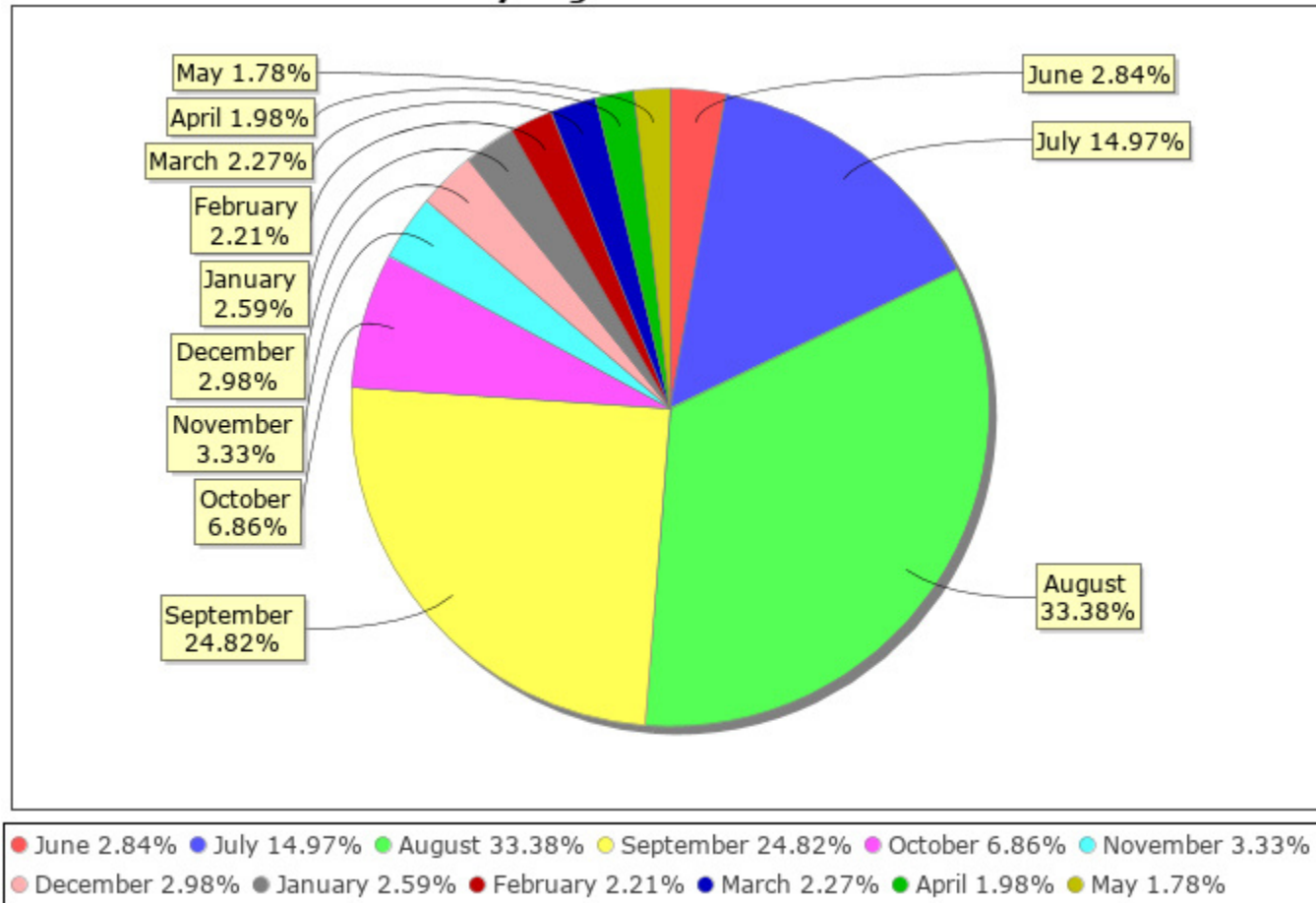
Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

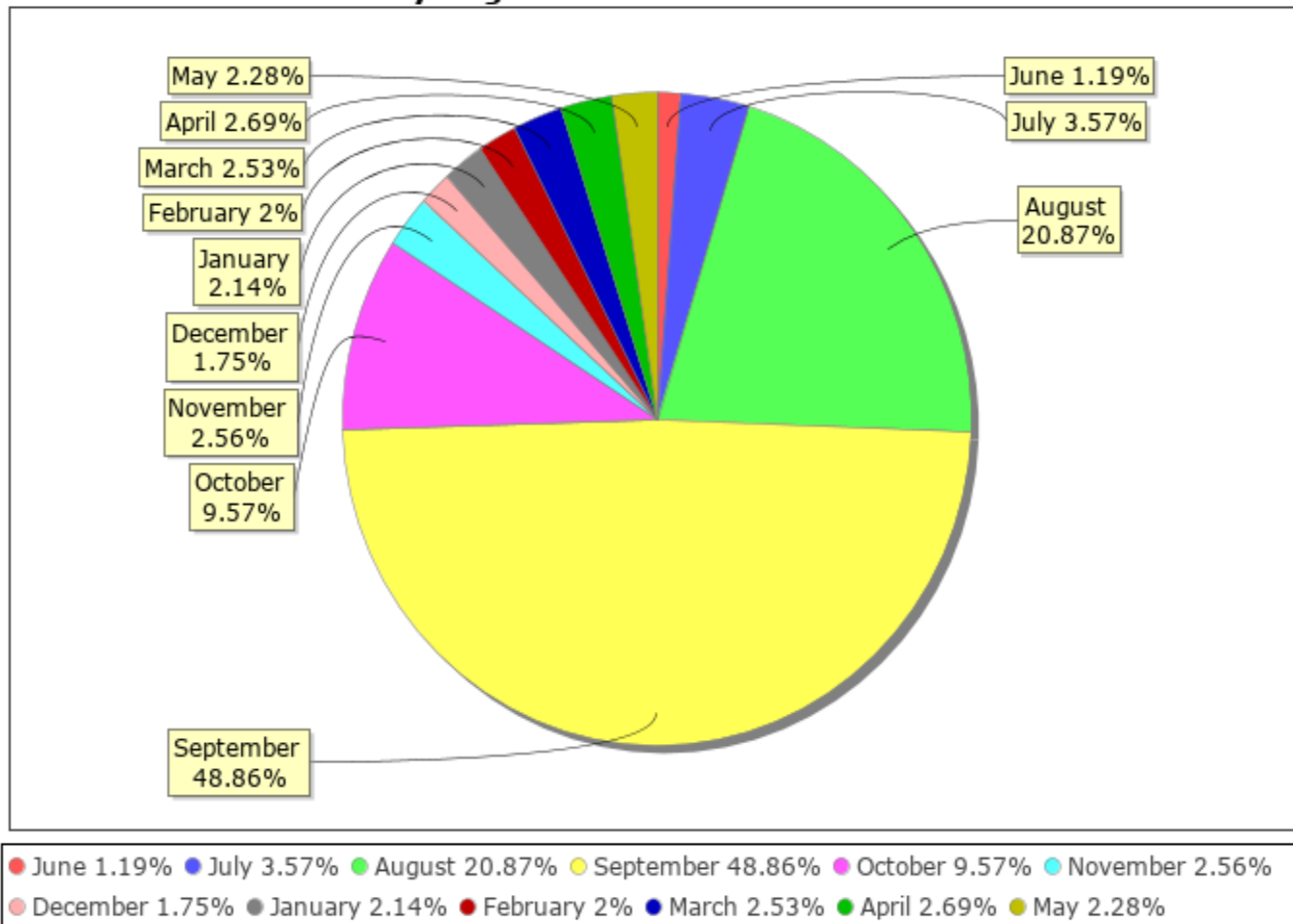
Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



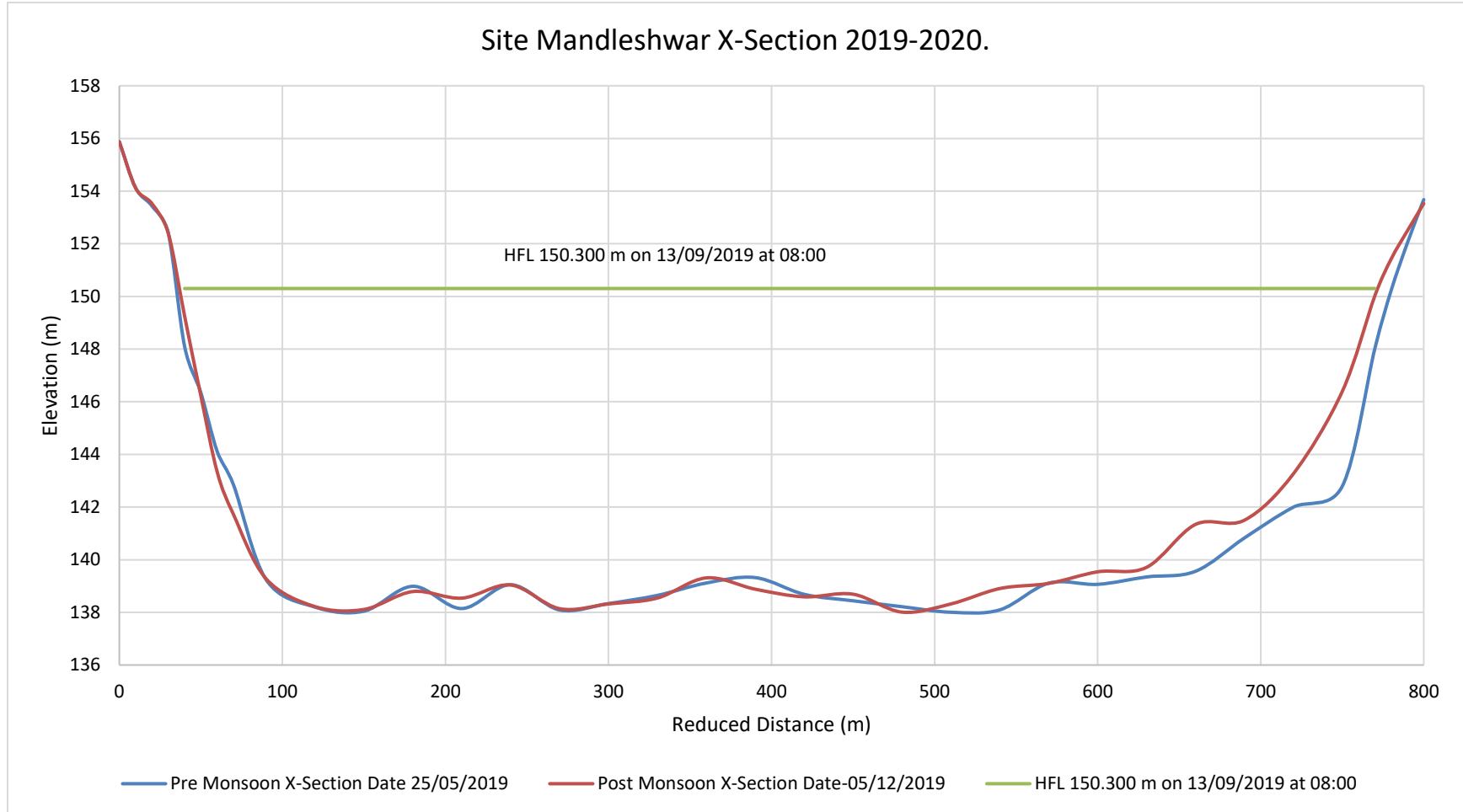
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore



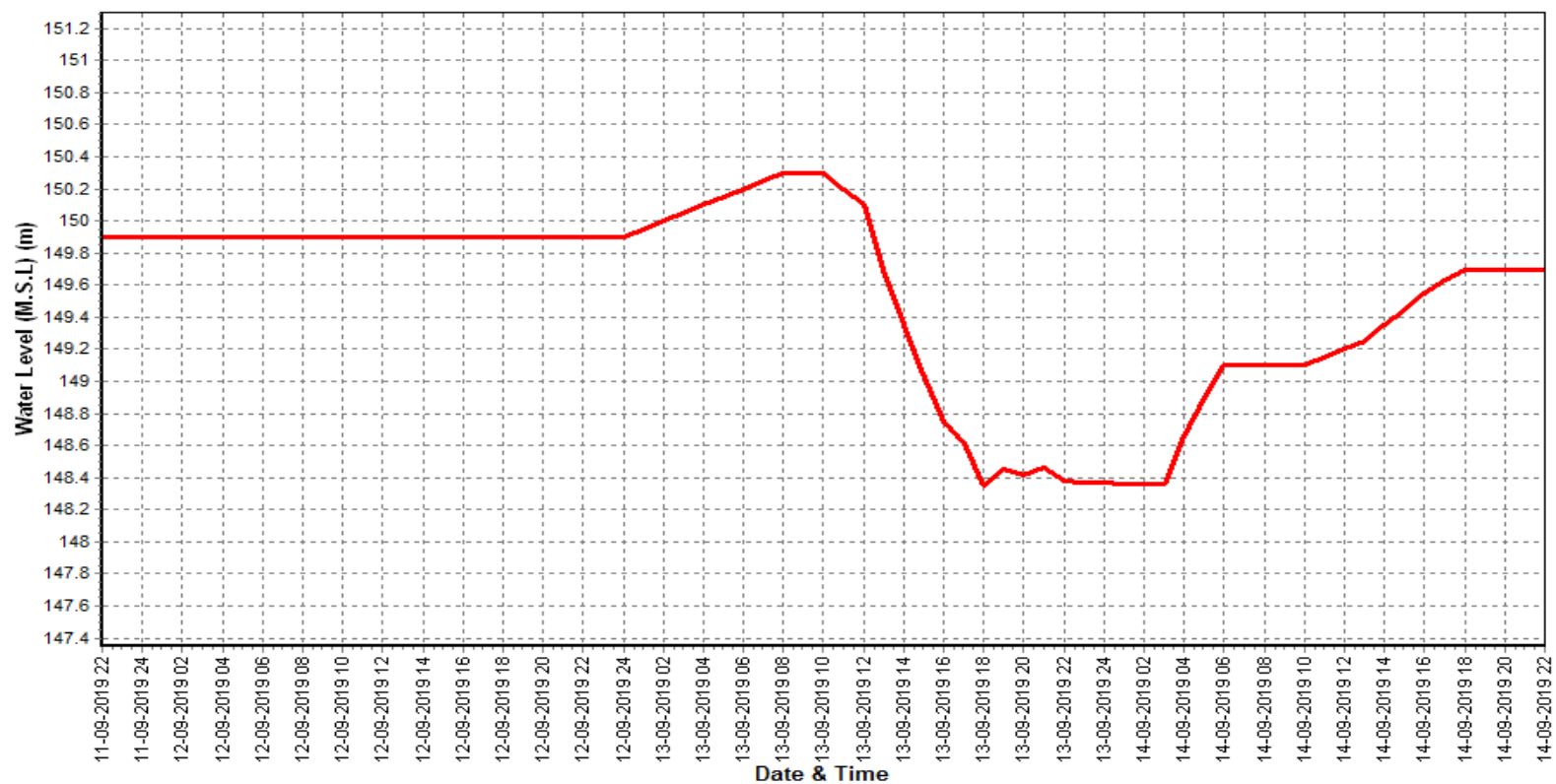
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore



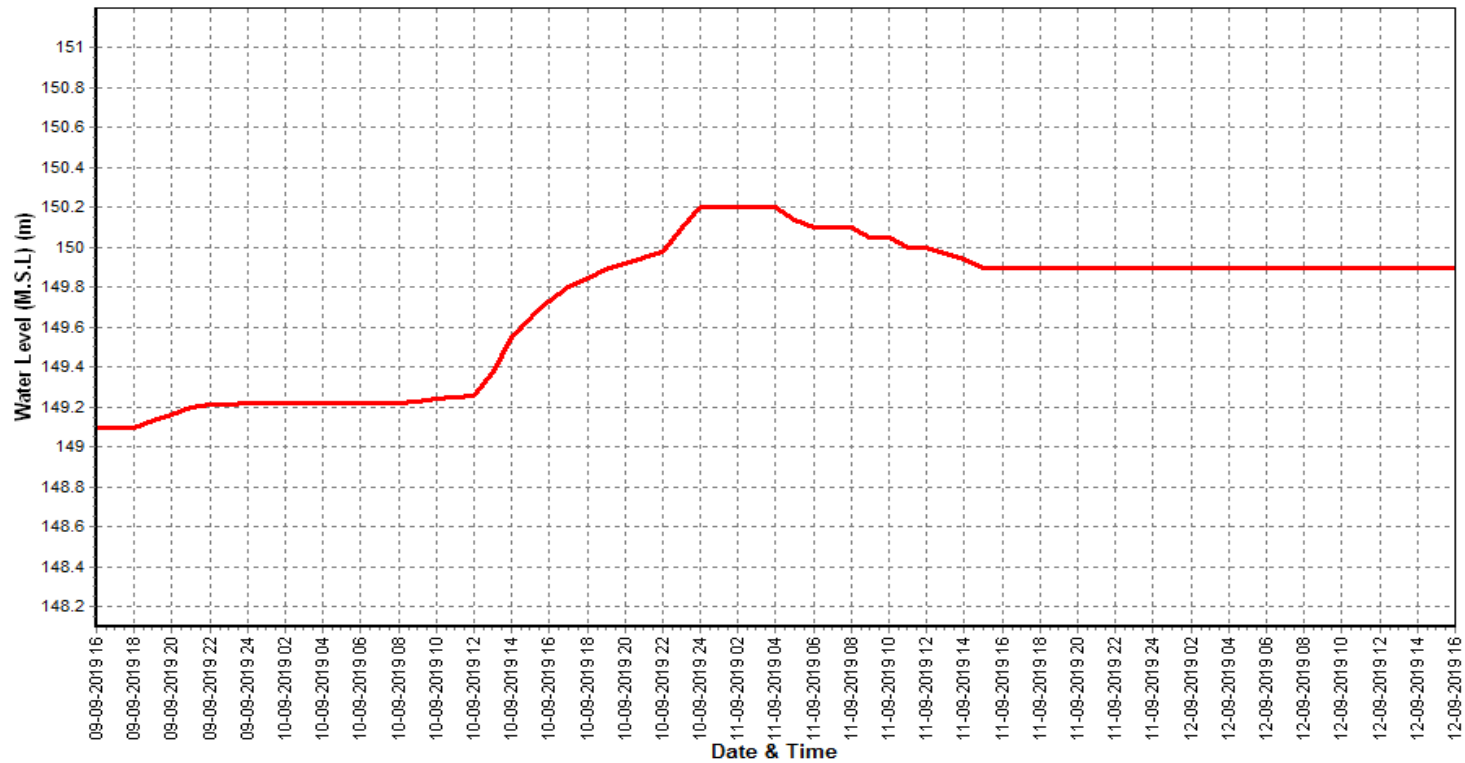
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore



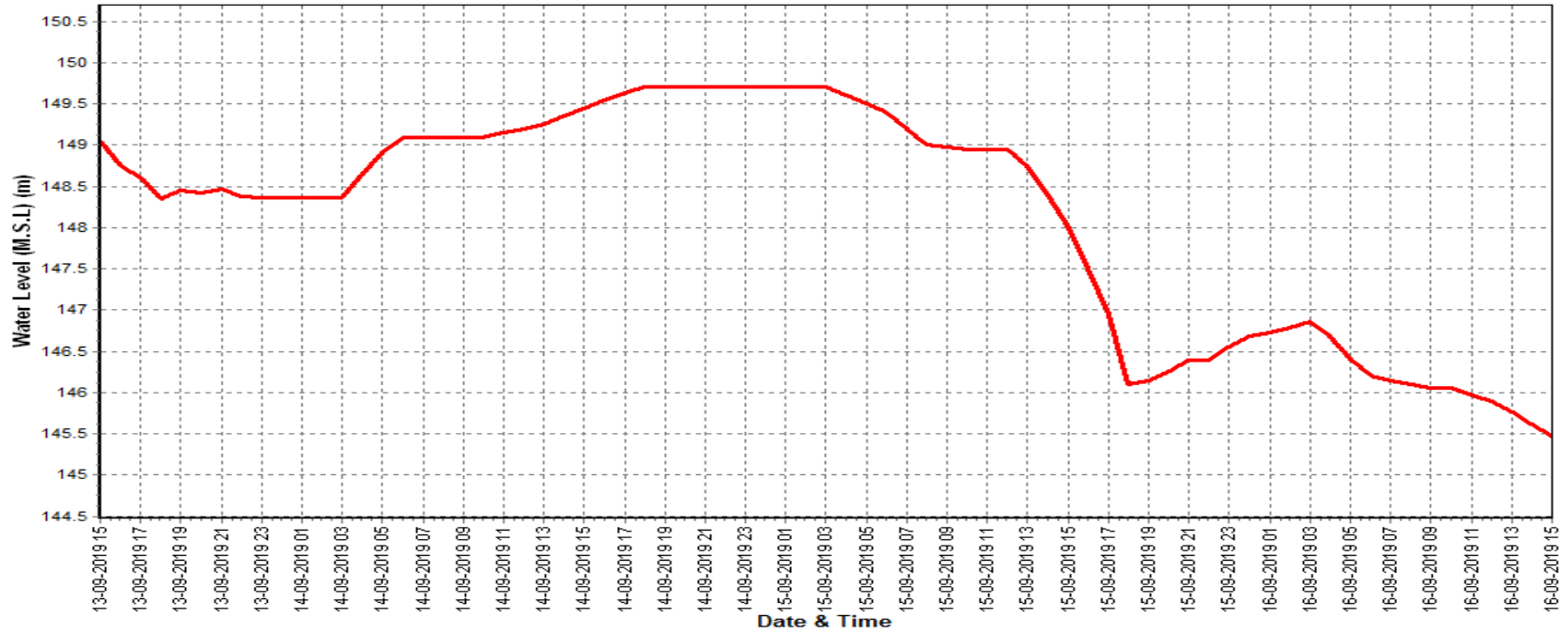
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

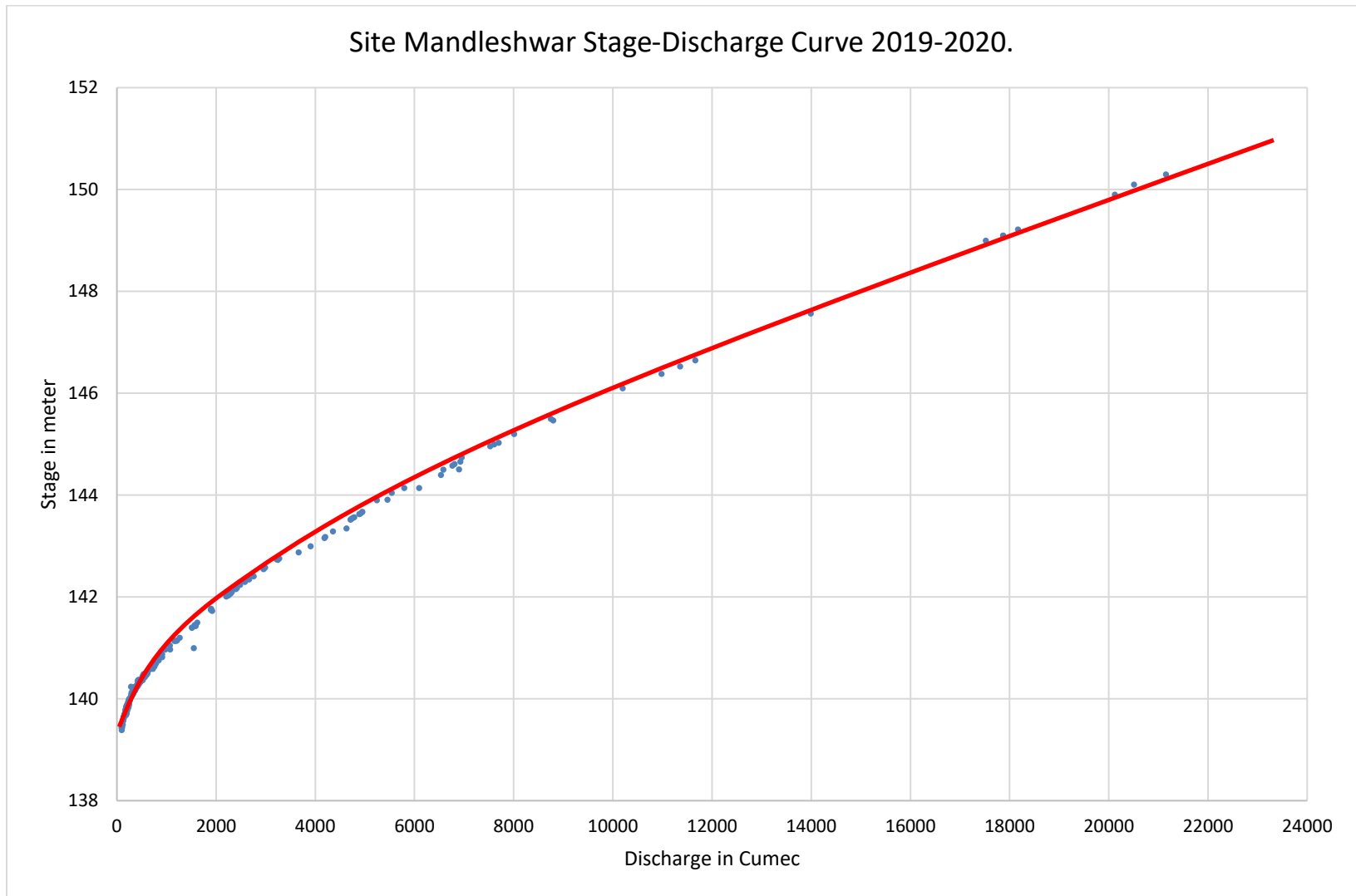
Station Name : Narmada at Mandleshwar

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD III, CWC Indore





4.8 Beda at Satwadi.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Beda at Satwadi		Code	:	CW1NAM001481
State	:	Madhya Pradesh		District	:	Khargone
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Beda		Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Beda
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	3410.16 Sq. Km.		Bank	:	Right
Latitude	:	21°58'59"		Longitude	:	75°42'13"
Current Zero of Gauge (m)	:	195				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
195.0		07/11/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	164	202.325	09/08/2019	0	196.265	20/05/2020

Stage Discharge Sheet for Beda at Satwadi for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	15.97	197.49	28.57	197.87	86.3	199.74	55.7	198.73	45.4	198.48	68	199.13
2	16	197.51	31.4	197.95	54.52	198.68	61.7	198.93	46.7	198.43	64.4	199.01
3	16.09	197.51	43.31	198.37	42.2	198.12	60.5	198.88	46.7	198.43	57.8	198.79
4	16.99	197.55	45.4	198.48	37.4	198.27	58.17	198.77	46.4	198.41	54.3	198.66
5	16.99	197.55	79.7	199.52	35.75	198.04	61.7	198.93	46.1	198.4	46.4	198.41
6	17.54	197.57	64.7	199.02	30.57	197.93	63.2	198.98	45.8	198.4	39.76	198.21
7	18.22	197.62	49.1	198.51	37.68	198.12	59.3	198.85	45.8	198.4	37.4	198.12
8	19.22	197.63	37.68	198.12	63.2	198.98	62.6	198.96	45.2	198.38	38.3	198.15
9	19.40	197.65	33.48	197.99	164	202.32	37.68	198.12	44.6	198.35	38	198.13
10	20.43	197.66	26.3	197.82	135	201.35	43.4	198.38	74	199.34	37.1	198.1
11	20.43	197.66	23.89	197.76	93.2	199.98	42.36	198.27	72.80	199.29	36.66	198.09
12	20.8	197.68	19.68	197.65	83.3	199.65	42.93	198.32	43.6	198.38	37.4	198.12
13	21.1	197.68	16.58	197.54	74.9	199.37	76.7	199.43	44.3	198.34	40.4	198.21
14	21.43	197.71	15.9	197.46	72.5	199.29	60.2	198.88	42.36	198.27	37.4	198.12
15	21.63	197.71	15.73	197.45	66.2	199.07	58.7	198.82	40.7	198.23	35.3	198.04
16	23.60	197.76	15.3	197.41	61.7	198.93	58.17	198.77	37.9	198.13	35.6	198.05
17	23.89	197.76	14.43	197.37	60.2	198.88	60.8	198.9	37.68	198.12	33	197.99
18	23.89	197.76	13.54	197.32	63.2	198.98	64.7	199.02	34.44	198.01	32.21	197.96
19	23.89	197.76	12.51	197.26	59.9	198.87	45.4	198.48	35.43	198.02	28.57	197.87
20	25.76	197.8	18.72	197.62	58.7	198.82	63.2	198.98	36.2	198.07	28.99	197.88
21	25.76	197.8	9.1	196.88	56.97	198.73	73.7	199.32	37.68	198.12	30.57	197.93
22	25.76	197.8	7.72	196.73	63.2	198.98	66.2	199.07	40.7	198.23	32.66	197.98
23	26.3	197.82	6.68	196.62	56.97	198.73	61.7	198.93	42.36	198.27	35.3	198.04
24	26.3	197.82	6.68	196.62	58.99	198.82	64.7	199.02	42.6	198.29	34	198.01
25	26.3	197.82	6.44	196.6	54.52	198.68	115.7	200.73	42.5	198.28	35.43	198.02
26	27.3	197.84	6.21	196.57	54.52	198.68	67.4	199.12	42.2	198.27	38.6	198.15
27	27.3	197.84	7.59	196.71	61.7	198.93	62.2	198.88	41.9	198.26	45.2	198.38
28	27.66	197.85	14.8	197.38	86.6	199.76	43.1	198.3	42	198.26	42.2	198.27
29	28.15	197.85	97.7	200.12	75.2	199.38	39.2	198.18	41.88	198.24	37.7	198.12
30	28.2	197.85	90.5	199.88	63.5	198.99	41.75	198.23	40.7	198.23	36.2	198.07
31			89.3	199.85	57.66	198.76			37.7	198.12		
Ten-Daily Mean												
I Ten-Daily	17.65	197.57	43.96	198.36	71.66	199.25	56.39	198.75	48.67	198.5	48.15	198.47
II Ten-Daily	22.67	197.73	16.63	197.48	69.38	199.18	57.32	198.79	42.49	198.29	34.55	198.03
III Ten-Daily	26.9	197.83	31.16	197.63	62.71	198.95	63.56	198.98	41.11	198.23	36.77	198.1
Monthly												
Min.	15.97	197.49	6.21	196.57	30.57	197.93	37.68	198.12	34.44	198.01	28.57	197.87
Max.	28.2	197.85	97.7	200.12	164	202.32	115.7	200.73	74	199.34	68	199.13
Mean	22.41	197.71	30.58	197.83	67.92	199.13	59.09	198.84	44.09	198.34	39.82	198.2

Annual Runoff in MCM :1213.23

Annual Runoff in mm :355.77

Peak Observed Discharge = 164 cumecs on 9/8/2019

Corres. Water Level 202.32 m

Lowest Observed Discharge = 0cumecs on 20/5/2020

Corres. Water Level 196.26 m

Stage Discharge Sheet for Beda at Satwadi for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	36.2	198.07	52.7	198.62	54.6	198.68	48.8	198.49	**	**	12.36	197.24
2	37.7	198.12	54.8	198.70	53.8	198.66	46.45	198.49	**	**	12.09	197.23
3	42.2	198.27	54.2	198.68	53	198.63	46.45	198.49	**	**	11.8	197.21
4	47.6	198.46	53.4	198.65	52.1	198.60	46.45	198.46	**	**	11.53	197.18
5	53	198.63	53.00	198.63	52.7	198.62	47.97	198.46	**	**	11.31	197.15
6	58.54	198.79	51.41	198.60	51.8	198.60	47.97	198.46	**	**	10.91	197.12
7	62	198.93	52.6	198.62	51.2	198.57	47.97	198.46	**	**	10.28	197.07
8	61.7	198.93	54.5	198.68	50.4	198.54	47.9	198.46	**	**	\$	196.20
9	60.5	198.88	54.2	198.68	50.7	198.55	46.7	198.43	**	**	\$	196.20
10	59.6	198.85	53.9	198.66	50.4	198.54	46.7	198.43	**	**	\$	196.20
11	58.1	198.80	53.4	198.65	50	198.52	46.7	198.43	**	**	\$	196.20
12	57.8	198.79	53.9	198.66	49.5	198.51	46.7	198.43	**	**	\$	196.20
13	56	198.74	54.8	198.70	50.2	198.54	46.7	198.43	**	**	\$	196.20
14	56.3	198.74	54.6	198.68	51	198.57	45.2	198.38	**	**	\$	196.20
15	55.7	198.73	52.9	198.63	50	198.52	45.2	198.38	**	**	\$	196.20
16	55.1	198.71	53.4	198.65	49.3	198.49	45.2	198.38	**	**	\$	196.20
17	55.1	198.71	53.1	198.65	49.5	198.51	42.93	198.32	**	**	\$	196.20
18	54.2	198.68	53.1	198.65	49.7	198.51	42.93	198.32	**	**	\$	196.23
19	51.99	198.57	52.9	198.63	50	198.52	43.7	198.32	**	**	\$	196.24
20	53.9	198.66	52.6	198.62	50.2	198.54	43.7	198.32	15.45	197.43	\$	196.26
21	54.2	198.68	52.7	198.62	50.7	198.55	42.93	198.32	15.3	197.41	\$	196.27
22	54.2	198.68	54.2	198.68	49.7	198.51	**	**	15.18	197.4	\$	196.29
23	54.8	198.70	53.8	198.66	49.3	198.49	**	**	14.83	197.38	\$	196.32
24	54.5	198.68	54.5	198.68	49.5	198.51	**	**	14.68	197.38	\$	196.34
25	56	198.74	54.2	198.68	49.7	198.51	**	**	14.28	197.35	\$	196.37
26	57.8	198.79	52.9	198.63	49.5	198.51	**	**	13.89	197.34	\$	196.38
27	56.3	198.74	53.1	198.65	49.2	198.49	**	**	13.74	197.32	\$	196.40
28	54.8	198.70	54.8	198.70	46.45	198.49	**	**	13.54	197.32	\$	196.43
29	54.2	198.68	53.8	198.66	46.45	198.49	**	**	13.16	197.29	\$	196.43
30	53.3	198.65	54.2	198.68			**	**	12.89	197.27	\$	196.46
31	52.7	198.62	54.5	198.68			**	**			\$	196.49
Ten-Daily Mean												
I Ten-Daily	51.9	198.6	53.46	198.65	51.33	198.58	47.34	198.46	0	0	8.03	196.88
II Ten-Daily	55.42	198.71	53.47	198.65	49.94	198.52	44.49	198.37	1.54	19.74	0	196.21
III Ten-Daily	54.8	198.7	53.88	198.67	48.94	198.51	3.9	18.03	14.15	197.35	0	196.38
Monthly												
Min.	36.2	198.07	51.41	198.6	43.31	198.37	42.93	198.32	12.89	197.27	0	196.2
Max.	62	198.93	54.8	198.7	54.6	198.68	48.8	198.49	15.45	197.43	12.36	197.24
Mean	54.04	198.67	53.6	198.66	50.07	198.54	31.91	138.29	5.23	72.36	2.68	196.49

Peak Computed Discharge = 93.2 cumecs on 11/8/2019 Corres. Water Level 199.98 m
 Lowest Computed Discharge = 0cumecs on 31/5/2020 Corres. Water Level 196.49 m

Note-
 ** - Lockdown
 \$- No Flow

Monthly Runoff for the Year (2019-2020)

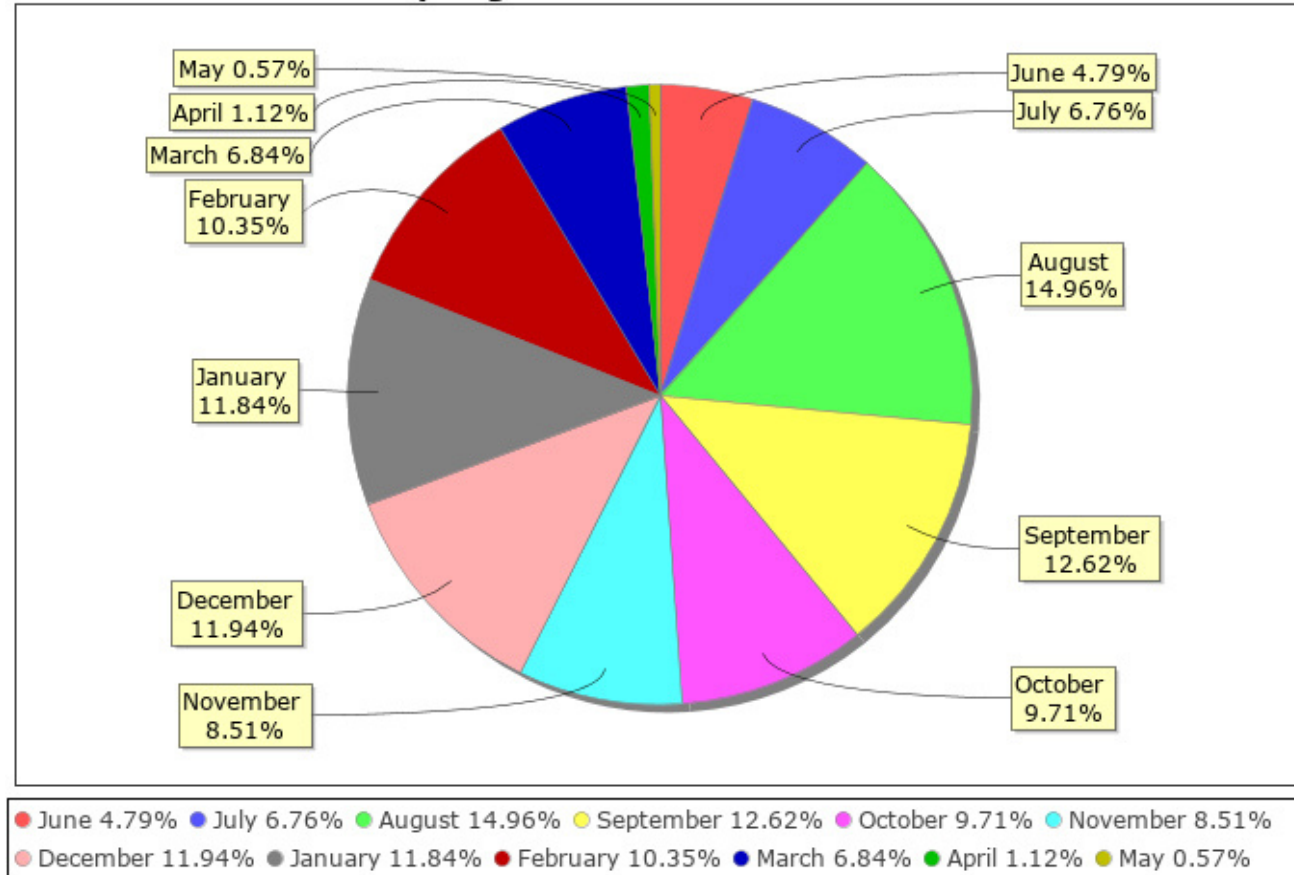
Station Name: Beda at Satwadi

Division: Narmada Division, Bhopal

Local River: Kaner

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



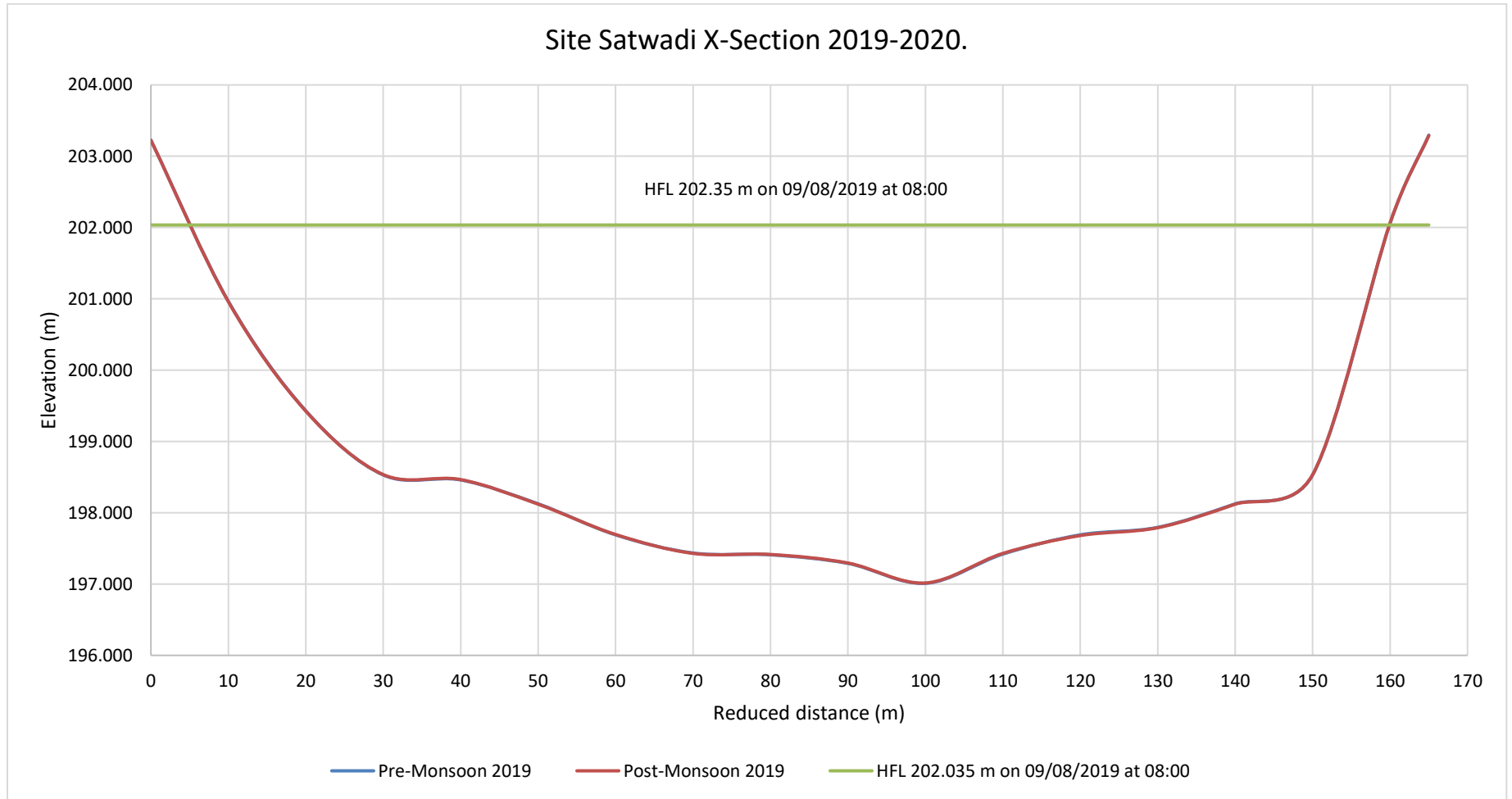
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Beda at Satwadi

Division: Narmada Division, Bhopal

Local River: Beda

Sub-Division: MNSD-III, CWC Indore



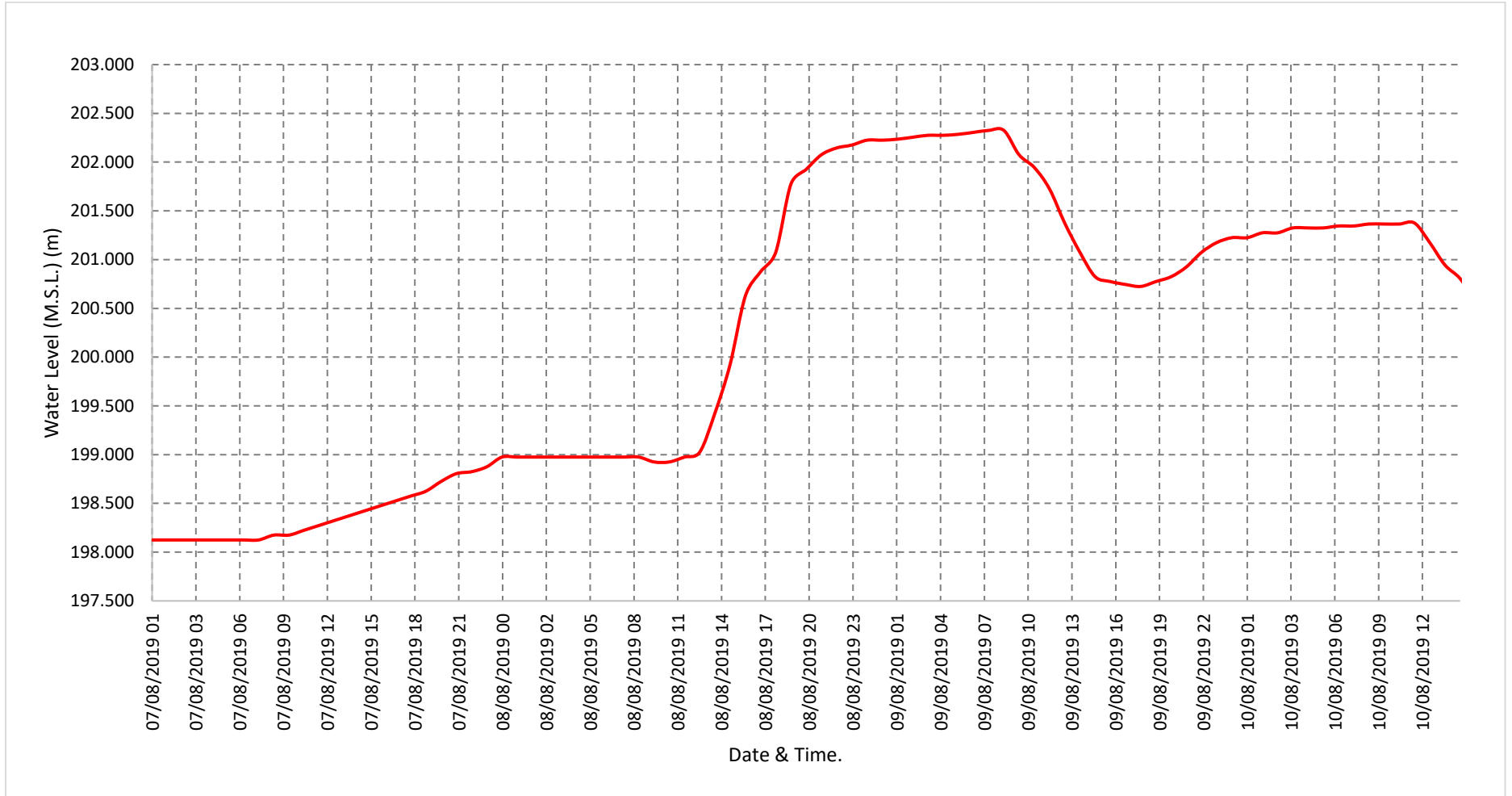
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Beda at Satwadi

Division: Narmada Division, Bhopal

Local River: Beda

Sub-Division: MNSD-III, CWC Indore



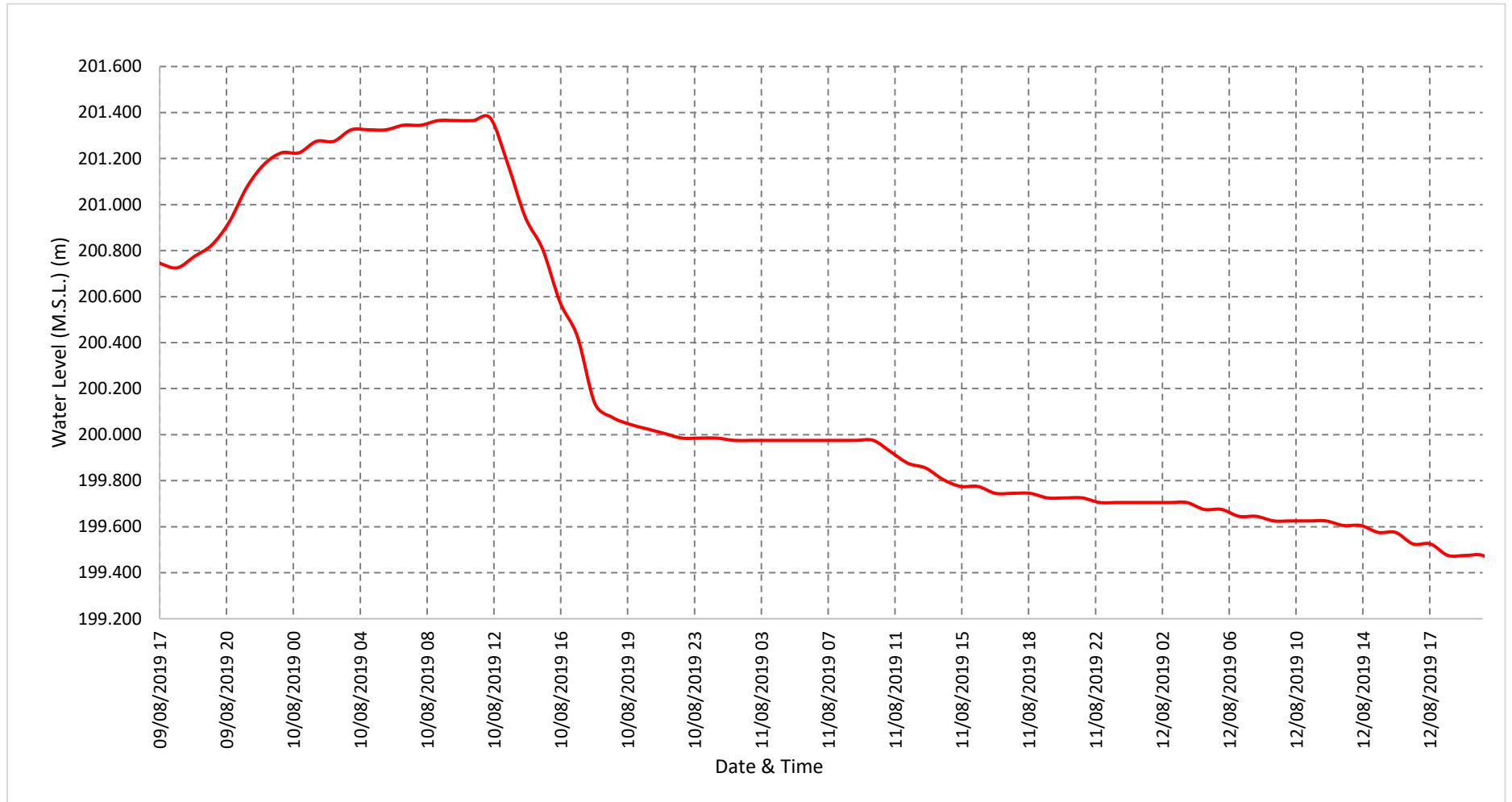
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Beda at Satwadi

Division: Narmada Division, Bhopal

Local River: Beda

Sub-Division: MNSD-III, CWC Indore



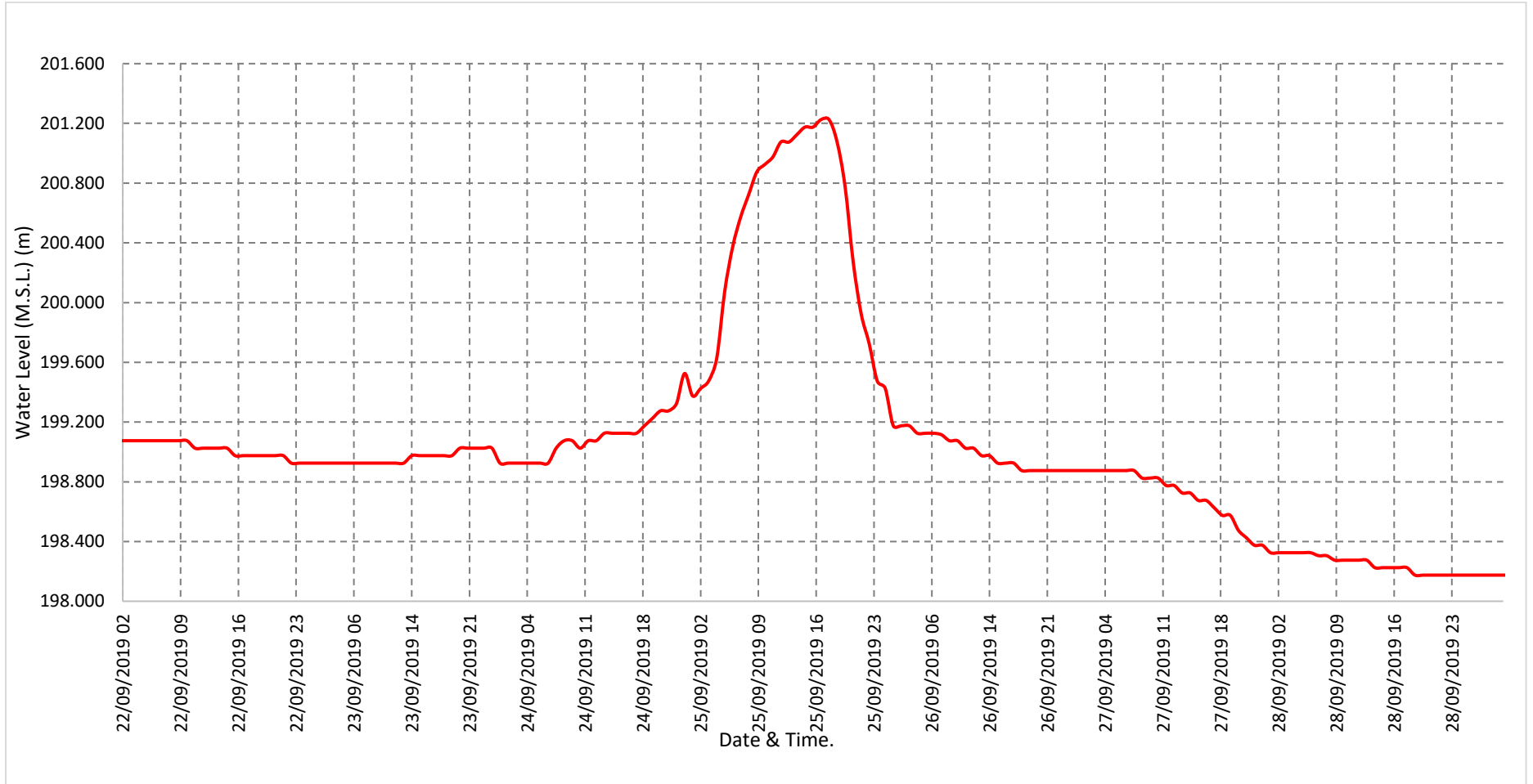
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Beda at Satwadi

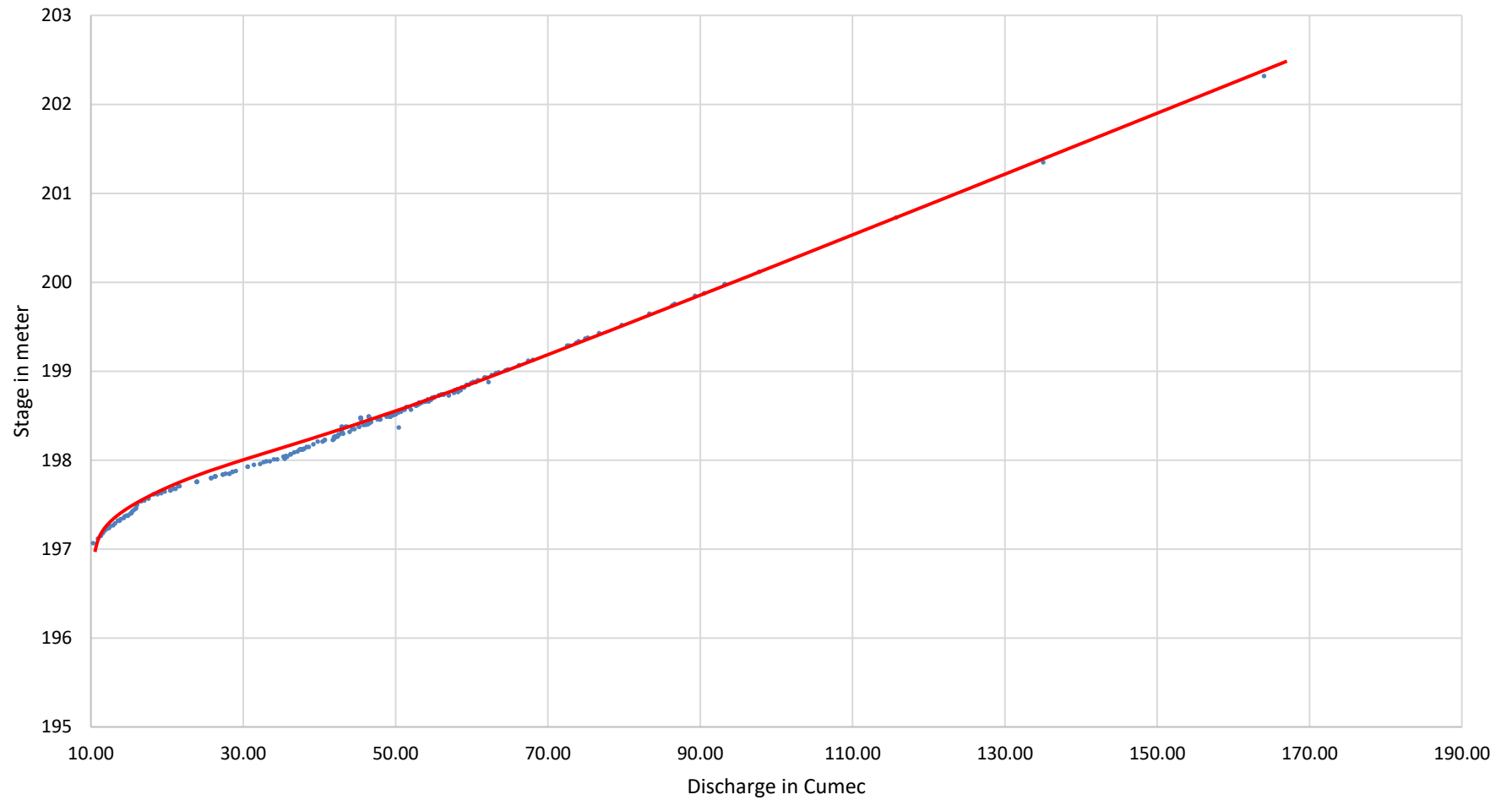
Division: Narmada Division, Bhopal

Local River: Beda

Sub-Division: MNSD-III, CWC Indore



Site Satwadi Stage-Discharge Curve 2019-2020.



4.9 Kundi at Kogaon.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	kogaon		Code	:	CW1NAM000442	
State	:	Madhya Pradesh		District	:	KHARGONE	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	Kundi		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Kundi	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub- Division-III, Indore	
Drainage Area	:	3919.0 Sq. Km.		Bank	:	Right	
Latitude	:	22°06'06"		Longitude	:	75°41'02"	
Current Zero of Gauge (m)	:	151					
CATEGORY		Opening Date		Closing Date			
Gauge	:	03/02/1978					
Discharge	:	01/07/1978					
Sediment	:						
Water Quality	:	15/09/1986					
Reduced Level		Opening Date		Closing Date			
151.0		03/02/1978					

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1971-1972	0	0.000	20/05/1972	0	0.000	20/05/1972
1972-1973	2835.8	227.728	01/07/1972	2.1	219.650	15/08/1972
1973-1974	0	0.000	30/08/1973	0	—	30/08/1973
1978-1979	1437	156.890	29/08/1978	0	—	06/06/1978
1979-1980	2700	161.100	26/06/1979	0	152.640	05/06/1979
1980-1981	600	155.320	22/06/1980	0	152.585	29/05/1981
1981-1982	2550	160.770	16/08/1981	0	152.545	13/06/1981
1982-1983	396	154.660	15/08/1982	0	152.610	30/01/1983
1983-1984	1135	159.000	15/09/1983	0	152.400	07/06/1983
1984-1985	1250	158.480	10/08/1984	0.1	152.520	06/06/1984
1985-1986	1520	156.350	09/10/1985	0	152.505	26/02/1986
1986-1987	1600	156.960	15/08/1986	0	—	12/06/1986
1987-1988	3034	157.630	21/08/1987	0	152.435	03/06/1987
1988-1989	3500	158.350	03/10/1988	0	—	03/06/1988
1989-1990	4960	159.900	17/08/1989	0	—	03/06/1989
1990-1991	8300	161.550	23/08/1990	0	152.590	11/06/1990
1991-1992	2090	159.700	30/07/1991	0	151.000	05/06/1991
1992-1993	650.9	157.400	22/06/1992	0	152.585	05/06/1992
1993-1994	1015	157.760	16/07/1993	0	—	12/06/1993
1994-1995	5500	161.850	31/08/1994	0	—	03/06/1994
1995-1996	2005	157.100	29/06/1995	0	152.395	03/06/1995
1996-1997	1520	156.350	16/09/1996	0	152.500	27/06/1996
1997-1998	3800	159.400	23/08/1997	0	152.280	14/06/1997
1998-1999	5600	161.100	22/09/1998	0	151.000	14/06/1998
1999-2000	1185	156.100	20/06/1999	0	151.380	09/01/2000
2000-2001	1450	155.100	30/06/2000	0	151.800	02/06/2000
2001-2002	725	155.060	18/06/2001	0	152.300	03/06/2001
2002-2003	5900	161.850	03/09/2002	0.05	152.080	30/11/2002
2003-2004	3500	158.760	02/07/2003	0	151.300	15/02/2004
2004-2005	3600	158.650	05/08/2004	0	—	24/01/2005
2005-2006	124.84	153.950	02/08/2005	0	—	17/06/2005
2006-2007	4021.28	158.750	07/08/2006	0	—	12/06/2006
2007-2008	1255.14	156.700	01/07/2007	0	—	12/06/2007
2008-2009	226.55	153.960	11/09/2008	0	152.230	18/06/2008
2009-2010	657.47	155.370	03/09/2009	0	—	21/06/2009
2010-2011	3463.63	159.150	09/09/2010	0	—	01/01/2011

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2011-2012	990.91	155.690	29/08/2011	0	—	24/06/2011
2012-2013	1457.52	156.325	06/09/2012	0	152.490	26/11/2012
2013-2014	1314.3	156.000	04/07/2013	0	—	01/06/2013
2014-2015	3753.29	160.200	08/09/2014	0	—	01/06/2014
2015-2016	1274.15	156.050	06/08/2015	1.77	152.580	17/10/2015
2016-2017	720	155.200	18/09/2016	1.77	152.580	02/07/2016
2017-2018	1579.2	152.500	13/07/2017	0	152.530	20/02/2018
2018-2019	2370	158.000	17/08/2018	0.5	152.550	15/08/2018
2019-2020	1113.65	156.075	09/08/2019	0.5	152.460	29/04/2020

Stage Discharge Sheet for Kundi at Kogaon for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	2.92	152.770	105.82	153.490	40.34	153.170	250	154.100	144.94	153.870	70	153.340
2	1.50	152.640	39.53	153.150	37.37	153.130	300.5	154.300	100	153.800	71	153.350
3	11.24	152.910	21.88	153.050	21.64	153.050	167.93	154.080	78.3	153.700	65	153.300
4	11.25	152.910	73.99	153.280	21.5	153.040	115.77	153.900	71.48	153.630	63.8	153.290
5	8.00	152.880	40.05	153.150	223.78	153.850	110.85	153.880	78.27	153.700	61.5	153.270
6	11.20	152.910	160.34	153.710	83.02	153.300	117.3	153.890	118	153.600	56.5	153.230
7	11.49	152.910	56.00	153.260	42.01	153.200	90.74	153.720	70.38	153.630	54.1	153.210
8	10.38	152.860	19.11	153.000	775.59	155.180	130	153.670	100	153.590	60.3	153.260
9	15.00	152.960	19.18	152.990	1113.65	156.070	520	154.850	63.68	153.600	71	153.350
10	11.87	152.920	13.52	152.950	706.35	155.450	200	153.950	37	153.430	71	153.350
11	13.47	152.960	12.5	152.930	390.0	154.560	180	153.860	36.02	153.420	71	153.350
12	11.83	152.920	9.72	152.900	340.0	154.480	195	153.930	37.36	153.430	65	153.300
13	9.53	152.880	9.37	152.870	235.37	154.190	530	154.850	73	153.330	59	153.250
14	8.22	152.890	9.00	152.860	188.9	154.120	601	155.000	69.63	153.340	38	153.090
15	7.93	152.880	5.36	152.820	180.0	153.940	305	154.310	63.84	153.290	36.5	153.080
16	21.00	153.010	4.43	152.810	182.97	153.770	178	154.120	51.2	153.270	35.3	153.070
17	21.73	153.050	3.73	152.800	165.62	153.710	167.12	154.090	43.19	153.220	32.1	153.040
18	19.04	152.990	3.19	152.770	150.0	153.760	536.15	154.930	37.17	153.160	32.1	153.040
19	11.88	152.920	4.54	152.800	164.52	153.700	354.24	154.490	36.98	153.150	40.2	153.110
20	8.18	152.890	3.19	152.770	96.41	153.640	284.86	154.380	40	153.150	41.5	153.120
21	19.23	153.000	3.80	152.800	72.11	153.540	776.14	155.270	45.13	153.280	41.5	153.120
22	20.91	153.020	2.96	152.750	72.3	153.540	408	154.510	44.51	153.220	41.5	153.120
23	21.00	153.050	10.38	152.930	57.23	153.470	286.55	154.300	43.19	153.220	44	153.140
24	37.43	153.140	6.79	152.850	71.1	153.540	346.72	154.430	63.34	153.340	46.5	153.160
25	39.64	153.150	4.26	152.790	85	153.420	169.63	154.000	67.51	153.340	46.5	153.160
26	20.84	153.020	6.79	152.850	179.18	154.120	374.01	154.510	50.67	153.280	46.5	153.160
27	8.15	152.890	24.54	153.090	779.12	155.000	290.93	154.350	60	153.240	33.3	153.050
28	10.87	152.870	70.00	153.310	325.37	154.410	189.48	154.120	49.89	153.280	16.5	152.920
29	2.91	152.770	75.12	153.280	175.16	154.120	192	153.920	69.38	153.540	59	153.250
30	19	152.990	218.7	153.850	115.29	153.890	112.79	153.820	68.08	153.540	47.8	153.170
31			105.3	153.370	172.43	154.140			66.75	153.340		
Ten-Daily Mean												
I Ten-Daily	9.49	152.870	54.94	153.200	306.52	153.940	200.31	154.030	86.21	153.650	64.42	153.300
II Ten-Daily	13.28	152.940	6.5	152.830	209.38	153.990	333.14	154.400	48.84	153.280	45.07	153.140
III Ten-Daily	20	152.990	48.06	153.080	191.3	153.930	314.62	154.320	57.13	153.330	42.31	153.120
Monthly												
Min.	1.5	152.640	2.96	152.750	21.5	153.040	90.74	153.670	36.02	153.150	16.5	152.920
Max.	39.64	153.150	218.7	153.850	1113.65	156.070	776.14	155.270	144.94	153.870	71	153.350
Mean	14.25	152.930	36.5	153.040	235.73	153.950	282.69	154.250	64.06	153.420	50.6	153.190

Annual Runoff in MCM : 2055.57

Annual Runoff in mm :524.52

Peak Observed Discharge = 1113.65 cumecs on 9/8/2019 Corres. Water Level 156.07 m

Lowest Observed Discharge = 0.5cumecs on 29/4/2020 Corres. Water Level 152.46 m

Stage Discharge Sheet for Kundi at Kogaon for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	22	152.990	23.2	153.000	17.26	152.960	19.9	153.030	13	152.760	0.00	152.460
2	18	152.940	23.2	153.000	18.55	153.000	24.98	153.040	12.4	152.740	0.00	152.460
3	18	152.940	32.1	153.040	18.74	153.010	25.12	153.040	11.5	152.710	0.00	152.460
4	23.2	153.000	20.8	152.980	18.54	153.010	28.02	153.050	10.6	152.680	0.00	152.450
5	42.7	153.130	22	152.990	18.24	153.020	27.86	153.050	9.5	152.640	0.00	152.450
6	22	152.990	18.84	153.010	20.36	153.040	24.88	153.040	8.9	152.620	0.00	152.460
7	45.2	153.150	19.2	153.020	20.05	153.040	25.55	153.040	8.5	152.610	0.00	152.460
8	42.7	153.130	18	153.020	17.95	153.020	20.1	153.040	8.1	152.600	0.00	152.400
9	39	153.100	13.68	153.010	19.9	153.030	27.8	153.050	7.2	152.580	0.00	152.380
10	46.5	153.160	14.36	153.010	17.24	153.000	20.29	153.080	6.4	152.560	0.00	152.380
11	35.3	153.060	16	153.020	17.53	153.000	28.08	153.050	6	152.550	0.00	152.370
12	33.5	153.050	18	153.010	17.74	153.000	28.05	153.050	5.5	152.540	0.00	152.370
13	32.1	153.040	17.98	153.020	18.61	152.940	25.2	153.040	5	152.520	0.00	152.360
14	24.5	153.010	13.78	152.970	20.53	153.040	24.63	153.030	4.6	152.510	0.00	152.370
15	23.2	153.000	15.71	153.020	18.65	153.040	20.1	153.040	4.1	152.500	0.00	152.350
16	20.8	152.980	18.26	153.000	20.1	153.040	28.15	153.020	3.9	152.500	0.00	152.340
17	32.1	153.040	16.38	152.950	20.07	153.040	22.79	153.030	3.5	152.480	0.00	152.330
18	24.5	153.010	15.28	152.960	20.23	153.040	23.44	153.020	3.2	152.470	0.00	152.400
19	30.8	153.030	12	152.960	23.29	153.020	23.51	153.020	3.1	152.460	0.00	152.490
20	33.5	153.050	17.88	152.940	24.61	153.030	23.03	153.020	2.8	152.460	7.96	152.810
21	32.1	153.040	17.39	152.940	20.1	153.040	17.97	152.940	2.5	152.460	8.03	152.810
22	30.8	153.030	20.48	153.040	27.99	153.050	17.1	152.940	2.2	152.460	8.06	152.810
23	29.5	153.020	17.79	153.000	23.39	153.020	18.03	152.940	2	152.460	7.68	152.800
24	24.5	153.010	17.5	152.940	23.09	153.020	17	152.940	1.7	152.460	10.15	152.770
25	24.5	153.000	16.82	152.940	23.19	153.020	20	152.960	1.5	152.460	9.4	152.750
26	24.5	153.010	17.8	153.010	27.52	153.050	16.5	152.900	1.2	152.460	7.65	152.800
27	24.5	153.010	18.88	153.010	28.15	153.050	16	152.870	1	152.460	7.64	152.800
28	23.2	153.000	18.62	153.010	25.27	153.030	15.5	152.860	0.9	152.460	5.23	152.750
29	22	152.990	20.07	153.040	24.42	153.030	14.8	152.840	0.5	152.460	5.01	152.750
30	20.8	152.980	18.33	153.010			14	152.810	0.00	152.460	5.19	152.750
31	20.8	152.980	17.03	152.940			13.5	152.790			9.05	152.630
Ten-Daily Mean												
I Ten-Daily	31.93	153.050	20.54	153.010	18.68	153.010	24.45	153.050	9.61	152.650	0	152.440
II Ten-Daily	29.03	153.030	16.13	152.990	20.14	153.020	24.7	153.030	4.17	152.500	0.8	152.420
III Ten-Daily	25.2	153.010	18.25	152.990	24.79	153.030	16.4	152.890	1.35	152.460	7.56	152.770
Monthly												
Min.	18	152.940	12	152.940	17.24	152.940	13.5	152.790	0.5	152.460	5.01	152.330
Max.	46.5	153.160	32.1	153.040	28.15	153.050	28.15	153.080	13	152.760	10.15	152.810
Mean	28.72	153.030	18.3	152.990	21.2	153.020	21.85	152.990	5.04	152.540	2.78	152.540

Peak Computed Discharge = 408 cumecs on 22/9/2019 Corres. Water Level 154.51 m
 Lowest Computed Discharge = 1.2cumecs on 26/4/2020 Corres. Water Level 152.46 m

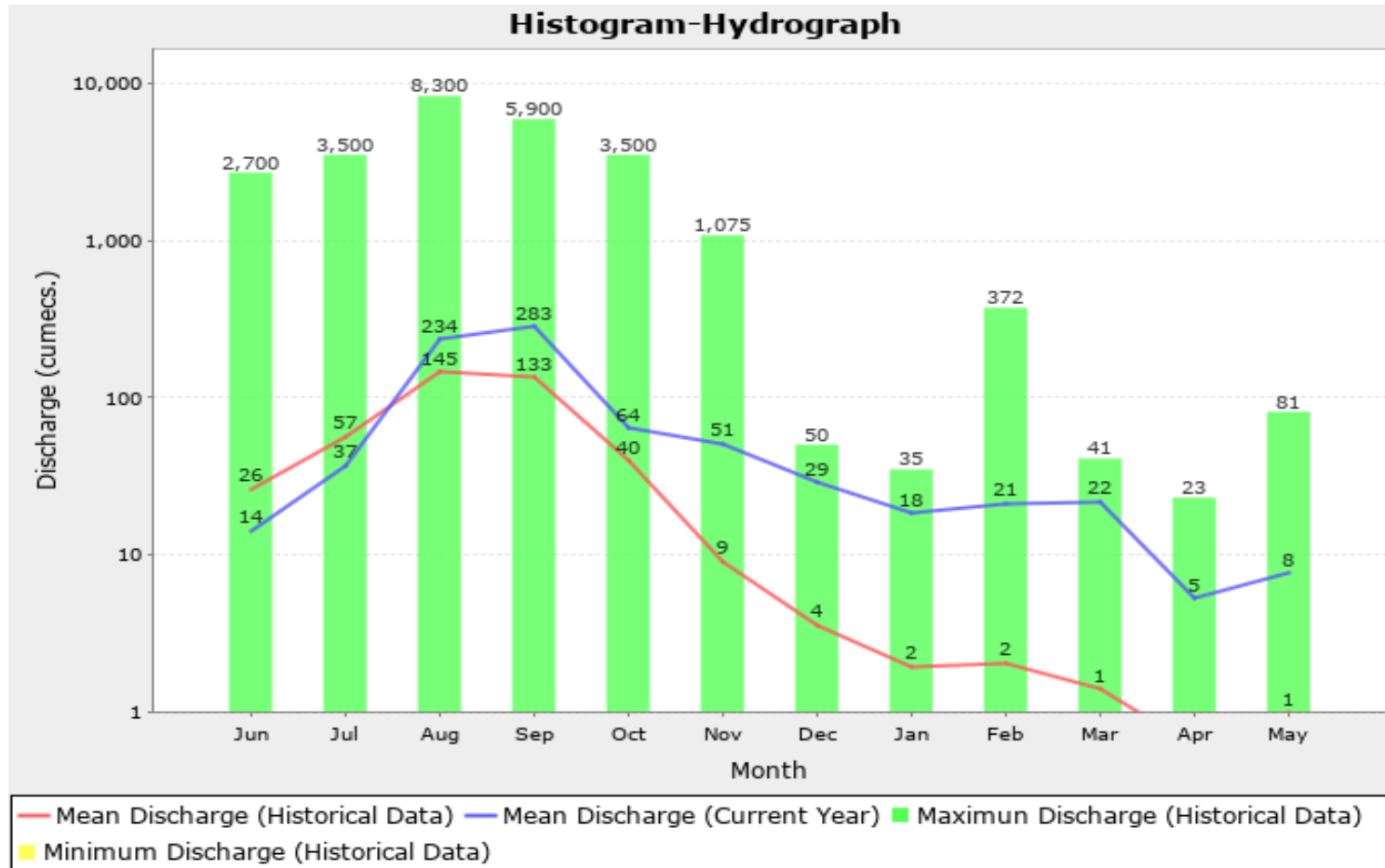
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1978-2019)

Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore



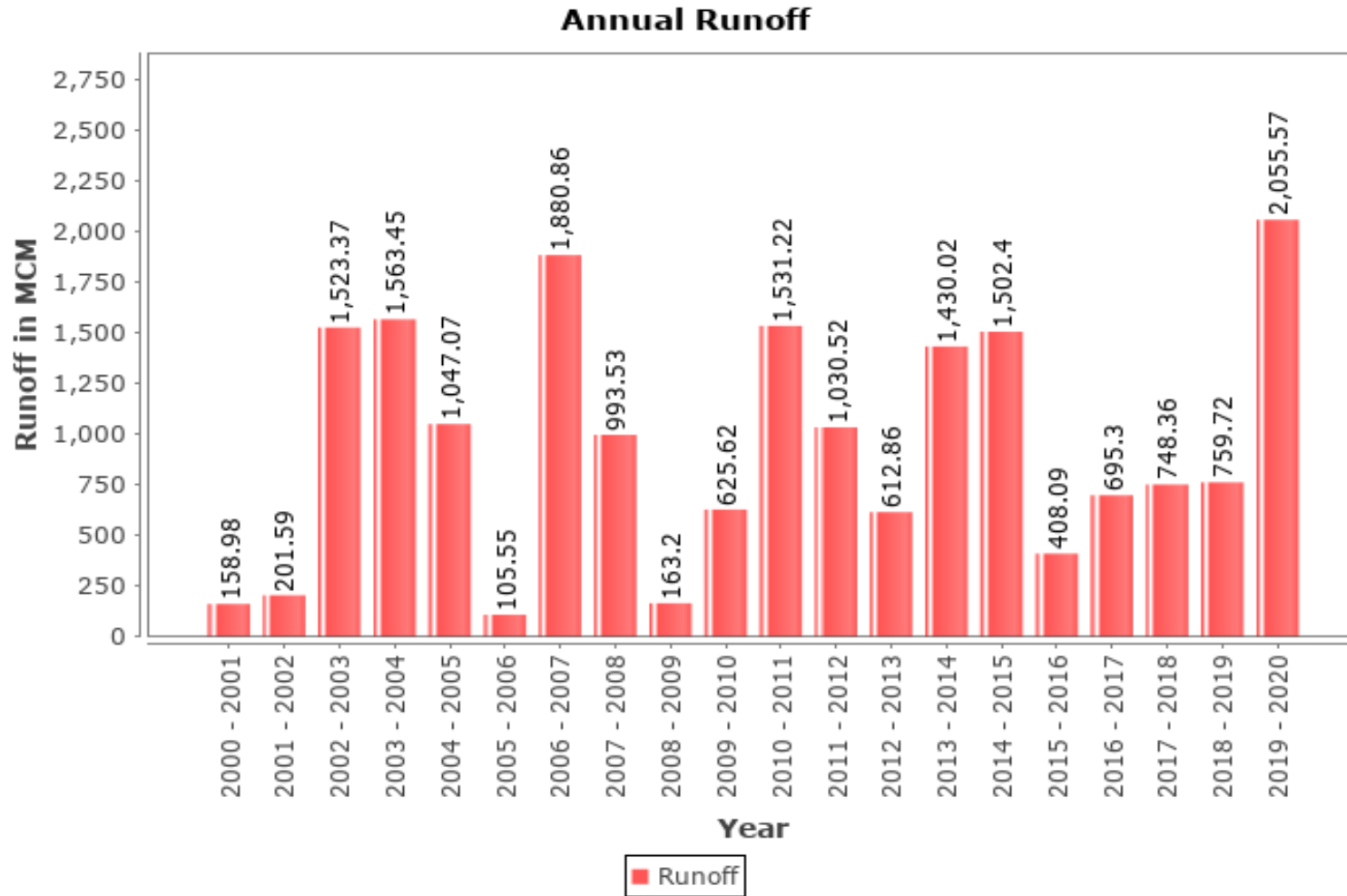
Annual Runoff Values for the period (2000 – 2020)

Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore



Monthly Average Runoff based on period (1978 – 2020)

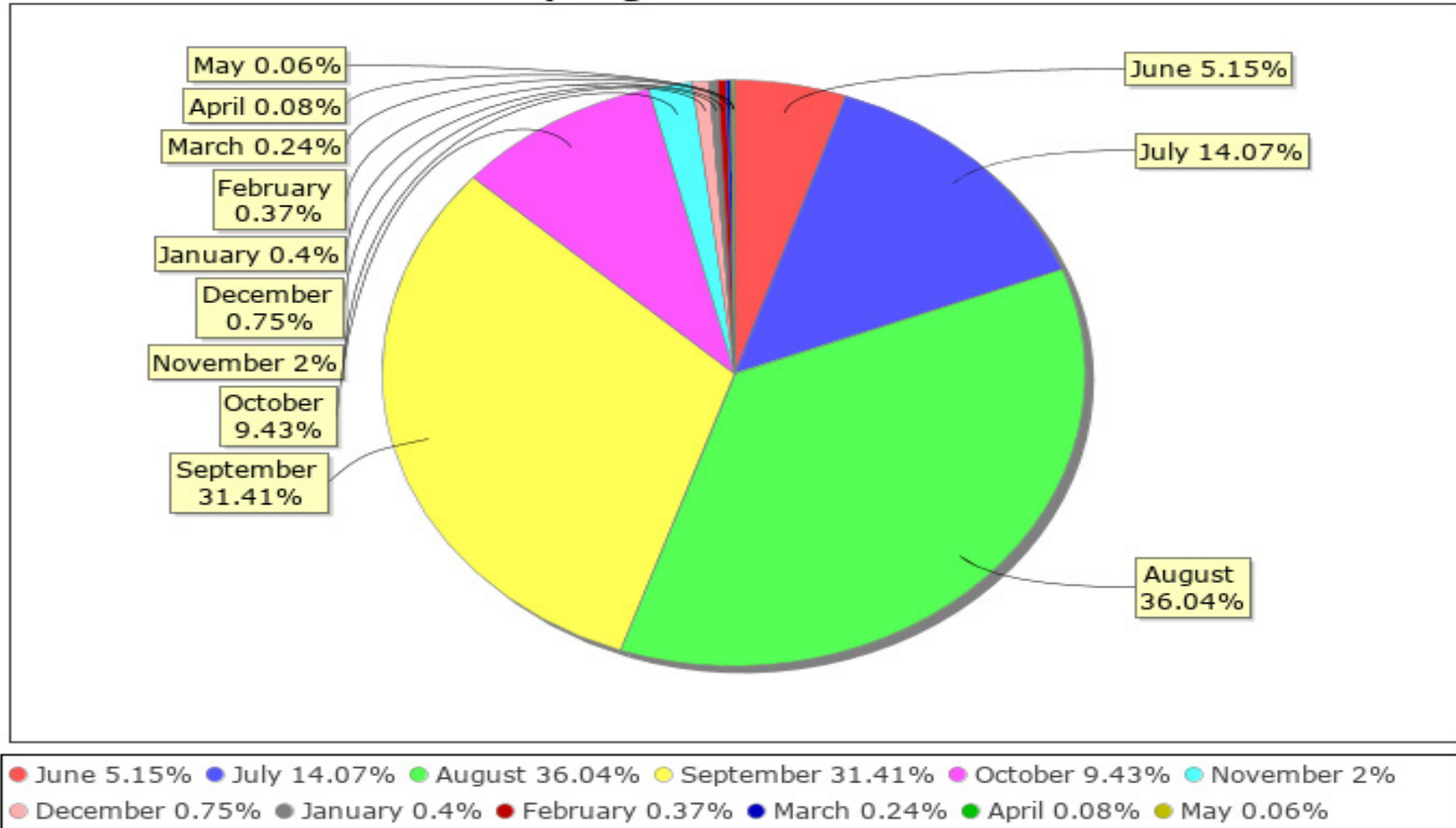
Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

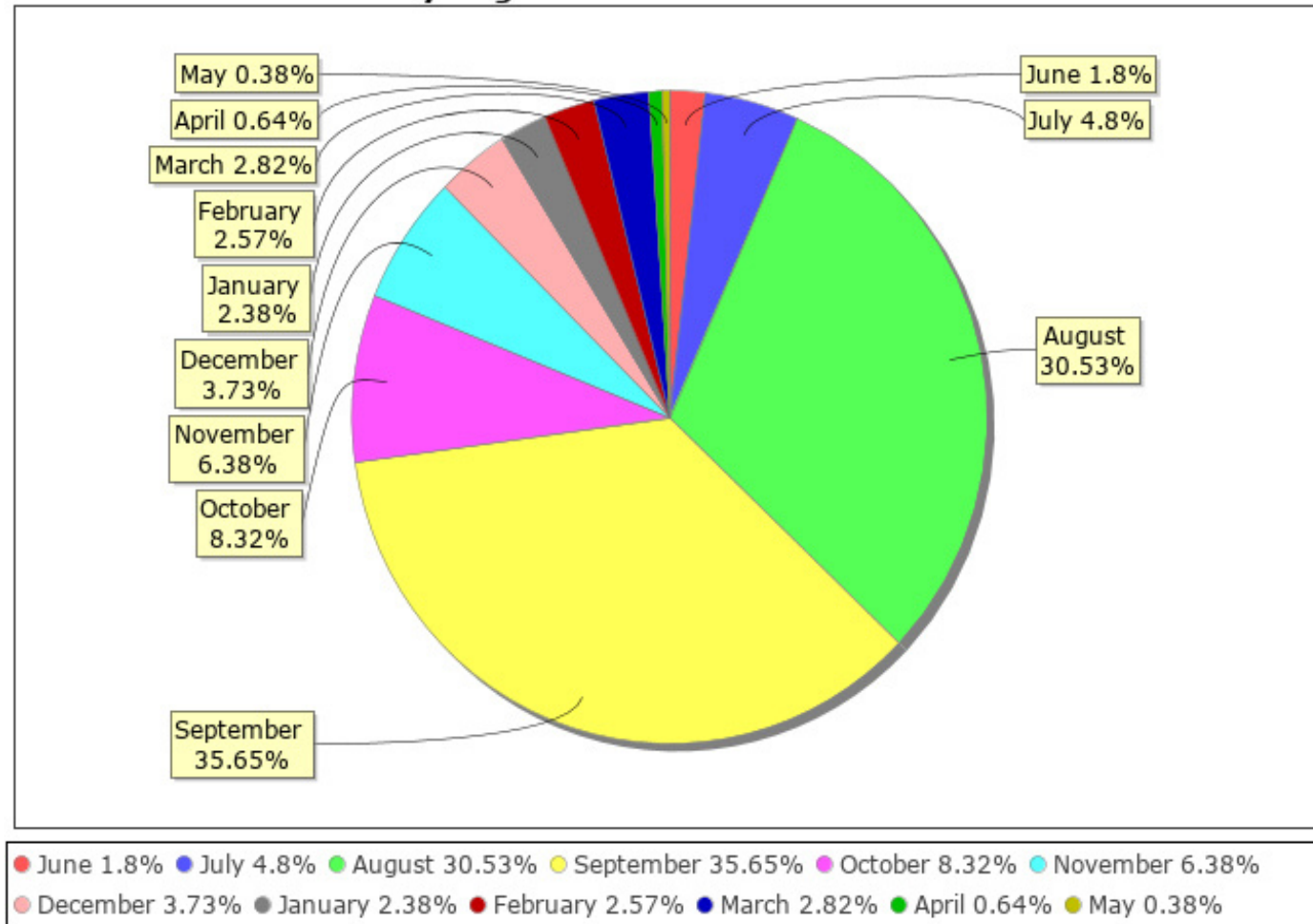
Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



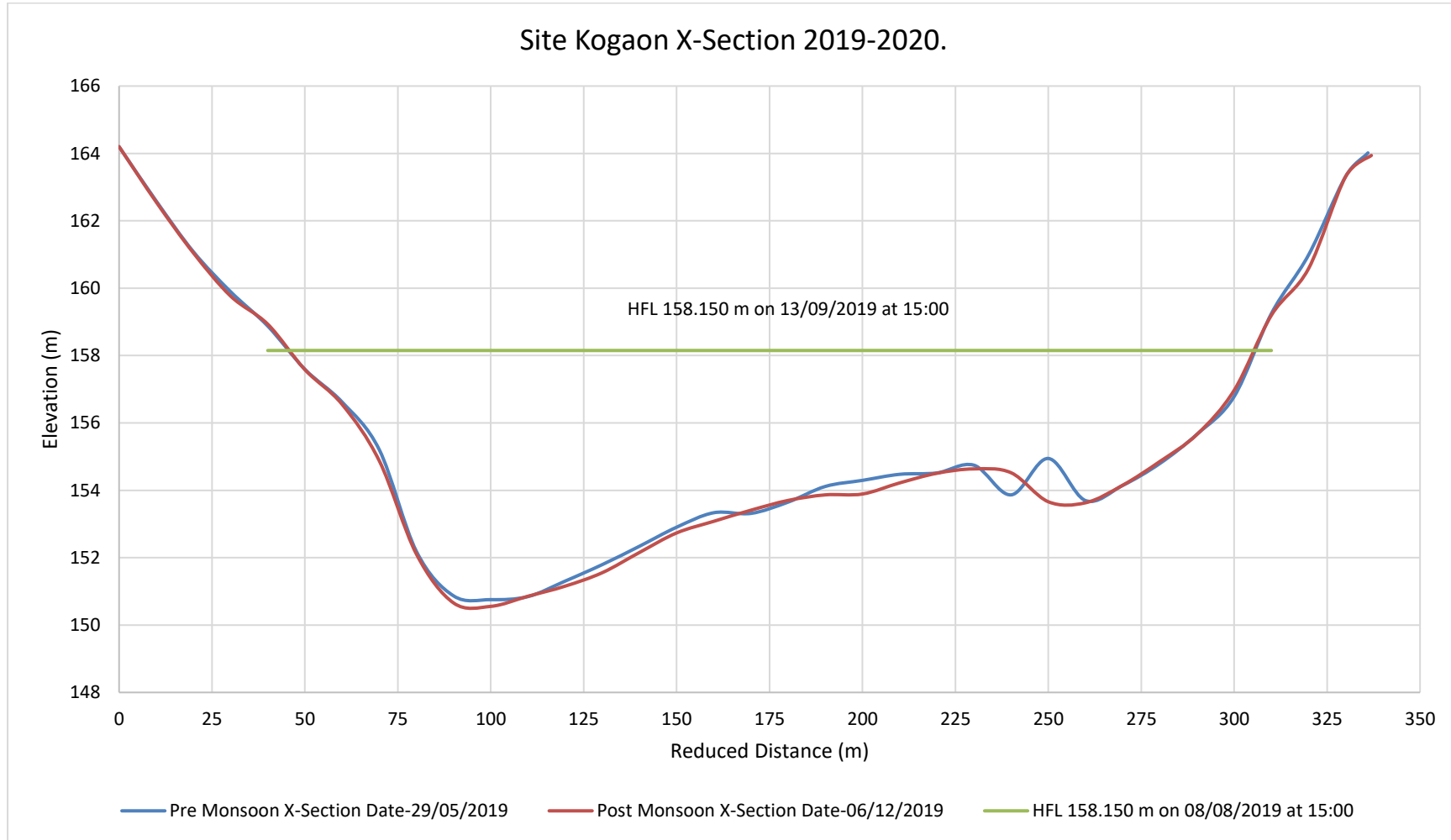
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division : MNSD III CWC Indore



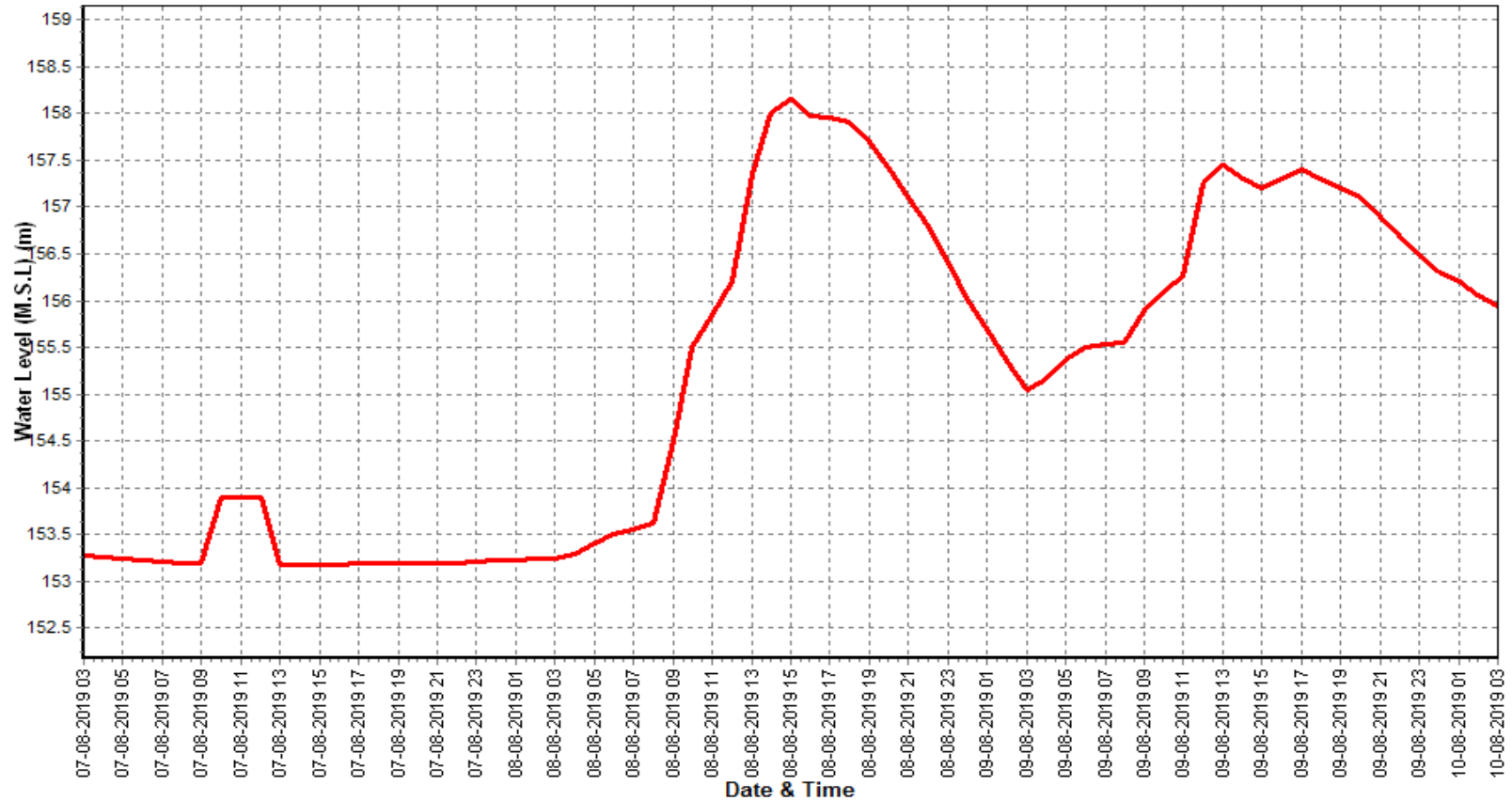
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore



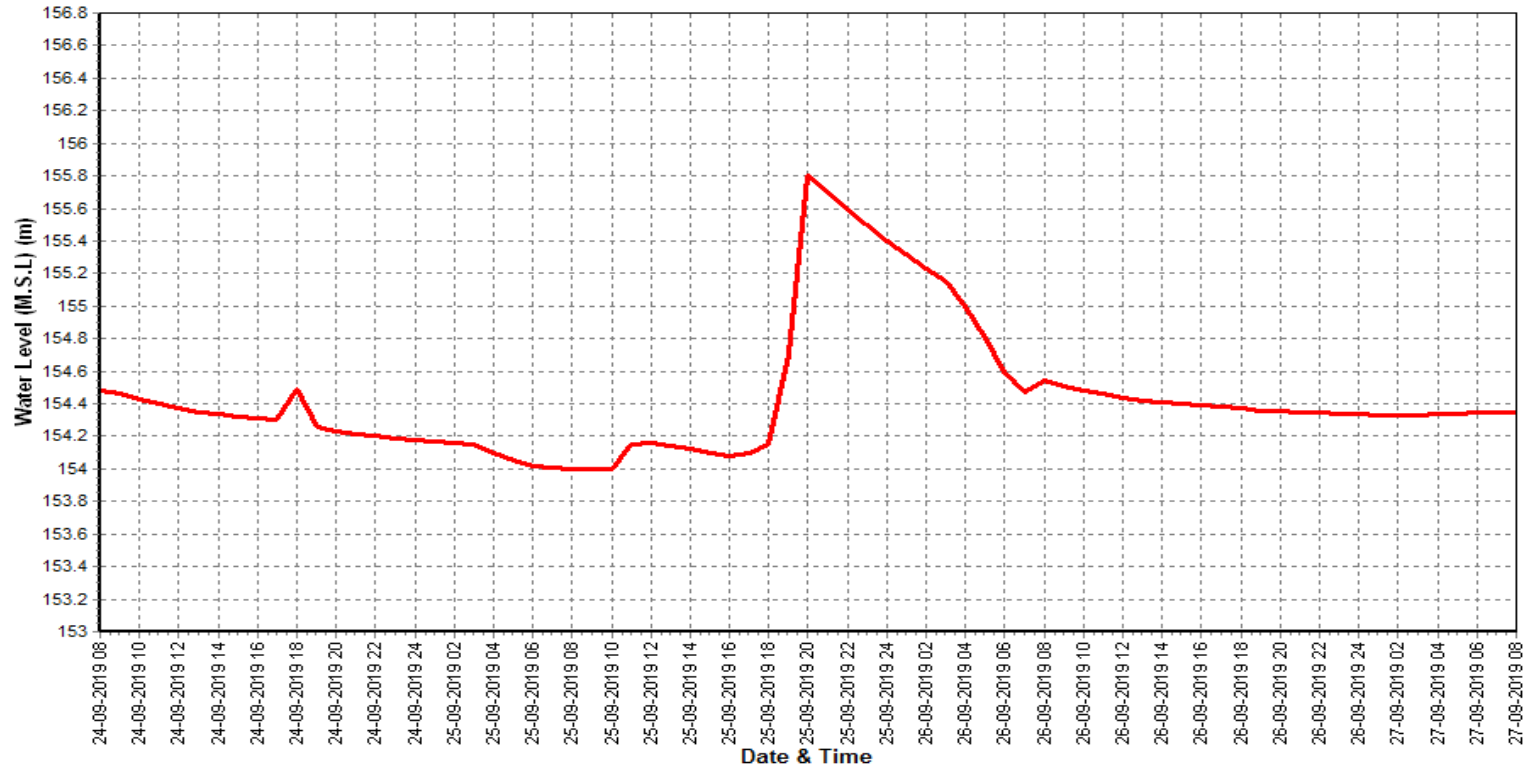
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Kundi at Kogaon

Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore



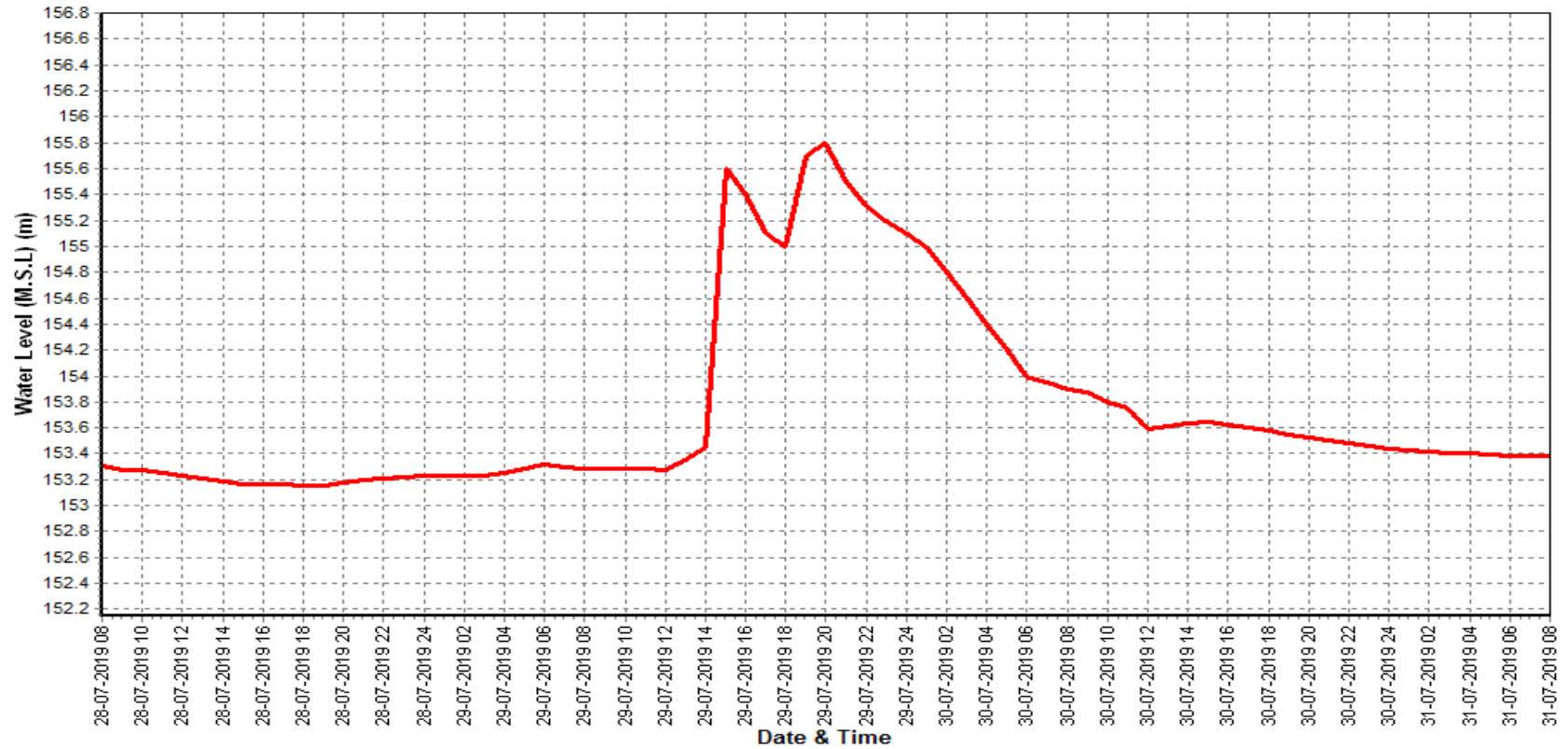
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Kundi at Kogaon

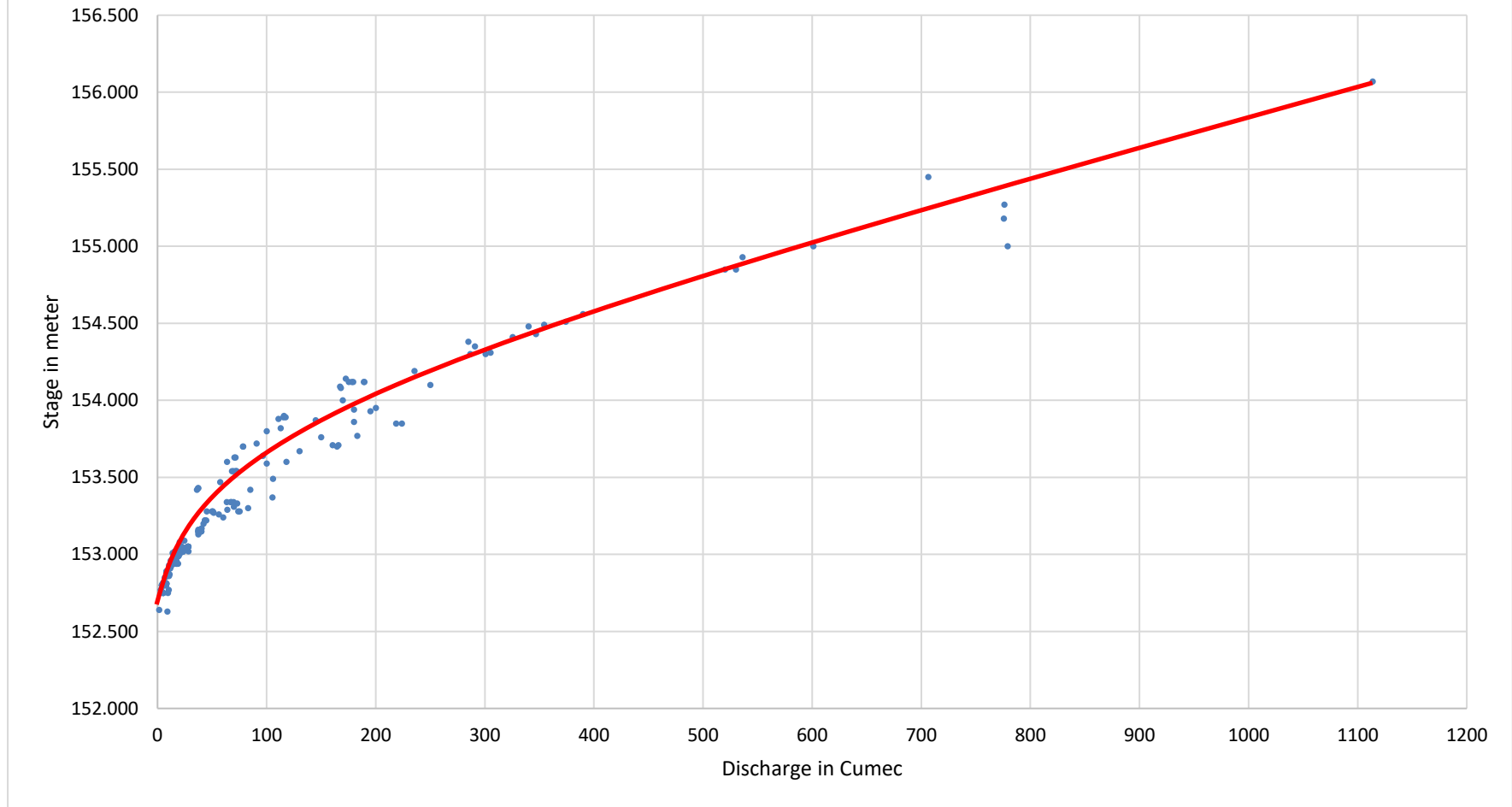
Division : Narmada Division, Bhopal

Local River : Kundi

Sub-Division :MNSD III, CWC Indore



Site Kogaon Stage-Dischareg Curve 2019-2020.



4.10 Choral at Barwah.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Choral at Barwah		Code	:	CW1NAM001449
State	:	Madhya Pradesh		District	:	Khargone
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Choral
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	395.31 Sq. Km.		Bank	:	Right
Latitude	:	22°14'46.0"		Longitude	:	76°30'6.0"
Current Zero of Gauge (m)	:	169				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
169.0		25/06/2019		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		41	173.2	13/09/2019	0	171.2
						25/07/2019

Stage Discharge Sheet for Choral at Barwah for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	169.35	3.94	170.93	6.37	171.56	11.17	171.70	11.75	171.75	6.17	171.54
2	#	169.35	§	170.76	6.08	171.53	7.15	171.60	6.37	171.56	5.93	171.51
3	#	169.35	§	170.76	6.27	171.55	7.15	171.60	12.53	171.78	5.65	171.47
4	#	169.35	§	170.77	5.85	171.50	6.84	171.58	10.48	171.70	5.52	171.45
5	#	169.35	§	170.77	4.24	171.20	6.08	171.53	7.15	171.60	5.28	171.42
6	#	169.35	§	170.78	4.83	171.300	5.93	171.51	13.17	171.80	5.14	171.39
7	#	169.35	13.57	171.82	5.28	171.42	6.08	171.53	10.48	171.70	5.14	171.39
8	#	169.35	21.4	172.21	6.17	171.54	23.2	172.30	9.02	171.65	5.28	171.42
9	#	169.35	5.17	171.40	6.27	171.55	6.94	171.590	10.48	171.70	5.28	171.42
10	#	169.35	4.44	171.24	6.94	171.59	23.2	172.30	11.75	171.75	5.45	171.44
11	#	169.35	3.91	171.13	13.17	171.8	27.2	172.50	7.15	171.60	5.45	171.44
12	#	169.35	3.91	171.13	11.75	171.75	17.2	172.00	5.85	171.50	5.21	171.41
13	#	169.35	3.97	171.15	12.05	171.76	41	173.20	6.27	171.55	5.21	171.41
14	#	169.35	4.13	171.18	11.75	171.75	25.2	172.40	5.85	171.50	5.45	171.44
15	#	169.35	3.97	171.15	10.15	171.69	21.2	172.20	5.17	171.40	5.21	171.41
16	#	169.35	4.04	171.16	8.58	171.64	17	171.99	4.83	171.30	5.11	171.38
17	#	169.35	3.79	171.08	6.17	171.54	17.2	172.00	5.17	171.40	5.17	171.40
18	#	169.35	3.91	171.13	5.7	171.49	13.06	171.80	5.52	171.45	5.38	171.43
19	#	169.35	3.89	171.12	6.27	171.55	17.2	172.00	5.93	171.51	5.52	171.45
20	#	169.35	3.84	171.10	6.94	171.59	14.57	171.87	7.15	171.60	5.65	171.47
21	#	169.35	3.97	171.15	9.86	171.68	13.06	171.80	10.48	171.70	5.38	171.43
22	#	169.35	4.83	171.30	11.32	171.73	12.17	171.75	5.85	171.50	5.21	171.41
23	#	169.35	5.17	171.40	12.8	171.79	10.48	171.70	4.83	171.30	5.11	171.38
24	§	169.38	4.34	171.23	10.48	171.70	17.2	172.08	5.04	171.35	5.17	171.40
25	§	169.40	2.24	171.20	6.5	171.57	13.06	171.80	5.17	171.40	5.11	171.38
26	§	169.42	4.96	171.34	5.65	171.47	13.06	171.80	5.52	171.45	5.04	171.35
27	§	169.40	5.93	171.51	7.83	171.62	16	171.95	7.15	171.60	5.04	171.35
28	§	169.39	12.17	171.75	11.56	171.74	28.6	172.57	9.53	171.67	4.9	171.33
29	§	169.43	18.2	172.05	11	171.72	19.2	172.10	5.85	171.50	4.83	171.30
30	§	169.45	19.2	172.10	9.53	171.67	13.06	171.80	6.27	171.55	4.83	171.30
31			6.94	171.59	7.15	171.60			7.15	171.60		
Ten-Daily Mean												
I Ten-Daily	0	169.35	4.85	171.14	5.83	171.47	10.37	171.72	10.32	171.7	5.48	171.44
II Ten-Daily	0	169.35	3.94	171.13	9.25	171.66	21.08	172.2	5.89	171.48	5.34	171.42
III Ten-Daily	0	169.39	8	171.51	9.43	171.66	15.59	171.94	6.62	171.51	5.06	171.36
Monthly												
Min.	0	169.35	2.24	170.76	4.24	171.20	5.93	171.51	4.83	171.30	4.83	171.30
Max.	0	169.45	21.4	172.21	13.17	171.80	41	173.20	13.17	171.80	6.17	171.54
Mean	0	169.36	5.59	171.26	8.17	171.60	15.68	171.95	7.61	171.56	5.29	171.41

Annual Runoff in

MCM : 122.8

Annual Runoff in

mm : 310.64

Peak Observed Discharge = 41 cumecs on 13/9/2019 Corres. Water Level 173.2 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Stage Discharge Sheet for Choral at Barwah for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	4.65	171.28	3.38	170.8	#	#	#	#	#	#	#	#
2	4.65	171.28	3.35	170.76	#	#	#	#	#	#	#	#
3	4.65	171.28	3.35	170.76	#	#	#	#	#	#	#	#
4	4.52	171.25	3.26	170.76	#	#	#	#	#	#	#	#
5	4.52	171.25	3.20	170.77	#	#	#	#	#	#	#	#
6	4.77	171.23	2.63	170.76	#	#	#	#	#	#	#	#
7	4.77	171.23	§	170.76	#	#	#	#	#	#	#	#
8	4.77	171.23	§	170.76	#	#	#	#	#	#	#	#
9	4.77	171.23	§	170.76	#	#	#	#	#	#	#	#
10	4.77	171.23	#	#	#	#	#	#	#	#	#	#
11	4.24	171.2	#	#	#	#	#	#	#	#	#	#
12	4.24	171.2	#	#	#	#	#	#	#	#	#	#
13	3.84	171.1	#	#	#	#	#	#	#	#	#	#
14	3.84	171.1	#	#	#	#	#	#	#	#	#	#
15	3.66	171.05	#	#	#	#	#	#	#	#	#	#
16	3.66	171.05	#	#	#	#	#	#	#	#	#	#
17	3.66	171.05	#	#	#	#	#	#	#	#	#	#
18	3.21	170.65	#	#	#	#	#	#	#	#	#	#
19	3.21	170.65	#	#	#	#	#	#	#	#	#	#
20	3.84	171.1	#	#	#	#	#	#	#	#	#	#
21	3.72	171.07	#	#	#	#	#	#	#	#	#	#
22	3.72	171.07	#	#	#	#	#	#	#	#	#	#
23	3.72	171.07	#	#	#	#	#	#	#	#	#	#
24	3.66	171.05	#	#	#	#	#	#	#	#	#	#
25	3.59	171	#	#	#	#	#	#	#	#	#	#
26	3.59	171	#	#	#	#	#	#	#	#	#	#
27	3.46	170.9	#	#	#	#	#	#	#	#	#	#
28	3.42	170.85	#	#	#	#	#	#	#	#	#	#
29	3.42	170.85	#	#	#	#	#	#	#	#	#	#
30	3.42	170.85	#	#	#	#	#	#	#	#	#	#
31	3.42	170.85	#	#	#	#	#	#	#	#	#	#
Ten-Daily Mean												
I Ten-Daily	4.68	171.25	1.92	170.76	0	0	0	0	0	0	0	0
II Ten-Daily	3.74	171.02	0	0	0	0	0	0	0	0	0	0
III Ten-Daily	3.56	170.96	0	0	0	0	0	0	0	0	0	0
Monthly												
Min.	3.21	170.65	0	0	0	0	0	0	0	0	0	0
Max.	4.77	171.28	3.38	170.8	0	0	0	0	0	0	0	0
Mean	3.99	171.07	0.11	169.	0	0	0	0	0	0	0	0

Peak Computed Discharge = 23.2 cumecs on 8/9/2019 Corres. Water Level 172.3 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Note-

§- No Flow

#-Dry

Monthly Runoff for the Year (2019-2020)

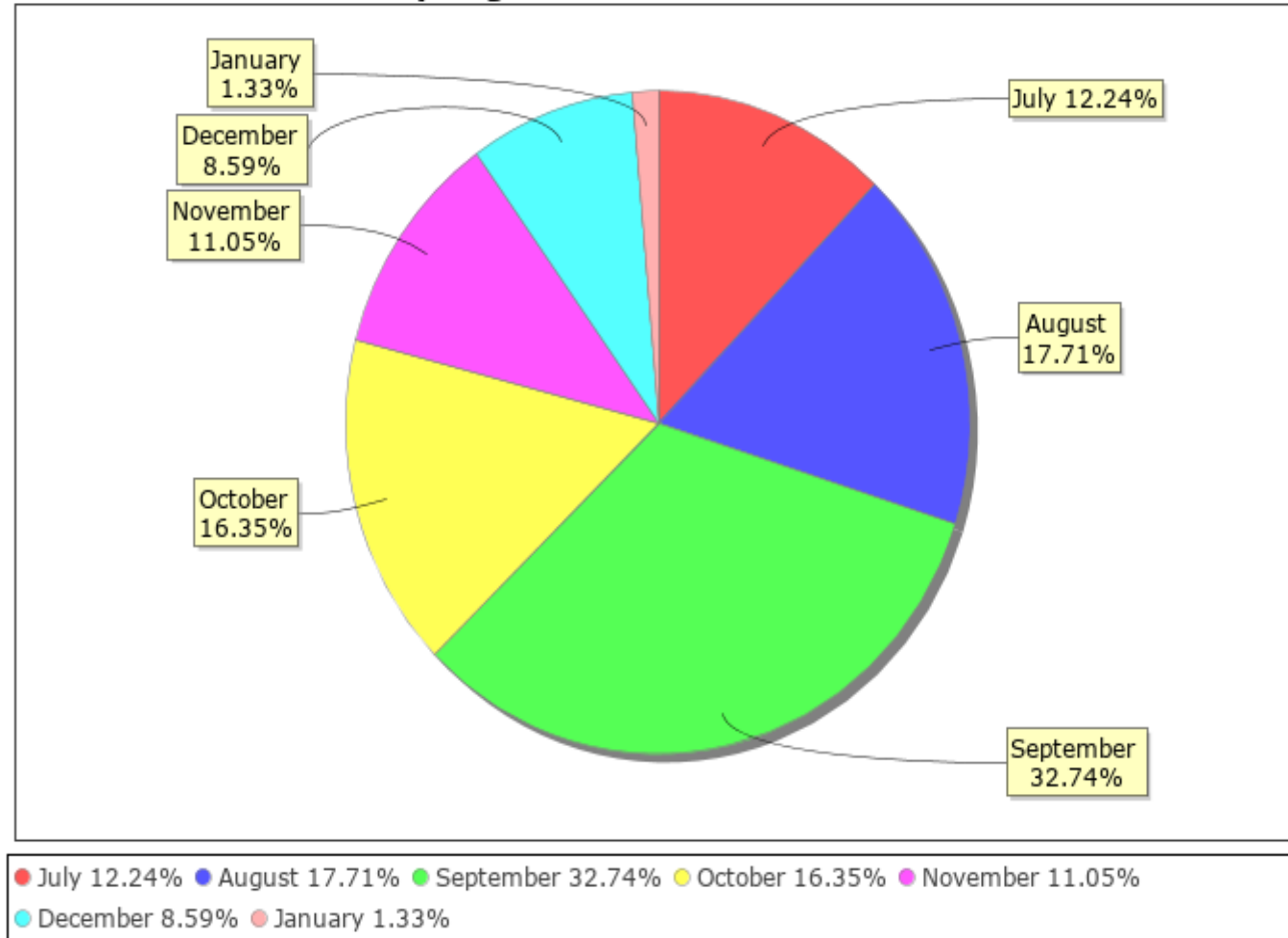
Station Name: Choral at Barwah

Local River: Choral

Division: Narmada Division, Bhopal

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



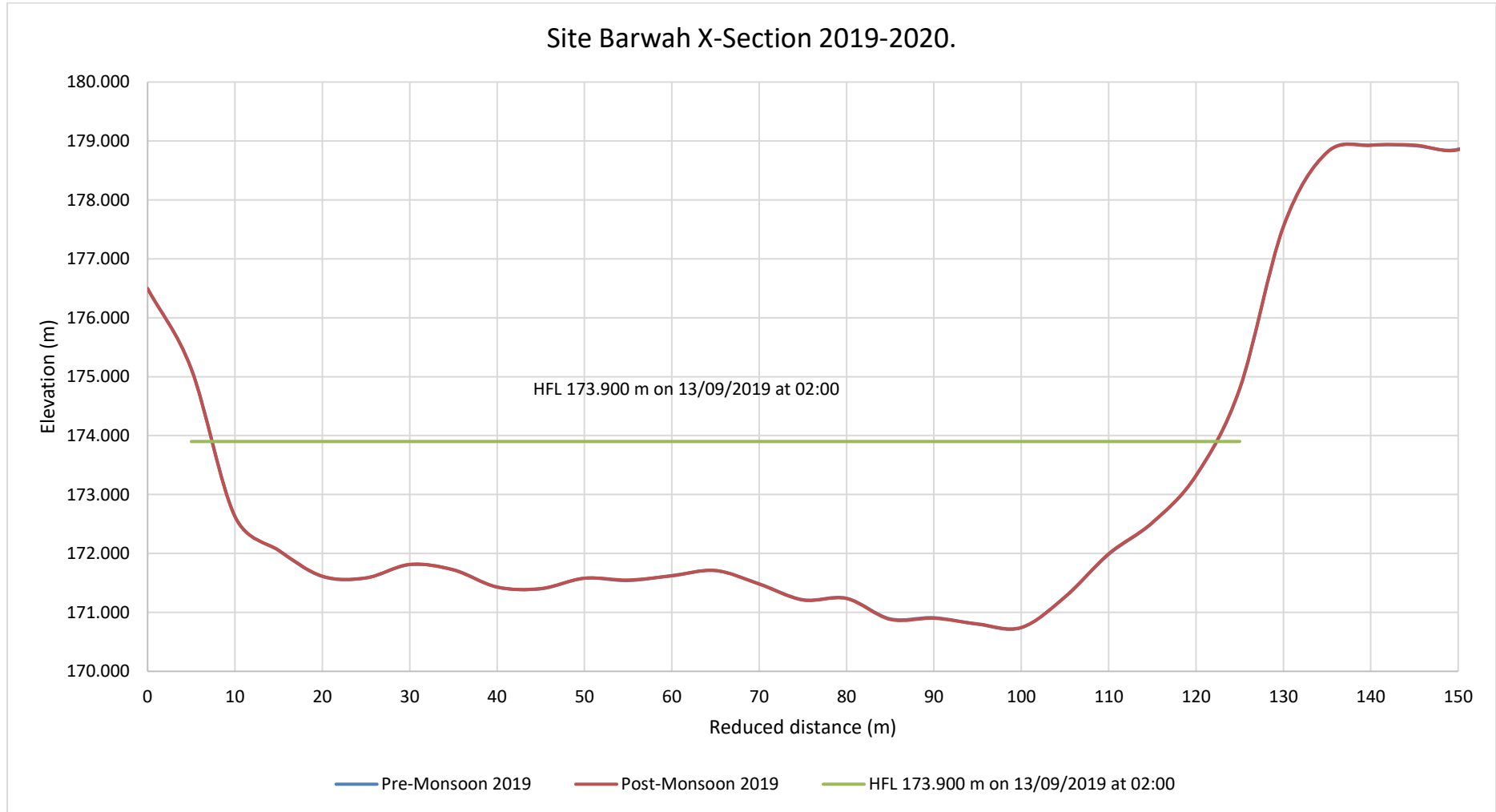
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Choral at Barwah

Division: Narmada Division, Bhopal

Local River: Choral

Sub-Division: MNSD-III, CWC Indore



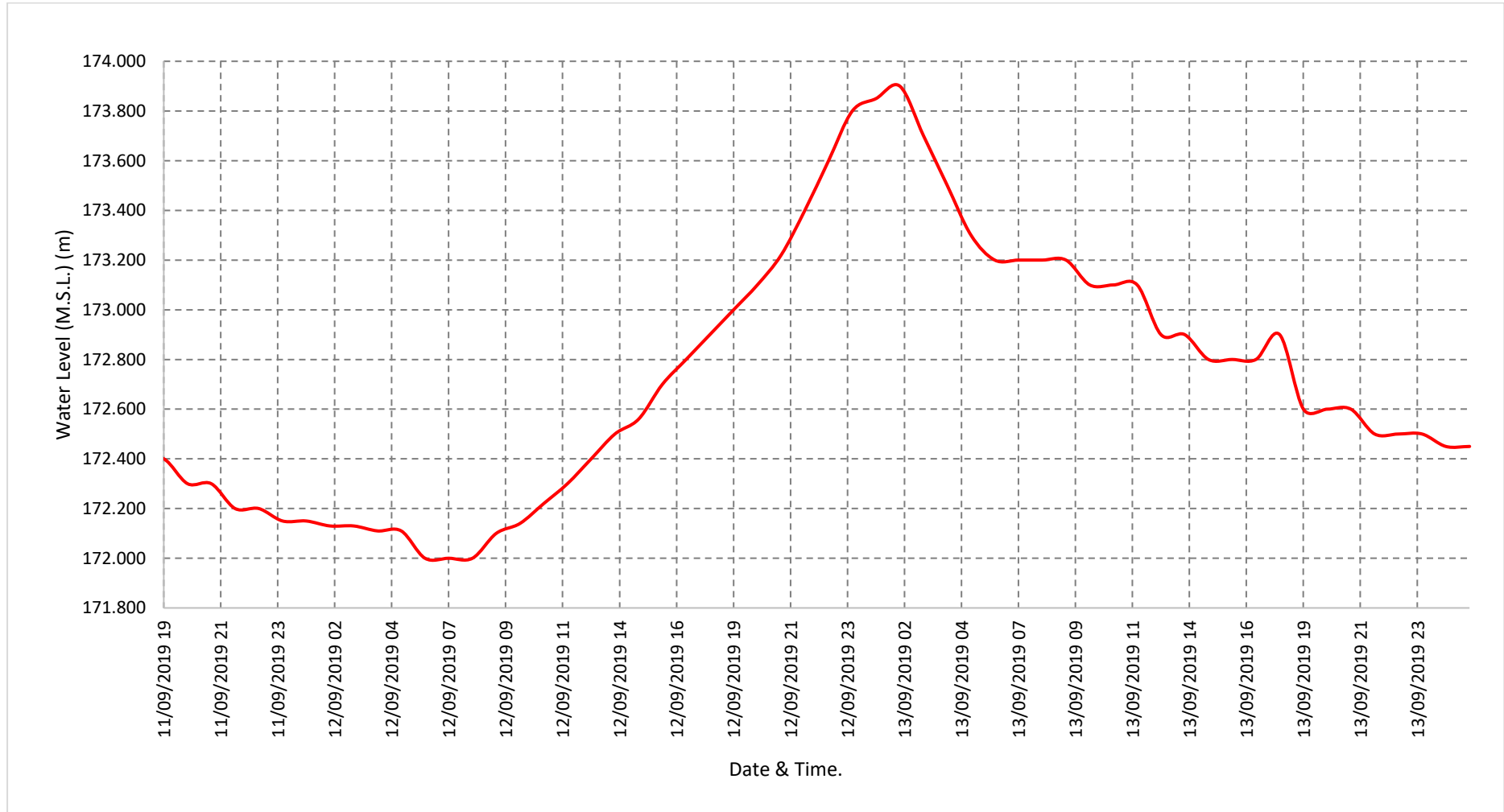
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Choral at Barwah

Division: Narmada Division, Bhopal

Local River: Choral

Sub-Division: MNSD-III, CWC Indore



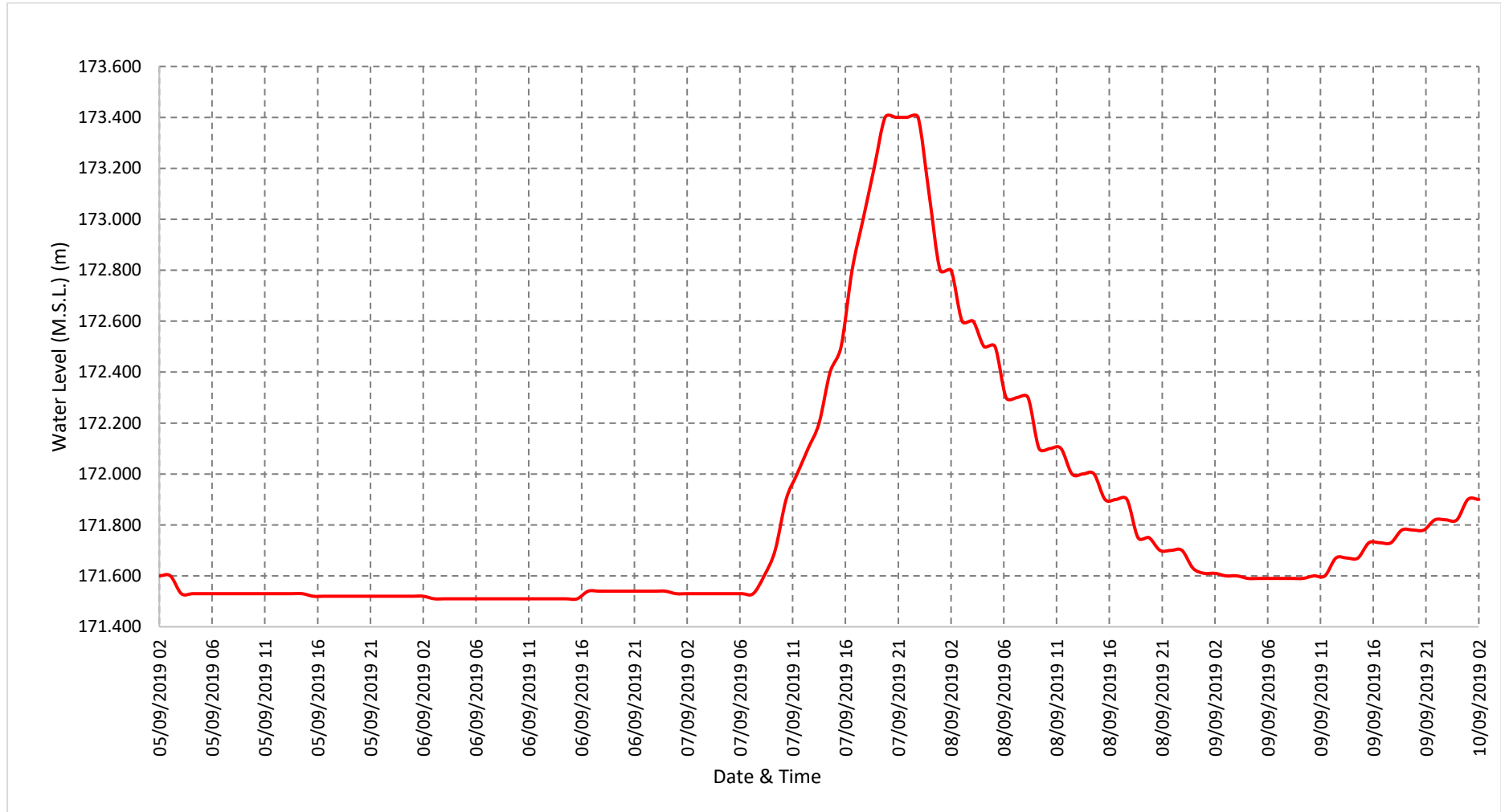
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Choral at Barwah

Division: Narmada Division, Bhopal

Local River: Choral

Sub-Division: MNSD-III, CWC Indore



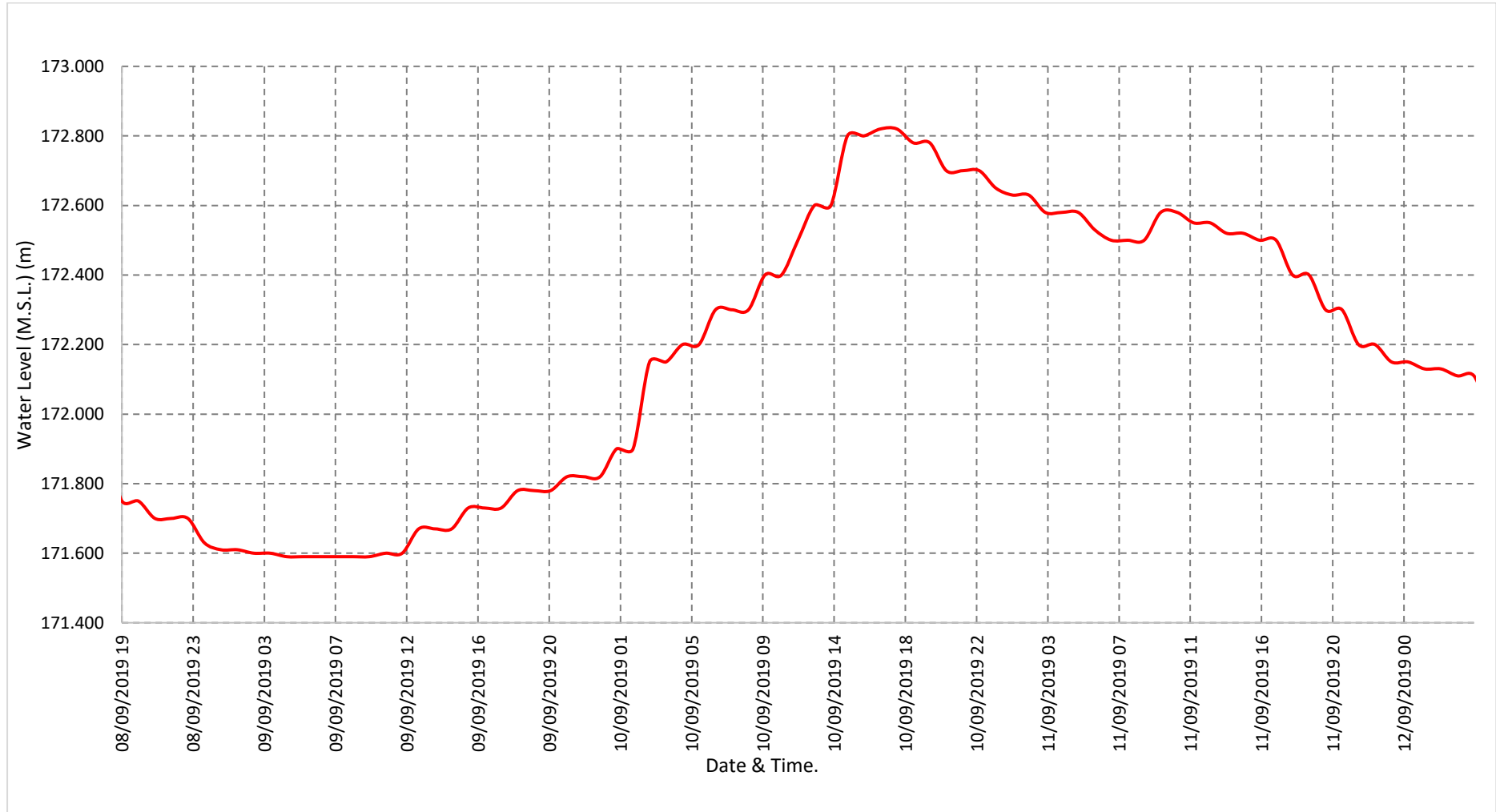
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Choral at Barwah

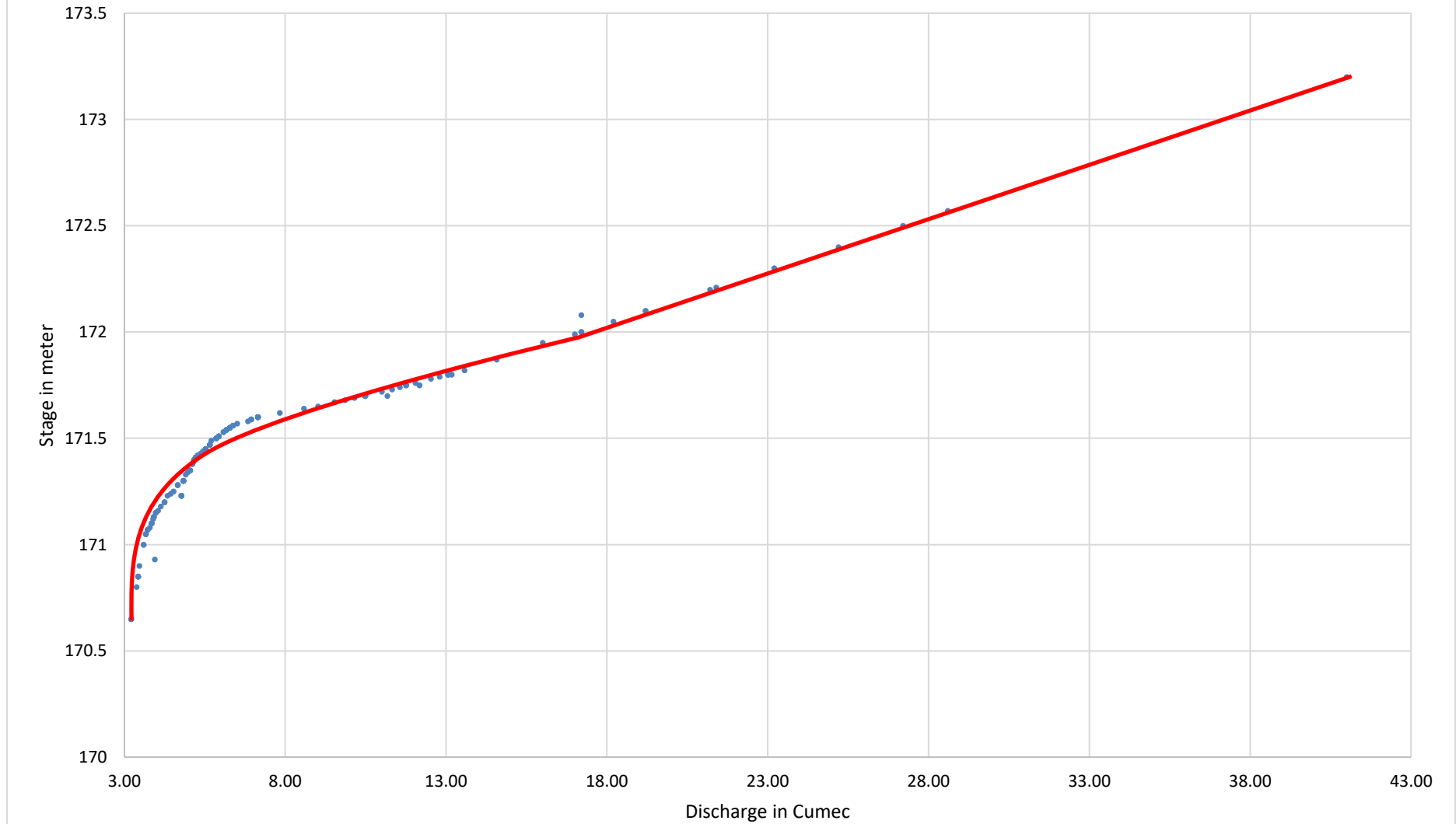
Division: Narmada Division, Bhopal

Local River: Choral

Sub-Division: MNSD-III, CWC Indore



Site Barwah Stage-Discharge Curve 2019-2020.



4.11 Kaner at Mendikheda.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Kaner at Mendikheda		Code	:	CW1NAM001474
State	:	Madhya Pradesh		District	:	Khargone
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Kaner
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	973.44 Sq. Km.		Bank	:	Right
Latitude	:	22°24'31.0"		Longitude	:	76°13'11.0"
Current Zero of Gauge (m)	:	208				
CATEGORY		Opening Date		Closing Date		
Gauge	:	01-06-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
208.0		01/12/2020				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		175	212.735	09/08/2019	0	210.185
						29/11/2019

Stage Discharge Sheet for Kaner at Mendikheda for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	13.8	210.32	26.81	210.55	19.1	210.43	37.36	210.74	28.89	210.49	28.78	210.59
2	15.05	210.35	28.78	210.59	0	209.99	36.43	210.71	31.99	210.63	26.81	210.55
3	14.34	210.32	29.9	210.6	0	210.09	38.11	210.76	40.75	210.8	25.93	210.54
4	15.55	210.35	45.48	210.87	0	210.18	37.36	210.74	37.36	210.74	24.2	210.51
5	18.15	210.41	49.35	210.91	19.1	210.43	36.43	210.71	39.36	210.79	22.89	210.49
6	16.6	210.38	49.35	210.91	29.34	210.6	34.83	210.68	37.36	210.74	21.45	210.46
7	17.14	210.4	50	210.93	37.36	210.74	33.89	210.66	34.83	210.68	22.89	210.49
8	20.51	210.46	45.48	210.87	118	211.93	28.78	210.59	33.89	210.66	20.51	210.46
9	18.15	210.41	50.99	210.93	175	212.74	40.04	210.79	32.57	210.65	21.45	210.46
10	15.55	210.35	53.12	210.99	162	212.59	62.86	211.13	29.9	210.6	19.81	210.45
11	17.14	210.4	50.99	210.93	142	212.27	158	212.54	37.36	210.74	18.15	210.41
12	18.15	210.41	54.55	211.01	139	212.24	158	212.54	37.36	210.74	18.15	210.41
13	19.1	210.43	55.4	211.01	127	212.07	170	212.68	34.83	210.68	19.81	210.45
14	19.1	210.43	56.78	211.04	68.69	211.24	149	212.38	31.99	210.63	19.81	210.45
15	22.89	210.49	57.65	211.04	82	211.43	125	212.04	26.04	210.54	21.45	210.46
16	26.04	210.54	58.54	211.07	61.26	211.12	90.96	211.43	28.78	210.59	23.44	210.49
17	29.9	210.6	60.37	211.1	35.54	210.63	85.47	211.38	31.99	210.63	21.45	210.46
18	31.37	210.62	61.93	211.12	26.81	210.55	84.69	211.38	31.99	210.63	19.1	210.43
19	31.99	210.63	65.73	211.2	20.51	210.46	90.96	211.43	35.54	210.7	16.6	210.38
20	31.99	210.63	70	211.26	0	210.21	63.95	211.2	37.36	210.74	16.6	210.38
21	33.15	210.65	69.3	211.24	0	210.04	62.86	211.13	39.36	210.79	15.88	210.37
22	30.62	210.62	56.78	211.04	37.36	210.74	62.86	211.13	43.14	210.84	14.71	210.34
23	29.34	210.6	42.4	210.82	37.36	210.74	43.14	210.84	50.99	210.93	12.62	210.29
24	25.93	210.54	38.75	210.76	25.93	210.54	46.92	210.88	59.41	211.09	11.33	210.27
25	22.3	210.48	46.92	210.88	11.88	210.29	41.7	210.82	59.41	211.09	9.84	210.24
26	24.9	210.51	52.26	210.98	0	210.18	43.89	210.85	39.36	210.77	9.84	210.24
27	25.93	210.54	66.66	211.21	14.71	210.34	47.61	210.9	34.83	210.68	9.34	210.24
28	26.04	210.54	72	211.29	22.89	210.49	46.12	210.88	31.99	210.63	0	210.21
29	26.04	210.54	59.41	211.09	16.6	210.38	19.1	210.43	22.89	210.49	0	210.18
30	26.04	210.54	49.35	210.91	22.89	210.49	15.88	210.37	16.6	210.38	0	210.18
31			33.89	210.66	37.36	210.74			25.93	210.54		
Ten-Daily Mean												
I Ten-Daily	16.45	210.38	42.93	210.81	55.99	210.97	38.61	210.75	34.69	210.68	23.47	210.5
II Ten-Daily	24.77	210.52	59.19	211.08	70.28	211.22	114.3	211.9	33.32	210.66	19.46	210.43
III Ten-Daily	27.03	210.56	53.43	210.99	20.63	210.45	43.01	210.82	38.54	210.75	8.36	210.26
Monthly												
Min.	13.8	210.32	26.81	210.55	0	209.99	15.88	210.37	16.6	210.38	0	210.18
Max.	33.15	210.65	72	211.29	175	212.74	170	212.68	59.41	211.09	28.78	210.59
Mean	22.75	210.48	51.85	210.96	48.97	210.88	65.3	211.16	35.52	210.7	17.09	210.4

Annual Runoff in MCM : 746.26

Annual Runoff in mm : 766.62

Peak Observed Discharge = 175 cumecs on 9/8/2019 Corres. Water Level 212.74 m

Lowest Observed Discharge = 0 cumecs on 29/11/2019 Corres. Water Level 210.18 m

Stage Discharge Sheet for Kaner at Mendikheda for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	210.21	9.84	210.24	14.71	210.34	#	#	#	#	#	#
2	0	210.21	9.84	210.24	15.55	210.35	#	#	#	#	#	#
3	0	210.21	9.84	210.24	16.49	210.38	#	#	#	#	#	#
4	0	210.21	9.84	210.24	17.14	210.4	#	#	#	#	#	#
5	9.34	210.24	14.71	210.34	18.15	210.41	#	#	#	#	#	#
6	9.34	210.24	14.71	210.34	18.55	210.41	#	#	#	#	#	#
7	9.34	210.24	14.71	210.34	19.1	210.43	#	#	#	#	#	#
8	9.34	210.24	16.6	210.38	18.55	210.43	#	#	#	#	#	#
9	9.34	210.24	16.6	210.38	19.1	210.43	#	#	#	#	#	#
10	9.34	210.24	15.88	210.37	18.55	210.43	#	#	#	#	#	#
11	9.34	210.24	15.55	210.35	18.15	210.41	#	#	#	#	#	#
12	10.26	210.26	15.55	210.35	18.55	210.43	#	#	#	#	#	#
13	10.26	210.26	16.49	210.38	19.81	210.45	#	#	#	#	#	#
14	10.26	210.26	16.49	210.38	19.1	210.43	#	#	#	#	#	#
15	10.9	210.26	18.55	210.43	19.81	210.45	#	#	#	#	#	#
16	10.9	210.26	18.55	210.43	19.1	210.43	#	#	#	#	#	#
17	10.90	210.26	19.1	210.43	19.1	210.43	#	#	#	#	#	#
18	11.33	210.27	19.1	210.43	18.15	210.41	#	#	#	#	#	#
19	11.33	210.27	19.81	210.45	18.15	210.41	#	#	#	#	#	#
20	11.3	210.27	21.45	210.46	17.6	210.4	#	#	#	#	#	#
21	10.9	210.26	20.51	210.46	17.6	210.4	#	#	#	#	#	#
22	10.9	210.26	19.1	210.43	17.14	210.4	#	#	#	#	#	#
23	10.3	210.26	18.15	210.41	17.14	210.4	#	#	#	#	#	#
24	10.3	210.26	17.14	210.4	16.6	210.38	#	#	#	#	#	#
25	10.26	210.26	15.05	210.35	16.6	210.38	#	#	#	#	#	#
26	9.8	210.24	14.71	210.34	17.14	210.4	#	#	#	#	#	#
27	9.8	210.24	14.34	210.32	16.49	210.38	#	#	#	#	#	#
28	9.84	210.24	11.88	210.29	17.6	210.4	#	#	#	#	#	#
29	9.84	210.24	13.8	210.32	18.55	210.43	#	#	#	#	#	#
30	9.84	210.24	14.71	210.34			#	#	#	#	#	#
31	9.84	210.24	14.71	210.34			#	#	#	#	#	#
Ten-Daily Mean												
I Ten-Daily	5.6	210.23	13.26	210.31	17.55	210.4	0	0	0	0	0	0
II Ten-Daily	10.73	210.26	18.06	210.41	18.75	210.43	0	0	0	0	0	0
III Ten-Daily	10.15	210.25	15.83	210.36	17.21	210.4	0	0	0	0	0	0
Monthly												
Min.	0	210.21	9.84	210.24	14.71	210.34	0	0	0	0	0	0
Max.	11.33	210.27	21.45	210.46	19.81	210.45	0	0	0	0	0	0
Mean	8.83	210.25	15.72	210.36	17.84	210.41	0	0	0	0	0	0

Peak Computed Discharge = 142 cumecs on 11/8/2019 Corres. Water Level 212.27 m

Lowest Computed Discharge = 0cumecs on 4/8/2019 Corres. Water Level 210.18 m

Note-

#-Dry

Monthly Runoff for the Year (2019-2020)

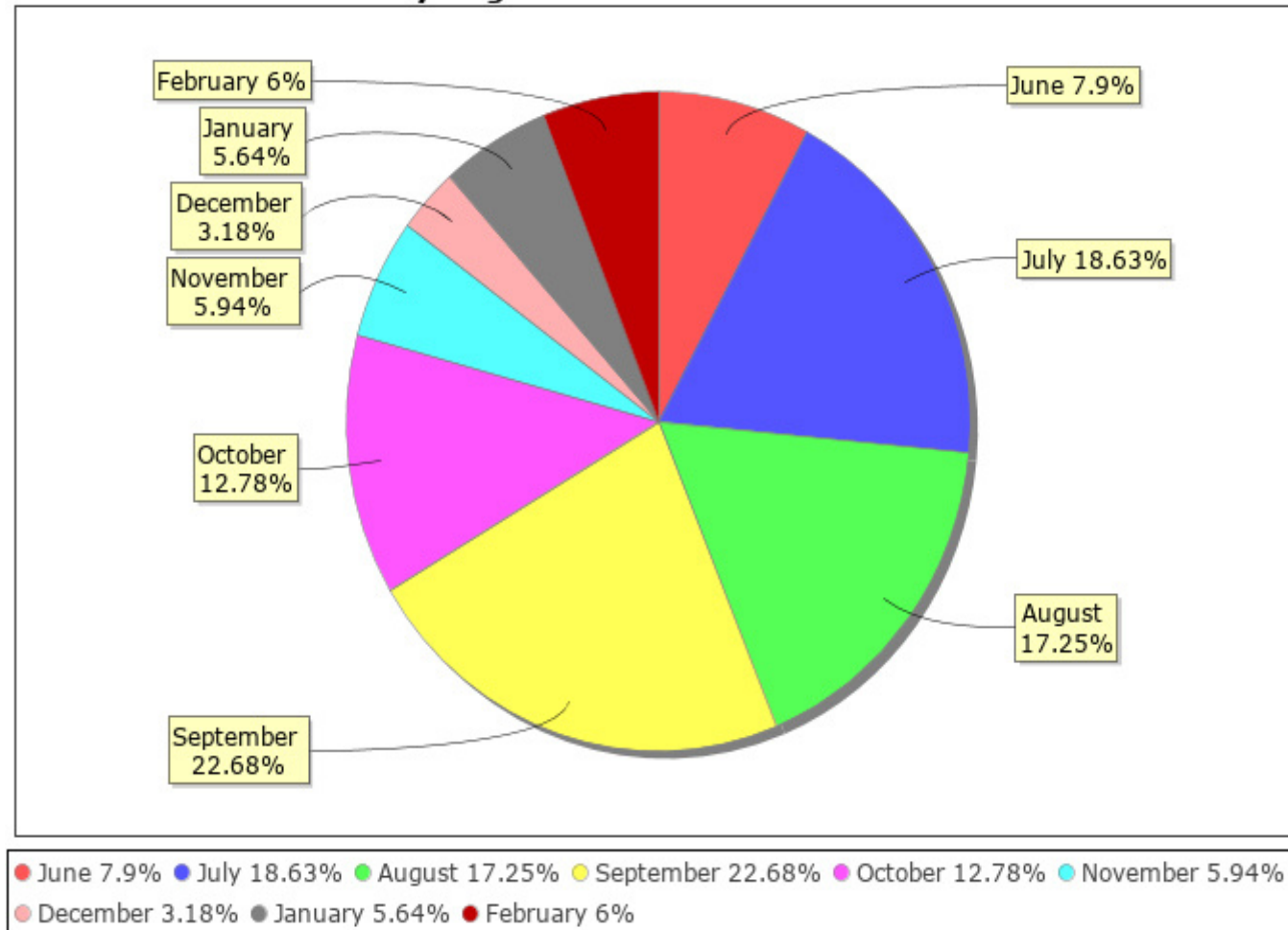
Station Name: Kaner at Mendikheda

Local River: Kaner

Division: Narmada Division, Bhopal

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



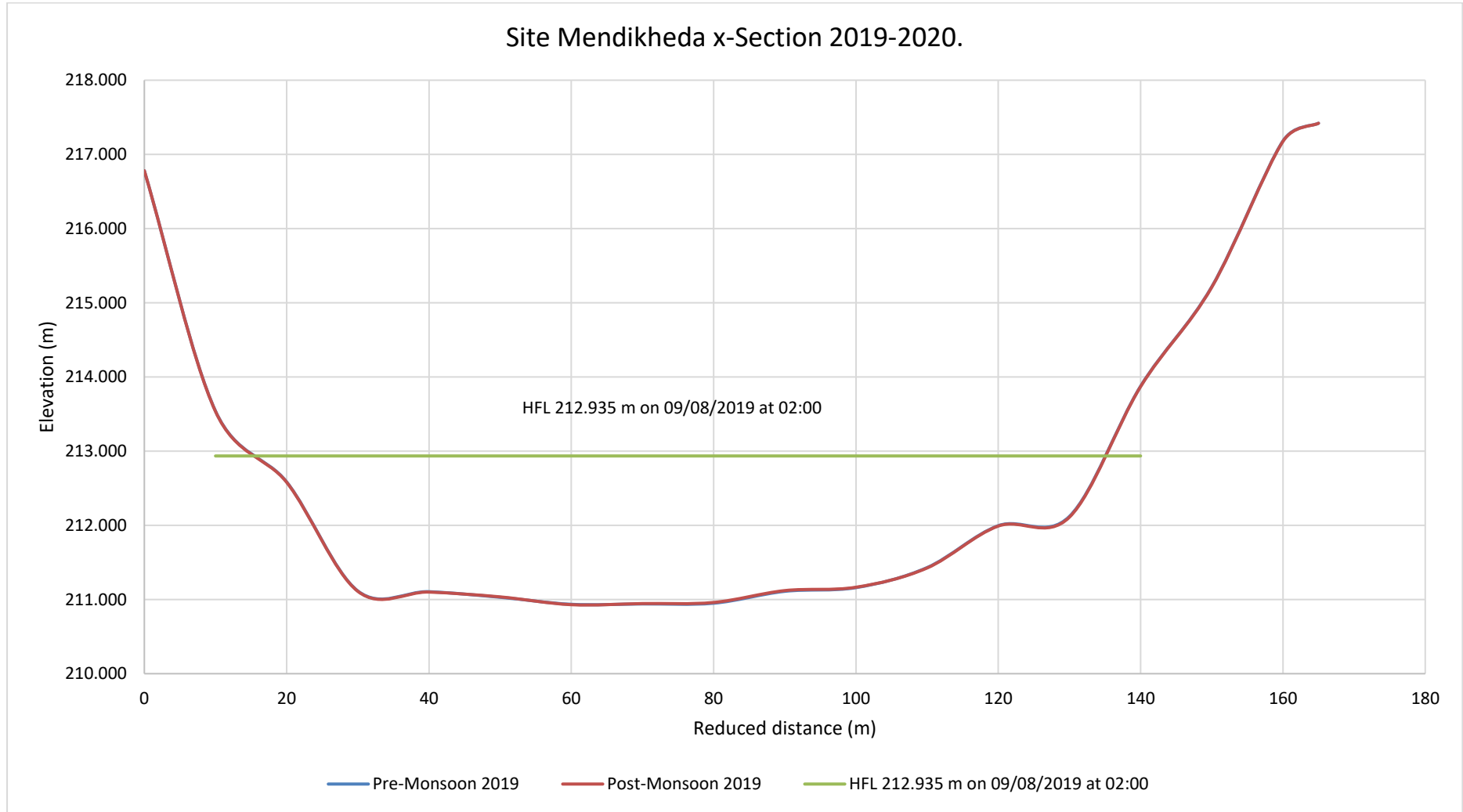
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Kaner at Mendikheda

Division: Narmada Division, Bhopal

Local River: Kaner

Sub-Division: MNSD-III, CWC Indore



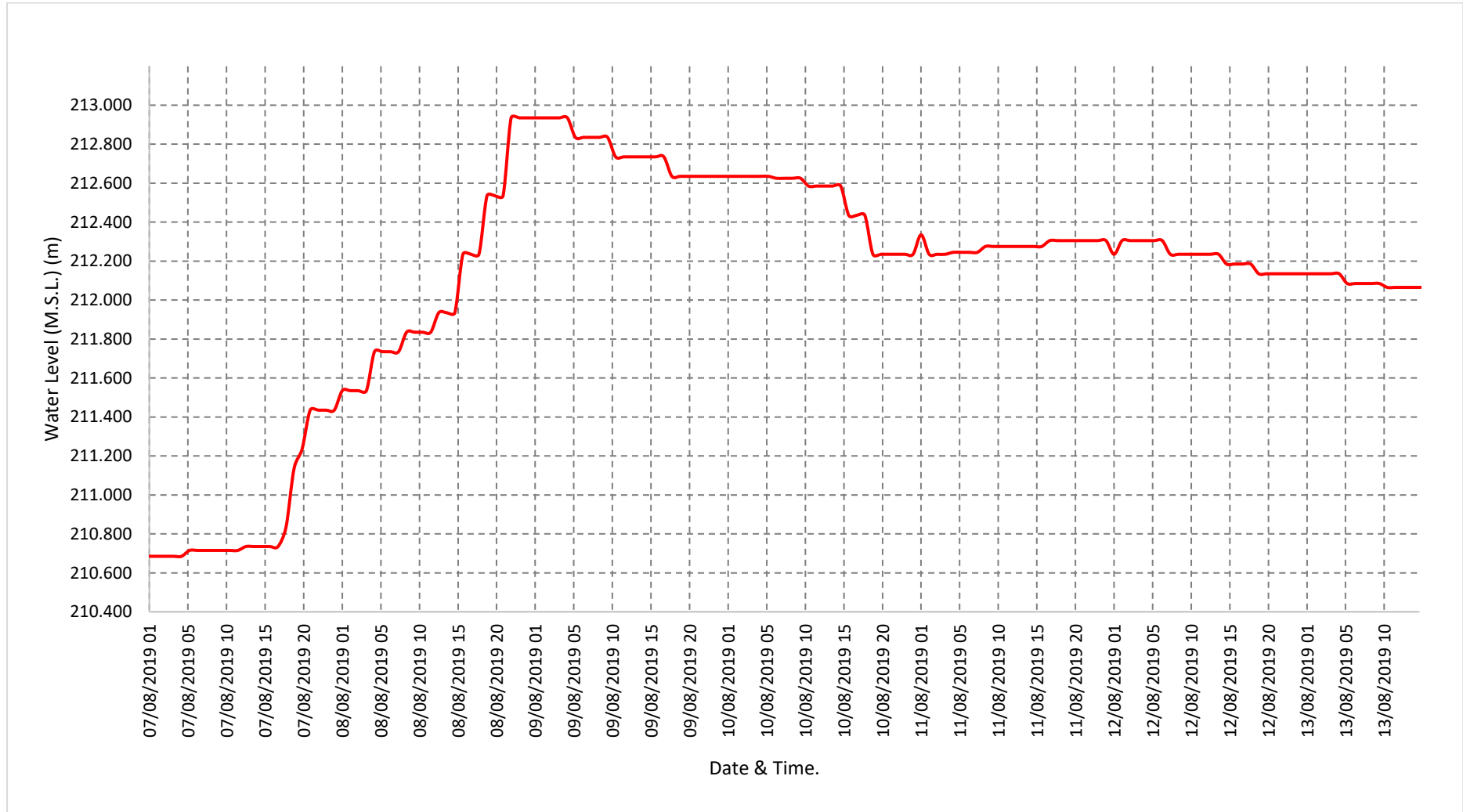
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Kaner at Mendikheda

Division: Narmada Division, Bhopal

Local River: Kaner

Sub-Division: MNSD-III, CWC Indore



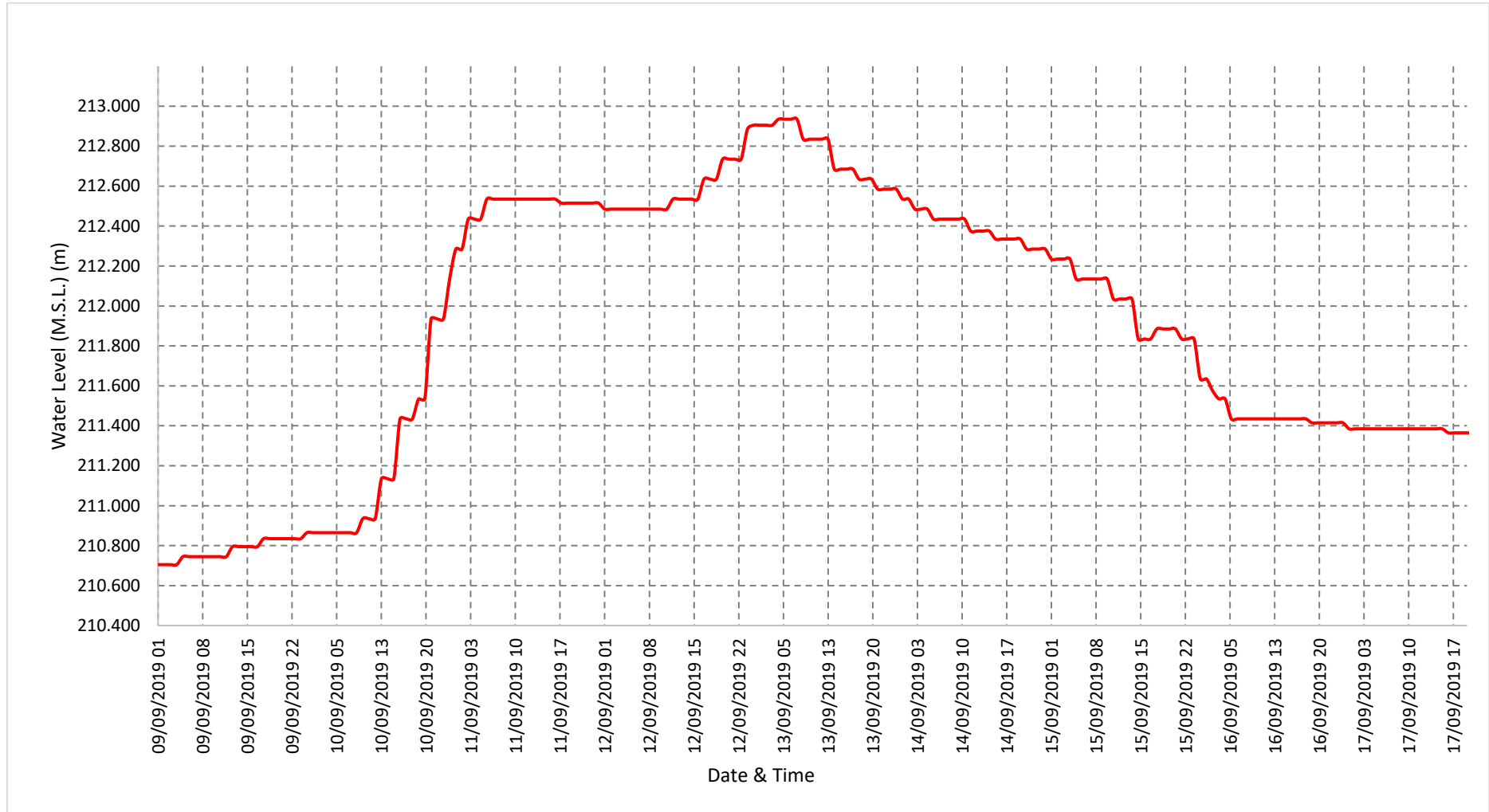
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Kaner at Mendikheda

Division: Narmada Division, Bhopal

Local River: Kaner

Sub-Division: MNSD-III, CWC Indore



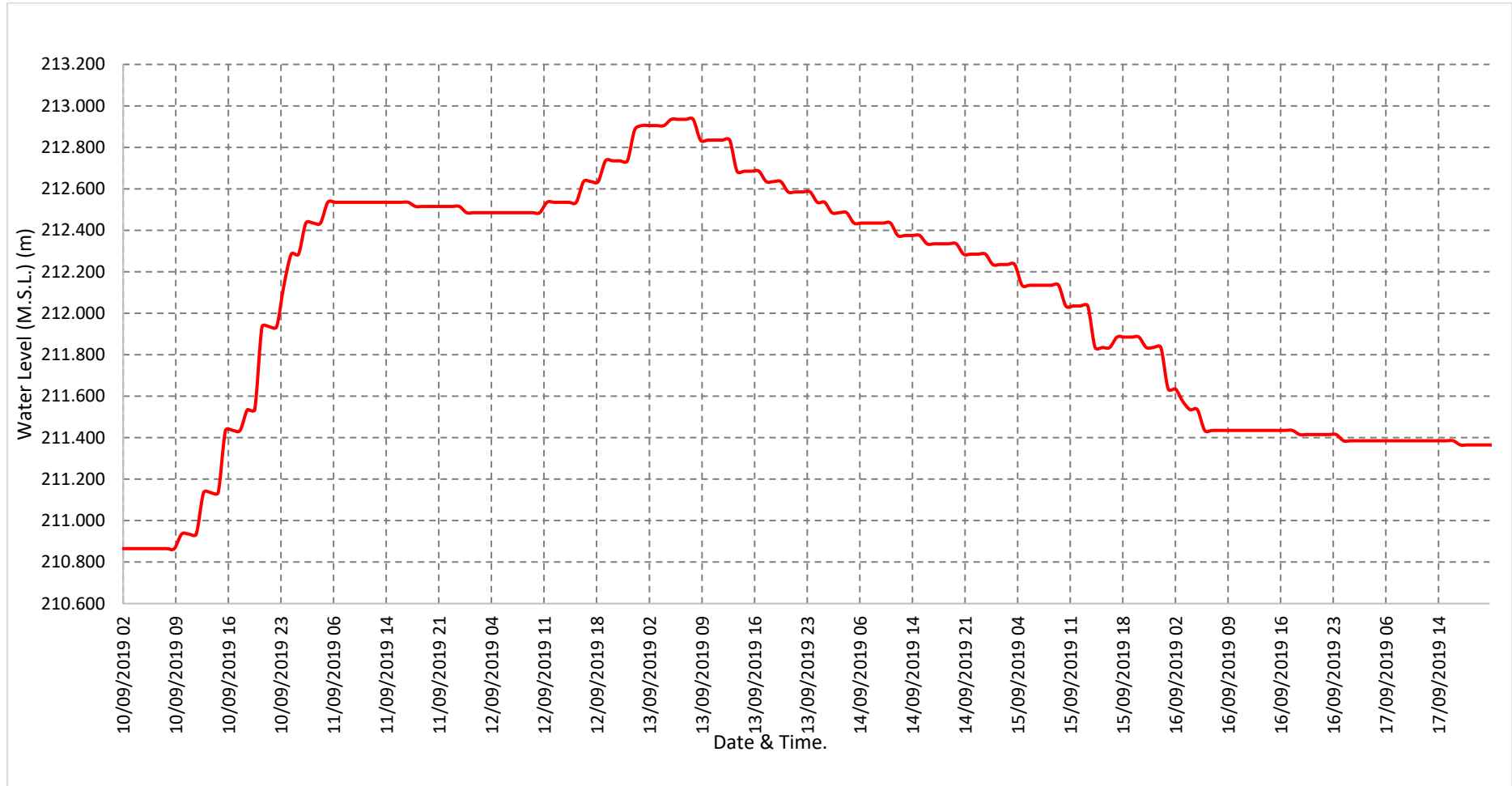
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Kaner at Mendikheda

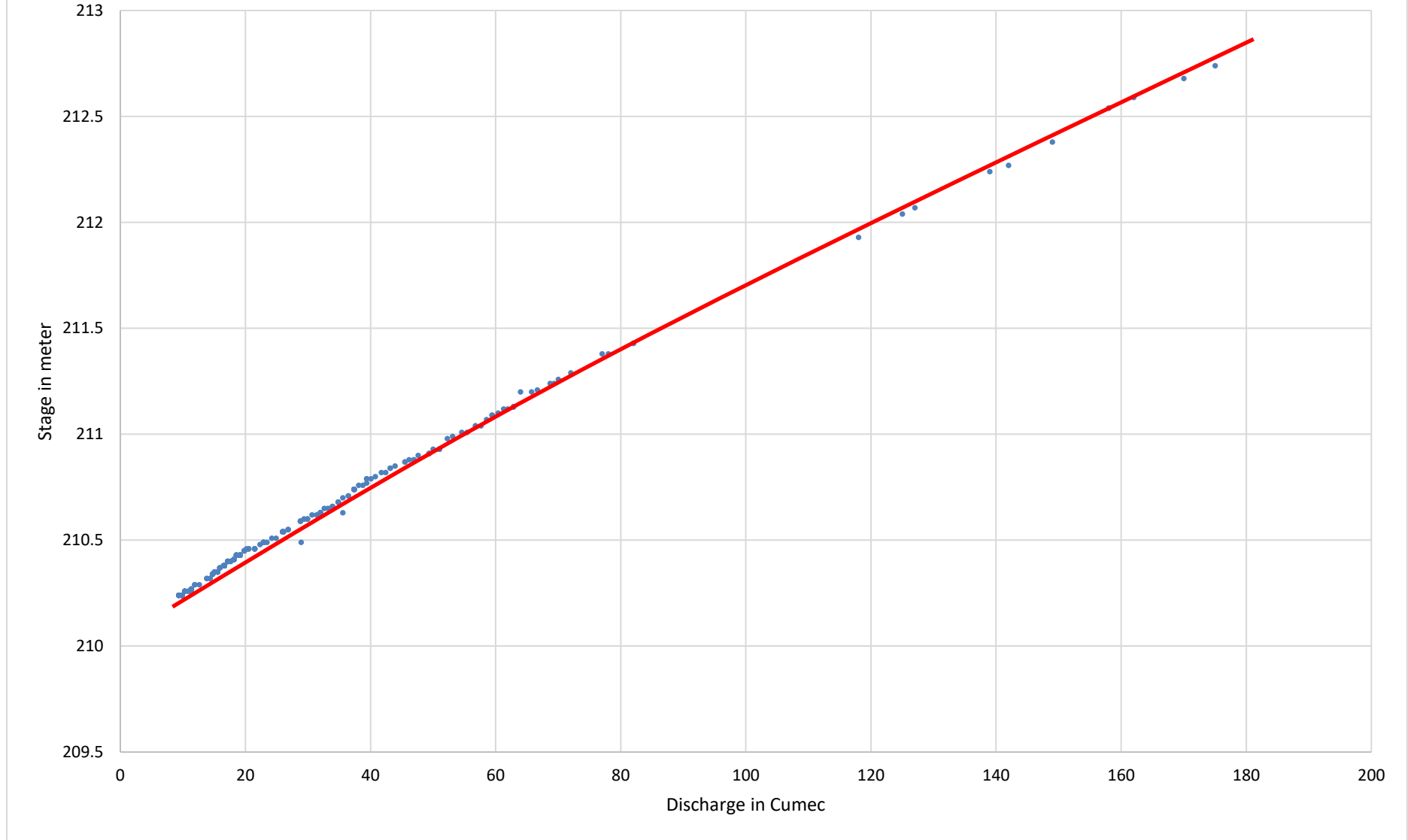
Division: Narmada Division, Bhopal

Local River: Kaner

Sub-Division: MNSD-III, CWC Indore



Site Mendikheda Stage-Discharge Curve 2019-2020.



4.12 Abna at Khandwa.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Abna at Khandwa		Code	:	CW1NAM001466
State	:	Madhya Pradesh		District	:	KHANDWA
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Abna
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-III, Indore
Drainage Area	:	352.03 Sq. Km.		Bank	:	Left
Latitude	:	21°48'55"		Longitude	:	76°20'20"
Current Zero of Gauge (m)	:	296				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
296.0		04/11/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		5.55	301.12	29/07/2019	0	297.92
						Date
						15/06/2019

Stage Discharge Sheet for Abna at Khandwa for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	298.55	1.25	298.98	1.06	298.90	2.45	299.57	1.33	299.01	2.39	299.32
2	0	298.49	1.31	299.00	1.33	299.01	2.15	299.42	1.19	298.59	2.39	299.32
3	0	298.44	1.33	299.01	1.38	299.03	2.04	299.22	1.12	298.92	2.23	299.27
4	0	298.38	1.35	299.02	1.35	299.02	1.91	299.19	1.14	298.93	2.23	299.27
5	0	298.25	2.15	299.42	1.28	298.99	1.79	299.16	1.19	298.95	2.19	299.26
6	0	298.15	1.35	299.02	2.04	299.22	1.66	299.12	1.23	298.97	2.15	299.25
7	0	298.03	1.14	298.93	5.15	300.92	1.56	299.09	1.23	298.97	2.12	299.24
8	0	298.01	1.14	298.93	4.15	300.42	1.45	299.06	1.21	298.96	2.07	299.23
9	0	297.95	1.12	298.92	2.04	299.22	1.17	298.94	1.21	298.96	2.04	299.22
10	0	297.90	1.09	298.92	1.59	299.10	2.15	299.42	1.17	298.94	1.95	299.00
11	0	297.89	1.09	298.91	1.43	299.05	1.66	299.12	1.14	298.93	1.87	299.18
12	0	297.85	1.03	298.89	1.31	299.00	1.23	298.97	1.12	298.92	1.87	299.17
13	0	297.85	0.97	298.87	1.19	298.95	3.35	300.02	1.09	298.91	1.84	299.17
14	0	297.87	0.91	298.85	1.12	298.92	1.59	299.10	1.12	298.92	1.84	299.17
15	0	297.92	0.87	298.83	1.09	298.91	1.43	299.05	1.66	299.12	1.84	299.17
16	0	298.01	0.81	298.81	1.06	298.90	1.23	298.97	2.73	299.38	1.79	299.16
17	0	298.13	0.74	298.78	1.00	298.88	1.35	299.02	2.73	299.38	1.79	299.16
18	0	298.25	0.65	298.75	1.00	298.88	1.35	299.02	2.73	299.38	1.79	299.16
19	0	298.34	0.58	298.72	0.97	298.87	2.39	299.32	2.68	299.37	1.76	299.15
20	0	298.42	0.00	298.68	0.95	298.86	1.59	299.10	2.68	299.37	1.76	299.15
21	0	298.48	0.00	298.65	0.95	298.86	3.15	299.92	2.68	299.37	1.72	299.14
22	0	298.52	0.00	298.62	0.91	298.85	1.59	299.10	2.63	299.36	1.72	299.14
23	0	298.59	0.00	298.59	0.89	298.84	1.43	299.05	2.63	299.36	1.69	299.13
24	0	298.66	0.00	298.58	1.35	299.02	1.48	299.07	2.58	299.35	1.69	299.13
25	0	298.70	0.00	298.60	2.2	299.44	1.35	299.02	2.58	299.35	1.66	299.12
26	0.76	298.79	0.00	298.65	2.39	299.32	1.48	299.07	2.58	299.35	1.59	299.10
27	1.09	298.91	0.00	298.70	1.23	298.97	1.66	299.12	2.63	299.36	1.51	299.08
28	1.12	298.92	0.97	298.87	1.09	298.91	1.94	299.20	2.63	299.36	1.48	299.07
29	1.14	298.93	5.55	301.12	1.35	299.02	1.59	299.10	2.68	299.36	1.46	299.06
30	1.09	298.91	1.48	299.07	1.59	299.10	1.35	299.02	2.73	299.38	1.46	299.06
31			1.06	298.90	2.15	299.42			2.77	299.39		
Ten-Daily Mean												
I Ten-Daily	0	298.22	1.32	299.02	2.14	299.38	1.83	299.22	1.2	298.92	2.18	299.24
II Ten-Daily	0	298.05	0.76	298.81	1.11	298.92	1.72	299.17	1.97	299.17	1.63	299.16
III Ten-Daily	0.52	298.74	0.82	298.94	1.46	299.07	1.7	299.17	2.64	299.36	1.6	299.10
Monthly												
Min.	0	297.85	0	298.58	0.89	298.84	1.17	298.94	1.09	298.59	1.46	299.00
Max.	1.14	298.93	5.55	301.12	5.15	300.92	3.35	300.02	2.77	299.39	2.39	299.32
Mean	0.17	298.34	0.97	298.92	1.57	299.12	1.75	299.19	1.94	299.15	1.8	299.17

Annual Runoff in MCM :25.8

Annual Runoff in mm :73.28

Peak Observed Discharge = 2.77 cumecs on 31/10/2019 Corres. Water Level 299.39 m

Lowest Observed Discharge = 0cumecs on 11/11/2019 Corres. Water Level 299.18 m

Stage Discharge Sheet for Abna at Khandwa for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	1.46	299.06	1.03	298.89	\$	298.65	#	#	#	#	#	#
2	1.43	299.05	1.00	298.88	\$	298.65	#	#	#	#	#	#
3	1.4	299.04	0.95	298.86	\$	298.65	#	#	#	#	#	#
4	1.38	299.03	0.89	298.84	\$	298.65	#	#	#	#	#	#
5	1.35	299.02	0.87	298.83	\$	298.65	#	#	#	#	#	#
6	1.33	299.01	0.81	298.81	\$	298.64	#	#	#	#	#	#
7	1.31	299	0.78	298.8	\$	298.64	#	#	#	#	#	#
8	1.28	298.99	0.76	298.79	\$	298.64	#	#	#	#	#	#
9	1.25	298.98	0.74	298.78	\$	298.64	#	#	#	#	#	#
10	1.23	298.97	0.68	298.76	\$	298.64	#	#	#	#	#	#
11	1.21	298.96	0.65	298.75	\$	298.64	#	#	#	#	#	#
12	1.19	298.95	0.63	298.74	\$	298.64	#	#	#	#	#	#
13	1.17	298.94	0.61	298.73	\$	298.63	#	#	#	#	#	#
14	1.14	298.93	0.58	298.72	\$	298.63	#	#	#	#	#	#
15	1.12	298.92	no flow	298.7	\$	298.63	#	#	#	#	#	#
16	1.12	298.92	no flow	298.69	\$	298.63	#	#	#	#	#	#
17	1.12	298.92	no flow	298.68	\$	298.63	#	#	#	#	#	#
18	1.12	298.92	no flow	298.67	\$	298.63	#	#	#	#	#	#
19	1.12	298.92	no flow	298.67	\$	298.63	#	#	#	#	#	#
20	1.09	298.91	no flow	298.67	\$	298.62	#	#	#	#	#	#
21	1.09	298.91	no flow	298.66	\$	298.62	#	#	#	#	#	#
22	1.09	298.91	no flow	298.66	\$	298.62	#	#	#	#	#	#
23	1.09	298.91	no flow	298.66	\$	298.62	#	#	#	#	#	#
24	1.09	298.91	no flow	298.65	\$	298.62	#	#	#	#	#	#
25	1.09	298.91	no flow	298.65	\$	298.62	#	#	#	#	#	#
26	1.06	298.9	no flow	298.65	\$	298.62	#	#	#	#	#	#
27	1.06	298.9	no flow	298.64	\$	298.63	#	#	#	#	#	#
28	1.06	298.9	no flow	298.64	\$	298.63	#	#	#	#	#	#
29	1.06	298.9	no flow	298.64	\$	298.63	#	#	#	#	#	#
30	1.06	298.9	no flow	298.64			#	#			#	#
31	1.06	298.9	no flow	298.64			#	#			#	#
Ten-Daily Mean												
I Ten-Daily	1.34	299.01	0.85	298.82	0	298.65	0	0	0	0	0	0
II Ten-Daily	1.14	298.93	0.25	298.7	0	298.63	0	0	0	0	0	0
III Ten-Daily	1.07	298.9	0	298.65	0	298.62	0	0	0	0	0	0
Monthly												
Min.	1.06	298.9	0	298.64	0	298.62	0	0	0	0	0	0
Max.	1.46	299.06	1.03	298.89	0	298.65	0	0	0	0	0	0
Mean	1.19	298.95	0.37	298.72	0	298.63	0	0	0	0	0	0

Peak Computed Discharge = 5.55 cumecs on 29/7/2019 Corres. Water Level 301.12 m

Lowest Computed Discharge = 0cumecs on 15/6/2019 Corres. Water Level 297.92 m

Note- "\$"- No Flow , #- Dry

Monthly Runoff for the Year (2019-2020)

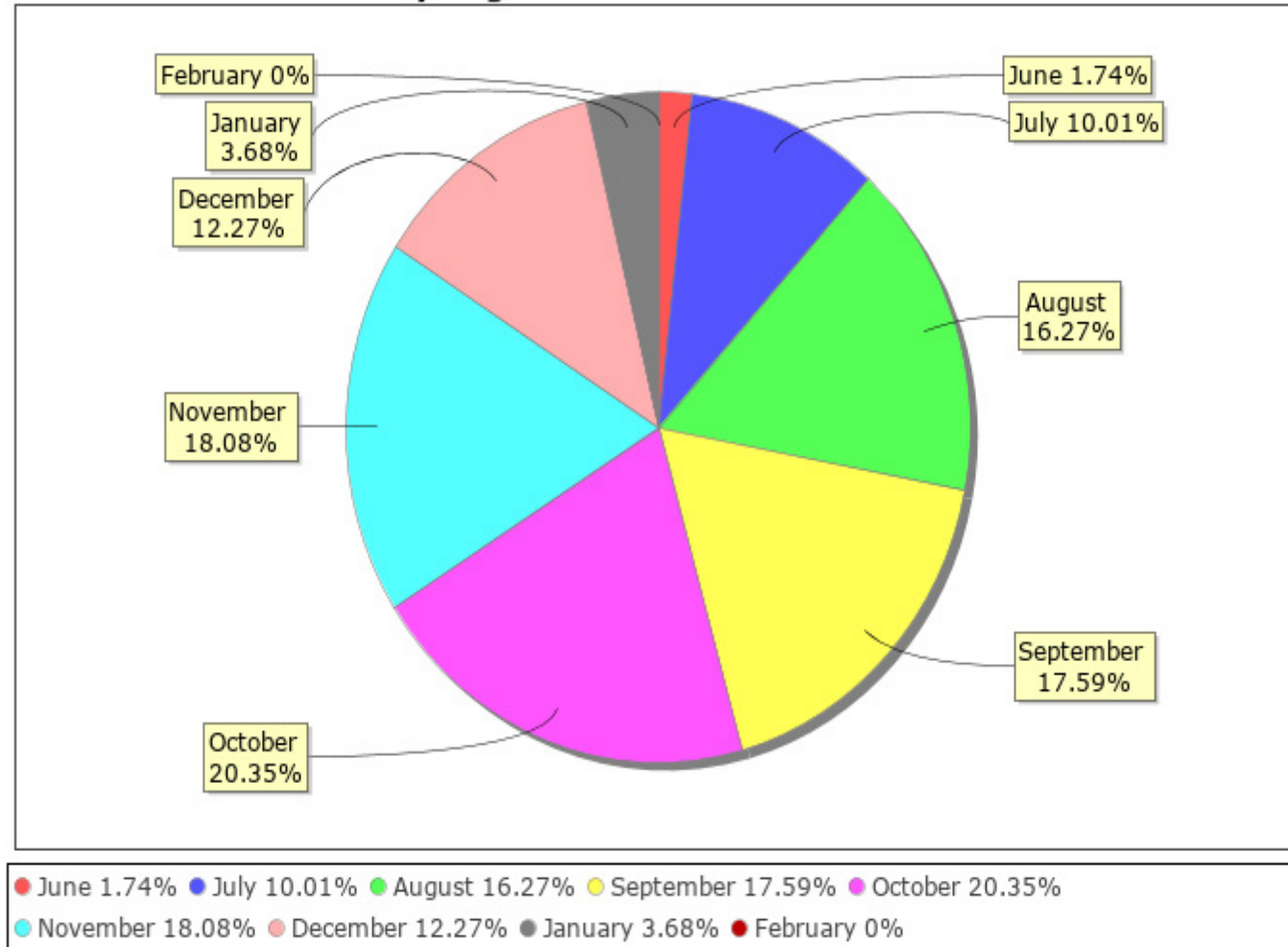
Station Name: Abna at Khandwa

Local River: Abna

Division: Narmada Division, Bhopal

Sub-Division: MNSD-III, CWC Indore

Monthly Avg Runoff Water Year: 2019-2020



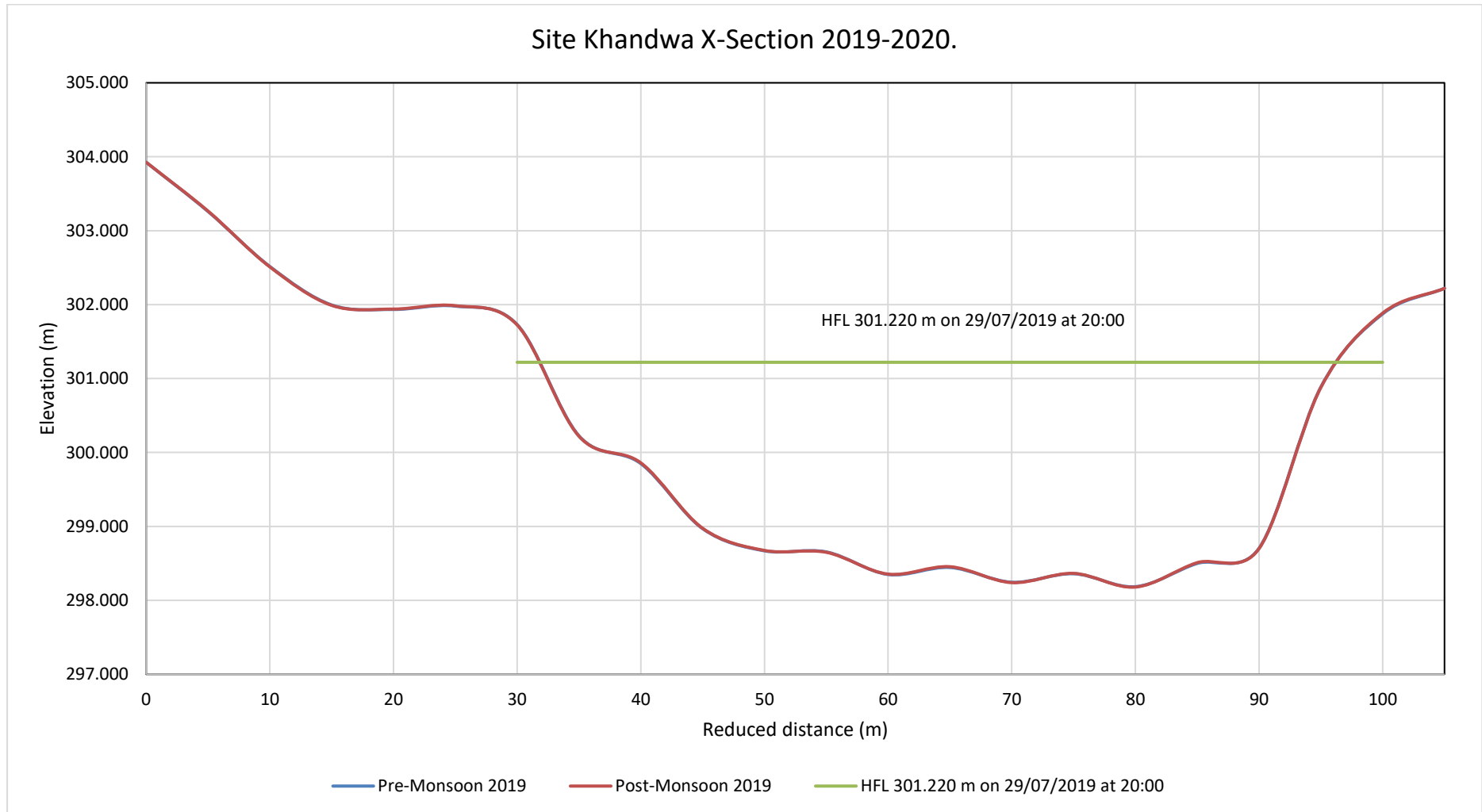
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Abna at Khandwa

Division: Narmada Division, Bhopal

Local River: Abna

Sub-Division: MNSD-III, CWC Indore



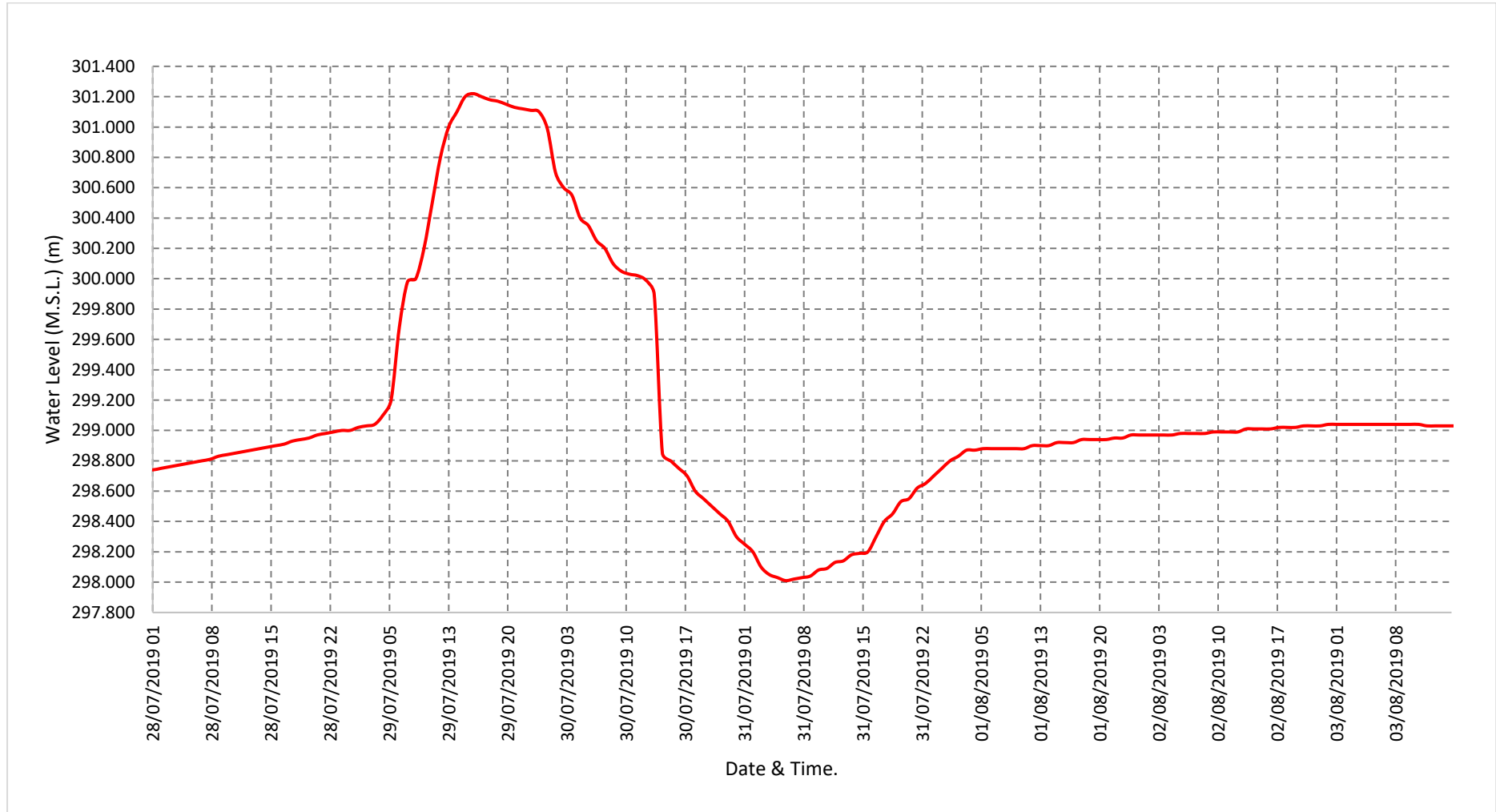
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Abna at Khandwa

Division: Narmada Division, Bhopal

Local River: Abna

Sub-Division: MNSD-III, CWC Indore



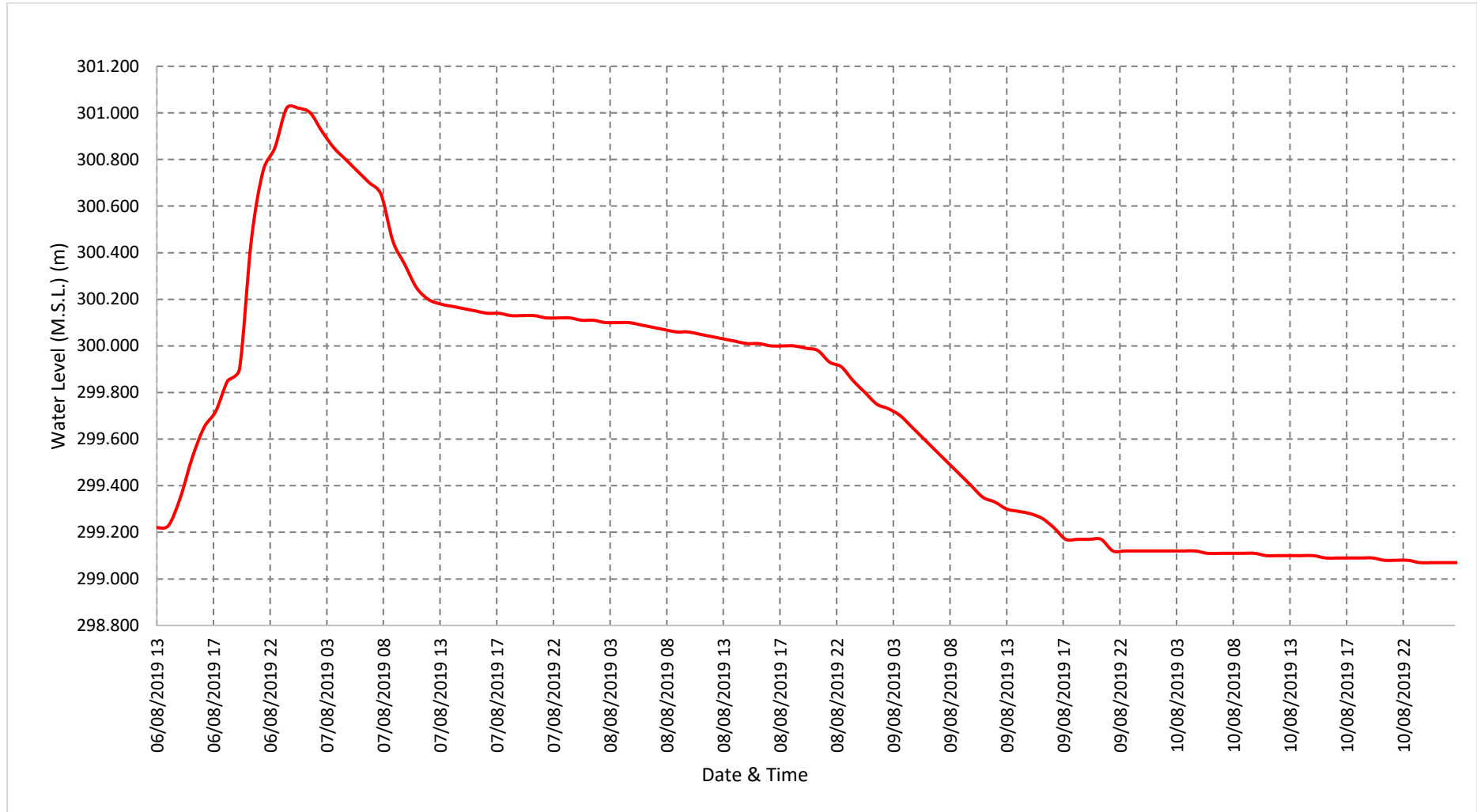
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Abna at Khandwa

Division: Narmada Division, Bhopal

Local River: Abna

Sub-Division: MNSD-III, CWC Indore



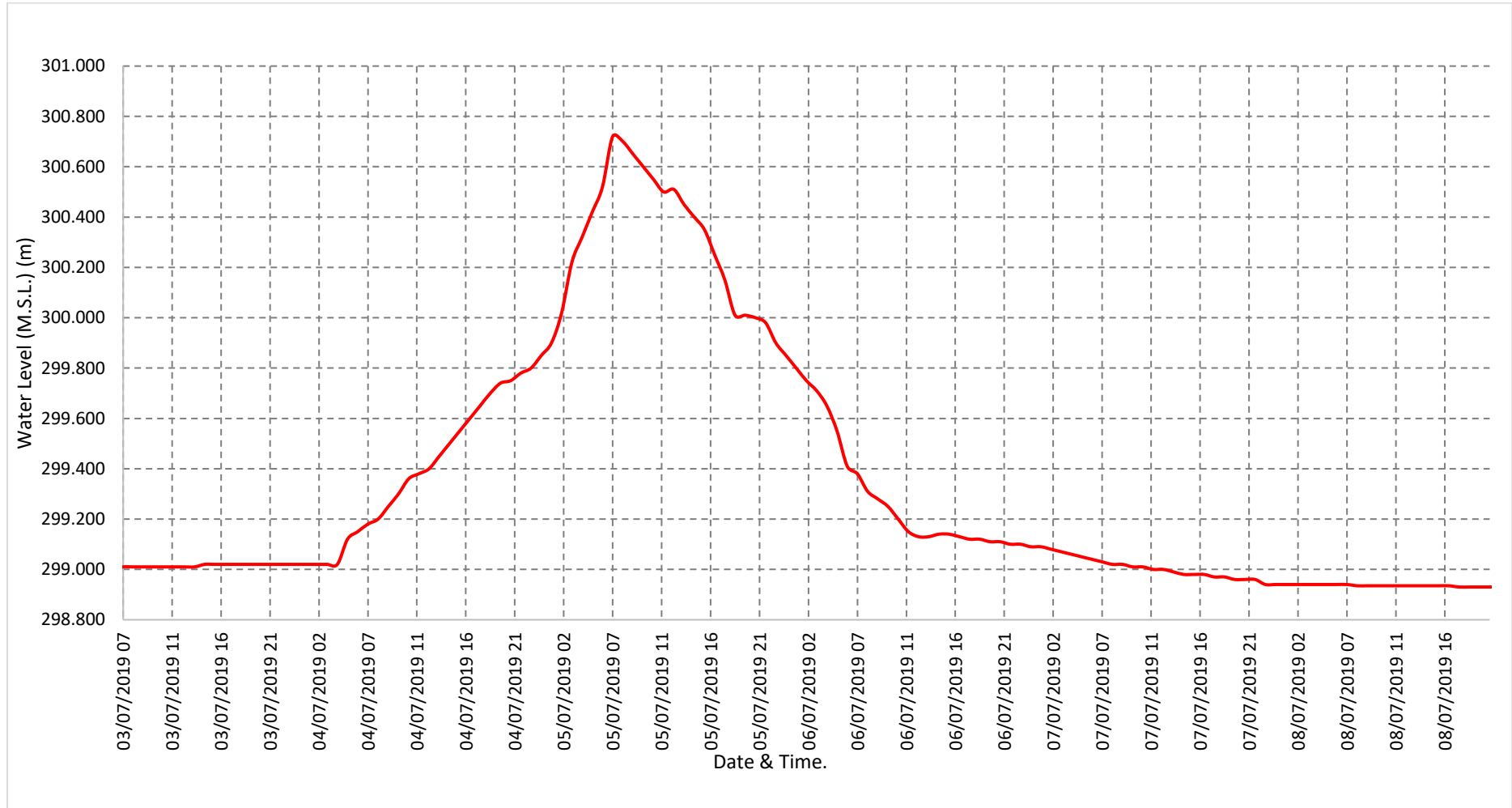
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Abna at Khandwa

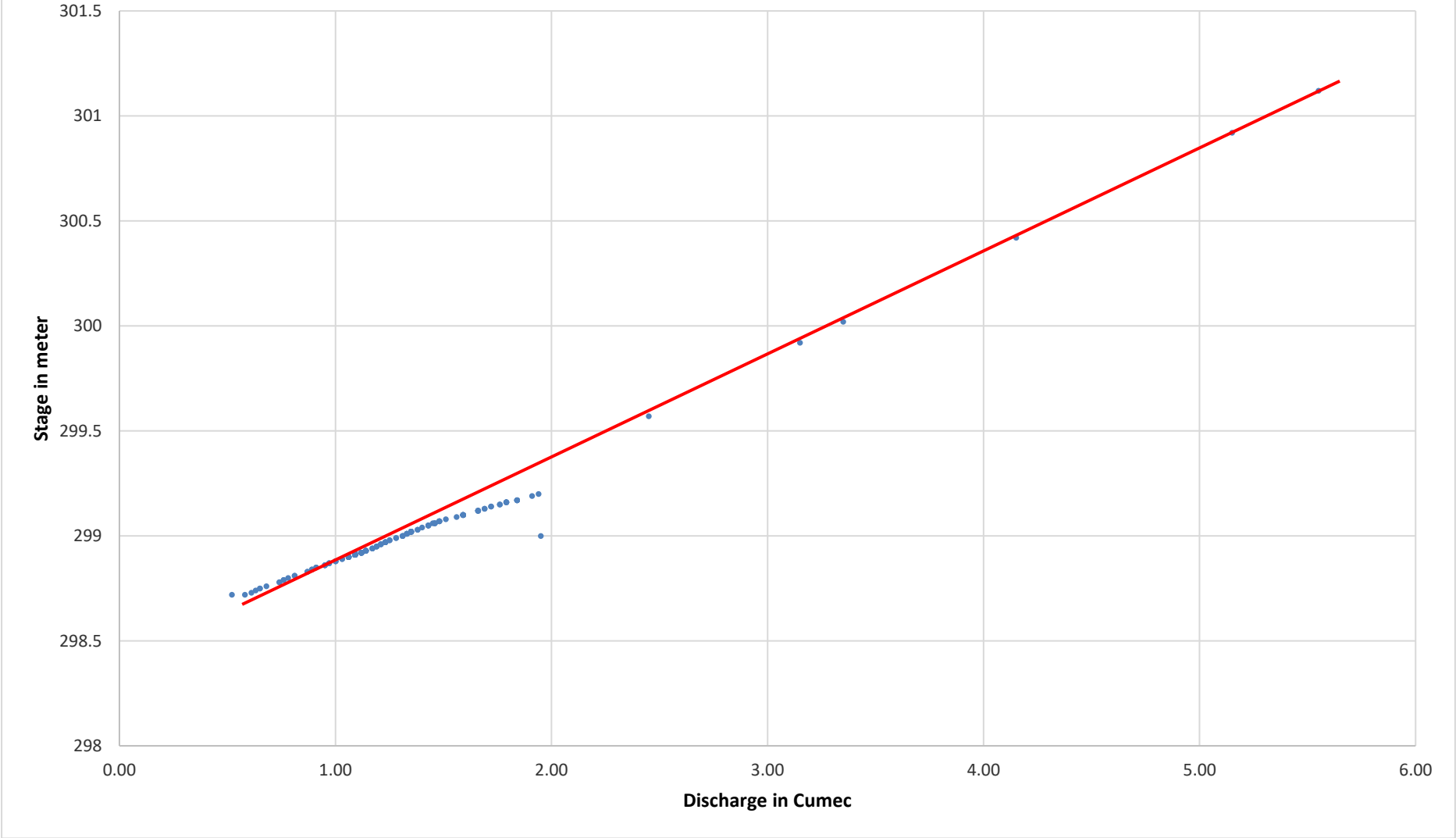
Division: Narmada Division, Bhopal

Local River: Abna

Sub-Division: MNSD-III, CWC Indore



Site Khandwa Stage-Discharge Curve 2019-2020.



4.13 Chhota Tawa at Bhamgarh.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	: 2019 - 2020	
Site	:	Chotatawa at Bhamgarh		Code	: CW1NAM001450	
State	:	Madhya Pradesh		District	: Khandwa	
Basin	:	Narmada		Independent River	: Narmada	
Tributary	:	Chhota Tawa		Sub Tributary	: -	
Sub-Sub Tributary	:	-		Local River	: Chhota Tawa	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	: Middle Narmada Sub-Division-II, Bhopal	
Drainage Area	:	2275.93 Sq. Km.		Bank	: Right	
Latitude	:	21°50'36"		Longitude	: 76°30'16"	
Current Zero of Gauge (m)	:	387				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
387.0		12/01/2021				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	1262.13	394	29/07/2019	0	-	01-06-2019

Stage Discharge Sheet for Chhota Tawa at Bhamgarh for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	127.73	388.70	153.63	389.60	480.00	392.00	74.11	389.50	35.26	387.80
2	#	#	131.56	388.65	89.41	389.45	539.21	392.70	50.00	389.00	33.27	388.75
3	#	#	122.70	388.60	74.83	389.10	426.64	391.80	24.41	388.85	30.00	388.70
4	#	#	120.00	388.60	65.00	389.00	417.84	391.50	23.26	388.70	28.80	388.70
5	#	#	120.70	388.60	65.98	388.85	413.33	391.30	12.18	388.50	27.28	388.69
6	#	#	33.85	387.80	63.39	388.80	99.53	390.60	6.26	388.40	18.04	388.68
7	#	#	43.12	387.70	57.29	388.70	74.11	389.50	6.26	388.40	18.04	388.68
8	#	#	17.96	387.20	91.17	388.75	50.00	389.00	4.66	388.20	15.21	388.67
9	#	#	20.48	387.50	63.39	388.80	23.26	388.70	5.00	388.20	11.24	388.66
10	#	#	17.96	387.20	147.82	389.50	25.00	388.70	5.70	388.10	15.00	388.65
11	#	#	25.89	387.06	450.00	390.90	22.16	388.60	24.08	388.95	11.01	388.65
12	#	#	27.44	387.05	623.40	392.86	19.73	388.30	22.82	388.90	12.00	388.64
13	#	#	28.02	387.04	115.90	389.10	70.03	388.80	20.00	388.80	10.67	388.64
14	#	#	30.00	387.06	31.05	388.70	71.55	389.60	22.12	388.80	10.12	388.63
15	#	#	35.00	387.09	40.00	388.50	80.00	389.60	21.80	388.75	6.87	388.62
16	#	#	60.00	387.50	44.86	388.30	81.55	389.60	14.88	388.70	6.93	388.61
17	#	#	122.87	387.90	44.86	388.30	242.93	390.40	13.63	388.65	6.00	388.60
18	#	#	78.77	387.80	10.00	388.00	100.69	390.10	7.24	388.60	2.58	388.50
19	#	#	72.02	387.70	2.87	387.95	237.25	390.30	7.08	388.55	3.89	388.40
20	#	#	66.49	387.60	3.08	387.85	240.59	390.47	5.00	388.50	1.05	388.30
21	#	#	65.00	387.60	1.29	387.80	58.40	389.85	5.63	388.50	2.33	388.25
22	#	#	54.70	387.50	0.89	387.75	50.00	389.50	7.19	388.49	6.33	388.22
23	#	#	47.08	387.40	0.73	387.70	46.58	389.45	6.97	388.48	13.68	388.15
24	#	#	36.05	387.30	0.61	387.59	24.41	388.85	5.65	388.47	10.00	388.12
25	#	#	31.00	387.20	1.00	387.60	22.49	388.80	5.89	388.46	9.80	388.10
26	#	#	54.70	387.50	1.94	387.65	49.70	389.40	5.91	388.45	8.00	388.00
27	#	#	80.30	387.60	111.69	388.83	49.97	389.40	20.00	388.50	8.00	388.00
28	#	#	220.00	389.38	311.53	390.40	27.52	388.75	23.60	388.50	20.00	388.50
29	#	#	1262.10	394.00	455.64	391.50	50.00	389.00	64.12	389.20	60.00	389.40
30	#	#	340.57	390.35	375.75	391.80	45.04	389.30	64.12	389.20	120.00	390.90
31			280.28	389.80	390.53	392.10			16.17	388.90		
Ten-Daily Mean												
I Ten-Daily	0	0	75.61	388.06	87.19	389.06	254.89	390.58	21.18	388.59	23.21	388.60
II Ten-Daily	0	0	54.65	387.38	136.60	389.05	116.65	389.58	15.87	388.72	7.11	388.56
III Ten-Daily	0	0	224.71	388.69	150.15	389.16	42.41	389.23	20.48	388.65	25.81	388.56
Monthly												
Min.	0	0	17.96	387.04	0.61	387.59	19.73	388.30	4.66	388.10	1.05	387.80
Max.	0	0	1262.13	394.00	623.40	392.86	539.21	392.70	74.11	389.50	120.00	390.90
Mean	0	0	118.32	388.04	124.65	389.09	137.98	389.80	19.18	388.65	18.71	388.57

Annual Runoff in MCM
:1479.71

Annual Runoff in mm
:650.16

Peak Observed Discharge = 1262.13 cumecs on 29/7/2019 Corres. Water Level 394 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

#- Dry

Stage Discharge Sheet for Chhota Tawa at Bhamgarh for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	69.81	390.60	35.42	390.10	17.91	389.55	30.00	389.40	14.33	389.34	10.96	389.29
2	69.81	390.60	35.44	390.10	20.00	389.55	31.48	389.40	18.00	389.34	10.96	389.29
3	69.81	390.60	35.00	390.10	17.91	389.55	28.99	389.40	14.33	389.34	10.00	389.29
4	69.81	390.60	34.55	390.00	17.91	389.55	28.99	389.40	14.33	389.34	10.96	389.29
5	61.64	390.50	34.40	390.00	17.91	389.55	29.07	389.40	14.33	389.34	11.83	389.27
6	61.64	390.50	33.90	389.99	17.91	389.55	20.24	389.40	18.00	389.34	11.83	389.27
7	61.64	390.50	33.65	389.99	17.91	389.55	20.80	389.40	4.25	389.33	11.83	389.27
8	65.00	390.50	33.00	389.98	17.91	389.55	30.00	389.40	14.33	389.33	11.83	389.27
9	61.64	390.50	32.90	389.98	20.00	389.55	31.48	389.40	14.33	389.33	11.83	389.27
10	61.64	390.50	32.89	389.98	15.65	389.50	31.48	389.40	15.00	389.33	8.00	389.27
11	44.49	390.40	30.84	389.96	15.65	389.55	15.54	389.35	14.33	389.33	11.83	389.27
12	44.49	390.40	29.96	389.96	15.65	389.55	15.54	389.35	15.00	389.33	12.64	389.25
13	44.49	390.40	29.00	389.95	15.65	389.55	15.54	389.35	15.54	389.35	12.64	389.25
14	44.49	390.40	28.75	389.95	15.65	389.55	15.52	389.35	18.00	389.35	12.64	389.25
15	50.00	390.40	27.45	389.94	15.65	389.55	18.00	389.35	15.52	389.35	12.64	389.25
16	44.49	390.40	27.10	389.93	15.00	389.40	15.52	389.35	11.77	389.35	12.64	389.25
17	44.49	390.40	26.87	389.91	16.46	389.45	18.11	389.35	11.48	389.30	7.00	389.25
18	35.44	390.30	25.12	389.90	16.45	389.45	18.17	389.35	11.63	389.30	12.64	389.25
19	35.44	390.30	24.45	389.87	16.45	389.45	19.64	389.35	13.00	389.30	12.64	389.25
20	35.44	390.30	24.01	389.85	16.45	389.45	18.89	389.35	11.78	389.30	12.64	389.25
21	34.67	390.20	23.80	389.81	16.45	389.45	17.53	389.37	11.78	389.30	10.46	389.23
22	35.00	390.20	22.54	389.78	16.45	389.45	18.00	389.37	10.95	389.29	10.46	389.23
23	34.67	390.20	21.68	389.75	15.00	389.45	17.55	389.37	10.96	389.29	10.46	389.23
24	34.67	390.20	21.10	389.70	16.45	389.45	17.55	389.36	10.00	389.29	8.00	389.23
25	35.00	390.20	20.85	389.68	16.45	389.45	17.55	389.36	10.96	389.29	10.46	389.23
26	34.67	390.20	20.14	389.63	17.93	389.40	17.50	389.36	10.00	389.29	10.46	389.23
27	34.67	390.20	19.70	389.59	17.93	389.40	17.61	389.35	10.96	389.29	10.46	389.23
28	34.67	390.20	19.24	389.58	17.93	389.40	17.61	389.35	10.96	389.29	10.46	389.23
29	35.00	390.15	18.50	389.57	17.93	389.40	18.00	389.35	10.96	389.29	10.46	389.23
30	35.44	390.10	18.08	389.56			17.97	389.35	10.96	389.29	10.46	389.23
31	35.44	390.10	17.85	389.55			17.52	389.35			8.00	389.23
Ten-Daily Mean												
I Ten-Daily	65.24	390.54	34.11	390.02	18.10	389.54	28.25	389.40	14.12	389.34	11.00	389.28
II Ten-Daily	42.33	390.37	27.36	389.92	15.91	389.49	17.05	389.35	13.80	389.33	12.00	389.25
III Ten-Daily	34.90	390.18	20.32	389.65	16.95	389.43	17.67	389.36	10.85	389.29	10.01	389.23
Monthly												
Min.	34.67	390.10	17.85	389.55	15.00	389.40	15.52	389.35	4.25	389.29	7.00	389.23
Max.	69.81	390.60	35.44	390.10	20.00	389.55	31.48	389.40	18.00	389.35	12.64	389.29
Mean	47.49	390.36	27.26	389.87	16.98	389.49	20.99	389.37	12.93	389.32	11.00	389.25

Peak Computed Discharge = 480 cumecs on 1/9/2019 Corres. Water Level 392 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

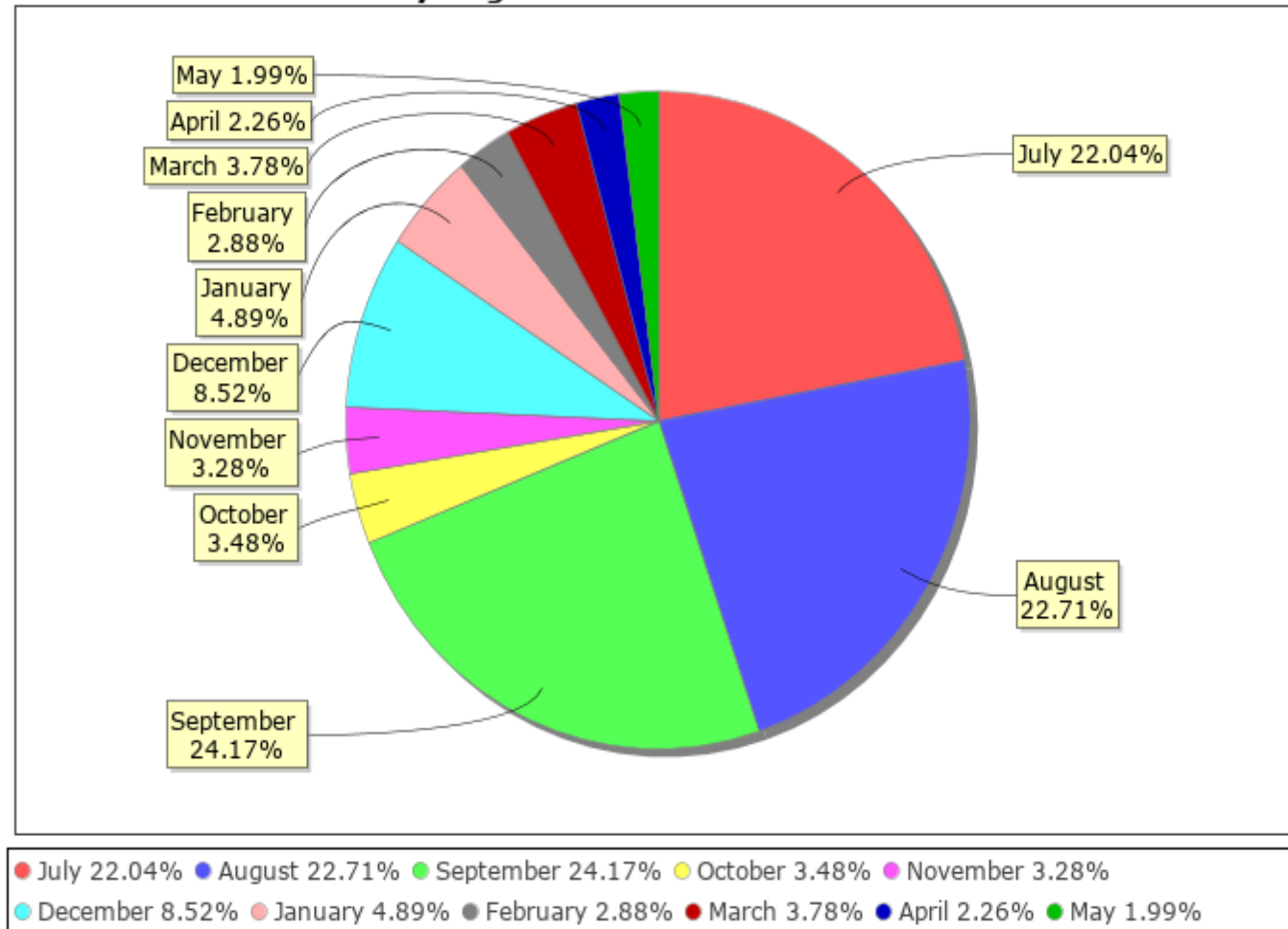
Station Name: Chhota Tawa at Bhamgarh

Local River: Chhota Tawa

Division: Narmada Division, Bhopal

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



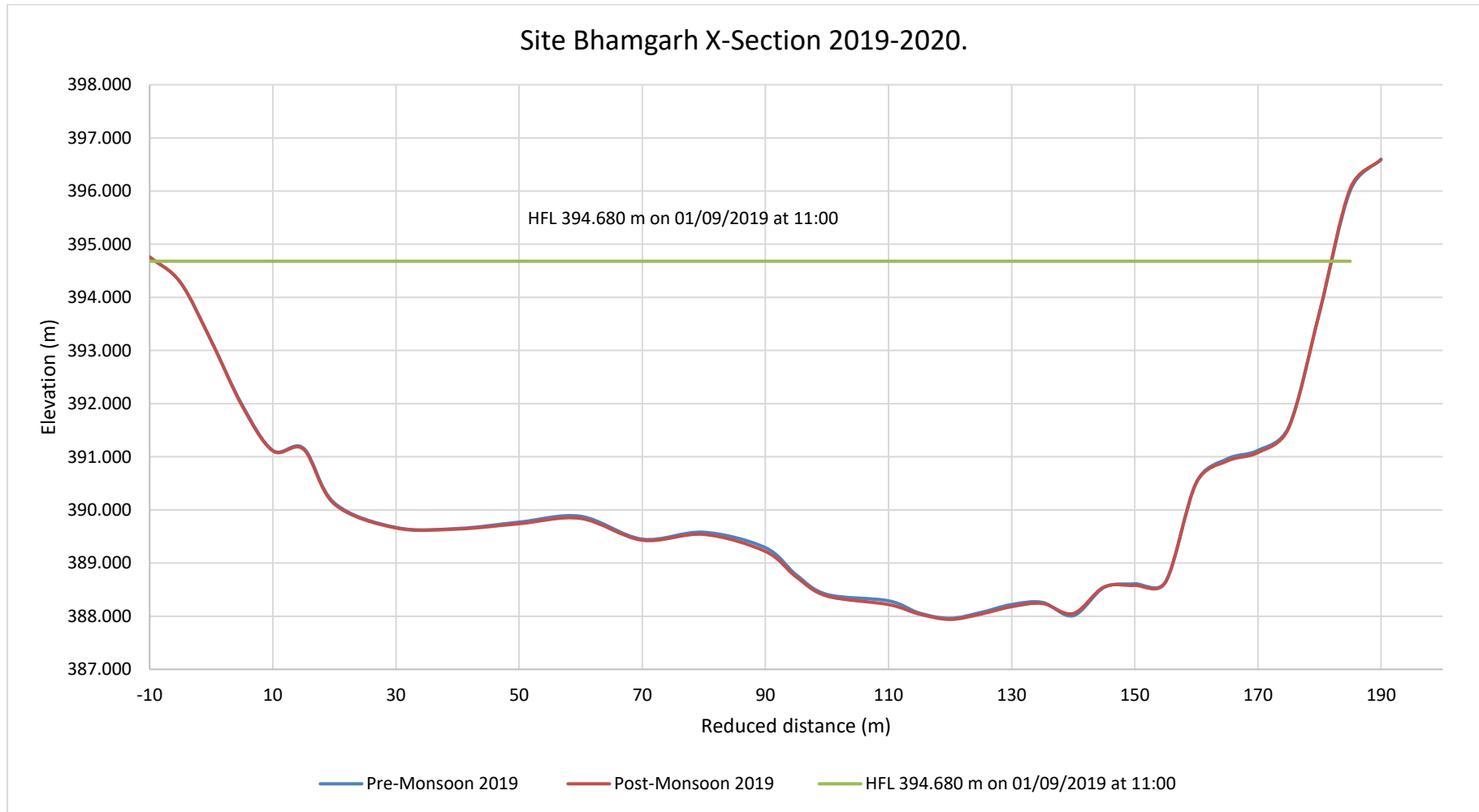
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Chhota Tawa at Bhamgarh

Division: Narmada Division, Bhopal

Local River: Chhota Tawa

Sub-Division: MNSD-II, CWC Bhopal



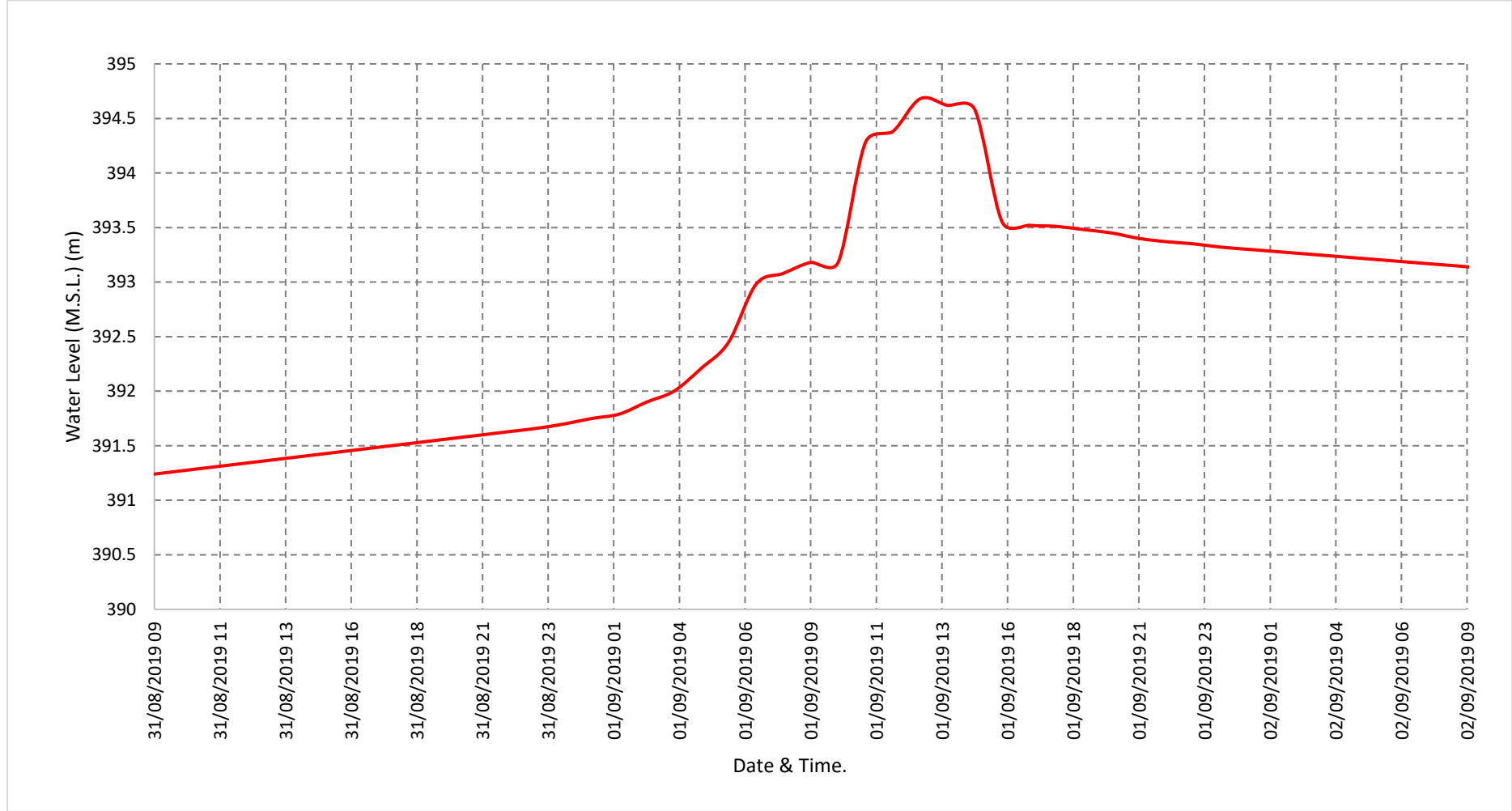
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Chhota Tawa at Bhamgarh

Division: Narmada Division, Bhopal

Local River: Chhota Tawa

Sub-Division: MNSD-II, CWC Bhopal



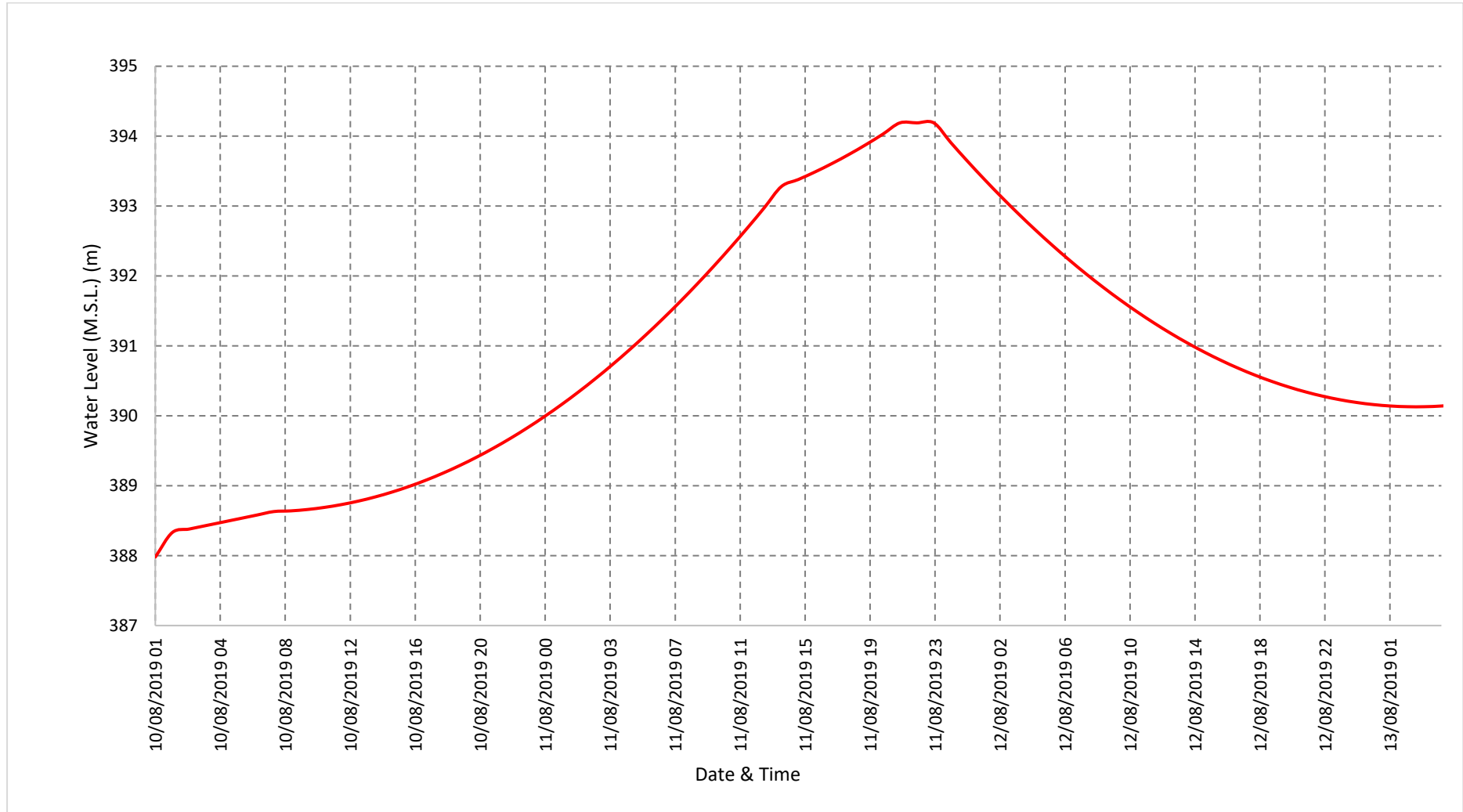
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Chhota Tawa at Bhamgarh

Division: Narmada Division, Bhopal

Local River: Chhota Tawa

Sub-Division: MNSD-II, CWC Bhopal



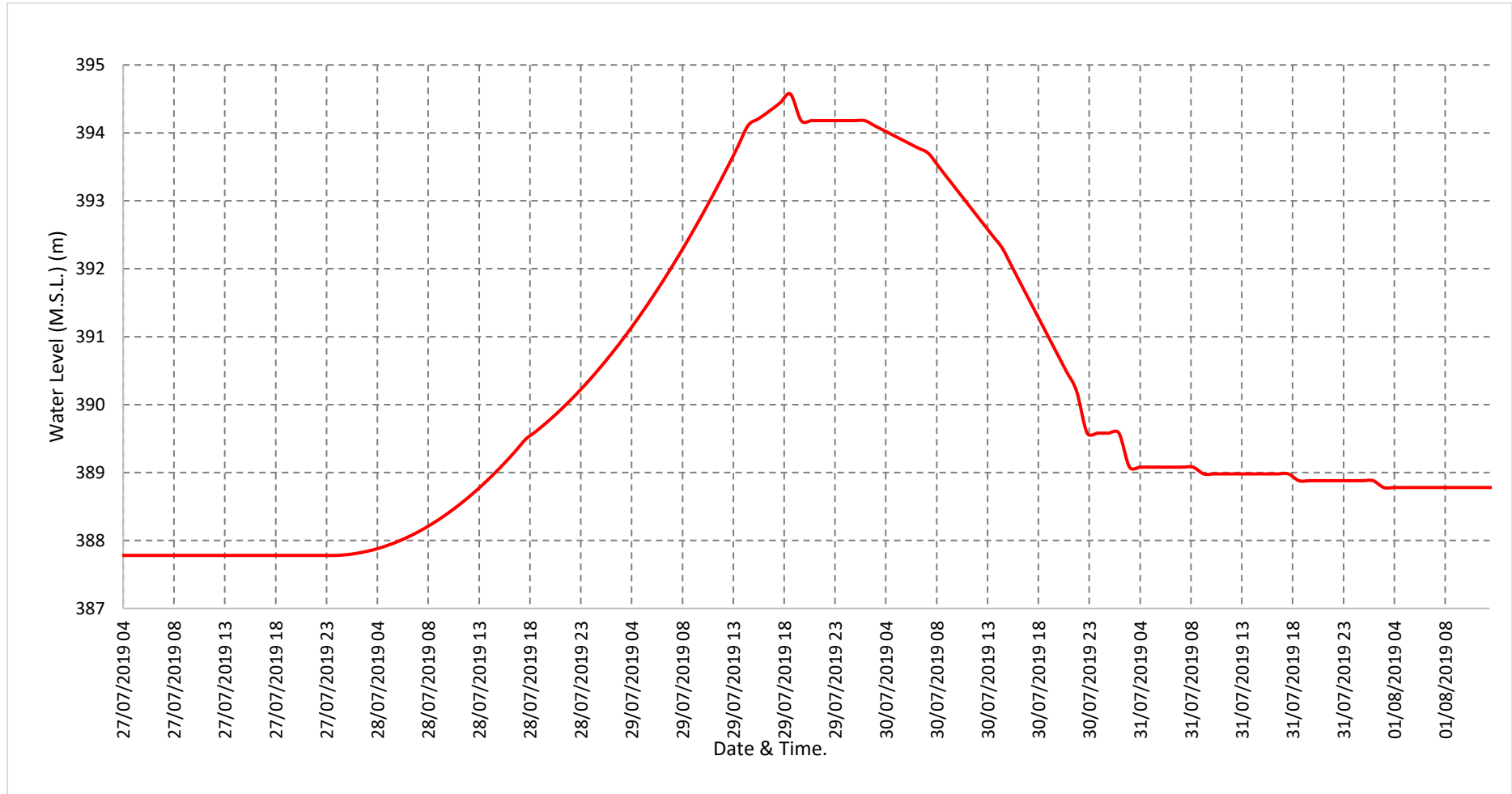
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Chhota Tawa at Bhamgarh

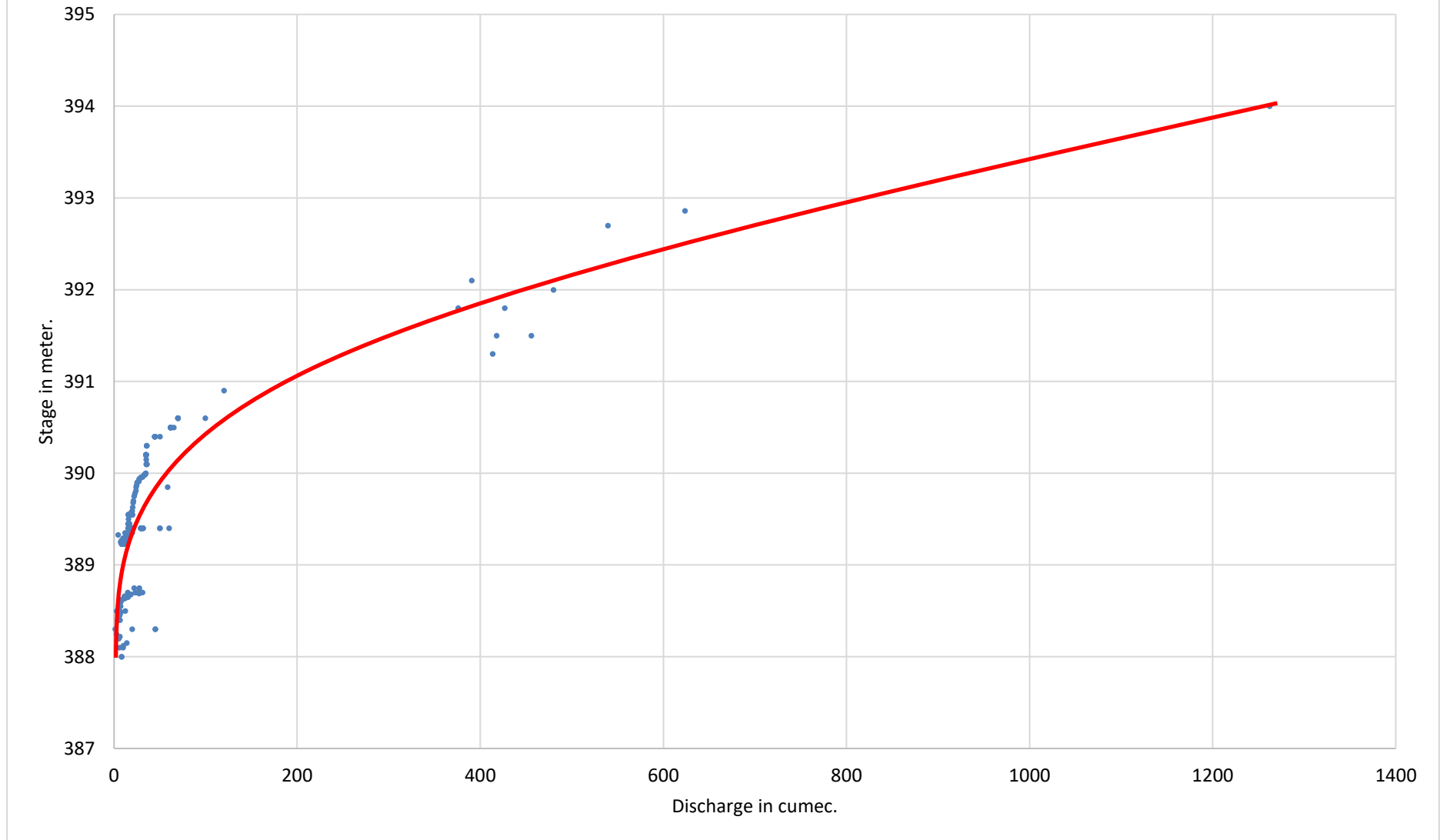
Division: Narmada Division, Bhopal

Local River: Chhota Tawa

Sub-Division: MNSD-II, CWC Bhopal



Site Bhamgarh SD Curve 2019-2020.



4.14 Kalimachak at Charuwa.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Kalimachak at Charuwa		Code	:	CW1NAM001452
State	:	Madhya Pradesh		District	:	HARDA
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Kalimachak
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	223.375 Sq. Km.		Bank	:	Right
Latitude	:	22°04'26"		Longitude	:	76°54'53"
Current Zero of Gauge (m)	:	275				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
275.0		18/11/2020				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	405.3	281.5	10/09/2019	0	-	01/06/2019

Stage Discharge Sheet for Kalimachak at Charuwa for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	§	§	16.90	277.20	86.00	278.30	20.00	277.20	110.20	278.40	5.90	277.20
2	§	§	19.00	277.30	73.20	278.10	19.30	277.20	86.00	278.30	5.94	277.20
3	§	§	21.40	277.40	73.20	278.10	133.30	278.90	86.00	278.30	5.00	277.20
4	§	§	20.20	277.30	67.10	277.80	291.50	281.00	78.20	278.20	6.00	277.25
5	§	§	24.20	277.50	34.90	277.80	133.30	278.90	71.00	278.20	5.93	277.30
6	§	§	34.60	277.75	30.20	277.60	45.70	277.90	73.20	278.10	6.00	277.30
7	§	§	31.70	277.60	169.60	279.00	86.00	278.30	73.20	278.10	6.30	277.30
8	§	§	24.20	277.50	169.60	279.00	91.20	278.90	70.40	278.00	5.00	277.25
9	§	§	19.00	277.30	188.30	279.20	207.30	280.00	70.40	278.00	5.20	277.20
10	§	§	15.00	277.00	140.90	278.80	405.30	281.50	41.50	277.90	5.00	277.20
11	§	§	3.90	276.60	137.30	278.60	270.30	280.80	38.20	277.80	5.00	277.20
12	§	§	3.90	276.60	125.40	278.60	216.70	280.30	36.20	277.60	5.20	277.20
13	§	§	3.90	276.50	110.20	278.40	260.60	280.70	35.60	277.60	6.12	277.25
14	§	§	4.20	276.70	197.20	279.30	198.80	279.90	35.60	277.60	6.01	277.25
15	§	§	3.50	277.40	205.00	279.80	194.40	279.60	25.80	277.60	6.00	277.25
16	§	§	3.50	277.40	133.90	278.70	168.60	279.50	25.80	277.60	7.30	277.20
17	§	§	3.50	276.40	86.00	278.30	159.30	279.30	25.80	277.40	5.00	277.20
18	§	§	3.10	276.35	87.30	278.80	159.30	279.30	22.40	277.30	7.80	277.20
19	§	§	3.20	276.30	149.70	278.90	188.30	279.40	22.40	277.30	6.10	277.20
20	§	§	3.20	276.30	123.30	278.55	73.20	278.15	22.40	277.30	5.90	277.25
21	§	§	2.90	276.25	168.60	279.50	139.90	278.90	20.30	277.20	6.20	277.25
22	§	§	3.10	276.25	168.60	279.50	134.70	278.60	16.50	277.10	6.01	277.25
23	§	§	2.60	276.15	140.90	278.80	133.90	278.70	16.50	277.10	5.30	277.30
24	§	§	2.40	276.10	86.00	278.30	169.60	279.00	16.50	277.10	15.00	277.30
25	§	§	2.40	276.10	87.35	278.40	140.90	278.80	16.50	277.10	5.20	277.25
26	§	§	2.00	276.10	86.00	278.30	133.90	278.70	16.50	277.10	4.97	277.20
27	§	§	2.90	276.20	122.90	278.50	122.90	278.50	16.50	277.10	7.00	277.25
28	§	§	207.30	280.00	122.90	278.50	125.40	278.60	16.50	277.10	7.30	277.25
29	§	§	78.20	278.20	168.60	279.50	122.30	279.50	16.50	277.10	7.10	277.30
30	§	§	70.40	278.00	285.90	280.80	122.90	278.50	20.30	277.20	7.10	277.30
31			73.20	278.10	168.60	279.50			20.30	277.20		
Ten-Daily Mean												
I Ten-Daily	0	0	22.62	277.38	103.30	278.37	143.29	278.98	76.01	278.15	5.63	277.24
II Ten-Daily	0	0	3.59	276.65	135.53	278.79	188.95	279.69	29.02	277.51	6.04	277.22
III Ten-Daily	0	0	40.67	277.04	146.03	279.05	134.64	278.78	17.54	277.13	7.12	277.26
Monthly												
Min.	0	0	2.00	276.10	30.20	277.60	19.30	277.20	16.50	277.10	4.97	277.20
Max.	0	0	207.30	280.00	285.90	280.80	405.30	281.50	110.20	278.40	15.00	277.30
Mean	0	0	22.29	277.03	128.29	278.74	155.63	279.15	40.86	277.60	6.26	277.24

Annual Runoff in MCM : **962.81** Annual Runoff in mm : **4310.28**
 Peak Observed Discharge = 405.3 cumecs on 10/9/2019 Corres. Water Level 281.5 m
 Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

§-No Flow

Stage Discharge Sheet for Kalimachak at Charuwa for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	6.00	277.20	1.67	277.12	1.70	277.09	1.50	277.08	0.64	277.07	0.71	277.05
2	6.00	277.20	1.72	277.12	1.70	277.09	1.54	277.08	0.70	277.07	0.67	277.05
3	5.90	277.20	1.70	277.12	1.70	277.09	1.44	277.08	0.70	277.07	0.60	277.05
4	5.90	277.20	1.70	277.12	1.67	277.09	1.30	277.08	0.71	277.07	0.66	277.05
5	4.20	277.20	1.50	277.12	1.73	277.09	1.33	277.08	0.70	277.07	0.64	277.05
6	6.30	277.18	1.70	277.12	1.70	277.09	1.37	277.08	0.70	277.07	0.71	277.05
7	5.97	277.16	1.70	277.11	1.72	277.09	1.30	277.08	0.64	277.07	0.65	277.05
8	5.80	277.16	1.70	277.11	1.70	277.09	1.50	277.08	0.79	277.07	0.54	277.05
9	5.21	277.16	1.66	277.11	1.70	277.09	1.30	277.08	0.64	277.07	0.57	277.05
10	5.00	277.16	1.70	277.11	1.70	277.09	1.40	277.08	0.70	277.07	0.65	277.05
11	4.97	277.16	1.70	277.11	1.66	277.09	1.10	277.08	0.71	277.07	0.67	277.05
12	5.00	277.16	1.70	277.11	1.70	277.09	1.10	277.08	0.70	277.07	0.57	277.05
13	5.00	277.15	1.70	277.11	1.70	277.09	1.14	277.08	0.67	277.07	0.57	277.05
14	4.97	277.15	1.70	277.11	1.70	277.09	1.10	277.08	0.70	277.07	0.54	277.05
15	4.97	277.15	1.70	277.11	1.70	277.09	1.10	277.08	0.80	277.07	0.67	277.05
16	4.97	277.15	1.70	277.11	1.70	277.09	1.10	277.08	0.66	277.06	0.54	277.04
17	4.97	277.15	1.67	277.11	1.66	277.09	1.14	277.08	0.79	277.06	0.60	277.04
18	4.97	277.15	1.39	277.11	1.72	277.09	1.30	277.08	0.66	277.06	0.67	277.04
19	5.20	277.14	1.30	277.10	1.70	277.08	1.16	277.08	0.60	277.06	0.66	277.04
20	5.17	277.14	1.69	277.10	1.66	277.08	1.16	277.02	0.79	277.06	0.66	277.04
21	5.20	277.14	1.70	277.10	1.70	277.08	1.20	277.08	0.67	277.06	0.64	277.04
22	5.00	277.13	1.69	277.10	1.67	277.08	1.20	277.08	0.79	277.06	0.54	277.04
23	5.00	277.13	1.70	277.10	1.67	277.08	1.11	277.08	0.67	277.06	0.64	277.04
24	5.00	277.13	1.70	277.10	1.67	277.08	1.33	277.08	0.64	277.06	0.60	277.04
25	5.00	277.13	1.70	277.10	1.40	278.08	1.20	277.08	0.54	277.06	0.60	277.04
26	5.00	277.13	1.60	277.10	1.69	277.08	1.34	277.08	0.60	277.06	0.57	277.04
27	5.00	277.13	1.72	277.10	1.39	277.08	1.34	277.08	0.57	277.06	0.57	277.04
28	4.97	277.12	1.67	277.10	1.40	277.00	1.14	277.08	0.57	277.06	0.57	277.04
29	4.97	277.12	1.70	277.10	1.70	277.08	1.35	277.08	0.57	277.06	0.54	277.04
30	5.00	277.12	1.72	277.10			1.14	277.08	0.57	277.06	0.54	277.04
31	5.00	277.12	1.72	277.09			1.20	277.08			0.67	277.04
Ten-Daily Mean												
I Ten-Daily	5.63	277.18	1.67	277.12	1.70	277.09	1.40	277.08	0.69	277.07	0.64	277.05
II Ten-Daily	5.02	277.15	1.62	277.11	1.69	277.09	1.14	277.08	0.71	277.07	0.61	277.04
III Ten-Daily	5.01	277.13	1.69	277.10	1.59	277.19	1.23	277.08	0.62	277.06	0.59	277.04
Monthly												
Min.	4.20	277.12	1.30	277.09	1.39	277.00	1.10	277.02	0.54	277.06	0.54	277.04
Max.	6.30	277.20	1.72	277.12	1.73	278.08	1.54	277.08	0.80	277.07	0.71	277.05
Mean	5.22	277.15	1.66	277.11	1.66	277.12	1.26	277.08	0.67	277.07	0.61	277.04

Peak Computed Discharge = 207.3 cumecs on 28/07/2019 Corres. Water Level 280 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

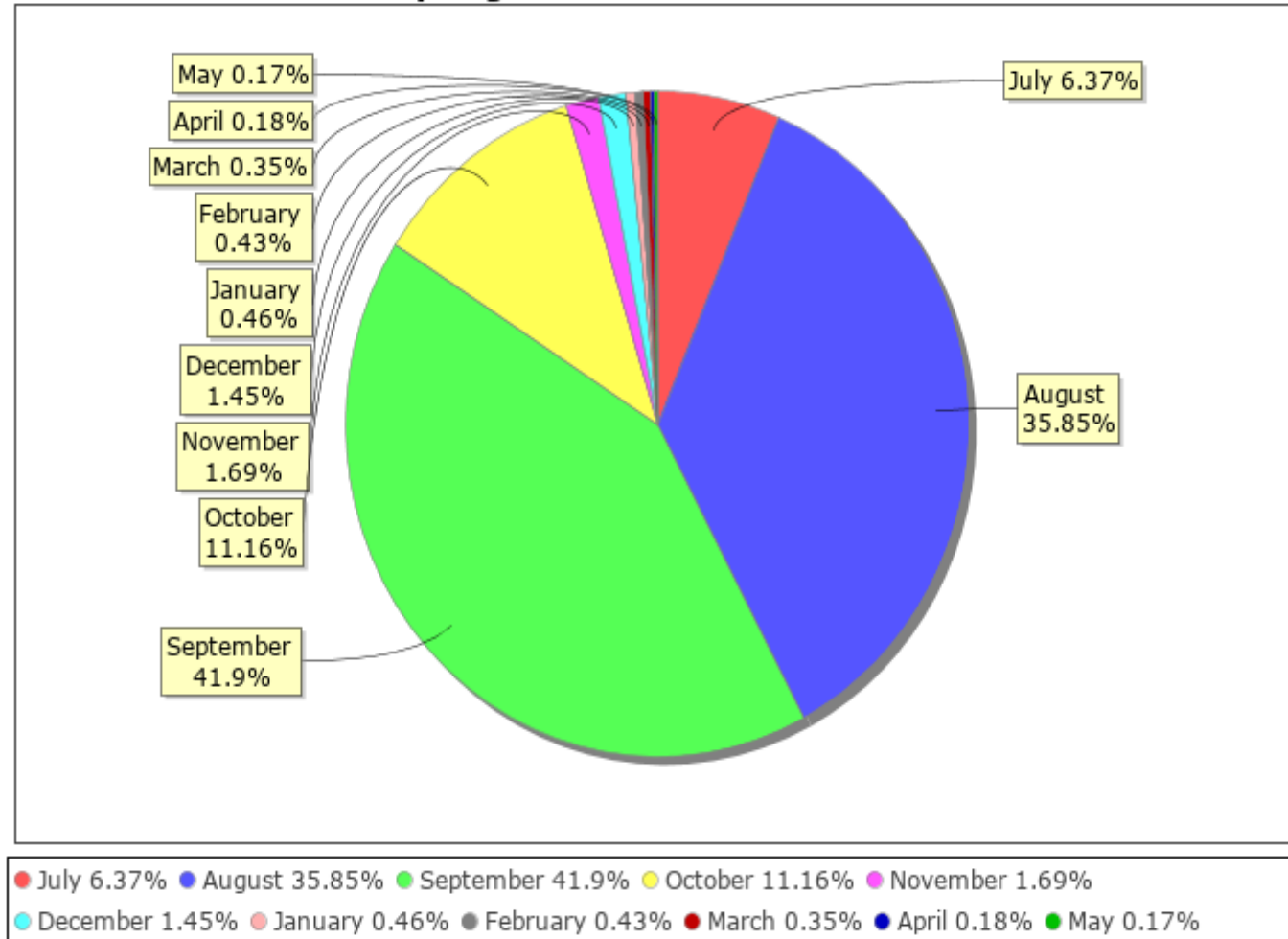
Station Name: Kalimachak at Charuwa

Local River: Kalimachak

Division: Narmada Division, Bhopal

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



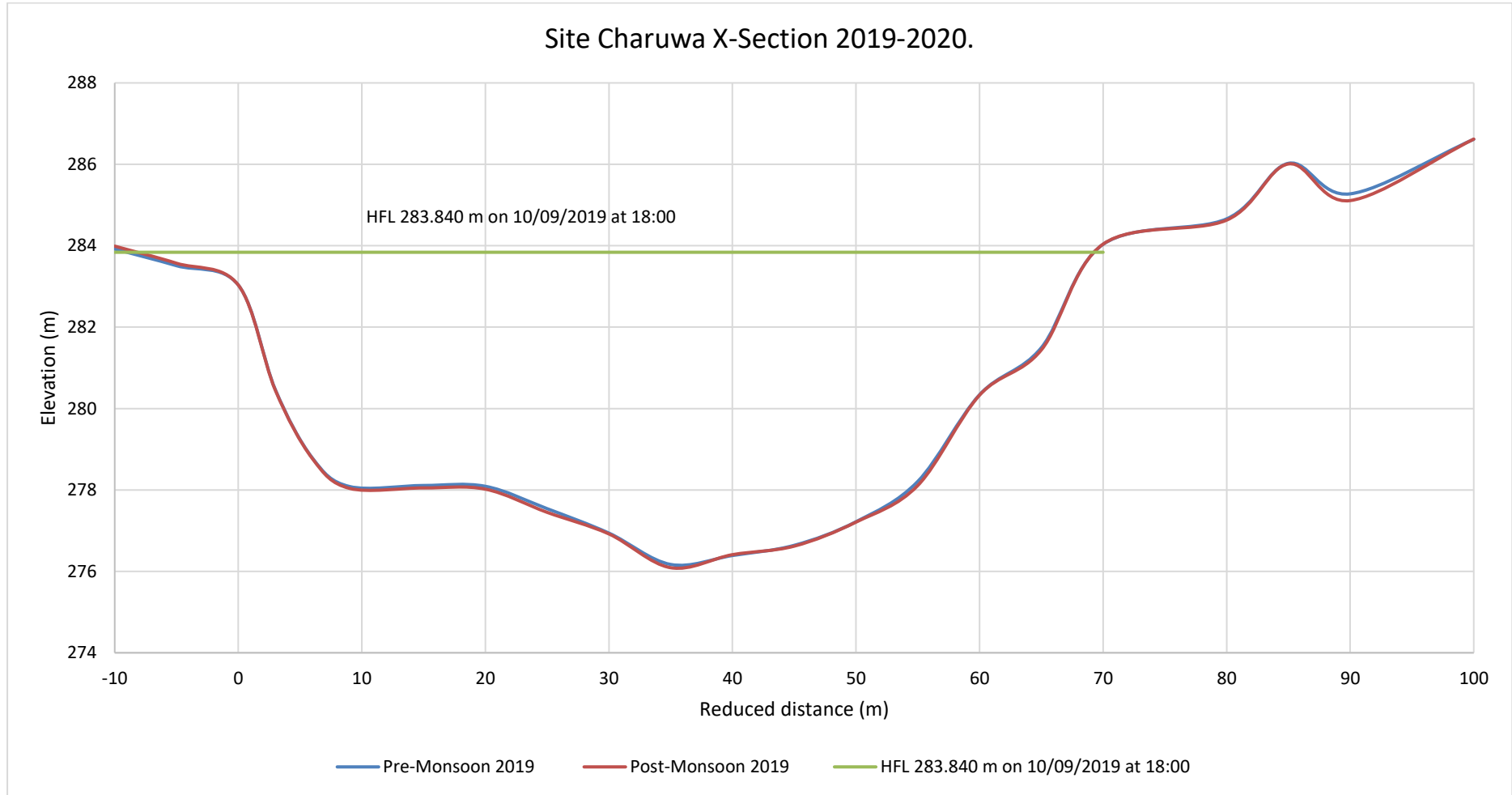
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Kalimachak at Charuwa

Division: Narmada Division, Bhopal

Local River: Kalimachak

Sub-Division: MNSD-II, CWC Bhopal



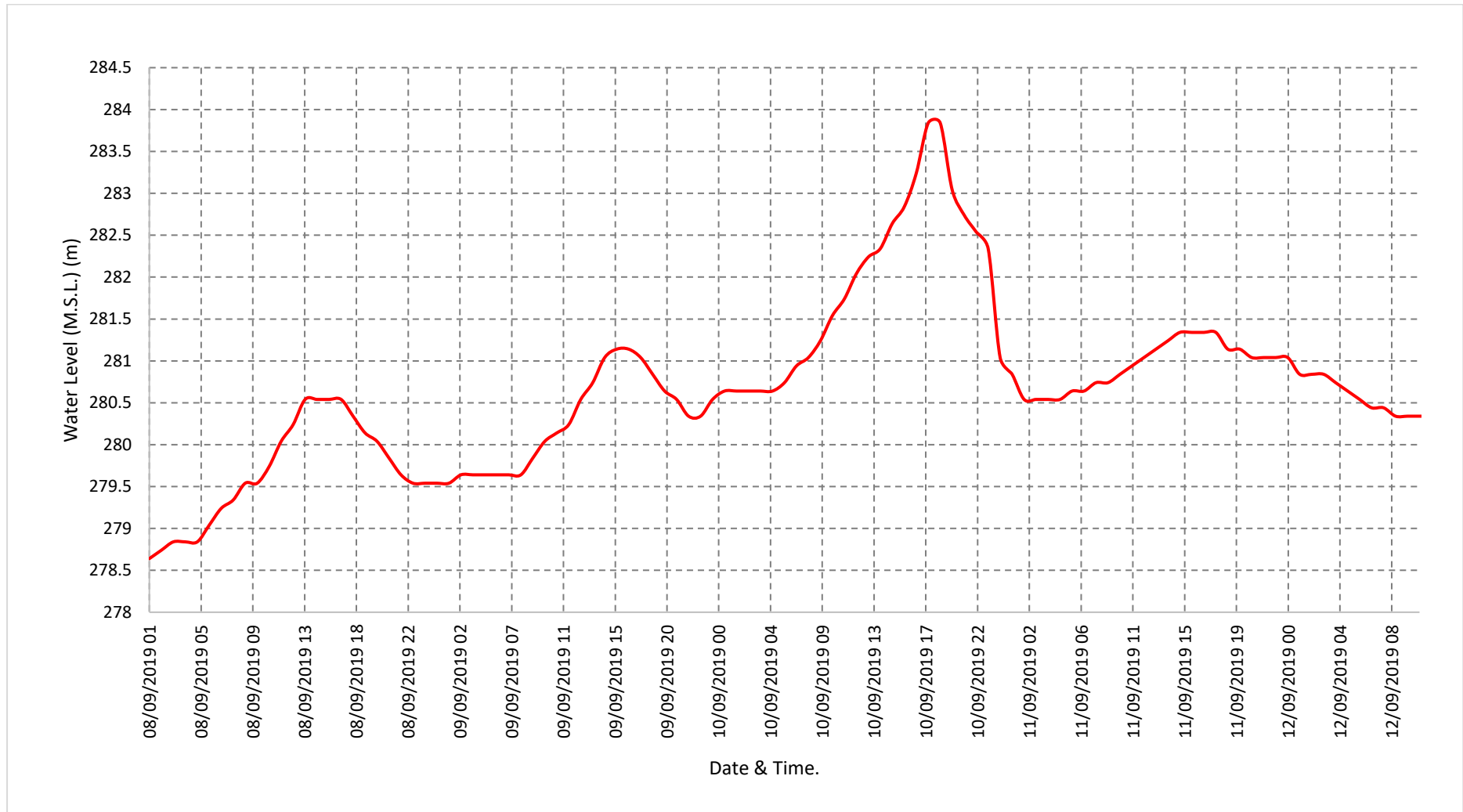
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Kalimachak at Charuwa

Division: Narmada Division, Bhopal

Local River: Kalimachak

Sub-Division: MNSD-II, CWC Bhopal



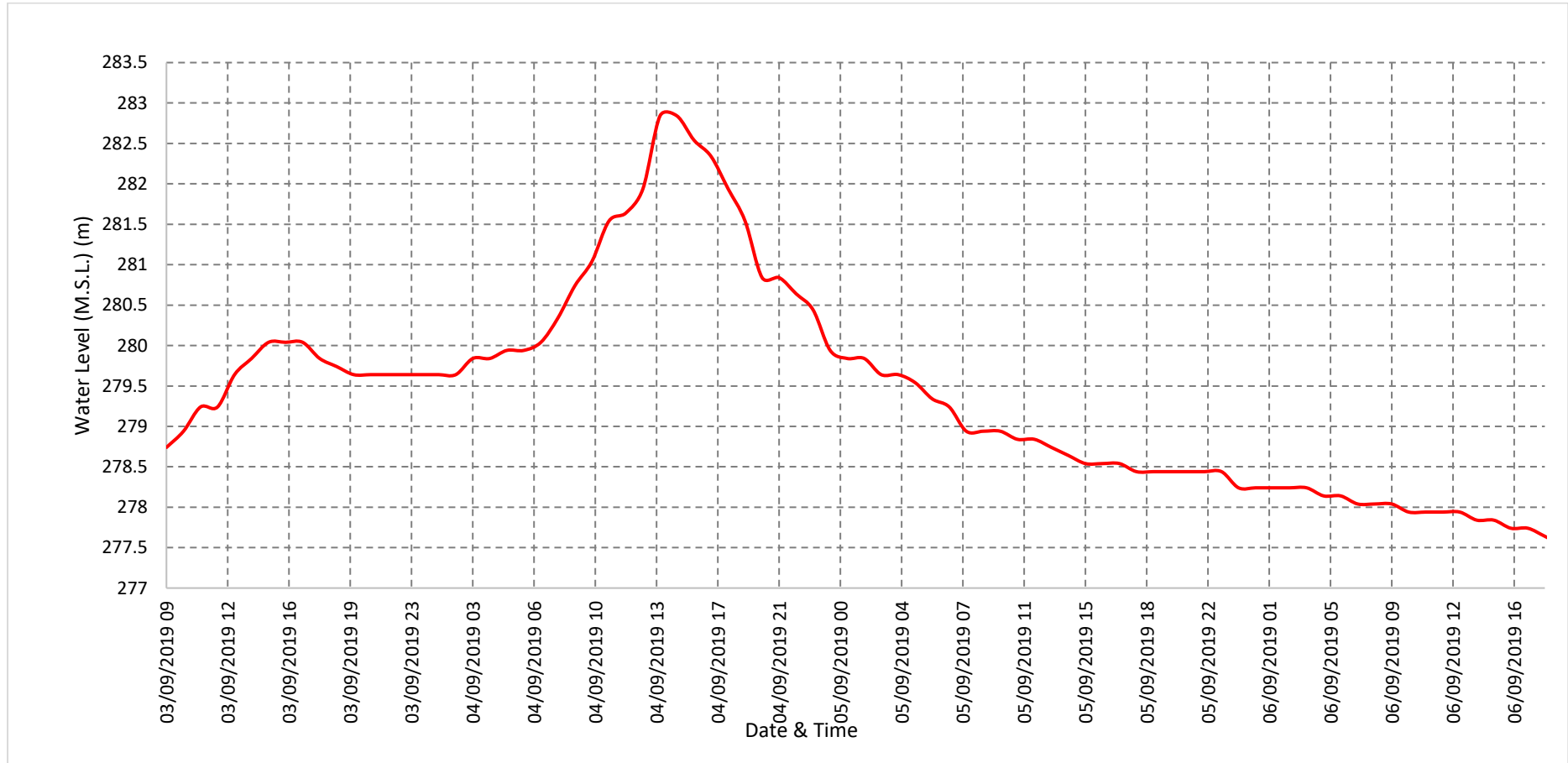
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Kalimachak at Charuwa

Division: Narmada Division, Bhopal

Local River: Kalimachak

Sub-Division: MNSD-II, CWC Bhopal



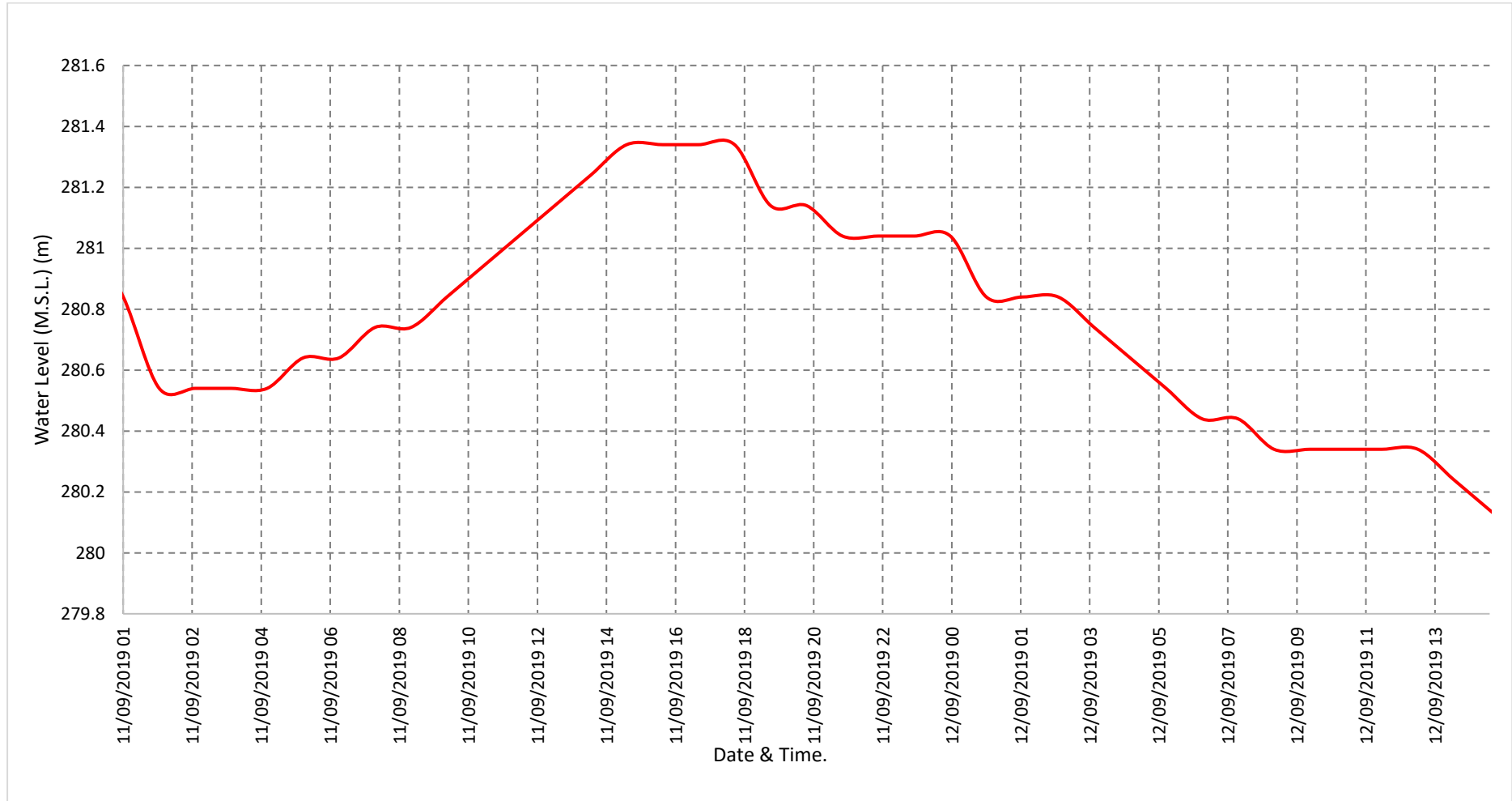
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Kalimachak at Charuwa

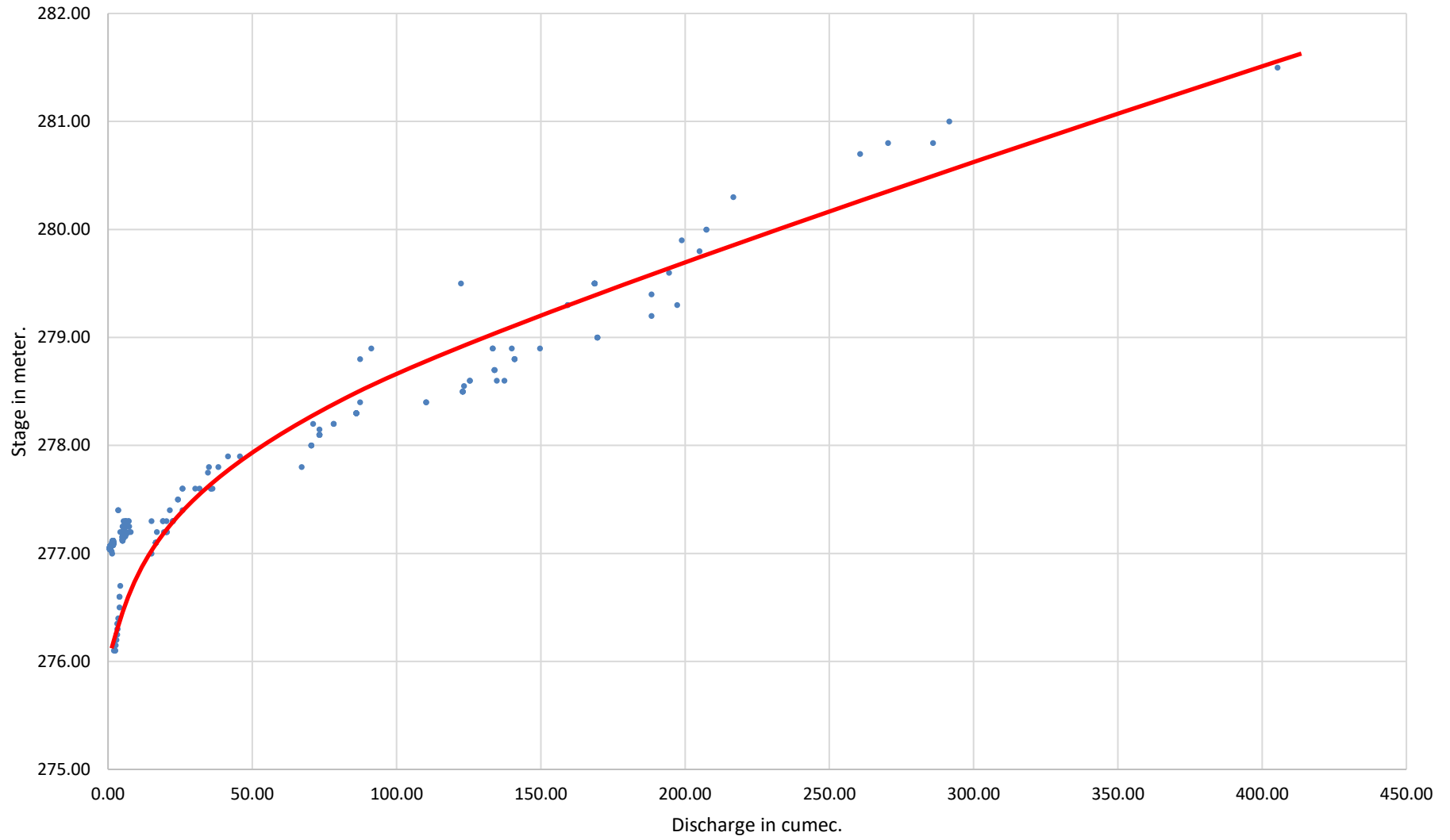
Division: Narmada Division, Bhopal

Local River: Kalimachak

Sub-Division: MNSD-II, CWC Bhopal



Site Charuwa Stage-Discharge curve 2019-2020.



4.15 Machak at Barangi.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Machak at Barangi		Code	:	CW1NAM001446
State	:	Madhya Pradesh		District	:	HARDA
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Machak
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	1030.0 Sq. Km.		Bank	:	Right
Latitude	:	22°13'14"		Longitude	:	76°56'38"
Current Zero of Gauge (m)	:	264				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
264.0		11/11/2020				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	500	273.8	11/08/2019	0	264.800	01-06-2019

Stage Discharge Sheet for Machak at Barangi for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	264.80	11.7	267.00	137.9	270.60	460.2	273.70	131.2	270.50	12.9	266.80
2	\$	264.80	24.2	267.30	131.2	270.50	495	273.90	127.5	270.30	12.7	266.85
3	\$	264.80	29.3	267.45	118.5	270.30	385.7	272.80	91.4	269.90	12.6	266.85
4	\$	264.80	29.3	267.40	120.1	270.35	307.6	272.50	83.3	269.70	13.04	266.90
5	\$	264.80	32.3	267.50	94.4	269.90	293.1	272.40	225.3	271.50	13.04	266.95
6	\$	264.80	22.9	267.30	89.2	269.80	264.2	271.85	74.3	269.40	12.93	266.95
7	\$	264.80	20.6	267.20	85.9	269.75	144.5	270.80	74.3	269.40	13.04	266.90
8	\$	264.80	11.7	267.00	89.2	269.80	144.3	270.80	72.8	269.35	12.9	266.90
9	\$	264.80	13.5	267.00	89.2	269.80	83.3	269.70	70.78	269.20	13.1	266.90
10	\$	264.80	12.5	266.95	131.2	270.50	105.1	270.10	66.9	269.10	12.9	266.90
11	\$	264.80	12.5	266.95	500	273.80	89.2	269.80	93.6	269.95	12.76	266.95
12	\$	264.80	11.4	266.90	485.2	273.80	77.8	269.50	88.3	269.90	13.6	267.00
13	\$	264.80	11.4	266.40	128.5	270.40	89.2	269.80	88.3	269.85	13.04	267.00
14	\$	264.80	11.6	266.40	81.9	269.65	137.9	270.60	89.2	269.80	13.2	267.10
15	\$	264.80	11.4	266.10	80.8	269.70	137.8	270.60	86.6	269.75	13	267.00
16	\$	264.80	10.5	266.80	75.9	269.30	137.9	270.60	83.8	269.70	12.9	267.00
17	\$	264.80	18.6	266.70	75.9	269.30	186.2	271.25	79.9	269.65	12.85	267.00
18	\$	264.80	15.3	266.70	54.2	268.95	177.1	271.10	78.9	269.60	13	266.95
19	\$	264.80	15.2	266.60	54.2	268.95	183.6	271.20	78.85	269.50	12.9	266.95
20	\$	264.80	15.3	266.70	51.2	268.85	253.3	271.700	75.8	269.50	13.1	266.95
21	\$	264.80	15.1	266.60	51.2	268.85	158.3	270.90	74.9	269.49	12.9	266.95
22	\$	264.80	15.2	266.60	48	268.75	158.2	270.90	74.9	269.49	13.04	266.95
23	\$	264.80	18.6	266.75	45.7	268.70	99.9	2700	74.3	269.48	12.8	266.90
24	\$	264.80	20.2	266.80	42.9	268.59	105.1	270.10	70.5	269.47	13	266.90
25	\$	264.80	20.2	266.80	43.9	268.60	89.2	269.80	69.1	269.46	12.9	266.90
26	\$	264.80	20.2	266.80	43.9	268.60	177.1	271.10	69.3	269.70	12.67	266.85
27	\$	264.80	24.4	266.90	90.6	269.83	137.9	270.60	55.6	268.80	12.69	266.85
28	\$	264.80	26.4	267.30	182.2	271.15	91.1	269.85	55.65	268.70	13.1	266.85
29	\$	264.80	72	269.20	310.5	272.00	102.3	269.80	56.75	268.60	13.4	266.80
30	\$	264.80	107	269.20	385.7	272.80	107	270.20	53	268.50	12.7	266.80
31			105.1	269.10	408	273.00			53.1	268.50		
Ten-Daily Mean												
I Ten-Daily	0	264.8	20.8	267.21	108.68	270.13	268.3	271.85	101.78	269.84	12.92	266.89
II Ten-Daily	0	264.8	13.32	266.63	158.78	270.27	147	270.62	84.33	269.72	13.04	266.99
III Ten-Daily	0	264.8	40.4	267.46	150.24	270.08	122.61	270.32	64.28	269.11	12.92	266.88
Monthly												
Min.	0	264.80	10.5	266.10	42.9	268.59	77.8	269.50	53	268.50	12.6	266.80
Max.	0	264.80	107	269.20	500	273.80	495	273.90	225.3	271.50	13.6	267.10
Mean	0	264.80	24.84	267.10	139.23	270.16	179.3	270.93	83.46	269.55	12.96	266.92

Annual Runoff in

MCM : 1220.41

Annual Runoff in

mm : 1184.86

Peak Observed Discharge = 495 cumecs on 2/9/2019 Corres. Water Level 273.9 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Stage Discharge Sheet for Machak at Barangi for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	14.00	266.85	3.11	266.70	3.11	266.20	1.80	266.13	0.64	265.20	0.78	265.00
2	13.40	266.85	3.11	266.70	2.90	266.20	1.80	266.13	0.70	265.20	0.80	265.00
3	12.90	266.85	3.06	266.60	3.11	266.20	1.75	266.13	0.84	265.20	0.75	265.00
4	12.70	266.90	3.00	266.55	3.06	266.20	1.70	266.30	0.81	265.20	0.76	265.00
5	13.00	266.90	3.00	266.55	3.00	266.20	1.75	266.12	0.80	265.20	0.73	265.00
6	13.10	266.90	3.02	266.50	3.02	266.19	1.67	266.11	0.80	265.20	0.80	265.00
7	12.72	266.85	3.02	266.50	3.02	266.19	1.70	266.10	0.82	265.20	0.75	265.00
8	13.00	266.80	3.02	266.50	3.02	266.19	1.70	266.10	0.69	265.20	0.76	265.00
9	12.90	266.85	3.02	266.50	3.02	266.19	1.70	266.10	0.84	265.20	0.80	265.00
10	12.70	266.80	3.06	266.40	3.02	266.18	1.68	266.00	0.80	265.20	0.75	265.00
11	13.10	266.80	3.02	266.40	3.06	266.18	1.80	265.90	0.81	265.15	0.73	264.90
12	12.69	266.80	3.00	266.40	3.02	266.18	1.70	265.80	0.70	265.15	0.74	264.90
13	12.70	266.85	3.06	266.50	3.06	266.18	1.70	265.80	0.82	265.15	0.73	264.90
14	16.69	266.85	3.00	266.50	3.02	266.18	1.75	265.80	0.80	265.15	0.77	264.90
15	17.00	266.85	3.00	266.50	3.06	266.18	1.70	265.70	0.64	265.15	0.73	264.90
16	12.70	266.80	3.06	266.40	3.10	266.18	1.70	265.60	0.85	265.15	0.74	264.90
17	12.90	266.85	3.06	266.40	3.00	266.17	1.50	265.70	0.81	265.15	0.70	264.90
18	12.69	266.85	2.95	266.40	3.00	266.17	1.45	265.70	0.82	265.15	0.70	264.90
19	13.40	266.80	3.00	266.40	2.95	266.17	1.48	265.60	0.70	265.15	0.76	264.90
20	13.10	266.80	2.93	266.40	2.90	266.16	1.40	265.50	0.60	265.15	0.70	264.90
21	12.90	266.80	2.95	266.35	2.90	266.16	1.40	265.50	0.64	265.10	0.76	264.90
22	12.60	266.80	2.95	266.35	2.95	266.16	1.50	265.50	0.84	265.10	0.70	264.90
23	12.60	266.80	2.94	266.30	2.95	266.16	1.38	265.50	0.81	265.10	0.69	264.90
24	12.50	266.80	3.11	266.30	2.96	266.16	1.30	265.40	0.81	265.10	0.70	264.90
25	13.38	266.80	3.10	266.30	2.95	266.15	1.30	265.40	0.82	265.10	0.70	264.90
26	11.90	266.75	3.00	266.30	2.94	266.15	1.35	265.40	0.75	265.10	0.66	264.90
27	11.34	266.75	3.00	266.30	2.95	266.15	1.35	265.40	0.70	265.10	0.64	264.90
28	12.00	266.70	3.02	266.30	2.94	266.15	1.40	265.30	0.64	265.10	0.74	264.90
29	12.00	266.70	3.02	266.25	2.94	266.15	1.40	265.30	0.85	265.10	0.66	264.90
30	11.90	266.70	3.06	266.25			1.37	265.20	0.68	265.10	0.66	264.90
31	11.30	266.70	3.06	266.25			1.37	265.20			0.64	264.90
Ten-Daily Mean												
I Ten-Daily	13.04	266.85	3.04	266.55	3.03	266.19	1.73	266.12	0.77	265.20	0.77	265.00
II Ten-Daily	13.70	266.82	3.01	266.43	3.02	266.18	1.62	265.71	0.76	265.15	0.73	264.90
III Ten-Daily	12.22	266.75	3.02	266.30	2.94	266.15	1.37	265.37	0.76	265.10	0.69	264.90
Monthly												
Min.	11.30	266.70	2.93	266.25	2.90	266.15	1.30	265.20	0.60	265.10	0.64	264.90
Max.	17.00	266.90	3.11	266.70	3.11	266.20	1.80	266.30	0.85	265.20	0.80	265.00
Mean	12.99	266.81	3.02	266.43	3.00	266.17	1.57	265.73	0.76	265.15	0.73	264.93

Peak Computed Discharge = 500 cumecs on 11/8/2019 Corres. Water Level 273.8 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

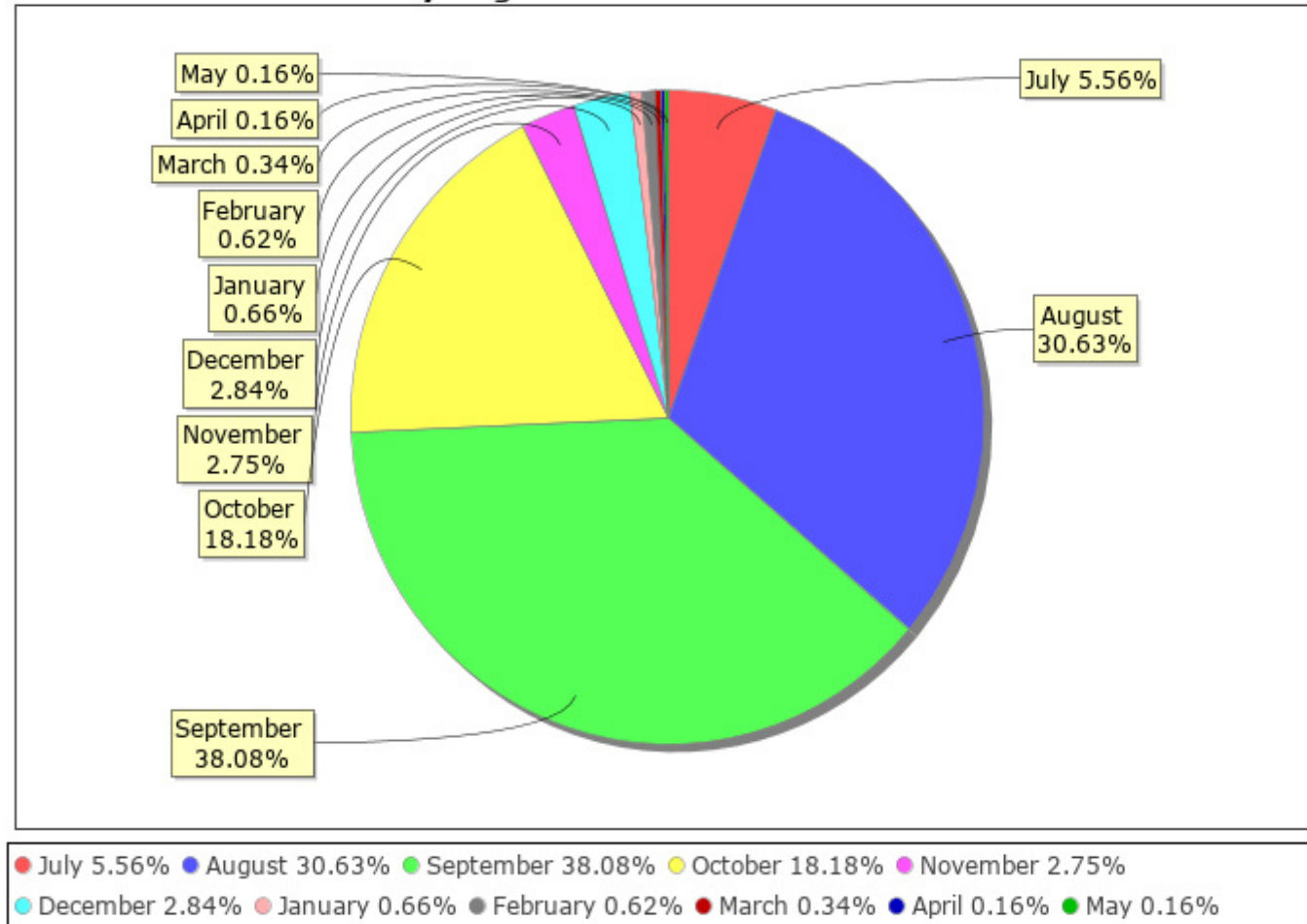
Station Name: Machak at Barangi

Local River: Machak

Division: Narmada Division, Bhopal

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



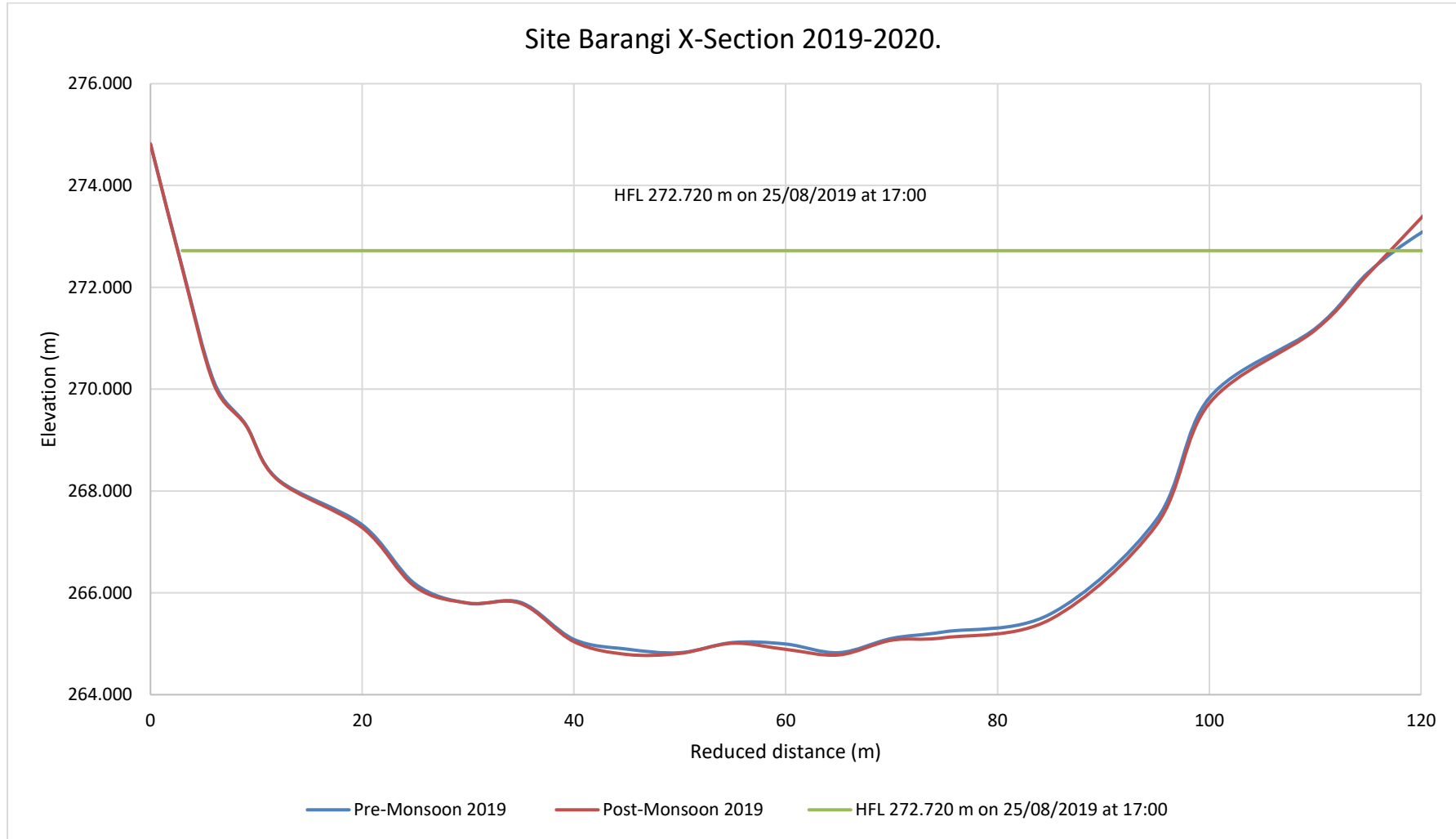
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Machak at Barangi

Division: Narmada Division, Bhopal

Local River: Machak

Sub-Division: MNSD-II, CWC Bhopal



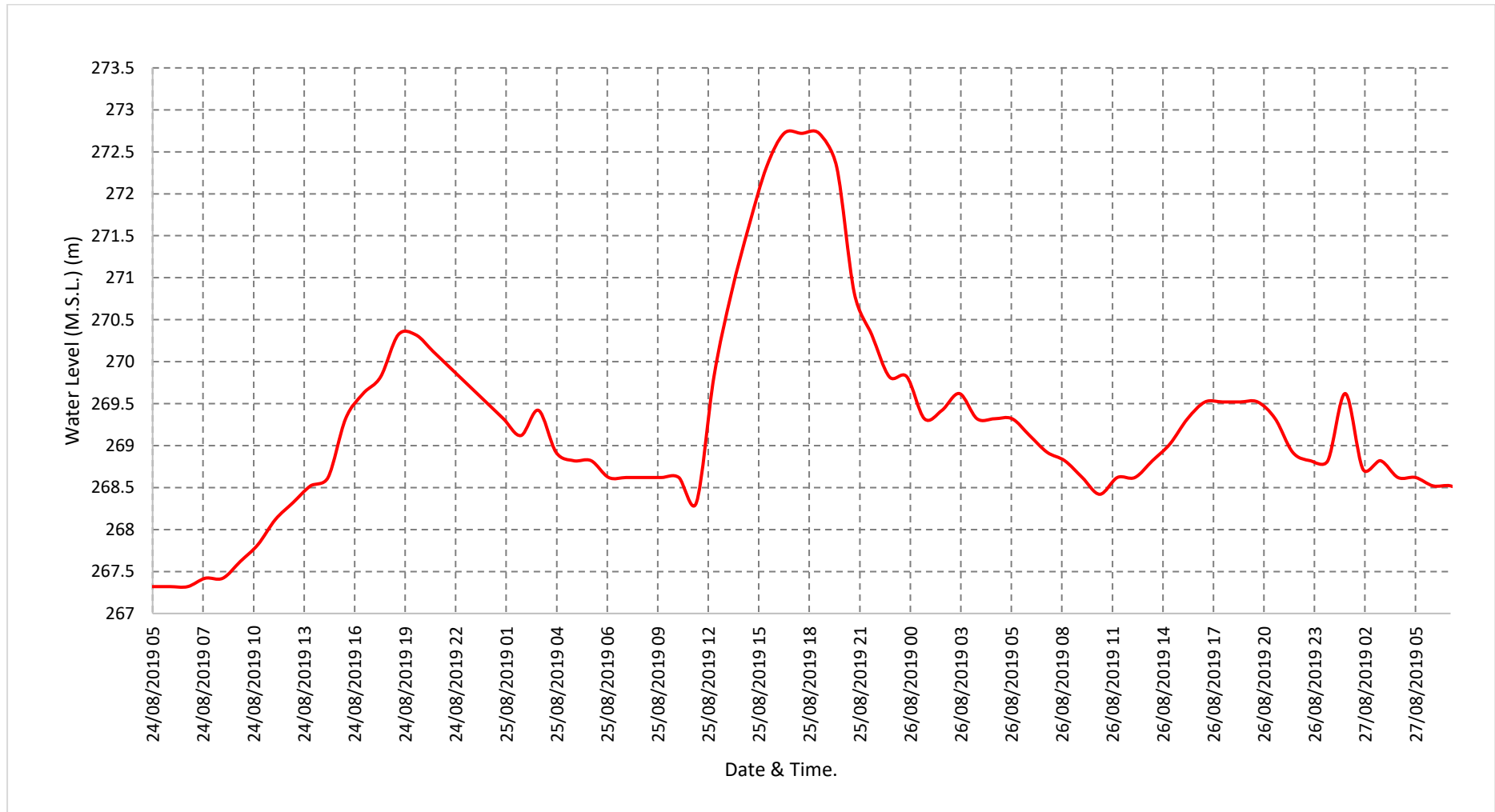
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Machak at Barangi

Division: Narmada Division, Bhopal

Local River: Machak

Sub-Division: MNSD-II, CWC Bhopal



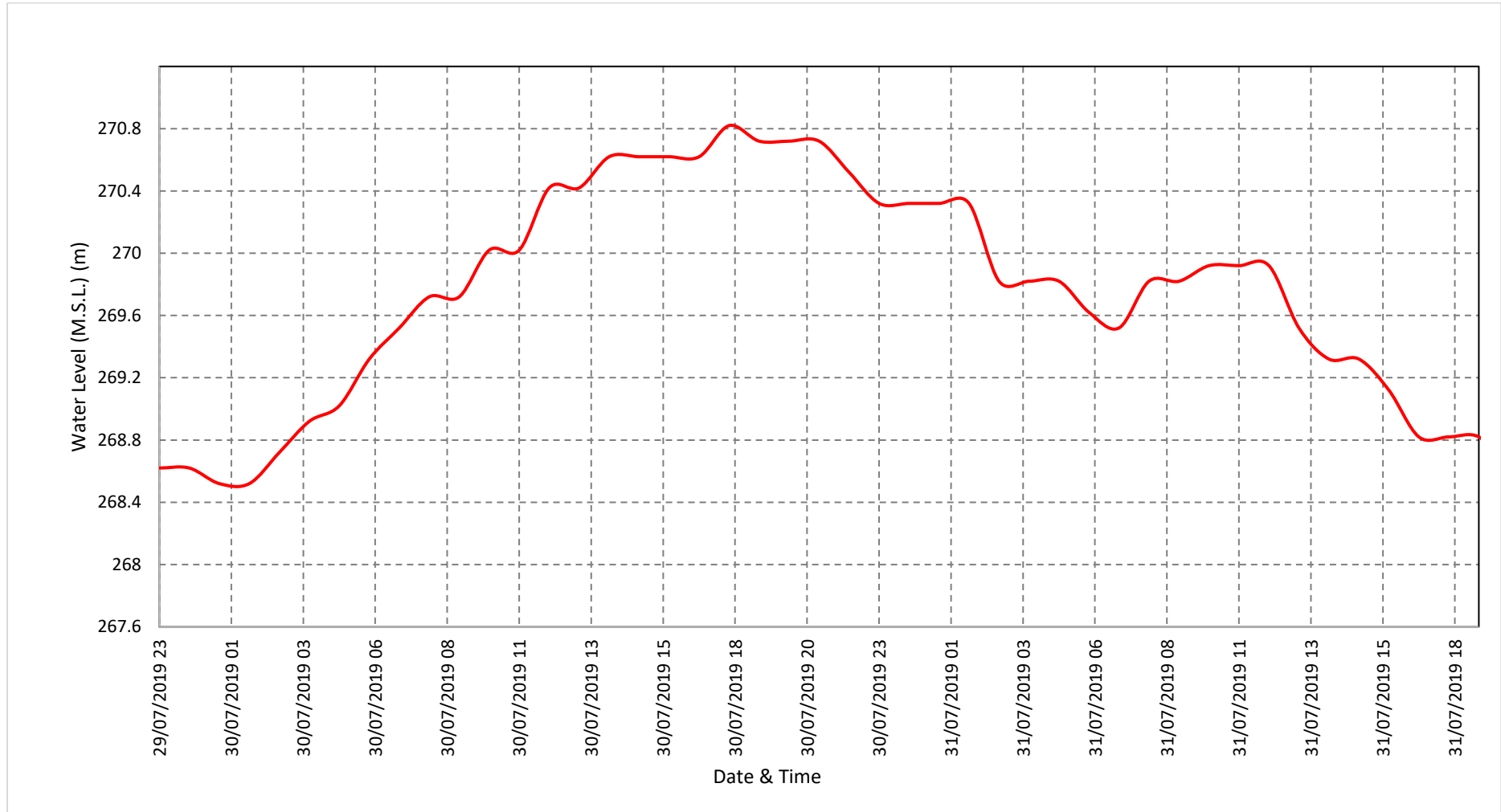
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Machak at Barangi

Division: Narmada Division, Bhopal

Local River: Machak

Sub-Division: MNSD-II, CWC Bhopal



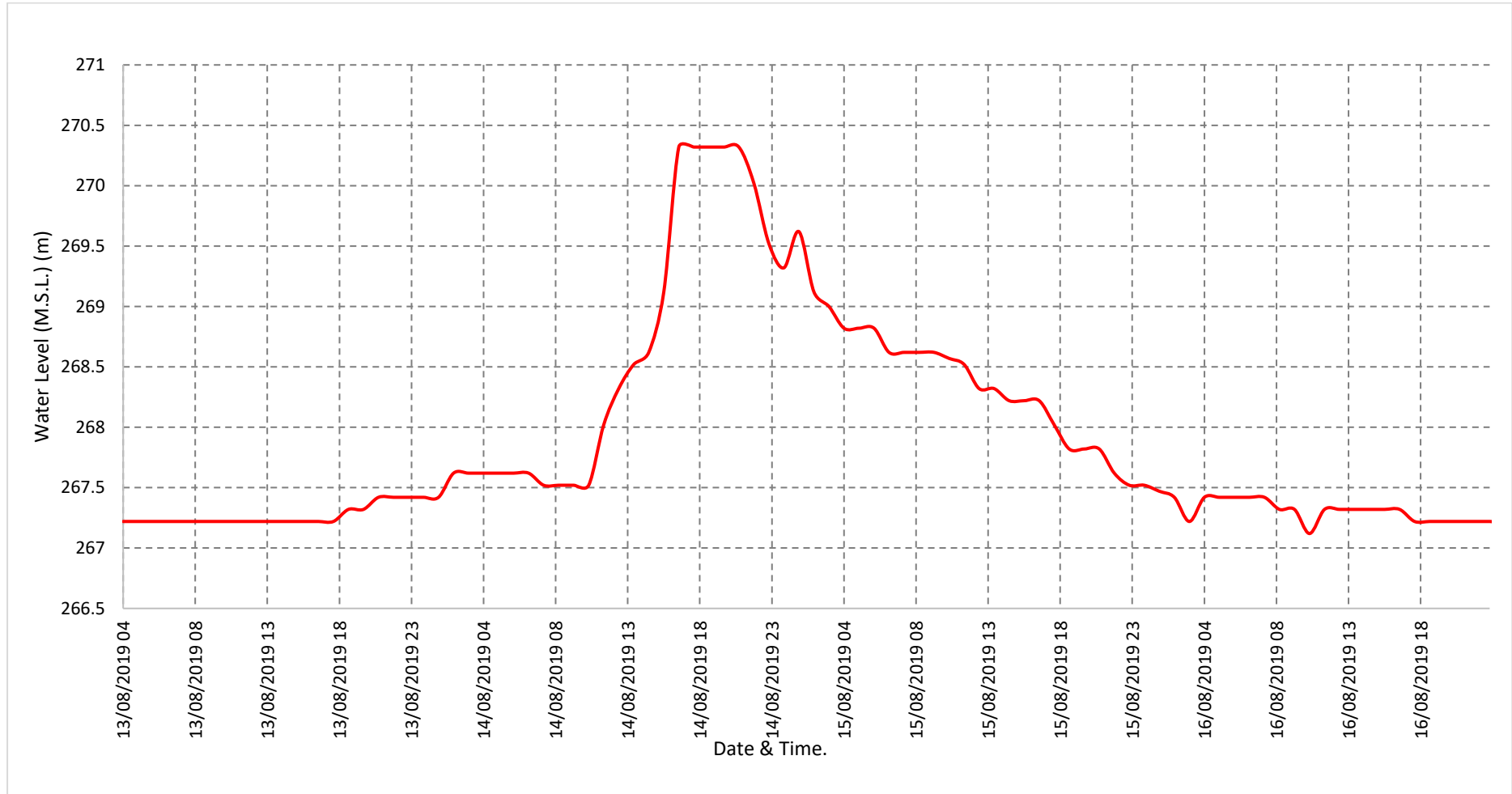
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Machak at Barangi

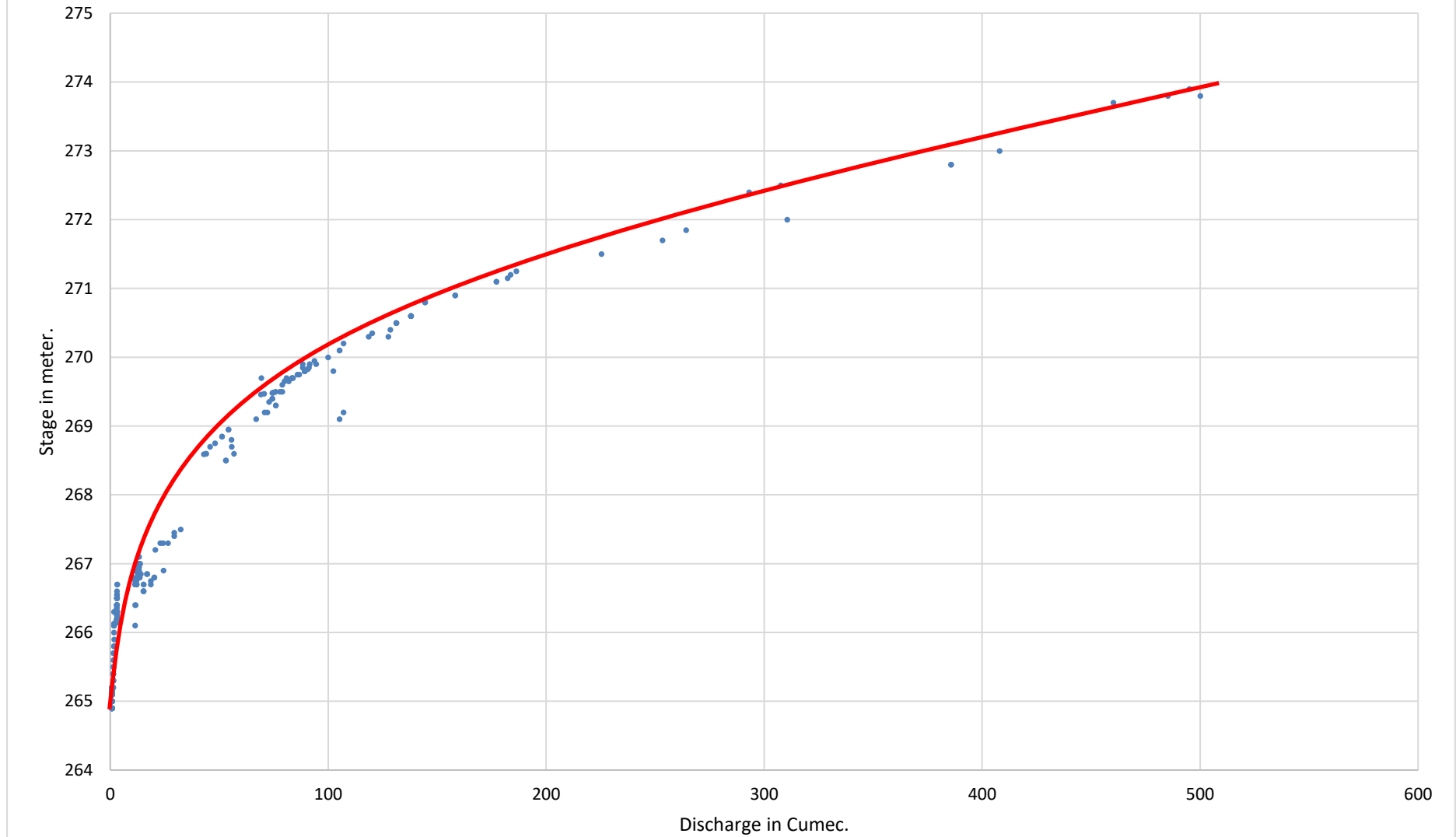
Division: Narmada Division, Bhopal

Local River: Machak

Sub-Division: MNSD-II, CWC Bhopal



Site Barangi SD Curve 2019-2020.



4.16 Datuni at Dudwas.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Datuni at Dudwas		Code	:	CW1NAM001455
State	:	Madhya Pradesh		District	:	DEWAS
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Datuni
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	1170.0 Sq. Km.		Bank	:	Right
Latitude	:	22°28'20"		Longitude	:	76°47'14"
Current Zero of Gauge (m)	:	240				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
240.0		06/01/2021				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	1350	249.81	10/09/2019	0	-	01-06-2019

Stage Discharge Sheet for Datuni at Dudwas for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	§	§	21.9	243.00	295	245.60	230	245.25	73.4	243.43	25.7	243.00
2	§	§	21.7	243.00	290.9	245.56	250	245.33	250	245.36	25.7	243.00
3	§	§	21.9	243.00	237.5	245.30	25.6	243.23	67.7	243.36	30	243.00
4	§	§	21.7	243.00	700	247.21	24.5	243.19	61.2	243.33	25.7	243.00
5	§	§	21.8	243.00	145.9	244.90	77.2	243.53	245	245.33	25.7	243.00
6	§	§	21.1	243.00	138	244.68	105.1	244.00	75.3	243.55	25.7	243.00
7	§	§	250	245.21	121.1	244.44	126.4	96.56	280	245.53	25.7	243.00
8	§	§	25.8	243.00	105.1	244.13	820	247.85	71.4	243.52	25.7	243.00
9	§	§	55	243.20	100.4	243.93	1200	249.65	65.8	243.47	25.7	243.00
10	§	§	101.6	243.99	93.2	243.84	1350	249.81	60.5	243.41	30	243.00
11	§	§	134.1	244.59	320	245.78	1100	249.57	57.4	243.36	25.3	243.00
12	§	§	147.9	244.92	87.4	243.96	1050	249.39	230	245.29	25.3	243.00
13	§	§	258.9	245.42	89.2	243.73	1000	248.96	52.6	243.33	25.3	243.00
14	§	§	600	247.16	77.9	243.55	900	248.27	47.6	243.27	25.3	243.00
15	§	§	137.2	244.83	260	245.47	800	247.62	43.7	243.23	25.3	243.00
16	§	§	128	244.52	73.4	243.45	270.4	245.43	41.4	243.2	25.3	243.00
17	§	§	109.1	244.21	83.4	243.64	150.7	244.96	38.9	243.18	30	243.00
18	§	§	97	243.87	280	245.56	125.6	244.47	36.32	243.14	25.3	243.00
19	§	§	75.2	243.48	69.3	243.36	109.3	244.07	32.2	243.08	25.3	243.00
20	§	§	21.3	243.00	66.7	243.32	99.6	243.92	150	244.96	25.3	243.00
21	§	§	150	244.96	67.4	243.34	99	243.86	23.3	243.00	25.3	243.00
22	§	§	21.8	243.00	62.4	243.26	330	245.76	26.9	243.00	25.3	243.00
23	§	§	21.3	243.00	69.7	243.37	84.1	243.65	26.7	243.00	24.4	242.99
24	§	§	21.7	243.00	63.1	243.27	80.2	243.57	26.7	243.00	25	242.99
25	§	§	26.4	243.26	210	245.10	73.4	243.44	26.3	243.00	23.4	242.98
26	§	§	92.7	243.82	61	243.24	75.1	243.35	26	243.00	23.3	242.97
27	§	§	134.4	244.59	73.4	243.44	71.1	243.39	165	244.96	23.3	242.96
28	§	§	950	248.61	65.9	243.30	71.1	243.39	26	243.00	23.3	242.95
29	§	§	514.9	246.65	61.1	243.23	220	245.16	26	243.00	22.3	242.94
30	§	§	364	246.09	21.8	243.00	79	243.55	26	243.00	22.3	242.94
31			361	246.09	63.6	243.28			25.8	243.00		
Ten-Daily Mean												
I Ten-Daily	0	0	56.25	243.34	222.71	244.96	420.88	230.84	125.03	244.03	26.56	243
II Ten-Daily	0	0	170.87	244.6	140.73	244.18	560.56	246.67	73.01	243.6	25.77	243
III Ten-Daily	0	0	241.65	244.82	74.49	243.44	118.3	243.91	38.61	243.18	23.79	242.97
Monthly												
Min.	0	0	21.1	243	21.8	243	24.5	96.56	23.3	243	22.3	242.94
Max.	0	0	950	248.61	700	247.21	1350	249.81	280	245.53	30	243
Mean	0	0	156.26	244.25	145.98	244.19	366.58	240.47	78.88	243.6	25.37	242.99

Annual Runoff in

MCM : 2427.59

Annual Runoff in

mm : 2074.86

Peak Observed Discharge = 514.9 cumecs on 29/7/2019 Corres. Water Level 246.65 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

§- No Flow

Stage Discharge Sheet for Datuni at Dudwas for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	25	242.96	29.9	243.69	32.2	243.97	26	243.81	22	243.50	15.9	243.40
2	22.6	242.98	29.9	243.69	32	243.97	25.9	243.80	22	243.50	15.9	243.40
3	22.8	243.02	29.9	243.69	31.6	243.96	25.5	243.79	22	243.50	16	243.39
4	23	243.08	29.9	243.68	31.6	243.96	25.5	243.78	22	243.50	15.9	243.39
5	23.6	243.15	45	243.68	31.6	243.96	24.9	243.77	22	243.49	15.9	243.38
6	27.4	243.40	29.9	243.68	31.3	243.95	24.8	243.76	21.8	243.49	15.9	243.37
7	31	243.80	29.9	243.68	31.3	243.95	24.8	243.75	21.8	243.49	14.8	243.34
8	60	243.80	29.6	243.67	31.3	243.95	25.8	243.74	21.8	243.49	14.1	243.30
9	32.1	243.90	29.6	243.67	31	243.94	24.4	243.73	21.7	243.48	12.7	243.24
10	31.7	243.89	29.6	243.67	30.9	243.94	24.4	243.72	21.7	243.48	12	243.18
11	33.4	243.86	29.6	243.67	30.9	243.94	24.4	243.71	21.7	243.48	11.8	243.10
12	32.6	243.83	45	243.67	30.9	243.94	24.1	243.70	22	243.48	11	243.02
13	32	243.80	29.6	243.66	30.6	243.93	24.1	243.69	21.7	243.48	10.8	242.96
14	31.8	243.79	29.6	243.66	29.6	243.93	24.1	243.68	20.2	243.47	10.7	242.88
15	55	243.77	29.6	243.66	29.6	243.93	24	243.67	20.2	243.47	10.6	242.83
16	31.4	243.75	29.6	243.66	30	243.93	23.9	243.66	20.2	243.46	10.4	242.78
17	31.4	243.75	29.6	243.65	29.4	243.92	23.9	243.65	20.2	243.47	10	242.70
18	31	243.74	29.6	243.65	29.4	243.92	23.9	243.64	19.3	243.46	10.2	242.63
19	31	243.74	40	243.65	29.4	243.92	23.9	243.63	20	243.46	9.9	242.59
20	30.9	243.73	28.6	243.64	29.1	243.91	23.9	243.62	19.3	243.46	9.9	242.56
21	30.9	243.73	28.6	243.64	28.8	243.90	23.9	243.61	19.3	243.46	9.7	242.53
22	50	243.72	28.6	243.64	27.9	243.89	23	243.60	19	243.45	9.7	242.50
23	30.6	243.72	27.8	243.63	28	243.88	22.8	243.59	19	243.45	9.4	242.47
24	30.36	243.72	27.8	243.63	27.5	243.87	22.8	243.58	19	243.45	9	242.45
25	30.5	243.71	27.8	243.63	27.3	243.86	22.8	243.57	18.4	243.44	8.5	242.43
26	30.5	243.71	38	243.63	27.3	243.85	22.8	243.56	19	243.44	8.5	242.42
27	30.5	243.71	30.5	243.70	26.8	243.84	22.8	243.55	18.1	243.43	8.5	242.41
28	30.5	243.71	34.4	243.95	26.8	243.83	22.8	243.54	18.1	243.43	8.5	242.40
29	48	243.70	34.5	243.98	26.5	243.82	22	243.53	17.8	243.42	8.3	242.39
30	30.5	243.70	34.5	243.98			21.8	243.52	16.3	243.41	7.2	242.38
31	30.5	243.70	32.7	243.97			21.8	243.51			7	242.37
Ten-Daily Mean												
I Ten-Daily	29.92	243.4	31.32	243.68	31.48	243.96	25.2	243.76	21.88	243.49	14.91	243.34
II Ten-Daily	34.05	243.78	32.08	243.66	29.89	243.93	24.02	243.66	20.48	243.47	10.53	242.81
III Ten-Daily	33.9	243.71	31.38	243.76	27.43	243.86	22.66	243.56	18.4	243.44	8.57	242.43
Monthly												
Min.	22.6	242.96	27.8	243.63	26.5	243.82	21.8	243.51	16.3	243.41	7	242.37
Max.	60	243.9	45	243.98	32.2	243.97	26	243.81	22	243.5	16	243.4
Mean	32.62	243.63	31.59	243.7	29.6	243.91	23.96	243.66	20.25	243.47	11.34	242.86

Peak Computed Discharge = 1350 cumecs on 10/9/2019 Corres. Water Level 249.81 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

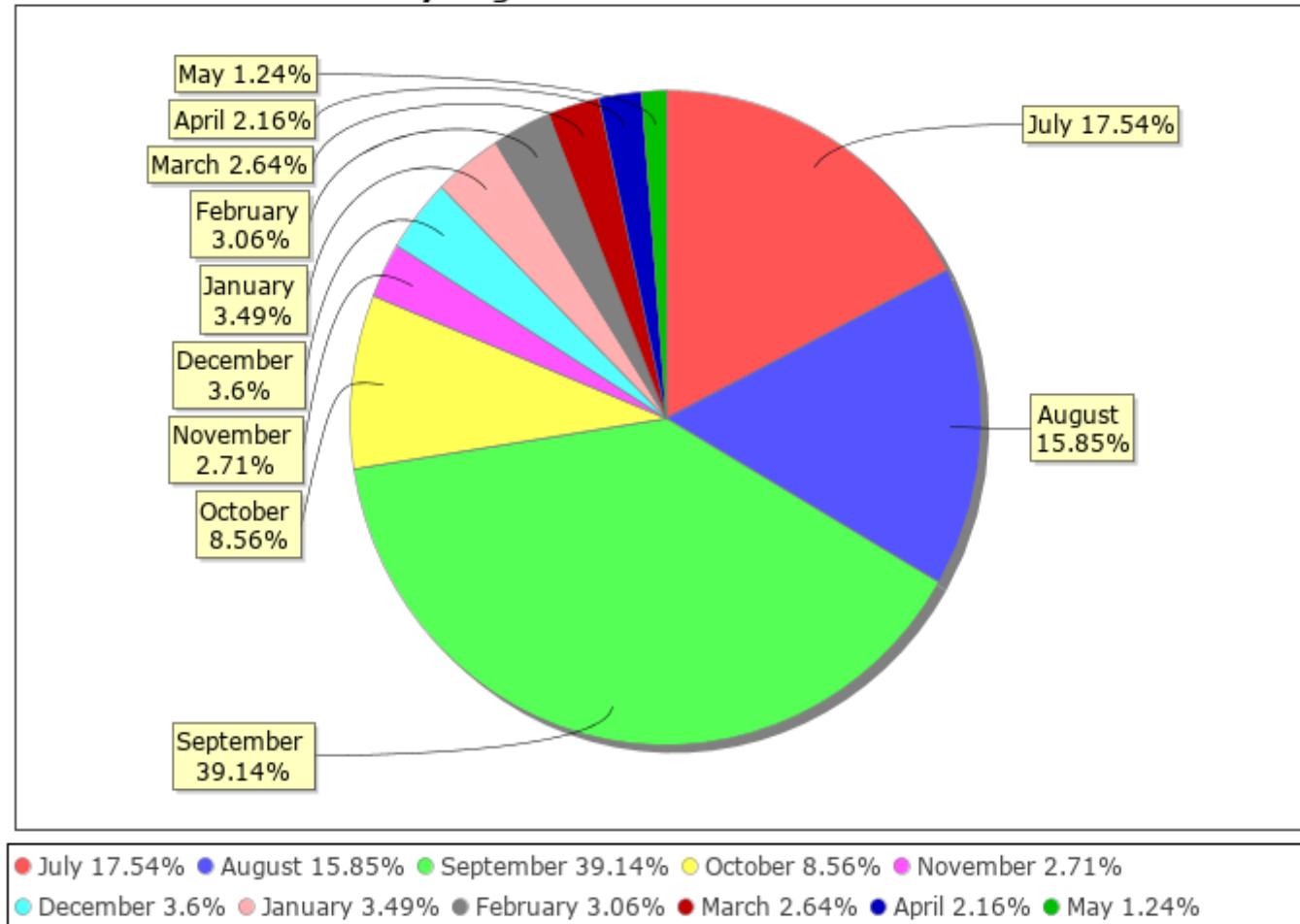
Station Name: Datuni at Dudwas

Local River: Datuni

Division: Narmada Division, Bhopal

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



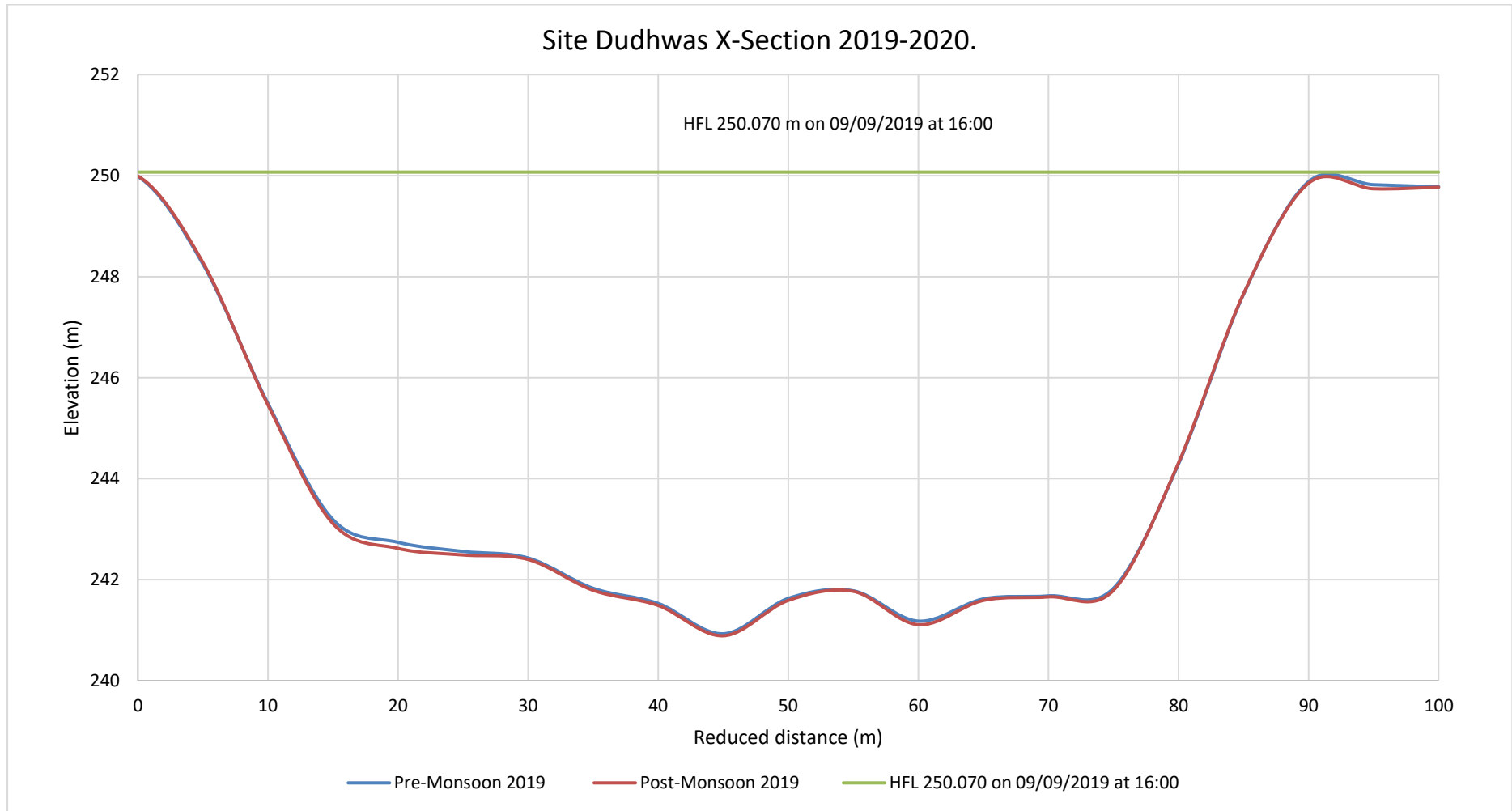
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Datuni at Dudwas

Division: Narmada Division, Bhopal

Local River: Datuni

Sub-Division: MNSD-II, CWC Bhopal



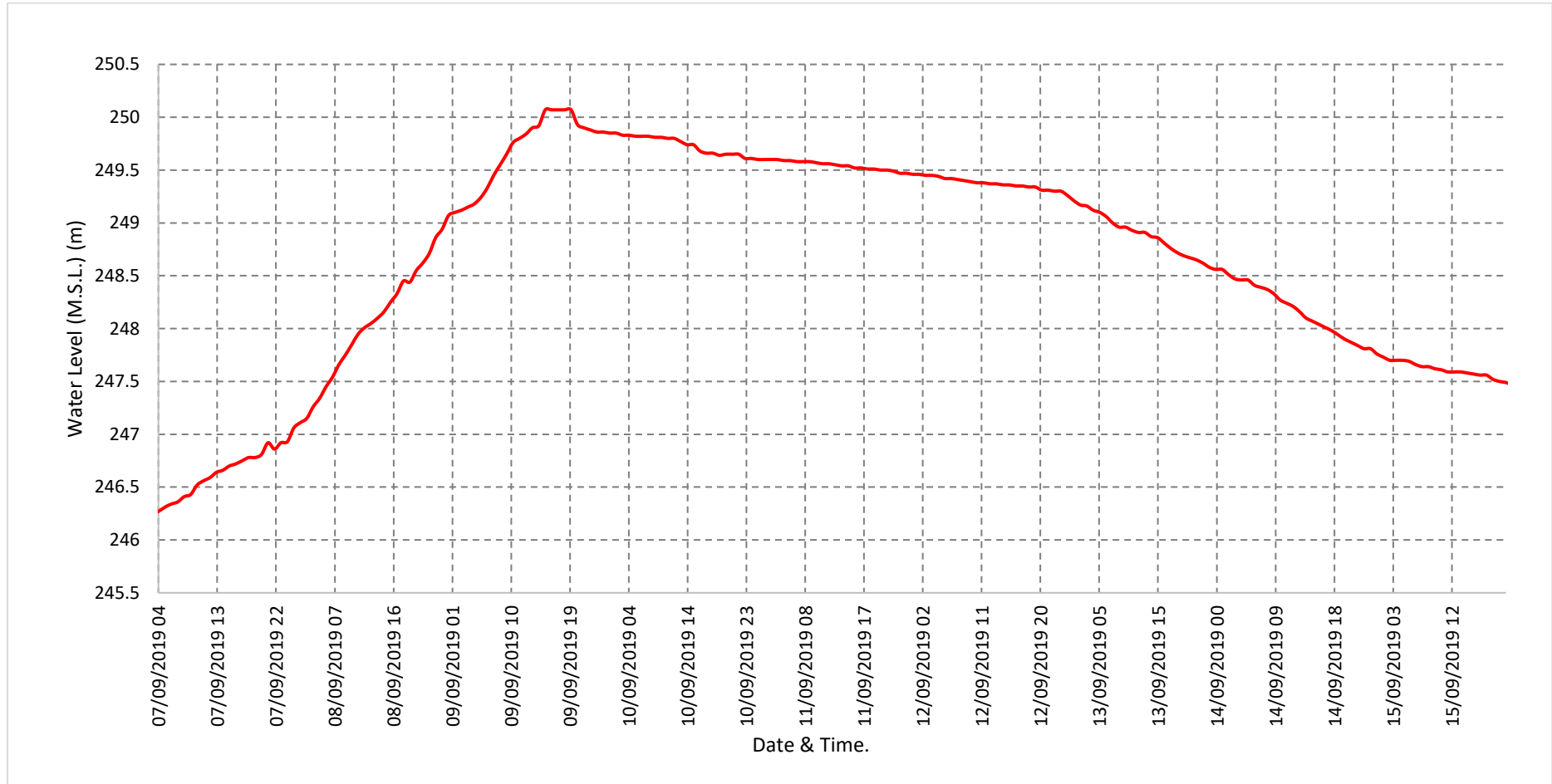
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Datuni at Dudwas

Division: Narmada Division, Bhopal

Local River: Datuni

Sub-Division: MNSD-II, CWC Bhopal



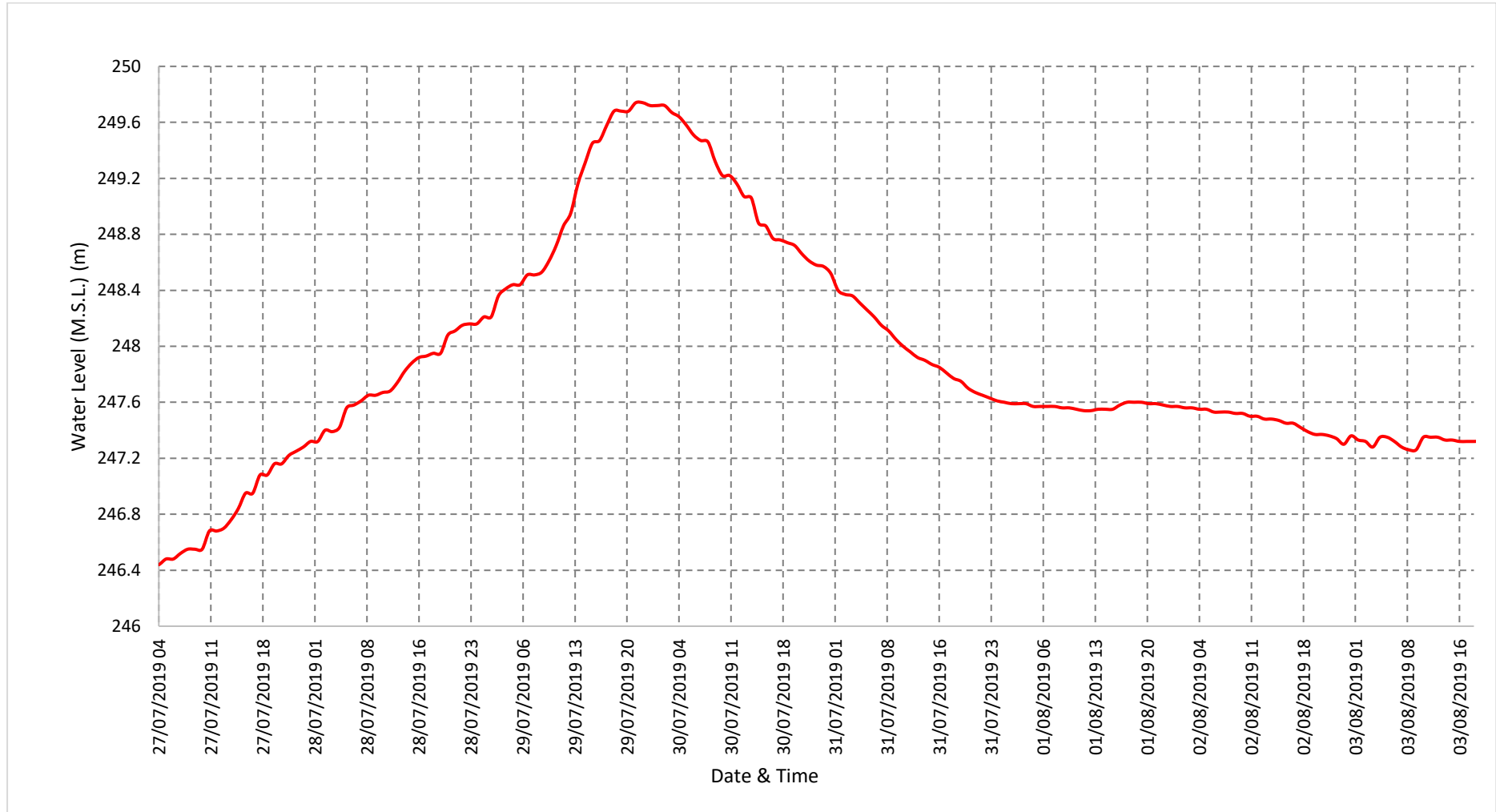
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Datuni at Dudwas

Division: Narmada Division, Bhopal

Local River: Datuni

Sub-Division: MNSD-II, CWC Bhopal



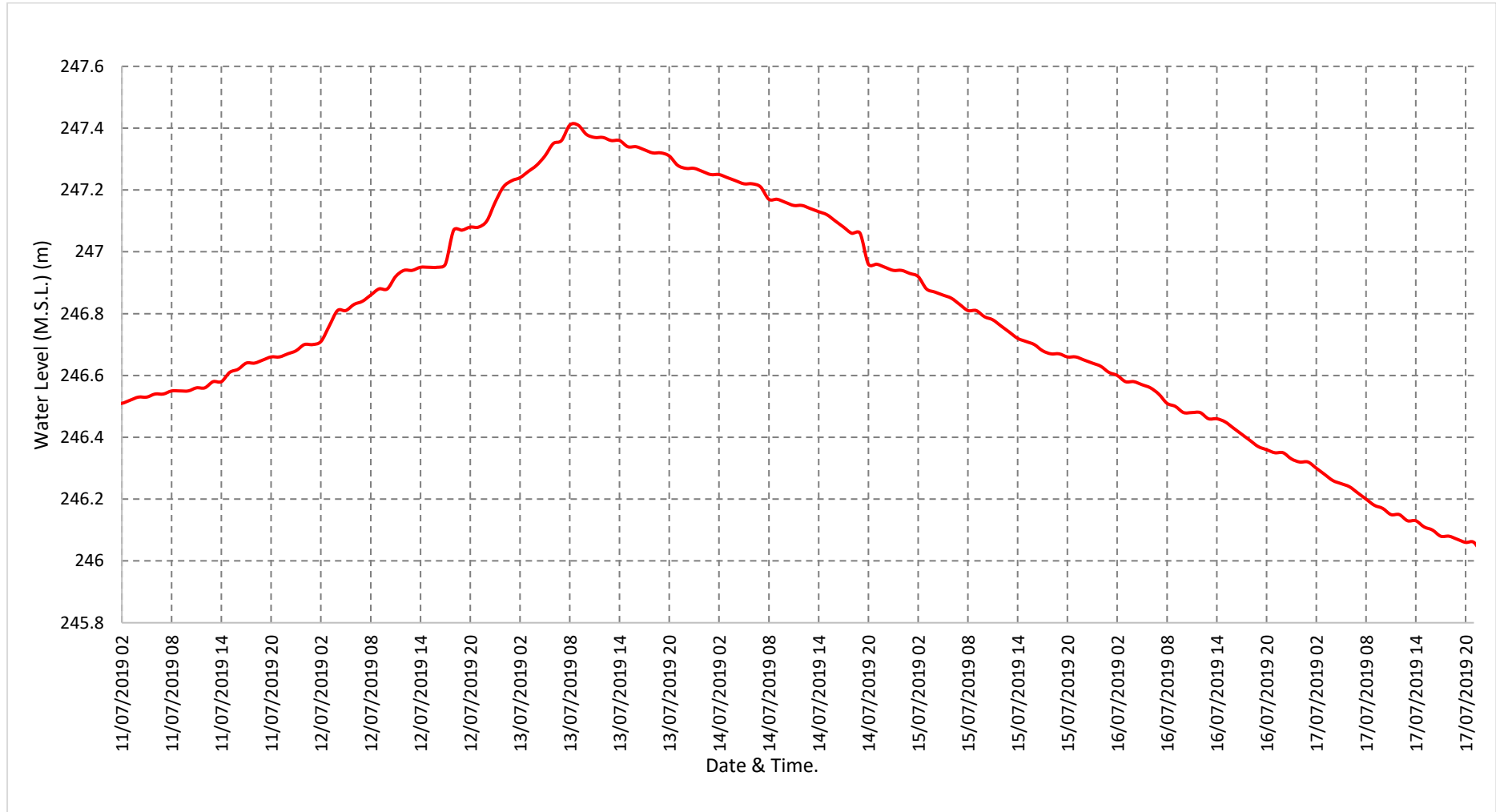
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Datuni at Dudwas

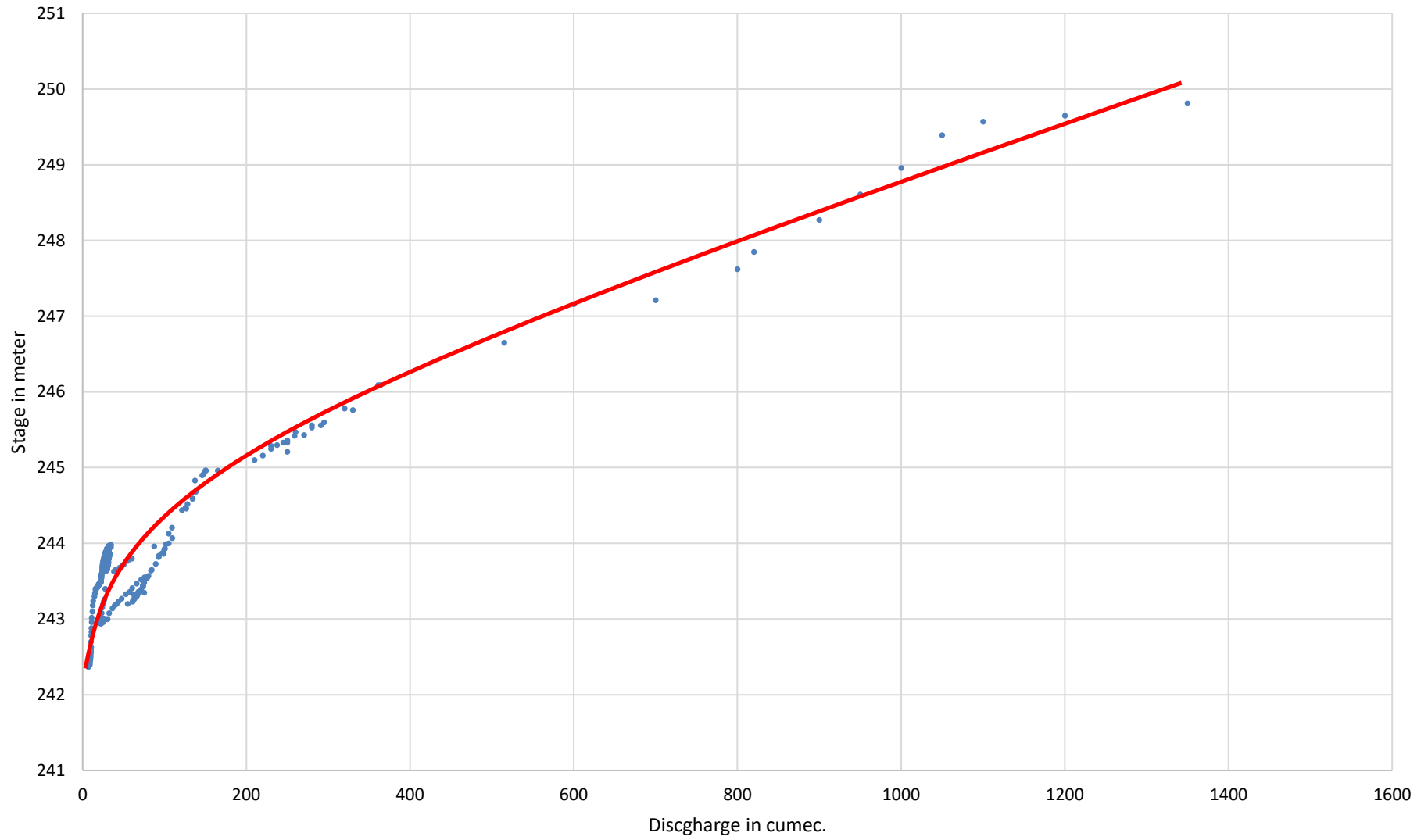
Division: Narmada Division, Bhopal

Local River: Datuni

Sub-Division: MNSD-II, CWC Bhopal



Site Dudwas SD Curve 2019-2020.



4.17 Narmada at Handia.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	Handia		Code	:	CW1NAM000392	
State	:	Madhya Pradesh		District	:	HARDA	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	-		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Narmada	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub- Division-II, Bhopal	
Drainage Area	:	54027.0 Sq. Km.		Bank	:	Left	
Latitude	:	22°29'30"		Longitude	:	76°59'38"	
Current Zero of Gauge (m)	:	258					
CATEGORY		Opening Date		Closing Date			
Gauge	:	09/02/1977					
Discharge	:	26/04/1977					
Sediment	:	11/12/1977					
Water Quality	:	01/08/1979					
Reduced Level		Opening Date		Closing Date			
258		09/02/1977					

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1976-1977	36.6	259.045	05/05/1977	18.5	258.985	20/05/1977
1977-1978	11000	269.000	15/09/1977	17.4	258.985	02/06/1977
1978-1979	19220	269.740	17/08/1978	33.6	259.240	07/06/1978
1979-1980	14350	268.480	11/08/1979	16.5	260.445	25/05/1980
1980-1981	20157.3	271.555	30/08/1980	20	260.540	01/06/1980
1981-1982	10199.2	267.545	10/08/1981	25.8	260.585	15/06/1981
1982-1983	17060	270.250	23/08/1982	30	260.570	12/06/1982
1983-1984	19950	270.760	10/09/1983	31.3	260.595	30/05/1984
1984-1985	26240	273.580	19/08/1984	23	260.555	26/05/1985
1985-1986	15600	269.740	09/08/1985	29.4	260.540	26/05/1986
1986-1987	23060	272.580	24/07/1986	28.8	260.540	16/06/1986
1987-1988	13661	269.830	28/08/1987	18.47	260.450	29/06/1987
1988-1989	20500	271.600	06/08/1988	12.12	260.440	30/05/1989
1989-1990	13200	268.520	08/08/1989	11.96	260.440	01/06/1989
1990-1991	18000	270.310	23/08/1990	37.66	260.680	12/06/1990
1991-1992	20780	270.685	26/08/1991	57.05	260.710	15/05/1992
1992-1993	9800	267.680	14/09/1992	53.2	260.695	17/03/1993
1993-1994	12300	269.150	06/08/1993	45.2	260.600	12/06/1993
1994-1995	24040	271.750	06/09/1994	100.8	261.035	22/01/1995
1995-1996	10200	267.880	12/08/1995	70.5	260.800	26/05/1996
1996-1997	14300	269.820	27/07/1996	45	260.730	23/06/1996
1997-1998	15000	270.220	26/07/1997	47.4	260.700	14/06/1997
1998-1999	18500	271.560	15/09/1998	65.2	260.680	29/05/1999
1999-2000	29250	272.780	20/09/1999	66	260.850	20/05/2000
2000-2001	5450	266.180	30/07/2000	99.01	260.950	07/06/2000
2001-2002	5950	266.500	16/08/2001	114	260.690	06/04/2002
2002-2003	14800	269.650	19/08/2002	60.41	260.760	30/05/2003
2003-2004	13240	270.080	28/07/2003	60	260.760	01/06/2003
2004-2005	14625	271.000	23/08/2004	53.5	260.850	23/05/2005
2005-2006	11761.64	268.935	06/07/2005	47.56	260.800	12/06/2005
2006-2007	21341	271.060	15/08/2006	56.52	260.680	29/06/2006
2007-2008	10883.78	268.685	09/07/2007	42.52	260.510	20/05/2008
2008-2009	6246	266.570	03/08/2008	32.41	261.270	01/02/2009
2009-2010	20785.61	271.210	11/09/2009	100.52	260.660	09/04/2010
2010-2011	6586.8	266.660	06/09/2010	77.58	260.760	06/06/2010
2011-2012	8044.14	267.850	24/07/2011	69.25	260.710	27/05/2012
2012-2013	21415	273.160	07/08/2012	45.3	260.610	08/06/2012

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2013-2014	31879.9	274.150	24/08/2013	113.76	260.800	18/05/2014
2014-2015	4908.59	266.255	08/09/2014	65.63	261.980	31/08/2014
2015-2016	5371.43	266.625	21/01/2016	72.8	260.700	04/04/2016
2016-2017	14900.8	270.090	13/07/2016	72	260.440	17/05/2017
2017-2018	3059.3	264.385	21/07/2017	20	260.330	04/04/2018
2018-2019	4500	265.370	02/09/2018	31.1	260.240	05/04/2019
2019-2020	17572.2	270.840	11/09/2019	33.3	260.240	03/06/2019

Stage Discharge Sheet for Narmada at Handia for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	33.8	260.260	121.9	260.590	3181.9	263.860	4300	264.490	5500	265.770	631	262.140
2	34	260.260	123.5	260.600	2922.9	263.560	4000	264.260	5200	266.170	630	262.140
3	33.3	260.240	125	260.620	2838.7	263.400	4579.8	264.780	4247.6	265.360	605	262.120
4	36.4	260.280	217.5	261.240	2900	263.550	6250.5	266.020	3500	264.810	600	262.120
5	35	260.280	319.4	261.730	2718.8	263.250	5867.4	265.760	2754.5	264.180	590	262.080
6	35.3	260.280	650	261.250	1314.4	262.440	7330.2	267.020	3000	264.030	580	262.080
7	35.6	260.280	2200	263.820	800	262.020	6805.2	266.740	2159.1	263.430	570	262.020
8	38	260.300	1037.8	262.370	1409.9	262.490	6700	266.680	2000	263.320	570	262.020
9	42	260.330	357.7	261.850	3636.8	264.550	12587	269.350	1790.1	263.030	570	262.020
10	42	260.330	319.7	261.700	4000	265.590	14000	270.370	1711.8	262.950	565	262.010
11	41.8	260.330	293.2	261.570	3900	264.970	17572	270.840	1660.7	262.890	565	262.010
12	42.1	260.330	170.7	261.060	3700	264.590	16267	270.440	1500	262.850	565	262.010
13	40.3	260.320	160	260.600	3000	263.640	12185	268.950	1500	262.850	570	262.020
14	82.84	260.320	210	261.140	2500	263.080	13500	269.960	1460	262.800	570	262.020
15	83.5	260.320	216.6	261.190	3500	264.400	11000	268.520	1197.8	262.440	565	261.990
16	90	260.430	198.8	261.080	5460.7	266.510	7065.9	266.860	780	262.370	565	261.990
17	89.6	260.430	167.1	260.950	5256.8	266.250	5420.6	265.450	686.6	262.330	565	261.980
18	97.5	260.480	159.8	260.880	3950	265.080	5795.5	265.670	650	262.250	565	261.980
19	102.4	260.500	148.4	260.820	3361.7	263.960	5278.8	266.390	650	262.200	560	261.970
20	102.7	260.500	147.2	260.800	2234.6	263.070	5050.8	265.430	650	262.180	560	261.970
21	103.8	260.500	145	260.760	2600	263.190	4062.5	265.180	650.2	262.180	560	261.960
22	103	260.490	157.4	260.870	2316.7	263.090	3000	264.530	642.8	262.180	560	261.960
23	100	260.480	171.2	260.910	2448.8	263.750	2914.9	264.330	636	262.160	560	261.950
24	109.1	260.490	157.8	260.880	3989.2	264.590	3005.1	264.480	610	262.110	560	261.950
25	121.4	260.590	146.9	260.810	7600	267.300	3584.5	264.750	609.8	262.100	550	261.940
26	118.1	260.570	135.3	260.730	6518.7	266.950	3000.2	264.470	600	262.100	550	261.940
27	116.2	260.540	148.6	260.830	10256	268.120	3558.8	264.800	600	262.100	550	261.930
28	105	260.490	1500	263.150	9079.7	267.410	3793.9	264.920	610	262.120	540	261.920
29	105	260.480	2554.5	263.840	6698.6	266.050	4500	265.270	610	262.130	540	261.900
30	107	260.520	1345.7	262.810	5200	265.020	4200	265.160	610	262.140	540	261.900
31			3510	263.900	4742.3	264.850			632	262.140		
Ten-Daily Mean												
I Ten-Daily	36.54	260.280	547.25	261.580	2572.3	263.470	7242	266.550	3186.3	264.310	591.1	262.080
II Ten-Daily	77.27	260.400	187.18	261.010	3686.4	264.550	9913.6	267.850	1073.5	262.520	565	261.990
III Ten-Daily	108.86	260.510	906.58	261.770	5586.3	265.480	3562	264.790	619.16	262.130	551	261.940
Monthly												
Min.	33.3	260.240	121.9	260.590	800	262.020	2914.9	264.260	600	262.100	540	261.900
Max.	121.4	260.590	3510	263.900	10256	268.120	17572	270.840	5500	266.170	631	262.140
Mean	74.22	260.400	547	261.450	3948.4	264.500	6905.9	266.400	1626.3	262.980	569.03	262.000

Annual Runoff in
MCM : **39299.06**

Annual Runoff in
mm : **727.4**

Peak Observed Discharge = 17572.2 cumecs on 11/9/2019 Corres. Water Level 270.84 m

Lowest Observed Discharge = 33.3 cumecs on 3/6/2019 Corres. Water Level 260.24 m

Stage Discharge Sheet for Narmada at Handia for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	540	261.890	120	261.020	230.27	261.080	190	261.100	159	260.920	168	260.970
2	530	261.870	117.04	261.000	190	261.080	162	261.100	164	260.950	166	260.960
3	530	261.860	112.45	260.990	224.7	261.070	190	261.100	166	260.960	161	260.930
4	520	261.260	163.5	260.980	155.43	261.060	190	261.100	166	260.960	156	260.900
5	520	261.840	160	260.980	170	261.050	190	261.070	168	260.970	154	260.890
6	510	261.800	160	260.970	170	261.050	188.05	261.050	163	260.940	154	260.890
7	500	261.750	158	260.960	170	261.050	185	261.050	157	260.910	156	260.900
8	490	261.700	155	260.900	168	261.040	185	261.040	156	260.900	161	260.930
9	480	261.650	154	260.860	165	261.030	165	261.030	157	260.910	166	260.960
10	450	261.600	154	260.870	165	261.030	165	261.030	159	260.920	168	260.970
11	430	261.550	153	260.840	165	261.020	165	261.020	157	260.910	168	260.970
12	400	261.500	153	260.840	164	261.010	165	261.020	154	260.890	166	260.960
13	390	261.480	153	260.830	164	261.000	201	261.050	156	260.900	161	260.930
14	390	261.470	154	260.850	165	261.030	183.5	261.080	156	260.900	159	260.920
15	390	261.470	154	260.850	170	261.050	190	261.080	157	260.910	159	260.920
16	370	261.440	156	260.940	170	261.060	200	261.100	163	260.940	157	260.910
17	360	261.360	158	260.970	183	261.080	170	261.050	164	260.950	156	260.900
18	360	261.340	165	261.000	200	261.090	168	261.040	163	260.940	157	260.910
19	340	261.310	165	261.000	200	261.090	165	261.030	159	260.920	161	260.930
20	330	261.290	165	261.020	200	261.120	160	260.950	156	260.900	156	260.900
21	320	261.270	166	261.040	220	261.130	155	260.900	156	260.900	159	260.920
22	320	261.270	170	261.050	220	261.130	150	260.840	154	260.890	168	260.970
23	318	261.270	180	261.060	220	261.100	148	260.820	152	260.880	173	261.000
24	318	261.250	190	261.070	210	261.120	155	260.900	151	260.870	176	261.020
25	316	261.240	195	261.110	210	261.120	159	260.940	147	260.850	181	261.050
26	300	261.240	190	261.100	210	261.120	158	260.930	149	260.860	181	261.050
27	270	261.200	180	261.080	210	261.120	155	260.900	157	260.910	180	261.040
28	240	261.170	180	261.080	259	261.080	154	260.880	163	260.940	175	261.010
29	200	261.140	185	261.090	267.95	261.100	155	260.900	164	260.950	181	261.050
30	180	261.110	191	261.090			157	260.910	166	260.960	183	261.060
31	150	261.080	190	261.080			154	260.890			185	261.070
Ten-Daily Mean												
I Ten-Daily	507	261.720	145.4	260.950	180.84	261.050	181	261.070	161.5	260.930	161	260.930
II Ten-Daily	376	261.420	157.6	260.910	178.1	261.050	176.75	261.040	158.5	260.920	160	260.930
III Ten-Daily	266.55	261.200	183.36	261.080	225.22	261.110	154.55	260.890	155.9	260.900	176.55	261.020
Monthly												
Min.	150	261.080	112.45	260.830	155.43	261.000	148	260.820	147	260.850	154	260.890
Max.	540	261.890	195	261.110	267.95	261.130	201	261.100	168	260.970	185	261.070
Mean	383.18	261.450	162.12	260.980	194.72	261.070	170.77	261.000	158.63	260.920	165.85	260.960

Peak Computed Discharge = 14000 cumecs on 10/9/2019 Corres. Water Level 270.37 m

Lowest Computed Discharge = 34cumecs on 2/6/2019 Corres. Water Level 260.26 m

Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 2000-2020)

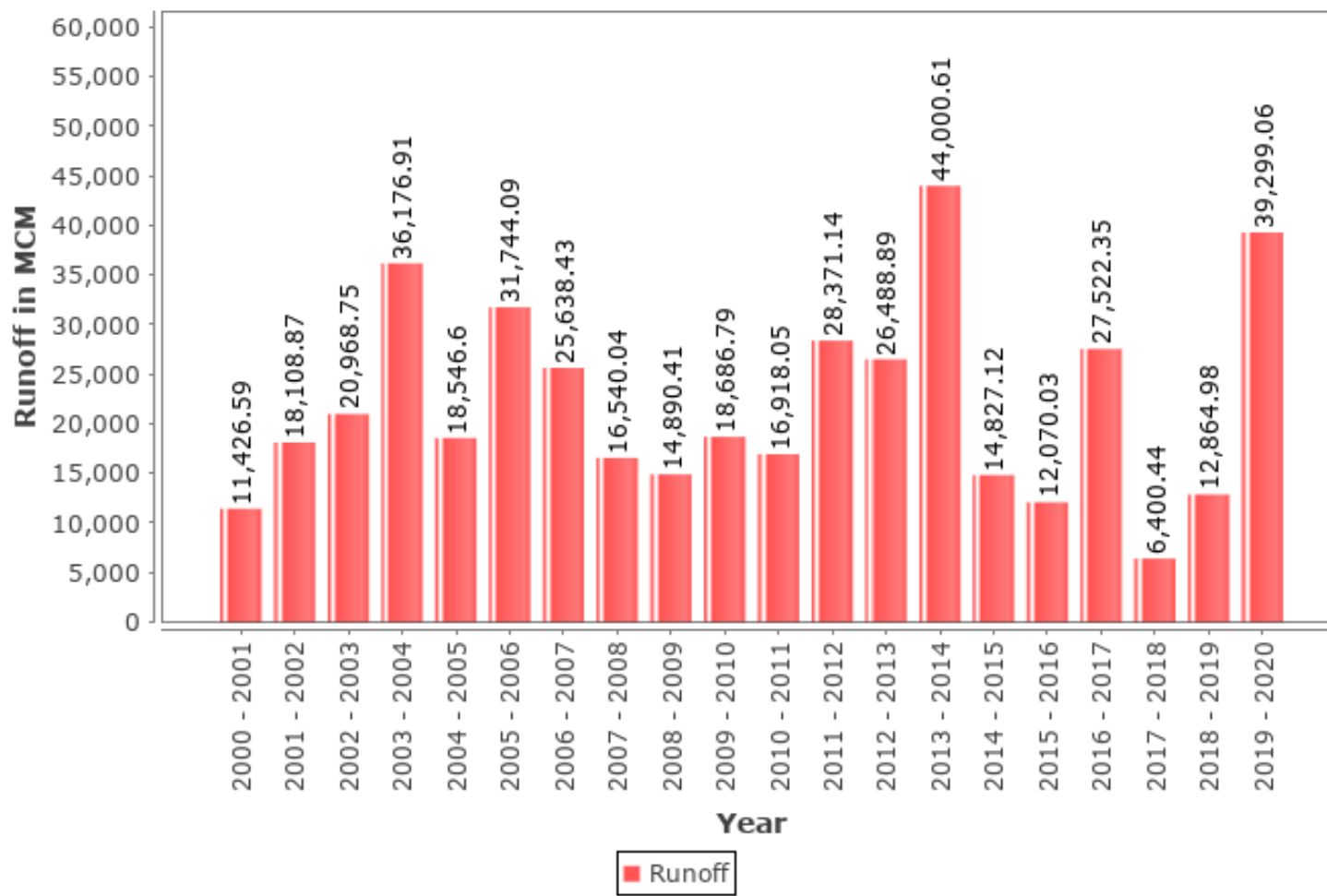
Station Name : Narmada at Handia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD II, CWC Bhopal

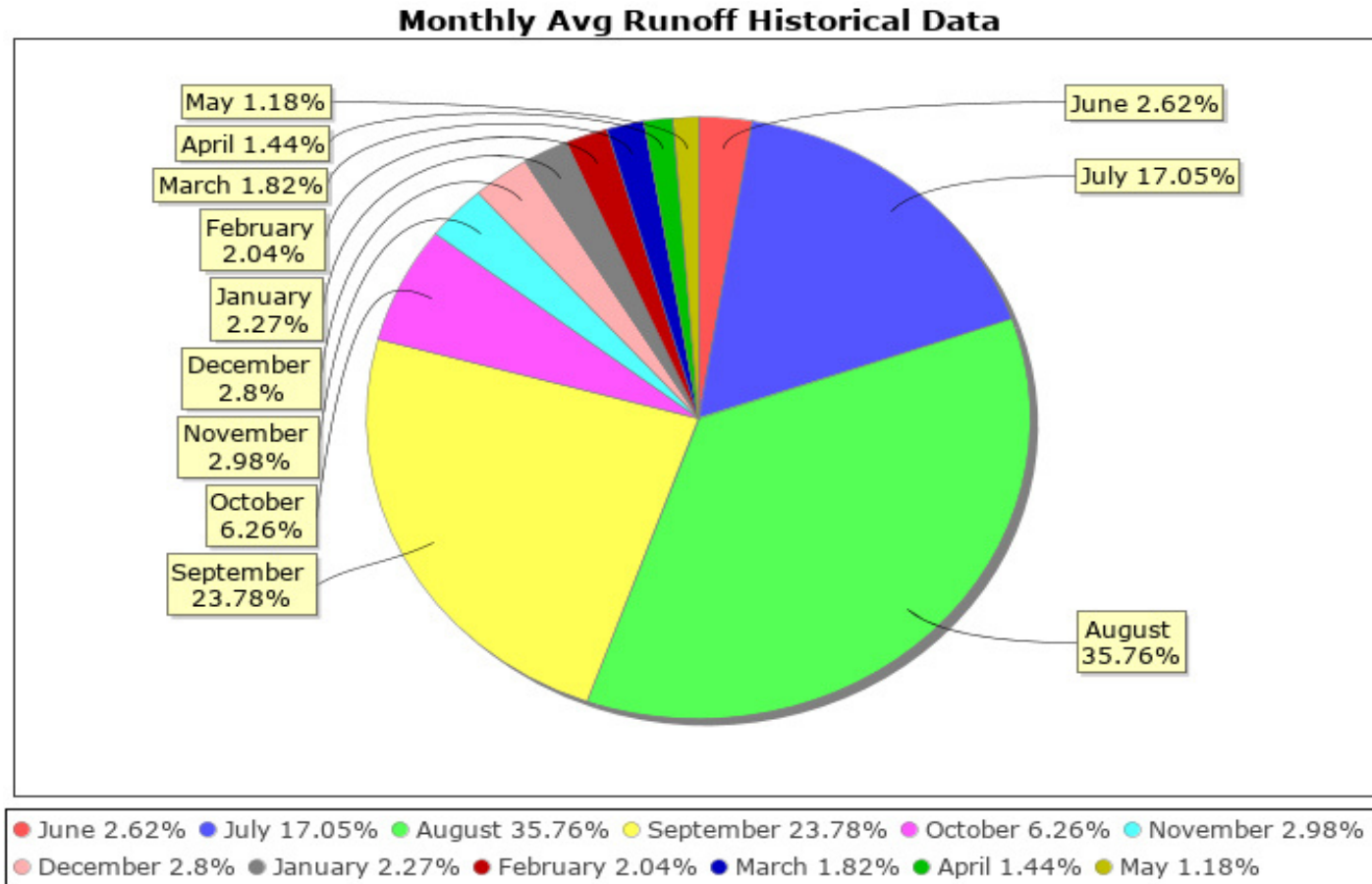
Annual Runoff



Monthly Average Runoff based on period (1977 – 2020)

Station Name : Narmada at Handia
Local River : Narmada

Division : Narmada Division, Bhopal
Sub-Division :MNSD II, CWC Bhopal

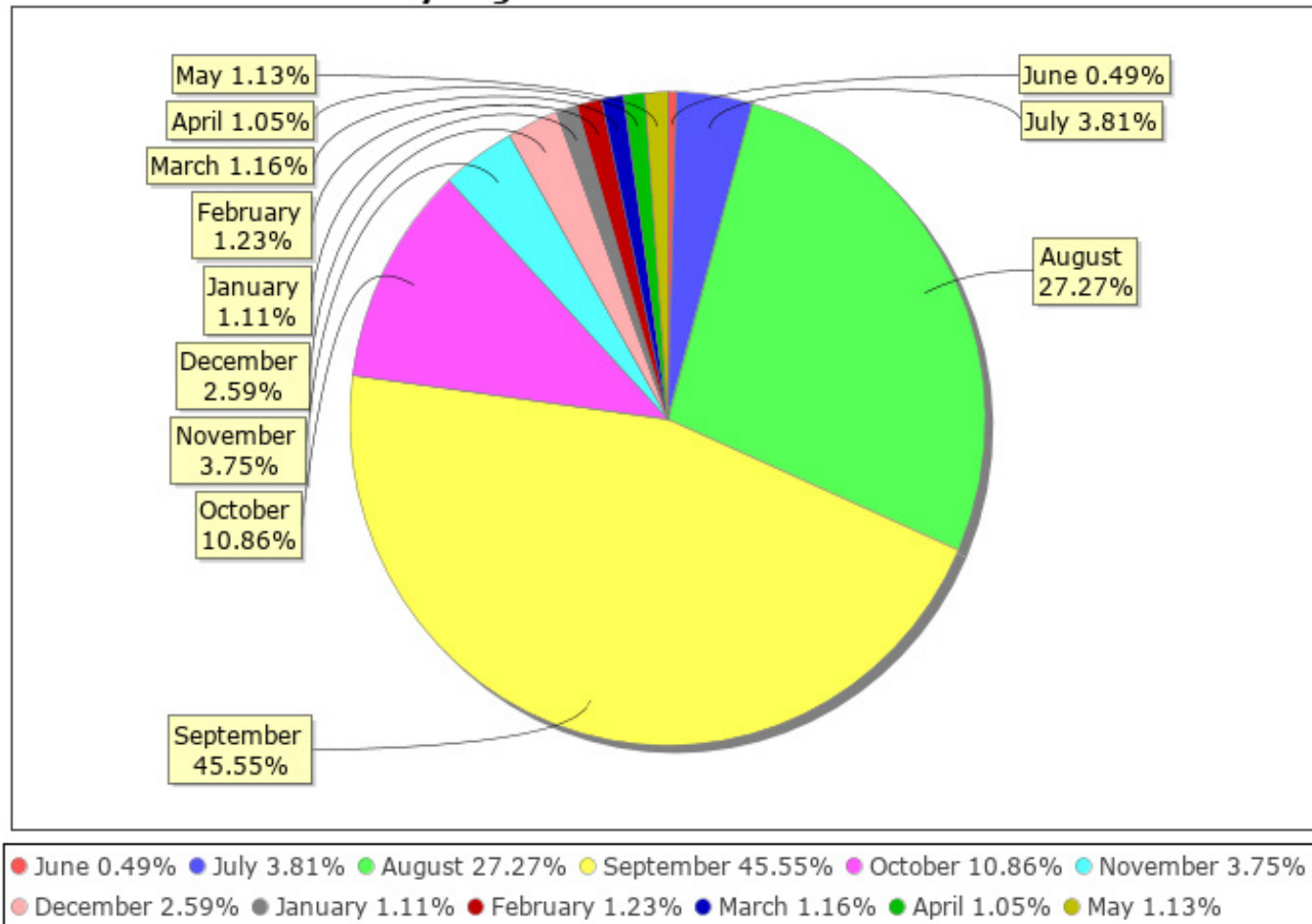


Monthly Runoff for the Year (2019-20)

Station Name : Narmada at Handia
Local River : Narmada

Division : Narmada Division, Bhopal
Sub-Division :MNSD II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



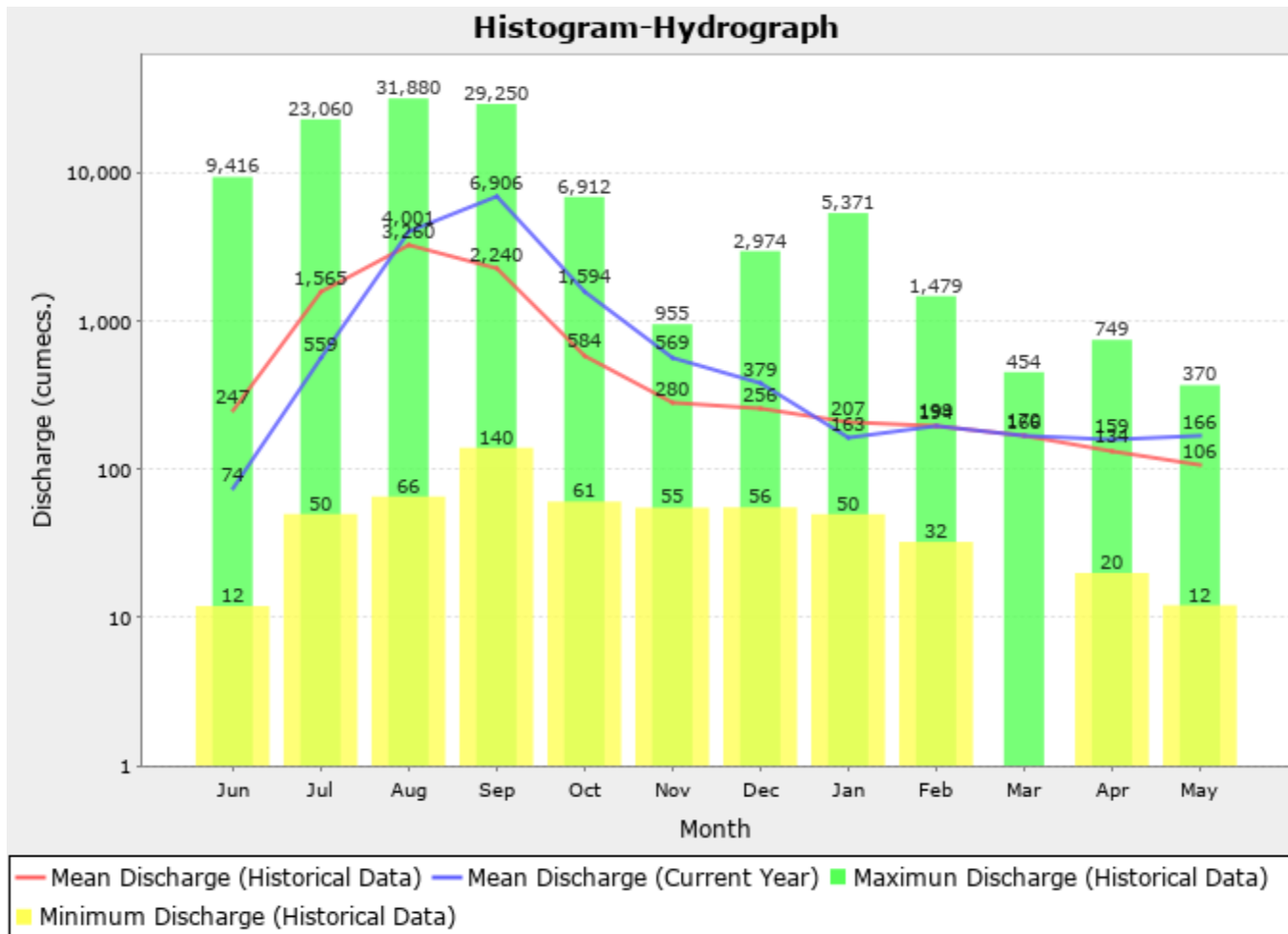
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1977-2020)

Station Name : Narmada at Handia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD II, CWC Bhopal



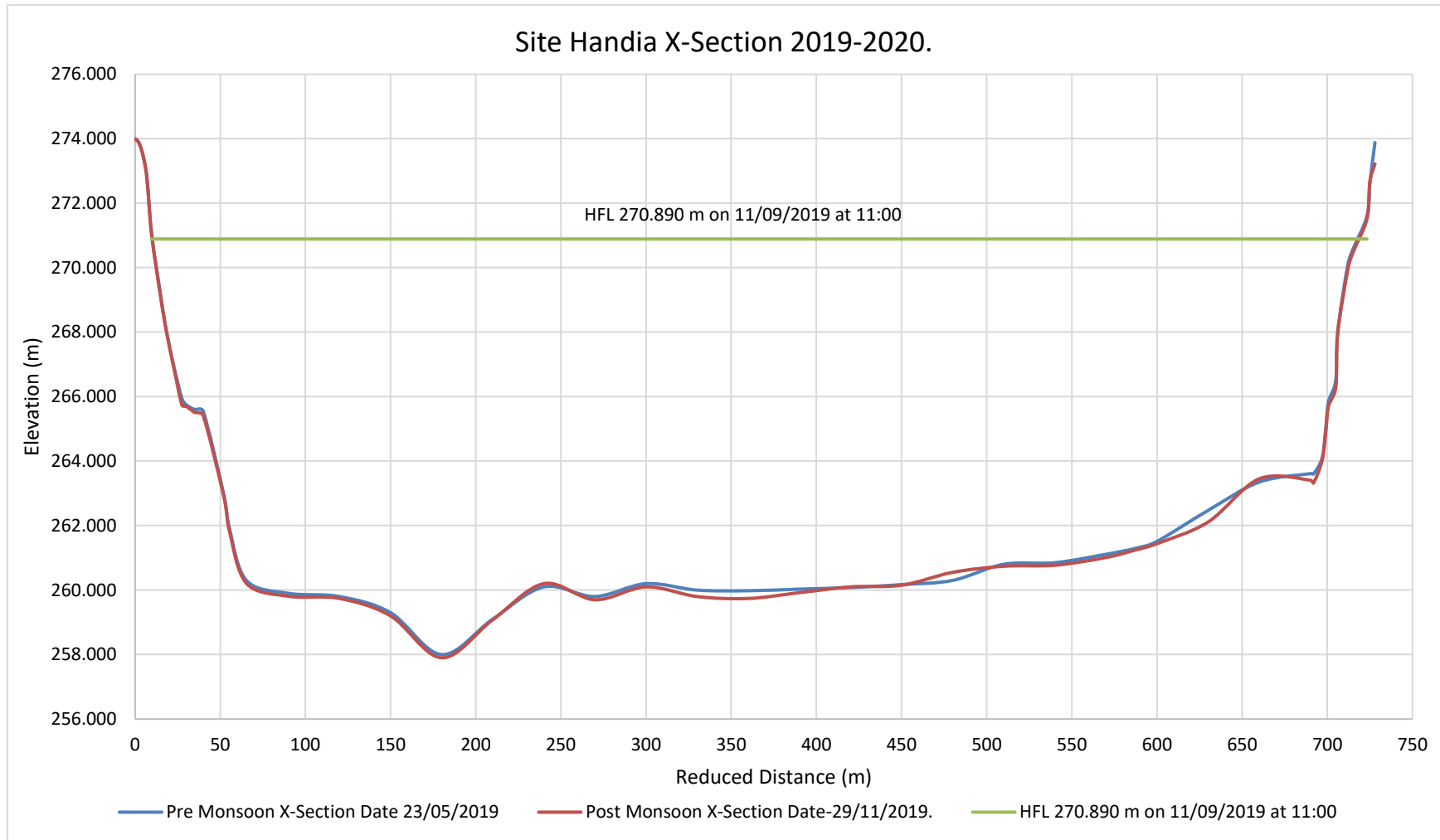
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Handia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD II, CWC Bhopal



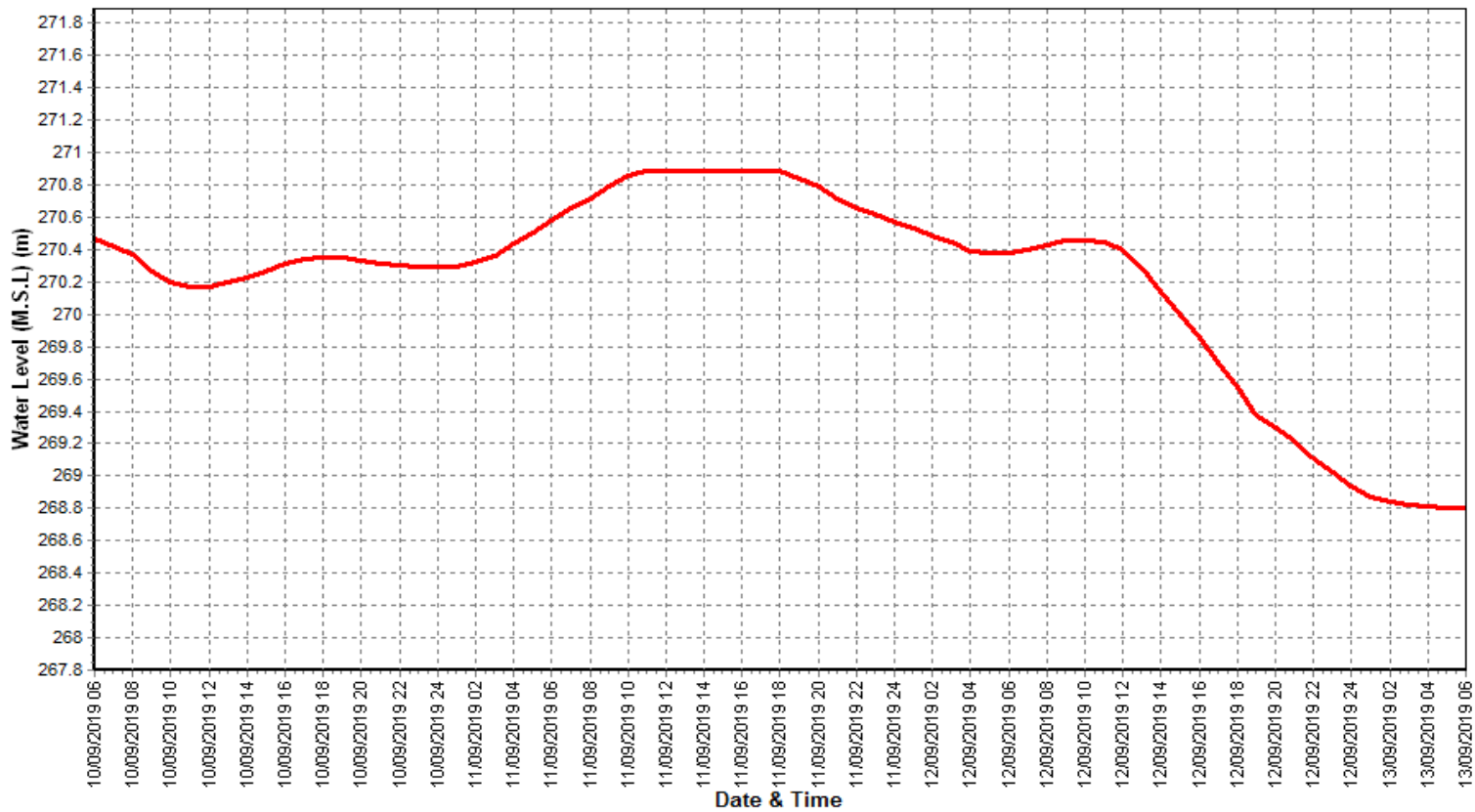
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Handia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD II, CWC Bhopal



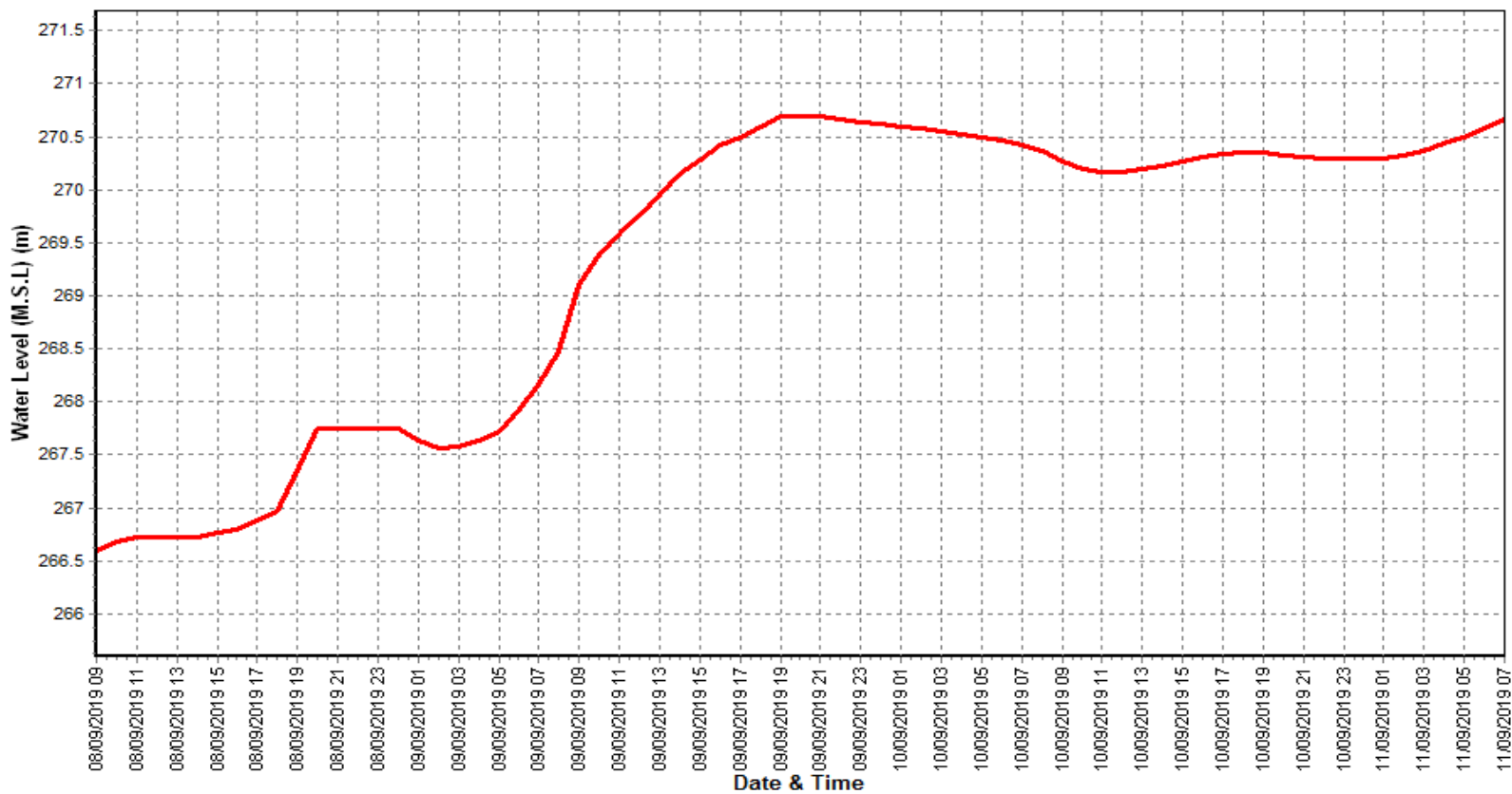
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Handia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD II, CWC Bhopal



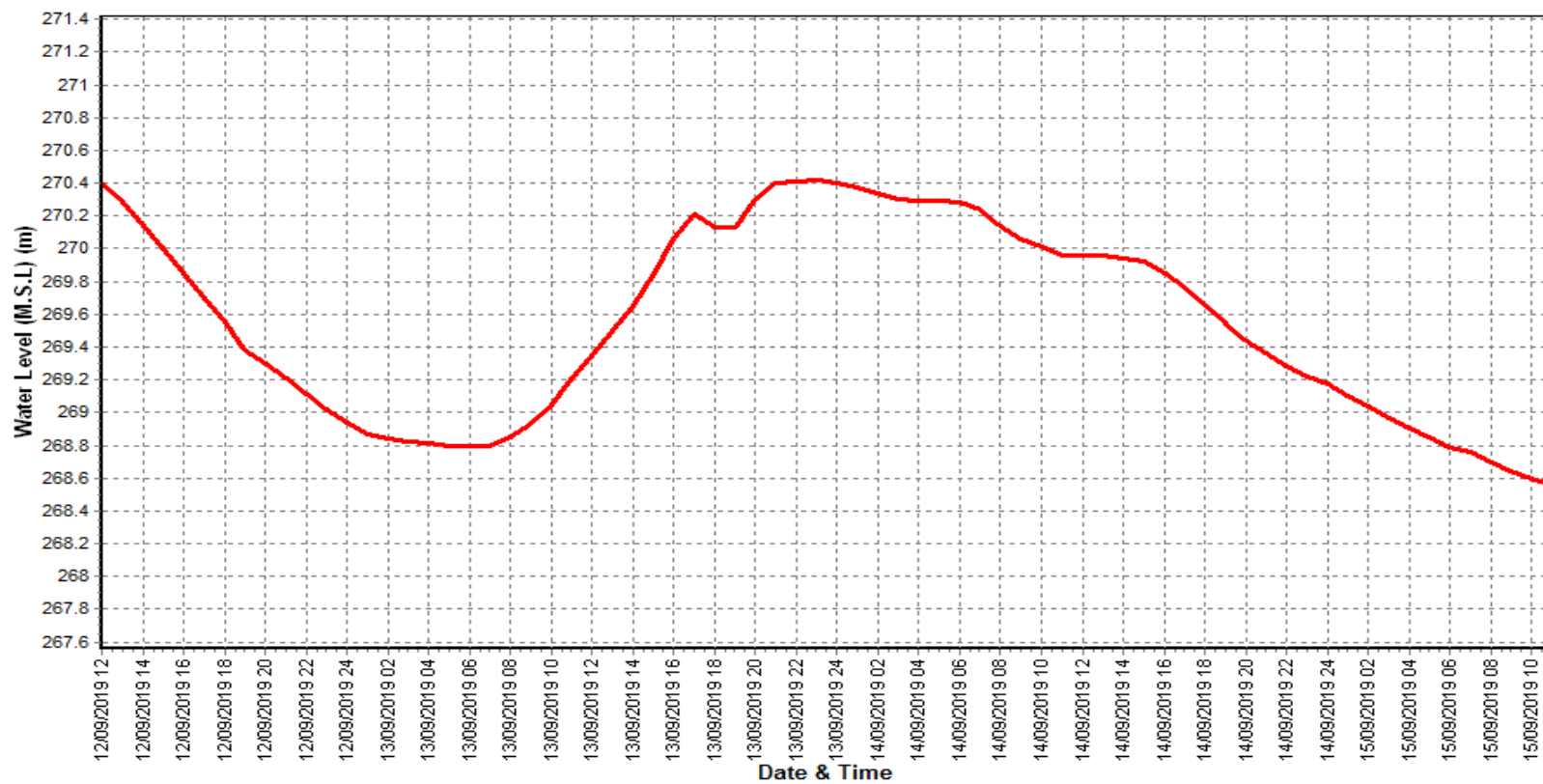
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Handia

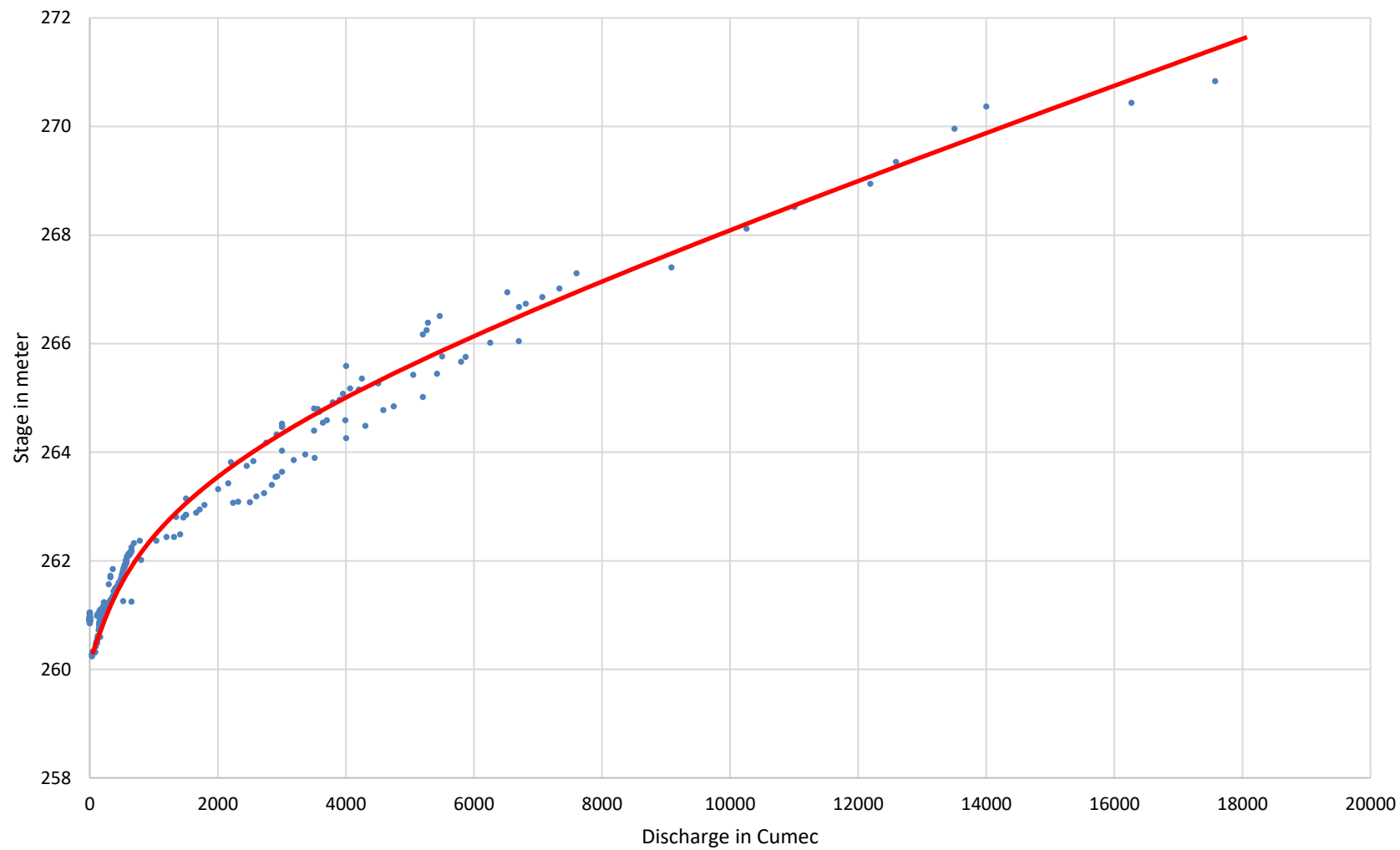
Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division :MNSD II, CWC Bhopal



Site Handia Stage-Discharge Curve 2019-2020.



4.18 Jamner at Sandalpur.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Jamner at Sandalpur		Code	:	CW1NAM001480
State	:	Madhya Pradesh		District	:	DEWAS
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Jamner
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	552 sq. km		Bank	:	Left
Latitude	:	22°34'49"		Longitude	:	76°58'22"
Current Zero of Gauge (m)	:	278				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2020				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
278.0		15/01/2019				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	1500	286.12	28/07/2019	0	-	01-06-2019

Stage Discharge Sheet for Jamner at Sandalpur for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	§	§	43.32	280.00	890	284.88	60	280.45	72.6	280.76	19.1	279.87
2	§	§	43	280.00	850	284.75	200	281.28	60	280.67	19.1	279.87
3	§	§	43.34	280.00	820	284.53	81.2	280.85	62.7	280.61	25	280.00
4	§	§	44.7	280.00	800	284.30	73.5	280.79	56.7	280.54	18.1	279.83
5	§	§	43	280.00	556.5	283.70	84.6	280.87	55	280.60	18	279.81
6	§	§	43.1	280.00	478.7	283.30	79.9	280.78	62.1	280.68	18	279.81
7	§	§	60	280.59	438.8	282.91	63.8	280.63	60	280.62	18	279.81
8	§	§	62.3	280.59	382.5	282.42	65	280.67	58.3	280.64	18	279.81
9	§	§	51.7	280.38	246.9	281.61	77.3	280.75	54.6	280.58	18	279.81
10	§	§	43.7	280.14	62.6	280.60	60	280.62	57.2	280.60	25	280.00
11	§	§	51.6	280.33	50	280.25	65	280.71	63.2	280.66	17.7	279.80
12	§	§	43.5	280.12	52.8	280.38	155.8	281.19	55.7	280.58	17.7	279.80
13	§	§	42.8	280.00	49.3	280.26	147.12	281.11	50	280.48	17.7	279.80
14	§	§	45	280.00	62.3	280.59	99.6	280.96	49.2	280.41	17.7	279.80
15	§	§	43.2	280.00	60	280.55	80	280.78	48.3	280.33	17.7	279.80
16	§	§	43.3	280.00	51.7	280.38	54.3	280.55	44	280.26	17.7	279.80
17	§	§	43.5	280.00	50.6	280.30	51.9	280.45	37.7	280.16	21.3	279.90
18	§	§	65.3	280.65	45	280.18	44	280.17	32.5	280.07	22.2	279.95
19	§	§	55.1	280.41	41.9	280.06	47.9	280.25	22.7	280.03	23.1	280.00
20	§	§	44	280.14	50.7	280.36	51.9	280.45	25	280.00	23.1	280.00
21	§	§	46	280.18	57.5	280.44	52.4	280.44	20.8	279.99	22.9	279.99
22	§	§	43.8	280.14	51.7	280.30	58	280.61	19.7	279.91	22.9	279.99
23	§	§	43	280.00	51.9	280.31	79.1	280.77	19.7	279.90	22.9	279.99
24	§	§	55.1	280.41	204.9	281.38	176	281.29	19.2	279.88	25	280.00
25	§	§	92.3	280.90	200	281.32	198.9	281.43	19.2	279.88	22.5	279.98
26	§	§	623	282.59	88.3	280.91	187.5	281.33	19.2	279.88	22.5	279.98
27	§	§	774.96	284.38	89.9	280.94	93.5	280.92	25	280.00	21.7	279.95
28	§	§	1500	286.12	66.5	280.70	71.6	280.84	19.1	279.87	21.7	279.96
29	§	§	1200	285.74	62.6	280.60	75	280.79	19.1	279.87	21.7	279.95
30	§	§	1100	285.40	60	280.49	76.4	280.79	19.1	279.87	21.6	279.96
31			1000	285.15	62.3	280.59			19.1	279.87		
Ten-Daily Mean												
I Ten-Daily	0	0	47.82	280.17	552.6	283.3	84.53	280.77	59.92	280.63	19.63	279.86
II Ten-Daily	0	0	47.73	280.16	51.43	280.33	79.75	280.66	42.83	280.3	19.59	279.86
III Ten-Daily	0	0	588.92	282.82	90.51	280.73	106.84	280.92	19.93	279.9	22.54	279.97
Monthly												
Min.	0	0	42.8	280	41.9	280.06	44	280.17	19.1	279.87	17.7	279.8
Max.	0	0	1500	286.12	890	284.88	200	281.43	72.6	280.76	25	280.00
Mean	0	0	228.16	281.05	231.51	281.45	90.37	280.78	40.89	280.28	20.59	279.90

Annual Runoff in

MCM : 1862.22

Annual Runoff in mm : 3373

Peak Observed Discharge = 774.96 cumecs on 27/7/2019 Corres. Water Level 284.38 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

§- No Flow

Stage Discharge Sheet for Jamner at Sandalpur for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	20	279.95	19.4	279.85	13.8	278.92	13.2	278.89	12.4	278.83	5.2	278.59
2	22.2	279.98	19.4	279.85	13.8	278.93	16	278.78	12.4	278.83	4.6	278.57
3	22.2	279.99	19.4	279.85	13.8	278.92	13.2	278.89	12.1	278.82	4.6	278.56
4	22.7	280.00	19.4	279.85	13.8	278.92	13.3	278.88	12.1	278.82	5.2	278.55
5	22.7	280.00	19.6	279.86	13.8	278.91	13.3	278.88	12.1	278.82	8	278.40
6	22.7	280.00	19.9	279.87	13.8	278.91	13.3	278.88	12.1	278.82	5.1	278.50
7	22.2	279.98	19.9	279.88	13.8	278.91	13.3	278.88	12.1	278.81	5	278.45
8	20	279.94	19	279.90	13.8	278.91	13.3	278.88	12.1	278.81	5	278.43
9	21.9	279.96	20.7	279.90	13.8	278.91	15	278.75	12.1	278.81	5	278.42
10	21.9	279.96	20.7	279.90	13.8	278.91	13.3	278.88	12	278.80	4.9	278.40
11	21.9	279.96	20.7	279.90	13.8	278.91	13.1	278.87	12	278.80	4.7	278.34
12	21.9	279.96	20.8	279.91	13.8	278.91	13.1	278.87	12	278.80	4.7	278.34
13	21.8	279.95	21.1	279.93	13.8	278.91	13.1	278.87	11.8	278.79	4.7	278.27
14	21.8	279.95	21.4	279.96	13.5	278.90	13.1	278.87	11.8	278.79	4.8	278.24
15	30	279.00	20.8	280.00	13.5	278.90	13.1	278.87	11.8	278.79	4.8	278.20
16	21.3	279.94	19.7	279.99	13.5	278.90	15	278.72	11.7	278.78	4.8	278.20
17	21.3	279.94	18.6	279.81	13.5	278.90	13.1	278.87	11.7	278.78	4.8	278.19
18	21.3	279.94	18.1	279.70	13.5	278.90	13.1	278.87	11.7	278.78	4.8	278.18
19	21.2	279.92	17.9	279.66	13.5	278.90	13.1	278.87	10.2	278.77	5	278.27
20	20.8	279.90	17.7	279.62	13.5	278.90	12.8	278.86	10.2	278.77	5	278.26
21	20.8	279.90	16	279.40	13.5	278.90	12.8	278.87	10.2	278.77	4	278.25
22	30	279.20	15.3	279.30	13.5	278.90	12.8	278.86	10.2	278.77	4	278.24
23	19.9	279.88	14.8	279.24	13.5	278.90	15	278.66	9.6	278.75	3	278.23
24	19.6	279.86	14.8	279.18	13.5	278.90	12.8	278.86	9.6	278.74	3	278.22
25	30	279.16	14.8	279.15	13.2	278.89	12.8	278.86	9.2	278.73	3	278.21
26	19.2	279.84	14.8	279.14	13.2	278.89	12.8	278.86	7.8	278.70	3	278.20
27	19.2	279.84	14.7	279.11	13.2	278.89	12.8	278.86	6.6	278.67	2	278.13
28	19.2	279.84	14.1	279.03	13.2	278.89	12.8	278.86	6	278.65	2	278.08
29	30	279.11	14	278.99	13.2	278.89	12.7	278.84	5.2	278.61	2	278.03
30	19.2	279.84	13.8	278.95			12.7	278.84	5.2	278.60	2	278.00
31	30	279.08	13.8	278.93			14	278.63			2	278.00
Ten-Daily Mean												
I Ten-Daily	21.85	279.98	19.74	279.87	13.8	278.92	13.72	278.86	12.15	278.82	5.26	278.49
II Ten-Daily	22.33	279.85	19.68	279.85	13.59	278.9	13.26	278.85	11.49	278.78	4.81	278.25
III Ten-Daily	23.37	279.6	14.63	279.13	13.33	278.89	13.09	278.82	7.96	278.7	2.73	278.14
Monthly												
Min.	19.2	279.00	13.8	278.93	13.2	278.89	12.7	278.63	5.2	278.6	2	278.00
Max.	30	280.00	21.4	280.00	13.8	278.93	16	278.89	12.4	278.83	8	278.59
Mean	22.52	279.81	18.02	279.62	13.57	278.9	13.36	278.84	10.53	278.77	4.27	278.29

Peak Computed Discharge = 1500 cumecs on 28/7/2019 Corres. Water Level 286.12 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

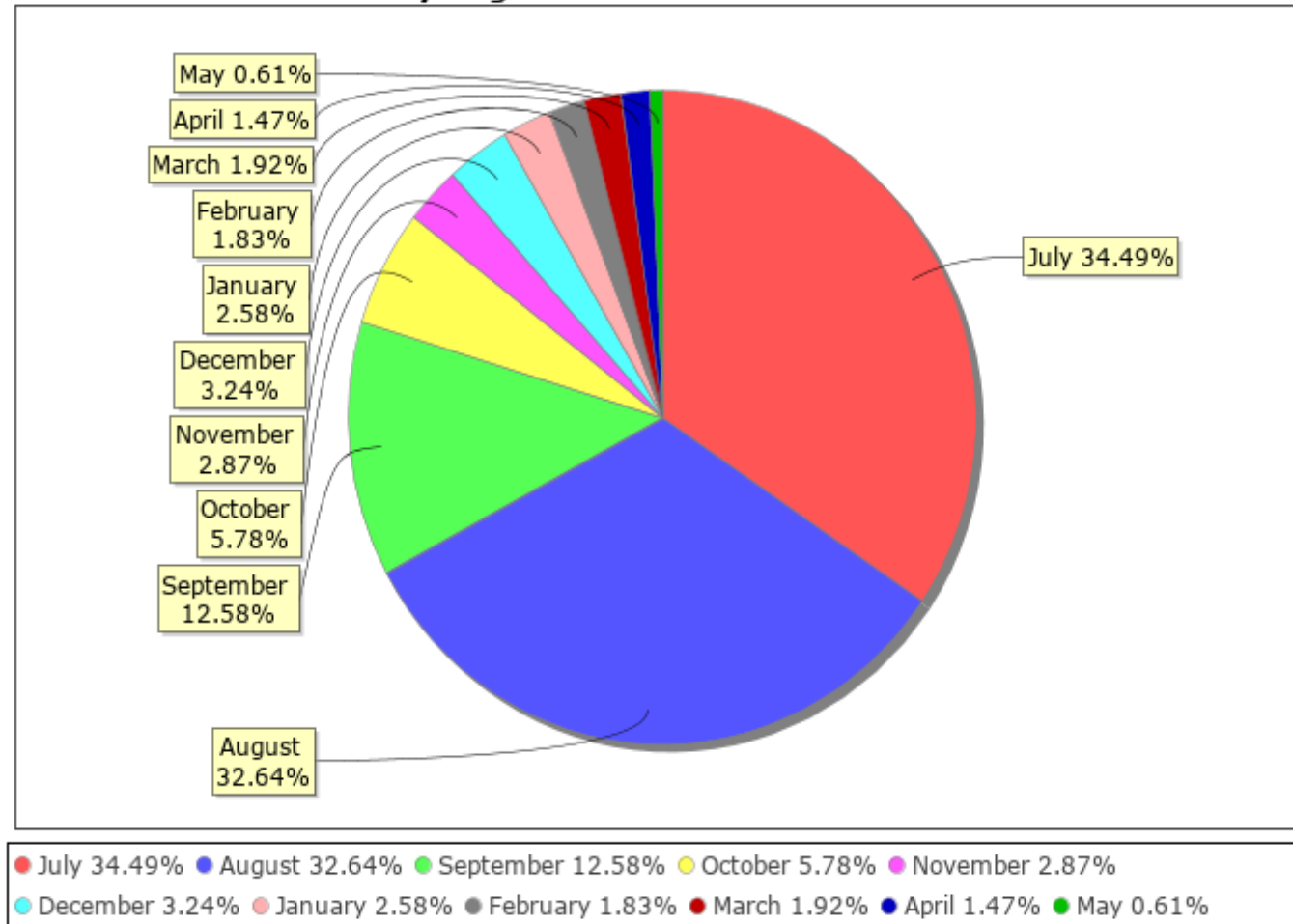
Station Name: Jamner at Sandalpur

Division: Narmada Division, Bhopal

Local River: Jamner

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



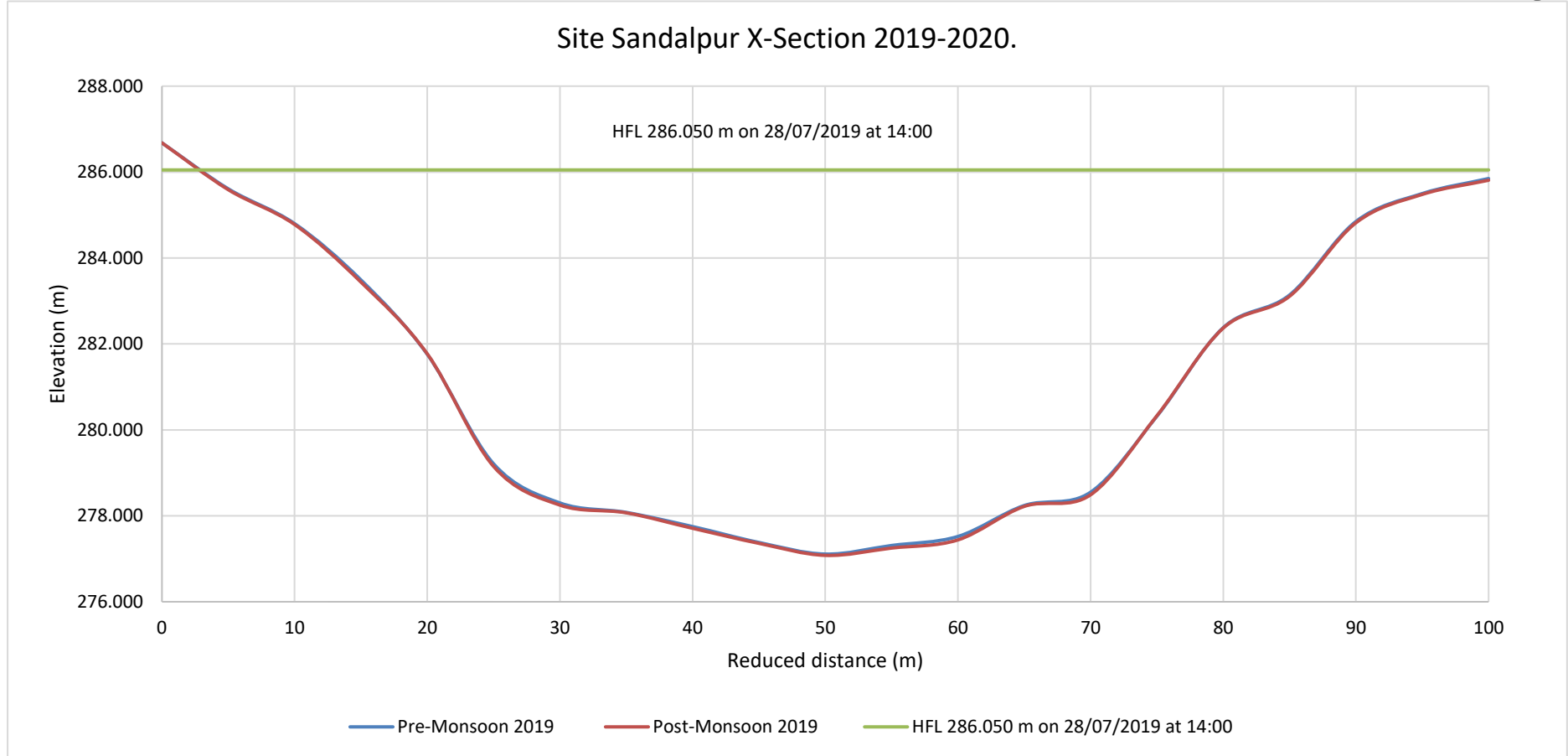
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Jamner at Sandalpur

Division: Narmada Division, Bhopal

Local River: Jamner

Sub-Division: MNSD-II, CWC Bhopal



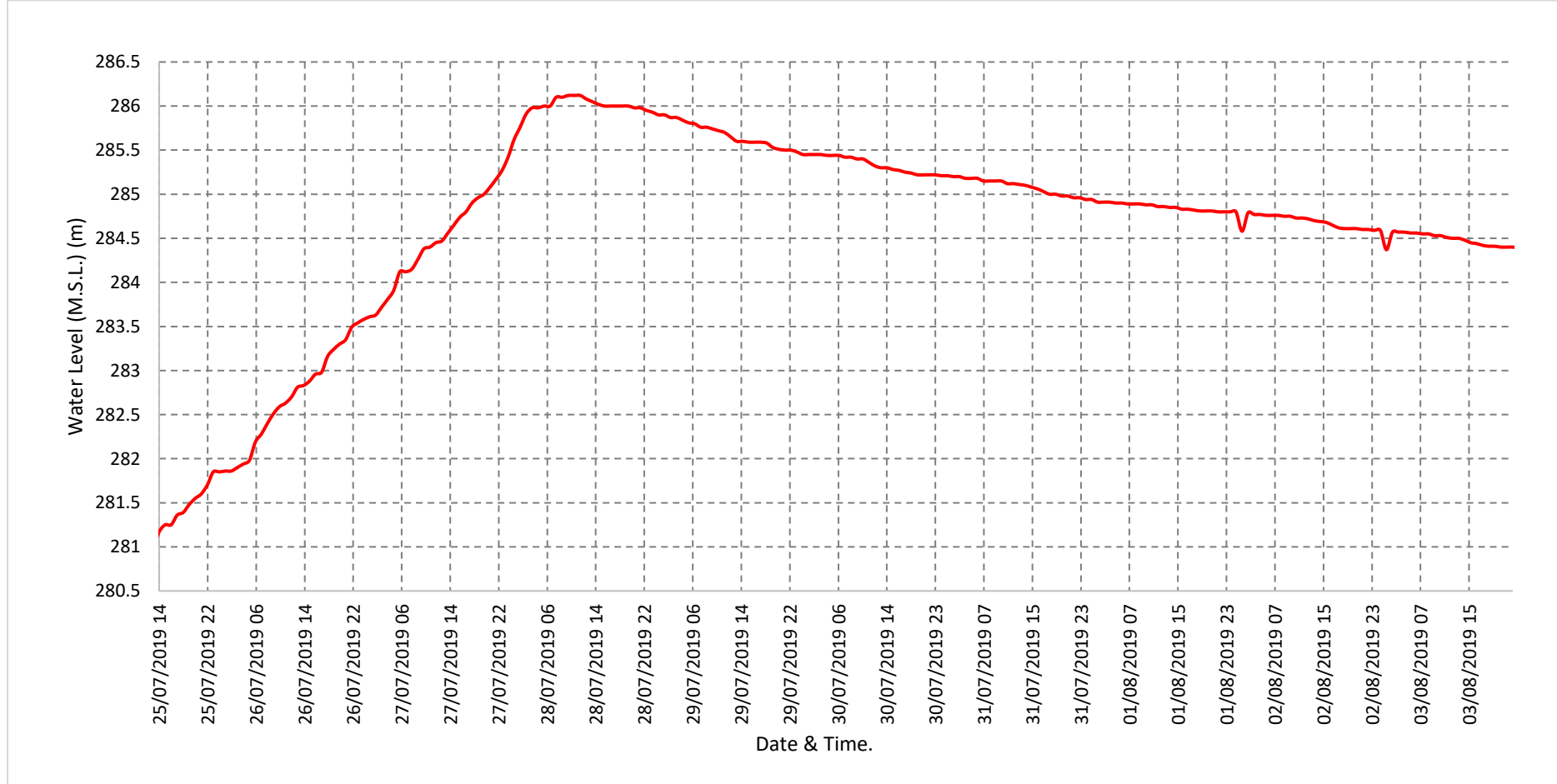
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Jamner at Sandalpur

Division: Narmada Division, Bhopal

Local River: Jamner

Sub-Division: MNSD-II, CWC Bhopal



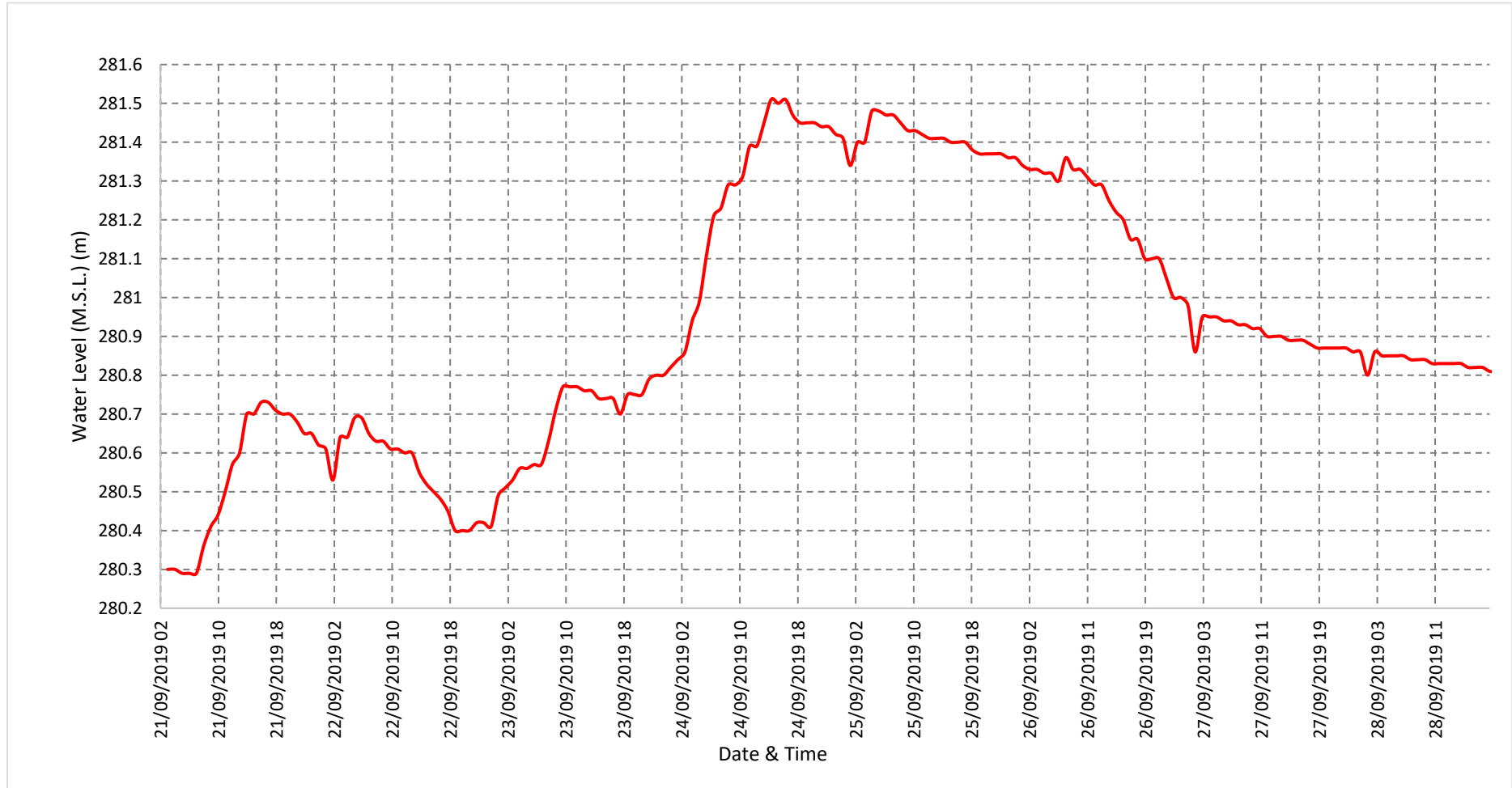
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Jamner at Sandalpur

Division: Narmada Division, Bhopal

Local River: Jamner

Sub-Division: MNSD-II, CWC Bhopal



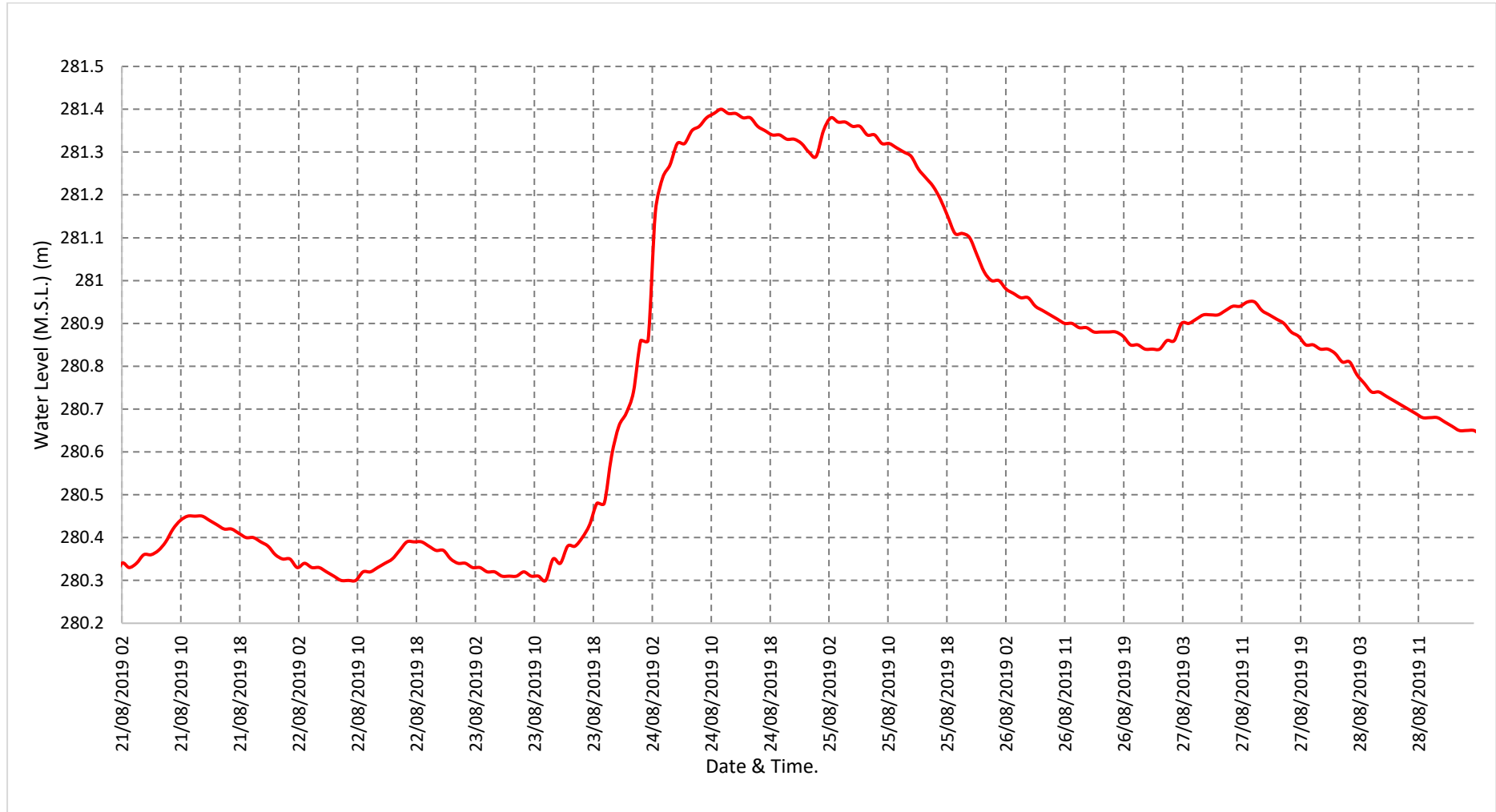
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Jamner at Sandalpur

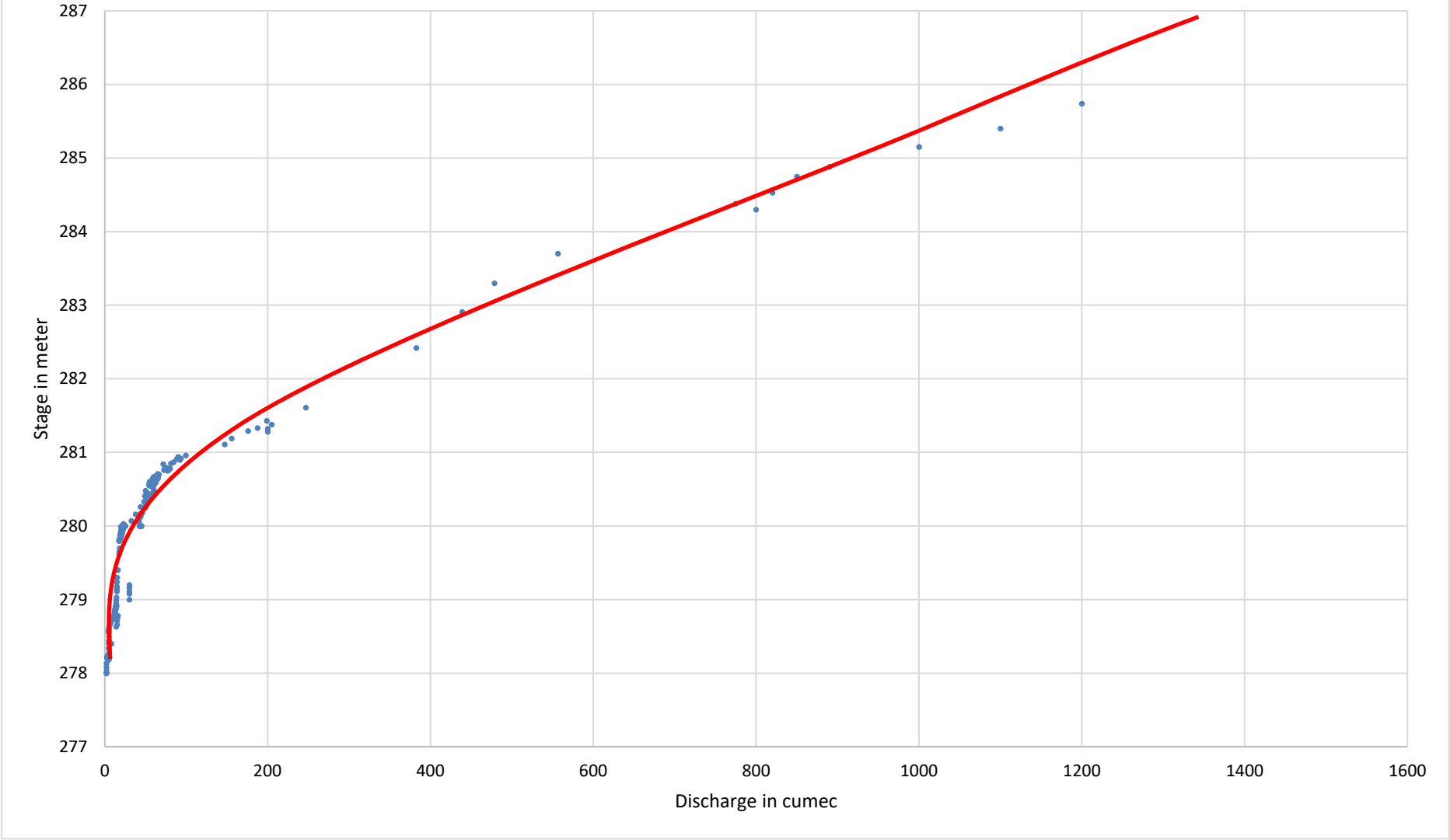
Division: Narmada Division, Bhopal

Local River: Jamner

Sub-Division: MNSD-II, CWC Bhopal



Site Sandalpur SD Curve 2019-2020.



4.19 Sip at Dholpur.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Sip at Dholpur		Code	:	CW1NAM001454
State	:	Madhya Pradesh		District	:	SEHORE
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Narmada		Sub Tributary	:	Narmada
Sub-Sub Tributary	:	Narmada		Local River	:	Sip
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	731 sq. km		Bank	:	Right
Latitude	:	22°36'21"		Longitude	:	77°11'44"
Current Zero of Gauge (m)	:	263				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
263.0		27/01/2021				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q	WL	Date	Q	WL
2019-2020		527.55	273.055	09/09/2019	0	-
						01-06-2019

Stage Discharge Sheet for Sip at Dholpur for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	\$	\$	248.77	267.27	284.35	267.53	336.62	268.86	166.79	267.31
2	\$	\$	\$	\$	204.27	267.95	364.64	268.62	318.46	268.57	169.97	267.39
3	\$	\$	6.68	265.18	344.58	268.15	357.98	268.60	236.64	267.85	161.08	267.32
4	\$	\$	99.83	267.85	260.41	267.45	353.32	268.85	227.84	267.55	166.97	267.32
5	\$	\$	502.49	272.48	231.31	267.05	350.12	268.60	193.22	267.10	157.89	267.27
6	\$	\$	403.16	269.48	231.96	266.72	397.39	269.39	194.59	267.08	156.78	267.25
7	\$	\$	340.1	268.10	215.76	266.75	376.28	269.20	194.12	267.08	158.27	267.29
8	\$	\$	344.53	268.13	274.85	267.65	447.71	270.40	193.81	267.07	158.87	267.27
9	\$	\$	284.53	267.49	404.79	269.55	527.55	273.05	192.37	267.07	153.66	267.26
10	\$	\$	272.22	267.48	390.85	269.15	511.37	272.34	190.03	267.05	164.65	267.33
11	\$	\$	270.51	267.48	349.09	268.30	507.58	272.60	169.62	267.11	164.63	267.33
12	\$	\$	269.67	267.47	290.72	267.90	502.95	272.40	169.83	267.12	166.83	267.32
13	\$	\$	265.28	267.46	231.2	267.05	490.48	272.03	170.72	267.12	166.68	267.31
14	\$	\$	265.2	267.46	270.14	267.60	489.03	272.37	157.88	267.11	165.74	267.31
15	\$	\$	264.8	267.46	361.22	268.85	442.56	270.40	164.04	267.11	160.85	267.32
16	\$	\$	262.89	267.45	423.67	269.85	368.12	269.05	163.47	267.11	165.44	267.31
17	\$	\$	262.11	267.45	401.83	269.45	372.78	268.94	163.43	267.11	166.2	267.30
18	\$	\$	261.72	267.44	354.9	268.36	363.35	268.85	162.4	267.11	161.11	267.30
19	\$	\$	262.07	267.45	264.42	267.60	361.35	268.82	162.32	267.11	159.72	267.30
20	\$	\$	262.88	267.45	243.89	267.38	315.04	268.50	162.9	267.12	160.26	267.29
21	\$	\$	261.75	267.45	232.13	267.35	284.05	268.06	162.77	267.12	155.75	267.29
22	\$	\$	257.53	267.4	276.47	267.70	233.32	267.82	163.38	267.15	155.28	267.28
23	\$	\$	252.6	267.27	277.59	267.80	222.93	267.35	163.12	267.15	158.3	267.29
24	\$	\$	217.84	266.83	372.48	268.75	229.36	267.12	162.51	267.15	158.18	267.29
25	\$	\$	204.64	266.58	423.61	268.90	230.64	267.62	164.04	267.2	155.62	267.28
26	\$	\$	206.24	266.63	472.94	270.85	232.56	267.68	165.37	267.25	155.45	267.27
27	\$	\$	277.75	267.74	434.74	270.10	232.3	267.67	165.27	267.25	155.24	267.27
28	\$	\$	460.98	270.75	400.61	269.60	309.32	268.45	168.4	267.45	150.98	267.23
29	\$	\$	229.99	266.95	361.55	268.65	229.78	267.75	166.87	267.32	150.08	267.18
30	\$	\$	366.07	268.95	270.38	267.85	236.6	267.83	160.23	267.30	148.31	267.13
31			349.37	268.25	274.59	267.65			157.69	267.30		
Ten-Daily Mean												
I Ten-Daily	0	0	225.35	214.62	280.75	267.77	397.07	269.66	227.77	267.53	161.49	267.30
II Ten-Daily	0	0	264.71	267.46	319.11	268.23	421.32	270.40	164.66	267.11	163.75	267.31
III Ten-Daily	0	0	280.43	267.71	345.19	268.65	244.09	267.74	163.6	267.24	154.32	267.25
Monthly												
Min.	0	0	6.68	265.18	204.27	266.72	222.93	267.12	157.69	267.05	148.31	267.13
Max.	0	0	502.49	272.48	472.94	270.85	527.55	273.05	336.62	268.86	169.97	267.39
Mean	0	0	256.83	249.93	315.02	268.22	354.16	269.26	185.35	267.29	159.85	267.29

Annual Runoff in MCM : **4860.92** Annual Runoff in mm : **6649**
 Peak Observed Discharge = 527.55 cumecs on 9/9/2019 Corres. Water Level 273.05 m
 Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

\$- No Flow

Stage Discharge Sheet for Sip at Dholpur for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	194.8	267.08	132.19	267.52	125.37	268.22	110.74	268.20	92.58	267.60	19.54	265.93
2	142.68	267.05	132.14	267.51	125.32	268.22	109.36	268.20	91.59	267.57	12.2	265.81
3	122.93	267.04	131.91	267.50	125.79	268.21	109.59	268.19	91.39	267.52	12	265.77
4	116.65	267.02	131.82	267.50	124.87	268.21	108.04	268.18	91.02	267.48	8.57	265.72
5	115.82	266.98	131.71	267.50	125.06	268.21	107.85	268.18	120.54	267.45	8.13	265.67
6	115.21	266.95	131.46	267.49	124.77	268.20	107.36	268.17	90.01	267.40	8.15	265.67
7	114.27	266.91	131.58	267.48	124.6	268.20	106.34	268.14	89.59	267.35	7.89	265.54
8	116.13	266.88	131.44	267.48	123.72	268.19	128.72	268.07	87.77	267.29	7.79	265.48
9	112.41	266.83	131.36	267.47	123.67	268.19	105	268.04	85.42	267.23	6.83	265.43
10	127.01	267.30	131.41	267.47	123.87	268.19	104.49	268.02	84.7	267.17	6.44	264.43
11	128.78	267.33	131.3	267.46	123.55	268.18	104.47	268.02	83.77	267.11	5.01	263.9
12	128.48	267.34	119.16	267.45	124.53	268.18	104.01	267.99	192.89	267.06	\$	263.73
13	127.72	267.36	120.43	267.45	123.31	268.18	103.67	267.98	82.94	266.99	\$	263.71
14	129.18	267.36	120.7	267.45	123.02	268.17	102.14	267.95	75.08	266.88	\$	263.71
15	129.15	267.36	130.61	267.44	120.43	268.17	234.54	267.84	72.09	266.79	\$	263.70
16	129.19	267.39	130.34	267.45	116.44	268.18	100.12	267.81	71.25	266.73	\$	263.70
17	129.22	267.39	131.52	267.47	116.57	268.18	98.86	267.78	69.82	266.70	\$	263.70
18	129.61	267.40	132.48	267.52	116.44	268.17	99.7	267.78	65	266.64	\$	263.70
19	129.91	267.42	225.99	267.57	116.27	268.17	99.5	267.77	66.57	266.58	\$	263.70
20	129.84	267.41	132.46	267.64	115.71	268.17	98.98	267.76	60.52	266.52	\$	263.43
21	131.15	267.42	134.76	267.65	110.45	268.16	98.59	267.76	60	266.47	\$	263.06
22	129.8	267.41	135.34	267.70	110.06	268.15	98.06	267.73	56.41	266.42	\$	263.00
23	132.26	267.43	138.19	267.74	110.4	268.16	98.94	267.73	51.59	266.37	\$	263.00
24	134.22	267.43	134.98	267.77	108.6	268.17	97.91	267.71	47.03	266.33	\$	263.00
25	133.3	267.43	131.69	267.78	109.87	268.17	97.9	267.71	56.78	266.28	\$	263.00
26	130.67	267.43	203.81	267.96	109.79	268.18	97.53	267.69	55.86	266.25	\$	263.00
27	130.68	267.43	136.19	268.02	110.12	268.18	97.17	267.67	46.47	266.20	\$	263.00
28	130.85	267.44	129.87	268.08	110.18	268.19	96.42	267.66	42.94	266.15	\$	263.00
29	129.88	267.46	126.19	268.11	110.85	268.20	95.41	267.65	37.63	266.09	\$	263.00
30	133.26	267.50	127.65	268.15			95.27	267.64	33.44	266.03	\$	263.00
31	133.71	267.52	124.87	268.19			95.3	267.61			\$	263.00
Ten-Daily Mean												
I Ten-Daily	127.79	267	131.7	267.49	124.7	268.21	109.75	268.14	92.46	267.41	9.75	265.54
II Ten-Daily	129.11	267.38	137.5	267.49	119.63	268.17	114.6	267.87	83.99	266.8	0.5	263.7
III Ten-Daily	131.8	267.45	138.5	267.92	110.04	268.17	97.14	267.69	48.82	266.26	0	263.01
Monthly												
Min.	112.41	266.83	119.16	267.44	108.6	268.15	95.27	267.61	33.44	266.03	0	263.00
Max.	194.8	267.52	225.99	268.19	125.79	268.22	234.54	268.20	192.89	267.60	19.54	265.93
Mean	129.57	267.27	135.9	267.63	118.12	268.18	107.16	267.90	75.09	266.82	3.42	264.08

Peak Computed Discharge = 447.71 cumecs on 08/09/2019 Corres. Water Level 270.400 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

Note-

\$- No Flow

Monthly Runoff for the Year (2019-2020)

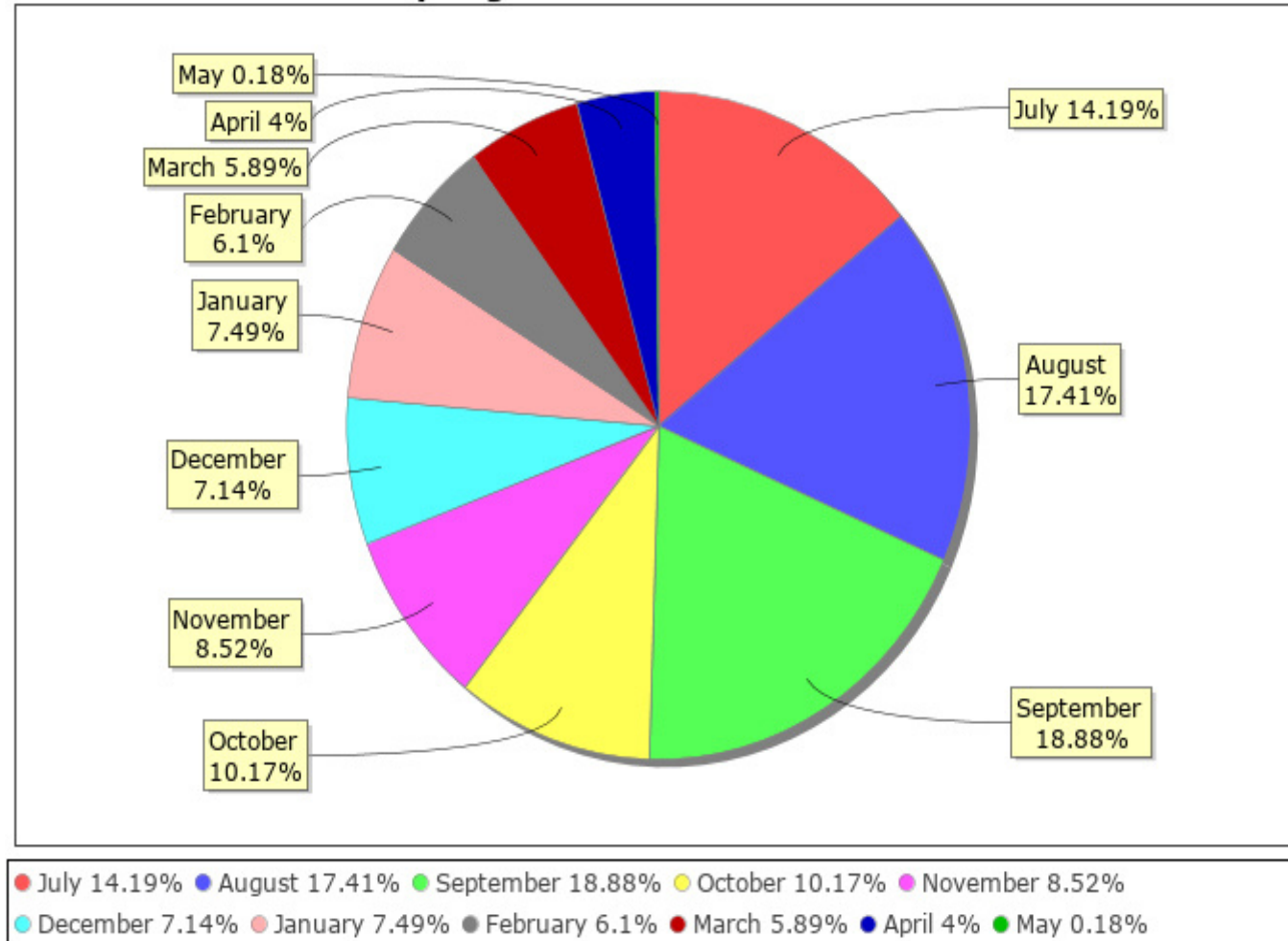
Station Name: Sip at Dholpur

Local River: Sip

Division: Narmada Division, Bhopal

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



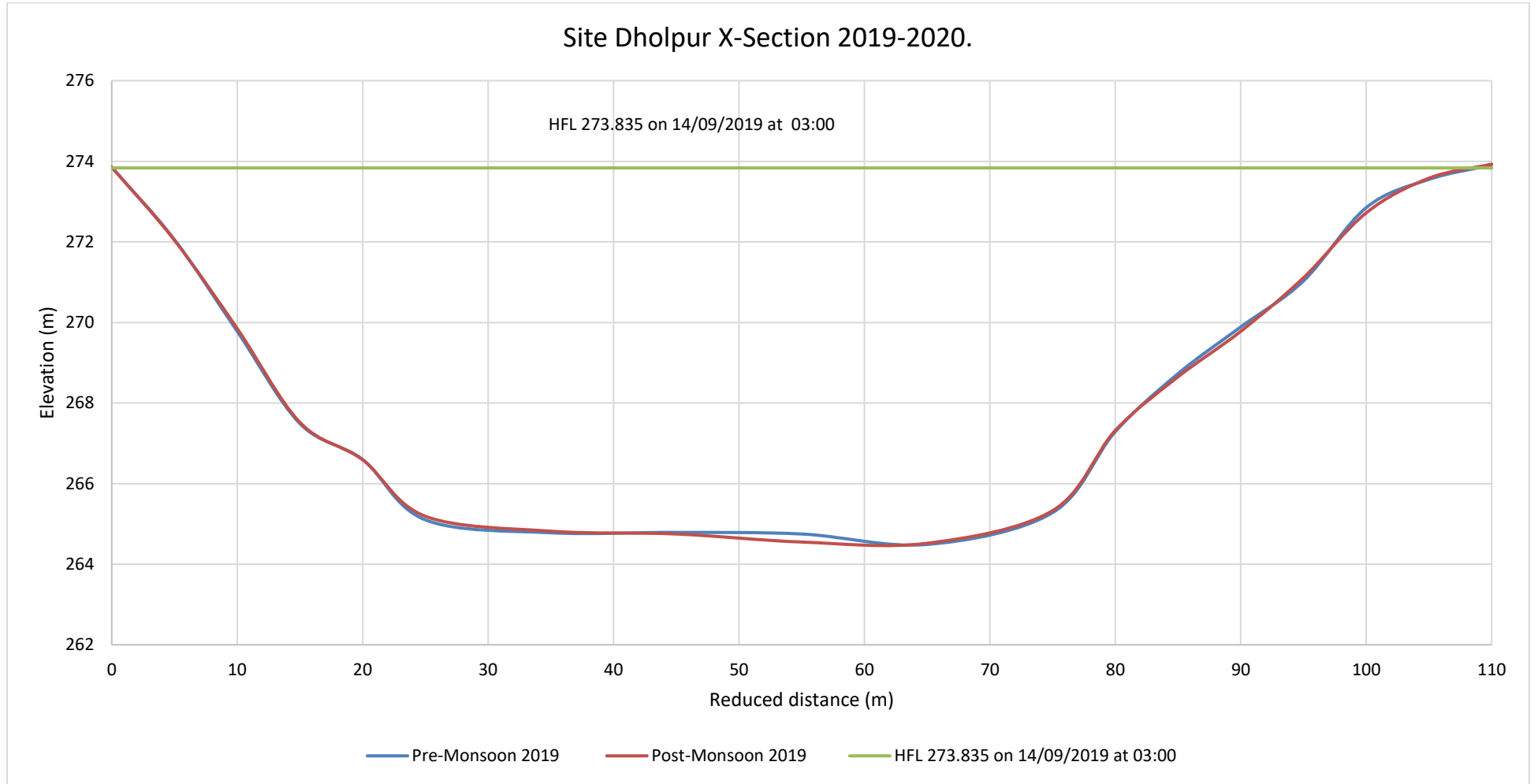
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Sip at Dholpur

Division: Narmada Division, Bhopal

Local River: Sip

Sub-Division: MNSD-II, CWC Bhopal



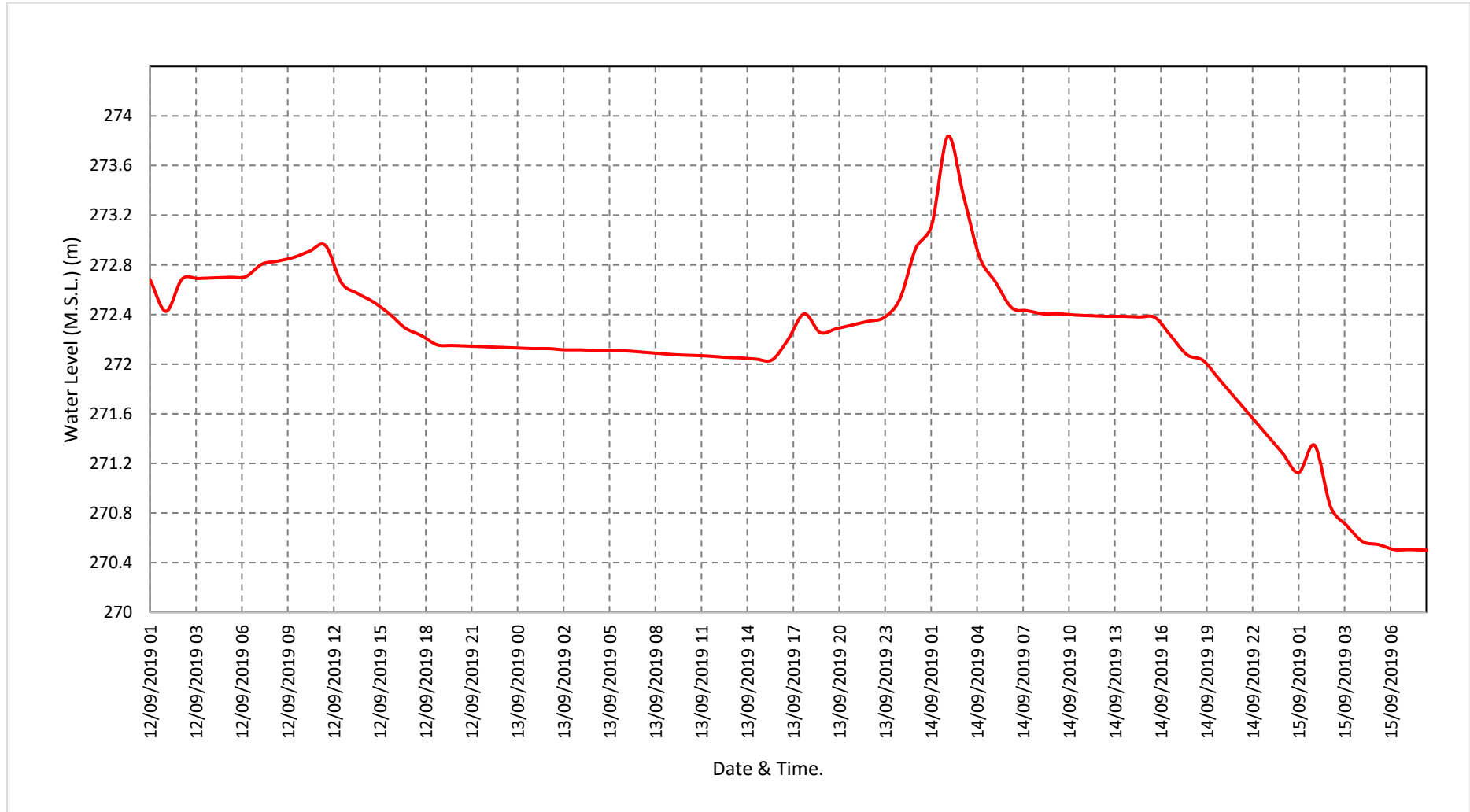
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Sip at Dholpur

Division: Narmada Division, Bhopal

Local River: Sip

Sub-Division: MNSD-II, CWC Bhopal



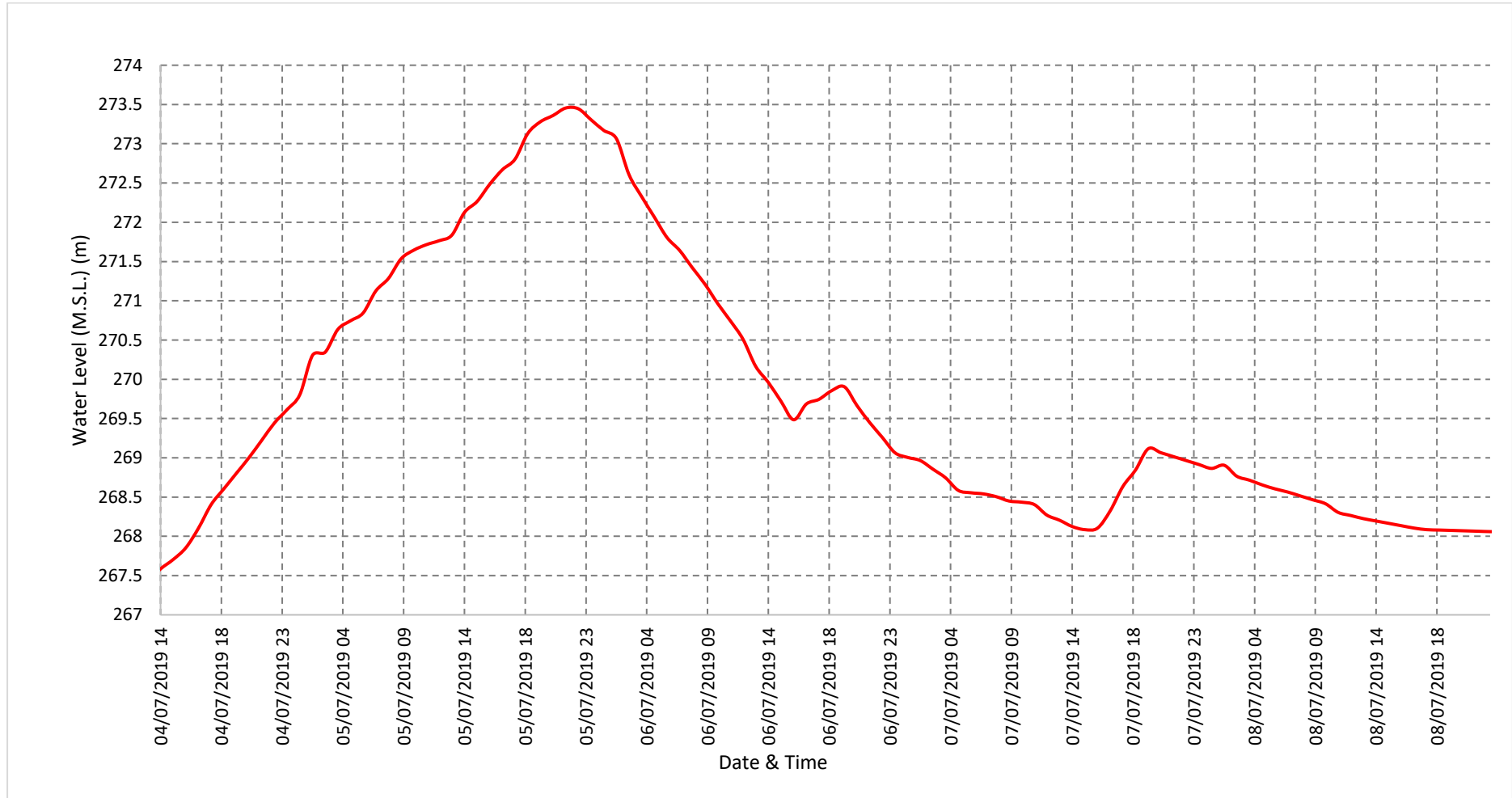
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Sip at Dholpur

Division: Narmada Division, Bhopal

Local River: Sip

Sub-Division: MNSD-II, CWC Bhopal



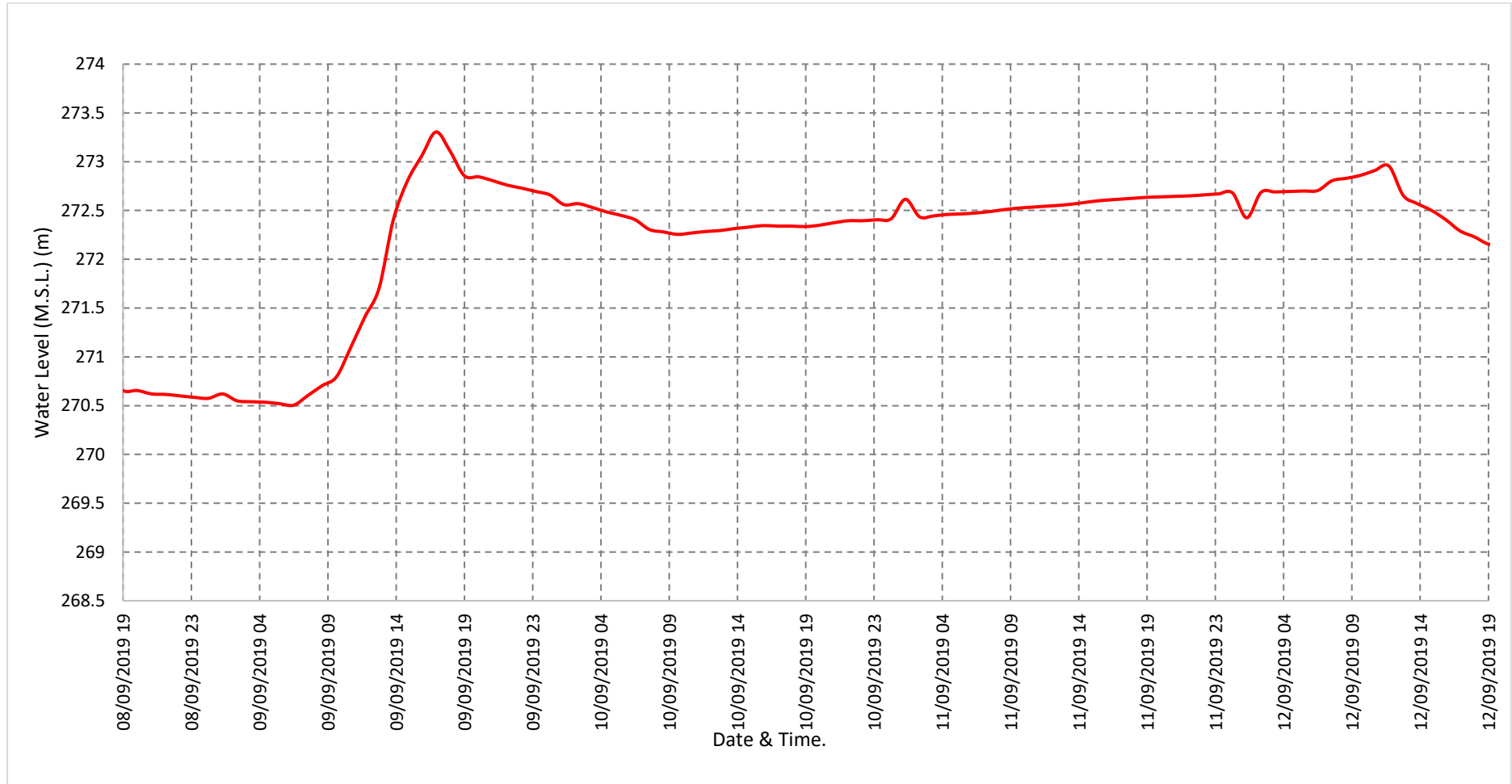
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Sip at Dholpur

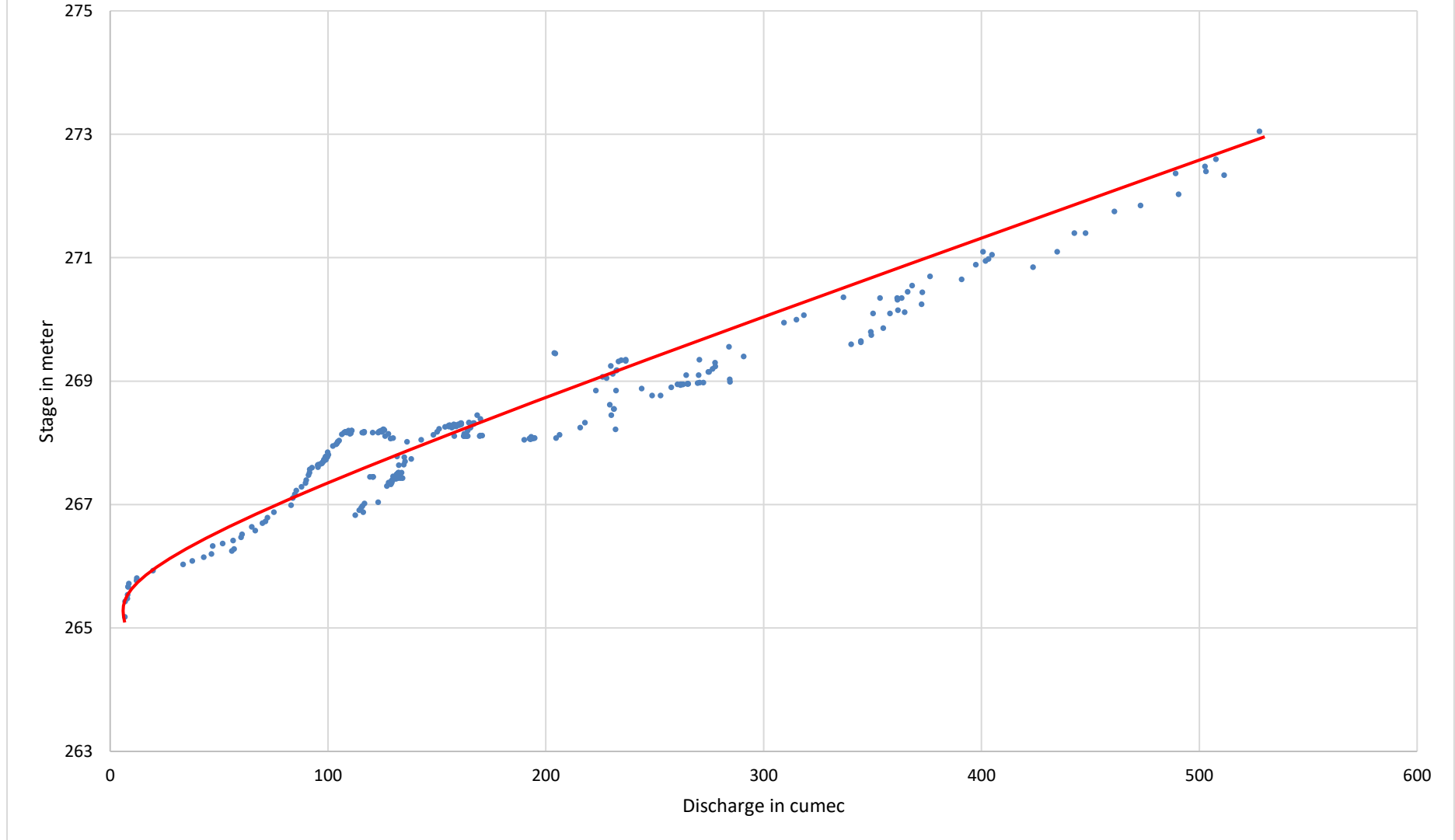
Division: Narmada Division, Bhopal

Local River: Sip

Sub-Division: MNSD-II, CWC Bhopal



Site Dholpur SD Curve 2019-2020.



4.20 Ganjal at Chhidgaon.

History sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)					
				Water Year	: 2019 - 2020
Site	:	Chhidgaon	Code	:	CW1NAM000379
State	:	Madhya Pradesh	District	:	HOSHANGABAD
Basin	:	Narmada	Independent River	:	Narmada
Tributary	:	Ganjal	Sub Tributary	:	-
Sub-Sub Tributary	:	-	Local River	:	Ganjal
Division	:	Narmada Division(ND), Bhopal	Sub-Division	:	Middle Narmada Sub- Division-II, Bhopal
Drainage Area	:	1729.0 Sq. Km.	Bank	:	Left
Latitude	:	22°24'21"	Longitude	:	77°18'28"
Current Zero of Gauge (m)	:	287			
CATEGORY		Opening Date		Closing Date	
Gauge	:	22/12/1976			
Discharge	:	22/12/1976			
Sediment	:				
Water Quality	:	16/09/1986			
Reduced Level		Opening Date		Closing Date	
287.0		02/12/1976			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1976-1977	3.4	287.680	07/03/1977	0.2	287.360	22/05/1977
1977-1978	2553.8	293.300	14/09/1977	0	287.840	09/04/1978
1978-1979	3813.4	296.500	29/08/1978	0	287.800	01/06/1978
1979-1980	1235	291.565	10/08/1979	0	287.430	01/06/1979
1980-1981	1375	295.100	03/08/1980	0.2	287.515	01/06/1980
1981-1982	490.8	290.265	10/08/1981	0.4	287.410	01/06/1981
1982-1983	876	291.260	23/08/1982	0.4	287.445	16/05/1983
1983-1984	2650	295.550	03/09/1983	0.3	287.420	06/06/1983
1984-1985	4470	299.000	10/08/1984	0.3	287.490	18/05/1985
1985-1986	1690	291.900	09/08/1985	0.3	287.485	01/06/1985
1986-1987	2675	295.990	15/08/1986	0.2	287.465	01/06/1986
1987-1988	1275	292.420	28/08/1987	0.36	287.170	25/05/1988
1988-1989	1300	292.540	04/08/1988	0.3	287.160	07/06/1988
1989-1990	863.5	291.000	29/06/1989	0.45	287.250	28/05/1990
1990-1991	3450	296.480	23/08/1990	0.1	287.350	01/06/1990
1991-1992	2060	294.200	30/07/1991	0.09	287.335	08/05/1992
1992-1993	1925	294.200	17/08/1992	0.02	287.335	01/06/1992
1993-1994	3700	297.200	16/07/1993	0.1	287.380	01/06/1993
1994-1995	5350	299.150	06/09/1994	0.38	287.340	01/06/1994
1995-1996	1320	292.505	02/09/1995	0.11	287.525	14/11/1995
1996-1997	2530	295.300	27/07/1996	0.2	287.450	05/06/1996
1997-1998	4500	298.900	26/07/1997	0.24	287.415	21/05/1998
1998-1999	6660	300.300	15/09/1998	0.17	287.415	15/06/1998
1999-2000	2490	295.620	10/08/1999	0.53	287.360	01/06/1999
2000-2001	960	291.900	13/07/2000	0.4	287.270	20/05/2001
2001-2002	1700	294.000	15/08/2001	0.27	287.260	19/05/2002
2002-2003	1200	292.600	23/08/2002	0.24	287.400	17/07/2002
2003-2004	2380	296.300	27/07/2003	0.31	287.295	07/06/2003
2004-2005	2170	297.000	22/08/2004	0.5	287.230	06/06/2004
2005-2006	926.52	292.640	01/08/2005	0.37	287.280	31/05/2006
2006-2007	5142.51	296.500	31/08/2006	0.29	287.280	04/06/2006
2007-2008	9625	301.810	08/07/2007	0.09	287.600	06/06/2007
2008-2009	810.87	291.570	11/08/2008	0.01	287.600	02/03/2009
2009-2010	1878.3	293.280	22/07/2009	0	287.500	12/05/2010
2010-2011	270.78	289.950	09/09/2010	0.35	287.370	27/05/2011

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2011-2012	815.98	291.400	26/08/2011	0.27	287.310	25/05/2012
2012-2013	832.46	292.000	06/09/2012	0.42	287.360	06/06/2012
2013-2014	7527.57	300.750	23/08/2013	0.57	287.400	05/06/2013
2014-2015	693.32	291.300	23/07/2014	0	287.550	26/05/2015
2015-2016	1003.84	292.100	05/08/2015	0	287.400	02/03/2016
2016-2017	6050.3	298.500	12/07/2016	1.29	287.460	01/07/2016
2017-2018	338.57	289.900	21/07/2017	0	287.520	01/06/2017
2018-2019	395.85	290.800	21/08/2018	0	287.590	16/06/2018
2019-2020	820.5	292.000	12/09/2019	0	287.630	13/06/2019

Stage Discharge Sheet for Ganjal at Chhidgaon for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	287.630	0	287.780	330.51	289.850	119.5	288.800	101.94	288.500	40.01	288.050
2	0	287.630	19.72	287.800	220.65	289.500	125.62	288.850	110	288.600	39.98	288.050
3	0	287.630	135.26	288.900	550.89	290.700	127.8	288.850	89.37	288.400	38.88	288.000
4	0	287.630	203.41	289.500	150	289.200	91.65	288.500	83.46	288.400	38.55	287.950
5	0	287.630	137.61	288.650	141.13	289.000	177.88	289.400	75.76	288.350	37.98	287.940
6	0	287.630	119.86	288.850	174.52	289.300	129.8	288.900	80	288.300	37.95	287.930
7	0	287.630	84.62	288.350	194.52	288.950	155.55	289.200	84.38	288.350	37.74	287.920
8	0	287.630	88.65	288.400	180.38	289.300	141.55	289.050	70	288.250	36.98	287.910
9	0	287.630	102.74	288.500	582.12	290.700	620.51	290.900	68.62	288.200	35.58	287.900
10	0	287.630	83.39	288.350	221.38	289.650	278.5	289.650	58.16	288.150	32.95	287.890
11	0	287.630	68.9	288.250	180	289.250	296.51	289.700	57.33	288.150	30.5	287.880
12	0	287.630	62.34	288.200	170	289.000	820.5	292.000	53.21	288.100	28.05	287.870
13	0	287.630	49.13	288.100	159.85	288.800	710.56	291.400	50	288.100	24.56	287.860
14	0	287.630	45.05	288.050	295.6	289.700	510.51	290.700	52.7	288.100	22.59	287.860
15	0	287.650	23.17	288.040	458.7	290.400	450.12	290.000	42.04	288.080	19.8	287.850
16	0	287.650	21.01	287.980	215.31	289.400	291.51	289.700	45.49	288.050	17.85	287.840
17	0	287.650	21.49	287.980	189.32	289.200	515.52	290.700	40.4	288.050	15.62	287.840
18	0	287.650	20.61	287.970	142	289.050	210.55	289.500	40.16	288.050	13.6	287.840
19	0	287.650	20.25	287.950	240.85	289.400	215.66	289.550	40.35	288.050	9.52	287.820
20	0	287.650	21.06	287.970	146.9	289.000	174.52	289.200	34	288.000	5.39	287.800
21	0	287.650	47.56	288.100	111.98	289.050	139.58	289.000	34.55	288.000	4.28	287.790
22	0	287.650	21.94	287.970	211.31	289.350	176.89	289.400	24.32	287.990	3.6	287.780
23	0	287.650	20.56	287.950	117.6	288.950	161.41	289.100	23.96	287.980	3.36	287.770
24	0	287.660	18.57	287.940	445.6	290.250	289.65	289.550	23.48	287.980	3	287.770
25	0	287.680	17.86	287.930	682.9	291.250	119.8	288.800	23.57	287.970	3.35	287.770
26	0	287.700	16.58	287.920	424.67	290.650	129.51	288.900	21.14	287.960	3.03	287.760
27	0	287.700	48.74	288.100	451.6	290.250	108.07	288.650	21	287.960	2.98	287.750
28	0	287.690	668.9	291.200	260.5	289.550	179.62	289.400	96.73	288.300	2.95	287.740
29	0	287.690	626.6	291.000	185.6	289.200	108.95	288.800	103.73	288.350	2.93	287.720
30	0	287.740	404.69	290.000	156.12	289.100	98.64	288.700	106.63	288.350	2.94	287.710
31			650.44	291.100	120.56	288.900			56.57	288.100		
Ten-Daily Mean												
I Ten-Daily	0	287.630	97.53	288.510	274.61	289.620	196.84	289.210	82.17	288.350	37.66	287.950
II Ten-Daily	0	287.640	35.3	288.050	219.85	289.320	419.6	290.250	45.57	288.070	18.75	287.850
III Ten-Daily	0	287.680	231.13	289.020	288.04	289.680	151.21	289.030	48.7	288.090	3.24	287.760
Monthly												
Min.	0	287.630	0	287.780	111.98	288.800	91.65	288.500	21	287.960	2.93	287.710
Max.	0	287.740	668.9	291.200	682.9	291.250	820.5	292.000	110	288.600	40.01	288.050
Mean	0	287.650	121.32	288.530	260.83	289.540	255.88	289.490	58.81	288.170	19.88	287.850

Annual Runoff in

MCM : 1915.04

Annual Runoff in

mm : 1107.6

Peak Observed Discharge = 820.5 cumecs on 12/9/2019 Corres. Water Level 292 m

Lowest Observed Discharge = 0cumecs on 13/6/2019 Corres. Water Level 287.63 m

Stage Discharge Sheet for Ganjal at Chhidgaon for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	2.89	287.700	1.1	287.580	0	287.450	0	287.390	0	287.490	0	287.440
2	2.39	287.690	1.11	287.560	0	287.450	0	287.400	0	287.480	0	287.440
3	2.34	287.680	1.09	287.560	0	287.450	0	287.400	0	287.480	0	287.430
4	2.35	287.680	1.09	287.550	0	287.450	0	287.410	0	287.470	0	287.430
5	2.16	287.660	1.02	287.540	0	287.450	0	287.450	0	287.470	0	287.440
6	2	287.650	0.99	287.540	0	287.460	0	287.450	0	287.470	0	287.440
7	1.94	287.640	0.96	287.600	0	287.450	0	287.440	0	287.460	0	287.450
8	1.8	287.630	0.96	287.600	0	287.450	0	287.450	0	287.460	0	287.450
9	1.64	287.620	0.95	287.590	0	287.450	0	287.440	0	287.460	0	287.450
10	1.61	287.620	0.95	287.580	0	287.450	0	287.440	0	287.450	0	287.450
11	1.56	287.620	0.94	287.570	0	287.420	0	287.410	0	287.450	0	287.450
12	1.59	287.650	0.92	287.560	0	287.390	0	287.440	0	287.450	0	287.440
13	2.56	287.750	0.9	287.550	0	287.380	0	287.450	0	287.450	0	287.440
14	2.31	287.690	0.89	287.550	0	287.370	0	287.420	0	287.450	0	287.440
15	2.29	287.680	0.88	287.540	0	287.370	0	287.410	0	287.440	0	287.440
16	2.34	287.680	0.95	287.570	0	287.400	0	287.440	0	287.440	0	287.440
17	2.35	287.680	0.94	287.570	0	287.430	0	287.450	0	287.440	0	287.440
18	2.32	287.680	0.85	287.520	0	287.450	0	287.450	0	287.440	0	287.440
19	2.27	287.680	0.87	287.530	0	287.450	0	287.450	0	287.440	0	287.450
20	2.21	287.670	0.88	287.540	0	287.450	0	287.450	0	287.430	0	287.460
21	2.17	287.670	0.89	287.540	0	287.420	0	287.450	0	287.430	0	287.450
22	2.22	287.660	0.87	287.530	0	287.390	0	287.440	0	287.430	0	287.450
23	2.23	287.660	0.87	287.530	0	287.370	0	287.440	0	287.430	0	287.450
24	2.25	287.650	0.85	287.520	0	287.370	0	287.440	0	287.440	0	287.440
25	2.28	287.650	0.86	287.530	0	287.370	0	287.440	0	287.440	0	287.440
26	2.15	287.630	0.88	287.540	0	287.370	0	287.440	0	287.440	0	287.440
27	2.19	287.620	0.75	287.500	0	287.360	0	287.450	0	287.450	0	287.450
28	2.2	287.600	0.7	287.480	0	287.380	0	287.470	0	287.450	0	287.450
29	2.19	287.590	0.7	287.470	0	287.390	0	287.480	0	287.440	0	287.450
30	2.18	287.590	0.67	287.460			0	287.490	0	287.440	0	287.450
31	2.19	287.590	0.65	287.450			0	287.490			0	287.450
Ten-Daily Mean												
I Ten-Daily	2.11	287.660	1.02	287.570	0	287.450	0	287.430	0	287.470	0	287.440
II Ten-Daily	2.18	287.680	0.9	287.550	0	287.410	0	287.440	0	287.440	0	287.440
III Ten-Daily	2.2	287.630	0.79	287.500	0	287.380	0	287.460	0	287.440	0	287.450
Monthly												
Min.	1.56	287.590	0.65	287.450	0	287.360	0	287.390	0	287.430	0	287.430
Max.	2.89	287.750	1.11	287.600	0	287.460	0	287.490	0	287.490	0	287.460
Mean	2.17	287.650	0.9	287.540	0	287.410	0	287.440	0	287.450	0	287.440

Peak Computed Discharge = 682.9 cumecs on 25/8/2019 Corres. Water Level 291.25 m
 Lowest Computed Discharge = 0 cumecs on 1/7/2019 Corres. Water Level 287.78 m

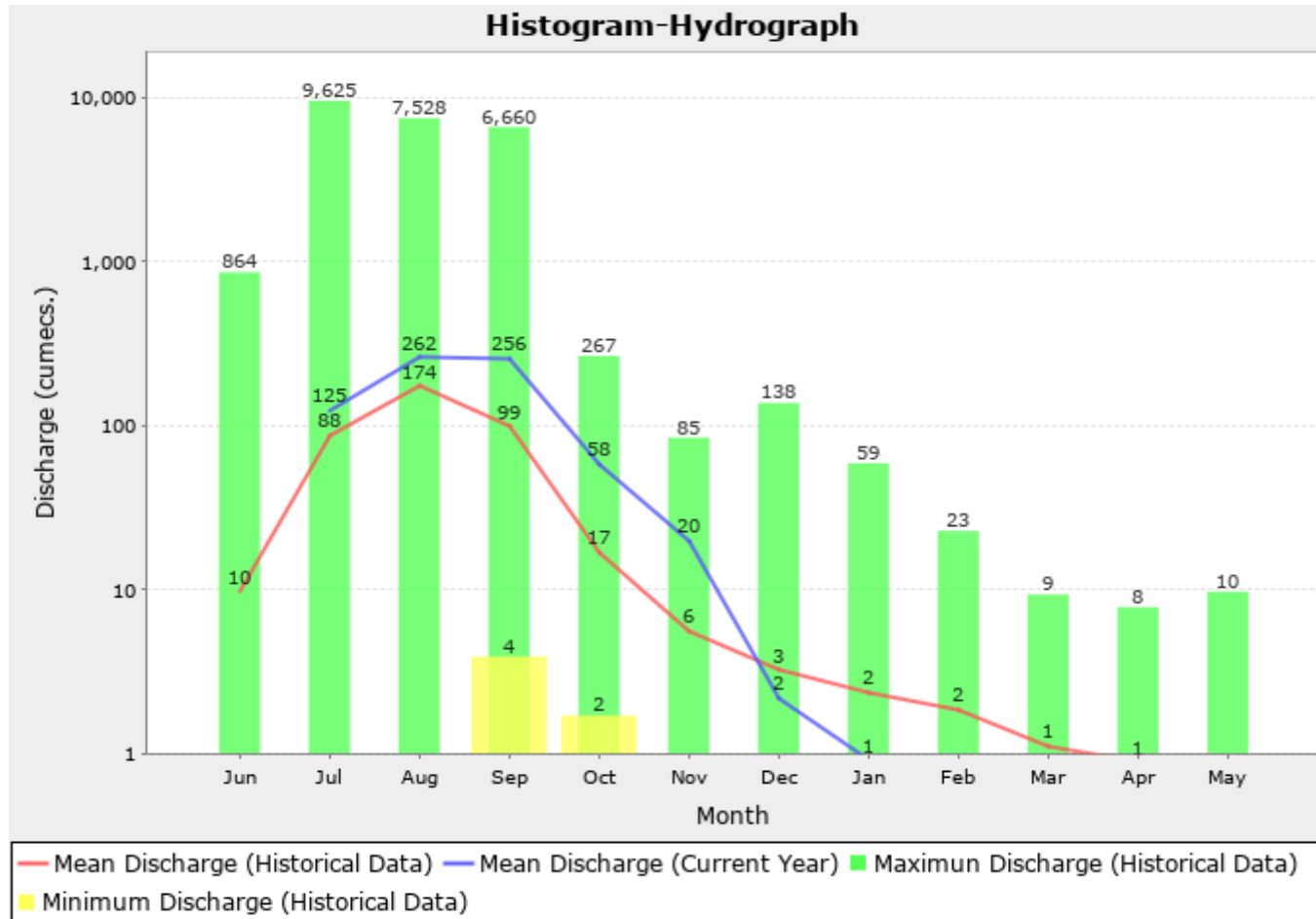
Histogram – Hydrograph for Water Year : 2019-20 (Data considered : 1977-2020)

Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal



Monthly Average Runoff based on period (1977 – 2020)

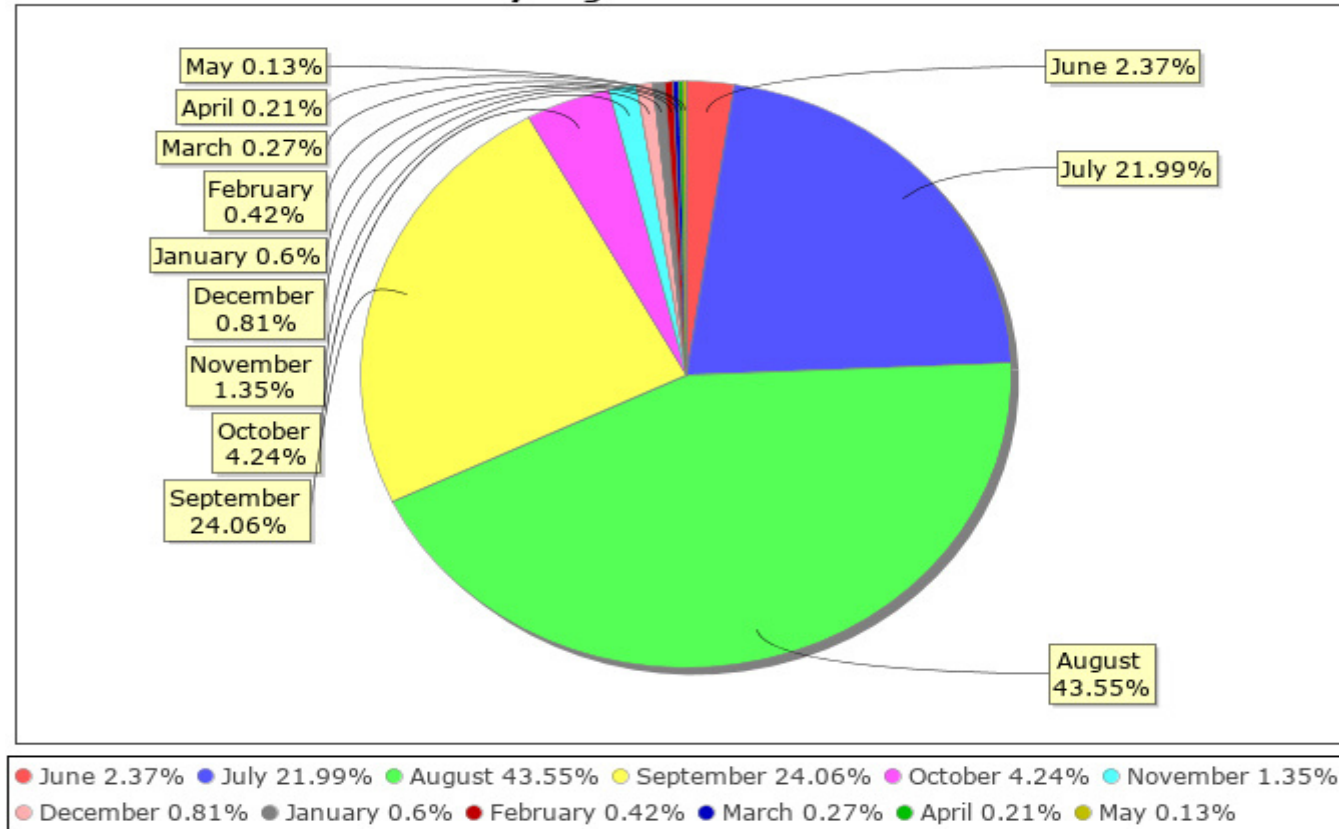
Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

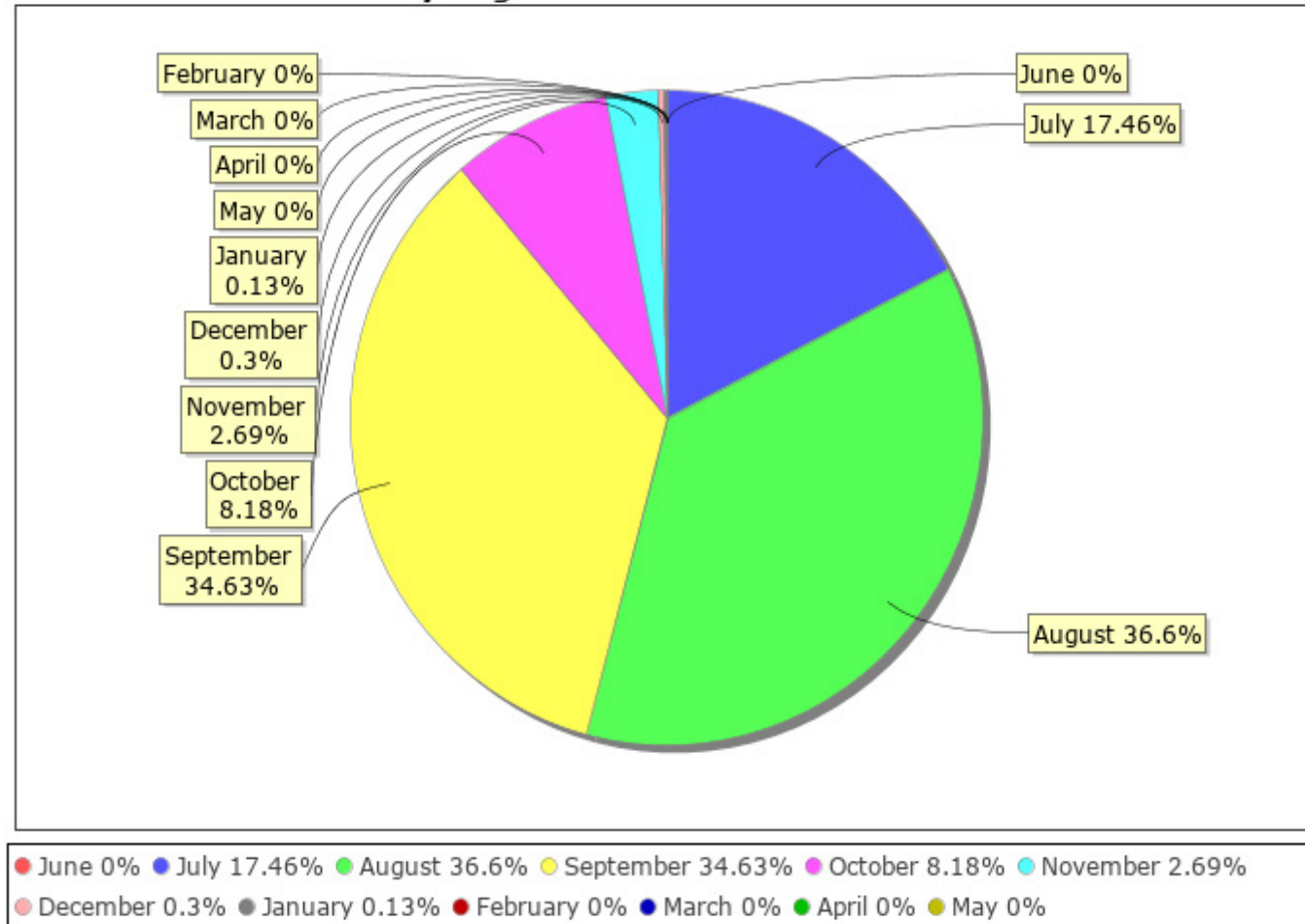
Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



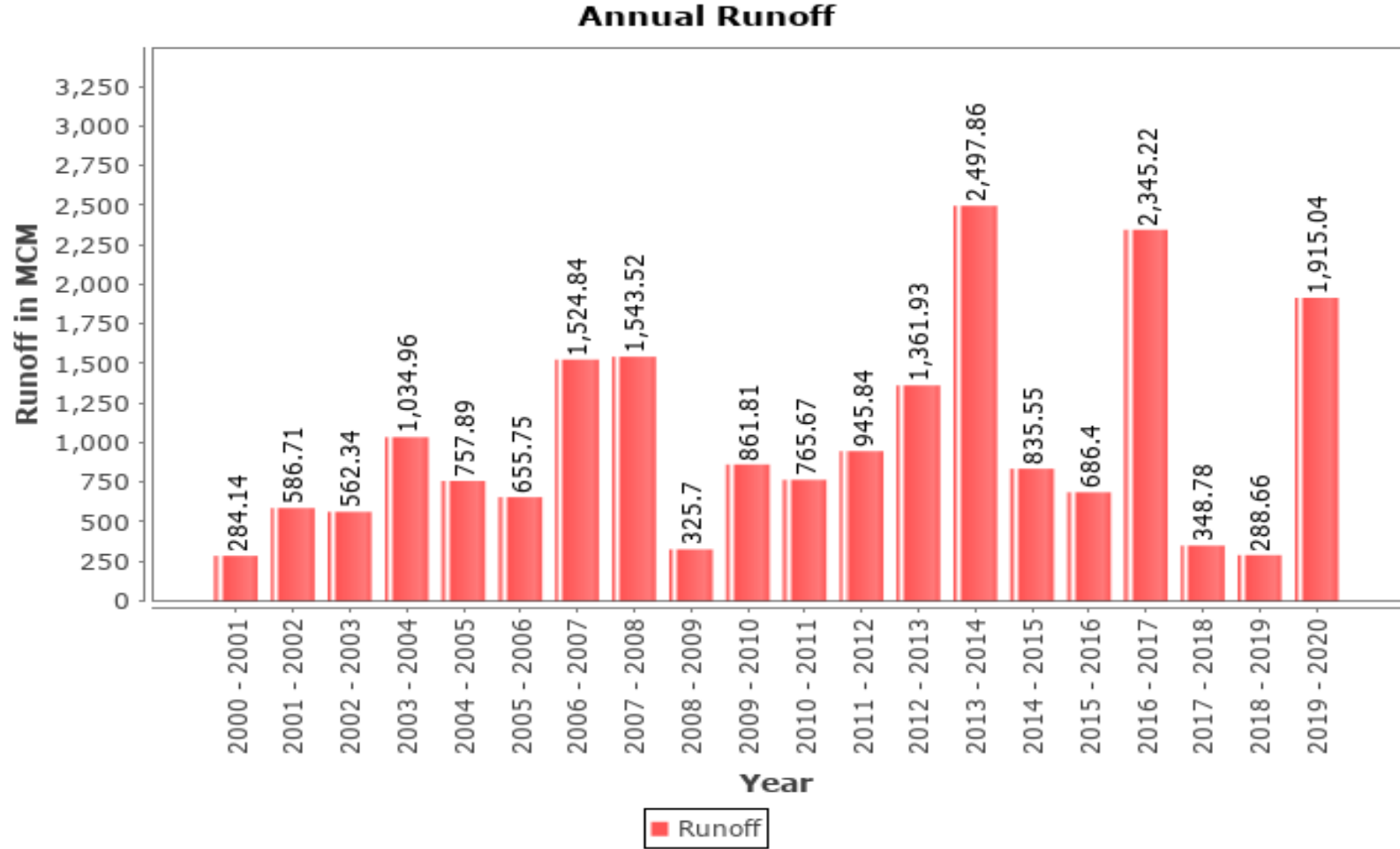
Annual Runoff Values for the period (2000 – 2020)

Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal



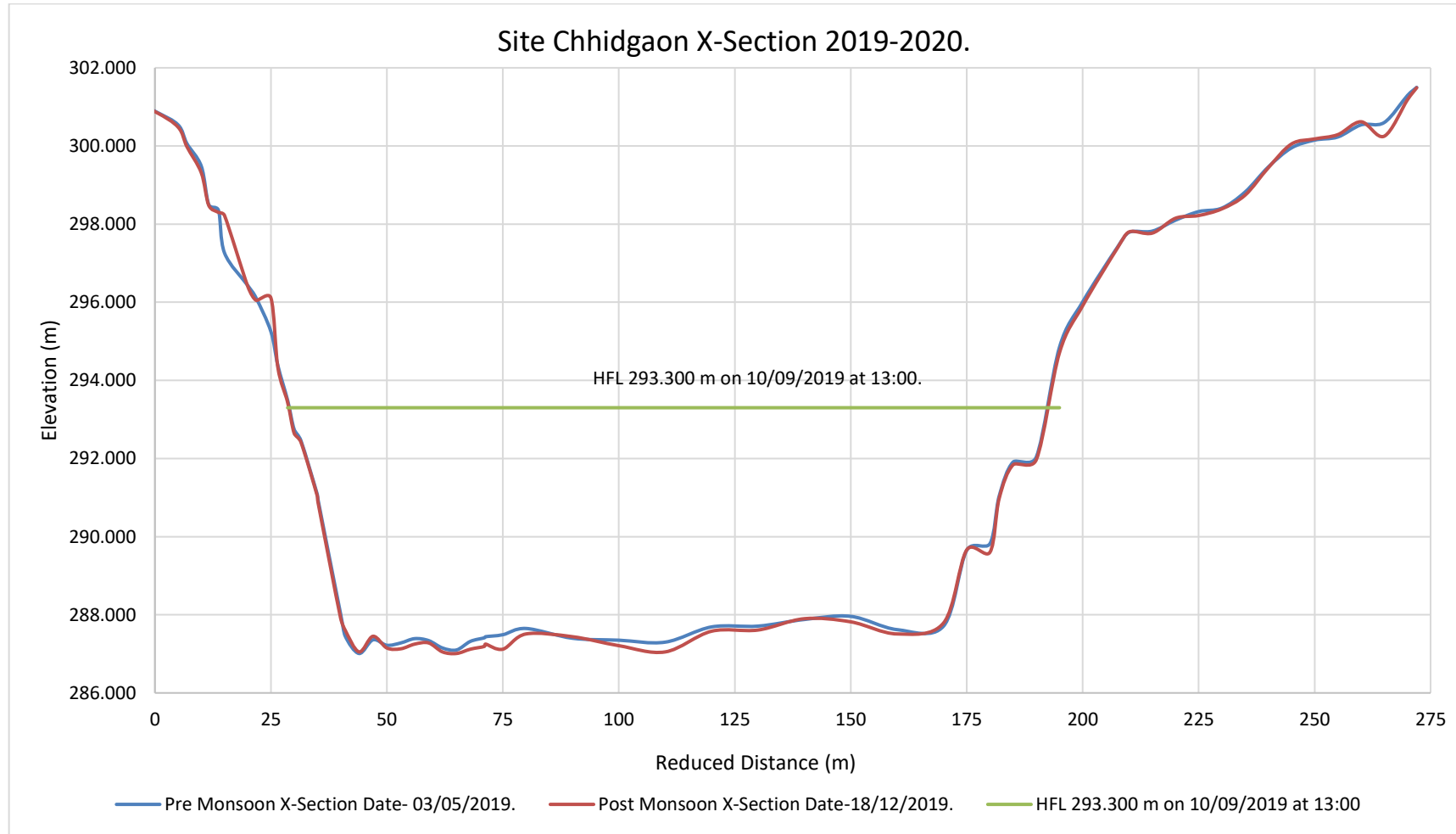
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division : MNSD II, CWC Bhopal



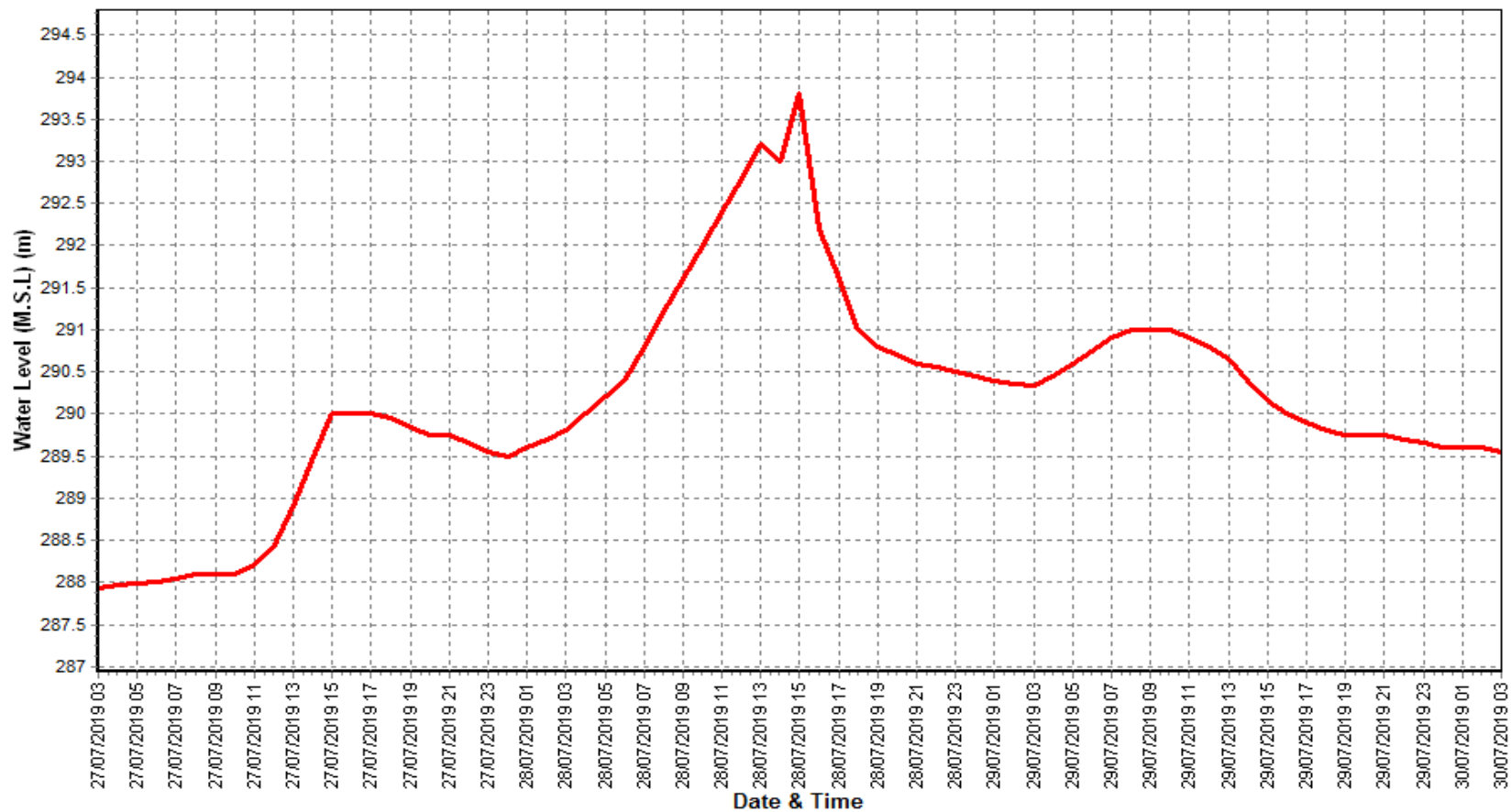
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal



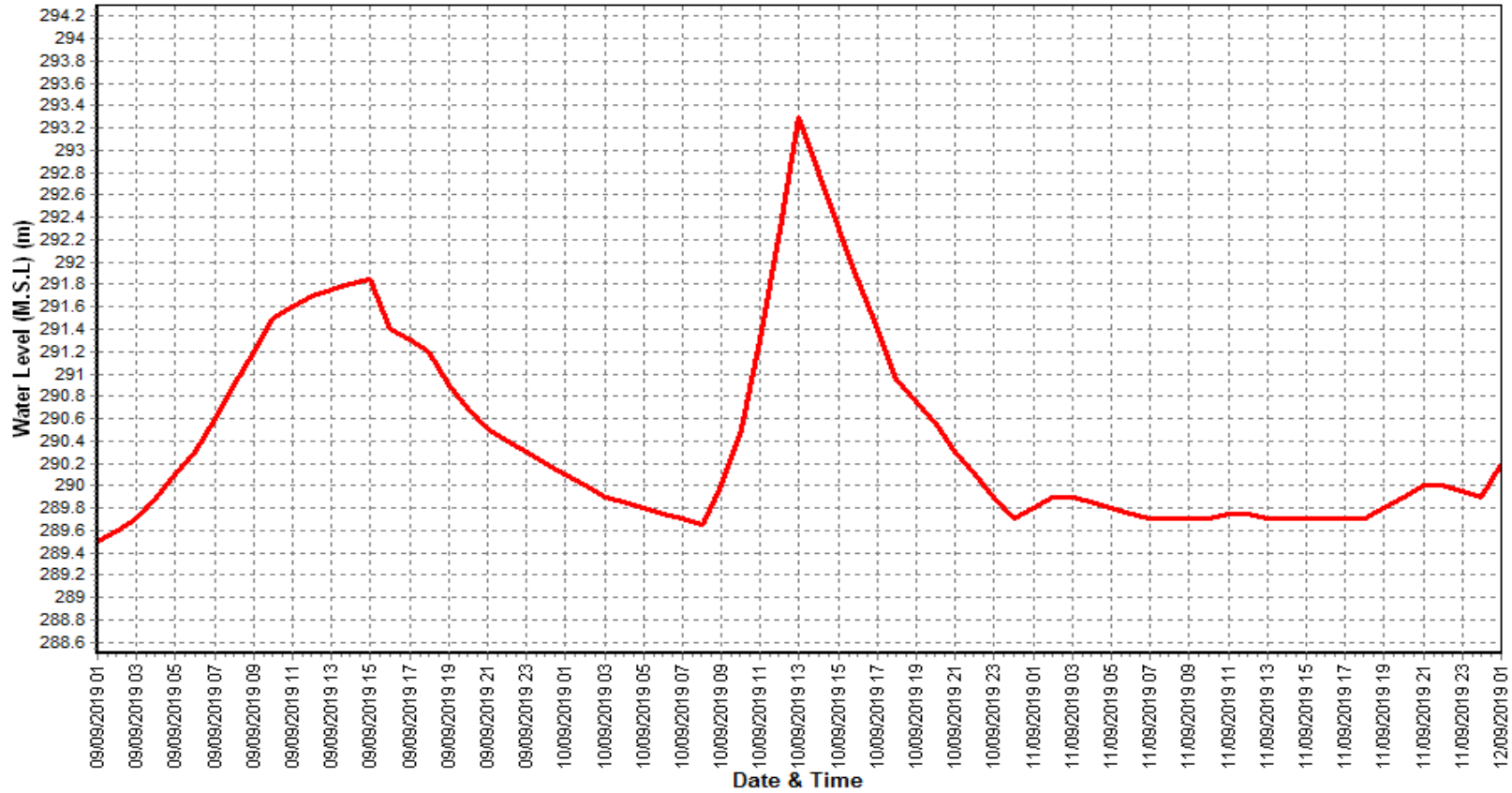
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal



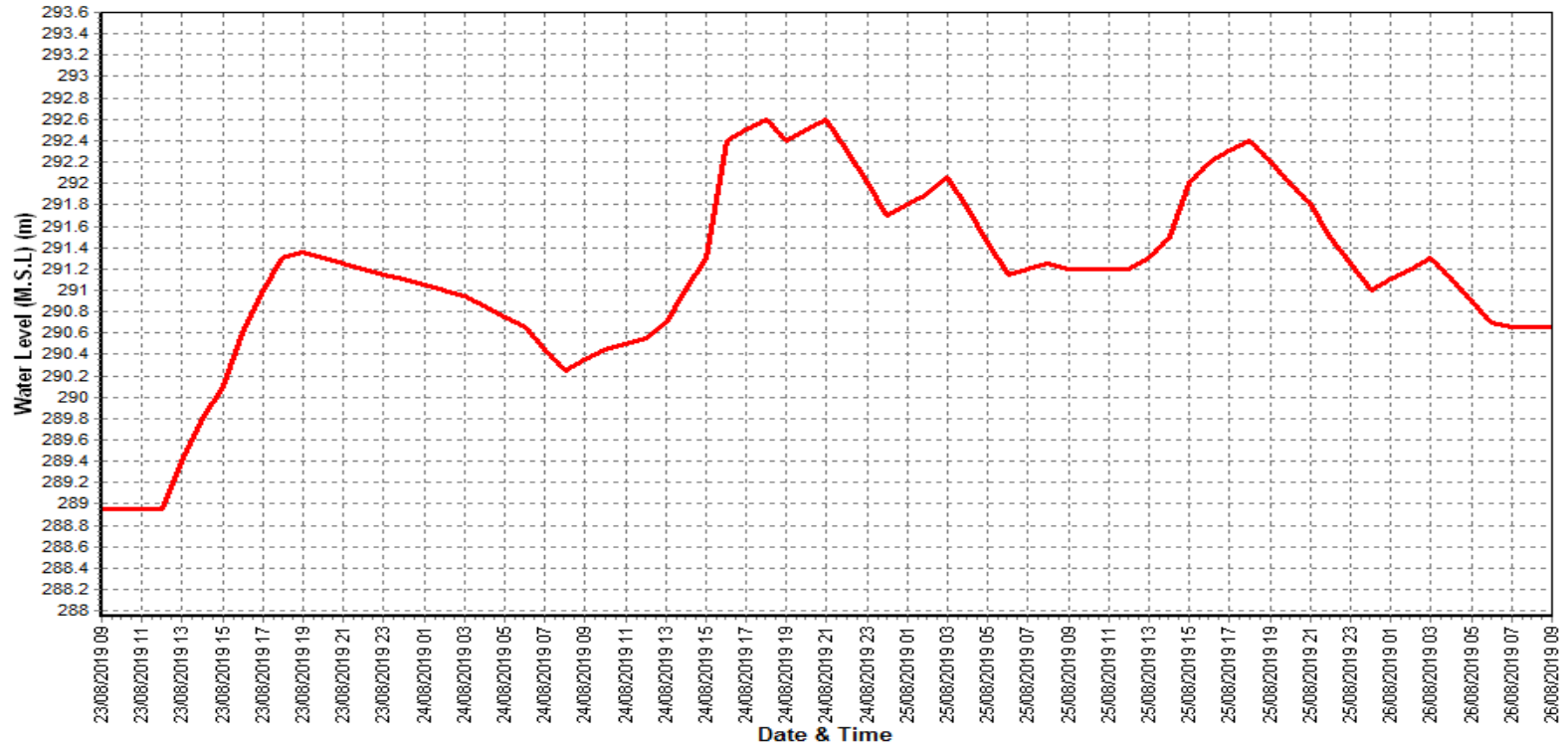
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

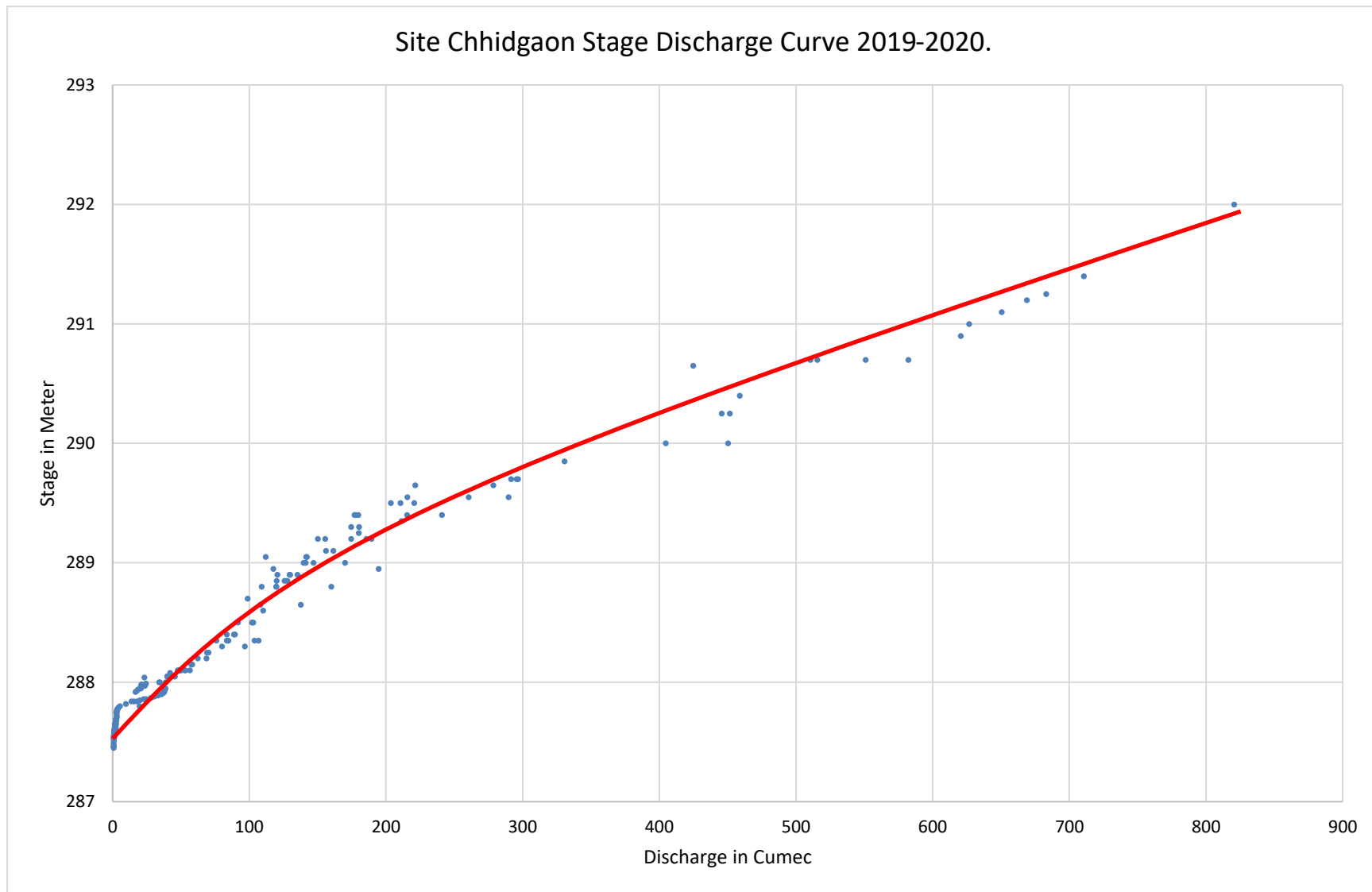
Station Name : Ganjal at Chhidgaon

Division : Narmada Division, Bhopal

Local River : Ganjal

Sub-Division :MNSD II, CWC Bhopal





4.21 Kolar at Mahgaon.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Kolar at Mahgaon		Code	:	CW1NAM001471
State	:	Madhya Pradesh		District	:	SEHORE
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Kolar		Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Kolar
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	1181.75 Sq. Km.		Bank	:	Right
Latitude	:	22°41'50"		Longitude	:	77°21'60"
Current Zero of Gauge (m)	:	279				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
279.0		25/01/2021		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	408.05	299.095	11/09/2019	3.67	291.74	31/05/2020

Stage Discharge Sheet for Kolar at Mahgaon for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	12.78	291.91	368.84	296.91	294.46	295.72	191.18	296.05	198.63	295.81
2	\$	\$	12.66	291.91	343.62	296.16	293.47	295.70	210.99	296.80	198.61	295.82
3	\$	\$	118.9	294.34	370.91	297.16	323.3	297.11	176.68	296.40	197.7	295.80
4	\$	\$	119.23	294.38	363.51	296.76	203.67	295.80	187.57	295.95	198.44	295.79
5	\$	\$	192.31	296.30	358.65	296.61	205.56	295.88	196.82	295.70	198.91	295.88
6	\$	\$	378.05	297.25	350.53	296.51	201.17	295.86	152.12	295.56	197.02	295.76
7	\$	\$	376.65	297.00	355.6	296.61	195.77	295.69	159.28	295.88	198.09	295.73
8	\$	\$	189.14	295.85	355.73	296.66	264.16	296.82	155.97	295.77	199.65	295.80
9	\$	\$	188.51	295.84	358.43	296.62	268.9	296.97	195.3	295.62	199.35	295.78
10	\$	\$	188.55	295.84	338.5	296.01	211.18	296.78	152.59	295.57	197.08	295.77
11	\$	\$	198.79	295.85	342.16	296.46	408.05	299.10	196.74	295.75	199.2	295.77
12	\$	\$	188.42	295.84	339.69	296.31	211.81	296.78	196.95	295.70	199.6	295.76
13	\$	\$	189.74	295.83	361.39	296.69	394.81	297.80	194.57	295.66	199.46	295.80
14	\$	\$	197.64	295.83	368.82	296.96	403.16	297.84	197.41	295.68	199.43	295.79
15	\$	\$	198.83	295.82	357.2	296.71	291.18	297.13	197.07	295.67	198.04	295.78
16	\$	\$	198.54	295.81	360.38	296.66	210.84	296.73	198.71	295.83	198.23	295.79
17	\$	\$	199.25	295.78	345.28	296.26	191.79	296.27	196.86	295.73	197.12	295.79
18	\$	\$	197	295.77	333.65	295.94	211.47	296.77	196.79	295.64	197.87	295.77
19	\$	\$	198.75	295.82	326.04	295.71	203.22	296.42	198.19	295.80	197	295.77
20	\$	\$	197.96	295.80	323.78	295.66	188.69	296.01	196.94	295.79	197.64	295.76
21	\$	\$	195.89	295.80	326.81	295.71	277.15	297.08	197.64	295.70	197.55	295.76
22	\$	\$	199.35	295.80	293.41	294.76	210.7	296.74	200.08	295.88	196.58	295.75
23	\$	\$	198.04	295.86	329.89	295.76	203.91	296.45	198.45	295.80	196.41	295.74
24	\$	\$	187.54	295.84	330.08	295.85	188.29	295.98	200.33	295.80	197.2	295.76
25	\$	\$	198.55	295.83	335.57	296.10	195.11	295.62	198.89	295.82	196.58	295.75
26	\$	\$	197.93	295.86	330.87	295.79	147.58	295.27	200.8	295.83	196.37	295.74
27	\$	\$	188.57	295.91	331.76	295.95	199.19	295.83	198.01	295.79	195.97	295.74
28	\$	\$	214.88	297.11	330.87	295.79	211.67	296.78	197.66	295.83	197.43	295.76
29	\$	\$	164.34	296.31	327.26	295.68	205.29	296.52	199.33	295.79	197.2	295.76
30	\$	\$	214.06	297.01	331.71	295.86	191.4	296.26	200.18	295.80	197.38	295.76
31			393.2	297.61	326.46	295.66			199.18	295.79		
Ten-Daily Mean												
I Ten-Daily	0	0	177.68	295.06	356.43	296.6	246.16	296.23	177.85	295.93	198.35	295.79
II Ten-Daily	0	0	196.49	295.81	345.84	296.34	271.5	297.08	197.02	295.73	198.36	295.78
III Ten-Daily	0	0	213.85	296.27	326.79	295.72	203.03	296.25	199.14	295.8	196.87	295.75
Monthly												
Min.	0	0	12.66	291.91	293.41	294.76	147.58	295.27	152.12	295.56	195.97	295.73
Max.	0	0	393.2	297.61	370.91	297.16	408.05	299.1	210.99	296.8	199.65	295.88
Mean	0	0	196.01	295.71	343.02	296.22	240.23	296.52	191.34	295.82	197.86	295.77

Annual Runoff in

MCM : 5526.04

Annual Runoff in

mm : 4676.15

Peak Observed Discharge = 403.16 cumecs on 14/9/2019 Corres. Water Level 297.84 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

\$- No Flow

Stage Discharge Sheet for Kolar at Mahgaon for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	196.4	295.75	199.67	295.85	193.43	296.32	171.31	296.35	164.69	296.31	112.3	294.24
2	197.43	295.73	198.94	295.85	193.09	296.32	176.18	296.35	160.24	296.03	112.03	294.22
3	197.46	295.70	198.76	295.85	192.83	296.32	171.45	296.35	157.08	295.84	112.91	294.21
4	197.03	295.67	190.55	295.84	192.67	296.32	171.39	296.35	155.45	295.74	105.73	294.18
5	196.59	295.65	198.68	295.85	190.68	296.32	171.25	296.35	196.13	295.67	100.34	294.15
6	195.97	295.62	189.51	295.84	190.96	296.33	170.74	296.35	152.91	295.58	95.34	294.13
7	196	295.62	189.68	295.84	189.92	296.33	169.45	296.35	152.11	295.53	94.63	294.11
8	196.15	295.64	189.65	295.83	190.07	296.33	169.64	296.34	151.02	295.46	94.01	294.07
9	196.79	295.67	189.83	295.85	188.79	296.33	169.4	296.34	150.49	295.42	85.01	294.04
10	197.03	295.67	189.37	295.85	188.74	296.33	169.3	296.34	149.47	295.35	84.45	294.01
11	196.99	295.67	188.96	295.85	188.34	296.33	169.26	296.33	147.89	295.27	43.49	294.00
12	196.17	295.67	189.56	295.83	188.00	296.33	167.08	296.33	144.84	295.2	42.11	293.98
13	197.23	295.68	188.56	295.84	183.59	296.33	167.03	296.33	142.54	295.1	44.69	293.96
14	197.18	295.68	187.29	295.85	183.41	296.33	169.1	296.33	136.47	294.97	44.6	293.94
15	197.37	295.68	187.36	295.84	183.59	296.33	168.9	296.33	136.44	294.83	41.54	293.92
16	196.68	295.70	186.13	295.9	183.49	296.33	169	296.33	135.79	294.77	39.22	293.89
17	196.85	295.70	185.97	295.9	183.03	296.33	166.87	296.33	134.72	294.7	29.42	293.87
18	197.27	295.72	186.52	295.92	187.24	296.34	166.23	296.33	133.98	294.65	29.18	293.85
19	197.18	295.72	186.93	295.93	187.36	296.34	165.87	296.33	130.48	294.6	27.89	293.83
20	197.47	295.73	185.79	295.88	183.47	296.34	166.18	296.32	129.39	294.56	21.94	293.80
21	197.66	295.74	187.82	295.99	184.40	296.34	166.28	296.32	128.68	294.51	17.24	293.77
22	198.77	295.76	187.8	295.99	176.67	296.33	166.23	296.32	128.1	294.49	9.64	293.74
23	198.72	295.76	188.01	296.01	176.72	296.33	165.77	296.32	127.67	294.46	5.59	293.70
24	197.86	295.75	188.89	296.05	176.13	296.33	165.82	296.32	119.35	294.38	5.52	293.65
25	198.36	295.77	188.28	296.05	175.96	296.32	165.46	296.32	118.93	294.37	5.45	293.60
26	198.45	295.78	187.95	296.04	176.01	296.32	164.96	296.32	119.37	294.35	5.32	293.54
27	197.58	295.78	188.83	296.08	175.67	296.33	164.91	296.32	118.33	294.33	5.14	293.49
28	198	295.80	189.37	296.11	175.84	296.33	165.3	296.31	116.73	294.3	4.83	293.44
29	197.69	295.83	189.77	296.12	175.98	296.34	165.19	296.31	116.58	294.3	4.67	293.28
30	198.59	295.83	190.28	296.15			165.13	296.31	112.68	294.27	4.27	292.70
31	198.79	295.85	191.57	296.15			163.93	296.31			3.67	291.74
Ten-Daily Mean												
I Ten-Daily	196.69	295.67	193.46	295.84	191.12	296.32	171.01	296.35	158.96	295.69	99.67	294.14
II Ten-Daily	197.04	295.7	187.31	295.87	185.15	296.33	167.55	296.33	137.25	294.87	36.41	293.9
III Ten-Daily	198.22	295.78	188.96	296.07	177.04	296.33	165.36	296.32	120.64	294.38	6.49	293.33
Monthly												
Min.	195.97	295.62	185.79	295.83	175.67	296.32	163.93	296.31	112.68	294.27	3.67	291.74
Max.	198.79	295.85	199.67	296.15	193.43	296.34	176.18	296.35	196.13	296.31	112.91	294.24
Mean	197.32	295.72	189.91	295.93	184.44	296.33	167.97	296.33	138.95	294.98	47.52	293.79

Peak Computed Discharge = 408.05 cumecs on 11/9/2019 Corres. Water Level 299.1 m
Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

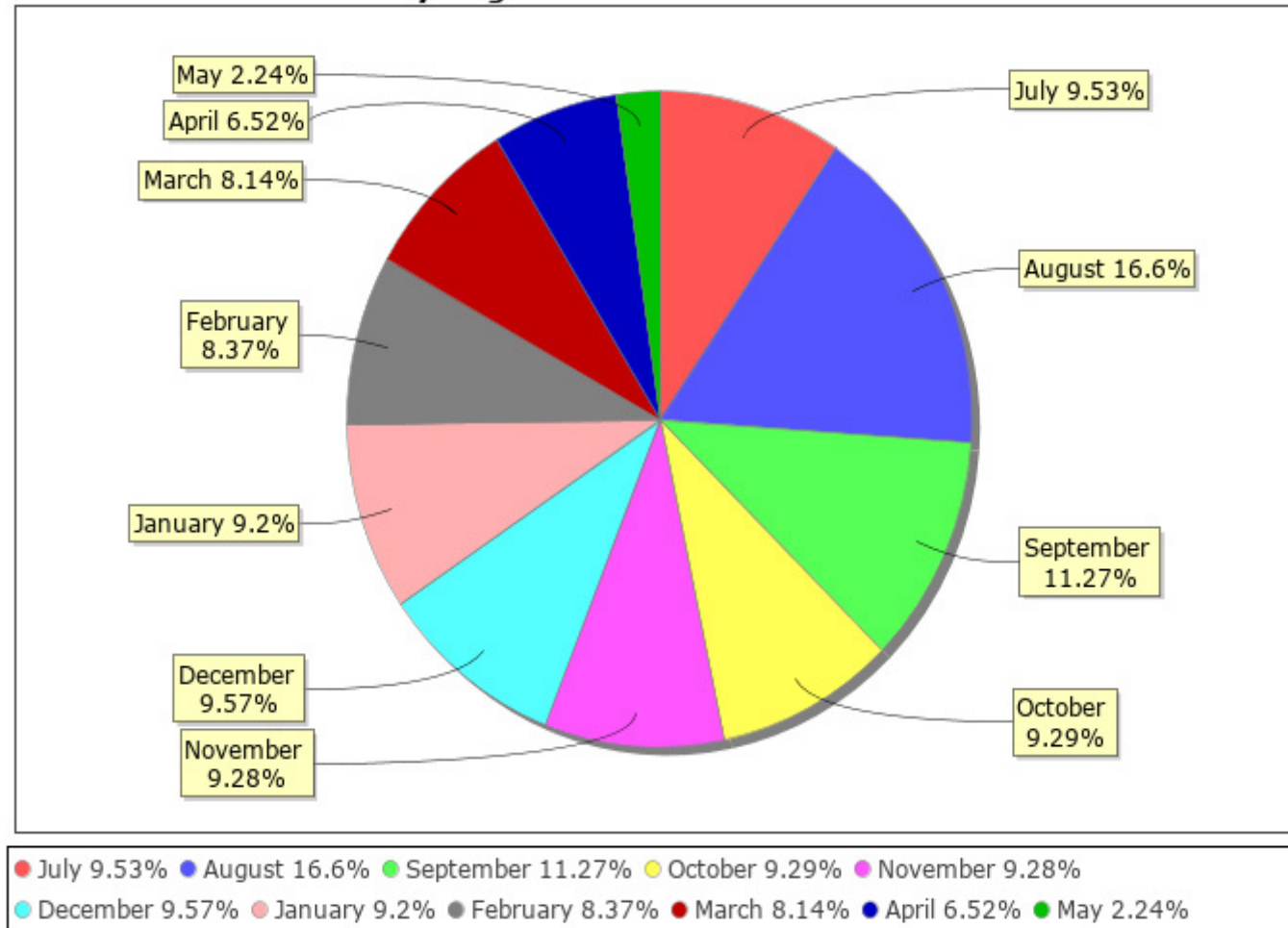
Station Name: Kolar at Mahgaon

Division: Narmada Division, Bhopal

Local River: Kolar

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



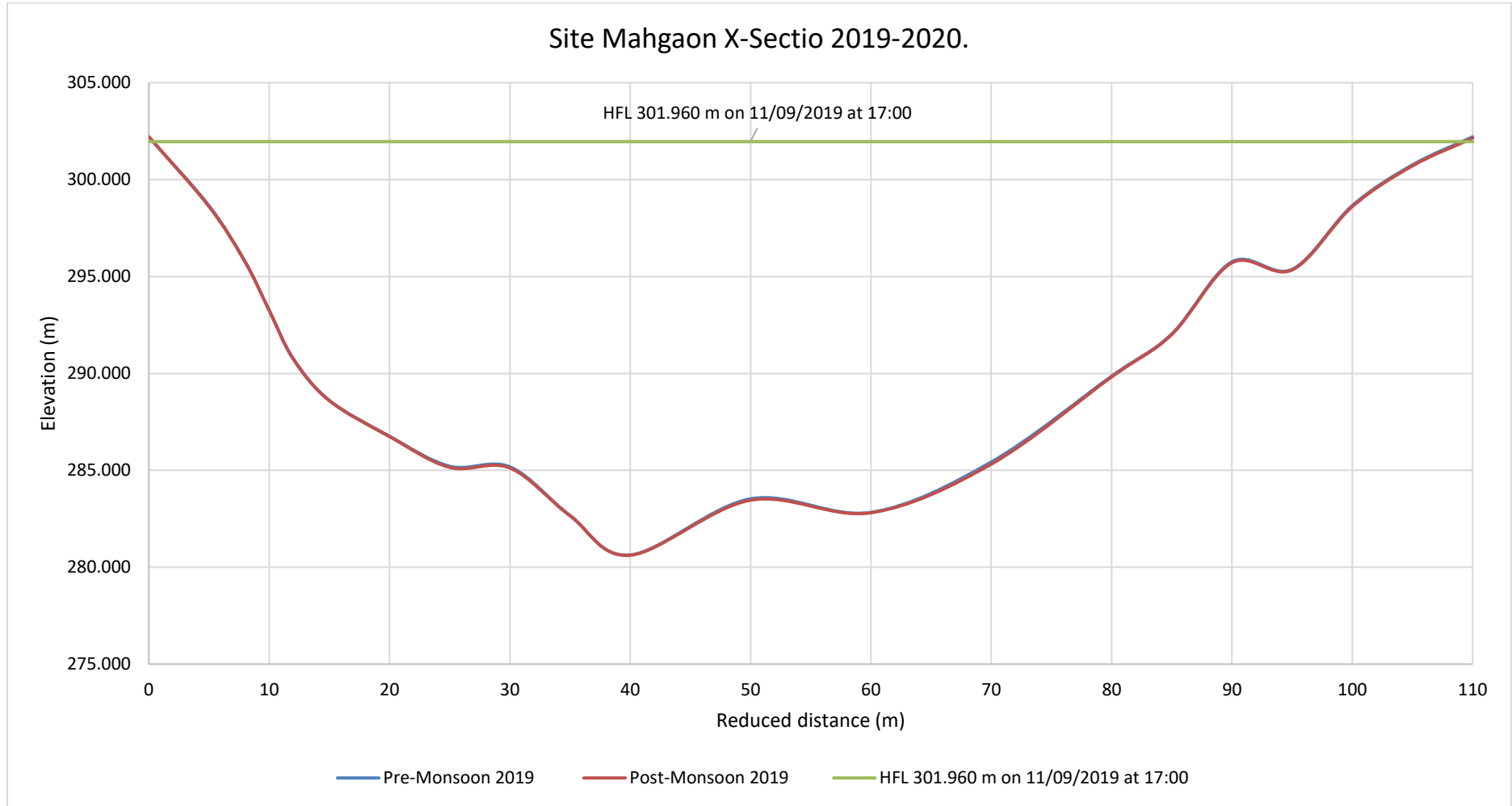
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Kolar at Mahgaon

Division: Narmada Division, Bhopal

Local River: Kolar

Sub-Division: MNSD-II, CWC Bhopal



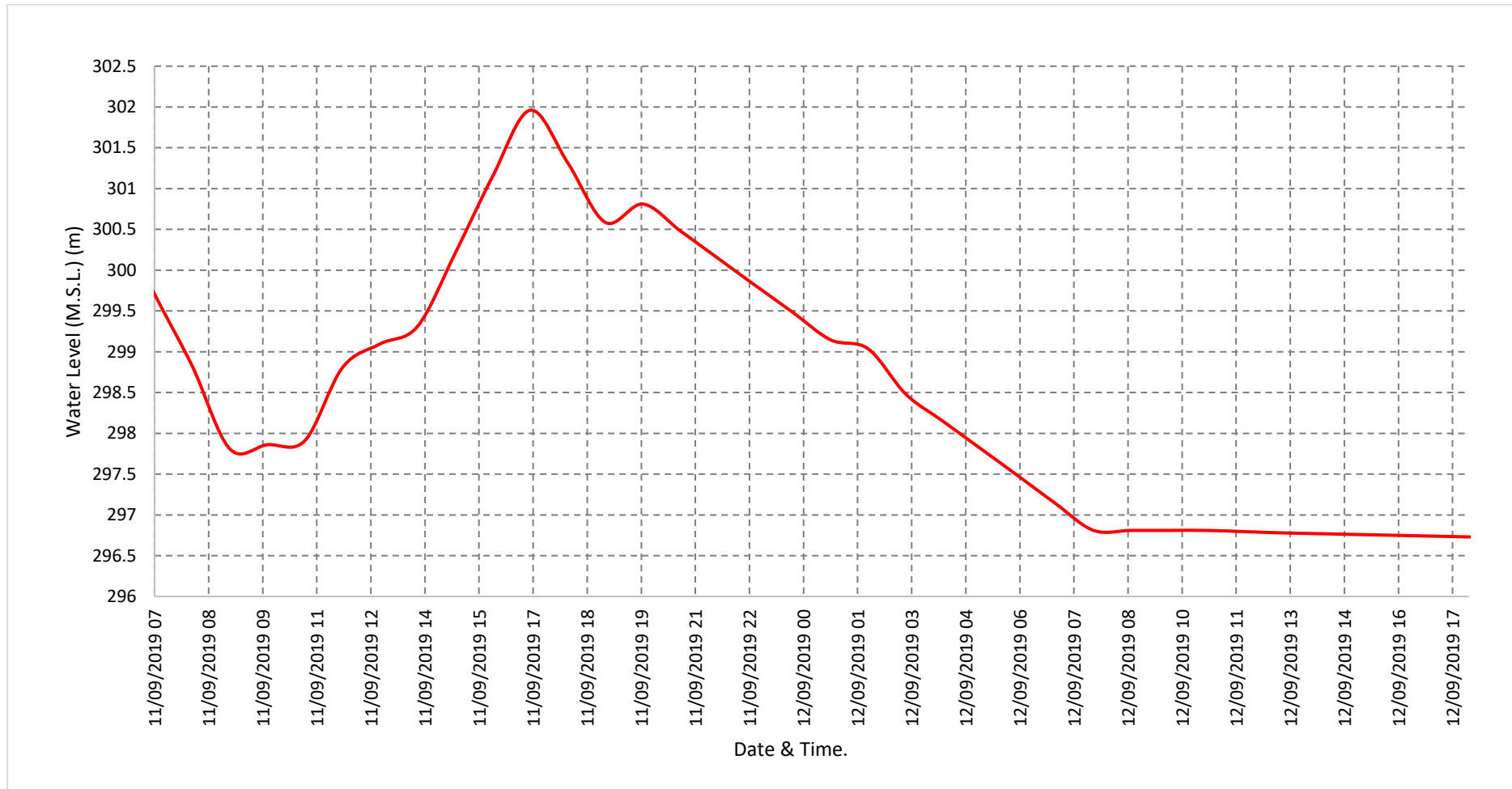
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Kolar at Mahgaon

Division: Narmada Division, Bhopal

Local River: Kolar

Sub-Division: MNSD-II, CWC Bhopal



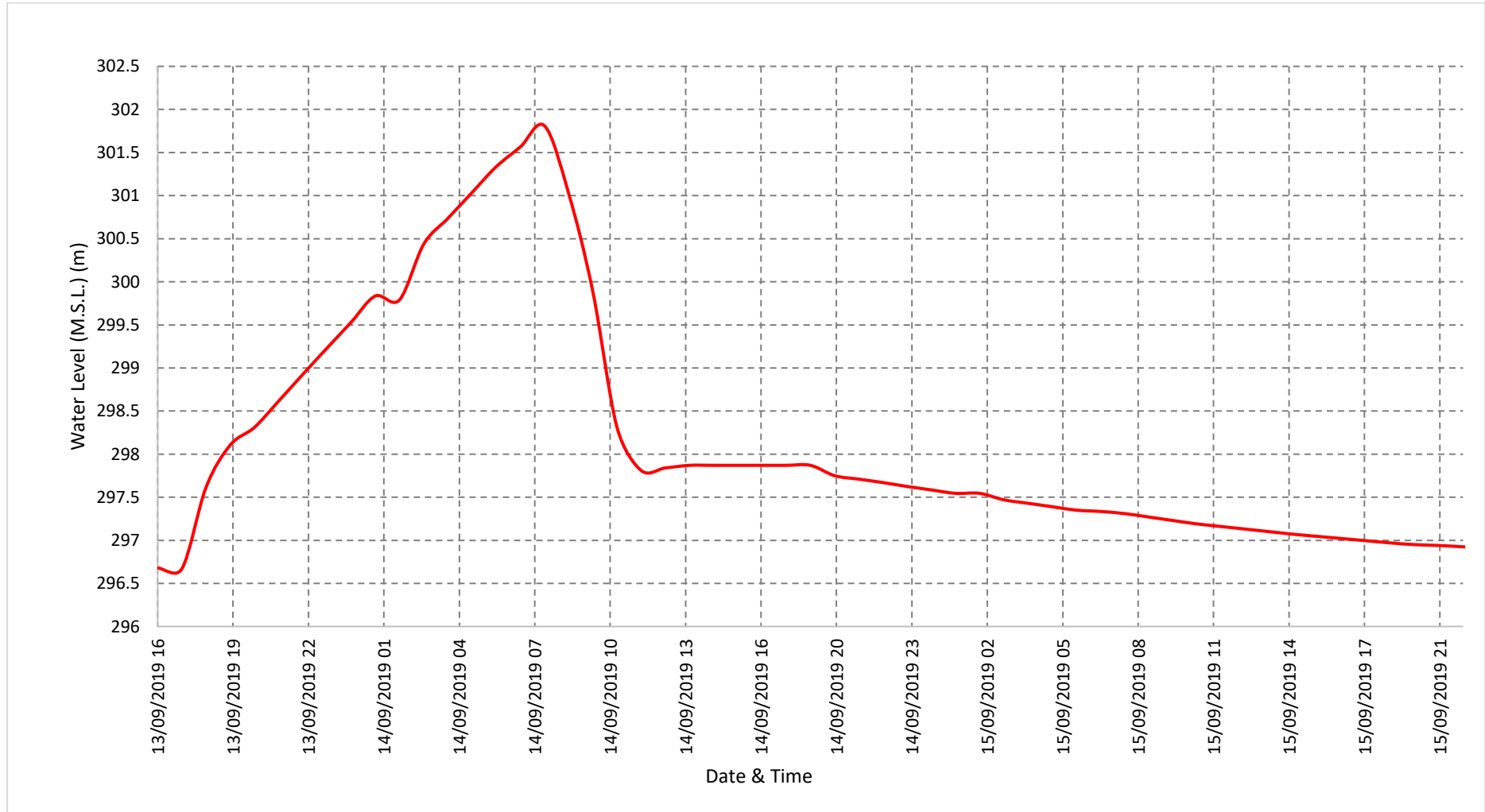
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Kolar at Mahgaon

Division: Narmada Division, Bhopal

Local River: Kolar

Sub-Division: MNSD-II, CWC Bhopal



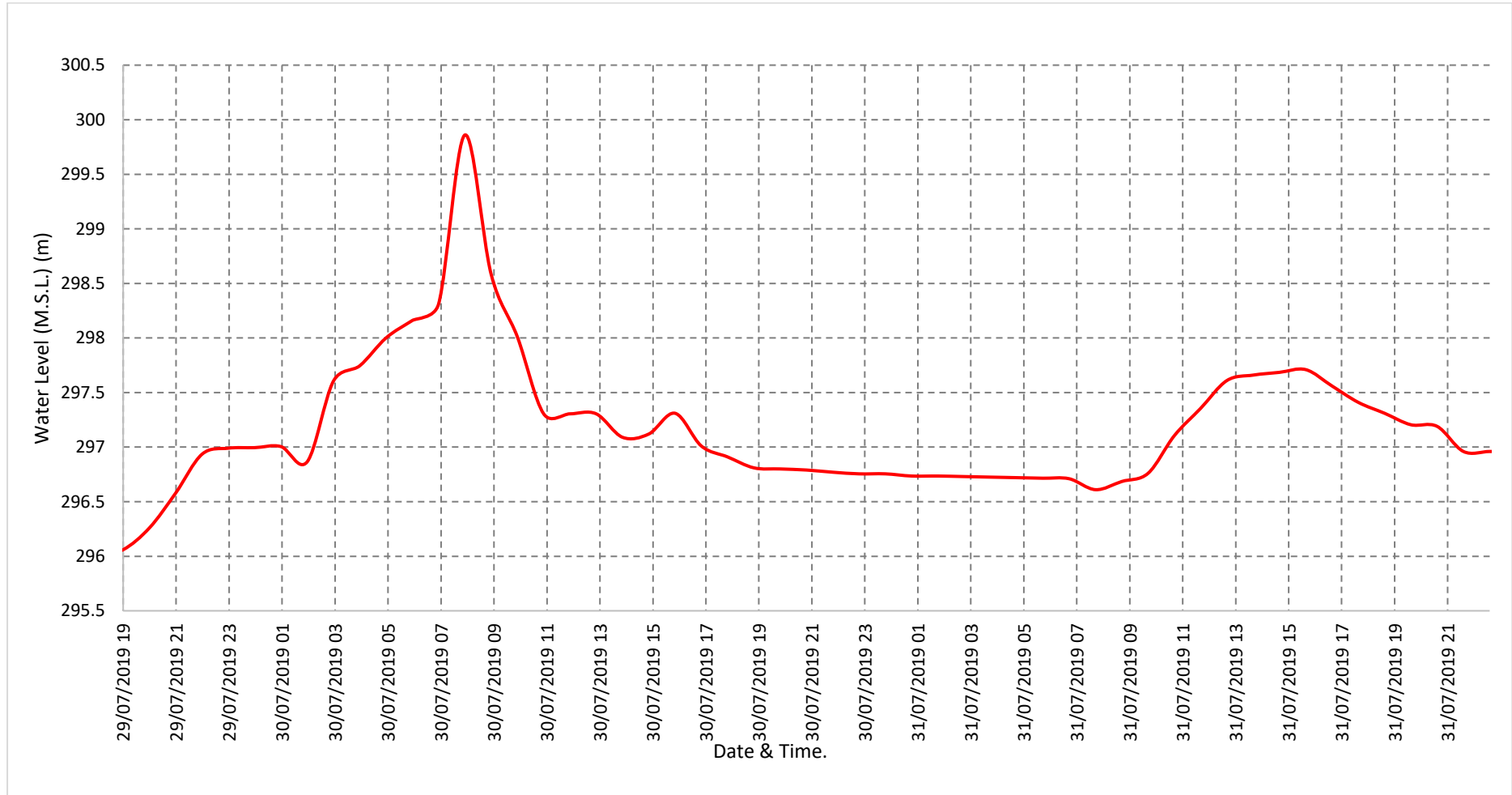
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Kolar at Mahgaon

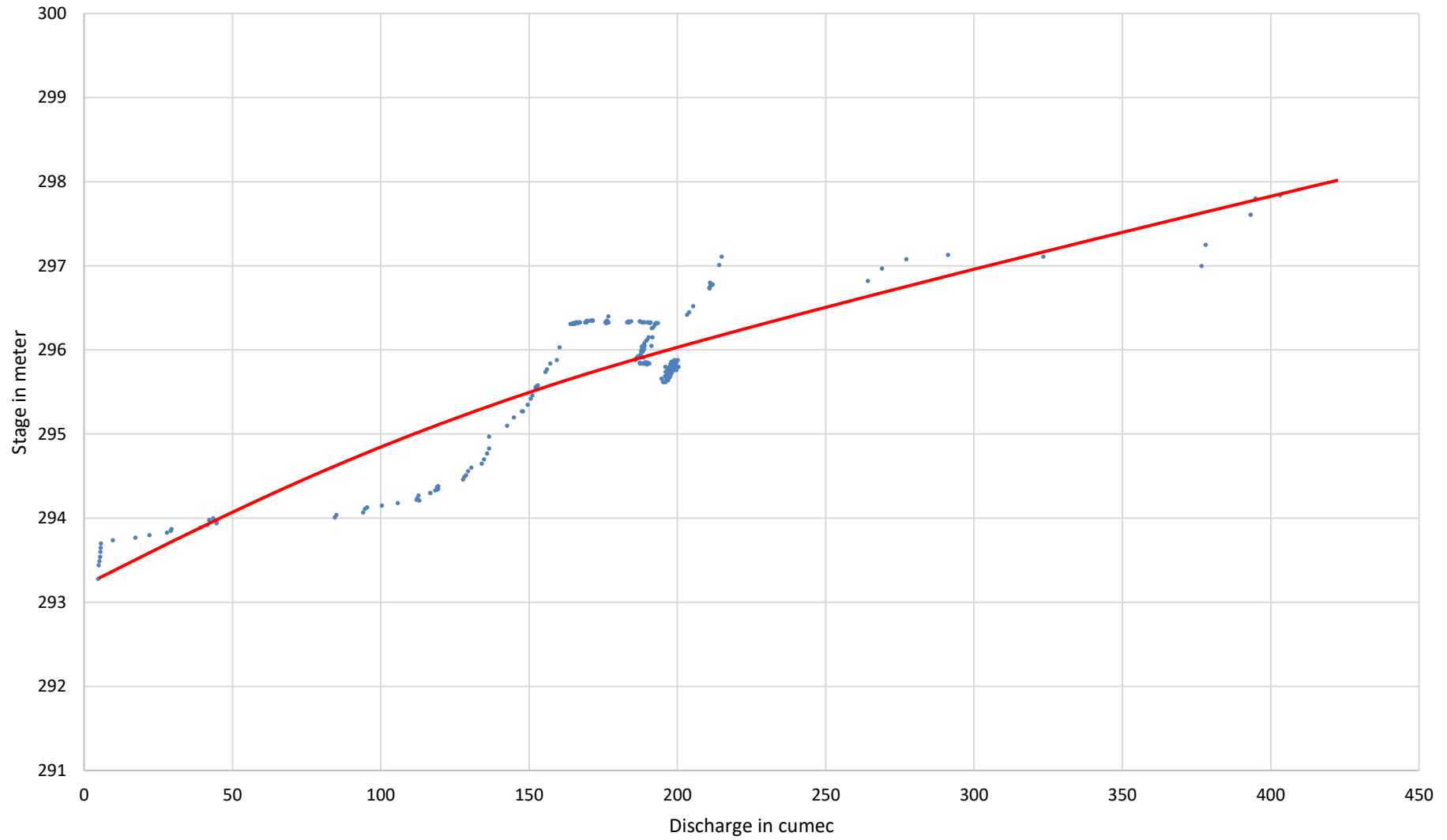
Division: Narmada Division, Bhopal

Local River: Kolar

Sub-Division: MNSD-II, CWC Bhopal



Site Mahgaon Stage-Discharge Curve 2019-2020.



4.22 Hathed at Misrod.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Hathed at Misrod		Code	:	CW1NAM001475
State	:	Madhya Pradesh		District	:	HOSHANGABAD
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Hathed
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	590.0 Sq. Km.		Bank	:	Left
Latitude	:	22°38'34"		Longitude	:	77°33'49"
Current Zero of Gauge (m)	:	288				
CATEGORY		Opening Date			Closing Date	
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date			Closing Date	
288		23/10/2020			-	
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	109.5	296.500	12-09-2019	0	-	01-06-2019

Stage Discharge Sheet for Hathed at Misrod for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	\$	\$	90.4	295.30	1	291.14	19.9	292.15	0.8	291.17
2	\$	\$	\$	\$	93.3	295.42	1.8	291.25	12.6	292.10	0.9	291.19
3	\$	\$	\$	\$	103.6	296.40	3.7	291.35	10.5	292.06	1.3	291.20
4	\$	\$	\$	\$	107	296.70	10.9	291.90	10.9	291.75	1.5	291.21
5	\$	\$	\$	\$	102.5	296.00	31.4	292.28	5.4	291.40	2.8	291.22
6	\$	\$	\$	\$	58.55	294.00	32.7	292.39	3.5	291.38	3.1	291.22
7	\$	\$	\$	\$	47.5	293.16	45.7	292.90	3.7	291.38	2.9	291.22
8	\$	\$	\$	\$	3.1	292.70	55	294.80	3.1	291.33	2.9	291.23
9	\$	\$	\$	\$	37.9	292.30	106.5	296.25	2.4	291.33	2.4	291.23
10	\$	\$	\$	\$	16.9	292.14	76.9	296.75	2.2	291.30	2	291.23
11	\$	\$	\$	\$	18	292.17	102.6	296.90	1.9	291.29	2.2	291.23
12	\$	\$	\$	\$	16.1	292.14	109.5	296.50	1.8	291.27	2.5	291.23
13	\$	\$	\$	\$	12.4	292.14	101.7	295.60	1.5	291.25	0.8	291.23
14	\$	\$	\$	\$	11.2	292.09	49.6	294.40	1.6	291.26	2.50	291.23
15	\$	\$	\$	\$	10.6	292.05	46.5	293.40	1.4	291.24	0.70	291.23
16	\$	\$	\$	\$	10.6	292.05	43.4	293.00	1.3	291.23	2.60	291.23
17	\$	\$	\$	\$	9.8	292.05	42.7	292.99	1.2	291.22	2.50	291.23
18	\$	\$	\$	\$	8	291.92	52.6	293.90	1.11	291.21	0.70	291.23
19	\$	\$	\$	\$	7.7	291.30	64.9	294.25	1.1	291.20	0.90	291.23
20	\$	\$	\$	\$	2.8	291.34	32.7	292.90	1	291.20	1.50	291.23
21	\$	\$	\$	\$	2.4	291.25	31.4	292.35	1	291.20	3.00	291.27
22	\$	\$	\$	\$	2.3	291.22	30.5	292.34	0.9	291.18	0.90	291.27
23	\$	\$	\$	\$	11.2	291.74	31.4	292.30	0.8	291.17	3.10	291.28
24	\$	\$	\$	\$	6.8	291.70	29.6	292.30	0.7	291.17	3.00	291.28
25	\$	\$	\$	\$	5.5	291.67	29.4	292.29	0.7	291.16	3.00	291.28
26	\$	\$	\$	\$	5.8	291.67	28.5	292.27	0.7	291.16	4.90	291.28
27	\$	\$	26.8	292.10	5	291.66	27.5	292.21	0.5	291.15	2.40	291.28
28	\$	\$	26.5	292.26	2.9	291.23	1.1	292.21	0.6	291.15	2.90	291.28
29	\$	\$	27	293.19	3.3	291.19	1.2	292.22	0.6	291.15	4.90	291.28
30	\$	\$	27.7	293.46	0.7	291.10	1	292.16	0.4	291.14	2.90	291.28
31			72	294.85	0.7	291.20			0.4	291.14		
Ten-Daily Mean												
I Ten-Daily	0	0	0	0	66.08	294.41	36.56	293.1	7.42	291.62	2.06	291.21
II Ten-Daily	0	0	0	0	10.72	291.93	64.62	294.38	1.39	291.24	1.69	291.23
III Ten-Daily	0	0	36	293.17	4.24	291.42	21.16	292.27	0.66	291.16	3.1	291.28
Monthly												
Min.	0	0	26.5	292.1	0.7	291.1	1	291.14	0.4	291.14	0.7	291.17
Max.	0	0	72	294.85	107	296.7	109.5	296.9	19.9	292.15	4.9	291.28
Mean	0	0	36	293.17	26.28	292.55	40.78	293.25	3.08	291.33	2.28	291.24

Annual Runoff in
MCM :

366.03

Annual Runoff in
mm :

620.4

Peak Observed Discharge = 109.5 cumecs on 12/09/2019 Corres. Water Level 296.500 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

\$- No Flow

Stage Discharge Sheet for Hathed at Misrod for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	2.00	291.29	23.2	291.34	10.3	290.69	10.5	290.68	12.4	290.51	11.2	290.22
2	2.50	291.30	21.2	291.31	10	290.68	11.6	290.68	12.35	290.50	9	290.22
3	5.20	291.31	18.2	291.29	11.1	290.68	10.6	290.68	12.3	290.49	10.5	290.22
4	2.60	291.31	18	291.29	12.4	290.68	12.8	290.68	12.25	290.48	10.3	290.21
5	5.1	291.31	16	291.24	10.2	290.68	13.2	290.68	12.2	290.47	10.6	290.21
6	4.2	291.31	17.8	291.21	10.6	290.70	10.6	290.68	12.15	290.46	10.3	290.21
7	2.6	291.31	16.2	291.17	11.1	290.70	10.3	290.68	12.1	290.45	10.4	290.21
8	2.5	291.31	15.5	291.15	13.2	290.70	10.5	290.68	12.05	290.44	10.2	290.21
9	5.2	291.33	15.1	291.13	9	290.70	11.2	290.68	12	290.43	11.2	290.21
10	3.2	291.33	14.4	291.07	10.2	290.70	9	290.68	11.95	290.42	10.5	290.21
11	3.5	291.33	15.3	291.00	10.3	290.70	10.2	290.68	11.9	290.41	9	290.21
12	2.6	291.33	14	291.97	10.2	290.70	11.2	290.68	11.85	290.40	11.8	290.21
13	4.1	291.34	13.2	290.96	13.2	290.70	11.1	290.67	11.8	290.39	12.8	290.21
14	4.8	291.34	11.2	290.95	11.2	290.70	10.2	290.67	11.75	290.38	13.2	290.21
15	3	291.35	10.3	290.94	10.6	290.70	9	290.67	11.7	290.37	9	290.21
16	5.2	291.35	10.6	290.92	9	290.70	8.9	290.67	11.65	290.36	11.2	290.21
17	3.2	291.35	10.3	290.90	11.2	290.70	13.2	290.66	11.6	290.35	10.5	290.21
18	3.4	291.35	11.2	290.88	11.2	290.70	11.1	290.65	11.55	290.34	10.3	290.21
19	2.6	291.35	11.5	290.86	10.6	290.70	12.4	290.64	11.5	290.33	10.6	290.21
20	3.5	291.35	11.8	290.84	13.2	290.70	11.8	290.63	11.2	290.30	8.9	290.21
21	5.2	291.35	11.82	290.83	11.8	290.70	10.2	290.63	13.2	290.30	11.2	290.20
22	3.5	291.35	10.3	290.81	8.9	290.70	12	290.61	12.4	292.28	10.2	290.20
23	3	291.35	11.1	290.80	9	290.70	13.2	290.60	10.3	292.28	7.8	290.20
24	2.6	291.35	12.4	290.80	10.4	290.70	13.1	290.59	11.8	292.28	8	290.20
25	5.2	291.35	13.2	290.78	10.2	290.70	13	290.58	11.1	292.26	8.2	290.20
26	4.3	291.35	10.5	290.74	11.8	290.70	12.9	290.57	9.5	290.24	8.2	290.20
27	4.2	291.35	10.3	290.73	8.9	290.70	12.8	290.56	8.9	290.24	8.3	290.20
28	5.2	291.35	11.2	290.70	10.6	290.70	12.7	290.55	9	290.23	8.4	290.19
29	5	291.35	11.8	290.70	8.9	290.69	12.6	290.54	10.4	290.23	8.2	290.19
30	5.2	291.35	9	290.70			12.5	290.53	10.3	290.22	9	290.19
31	3.2	291.35	11.6	290.70			12.4	290.52			8.5	290.19
Ten-Daily Mean												
I Ten-Daily	3.51	291.31	17.56	291.22	10.81	290.69	11.03	290.68	12.18	290.47	10.42	290.21
II Ten-Daily	3.59	291.34	11.94	291.02	11.07	290.7	10.91	290.66	11.65	290.36	10.73	290.21
III Ten-Daily	4.24	291.35	11.2	290.75	10.06	290.7	12.49	290.57	10.69	291.06	8.73	290.2
Monthly												
Min.	2	291.29	9	290.7	8.9	290.68	8.9	290.52	8.9	290.22	7.8	290.19
Max.	5.2	291.35	23.2	291.97	13.2	290.7	13.2	290.68	13.2	292.28	13.2	290.22
Mean	3.79	291.34	13.49	290.99	10.67	290.7	11.51	290.64	11.51	290.63	9.92	290.21

Peak Computed Discharge = 55 cumecs on 8/9/2019 Corres. Water Level 294.800 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

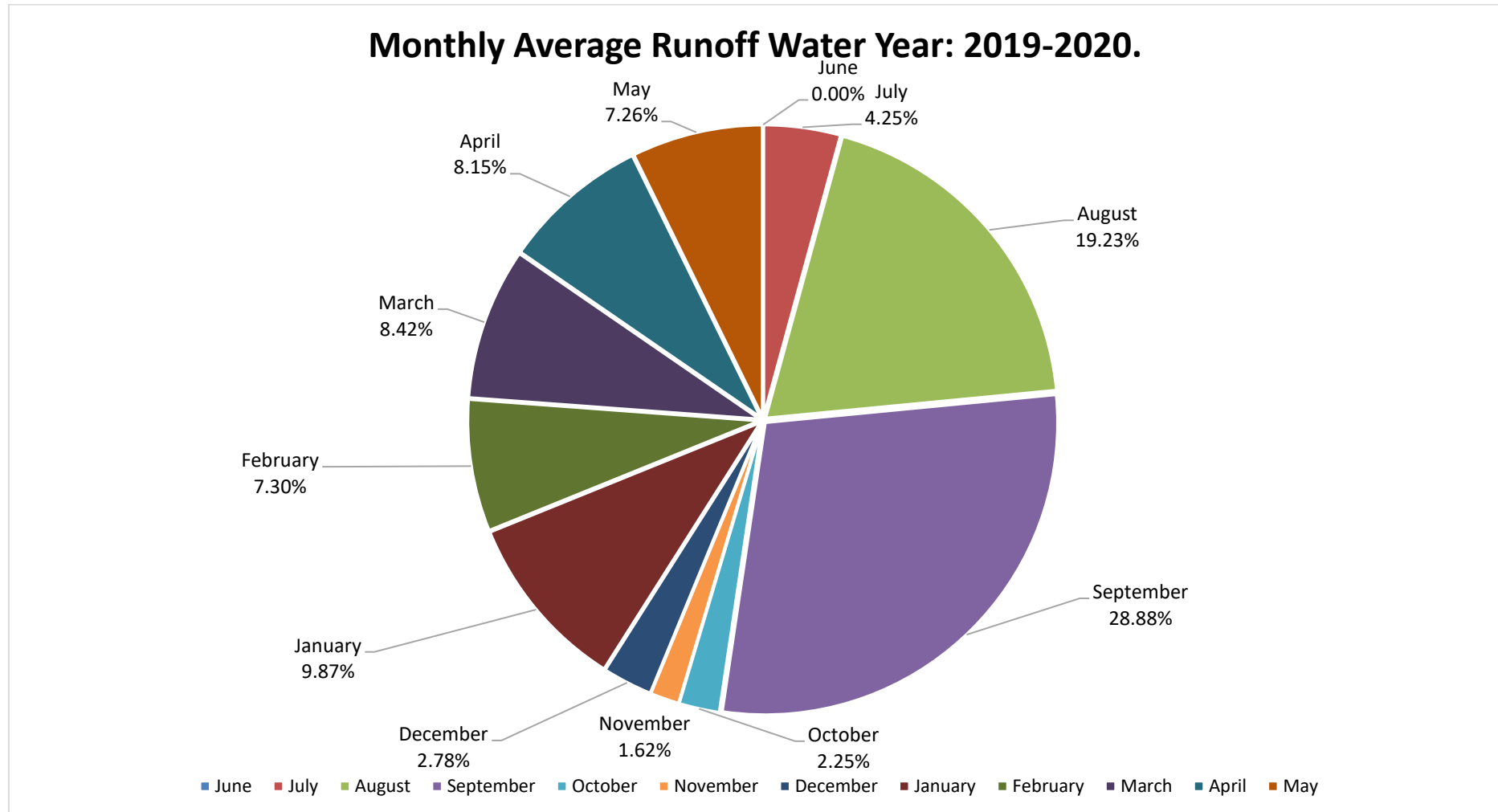
Monthly Runoff for the Year (2019-2020)

Station Name: Hathed at Misrod

Division: Narmada Division, Bhopal

Local River: Hathed

Sub-Division: MNSD-I, CWC Hoshangabad



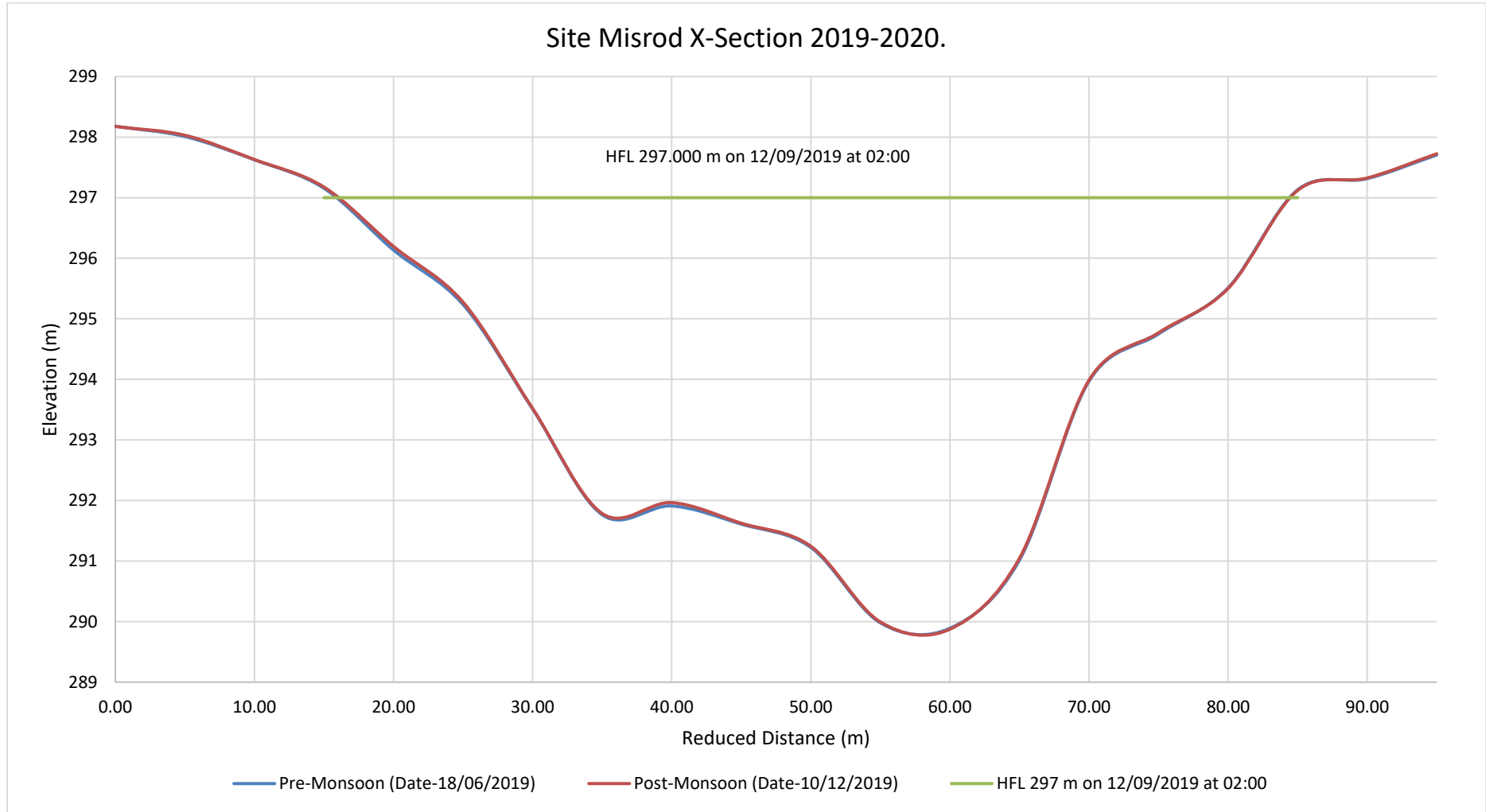
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Hathed at Misrod

Division: Narmada Division, Bhopal

Local River: Hathed

Sub-Division: MNSD-I, CWC Hoshangabad



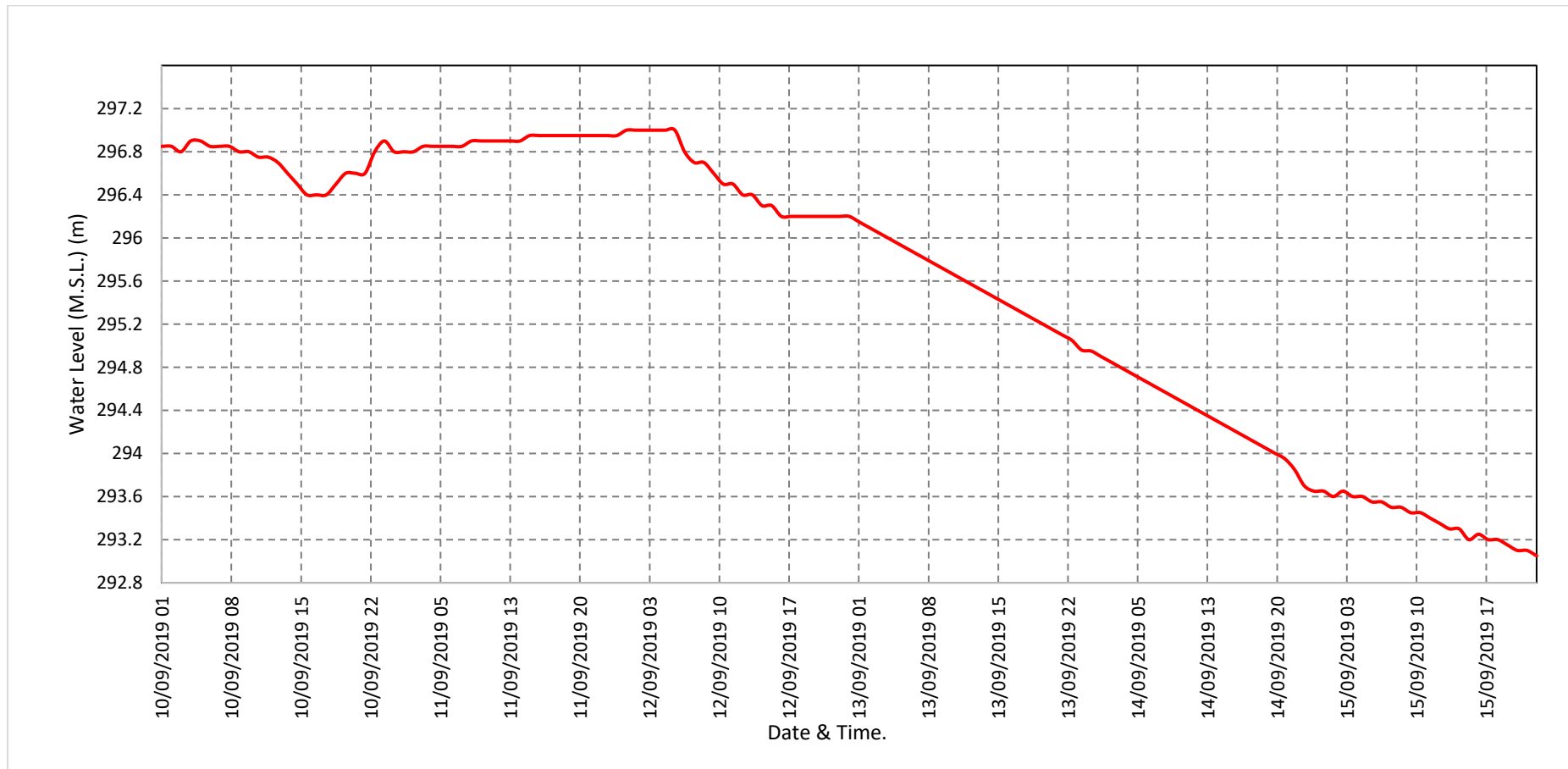
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Hathed at Misrod

Division: Narmada Division, Bhopal

Local River: Hathed

Sub-Division: MNSD-I, CWC Hoshangabad



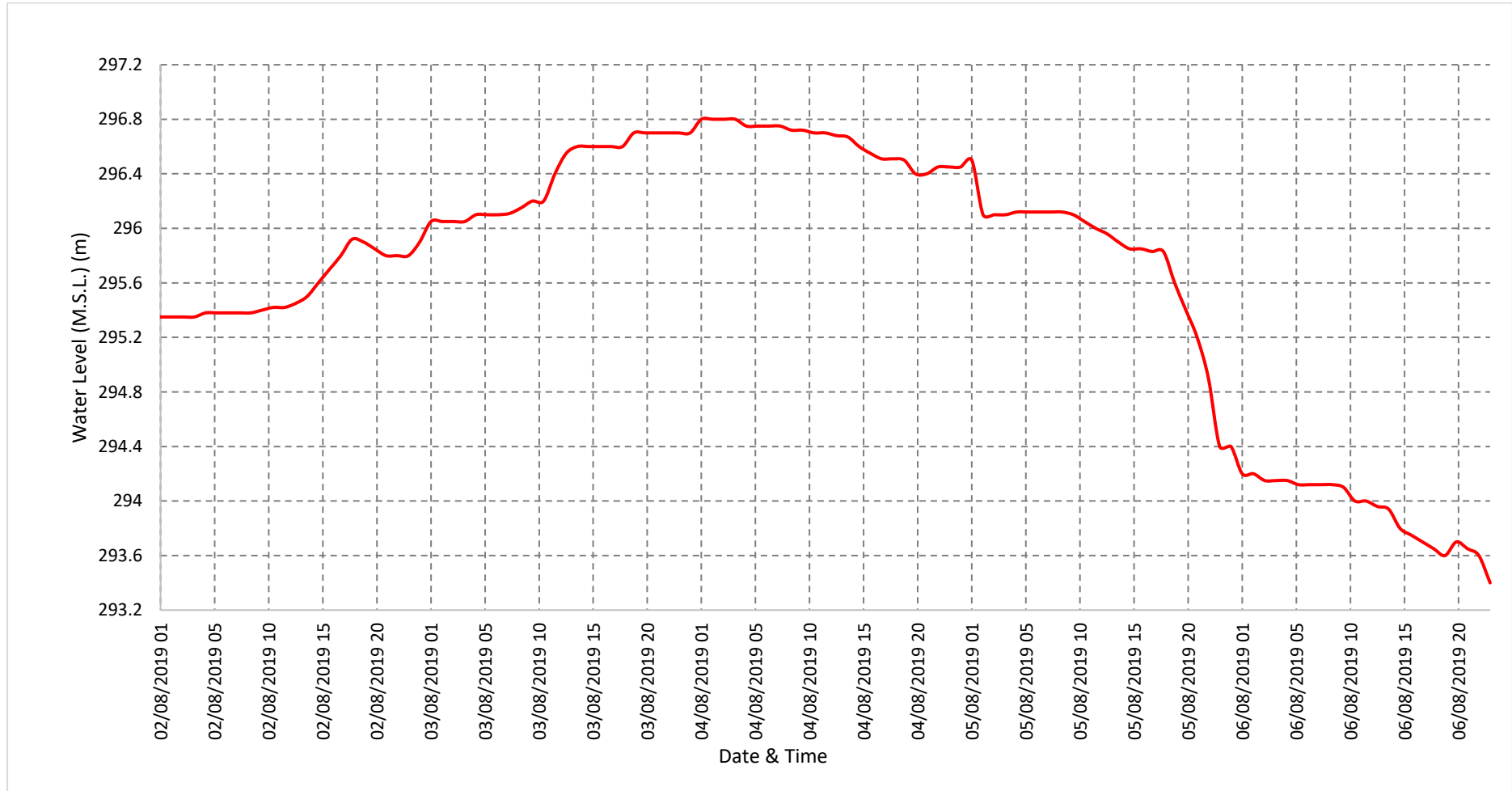
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Hathed at Misrod

Division: Narmada Division, Bhopal

Local River: Hathed

Sub-Division: MNSD-I, CWC Hoshangabad



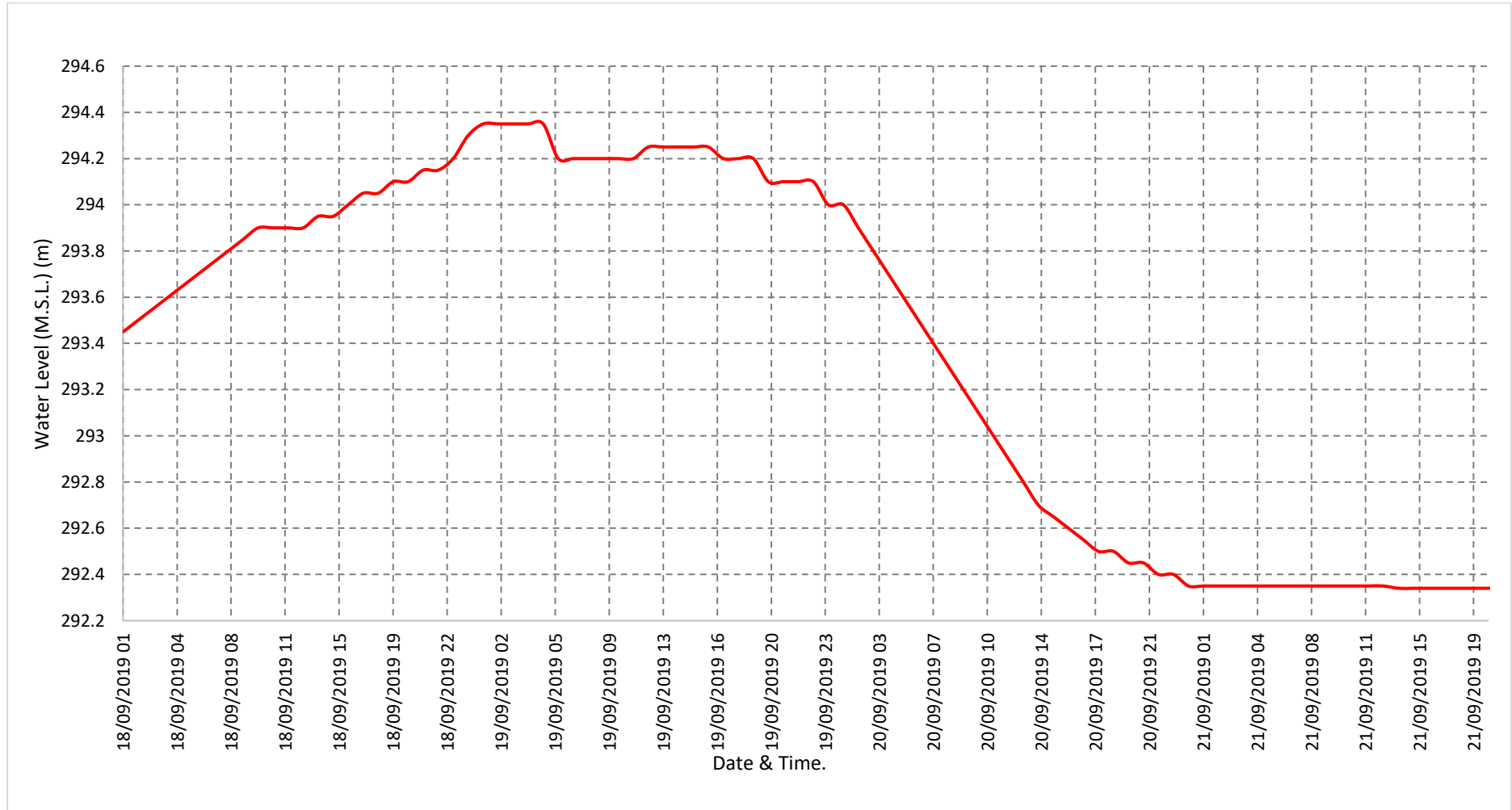
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Hathed at Misrod

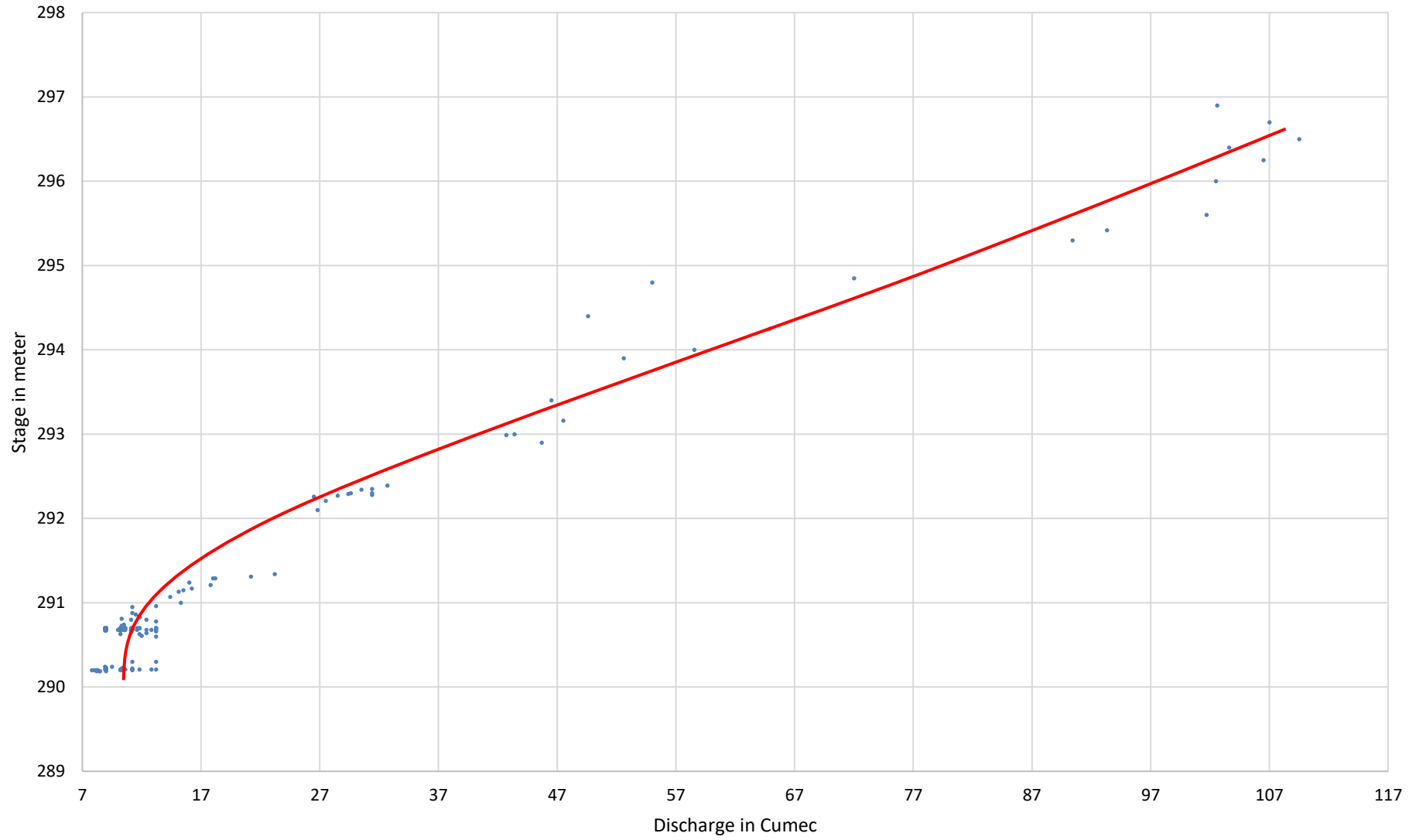
Division: Narmada Division, Bhopal

Local River: Hathed

Sub-Division: MNSD-I, CWC Hoshangabad



Site Misrod Stage-Discharge Curve 2019-2020.



Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1971-1972	N.A.	N.A.	13/01/1972	N.A.	N.A	13/01/1972
1972-1973	2941.7	288.543	16/09/1972	23.5	284.140	27/05/1973
1973-1974	31600	300.625	30/08/1973	25	284.130	03/06/1973
1974-1975	28435.3	300.805	20/08/1974	22.4	283.805	30/05/1975
1975-1976	13865.2	295.210	25/08/1975	19.4	283.805	11/06/1975
1976-1977	10350	292.995	05/08/1976	15	283.775	26/05/1977
1977-1978	15436.6	296.045	09/08/1977	15.2	283.770	09/06/1977
1978-1979	18400	295.895	26/08/1978	27	283.885	02/06/1978
1979-1980	11200.7	294.345	10/08/1979	14.3	283.775	30/05/1980
1980-1981	21893.4	296.400	30/08/1980	14.9	283.770	03/06/1980
1981-1982	5853.6	290.475	17/08/1981	20	283.900	15/06/1981
1982-1983	16885.7	294.550	23/08/1982	21.4	284.827	26/06/1982
1983-1984	22020	296.200	10/09/1983	26.9	284.145	16/06/1983
1984-1985	28600	298.610	19/08/1984	27.9	283.930	29/05/1985
1985-1986	12470	293.690	10/08/1985	19	283.960	09/06/1985
1986-1987	20680	296.250	24/07/1986	20.1	283.950	30/05/1987
1987-1988	15945	294.660	18/09/1987	15	283.900	29/05/1988
1988-1989	16800	295.090	05/08/1988	15.07	283.895	03/06/1988
1989-1990	10800	292.530	08/08/1989	18.87	283.925	03/06/1989
1990-1991	12810	293.500	23/08/1990	12.8	284.715	03/02/1991
1991-1992	20000	296.400	25/08/1991	58	284.260	11/05/1992
1992-1993	9750	292.010	13/09/1992	56.58	284.220	12/07/1992
1993-1994	12100	293.370	06/08/1993	49	284.480	10/06/1993
1994-1995	20200	296.160	22/07/1994	100.4	284.415	21/01/1995
1995-1996	10100	292.230	12/08/1995	102.6	284.480	02/06/1995
1996-1997	3450	288.500	27/07/1996	87.39	284.190	22/06/1996
1997-1998	11860	292.050	26/07/1997	67.84	284.190	11/06/1997
1998-1999	18000	295.140	15/09/1998	49	284.210	30/05/1999
1999-2000	27800	299.530	19/09/1999	42	284.200	06/06/1999
2000-2001	5600	290.320	29/07/2000	70	284.240	11/04/2001
2001-2002	6280	290.190	16/07/2001	67.81	284.250	04/06/2001
2002-2003	14560	294.200	19/08/2002	85.42	284.410	30/05/2003
2003-2004	12539	292.700	28/07/2003	72.78	284.360	19/05/2004
2004-2005	12500	293.310	23/08/2004	64.7	284.290	07/06/2004
2005-2006	14279.56	294.000	06/07/2005	18.5	284.190	12/06/2005
2006-2007	14924	294.690	01/09/2006	62.42	284.190	25/06/2006

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2007-2008	9373.05	291.800	09/07/2007	9.55	284.000	08/07/2007
2008-2009	6239.87	289.990	02/08/2008	76.04	284.310	23/01/2009
2009-2010	20983.97	296.890	10/09/2009	48.93	284.210	04/07/2009
2010-2011	4784.35	289.500	05/09/2010	65.88	284.330	06/12/2010
2011-2012	9075.81	291.500	24/07/2011	42.86	284.260	31/05/2012
2012-2013	16972.88	295.550	07/08/2012	38.96	284.130	07/06/2012
2013-2014	23529.48	299.180	23/08/2013	91.14	284.250	16/05/2014
2014-2015	4751.59	289.100	09/08/2014	83.77	284.300	29/06/2014
2015-2016	2796.64	287.990	14/08/2015	86.01	284.320	20/11/2015
2016-2017	8000	291.700	09/07/2016	10.9	291.000	10/07/2016
2017-2018	1450	286.650	22/07/2017	26	284.370	18/02/2018
2018-2019	1750	288.840	01/09/2018	37.7	284.280	15/05/2019
2019-2020	15700	294.200	11/09/2019	33.5	284.330	06/06/2019

Stage Discharge Sheet for Narmada at Hoshangabad for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	47.2	284.310	72.2	284.390	2700	287.290	1900	287.170	6518.8	290.02	629.9	285.360
2	45	284.300	80.1	284.430	1550	286.920	2450	287.380	5200	289.18	634.6	285.250
3	40.1	284.290	119.2	284.540	1350	286.290	3143.5	288.500	2394.1	288.36	450	285.240
4	37.3	284.360	315	285.000	2900	287.550	3785.3	289.020	2652.6	287.49	612.09	285.200
5	52	284.340	360	285.500	1400	286.600	7136.6	289.820	2390.4	286.98	601.7	285.160
6	33.5	284.330	514	285.420	1100	285.950	8018.8	290.700	1380	286.56	593.7	285.140
7	43.8	284.320	950	286.180	1050	285.820	8997.7	290.200	1791.4	286.28	578.6	285.120
8	61.3	284.320	1158.2	285.860	1400	286.520	6200	289.850	1180	286.04	574.5	285.050
9	42	284.300	922.7	285.920	2250	287.500	10800	292.250	1423.7	285.98	567.5	285.050
10	67	284.300	1097.5	285.730	7000	290.200	15300	294.030	1794.1	285.96	475	285.000
11	67.7	284.300	377	285.330	4500	288.700	15700	294.200	1000	285.93	562.7	284.950
12	38.8	284.310	289	285.130	3800	288.200	7300	290.400	850	285.87	450	284.940
13	54.7	284.340	268	285.080	1850	287.070	12090.2	293.030	800	285.83	585.1	284.900
14	64.8	284.370	255	285.000	1300	286.540	13060	292.790	674.1	285.76	700.6	285.010
15	56.3	284.400	181	284.900	4400	288.700	10200	291.930	646.4	285.65	500	285.040
16	63	284.410	177	284.830	8500	291.020	5036.8	289.390	606.9	285.58	530	285.020
17	71.4	284.400	181	284.780	7400	290.450	5235.9	288.650	607.1	285.49	540.5	285.030
18	69.1	284.380	164	284.750	3600	288.680	6464.9	290.110	576.1	285.42	545	285.030
19	65.5	284.350	167	284.720	1700	287.070	5121.1	289.070	572.6	285.42	475	284.980
20	56.5	284.350	138	284.780	1550	286.870	6595.4	288.860	520	285.39	420	284.900
21	70.7	284.390	175	284.890	2200	286.850	2677.3	287.700	743.9	285.38	360	284.830
22	57.1	284.410	228	284.860	2410	287.300	2200	287.250	638.2	285.28	360	284.830
23	70	284.430	139	284.810	3700	288.060	2527	287.570	638.8	285.24	330	284.800
24	72	284.400	225.5	284.750	4500	288.700	2375.1	287.690	643.2	285.28	320	284.790
25	64.3	284.370	145	284.650	7350	290.400	2434.8	287.420	651.7	285.33	340	284.800
26	47.1	284.360	151	285.100	9100	291.350	2806.6	287.920	653.6	285.35	371.7	284.830
27	69.2	284.380	151	284.870	9300	291.520	2243.3	287.360	515	285.38	364.1	284.800
28	48.9	284.390	292	285.140	5530	289.600	2816.1	288.080	510	285.32	361.8	284.790
29	77.7	284.420	481	285.360	4850	288.900	4000	288.500	691.1	285.4	358.9	284.790
30	74	284.410	688	285.800	2999.8	287.790	2340.4	288.510	652.3	285.4	359.5	284.780
31			2200	286.970	2587.9	287.590			640.1	285.4		
Ten-Daily Mean												
I Ten-Daily	46.92	284.320	558.89	285.300	2270	287.060	6773.19	289.890	2672.51	287.280	571.76	285.160
II Ten-Daily	60.78	284.360	219.7	284.930	3860	288.330	8680.43	290.840	685.32	285.630	530.89	284.980
III Ten-Daily	65.1	284.400	443.23	285.200	4957.06	288.910	2642.06	287.800	634.35	285.340	352.6	284.800
Monthly												
Min.	33.5	284.290	72.2	284.390	1050	285.820	1900	287.170	510	285.240	320	284.780
Max.	77.7	284.430	2200	286.970	9300	291.520	15700	294.200	6518.8	290.020	700.6	285.360
Mean	57.6	284.360	407.27	285.140	3695.69	288.100	6031.89	289.510	1330.73	286.090	485.08	284.980

Annual Runoff in

MCM :

36860.5

Annual Runoff in

mm :

827.43

Peak Observed Discharge = 13060 cumecs on 14/9/2019 Corres. Water Level 292.790 m

Lowest Observed Discharge = 33.5 cumecs on 6/6/2019 Corres. Water Level 284.330 m

Stage Discharge Sheet for Narmada at Hoshangabad for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	315	284.750	217	284.580	308	284.700	330	284.700	255	284.590	440	284.910
2	298.4	284.700	219	284.650	309	284.700	342.4	284.700	256	284.600	435	284.900
3	274.6	284.650	280.5	284.610	313.6	284.720	335.7	284.700	320	284.680	432	284.890
4	264.9	284.630	312.2	284.680	271.5	284.710	368.3	284.700	275	284.650	410	284.850
5	253.8	284.600	290	284.660	305	284.700	344.6	284.700	340	284.720	408	284.820
6	251.9	284.600	254	284.600	313.6	284.690	331.4	284.700	340	284.720	335	284.730
7	271.6	284.640	253	284.600	311.6	284.680	319.5	284.700	330	284.700	320	284.690
8	260	284.640	246.4	284.620	309.5	284.670	335.5	284.700	330	284.700	311.8	284.690
9	270	284.650	218.9	284.580	310	284.680	325	284.690	335	284.710	315	284.700
10	300	284.700	210	284.570	306.7	284.670	370	284.720	340	284.720	320	284.700
11	290	284.650	252	284.600	310.9	284.680	380	284.740	340	284.720	342.4	284.700
12	285	284.630	260	284.610	308.9	284.680	404.1	284.810	325	284.700	422.8	284.800
13	282	284.630	221.5	284.590	307.9	284.700	450	284.920	323	284.690	440	284.890
14	276	284.660	228.5	284.630	306.1	284.710	430	284.880	41	284.830	445	284.900
15	264	284.630	300	284.700	305.5	284.700	340	284.720	435	284.900	450	284.920
16	263	284.630	305.2	284.720	310	284.710	265	284.610	435	284.900	448	284.910
17	260	284.610	307	284.720	309.3	284.710	264.3	284.600	440	284.910	445	284.900
18	260	284.610	304	284.710	310.1	284.710	261.3	284.600	450	284.920	445	284.900
19	256	284.630	310	284.730	308.2	284.710	267.1	284.600	452	284.930	448	284.910
20	255	284.630	325.1	284.740	342.4	284.710	245.8	284.570	452	284.930	464.8	284.930
21	246.6	284.640	321.8	284.730	325	284.710	231.6	284.550	452	284.930	472.9	284.940
22	243	284.630	347.7	284.770	332.4	284.710	315	284.670	452	284.930	478.1	284.950
23	236.5	284.620	319.8	284.730	345	284.710	359.2	284.770	450	284.920	481.1	284.960
24	227.6	284.600	317.3	284.730	371.6	284.710	415	284.860	450	284.920	480	284.960
25	220	284.600	312.11	284.720	369.8	284.700	380	284.790	452	284.930	450	284.920
26	216.3	284.590	310	284.720	367.1	284.700	345	284.750	450	284.920	480	284.950
27	218.7	284.600	313	284.720	370.4	284.700	325	284.690	450	284.920	427.4	284.900
28	212.3	284.600	312	284.720	368.2	284.700	265	284.640	452	284.930	419.2	284.810
29	214	284.550	318	284.730	347	284.700	256	284.600	455	284.940	369.8	284.750
30	212	284.540	315	284.720			248	284.570	452	284.930	357.9	284.750
31	211	284.54	316	284.720			240	284.560			330	284.700
Ten-Daily Mean												
I Ten-Daily	276.02	284.660	250.1	284.610	305.85	284.690	340.24	284.700	312.1	284.680	372.68	284.790
II Ten-Daily	269.1	284.630	281.33	284.680	311.93	284.700	330.76	284.710	369.3	284.840	435.1	284.880
III Ten-Daily	223.45	284.590	318.43	284.730	355.17	284.700	307.25	284.680	451.5	284.930	431.49	284.870
Monthly												
Min.	211	284.540	210	284.570	271.5	284.670	231.6	284.550	41	284.590	311.8	284.690
Max.	315	284.750	347.7	284.770	371.6	284.720	450	284.920	455	284.940	481.1	284.960
Mean	256.19	284.630	283.29	284.670	324.32	284.700	326.08	284.690	377.63	284.820	413.09	284.850

Peak Computed Discharge = 15700 cumecs on 11/9/2019 Corres. Water Level 294.200 m
 Lowest Computed Discharge = 41cumecs on 14/4/2020 Corres. Water Level 284.830 m

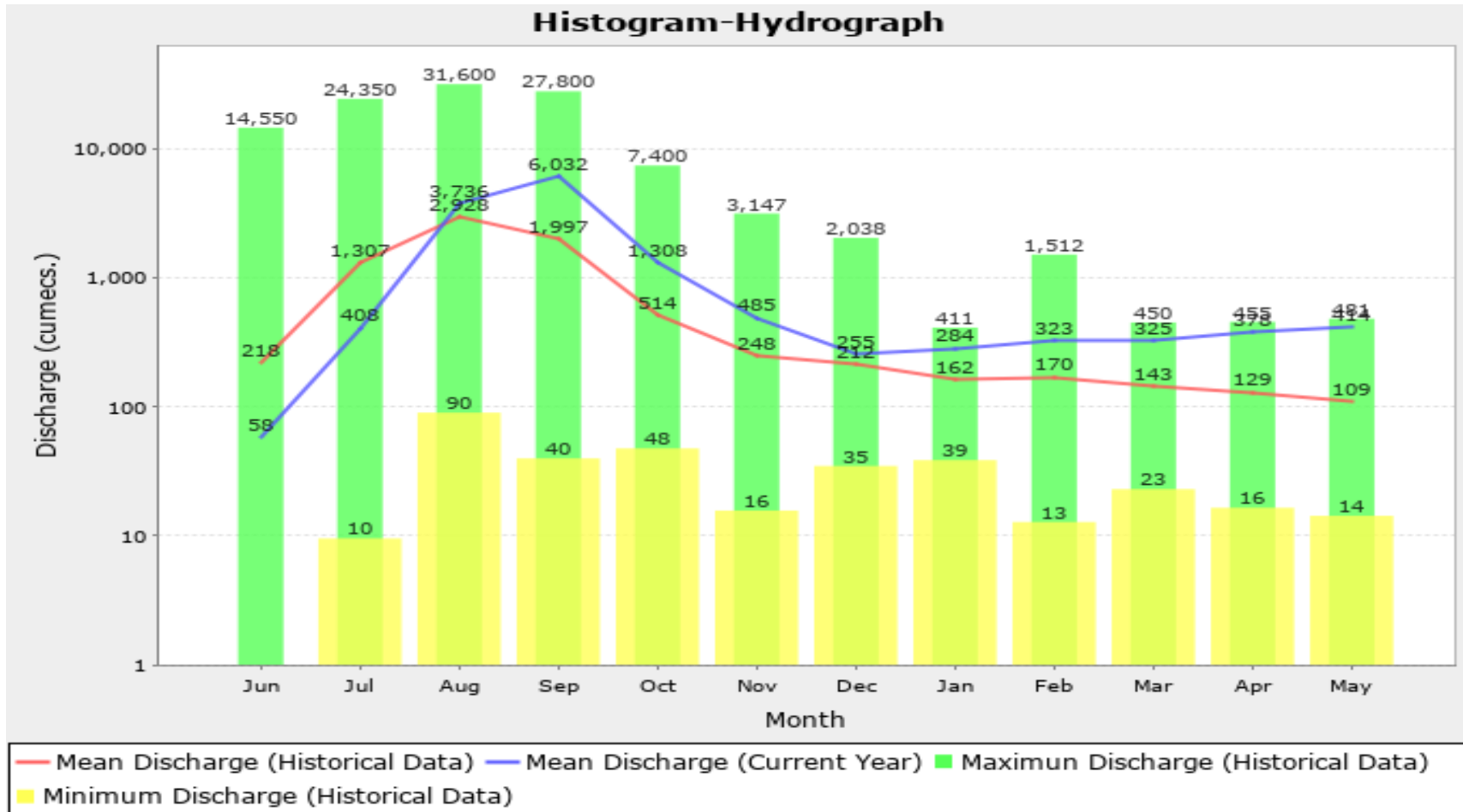
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1973-2020)

Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



Annual Runoff Values for the period (2000 – 2020)

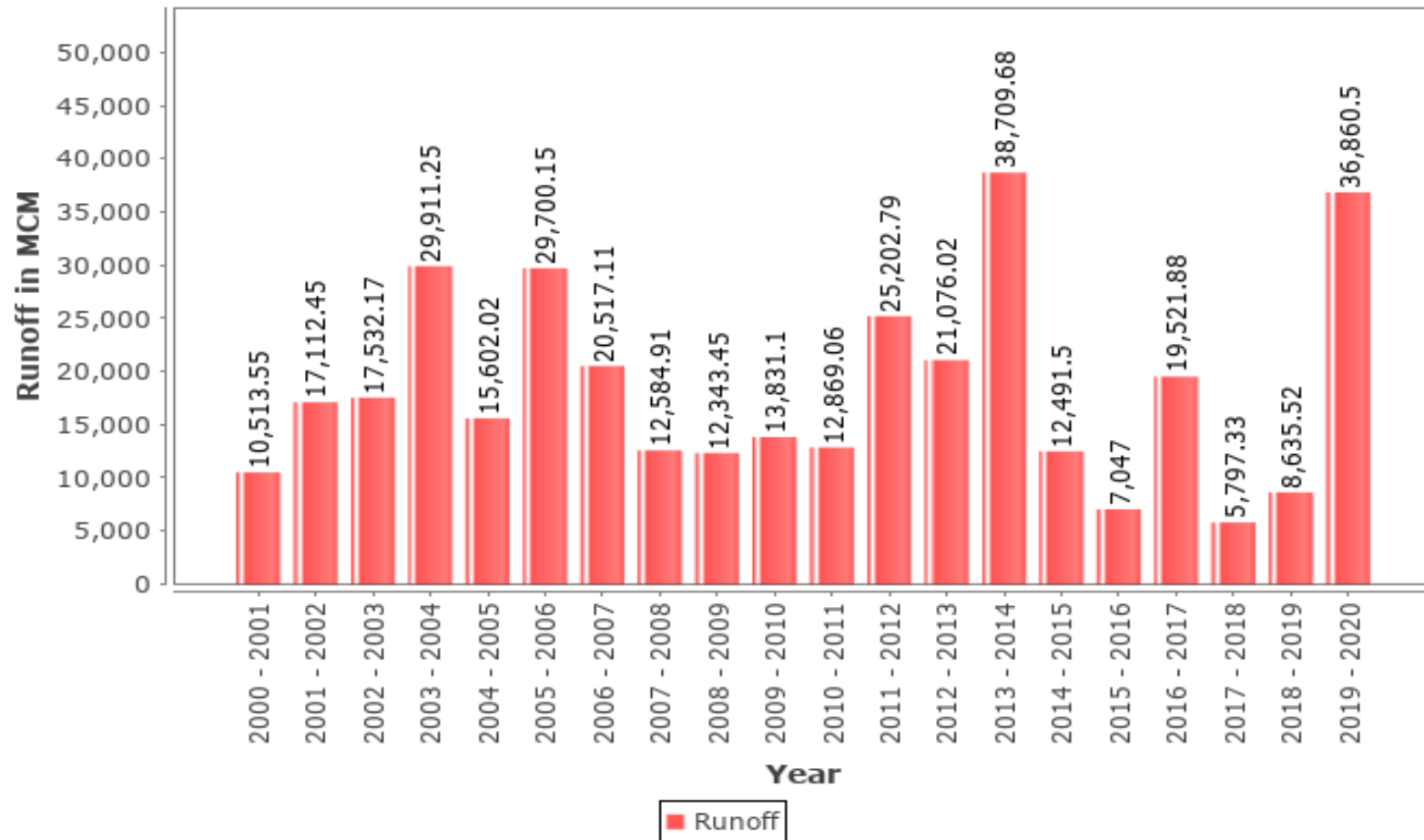
Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad

Annual Runoff



Monthly Average Runoff based on period (1978-2020)

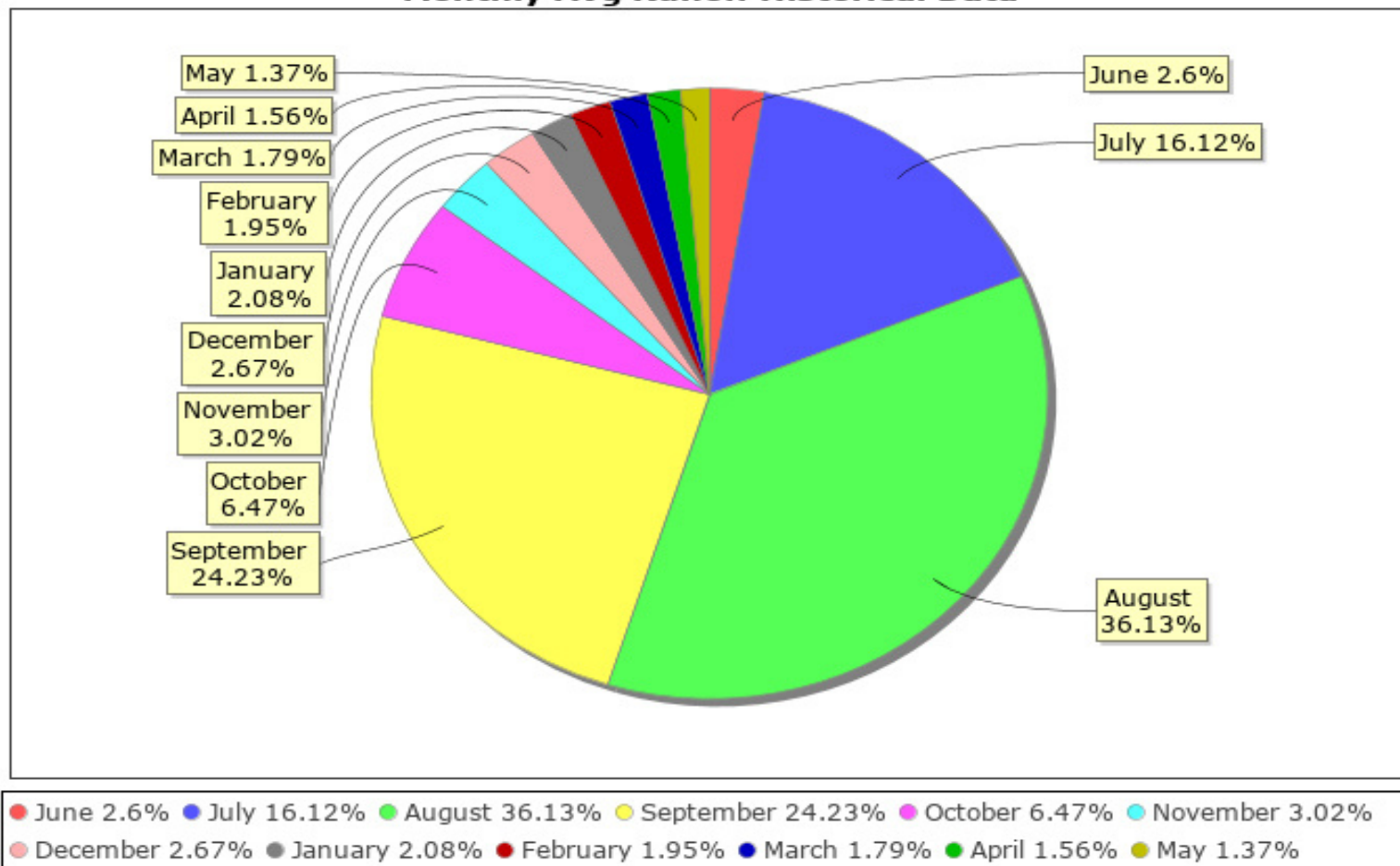
Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

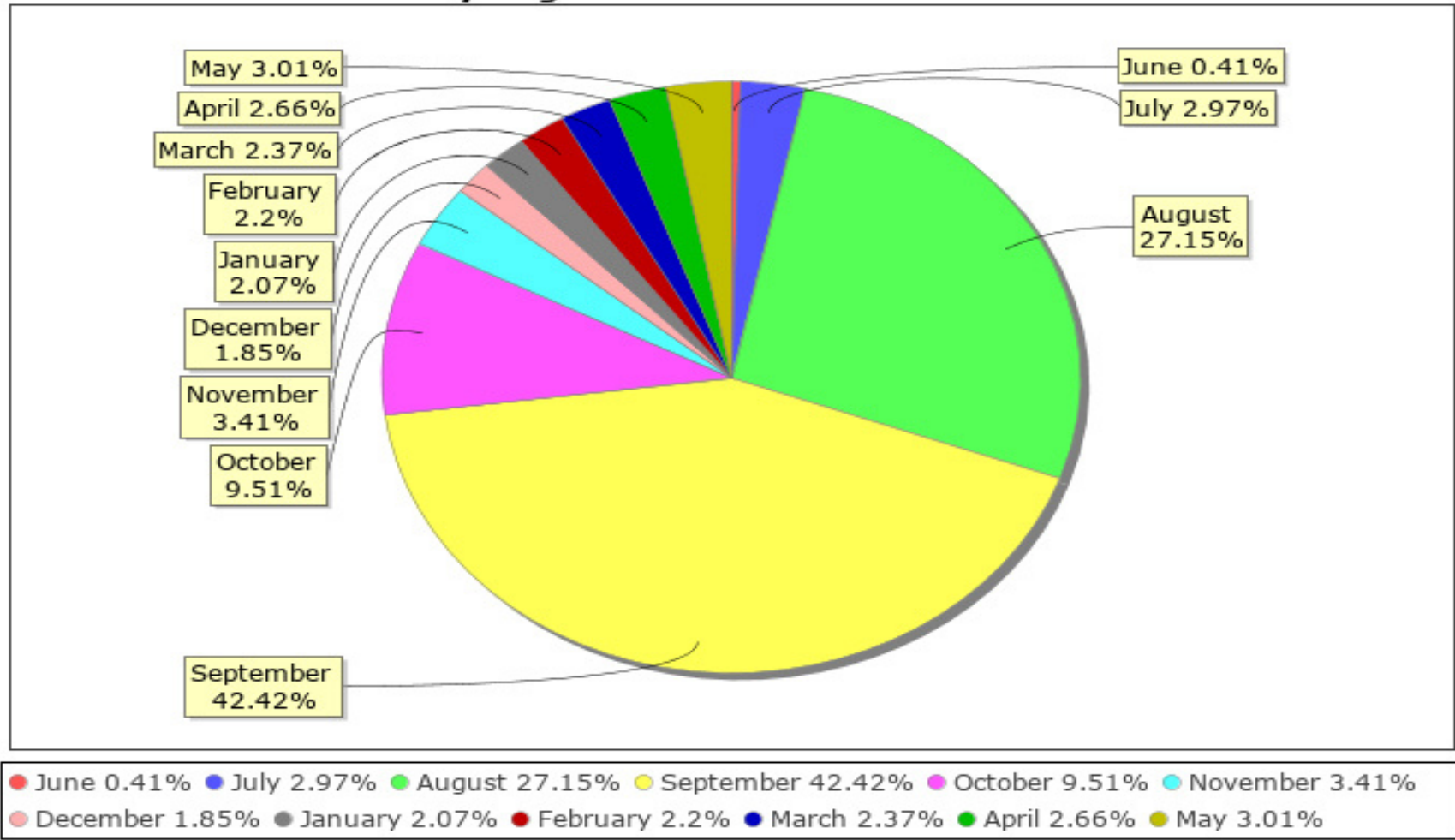
Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Water Year: 2019-2020



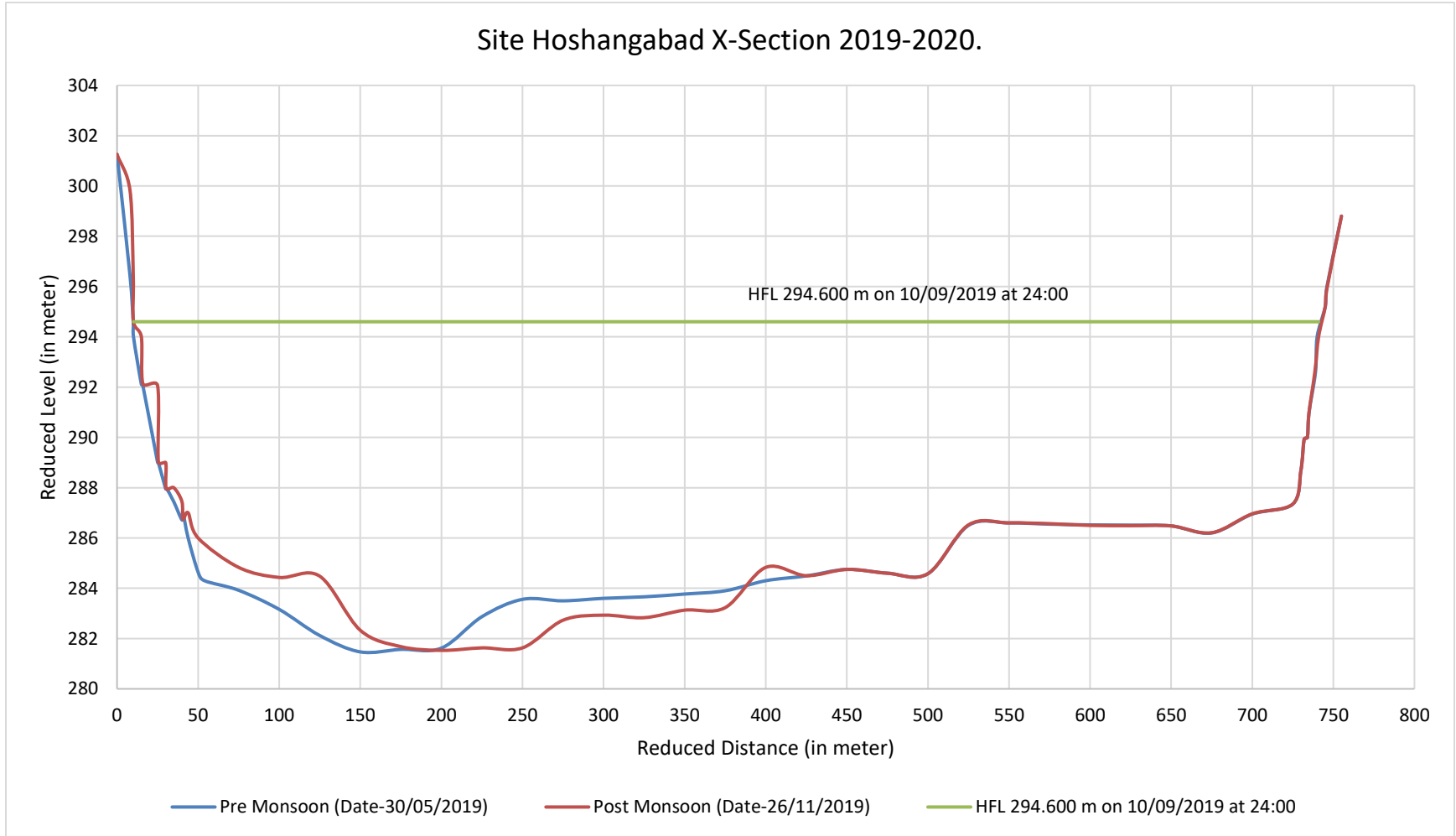
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



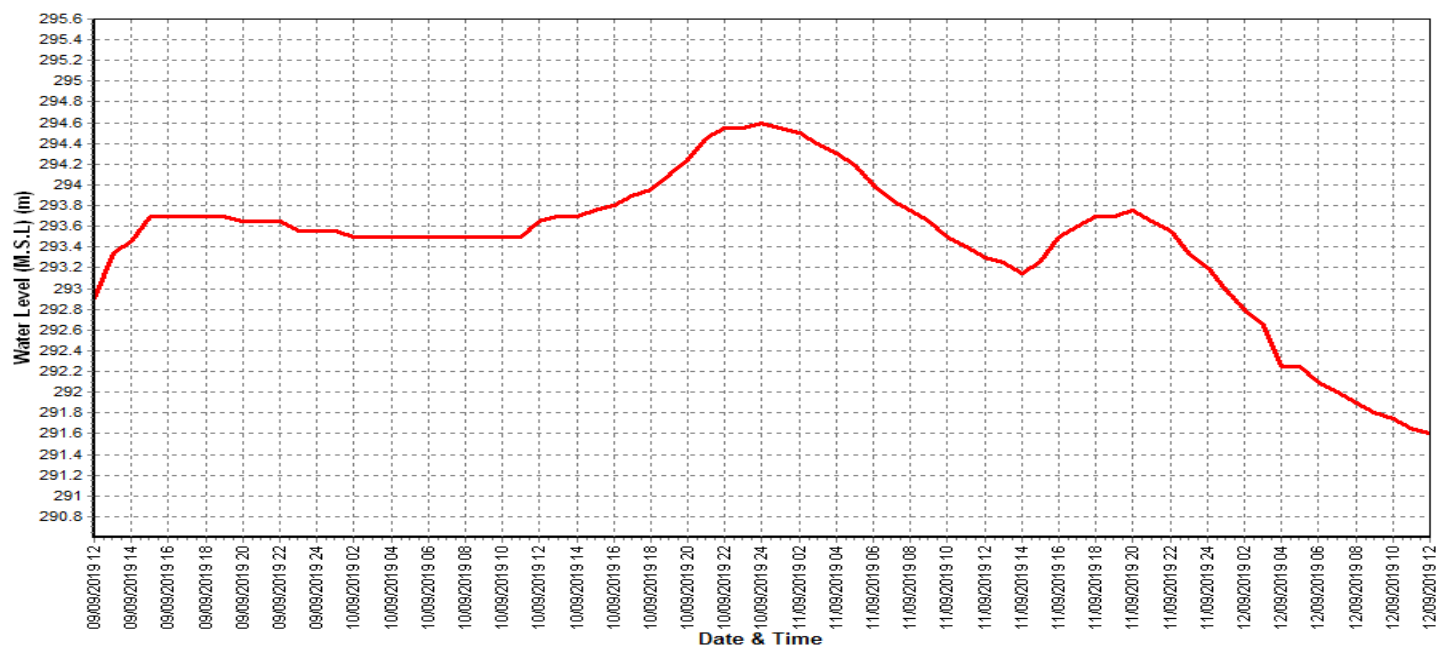
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



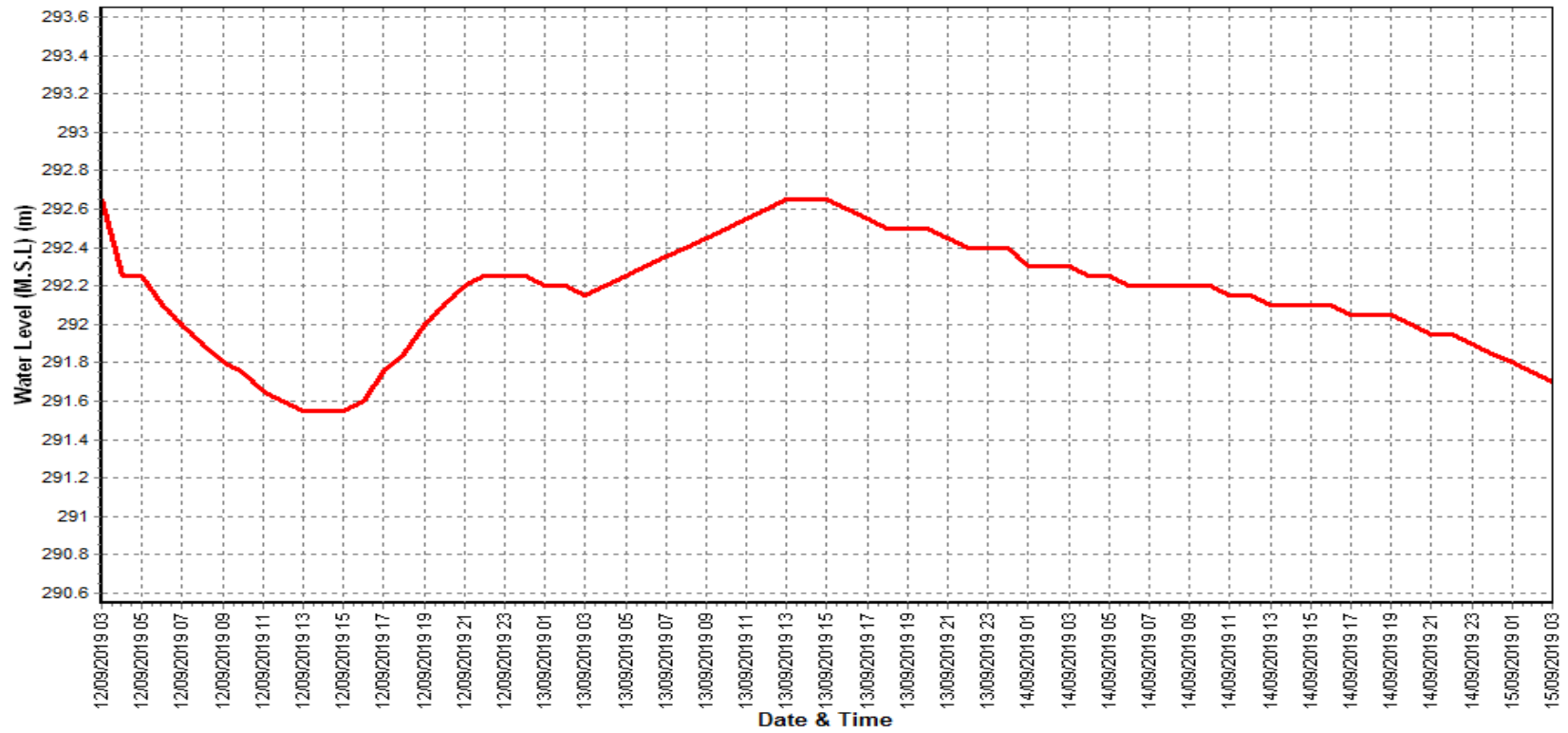
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Hoshangabad

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



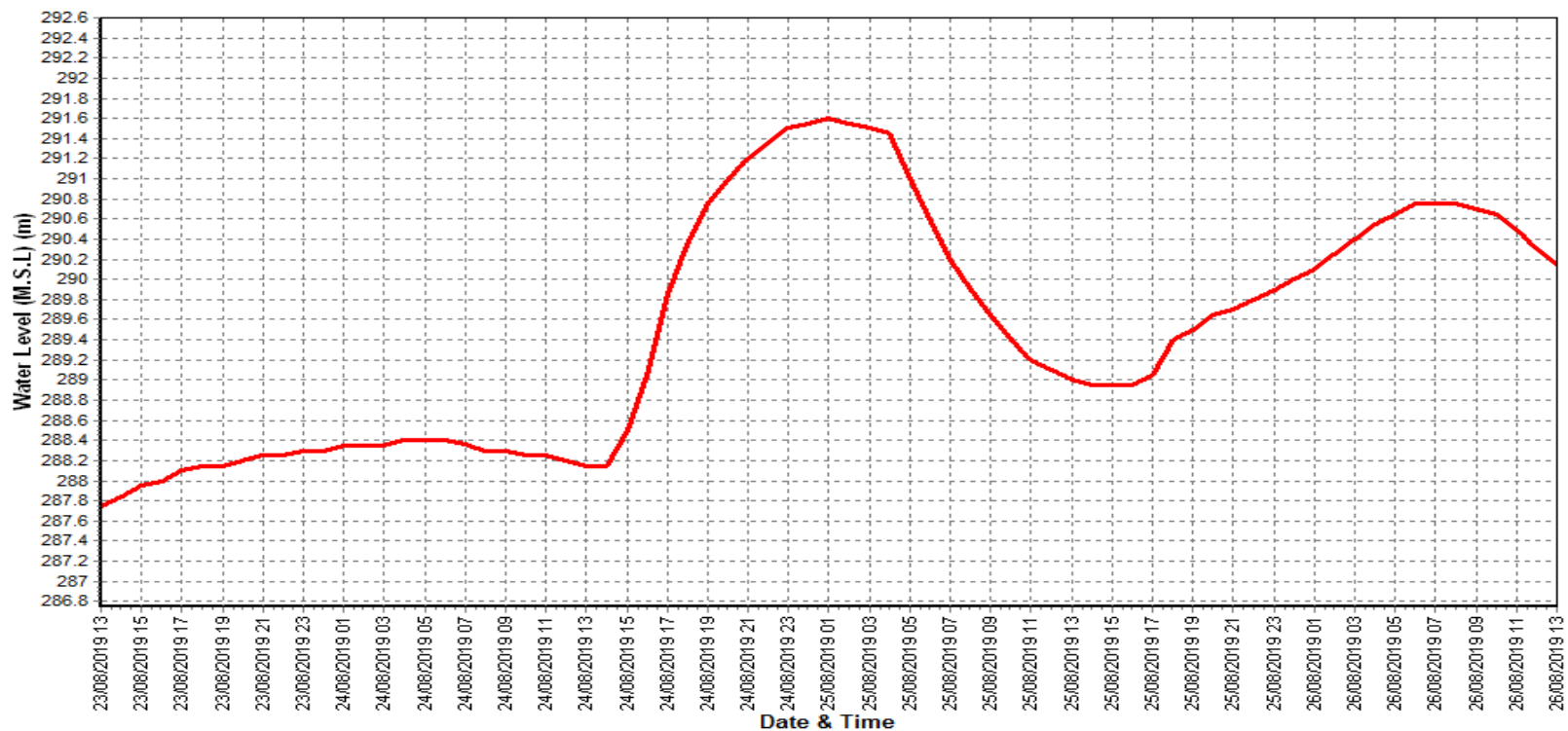
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Hoshangabad

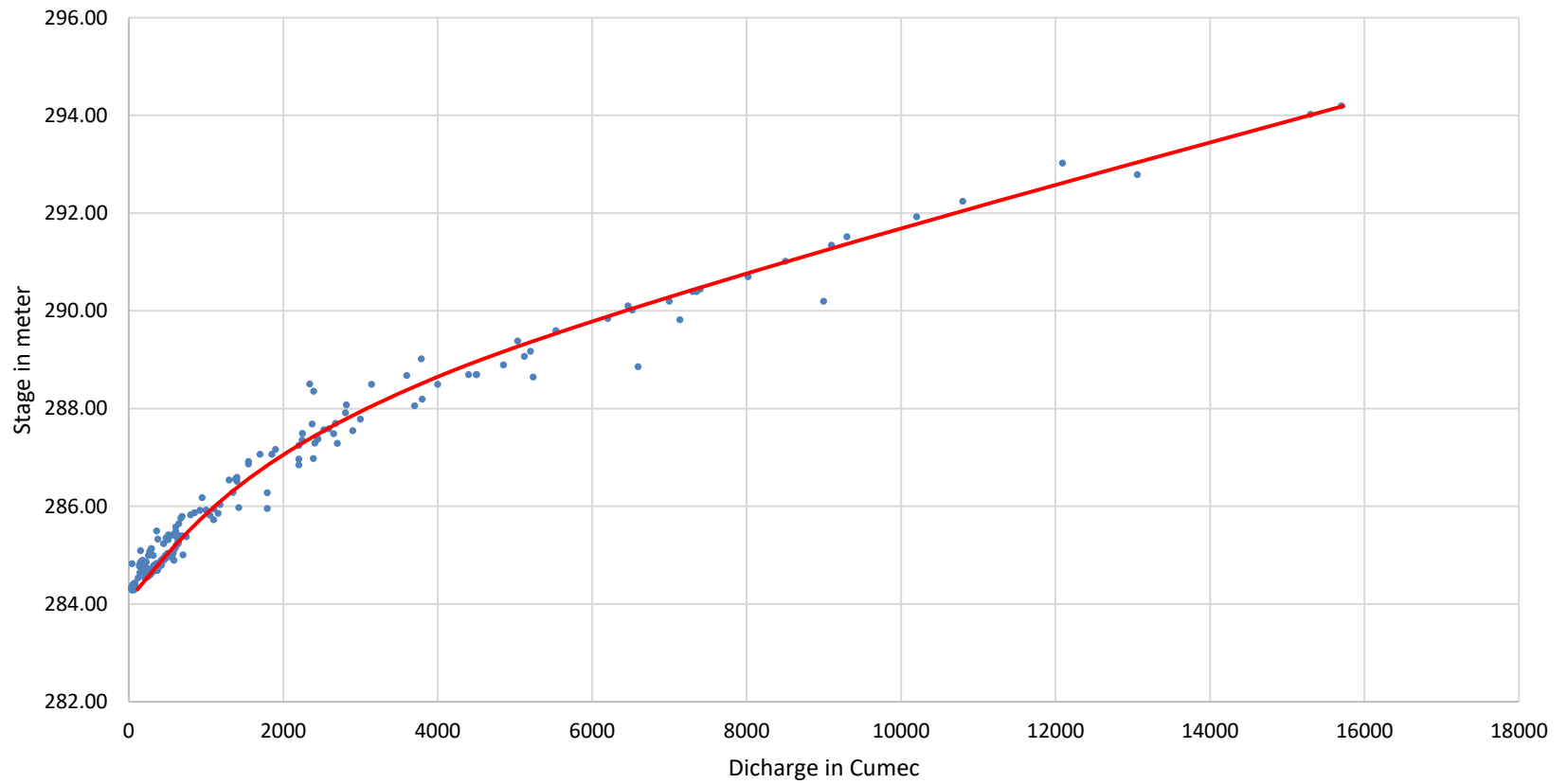
Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



Stage- Discharge Curve of Site- Hoshangabad 2019-2020.



4.24 Machna at Shahpur.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Machna at Shahpur		Code	:	CW1NAU001482
State	:	Madhya Pradesh		District	:	BETUL
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Tawa		Sub Tributary	:	Machna
Sub-Sub Tributary	:	-		Local River	:	Machna
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	841 sq. km		Bank	:	Left
Latitude	:	22°11'43"		Longitude	:	77°53'54"
Current Zero of Gauge (m)	:	376				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
376.0		15/01/2019				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (Cumec)	WL	Date	Q (Cumec)	WL	Date
2019-2020	551.31	381.34	15/09/2019	0	-	01-06-2019

Stage Discharge Sheet for Machna at Shahpur for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	0.31	379.19	256.98	380.90	3.76	378.82	5.12	378.83	0.34	378.56
2	\$	\$	0.36	379.19	55.91	379.96	3.19	378.81	1.1	378.83	1.01	378.56
3	\$	\$	4.08	379.19	11.08	379.48	3.08	378.80	5.12	378.83	1.01	378.56
4	\$	\$	0.36	379.19	55.27	379.96	0.9	378.78	5.11	378.83	0.29	378.53
5	\$	\$	0.4	379.22	9.97	379.41	0.93	378.79	4.63	378.81	0.59	378.53
6	\$	\$	1.01	379.25	13.76	379.51	2.8	379.07	4.47	378.78	0.29	379.07
7	\$	\$	3.01	379.33	10.67	379.50	3.22	379.11	4.45	378.78	0.59	378.53
8	\$	\$	1.25	379.26	7.27	379.28	6.81	379.35	4.43	378.78	0.35	379.35
9	\$	\$	8.79	379.45	6.53	379.20	1.56	378.92	0.86	378.77	0.35	378.48
10	\$	\$	11.97	379.54	5.08	379.10	1.29	378.87	3.13	378.76	0.35	378.87
11	\$	\$	5.79	379.38	4.85	379.04	11.3	379.32	0.79	378.75	0.35	378.48
12	\$	\$	7.12	379.43	5.06	379.04	6.48	378.92	0.76	378.74	0.35	378.48
13	\$	\$	1.55	379.28	4.81	379.01	26.13	379.83	3.02	378.71	0.23	378.48
14	\$	\$	1.55	379.28	1.82	378.96	18.61	379.70	0.64	378.70	0.34	378.48
15	\$	\$	1.56	379.28	3.01	379.10	551.31	381.34	0.61	378.69	0.23	378.48
16	\$	\$	1.55	379.28	4.6	378.93	31.16	379.90	0.64	378.70	0.35	378.48
17	\$	\$	4.81	379.25	4.14	378.90	15.4	379.63	2.88	378.70	0.35	378.48
18	\$	\$	0.69	379.23	4.09	378.89	12.31	379.55	0.67	378.71	0.36	378.48
19	\$	\$	0.64	379.21	7.27	379.28	6.81	379.35	0.64	378.70	0.35	378.48
20	\$	\$	0.65	379.21	4.91	379.04	6.61	379.34	0.64	378.70	0.23	378.48
21	\$	\$	9.87	379.45	4.36	379.21	5.3	379.27	0.64	378.70	0.23	378.47
22	\$	\$	2.81	379.29	5.47	379.30	4.36	379.21	0.61	378.70	0.22	378.47
23	\$	\$	2.56	379.25	2.52	379.05	2.9	379.09	0.56	378.67	0.16	378.47
24	\$	\$	4.36	379.22	2.61	379.06	2.9	379.09	2.08	378.64	0.22	378.47
25	\$	\$	39.77	380.00	6.09	379.00	2.43	379.04	0.47	378.63	0.16	378.47
26	\$	\$	55.39	379.96	5.83	378.97	2.11	379.00	0.41	378.60	0.22	378.47
27	\$	\$	47.84	379.83	5.26	378.91	1.96	378.98	1.01	378.56	0.22	378.47
28	\$	\$	47.19	379.83	3.96	378.89	1.62	378.93	1.02	378.56	0.14	378.47
29	\$	\$	9.46	379.44	3.96	378.87	1.45	378.90	1.02	378.56	0.17	378.47
30	\$	\$	6.96	379.36	6.03	378.95	1.29	378.87	0.34	378.56	0.17	378.47
31			6.01	379.31	3.92	378.86			1.01	378.56		
Ten-Daily Mean												
I Ten-Daily	0	0	3.15	379.28	43.25	379.63	2.75	378.93	3.84	378.8	0.52	378.7
II Ten-Daily	0	0	2.59	379.28	4.46	379.02	68.61	379.69	1.13	378.71	0.31	378.48
III Ten-Daily	0	0	21.11	379.54	4.55	379.01	2.63	379.04	0.83	378.61	0.19	378.47
Monthly												
Min.	0	0	0.31	379.19	1.82	378.86	0.9	378.78	0.34	378.56	0.14	378.47
Max.	0	0	55.39	380	256.98	380.9	551.31	381.34	5.12	378.83	1.01	379.35
Mean	0	0	8.95	379.37	17.42	379.22	24.67	379.22	1.93	378.71	0.34	378.55

Annual Runoff in
MCM : **143.23** Annual Runoff in mm : **170.3**
Peak Observed Discharge = 256.98 cumecs on 1/8/2019 Corres. Water Level 380.9 m
Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

\$-No Flow

Stage Discharge Sheet for Machna at Shahpur for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0.17	378.47	0.21	378.46	0.07	378.41	0.03	378.33	0.15	378.44	0.1	378.40
2	0.17	378.47	0.15	378.45	0.01	378.39	0.03	378.33	0.15	378.44	0.1	378.40
3	0.16	378.47	0.15	378.45	0.01	378.39	0.03	378.33	0.15	378.44	0.1	378.40
4	0.22	378.47	0.15	378.45	0.01	378.39	0.01	378.33	0.15	378.44	0.1	378.40
5	0.17	378.47	0.12	378.44	0.01	378.39	0.01	378.33	0.15	378.44	0.1	378.39
6	0.22	378.47	0.12	378.44	0.01	378.39	0.04	378.32	0.15	378.44	0.1	378.39
7	0.16	378.47	0.12	378.44	0.14	378.38	0.01	378.30	0.15	378.44	0.1	378.39
8	0.22	378.47	0.19	378.26	0.14	378.38	0.03	378.30	0.14	378.43	0.1	378.39
9	0.22	378.47	0.12	378.44	0.14	378.38	0.4	378.48	0.14	378.43	0.1	378.39
10	0.22	378.47	0.1	378.43	0.14	378.38	0.41	378.60	0.14	378.43	0.1	378.39
11	0.22	378.47	0.18	378.43	0.14	378.38	1.45	378.70	0.14	378.43	0.1	378.39
12	0.17	378.46	0.1	378.43	0.14	378.38	3.82	378.80	0.14	378.43	0.09	378.38
13	0.21	378.46	0.11	378.43	0.14	378.38	0.51	378.65	0.14	378.43	0.09	378.38
14	0.21	378.46	0.1	378.43	0.14	378.38	0.41	378.46	0.14	378.43	0.09	378.38
15	0.21	378.46	0.18	378.43	0.14	378.38	0.34	378.56	0.14	378.43	0.09	378.38
16	0.21	378.46	0.1	378.43	0.14	378.38	0.34	378.54	0.13	378.42	0.09	378.38
17	0.17	378.46	0.1	378.43	0.13	378.37	0.31	378.54	0.13	378.42	0.09	378.38
18	0.21	378.46	0.1	378.43	0.13	378.37	0.28	378.52	0.13	378.42	0.09	378.38
19	0.18	378.46	0.11	378.43	0.13	378.37	0.39	378.48	0.13	378.42	0.09	378.38
20	0.18	378.46	0.07	378.42	0.13	378.37	0.4	378.48	0.13	378.42	0.06	378.37
21	0.18	378.46	0.08	378.42	0.13	378.37	0.4	378.48	0.13	378.42	0.06	378.37
22	0.18	378.46	0.17	378.42	0.13	378.36	0.4	378.48	0.13	378.42	0.06	378.37
23	0.21	378.46	0.07	378.42	0.12	378.35	0.4	378.48	0.11	378.41	0.06	378.37
24	0.21	378.46	0.07	378.42	0.12	378.35	0.4	378.48	0.11	378.41	0.06	378.37
25	0.21	378.46	0.07	378.42	0.12	378.35	0.23	378.48	0.11	378.41	0.05	378.36
26	0.21	378.46	0.17	378.42	0.12	378.35	0.39	378.48	0.11	378.41	0.05	378.36
27	0.21	378.46	0.07	378.41	0.12	378.35	0.39	378.48	0.11	378.41	0.05	378.36
28	0.21	378.46	0.07	378.41	0.12	378.35	0.4	378.48	0.11	378.41	0.05	378.36
29	0.21	378.46	0.16	378.41	0.1	378.33	0.15	378.44	0.11	378.41	0.05	378.36
30	0.2	378.45	0.07	378.41			0.15	378.44	0.1	378.4	0.05	378.36
31	0.15	378.45	0.07	378.41			0.15	378.44			0.05	378.36
Ten-Daily Mean												
I Ten-Daily	0.19	378.47	0.14	378.43	0.07	378.39	0.1	378.36	0.15	378.44	0.1	378.39
II Ten-Daily	0.2	378.46	0.12	378.43	0.14	378.38	0.82	378.59	0.13	378.43	0.09	378.38
III Ten-Daily	0.2	378.46	0.1	378.42	0.12	378.35	0.32	378.47	0.11	378.41	0.05	378.36
Monthly												
Min.	0.15	378.45	0.07	378.26	0.01	378.33	0.01	378.3	0.1	378.4	0.05	378.36
Max.	0.22	378.47	0.21	378.46	0.14	378.41	3.82	378.90	0.15	378.44	0.1	378.40
Mean	0.2	378.46	0.12	378.42	0.11	378.37	0.41	378.48	0.13	378.42	0.08	378.38

Peak Computed Discharge = 551.31 cumecs on 15/9/2019 Corres. Water Level 381.34 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

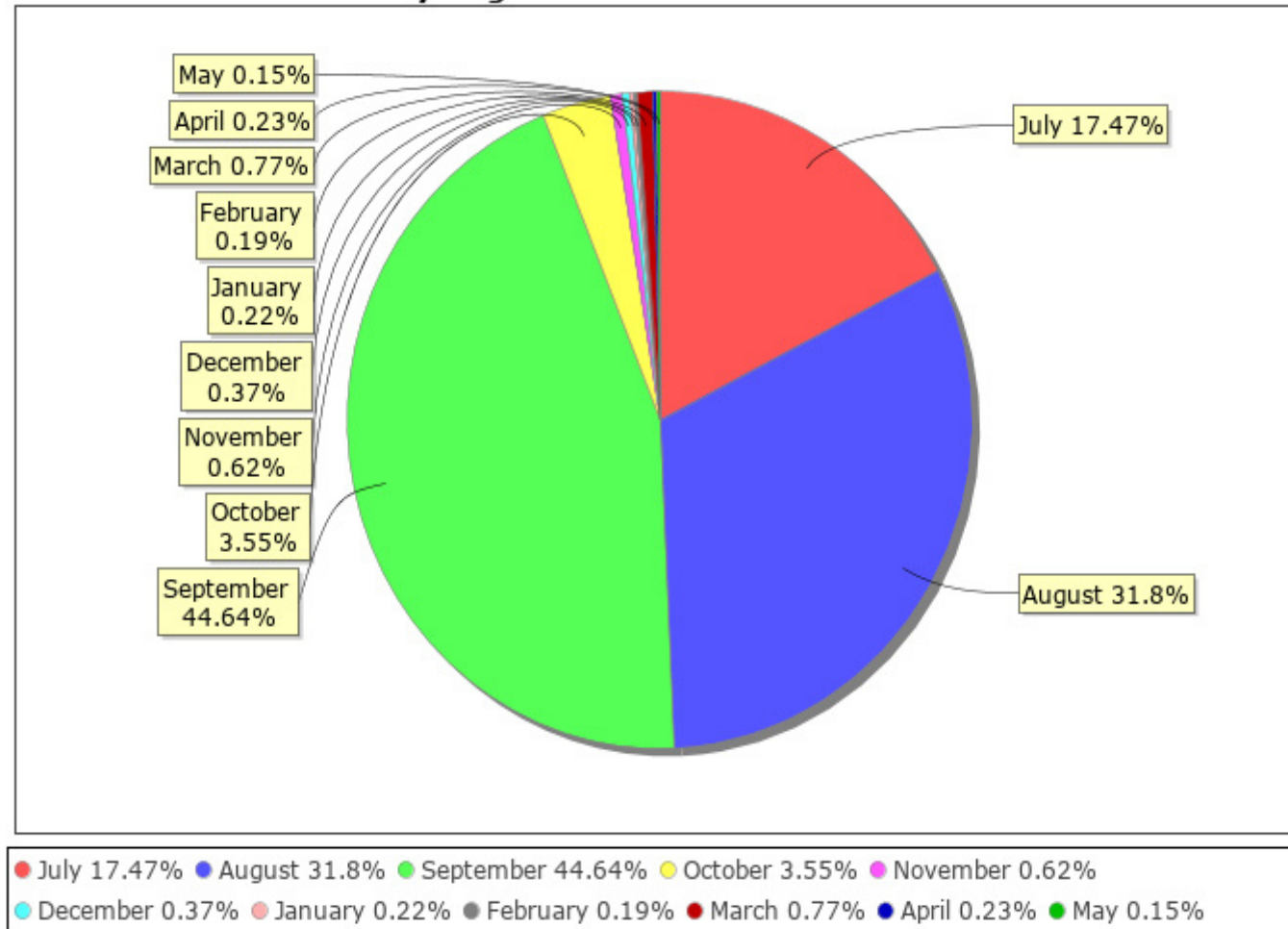
Station Name: Machna at Shahpur

Division: Narmada Division, Bhopal

Local River: Machna

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



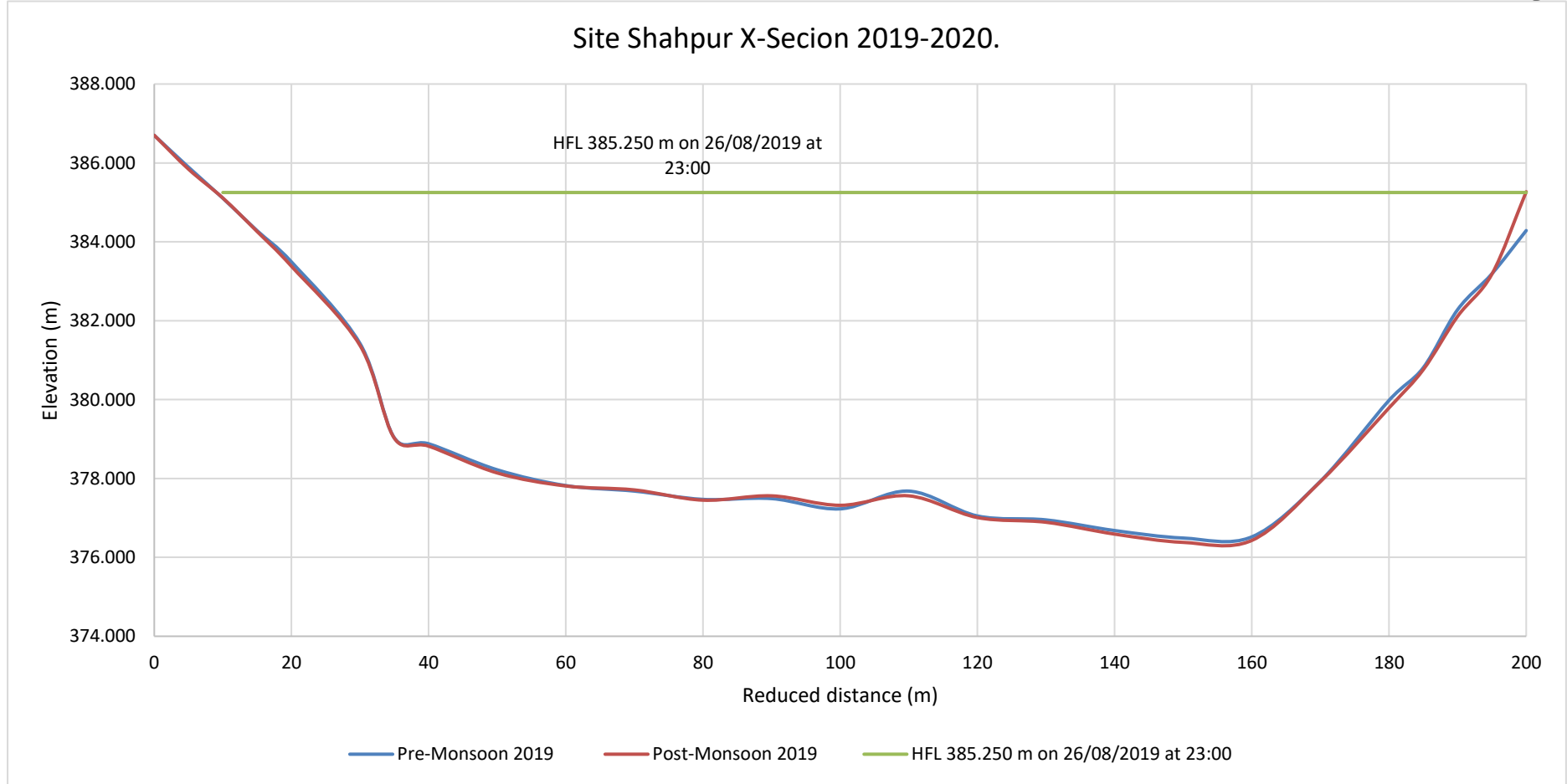
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Machna at Shahpur

Division: Narmada Division, Bhopal

Local River: Machna

Sub-Division: MNSD-II, CWC Bhopal



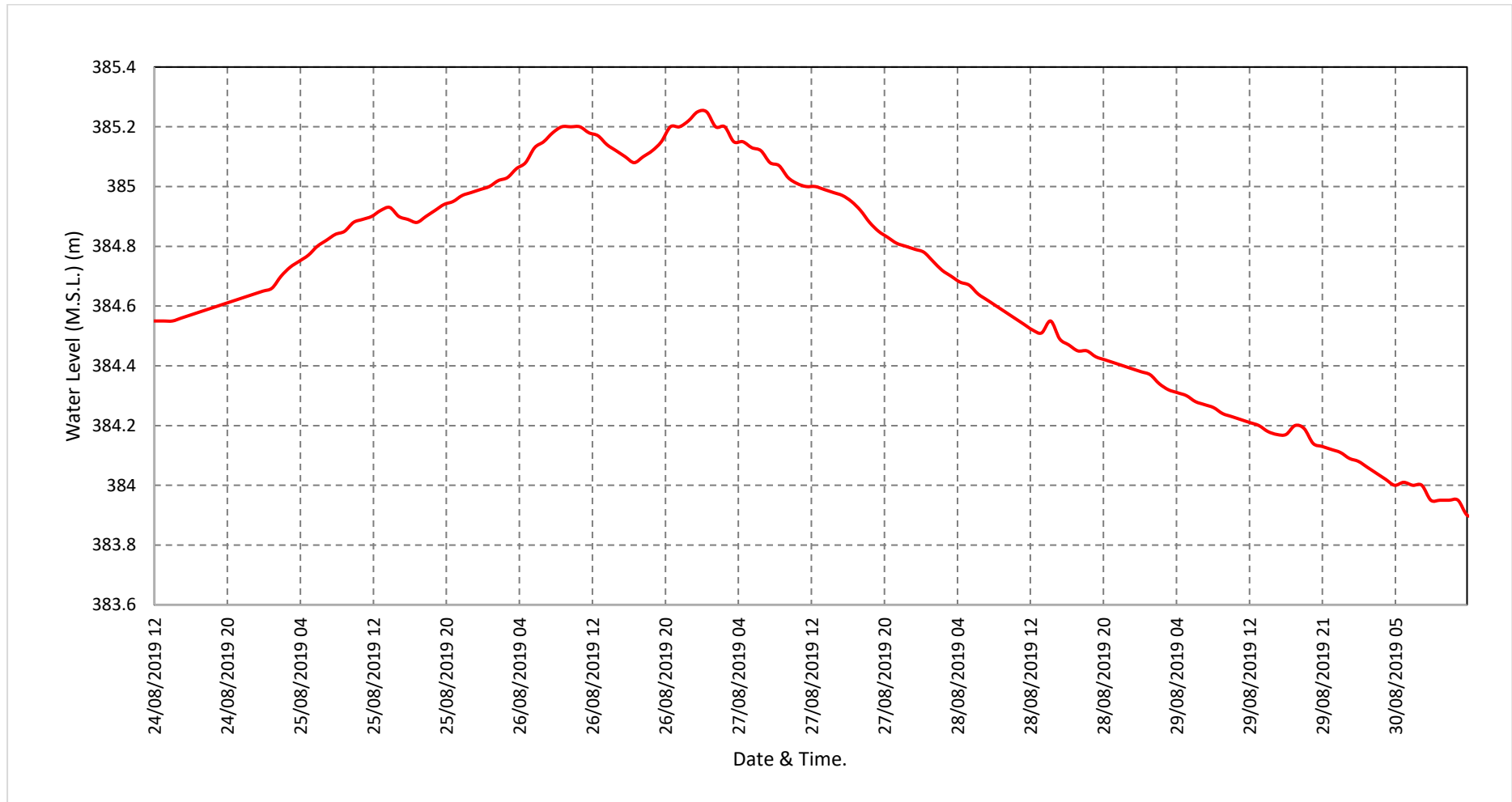
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Machna at Shahpur

Division: Narmada Division, Bhopal

Local River: Machna

Sub-Division: MNSD-II, CWC Bhopal



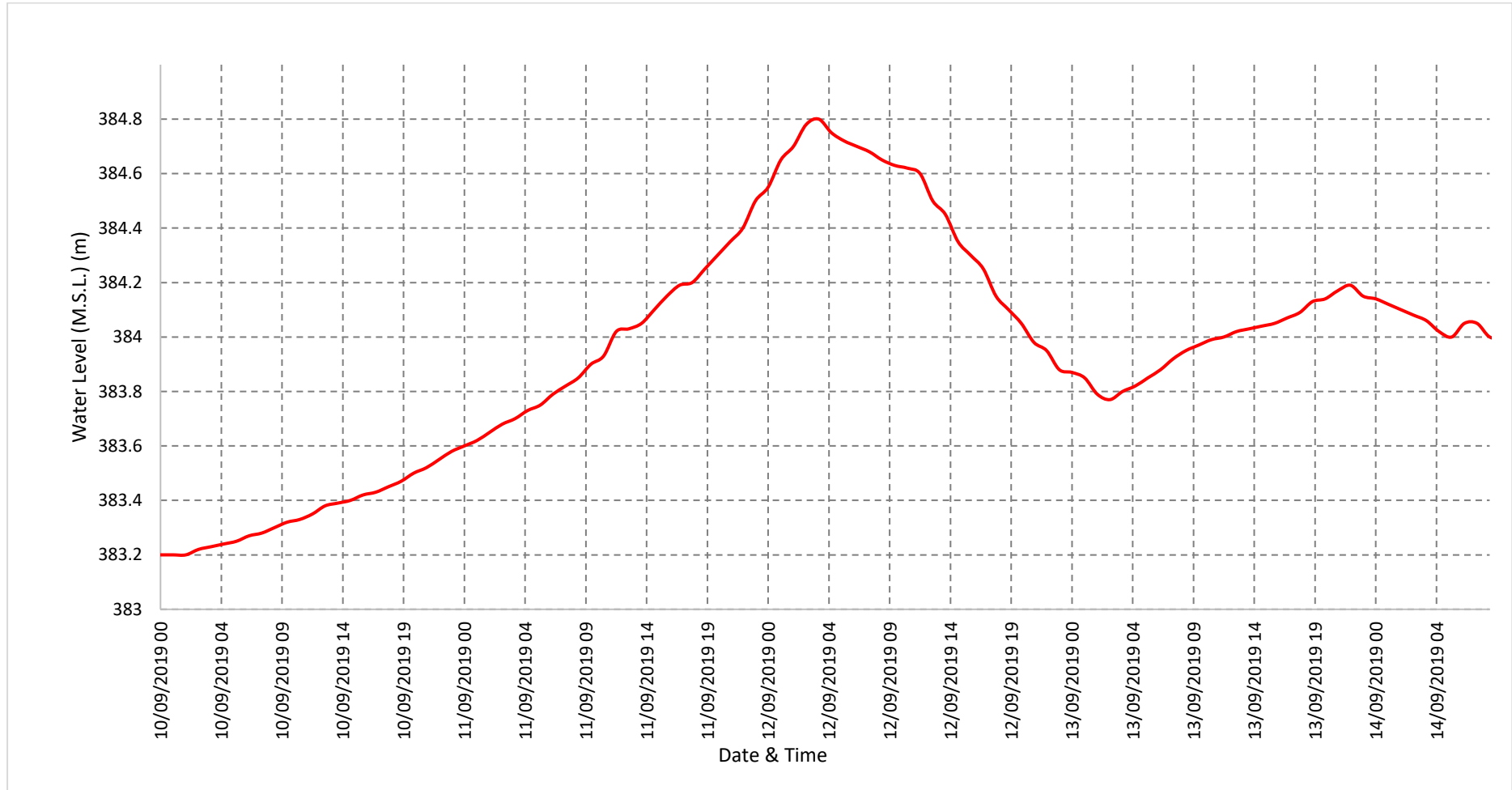
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Machna at Shahpur

Division: Narmada Division, Bhopal

Local River: Machna

Sub-Division: MNSD-II, CWC Bhopal



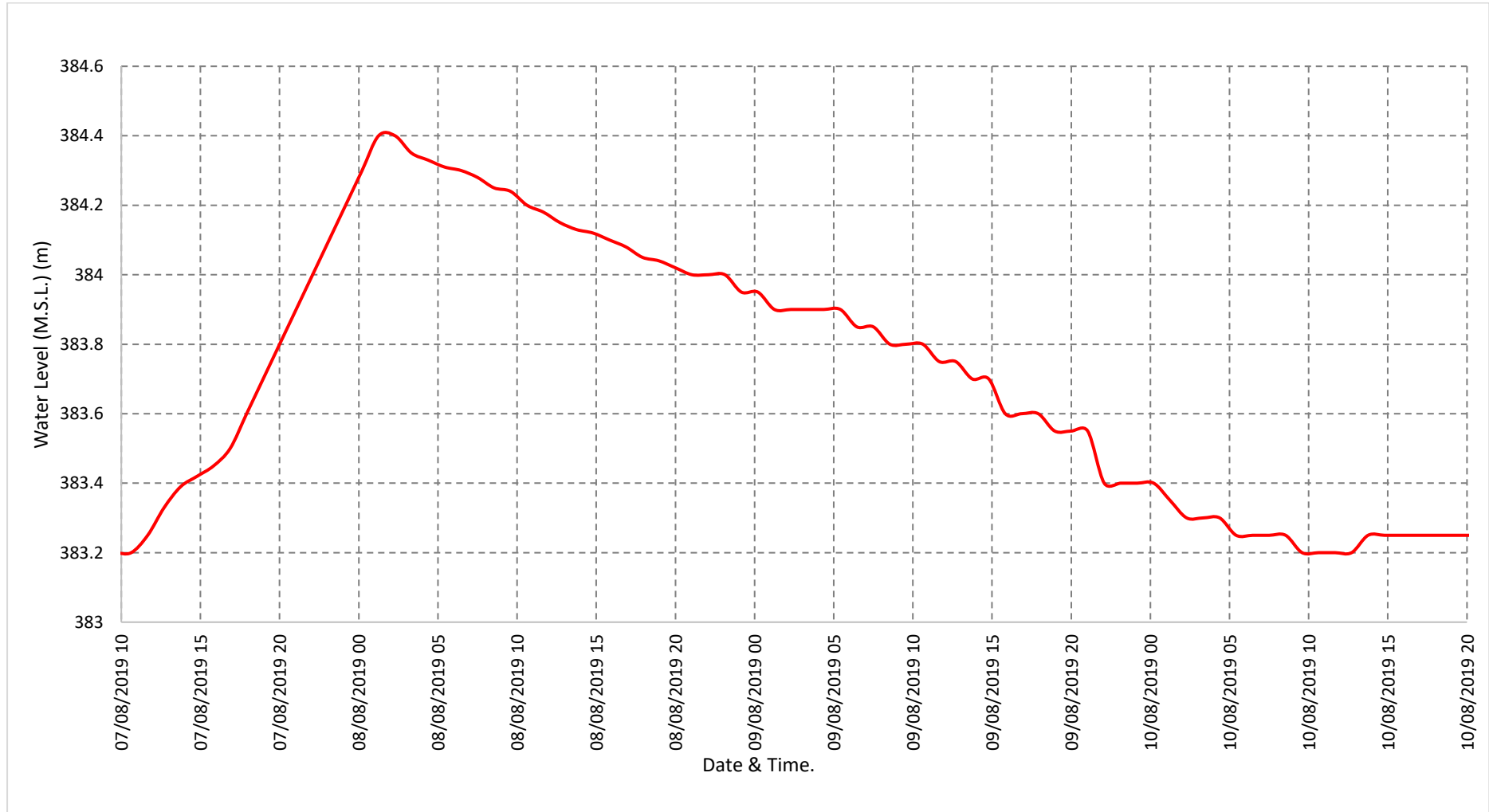
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Machna at Shahpur

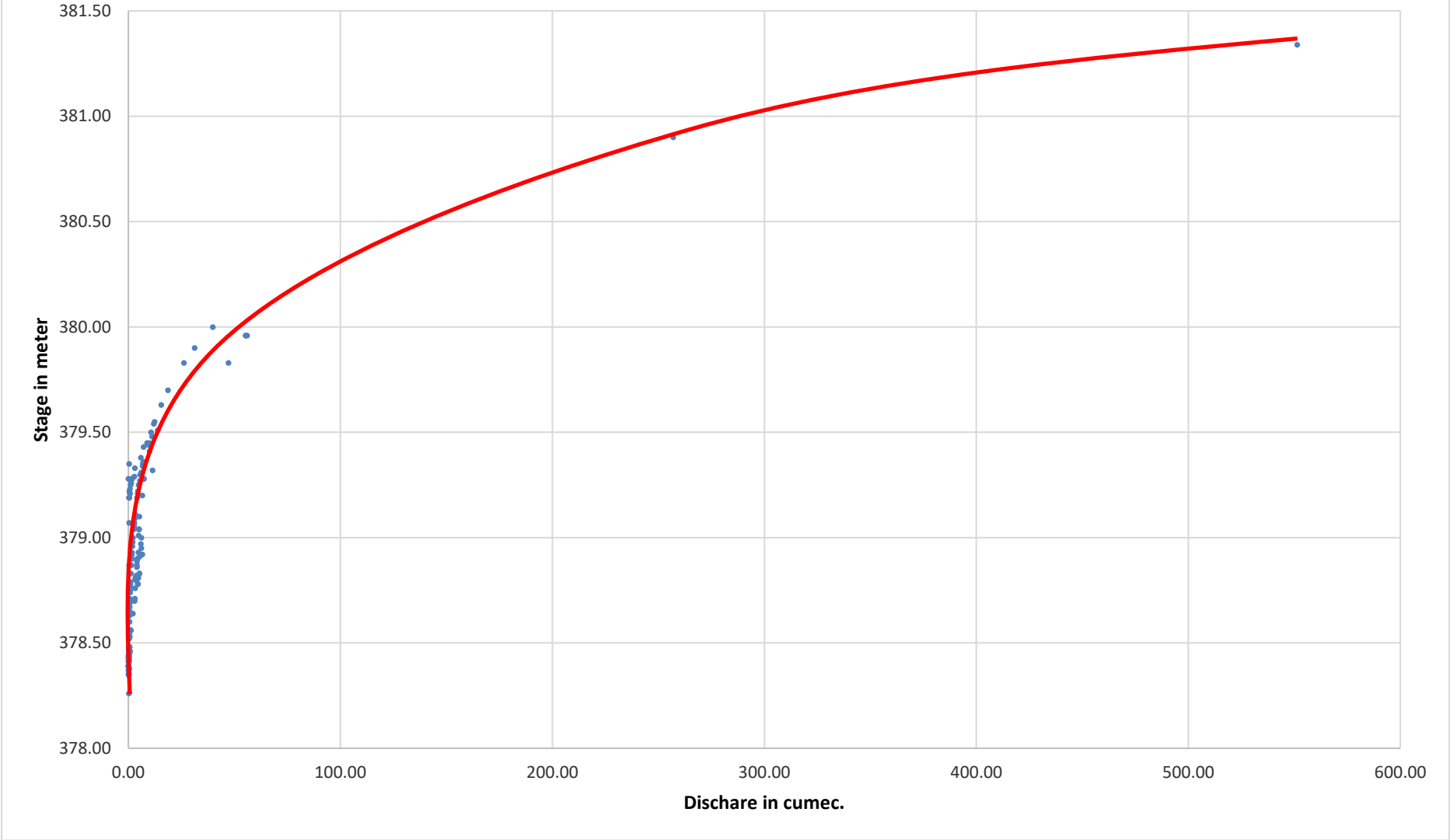
Division: Narmada Division, Bhopal

Local River: Machna

Sub-Division: MNSD-II, CWC Bhopal



Site Shahpur SD Curve 2019-2020.



4.25 Tawa at Tawakathi.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Tawa at Tawakathi		Code	:	NBO-1-034-1235
State	:	Madhya Pradesh		District	:	BETUL
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Tawa		Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Tawa
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-II, Bhopal
Drainage Area	:	1090 sq. km		Bank	:	Left
Latitude	:	22°12'02"		Longitude	:	77°57'21"
Current Zero of Gauge (m)	:	361				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15/01/2019				
Discharge	:	01/06/2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
361.0		15/01/2019				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	793.64	367.75	25/07/2019	0	-	01-06-2019

Stage Discharge Sheet for Tawa at Tawakathi for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	₹	₹	30.67	363.71	181.34	365.20	5.78	363.40	11.19	363.58	7.26	363.40
2	₹	₹	36.28	363.77	66.90	364.25	5.79	363.40	13.95	363.55	5.10	363.40
3	₹	₹	18.11	363.63	111.35	364.57	5.68	363.40	14.34	363.61	5.13	363.40
4	₹	₹	36.82	363.77	62.58	364.20	24.52	363.74	20.86	363.64	7.26	363.40
5	₹	₹	113.85	364.55	59.04	364.09	10.81	363.60	11.17	363.58	5.11	363.40
6	₹	₹	83.91	364.28	59.04	364.15	27.96	363.75	11.16	363.58	6.48	363.38
7	₹	₹	37.14	363.78	74.32	364.35	28.03	363.75	11.11	363.58	2.32	363.35
8	₹	₹	41.40	363.80	43.51	363.85	10.86	363.60	12.47	363.60	2.31	363.35
9	₹	₹	42.38	363.82	41.27	363.81	13.95	363.62	14.95	363.57	2.30	363.35
10	₹	₹	38.18	363.94	39.21	363.79	10.90	363.60	8.85	363.55	2.33	363.35
11	₹	₹	40.34	363.80	39.56	363.79	19.22	363.65	11.10	363.49	2.28	363.35
12	₹	₹	39.77	363.79	29.89	363.71	20.42	363.68	8.90	363.44	2.31	363.35
13	₹	₹	40.26	363.80	41.22	363.98	52.89	364.09	5.16	363.40	5.36	363.35
14	₹	₹	6.95	363.35	33.81	363.88	113.82	364.70	7.26	363.40	2.29	363.35
15	₹	₹	6.65	363.34	17.57	363.62	779.26	367.70	7.26	363.40	5.00	363.34
16	₹	₹	6.64	363.34	11.87	363.58	373.36	366.20	9.33	363.45	2.29	363.35
17	₹	₹	14.95	363.57	10.69	363.58	154.02	365.00	6.07	363.44	2.29	363.35
18	₹	₹	19.96	363.62	16.50	363.60	106.48	364.64	8.48	363.43	5.36	363.26
19	₹	₹	19.50	363.60	25.14	363.75	126.57	364.80	8.48	363.43	2.29	363.35
20	₹	₹	7.84	363.34	123.20	364.67	39.09	363.79	8.07	363.42	5.00	363.34
21	₹	₹	18.93	363.60	27.04	363.78	27.69	363.79	8.07	363.42	1.90	363.33
22	₹	₹	6.98	363.34	20.61	363.68	27.69	363.79	7.26	363.40	4.65	363.33
23	₹	₹	6.68	363.30	22.81	363.68	41.22	363.98	7.26	363.40	1.91	363.33
24	₹	₹	34.52	363.89	15.31	363.62	12.45	363.60	5.59	363.40	4.65	363.33
25	₹	₹	793.64	367.75	12.02	363.61	27.04	363.78	7.26	363.40	1.94	363.27
26	₹	₹	64.53	364.21	19.87	363.68	28.04	363.75	6.87	363.39	4.65	363.33
27	₹	₹	26.88	363.71	12.87	363.61	12.43	363.60	5.13	363.40	4.65	363.33
28	₹	₹	227.03	365.86	11.10	363.49	16.50	363.60	5.11	363.40	1.95	363.33
29	₹	₹	53.44	364.10	7.04	363.44	11.18	363.58	5.11	363.40	1.68	363.29
30	₹	₹	42.40	363.82	6.21	363.42	14.95	363.57	7.26	363.40	1.69	363.29
31			22.10	363.70	5.95	363.41			5.15	363.40		
Ten-Daily Mean												
I Ten-Daily	0	0	47.87	363.90	73.86	364.23	14.43	363.59	13.01	363.58	4.56	363.38
II Ten-Daily	0	0	20.29	363.55	34.95	363.82	178.51	364.83	8.01	363.43	3.45	363.34
III Ten-Daily	0	0	117.92	364.30	14.62	363.58	21.92	363.70	6.37	363.40	2.97	363.32
Monthly												
Min.	0	0	6.64	363.30	5.95	363.41	5.68	363.40	5.11	363.39	1.68	363.26
Max.	0	0	793.64	367.75	181.34	365.20	779.26	367.70	20.86	363.64	7.26	363.40
Mean	0	0	62.03	363.92	41.14	363.88	71.62	364.04	9.13	363.47	3.66	363.34

Annual Runoff in

MCM : **528.69**

Annual Runoff in mm :

Peak Observed Discharge = 793.64 cumecs on 25/7/2019 Corres. Water Level 367.75 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

₹- No Flow

Stage Discharge Sheet for Tawa at Tawakathi for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	1.32	363.28	2.35	363.26	0.66	363.18	0.78	363.20	1.20	363.09	0.82	363.06
2	1.32	363.28	1.03	363.26	0.66	363.18	0.55	363.17	1.10	363.08	0.86	363.06
3	1.32	363.28	1.08	363.26	0.66	363.18	0.55	363.17	1.00	363.07	0.86	363.06
4	2.97	363.28	1.06	363.26	0.66	363.18	0.45	363.17	1.00	363.07	0.78	363.06
5	1.34	363.28	1.07	363.26	0.66	363.18	0.56	363.17	1.09	363.07	0.81	363.04
6	1.33	363.28	1.06	363.26	0.65	363.18	0.56	363.17	1.09	363.07	0.80	363.04
7	1.31	363.28	1.06	363.26	0.65	363.18	0.55	363.17	1.08	363.07	0.80	363.04
8	1.32	363.28	1.75	363.24	0.66	363.18	0.78	363.20	1.08	363.07	0.80	363.04
9	1.29	363.28	0.78	363.22	0.11	363.18	70.61	364.27	1.00	363.07	0.76	363.04
10	1.32	363.28	0.77	363.22	0.66	363.18	66.41	364.27	1.08	363.07	0.76	363.04
11	2.66	363.27	1.18	363.22	0.66	363.18	22.10	363.70	0.86	363.06	0.80	363.04
12	1.01	363.26	0.76	363.22	0.11	363.18	2.08	363.33	0.70	363.05	0.80	363.04
13	1.00	363.26	0.79	363.22	0.66	363.18	3.96	363.31	0.71	363.05	0.75	363.50
14	1.02	363.26	0.81	363.22	0.66	363.18	3.96	363.31	0.70	363.05	0.75	363.50
15	1.00	363.26	1.18	363.22	0.66	363.18	3.97	363.31	0.76	363.05	0.75	363.50
16	1.00	363.26	1.05	363.26	0.65	363.18	3.96	363.31	0.72	363.05	0.81	363.29
17	1.00	363.26	1.06	363.26	0.66	363.18	3.96	363.31	0.69	363.05	0.40	363.40
18	2.35	363.26	0.81	363.22	0.66	363.18	2.97	363.28	0.76	363.05	0.85	363.40
19	0.99	363.26	0.78	363.22	0.11	363.18	1.45	363.27	0.70	363.05	0.85	363.40
20	2.35	363.26	0.80	363.22	0.66	363.18	1.47	363.27	0.70	363.05	0.70	363.40
21	2.35	363.26	0.78	363.22	0.64	363.18	1.40	363.23	0.69	363.05	0.70	363.40
22	2.35	363.26	1.18	363.22	0.78	363.20	1.41	363.23	0.56	363.04	0.85	363.40
23	2.35	363.26	0.80	363.22	0.78	363.20	1.40	363.23	0.42	363.03	0.86	363.40
24	2.35	363.26	0.65	363.18	0.79	363.20	1.39	363.23	0.45	363.03	0.70	363.40
25	2.35	363.26	0.64	363.18	0.78	363.20	1.46	363.23	0.62	363.03	0.89	363.40
26	0.99	363.26	0.11	363.18	0.63	363.20	1.40	363.23	0.83	363.06	0.88	363.40
27	2.35	363.26	0.64	363.18	0.77	363.20	1.41	363.23	0.83	363.06	0.88	363.40
28	2.35	363.26	0.66	363.18	0.79	363.20	1.40	363.23	0.83	363.06	0.88	363.40
29	1.01	363.26	0.11	363.18	0.77	363.20	1.08	363.22	0.83	363.06	0.88	363.40
30	2.35	363.26	0.66	363.18			1.05	363.22	0.83	363.06	0.86	363.40
31	0.98	363.26	0.66	363.12			1.04	363.22			0.70	363.40
Ten-Daily Mean												
I Ten-Daily	1.48	363.28	1.20	363.25	0.60	363.18	14.18	363.40	1.07	363.07	0.80	363.05
II Ten-Daily	1.44	363.26	0.92	363.23	0.55	363.18	4.99	363.34	0.73	363.05	0.75	363.35
III Ten-Daily	1.98	363.26	0.63	363.19	0.75	363.20	1.31	363.23	0.69	363.05	0.82	363.40
Monthly												
Min.	0.98	363.26	0.11	363.12	0.11	363.18	0.45	363.17	0.42	363.03	0.40	363.04
Max.	2.97	363.28	2.35	363.26	0.79	363.20	70.61	364.27	1.20	363.09	0.89	363.50
Mean	1.63	363.27	0.92	363.22	0.63	363.19	6.83	363.32	0.83	363.06	0.79	363.26

Peak Computed Discharge = 779.26 cumecs on 15/9/2019 Corres. Water Level 367.7 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

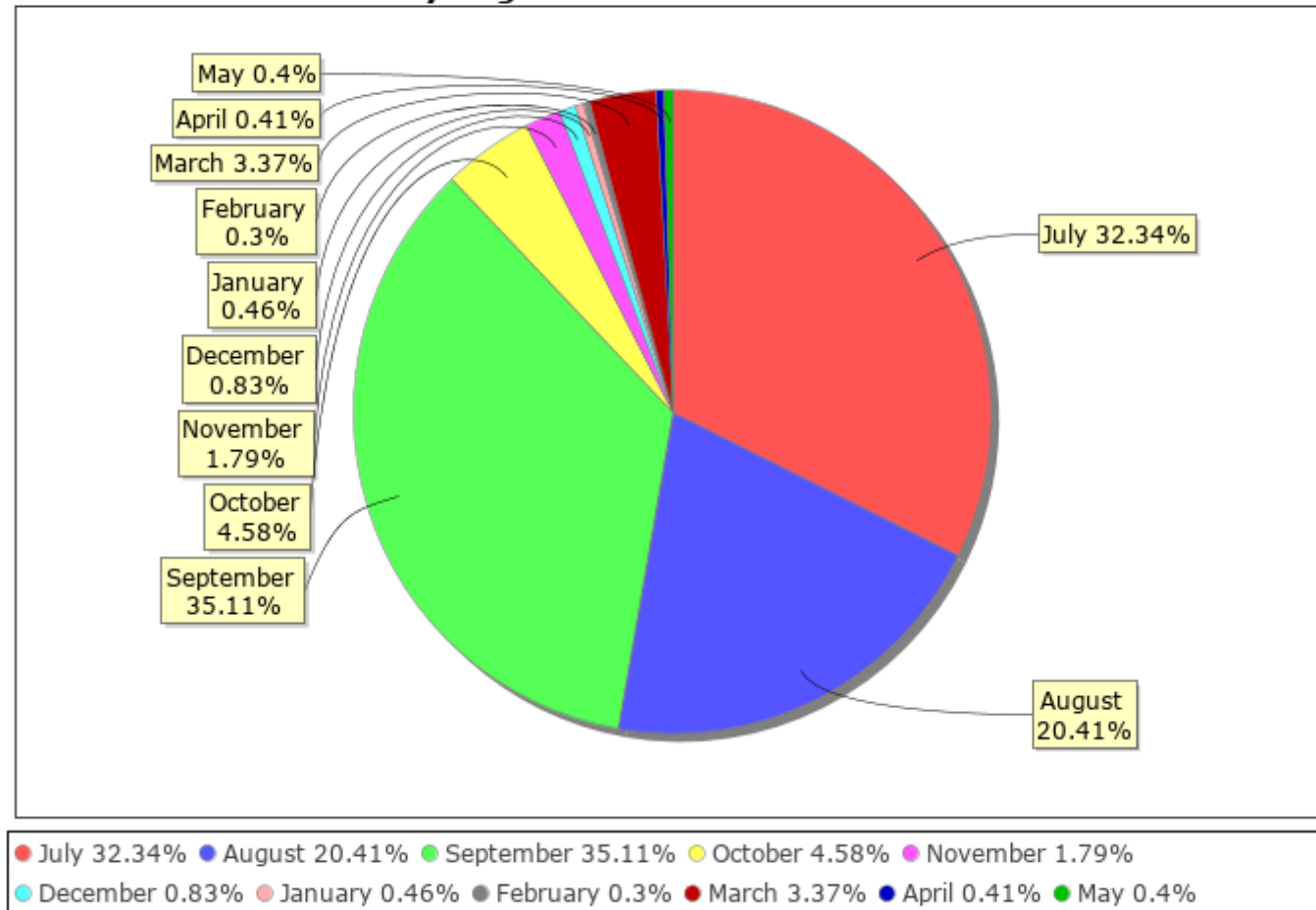
Station Name: Tawa at Tawakathi

Local River: Tawa

Division: Narmada Division, Bhopal

Sub-Division: MNSD-II, CWC Bhopal

Monthly Avg Runoff Water Year: 2019-2020



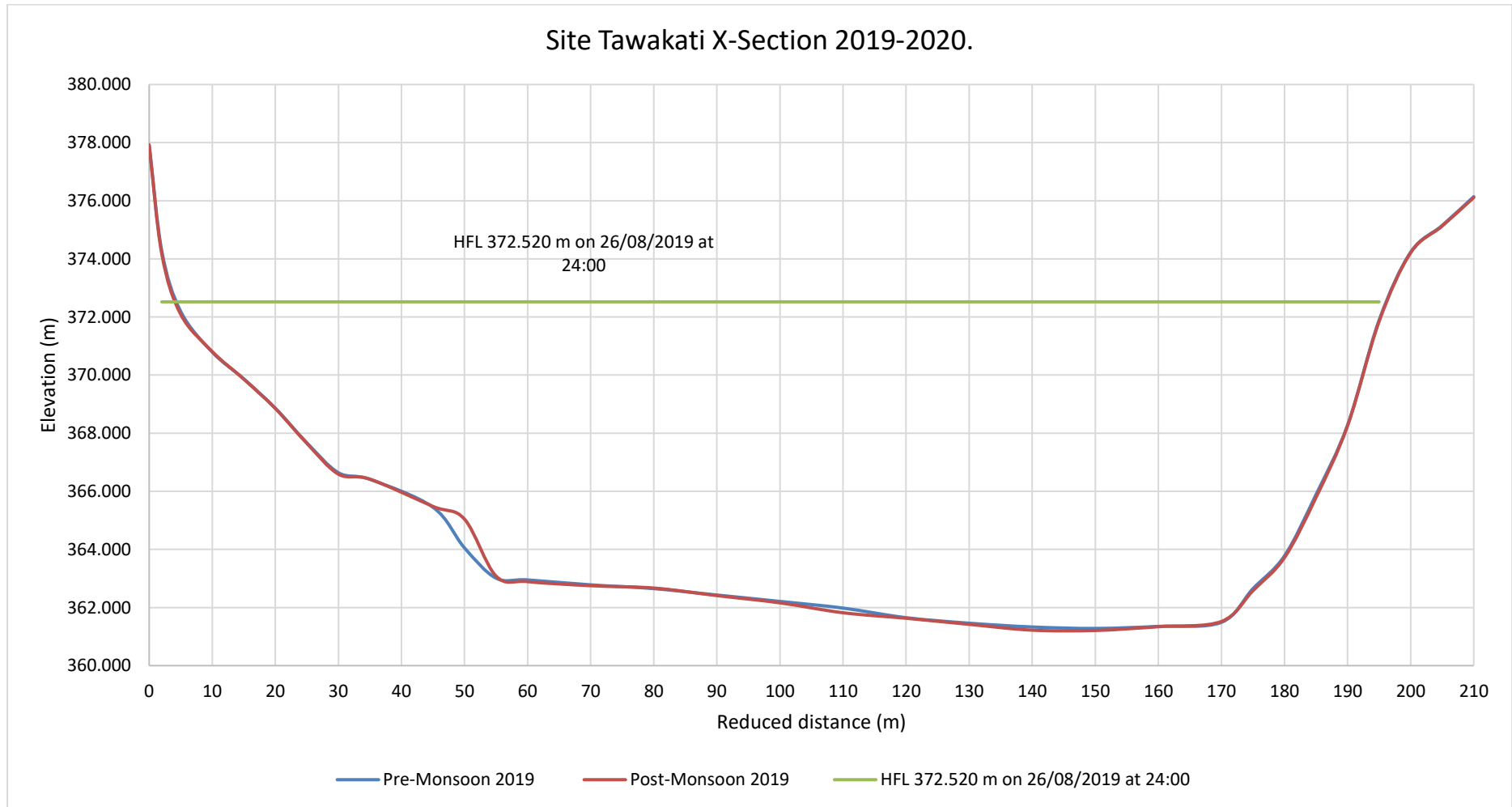
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Tawa at Tawakathi

Division: Narmada Division, Bhopal

Local River: Tawa

Sub-Division: MNSD-II, CWC Bhopal



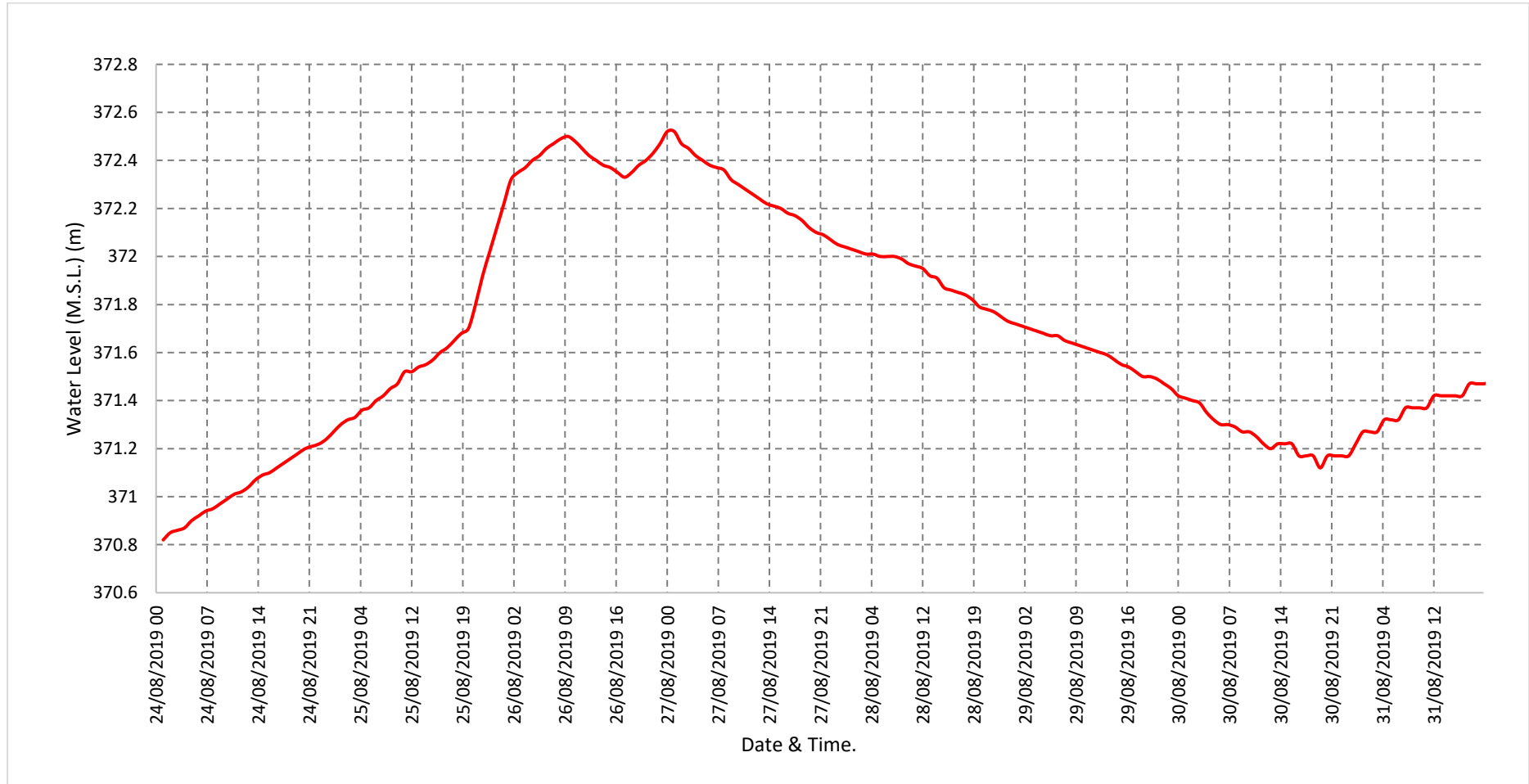
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Tawa at Tawakathi

Division: Narmada Division, Bhopal

Local River: Tawa

Sub-Division: MNSD-II, CWC Bhopal



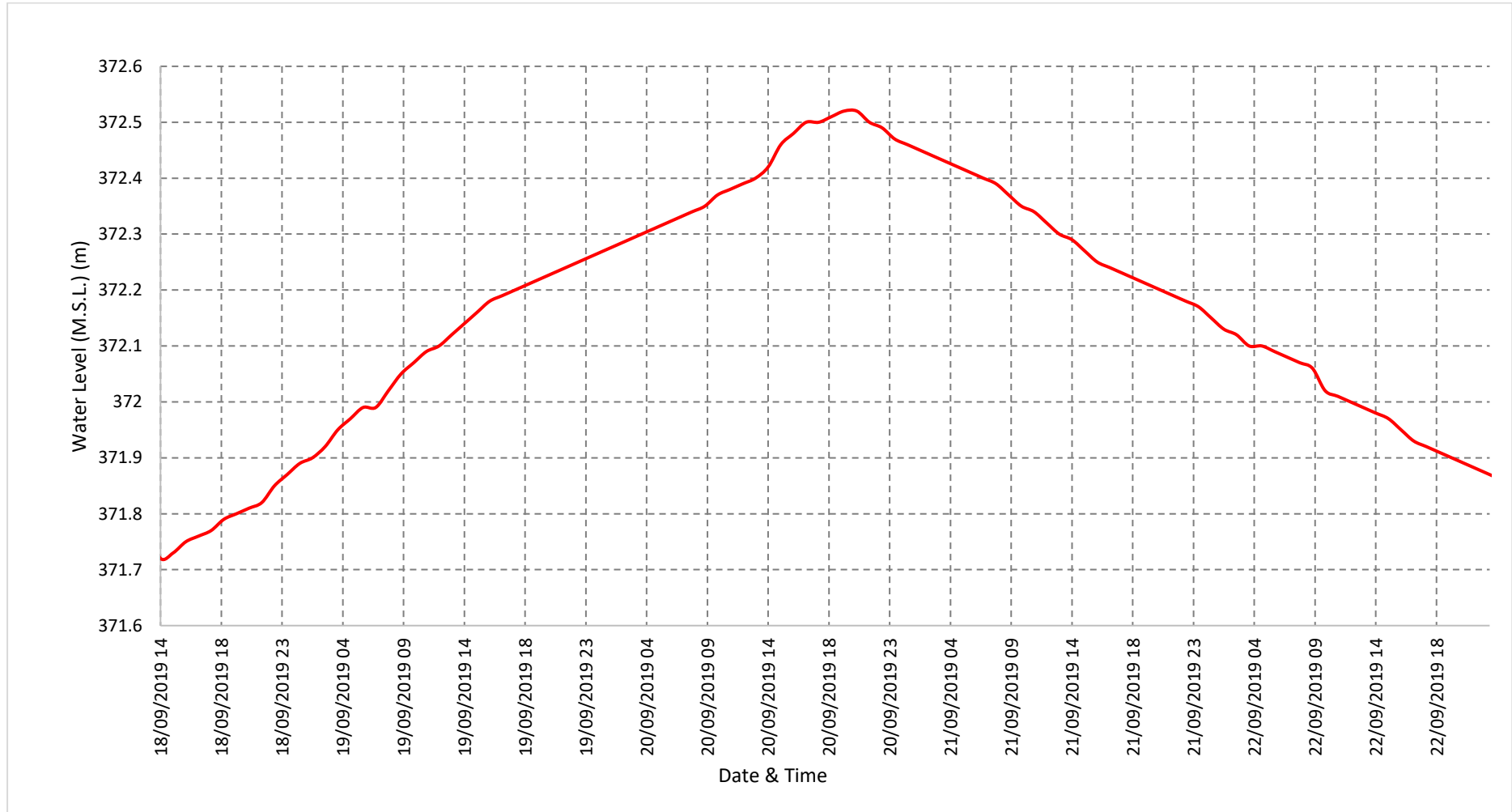
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Tawa at Tawakathi

Division: Narmada Division, Bhopal

Local River: Tawa

Sub-Division: MNSD-II, CWC Bhopal



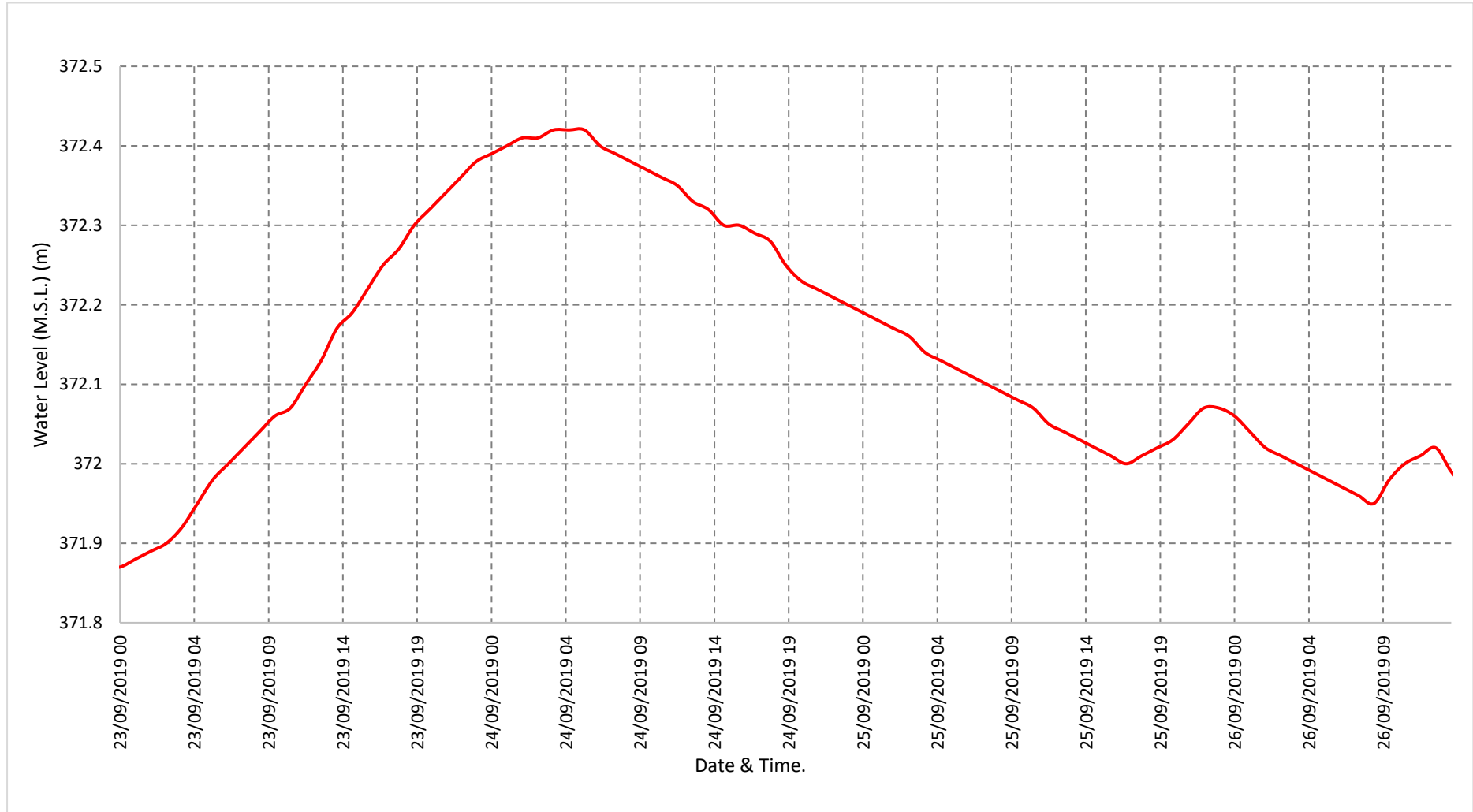
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Tawa at Tawakathi

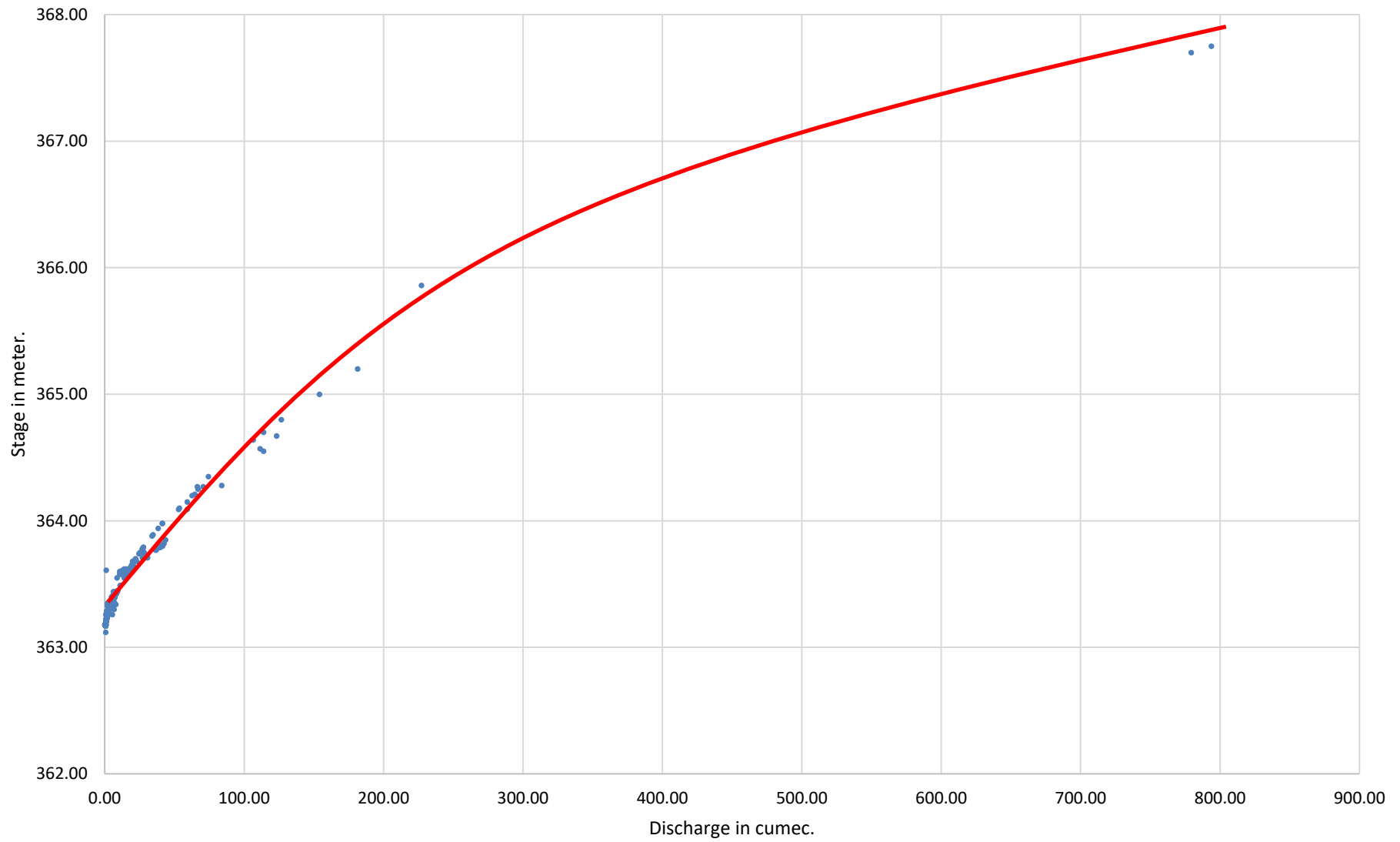
Division: Narmada Division, Bhopal

Local River: Tawa

Sub-Division: MNSD-II, CWC Bhopal



Site Tawakati Stage-Discharge Curve 2019-2020.



4.26 Denva at Matkuli.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	: 2019 - 2020	
Site	:	Denva at Matkuli		Code	: CW1NAU001473	
State	:	Madhya Pradesh		District	: HOSHANGABAD	
Basin	:	Narmada		Independent River	: Narmada	
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	: DENVA	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	: Middle Narmada Sub-Division-I, Hosangabad	
Drainage Area	:	751.0 Sq. Km.		Bank	: Right	
Latitude	:	22°85'08"		Longitude	: 78°27'33"	
Current Zero of Gauge (m)	:	389				
CATEGORY		Opening Date		Closing Date		
Gauge	:	01-06-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
389		15/01/2019		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	687.731	394.600	07-08-2019	0	-	01-06-2019

Stage Discharge Sheet for Denva at Matkuli for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	\$	\$	420.02	393.50	461.81	393.58	52.271	392.34	76.071	392.45
2	\$	\$	\$	\$	439.17	393.55	289.96	393.15	30.901	392.26	71.111	392.43
3	\$	\$	\$	\$	168.35	392.78	159.32	392.75	21.451	392.20	70.071	392.45
4	\$	\$	\$	\$	183.45	392.80	214.03	392.95	8.731	392.14	90.591	392.49
5	\$	\$	\$	\$	105.13	392.54	484.77	393.75	3.731	392.10	49.271	392.34
6	\$	\$	\$	\$	159.32	392.75	244.88	393.02	1.361	392.07	40.281	392.31
7	\$	\$	\$	\$	687.73	394.60	466.7	393.65	0.601	392.05	32.901	392.26
8	\$	\$	\$	\$	639.15	394.40	157.31	392.76	0.501	392.03	26.481	392.24
9	\$	\$	\$	\$	180.91	392.85	468.17	393.70	0.301	392.01	24.481	392.24
10	\$	\$	68.761	392.40	204.25	392.87	450.31	393.60	0.401	392.02	26.421	392.23
11	\$	\$	13.381	392.17	150.62	392.72	610.24	394.28	0.401	392.02	20.391	392.22
12	\$	\$	6.021	392.12	202.65	392.89	474.77	393.75	0.301	392.01	20.391	392.21
13	\$	\$	2.781	392.09	146.62	392.72	48.661	392.35	28.481	392.24	20.451	392.20
14	\$	\$	1.361	392.07	85.251	392.50	483.17	393.70	18.451	392.20	15.02	392.18
15	\$	\$	0.401	392.03	39.981	392.30	434.31	393.60	8.731	392.14	20.39	392.21
16	\$	\$	0.501	392.03	164.32	392.75	452.58	393.61	3.731	392.10	18.45	392.20
17	\$	\$	0.201	392.01	582.34	394.10	443.57	393.57	1.361	392.07	13.38	392.17
18	\$	\$	0.301	392.02	302.96	393.15	443.57	393.57	0.501	392.03	11.80	392.16
19	\$	\$	111.13	392.58	628.64	394.29	398.42	393.48	0.501	392.03	10.25	392.15
20	\$	\$	106.13	392.58	627.99	394.42	268.66	393.09	0.601	392.05	8.73	392.14
21	\$	\$	26.481	392.24	572.08	394.12	261.72	393.07	0.501	392.03	7.33	392.13
22	\$	\$	24.481	392.24	468.57	393.68	254.9	393.05	82.071	392.45	7.33	392.13
23	\$	\$	7.331	392.13	443.57	393.57	491.82	393.78	189.91	392.85	6.02	392.12
24	\$	\$	2.781	392.09	428.57	393.57	71.071	392.45	15.451	392.20	6.02	392.12
25	\$	\$	0.501	392.04	454.17	393.55	377.56	393.35	8.731	392.14	6.02	392.12
26	\$	\$	576.12	394.20	333.88	393.27	484.77	393.75	3.731	392.10	4.83	392.11
27	\$	\$	287.82	393.18	256.66	393.09	382.26	393.40	1.361	392.07	4.83	392.11
28	\$	\$	308.12	393.20	273.72	393.07	140.42	392.67	0.601	392.05	4.83	392.11
29	\$	\$	89.251	392.50	254.9	393.05	76.071	392.45	17.021	392.18	3.73	392.10
30	\$	\$	275.72	393.11	241.2	393.03	18.451	392.20	14.721	392.19	3.73	392.10
31			248.59	393.01	183.69	392.83			18.451	392.20		
Ten-Daily Mean												
I Ten-Daily	0	0	0	0	318.75	393.26	339.73	393.29	12.02	392.12	50.77	392.34
II Ten-Daily	0	0	24.22	392.17	293.14	393.18	405.8	393.5	6.31	392.09	15.93	392.18
III Ten-Daily	0	0	167.93	392.72	355.55	393.35	255.9	393.02	32.05	392.22	5.47	392.12
Monthly												
Min.	0	0	0.201	392.01	39.981	392.30	18.451	392.20	0.301	392.01	3.731	392.10
Max.	0	0	576.12	394.20	687.73	394.60	610.24	394.28	189.91	392.85	90.591	392.49
Mean	0	0	98.1	392.46	323.54	393.27	333.81	393.27	17.29	392.15	24.05	392.21

Annual Runoff in MCM :2029.9

Annual Runoff in mm : 2702.9

Peak Observed Discharge = 687.731 cumecs on 07/08/2019 Corres. Water Level 394.600 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note- "\$" - No Flow

Stage Discharge Sheet for Denva at Matkuli for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	2.78	392.09	§	391.78	§	390.99	§	391.09	§	391.40	§	391.68
2	2.78	392.09	§	391.06	§	390.55	§	391.09	§	391.38	§	391.11
3	2.01	392.08	§	391.77	§	391.14	§	391.00	§	391.36	§	391.09
4	2.01	392.08	§	391.86	§	391.06	§	391.09	§	391.34	§	391.09
5	2.011	392.08	§	391.65	§	391.11	§	391.86	§	391.32	§	391.86
6	1.361	392.07	§	391.09	§	391.09	§	391.11	§	391.30	§	391.78
7	1.361	392.07	§	391.06	§	391.00	§	391.77	§	391.28	§	391.09
8	1.361	392.07	§	391.18	§	391.11	§	391.77	§	391.26	§	391.06
9	0.951	392.06	§	391.77	§	391.11	§	391.06	§	391.24	§	391.14
10	2.781	392.09	§	391.09	§	391.11	§	391.68	§	391.22	§	391.55
11	2.011	392.08	§	391.86	§	391.78	§	391.06	§	391.20	§	391.78
12	2.781	392.09	§	391.56	§	391.00	§	391.86	§	391.18	§	391.68
13	0.601	392.05	§	391.14	§	391.86	§	391.00	§	391.16	§	391.06
14	0.601	392.05	§	391.11	§	390.98	§	391.68	§	391.14	§	391.11
15	0.601	392.04	§	391.11	§	391.00	§	391.62	§	391.12	§	391.71
16	0.601	392.04	§	390.99	§	390.85	§	391.78	§	391.11	§	391.71
17	0.501	392.03	§	391.00	§	390.67	§	391.96	§	391.11	§	391.71
18	0.401	392.02	§	391.09	§	391.98	§	391.78	§	391.11	§	391.73
19	0.501	392.03	§	391.08	§	390.99	§	391.68	§	391.11	§	391.73
20	0.401	392.02	§	391.06	§	390.98	§	391.86	§	391.11	§	391.73
21	0.401	392.02	§	391.78	§	390.98	§	391.78	§	391.11	§	391.73
22	0.301	392.01	§	391.86	§	390.97	§	391.78	§	390.99	§	391.78
23	0.301	392.01	§	391.11	§	390.75	§	391.86	§	391.11	§	391.78
24	0.401	392.02	§	390.99	§	391.68	§	391.81	§	391.06	§	391.78
25	0.20	392.00	§	390.09	§	390.97	§	391.76	§	391.14	§	391.78
26	0.201	392.00	§	391.77	§	390.97	§	391.71	§	391.12	§	391.68
27	0.201	392.00	§	391.09	§	391.86	§	391.66	§	391.11	§	391.86
28	0.501	392.03	§	391.07	§	391.09	§	391.61	§	391.00	§	391.68
29	0.601	392.05	§	391.06	§	391.07	§	391.56	§	391.09	§	391.78
30	0.951	392.06	§	391.06			§	391.51	§	391.06	§	391.78
31	1.361	392.07	§	391.04			§	391.46			§	391.55
Ten-Daily Mean												
I Ten-Daily	1.94	392.08	0	391.43	0	391.03	0	391.35	0	391.31	0	391.35
II Ten-Daily	0.9	392.05	0	391.2	0	391.21	0	391.63	0	391.14	0	391.60
III Ten-Daily	0.49	392.02	0	391.17	0	391.15	0	391.68	0	391.08	0	391.74
Monthly												
Min.	0.2	392	0	390.09	0	390.55	0	391	0	390.99	0	391.06
Max.	2.781	392.09	0	391.86	0	391.98	0	391.96	0	391.4	0	391.86
Mean	1.09	392.05	0	391.27	0	391.13	0	391.56	0	391.17	0	391.57

Peak Computed Discharge = 461.81 cumecs on 01/09/2019 Corres. Water Level 393.580 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Note-

“§”-No Flow

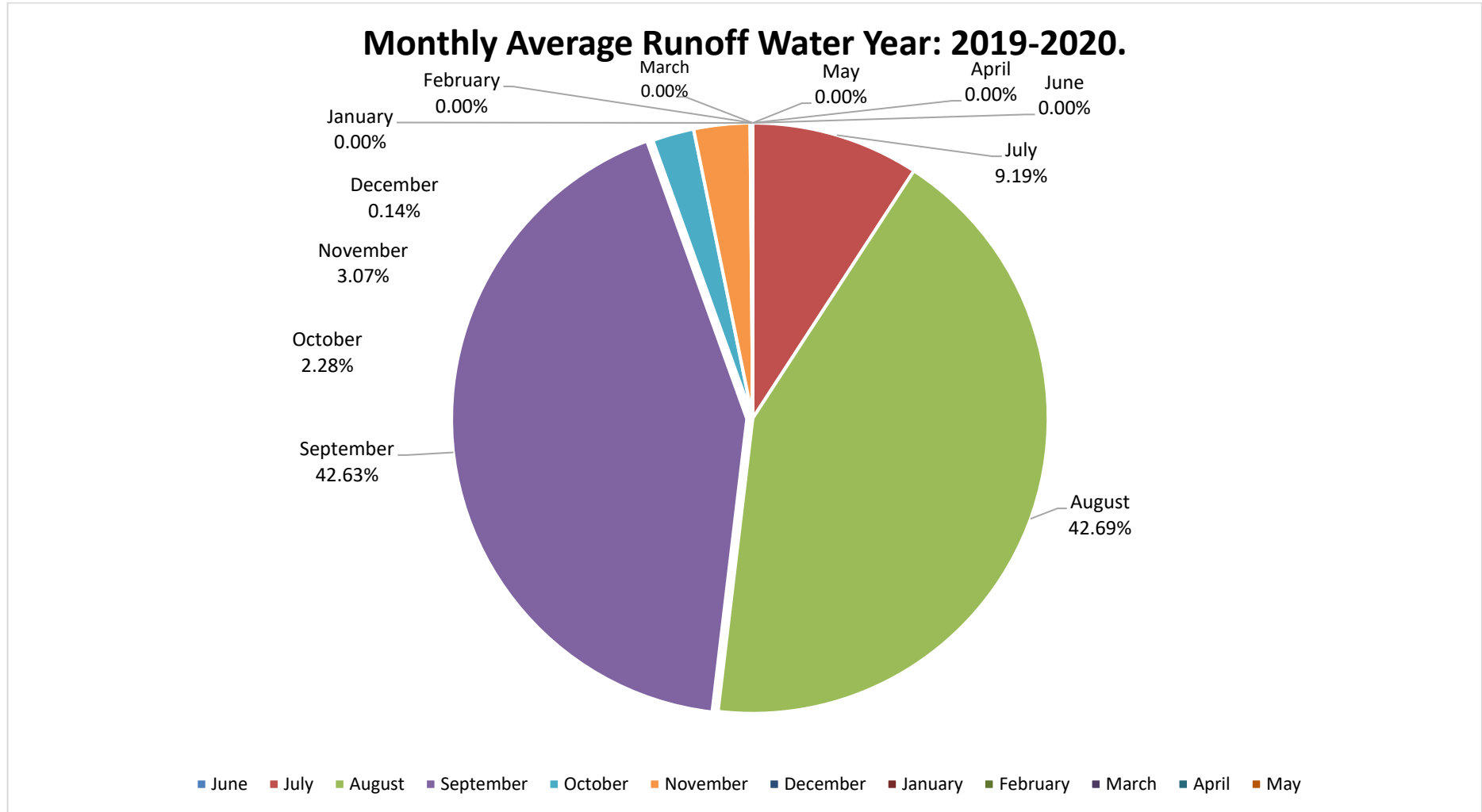
Monthly Runoff for the Year (2019-2020)

Station Name: Denva at Matkuli

Division: Narmada Division, Bhopal

Local River: Denva

Sub-Division: MNSD-I, CWC Hoshangabad



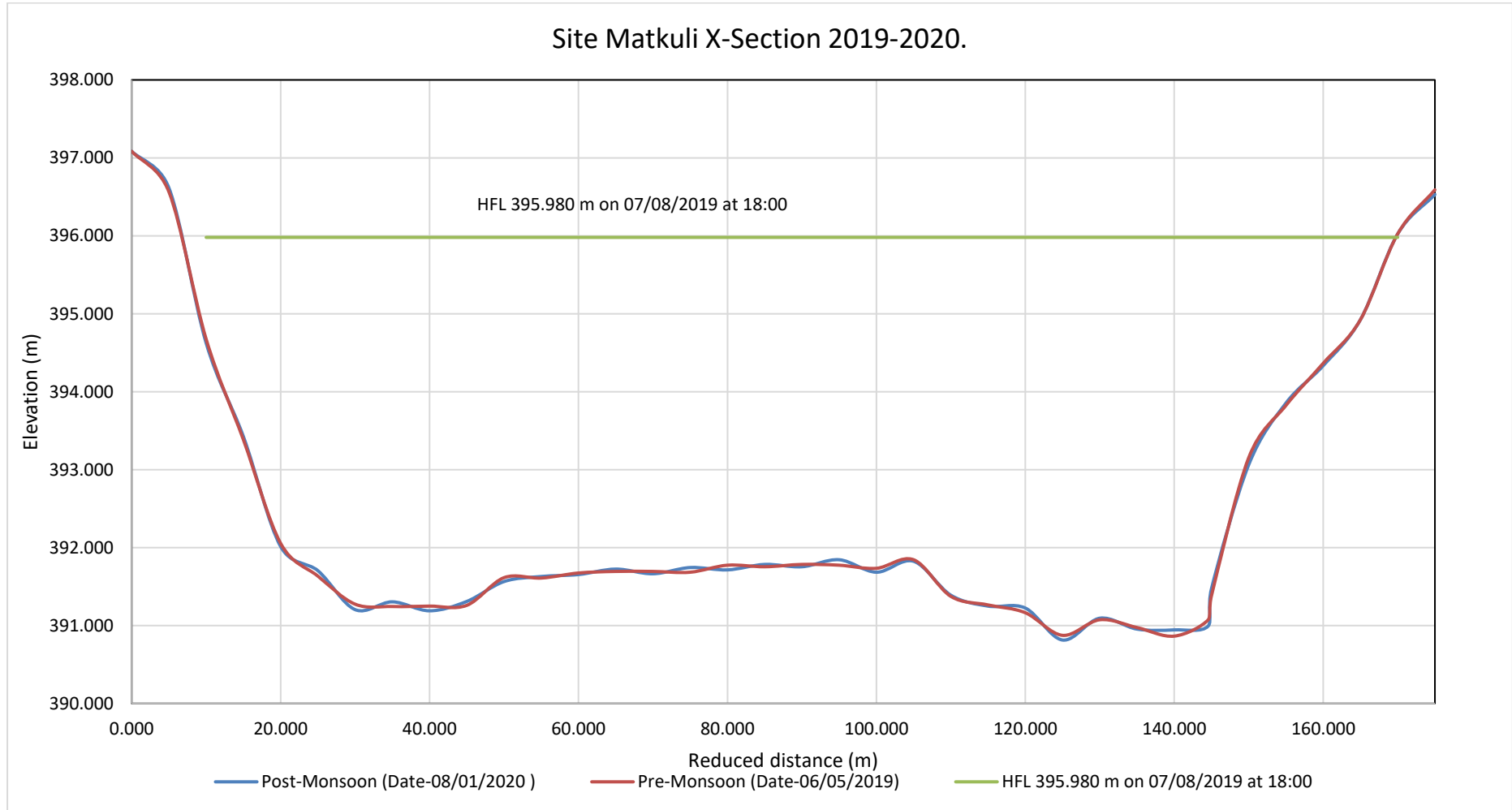
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Denva at Matkuli

Division: Narmada Division, Bhopal

Local River: Denva

Sub-Division: MNSD-I, CWC Hoshangabad



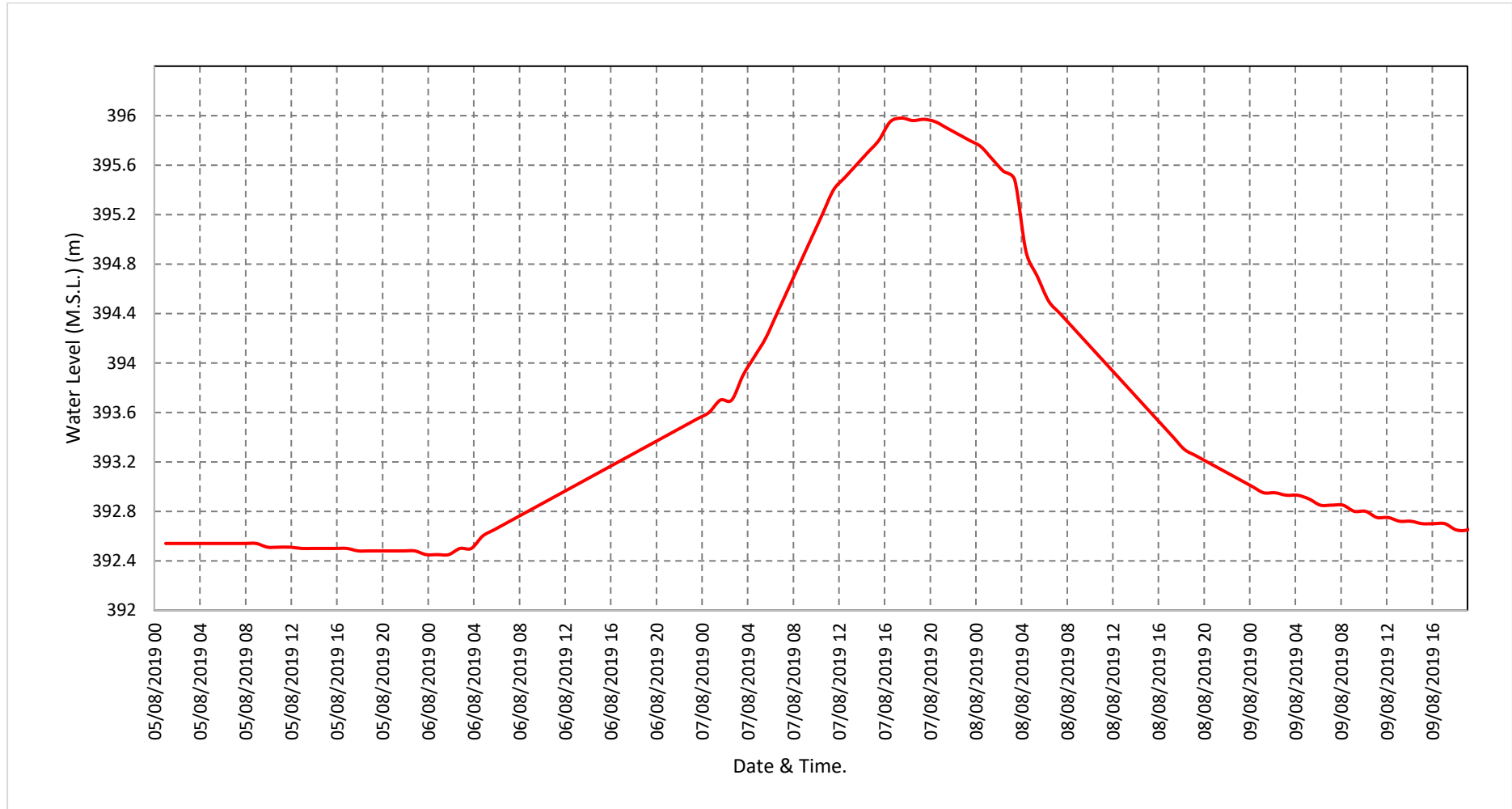
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Denva at Matkuli

Division: Narmada Division, Bhopal

Local River: Denva

Sub-Division: MNSD-I, CWC Hoshangabad



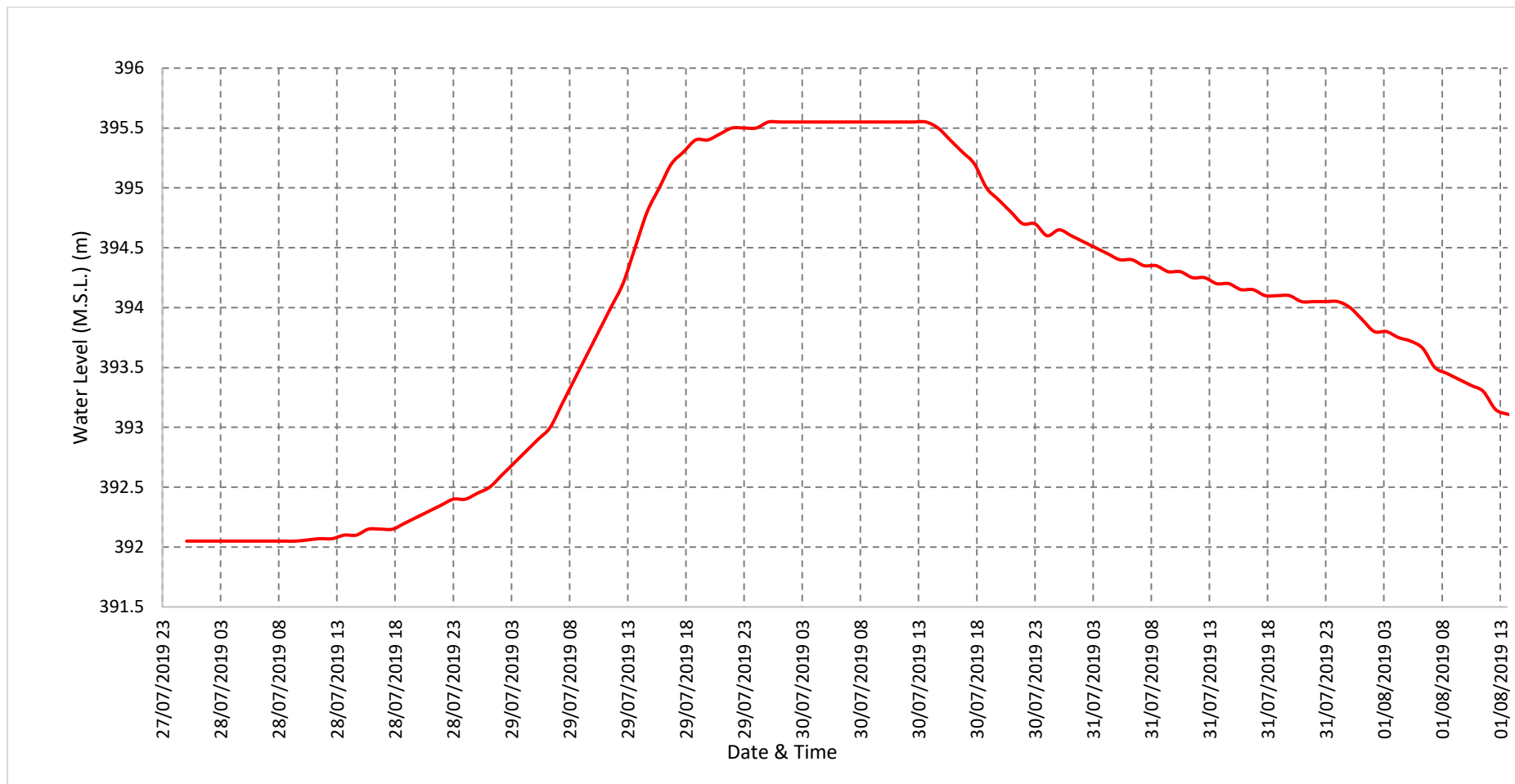
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Denva at Matkuli

Division: Narmada Division, Bhopal

Local River: Denva

Sub-Division: MNSD-I, CWC Hoshangabad



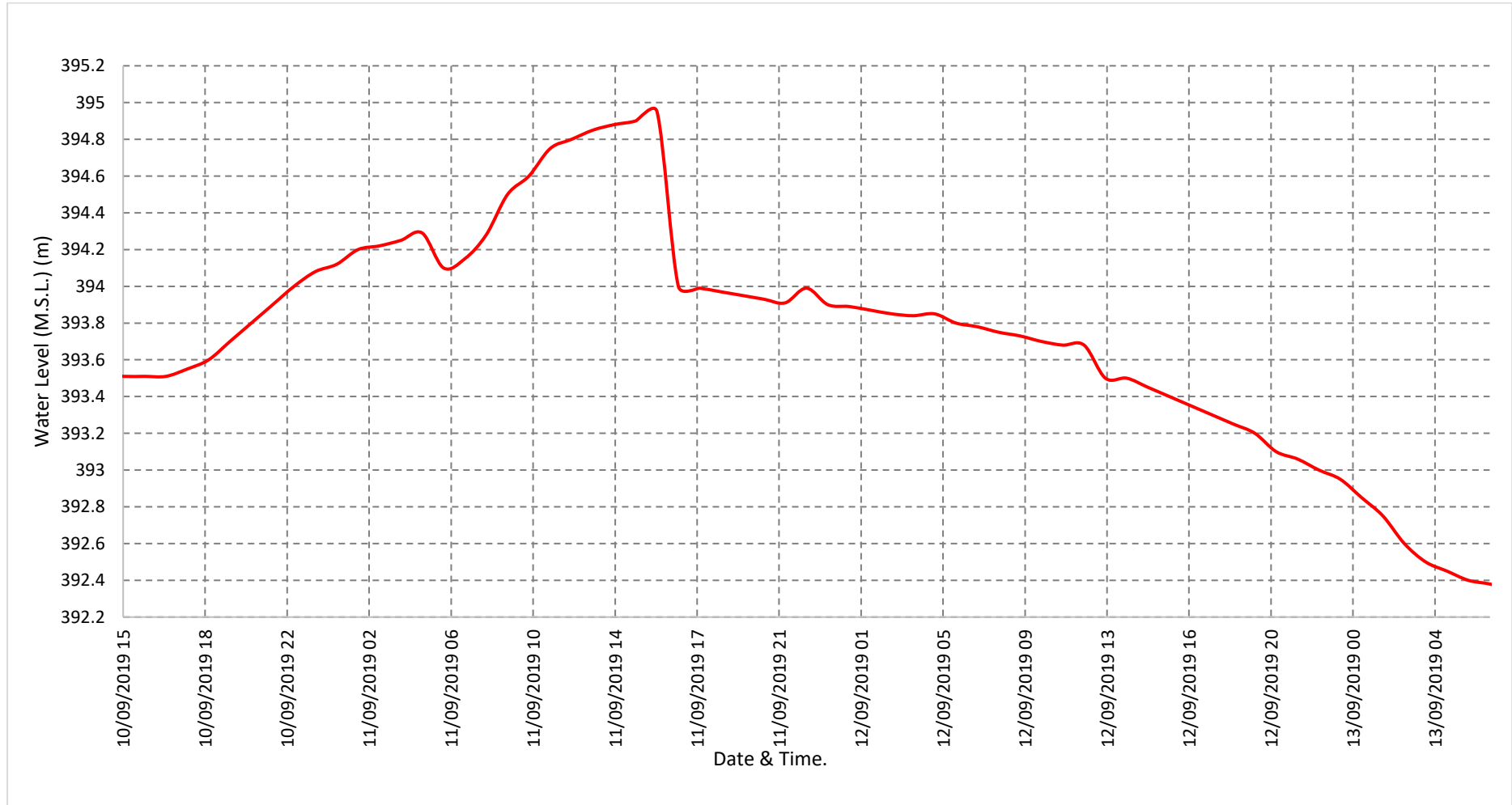
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Denva at Matkuli

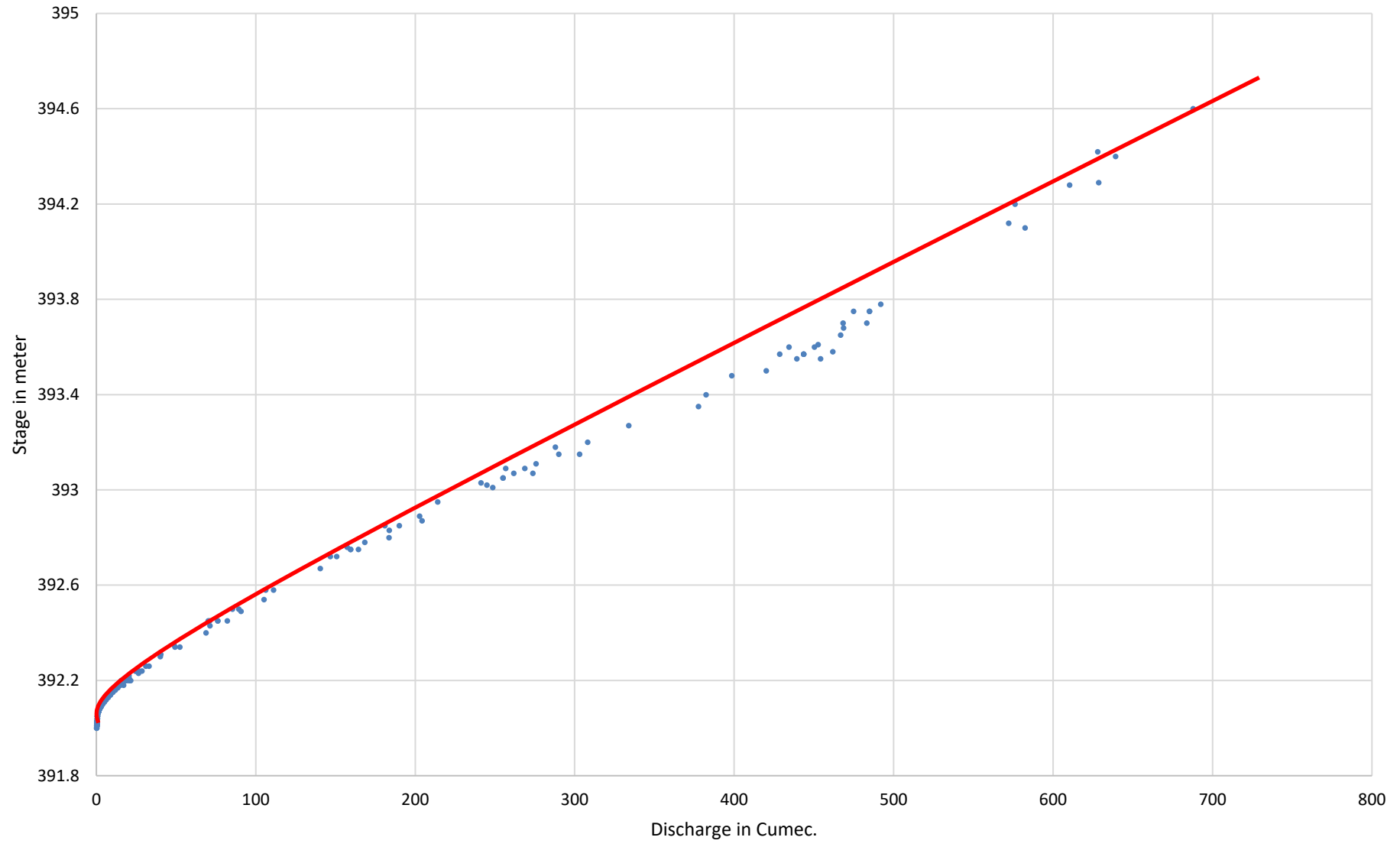
Division: Narmada Division, Bhopal

Local River: Denva

Sub-Division: MNSD-I, CWC Hoshangabad



Site Matkuli Stage-Discharge Curve 2019-2020.



4.27 Palakmati at Sohagpur.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Palakmati at Sohagpur		Code	:	CW1NAU001484
State	:	Madhya Pradesh		District	:	HOSHANGABAD
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Palakmati
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	182.6 Sq. Km.		Bank	:	Right
Latitude	:	22°42'26"		Longitude	:	78°11'39"
Current Zero of Gauge (m)	:	321				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
321		20/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		520.954	324.600	24-08-2019	0	-
						01-06-2019

Stage Discharge Sheet for Palakmati at Sohagpur for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	§	§	34.48	323.05	126.954	323.40	66.134	323.20	66.13	323.20	26.14	323.03
2	§	§	52.04	323.15	66.134	323.20	52.04	323.15	52.04	323.15	20.09	323.02
3	§	§	80.784	323.25	138	323.45	136.434	323.43	66.13	323.20	20.09	323.02
4	§	§	66.134	323.20	66.134	323.20	95.904	323.30	89.84	323.28	28.09	323.02
5	§	§	20.24	323.00	80.784	323.25	80.784	323.25	80.78	323.25	20.09	323.02
6	§	§	66.134	323.20	80.784	323.25	80.784	323.25	52.04	323.15	20.09	323.02
7	§	§	38.41	323.10	111.354	323.35	111.354	323.35	66.13	323.20	32.09	323.02
8	§	§	26.48	323.05	95.904	323.30	95.904	323.30	52.04	323.15	20.09	323.02
9	§	§	44.41	323.10	120	323.40	126.954	323.40	38.41	323.10	20.09	323.02
10	§	§	38.41	323.10	41.12	323.11	41.12	323.11	16.24	323.00	18.12	323.01
11	§	§	52.04	323.15	31.22	323.07	31.22	323.07	26.48	323.05	18.12	323.01
12	§	§	34.48	323.05	22.14	323.03	28.14	323.03	38.41	323.10	26.12	323.01
13	§	§	38.41	323.10	165.074	323.52	165.074	323.52	38.41	323.10	18.12	323.01
14	§	§	26.48	323.05	30.48	323.05	26.48	323.05	20.24	323.00	28.12	323.01
15	§	§	38.41	323.10	38.41	323.10	38.41	323.10	16.24	323.00	18.12	323.01
16	§	§	38.41	323.10	46.41	323.10	38.41	323.10	22.24	323.00	18.12	323.01
17	§	§	42.41	323.10	38.41	323.10	44.41	323.10	26.48	323.05	18.12	323.01
18	§	§	38.41	323.10	38.41	323.10	38.41	323.10	26.48	323.05	22.12	323.01
19	§	§	38.41	323.10	48.41	323.10	38.41	323.10	30.48	323.05	16.24	323.00
20	§	§	16.24	323.00	16.24	323.00	16.24	323.00	24.28	323.04	16.24	323.00
21	§	§	38.41	323.10	38.41	323.10	38.41	323.10	24.28	323.04	16.24	323.00
22	§	§	26.48	323.05	26.48	323.05	32.48	323.05	24.28	323.04	16.24	323.00
23	§	§	26.48	323.05	177.974	323.56	180	323.56	24.28	323.04	22.24	323.00
24	§	§	26.48	323.05	520.954	324.60	80.784	323.25	36.28	323.04	16.24	323.00
25	§	§	52.04	323.15	52.04	323.15	66.134	323.20	24.28	323.04	24.24	323.00
26	§	§	44	323.09	36	323.09	66.134	323.20	22.14	323.03	22.24	323.00
27	§	§	95.904	323.30	95.904	323.30	66.134	323.20	22.14	323.03	16.24	323.00
28	§	§	174.7	323.55	178	323.55	111.354	323.35	22.14	323.03	16.24	323.00
29	§	§	158.674	323.50	158.674	323.50	95.904	323.30	30.14	323.03	16.24	323.00
30	§	§	177.974	323.56	191.054	323.60	80.784	323.25	22.14	323.03	16.24	323.00
31			191.054	323.60	80.784	323.25			22.14	323.03		
Ten-Daily Mean												
I Ten-Daily	0	0	46.75	323.12	92.72	323.29	88.74	323.27	57.98	323.17	22.5	323.02
II Ten-Daily	0	0	36.37	323.09	47.52	323.12	46.52	323.12	26.97	323.04	19.94	323.01
III Ten-Daily	0	0	92.02	323.27	141.48	323.43	81.81	323.25	24.93	323.03	18.24	323
Monthly												
Min.	0	0	16.24	323	16.24	323	16.24	323	16.24	323	16.24	323
Max.	0	0	191.054	323.6	520.954	324.6	180	323.56	89.844	323.28	32.09	323.03
Mean	0	0	59.47	323.16	95.44	323.28	72.36	323.21	36.25	323.08	20.23	323.01

Annual Runoff in

MCM : **825.45**

Annual Runoff in

mm : **4520**

Peak Observed Discharge = 520.954 cumecs on 24/08/2019 Corres. Water Level 324.600 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

“§”-No Flow

Stage Discharge Sheet for Palakmati at Sohagpur for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	14.79	322.99	3.46	322.90	4.4	322.91	16.24	323.00	2.5	322.87	0.78	322.79
2	14.79	322.99	3.46	322.90	3.46	322.90	30.48	323.05	2.5	322.87	0.78	322.79
3	14.79	322.99	4.4	322.91	3.46	322.90	22.24	323.00	2.5	322.87	0.78	322.79
4	14.79	322.99	4.4	322.91	3.925	322.91	16.24	323.00	2.5	322.87	0.78	322.79
5	9.15	322.95	3.46	322.90	3.46	322.90	16.24	323.00	2.5	322.87	0.75	322.78
6	9.15	322.95	3.46	322.90	3.925	322.91	20.24	323.00	2.5	322.87	0.75	322.78
7	9.15	322.95	3.46	322.90	5.48	322.92	16.24	323.00	2.5	322.87	0.75	322.78
8	9.15	322.95	3.46	322.90	6.07	322.92	16.24	323.00	2.5	322.87	0.75	322.78
9	9.15	322.95	3.46	322.90	3.46	322.92	9.15	322.95	2.5	322.87	0.75	322.78
10	9.15	322.95	3.46	322.90	6.07	322.92	9.15	322.95	2.5	322.87	0.76	322.78
11	9.15	322.95	3.46	322.90	5.46	322.90	9.15	322.95	2.2	322.86	0.75	322.78
12	7.88	322.94	4.4	322.91	3.46	322.90	9.15	322.95	2.2	322.86	0.74	322.78
13	7.88	322.94	4.4	322.91	3.46	322.90	7.88	322.94	2.2	322.86	0.75	322.78
14	7.88	322.94	3.46	322.90	3.46	322.90	6.67	322.93	2.2	322.86	0.82	322.79
15	7.88	322.94	3.46	322.90	3.46	322.90	5.48	322.92	2.2	322.86	0.81	322.79
16	7.88	322.94	3.46	322.90	5.46	322.90	5.48	322.92	2.2	322.86	0.81	322.79
17	5.48	322.92	3.46	322.90	3.46	322.90	4.4	322.91	2.2	322.86	0.8	322.79
18	5.48	322.92	3.46	322.90	3.46	322.90	3.46	322.90	2.2	322.86	0.78	322.79
19	9.48	322.92	6.4	322.91	3.46	322.90	3.14	322.89	2.06	322.85	0.76	322.78
20	5.48	322.92	4.4	322.91	5.46	322.90	3.14	322.89	2.06	322.85	0.76	322.78
21	5.48	322.92	4.4	322.91	3.46	322.90	3.14	322.89	0.81	322.80	0.76	322.78
22	5.48	322.92	4.4	322.91	3.46	322.90	3.14	322.89	0.81	322.80	0.76	322.78
23	5.48	322.92	4.4	322.91	3.46	322.90	3.14	322.89	0.81	322.80	0.76	322.78
24	3.46	322.90	4.4	322.91	9.15	322.95	2.84	322.88	0.81	322.80	0.76	322.78
25	3.46	322.90	4.4	322.91	9.15	322.95	2.84	322.88	0.78	322.79	0.75	322.77
26	3.46	322.90	3.46	322.90	3.46	322.90	2.84	322.88	0.78	322.79	0.75	322.77
27	3.46	322.90	3.46	322.90	9.15	322.95	2.84	322.88	0.78	322.79	0.75	322.77
28	3.46	322.90	3.46	322.90	16.27	323.00	2.84	322.88	0.78	322.79	0.75	322.77
29	3.46	322.90	3.46	322.90	16.24	323.00	2.84	322.88	0.78	322.79	0.75	322.77
30	3.46	322.90	3.46	322.90			2.84	322.88	0.78	322.79	0.75	322.77
31	3.46	322.90	5.46	322.90							0.75	322.77
Ten-Daily Mean												
I Ten-Daily	11.41	322.97	3.65	322.9	4.37	322.91	17.25	323	2.5	322.87	0.76	322.78
II Ten-Daily	7.45	322.93	4.04	322.9	4.06	322.9	5.8	322.92	2.17	322.86	0.78	322.79
III Ten-Daily	4.01	322.91	4.07	322.9	8.2	322.94	2.93	322.88	0.79	322.79	0.75	322.77
Monthly												
Min.	3.46	322.9	3.46	322.9	3.46	322.9	2.84	322.88	0.78	322.79	0.74	322.77
Max.	14.79	322.99	6.4	322.91	16.27	323	30.48	323.05	2.5	322.87	0.82	322.79
Mean	7.5	322.93	3.92	322.9	5.45	322.92	8.66	322.93	1.82	322.84	0.76	322.78

Peak Computed Discharge = 174.7 cumecs on 28/07/2019 Corres. Water Level 323.55 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

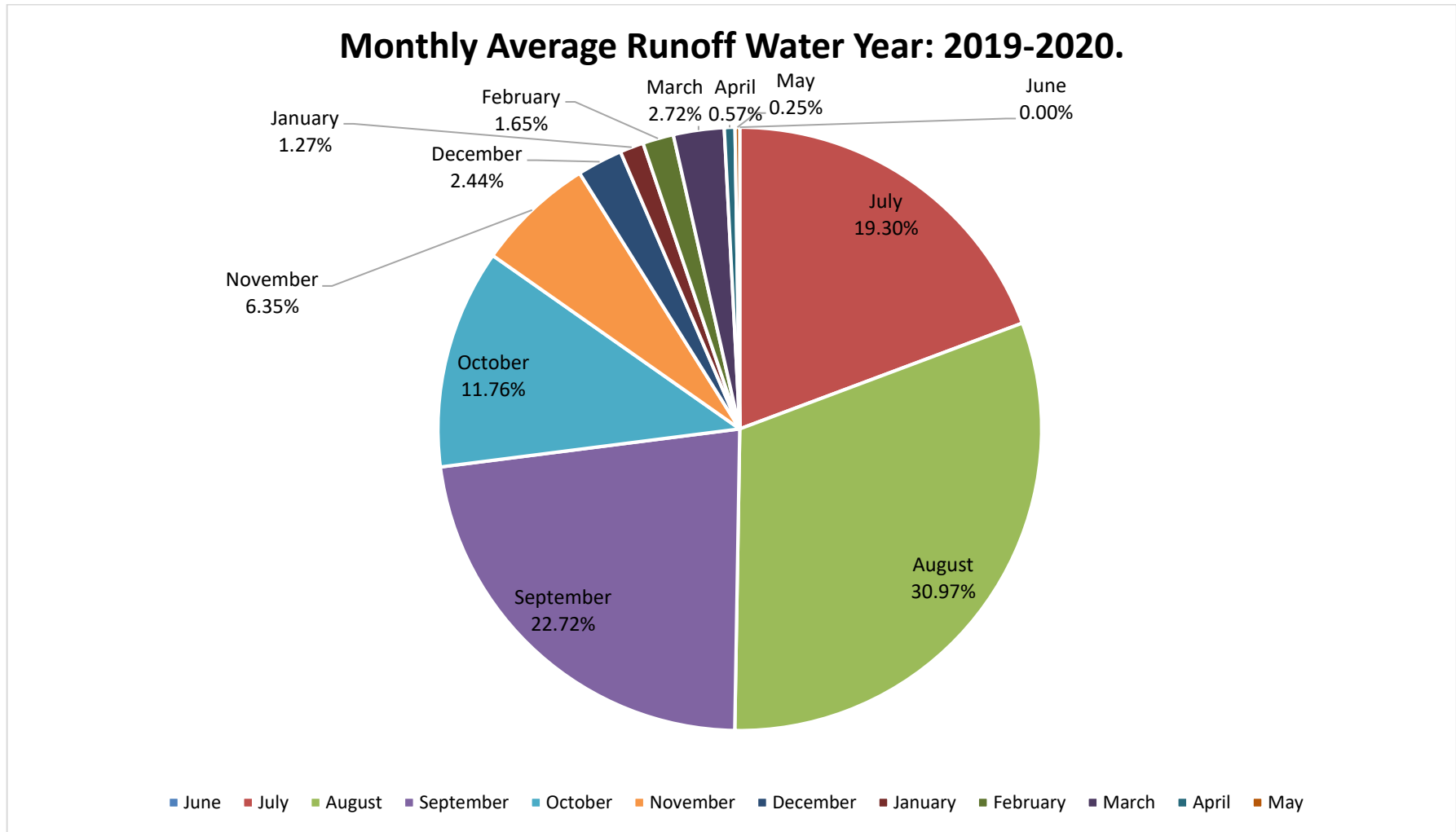
Monthly Runoff for the Year (2019-2020)

Station Name: Palakmati at Sohagpur

Division: Narmada Division, Bhopal

Local River: Palakmati

Sub-Division: MNSD-I, CWC Hoshangabad



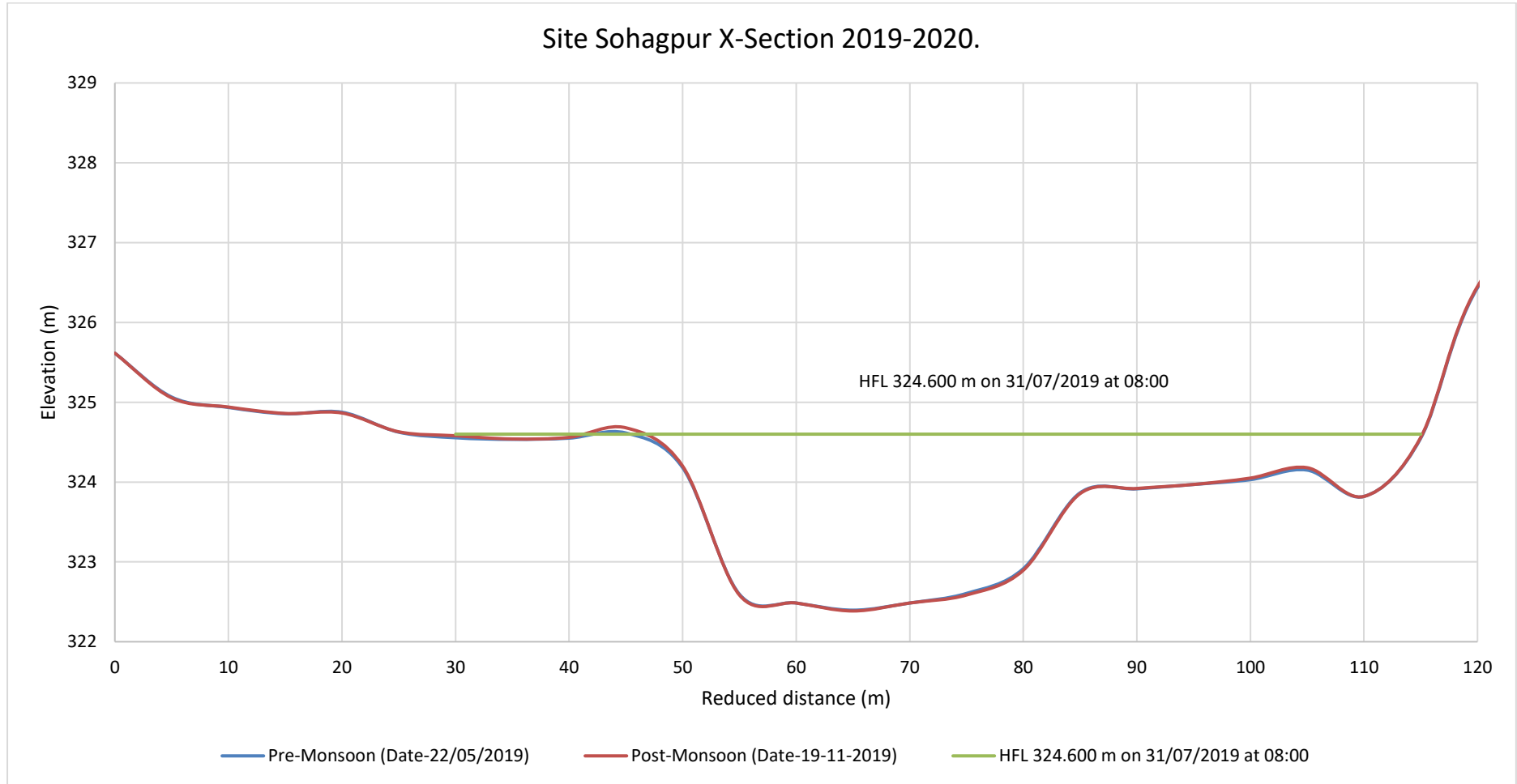
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Palakmati at Sohagpur

Division: Narmada Division, Bhopal

Local River: Palakmati

Sub-Division: MNSD-I, CWC Hoshangabad



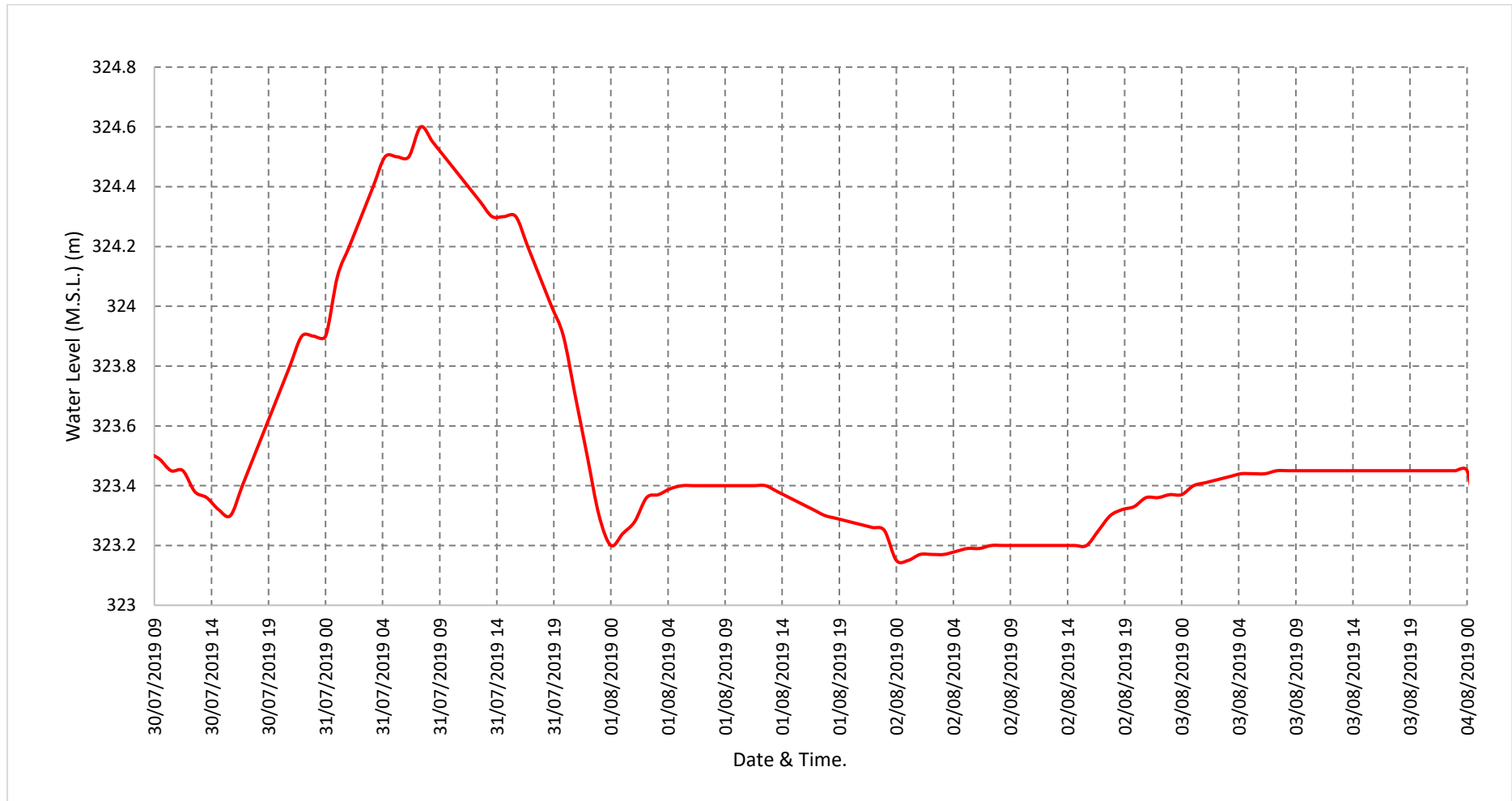
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Palakmati at Sohagpur

Division: Narmada Division, Bhopal

Local River: Palakmati

Sub-Division: MNSD-I, CWC Hoshangabad



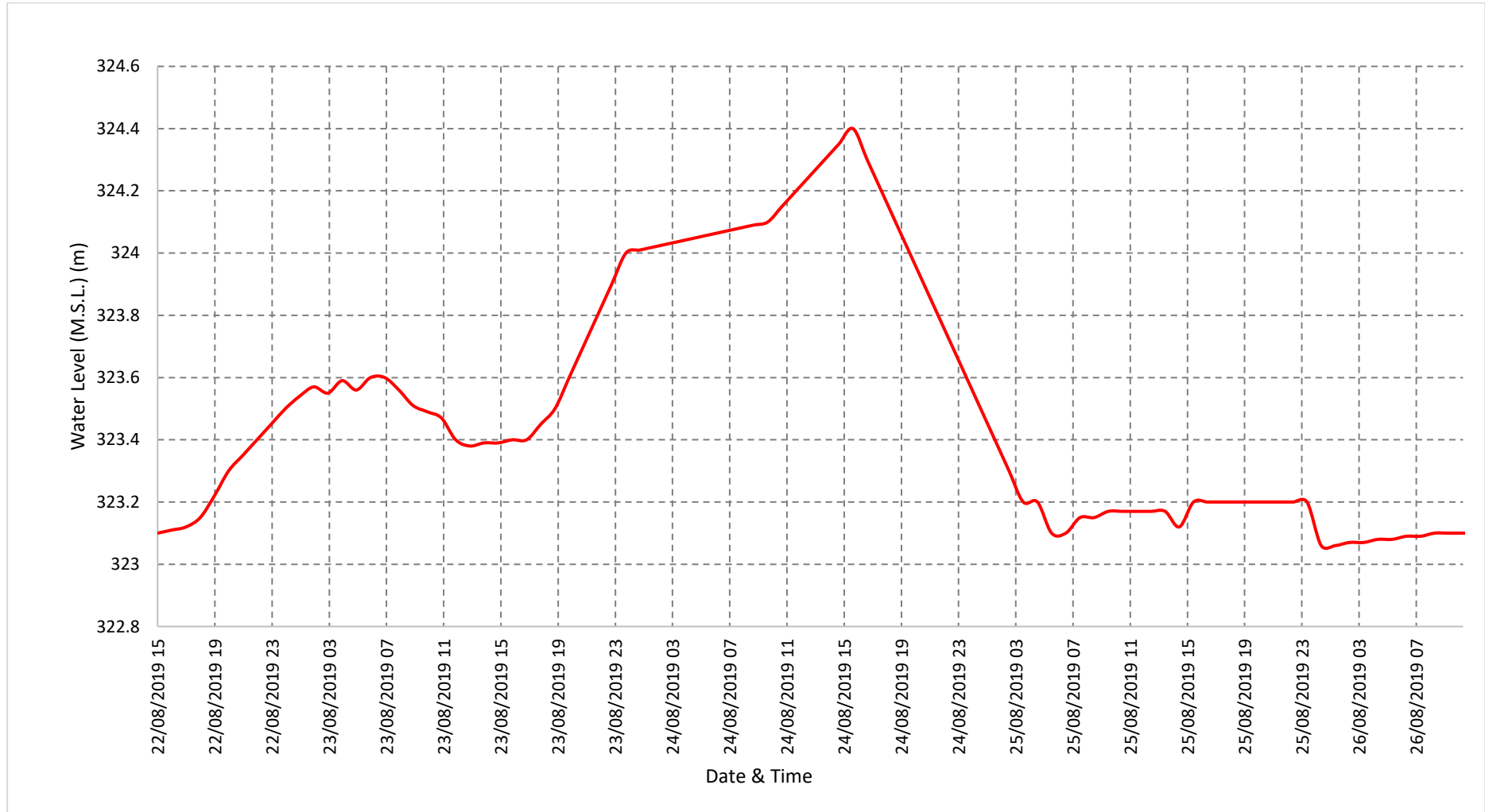
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Palakmati at Sohagpur

Division: Narmada Division, Bhopal

Local River: Palakmati

Sub-Division: MNSD-I, CWC Hoshangabad



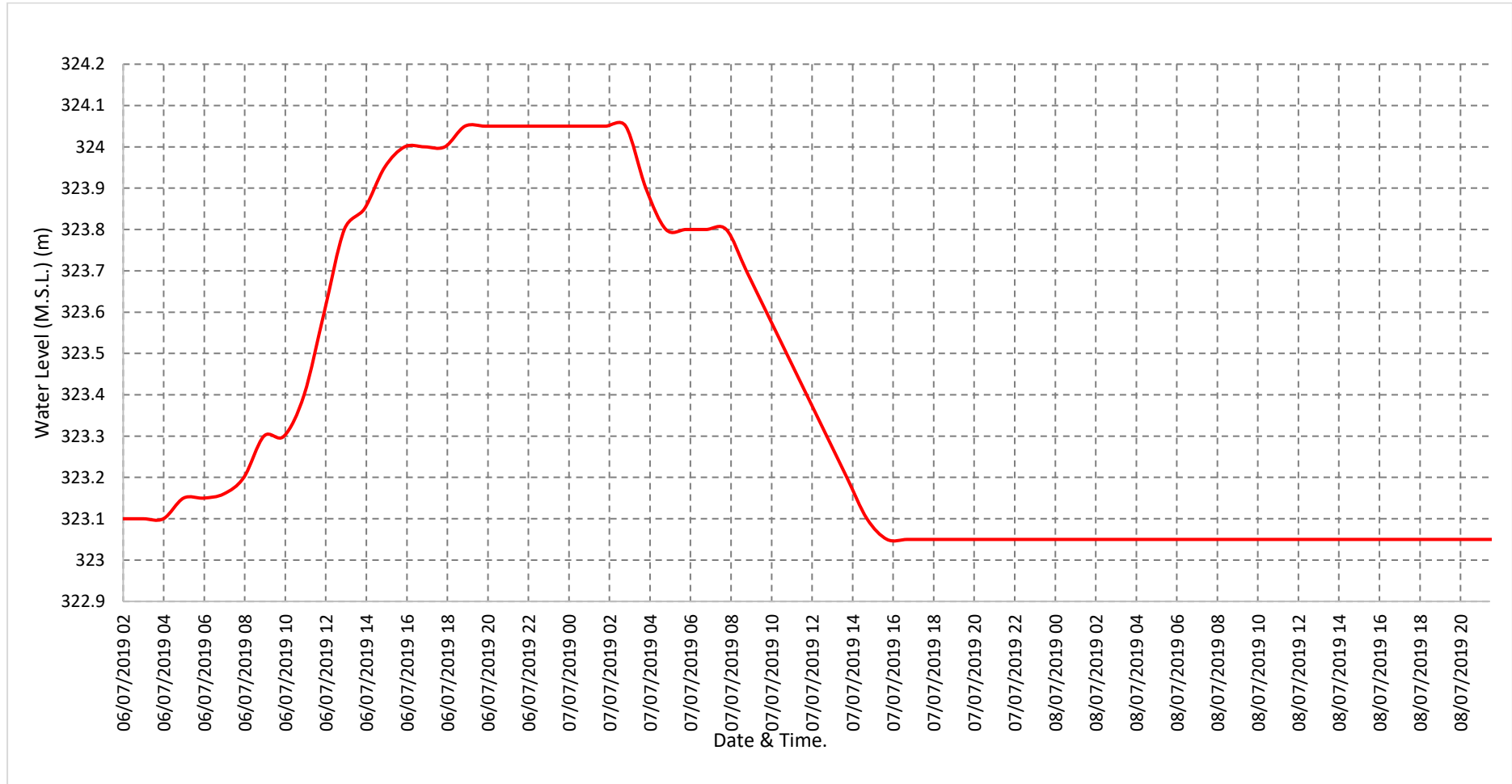
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Palakmati at Sohagpur

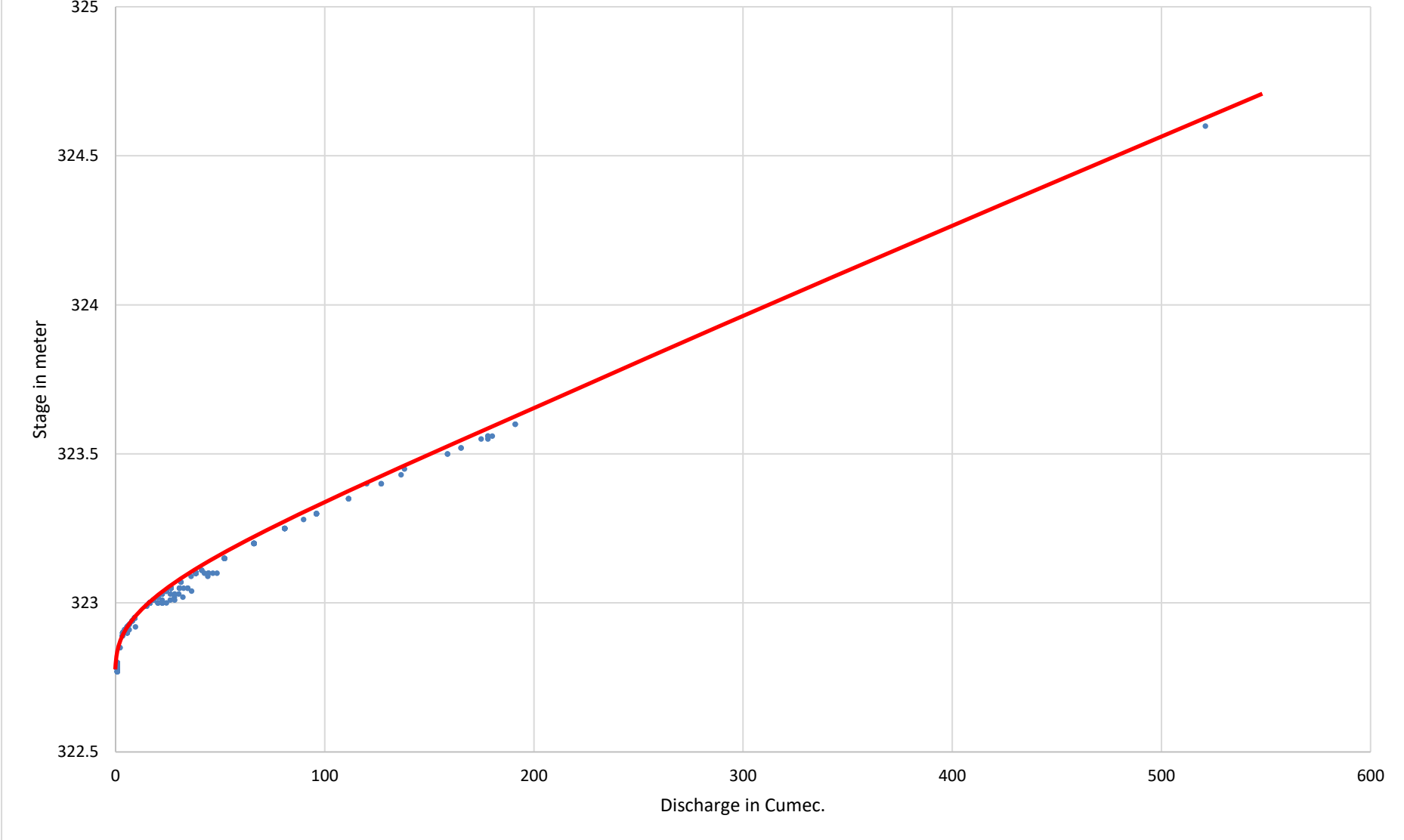
Division: Narmada Division, Bhopal

Local River: Palakmati

Sub-Division: MNSD-I, CWC Hoshangabad



Site Sohagpur Stage-Discharge Curve 2019-2020.



4.28 Indra at Khapariya.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Indra at Khapariya		Code	:	CW1NAU001467
State	:	Madhya Pradesh		District	:	HOSHANGABAD
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Indra
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	453.39 Sq. Km.		Bank	:	Right
Latitude	:	22°44'45"		Longitude	:	78°09'33"
Current Zero of Gauge (m)	:	287				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
287		16/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	157.8	294.750	11-09-2019	0	-	01-06-2019

Stage Discharge Sheet for Indra at Khaparia for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	4.4	290.01	58.2	291.20	31	290.80	20.7	290.49	17	290.39
2	#	#	5.9	290.03	58.3	291.23	32.9	290.88	20.4	290.48	16.5	290.38
3	#	#	5.8	290.03	57.6	291.20	37.4	290.94	20.7	290.47	16	290.38
4	#	#	6	290.04	55	291.10	38.4	290.95	17	290.46	15.5	290.37
5	#	#	5.4	290.05	38.9	290.98	32.8	290.88	18.4	290.45	15.4	290.36
6	#	#	6.3	290.06	29.2	290.77	32.7	290.86	18	290.44	14.6	290.35
7	#	#	7	290.08	23.6	290.66	78.2	291.60	17.7	290.42	14.4	290.35
8	#	#	7.3	290.09	21.3	290.54	95	292.50	17.6	290.41	14.1	290.34
9	#	#	7.6	290.09	22.6	290.60	133.9	293.92	17.6	290.40	12.7	290.34
10	#	#	8.6	290.10	28.9	290.70	138.2	293.84	17	290.39	12.5	290.34
11	#	#	8.1	290.10	18	290.38	157.8	294.75	17.2	290.38	12.1	290.33
12	#	#	8.6	290.10	32.7	290.8	136.2	293.74	16.5	290.37	12.1	290.32
13	#	#	8.6	290.10	32.4	290.83	111.6	292.93	15	290.37	12.1	290.32
14	#	#	8	290.10	31.8	290.81	92.8	292.42	15.5	290.37	14.10	290.31
15	#	#	8.1	290.09	28.9	290.72	90	292.20	15.4	290.36	12.10	290.31
16	#	#	7.5	290.09	28.8	290.74	87.8	291.99	15.4	290.36	15.80	290.30
17	#	#	6.5	290.09	24.5	290.68	83.1	291.90	15.5	290.35	15.00	290.30
18	#	#	7.6	290.08	30	290.77	79.6	291.60	16.4	290.34	14.10	290.29
19	#	#	6.8	290.08	31.8	290.79	76.4	291.59	15.5	290.32	14.40	290.29
20	#	#	6.5	290.07	32.8	290.85	68.7	291.30	16	290.30	14.10	290.29
21	#	#	5.8	290.07	32.9	290.87	38.4	290.97	16.5	290.30	15.80	290.30
22	#	#	5.1	290.06	37.4	290.94	35	290.85	15.8	290.29	14.10	290.31
23	#	#	5.1	290.05	38.4	291.15	28.9	290.72	15.7	290.29	12.10	290.32
24	#	#	5.4	290.05	73.3	291.41	24.9	290.68	16.5	290.29	12.00	290.32
25	#	#	5.8	290.05	77	291.66	22.2	290.61	15.1	290.28	12.10	290.33
26	#	#	14.5	290.25	79.2	291.67	23.2	290.63	14.4	290.28	14.60	290.34
27	#	#	18.3	290.45	78.2	291.63	22.6	290.62	14	290.28	14.60	290.35
28	#	#	50	291.12	36.8	290.90	21.3	290.58	13.7	290.27	15.50	290.37
29	#	#	70.8	291.35	32.7	290.81	21	290.58	14.1	290.29	15.40	290.37
30	#	#	75.1	291.52	29.2	290.77	20.4	290.50	15.8	290.36	16.50	290.38
31			78.8	291.60	29.3	290.75			17.7	290.40		
Ten-Daily Mean												
I Ten-Daily	0	0	6.43	290.06	39.36	290.9	65.05	291.72	18.51	290.44	14.87	290.36
II Ten-Daily	0	0	7.63	290.09	29.17	290.74	98.4	292.44	15.84	290.35	13.59	290.31
III Ten-Daily	0	0	30.43	290.6	49.49	291.14	25.79	290.67	15.39	290.3	14.27	290.34
Monthly												
Min.	0	0	4.4	290.01	18	290.38	20.4	290.5	13.7	290.27	12	290.29
Max.	0	0	78.8	291.6	79.2	291.67	157.8	294.75	20.7	290.49	17	290.39
Mean	0	0	15.33	290.26	39.67	290.93	63.08	291.61	16.54	290.36	14.24	290.34

Annual Runoff in MCM :545.42

Annual Runoff in mm :1203

Peak Observed Discharge = 157.8 cumecs on 11/09/2019 Corres. Water Level 294.75 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

#- Dry

Stage Discharge Sheet for Indra at Khapariya for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	16.00	290.37	7.6	290.36	7.8	290.39	9.5	290.39	9.2	290.38	4.3	290.16
2	15.80	290.36	8.6	290.37	7	290.38	9.1	290.38	9	290.37	4	290.15
3	14.60	290.34	8.1	290.38	7.3	290.38	9.1	290.38	8.8	290.36	4	290.15
4	14.10	290.34	8.6	290.39	9.8	290.41	9.9	290.40	8.6	290.35	4.7	290.15
5	14.6	290.34	14	290.40	10.9	290.45	10	290.43	8.4	290.34	4.3	290.15
6	12.1	290.33	12.5	290.41	10.6	290.45	10.6	290.45	8.2	290.33	4	290.15
7	12.1	290.33	13.7	290.42	10.7	290.46	9.8	290.45	8	290.32	4.7	290.15
8	11.5	290.32	14.1	290.43	11.1	290.47	10	290.45	7.8	290.31	4.8	290.15
9	14.1	290.31	14.4	290.44	11	290.47	12.4	290.46	7.6	290.30	4.3	290.14
10	15.8	290.30	15.8	290.45	11.4	290.47	10.6	290.46	7.4	290.29	4	290.14
11	14.4	290.39	15.5	290.45	11.1	290.46	10.4	290.46	7.2	290.28	4	290.14
12	12.1	290.28	16.5	290.47	10.9	290.46	10.7	290.46	7	290.27	4.8	290.14
13	14.4	290.28	17.7	290.47	9.8	290.46	11.4	290.45	6.8	290.26	4.3	290.14
14	13.7	290.27	15.1	290.46	11.4	290.45	10.6	290.45	6.6	290.25	4.7	290.13
15	16	290.37	16.5	290.46	10.9	290.45	10	290.45	6.4	290.24	4	290.13
16	12.1	290.26	15.7	290.45	10	290.45	10.2	290.44	6.2	290.23	3.6	290.13
17	13.7	290.26	15.1	290.45	9.8	290.45	10.6	290.44	6	290.22	3.5	290.13
18	12.1	290.26	15.5	290.45	10.8	290.44	10.1	290.44	5.9	290.21	4.3	290.13
19	14.6	290.28	15	290.44	10.7	290.44	9.5	290.43	5.8	290.20	4	290.12
20	12.1	290.32	15.1	290.44	9.8	290.42	10.1	290.42	5.8	290.20	4.6	290.12
21	14.6	290.34	16.5	290.44	9.8	290.42	10.3	290.42	5.8	290.20	3.6	290.12
22	16	290.37	15.7	290.43	10.1	290.41	10.1	290.42	5.8	290.20	4	290.12
23	17	290.39	15.5	290.43	10	290.40	9.8	290.41	5.3	290.18	3.1	290.11
24	12.8	290.40	15.1	290.42	10.1	290.40	9.8	290.41	4.8	290.18	3	290.11
25	13.2	290.40	14.4	290.42	9.8	290.40	9.8	290.41	5.3	290.18	3.6	290.11
26	12.8	290.40	14	290.42	8.4	290.39	9.6	290.40	4.9	290.17	4.3	290.11
27	13.2	290.39	14.1	290.41	10.1	290.39	9.6	290.40	4.8	290.17	4	290.11
28	13.2	290.38	13.7	290.40	9.8	290.39	9.6	290.40	4.3	290.16	3.1	290.11
29	13.5	290.38	12.5	290.40	9.9	290.39	9.4	290.39	4.8	290.16	3.6	290.10
30	12.8	290.37	8.9	290.39			9.4	290.39	4.7	290.16	3.6	290.10
31	13.2	290.37	8	290.39			9.2	290.38			3.5	290.10
Ten-Daily Mean												
I Ten-Daily	14.07	290.33	11.74	290.41	9.76	290.43	10.1	290.43	8.3	290.34	4.31	290.15
II Ten-Daily	13.52	290.3	15.77	290.45	10.52	290.45	10.36	290.44	6.37	290.24	4.18	290.13
III Ten-Daily	13.85	290.38	13.49	290.41	9.78	290.4	9.69	290.4	5.05	290.18	3.58	290.11
Monthly												
Min.	11.5	290.26	7.6	290.36	7	290.38	9.1	290.38	4.3	290.16	3	290.1
Max.	17	290.4	17.7	290.47	11.4	290.47	12.4	290.46	9.2	290.38	4.8	290.16
Mean	13.81	290.34	13.66	290.42	10.03	290.43	10.04	290.42	6.57	290.25	4.01	290.13

Peak Computed Discharge = 95 cumecs on 08/09/2019 Corres. Water Level 292.500 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

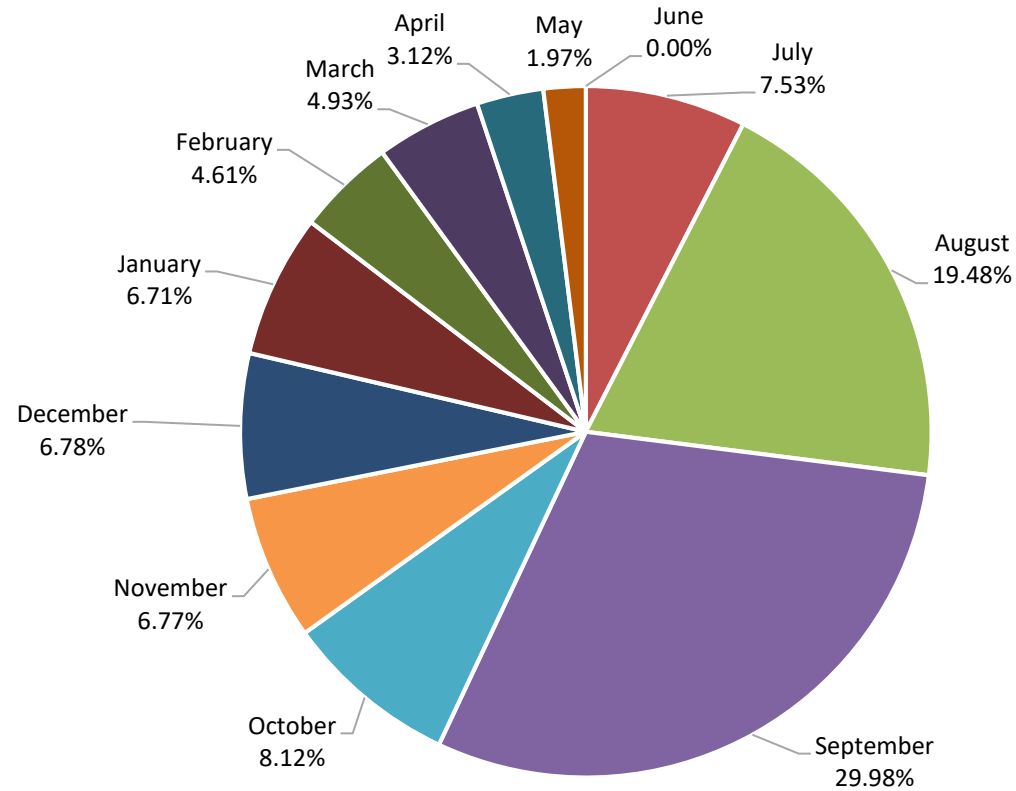
Station Name: Indra at Khapariya

Division: Narmada Division, Bhopal

Local River: Indra

Sub-Division: MNSD-I, CWC Hoshangabad

Monthly Average Runoff Water Year: 2019-2020.



■ June ■ July ■ August ■ September ■ October ■ November ■ December ■ January ■ February ■ March ■ April ■ May

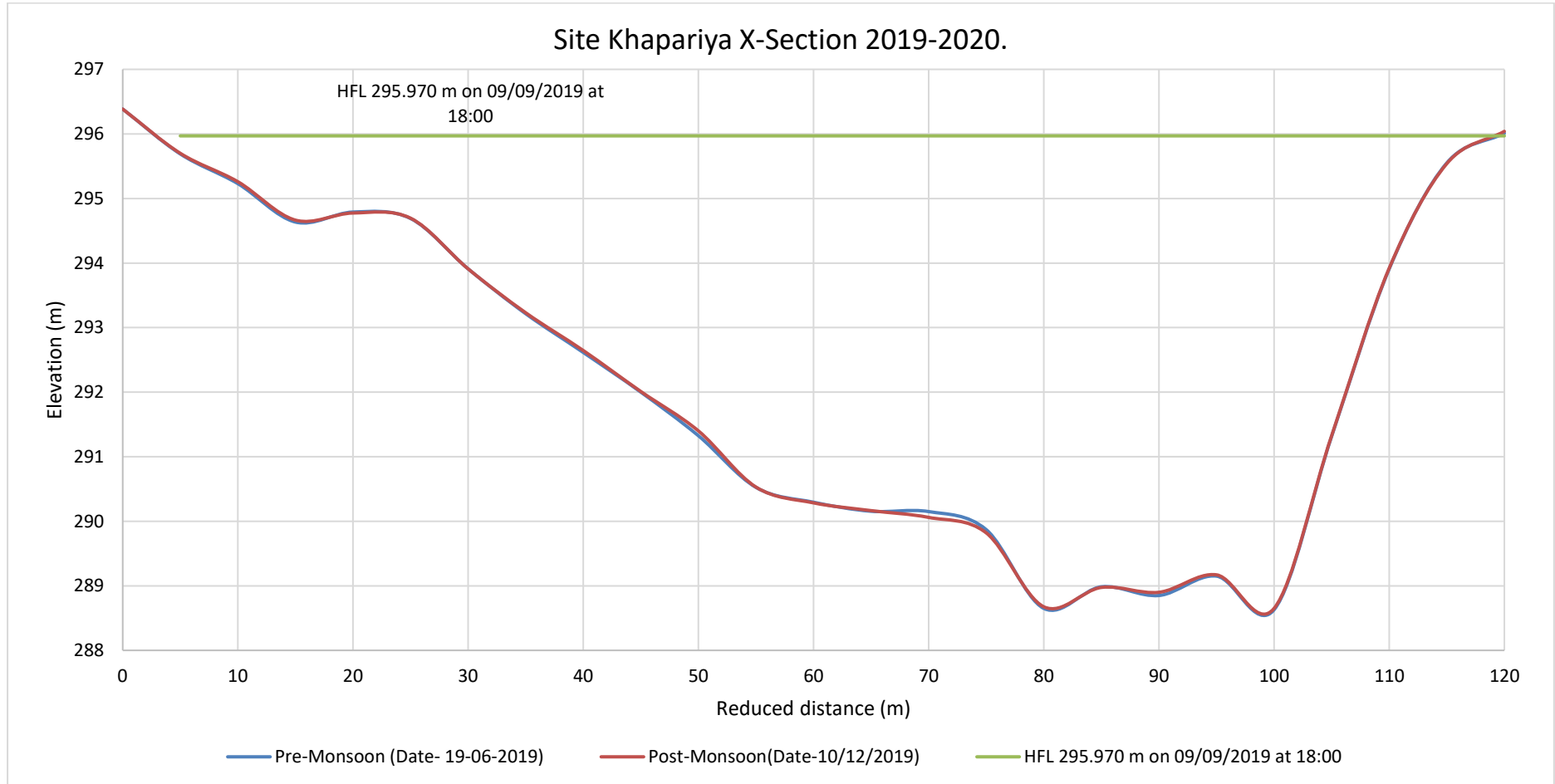
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Indra at Khapariya

Division: Narmada Division, Bhopal

Local River: Indra

Sub-Division: MNSD-I, CWC Hoshangabad



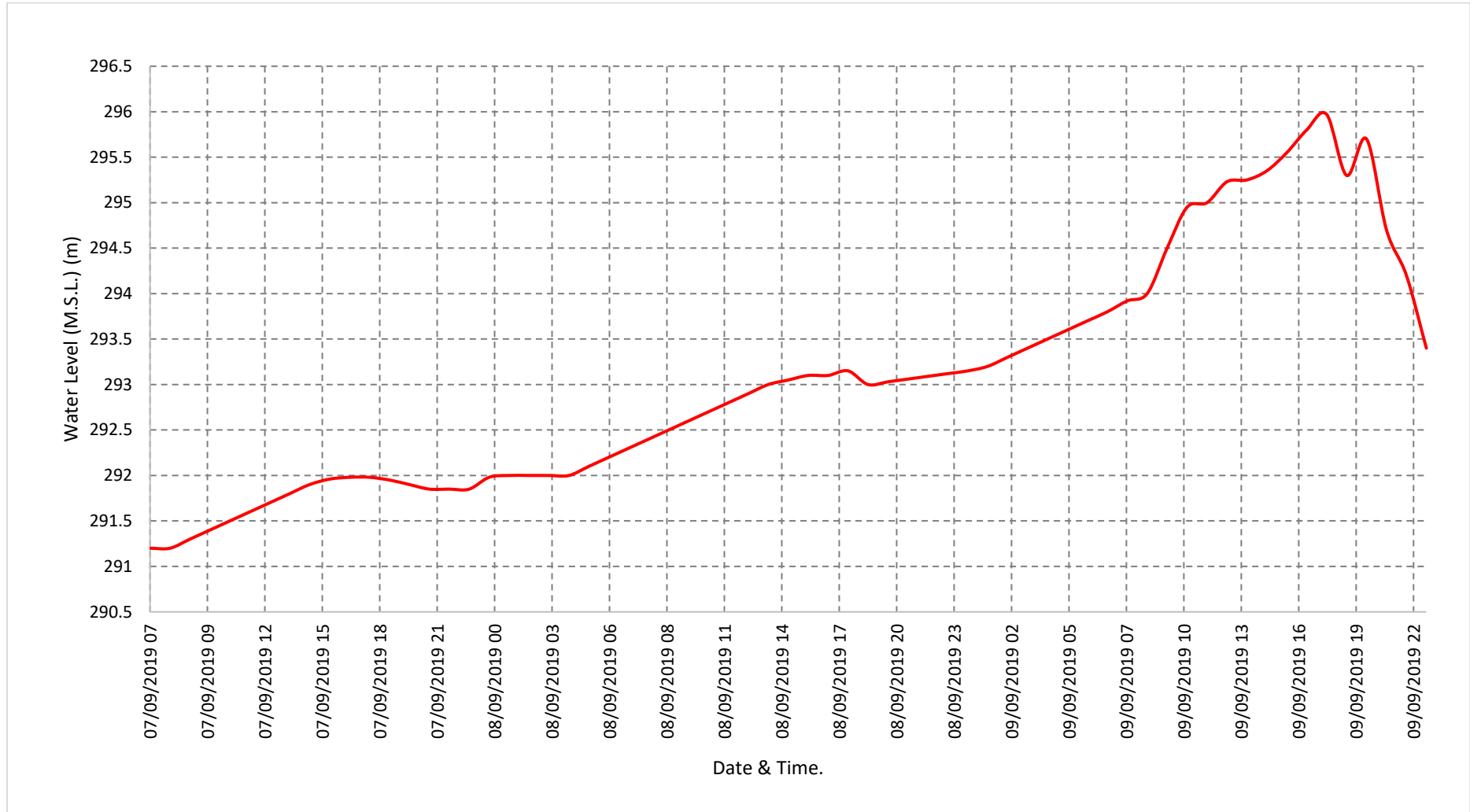
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Indra at Khapariya

Division: Narmada Division, Bhopal

Local River: Indra

Sub-Division: MNSD-I, CWC Hoshangabad



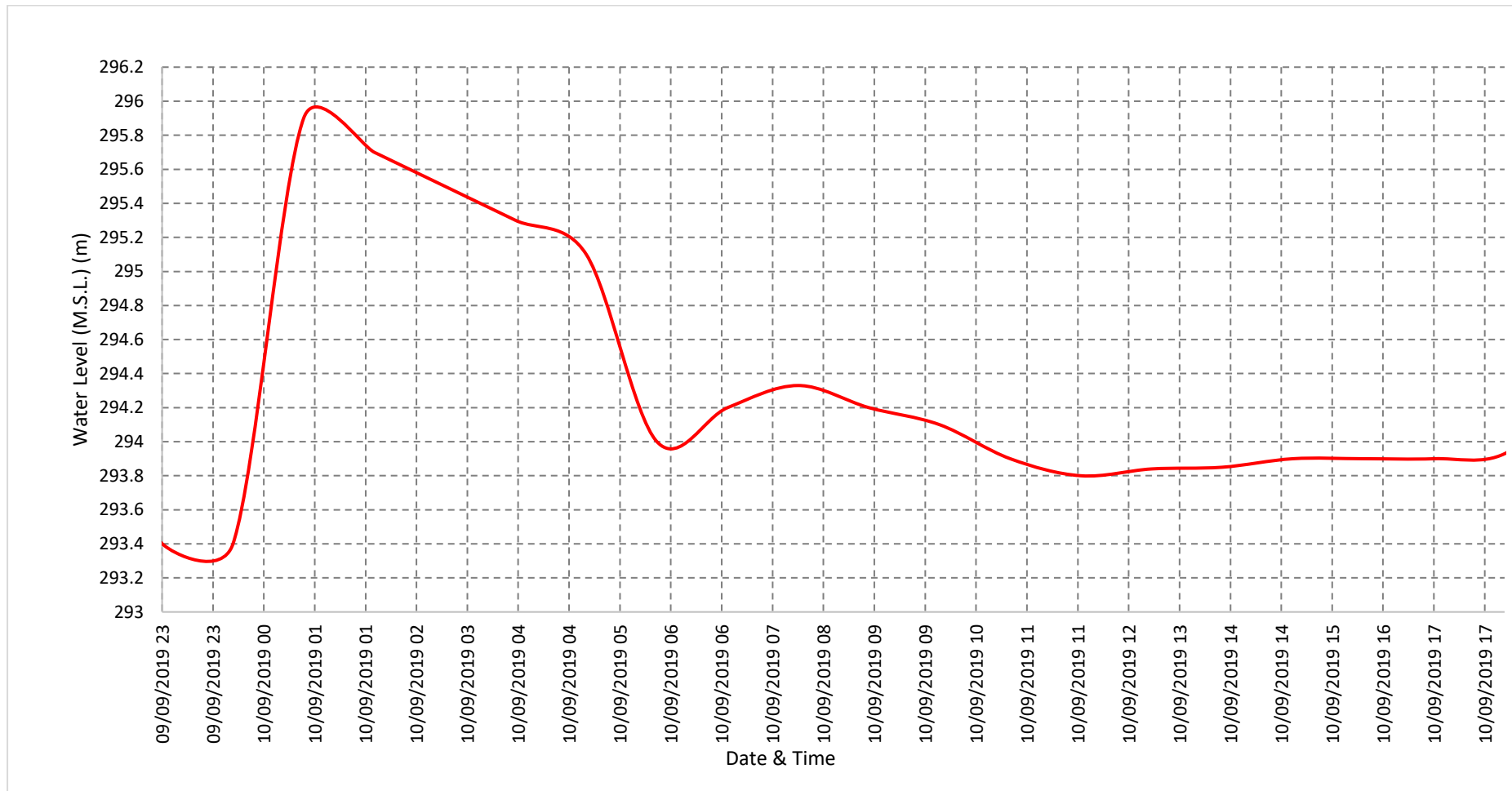
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Indra at Khapariya

Division: Narmada Division, Bhopal

Local River: Indra

Sub-Division: MNSD-I, CWC Hoshangabad



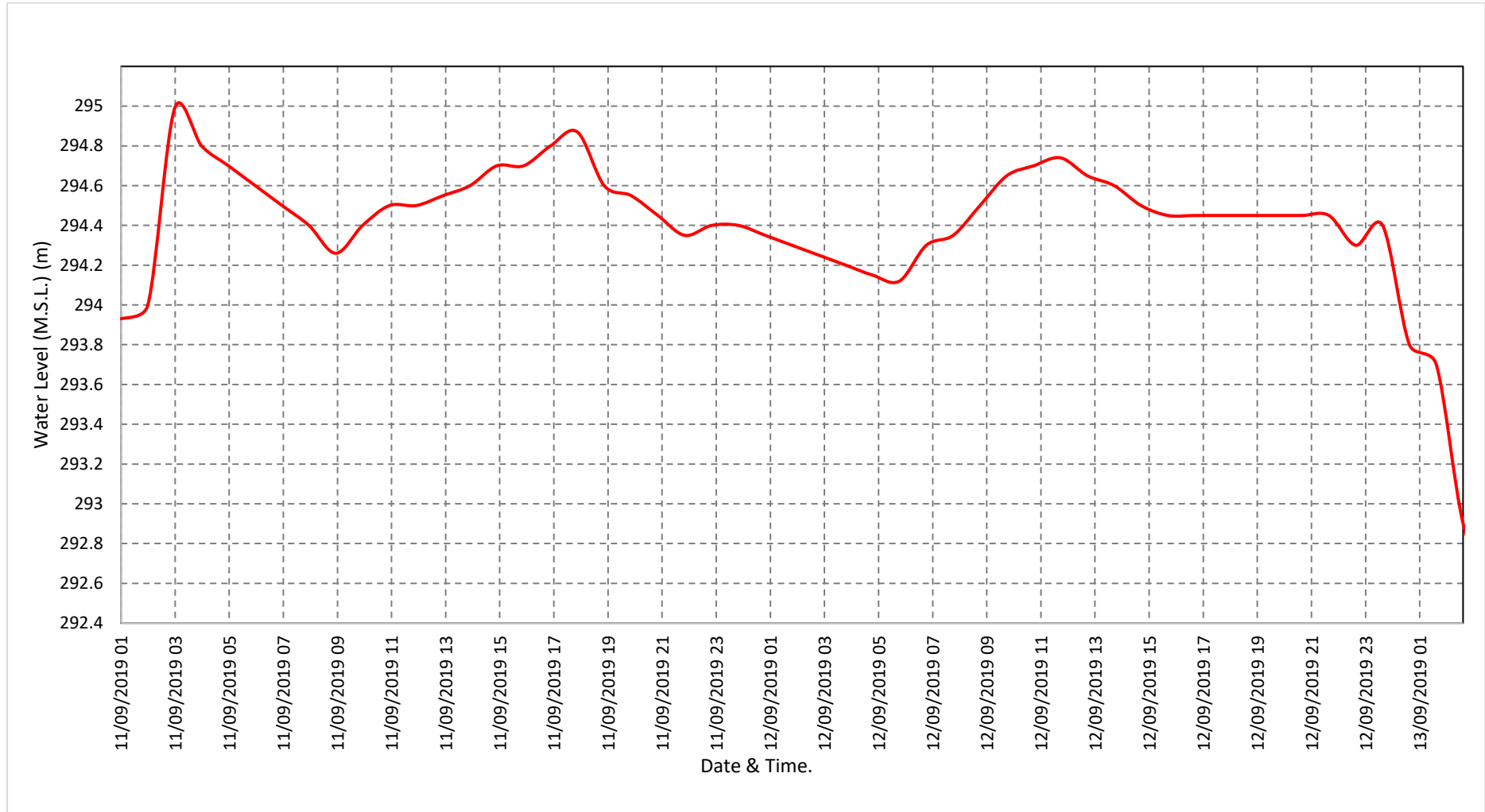
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Indra at Khapariya

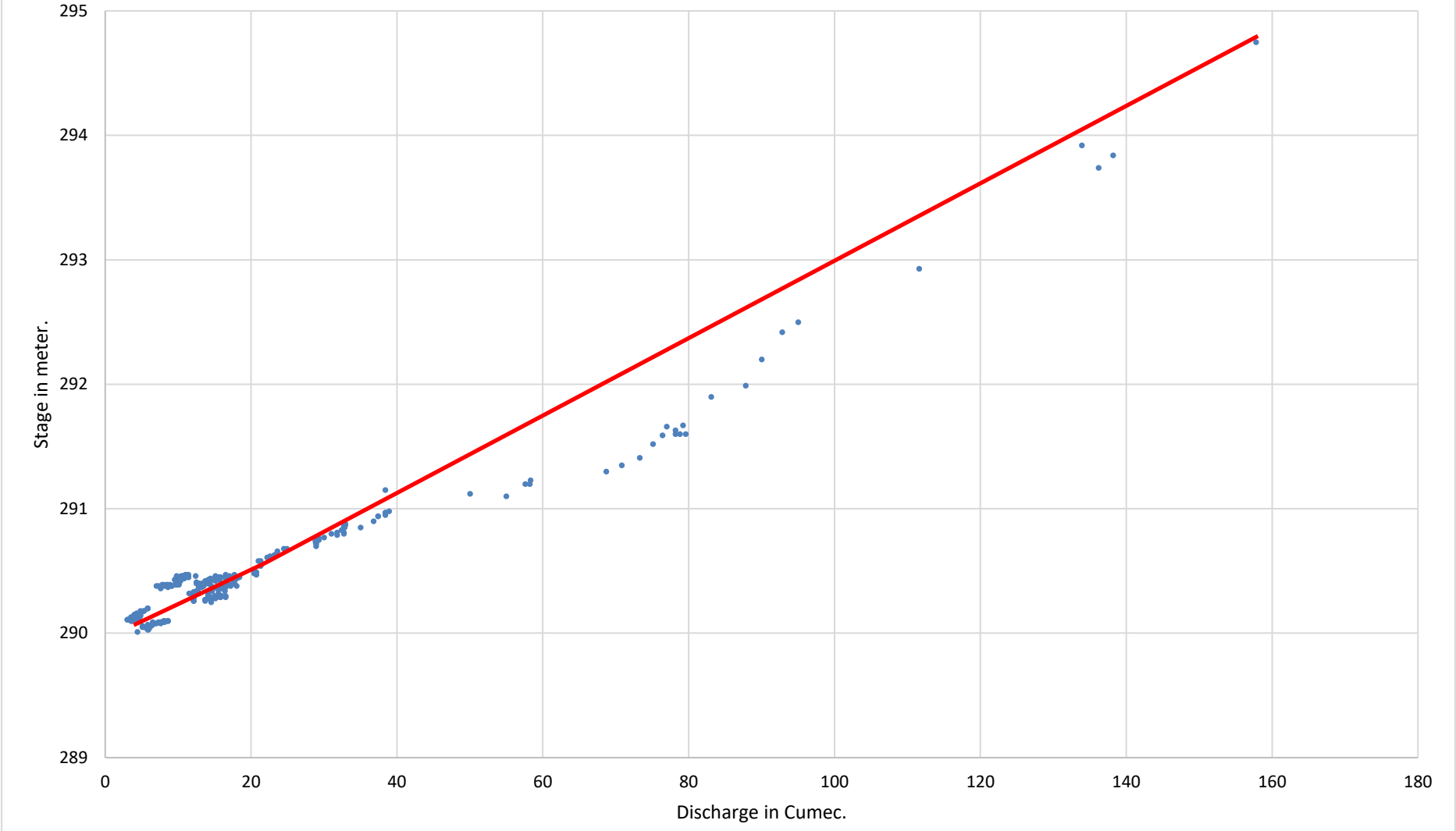
Division: Narmada Division, Bhopal

Local River: Indra

Sub-Division: MNSD-I, CWC Hoshangabad



Site Khapariya Stage-Discharge Curve 2019-2020.



4.29 Tenduni at Maheshwar.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 – 2020
Site	:	Tenduni at Maheshwar		Code	:	CW1NAU001470
State	:	Madhya Pradesh		District	:	SEHORE
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Tenduni
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	1331.0 Sq. Km.		Bank	:	Right
Latitude	:	22°58'45"		Longitude	:	78°19'15"
Current Zero of Gauge (m)	:	1331				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
302		19/11/2016		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	602.335	315.055	09-08-2019	0	-	01-06-2019

Stage Discharge Sheet for Tenduni at Maheshwar for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	3.55	303.70	86.815	306.15	70.315	305.96	23.44	304.25	7.55	304.01
2	#	#	3.52	303.72	108.355	306.55	39.125	305.20	29.1	304.88	7.5	304.00
3	#	#	3.59	303.76	127.915	307.16	262.515	309.45	26.4	304.79	7.4	303.98
4	#	#	40.87	305.25	25.60	304.75	58.555	305.70	24.8	304.76	7.45	303.97
5	#	#	45.87	305.25	26.60	304.75	383.035	311.40	25.4	304.74	7.4	303.96
6	#	#	7.30	303.67	7.60	303.95	200.555	308.35	28.6	304.65	7.45	303.95
7	#	#	11.87	304.10	80.87	306.05	141.155	307.20	18.6	304.65	7.55	303.94
8	#	#	35.875	305.25	116.95	306.75	205.115	308.36	15.4	304.60	7.35	303.94
9	#	#	40.875	305.25	602.33	315.05	524.635	313.96	15.7	304.55	7.33	303.94
10	#	#	9.22	304.00	173.43	307.95	491.035	313.20	14.1	304.50	7.32	303.94
11	#	#	9.39	304.01	14.55	304.56	359.035	311.00	23.6	304.40	7.35	303.94
12	#	#	3.15	303.72	32.85	305.10	275.515	309.60	24.6	304.35	7.25	303.94
13	#	#	2.87	303.65	24.6	304.70	515.035	313.40	20.4	304.29	7.3	303.94
14	#	#	2.55	303.56	44.865	305.35	286.515	309.60	21	304.27	7.32	303.94
15	#	#	5.6	303.57	178.435	307.95	271.235	309.72	22.31	304.23	7.15	303.94
16	#	#	2.31	303.55	73.835	305.95	77.235	306.00	19	304.20	7.02	303.92
17	#	#	1.71	303.55	31.95	304.97	69.635	306.05	20.18	304.19	7.00	303.92
18	#	#	1.22	303.54	14.00	303.51	100.615	306.55	17.26	304.15	6.92	303.92
19	#	#	1.24	303.53	45.815	305.38	75.155	306.20	16.51	304.14	6.98	303.92
20	#	#	1.06	303.52	36.15	305.11	47.515	305.53	14.25	304.13	6.90	303.92
21	#	#	1.00	303.51	108.155	306.70	58.655	305.75	13.59	304.12	6.80	303.92
22	#	#	0.86	303.51	57.355	305.60	42.425	305.18	12.81	304.11	6.70	303.90
23	#	#	0.70	303.49	61.605	305.72	62.755	305.80	12.2	304.10	6.85	303.90
24	#	#	1.25	304.43	52.475	305.45	92.355	306.55	11.67	304.09	6.90	303.90
25	#	#	0.68	303.47	71.995	306.12	68.875	305.93	11.42	304.08	6.95	303.90
26	#	#	0.88	303.78	65.835	305.95	51.515	305.53	11.28	304.07	6.65	303.90
27	#	#	4.51	303.85	82.675	306.21	34.775	305.19	11.55	304.06	6.60	303.88
28	#	#	4.00	303.90	38.7	305.10	29.5	304.96	12.12	304.05	6.75	303.88
29	#	#	3.33	303.75	31.7	304.90	56.875	305.66	9.02	304.04	6.30	303.88
30	#	#	5.38	303.90	52.465	305.55	63.595	305.82	7.78	304.03	6.19	303.88
31			2.55	303.56	51.355	305.60			7.55	304.02		
Ten-Daily Mean												
I Ten-Daily	0	0	20.25	304.4	135.65	306.91	237.6	308.88	22.15	304.64	7.43	303.96
II Ten-Daily	0	0	3.11	303.62	49.7	305.26	207.75	308.37	19.91	304.24	7.12	303.93
III Ten-Daily	0	0	2.29	303.74	61.3	305.72	56.13	305.64	11	304.07	6.67	303.89
Monthly												
Min.	0	0	0.68	303.475	7.6	303.51	29.5	304.96	7.55	304.02	6.19	303.88
Max.	0	0	45.875	305.25	602.335	315.055	524.635	313.96	29.1	304.88	7.55	304.01
Mean	0	0	8.35	303.91	81.54	305.96	167.16	307.63	17.47	304.31	7.07	303.93

Annual Runoff in MCM :858.06

Annual Runoff in mm :644.7

Peak Observed Discharge = 602.335 cumecs on 9/8/2019 Corres. Water Level 315.055 m

Lowest Observed Discharge = 0 cumecs on 1/6/2019

Note-"#" - Dry

Stage Discharge Sheet for Tenduni at Maheshwar for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	7.35	303.85	23.4	304.64	8.1	304.00	4.5	303.65	5.4	303.63	6.4	303.60
2	7.55	303.86	23.2	304.63	7.5	303.95	4.3	303.65	5.0	303.62	5.8	303.60
3	7.50	303.86	19	304.62	6.9	303.81	4.7	303.65	5.0	303.62	6.0	303.60
4	7.45	303.85	12.1	304.61	6.2	303.78	4.3	303.65	5.0	303.62	7.2	303.60
5	7.40	303.85	12.12	304.61	7.0	303.71	4.7	303.65	5.0	303.62	4.3	303.58
6	7.45	303.85	16.1	304.61	4.7	303.70	5.8	303.65	5.0	303.62	6.4	303.58
7	7.55	303.84	15.5	304.60	7.7	303.70	6.0	303.64	5.0	303.62	6.5	303.58
8	7.45	303.84	9.5	304.60	7.0	303.69	6.5	303.64	5.0	303.62	6.9	303.58
9	7.35	303.84	11.7	304.58	6.5	303.69	7.0	303.64	5.0	303.62	6.5	303.58
10	7.33	303.84	14.6	304.58	5.0	303.69	4.5	303.64	5.0	303.62	6.0	303.68
11	7.35	303.82	15	304.58	5.2	303.69	6.4	303.64	5.0	303.62	5.7	303.58
12	7.25	303.82	12.35	304.55	7.0	303.69	4.3	303.64	5.0	303.62	6.4	303.57
13	7.30	303.82	9.6	304.50	5.0	303.68	7.0	303.64	5.0	303.62	6.9	303.57
14	7.32	303.80	14.7	304.50	5.0	303.68	7.3	303.64	5.0	303.62	6.4	303.57
15	7.22	303.80	13.7	304.50	5.2	303.68	6.8	303.64	5.0	303.62	6.0	303.57
16	7.15	303.80	8.5	304.48	6.3	303.67	6.3	303.64	5.0	303.62	4.3	303.57
17	7.02	303.70	13.7	304.48	7.0	303.67	7.0	303.64	5.0	303.62	5.2	303.57
18	6.92	303.70	17.7	304.45	7.0	303.67	6.3	303.64	5.0	303.62	7.2	303.57
19	6.98	303.70	23.6	304.40	5.8	303.67	7.0	303.64	5.0	303.62	6.0	303.56
20	6.90	303.60	26.6	304.40	7.2	303.67	6.9	303.64	8.1	303.62	6.0	303.56
21	6.80	303.60	20.6	304.40	6.3	303.66	4.3	303.64	6.9	303.62	7.2	303.56
22	6.75	303.60	9.6	304.40	6.2	303.66	5.5	303.64	5.7	303.62	5.2	303.56
23	6.70	303.60	20.6	304.35	6.5	303.65	6.3	303.64	6.5	303.62	6.0	303.56
24	0.80	303.50	21.6	304.30	7.0	303.65	5.4	303.63	6.9	303.62	5.5	303.56
25	0.80	303.50	22.2	304.28	6.4	303.65	5.4	303.63	7.2	303.62	2.31	303.55
26	0.80	303.50	23.64	304.26	6.7	303.65	5.4	303.63	6.8	303.62	2.31	303.55
27	0.80	303.50	22.51	304.24	6.0	303.65	5.4	303.63	6.3	303.62	2.31	303.55
28	0.47	303.40	19	304.20	5.7	303.65	5.4	303.63	6.2	303.62	2.31	303.55
29	0.45	303.40	17.26	304.15	6.5	303.65	5.4	303.63	6.9	303.62	2.31	303.55
30	0.43	303.40	9.6	304.10			5.4	303.63	8.1	303.62	2.31	303.55
31	0.412	303.40	12.5	304.05			5.4	303.63			0.8	303.50
Ten-Daily Mean												
I Ten-Daily	7.44	303.85	15.72	304.61	6.66	303.77	5.23	303.65	5.04	303.62	6.2	303.6
II Ten-Daily	7.14	303.76	15.55	304.48	6.07	303.68	6.53	303.64	5.31	303.62	6.01	303.57
III Ten-Daily	2.29	303.49	18.1	304.25	6.37	303.65	5.39	303.63	6.75	303.62	3.51	303.55
Monthly												
Min.	0.412	303.4	8.5	304.05	4.7	303.65	4.3	303.63	5	303.62	0.8	303.5
Max.	7.55	303.86	26.6	304.64	8.1	304	7.3	303.65	8.1	303.63	7.2	303.68
Mean	5.52	303.69	16.51	304.44	6.37	303.7	5.71	303.64	5.7	303.62	5.18	303.57

Peak Computed Discharge = 271.235 cumecs on 15/09/2019 Corres. Water Level 309.720 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

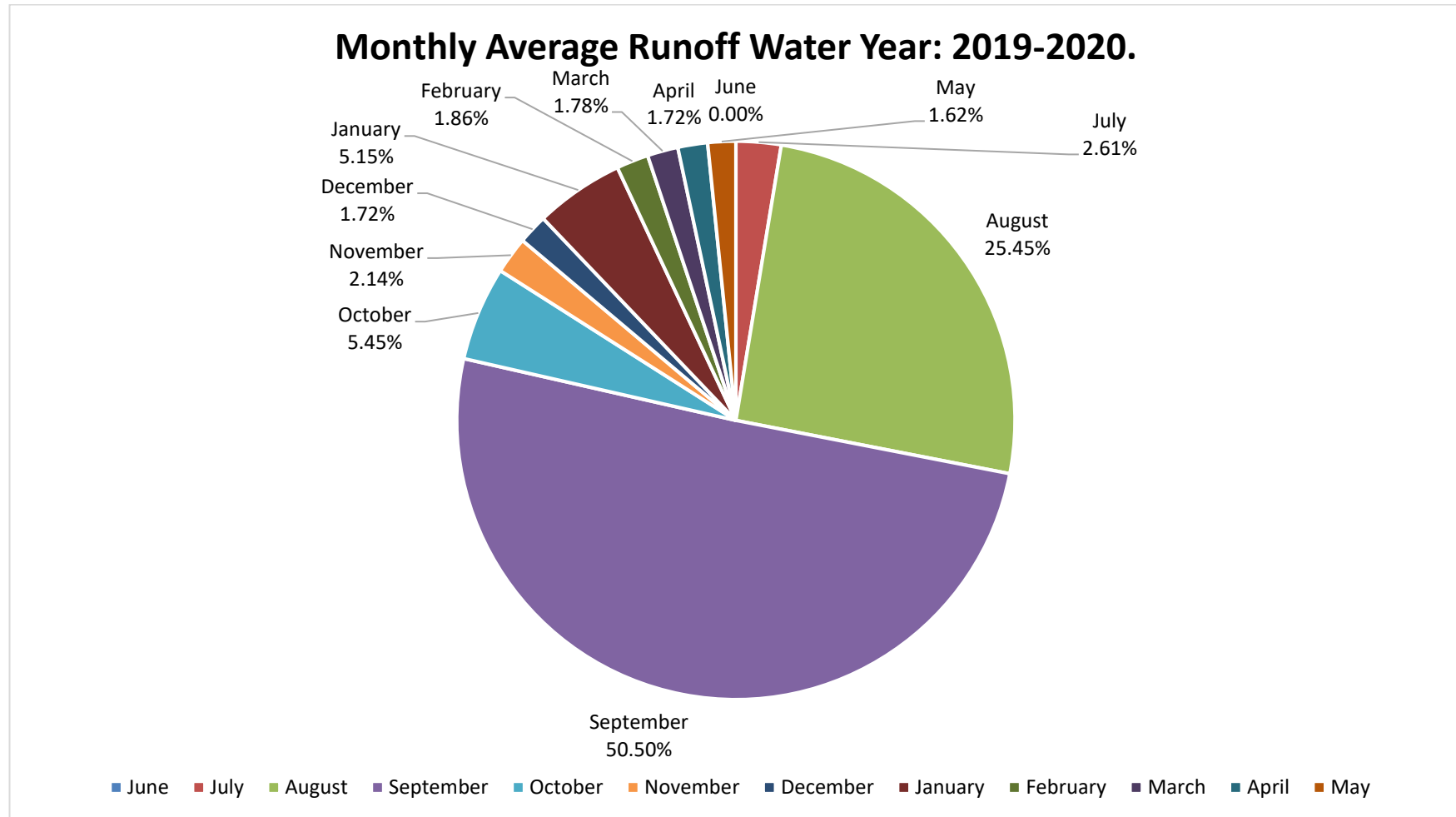
Monthly Runoff for the Year (2019-2020)

Station Name: Tenduni at Maheshwar

Division: Narmada Division, Bhopal

Local River: Tenduni

Sub-Division: MNSD-I, CWC Hoshangabad



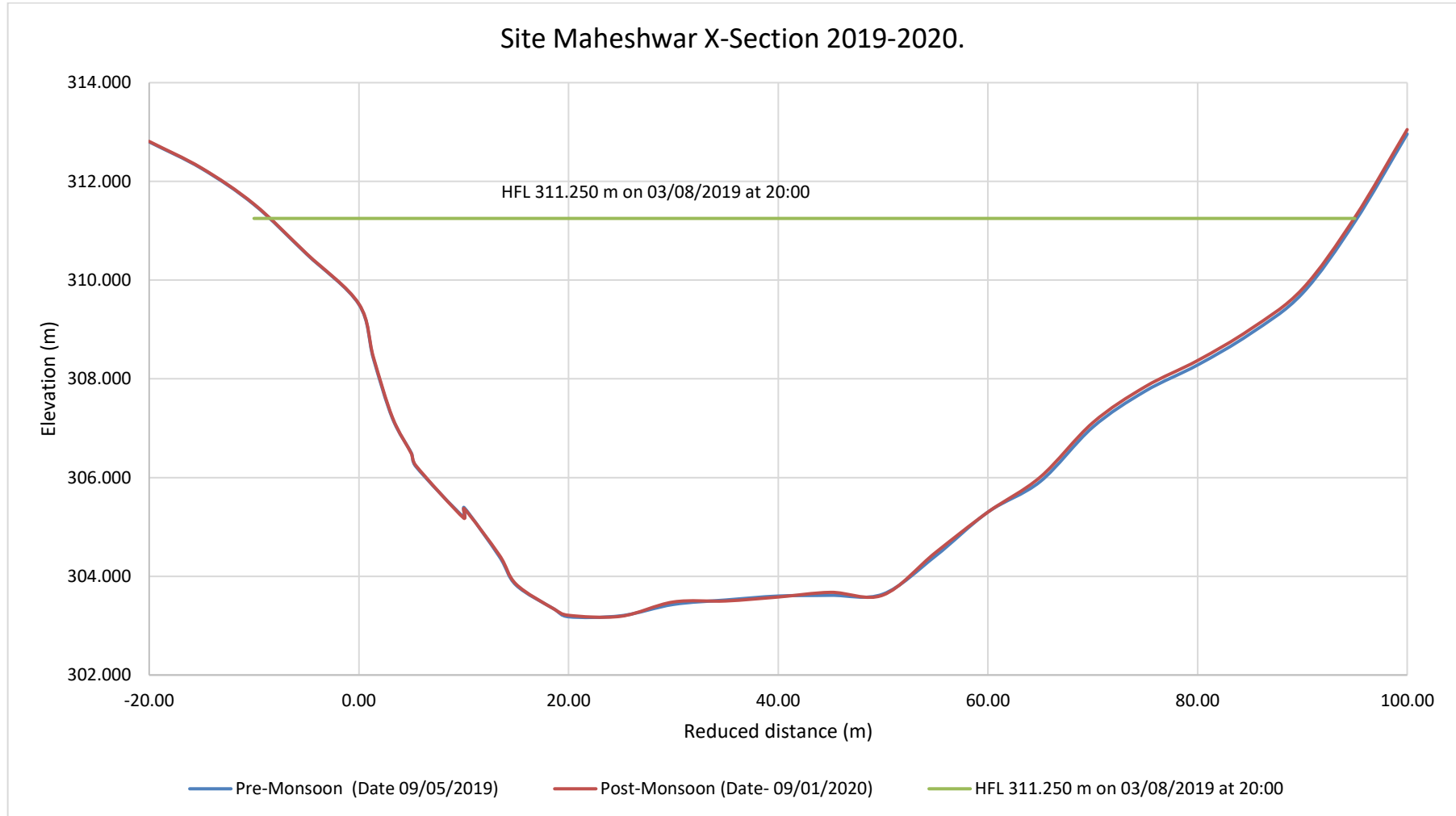
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Tenduni at Maheshwar

Division: Narmada Division, Bhopal

Local River: Tenduni

Sub-Division: MNSD-I, CWC Hoshangabad



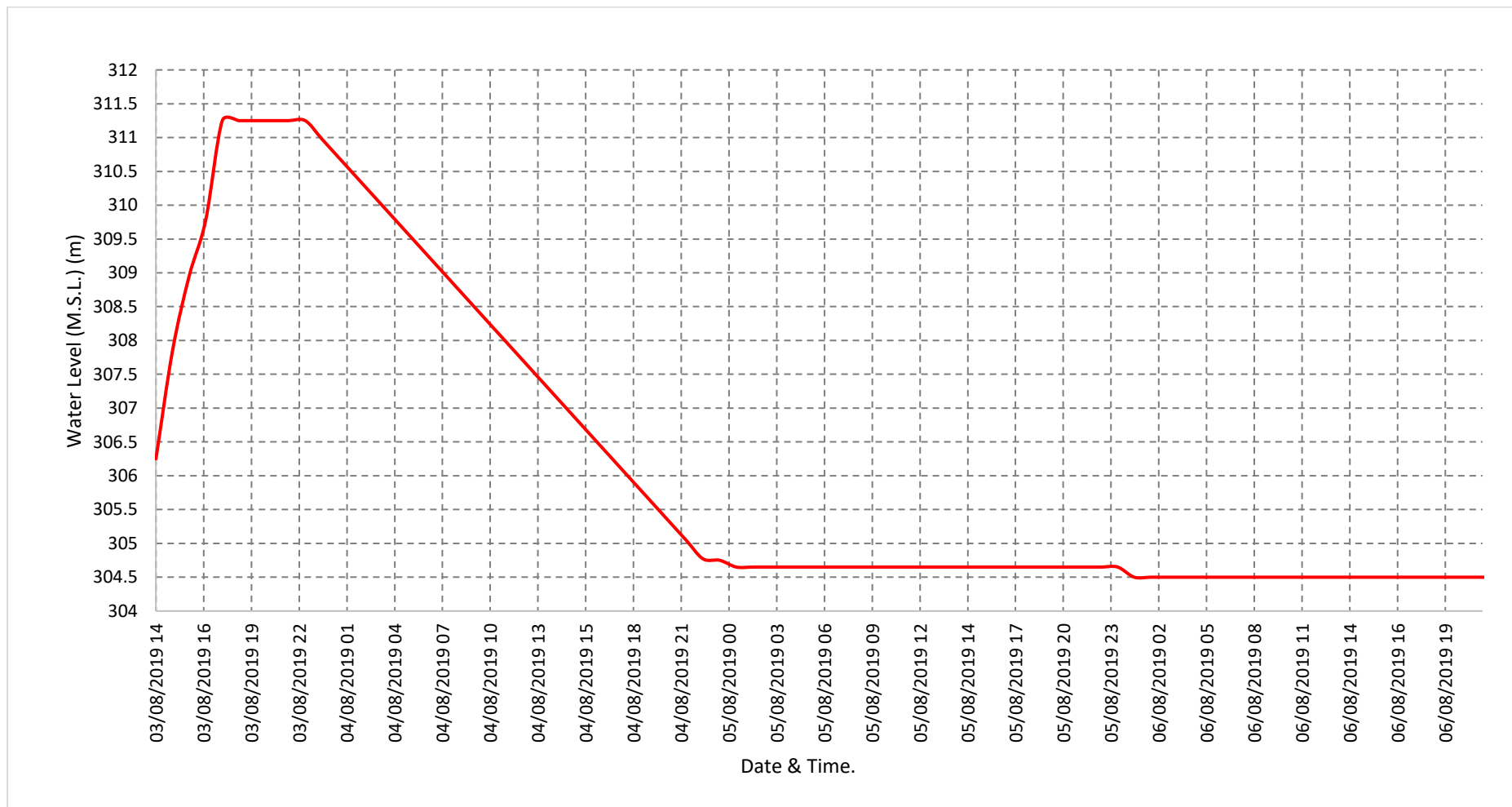
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Tenduni at Maheshwar

Division: Narmada Division, Bhopal

Local River: Tenduni

Sub-Division: MNSD-I, CWC Hoshangabad



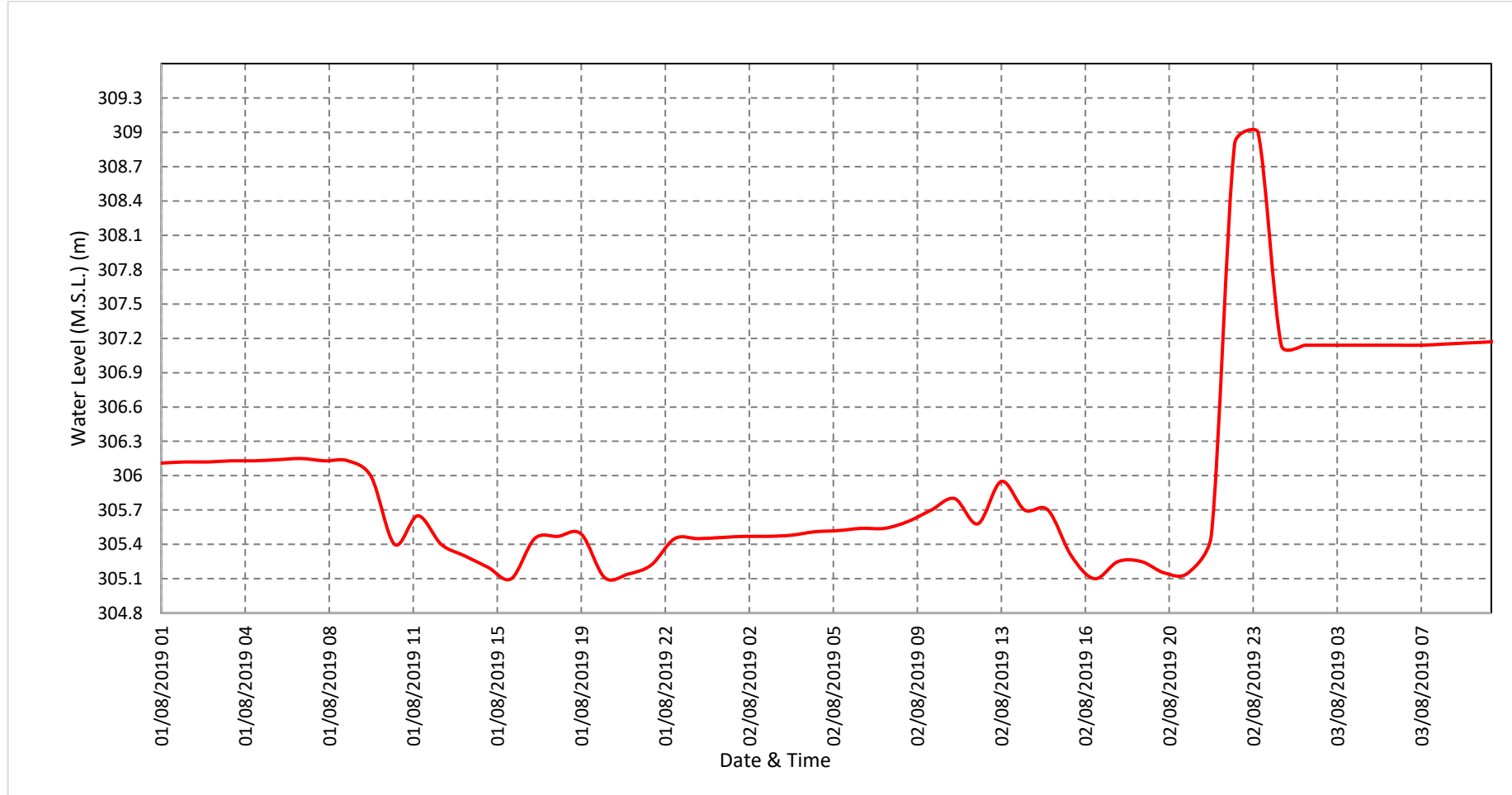
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Tenduni at Maheshwar

Division: Narmada Division, Bhopal

Local River: Tenduni

Sub-Division: MNSD-I, CWC Hoshangabad



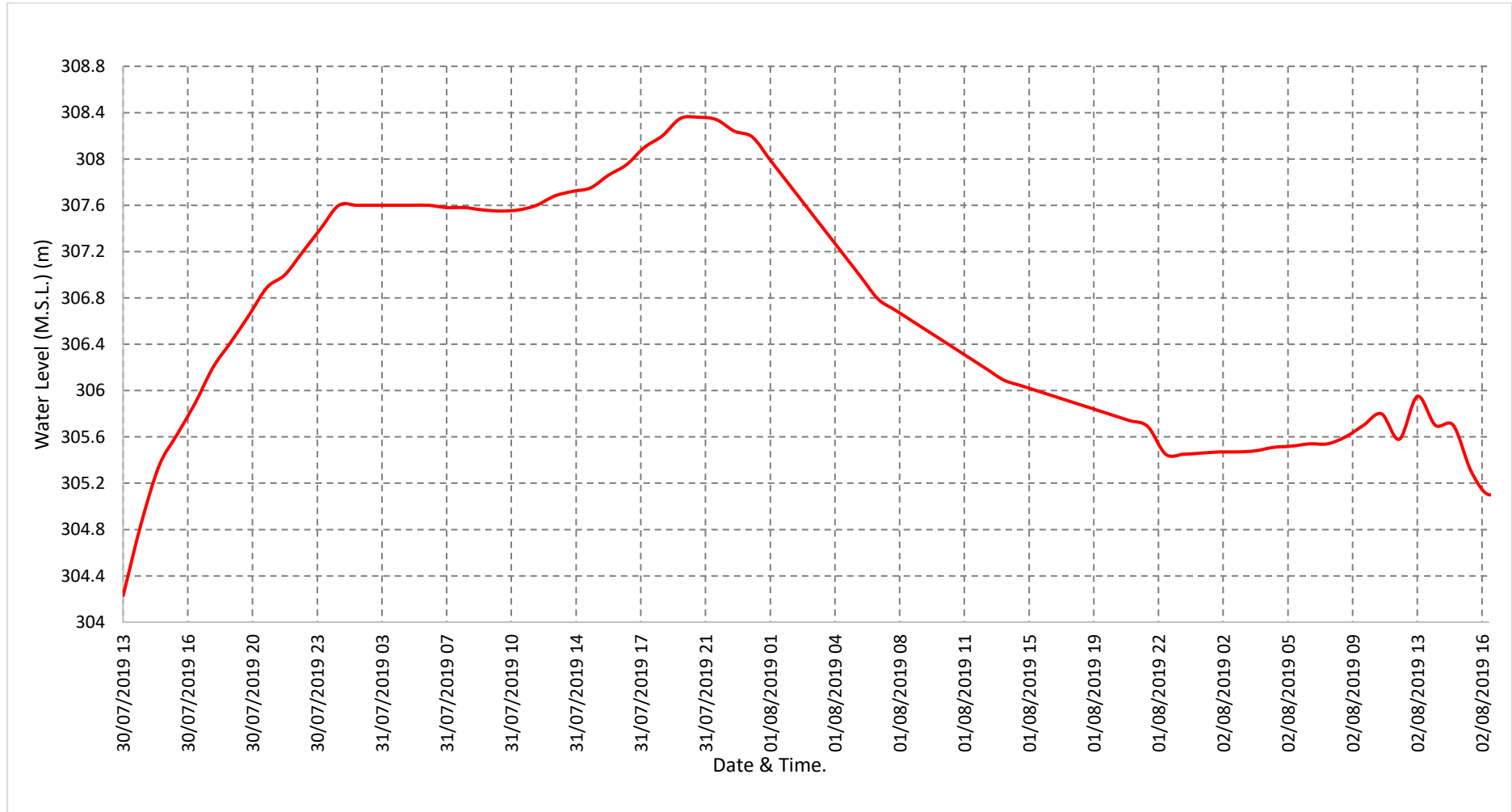
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Tenduni at Maheshwar

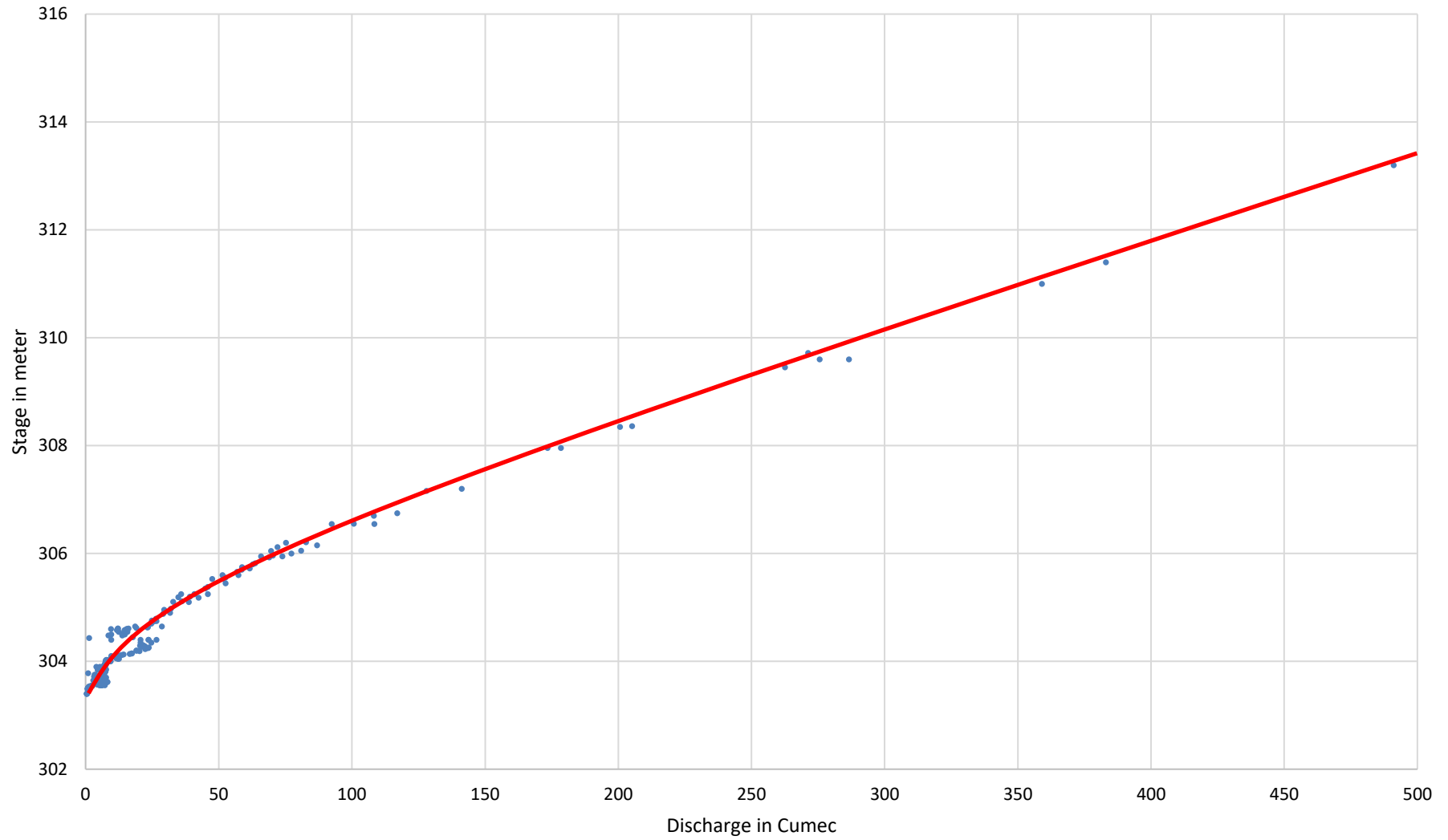
Division: Narmada Division, Bhopal

Local River: Tenduni

Sub-Division: MNSD-I, CWC Hoshangabad



Site Maheshwar Stage-Discharge Curve 2019-2020.



Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1977-1978	38.9	299.665	26/04/1978	0	299.845	01/04/1978
1978-1979	8760	311.270	16/08/1978	0	300.715	31/10/1978
1979-1980	5643.9	307.250	11/08/1979	8.7	299.410	19/05/1980
1980-1981	16400	314.900	30/08/1980	10.6	299.420	04/06/1980
1981-1982	3850	306.120	16/08/1981	3	299.500	06/03/1982
1982-1983	6561	308.180	20/08/1982	4.5	299.280	08/07/1982
1983-1984	14500	314.250	09/09/1983	14	299.340	27/05/1984
1984-1985	16500	314.730	19/08/1984	12.6	299.200	03/05/1985
1985-1986	7600	310.850	09/08/1985	15.5	299.250	06/06/1985
1986-1987	5350	310.190	23/07/1986	16.3	299.075	25/05/1987
1987-1988	12466	311.567	17/09/1987	11.54	298.985	31/05/1988
1988-1989	12600	311.575	05/08/1988	9.29	298.965	09/05/1989
1989-1990	6600	307.725	07/08/1989	11	298.940	04/06/1989
1990-1991	7300	308.530	22/09/1990	21.4	299.480	15/06/1990
1991-1992	19700	314.140	25/08/1991	58.89	299.220	08/05/1992
1992-1993	9600	310.060	13/09/1992	44.91	299.210	10/07/1992
1993-1994	7300	308.500	16/07/1993	32.13	299.140	08/06/1993
1994-1995	17275	314.000	22/07/1994	87.67	299.570	09/06/1994
1995-1996	10040	310.030	11/08/1995	36	298.900	19/05/1996
1996-1997	2210	303.930	27/07/1996	37.94	299.100	08/04/1997
1997-1998	6900	308.600	25/07/1997	33.68	299.090	11/06/1997
1998-1999	4550	305.620	16/09/1998	28.01	299.210	31/05/1999
1999-2000	24500	316.890	19/09/1999	21.5	299.110	06/06/1999
2000-2001	5390	307.400	29/07/2000	38	299.330	21/01/2001
2001-2002	5360	307.660	15/07/2001	52.27	299.570	01/06/2001
2002-2003	11120	311.420	19/08/2002	45	299.300	18/04/2003
2003-2004	9440	309.670	15/09/2003	55	299.350	08/06/2003
2004-2005	10600	311.000	23/08/2004	71.02	299.400	16/05/2005
2005-2006	10854.85	311.020	06/07/2005	22.57	299.250	23/06/2005
2006-2007	8846.9	309.980	14/08/2006	14.14	299.280	25/06/2006
2007-2008	4110.91	306.100	08/07/2007	34.29	299.520	07/04/2008
2008-2009	5499.45	307.570	02/08/2008	51.46	299.660	21/01/2009
2009-2010	25288.18	314.100	10/09/2009	47.75	299.380	04/04/2010

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2010-2011	2142.24	304.210	21/09/2010	67.92	299.240	04/05/2011
2011-2012	8982.61	309.820	09/09/2011	33.35	299.110	28/05/2012
2012-2013	7421.63	308.425	07/08/2012	29.29	299.110	09/06/2012
2013-2014	16259.29	314.050	23/08/2013	65.45	299.300	15/05/2014
2014-2015	4602.13	306.910	08/08/2014	75.02	299.325	18/06/2014
2015-2016	2982.3	305.320	05/08/2015	40.26	299.250	03/03/2016
2016-2017	6517.6	307.580	09/08/2016	57	299.290	12/06/2016
2017-2018	1625.4	303.000	21/07/2017	30	299.040	29/03/2018
2018-2019	4249	306.410	01/09/2018	28	299.100	29/03/2019
2019-2020	13200	312.650	10/09/2019	28	298.810	05/06/2019

Stage Discharge Sheet for Narmada at Sandia for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	33.5	299.120	47.2	299.430	1850	303.800	1690	303.030	4970	307.000	667.3	300.100
2	52	299.290	103.7	299.590	980	301.980	2320	303.160	2790	305.060	678	300.700
3	38.1	299.050	226.4	300.350	580	301.170	2398.7	303.360	2391.9	303.860	660	300.680
4	29	298.810	523.5	301.020	1120	302.600	2411.8	303.460	2152.6	302.860	642	300.580
5	28	298.810	421.3	300.900	710	301.600	4050	306.370	1815.3	302.000	628	300.510
6	35.1	298.790	920	302.000	567.2	301.390	3890	306.330	1550	302.160	621	300.490
7	33.6	298.760	540	301.200	722.6	301.390	3570	306.040	1239.3	301.300	615	300.480
8	32	298.720	413.5	300.880	1095.1	302.360	2483	304.900	1290	301.680	610	300.470
9	33	298.750	569.7	301.300	4240	306.570	9200	309.950	1057.2	301.060	500	299.910
10	37.3	298.800	354	300.520	3060	305.650	13200	312.650	1002.7	300.980	499	299.830
11	43.5	298.820	208.7	300.360	3020	305.540	8750	309.650	1022.4	300.980	494	299.800
12	49.3	298.870	205	300.340	2130	303.900	5420	307.340	998.1	300.970	493	299.800
13	51.3	298.890	188.7	300.230	1152.8	301.900	8600	309.640	900	301.480	570	300.350
14	52.5	298.900	167	300.120	1109.5	301.900	9680	310.300	840	300.600	580	300.420
15	55.8	298.920	131.6	300.110	2180	303.900	5780	307.700	830	300.170	578	300.420
16	49	298.870	118.5	300.010	6600	308.800	2419.6	303.420	745.9	300.400	575	300.410
17	38.1	298.830	114.1	300.010	5100	306.670	2280.9	302.820	737.3	300.290	570	300.400
18	38.4	298.770	117.6	300.010	2110	304.000	2466.5	303.900	727	300.250	568	300.400
19	41.9	299.070	150.8	300.130	1047.4	301.870	2580.8	304.330	717.7	300.240	562	300.110
20	55.9	299.320	157.2	300.170	1010.7	301.800	2373.3	304.400	700	300.900	560	300.100
21	57.9	299.350	125	300.090	1260	302.590	1951.1	302.550	712.6	300.240	550	300.080
22	57.1	299.340	152.8	300.030	2141	304.070	1790	302.680	702.7	300.230	552	300.070
23	49	299.300	142.5	299.970	2463.7	304.900	1767.4	302.480	698.4	300.210	550	300.060
24	43.2	299.210	120.7	299.750	2150	304.100	1751.9	302.480	694.3	300.200	548	300.050
25	55	299.330	114.3	299.730	2370	304.710	1887.9	302.600	690.4	300.200	327.3	299.070
26	54.7	299.330	107.4	299.680	3550	306.050	1843.7	302.580	689.7	300.180	311.8	299.550
27	51.7	299.300	123.2	299.750	5650	307.700	2150	303.430	720	300.760	310.8	299.500
28	49.8	299.330	190	300.400	4470	306.490	2524.9	304.450	673.7	300.140	300	299.500
29	43	299.240	210.2	300.330	2500	304.920	2500	304.350	678.8	300.140	301.1	299.490
30	41	299.390	680.2	301.500	2318.6	303.260	3780	306.450	679.3	300.140	226.6	299.400
31			1010	302.120	2207.6	302.940			679.4	300.140		
Ten-Daily Mean												
I Ten-Daily	35.16	298.890	411.93	300.720	1492.49	302.850	4521.35	305.920	2025.9	302.800	612.03	300.380
II Ten-Daily	47.57	298.930	155.92	300.150	2546.04	304.030	5035.11	306.350	821.84	300.630	555	300.220
III Ten-Daily	50.24	299.310	270.57	300.300	2825.54	304.700	2194.69	303.400	692.66	300.230	397.76	299.680
Monthly												
Min.	28	298.720	47.2	299.430	567.2	301.170	1690	302.480	673.7	300.140	226.6	299.070
Max.	57.9	299.390	1010	302.120	6600	308.800	13200	312.650	4970	307.000	678	300.700
Mean	44.32	299.040	279.47	300.390	2288.02	303.860	3917.05	305.230	1180.13	301.220	521.6	300.090

Annual Runoff in MCM : 23809.5

Annual Runoff in mm : 701.24

Peak Observed Discharge = 2580.8 cumecs on 19/9/2019 Corres. Water Level 304.33 m

Lowest Observed Discharge = 29 cumecs on 4/6/2019 Corres. Water Level 298.81 m

Stage Discharge Sheet for Narmada at Sandia for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	130	299.270	144.6	299.090	139	299.830	143	299.740	84	299.670	155	300.070
2	131	299.270	144.4	299.670	143	299.850	143.6	299.740	83	299.730	153	300.060
3	199.2	299.230	155	299.730	118	299.810	145	299.750	85	299.650	145	300.000
4	170	299.740	155	299.730	114	299.790	147	299.760	84	299.650	110	300.830
5	195	299.780	160	299.750	112	299.780	148	299.760	87	299.810	102.8	299.700
6	205	299.840	158	299.740	110	299.770	145	299.750	80	299.740	101	299.680
7	190	299.790	175	299.840	108	299.760	146	299.750	78	299.730	103	299.680
8	195	299.820	104.6	299.910	107	299.760	148	299.760	85	299.740	110	299.750
9	200.2	299.280	106.4	299.910	106	299.760	158	299.810	91	299.760	102	299.720
10	189.6	299.210	109	299.930	106.7	299.760	162	299.830	95	299.790	100	299.680
11	163.3	299.150	120	299.960	106	299.760	212	300.080	90	299.750	144	299.980
12	162.3	299.150	121	299.960	109	299.770	227	300.150	77	299.690	164	300.100
13	180	299.650	112	299.960	110	299.770	187	299.950	85	299.800	166	300.100
14	175	299.640	118	299.980	111	299.770	129	299.660	150	300.060	172	300.120
15	160	299.600	120	299.990	110	299.770	111	299.570	178	300.120	165	300.100
16	158	299.600	118	299.990	109	299.760	68	299.570	172	300.100	162	300.080
17	158	299.600	116	299.990	146.2	299.750	70	299.570	175	300.120	163	300.080
18	155	299.590	120	299.920	146	299.750	68.5	299.570	174	300.120	140.8	300.100
19	152	299.580	121	299.920	145	299.740	68	299.570	185	300.140	138	300.090
20	170	299.640	117	299.900	147	299.740	67	299.570	186	300.140	139	300.090
21	155	299.590	115	299.900	146	299.740	110	299.830	190	300.140	137	300.090
22	152	299.580	116.3	299.900	147.5	299.740	108	299.890	185	300.130	175	300.120
23	145	299.550	136.3	299.800	146	299.740	105.8	299.880	183	300.130	170	300.100
24	144	299.550	132	299.880	140.8	299.730	109	299.900	180	300.130	172	300.100
25	170	299.640	131	299.880	140	299.730	81	299.760	175	300.120	170	300.100
26	160	299.610	130	299.880	141	299.730	93	299.720	176	300.120	150	299.920
27	162	299.620	128	299.860	146	299.740	90	299.600	180	300.140	80	299.600
28	135	299.460	145.5	299.860	147	299.740	90	299.580	185	300.150	135	299.900
29	130	299.460	144.9	299.860	146	299.740	87	299.520	180	300.130	105	299.710
30	120.3	299.420	140	299.840			86	299.490	165	300.100	79	299.600
31	146.4	299.670	138	299.830			84	299.460			84	299.620
Ten-Daily Mean												
I Ten-Daily	180.5	299.520	141.2	299.730	116.37	299.790	148.56	299.760	85.2	299.730	118.18	299.920
II Ten-Daily	163.36	299.520	118.3	299.960	123.92	299.760	120.75	299.730	147.2	300.000	155.38	300.080
III Ten-Daily	147.25	299.560	132.45	299.860	144.48	299.740	94.89	299.690	179.9	300.130	132.45	299.900
Monthly												
Min.	120.3	299.150	104.6	299.090	106	299.730	67	299.460	77	299.650	79	299.600
Max.	205	299.840	175	299.990	147.5	299.850	227	300.150	190	300.150	175	300.830
Mean	163.7	299.530	130.65	299.850	128.26	299.760	121.4	299.730	137.43	299.950	135.34	299.970

Peak Computed Discharge = 13200 cumecs on 10/9/2019 Corres. Water Level 312.65 m

Lowest Computed Discharge = 28cumecs on 5/6/2019 Corres. Water Level 298.81 m

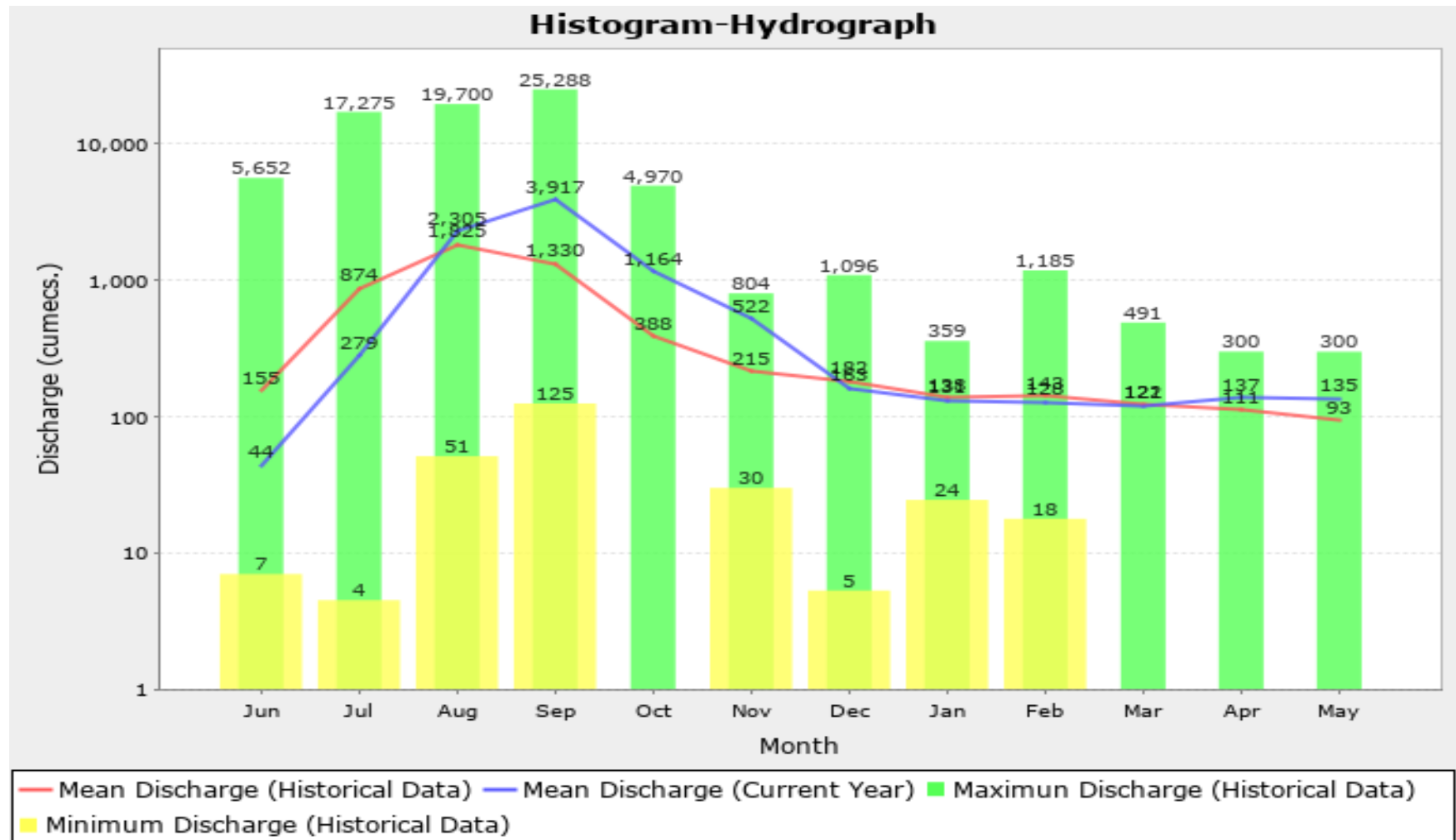
Histogram - Hydrograph for Water Year : 2019-20 (Data considered : 1978-2020)

Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



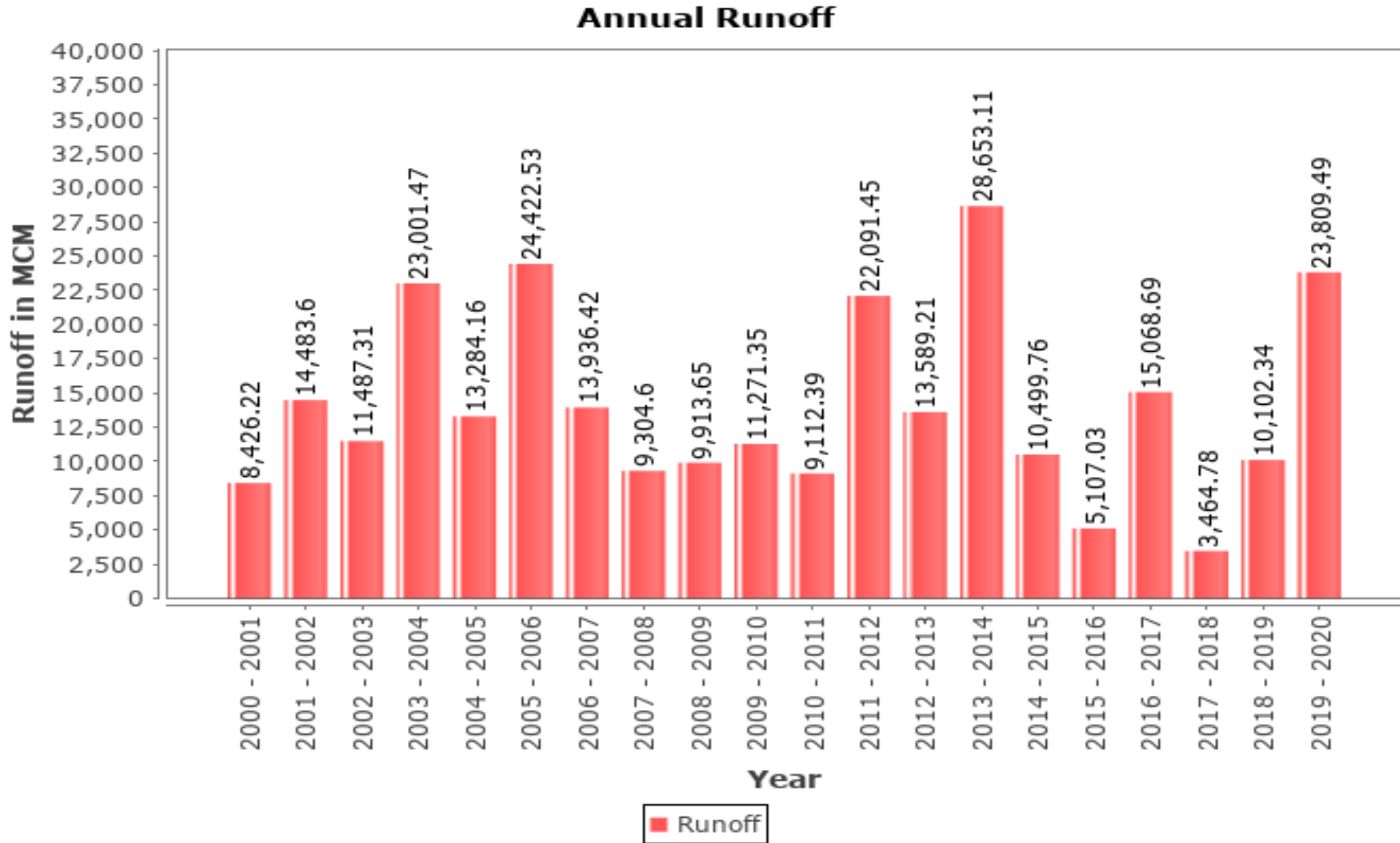
Annual Runoff Values for the period (2000 – 2020)

Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



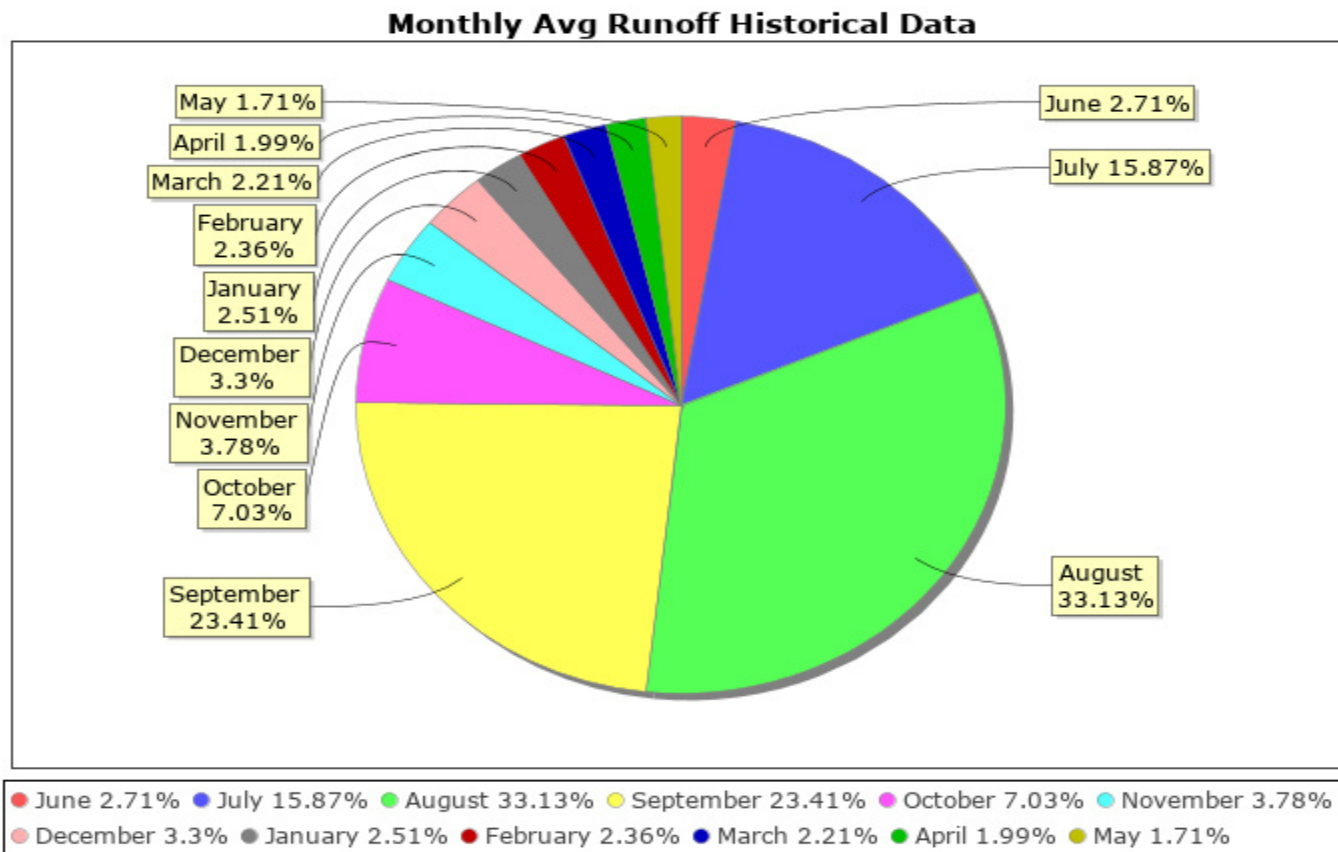
Monthly Average Runoff based on period (1978-2020)

Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



Monthly Runoff for the Year (2019-20)

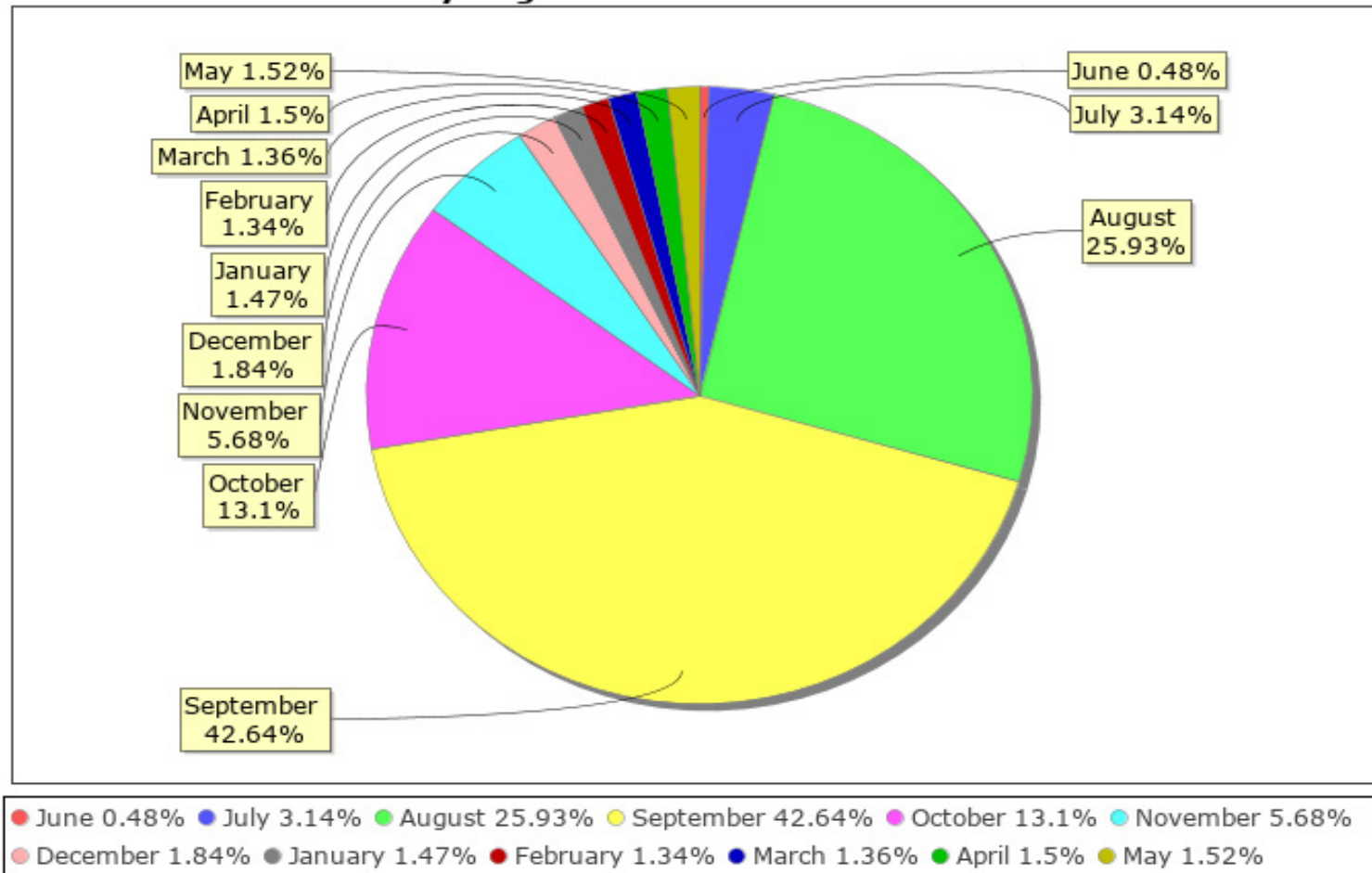
Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Water Year: 2019-2020



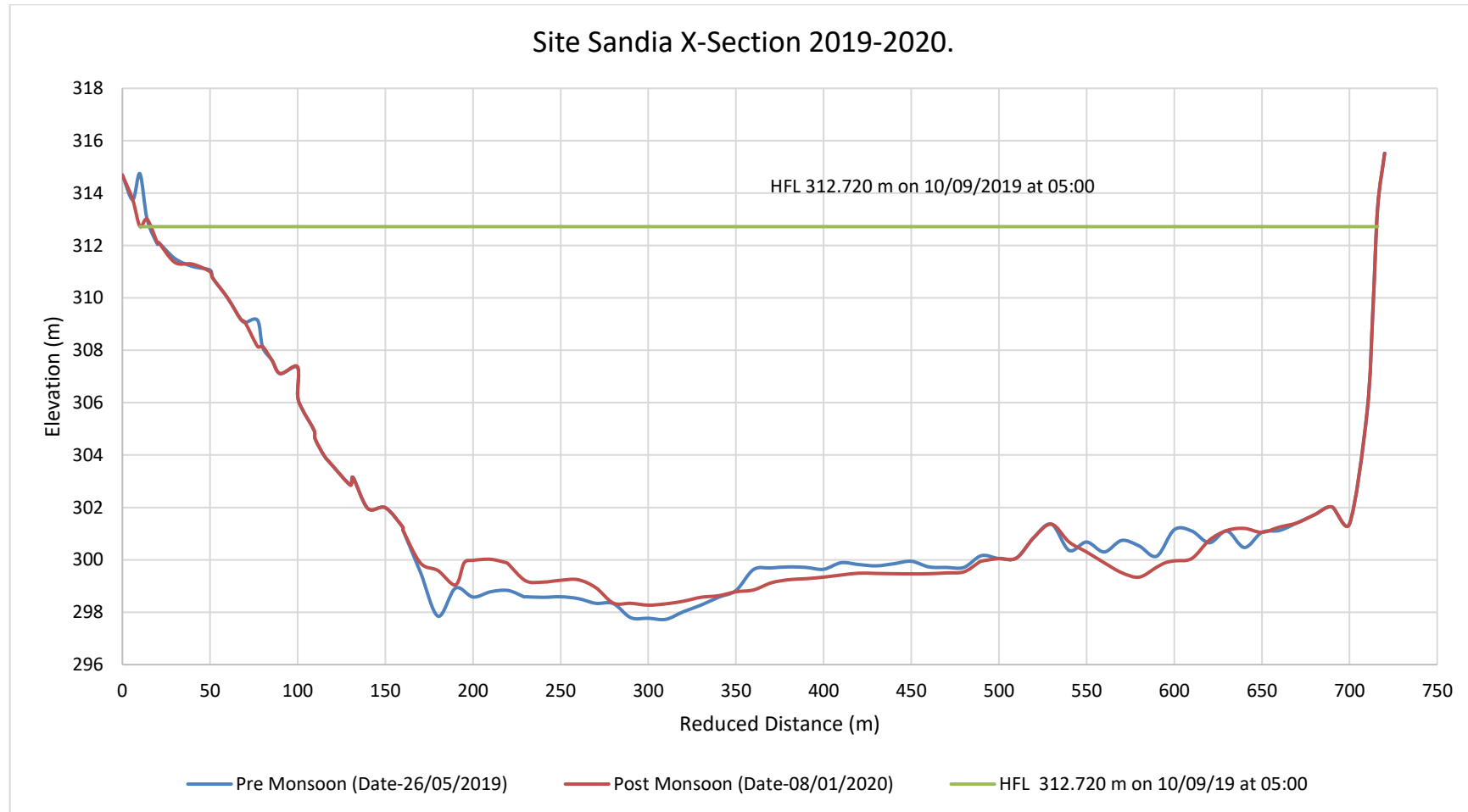
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



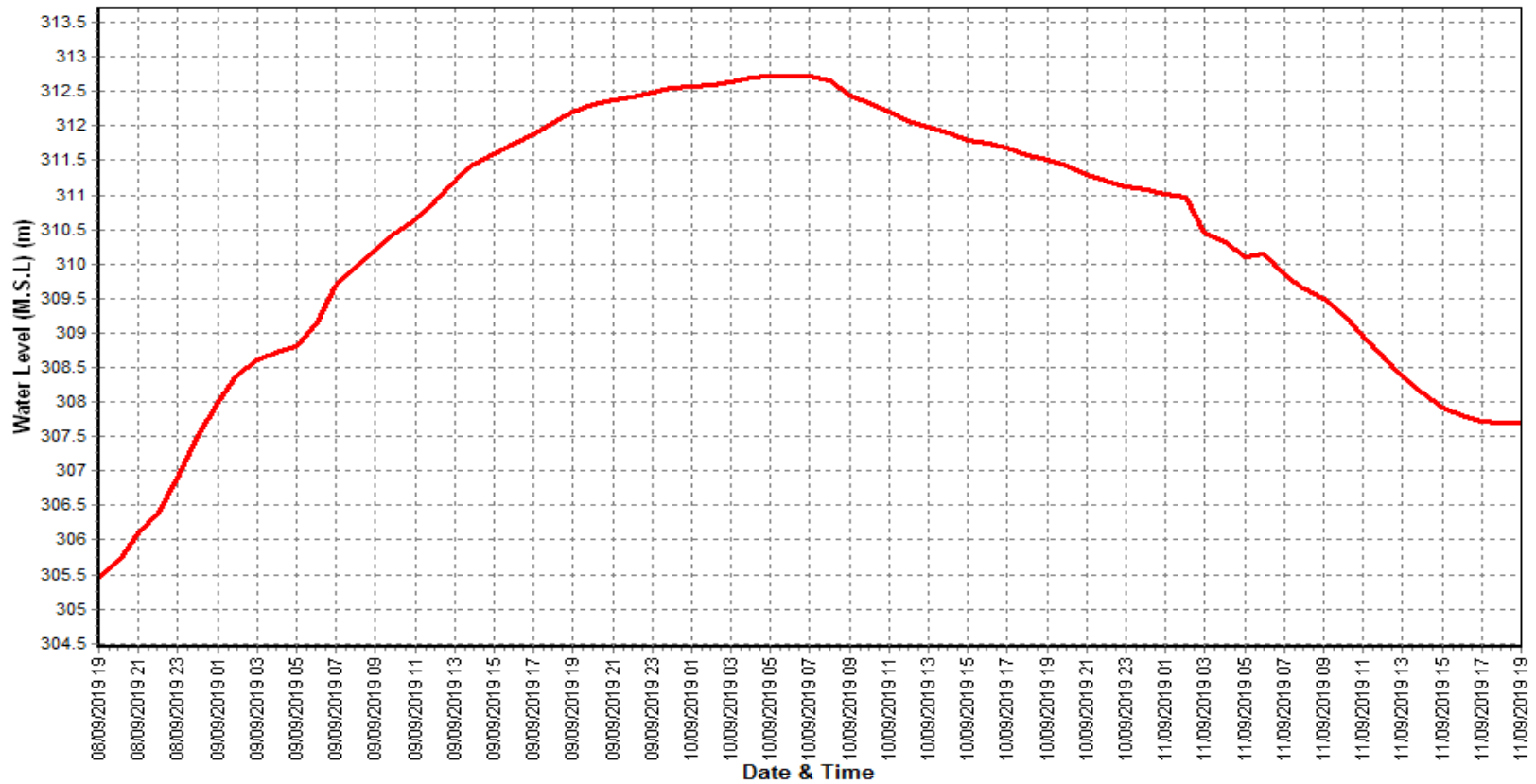
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



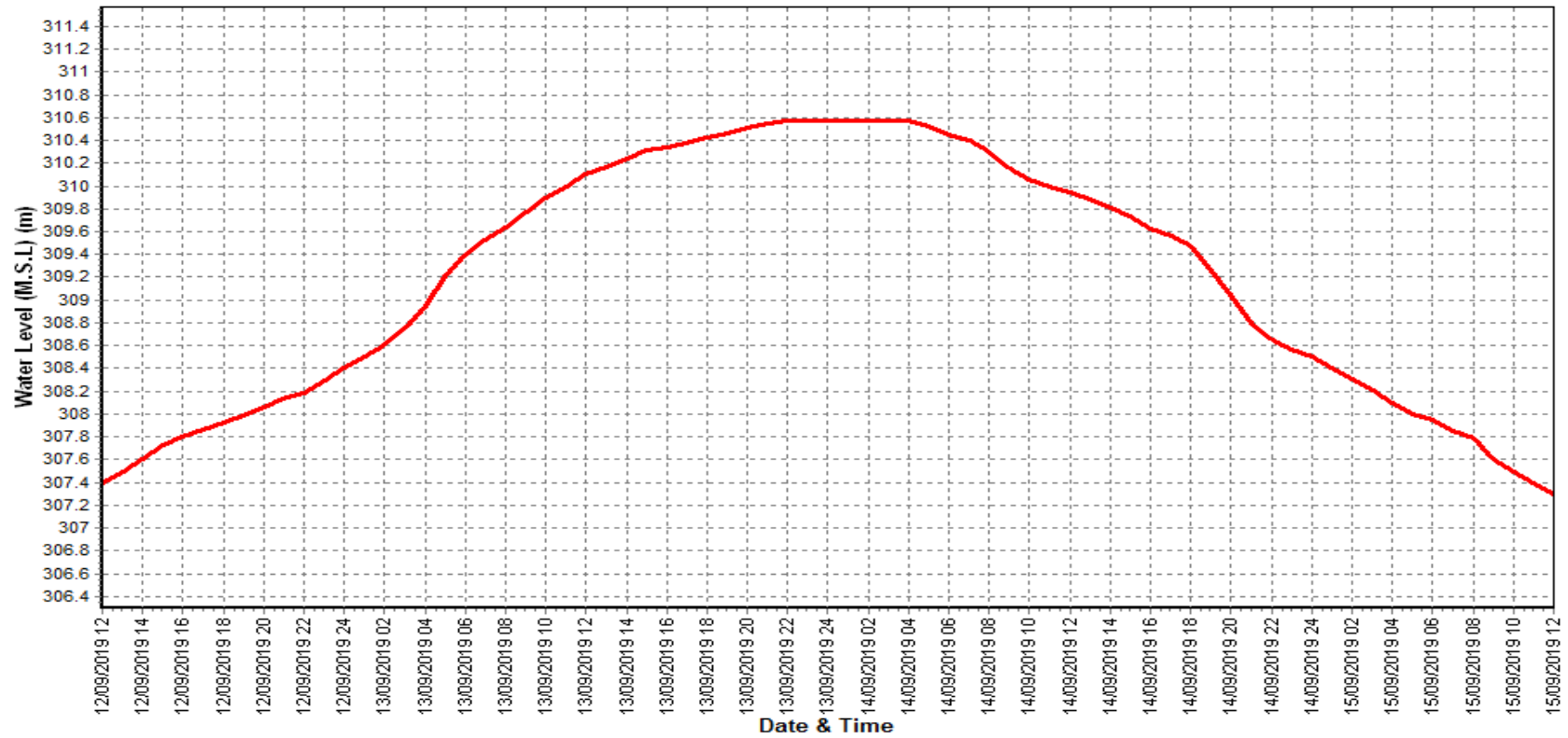
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



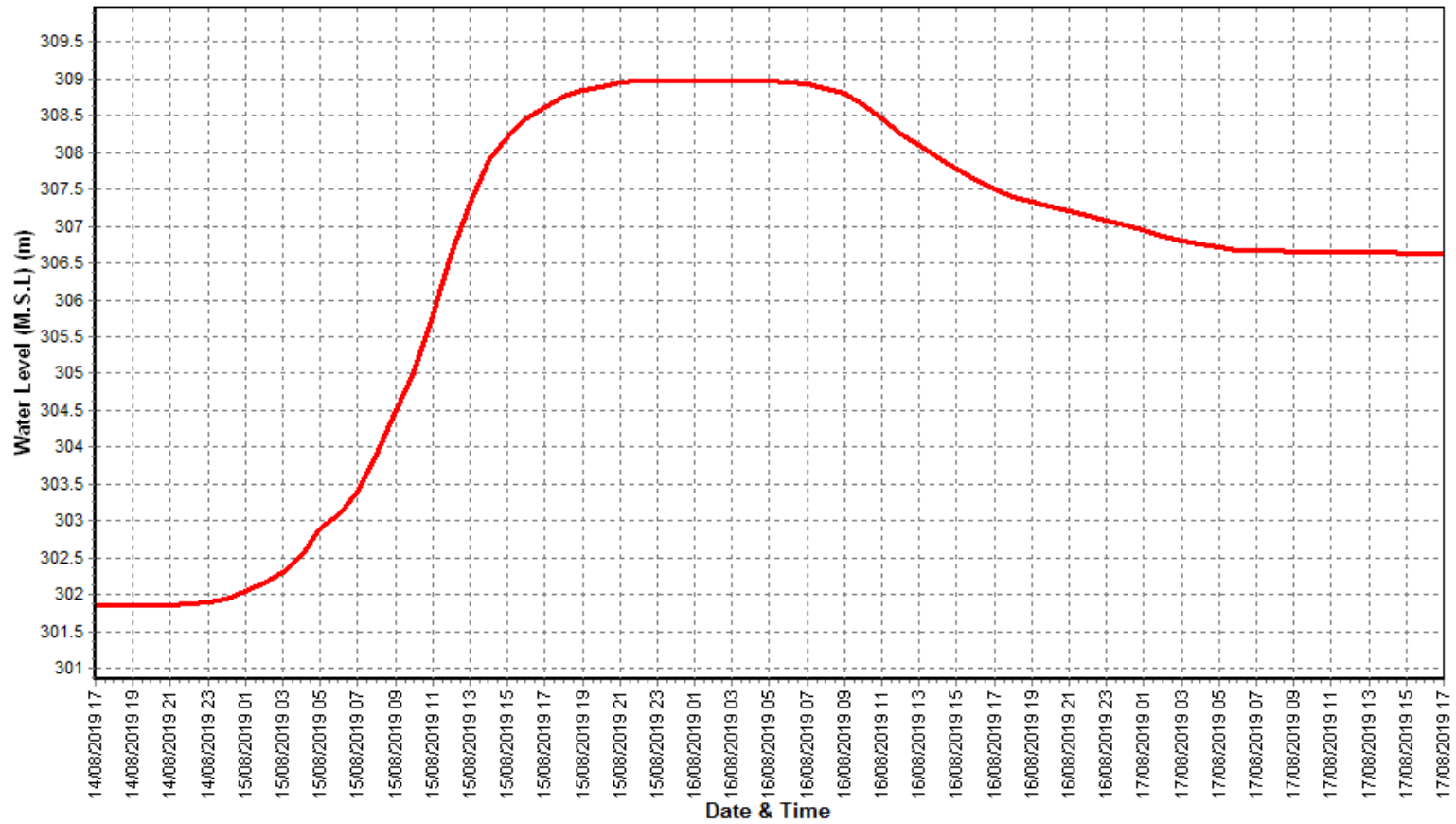
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

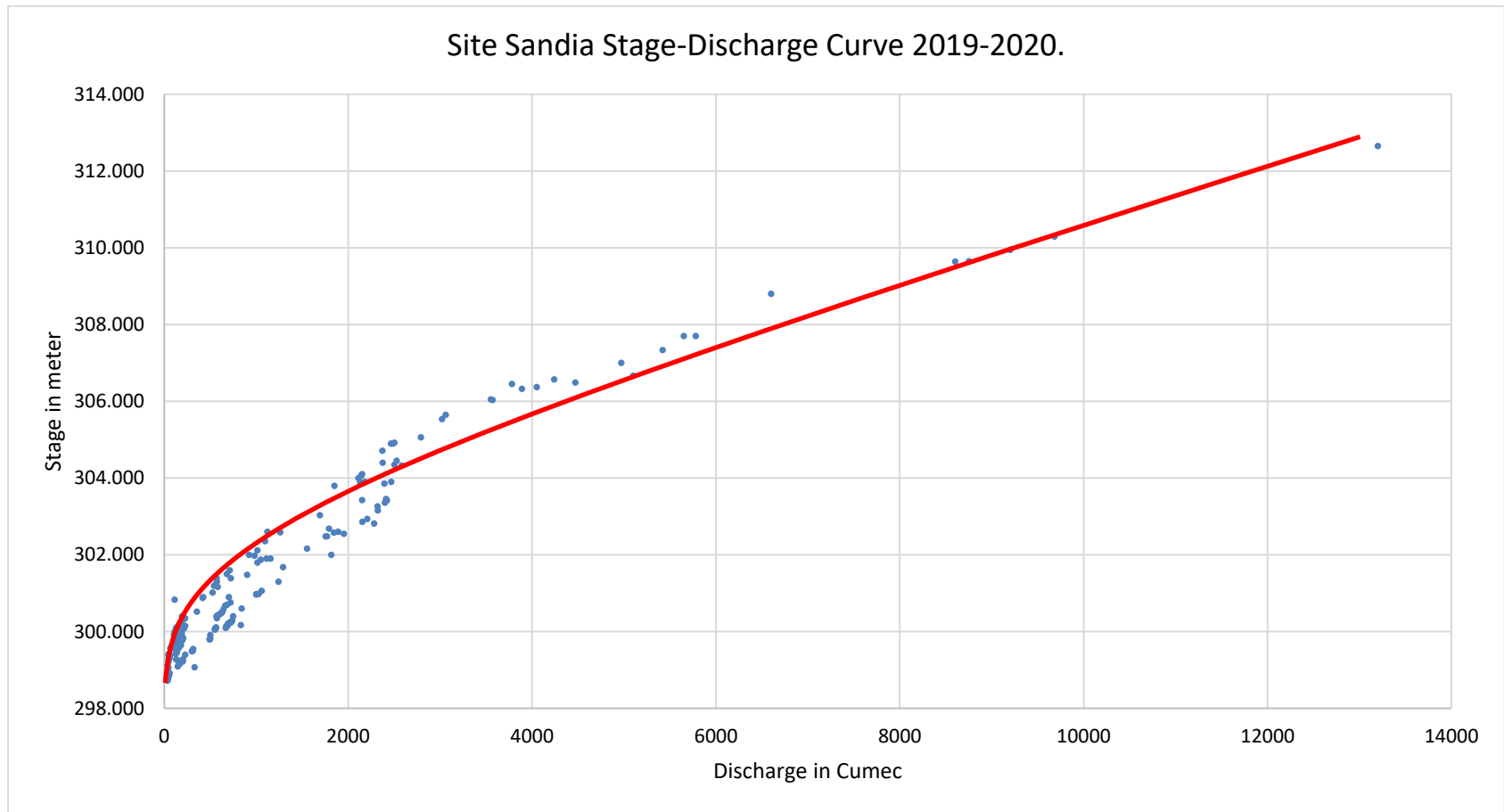
Station Name : Narmada at Sandia

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad





4.31 Dudhi at Panagar.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Dudhi at Panagar		Code	:	CW1NAU001478
State	:	Madhya Pradesh		District	:	NARSINGHPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Dudhi
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	868.19 Sq. Km.		Bank	:	Right
Latitude	:	22°50'13"		Longitude	:	78°36'10"
Current Zero of Gauge (m)	:	323				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15/01/2019				
Discharge	:	01/06/2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
323		20/11/2016		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	150.3	330.100	10-09-2019	0	-	01-06-2019

Stage Discharge Sheet for Dudhi at Panagar for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	139.1	328.90	130.5	328.30	133	327.85	131	327.70	72.1	325.20
2	\$	\$	137.7	328.75	126.9	328.10	130.6	327.80	130.8	327.70	97.8	326.80
3	\$	\$	134.1	328.60	131.1	328.30	138.1	328.80	130.6	327.70	94	326.50
4	\$	\$	137.8	328.20	125	328.10	134.7	328.70	131.4	327.50	91.1	326.30
5	\$	\$	131.1	328.20	129.7	327.68	139.7	329.15	131.1	327.50	90.6	326.30
6	\$	\$	129.4	328.10	126.3	327.40	138.7	329.20	131.5	327.50	88.2	326.20
7	\$	\$	126	328.20	129.2	327.50	137.8	329.40	130.9	327.55	86.6	326.10
8	\$	\$	126.9	328.20	132.1	328.60	139	329.55	130.5	327.65	82.4	326.00
9	\$	\$	126.2	327.24	137.7	328.25	139.7	329.25	130.2	327.70	80.7	325.90
10	\$	\$	125.7	327.20	129.4	328.60	150.3	330.10	130.5	327.80	79.3	325.50
11	\$	\$	126.2	327.20	124	328.00	138.9	329.35	130.4	327.80	77.4	325.40
12	\$	\$	112.7	327.18	130.5	327.55	140.3	329.30	133.1	327.80	72.1	325.20
13	\$	\$	113.9	327.15	126.9	327.90	139.7	329.40	131.45	327.80	64.6	325.10
14	\$	\$	122	327.10	131.7	328.55	137.8	329.20	131.8	327.70	64.70	325.00
15	\$	\$	125.7	327.05	134.7	328.75	136	329.00	132.5	327.70	63.50	325.00
16	\$	\$	120	327.05	137.7	328.60	138.1	328.86	130.3	327.70	66.00	325.00
17	\$	\$	120	327.05	126.1	328.20	137.7	328.76	131	327.70	63.10	325.00
18	\$	\$	120	327.05	126	328.20	131.2	328.45	131.2	327.60	61.50	325.00
19	\$	\$	120	327.05	131	328.10	129.9	328.20	131.8	327.60	59.90	325.00
20	\$	\$	120	327.05	129.7	328.20	129.4	328.00	131.85	327.50	53.10	324.90
21	\$	\$	120	327.05	131.2	328.20	129.1	328.05	130.9	327.50	53.20	324.90
22	\$	\$	120	327.05	127	328.20	135	328.20	132	327.40	51.80	324.90
23	\$	\$	120	327.05	131.1	328.30	133.2	328.00	130	327.40	51.20	324.90
24	\$	\$	125.7	327.10	131.4	328.30	133.8	327.60	130.8	327.50	51.00	324.90
25	\$	\$	130.7	327.40	136	328.55	131.1	327.85	128.2	327.50	39.30	324.90
26	\$	\$	126.3	327.80	145	330.00	131.9	327.75	115.5	327.40	39.80	324.85
27	\$	\$	129.4	328.20	137.9	328.95	130.6	327.74	114.1	327.30	39.30	324.85
28	\$	\$	127	328.20	134.7	328.68	130.5	327.74	112.7	327.30	39.80	324.85
29	\$	\$	132.1	327.80	139.7	328.45	130	327.74	114.4	327.30	39.30	324.85
30	\$	\$	138.1	327.89	132.1	328.28	131.2	327.77	114.5	327.30	39.20	324.85
31			139.7	329.25	129.4	328.05			113.9	327.30		
Ten-Daily Mean												
I Ten-Daily	0	0	131.4	328.16	129.79	328.08	138.16	328.98	130.85	327.63	86.28	326.08
II Ten-Daily	0	0	120.05	327.09	129.83	328.21	135.9	328.85	131.54	327.69	64.59	325.06
III Ten-Daily	0	0	128.09	327.71	134.14	328.54	131.64	327.84	121.55	327.38	44.39	324.88
Monthly												
Min.	0	0	112.7	327.05	124	327.4	129.1	327.6	112.7	327.3	39.2	324.85
Max.	0	0	139.7	329.25	145	330	150.3	330.1	133.1	327.8	97.8	326.80
Mean	0	0	126.56	327.66	131.35	328.29	135.23	328.56	127.77	327.56	65.09	325.34

Annual Runoff in mm

Annual Runoff in MCM :1651.37

:1902.1

Peak Observed Discharge = 150.3 cumecs on 10/09/2019 Corres. Water Level 330.100 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note: "\$" - No Flow

Stage Discharge Sheet for Dudhi at Panagar for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	36.10	324.80	6.9	324.10	4.4	324.09	5.0	324.08	4.5	324.07	3.6	324.05
2	36.10	324.80	6.6	324.10	5.0	324.09	4.2	324.08	4.5	324.07	3.8	324.05
3	33.20	324.80	6.3	324.10	4.7	324.09	4.2	324.08	4.5	324.07	3.5	324.05
4	24.30	324.75	6.2	324.10	5.0	324.09	4.5	324.08	4.5	324.07	3.8	324.05
5	20.3	324.70	6.0	324.10	4.8	324.09	5.4	324.08	4.5	324.07	3.9	324.05
6	20.8	324.70	6.0	324.10	5.0	324.09	4.6	324.08	4.5	324.07	4.1	324.05
7	18.6	324.65	6.2	324.10	5.2	324.09	3.5	324.08	4.5	324.07	3.8	324.05
8	18.0	324.65	6.2	324.10	4.6	324.09	5.0	324.08	4.5	324.07	3.7	324.05
9	18.4	324.65	6.2	324.10	5.0	324.09	3.6	324.08	4.5	324.07	4.0	324.05
10	15.4	324.60	8.2	324.10	6.4	324.09	4.6	324.08	4.5	324.07	4.0	324.05
11	16.5	324.50	4.2	324.10	4.1	324.09	4.6	324.08	4.5	324.07	3.7	324.04
12	16.4	324.50	5.5	324.10	5.6	324.09	4.6	324.08	4.5	324.07	3.0	324.04
13	14.9	324.50	5.0	324.10	4.2	324.09	5.5	324.08	4.5	324.07	3.3	324.04
14	12.9	324.50	7.6	324.10	4.3	324.09	5.4	324.08	4.5	324.07	3.4	324.04
15	10.0	324.40	5.2	324.10	4.4	324.09	5.0	324.08	4.5	324.07	4.2	324.04
16	9.70	324.40	6.0	324.11	5.0	324.09	4.3	324.08	4.5	324.07	3.1	324.04
17	8.90	324.35	10.2	324.11	5.4	324.09	5.6	324.07	4.5	324.07	3.0	324.04
18	7.60	324.30	8.0	324.11	5.1	324.09	3.5	324.07	4.5	324.07	5.6	324.04
19	13.20	324.25	8.0	324.11	5.0	324.09	4.7	324.07	4.5	324.07	3.3	324.03
20	7.70	324.20	8.3	324.11	5.0	324.08	5.8	324.07	4.2	324.06	4.0	324.03
21	7.50	324.20	5.2	324.11	4.2	324.08	4.9	324.07	5.1	324.06	4.2	324.03
22	7.0	324.19	5.8	324.11	4.4	324.08	4.7	324.07	4.3	324.06	4.4	324.03
23	6.2	324.18	6.0	324.11	4.0	324.08	4.7	324.07	4.2	324.06	4.6	324.03
24	5.0	324.18	5.3	324.10	4.2	324.08	4.5	324.07	5.6	324.06	4.0	324.03
25	4.9	324.18	6.1	324.10	5.5	324.08	4.5	324.07	4.2	324.06	5.4	324.03
26	3.4	324.15	6.0	324.10	3.6	324.08	4.5	324.07	4.5	324.06	4.8	324.03
27	3.6	324.15	6.0	324.10	5.1	324.08	4.5	324.07	4.9	324.06	5.0	324.02
28	3.7	324.10	6.0	324.10	4.2	324.08	4.5	324.07	5.7	324.06	4.0	324.02
29	3.5	324.10	5.4	324.10	4.3	324.08	4.5	324.07	4.0	324.06	4.2	324.02
30	3.6	324.10	6.0	324.10			4.5	324.07	5.1	324.06	3.9	324.02
31	3.6	324.10	4.1	324.10			4.5	324.07			3.5	324.02
Ten-Daily Mean												
I Ten-Daily	24.12	324.71	6.48	324.1	5.01	324.09	4.46	324.08	4.5	324.07	3.82	324.05
II Ten-Daily	11.78	324.39	6.8	324.11	4.81	324.09	4.9	324.08	4.47	324.07	3.66	324.04
III Ten-Daily	4.73	324.15	5.63	324.1	4.39	324.08	4.57	324.07	4.76	324.06	4.36	324.03
Monthly												
Min.	3.4	324.1	4.1	324.1	3.6	324.08	3.5	324.07	4	324.06	3	324.02
Max.	36.1	324.8	10.2	324.11	6.4	324.09	5.8	324.08	5.7	324.07	5.6	324.05
Mean	13.26	324.41	6.28	324.1	4.75	324.09	4.64	324.08	4.58	324.07	3.96	324.04

Peak Computed Discharge = 139 cumecs on 08/09/2019 Corres. Water Level 329.550 m
 Lowest Computed Discharge = 0 cumecs on 01/02/2019

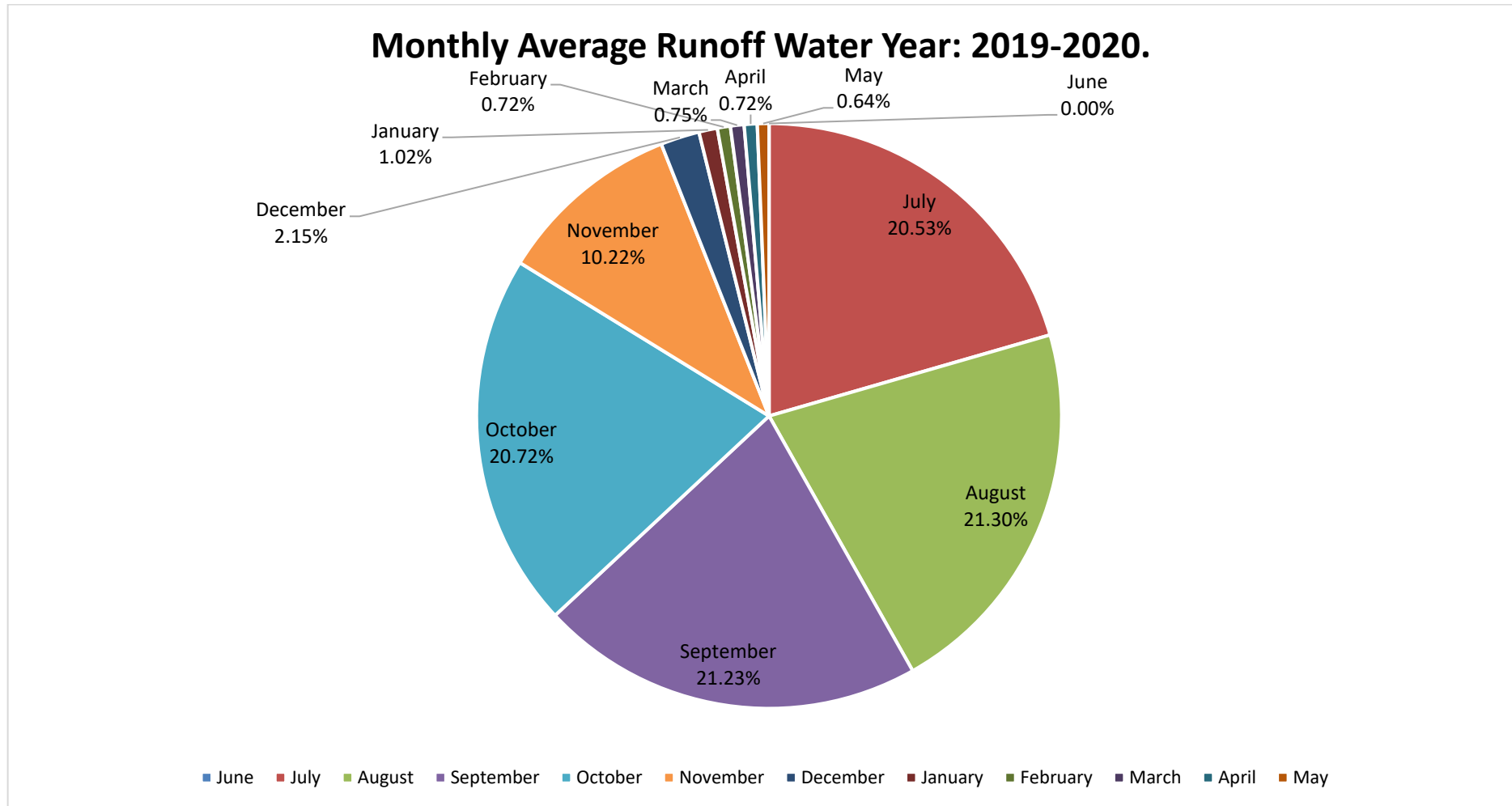
Monthly Runoff for the Year (2019-2020)

Station Name: Dudhi at Panagar

Local River: Dudhi

Division: Narmada Division, Bhopal

Sub-Division: MNSD-I, CWC Hoshangabad



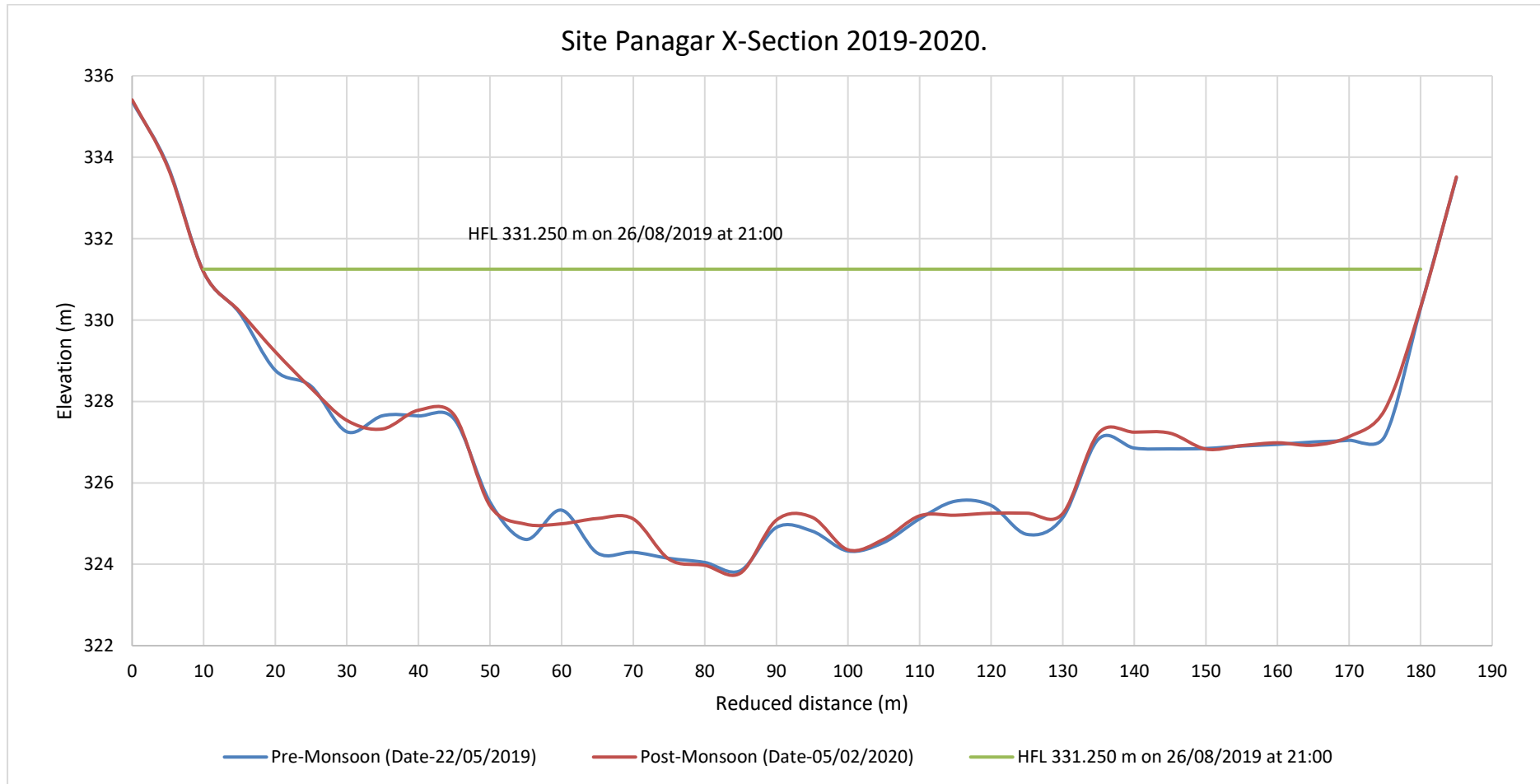
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Dudhi at Panagar

Division: Narmada Division, Bhopal

Local River: Dudhi

Sub-Division: MNSD-I, CWC Hoshangabad



Note- River Bed is Sandy.

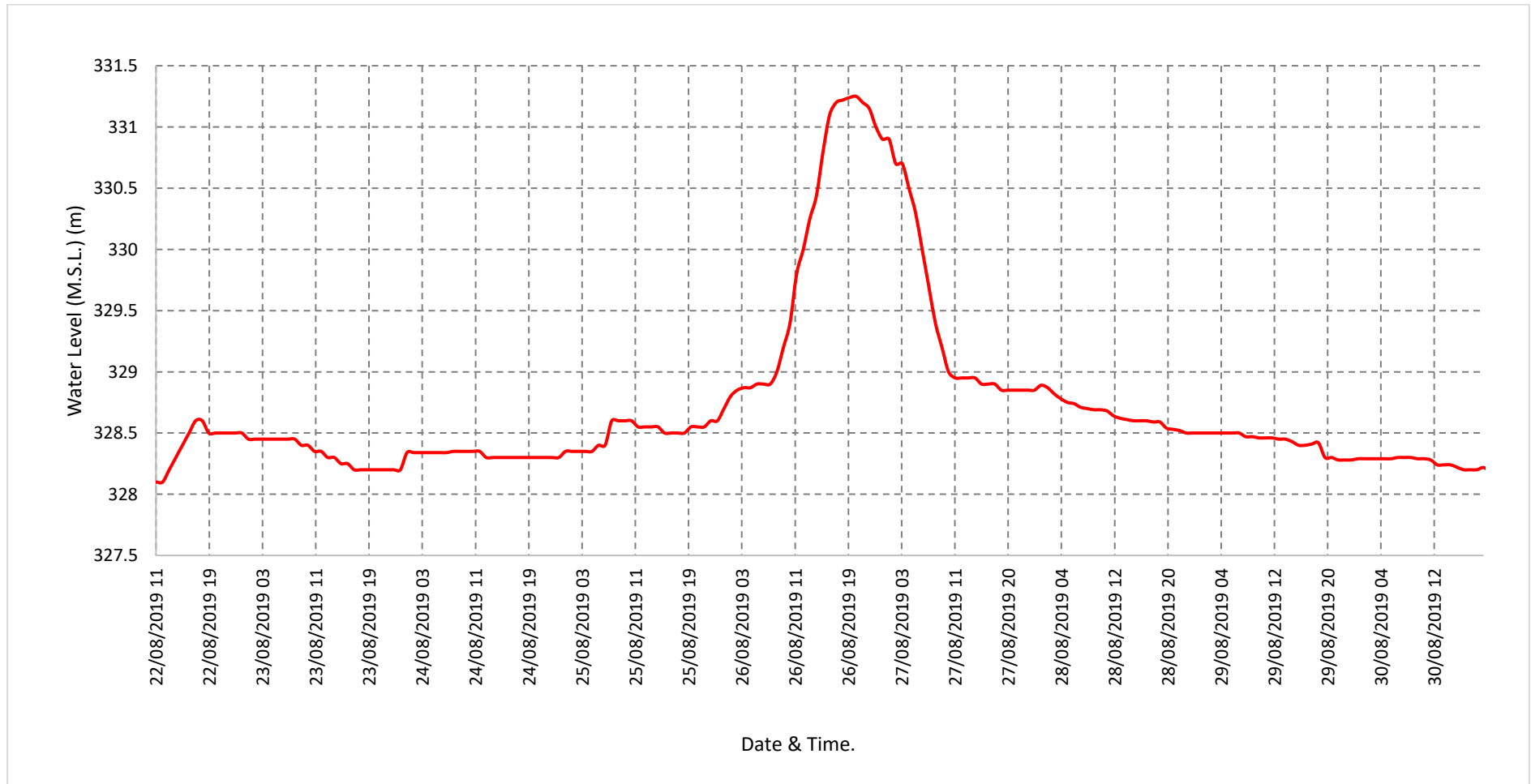
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Dudhi at Panagar

Division: Narmada Division, Bhopal

Local River: Dudhi

Sub-Division: MNSD-I, CWC Hoshangabad



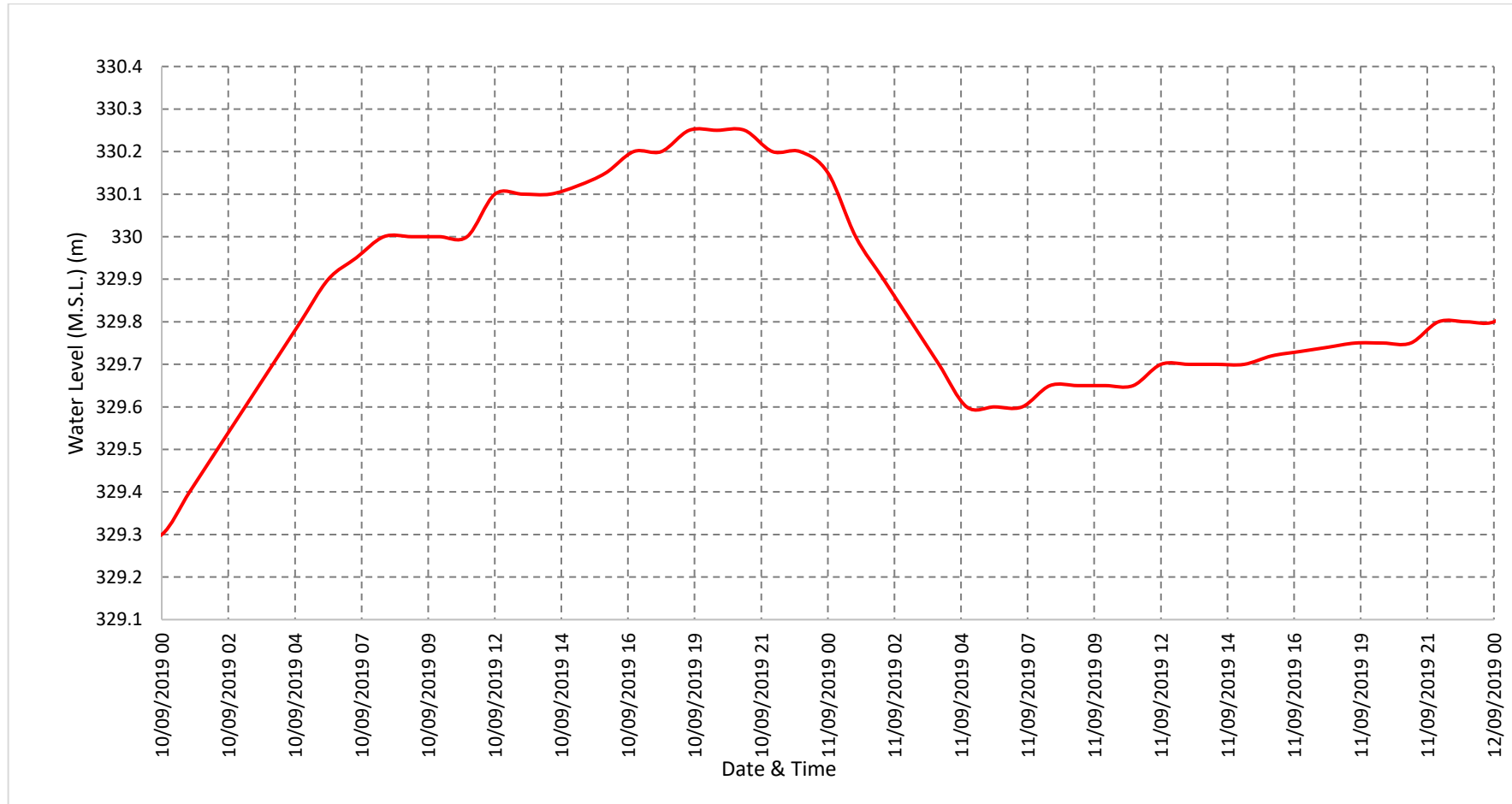
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Dudhi at Panagar

Division: Narmada Division, Bhopal

Local River: Dudhi

Sub-Division: MNSD-I, CWC Hoshangabad



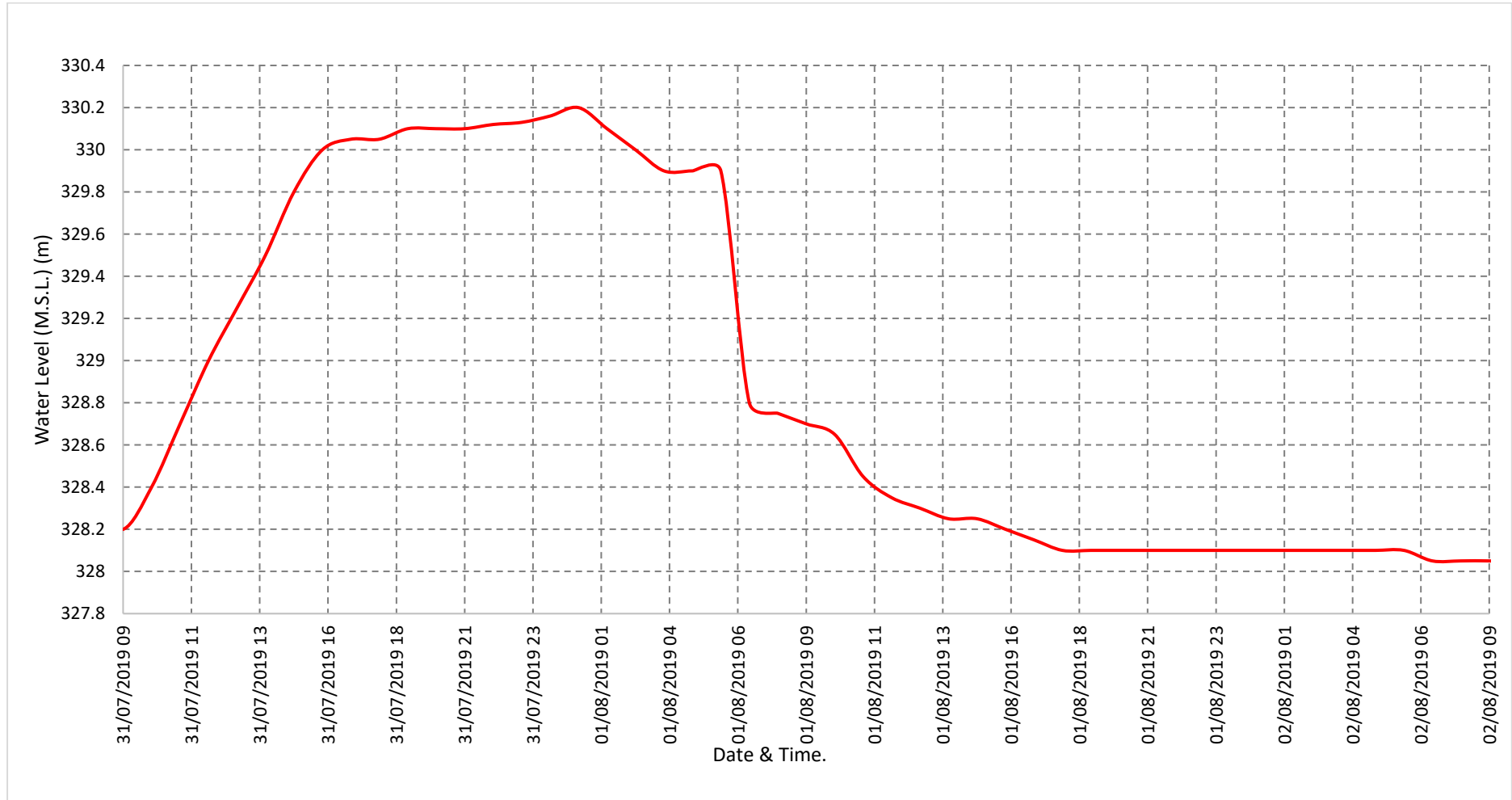
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Dudhi at Panagar

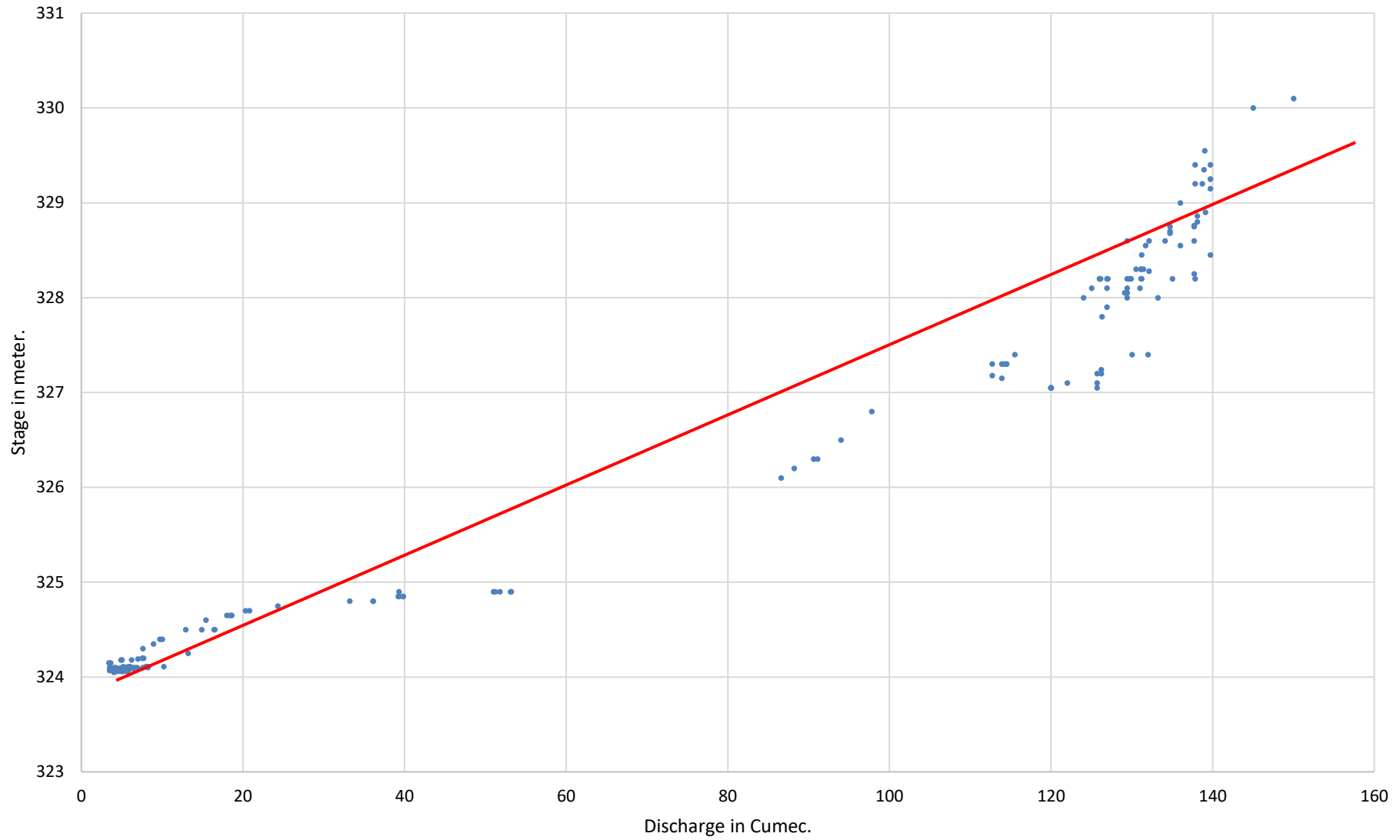
Division: Narmada Division, Bhopal

Local River: Dudhi

Sub-Division: MNSD-I, CWC Hoshangabad



Site Panagar Stage-Discharge Curve 2019-2020.



4.32 Shakkar at Gadarwara.

History sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	Gadarwara		Code	:	CW1NAU000391	
State	:	Madhya Pradesh		District	:	NARSINGHPUR	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	-		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Shakkar	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub- Division-I, Hosangabad	
Drainage Area	:	2270.0 Sq. Km.		Bank	:	Left	
Latitude	:	22°55'26"		Longitude	:	78°47'30"	
Current Zero of Gauge (m)	:	321					
CATEGORY		Opening Date		Closing Date			
Gauge	:	01/02/1977					
Discharge	:	01/02/1977					
Sediment	:	15/06/1978					
Water Quality	:	16/06/1979					
Reduced Level		Opening Date		Closing Date			
321.0		01/02/1977					

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1971-1972	0	0.000	21/02/1972	0	0.000	21/02/1972
1976-1977	28	322.705	03/02/1977	1.7	322.600	28/05/1977
1977-1978	2734.6	328.175	07/08/1977	1.6	322.590	01/06/1977
1978-1979	2890	328.580	16/08/1978	2.4	322.850	31/05/1979
1979-1980	1430.8	327.410	09/08/1979	1	322.620	04/04/1980
1980-1981	2822.9	328.810	29/08/1980	0.9	322.635	30/11/1980
1981-1982	724	325.470	24/06/1981	1.2	322.680	08/06/1981
1982-1983	3031	328.745	20/08/1982	1.2	322.820	11/06/1982
1983-1984	2335	328.820	08/09/1983	1.6	322.875	08/06/1983
1984-1985	2850	329.600	18/08/1984	1.2	322.920	30/05/1985
1985-1986	1930	327.850	08/08/1985	1	322.860	23/06/1985
1986-1987	2680	329.800	14/08/1986	1.6	322.890	19/06/1986
1987-1988	1450	326.985	08/09/1987	1	322.930	30/05/1988
1988-1989	2400	328.810	03/08/1988	0.94	322.850	31/05/1989
1989-1990	1605	327.300	16/08/1989	0.8	322.840	12/06/1989
1990-1991	2300	328.400	05/09/1990	1.08	322.995	11/06/1990
1991-1992	1046	326.320	19/08/1991	1.06	322.925	07/07/1991
1992-1993	1590	327.400	20/08/1992	1.2	322.920	10/07/1992
1993-1994	1880	328.150	16/07/1993	1.73	322.915	06/06/1993
1994-1995	2720	330.180	19/08/1994	1.7	322.960	29/05/1995
1995-1996	1160	326.650	25/07/1995	0.25	322.620	30/05/1996
1996-1997	608	325.150	27/07/1996	0	322.470	22/04/1997
1997-1998	1732	328.000	25/07/1997	0	--	01/06/1997
1998-1999	836	326.000	05/07/1998	0.25	323.050	28/06/1998
1999-2000	5850	332.470	18/09/1999	0.15	322.810	21/05/2000
2000-2001	1310	327.100	28/07/2000	0.85	322.810	06/06/2000
2001-2002	1030	326.480	19/07/2001	0.5	322.630	27/05/2002
2002-2003	2750	328.850	06/09/2002	0.3	322.900	30/05/2003
2003-2004	2700	328.450	24/07/2003	0.21	322.870	15/06/2003
2004-2005	940	327.100	22/08/2004	0.11	322.770	29/05/2005
2005-2006	1828.4	326.250	01/08/2005	0.02	322.720	19/06/2005
2006-2007	4650.39	329.000	14/08/2006	0.01	323.130	19/05/2007
2007-2008	3279.69	329.000	08/07/2007	0	--	31/05/2008
2008-2009	237.39	324.250	05/08/2008	0.04	322.790	02/02/2009
2009-2010	3278.58	329.880	09/09/2009	0	--	01/06/2009
2010-2011	901.36	325.700	07/08/2010	0	--	11/06/2010

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
2011-2012	736.19	324.600	15/07/2011	0	--	06/06/2011
2012-2013	1866	326.350	21/08/2012	0	--	21/04/2013
2013-2014	2898.65	328.580	23/08/2013	0	--	01/06/2013
2014-2015	554.43	325.230	23/07/2014	0.16	322.330	31/05/2015
2015-2016	493.83	324.540	14/08/2015	0.01	322.230	03/03/2016
2016-2017	10138	323.720	26/10/2016	0	--	02/05/2017
2017-2018	468.69	324.540	21/07/2017	0	321.000	02/06/2017
2018-2019	433.28	324.420	08/09/2018	0.06	--	16/01/2019
2019-2020	2805.3	328.580	09/09/2019	0	321.000	01/06/2019

Stage Discharge Sheet for Shakkar at Gadarwara for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	321.000	7.5	322.730	378.83	324.330	172.8	323.820	139.65	323.700	5.5	322.610
2	0	321.000	93.5	323.540	131.73	323.680	172.8	323.820	118.3	323.630	5.9	322.620
3	0	321.000	186	323.870	368.53	324.220	159.4	323.730	80.67	323.510	4.97	322.590
4	0	321.000	121.57	324.290	198.92	323.920	208.3	323.940	54.37	323.400	4.38	322.570
5	0	321.000	54.45	323.380	116.51	323.630	471.4	324.540	44.22	323.330	4.97	322.590
6	0	321.000	32.43	323.310	99.82	323.560	386.9	324.340	30.4	323.300	4.38	322.570
7	0	321.000	19	323.250	124.59	323.660	592.9	325.400	25.41	323.260	4.21	322.550
8	0	321.000	55.81	323.400	404.27	324.330	369.1	324.220	13.84	323.190	4.97	322.590
9	0	321.000	54.66	323.380	468.05	324.530	2805.3	328.580	33.09	323.130	4.97	322.590
10	0	321.000	58.25	323.410	365.94	324.200	186	323.870	29.92	323.060	4.55	322.580
11	0	321.000	44.17	323.350	172.6	323.820	391.5	324.360	28.25	323.020	4.65	322.560
12	0	321.000	11.44	322.920	162.2	323.750	388.9	324.340	25.53	322.980	4.02	322.540
13	0	321.000	8.85	322.760	138.76	323.700	376.1	324.330	24.6	322.960	3.85	322.520
14	0	321.000	7.42	322.700	159.22	323.730	366	324.200	20.78	322.930	3.8	322.510
15	0	321.000	5.13	322.600	820.2	325.840	172.6	323.820	19.93	322.900	3.75	322.500
16	0	321.000	3.79	322.500	377.72	324.330	163.3	323.750	18.23	322.870	3.72	322.490
17	0	321.000	3.32	322.430	386.42	324.340	379.2	324.330	16.87	322.840	3.65	322.480
18	0	321.000	1.91	322.380	178	323.840	107.8	323.730	15.66	322.810	3.55	322.460
19	0	321.000	1.22	322.280	139.48	323.700	209.1	323.940	13.92	322.780	3.51	322.450
20	0	321.000	1.07	322.170	116.69	323.630	100.8	323.560	17.3	322.850	3.48	322.430
21	0	321.000	1.07	322.170	367.06	324.200	79.8	323.510	18.02	322.870	3.44	322.420
22	0	321.000	12.82	322.950	369.85	324.220	86.3	323.520	14.8	322.800	3.41	322.400
23	0	321.000	11.11	322.890	390.67	324.360	77.1	323.500	18.34	322.890	3.35	322.390
24	0	321.000	7.62	322.750	365.9	324.200	199.3	323.920	16.96	322.850	3.33	322.380
25	0	321.000	6.82	322.650	390.67	324.360	100.5	323.560	14.81	322.810	3.29	322.370
26	0	321.000	7.19	322.630	470.26	324.540	216	323.960	13.22	322.780	3.25	322.360
27	0	321.000	130.12	323.690	592.07	325.400	138.5	323.700	12.9	322.760	3.2	322.330
28	0	321.000	108.5	323.600	387.78	324.340	118.3	323.630	12.68	322.730	3.19	322.320
29	4.3	322.890	123.95	323.670	366.11	324.200	216	323.960	12.04	322.700	3.15	322.300
30	6	322.790	377.53	324.230	198.24	323.920	161	323.730	11.34	322.670	3.11	322.290
31			390.94	324.250	209.91	323.940			9.88	322.640		
Ten-Daily Mean												
I Ten-Daily	0	321.000	68.32	323.460	265.72	324.010	552.49	324.630	56.99	323.350	4.88	322.590
II Ten-Daily	0	321.000	8.83	322.610	265.13	324.070	265.53	324.040	20.11	322.890	3.8	322.490
III Ten-Daily	1.03	321.370	107.06	323.230	373.5	324.330	139.28	323.700	14.09	322.770	3.27	322.360
Monthly												
Min.	0	321.000	1.07	322.170	99.82	323.560	77.1	323.500	9.88	322.640	3.11	322.290
Max.	6	322.890	390.94	324.290	820.2	325.840	2805.3	328.580	139.65	323.700	5.9	322.620
Mean	0.34	321.120	61.4	323.100	301.45	324.140	319.1	324.120	30.39	323.010	3.98	322.480

Annual Runoff in MCM :1921.41

Annual Runoff in mm :846.44

Peak Observed Discharge = 2805.3 cumecs on 9/9/2019

Corres. Water Level 328.58 m

Lowest Observed Discharge = 1.07cumecs on 20/7/2019

Corres. Water Level 322.17 m

Stage Discharge Sheet for Shakkar at Gadarwara for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	3.08	322.280	3	322.220	1.7	322.030	0.81	321.730	0.49	321.490	0.28	321.430
2	3.06	322.270	3	322.220	1.65	322.020	0.79	321.710	0.49	321.490	0.25	321.420
3	3.05	322.260	2.93	322.200	1.6	322.010	0.79	321.700	0.49	321.490	0.2	321.410
4	3.04	322.250	2.93	322.200	1.6	322.010	0.77	321.690	0.45	321.480	0.18	321.400
5	3	322.240	2.88	322.190	1.6	322.010	0.75	321.680	0.42	321.470	0.18	321.400
6	3	322.240	2.88	322.190	1.55	322.000	0.73	321.670	0.42	321.470	0.17	321.390
7	3	322.230	2.75	322.180	1.55	322.000	0.72	321.650	0.49	321.490	0.51	321.510
8	3	322.230	2.75	322.180	1.55	322.000	0.72	321.650	0.49	321.490	0.5	321.500
9	3	322.220	2.75	322.180	1.52	321.990	0.7	321.640	0.45	321.480	0.49	321.490
10	2.95	322.210	2.75	322.180	1.52	321.990	0.68	321.630	0.42	321.470	0.45	321.480
11	2.95	322.210	2.68	322.170	1.44	321.980	0.66	321.620	0.4	321.460	0.45	321.480
12	2.93	322.200	2.63	322.150	1.38	321.970	0.65	321.610	0.35	321.450	0.42	321.470
13	3	322.220	2.6	322.140	1.36	321.960	0.64	321.590	0.35	321.450	0.4	321.460
14	2.95	322.210	2.6	322.140	1.25	321.950	0.66	321.620	0.32	321.440	0.35	321.450
15	3	322.220	2.59	322.130	1.24	321.940	0.7	321.640	0.32	321.440	0.28	321.430
16	3	322.220	2.48	322.120	1.2	321.930	0.66	321.620	0.42	321.470	0.2	321.410
17	3	322.220	2.48	322.120	1.15	321.920	0.72	321.650	0.42	321.470	0.2	321.410
18	3	322.220	2.4	322.110	1.12	321.910	0.72	321.650	0.4	321.460	0.17	321.390
19	2.95	322.210	2.4	322.110	1.08	321.900	0.7	321.640	0.4	321.460	0.15	321.380
20	2.95	322.210	2.3	322.100	1.02	321.880	0.68	321.630	0.35	321.450	0.14	321.370
21	2.93	322.200	2.15	322.090	1	321.870	0.66	321.620	0.32	321.440	0.13	321.360
22	2.93	322.200	2.15	322.090	0.98	321.860	0.64	321.600	0.35	321.450	0.12	321.350
23	2.88	322.190	2.15	322.090	0.95	321.850	0.63	321.580	0.28	321.430	0.11	321.330
24	2.88	322.190	2.12	322.080	0.92	321.830	0.62	321.570	0.25	321.420	0.1	321.320
25	2.88	322.190	2.12	322.080	0.9	321.810	0.6	321.560	0.2	321.410	0.09	321.300
26	3	322.230	2	322.070	0.88	321.790	0.6	321.560	0.18	321.400	0.08	321.290
27	3	322.230	1.98	322.060	0.87	321.780	0.59	321.550	0.4	321.460	0.07	321.270
28	2.95	322.210	1.98	322.050	0.85	321.770	0.58	321.530	0.35	321.450	0.05	321.250
29	2.95	322.210	1.98	322.050	0.83	321.750	0.57	321.520	0.32	321.440	0.05	321.230
30	2.93	322.200	1.98	322.050			0.56	321.500	0.32	321.440	0.05	321.210
31	2.88	322.190	1.88	322.040			0.56	321.500			0.05	321.200
Ten-Daily Mean												
I Ten-Daily	3.02	322.240	2.86	322.190	1.58	322.010	0.75	321.680	0.46	321.480	0.32	321.440
II Ten-Daily	2.97	322.210	2.52	322.130	1.22	321.930	0.68	321.630	0.37	321.460	0.28	321.430
III Ten-Daily	2.93	322.200	2.04	322.070	0.91	321.810	0.6	321.550	0.3	321.430	0.08	321.280
Monthly												
Min.	2.88	322.190	1.88	322.040	0.83	321.750	0.56	321.500	0.18	321.400	0.05	321.200
Max.	3.08	322.280	3	322.220	1.7	322.030	0.81	321.730	0.49	321.490	0.51	321.510
Mean	2.97	322.220	2.47	322.130	1.24	321.920	0.68	321.620	0.38	321.460	0.23	321.380

Peak Computed Discharge = 820.2 cumecs on 15/8/2019 Corres. Water Level 325.84 m
 Lowest Computed Discharge = 0 cumecs on 1/6/2019 Corres. Water Level 321 m

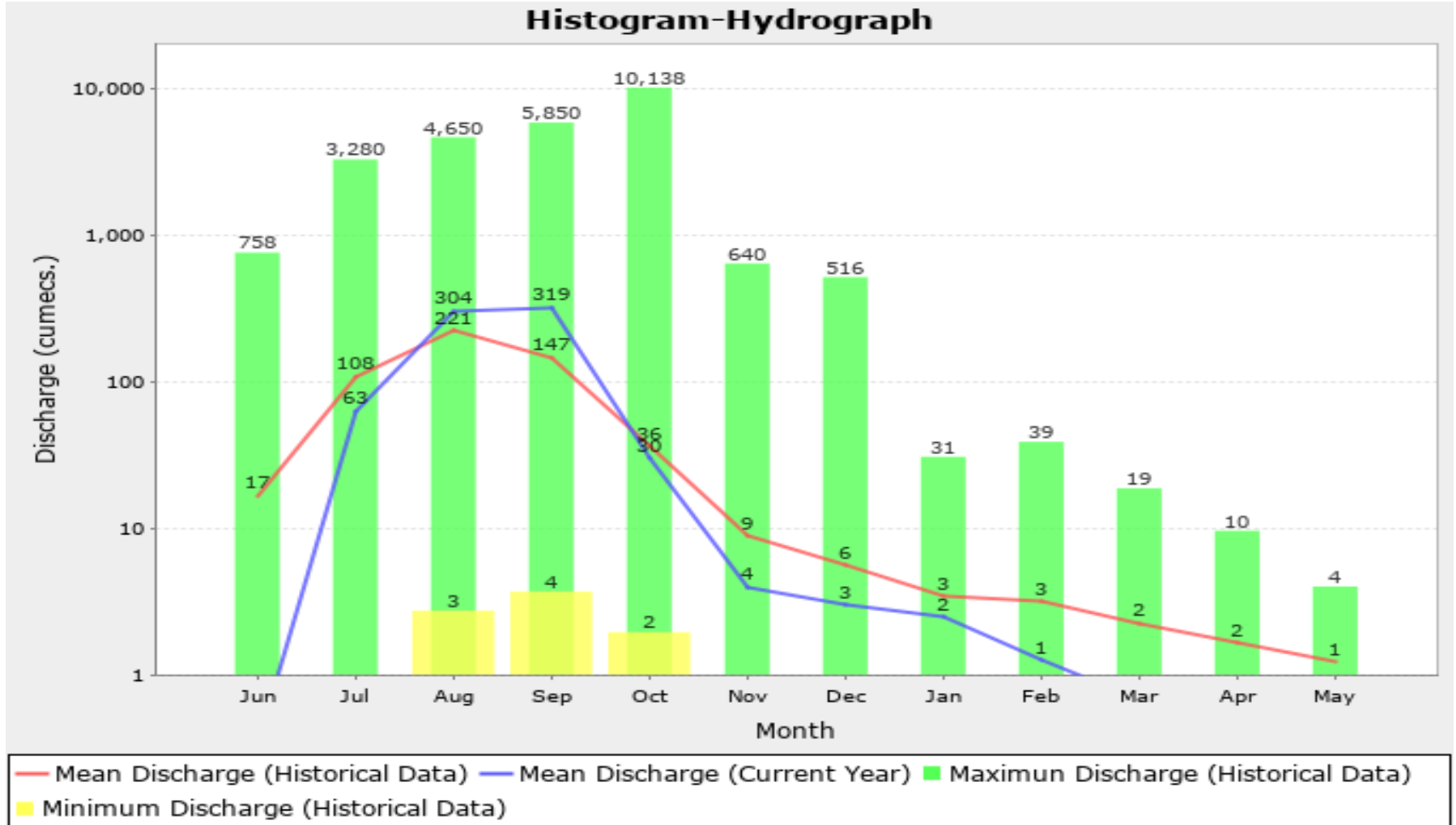
Histogram - Hydrograph for Water Year : 2019-20 (Data considered : 1977-2020)

Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad



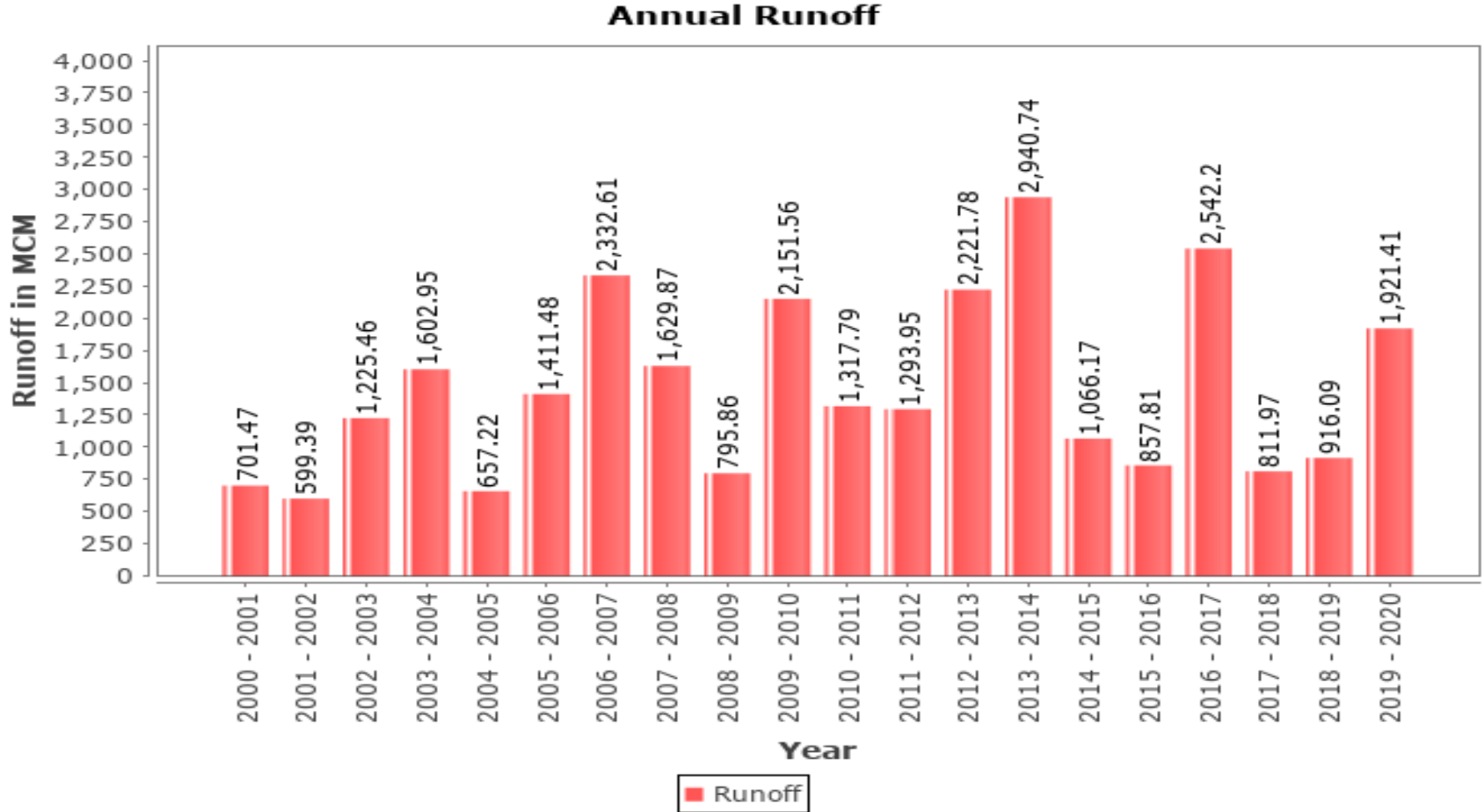
Annual Runoff Values for the period (2000 – 2020)

Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad



Monthly Average Runoff based on period (1977 – 2020)

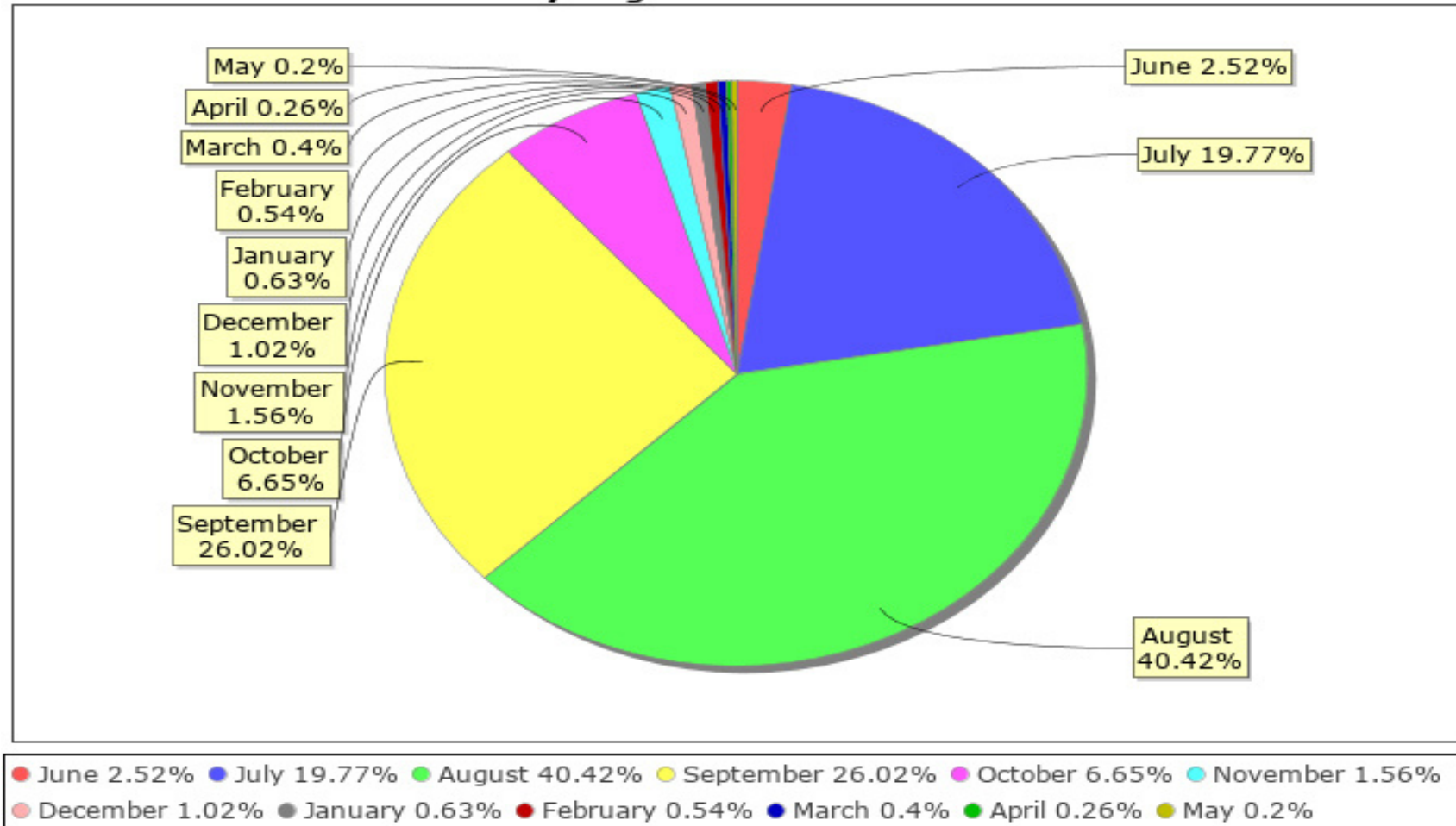
Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

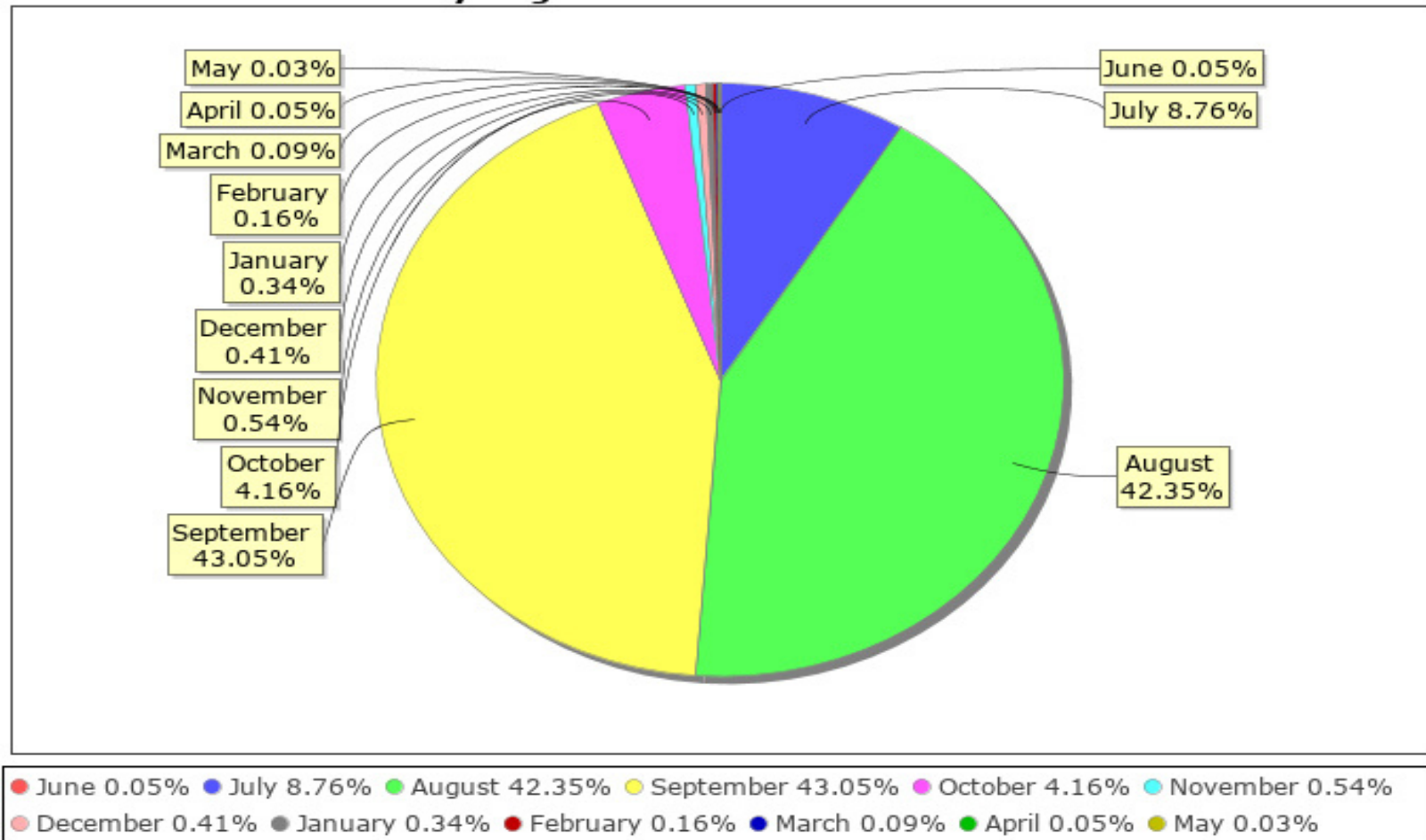
Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Water Year: 2019-2020



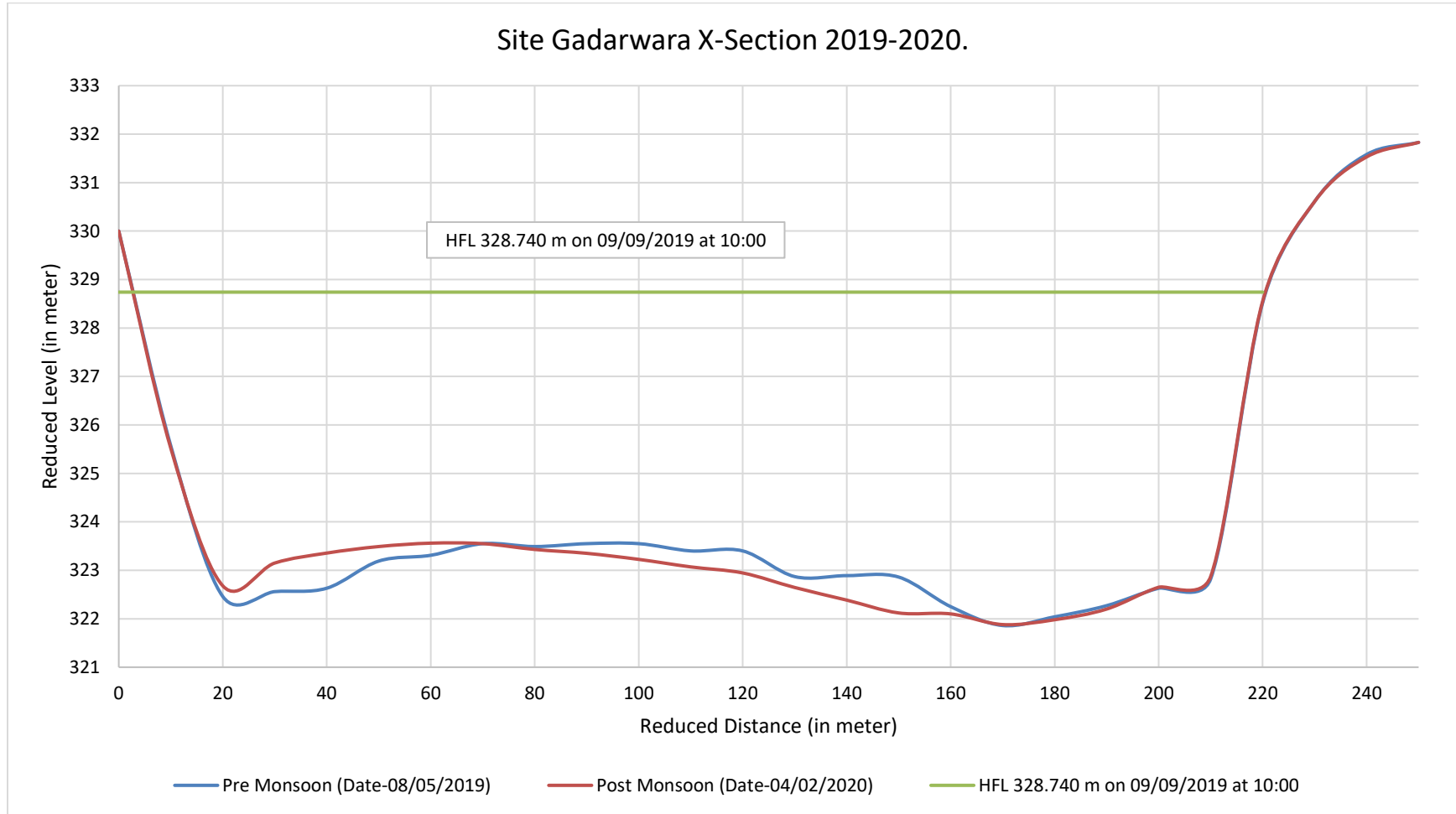
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad



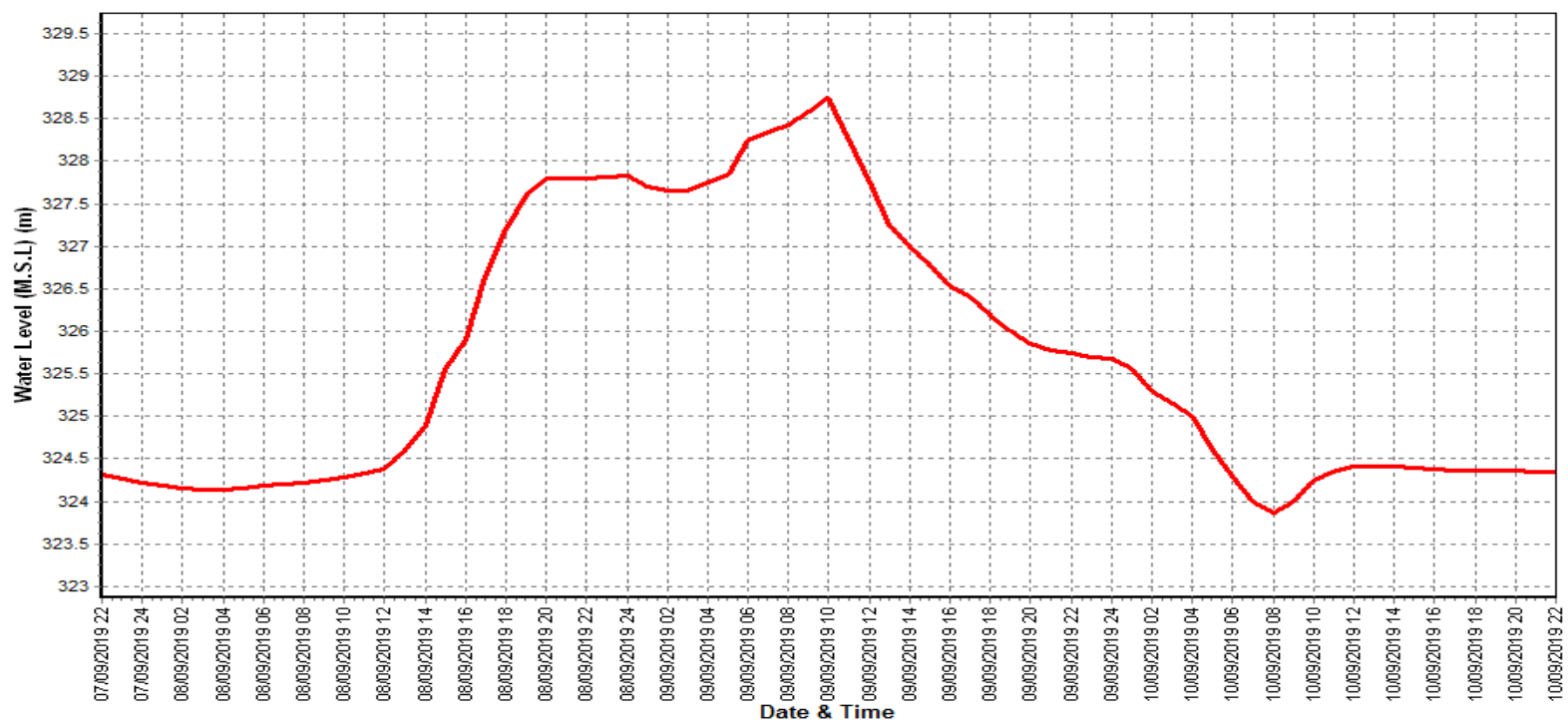
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad



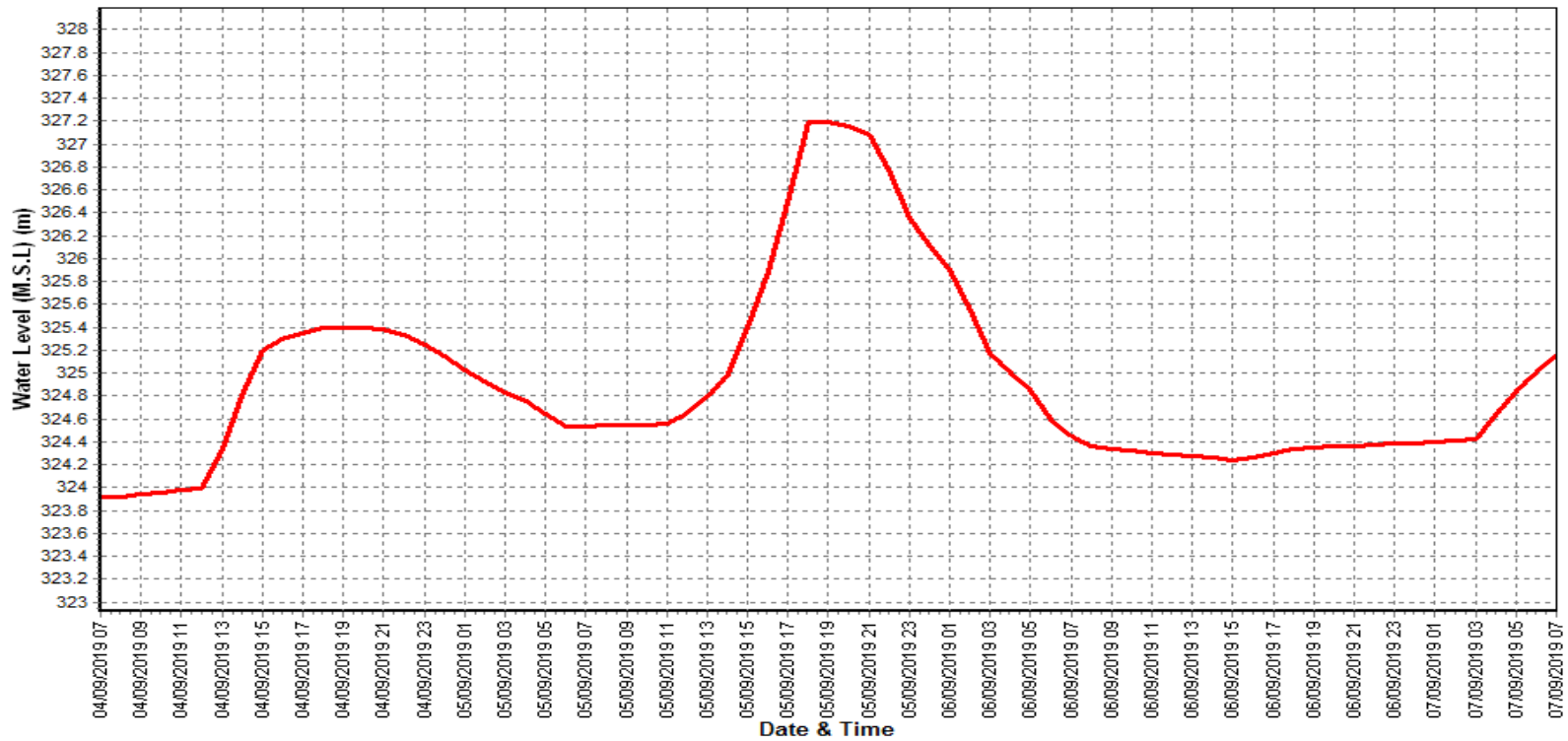
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad



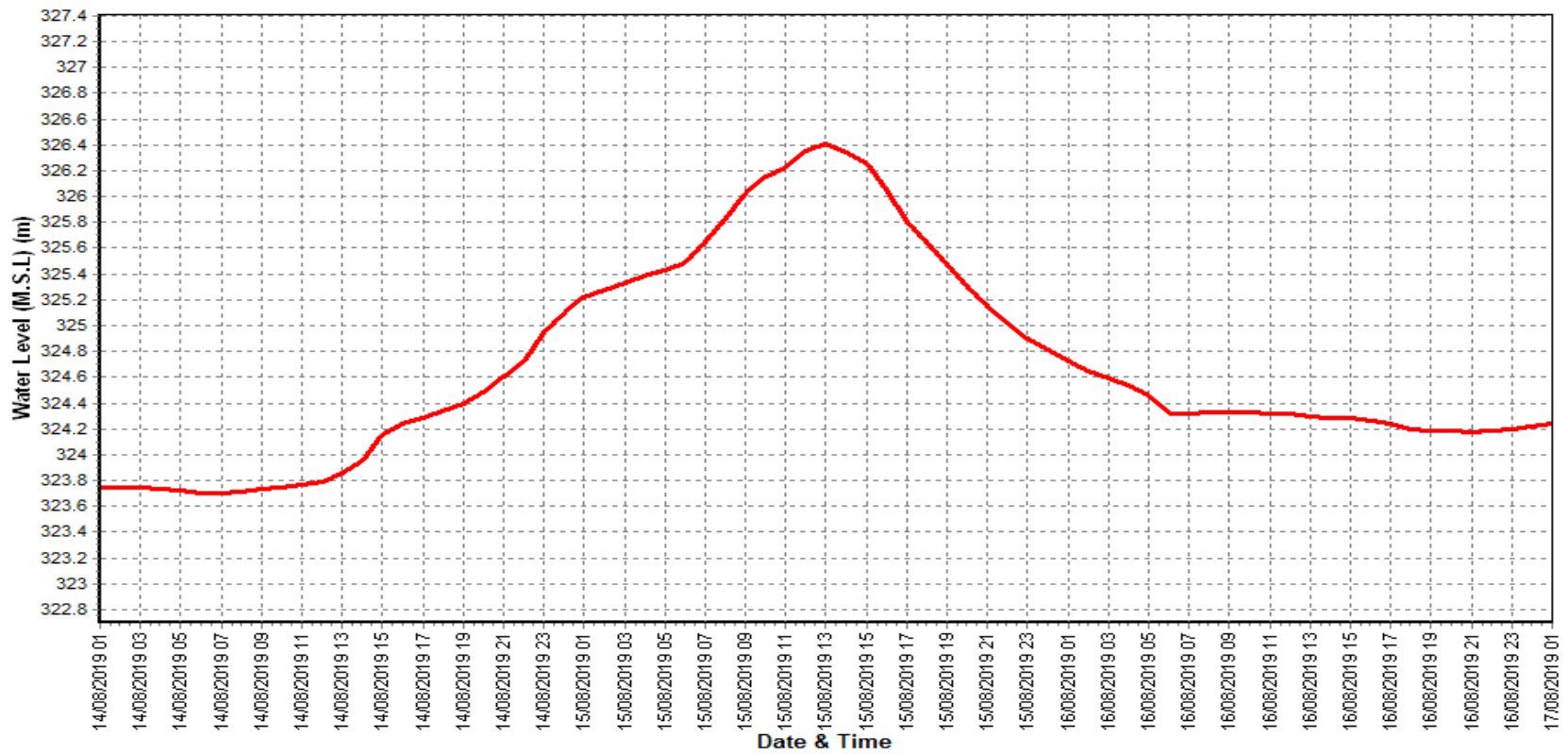
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

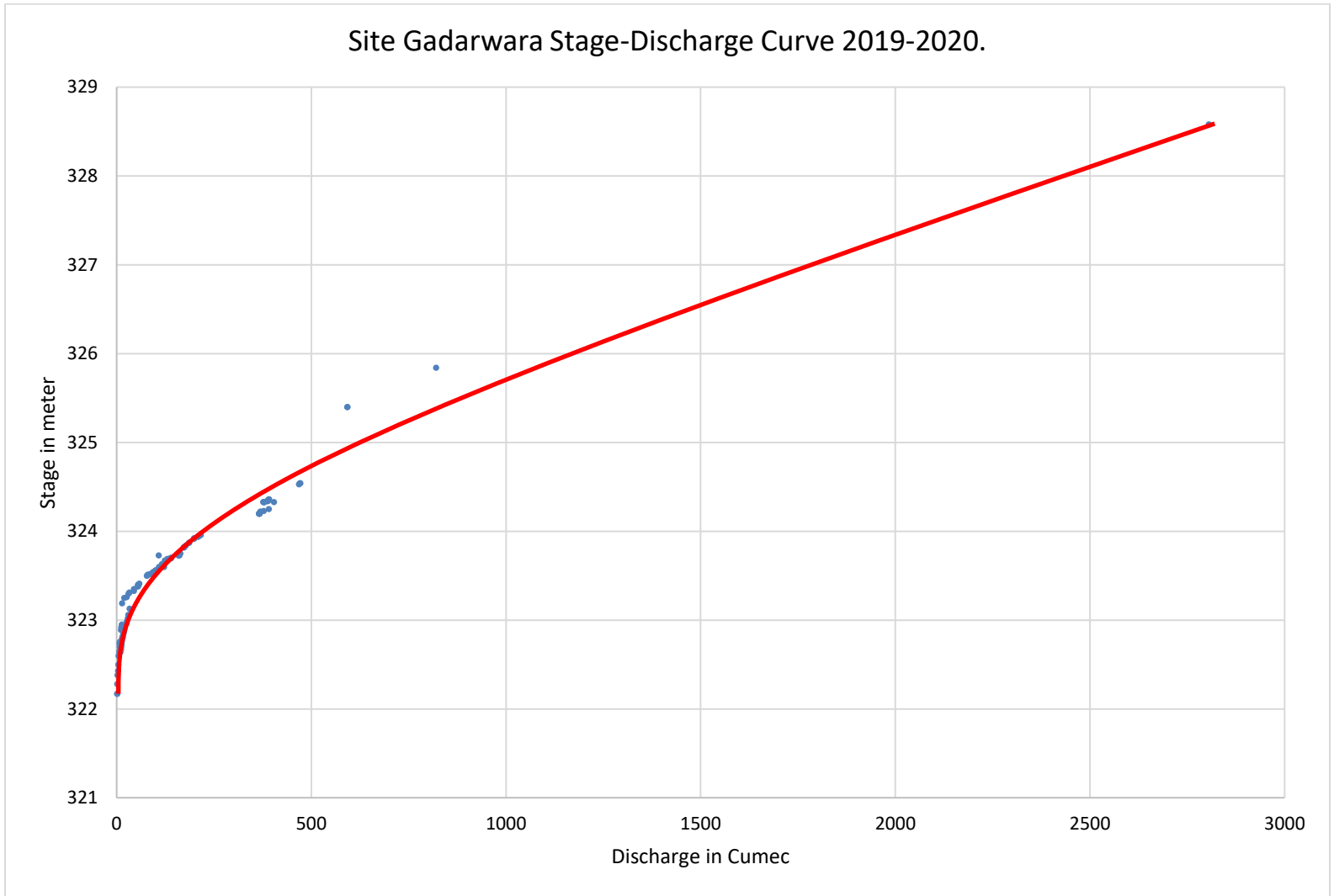
Station Name : Shakkar at Gadarwara

Division : Narmada Division, Bhopal

Local River : Shakkar

Sub-Division : MNSD I, CWC Hoshangabad





Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1970-1971	0	309.750	25/05/1971	0	309.750	25/05/1971
1971-1972	199.2	310.005	20/11/1971	10.7	308.280	28/05/1972
1972-1973	16193.5	330.185	31/08/1972	8.7	308.125	19/06/1972
1973-1974	20658.2	330.455	30/08/1973	8	307.620	10/06/1973
1974-1975	17288.2	329.250	19/08/1974	6.1	307.560	31/05/1975
1975-1976	15847.8	328.205	23/08/1975	5.4	307.558	16/06/1975
1976-1977	3074.3	315.440	16/08/1976	5.9	307.470	17/05/1977
1977-1978	13455.2	326.838	08/08/1977	5.7	307.460	03/06/1977
1978-1979	6961.5	311.248	30/07/1978	10	307.640	09/06/1978
1979-1980	8158.1	322.175	10/08/1979	4.6	307.370	30/05/1980
1980-1981	12375	326.725	30/08/1980	4.5	307.370	01/06/1980
1981-1982	2904	315.155	29/07/1981	4	307.445	18/05/1982
1982-1983	4641.6	317.702	18/08/1982	5.5	307.425	02/06/1982
1983-1984	14890.5	325.625	09/09/1983	2.9	307.565	31/05/1984
1984-1985	12220	327.600	19/08/1984	3	307.565	04/06/1984
1985-1986	6860	321.400	09/08/1985	7.8	307.555	07/06/1985
1986-1987	3170	317.360	23/07/1986	1.2	307.520	01/06/1986
1987-1988	10800	323.715	18/09/1987	4.54	307.465	05/06/1987
1988-1989	11200	324.030	05/08/1988	3.4	307.500	27/04/1989
1989-1990	2750	315.670	06/08/1989	5.23	307.470	03/06/1989
1990-1991	7200	320.420	20/09/1990	22.38	307.570	02/06/1990
1991-1992	19500	329.240	24/08/1991	27	307.750	17/01/1992
1992-1993	9400	323.450	12/09/1992	18.68	307.810	05/03/1993
1993-1994	7100	319.630	28/09/1993	20	307.700	08/06/1993
1994-1995	15600	327.220	21/07/1994	51	308.310	04/06/1994
1995-1996	10000	323.590	11/08/1995	46	307.920	12/11/1995
1996-1997	1750	313.170	21/08/1996	19	307.500	04/06/1996
1997-1998	5700	319.080	03/08/1997	56.63	307.900	26/06/1997
1998-1999	3900	316.150	15/09/1998	21.44	307.580	24/05/1999
1999-2000	21500	329.260	19/09/1999	19.8	307.600	06/06/1999
2000-2001	5900	318.970	28/07/2000	30.87	307.700	23/05/2001
2001-2002	6950	320.160	15/07/2001	31	307.710	31/03/2002
2002-2003	9800	323.500	18/08/2002	25.15	307.380	22/03/2003
2003-2004	6800	320.170	05/09/2003	65.14	307.930	12/05/2004
2004-2005	12300	323.800	23/08/2004	30	307.620	11/06/2004
2005-2006	10452.2	323.555	16/09/2005	18.69	307.550	25/06/2005

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
2006-2007	4752.72	318.380	31/08/2006	24.27	307.560	23/06/2006
2007-2008	818.66	311.480	09/07/2007	30.89	307.600	05/05/2008
2008-2009	4051.12	316.935	02/08/2008	36.02	307.700	15/01/2009
2009-2010	7727.63	321.300	09/09/2009	25.54	307.590	30/06/2009
2010-2011	2535.61	314.930	20/09/2010	37.46	307.550	20/04/2011
2011-2012	8131.4	322.000	09/09/2011	36.82	307.500	26/05/2012
2012-2013	4040.76	317.750	13/08/2012	29.4	307.610	08/06/2012
2013-2014	15223	326.500	23/08/2013	50.14	307.600	14-05-2014
2014-2015	4134	317.735	19/03/2015	70.7	307.800	30/04/2015
2015-2016	1881.21	313.940	05/08/2015	24.8	307.380	13/04/2016
2016-2017	6091	319.120	08/08/2016	31.9	307.640	02/06/2016
2017-2018	1017	312.130	22/07/2017	17	307.350	18/02/2018
2018-2019	4350	317.500	09/09/2018	23.3	307.430	27/03/2019
2019-2020	11700	324.200	09/09/2019	21.5	307.480	06/06/2019

Stage Discharge Sheet for Narmada at Barmanghat for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	43.8	307.540	241	309.300	454	310.420	1920	314.000	4000	317.060	280	309.500
2	27	307.510	132	308.140	286	309.550	1940	314.130	2720	315.320	254	309.470
3	32.7	307.550	188	308.740	227	309.200	1300	312.780	1800	313.800	248	309.440
4	38.7	307.530	284	309.800	560	310.800	1820	313.560	1340	312.900	241	309.400
5	37	307.500	800	311.050	432	310.710	3100	315.800	820	311.620	259	309.380
6	21.5	307.480	580	310.900	375	309.860	2960	315.600	600	310.990	250	309.300
7	36.5	307.530	320	309.830	550	310.810	2820	315.420	550	310.860	227	309.200
8	40.4	307.570	373	310.150	833	311.600	2560	315.000	560	310.800	216	309.130
9	32	307.550	227	309.230	3680	316.620	11700	324.200	580	310.940	203	309.040
10	53.7	307.680	259	309.280	3580	316.450	8200	321.590	565	310.860	200	309.000
11	51.3	307.680	222	309.300	3200	315.900	3440	316.360	540	310.800	179	308.940
12	48.4	307.690	171	308.930	1380	312.950	4340	317.880	501	310.750	170	308.970
13	46.4	307.680	158	308.810	1300	312.270	9200	322.440	433	310.700	233	309.270
14	45.3	307.640	140	308.680	880	311.750	6620	320.550	372	310.150	222	309.240
15	40.9	307.510	127	308.560	6240	319.650	2740	315.300	375	310.180	221	309.230
16	35	307.560	125	308.480	6500	319.900	1050	312.230	385	309.960	219	309.210
17	47.9	307.530	130	308.480	3420	316.250	1540	313.340	370	309.830	215	309.110
18	57.8	307.550	183	308.900	1100	312.350	2100	314.280	380	309.970	153	308.850
19	62.7	307.730	179	309.000	720	311.300	2400	314.750	376	309.900	151	308.640
20	47.1	307.720	181	308.940	833	311.250	1340	312.900	320	309.740	175	308.720
21	36.3	307.640	117	308.370	1880	313.600	1200	312.580	179	309.740	156	308.600
22	46.1	307.600	79.1	308.070	2460	314.880	1180	312.550	203	309.000	127	308.560
23	46	307.670	82.3	308.070	2580	315.050	1100	312.320	299	309.630	163	308.610
24	57	307.680	73.2	308.000	1900	313.960	960	312.000	345	309.770	151	308.720
25	40.2	307.650	47.8	307.800	2270	314.630	1180	312.550	335	309.750	165	308.620
26	60.8	307.670	57.7	307.840	3450	316.350	1200	312.600	345	309.700	140	308.540
27	43.3	307.640	203	309.000	4100	317.200	2500	314.880	343	309.690	159	308.630
28	41.9	307.580	220	309.120	3600	316.500	2620	315.080	305	309.650	150	308.550
29	53.3	307.890	161	308.850	1940	314.190	2360	314.700	300	309.640	120	308.450
30	46	307.670	215	309.050	1400	313.140	5540	318.980	288	309.580	116	308.360
31			1120	312.300	1280	312.800			284	309.550		
Ten-Daily Mean												
I Ten-Daily	36.33	307.540	340.4	309.640	1097.7	311.600	3832	316.210	1353.5	312.510	237.8	309.290
II Ten-Daily	48.28	307.630	161.6	308.810	2557.3	314.360	3477	316.000	405.2	310.200	193.8	309.020
III Ten-Daily	47.09	307.670	216.01	308.770	2441.82	314.750	1984	313.820	293.27	309.610	144.7	308.560
Monthly												
Min.	21.5	307.480	47.8	307.800	227	309.200	960	312.000	179	309.000	116	308.360
Max.	62.7	307.890	1120	312.300	6500	319.900	11700	324.200	4000	317.060	280	309.500
Mean	43.9	307.610	239.34	309.070	2032.27	313.570	3097.67	315.340	683.99	310.770	192.1	308.960

Annual Runoff in MCM :18603.84 Annual Runoff in mm :703.28

Peak Observed Discharge = 1940 cumecs on 29/8/2019 Corres. Water Level 314.19 m

Lowest Observed Discharge = 21.5cumecs on 6/6/2019 Corres. Water Level 307.48 m

Stage Discharge Sheet for Narmada at Barmanghat for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	108	308.240	101	308.270	134	308.450	110	308.320	115	308.340	176	308.980
2	88.3	308.080	124	308.400	125	308.410	115	308.350	125	308.380	172	308.900
3	86.5	308.040	99.7	308.140	108	308.310	120	308.360	160	308.620	160	308.820
4	101	308.150	75.5	308.000	102	308.270	123	308.380	120	308.460	162	308.640
5	119	308.320	80	308.010	104	308.280	125	308.390	110	308.380	120	308.360
6	102	308.180	76.9	307.980	105	308.300	114	308.340	130	308.430	134	308.400
7	82.3	308.120	62.7	307.830	110	308.320	116	308.350	130	308.440	140	308.520
8	110	308.370	75.4	307.970	106	308.300	119	308.360	140	308.140	138	308.590
9	99.8	308.140	97.4	308.180	103	308.290	127	308.400	120	308.450	135	308.500
10	80	308.050	80.9	308.030	113	308.330	179	308.900	100	308.400	122	308.380
11	114	308.280	78.9	308.010	118	308.350	202	309.010	140	308.600	169	308.720
12	79.8	308.030	75	308.000	120	308.360	162	308.660	160	308.640	209	309.060
13	79.5	307.990	120	308.380	119	308.350	90.6	308.100	180	309.040	220	309.100
14	90.6	308.100	129	308.420	121	308.370	93.8	308.140	175	308.900	212	309.070
15	100	308.200	125	308.400	119	308.360	102	308.210	185	309.050	223	309.110
16	92.3	308.160	122	308.390	125	308.390	98.7	308.190	180	309.000	228	309.140
17	86.4	308.040	132	308.460	127	308.420	95.8	308.160	220	309.100	225	309.120
18	90.5	308.130	138	308.480	126	308.400	100	308.200	200	309.060	215	309.080
19	91.1	308.180	133	308.450	120	308.350	81.3	308.020	180	309.010	210	309.060
20	85.3	308.080	127	308.410	115	308.340	164	308.680	210	309.070	218	309.090
21	86	308.030	125	308.400	122	308.380	163	308.660	187	309.050	224	309.110
22	87	308.050	126	308.420	115	308.360	167	308.690	209	309.070	221	309.100
23	84.5	308.020	125	308.390	119	308.360	161	308.640	213	309.080	188	309.050
24	75.4	307.960	126	308.400	120	308.360	180	308.700	211	309.060	185	309.030
25	102	308.180	127	308.420	115	308.340	140	308.500	183	309.030	180	309.000
26	63.1	307.880	131	308.450	112	308.330	80	308.030	180	309.000	104	308.220
27	56	307.850	124	308.450	116	308.350	75	307.980	186	309.050	168	308.860
28	68.6	307.930	125	308.390	114	308.340	73	307.920	215	309.090	125	308.450
29	74	308.000	123	308.380	111	308.320	73	307.960	178	309.000	122	308.380
30	104	308.300	130	308.440			60	307.890	170	308.960	139	308.490
31	93.7	308.180	121	308.370			150	307.550			95.8	308.160
Ten-Daily Mean												
I Ten-Daily	97.69	308.170	87.35	308.080	111	308.330	124.8	308.410	125	308.400	145.9	308.610
II Ten-Daily	90.95	308.120	117.99	308.340	121	308.370	119.02	308.340	183	308.950	212.9	309.050
III Ten-Daily	81.3	308.030	125.73	308.410	116	308.350	120.18	308.230	193.2	309.040	159.25	308.710
Monthly												
Min.	56	307.850	62.7	307.830	102	308.270	60	307.550	100	308.140	95.8	308.160
Max.	119	308.370	138	308.480	134	308.450	202	309.010	220	309.100	228	309.140
Mean	89.98	308.110	110.36	308.280	116	308.350	121.33	308.330	167.07	308.800	172.68	308.790

Peak Computed Discharge = 11700 cumecs on 9/9/2019 Corres. Water Level 324.2 m
 Lowest Computed Discharge = 27cumecs on 2/6/2019 Corres. Water Level 307.51 m

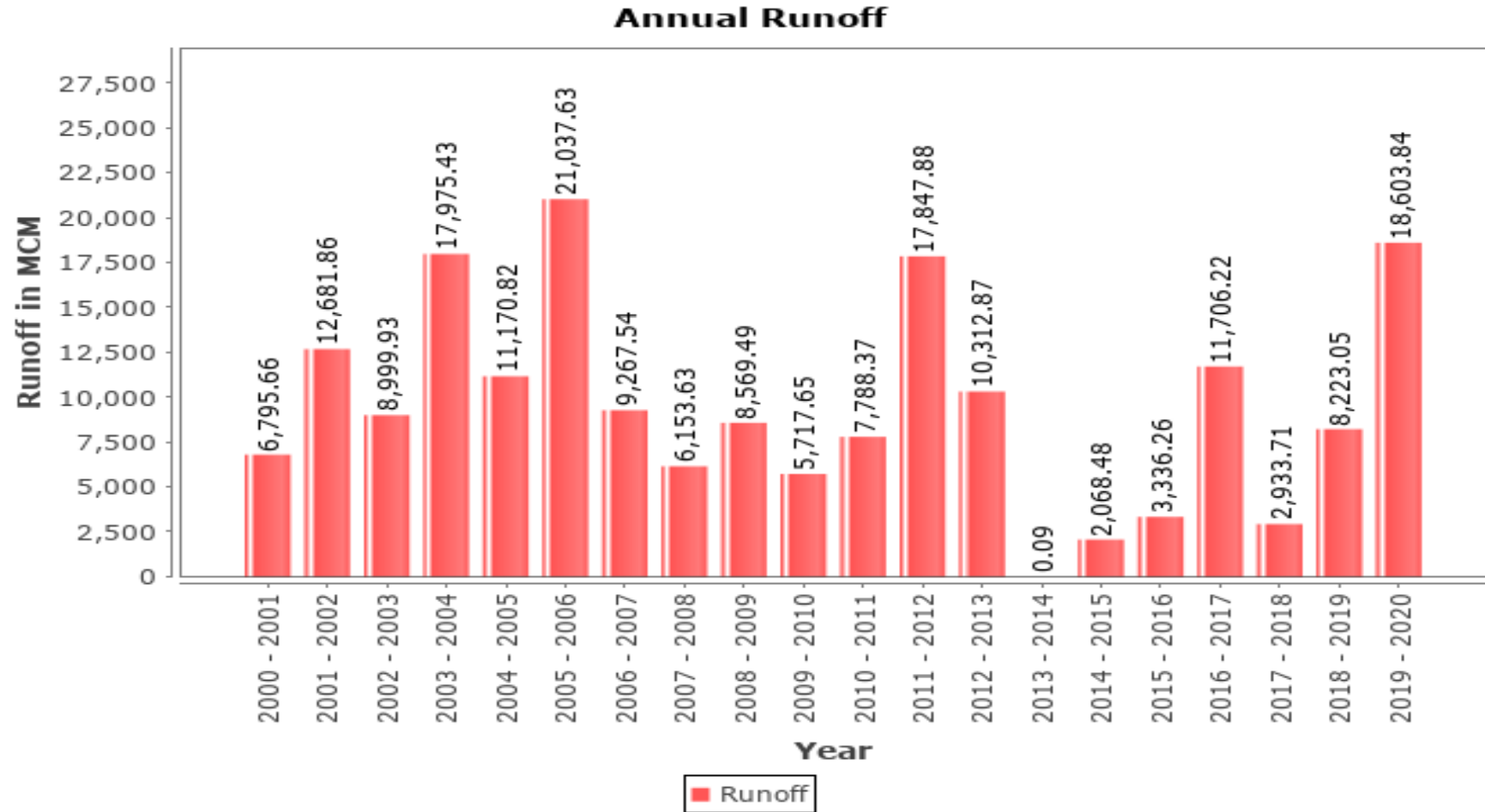
Annual Runoff Values for the period (2000 – 2020)

Station Name : Narmada at Barmanghat

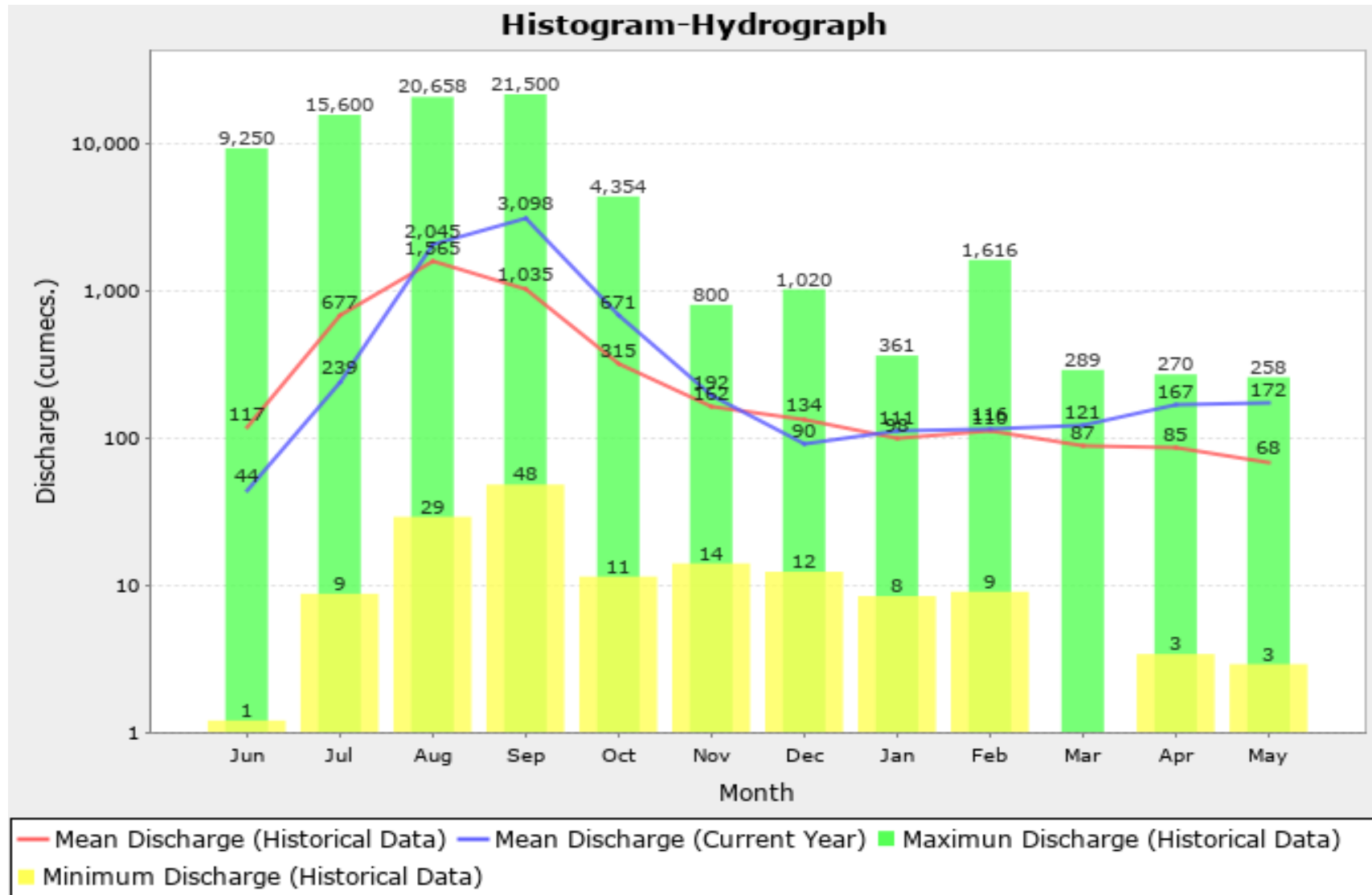
Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1972-2020)



Monthly Average Runoff based on period (1972 – 2020)

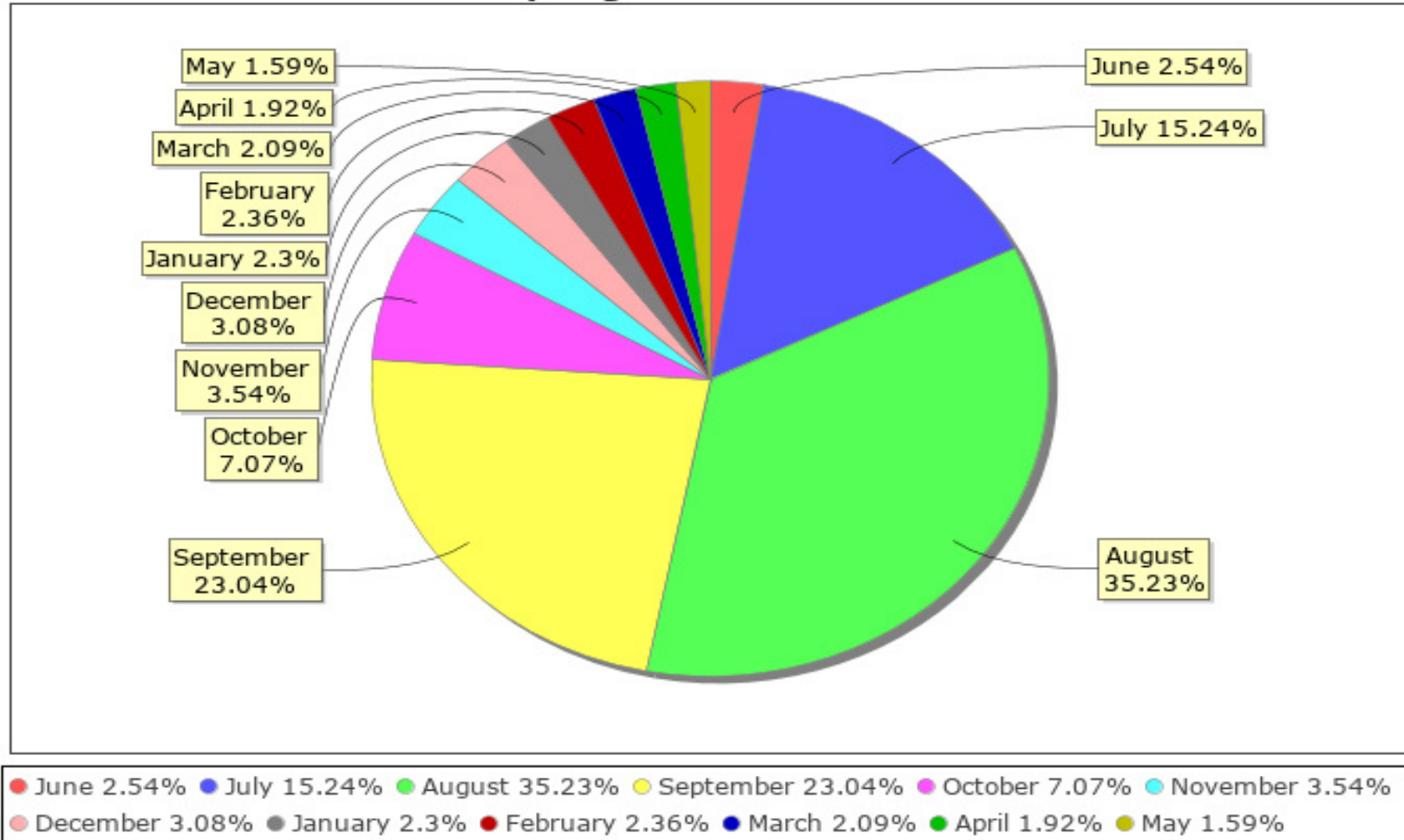
Station Name : Narmada at Barmanghat

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

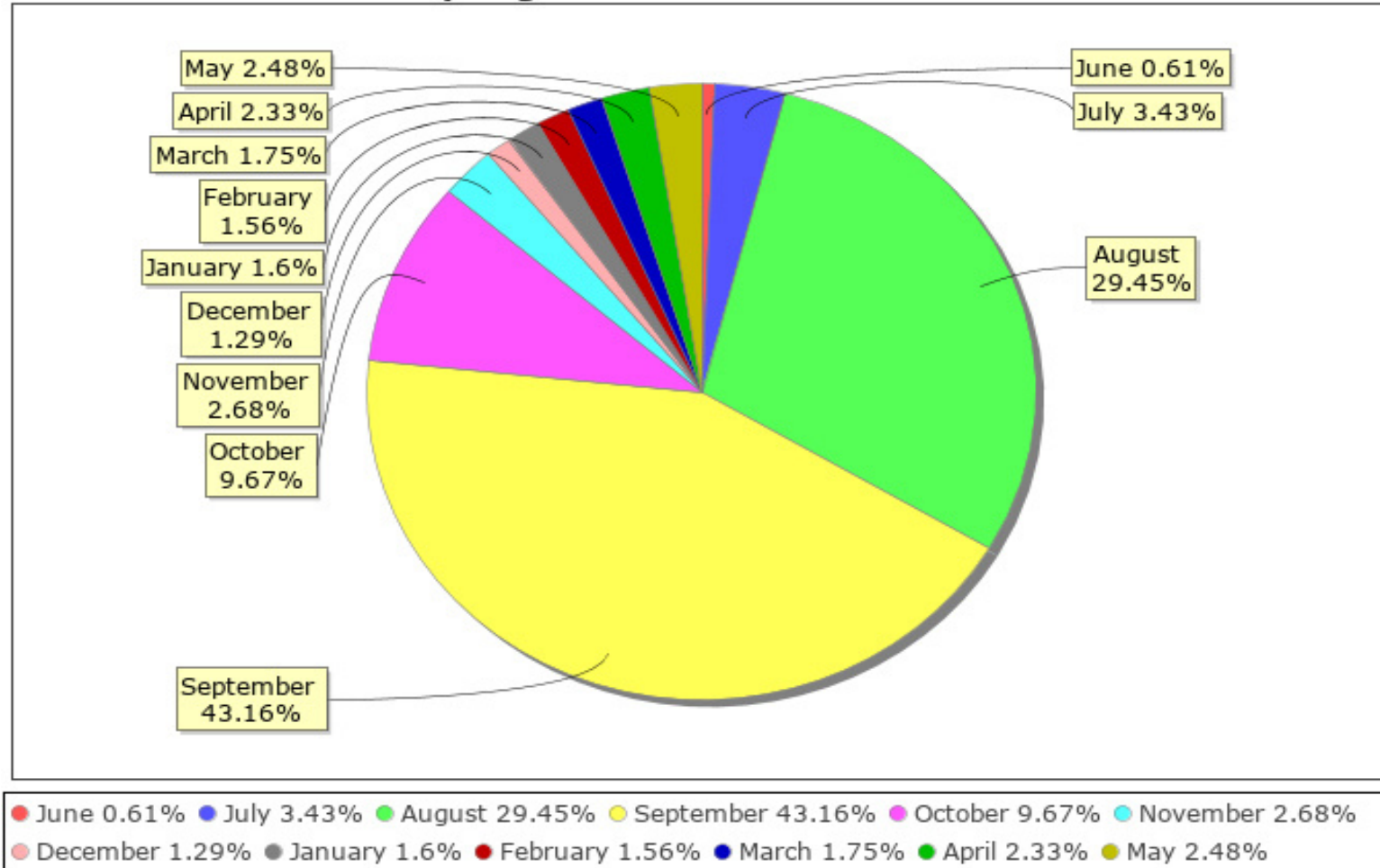
Station Name : Narmada at Barmanghat

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Water Year: 2019-2020



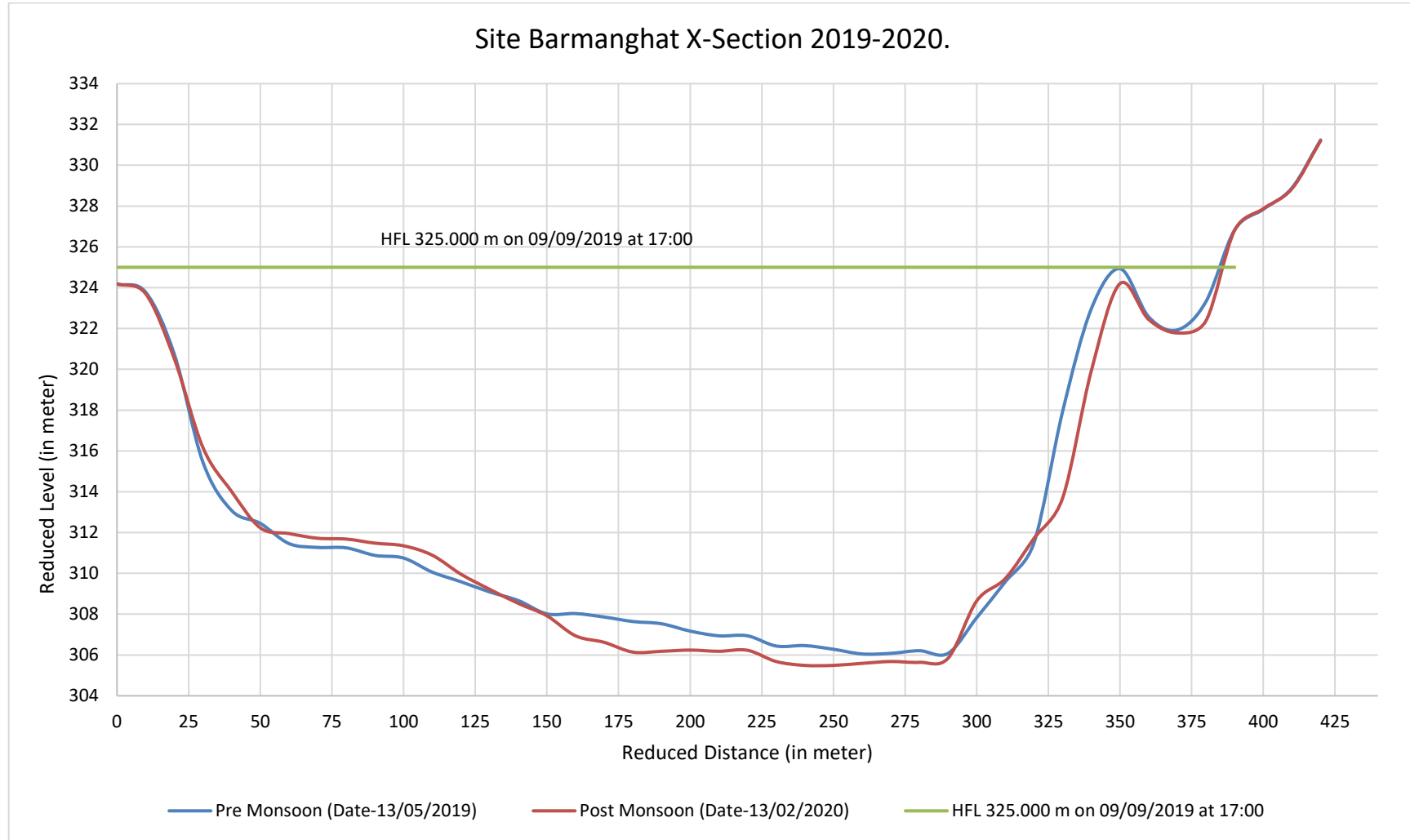
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Barmanghat

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



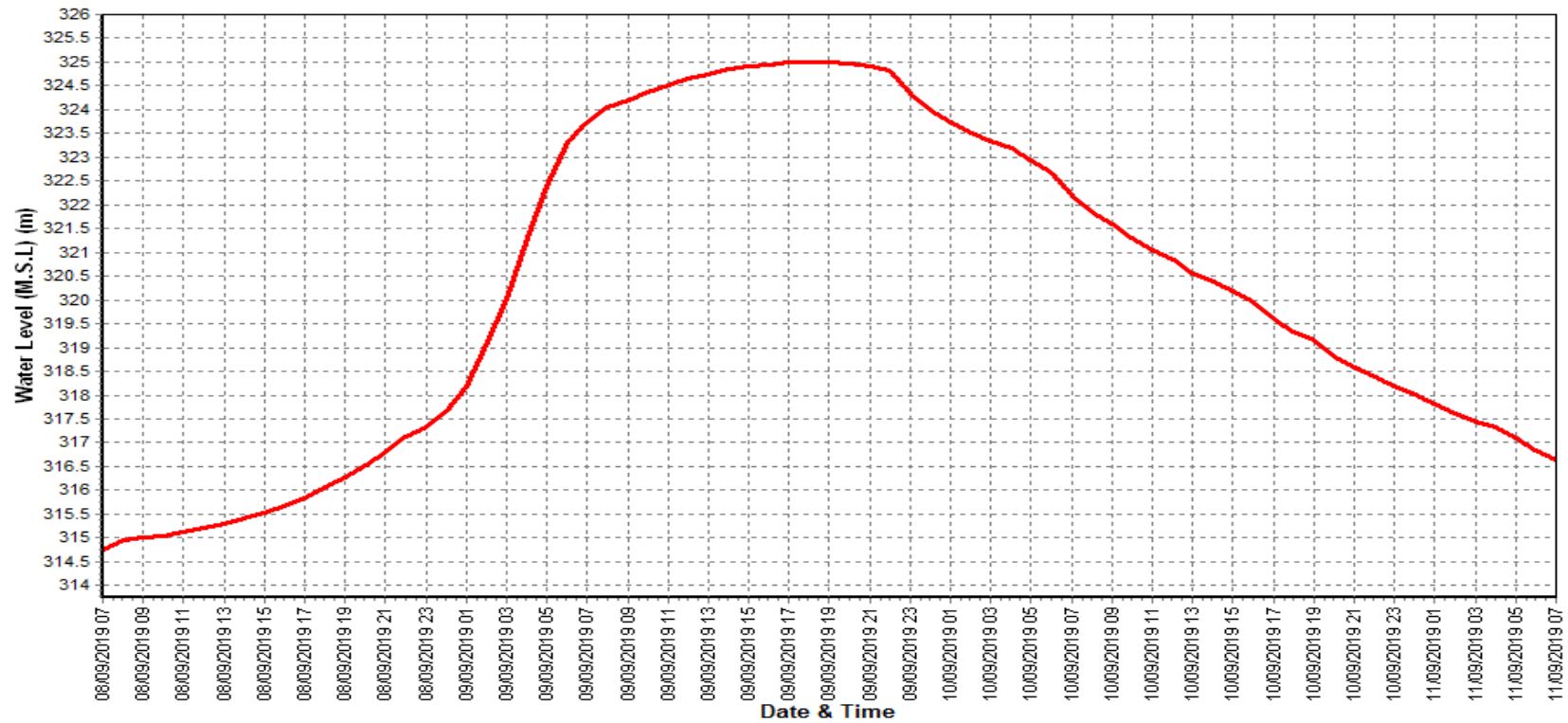
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Barman

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



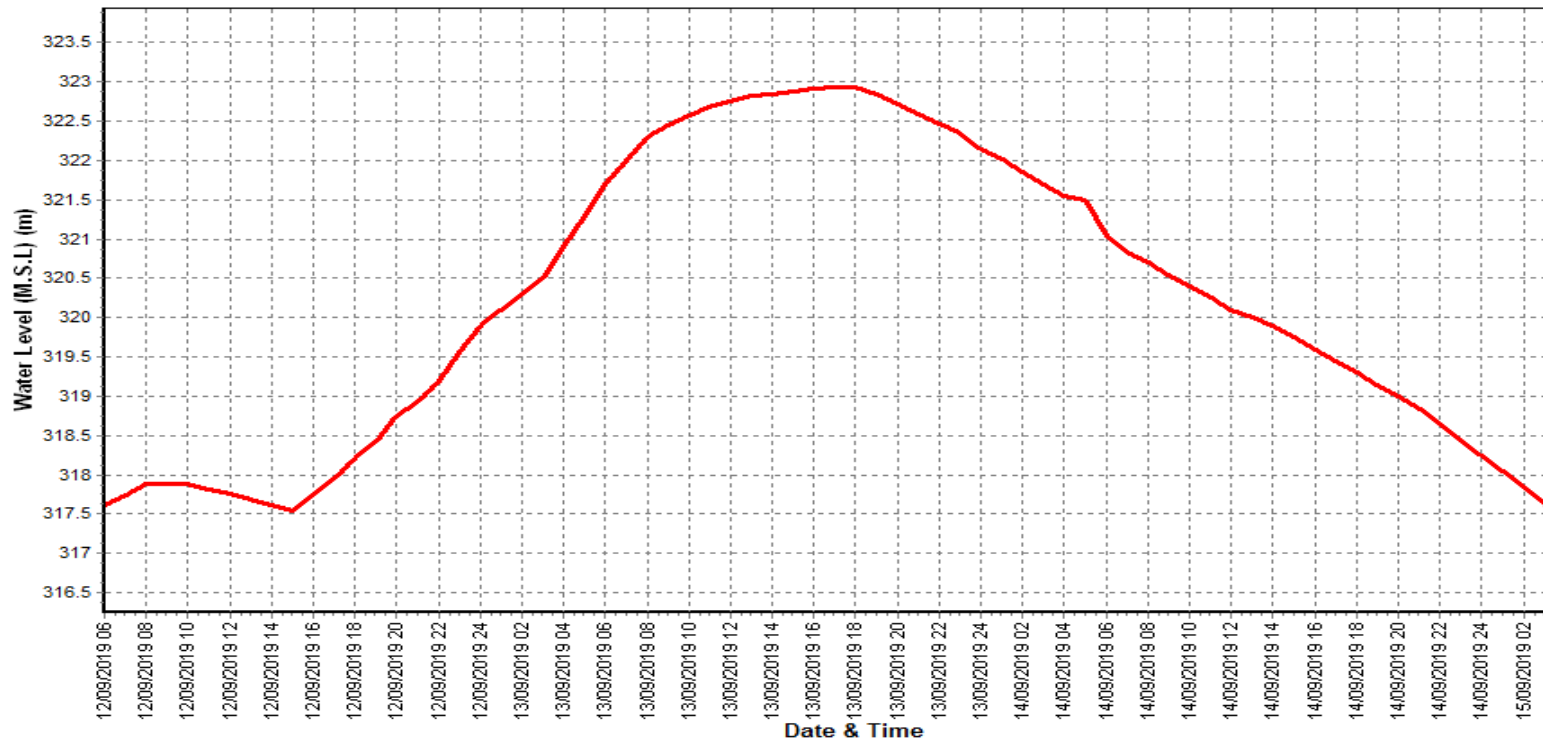
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Barman

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



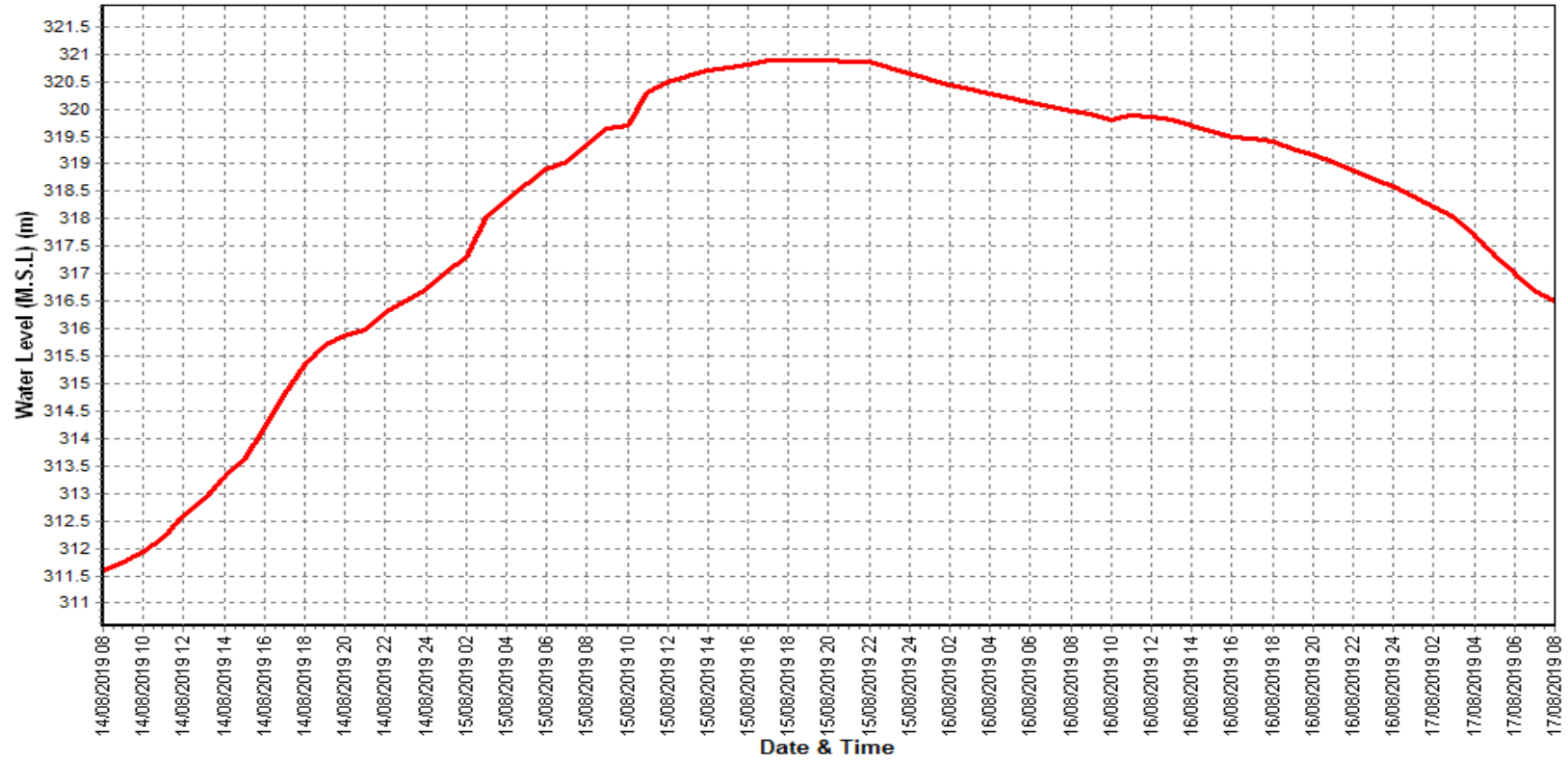
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Barman

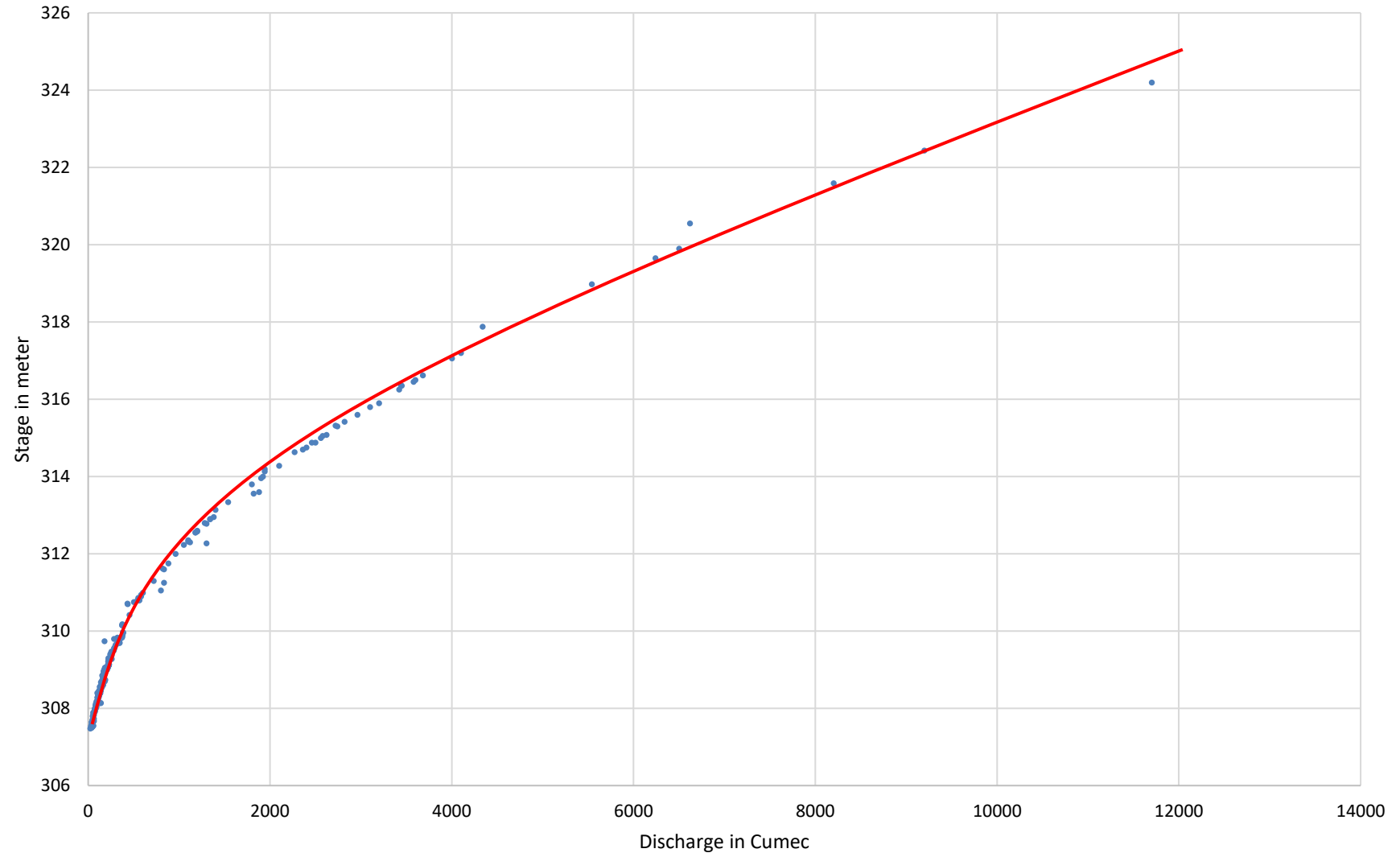
Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : MNSD I, CWC Hoshangabad



Site Barmanghat Stage-Discharge Curve 2019-2020.



4.34 Machrewa at Bakori.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Machrewa at Bakori		Code	:	CW1NAU001444
State	:	Madhya Pradesh		District	:	NARSIGHPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Machrewa
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	479 Sq. Km.		Bank	:	Left
Latitude	:	22°50'31"		Longitude	:	79°21'42"
Current Zero of Gauge (m)	:	372				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
372		16/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	385.755	375.900	09-08-2019	0.21	373.020	31-05-2020

Stage Discharge Sheet for Machrewa at Bakori for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	28.58	373.25	18.53	373.20	46.915	373.45	173.33	374.50	48.795	373.48	38.35	373.34
2	27.34	373.25	25.53	373.20	45.755	373.50	130.13	374.20	34.915	373.45	33.87	373.33
3	22.58	373.25	131.13	374.20	49.755	373.50	97.475	373.99	39.035	373.43	27.87	373.33
4	26.82	373.24	120.33	374.15	63.915	373.70	117.66	374.10	38.105	373.42	30.87	373.33
5	16.82	373.24	134.13	374.20	70.775	373.69	202.33	374.70	37.205	373.41	30.87	373.33
6	25.14	373.23	124.33	374.15	75.795	373.80	219.93	374.80	37.205	373.41	34.87	373.33
7	17.14	373.23	38.325	373.40	92.095	373.90	263.24	375.10	36.325	373.40	26.87	373.33
8	24.14	373.23	10.08	373.15	261.24	375.10	303.51	375.38	42.325	373.40	35.87	373.33
9	18.14	373.23	26.87	373.35	385.75	375.90	259.24	375.10	30.325	373.40	25.87	373.33
10	21.82	373.24	34.325	373.40	111.66	374.10	148.03	374.30	35.605	373.39	30.17	373.33
11	21.82	373.24	36.325	373.40	92.095	373.90	175.33	374.50	37.895	373.38	30.17	373.33
12	20.54	373.22	31.22	373.30	32.325	373.40	171.33	374.50	31.895	373.38	35.17	373.33
13	20.54	373.22	11.53	373.20	36.325	373.40	74.795	373.80	34.205	373.37	25.17	373.33
14	20.54	373.22	13.95	373.18	352.15	375.70	42.755	373.50	35.525	373.36	30.17	373.33
15	25.54	373.22	16.56	373.16	228.63	374.90	32.87	373.35	31.525	373.36	30.17	373.33
16	15.54	373.22	8.24	373.12	156.13	374.40	23.18	373.29	33.195	373.36	34.17	373.33
17	20.54	373.22	7.20	373.11	41.755	373.50	36.325	373.40	51.105	373.55	26.17	373.33
18	20.01	373.21	7.20	373.11	23.22	373.30	92.095	373.90	51.105	373.55	35.51	373.32
19	24.01	373.21	36.325	373.40	27.23	373.28	70.915	373.70	56.105	373.55	23.51	373.32
20	16.01	373.21	39.325	373.40	143.03	374.30	56.605	373.60	35.87	373.35	29.51	373.32
21	24.53	373.20	33.325	373.40	117.66	374.10	45.755	373.50	29.87	373.35	34.51	373.32
22	12.53	373.20	36.325	373.40	45.755	373.50	43.795	373.48	34.87	373.35	24.51	373.32
23	18.53	373.20	40.325	373.40	23.23	373.28	31.105	373.42	30.87	373.35	29.51	373.32
24	20.19	373.19	32.87	373.35	51.605	373.60	41.325	373.40	35.87	373.35	29.51	373.32
25	14.19	373.19	32.87	373.35	106.03	374.01	31.325	373.40	29.87	373.35	33.51	373.32
26	17.19	373.19	36.87	373.35	104.39	373.95	32.87	373.35	32.35	373.34	25.51	373.32
27	21.19	373.19	29.51	373.32	124.31	374.12	64.915	373.70	32.35	373.34	29.51	373.32
28	13.19	373.19	40.755	373.50	122.35	374.09	67.915	373.70	32.35	373.34	32.51	373.32
29	17.19	373.19	45.105	373.42	84.795	373.80	73.815	373.75	38.35	373.34	26.51	373.32
30	17.19	373.19	28.87	373.35	48.755	373.50	56.605	373.60	26.35	373.34	29.51	373.32
31			45.755	373.50	80.195	373.77			32.35	373.34		
Ten-Daily Mean												
I Ten-Daily	22.85	373.24	66.36	373.64	120.36	374.06	191.49	374.62	37.98	373.42	31.55	373.33
II Ten-Daily	20.51	373.22	20.79	373.24	113.29	374.01	77.62	373.75	39.84	373.42	29.97	373.32
III Ten-Daily	17.59	373.19	36.6	373.39	82.64	373.79	48.94	373.53	32.31	373.34	29.51	373.32
Monthly												
Min.	7.2	373.11	7.2	373.11	23.22	373.28	23.18	373.29	26.35	373.34	23.51	373.32
Max.	134.13	374.2	134.13	374.2	385.75	375.9	303.51	375.38	56.105	373.55	38.35	373.34
Mean	41.1	373.42	41.1	373.42	104.7	373.95	106.02	373.97	36.57	373.39	30.34	373.32

Annual Runoff in MCM :1085.9

Annual Runoff in mm :2267

Peak Observed Discharge = 385.755 cumecs on 09/08/2019 Corres. Water Level 375.9 m

Lowest Observed Discharge = 0.211 cumecs on 30/05/2020 Corres. Water Level 373.02 m

Stage Discharge Sheet for Machrewa at Bakori for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	34.33	373.31	25.58	373.25	15.08	373.15	9.36	373.13	8.2	373.12	2.88	373.06
2	22.33	373.31	19.58	373.25	9.08	373.15	9.36	373.13	8.2	373.12	2.88	373.06
3	28.33	373.31	24.58	373.25	12.08	373.15	9.36	373.13	8.2	373.12	2.88	373.06
4	28.33	373.31	21.82	373.24	14.08	373.15	9.36	373.13	8.2	373.12	2.88	373.06
5	35.33	373.31	27.82	373.24	10.08	373.15	9.36	373.13	8.2	373.12	2.88	373.06
6	21.33	373.31	21.14	373.23	12.08	373.15	10.67	373.14	8.2	373.12	3.69	373.07
7	28.33	373.31	21.14	373.23	10.67	373.14	10.67	373.14	8.2	373.12	2.88	373.06
8	27.22	373.30	25.14	373.23	10.67	373.14	10.67	373.14	8.2	373.12	2.13	373.05
9	27.22	373.30	17.14	373.23	10.67	373.14	10.67	373.14	8.2	373.12	2.13	373.05
10	32.22	373.30	15.82	373.24	10.67	373.14	10.67	373.14	8.2	373.12	2.13	373.05
11	22.22	373.30	21.82	373.24	9.36	373.13	12.67	373.14	8.2	373.12	2.13	373.05
12	27.22	373.30	20.54	373.22	9.36	373.13	9.36	373.13	7.2	373.11	2.13	373.05
13	26.18	373.29	18.53	373.20	9.36	373.13	9.36	373.13	7.2	373.11	2.13	373.05
14	28.18	373.29	18.53	373.20	9.36	373.13	9.36	373.13	7.2	373.11	1.44	373.04
15	24.18	373.29	24.53	373.20	9.36	373.13	9.36	373.13	7.2	373.11	1.44	373.04
16	26.18	373.29	12.53	373.20	8.24	373.12	9.36	373.13	7.2	373.11	1.44	373.04
17	26.18	373.29	18.53	373.20	8.24	373.12	9.36	373.13	7.2	373.11	1.44	373.04
18	29.18	373.29	20.01	373.21	8.24	373.12	9.36	373.13	7.2	373.11	0.79	373.03
19	23.18	373.29	23.01	373.21	8.24	373.12	9.36	373.13	7.2	373.11	0.79	373.03
20	26.18	373.29	17.01	373.21	7.2	373.11	8.24	373.12	7.2	373.11	0.79	373.03
21	25.23	373.28	23.53	373.20	7.2	373.11	8.24	373.12	6.28	373.10	0.79	373.03
22	28.23	373.28	13.53	373.20	7.2	373.11	8.24	373.12	6.28	373.10	0.79	373.03
23	22.32	373.27	18.53	373.20	7.2	373.11	9.36	373.13	5.38	373.09	0.79	373.03
24	27.32	373.27	22.19	373.19	7.2	373.11	9.36	373.13	5.38	373.09	0.215	373.02
25	21.32	373.27	12.19	373.19	7.2	373.11	9.36	373.13	5.38	373.09	0.212	373.02
26	24.32	373.27	17.19	373.19	7.2	373.11	9.36	373.13	4.51	373.08	0.23	373.02
27	22.58	373.25	15.95	373.18	7.2	373.11	9.36	373.13	4.51	373.08	0.21	373.02
28	26.58	373.25	15.95	373.18	7.2	373.11	9.36	373.13	4.51	373.08	0.216	373.02
29	18.58	373.25	11.74	373.17	7.2	373.11	8.2	373.12	4.51	373.08	0.212	373.02
30	22.58	373.25	14.74	373.17			8.2	373.12	4.51	373.08	0.211	373.02
31	22.58	373.25	16.74	373.17			8.2	373.12			0.21	373.02
Ten-Daily Mean												
I Ten-Daily	28.5	373.31	21.98	373.24	11.52	373.15	10.01	373.14	8.2	373.12	2.74	373.06
II Ten-Daily	25.89	373.29	19.5	373.21	8.7	373.12	9.58	373.13	7.3	373.11	1.45	373.04
III Ten-Daily	23.79	373.26	16.57	373.19	7.2	373.11	8.84	373.13	5.13	373.09	0.37	373.02
Monthly												
Min.	18.58	373.25	11.74	373.17	7.2	373.11	8.2	373.12	4.51	373.08	0.21	373.02
Max.	35.33	373.31	27.82	373.25	15.08	373.15	12.67	373.14	8.2	373.12	3.69	373.07
Mean	25.98	373.29	19.26	373.21	9.2	373.13	9.46	373.13	6.88	373.11	1.48	373.04

Peak Computed Discharge = 303.515 cumecs on 08/09/2019 Corres. Water Level 375.380 m
 Lowest Computed Discharge = 0.21 cumecs on 31/05/2020 Corres. Water Level 373.02 m

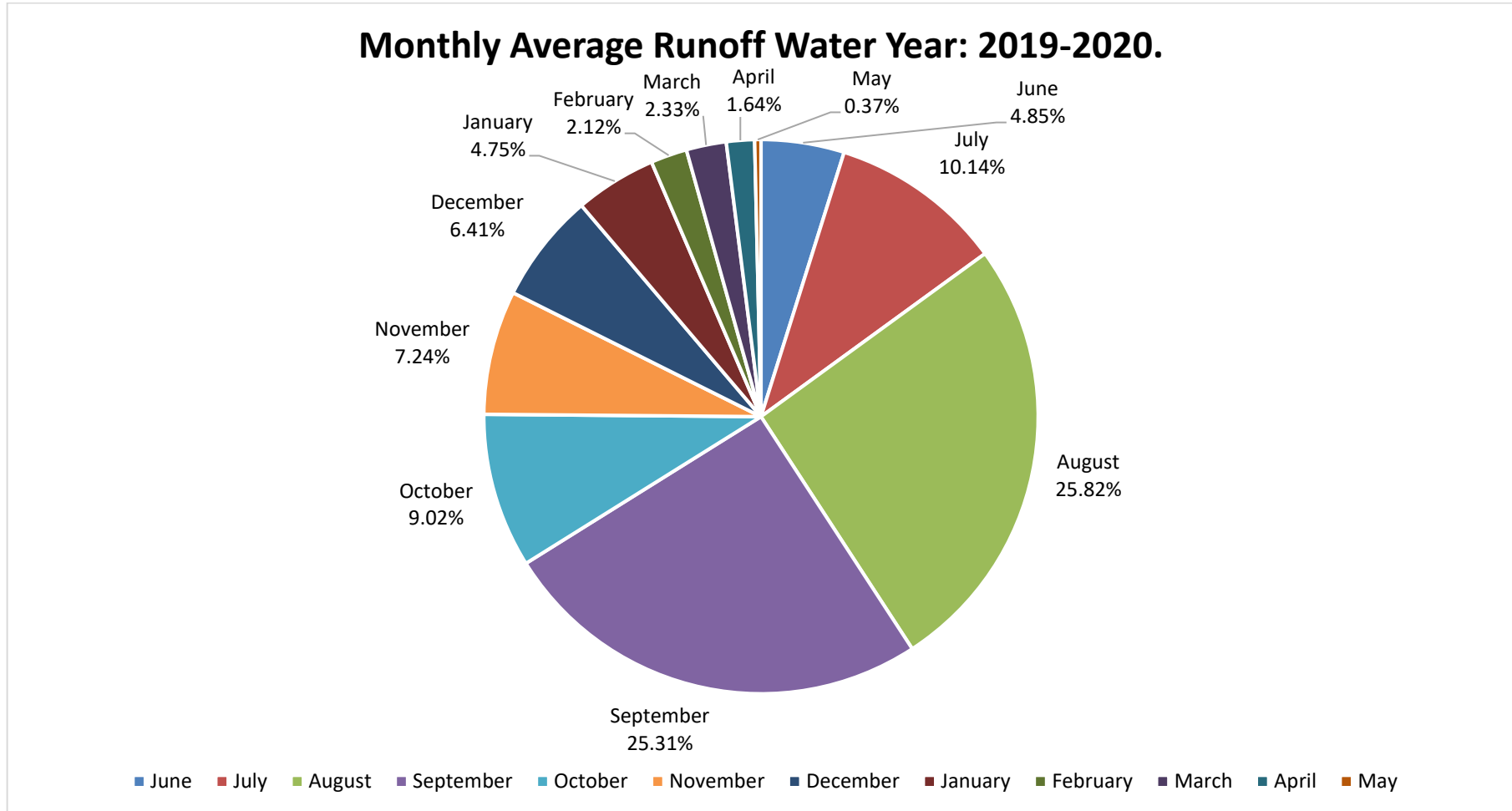
Monthly Runoff for the Year (2019-2020)

Station Name: Machrewa at Bakori

Local River: Machrewa

Division: Narmada Division, Bhopal

Sub-Division: MNSD-I, CWC Hoshangabad



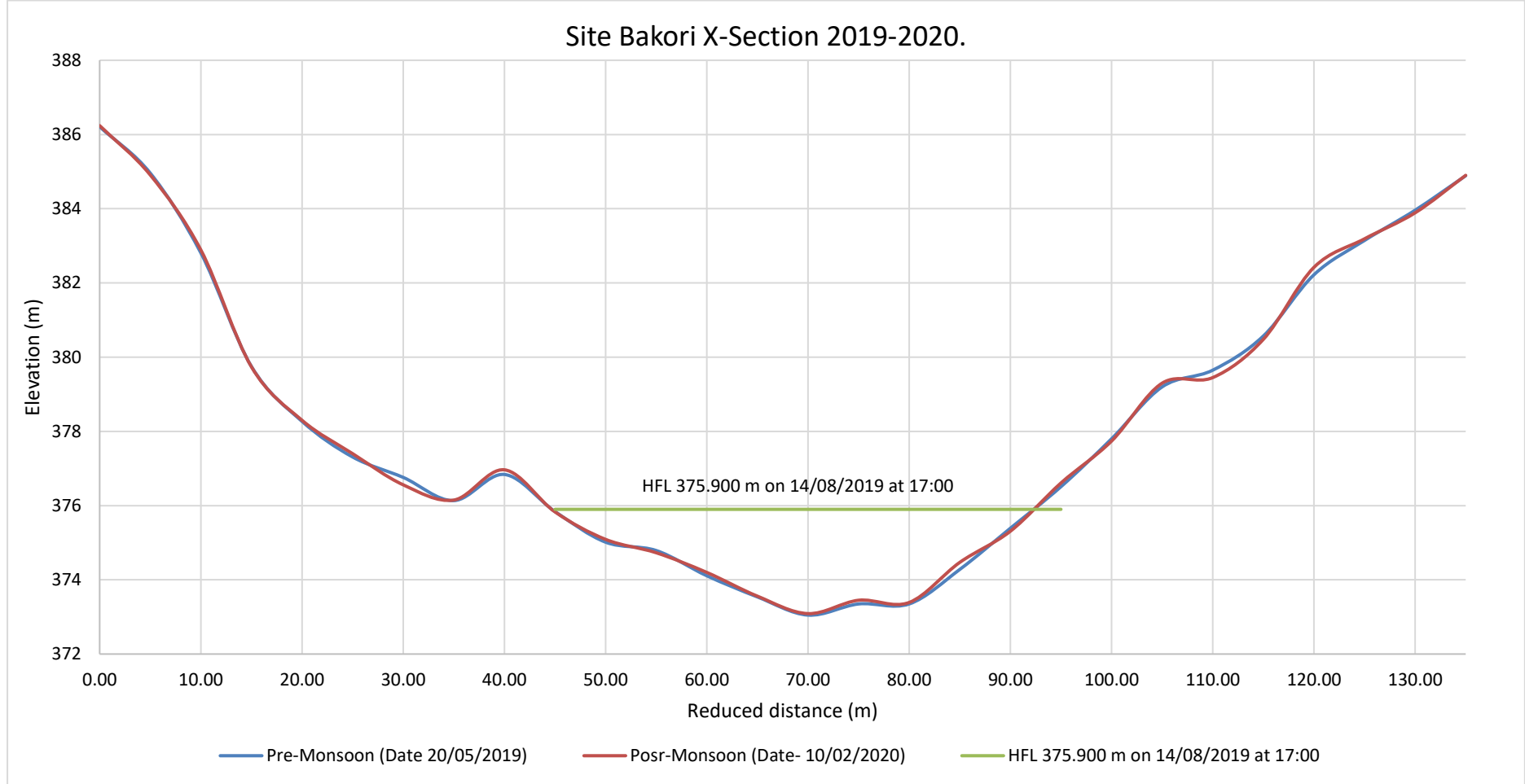
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Machrewa at Bakori

Division: Narmada Division, Bhopal

Local River: Machrewa

Sub-Division: MNSD-I, CWC Hoshangabad



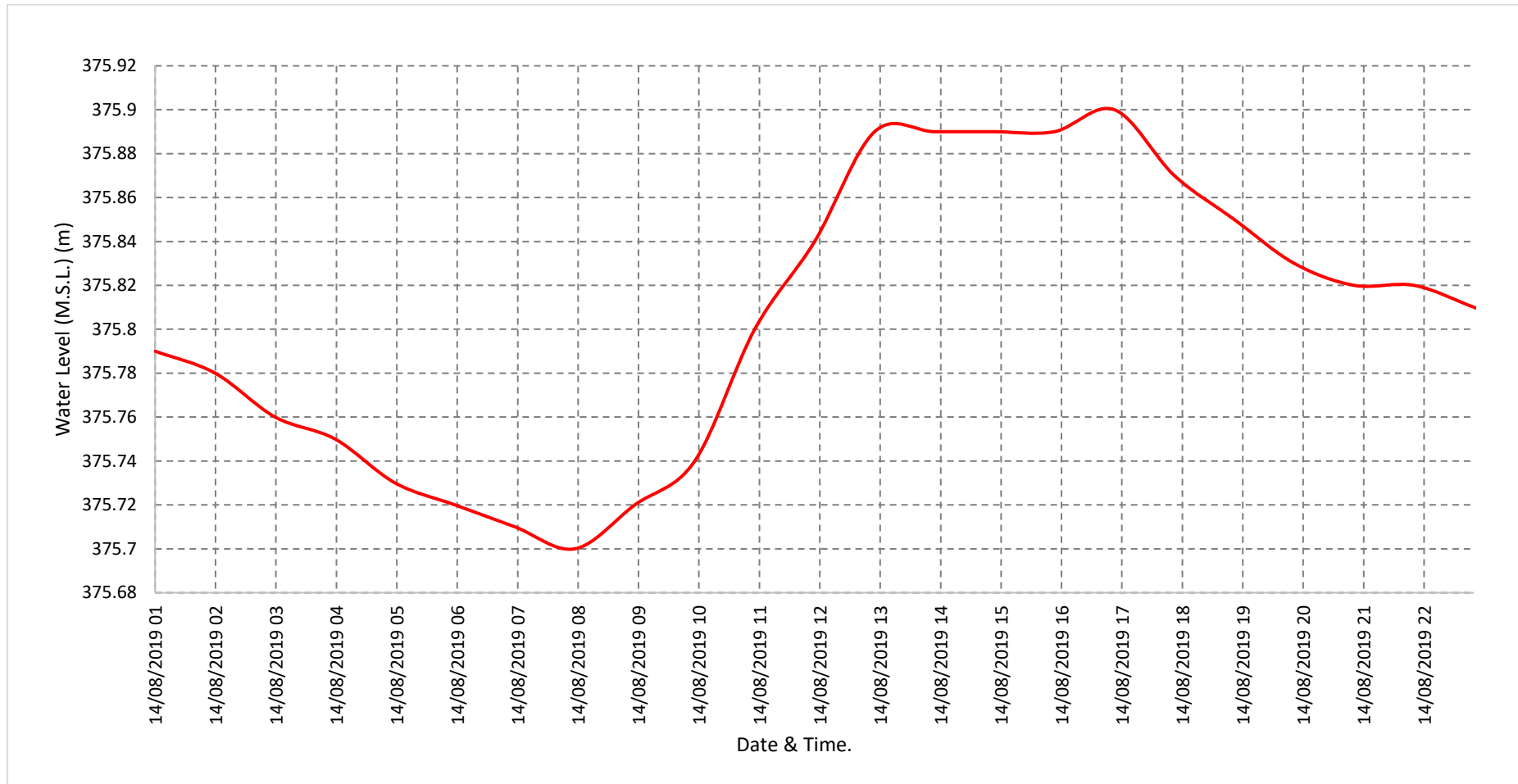
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Machrewa at Bakori

Division: Narmada Division, Bhopal

Local River: Machrewa

Sub-Division: MNSD-I, CWC Hoshangabad



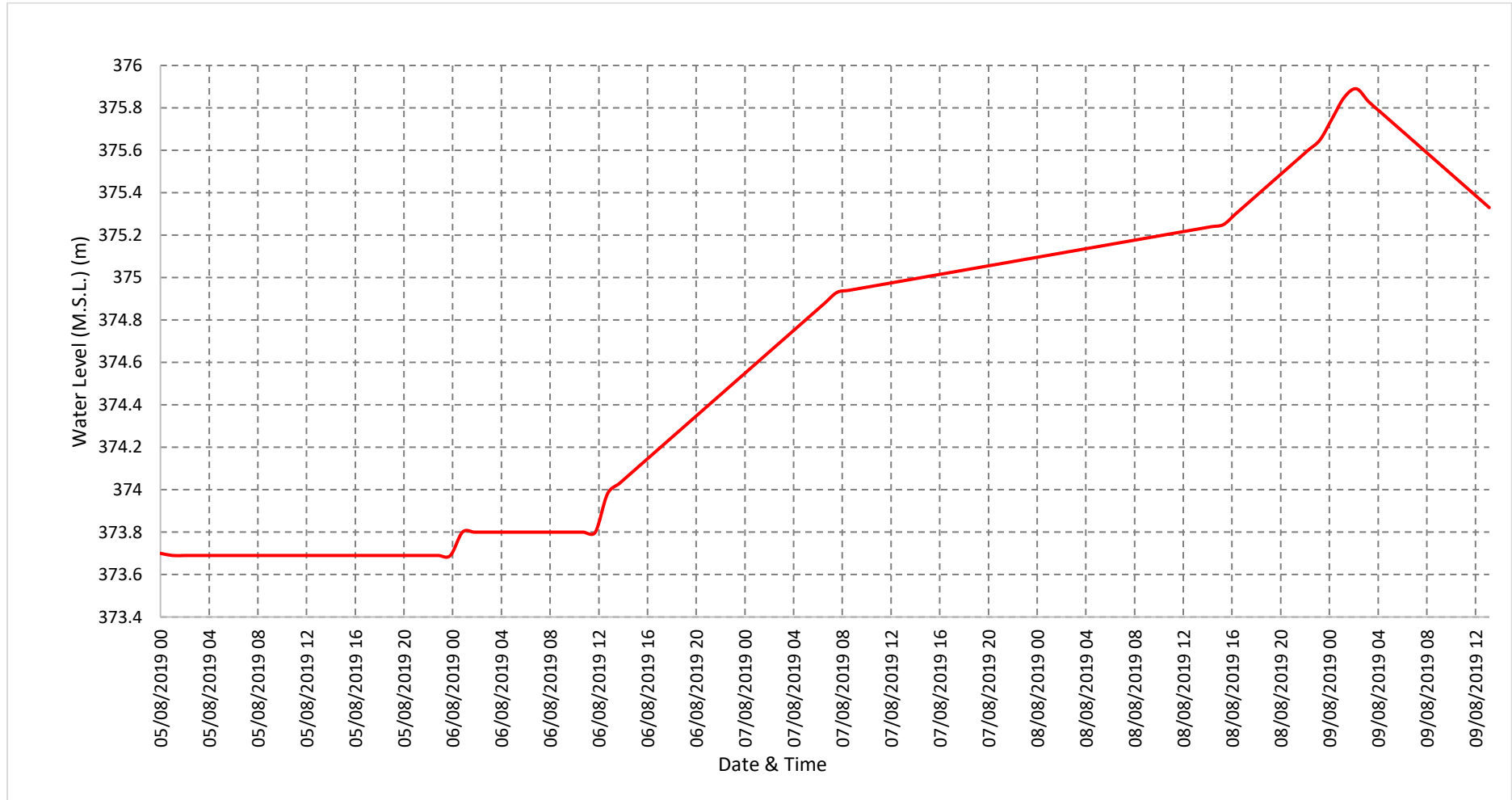
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Machrewa at Bakori

Division: Narmada Division, Bhopal

Local River: Machrewa

Sub-Division: MNSD-I, CWC Hoshangabad



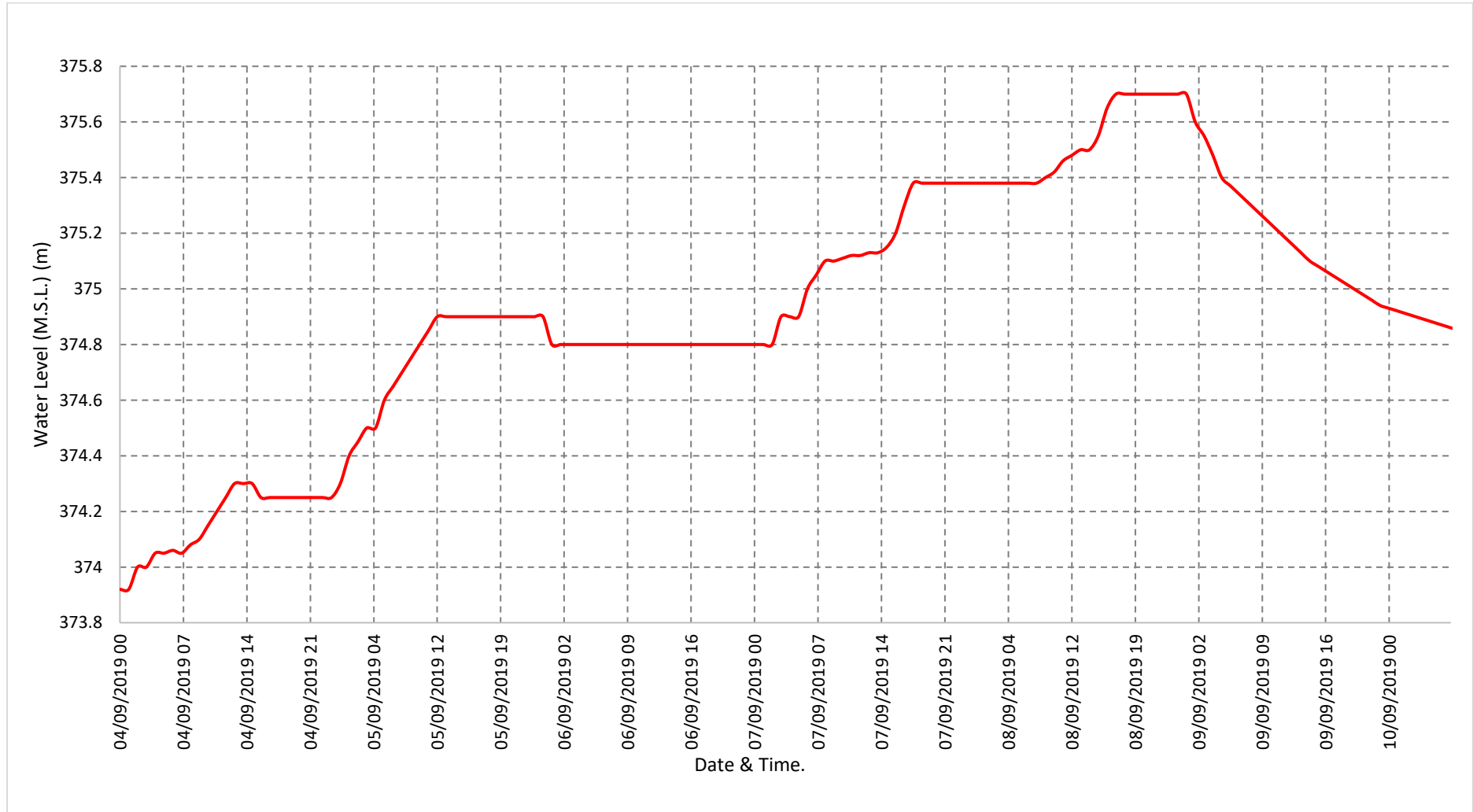
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Machrewa at Bakori

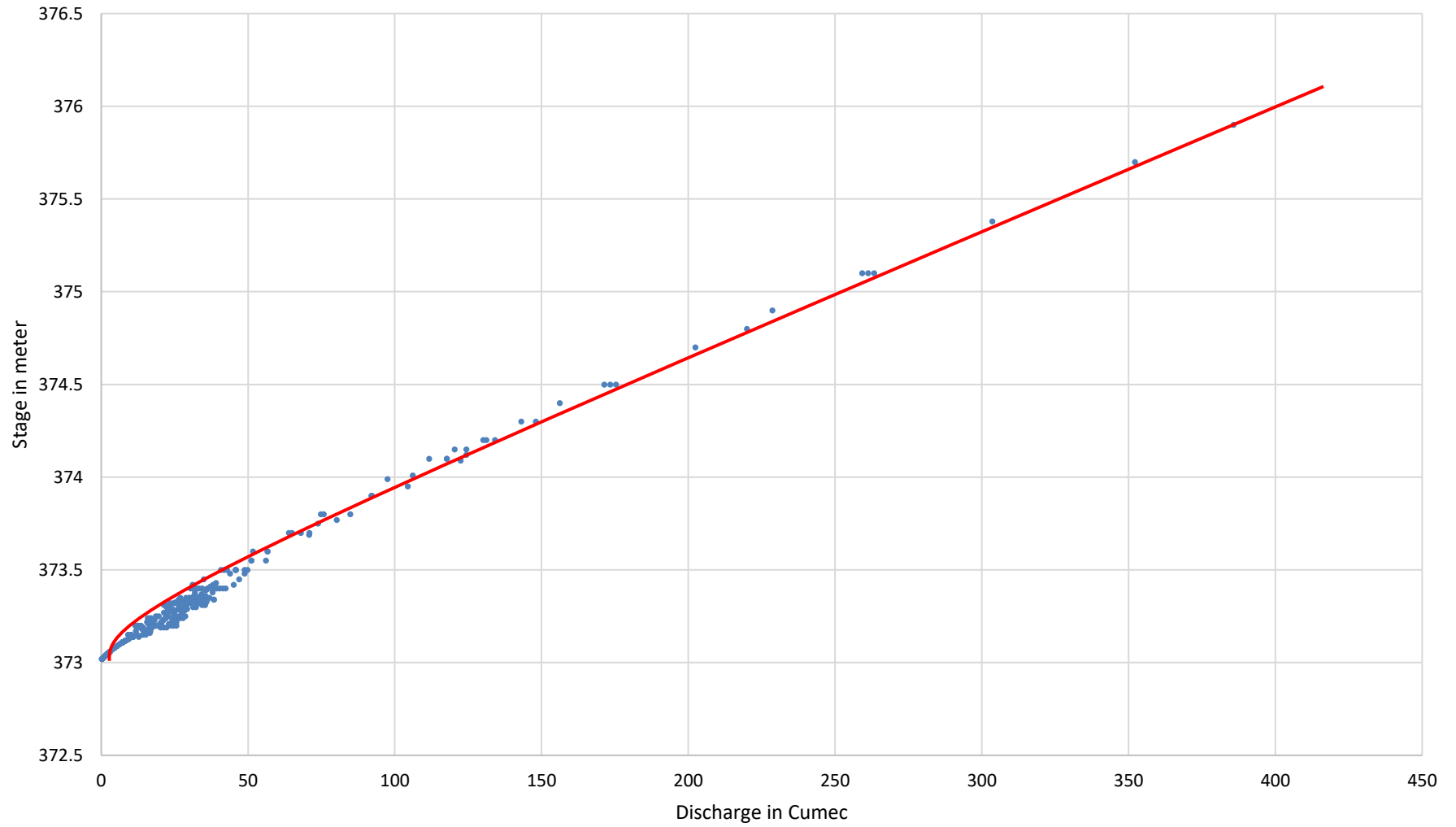
Division: Narmada Division, Bhopal

Local River: Machrewa

Sub-Division: MNSD-I, CWC Hoshangabad



Site Bakori Stage-Discharge Curve 2019-2020.



4.35 Sher at Kachhara.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Sher at Kachhara		Code	:	CW1NAU001463
State	:	Madhya Pradesh		District	:	NARSIMHAPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Sher		Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Sher
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Middle Narmada Sub-Division-I, Hosangabad
Drainage Area	:	295.0 Sq. Km.		Bank	:	Left
Latitude	:	22°49'26"		Longitude	:	79°27'27"
Current Zero of Gauge (m)	:	395				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
395		17/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	70.4	399.400	09-08-2019	0	-	01-06-2019

Stage Discharge Sheet for Sher at Kachhara for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	27.95	397.14	62.33	397.9	63.35	397.9	63.9	397.72	58.07	397.48
2	#	#	28.05	397.15	59.92	397.9	63.11	397.84	62.6	397.64	59.06	397.48
3	#	#	28.62	397.18	64.43	397.95	63.45	397.67	62.6	397.63	59.15	397.48
4	#	#	28.32	397.1	63.55	397.25	63.62	397.91	64.5	397.6	59.3	397.48
5	#	#	39.06	397.22	61.8	397.7	65.62	397.93	63.07	397.59	61.35	397.47
6	#	#	54.89	397.28	62.6	397.65	63.15	397.8	63.45	397.59	58.5	397.47
7	#	#	54.75	397.25	63.11	397.85	65.62	397.88	63.85	397.58	58.8	397.47
8	#	#	54.64	397.18	65.62	397.95	65.61	397.88	63.9	397.58	59.3	397.47
9	#	#	53.14	397.15	70.4	399.4	65.62	397.93	64.05	397.57	59.3	397.47
10	#	#	52.83	397.15	63.1	397.85	65.5	397.8	61.35	397.56	59.32	397.7
11	#	#	52.83	397.15	62.45	397.8	63.11	397.88	60.75	397.55	59.35	397.47
12	#	#	53.94	397.15	61.8	397.7	63.15	397.88	60.75	397.54	59.35	397.47
13	#	#	52.84	397.15	61.49	397.6	62.6	397.79	61.75	397.55	56.96	397.45
14	#	#	52.8	397.15	65.59	397.9	63.89	397.73	62.6	397.53	56.90	397.45
15	#	#	52.76	397.14	63.16	397.8	63.75	397.7	61.3	397.53	56.12	397.45
16	#	#	48.68	397.14	61.8	397.7	62.6	397.64	60.56	397.52	57.08	397.45
17	#	#	48.46	397.14	63.13	397.8	63.11	397.8	61.3	397.53	55.65	397.45
18	#	#	48.46	397.14	63.75	397.7	63.89	397.73	61.26	397.52	54.60	397.44
19	#	#	48.45	397.12	64.17	397.59	62.59	397.72	60.56	397.52	56.90	397.44
20	#	#	45.62	397.1	64.19	397.59	62.9	397.69	60.25	397.52	56.15	397.44
21	#	#	49.55	397.35	62.33	397.9	62.6	397.62	59.9	397.5	59.60	397.4
22	#	#	55.79	397.34	63.04	397.83	62.59	397.59	59.87	397.5	56.80	397.4
23	#	#	55.49	397.33	62.59	397.81	62.6	397.53	58.8	397.5	54.63	397.4
24	#	#	54.6	397.3	63.89	397.73	62.8	397.49	59.9	397.5	54.48	397.4
25	#	#	54.01	397.27	64.15	397.7	62.89	397.5	60.61	397.5	54.38	397.4
26	#	#	54.06	397.24	64.43	397.9	63.11	397.79	59.9	397.5	54.36	397.39
27	#	#	60.56	397.65	63.13	397.8	65.62	397.88	59.45	397.5	54.41	397.39
28	#	#	58.35	397.6	64.07	397.84	63.11	397.79	58.8	397.49	54.38	397.39
29	#	#	56.75	397.47	63.89	397.85	63.47	397.8	61.3	397.5	54.31	397.39
30	#	#	59.82	397.49	63.8	397.73	62.6	397.79	59.57	397.49	54.31	397.39
31			62.3	397.9	63.13	397.8			58.73	397.49		
Ten-Daily Mean												
I Ten-Daily			42.23	397.18	63.69	397.94	64.47	397.85	63.33	397.61	59.22	397.5
II Ten-Daily			50.48	397.14	63.15	397.72	63.16	397.76	61.11	397.53	56.91	397.45
III Ten-Daily			56.48	397.45	63.5	397.81	63.14	397.68	59.71	397.5	55.17	397.4
Monthly												
Min.			27.95	397.1	59.92	397.25	62.59	397.49	58.73	397.49	54.31	397.39
Max.			62.3	397.9	70.4	399.4	65.62	397.93	64.5	397.72	61.35	397.7
Mean			49.95	397.26	63.45	397.82	63.59	397.76	61.33	397.54	57.1	397.45

Annual Runoff in MCM :1043.54

Annual Runoff in mm :3537.4

Peak Observed Discharge = 70.4 cumecs on 09/08/2019 Corres. Water Level 399.400 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note- #- Dry

Stage Discharge Sheet for Sher at Kachhara for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	52.88	397.36	22.5	397.24	12.49	397.10	10.35	397.06	5.8	396.99	5.1	396.83
2	52.81	397.30	21.9	397.24	12.4	397.10	10.1	397.06	5.8	396.99	6.2	396.83
3	52.80	397.30	22.8	397.24	12.35	397.09	9.97	397.06	5.8	396.98	6.15	396.83
4	52.10	397.35	22.9	397.24	12.05	397.08	9.88	397.06	5.8	396.98	6.1	396.82
5	52.2	397.35	21.8	397.24	12.05	397.08	10.2	397.06	5.8	396.97	5.9	396.82
6	52.52	397.35	20.6	397.23	12.3	397.08	10	397.06	5.8	396.97	6	396.82
7	54.31	397.35	19.6	397.23	12.18	397.08	9.2	397.05	5.8	396.96	5.4	396.80
8	54.35	397.35	19.12	397.23	12.05	397.08	9.5	397.05	5.8	396.96	5.6	396.80
9	54.31	397.35	19.17	397.23	12.04	397.08	10.2	397.05	5.8	396.95	5.6	396.80
10	54.31	397.35	18.35	397.22	12.09	397.08	8.9	397.05	5.8	396.95	5.35	396.80
11	54.3	397.35	17.91	397.22	12.18	397.08	8.7	397.05	5.8	396.94	4.9	396.80
12	54.31	397.33	17.85	397.21	11.75	397.08	8.6	397.05	5.8	396.94	5.6	396.79
13	51.5	397.33	17.64	397.21	11.61	397.07	8.5	397.04	5.7	396.93	4.3	396.79
14	51.62	397.33	16.6	397.21	11.55	397.07	8.6	397.04	5.7	396.93	4.9	396.79
15	51.75	397.33	17.34	397.20	11.42	397.07	8.85	397.04	5.7	396.92	5.9	396.79
16	52.81	397.33	17.39	397.20	11.35	397.07	6.99	397.04	5.7	396.92	4.6	396.78
17	52.8	397.33	16.13	397.20	11.29	397.07	6.8	397.03	5.7	396.92	4.4	396.78
18	52.7	397.33	16.8	397.19	11.14	397.07	6.1	397.03	5.7	396.91	4.3	396.78
19	52.8	397.32	16.25	397.19	11.09	397.07	6.5	397.03	5.7	396.91	3.8	396.78
20	52.7	397.32	15.87	397.18	11.04	397.07	5.9	397.03	5.7	396.90	4.05	396.78
21	52.3	397.30	15.21	397.18	10.77	397.07	5.9	397.02	5.7	396.90	4.3	396.78
22	51.75	397.30	14.86	397.17	10.88	397.07	5.9	397.02	6	396.90	4.1	396.77
23	50.9	397.29	14.73	397.14	10.65	397.07	5.9	397.02	5.7	396.90	4.3	396.77
24	52.8	397.29	14.73	397.15	10.57	397.07	5.9	397.02	5.5	396.85	4	396.77
25	52.9	397.29	14.59	397.15	10.35	397.07	5.9	397.01	3.7	396.85	3.7	396.76
26	51.6	397.29	14.45	397.15	10.27	397.07	5.9	397.01	5.42	396.85	3.6	396.76
27	50.63	397.27	14.37	397.14	9.8	397.06	5.9	397.01	6.4	396.85	3.3	396.76
28	50.7	397.27	13.89	397.13	9.5	397.06	5.9	397.00	5.3	396.84	3.3	396.76
29	50.45	397.25	12.75	397.11	9.9	397.06	5.9	397.00	5.5	396.84	3.2	396.76
30	49.67	397.25	12.76	397.11			5.9	397.00	5.3	396.84	3.5	396.75
31	51.62	397.25	12.69	397.11			5.9	397.00			3.4	396.75
Ten-Daily Mean												
I Ten-Daily	53.26	397.34	20.87	397.23	12.2	397.09	9.83	397.06	5.8	396.97	5.74	396.82
II Ten-Daily	52.73	397.33	16.98	397.2	11.44	397.07	7.55	397.04	5.72	396.92	4.68	396.79
III Ten-Daily	51.39	397.28	14.09	397.14	10.3	397.07	5.9	397.01	5.45	396.86	3.7	396.76
Monthly												
Min.	49.67	397.25	12.69	397.11	9.5	397.06	5.9	397	3.7	396.84	3.2	396.75
Max.	54.35	397.36	22.9	397.24	12.49	397.1	10.35	397.06	6.4	396.99	6.2	396.83
Mean	52.43	397.31	17.21	397.19	11.35	397.07	7.7	397.03	5.66	396.92	4.67	396.79

Peak Computed Discharge = 64.15 cumecs on 25/08/2019 Corres. Water Level 397.700 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

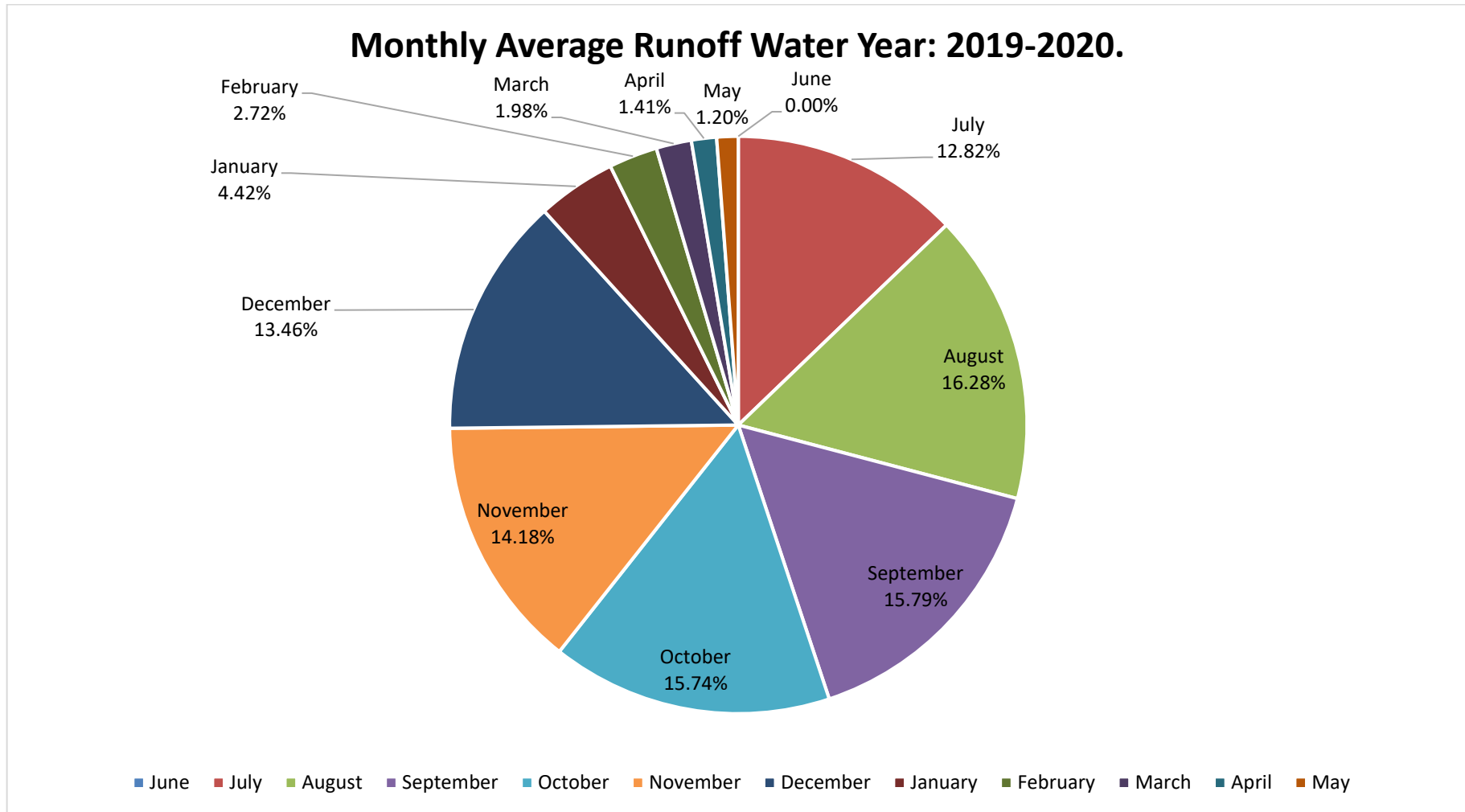
Monthly Runoff for the Year (2019-2020)

Station Name: Sher at Kachhara

Division: Narmada Division, Bhopal

Local River: Sher

Sub-Division: MNSD-I, CWC Hoshangabad



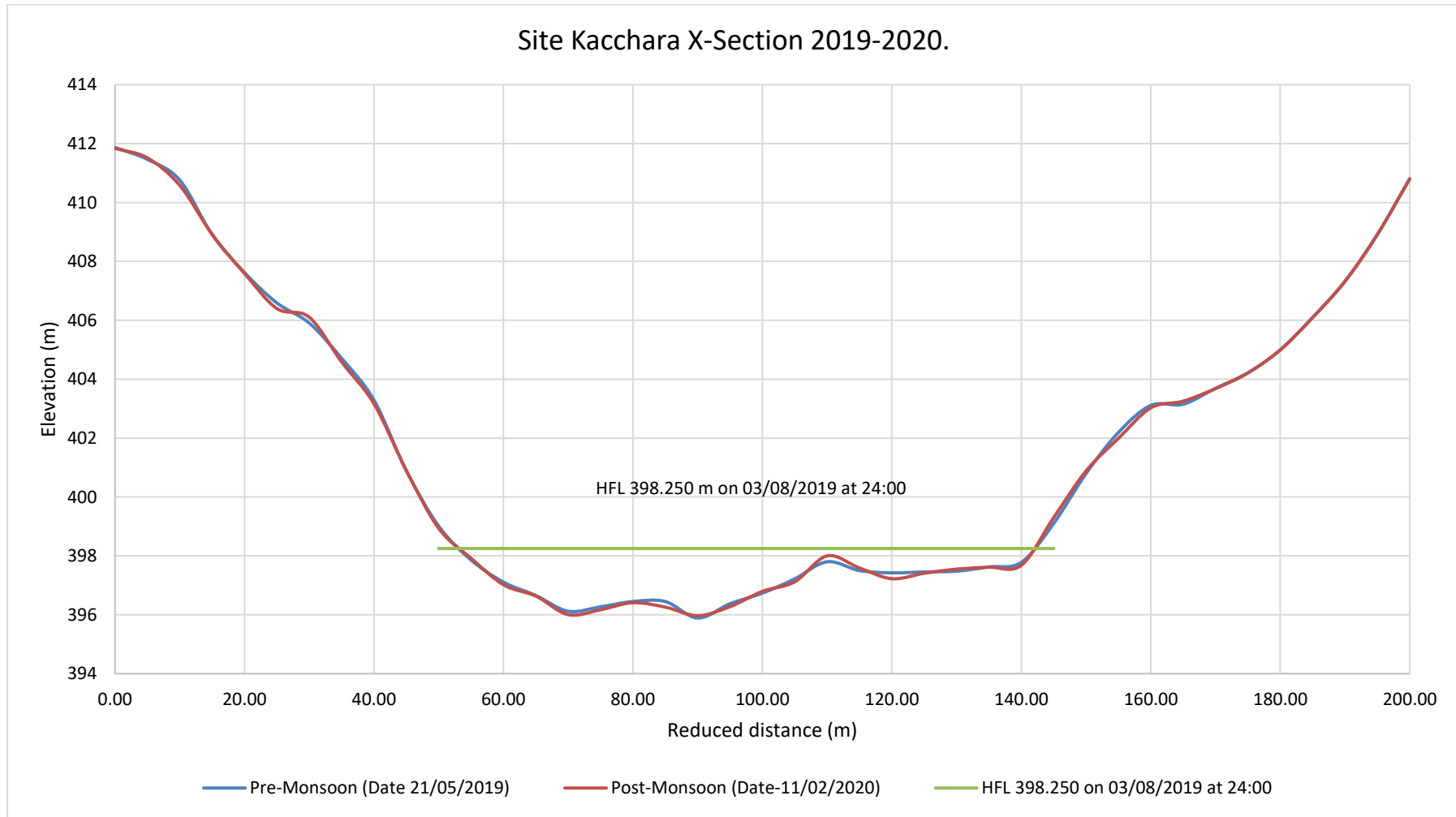
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Sher at Kachhara

Division: Narmada Division, Bhopal

Local River: Sher

Sub-Division: MNSD-I, CWC Hoshangabad



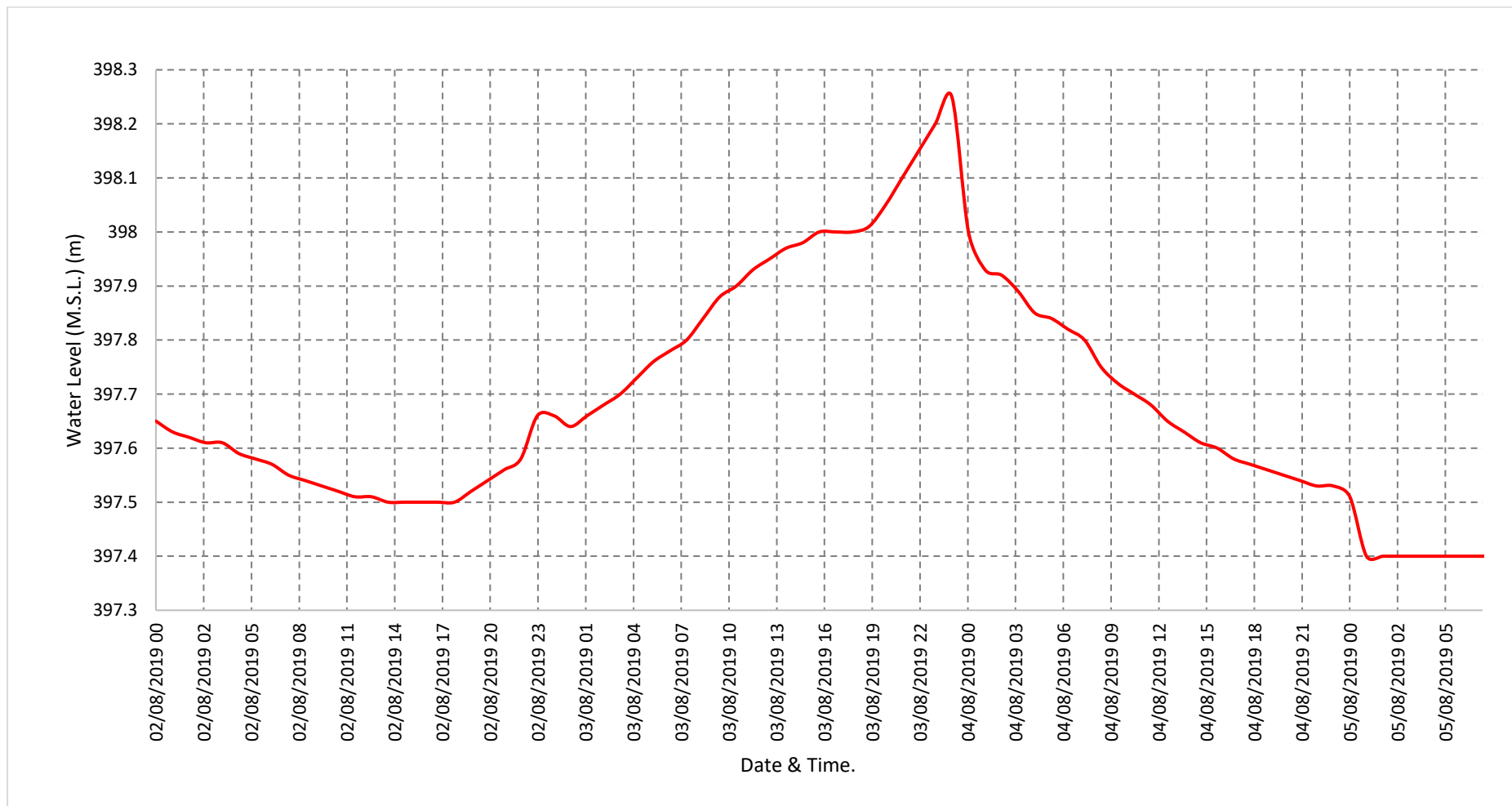
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Sher at Kachhara

Division: Narmada Division, Bhopal

Local River: Sher a

Sub-Division: MNSD-I, CWC Hoshangabad



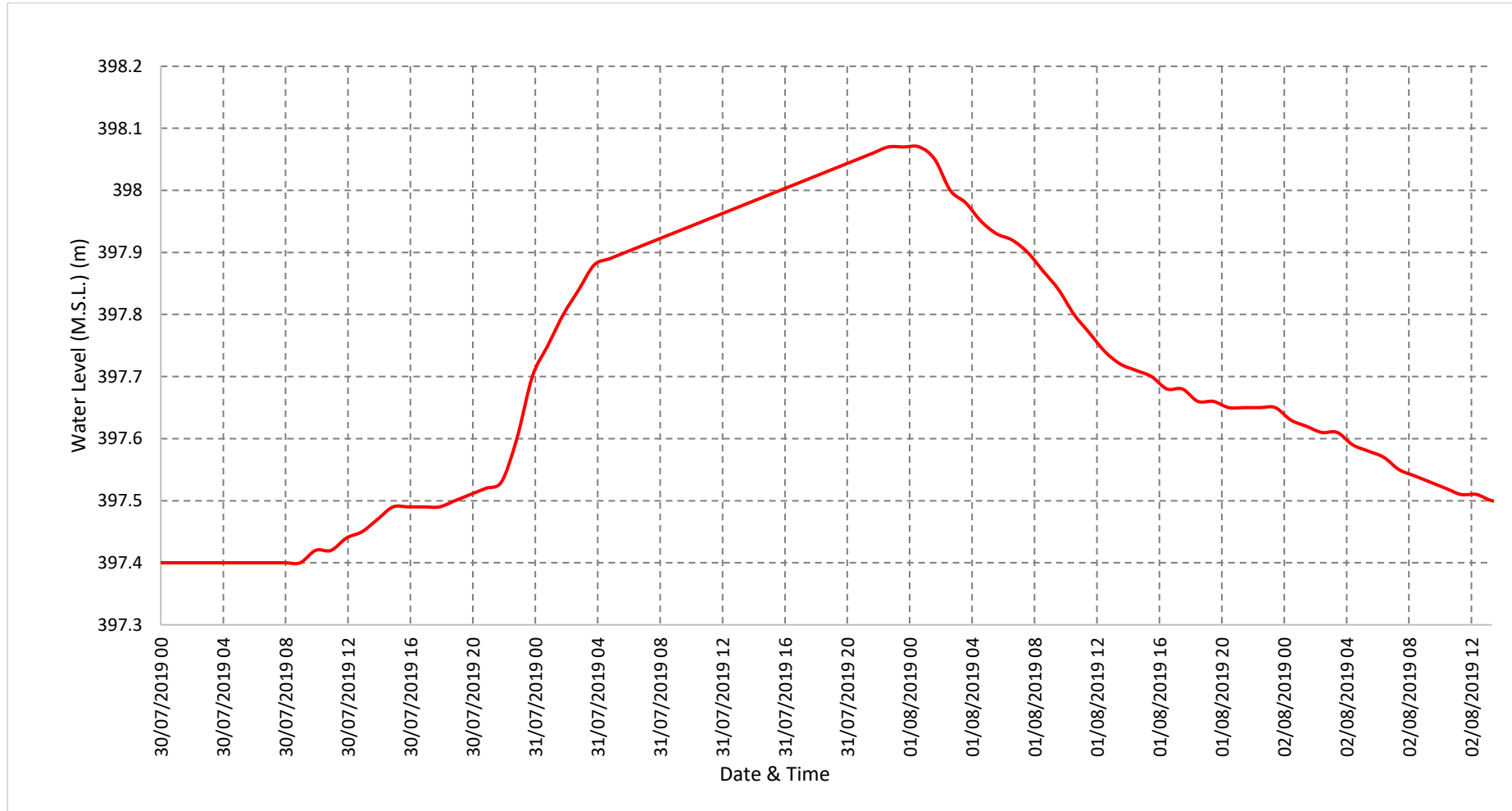
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Sher at Kachhara

Division: Narmada Division, Bhopal

Local River: Sher

Sub-Division: MNSD-I, CWC Hoshangabad



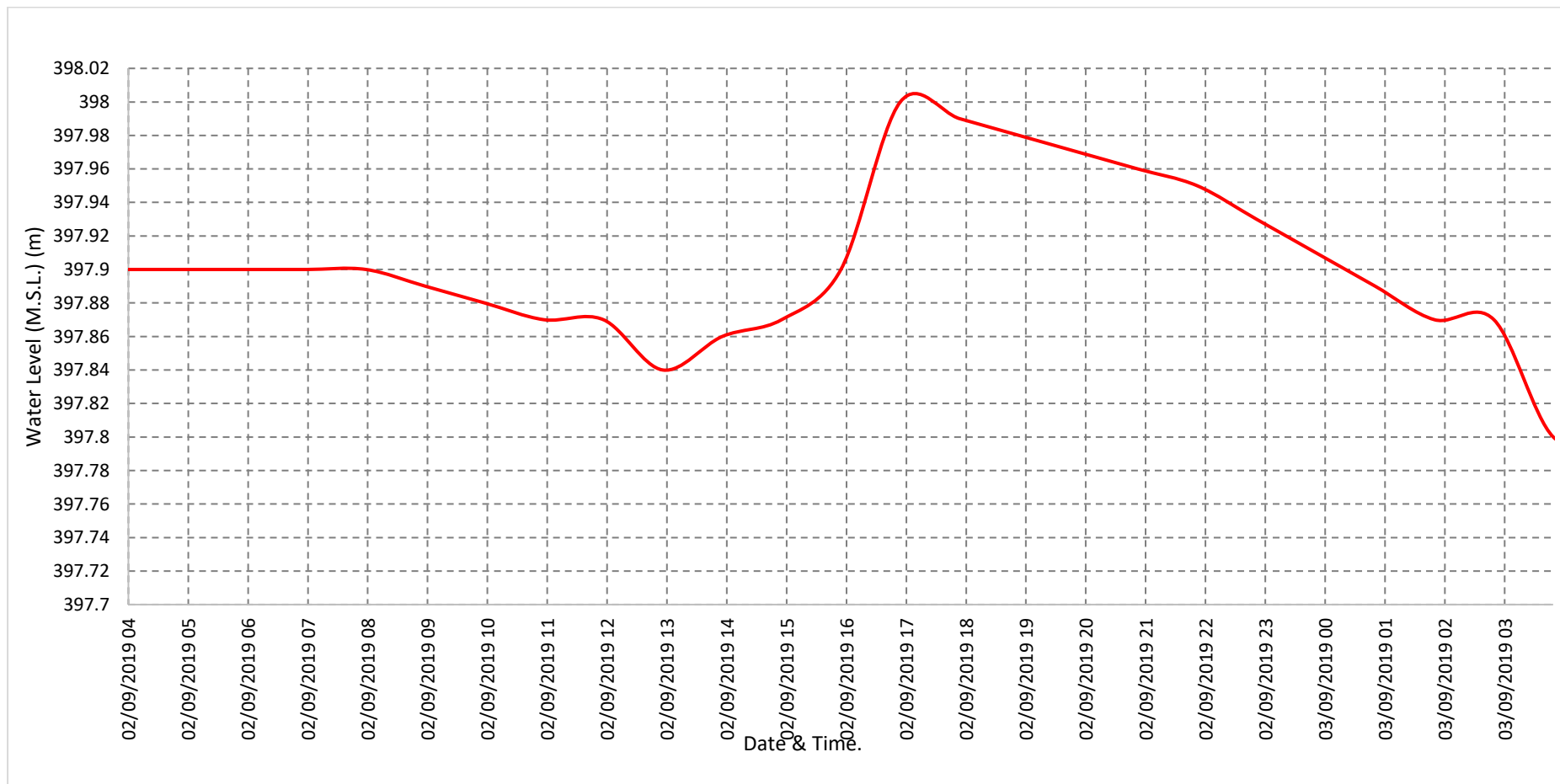
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Sher at Kachhara

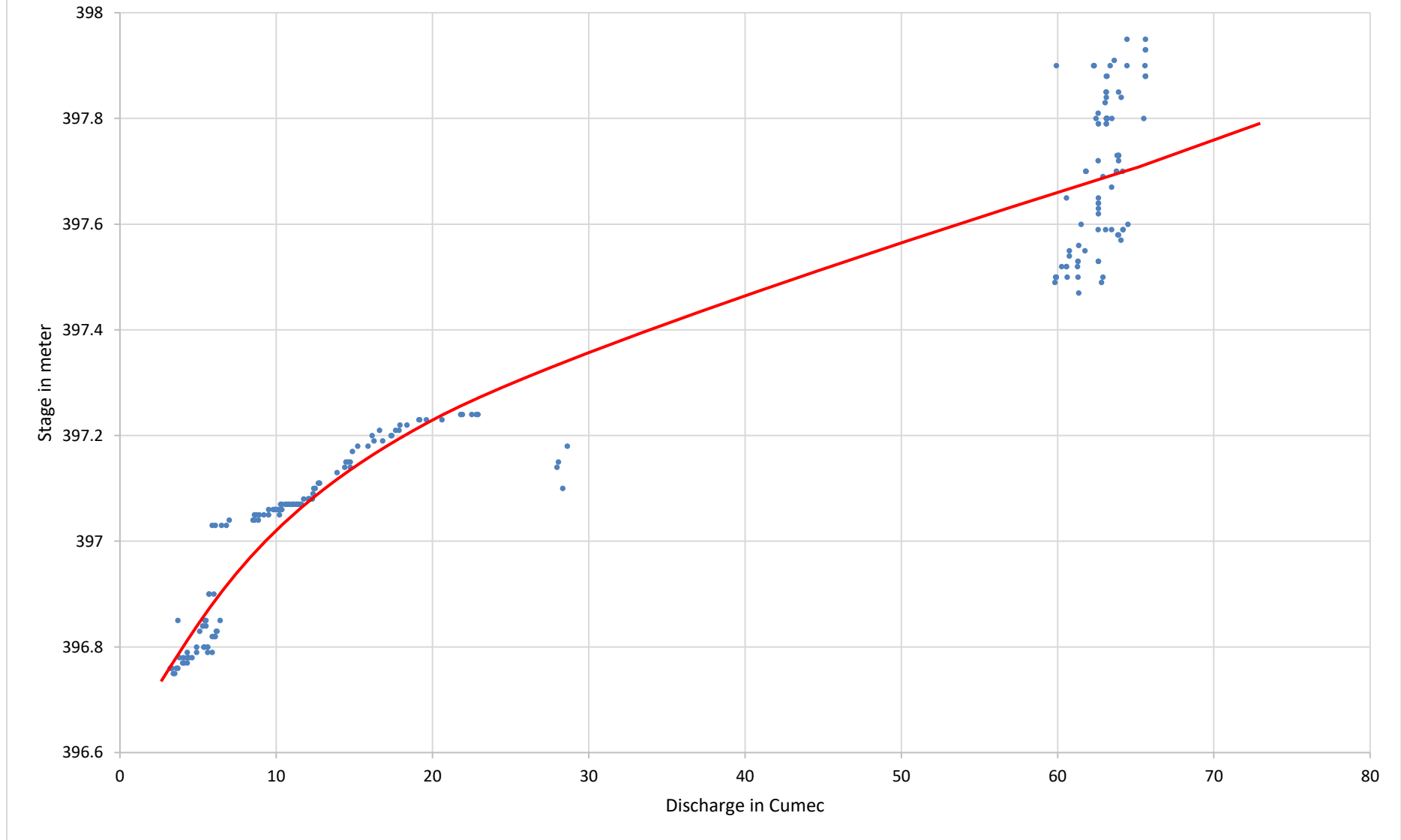
Division: Narmada Division, Bhopal

Local River: Sher

Sub-Division: MNSD-I, CWC Hoshangabad



Site Kacchara Stage-Discharge Curve 2019-2020.



4.36 Sher at Belkhedi

History sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)					
				Water Year	: 2019 - 2020
Site	:	Belkhedi	Code	:	CW1NAU000395
State	:	Madhya Pradesh	District	:	SHIVPURI
Basin	:	Narmada	Independent River	:	Narmada
Tributary	:	Sher	Sub Tributary	:	-
Sub-Sub Tributary	:	-	Local River	:	Sher
Division	:	Narmada Division(ND), Bhopal	Sub-Division	:	Middle Narmada Sub- Division-I, Hosangabad
Drainage Area	:	1508.0 Sq. Km.	Bank	:	Right
Latitude	:	22°55'40"	Longitude	:	79°20'23"
Current Zero of Gauge (m)	:	340			
CATEGORY		Opening Date		Closing Date	
Gauge	:	16/03/1977			
Discharge	:	16/03/1977			
Sediment	:				
Water Quality	:	01/09/1986			
Reduced Level		Opening Date		Closing Date	
340.0		16/03/1977			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1976-1977	0.7	341.300	16/03/1977	0.2	341.440	30/04/1977
1977-1978	1695	348.230	07/08/1977	0.1	341.435	08/06/1977
1978-1979	1280	346.435	15/08/1978	0.7	341.165	05/06/1978
1979-1980	2056.2	347.750	09/08/1979	0.4	341.280	15/05/1980
1980-1981	2712	349.100	29/08/1980	0.4	341.280	15/06/1980
1981-1982	645	345.150	22/09/1981	0.3	341.405	27/03/1982
1982-1983	2002.5	348.400	11/09/1982	0.3	341.565	25/04/1983
1983-1984	1700	348.200	08/09/1983	0.3	341.520	17/06/1983
1984-1985	6500	353.370	18/08/1984	0.4	341.020	05/05/1985
1985-1986	2150	348.650	17/08/1985	0.2	341.020	09/06/1985
1986-1987	1245	346.720	14/08/1986	0.02	341.010	21/06/1986
1987-1988	367	343.975	17/09/1987	0.33	341.220	29/05/1988
1988-1989	1200	347.000	04/08/1988	0.28	341.300	31/05/1989
1989-1990	1018	346.700	06/08/1989	0.25	341.300	03/06/1989
1990-1991	1300	347.000	30/08/1990	0.55	341.420	15/05/1991
1991-1992	1570	347.750	23/08/1991	0.41	341.320	20/05/1992
1992-1993	1560	347.500	20/08/1992	0.35	341.360	17/04/1993
1993-1994	2975	350.800	16/07/1993	0.26	341.090	18/05/1994
1994-1995	7600	359.950	21/07/1994	0.6	341.100	28/05/1995
1995-1996	864	345.800	20/07/1995	0.33	340.950	15/05/1996
1996-1997	323	343.800	29/08/1996	0.25	341.080	25/05/1997
1997-1998	2300	348.560	24/07/1997	0.25	341.085	09/06/1997
1998-1999	530	344.920	05/07/1998	0.12	341.080	13/04/1999
1999-2000	4475	353.940	15/09/1999	0.17	341.040	01/07/1999
2000-2001	1650	347.290	28/07/2000	0.31	340.940	10/04/2001
2001-2002	3900	352.920	19/07/2001	0.33	341.000	14/05/2002
2002-2003	2300	350.400	18/08/2002	0.24	340.910	27/04/2003
2003-2004	3700	352.780	14/09/2003	0	340.870	28/11/2003
2004-2005	1330	348.850	22/08/2004	0.18	340.960	04/06/2004
2005-2006	590.28	344.980	15/09/2005	0.11	341.000	12/06/2005
2006-2007	4803.16	351.200	22/07/2006	0.09	341.020	25/06/2006
2007-2008	1076.94	345.300	08/07/2007	0.1	341.050	10/06/2007
2008-2009	232.92	343.480	01/08/2008	0.13	341.050	03/06/2008
2009-2010	454.37	344.450	09/09/2009	0.05	340.940	30/05/2010
2010-2011	411.7	344.050	19/09/2010	0.11	340.940	06/06/2010
2011-2012	431.08	344.360	16/07/2011	0.04	340.890	12/06/2011

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2012-2013	1224.06	346.150	06/08/2012	0.08	341.020	13/06/2012
2013-2014	702.87	345.100	22/08/2013	0.34	341.050	03/06/2013
2014-2015	415.62	344.400	06/08/2014	0.34	341.380	12/05/2015
2015-2016	451.45	344.410	04/08/2015	0.24	341.040	14/05/2016
2016-2017	425	344.475	12/07/2016	0.02	341.100	02/12/2016
2017-2018	239.5	343.170	24/07/2017	0	341.100	19/02/2018
2018-2019	4350	342.480	09/09/2018	0	—	18/02/2019
2019-2020	710	346.150	26/08/2019	0	341.080	02/06/2019

Stage Discharge Sheet for Sher at Belkhedi for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	341.080	6.65	341.420	34.11	341.950	224	343.360	127.61	342.570	11.47	341.460
2	0	341.080	9.34	341.580	59.08	342.070	148.5	342.840	113	342.450	10.15	341.460
3	0	341.080	60.23	342.090	115.8	342.480	102.2	342.370	99.51	342.330	10	341.450
4	0	341.080	50.4	342.060	148	342.830	255.4	343.440	99.08	342.280	10	341.450
5	0	341.080	263.7	342.300	75.05	342.220	647.2	345.040	69.51	342.170	10	341.450
6	0	341.080	43.65	342.070	73.74	342.200	202.6	343.150	52	342.040	10	341.450
7	0	341.080	10.1	341.580	132.6	342.550	294.1	343.610	35.41	341.960	9.5	341.440
8	0	341.080	5.56	341.430	223.2	343.360	695.1	345.950	32	341.910	9.5	341.440
9	0	341.080	7.01	341.460	443.1	344.310	439.5	344.240	29.53	341.850	9.5	341.440
10	0	341.080	6.48	341.450	162.2	342.940	295	343.640	17.9	341.700	9.5	341.440
11	0	341.080	5.94	341.350	120	342.520	291.3	343.590	16.69	341.640	9.5	341.440
12	0	341.080	5.67	341.280	85.5	342.340	287.33	343.570	15.33	341.600	9.5	341.440
13	0	341.080	5.24	341.280	61.39	342.120	191.28	343.050	15	341.570	9.5	341.440
14	0	341.080	5.24	341.280	450.4	344.410	137.98	342.670	14.79	341.560	9.3	341.430
15	0	341.080	5.22	341.270	474.5	344.600	135	342.590	14.08	341.540	9.3	341.430
16	0	341.070	5.2	341.270	208.9	343.190	110.12	342.460	13.55	341.530	9	341.420
17	0	341.070	5.2	341.270	152.6	342.780	258.55	343.450	13.28	341.510	8.5	341.410
18	0	341.070	5.07	341.270	92	342.380	200.3	343.140	13.26	341.500	8	341.400
19	0	341.070	5.01	341.260	98.97	342.280	157.12	342.860	13.09	341.490	7.5	341.390
20	0	341.070	4.84	341.260	205.5	343.170	101.8	342.370	13	341.490	7	341.380
21	0	341.070	4.3	341.300	254.4	343.430	86	342.250	12.47	341.480	7	341.380
22	0	341.070	7.53	341.510	189.4	343.030	73	342.190	12.15	341.480	6.25	341.360
23	0	341.070	6.56	341.460	136	342.640	68.8	342.160	12.24	341.480	5.8	341.340
24	0	341.070	6.45	341.450	105.7	342.380	127.1	342.510	12.19	341.480	5.8	341.340
25	0	341.070	7.16	341.490	78.5	342.310	129.3	342.600	12.13	341.480	5.3	341.330
26	0	341.070	63.16	341.950	710	346.150	137.7	342.640	12.11	341.470	5	341.320
27	0	341.070	109.5	342.340	705	346.050	69.2	342.180	12	341.470	4.75	341.310
28	5.82	341.500	63.25	342.290	365.7	343.820	195	343.060	11.96	341.470	4.5	341.300
29	4.32	341.250	20.57	341.750	158.8	342.900	258	343.450	11.79	341.470	4.25	341.290
30	3.5	341.170	35.35	342.010	138.8	342.700	158.4	342.880	11.64	341.460	4	341.280
31			323.5	344.100	130.4	342.510			11.47	341.460		
Ten-Daily Mean												
I Ten-Daily	0	341.080	46.31	341.740	146.69	342.690	330.36	343.760	67.55	342.130	9.96	341.450
II Ten-Daily	0	341.070	5.26	341.280	194.98	342.980	187.08	342.980	14.21	341.540	8.71	341.420
III Ten-Daily	1.36	341.140	58.85	341.970	270.25	343.450	130.25	342.590	12.01	341.470	5.27	341.320
Monthly												
Min.	0	341.070	4.3	341.260	34.11	341.950	68.8	342.160	11.47	341.460	4	341.280
Max.	5.82	341.500	323.5	344.100	710	346.150	695.1	345.950	127.61	342.570	11.47	341.460
Mean	0.45	341.100	36.81	341.660	203.97	343.040	215.9	343.110	31.26	341.710	7.98	341.400

Annual Runoff in MCM 1340.36

Annual Runoff in mm :888.83

Peak Observed Discharge = 647.2 cumecs on 5/9/2019 Corres. Water Level 345.04 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019 Corres. Water Level 341.080 m

Stage Discharge Sheet for Sher at Belkhedi for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	4	341.280	2.25	341.200	1.75	341.180	1.5	341.170	0.8	341.140	0.7	341.130
2	3.75	341.270	2.5	341.220	1.75	341.180	1.5	341.170	0.8	341.140	0.7	341.130
3	3.75	341.270	2.5	341.220	1.75	341.180	1.5	341.170	0.8	341.140	0.7	341.130
4	3.75	341.270	2.5	341.220	1.75	341.180	1.5	341.170	0.8	341.140	0.7	341.130
5	3.6	341.260	2.25	341.200	1.5	341.170	1.5	341.170	0.8	341.140	0.7	341.130
6	3.35	341.250	2.5	341.220	1.5	341.170	1.5	341.170	0.8	341.140	0.7	341.130
7	3.15	341.240	2.35	340.210	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
8	3.15	341.240	2.35	341.210	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
9	3	341.230	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
10	3	341.230	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
11	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
12	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
13	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
14	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
15	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.7	341.130
16	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.5	341.120
17	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.5	341.120
18	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.5	341.120
19	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.5	341.120
20	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.5	341.120
21	2.75	341.220	2	341.190	1.5	341.170	1.35	341.160	0.8	341.140	0.5	341.120
22	2.5	341.210	2	341.190	1.5	341.170	1.35	341.160	0.8	341.140	0.4	341.110
23	2.5	341.210	2	341.190	1.5	341.170	1	341.150	0.8	341.140	0.4	341.110
24	2.5	341.210	1.75	341.180	1.5	341.170	1	341.150	0.8	341.140	0.4	341.110
25	2.5	341.210	1.75	341.180	1.5	341.170	1	341.150	0.8	341.140	0.4	341.110
26	2.5	341.210	1.75	341.180	1.5	341.170	1	341.150	0.8	341.140	0.4	341.110
27	2.5	341.210	1.75	341.180	1.5	341.170	1	341.150	0.8	341.140	0.4	341.110
28	2.5	341.210	1.75	341.180	1.5	341.170	1	341.150	0.8	341.140	0.4	341.110
29	2.5	341.210	1.75	341.180	1.5	341.170	1	341.150	0.7	341.130	0.4	341.110
30	2.5	341.210	1.75	341.180			1	341.150	0.7	341.130	0.4	341.110
31	2.5	341.210	1.75	341.180			1	341.150			0.4	341.110
Ten-Daily Mean												
I Ten-Daily	3.45	341.250	2.37	341.110	1.6	341.170	1.44	341.170	0.8	341.140	0.7	341.130
II Ten-Daily	2.75	341.220	2.25	341.200	1.5	341.170	1.35	341.160	0.8	341.140	0.6	341.120
III Ten-Daily	2.52	341.210	1.82	341.180	1.5	341.170	1.06	341.150	0.78	341.140	0.41	341.110
Monthly												
Min.	2.5	341.210	1.75	340.210	1.5	341.170	1	341.150	0.7	341.130	0.4	341.110
Max.	4	341.280	2.5	341.220	1.75	341.180	1.5	341.170	0.8	341.140	0.7	341.130
Mean	2.91	341.230	2.15	341.160	1.53	341.170	1.28	341.160	0.79	341.140	0.57	341.120

Peak Computed Discharge = 710 cumecs on 26/8/2019 Corres. Water Level 346.15 m
 Lowest Computed Discharge = 0 cumecs on 2/6/2019 Corres. Water Level 341.08 m

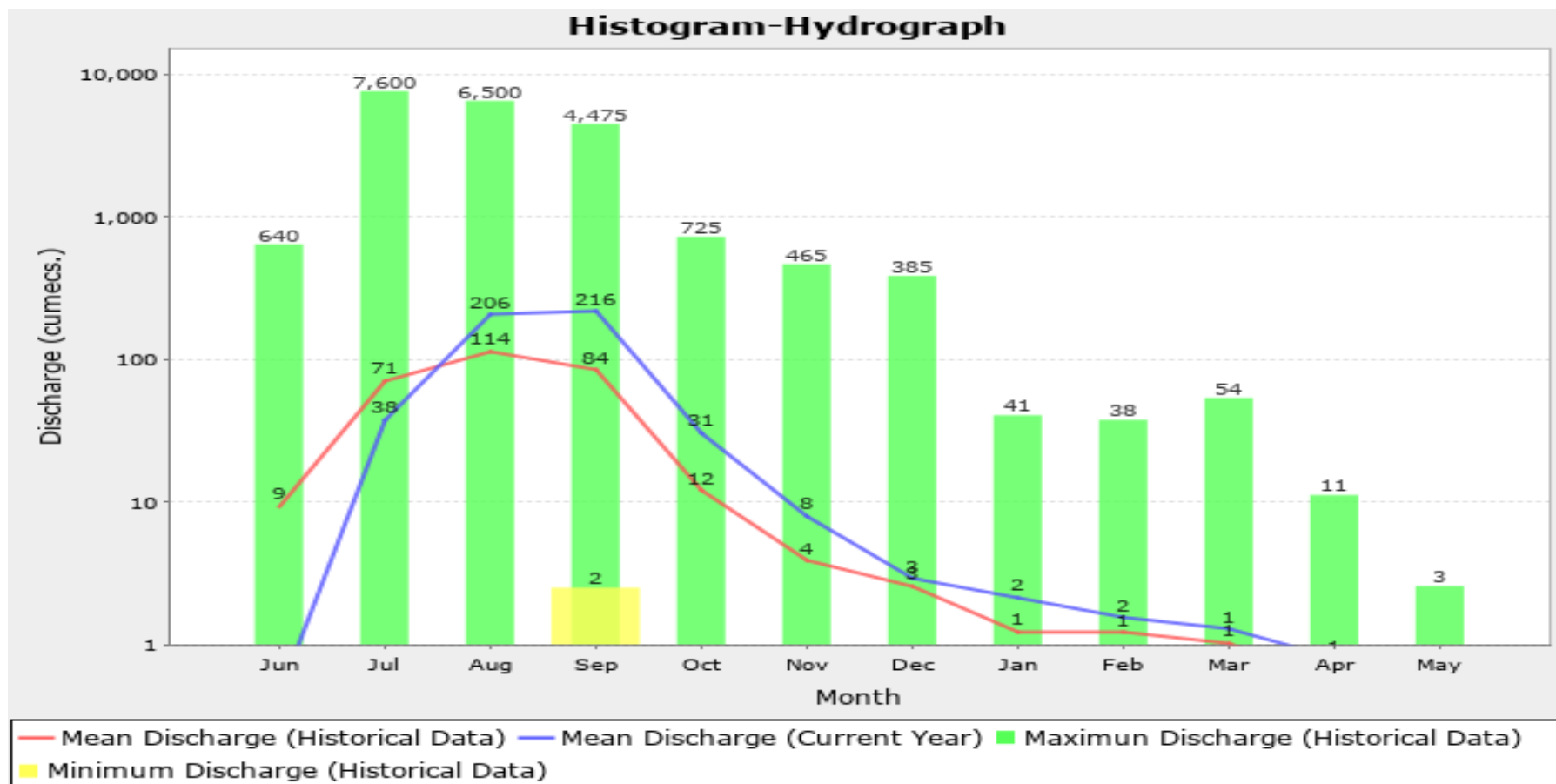
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1977-2020)

Station Name : Sher at Belkhedi

Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad



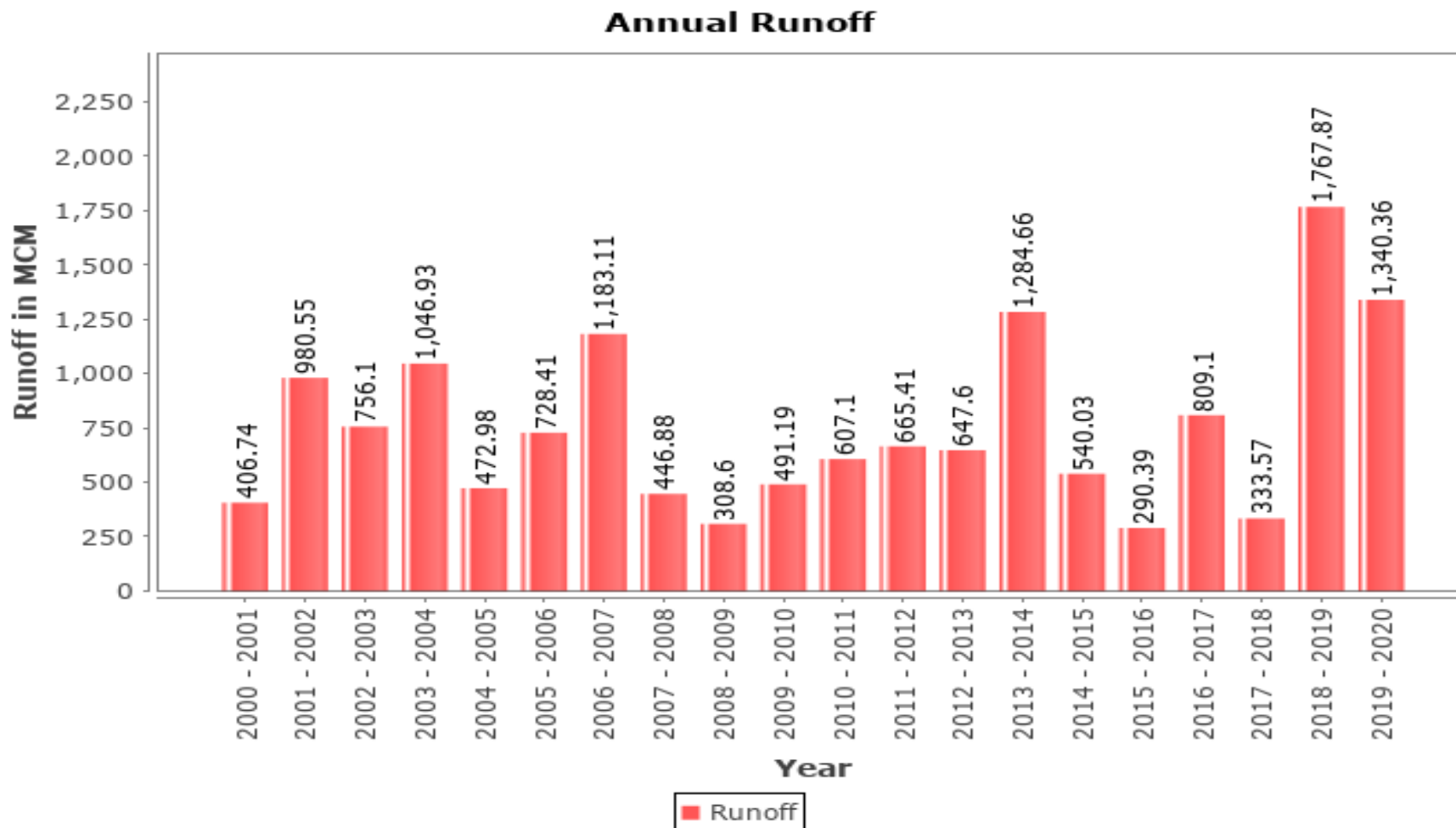
Annual Runoff Values for the period (2000 – 2020)

Station Name : Sher at Belkhedi

Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad



Monthly Average Runoff based on period (1977-2020)

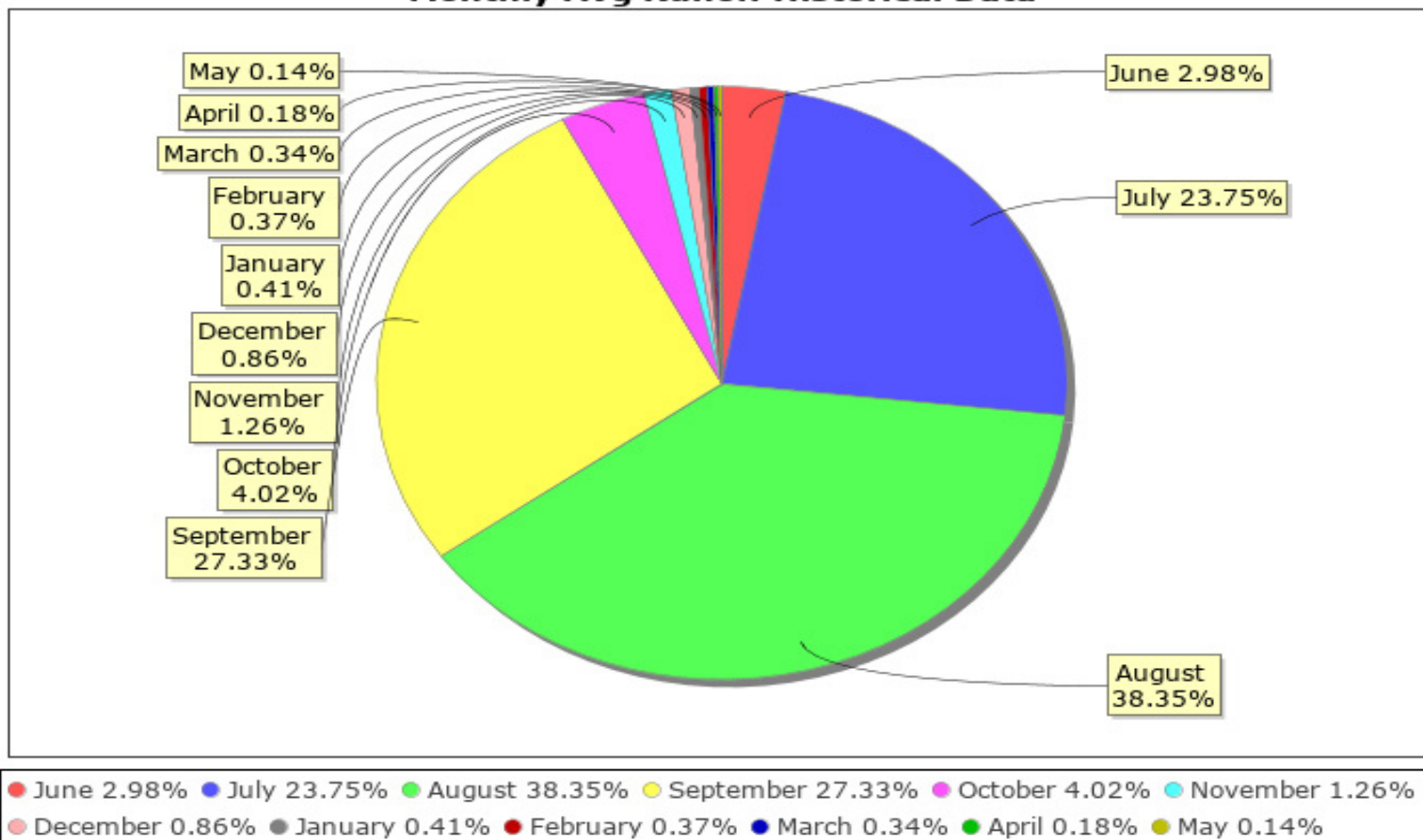
Station Name : Sher at Belkhedi

Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Historical Data

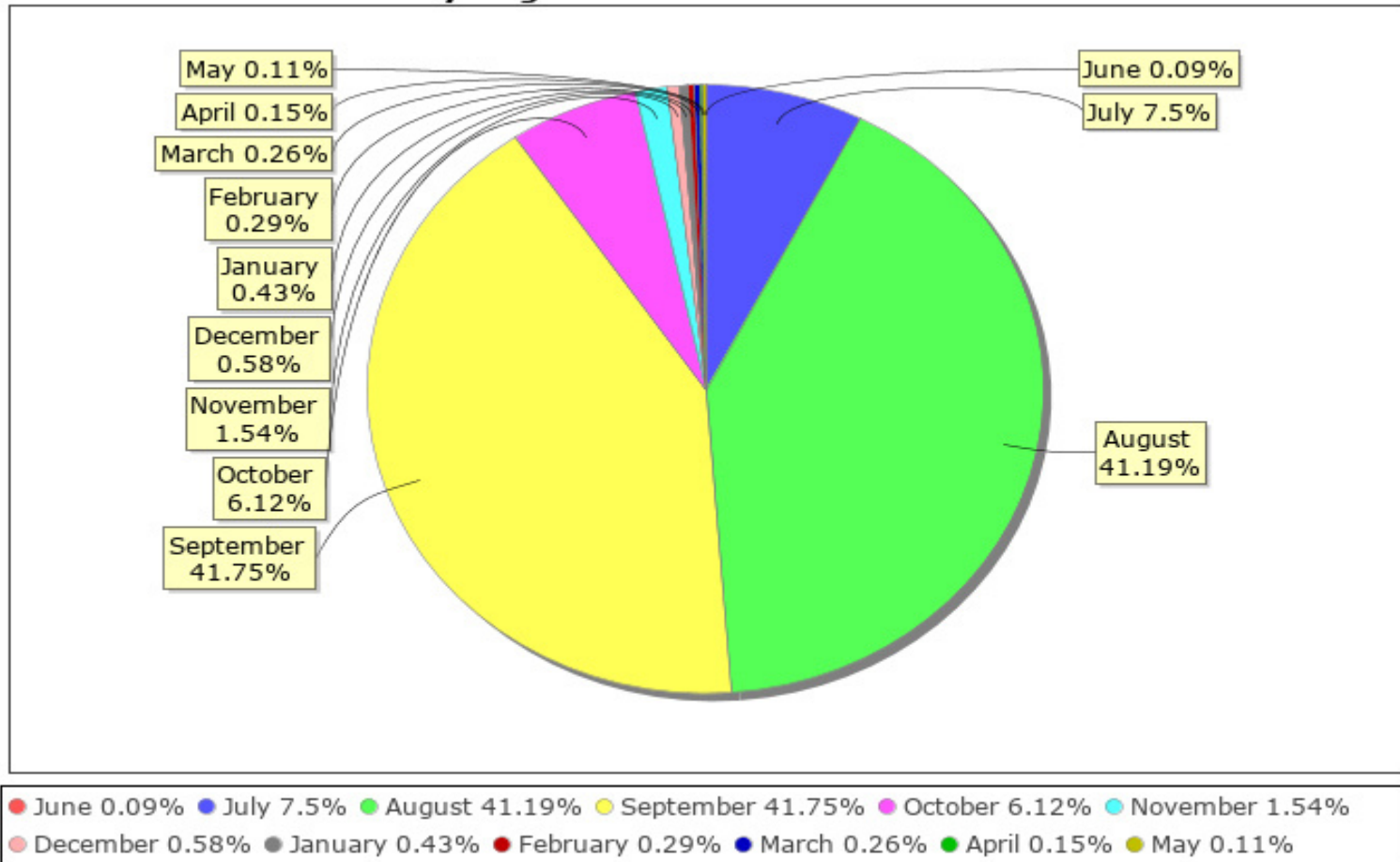


Monthly Runoff for the Year (2019-20)

Station Name : Sher at Belkhedi
Local River : Sher

Division : Narmada Division, Bhopal
Sub-Division : MNSD I, CWC Hoshangabad

Monthly Avg Runoff Water Year: 2019-2020



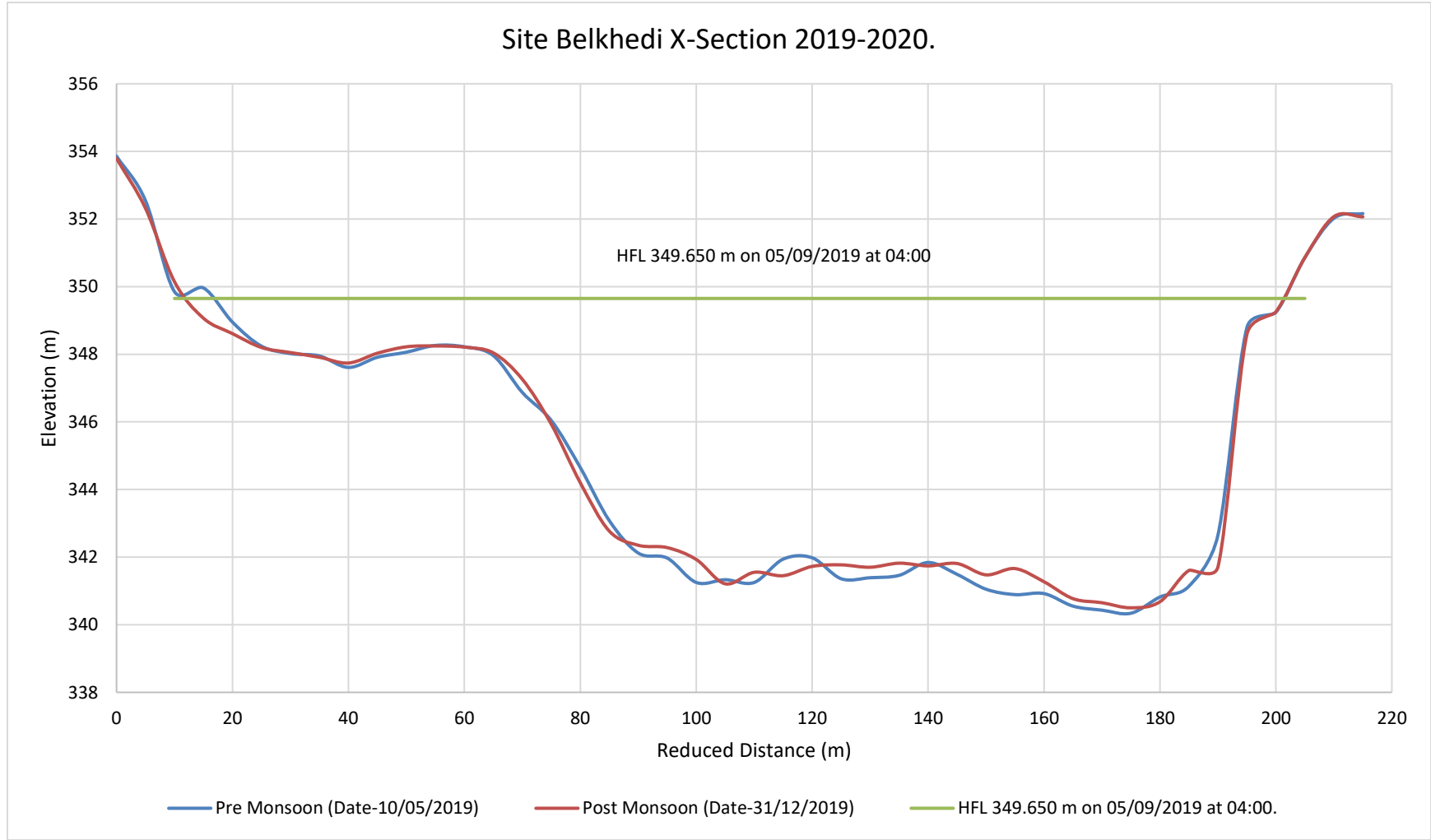
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Sher at Belkhedi

Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad



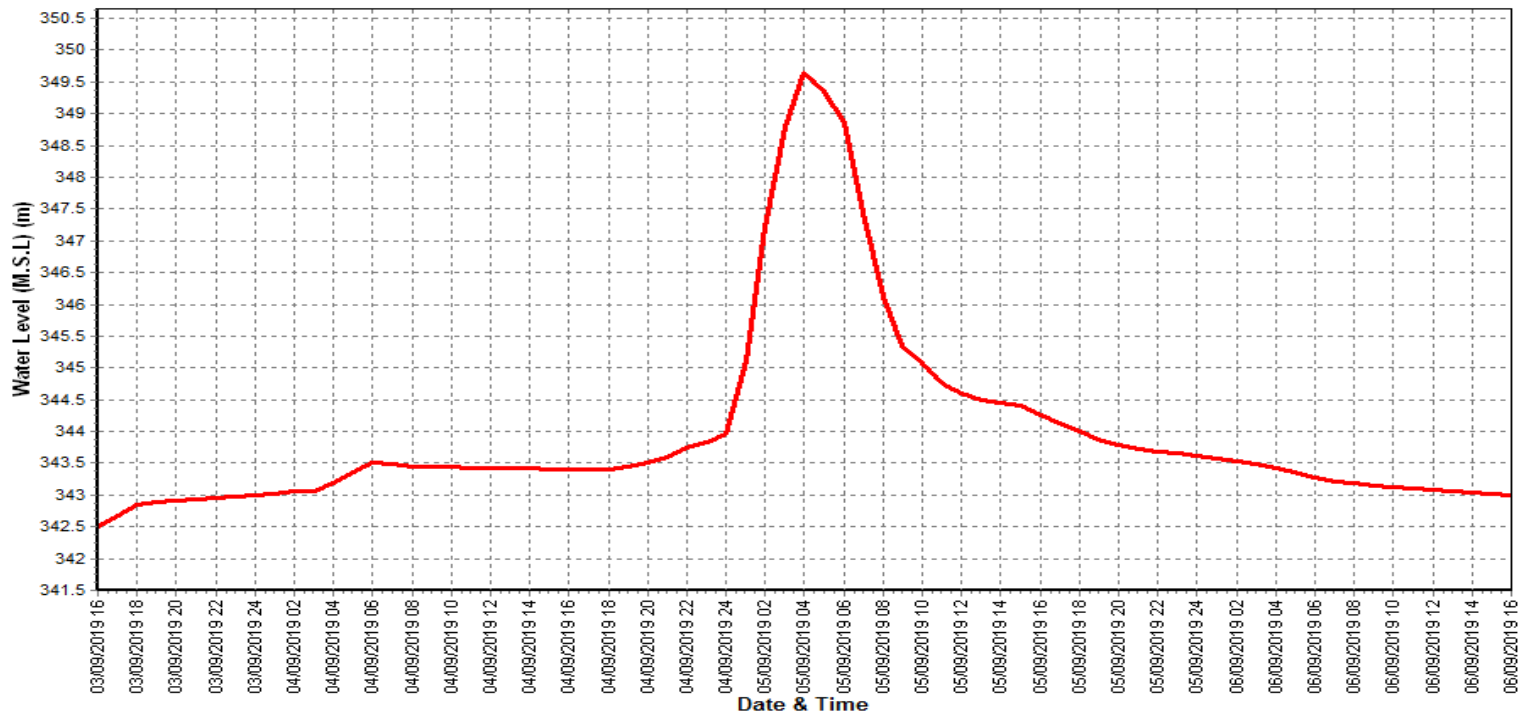
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Sher at Belkhedi

Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad



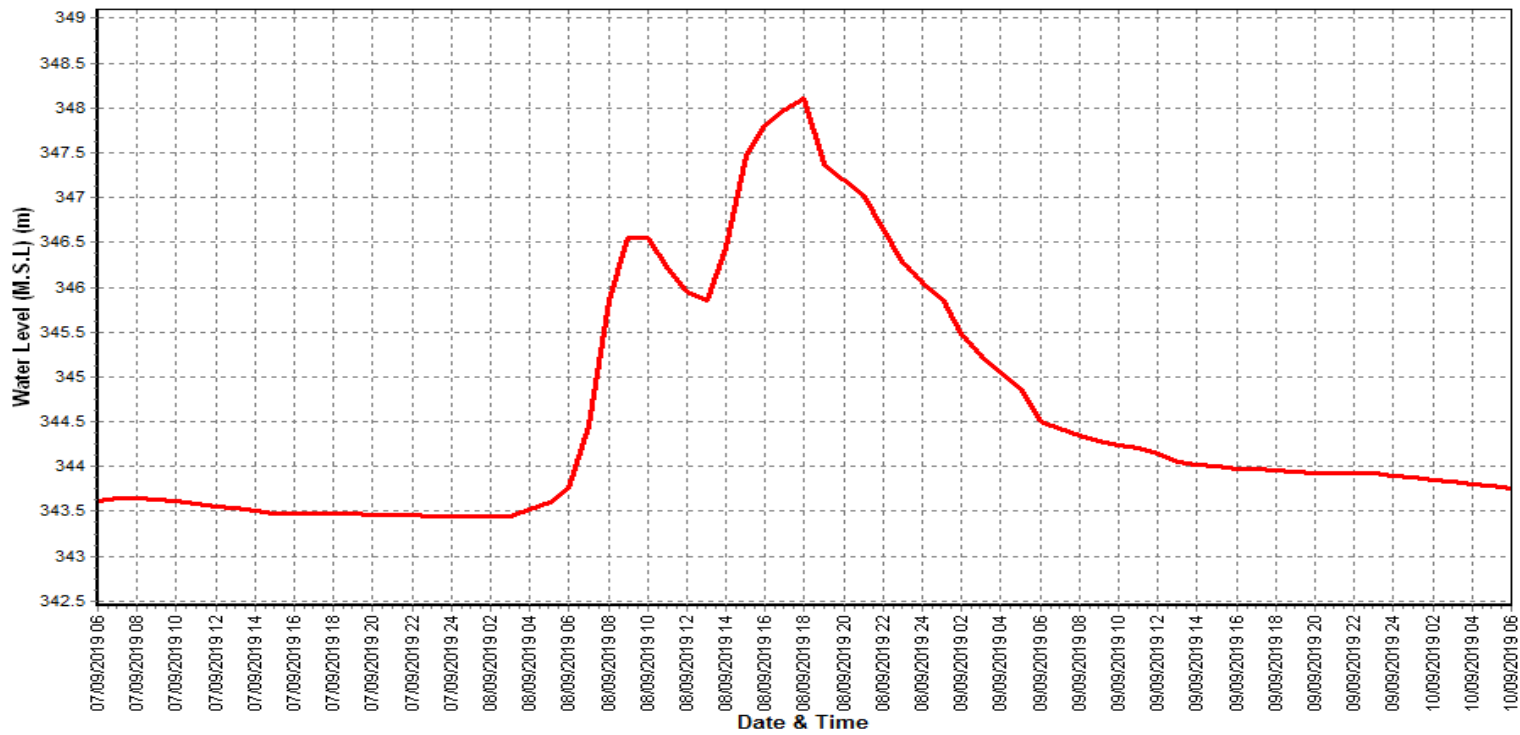
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Sher at Belkhedi

Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad



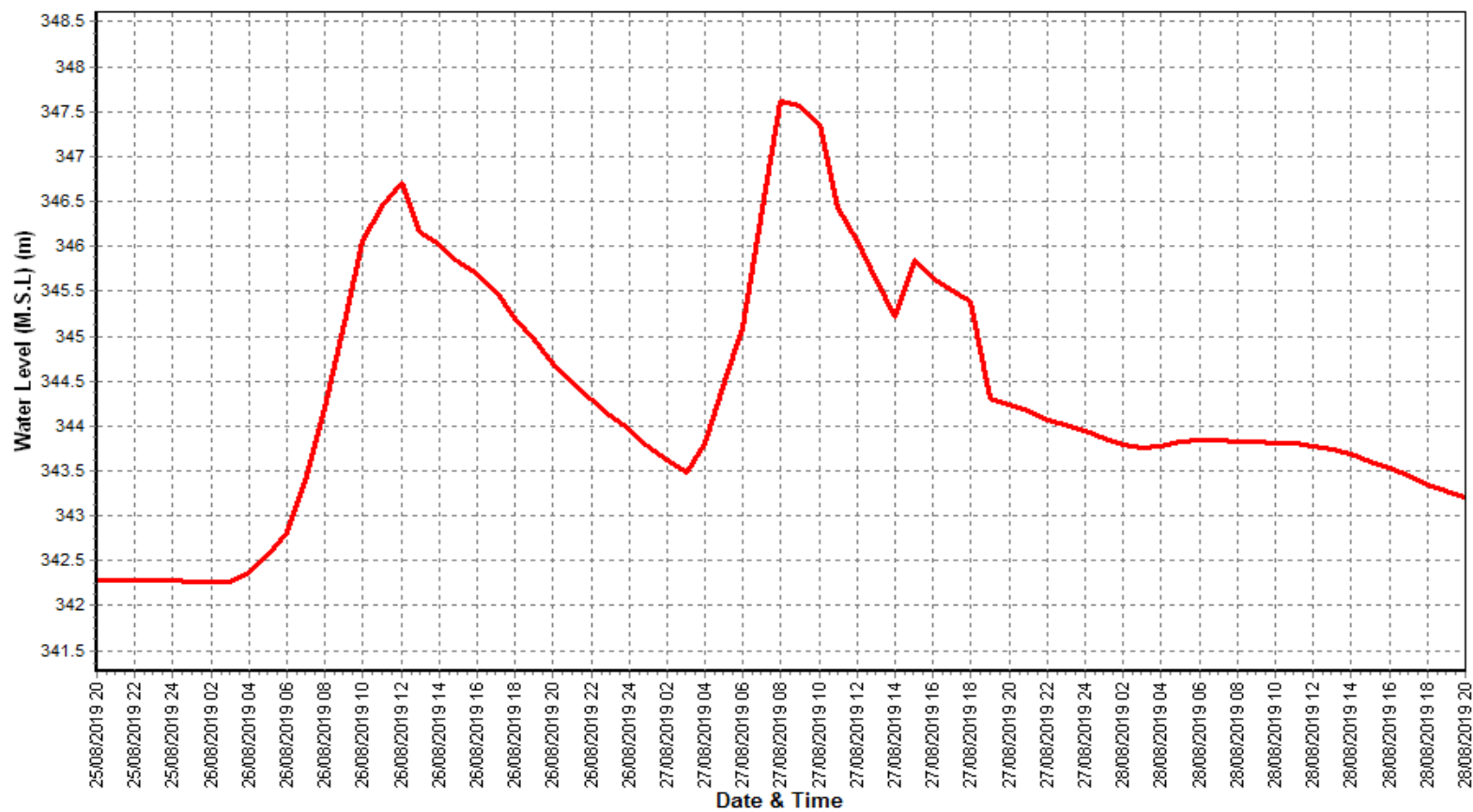
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Sher at Belkhedi

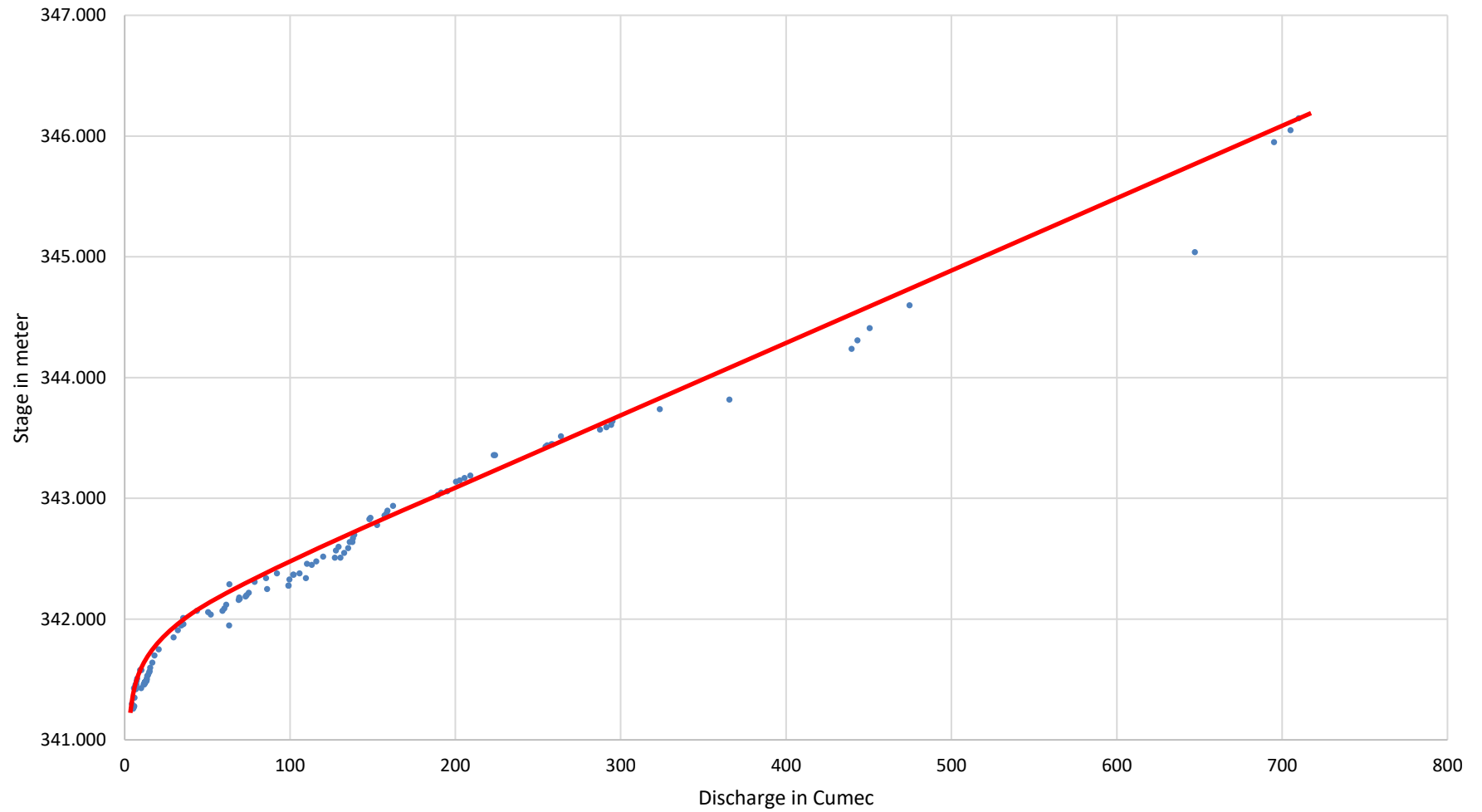
Division : Narmada Division, Bhopal

Local River : Sher

Sub-Division : MNSD I, CWC Hoshangabad



Site Belkhedi Stage-Discharge Curve 2019-2020.



4.37 Belkund at Ghughra.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Belkund at Ghughra		Code	:	CW1NAU001457
State	:	Madhya Pradesh		District	:	JABALPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Belkund
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	1075.0 Sq. Km.		Bank	:	Right
Latitude	:	23°29'21"		Longitude	:	80°11'52"
Current Zero of Gauge (m)	:	375				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
375		19/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q	WL	Date	Q	WL	Date
2019-2020	27.12	378.94	15/08/2019	0.67	376.08	01/06/2019

Stage Discharge Sheet for Belkund at Ghughra for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0.67	376.08	4.55	377.03	7.62	377.39	4.93	377.12	16.78	377.73	4.68	377.07
2	0.69	376.10	4.59	377.04	7.41	377.38	4.83	377.10	11.55	377.48	4.61	377.05
3	0.72	376.11	4.59	377.04	11.99	377.50	9.15	377.44	7.66	377.39	4.42	377.00
4	1.01	376.13	4.61	377.05	7.89	377.41	11.55	377.48	8.00	377.42	4.34	376.98
5	1.08	376.15	4.73	377.08	6.13	377.27	6.73	377.35	6.49	377.32	4.26	376.96
6	1.14	376.17	4.88	377.11	4.61	377.05	6.42	377.30	5.74	377.24	4.19	376.93
7	1.20	376.19	5.01	377.14	9.15	377.44	5.95	377.25	6.12	377.26	4.17	376.92
8	1.26	376.20	5.17	377.16	7.89	377.41	6.91	377.36	5.62	377.22	4.07	376.90
9	1.32	376.22	5.33	377.18	9.15	377.44	7.41	377.38	5.58	377.21	3.95	376.87
10	1.44	376.26	5.48	377.20	5.29	377.17	7.63	377.39	5.58	377.21	3.83	376.84
11	1.54	376.29	5.62	377.22	4.66	377.06	5.58	377.21	5.49	377.20	3.38	376.83
12	1.64	376.32	5.68	377.23	4.03	376.89	14.71	377.61	5.20	377.16	3.75	376.82
13	1.74	376.35	5.84	377.25	1.61	376.31	7.79	377.40	5.08	377.14	3.67	376.80
14	1.89	376.38	5.95	377.25	22.01	378.11	6.13	377.27	4.88	377.11	3.59	376.78
15	1.97	376.40	5.68	377.23	27.12	378.94	5.62	377.22	5.42	377.19	3.45	376.75
16	2.13	376.43	5.57	377.21	22.99	378.28	5.19	377.16	6.13	377.26	3.42	376.74
17	2.31	376.47	5.42	377.19	14.47	377.60	5.74	377.24	6.13	377.27	3.42	376.74
18	2.41	376.49	5.29	377.17	7.89	377.41	5.49	377.20	5.68	377.23	3.38	376.73
19	2.48	376.51	5.18	377.16	6.13	377.27	12.51	377.55	5.58	377.21	3.32	376.72
20	2.59	376.54	5.08	377.14	7.89	377.41	6.91	377.36	5.34	377.18	3.28	376.71
21	2.64	376.55	4.74	377.08	6.46	377.31	6.42	377.30	5.35	377.18	3.28	376.71
22	2.78	376.58	4.50	377.02	6.46	377.31	11.55	377.48	5.21	377.16	3.24	376.70
23	2.88	376.61	4.03	376.89	5.18	377.16	20.94	377.95	5.21	377.16	3.21	376.69
24	3.32	376.72	4.03	376.89	14.68	377.61	15.55	377.69	5.08	377.14	3.21	376.69
25	4.29	376.97	4.59	377.04	7.41	377.38	11.55	377.48	4.94	377.12	3.15	376.68
26	4.33	376.98	22.01	378.11	5.58	377.21	20.69	377.93	4.88	377.11	3.1	376.67
27	4.37	376.99	6.13	377.27	5.08	377.14	17.12	377.74	4.88	377.11	3.05	376.66
28	4.46	377.01	5.70	377.21	15.21	377.67	13.98	377.58	5.22	377.16	3.02	376.65
29	4.49	377.02	6.34	377.29	5.12	377.15	5.62	377.22	4.99	377.13	3.02	376.65
30	4.54	377.03	6.71	377.35	4.93	377.12	21.02	377.96	4.83	377.10	2.98	376.64
31			6.91	377.36	6.46	377.31			4.79	377.09		
Ten-Daily Mean												
I Ten-Daily	1.05	376.16	4.9	377.1	7.72	377.35	7.15	377.32	7.91	377.35	4.25	376.95
II Ten-Daily	2.07	376.42	5.53	377.21	11.88	377.53	7.57	377.32	5.49	377.2	3.47	376.76
III Ten-Daily	3.81	376.85	6.88	377.23	7.51	377.31	14.44	377.63	5.03	377.13	3.13	376.67
Monthly												
Min.	0.67	376.08	4.03	376.89	1.61	376.31	4.83	377.1	4.79	377.09	2.98	376.64
Max.	4.54	377.03	22.01	378.11	27.12	378.94	21.02	377.96	16.78	377.73	4.68	377.07
Mean	2.31	376.47	5.77	377.18	9.03	377.39	9.72	377.42	6.15	377.23	3.61	376.8

Annual Runoff in

MCM : 144.45

Annual Runoff in

mm : 134.37

Peak Observed Discharge = 27.12 cumecs on 15/8/2019 Corres. Water Level 378.94 m

Lowest Observed Discharge = 0.67 cumecs on 1/6/2019 Corres. Water Level 376.08 m

Stage Discharge Sheet for Belkund at Ghughra for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	2.98	376.64	3.72	376.81	3.45	376.75	3.24	376.70	2.4	376.48	1.92	376.39
2	2.98	376.64	3.72	376.81	3.45	376.75	3.21	376.69	2.41	376.48	1.89	376.38
3	3.02	376.65	3.72	376.81	3.45	376.75	3.05	376.66	2.27	376.46	1.83	376.37
4	3.05	376.66	3.72	376.81	3.45	376.75	3.02	376.65	2.27	376.46	1.79	376.36
5	3.05	376.66	3.67	376.80	3.45	376.75	2.95	376.63	2.27	376.46	1.76	376.35
6	3.16	376.68	3.67	376.80	3.46	376.75	2.91	376.62	2.13	376.43	1.79	376.36
7	3.24	376.70	3.67	376.80	3.42	376.74	2.88	376.61	2.13	376.43	1.83	376.37
8	3.32	376.72	3.67	376.80	3.42	376.74	2.85	376.60	2.13	376.43	1.89	376.38
9	3.42	376.74	3.67	376.80	3.42	376.74	3.28	376.71	2.01	376.42	1.97	376.40
10	3.5	376.76	3.64	376.79	3.42	376.74	3.92	376.86	2.01	376.42	1.97	376.41
11	3.59	376.78	3.64	376.79	3.42	376.74	3.87	376.85	2.01	376.42	2.01	376.42
12	3.72	376.81	3.64	376.79	3.38	376.73	3.83	376.84	1.92	376.39	2.17	376.44
13	3.83	376.84	3.64	376.79	3.38	376.73	3.79	376.83	1.92	376.39	2.22	376.45
14	3.92	376.86	3.59	376.78	3.38	376.73	3.67	376.80	1.74	376.35	2.31	376.47
15	3.95	376.87	3.59	376.78	3.38	376.73	3.59	376.78	1.74	376.35	2.48	376.51
16	3.98	376.88	3.59	376.78	3.38	376.73	3.32	376.72	1.68	376.33	2.53	376.52
17	3.92	376.86	3.59	376.78	3.38	376.73	3.28	376.71	1.69	376.33	2.59	376.54
18	3.92	376.86	3.59	376.78	3.32	376.72	3.25	376.70	1.61	376.31	2.64	376.55
19	3.87	376.85	3.59	376.78	3.32	376.72	3.21	376.69	1.55	376.29	2.74	376.57
20	3.87	376.85	3.54	376.77	3.32	376.72	3.17	376.68	1.48	376.27	2.78	376.58
21	3.83	376.84	3.54	376.77	3.32	376.72	3.1	376.67	1.45	376.26	2.85	376.60
22	3.83	376.84	3.54	376.77	3.32	376.72	3.02	376.65	1.38	376.24	2.88	376.61
23	3.79	376.83	3.54	376.77	3.32	376.72	2.98	376.64	1.51	376.28	2.91	376.62
24	3.79	376.83	3.54	376.77	3.32	376.72	2.95	376.63	1.92	376.39	2.98	376.64
25	3.79	376.83	3.54	376.77	3.32	376.72	2.81	376.59	2.22	376.45	3.06	376.66
26	3.79	376.83	3.5	376.76	3.32	376.72	2.69	376.56	2.17	376.44	3.17	376.68
27	3.75	376.82	3.5	376.76	3.28	376.71	2.69	376.56	2.13	376.43	3.28	376.71
28	3.75	376.82	3.5	376.76	3.28	376.71	2.58	376.53	2.13	376.43	3.42	376.74
29	3.75	376.82	3.5	376.76	3.28	376.71	2.58	376.53	2.01	376.42	3.64	376.79
30	3.75	376.82	3.5	376.76			2.48	376.51	2.01	376.42	3.59	376.78
31	3.72	376.81	3.45	376.75			2.48	376.51			3.54	376.77
Ten-Daily Mean												
I Ten-Daily	3.17	376.69	3.69	376.8	3.44	376.75	3.13	376.67	2.2	376.45	1.86	376.38
II Ten-Daily	3.86	376.85	3.6	376.78	3.37	376.73	3.5	376.76	1.73	376.34	2.45	376.51
III Ten-Daily	3.78	376.83	3.51	376.76	3.31	376.72	2.76	376.58	1.89	376.38	3.21	376.69
Monthly												
Min.	2.98	376.64	3.45	376.75	3.28	376.71	2.48	376.51	1.38	376.24	1.76	376.35
Max.	3.98	376.88	3.72	376.81	3.46	376.75	3.92	376.86	2.41	376.48	3.64	376.79
Mean	3.6	376.79	3.6	376.78	3.37	376.73	3.13	376.67	1.94	376.39	2.51	376.52

Peak Computed Discharge = 11.55 cumecs on 22/9/2019 Corres. Water Level 377.48 m
 Lowest Computed Discharge = 0.69cumecs on 2/6/2019 Corres. Water Level 376.1 m

Monthly Runoff for the Year (2019-2020)

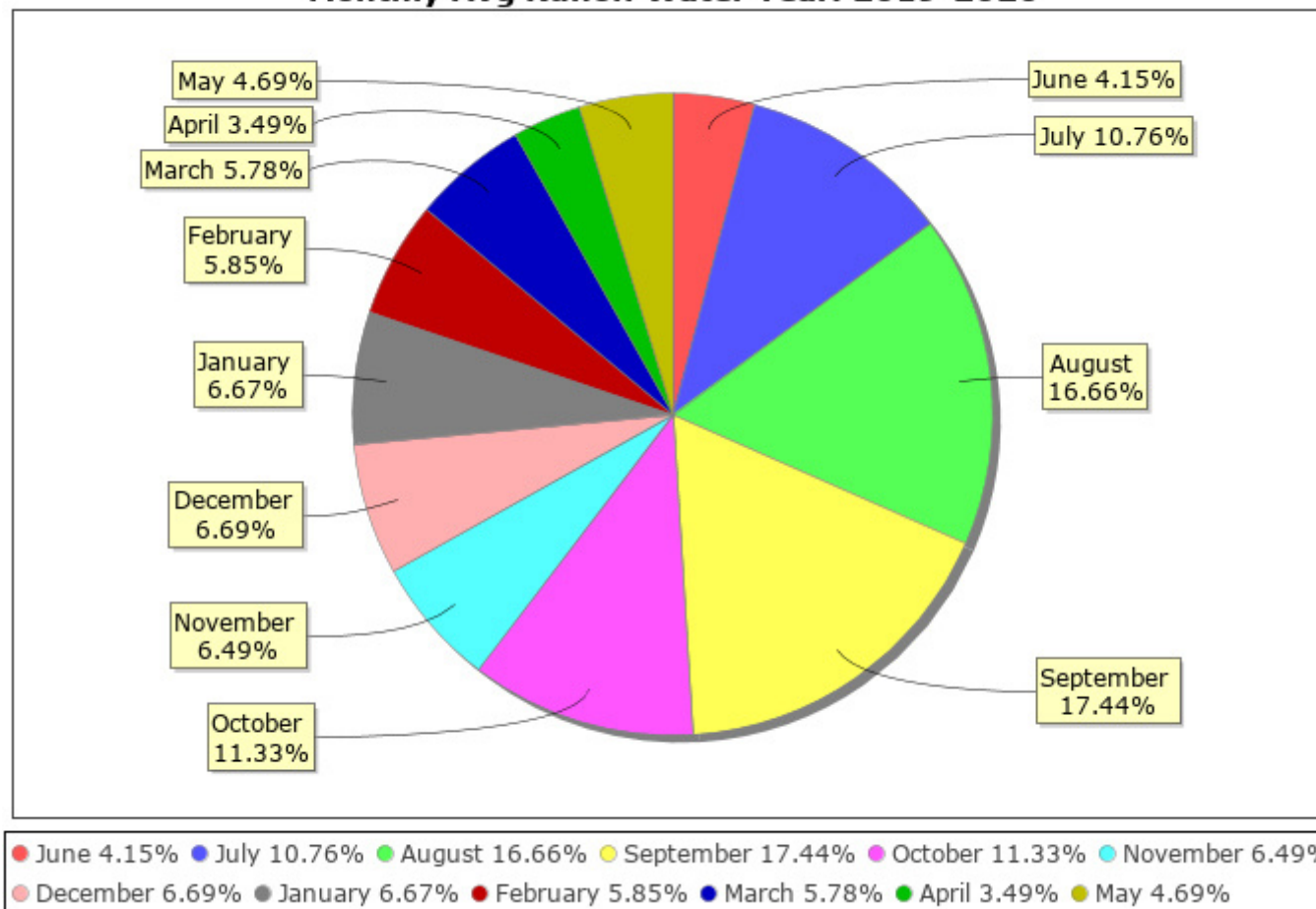
Station Name: Belkund at Ghughra

Division: Narmada Division, Bhopal

Local River: Belkund

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



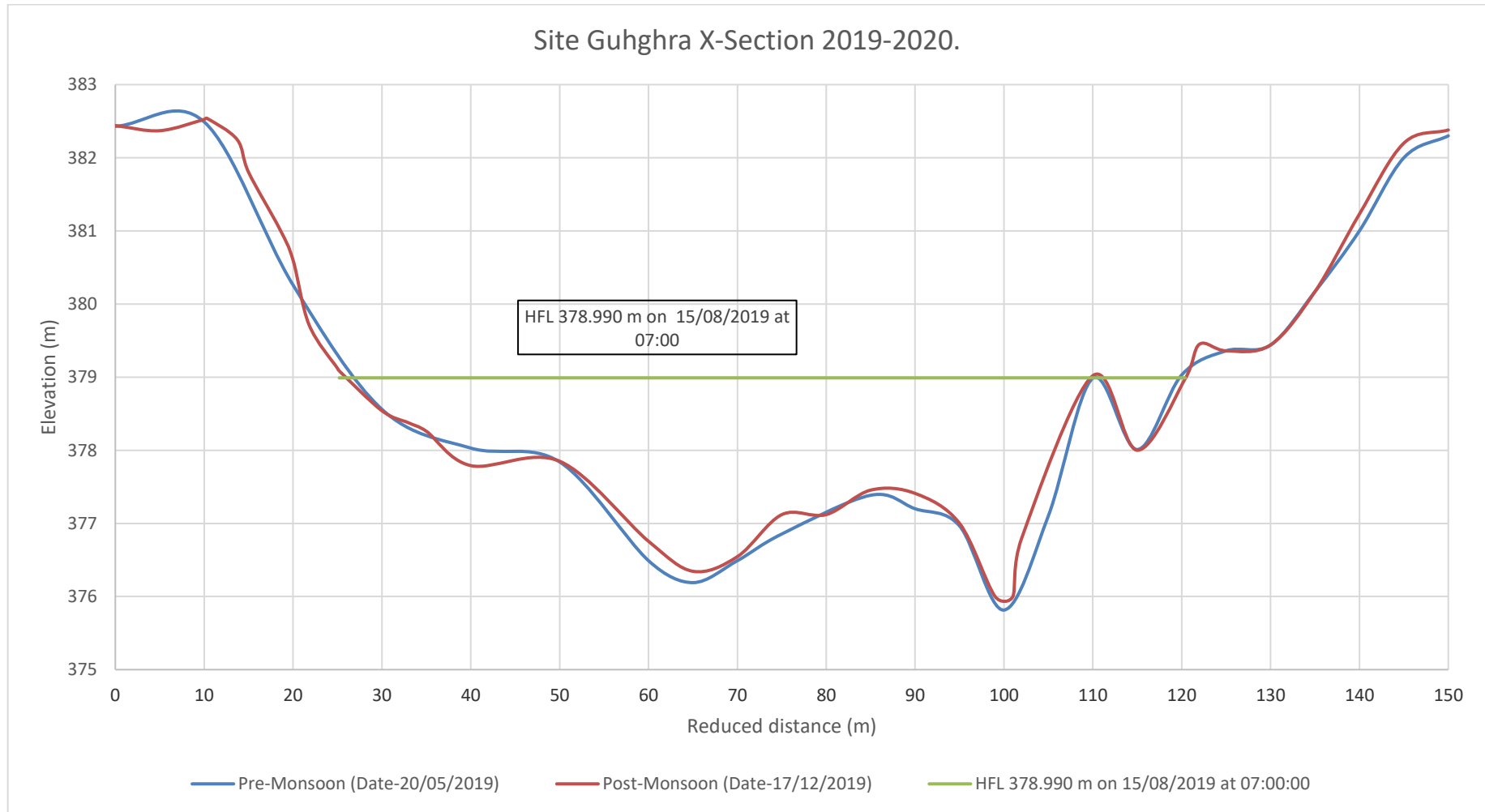
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Belkund at Ghughra

Division: Narmada Division, Bhopal

Local River: Belkund

Sub-Division: UNSD, CWC Jabalpur



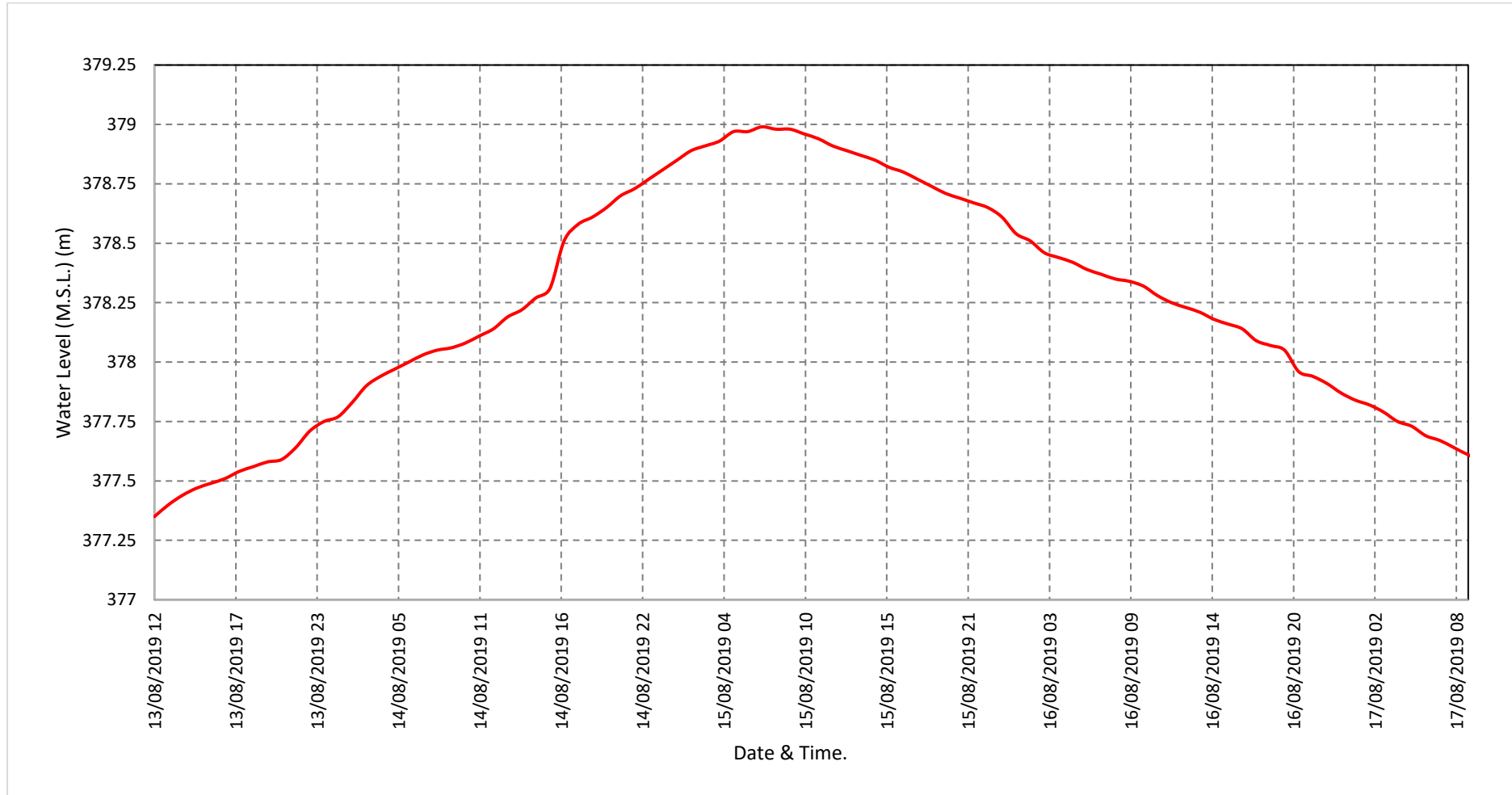
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Belkund at Ghughra

Division: Narmada Division, Bhopal

Local River: Belkund

Sub-Division: UNSD, CWC Jabalpur



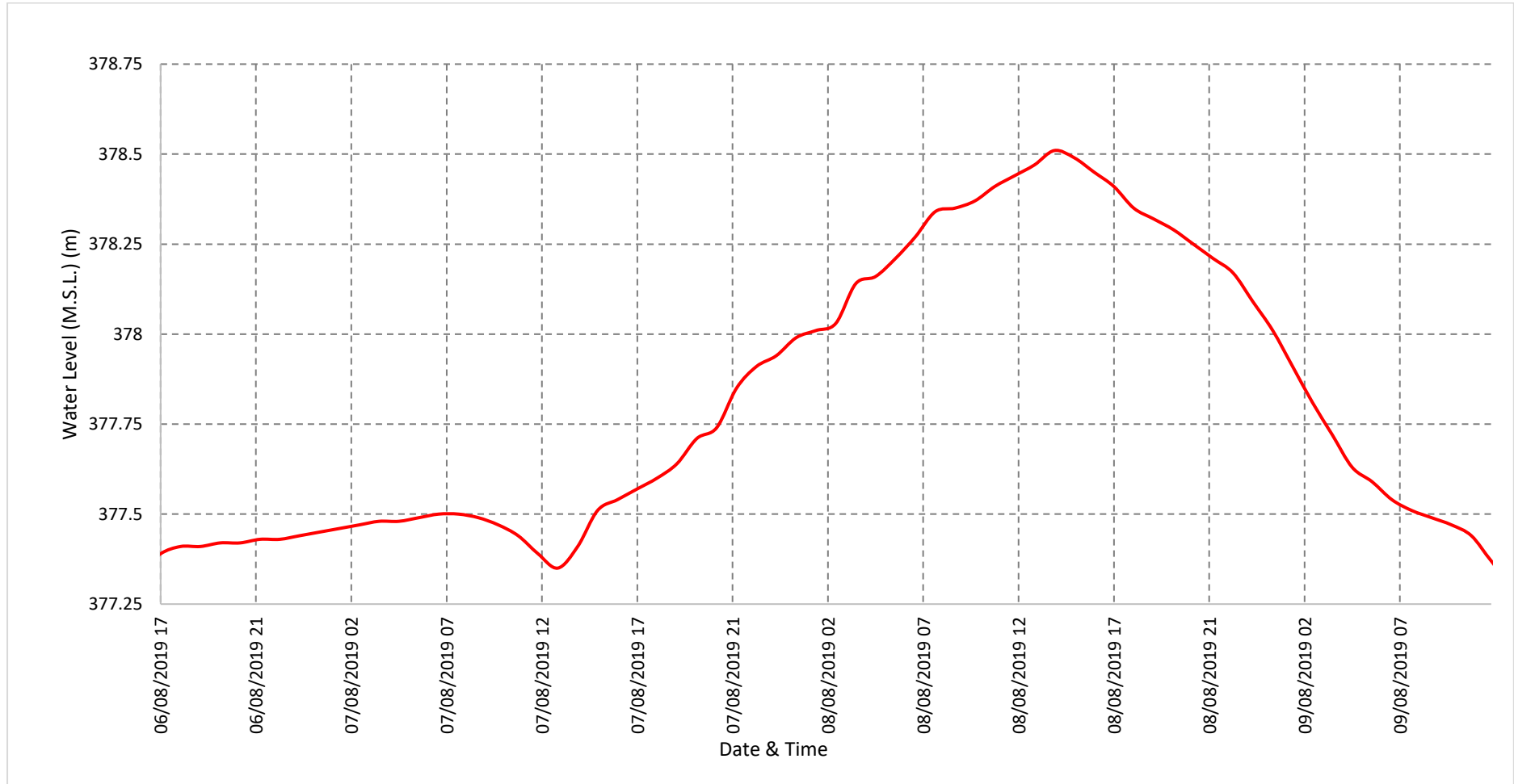
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Belkund at Ghughra

Division: Narmada Division, Bhopal

Local River: Belkund

Sub-Division: UNSD, CWC Jabalpur



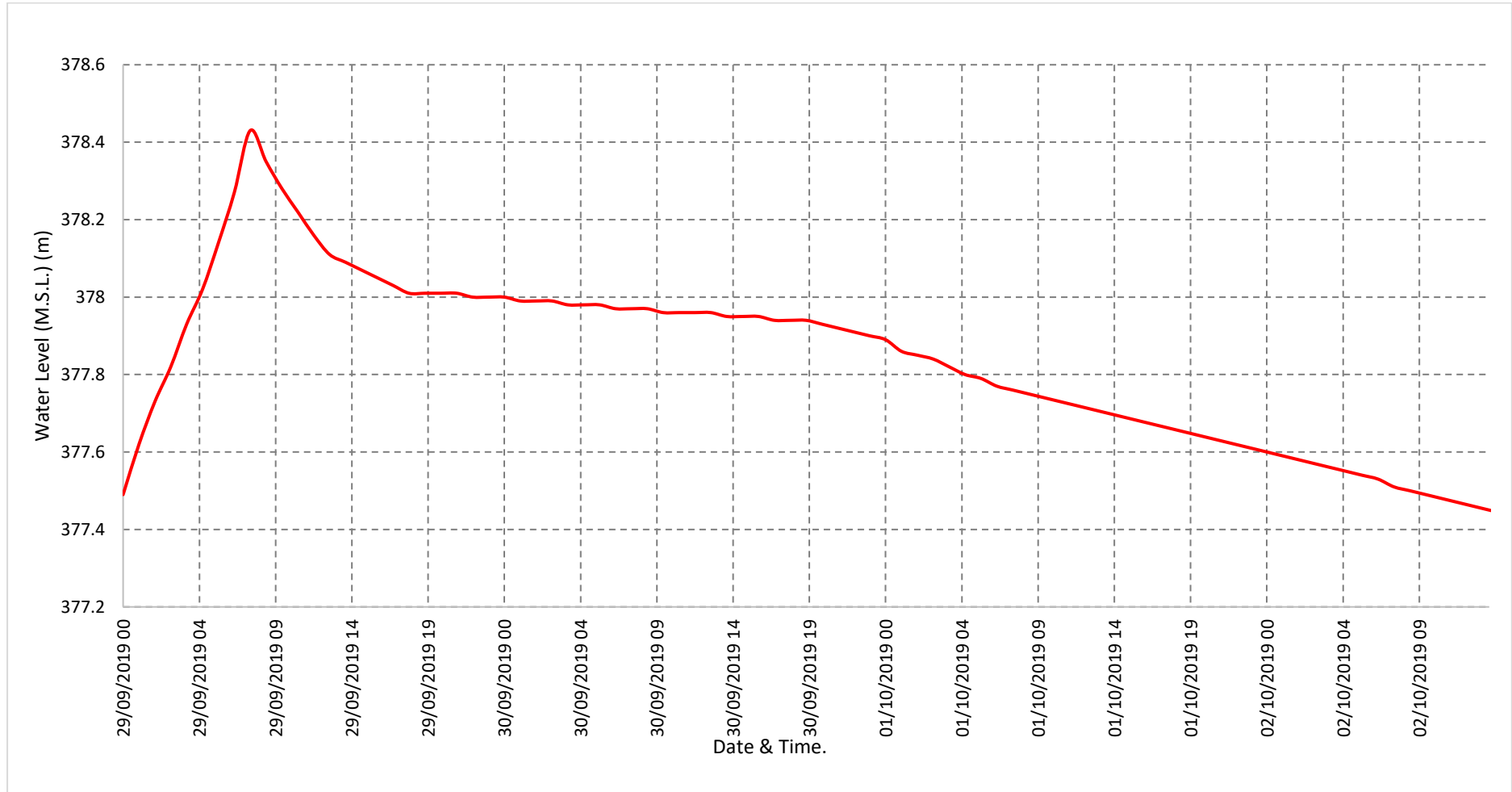
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Belkund at Ghughra

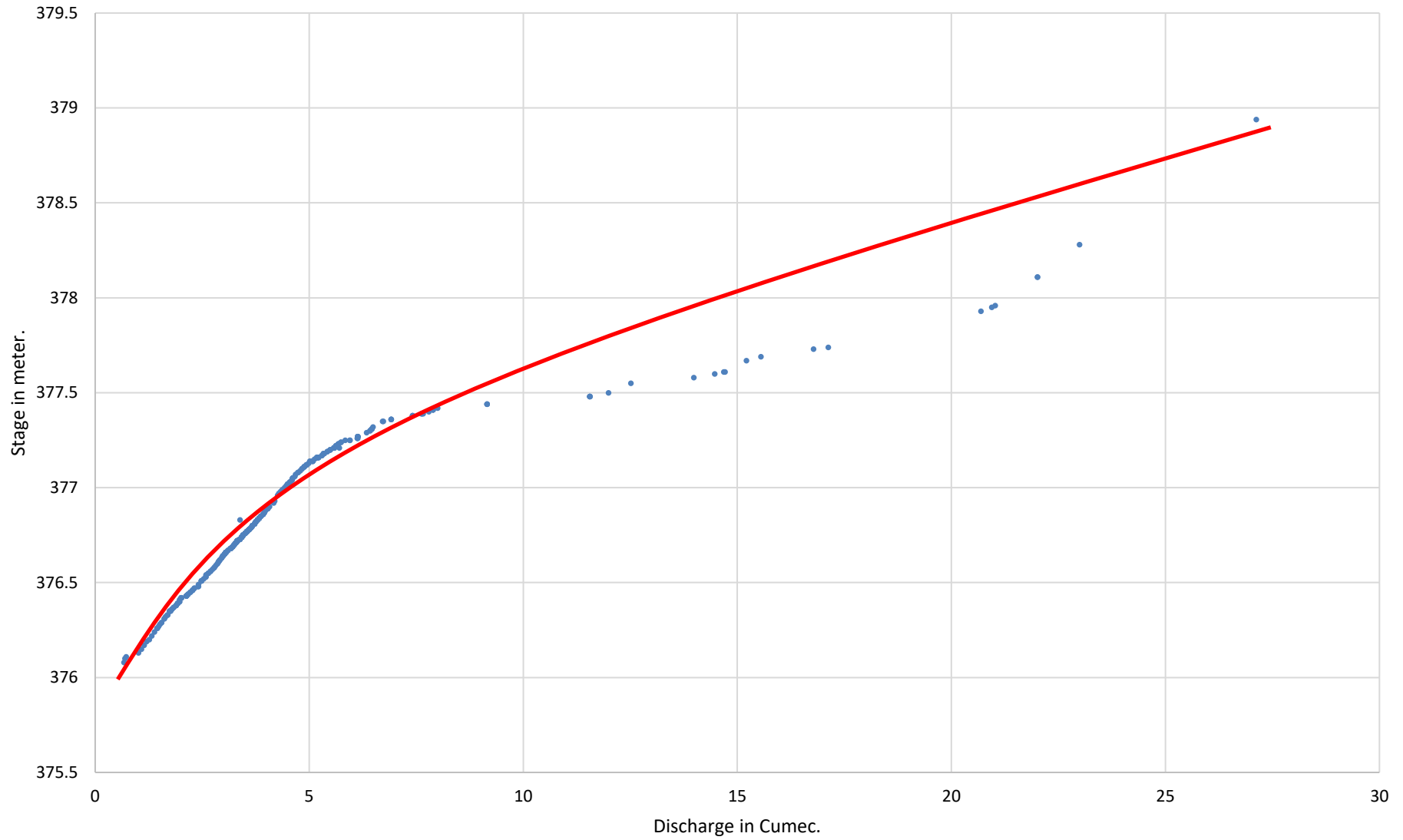
Division: Narmada Division, Bhopal

Local River: Belkund

Sub-Division: UNSD, CWC Jabalpur



Site Ghughra Stage-Discharge Curve 2019-2020.



4.38 Hiran at Singaldeep.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Hiran at Singaldeep		Code	:	CW1NAU001483
State	:	Madhya Pradesh		District	:	JABALPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	-
Sub-Sub Tributary	:	-		Local River	:	Hiran
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	1175.0 Sq. Km.		Bank	:	Left
Latitude	:	23°23'16"		Longitude	:	79°54'54"
Current Zero of Gauge (m)	:	355				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
355		31/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q	WL	Date	Q	WL	Date
2019-2020	74.21	362.06	09/08/2019	2.76	357.07	24/04/2020

Stage Discharge Sheet for Hiran at Singaldeep for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	6.90	357.76	17.81	359.13	20.61	359.35	37.64	360.01	68.25	361.36	13.85	358.69
2	6.80	357.75	17.81	359.13	20.33	359.32	37.41	359.98	68.21	361.35	13.6	358.67
3	6.70	357.74	17.81	359.13	20.10	359.30	73.16	361.91	48.02	360.40	13.46	358.64
4	6.70	357.74	17.99	359.14	50.12	360.36	37.09	359.97	38.54	360.04	13.31	358.61
5	6.70	357.74	17.99	359.14	31.85	359.79	37.41	359.98	30.01	359.73	13.21	358.59
6	6.60	357.73	18.23	359.16	23.86	359.47	50.26	360.37	24.12	359.49	13.05	358.56
7	6.50	357.72	18.23	359.16	48.79	360.32	36.68	359.95	19.69	359.26	12.96	358.53
8	6.40	357.71	18.33	359.17	69.70	361.54	33.98	359.86	17.39	359.09	12.81	358.50
9	6.30	357.70	18.58	359.19	74.21	362.06	68.21	361.35	16.91	359.05	12.65	358.47
10	6.10	357.68	18.75	359.20	73.16	361.91	65.43	361.00	16.78	359.01	12.49	358.44
11	6.00	357.67	18.45	359.18	68.46	361.40	62.56	360.87	16.33	358.96	12.35	358.40
12	5.80	357.65	18.10	359.15	64.56	360.96	66.65	361.13	15.53	358.86	12.3	358.39
13	5.50	357.62	17.99	359.14	60.05	360.74	73.58	361.93	15.53	358.86	12.25	358.38
14	5.60	357.63	17.99	359.14	50.13	360.36	68.21	361.35	14.91	358.80	12.20	358.37
15	5.90	357.66	17.81	359.13	61.51	360.81	66.7	361.14	16.21	358.95	12.15	358.36
16	6.10	357.68	17.81	359.13	53.20	360.48	64.56	360.96	16.48	358.97	12.15	358.35
17	6.50	357.72	18.10	359.15	31.85	359.79	62.29	360.85	15.91	358.91	12.11	358.34
18	7.60	357.83	18.95	359.21	28.89	359.69	57.41	360.64	15.63	358.87	12.11	358.34
19	9.20	357.99	18.95	359.21	31.21	359.77	60.10	360.75	15.21	358.83	12.06	358.33
20	10.70	358.14	19.13	359.22	37.64	360.01	58.28	360.67	15.1	358.81	11.99	358.32
21	11.84	358.29	19.51	359.25	38.71	360.05	62.61	360.88	14.86	358.79	11.93	358.31
22	12.55	358.45	19.36	359.24	66.6	361.12	61.52	360.81	14.68	358.77	11.93	358.31
23	13.21	358.59	18.23	359.16	58.28	360.67	66.76	361.15	14.68	358.77	11.89	358.30
24	14.71	358.78	17.22	359.07	66.21	361.07	60.72	360.78	14.45	358.75	11.84	358.29
25	16.78	359.01	17.22	359.07	66.30	361.08	66.10	361.06	14.22	358.73	11.84	358.29
26	16.91	359.05	43.99	360.13	64.51	360.95	69.25	361.48	14.1	358.72	11.78	358.28
27	17.01	359.06	25.92	359.59	60.16	360.76	71.95	361.73	14.68	358.77	11.74	358.27
28	17.39	359.09	24.2	359.52	53.10	360.47	69.15	361.47	14.56	358.76	11.70	358.26
29	17.39	359.09	24.2	359.52	48.81	360.32	72.41	361.77	14.31	358.74	11.67	358.25
30	17.81	359.13	24.34	359.53	43.75	360.11	69.26	361.48	14.1	358.72	11.67	358.25
31			22.18	359.42	43.82	360.12			13.96	358.70		
Ten-Daily Mean												
I Ten-Daily	6.57	357.73	18.15	359.16	43.27	360.34	47.73	360.44	34.78	359.88	13.14	358.57
II Ten-Daily	6.89	357.76	18.33	359.17	48.75	360.4	64.03	361.03	15.68	358.88	12.17	358.36
III Ten-Daily	15.56	358.85	23.31	359.41	55.48	360.61	66.97	361.26	14.42	358.75	11.8	358.28
Monthly												
Min.	5.5	357.62	17.22	359.07	20.1	359.3	33.98	359.86	13.96	358.7	11.67	358.25
Max.	17.81	359.13	43.99	360.13	74.21	362.06	73.58	361.93	68.25	361.36	13.85	358.69
Mean	9.67	358.11	19.93	359.24	49.17	360.45	59.58	360.91	21.63	359.17	12.37	358.4

Annual Runoff in MCM :625.44 Annual Runoff in mm : 532.29

Peak Observed Discharge = 74.21 cumecs on 9/8/2019 Corres. Water Level 362.06 m

Lowest Observed Discharge = 2.76cumecs on 24/4/2020 Corres. Water Level 357.83 m

Stage Discharge Sheet for Hiran at Singaldeep for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	11.67	358.25	11.31	358.2	11.74	358.27	11.32	358.2	10	358.07	10	358.07
2	11.67	358.25	11.31	358.2	11.74	358.27	11.2	358.19	9.9	358.06	9.9	358.06
3	11.70	358.26	11.43	358.21	11.74	358.27	10.9	358.16	9.8	358.05	9.7	358.04
4	11.74	358.27	11.55	358.23	11.74	358.27	10.7	358.14	9.7	358.04	9.8	358.05
5	11.78	358.28	11.67	358.25	11.74	358.27	10.6	358.13	9.7	358.04	9.7	358.04
6	11.84	358.29	11.78	358.28	11.7	358.26	10.4	358.11	9.6	358.03	9.6	358.03
7	11.93	358.31	11.89	358.3	11.7	358.26	10.3	358.1	9.5	358.02	9.6	358.03
8	12.06	358.33	12.06	358.33	11.7	358.26	10.2	358.09	9.4	358.01	9.5	358.02
9	11.99	358.32	11.99	358.32	11.7	358.26	10.5	358.12	9.4	358.01	9.6	358.03
10	11.93	358.31	11.93	358.31	11.67	358.25	12.3	358.39	9.3	358.00	9.6	358.03
11	11.89	358.3	11.93	358.31	11.67	358.25	12.25	358.38	9.2	357.99	9.7	358.04
12	11.78	358.28	11.89	358.3	11.67	358.25	11.2	358.37	9.2	357.99	9.7	358.04
13	11.78	358.28	11.89	358.3	11.63	358.24	11.15	358.36	9.1	357.98	9.8	358.05
14	11.74	358.27	11.89	358.3	11.63	358.24	12.06	358.33	9.0	357.97	9.8	358.05
15	11.70	358.26	11.89	358.3	11.63	358.24	11.84	358.29	9.0	357.97	9.7	358.04
16	11.70	358.26	11.89	358.3	11.63	358.24	11.67	358.25	8.9	357.96	9.6	358.03
17	11.67	358.25	11.89	358.3	11.55	358.23	11.63	358.24	8.8	357.95	9.6	358.03
18	11.67	358.25	11.84	358.29	11.55	358.23	11.55	358.23	8.7	357.94	9.5	358.02
19	11.63	358.24	11.84	358.29	11.55	358.23	11.45	358.22	8.5	357.92	9.5	358.02
20	11.63	358.24	11.84	358.29	11.55	358.23	11.43	358.21	8.4	357.91	9.4	358.01
21	11.63	358.24	11.84	358.29	11.55	358.23	11.32	358.2	8.3	357.9	9.4	358.01
22	11.63	358.24	11.84	358.29	11.55	358.23	11.00	358.17	8.2	357.89	9.3	358.00
23	11.55	358.23	11.84	358.29	11.45	358.22	10.9	358.16	8.6	357.93	9.2	357.99
24	11.55	358.23	11.78	358.28	11.45	358.22	10.8	358.15	2.76	357.83	9.1	357.98
25	11.55	358.23	11.78	358.28	11.45	358.22	10.6	358.13	10.6	358.13	9.0	357.97
26	11.45	358.22	11.78	358.28	11.45	358.22	10.5	358.12	10.5	358.12	9.1	357.98
27	11.45	358.22	11.78	358.28	11.43	358.21	10.5	358.12	10.4	358.11	9.2	357.99
28	11.45	358.22	11.78	358.28	11.43	358.21	10.4	358.11	10.4	358.11	9.3	358.00
29	11.4	358.21	11.78	358.28	11.43	358.21	10.3	358.1	10.3	358.1	9.4	358.01
30	11.42	358.21	11.74	358.27			10.2	358.09	10.3	358.1	9.4	358.01
31	11.30	358.20	11.74	358.27			10.1	358.08			9.3	358.00
Ten-Daily Mean												
I Ten-Daily	11.83	358.29	11.69	358.26	11.72	358.26	10.84	358.16	9.63	358.03	9.7	358.04
II Ten-Daily	11.72	358.26	11.88	358.3	11.61	358.24	11.62	358.29	8.88	357.96	9.63	358.03
III Ten-Daily	11.49	358.22	11.79	358.28	11.46	358.22	10.6	358.13	9.04	357.95	9.25	357.99
Monthly												
Min.	11.3	358.2	11.31	358.2	11.43	358.21	10.1	358.08	2.76	357.83	9.01	357.97
Max.	12.06	358.33	12.06	358.33	11.74	358.27	12.3	358.39	10.6	358.13	10	358.07
Mean	11.68	358.26	11.79	358.28	11.6	358.24	11.02	358.19	9.18	357.98	9.53	358.02

Peak Computed Discharge = 72.41 cumecs on 29/9/2019 Corres. Water Level 361.77 m
 Lowest Computed Discharge = 6.1cumecs on 16/6/2019 Corres. Water Level 357.68 m

Monthly Runoff for the Year (2019-2020)

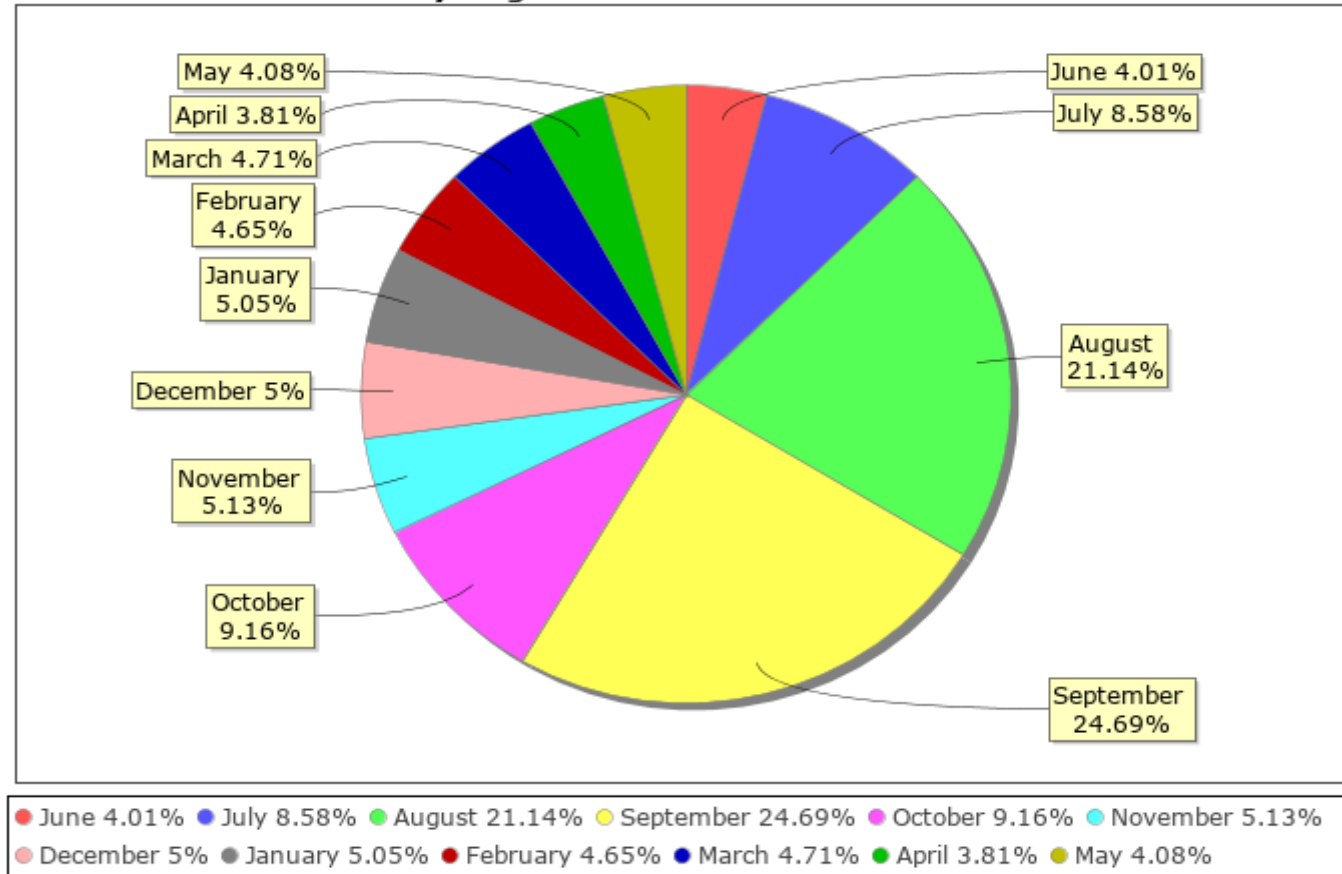
Station Name: Hiran at Singaldeep

Local River: Hiran

Division: Narmada Division, Bhopal

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



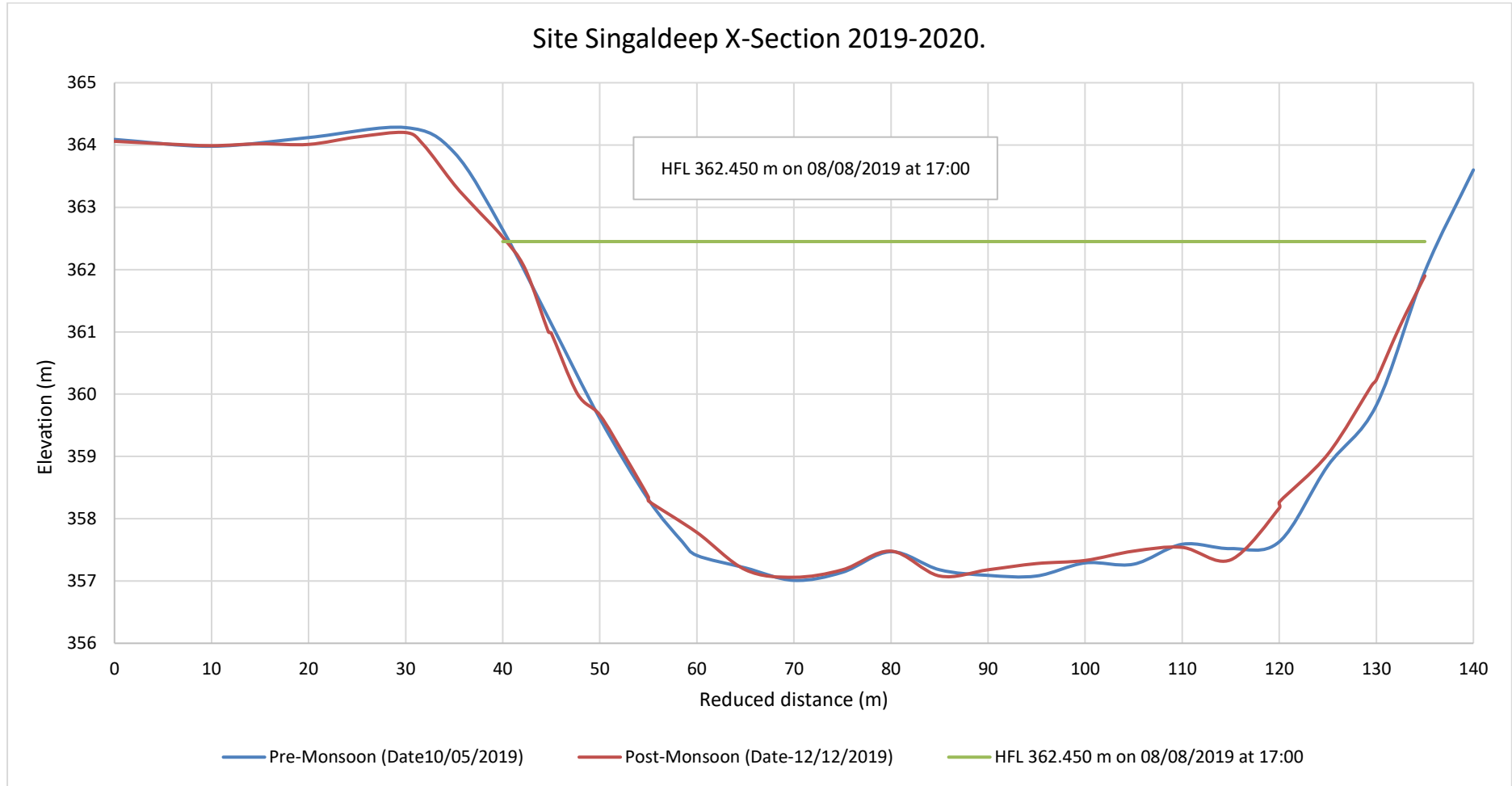
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Hiran at Singaldeep

Division: Narmada Division, Bhopal

Local River: Hiran

Sub-Division: UNSD, CWC Jabalpur



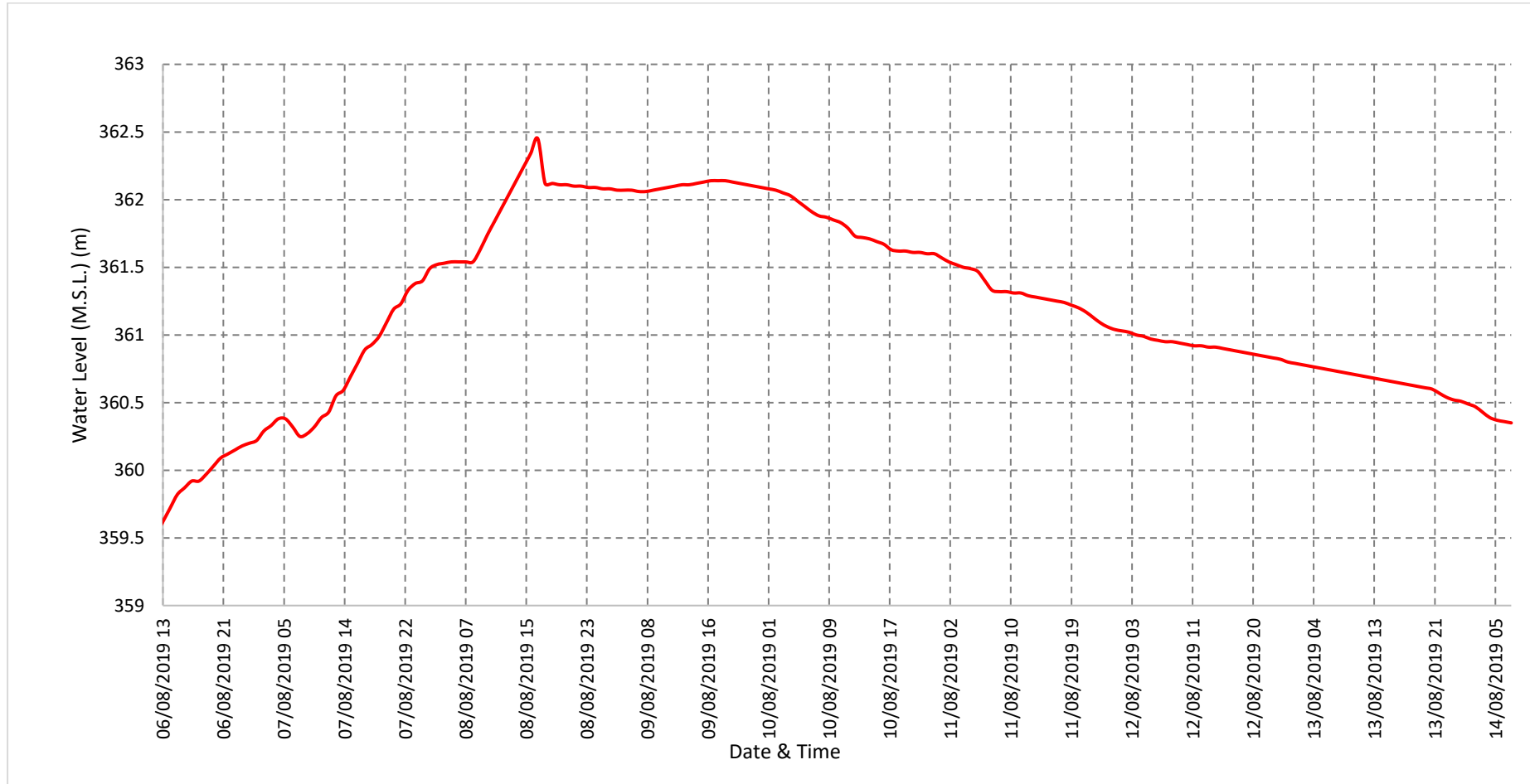
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Hiran at Singaldeep

Division: Narmada Division, Bhopal

Local River: Hiran

Sub-Division: UNSD, CWC Jabalpur



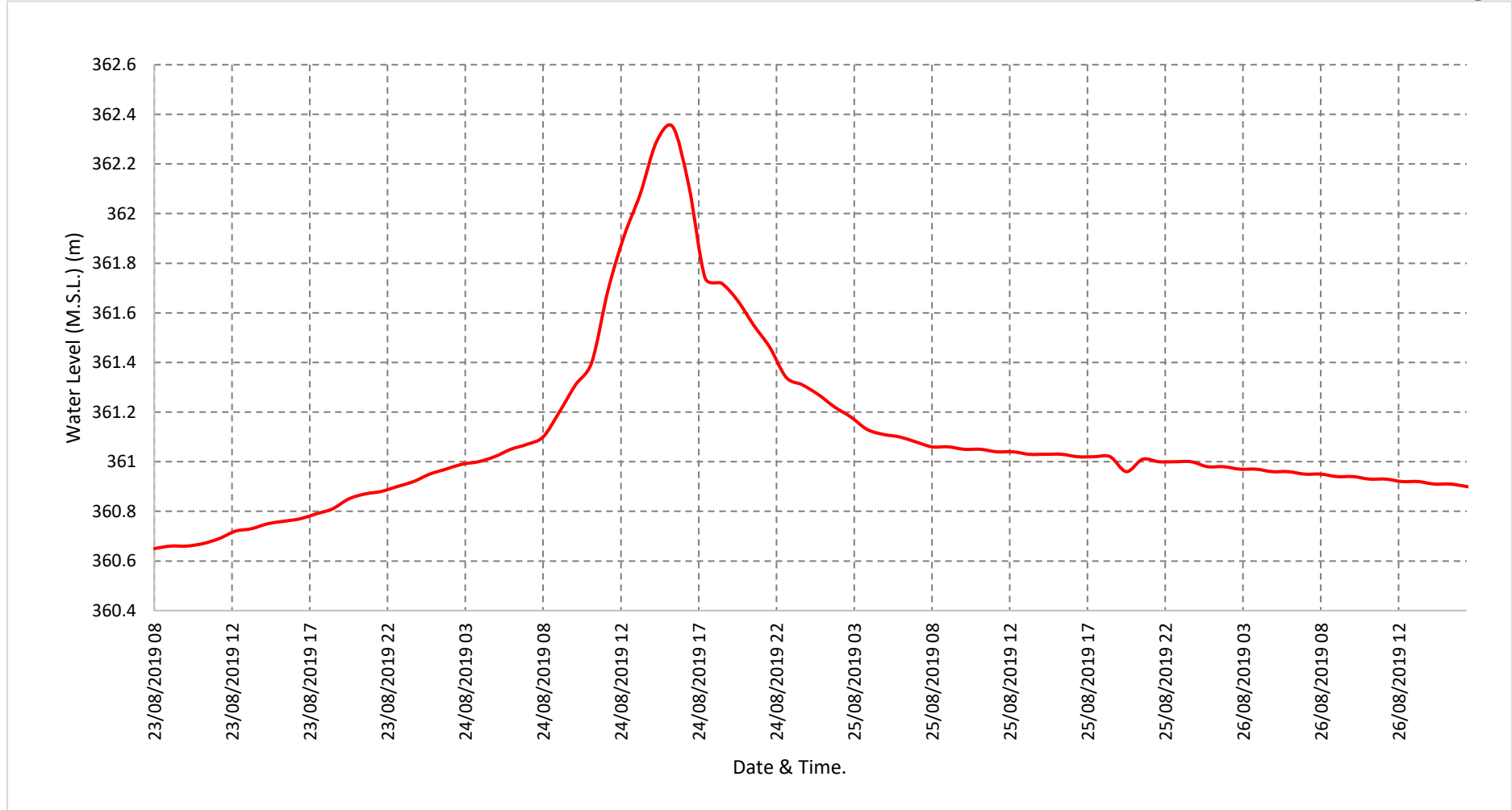
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Hiran at Singaldeep

Division: Narmada Division, Bhopal

Local River: Hiran

Sub-Division: UNSD, CWC Jabalpur



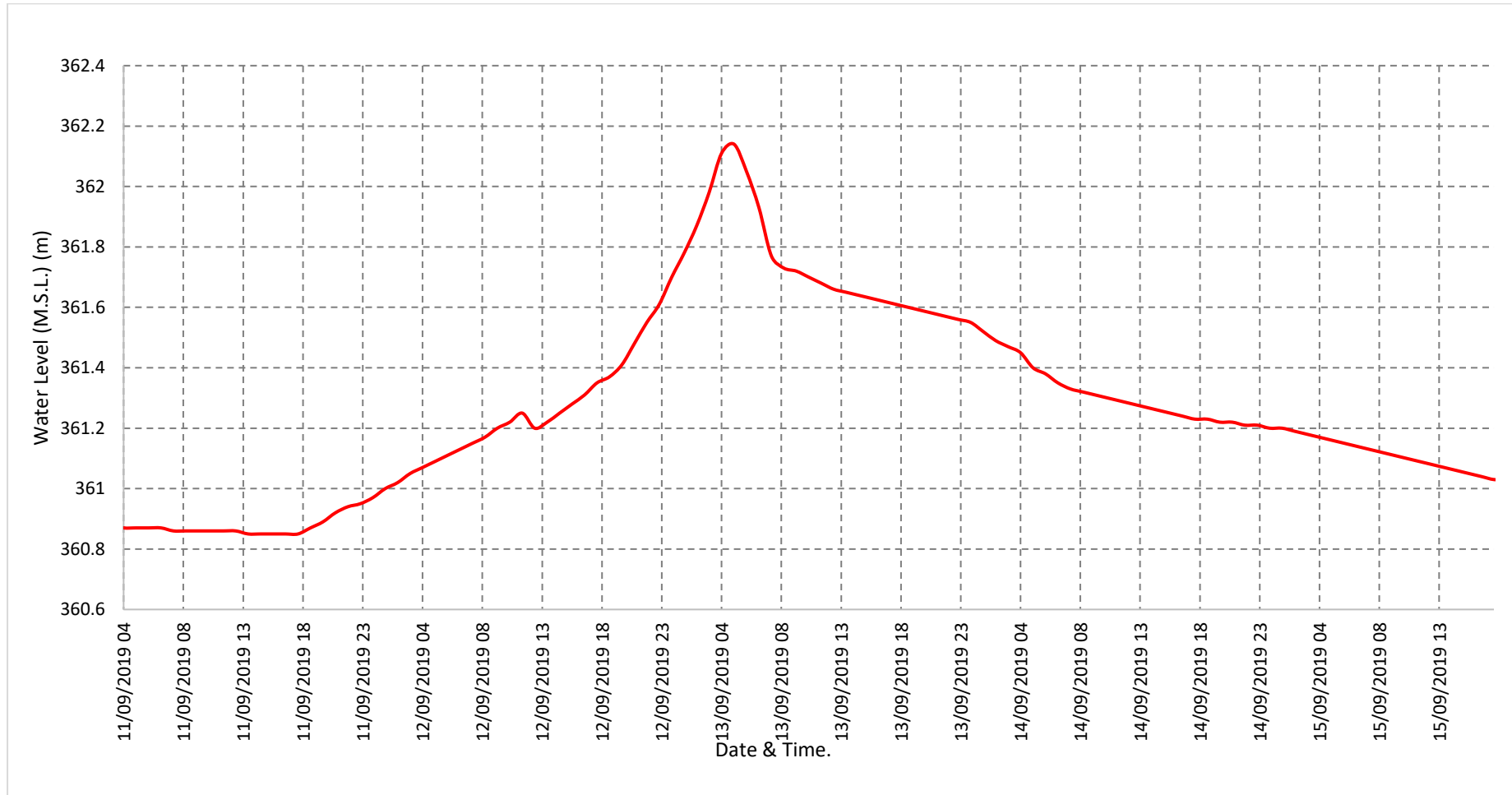
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Hiran at Singaldeep

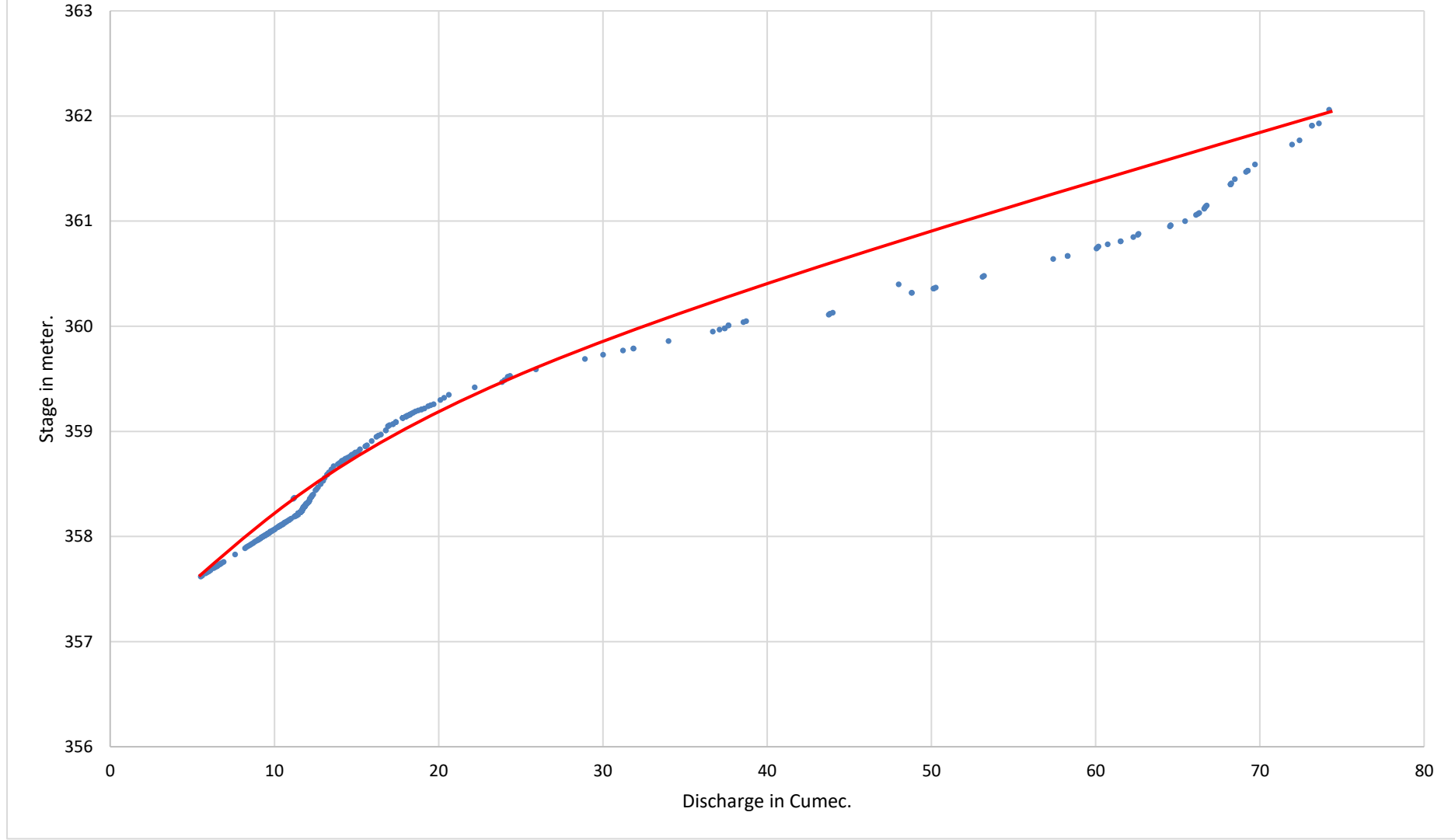
Division: Narmada Division, Bhopal

Local River: Hiran

Sub-Division: UNSD, CWC Jabalpur



Site Singaldeep Stage-Discharge Curve 2019-2020.



4.39 Hiran at Patan.

History sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)					
				Water Year	: 2019 - 2020
Site	:	Patan		Code	: CW1NAU000530
State	:	Madhya Pradesh		District	: JABALPUR
Basin	:	Narmada		Independent River	: Narmada
Tributary	:			Sub Tributary	: -
Sub-Sub Tributary	:	-		Local River	: Hiran
Division	:	Narmada Division(ND), Bhopal		Sub-Division	: Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	3950.0 Sq. Km.		Bank	: Left
Latitude	:	23°18'42"		Longitude	: 79°39'46"
Current Zero of Gauge (m)	:	338.5			
CATEGORY		Opening Date		Closing Date	
Gauge	:	30/08/1979			
Discharge	:	30/08/1979			
Sediment	:				
Water Quality	:	01/09/1986			
Reduced Level		Opening Date		Closing Date	
341.5		30/08/1979		23/05/2019	
338.5		24/05/2019			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1979-1980	12.2	342.355	01/12/1979	0	0.000	01/06/1979
1980-1981	1666	355.660	30/08/1980	0.4	341.855	01/06/1980
1981-1982	202	346.190	08/08/1981	0.8	341.840	14/06/1981
1982-1983	1981	354.313	10/08/1982	1.3	342.070	30/05/1983
1983-1984	1640	355.670	10/09/1983	1.2	342.540	06/06/1983
1984-1985	1275	352.850	24/08/1984	1.3	342.340	31/05/1985
1985-1986	1118	351.350	09/08/1985	1.3	342.340	01/06/1985
1986-1987	440	347.440	06/08/1986	1.6	342.290	20/05/1987
1987-1988	1200	352.370	17/09/1987	1.06	342.320	01/07/1987
1988-1989	1200	352.350	05/08/1988	1.29	342.310	31/05/1989
1989-1990	310	346.400	15/08/1989	0.37	342.795	14/05/1990
1990-1991	1270	351.270	20/09/1990	1.64	342.930	01/06/1990
1991-1992	1680	354.950	25/08/1991	1.6	342.360	06/06/1991
1992-1993	1880	356.080	13/09/1992	1.29	342.485	29/06/1992
1993-1994	1086	351.600	10/09/1993	1.5	342.250	11/06/1993
1994-1995	1660	354.700	02/08/1994	2.32	342.170	31/05/1995
1995-1996	1415	353.605	11/08/1995	1.05	342.250	31/05/1996
1996-1997	234	345.620	18/08/1996	0	342.050	20/03/1997
1997-1998	1295	351.850	07/08/1997	0	341.925	01/06/1997
1998-1999	488	347.650	07/08/1998	0.73	342.210	19/05/1999
1999-2000	1620	353.230	09/08/1999	0.9	342.190	15/06/1999
2000-2001	756	349.600	20/07/2000	0.05	341.800	19/05/2001
2001-2002	580	347.750	27/07/2001	0.25	341.800	01/06/2001
2002-2003	1302	352.500	19/08/2002	1.07	342.200	03/06/2002
2003-2004	1360	352.620	16/09/2003	0.56	342.160	11/06/2003
2004-2005	1175	352.250	23/08/2004	1.24	342.060	31/05/2005
2005-2006	1930	356.800	06/07/2005	0.39	341.970	26/06/2005
2006-2007	254.94	347.050	25/08/2006	0.15	341.700	31/05/2007
2007-2008	663.16	348.610	22/08/2007	0	--	24/04/2008
2008-2009	945.33	350.300	08/07/2008	0.59	341.650	29/05/2009
2009-2010	937.53	350.650	11/09/2009	0.06	341.720	21/05/2010
2010-2011	866.13	350.025	26/07/2010	0	341.710	01/07/2010
2011-2012	1444.59	352.510	24/07/2011	0	341.770	01/06/2011
2012-2013	531.3	347.720	11/08/2012	0	--	16/05/2013
2013-2014	2202.29	355.140	20/08/2013	0	--	02/06/2013

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2014-2015	779.83	349.200	06/08/2014	0.5	341.510	20/05/2015
2015-2016	380.45	347.180	04/08/2015	0.06	341.510	11/04/2016
2016-2017	872.73	349.740	20/08/2016	1.05	341.540	07/04/2017
2017-2018	144	344.550	23/07/2017	0	341.500	04/06/2017
2018-2019	872	350.550	29/08/2018	0	341.500	30/12/2018
2019-2020	759.1	349.260	16/08/2019	0	341.450	01/07/2019

Stage Discharge Sheet for Hiran at Patan for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	340.860	0	341.450	24.48	342.380	133	344.190	295.5	346.070	38.34	342.450
2	0	340.840	0	341.470	13.79	342.050	100.3	343.780	263.4	345.750	38	342.440
3	0	340.820	19.66	342.130	37.79	342.640	101.2	343.800	210.6	345.160	37.32	342.420
4	0	340.810	51.58	343.040	32.72	342.570	86.89	343.530	192.7	344.910	34.94	342.390
5	0	340.800	118.6	343.990	88.78	343.550	110.4	343.930	156.3	344.490	35.3	342.360
6	0	340.790	40.69	342.720	41.02	342.730	161.2	344.660	129.4	344.130	33.9	342.320
7	0	340.760	49.6	343.020	65.04	343.290	113.5	343.970	109.6	343.910	32.56	342.280
8	0	340.750	37.21	342.620	196.6	344.960	91.37	343.610	94.76	343.660	30.86	342.230
9	0	340.730	96.45	343.700	553.4	347.830	378.3	346.550	88.05	343.530	29.16	342.180
10	0	340.720	79.04	343.570	286.3	345.990	570.4	347.910	82.89	343.390	27.8	342.140
11	0	340.710	32.88	342.700	203.4	345.050	290.1	346.040	77.75	343.280	26.44	342.100
12	0	340.690	20.72	342.420	123.7	344.040	277.8	345.890	75.27	343.220	24.7	342.050
13	0	340.680	12.75	341.990	63.41	343.270	590.6	348.160	69.41	343.150	22.95	342.000
14	0	340.670	9.73	341.810	68.66	343.340	499.2	347.400	63.56	343.080	22.25	341.980
15	0	340.670	7.92	341.720	741.4	349.210	317.5	346.210	60.77	343.020	20.55	341.930
16	0	340.660	5.61	341.650	759.1	349.260	260.4	345.700	61.05	343.030	19.2	341.890
17	0	340.650	4.9	341.580	451.5	347.060	214.1	345.220	75.48	343.230	18.85	341.880
18	0	340.600	4.43	341.540	267.4	345.820	223.9	345.340	74.61	343.210	18.5	341.870
19	0	340.590	2.52	341.400	160.6	344.650	281.5	345.940	63.12	343.070	17.8	341.850
20	0	340.590	3.56	341.520	132.4	344.180	249.7	345.570	57.46	342.940	7.15	341.840
21	0	340.590	3.53	341.520	247.9	345.560	226.6	345.380	56.2	342.910	16.75	341.820
22	0	340.580	3.66	341.530	479.4	347.210	217.4	345.260	55.32	342.890	16.05	341.800
23	0	340.580	7.46	341.660	241.1	345.520	227.9	345.400	55.02	342.880	15.7	341.790
24	0	340.570	3.64	341.530	200.6	345.040	230.4	345.420	52.44	342.810	15	341.770
25	0	340.570	3.21	341.480	572.3	347.920	214.6	345.220	50.65	342.760	14.3	341.750
26	0	341.160	12.82	341.990	287.1	346.000	331.2	346.350	49.99	342.740	13.95	341.740
27	0	341.150	57.35	343.190	257.5	345.660	454.6	347.060	49.25	342.720	13.6	341.730
28	0	341.140	51.72	343.050	203.8	345.090	352.9	346.480	47.04	342.660	12.9	341.710
29	0	341.110	28.11	342.490	160.1	344.640	353.8	346.480	43.63	342.580	11.5	341.670
30	0	341.100	25.49	342.420	131.9	344.170	394	346.680	41.47	342.530	11.5	341.670
31			27.85	342.480	145.3	344.390			39.36	342.480		
Ten-Daily Mean												
I Ten-Daily	0	340.790	49.28	342.770	133.99	343.800	184.66	344.590	162.32	344.500	33.82	342.320
II Ten-Daily	0	340.650	10.5	341.830	297.16	345.590	320.48	346.150	67.85	343.120	19.84	341.940
III Ten-Daily	0	340.850	20.44	342.120	266.09	345.560	300.34	345.970	49.12	342.720	14.12	341.750
Monthly												
Min.	0	340.570	0	341.400	13.79	342.050	86.89	343.530	39.36	342.480	7.15	341.670
Max.	0	341.160	118.6	343.990	759.1	349.260	590.6	348.160	295.5	346.070	38.34	342.450
Mean	0	340.760	26.74	342.240	232.41	344.980	268.49	345.570	93.1	343.450	22.59	342.000

Annual Runoff in MCM :1785.83

Annual Runoff in mm :452.11

Peak Observed Discharge = 759.1 cumecs on 16/8/2019 Corres. Water Level 349.26 m

Lowest Observed Discharge = 0cumecs on 3/6/2019 Corres. Water Level 340.82 m

Stage Discharge Sheet for Hiran at Patan for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	10.82	341.650	7.25	341.530	6.7	341.470	2.47	341.220	2.73	341.270	3.24	341.370
2	9.8	341.620	7.16	341.520	6.43	341.440	2.42	341.210	2.67	341.260	3.19	341.360
3	9.12	341.600	10.15	341.620	6.19	341.410	2.37	341.190	2.62	341.250	3.29	341.380
4	8.78	341.590	11.48	341.620	5.93	341.380	2.21	341.190	2.46	341.220	3.5	341.420
5	8.45	341.580	11.82	341.670	3.37	341.360	2.31	341.190	2.41	341.210	3.5	341.420
6	7.8	341.560	12.14	341.680	3.27	341.350	2.17	341.180	2.36	341.190	3.4	341.400
7	7.45	341.550	11.78	341.670	5.79	341.370	2.44	341.210	2.17	341.180	3.4	341.400
8	6.79	341.530	10.22	341.690	6.46	341.440	3.14	341.330	2.17	341.180	3.34	341.390
9	6.13	341.510	10.68	341.730	6.61	341.460	3.96	341.410	2.16	341.180	3.34	341.390
10	5.8	341.500	10.87	341.790	6.72	341.470	4.17	341.430	2.14	341.150	3.45	341.410
11	5.48	341.490	10.84	341.750	6.73	341.470	4.09	341.420	2.14	341.150	3.66	341.450
12	5.48	341.490	10.63	341.730	4.26	341.440	3.91	341.410	2.14	341.130	3.66	341.450
13	10.15	341.630	10.44	341.710	4.08	341.420	3.87	341.400	2.11	341.120	3.61	341.440
14	13.25	341.720	10.35	341.700	4.05	341.420	3.42	341.370	2.1	341.090	3.56	341.430
15	16.05	341.800	10.31	341.700	4.02	341.420	3.07	341.320	2.09	341.080	3.5	341.420
16	18.15	341.860	10.14	341.690	3.94	341.410	2.87	341.280	2.08	341.060	3.4	341.400
17	17.45	341.840	10.06	341.680	3.84	341.400	2.73	341.270	2.08	341.060	3.34	341.390
18	17.1	341.830	10.03	341.680	3.65	341.380	2.69	341.260	2.08	341.060	3.29	341.380
19	16.75	341.820	9.96	341.670	3.44	341.370	2.67	341.260	2.07	341.060	3.24	341.370
20	16.05	341.800	9.81	341.650	3.25	341.350	2.62	341.250	1.61	341.050	3.13	341.350
21	15.7	341.790	9.73	341.640	3.19	341.340	2.99	341.290	1.55	341.040	3.08	341.340
22	15.7	341.790	9.09	341.620	3.09	341.320	3.01	341.300	1.55	341.040	3.07	341.320
23	15.35	341.780	8.89	341.600	3.05	341.310	2.98	341.290	2.67	341.200	3.02	341.310
24	15.35	341.780	8.67	341.580	3.02	341.300	2.87	341.280	3.24	341.350	3.02	341.310
25	13.6	341.730	8.63	341.580	2.98	341.290	2.86	341.280	3.45	341.410	3.01	341.300
26	12.2	341.690	8.43	341.570	2.75	341.270	2.86	341.280	3.4	341.400	3.01	341.300
27	10.5	341.640	8.22	341.560	2.71	341.260	2.73	341.270	3.34	341.390	2.87	341.280
28	9.8	341.620	8.02	341.550	2.61	341.250	2.73	341.270	3.34	341.390	2.67	341.260
29	8.45	341.580	7.37	341.540	2.57	341.240	2.68	341.260	3.29	341.380	2.62	341.250
30	7.14	341.540	7.32	341.530			2.68	341.260	3.29	341.380	2.58	341.240
31	6.79	341.530	6.98	341.500			2.86	341.280			2.58	341.240
Ten-Daily Mean												
I Ten-Daily	8.09	341.570	10.35	341.650	5.75	341.410	2.77	341.260	2.39	341.210	3.36	341.390
II Ten-Daily	13.59	341.730	10.26	341.700	4.13	341.410	3.19	341.320	2.05	341.090	3.44	341.410
III Ten-Daily	11.87	341.680	8.31	341.570	2.89	341.290	2.84	341.280	2.91	341.300	2.87	341.290
Monthly												
Min.	5.48	341.490	6.98	341.500	2.57	341.240	2.17	341.180	1.55	341.040	2.58	341.240
Max.	18.15	341.860	12.14	341.790	6.73	341.470	4.17	341.430	3.45	341.410	3.66	341.450
Mean	11.19	341.660	9.64	341.640	4.25	341.370	2.93	341.290	2.45	341.200	3.22	341.360

Peak Computed Discharge = 741.4 cumecs on 15/8/2019 Corres. Water Level 349.21 m

Lowest Computed Discharge = 0cumecs on 1/7/2019 Corres. Water Level 341.45 m

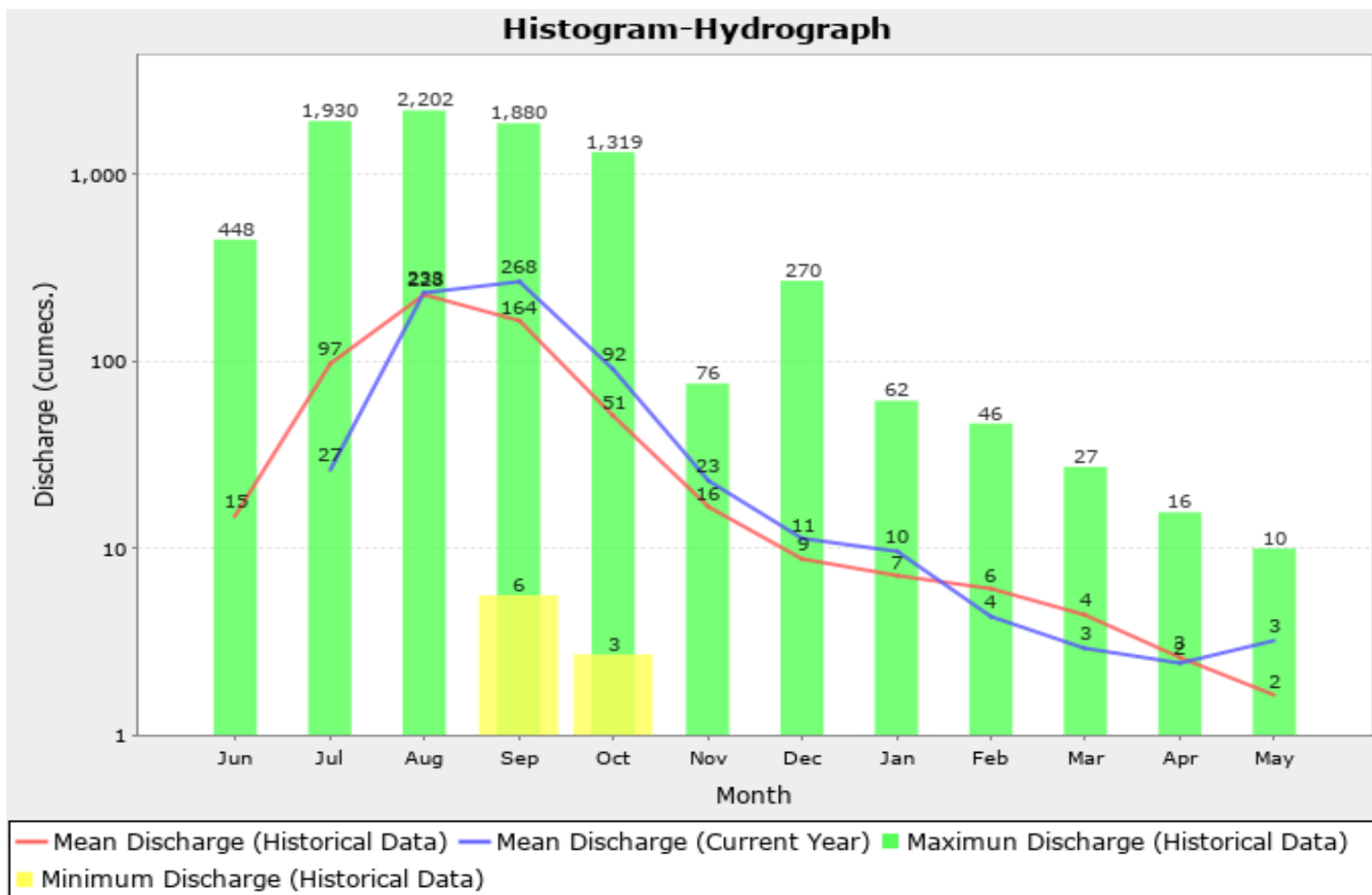
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1979-2019)

Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur



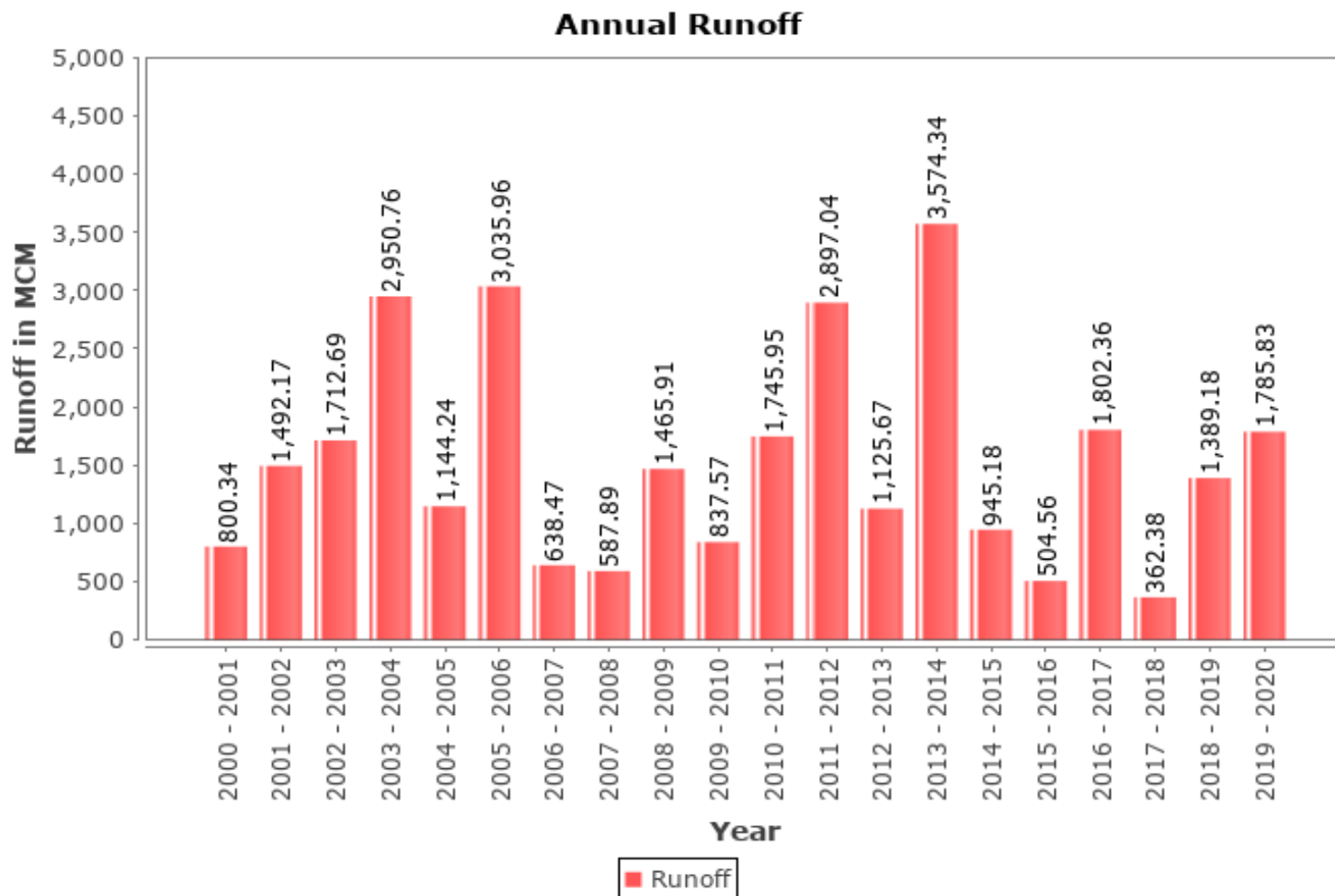
Annual Runoff Values for the period (2000 – 2020)

Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur



Monthly Average Runoff based on period (1979 – 2020)

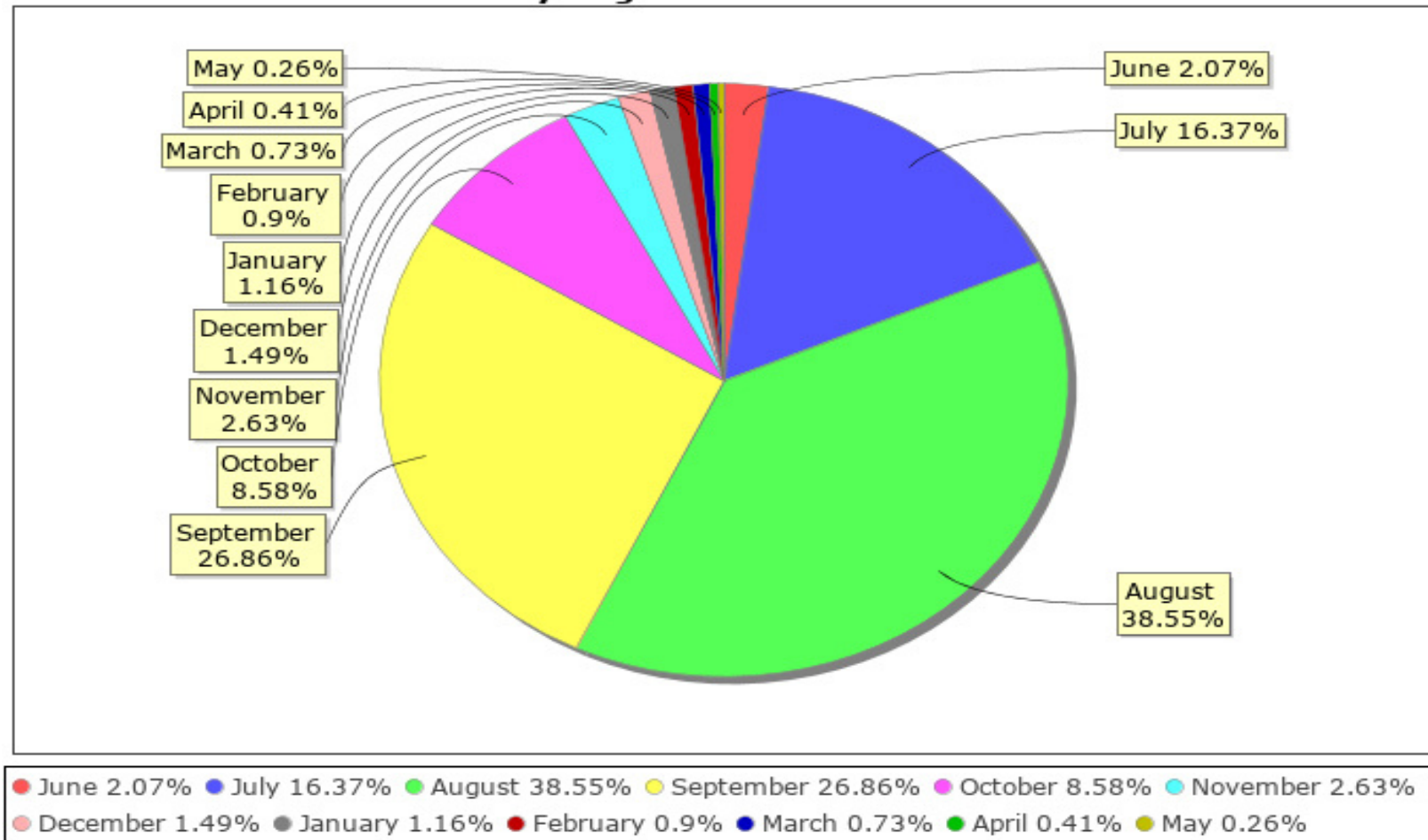
Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

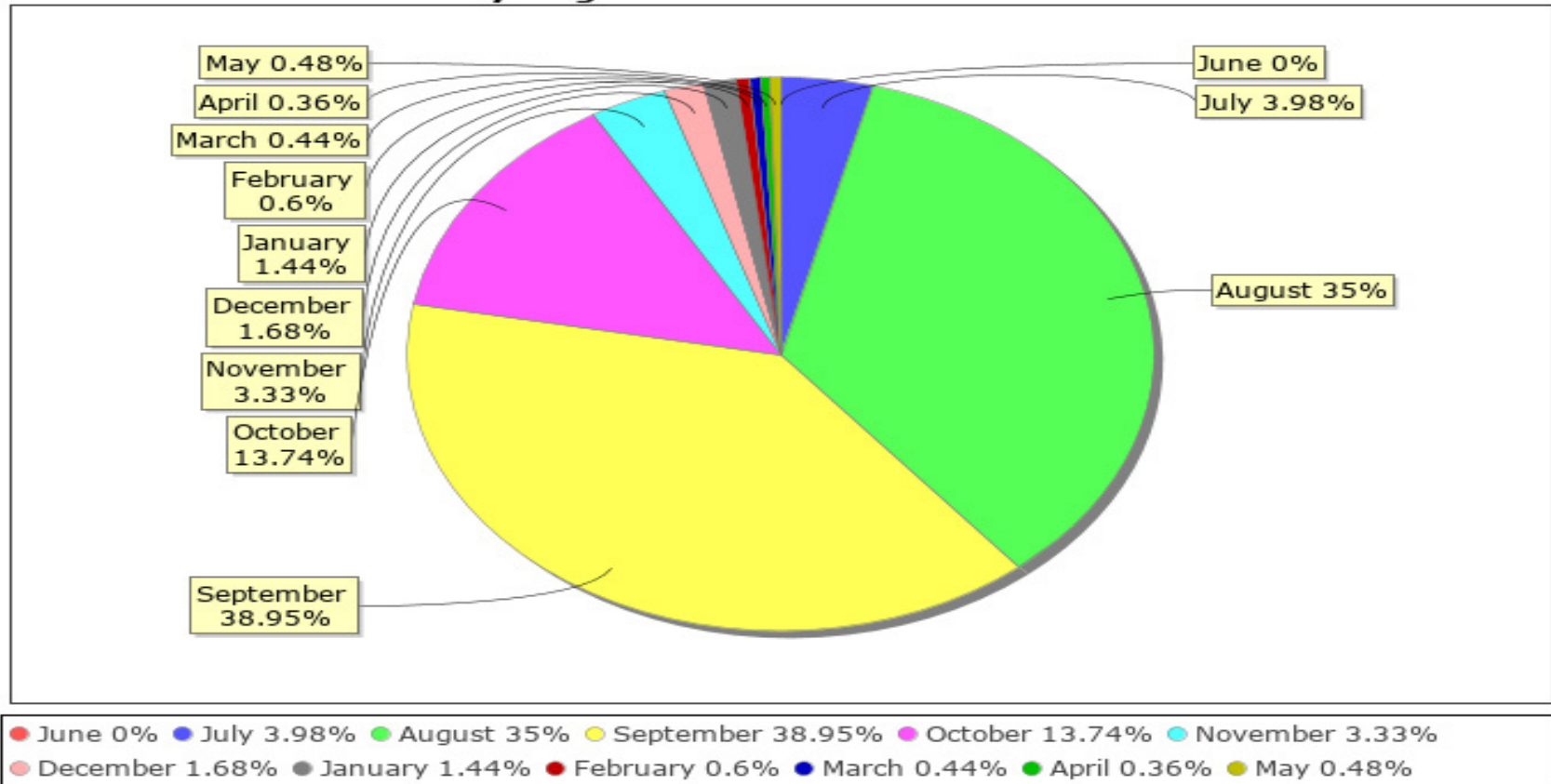
Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



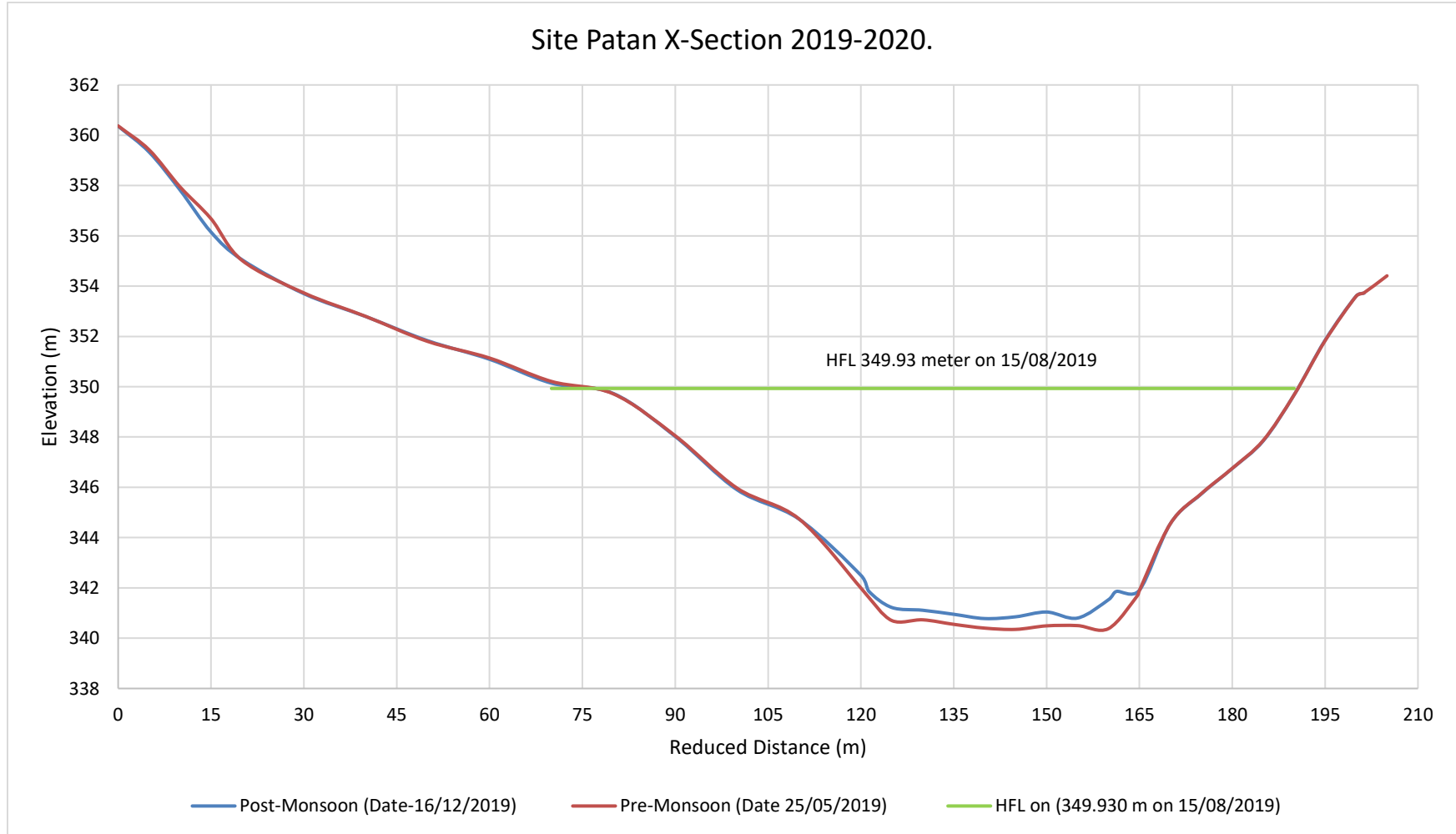
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur



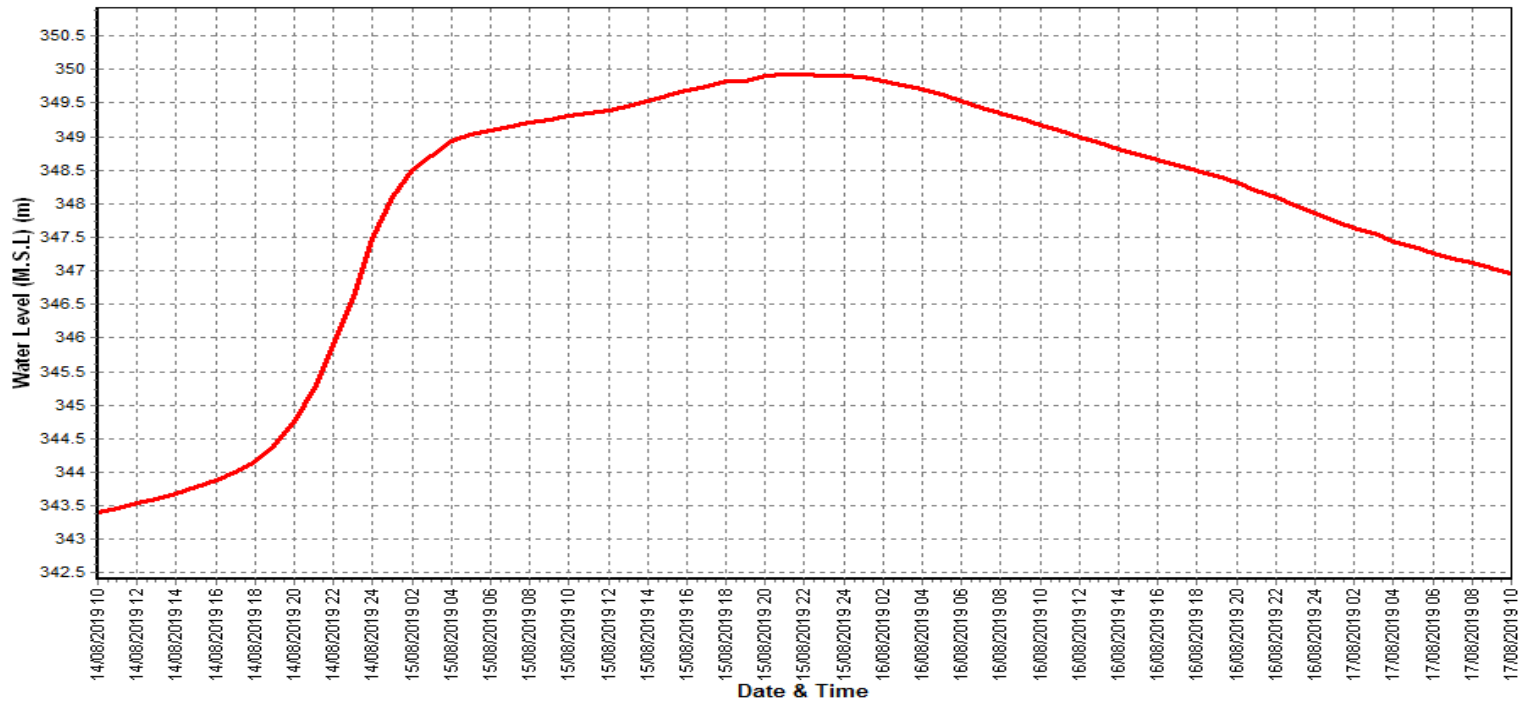
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur



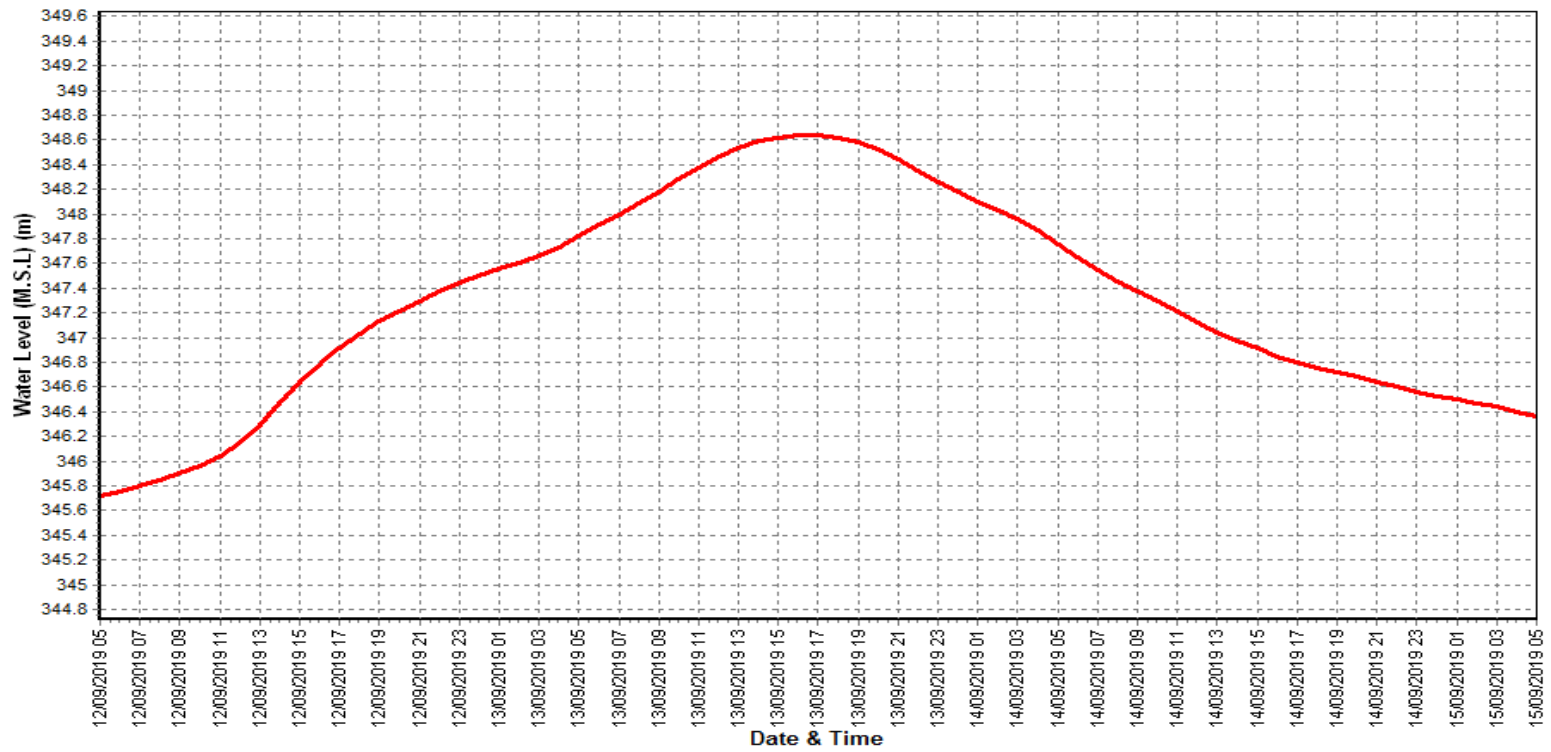
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur



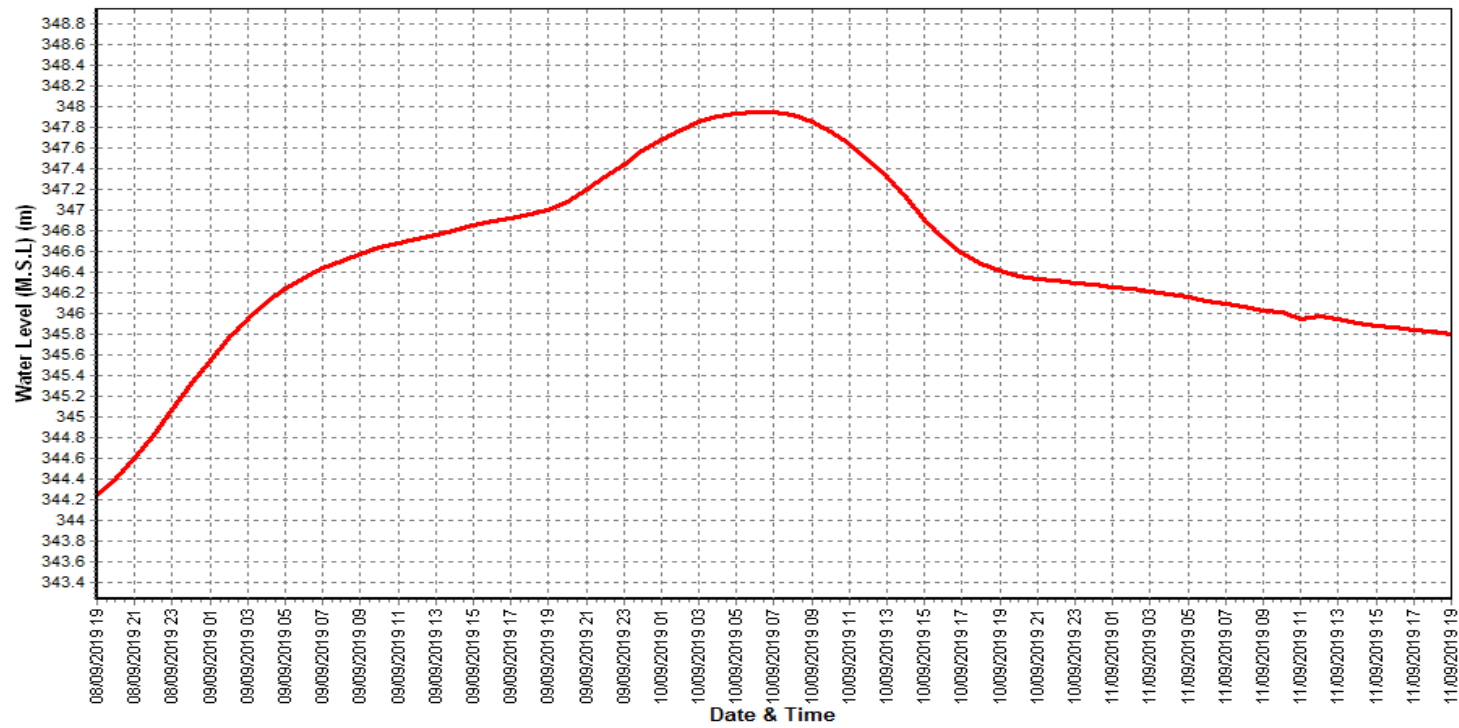
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

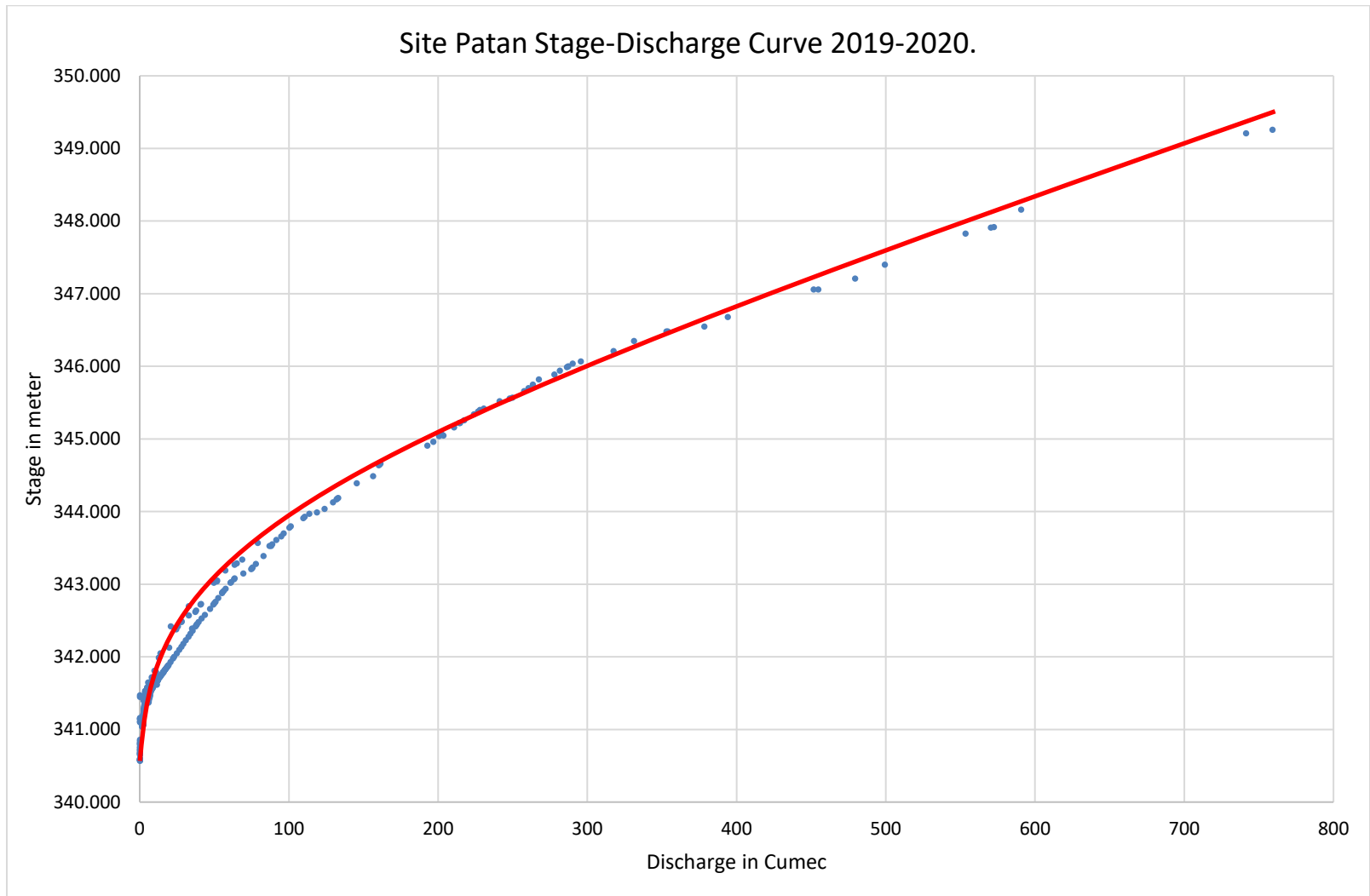
Station Name : Hiran at Patan

Division : Narmada Division, Bhopal

Local River : Hiran

Sub-Division : UNSD, CWC Jabalpur





4.40 Saner at Chargwan.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 – 2020
Site	:	Saner at Chargwan		Code	:	CW1NAU001451
State	:	Madhya Pradesh		District	:	JABALPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Saner
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	537.0 Sq. Km.		Bank	:	Left
Latitude	:	23°30'20"		Longitude	:	79°35'55"
Current Zero of Gauge (m)	:	341.4				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
341.4		23/01/2021		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
	Q	WL	Date	Q	WL	Date
2019-2020	40.73	346.525	11/09/2019	0.49	343.20	02/06/2019

Stage Discharge Sheet for Saner at Chargwan for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0.50	343.18	3.36	343.9	11.34	344.82	21.73	345.29	9.34	344.90	6.71	344.39
2	0.49	343.20	4.78	344.05	10.45	344.65	14.36	344.83	9.31	344.88	6.29	344.36
3	0.51	343.29	5.69	344.35	10.97	344.74	13.25	344.76	9.10	344.83	6.16	344.36
4	0.62	343.32	13.37	344.98	11.30	344.77	20.53	345.18	9.02	344.73	6.07	344.35
5	0.66	343.33	12.96	345.85	10.51	344.71	30.78	345.4	8.79	344.64	6.09	344.36
6	0.73	343.36	10.38	345.64	12.67	344.93	28.72	345.05	8.70	344.61	6.29	344.36
7	0.81	343.39	17.97	345.14	10.85	344.73	16.97	344.89	8.65	344.60	6.09	344.36
8	0.94	343.42	9.03	344.45	10.03	345.62	13.17	344.74	8.52	344.58	5.96	344.33
9	0.98	343.45	10.4	344.64	9.67	345.51	11.10	344.62	8.43	344.55	5.96	344.33
10	1.15	343.52	9.78	344.52	13.76	344.98	29.10	345.38	8.30	344.52	5.73	344.33
11	1.18	343.54	6.54	344.42	12.84	344.89	40.73	346.52	8.31	344.49	5.94	344.33
12	1.72	343.60	5.82	344.33	11.37	344.79	19.34	345.52	8.30	344.49	5.59	344.32
13	2.02	343.64	3.86	344.24	10.58	344.70	18.35	345.11	8.35	344.51	4.88	344.30
14	2.06	343.71	3.63	344.02	40.57	346.46	18.20	345.1	8.14	344.48	4.83	344.30
15	2.40	343.72	3.54	344.04	30.57	345.65	15.78	344.93	8.13	344.46	5.59	344.32
16	2.67	343.79	4.37	344.05	19.73	345.20	15.12	344.92	8.50	344.57	5.59	344.32
17	2.94	343.85	3.54	344.04	15.76	344.98	19.07	345.15	8.87	344.61	4.64	344.30
18	3.37	343.91	3.24	344.02	13.00	344.89	17.75	345.04	8.11	344.45	4.83	344.30
19	3.37	343.91	3.24	344.02	11.40	345.80	16.34	345.01	8.15	344.48	4.72	344.29
20	3.47	343.90	4.66	344.08	40.03	346.40	15.37	344.86	8.31	344.49	4.69	344.27
21	3.40	343.89	3.78	344.08	35.76	345.58	14.36	344.86	8.36	344.54	4.53	344.27
22	3.45	343.90	3.19	344.01	18.73	345.23	14.35	344.86	8.52	344.60	4.83	344.30
23	3.76	343.90	3.18	343.98	20.35	345.23	13.96	344.8	8.41	344.55	5.96	344.33
24	3.82	343.92	2.73	343.95	16.34	345.20	14.09	344.82	8.03	344.46	5.7	344.36
25	3.76	343.92	5.74	344.26	15.13	344.98	14.17	344.83	8.01	344.42	6.57	344.38
26	3.22	343.90	13.78	344.79	13.01	345.73	18.73	345.27	8.00	344.40	6.76	344.39
27	3.21	343.89	13.25	344.74	10.76	345.64	21.86	344.85	8.01	344.42	7.76	344.45
28	3.21	343.89	12.35	344.67	15.83	345.15	16.79	345.02	8.01	344.42	8.17	344.49
29	3.15	343.89	10.78	344.61	15.03	344.96	27.37	345.38	8.03	344.43	8.23	344.46
30	3.21	343.89	10.13	344.52	14.31	344.89	16.73	344.98	8.04	344.43	8.39	344.54
31			20.35	345.27	14.79	344.95			7.98	344.40		
Ten-Daily Mean												
I Ten-Daily	0.74	343.35	9.77	344.75	11.16	344.95	19.97	345.01	8.82	344.68	6.14	344.35
II Ten-Daily	2.52	343.76	4.24	344.13	20.59	345.38	19.61	345.22	8.32	344.5	5.13	344.30
III Ten-Daily	3.42	343.9	9.02	344.44	17.28	345.23	17.24	344.96	8.13	344.46	6.69	344.40
Monthly												
Min.	0.49	343.18	2.73	343.9	9.67	344.65	11.1	344.62	7.98	344.4	4.53	344.27
Max.	3.82	343.92	20.35	345.85	40.57	346.46	40.73	346.52	9.34	344.9	8.39	344.54
Mean	2.23	343.67	7.68	344.44	16.34	345.19	18.94	345.06	8.42	344.55	5.99	344.35

Annual Runoff in

MCM : 271.47

Annual Runoff in

mm : 505.53

Peak Observed Discharge = 40.57 cumecs on 14/8/2019 Corres. Water Level 346.46 m

Lowest Observed Discharge = 0.5 cumecs on 1/6/2019 Corres. Water Level 343.18 m

Stage Discharge Sheet for Saner at Chargwan for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	8.34	344.54	9.76	344.61	8.70	344.42	8.15	344.42	5.20	344.24	5.06	344.22
2	8.53	344.55	9.49	344.58	8.71	344.42	8.15	344.39	5.15	344.24	4.85	344.23
3	8.76	344.56	8.87	344.52	8.62	344.40	8.19	344.39	5.11	344.23	5.01	344.26
4	8.75	344.56	7.76	344.45	8.23	344.39	7.49	344.38	5.05	344.22	5.46	344.29
5	8.76	344.56	7.03	344.38	8.21	344.39	6.75	344.36	4.95	344.21	5.98	344.33
6	8.54	344.55	7.00	344.32	8.17	344.39	6.12	344.26	4.88	344.2	6.75	344.37
7	8.54	344.55	6.84	344.29	8.16	344.39	6.15	344.33	4.80	344.18	8.19	344.39
8	8.50	344.54	8.18	344.26	8.31	344.40	6.03	344.33	4.80	344.18	8.22	344.40
9	8.31	344.53	5.18	344.26	8.80	344.42	5.95	344.32	4.70	344.17	8.16	344.41
10	8.30	344.53	5.07	344.23	8.92	344.43	5.64	344.30	4.61	344.17	8.18	344.43
11	8.53	344.55	4.84	344.23	9.07	344.45	6.07	344.33	4.60	344.17	8.01	344.45
12	8.62	344.57	4.64	344.20	9.13	344.45	6.75	344.36	4.51	344.15	8.12	344.45
13	8.92	344.58	5.06	344.21	9.12	344.45	8.16	344.40	4.44	344.14	8.19	344.46
14	9.10	344.58	5.07	344.23	9.17	344.46	8.35	344.42	4.35	344.13	8.21	344.48
15	9.13	344.60	5.18	344.26	9.15	344.45	8.03	344.40	4.28	344.12	8.24	344.48
16	9.21	344.61	5.64	344.27	9.08	344.45	7.49	344.38	4.15	344.11	8.3	344.49
17	9.23	344.62	5.56	344.30	9.05	344.45	6.75	344.36	4.05	344.10	8.31	344.51
18	9.29	344.64	5.95	344.32	9.00	344.43	6.71	344.36	4.00	344.10	8.3	344.51
19	9.38	344.64	5.62	344.33	8.95	344.43	6.07	344.33	3.75	344.10	8.29	344.49
20	9.40	344.64	6.51	344.36	8.82	344.42	5.98	344.33	3.60	344.08	8.24	344.48
21	9.45	344.65	7.49	344.38	8.74	344.42	5.95	344.32	3.61	344.07	8.31	344.51
22	9.57	344.67	8.22	344.39	8.70	344.42	5.73	344.30	3.16	344.05	8.33	344.52
23	9.49	344.65	8.17	344.39	8.42	344.42	5.43	344.29	3.10	344.02	8.37	344.52
24	9.43	344.64	7.49	344.38	8.15	344.40	5.38	344.27	3.91	344.11	8.4	344.52
25	9.43	344.64	8.19	344.39	8.16	344.40	5.34	344.26	4.84	344.23	8.31	344.51
26	9.23	344.64	8.29	344.39	8.22	344.39	5.30	344.24	4.97	344.23	8.27	344.49
27	9.20	344.62	8.30	344.40	7.49	344.38	5.30	344.24	4.84	344.23	8.23	344.48
28	9.12	344.62	8.41	344.42	8.22	344.39	5.29	344.24	5.06	344.21	8.17	344.48
29	9.19	344.62	8.78	344.42	8.40	344.42	5.26	344.23	5.01	344.20	8.01	344.46
30	9.19	344.62	8.79	344.42			5.25	344.23	4.86	344.20	8.00	344.45
31	9.15	344.61	8.79	344.42			5.23	344.23			7.99	344.45
Ten-Daily Mean												
I Ten-Daily	8.53	344.55	7.52	344.39	8.48	344.41	6.86	344.35	4.92	344.2	6.59	344.33
II Ten-Daily	9.08	344.6	5.41	344.27	9.05	344.45	7.04	344.37	4.17	344.12	8.22	344.48
III Ten-Daily	9.31	344.64	8.26	344.4	8.28	344.4	5.41	344.26	4.34	344.15	8.22	344.49
Monthly												
Min.	8.3	344.53	4.64	344.2	7.49	344.38	5.23	344.23	3.1	344.02	4.85	344.22
Max.	9.57	344.67	9.76	344.61	9.17	344.46	8.35	344.42	5.2	344.24	8.4	344.52
Mean	8.98	344.6	7.06	344.35	8.61	344.42	6.43	344.32	4.48	344.16	7.67	344.43

Peak Computed Discharge = 40.73 cumecs on 11/9/2019 Corres. Water Level 346.52 m
 Lowest Computed Discharge = 0.49cumecs on 2/6/2019 Corres. Water Level 343.20 m

Monthly Runoff for the Year (2019-2020)

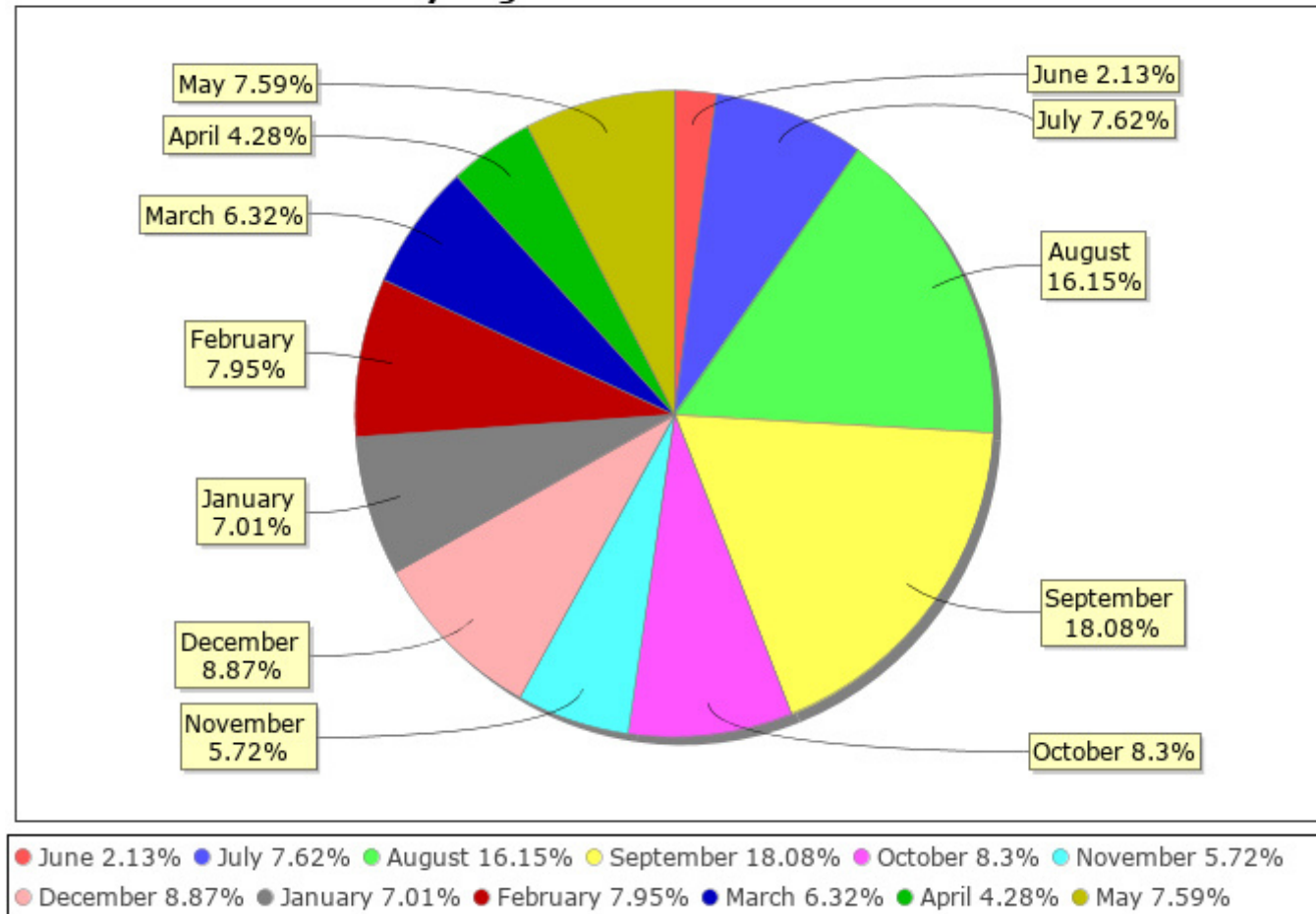
Station Name: Saner at Chargwan

Local River: Saner

Division: Narmada Division, Bhopal

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



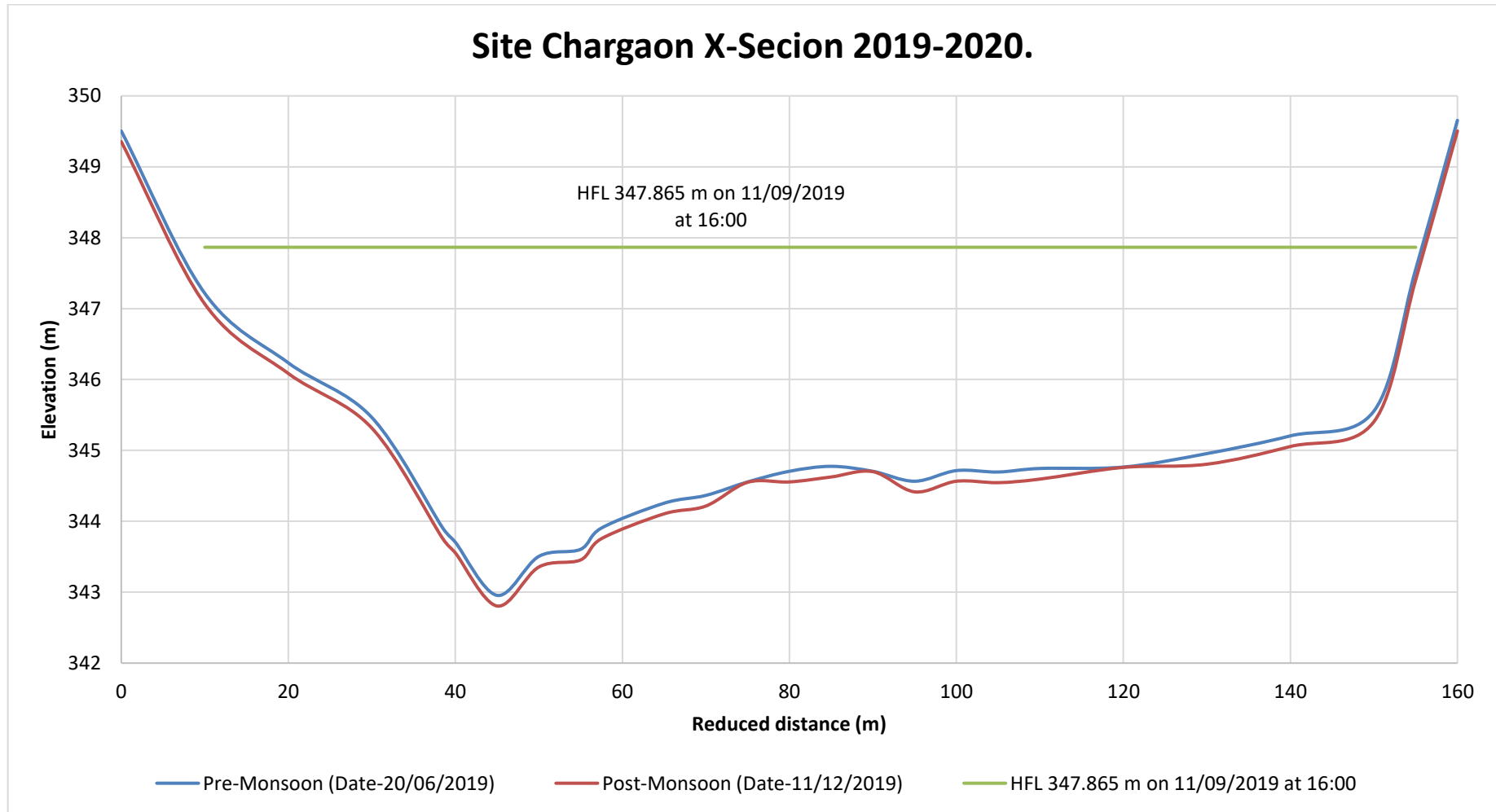
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Saner at Chargwan

Division: Narmada Division, Bhopal

Local River: Saner

Sub-Division: UNSD, CWC Jabalpur



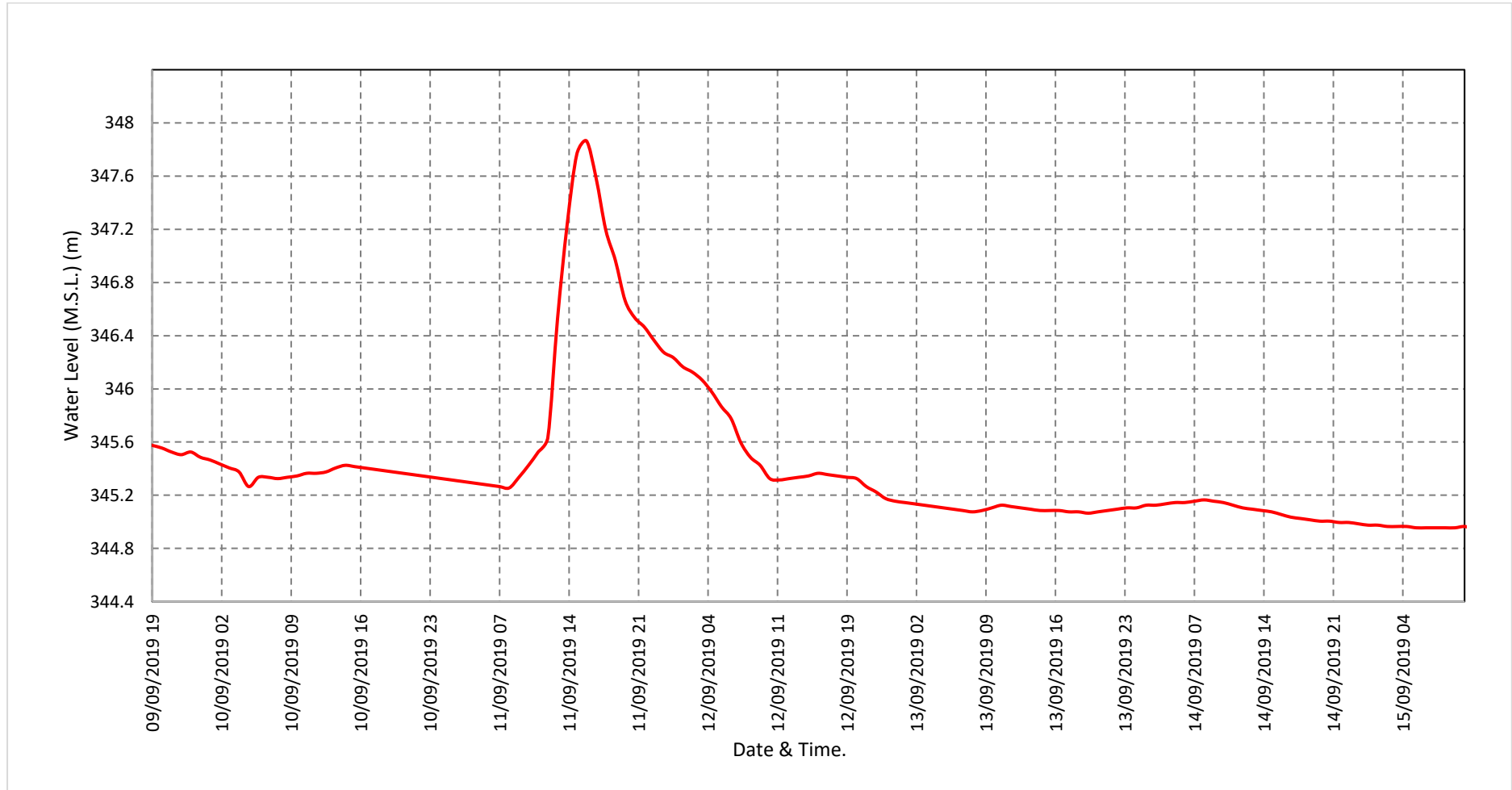
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Saner at Chargwan

Division: Narmada Division, Bhopal

Local River: Saner

Sub-Division: UNSD, CWC Jabalpur



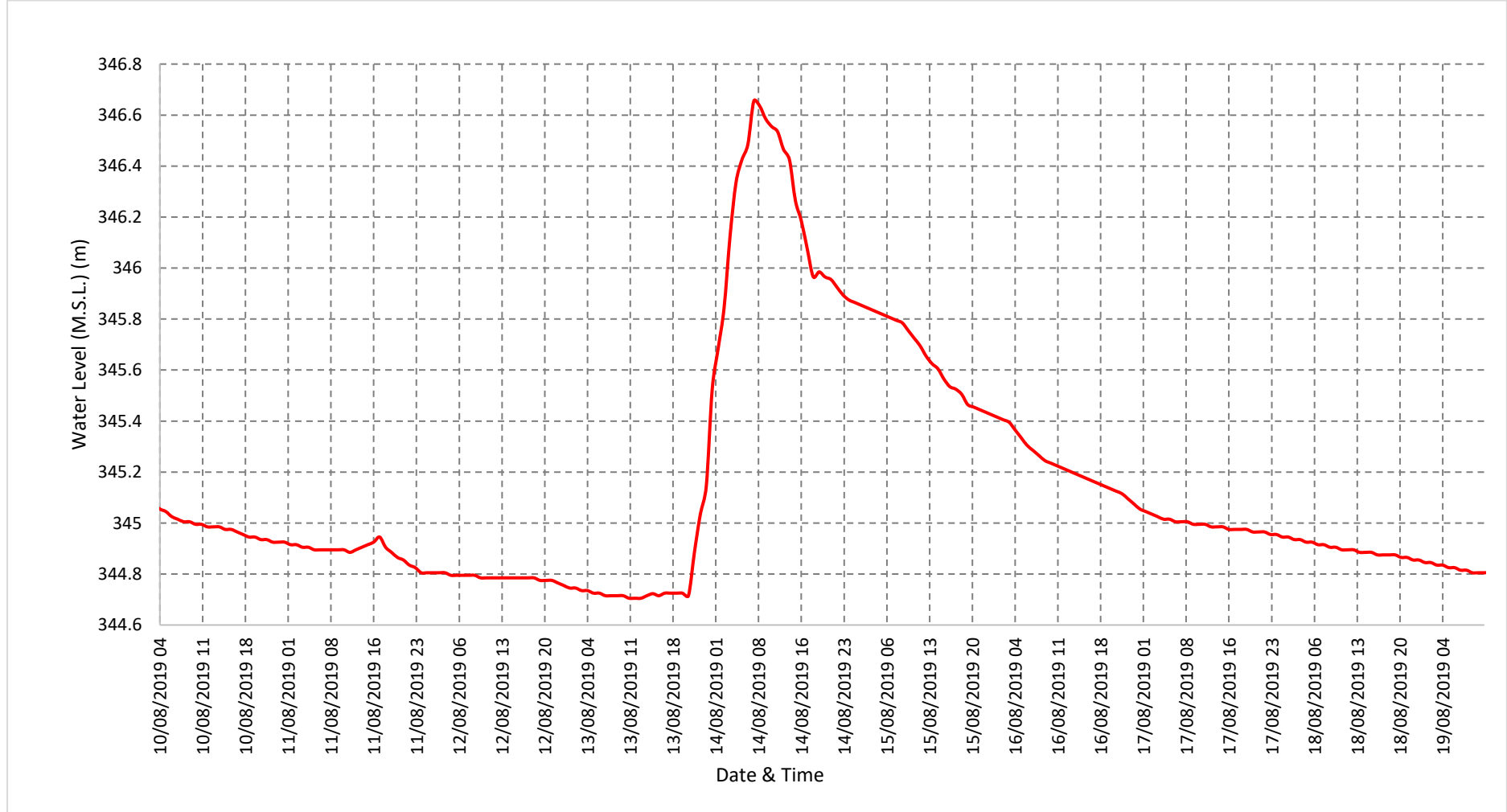
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Saner at Chargwan

Division: Narmada Division, Bhopal

Local River: Saner

Sub-Division: UNSD, CWC Jabalpur



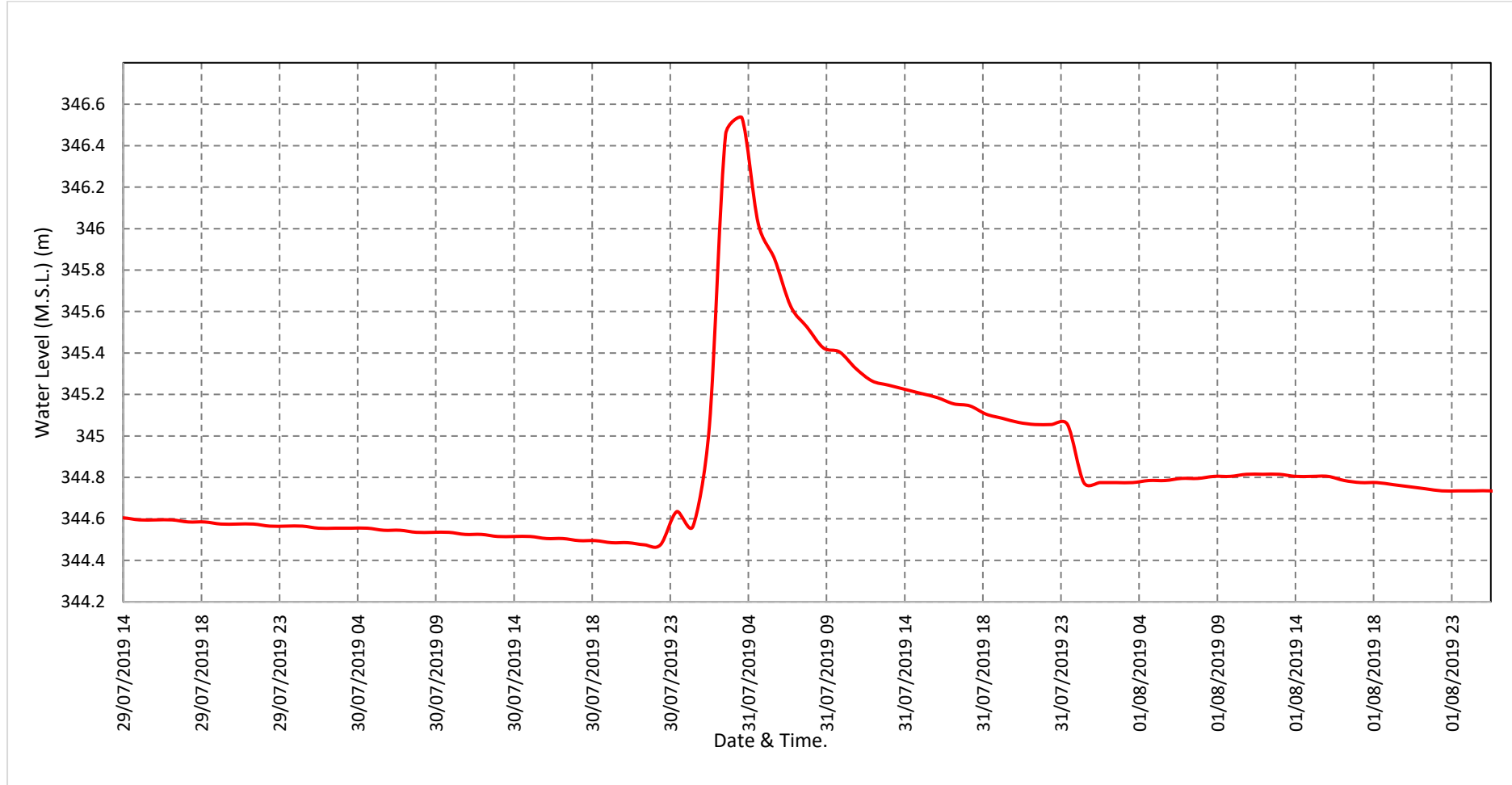
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Saner at Chargwan

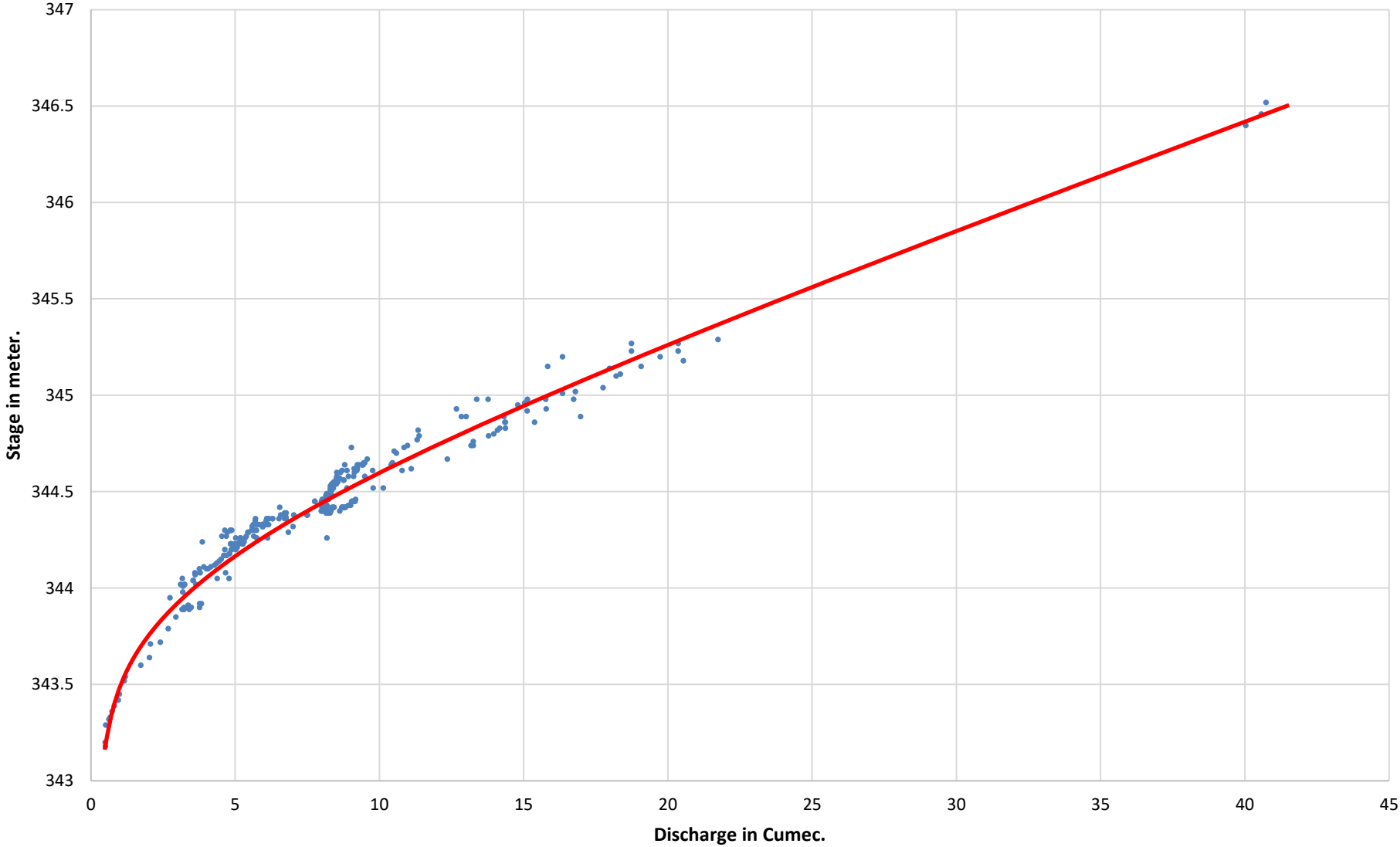
Division: Narmada Division, Bhopal

Local River: Saner

Sub-Division: UNSD, CWC Jabalpur



Site Chargwan Stage-Discharge Curve 2019-2020.



4.41 Gaur at Bhalwara.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Gaur at Bahalwara		Code	:	CW1NAU001445
State	:	Madhya Pradesh		District	:	JABALPUR
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Gaur
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	706.0 Sq. Km.		Bank	:	Right
Latitude	:	23°06'32"		Longitude	:	79°58'18"
Current Zero of Gauge (m)	:	384				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
384		17/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year	Q	WL	Date	Q	WL	Date
2019-2020	235.85	392.01	15/08/2019	0	-	01-06-2019

Stage Discharge Sheet for Gaur at Bhalwara for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	\$	0.48	387.56	14.58	388.80	30.76	388.84	47.46	388.96	10.99	388.47
2	\$	\$	0.81	387.62	13.13	388.77	33.67	388.94	50.84	389.13	10.98	388.47
3	\$	\$	1.01	387.68	25.24	388.95	32.13	388.92	67.48	389.30	10.87	388.46
4	\$	\$	1.87	387.79	60.32	390.21	35.68	389.04	49.41	389.07	10.8	388.46
5	\$	\$	3.50	387.89	33.38	389.00	36.03	389.05	37.14	389.01	10.41	388.44
6	\$	\$	13.67	388.66	50.84	389.82	33.86	389.00	34.38	388.95	9.82	388.41
7	\$	\$	35.67	389.39	43.38	389.70	32.49	388.93	31.78	388.87	9.03	388.37
8	\$	\$	20.78	388.92	58.81	390.14	38.98	389.17	30.98	388.85	8.67	388.36
9	\$	\$	17.81	388.85	68.46	390.34	60.67	390.20	39.48	388.82	8.03	388.33
10	\$	\$	11.63	388.54	36.37	389.13	52.34	390.11	30.01	388.82	7.02	388.29
11	\$	\$	8.37	388.30	23.48	388.92	46.42	389.41	30.18	388.80	6.38	388.25
12	\$	\$	6.79	388.25	13.67	388.71	88.46	390.18	30.10	388.78	6.00	388.23
13	\$	\$	5.96	388.21	13.31	388.64	62.76	389.90	30.00	388.77	5.72	388.20
14	\$	\$	5.12	388.17	56.78	390.07	53.67	389.00	30.78	388.78	5.47	388.17
15	\$	\$	5.29	388.13	235.85	392.01	48.46	388.91	30.01	388.78	5.44	388.16
16	\$	\$	5.20	388.11	56.8	390.07	42.76	389.28	29.87	388.75	5.47	388.17
17	\$	\$	4.96	388.08	30.81	389.03	55.13	389.09	28.99	388.74	5.32	388.17
18	\$	\$	4.88	388.05	22.86	388.88	15.37	388.25	27.67	388.71	5.55	388.18
19	\$	\$	4.15	388.05	35.31	389.12	43.78	389.36	28.01	388.72	5.7	388.19
20	\$	\$	4.88	388.09	32.03	389.06	39.46	389.20	27.70	388.10	5.81	388.20
21	\$	\$	4.72	388.10	73.68	390.40	51.36	389.07	25.18	388.69	5.86	388.21
22	0.32	387.06	4.96	388.09	40.88	389.34	46.78	389.05	27.76	388.67	6.05	388.22
23	0.30	387.07	4.88	388.08	18.78	388.77	54.81	389.15	24.03	388.65	6.11	388.23
24	0.38	387.14	5.20	388.13	88.13	389.46	55.78	389.18	23.78	388.63	6.21	388.23
25	0.60	387.26	5.46	388.19	56.03	389.94	78.87	390.00	20.18	388.60	6.47	388.24
26	0.71	387.51	10.25	388.61	45.36	389.62	80.14	389.02	17.36	388.59	6.49	388.25
27	0.97	387.66	13.89	388.77	38.76	389.21	58.78	389.26	17.40	388.59	6.73	388.26
28	1.00	387.65	30.13	389.13	34.34	389.10	51.73	389.10	12.04	388.56	6.77	388.26
29	0.64	387.59	32.67	389.16	30.78	389.00	43.78	388.95	11.50	388.52	6.81	388.27
30	0.60	387.59	26.34	388.96	32.14	389.02	48.46	388.96	11.56	388.52	7.25	388.28
31			18.73	388.84	33.75	389.03			11.25	388.49		
Ten-Daily Mean												
I Ten-Daily	0	0	10.72	388.29	40.45	389.49	38.66	389.22	41.9	388.98	9.66	388.41
II Ten-Daily	0	0	5.56	388.14	52.09	389.45	49.63	389.26	29.33	388.69	5.69	388.19
III Ten-Daily	0.55	348.65	14.29	388.55	44.78	389.35	57.05	389.17	18.37	388.59	6.48	388.25
Monthly												
Min.	0.3	387.06	0.48	387.56	13.13	388.64	15.37	388.25	11.25	388.1	5.32	388.16
Max.	1	387.66	35.67	389.39	235.85	392.01	88.46	390.2	67.48	389.3	10.99	388.47
Mean	0.18	116.22	10.19	388.33	45.78	389.43	48.45	389.22	29.86	388.75	7.27	388.28

Annual Runoff in

MCM : 424.8

Annual Runoff in

mm : 601.7

Peak Observed Discharge = 88.46 cumecs on 12/09/2019 Corres. Water Level 390.180 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note- "\$"- No Flow

Stage Discharge Sheet for Gaur at Bhalwara for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	7.13	388.28	4.8	388.06	3.38	387.87	1.51	387.73	\$	387.61	0.96	387.65
2	6.9	388.27	4.85	388.07	3.18	387.84	1.64	387.72	\$	387.61	0.83	387.66
3	6.81	388.26	4.95	388.08	3.16	387.81	1.39	387.71	\$	387.61	0.53	387.68
4	6.55	388.25	5.04	388.10	2.81	387.80	1.39	387.71	\$	387.58	1.29	387.70
5	6.17	388.23	5.01	388.11	2.82	387.80	1.11	387.71	\$	387.58	1.67	387.73
6	6.14	388.22	5.37	388.14	2.78	387.79	1.31	387.70	\$	387.58	2.02	387.76
7	5.93	388.21	5.37	388.14	2.74	387.79	1.29	387.70	\$	387.58	2.78	387.79
8	5.88	388.2	5.45	388.15	2.78	387.79	1.03	387.70	\$	387.57	3.14	387.83
9	5.79	388.19	5.54	388.16	2.5	387.78	1.24	387.69	\$	387.57	3.25	387.85
10	5.92	388.20	5.53	388.17	2.61	387.78	1.15	387.68	\$	387.54	3.54	387.88
11	6.97	388.28	5.61	388.18	2.62	387.78	1.15	387.68	\$	387.54	3.76	387.92
12	6.93	388.23	5.5	388.16	2.61	387.78	1.17	387.67	\$	387.54	3.94	387.95
13	6.21	388.22	5.45	388.15	2.33	387.77	1.17	387.67	\$	387.52	4.18	387.98
14	6.16	388.22	5.29	388.13	2.33	387.77	1.24	387.69	\$	387.52	4.38	388.02
15	6.56	388.24	5.12	388.12	2.02	387.76	1.02	387.73	\$	387.52	4.85	388.07
16	6.67	388.25	5.38	388.10	1.02	387.76	2.66	387.78	\$	387.52	5.03	388.10
17	6.57	388.25	4.96	388.08	1.99	387.76	3.11	387.82	\$	387.51	5.32	388.13
18	6.28	388.23	4.88	388.07	1.99	387.75	3.32	387.86	\$	387.51	5.45	388.15
19	6.17	388.23	4.52	388.06	1.84	387.75	3.25	387.85	\$	387.51	5.54	388.16
20	6.16	388.23	4.65	388.05	1.84	387.75	3.14	387.83	\$	387.51	5.8	388.20
21	6.08	388.22	4.51	388.03	1.78	387.74	2.87	387.81	\$	387.50	5.8	388.20
22	6.00	388.21	4.38	388.02	1.84	387.75	2.00	387.79	\$	387.48	5.61	388.18
23	5.93	388.21	4.32	388.01	1.41	387.75	2.02	387.76	\$	387.52	5.53	388.17
24	5.64	388.18	4.25	388.00	1.72	387.76	1.8	387.74	1.08	387.65	5.02	388.16
25	5.6	388.16	4.18	387.99	2.17	387.77	1.75	387.71	1.24	387.69	5.45	388.15
26	5.46	388.15	4.01	387.98	1.98	387.76	1.68	387.71	0.50	387.66	5.29	388.13
27	5.35	388.12	4.02	387.96	1.83	387.75	1.66	387.68	0.96	387.65	5.12	388.12
28	5.12	388.10	3.81	387.94	1.78	387.74	1.66	387.68	0.96	387.65	5.04	388.10
29	5.01	388.08	3.76	387.92	1.58	387.73	1.62	387.65	0.96	387.64	4.85	388.07
30	4.91	388.06	3.59	387.90			1.59	387.65	0.96	387.64	4.65	388.05
31	4.88	388.06	3.43	387.88			1.55	387.62			4.52	388.03
Ten-Daily Mean												
I Ten-Daily	6.32	388.23	5.19	388.12	2.88	387.8	1.31	387.71	0	387.58	2	387.75
II Ten-Daily	6.47	388.24	5.14	388.11	2.06	387.76	2.12	387.76	0	357.52	4.82	388.07
III Ten-Daily	5.45	388.14	4.02	387.97	1.79	387.75	1.84	387.71	0.67	387.61	5.17	388.12
Monthly												
Min.	4.88	388.06	3.43	387.88	1.02	387.73	1.02	387.62	0.5	387.51	0.53	387.65
Max.	7.13	388.28	5.61	388.18	3.38	387.87	3.32	387.86	1.24	387.69	5.8	388.20
Mean	6.08	388.20	4.78	388.06	2.24	387.77	1.76	387.72	0.22	377.57	4	387.98

Peak Computed Discharge = 235.85 cumecs on 15/8/2019 Corres. Water Level 392.01 m
 Lowest Computed Discharge = 0 cumecs on 02/06/2019

Note-
 "\$" - No Flow

Monthly Runoff for the Year (2019-2020)

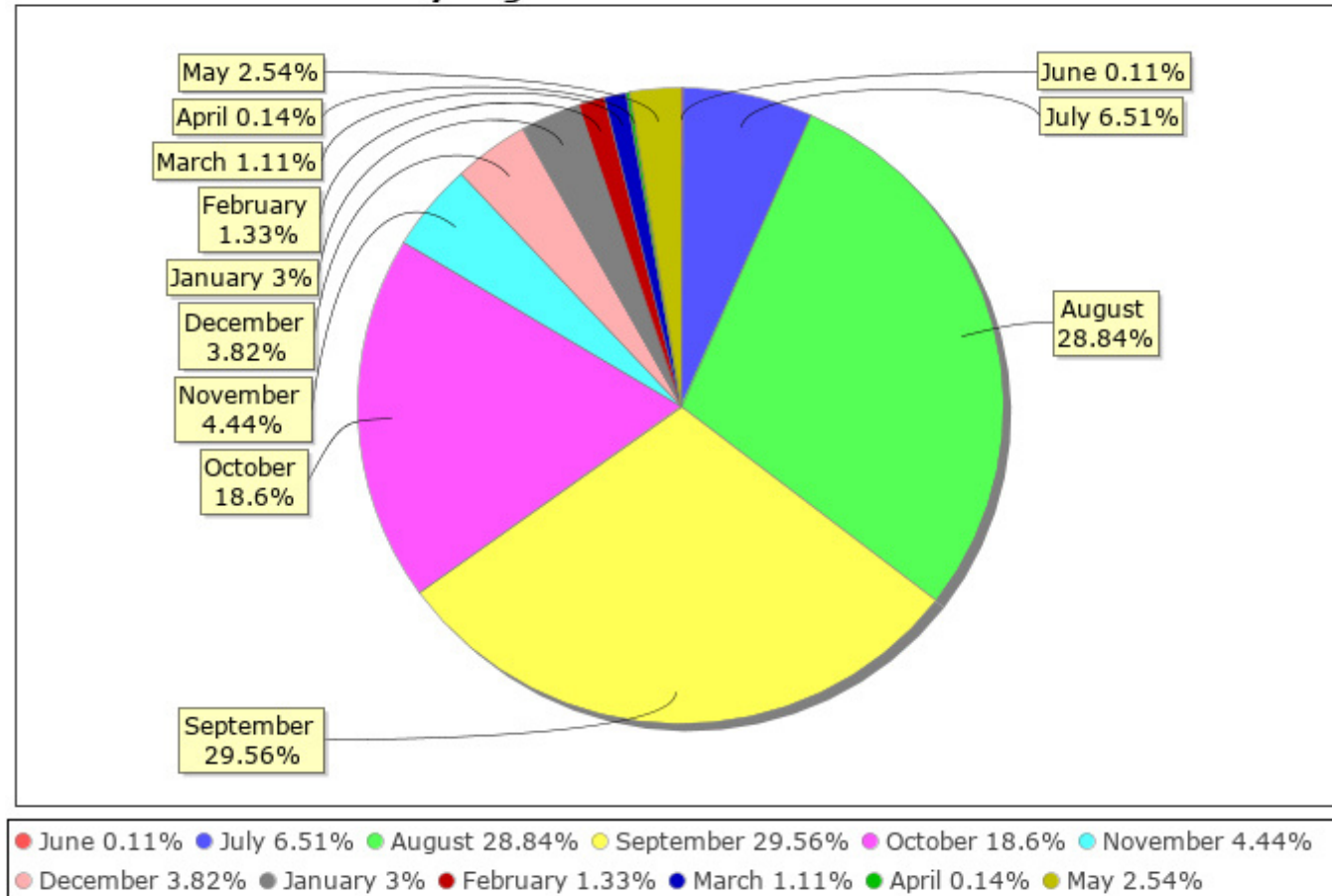
Station Name: Gaur at Bhalwara

Division: Narmada Division, Bhopal

Local River: Gaur

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



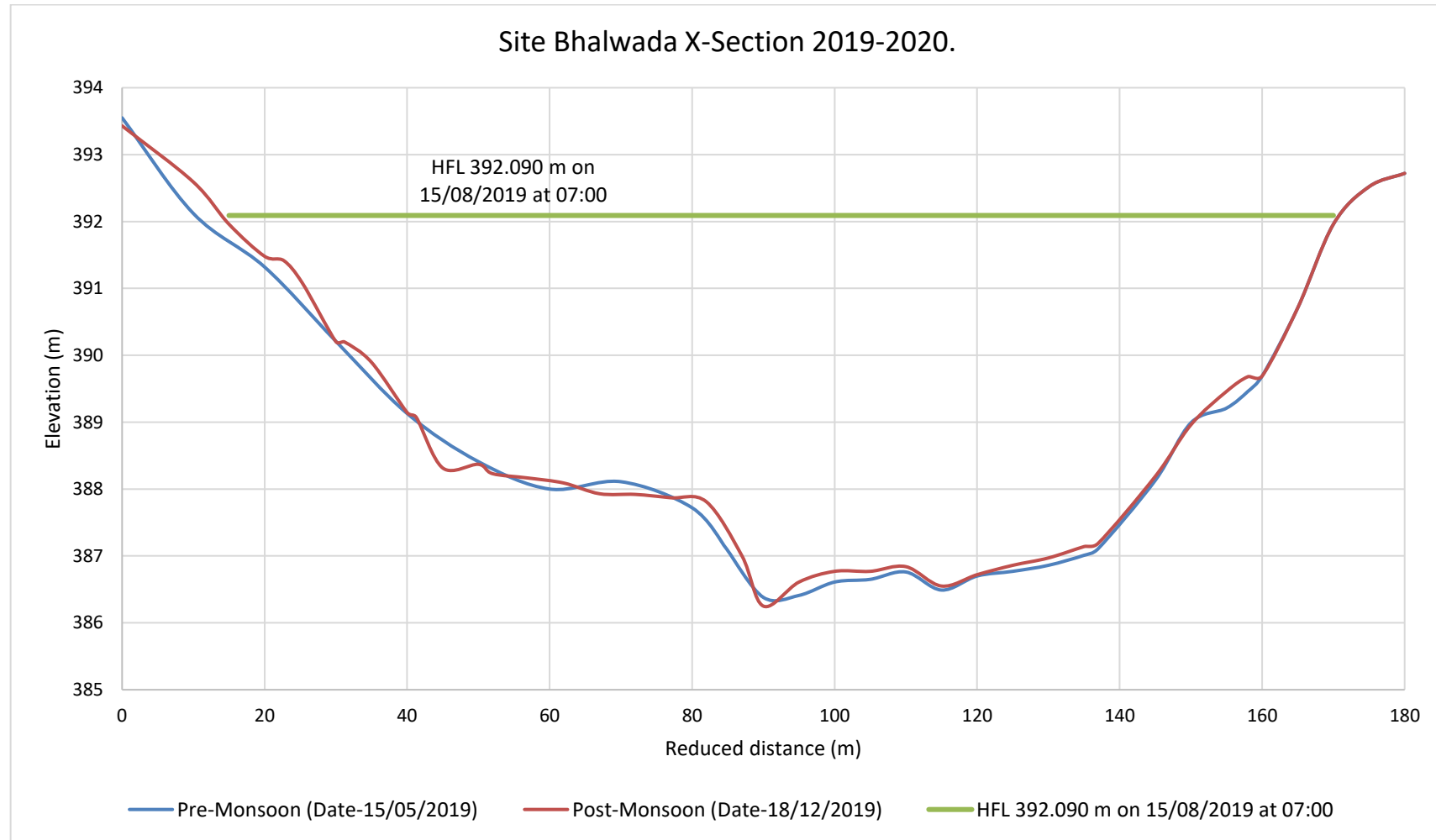
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Gaur at Bhalwara

Division: Narmada Division, Bhopal

Local River: Gaur

Sub-Division: UNSD, CWC Jabalpur



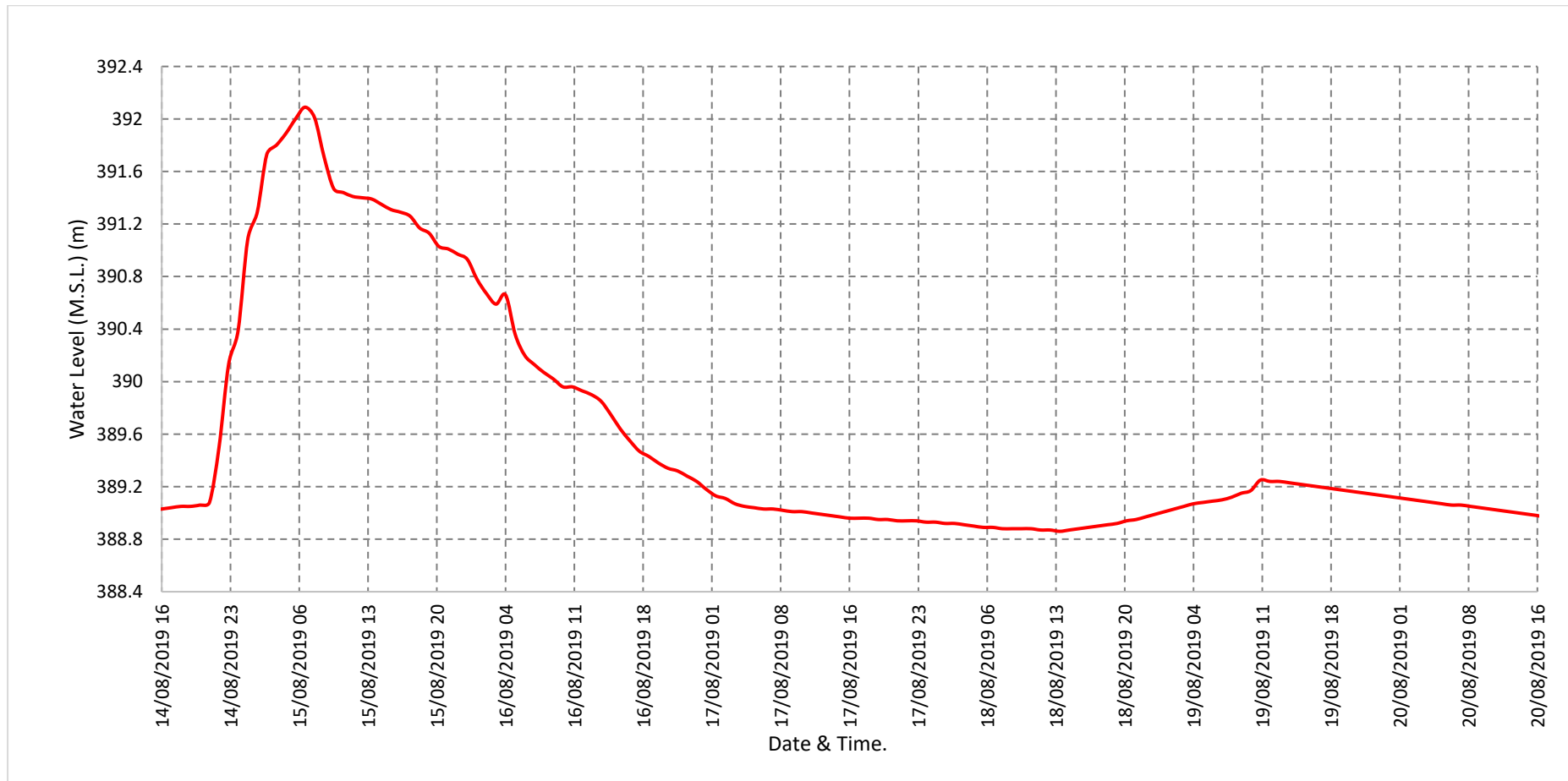
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Gaur at Bhalwara

Division: Narmada Division, Bhopal

Local River: Gaur

Sub-Division: UNSD, CWC Jabalpur



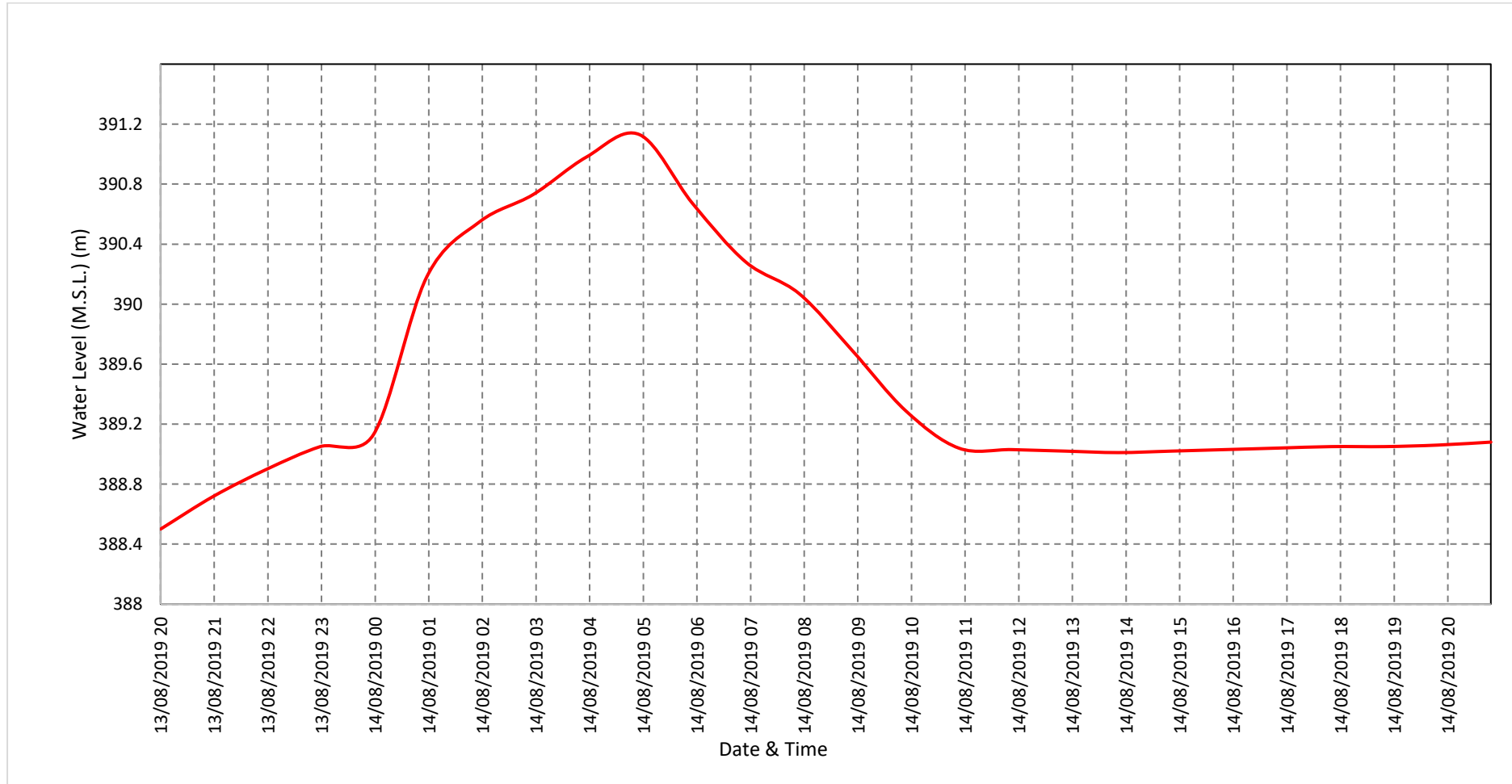
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Gaur at Bhalwara

Division: Narmada Division, Bhopal

Local River: Gaur

Sub-Division: UNSD, CWC Jabalpur



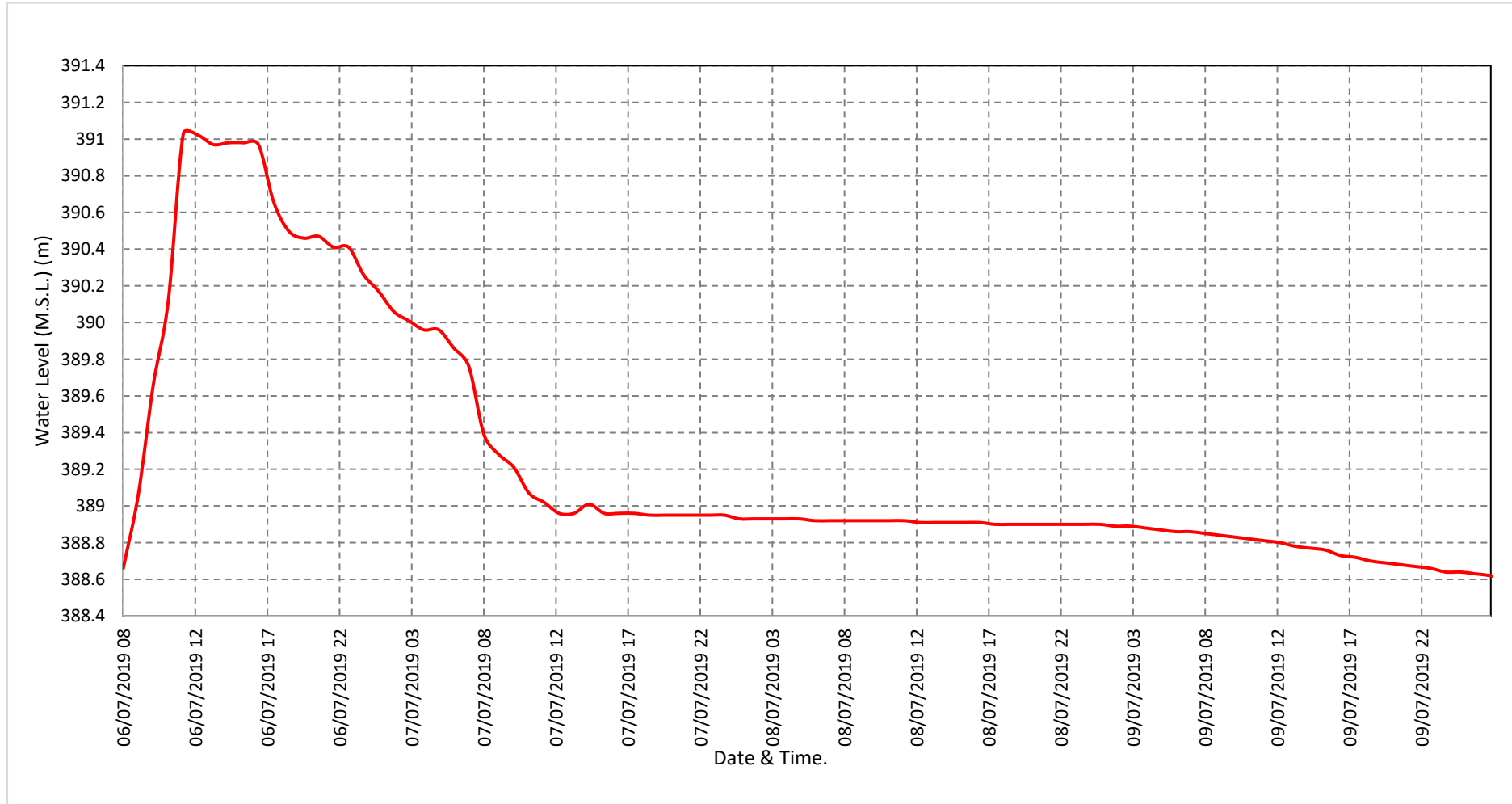
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Gaur at Bhalwara

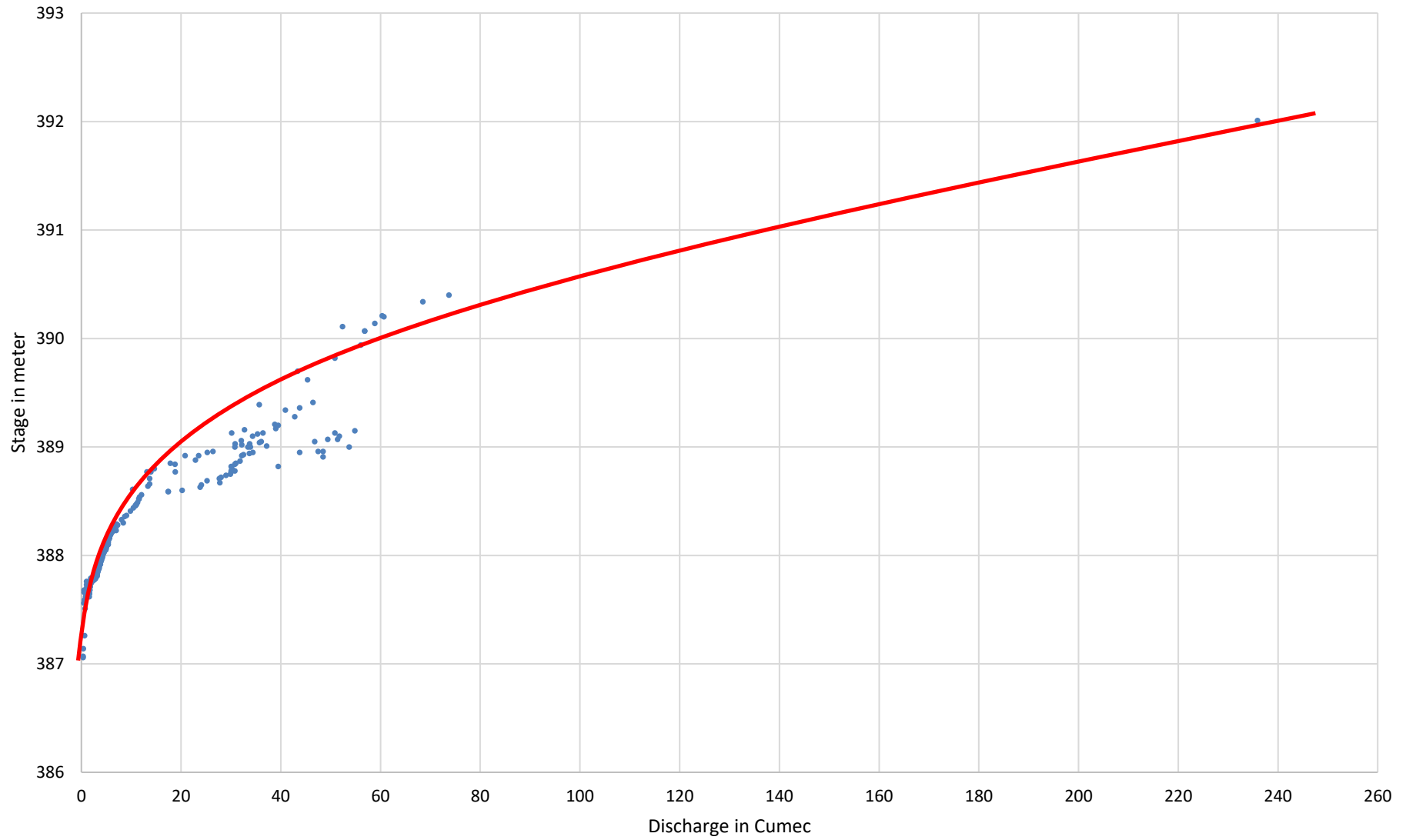
Division: Narmada Division, Bhopal

Local River: Gaur

Sub-Division: UNSD, CWC Jabalpur



Site Bhalwara Stage-Discharge Curve 2019-2020.



4.42 Banjar at Bamni.

History sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)					
				Water Year	: 2019 - 2020
Site	:	Bamni	Code	:	CW1NAU000781
State	:	Madhya Pradesh	District	:	MANDLA
Basin	:	Narmada	Independent River	:	Narmada
Tributary	:	-	Sub Tributary	:	-
Sub-Sub Tributary	:	-	Local River	:	Banjar
Division	:	Narmada Division(ND), Bhopal	Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	1864.0 Sq. Km.	Bank	:	Left
Latitude	:	22°29'03"	Longitude	:	80°22'41"
Current Zero of Gauge (m)	:	436			
CATEGORY		Opening Date		Closing Date	
Gauge	:	20/06/1999			
Discharge	:	30/11/1999			
Sediment	:	01/07/2002			
Water Quality	:	01/07/2002			
Reduced Level		Opening Date		Closing Date	
440.0		20/06/1999		29/11/2019	
436.0		30/11/2019		-	

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2001-2002	0	0.000	25/01/2002	0	—	25/01/2002
2002-2003	0	0.000	24/08/2002	0	—	24/08/2002
2004-2005	75.12	441.720	02/02/2005	0	—	01/04/2005
2005-2006	1455.9	446.930	15/09/2005	0	—	01/06/2005
2006-2007	681.41	444.500	14/08/2006	0	—	01/06/2006
2007-2008	391.5	443.850	20/08/2007	0	—	01/06/2007
2008-2009	406.03	443.800	01/08/2008	0.01	440.76	15/06/2008
2009-2010	488.86	443.650	22/07/2009	0	—	01/06/2009
2010-2011	360.97	443.025	26/07/2010	0	—	01/06/2010
2011-2012	403.94	443.400	08/09/2011	0	—	01/06/2011
2012-2013	285.25	443.200	23/08/2012	0	—	02/05/2013
2013-2014	517.65	444.120	22/08/2013	0	—	02/05/2014
2014-2015	524.67	444.180	23/07/2014	0	—	13/06/2014
2015-2016	301.19	443.220	05/08/2015	0	—	03/05/2016
2016-2017	550.5	444.430	07/08/2016	0.36	440.21	18/02/2017
2017-2018	123.9	441.390	21/07/2017	0	440	02/06/2017
2018-2019	594.3	442.510	24/07/2018	2.48	440.18	31/10/2018
2019-2020	1730.5	446.260	08/09/2019	0.2	439.46	08/04/2020

Stage Discharge Sheet for Banjar at Bamni for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	DRY	DRY	32.58	439.750	159.5	440.400	290.5	441.110	33.75	440.040
2	#	#	DRY	DRY	22.48	439.580	130.2	440.220	238.2	440.850	31	440.000
3	#	#	DRY	DRY	85.52	439.920	129	440.210	192.7	440.580	28	439.960
4	#	#	DRY	440.120	189.9	440.730	167.1	440.940	170.4	440.440	24.5	439.910
5	#	#	15.99	440.650	129.6	440.210	286.6	441.080	152.6	440.350	21	439.860
6	#	#	15.81	440.630	86.07	439.930	289.9	441.110	139.4	440.260	19	439.820
7	#	#	14.07	440.570	41.11	439.870	285.9	441.080	128.8	440.200	15	439.770
8	#	#	13.33	440.540	147.6	440.320	1730.5	446.260	127	440.170	13.75	439.750
9	#	#	15.64	440.600	1120.4	443.780	934.4	443.580	114.9	440.080	13	439.740
10	#	#	23.55	440.680	340.5	441.360	386.2	441.710	108.5	440.030	12.5	439.730
11	#	#	22.35	440.660	193.7	440.790	306.9	441.180	100.9	439.970	12	439.720
12	#	#	11.49	440.530	136.5	440.280	1005.9	443.720	93.6	439.940	12	439.720
13	#	#	9.71	440.450	36.16	439.840	825.7	443.330	43.46	439.910	11.5	439.710
14	#	#	2	440.420	33.47	439.780	319.9	441.260	42.91	439.890	11	439.700
15	#	#	1.56	440.400	363.4	441.470	268.8	440.990	42.73	439.880	10.5	439.690
16	#	#	1.49	440.380	218.8	440.780	213.4	440.740	36.71	439.850	10.5	439.690
17	#	#	1.09	440.360	146.9	440.310	195.9	440.610	33.69	439.810	10	439.680
18	#	#	1.07	440.340	127.6	440.170	180.5	440.510	32.78	439.770	9.5	439.670
19	#	#	1.05	440.330	128	440.180	172.2	440.450	126.5	440.180	9.5	439.670
20	#	#	1.03	440.320	86.32	439.940	153.3	440.360	114.2	440.080	9	439.660
21	#	#	7.38	439.260	243.1	440.880	150.2	440.330	108.2	440.030	8.5	439.650
22	#	#	7.37	439.230	326.7	441.270	146	440.300	105.7	440.010	8.5	439.650
23	#	#	7.18	439.210	189.8	440.560	130.5	440.210	115.7	440.090	8.25	439.640
24	#	#	4.08	439.170	145.8	440.300	223.4	440.800	35.99	440.150	8	439.630
25	#	#	1.11	439.100	189	440.570	143.8	440.280	34.41	440.070	8	439.630
26	#	#	1.68	439.130	209.8	440.670	210.9	440.690	33.71	440.040	7.75	439.620
27	#	#	11.37	439.390	182.6	440.530	171.1	440.440	32.9	440.020	7.5	439.610
28	#	#	9.25	439.320	183.1	440.540	162.3	440.400	32.09	440.010	7.5	439.610
29	#	#	11.58	439.410	161.1	440.400	447.3	442.010	32.69	440.020	7.25	439.600
30	#	#	27.93	439.670	239.9	440.860	432.7	441.940	43.38	440.230	7	439.590
31			86.22	439.930	142.7	440.280			34.68	440.080		
Ten-Daily Mean												
I Ten-Daily	0	0.000	9.84	308.380	219.58	440.540	449.93	441.660	166.3	440.410	21.15	439.860
II Ten-Daily	0	0.000	5.28	440.420	147.08	440.350	364.25	441.310	66.75	439.930	10.55	439.690
III Ten-Daily	0	0.000	15.92	439.350	201.24	440.620	221.82	440.740	55.4	440.070	7.83	439.620
Monthly												
Min.	0	0.000	1.03	439.100	22.48	439.580	129	440.210	32.09	439.770	7	439.590
Max.	0	0.000	86.22	440.680	1120.4	443.780	1730.5	446.260	290.5	441.110	33.75	440.040
Mean	0	0.000	10.35	396.050	189.3	440.510	345.33	441.240	96.15	440.130	13.17	439.720

Annual Runoff in MCM :1805.06

Annual Runoff in mm :968.38

Peak Observed Discharge = 1730.5 cumecs on 8/9/2019

Corres. Water Level 446.26 m

Lowest Observed Discharge = 1.03cumecs on 20/7/2019

Corres. Water Level 440.32 m

"#" - Dry

Stage Discharge Sheet for Banjar at Bamni for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	6.75	439.580	12.8	439.720	5.25	439.520	7	439.590	1.75	439.490	#	#
2	6.75	439.580	25	439.920	5	439.510	6.75	439.580	1.75	439.490	#	#
3	6.5	439.570	28	439.960	5.5	439.530	6.5	439.570	1.5	439.480	#	#
4	6.5	439.570	26	439.930	8.5	439.650	6.25	439.560	1.5	439.480	#	#
5	6.25	439.560	18	439.800	16.5	439.790	6.25	439.560	1.2	439.470	#	#
6	6.25	439.560	21	439.860	18	439.810	6	439.550	1	439.470	#	#
7	6	439.550	19.5	439.840	11	439.700	5.75	439.540	0.5	439.460	#	#
8	6	439.550	19	439.830	10	439.680	5.5	439.530	0.2	439.460	#	#
9	6	439.550	22.5	439.880	8	439.630	5.25	439.520	#	#	#	#
10	5.75	439.540	27	439.950	7	439.590	5	439.510	#	#	#	#
11	5.75	439.540	21	439.860	6.75	439.580	5.5	439.530	#	#	#	#
12	5.75	439.540	14.5	439.760	6	439.550	6.25	439.560	#	#	#	#
13	5.75	439.540	11.5	439.710	5.75	439.540	6.25	439.560	#	#	#	#
14	5.5	439.530	10	439.680	5.25	439.520	6.5	439.570	#	#	#	#
15	5.5	439.530	8.25	439.640	5	439.510	8	439.630	#	#	#	#
16	5.75	439.540	7.75	439.620	5	439.510	12	439.720	#	#	#	#
17	6	439.550	7.5	439.610	5	439.510	9	439.660	#	#	#	#
18	6	439.550	7.25	439.600	5.25	439.520	7.75	439.620	#	#	#	#
19	5.75	439.540	7.25	439.600	5.25	439.520	7	439.590	#	#	#	#
20	5.5	439.530	7	439.590	5.5	439.530	6.5	439.570	#	#	#	#
21	5.25	439.520	7	439.590	5.75	439.540	6.25	439.560	#	#	#	#
22	5.25	439.520	6.75	439.580	5.75	439.540	6	439.550	#	#	#	#
23	5.25	439.520	6.75	439.580	6	439.550	5.5	439.540	#	#	#	#
24	5	439.510	6.5	439.570	6.5	439.570	5	439.530	#	#	#	#
25	5	439.510	6.5	439.570	11	439.700	4.5	439.520	#	#	#	#
26	4.75	439.500	6.25	439.560	18	439.800	4	439.510	#	#	#	#
27	4.75	439.500	6.25	439.560	18	439.800	3.5	439.510	#	#	#	#
28	4.5	439.490	6	439.550	11	439.700	3	439.500	#	#	#	#
29	4.5	439.490	5.75	439.540	7.5	439.610	2.5	439.490	#	#	#	#
30	4.25	439.480	5.5	439.530			2	439.490	#	#	#	#
31	4.75	439.500	5.5	439.530			1.7	439.490			#	#
Ten-Daily Mean												
I Ten-Daily	6.28	439.560	21.88	439.870	9.47	439.640	6.03	439.550	0.94	351.580	0	0.000
II Ten-Daily	5.72	439.540	10.2	439.670	5.47	439.530	7.47	439.600	0	0.000	0	0.000
III Ten-Daily	4.84	439.500	6.25	439.560	9.94	439.650	4	439.520	0	0.000	0	0.000
Monthly												
Min.	4.25	439.480	5.5	439.530	5	439.510	1.7	439.490	0.2	439.460	0	0.000
Max.	6.75	439.580	28	439.960	18	439.810	12	439.720	1.75	439.490	0	0.000
Mean	5.61	439.530	12.78	439.700	8.3	439.610	5.83	439.560	0.31	117.190	0	0.000

Peak Computed Discharge = 447.3 cumecs on 29/9/2019 Corres. Water Level 442.01 m

Lowest Computed Discharge = 0.2cumecs on 8/4/2020 Corres. Water Level 439.46 m

“#”- Dry

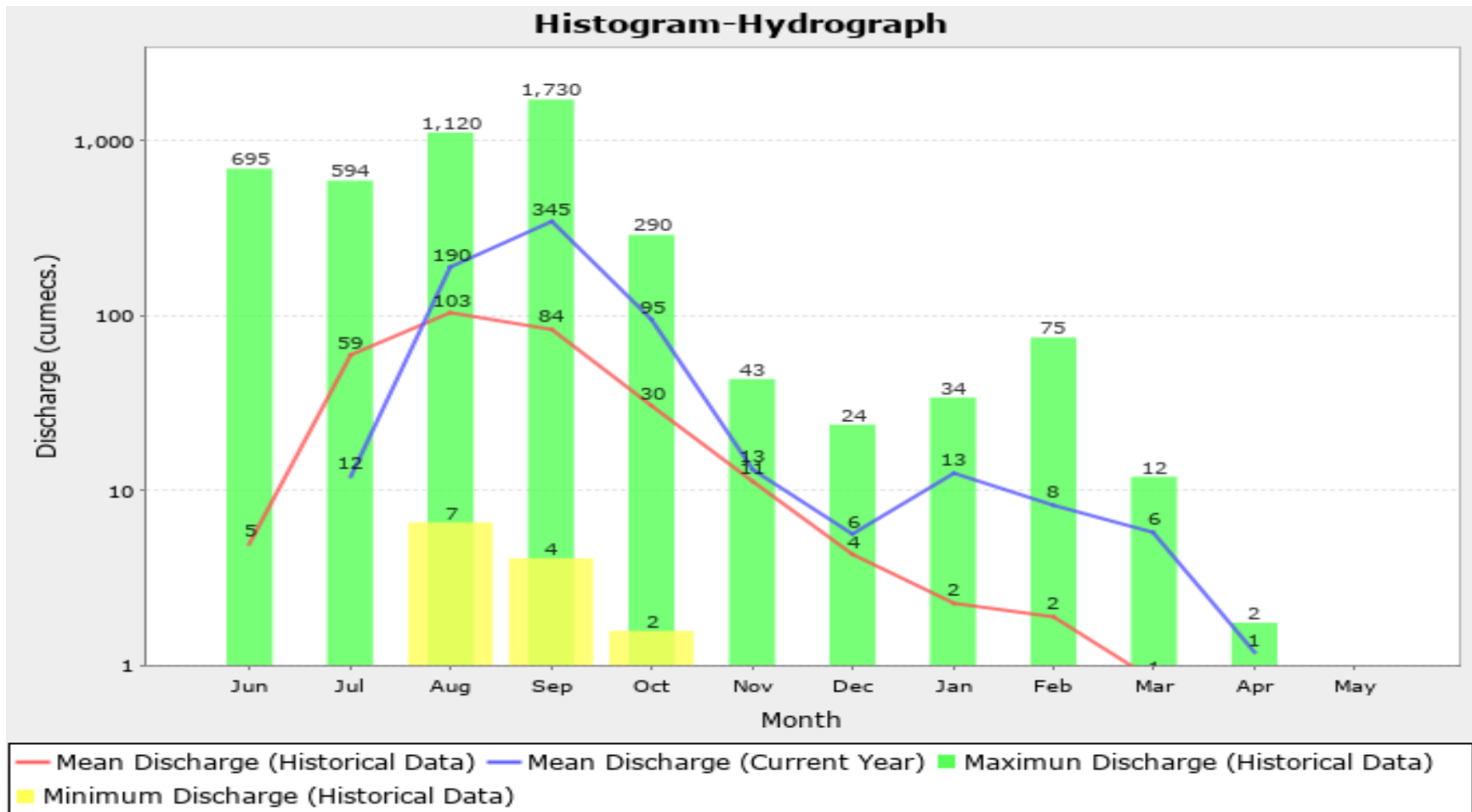
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 2000-2019)

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



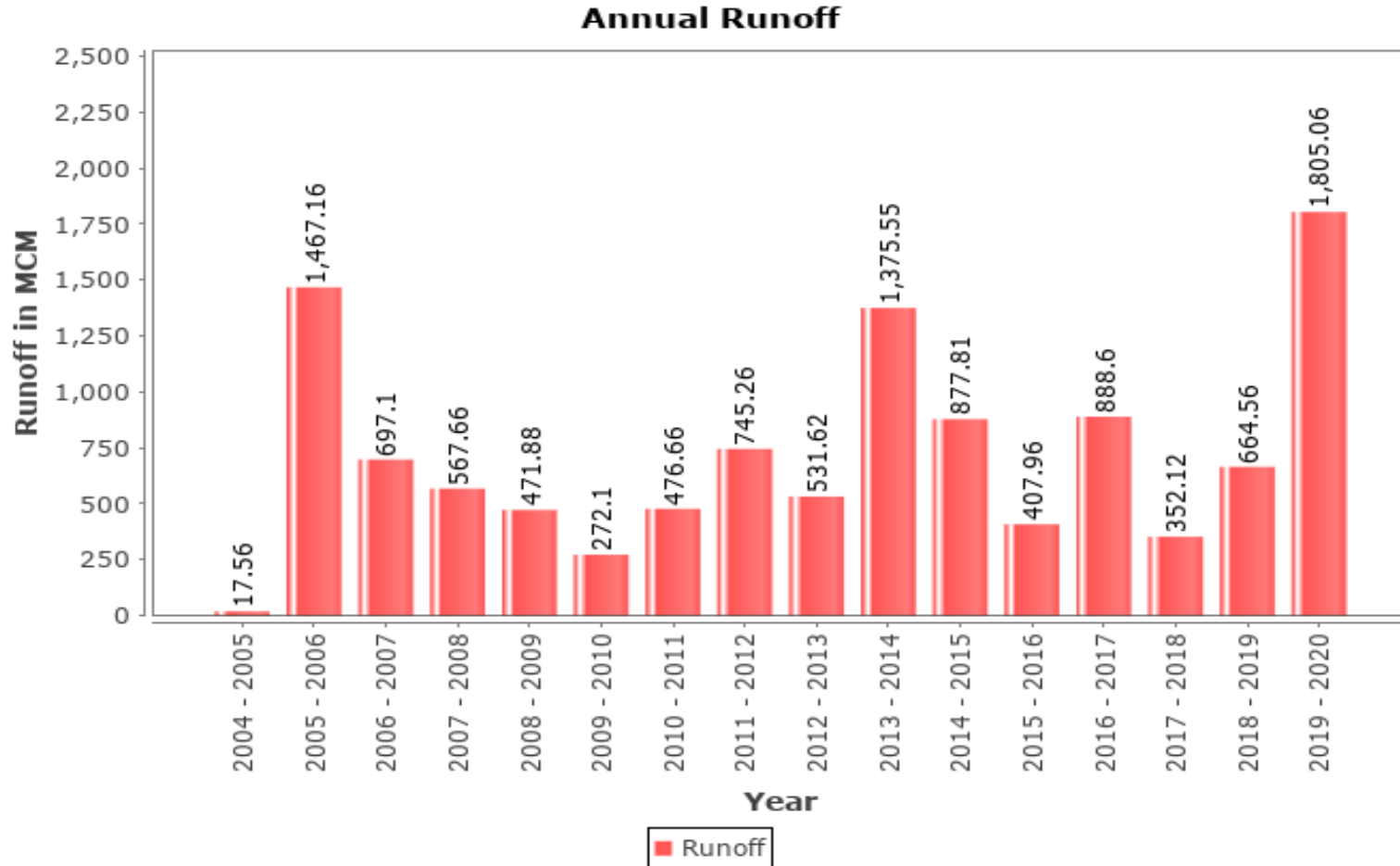
Annual Runoff Values for the period (2000-2020)

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



Monthly Average Runoff based on period (2000– 2020)

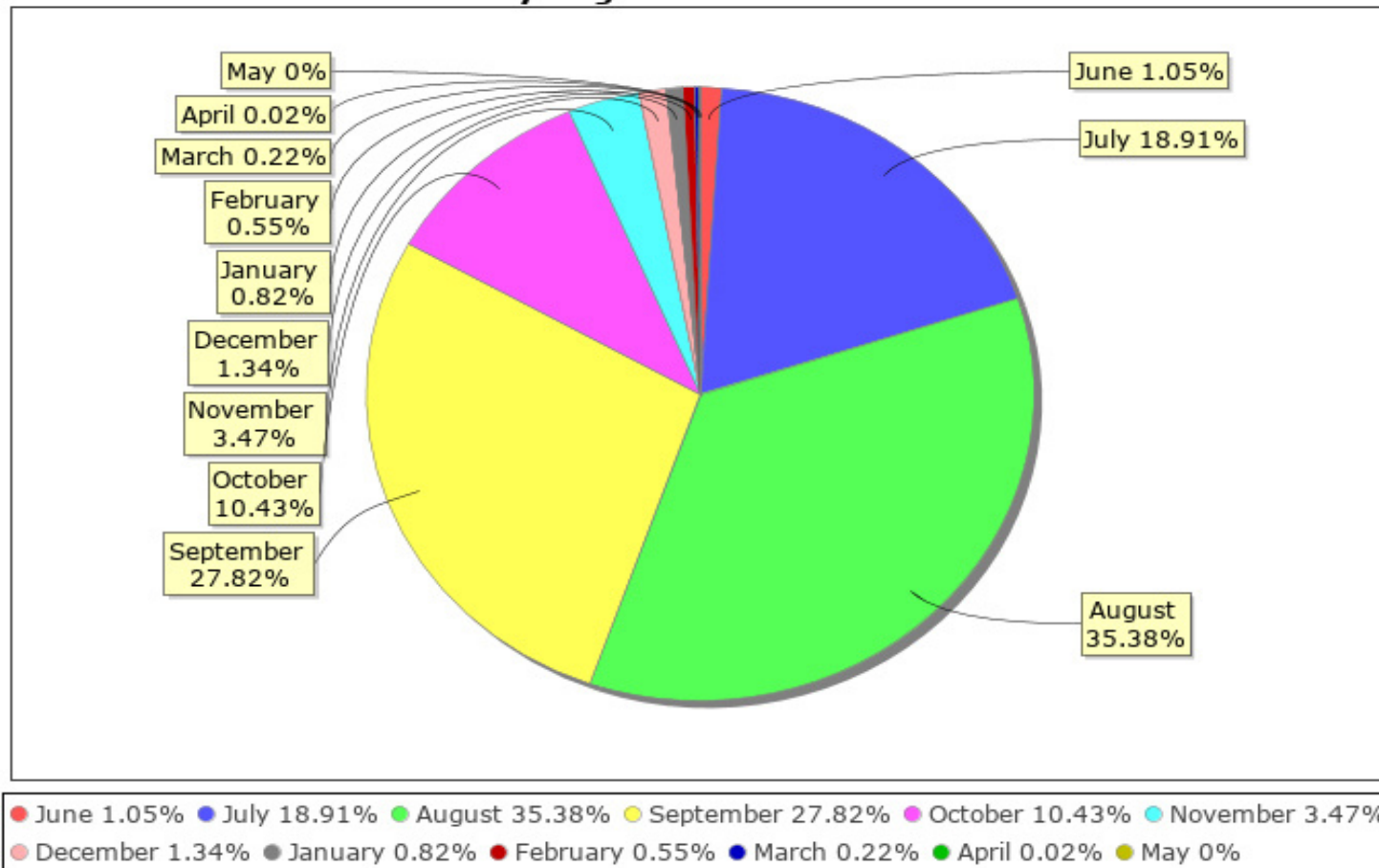
Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC, Jabalpur

Monthly Avg Runoff Historical Data



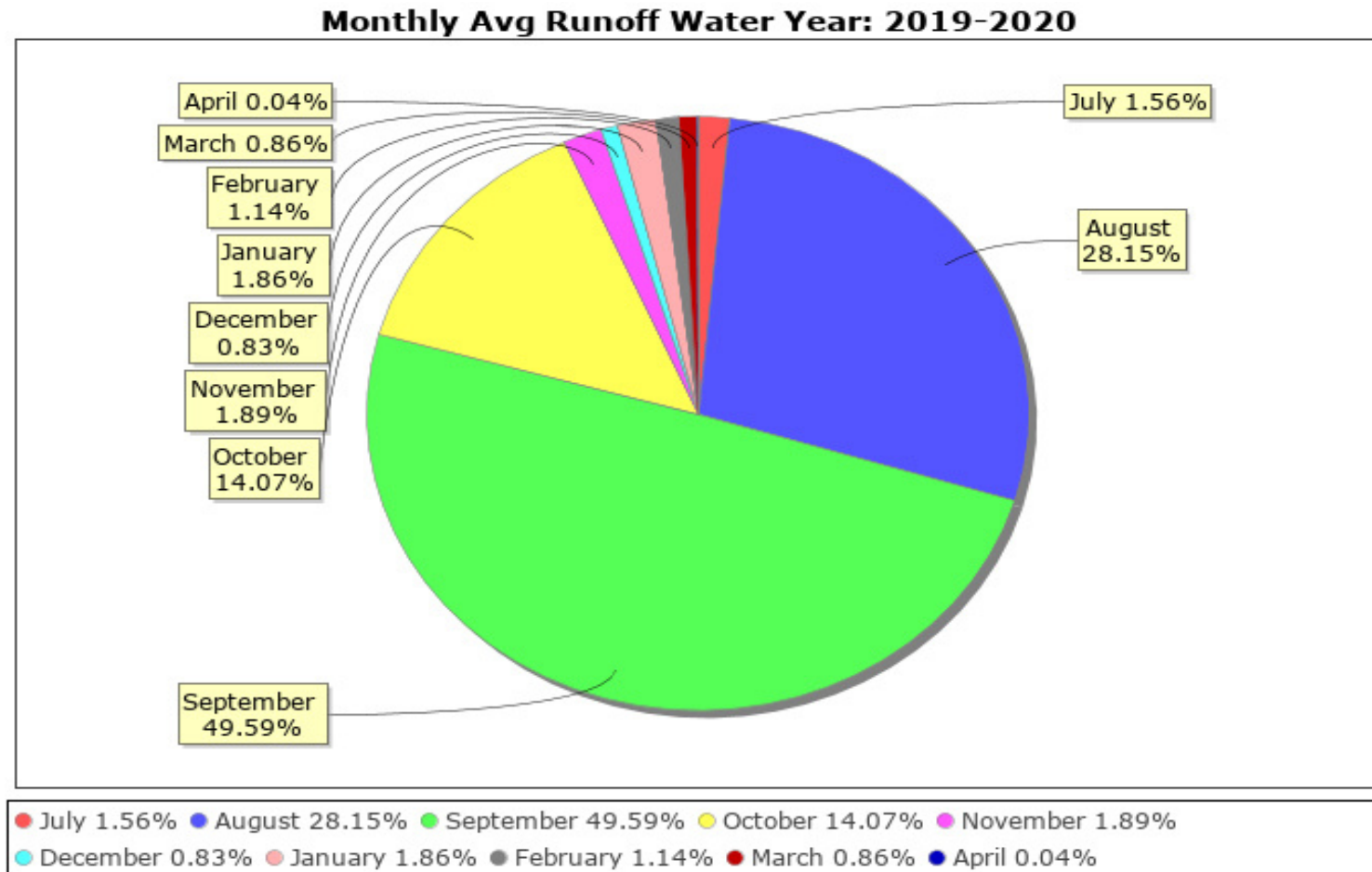
Monthly Runoff for the Year (2019-20)

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



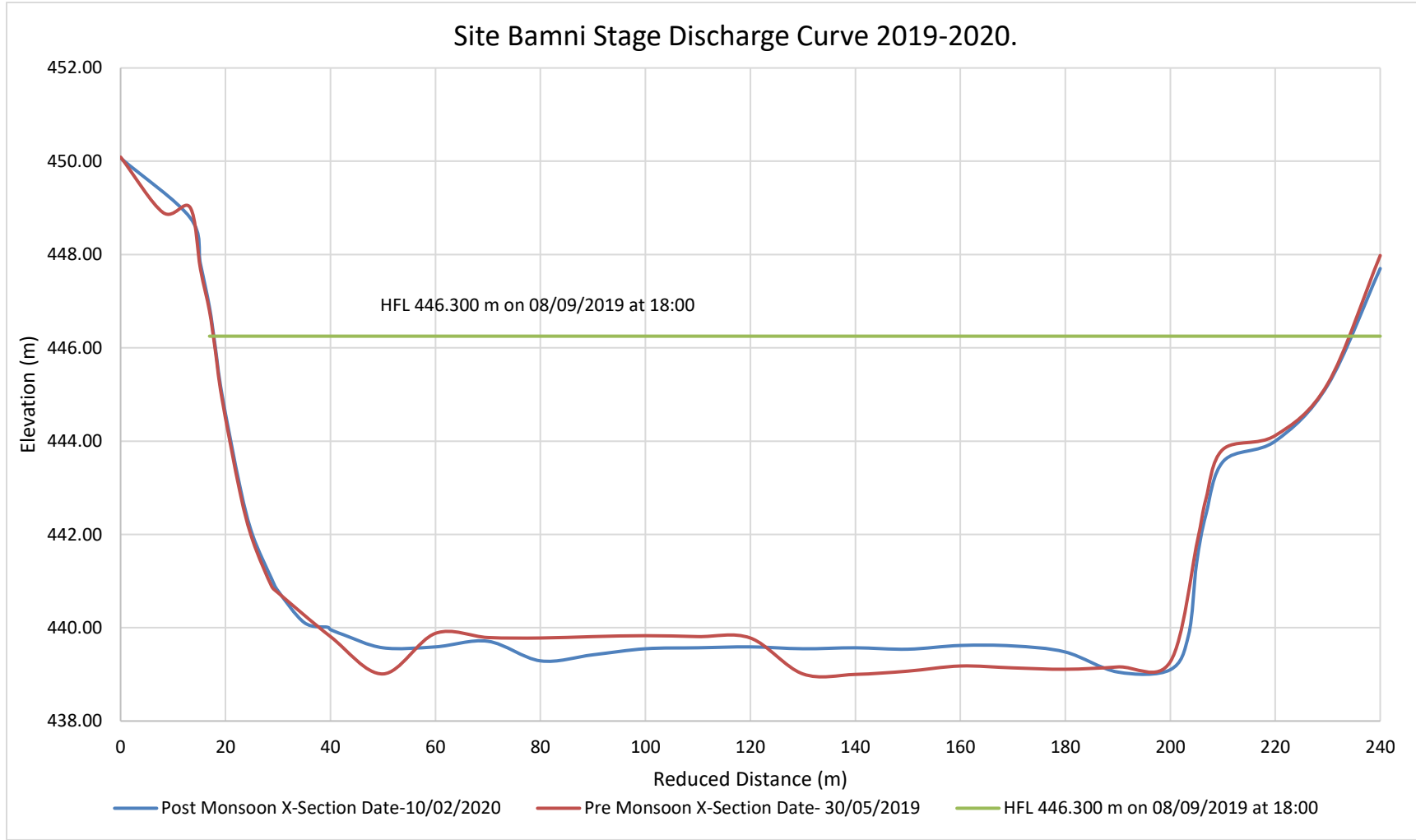
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



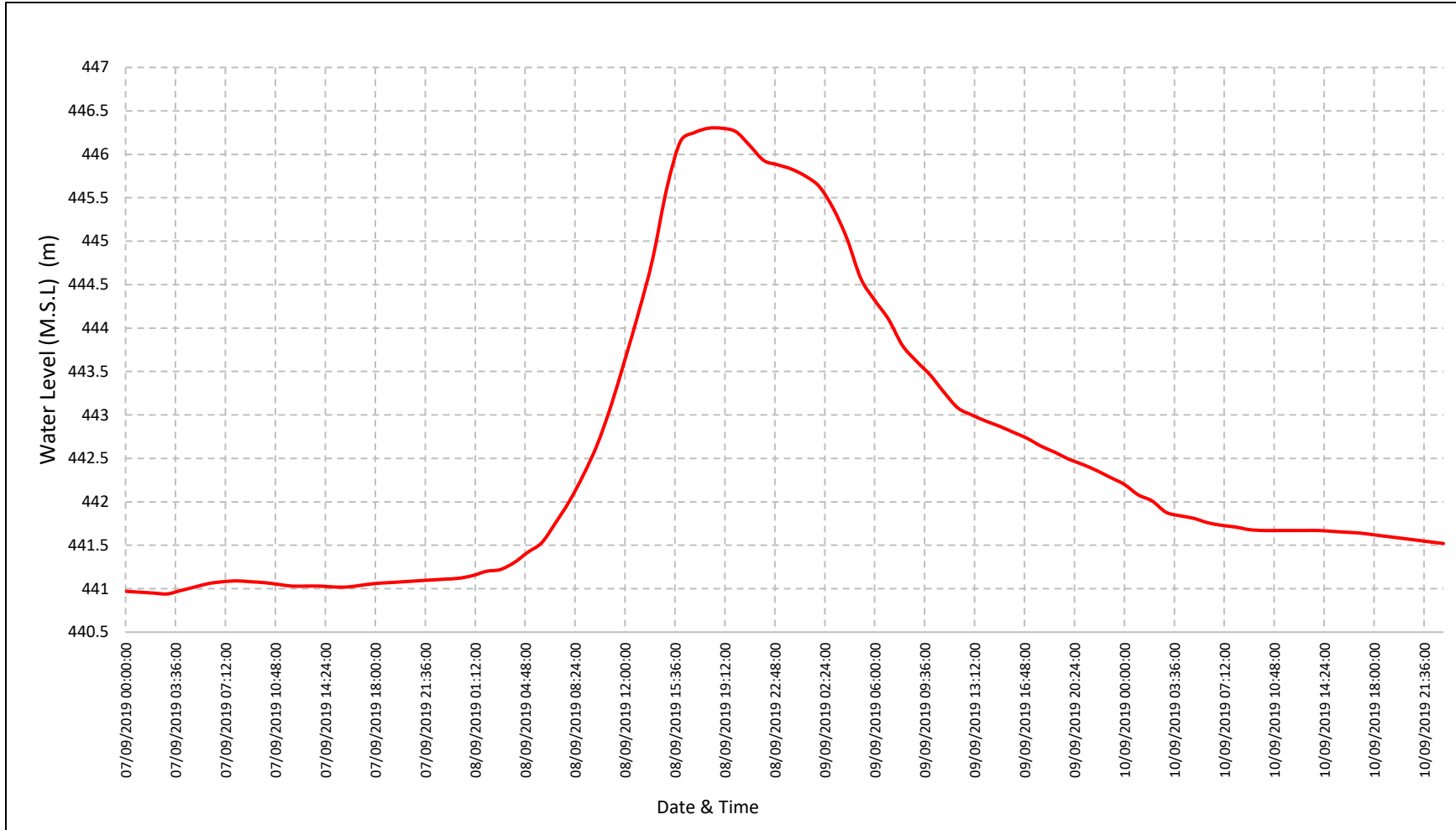
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Banjar at Bamni

Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



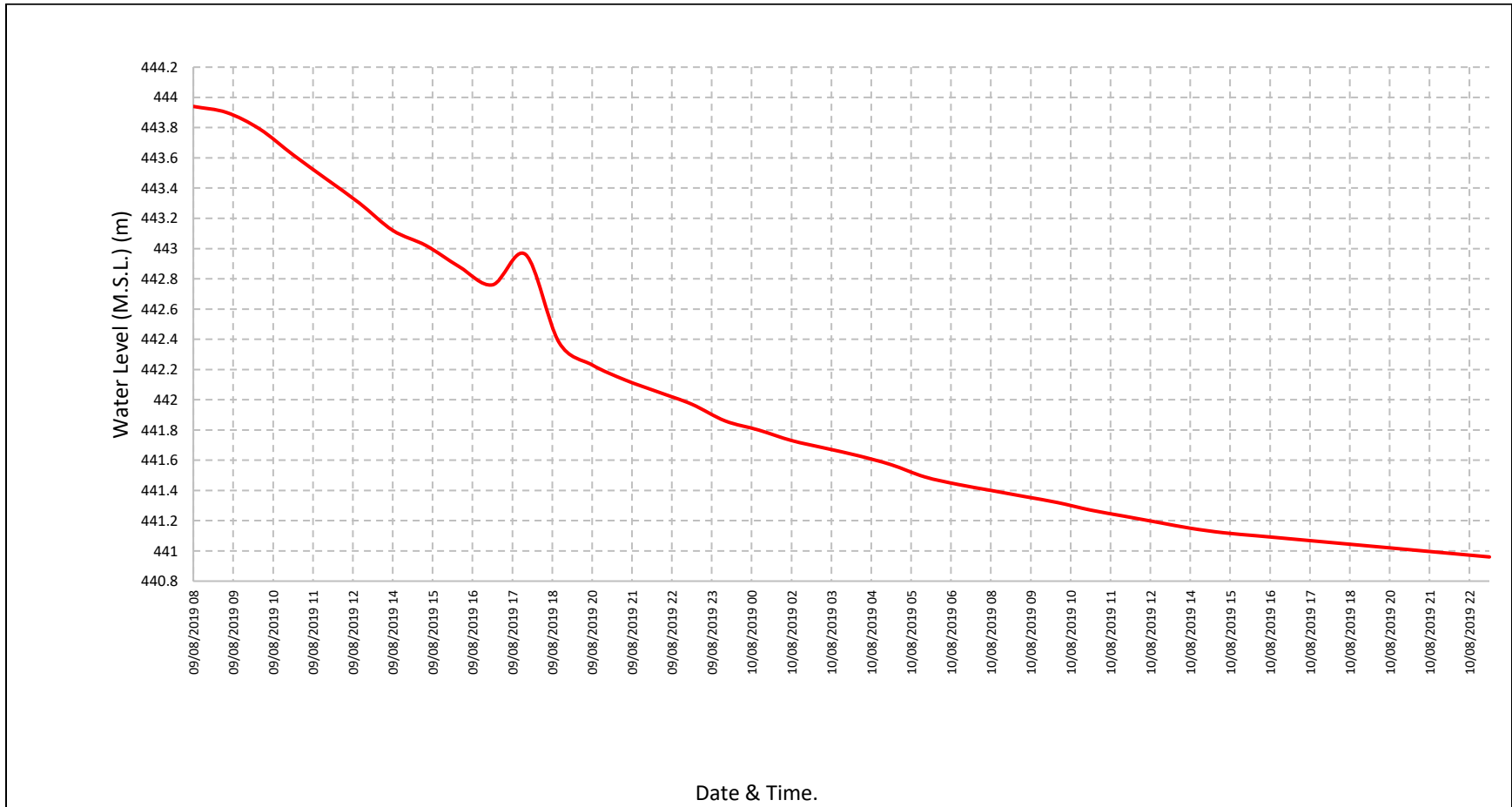
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Banjar at Bamni

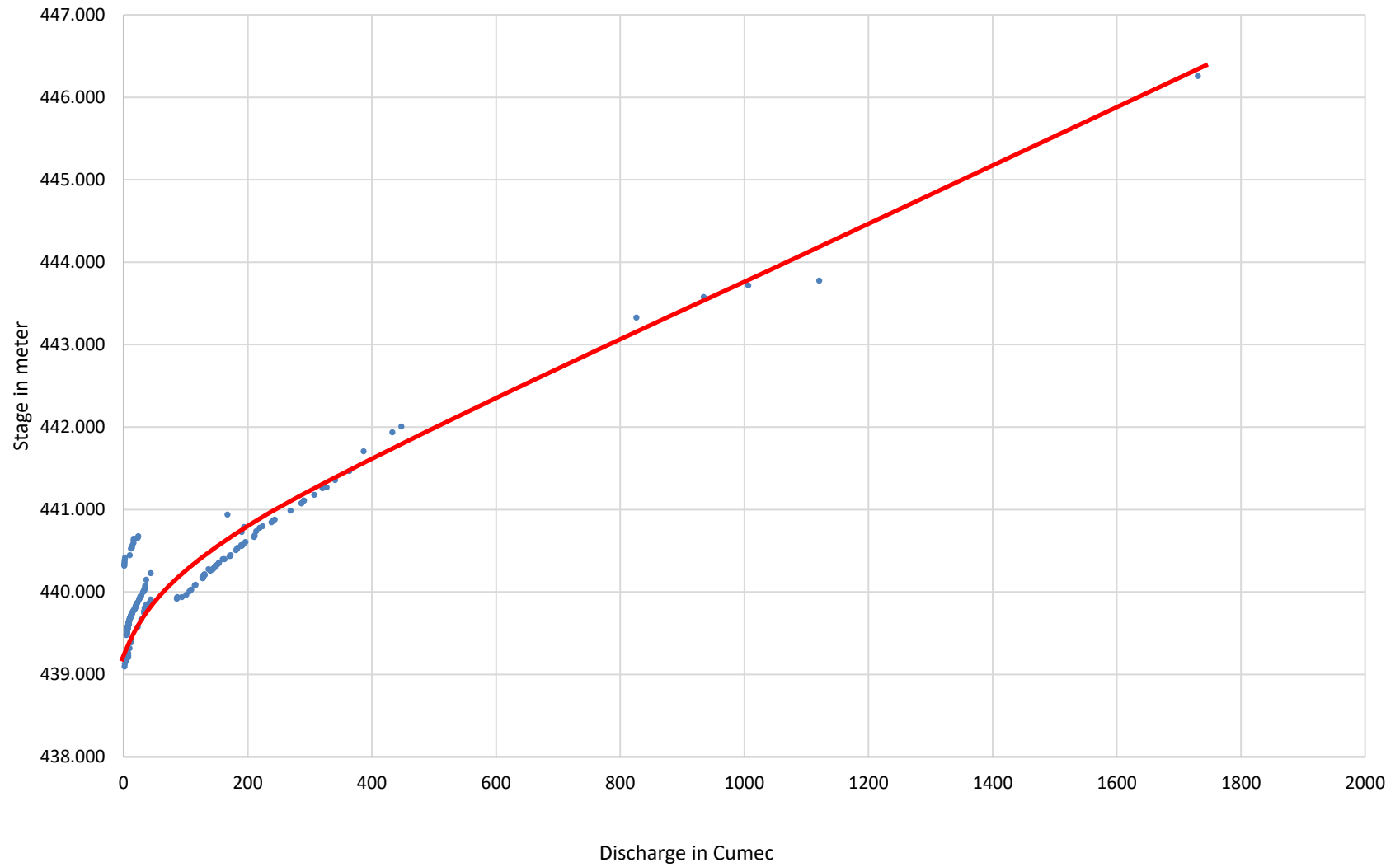
Division : Narmada Division, Bhopal

Local River : Banjar

Sub-Division : UNSD, CWC Jabalpur



Site Bamni Stage-Discharge Curve 2019-2020



4.43 Matiyari at Katangatola.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
				Water Year	:	2019 - 2020
Site	:	Matiyari at Katangatola		Code	:	CW1NAU001464
State	:	Madhya Pradesh		District	:	MANDLA
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:	Banjar		Sub Tributary	:	Narmada
Sub-Sub Tributary	:			Local River	:	Matiyari
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	730.0 Sq. Km.		Bank	:	Right
Latitude	:	22°32'09"		Longitude	:	80°23'43"
Current Zero of Gauge (m)	:	436				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
436		21/10/2020		-		
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q	WL	Date	Q	WL	Date
2019-2020	215.54	445	08/09/2019	0	438.16	01/07/2019

Stage Discharge Sheet for Matiyari at Katangatola for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	0	438.16	32.84	439.78	46.84	440.18	47.54	440.20	2.69	439.07
2	#	#	0	438.47	25.28	439.58	39.49	439.97	40.89	440.01	2.06	439.06
3	#	#	0	438.58	8.83	439.27	44.39	440.11	39.49	439.97	1.53	439.03
4	#	#	1.11	438.90	109.49	441.97	84.99	441.27	36.34	439.88	1.36	439.01
5	#	#	1.4	439.02	45.09	440.13	59.44	440.54	34.24	439.82	1.36	439.01
6	#	#	9.31	439.37	29.34	439.68	51.04	440.23	35.64	439.86	1.32	438.98
7	#	#	9.3	439.37	55.24	440.42	80.79	441.15	34.24	439.82	1.24	438.95
8	#	#	14.33	439.48	101.44	441.74	215.54	445.00	32.14	439.76	1.17	438.93
9	#	#	8.23	439.25	212.74	444.92	184.04	444.10	27.12	439.62	1.12	438.91
10	#	#	10.57	439.42	63.64	440.66	98.99	441.67	13.95	439.46	1.08	438.90
11	#	#	9.27	439.37	45.44	440.14	85.69	441.29	9.04	439.36	1.03	438.88
12	#	#	8.90	439.32	29.32	439.64	75.54	441.00	8.63	439.30	0.97	438.86
13	#	#	8.18	439.23	22.95	439.50	81.84	441.18	8.3	439.29	0.91	438.84
14	#	#	2.93	439.09	24.68	439.57	83.24	441.22	8.21	439.28	\$	438.81
15	#	#	1.22	438.92	118.94	442.24	98.99	441.67	8.17	439.23	\$	438.78
16	#	#	1.02	438.87	66.79	440.75	48.94	440.24	8.13	439.23	\$	438.75
17	#	#	0.94	438.85	38.44	439.94	45.44	440.14	8.16	439.23	\$	438.72
18	#	#	0.79	438.82	30.45	439.66	51.39	440.31	8.23	439.27	\$	438.70
19	#	#	1.21	438.94	38.94	439.75	43.69	440.09	18.85	439.52	\$	438.67
20	#	#	8.41	439.33	28.27	439.63	32.14	439.76	28.64	439.66	\$	438.66
21	#	#	3.98	439.14	39.49	439.97	41.24	440.02	25.53	439.59	\$	438.64
22	#	#	1.40	439.02	55	440.68	35.64	439.86	6.49	439.21	\$	438.63
23	#	#	1.27	438.94	36.34	439.88	31.79	439.75	5.17	439.19	\$	438.62
24	#	#	1.11	438.90	40.89	440.01	66.79	440.75	3.98	439.14	\$	438.60
25	#	#	1.14	438.91	68.89	440.81	32.49	439.77	3.44	439.13	\$	438.59
26	#	#	8.21	439.27	11.09	439.49	58.74	440.52	3.42	439.13	\$	438.57
27	#	#	8.94	439.32	45.09	440.13	63.99	440.67	3.52	439.13	\$	438.55
28	#	#	1.13	439.01	37.02	439.74	68.19	440.79	3.35	439.12	\$	438.54
29	#	#	41.94	440.05	28.26	439.63	112.99	442.07	3.01	439.10	\$	438.51
30	#	#	48.59	440.23	39.49	439.97	47.19	440.19	2.83	439.08	\$	438.48
31			48.59	440.23	26.89	439.61			2.6	439.07		
Ten-Daily Mean												
I Ten-Daily	0	0	5.42	439	68.39	440.81	90.55	441.42	34.16	439.84	1.49	438.99
II Ten-Daily	0	0	4.29	439.07	44.42	440.08	64.69	440.69	11.44	439.34	0.29	438.77
III Ten-Daily	0	0	15.12	439.37	38.95	439.99	55.9	440.44	5.76	439.17	0	438.57
Monthly												
Min.	0	0	0	438.16	8.83	439.27	31.79	439.75	2.6	439.07	0.91	438.48
Max.	0	0	48.59	440.23	212.74	444.92	215.54	445	47.54	440.2	2.69	439.07
Mean	0	0	8.28	439.15	50.59	440.3	70.38	440.85	17.12	439.45	0.59	438.78

Peak Observed Discharge = 212.74 cumecs on 9/8/2019 Corres. Water Level 444.92 m

Lowest Observed Discharge = 0 cumecs on 1/7/2019 Corres. Water Level 438.16 m

Note-
 “#” – Dry
 “\$” – No Flow

Stage Discharge Sheet for Matiyari at Katangatola for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	\$	438.47	0.98	438.86	0.79	438.82	0.98	438.86	\$	438.69	\$	438.48
2	\$	438.49	0.98	438.86	1.03	438.88	0.95	438.85	\$	438.69	\$	438.48
3	\$	438.59	0.96	438.86	1.12	438.91	0.98	438.86	\$	438.69	\$	438.47
4	\$	438.71	0.96	438.86	1.15	438.92	0.98	438.86	\$	438.68	\$	438.47
5	0.78	438.82	0.96	438.86	1.14	438.92	0.95	438.85	\$	438.68	\$	438.48
6	1.11	438.90	0.97	438.86	1.12	438.91	0.95	438.85	\$	438.66	\$	438.52
7	1.17	438.92	0.98	438.85	1.11	438.91	0.95	438.85	\$	438.66	\$	438.52
8	1.12	438.91	0.94	438.85	1.08	438.9	0.96	438.85	\$	438.64	\$	438.51
9	1.14	438.91	0.95	438.85	1.05	438.89	0.98	438.86	\$	438.63	\$	438.51
10	1.13	438.91	0.95	438.85	1.22	438.88	0.98	438.86	\$	438.63	\$	438.51
11	1.10	438.90	0.95	438.85	1.19	438.92	0.95	438.85	\$	438.62	\$	438.51
12	1.07	438.89	0.95	438.85	1.15	438.91	0.95	438.85	\$	438.60	\$	438.51
13	1.04	438.88	0.95	438.85	1.12	438.90	0.95	438.85	\$	438.59	\$	438.50
14	1.04	438.88	0.92	438.84	1.04	438.87	0.92	438.84	\$	438.59	\$	438.50
15	1.04	438.88	0.92	438.84	0.99	438.85	0.89	438.83	\$	438.58	\$	438.50
16	1.01	438.87	0.92	438.84	0.99	438.85	0.78	438.82	\$	438.58	\$	438.50
17	1.01	438.87	0.92	438.84	0.93	438.83	\$	438.81	\$	438.57	\$	438.50
18	1.01	438.87	0.92	438.84	0.93	438.83	\$	438.79	\$	438.57	\$	438.50
19	1.01	438.87	0.92	438.84	0.93	438.83	\$	438.78	\$	438.55	\$	438.50
20	1.02	438.87	0.92	438.84	0.79	438.82	\$	438.77	\$	438.54	\$	438.50
21	1.01	438.87	0.92	438.84	0	438.81	\$	438.76	\$	438.54	\$	438.50
22	1.02	438.86	0.92	438.84	0	438.80	\$	438.76	\$	438.53	\$	438.50
23	0.98	438.86	0.92	438.84	0	438.80	\$	438.75	\$	438.52	\$	438.50
24	0.99	438.86	0.92	438.84	1.06	438.89	\$	438.74	\$	438.52	\$	438.49
25	0.98	438.86	0.89	438.83	1.22	438.94	\$	438.74	\$	438.51	\$	438.49
26	0.99	438.86	0.90	438.83	1.22	438.94	\$	438.72	\$	438.51	\$	438.48
27	0.99	438.86	0.90	438.83	1.16	438.92	\$	438.72	\$	438.50	\$	438.47
28	0.98	438.86	0.78	438.82	1.09	438.90	\$	438.70	\$	438.49	\$	438.47
29	0.99	438.86	0.79	438.82	1	438.87	\$	438.70	\$	438.49	\$	438.47
30	0.99	438.86	0.79	438.82			\$	438.70	\$	438.48	\$	438.47
31	0.99	438.86	0.79	438.82			\$	438.69			\$	438.46
Ten-Daily Mean												
I Ten-Daily	0.64	438.76	0.96	438.86	1.08	438.89	0.97	438.85	0	438.67	0	438.5
II Ten-Daily	1.04	438.88	0.93	438.84	1.01	438.86	0.54	438.82	0	438.58	0	438.5
III Ten-Daily	0.99	438.86	0.86	438.83	0.75	438.87	0	438.73	0	438.51	0	438.48
Monthly												
Min.	0.78	438.47	0.78	438.82	0	438.8	0	438.69	0	438.48	0	438.46
Max.	1.17	438.92	0.98	438.86	1.22	438.94	0.98	438.86	0	438.69	0	438.52
Mean	0.89	438.83	0.92	438.84	0.94	438.88	0.5	438.8	0	438.58	0	438.49

Peak Computed Discharge = 215.54 cumecs on 8/9/2019 Corres. Water Level 445 m
 Lowest Computed Discharge = 0cumecs on 21/2/2020 Corres. Water Level 438.81 m

Note
 “#” – Dry, “\$”- No Flow

Monthly Runoff for the Year (2019-2020)

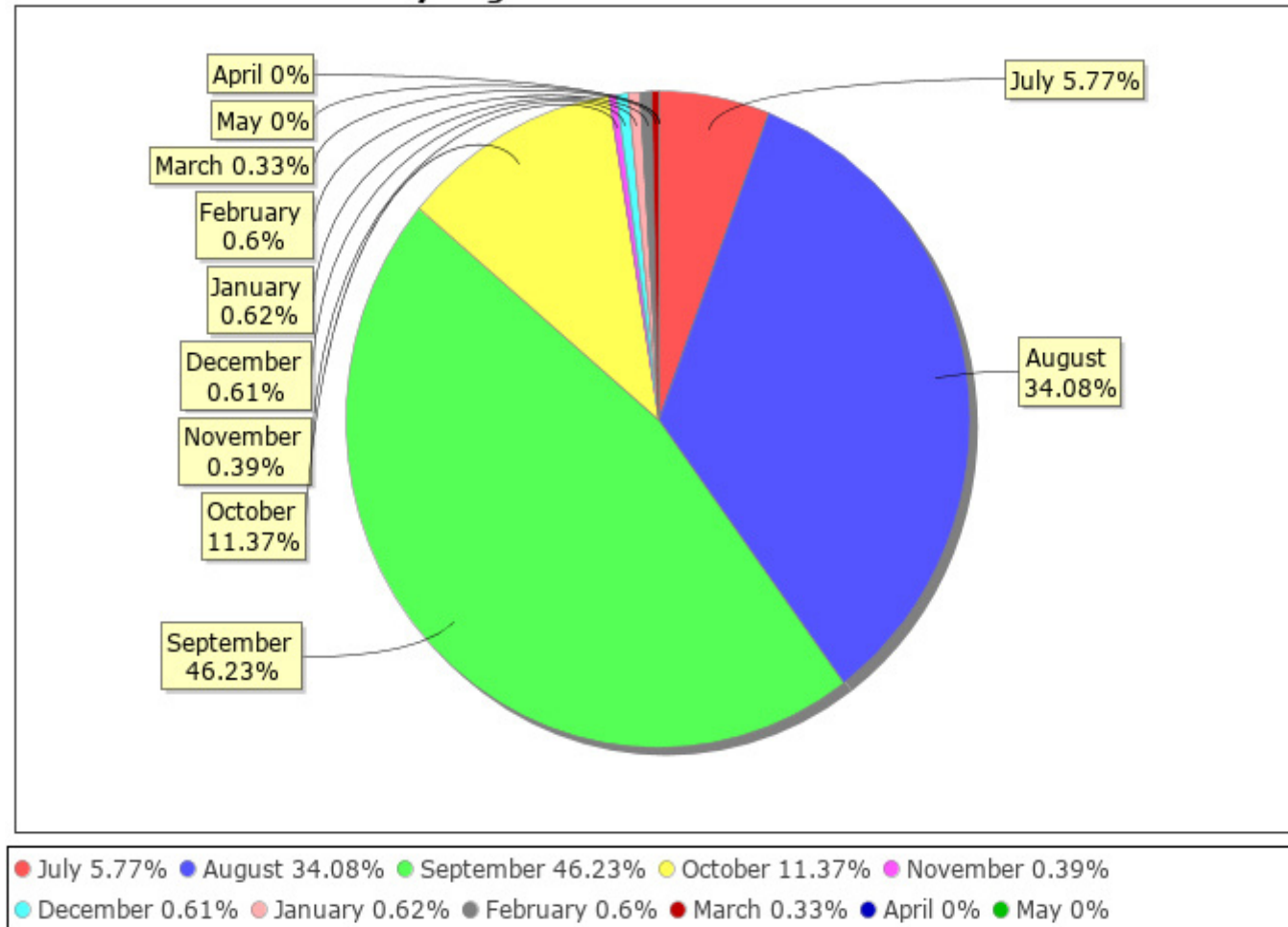
Station Name: Matiyari at Katangatola

Local River: Katangatola

Division: Narmada Division, Bhopal

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



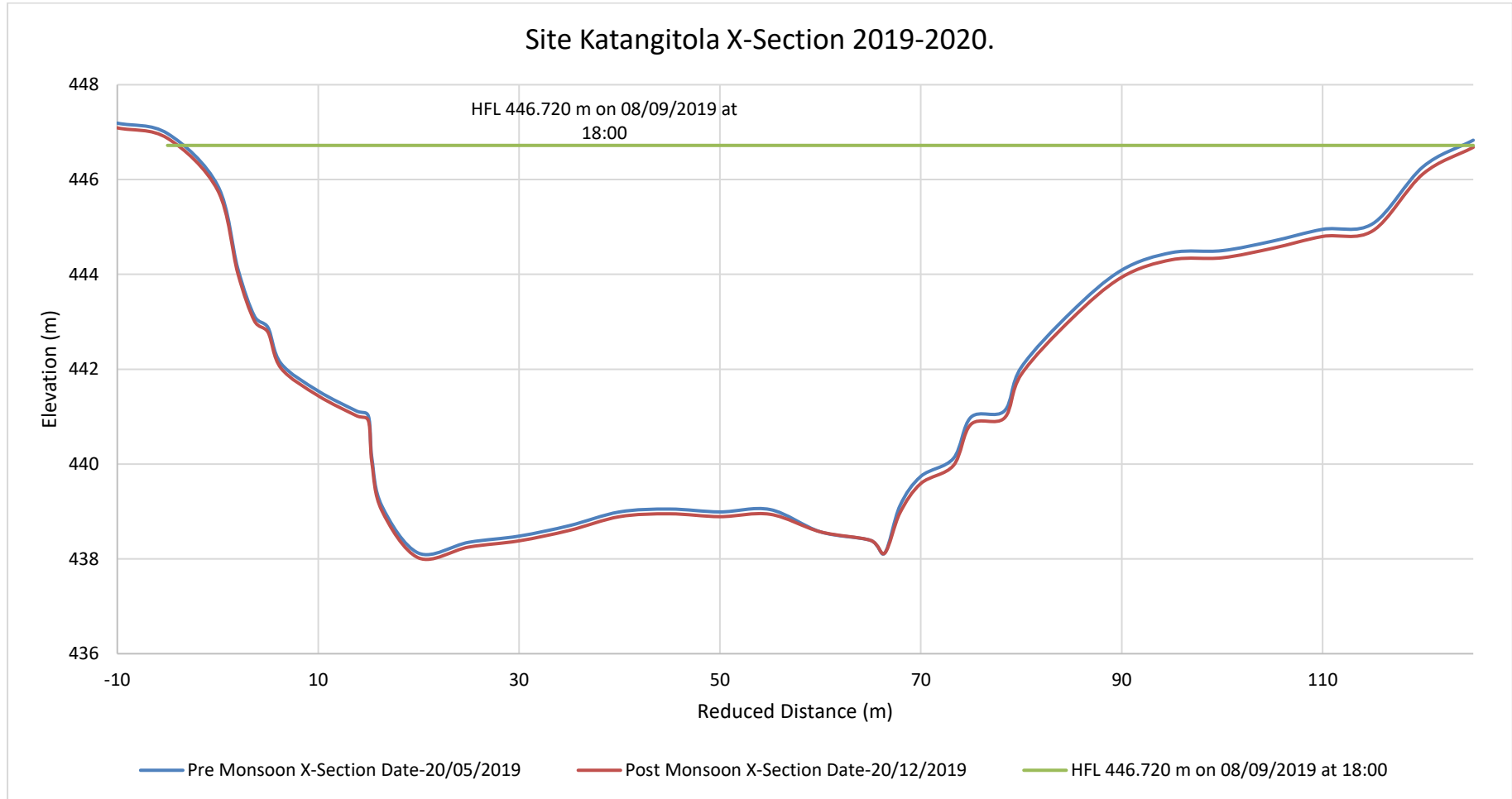
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Matiyari at Katangatola

Division: Narmada Division, Bhopal

Local River: Katangatola

Sub-Division: UNSD, CWC Jabalpur



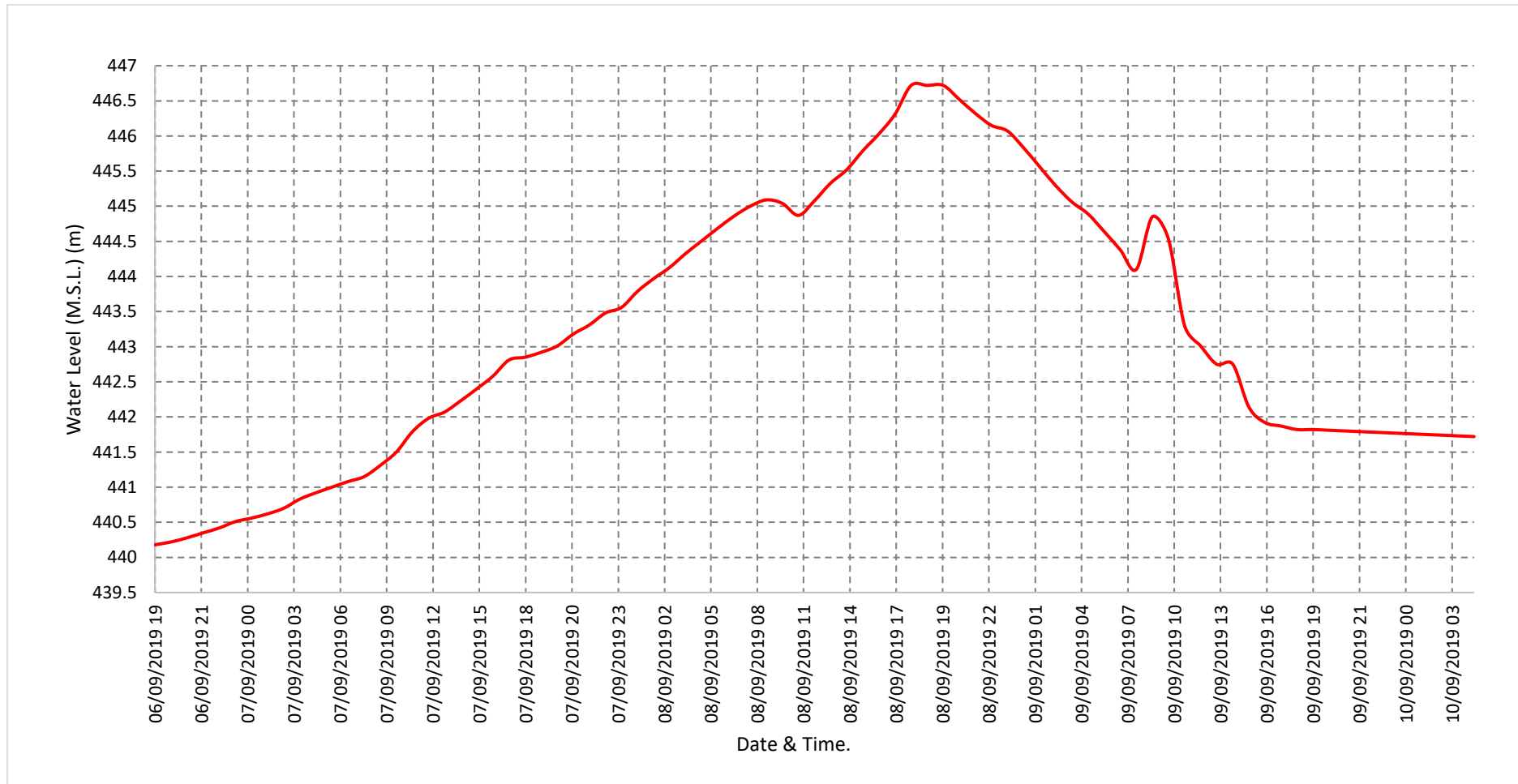
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Matiyari at Katangatola

Division: Narmada Division, Bhopal

Local River: Katangatola

Sub-Division: UNSD, CWC Jabalpur



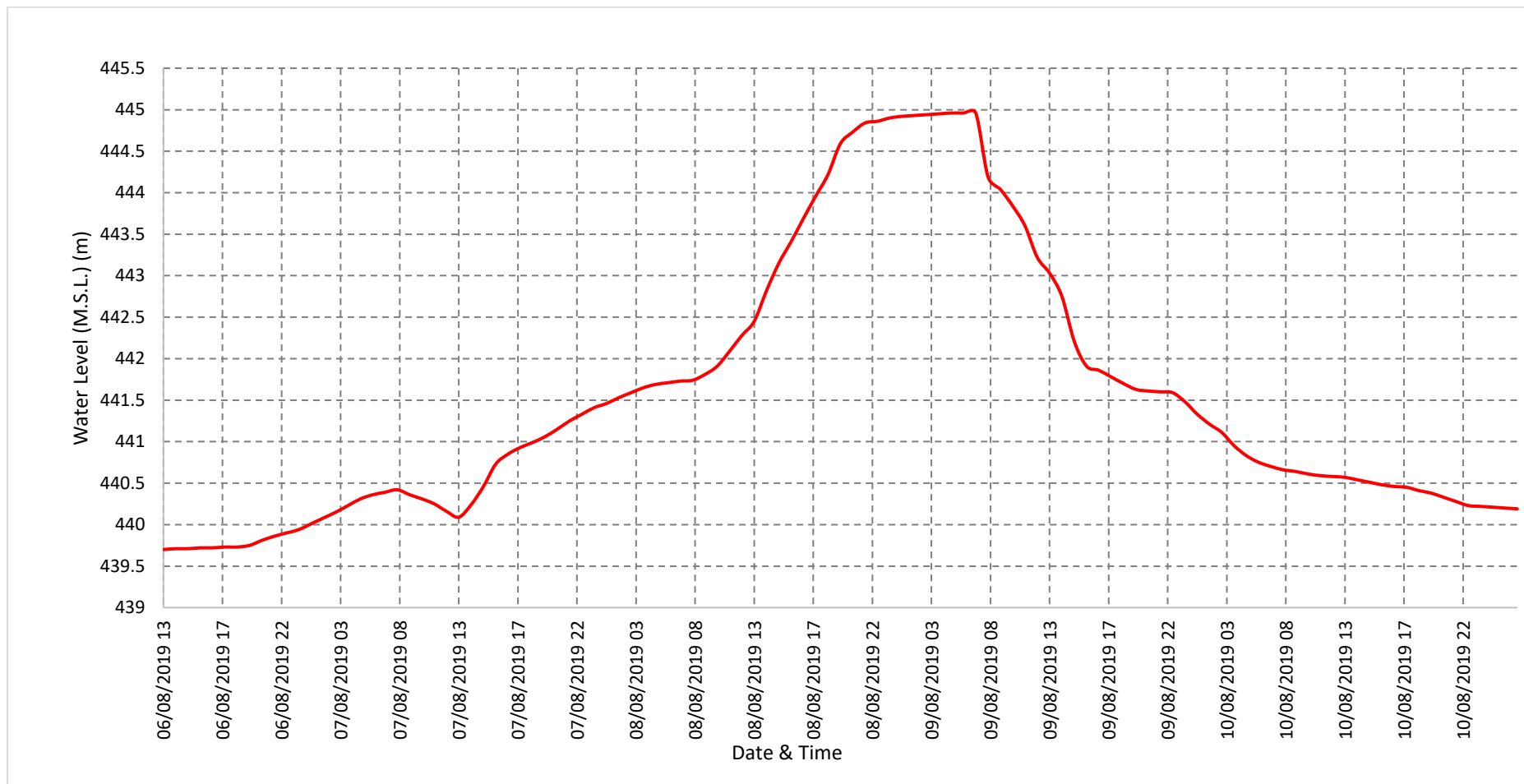
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Matiyari at Katangatola

Division: Narmada Division, Bhopal

Local River: Katangatola

Sub-Division: UNSD, CWC Jabalpur



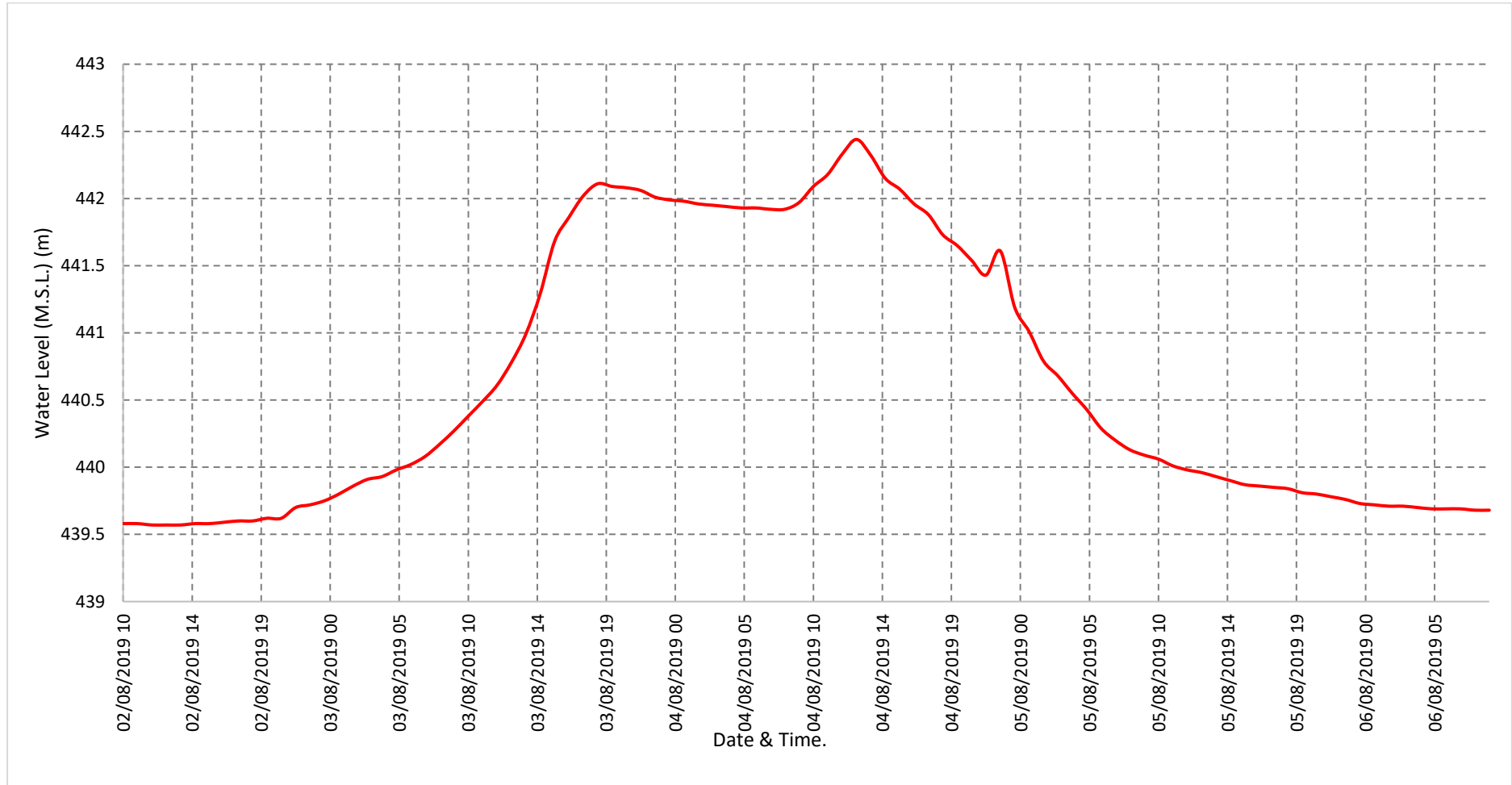
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Matiyari at Katangatola

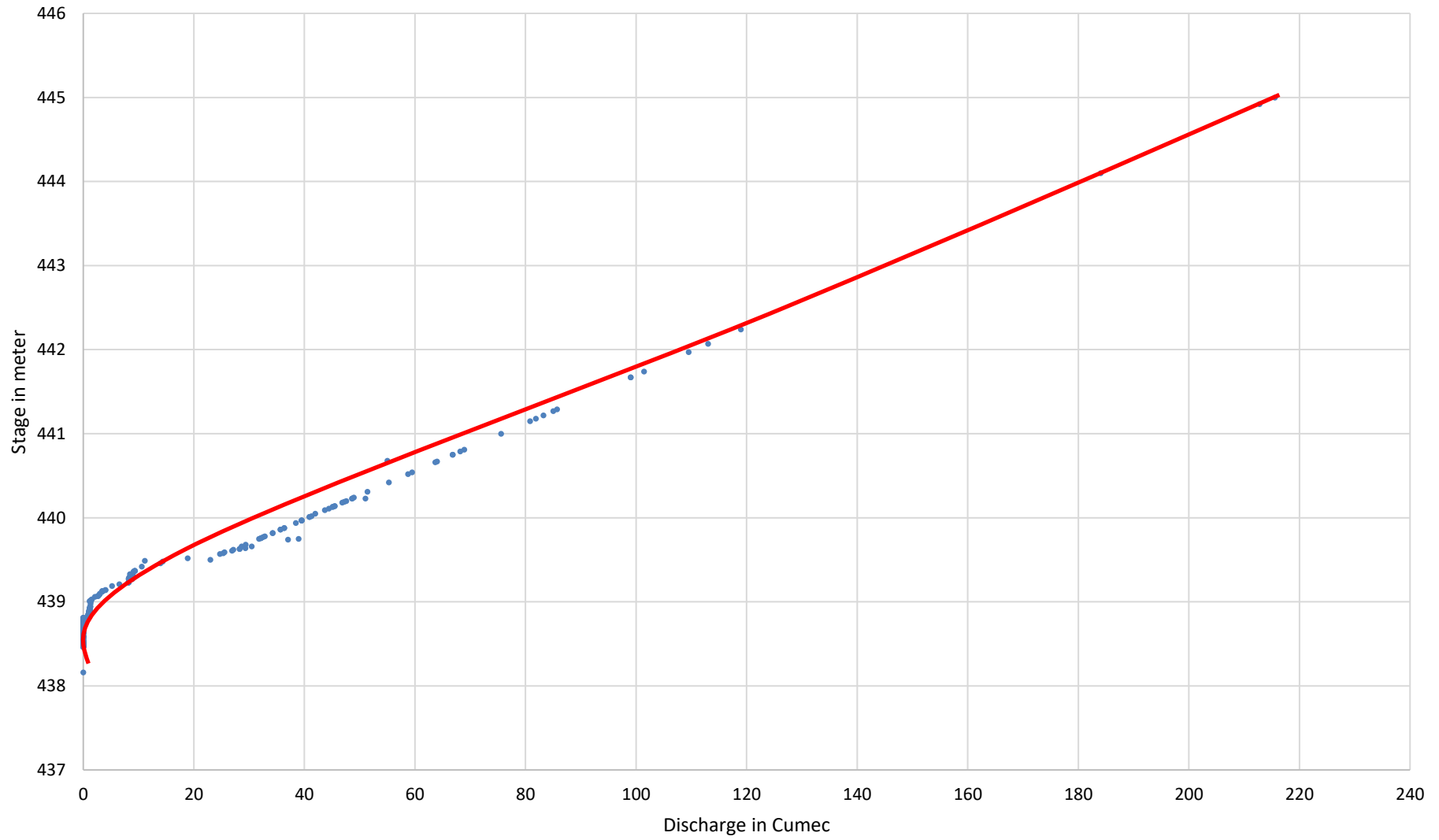
Division: Narmada Division, Bhopal

Local River: Katangatola

Sub-Division: UNSD, CWC Jabalpur



Site Katangatola Stage-Discharge Curve 2019-2020.



4.44 Burhner at Mohgaon.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)					
				Water Year	: 2019 - 2020
Site	:	Mohgaon	Code	:	CW1NAU000390
State	:	Madhya Pradesh	District	:	MANDLA
Basin	:	Narmada	Independent River	:	Narmada
Tributary	:	-	Sub Tributary	:	-
Sub-Sub Tributary	:	-	Local River	:	Burhner
Division	:	Narmada Division(ND), Bhopal	Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	4090.0 Sq. Km.	Bank	:	Right
Latitude	:	22°45'57"	Longitude	:	80°37'24"
Current Zero of Gauge (m)	:	447			
CATEGORY		Opening Date		Closing Date	
Gauge	:	13/01/1977			
Discharge	:	13/01/1977			
Sediment	:	27/08/1992			
Water Quality	:	16/09/1986			
Reduced Level		Opening Date		Closing Date	
447.0		13/01/1977			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1976-1977	1.5	447.100	13/01/1977	0.1	446.905	30/03/1977
1977-1978	20.3	449.565	05/02/1978	0	448.760	19/05/1978
1978-1979	730.5	455.080	05/08/1978	0	448.525	25/05/1979
1979-1980	914	458.030	09/08/1979	0	448.510	01/06/1979
1980-1981	1370	457.390	16/07/1980	0	448.645	01/06/1980
1981-1982	691.8	453.330	02/07/1981	0	449.135	01/05/1982
1982-1983	2120	455.315	16/08/1982	0	449.125	01/06/1982
1983-1984	1020	455.050	08/09/1983	0	449.130	01/06/1983
1984-1985	9000	462.900	18/08/1984	0.1	449.065	01/06/1984
1985-1986	5700	461.850	08/08/1985	0.1	449.295	01/06/1985
1986-1987	3690	460.300	08/07/1986	0.1	449.195	01/06/1986
1987-1988	3022	458.580	15/09/1987	0.04	449.155	26/05/1988
1988-1989	2850	458.650	04/08/1988	0	449.120	08/06/1988
1989-1990	1085	454.100	12/09/1989	0.03	449.255	29/04/1990
1990-1991	4100	459.200	25/06/1990	0.05	449.230	30/05/1991
1991-1992	7184	463.620	23/08/1991	0.08	449.170	15/05/1992
1992-1993	3688	459.700	11/09/1992	0.01	449.380	12/05/1993
1993-1994	1900	456.210	26/09/1993	0.04	449.385	10/06/1993
1994-1995	3950	459.780	20/07/1994	0.17	449.265	05/06/1994
1995-1996	2960	458.400	09/08/1995	0.13	449.265	14/06/1995
1996-1997	902	453.960	05/08/1996	0.1	449.200	30/05/1997
1997-1998	2185	456.650	29/07/1997	0.07	449.205	16/06/1997
1998-1999	1750	456.000	06/07/1998	0.09	449.150	31/05/1999
1999-2000	2600	457.670	23/06/1999	0.08	449.165	09/06/1999
2000-2001	2750	457.080	27/07/2000	0.09	449.210	29/05/2001
2001-2002	2860	458.020	13/07/2001	0.07	449.210	25/05/2002
2002-2003	1725	455.950	18/08/2002	0.01	449.095	25/05/2003
2003-2004	6469	462.820	29/08/2003	0.01	449.040	11/06/2003
2004-2005	11600	467.300	08/08/2004	0.1	449.210	08/06/2004
2005-2006	5400.36	461.600	06/08/2005	0.09	449.400	03/06/2005
2006-2007	6723	462.340	31/07/2006	0.11	449.250	16/05/2007
2007-2008	1084.79	454.500	08/07/2007	0.04	449.160	21/05/2008
2008-2009	939.79	454.080	01/08/2008	0.13	449.095	09/05/2009
2009-2010	364.07	451.920	21/07/2009	0	449.185	25/05/2010
2010-2011	2890.09	456.850	02/09/2010	0	449.175	01/06/2010

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2011-2012	1863.79	456.390	07/09/2011	0.03	449.170	08/06/2011
2012-2013	1180	454.050	09/07/2012	0	449.130	04/06/2012
2013-2014	1508.76	454.930	22/08/2013	0.2	449.195	02/06/2013
2014-2015	2149.16	457.350	06/08/2014	0.24	449.230	01/06/2014
2015-2016	1805.08	455.175	04/08/2015	0.09	449.100	24/05/2016
2016-2017	1551.26	455.050	07/08/2016	0	449.040	22/05/2017
2017-2018	1424.6	456.250	16/07/2017	0	449.150	08/06/2017
2018-2019	1626	455.110	23/07/2018	0	449.130	18/05/2019
2019-2020	2143	457.500	12/09/2019	0	449.120	02/06/2019

Stage Discharge Sheet for Burhner at Mohgaon for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	449.120	18.08	449.700	263.1	451.450	249	451.500	435	452.380	57.5	450.200
2	0	449.120	43.33	450.020	253.3	451.390	150	451.100	304	451.800	55	450.170
3	0	449.120	103.7	450.690	1717	455.310	184.8	451.230	221	451.490	48	450.110
4	0	449.120	118.5	450.870	1668	455.230	957.3	453.600	194.3	451.300	46	450.090
5	0	449.130	278	451.880	438.9	452.230	439.9	452.220	176.4	451.180	43	450.060
6	0	449.130	963.2	453.770	441.8	452.070	347.9	451.950	167	451.100	41	450.040
7	0	449.130	262	451.680	573.6	452.550	207.3	451.310	147.9	450.920	40	450.030
8	0	449.130	151	451.100	1960	455.820	1829	455.500	136	450.840	38	450.010
9	0	449.130	212.7	451.340	1118	454.680	1070	454.170	126.3	450.740	36	449.990
10	0	449.130	270.8	451.410	387.9	452.210	485	452.350	118.9	450.670	35	449.980
11	0	449.150	82.02	450.500	270	451.500	609.6	452.700	112.5	450.610	34.25	449.960
12	0	449.150	80.61	450.520	155	451.130	2143	457.500	105.8	450.550	32.75	449.940
13	0	449.150	50.19	450.120	125.5	450.900	838.1	453.600	101	450.500	30	449.910
14	0	449.150	27	449.960	432	451.880	395.7	452.160	97.92	450.450	29.25	449.900
15	0	449.150	23.51	449.860	1300	454.200	310	451.780	89.83	450.400	28	449.890
16	0	449.160	18.61	449.790	437.3	452.200	240.4	451.500	81.91	450.360	27.25	449.880
17	0	449.170	14.65	449.740	249.3	451.500	304.5	451.800	77.24	450.330	26.5	449.870
18	0	449.190	11.48	449.700	180	451.190	193.5	451.360	63.18	450.300	25.75	449.860
19	0	449.200	11.61	449.700	145.3	450.990	196.3	451.300	62.12	450.290	25	449.850
20	0	449.220	18.45	449.790	164.4	451.160	151	451.100	103	450.800	24	449.840
21	0	449.220	53	450.150	273.7	451.700	140.4	451.060	176.1	451.190	23	449.830
22	0	449.220	23.9	449.870	172.3	451.250	106	450.830	112.5	450.840	22	449.820
23	0	449.230	12.2	449.750	139.8	450.950	93.41	450.730	95.01	450.550	21	449.810
24	14.21	449.630	15.5	449.760	190.2	451.350	127.5	451.030	82.78	450.410	20	449.800
25	14.58	449.640	42.82	450.030	265	451.660	105	450.850	75.75	450.340	19	449.790
26	12.86	449.590	312.9	451.780	273.8	451.720	316	451.930	67.61	450.300	18	449.780
27	10.31	449.560	130.7	450.830	486.4	452.330	337.9	452.040	60	450.280	17	449.770
28	13.85	449.630	240	451.360	421.7	452.170	675.3	453.000	53.17	450.260	15.5	449.750
29	13.68	449.630	279	451.700	186.7	451.280	950	453.250	48.97	450.230	15.5	449.750
30	11	449.570	274	451.520	705	452.470	750.5	453.230	104	450.490	15	449.740
31			330.8	451.990	411.4	452.220			68.91	450.300		
Ten-Daily Mean												
I Ten-Daily	0	449.130	242.13	451.250	882.16	453.290	592.02	452.490	202.68	451.240	43.95	450.070
II Ten-Daily	0	449.170	33.81	449.970	345.88	451.670	538.21	452.480	89.45	450.460	28.27	449.890
III Ten-Daily	9.05	449.490	155.89	450.790	320.55	451.740	360.2	451.800	85.89	450.470	18.6	449.780
Monthly												
Min.	0	449.120	11.48	449.700	125.5	450.900	93.41	450.730	48.97	450.230	15	449.740
Max.	14.58	449.640	963.2	453.770	1960	455.820	2143	457.500	435	452.380	57.5	450.200
Mean	3.02	449.260	143.95	450.670	516.2	452.230	496.81	452.260	126.01	450.720	30.27	449.910

Annual Runoff in MCM :3617.78

Annual Runoff in mm :884.54

Peak Observed Discharge = 2143 cumecs on 12/9/2019 Corres. Water Level 457.5 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019 Corres. Water Level 449.120 m

Stage Discharge Sheet for Burhner at Mohgaon for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	15	449.740	9.9	449.640	9.5	449.640	9.5	449.610	10	449.590	2.25	449.430
2	14.8	449.730	11	449.660	9	449.630	8.85	449.600	10	449.590	2	449.420
3	14.8	449.730	13	449.700	7.54	449.600	8.3	449.590	9.5	449.580	1.75	449.410
4	14.6	449.720	31	450.050	7	449.590	8.3	449.590	9	449.570	1.5	449.400
5	14.6	449.720	28	450.000	8	449.610	7.3	449.570	8.5	449.560	1.49	449.400
6	14.6	449.720	22.52	449.880	12.5	449.700	6	449.550	8	449.550	2.25	449.430
7	14.25	449.710	20	449.790	24	449.930	5	449.530	7.5	449.540	1.75	449.410
8	14.25	449.710	18	449.750	17.5	449.830	6.5	449.520	7.5	449.540	1.75	449.410
9	14.25	449.710	17	449.730	14.5	449.770	6.07	449.510	7	449.530	1.5	449.400
10	14	449.700	16.5	449.720	11.18	449.700	6	449.510	6.5	449.520	1.25	449.390
11	14	449.700	28	450.000	11	449.700	17	449.730	6	449.510	1.12	449.380
12	14	449.700	21	449.900	9.5	449.670	13	449.650	5.5	449.500	1.1	449.380
13	14	449.700	17.11	449.820	8.5	449.650	28	450.240	5.5	449.500	1	449.370
14	14	449.700	14.5	449.760	7.5	449.630	55	450.270	5	449.490	1.1	449.380
15	14	449.700	13	449.730	6.5	449.610	55	450.270	5	449.490	1.25	449.390
16	14	449.700	11.5	449.700	8	449.600	46.41	450.200	4.5	449.480	1.5	449.400
17	14.6	449.720	10.5	449.680	7.52	449.590	24	449.930	4	449.470	1.5	449.400
18	14.8	449.730	10.5	449.680	7	449.580	17	449.790	3.5	449.460	1.42	449.400
19	14.8	449.730	11.5	449.670	6.5	449.570	12.5	449.700	3	449.450	1.4	449.400
20	14.6	449.720	11.25	449.670	6	449.560	11	449.670	2.5	449.440	2.25	449.430
21	14.5	449.710	11	449.670	5.5	449.550	9	449.630	2.25	449.430	2.25	449.430
22	13.5	449.690	10.5	449.680	5	449.540	9.5	449.600	2.25	449.430	1.75	449.410
23	12	449.680	10	449.670	6	449.540	8.93	449.590	2.25	449.430	1.75	449.410
24	12	449.680	10	449.670	6.22	449.540	8.9	449.590	2	449.420	1.4	449.400
25	11.5	449.670	9.5	449.660	8.5	449.590	13	449.650	2	449.420	1.25	449.390
26	11	449.660	11	449.670	29	450.000	12.5	449.640	1.75	449.410	0.97	449.380
27	10.5	449.650	10.9	449.670	18.5	449.790	12.5	449.640	1.5	449.400	0.92	449.370
28	10.45	449.650	9	449.630	13.5	449.690	12	449.630	1.5	449.400	0.92	449.370
29	10	449.640	9	449.630	11	449.640	11.5	449.620	1.75	449.410	0.92	449.370
30	9.93	449.640	9	449.630			11	449.610	2	449.420	0.87	449.360
31	9.9	449.640	9.5	449.640			10.5	449.600			0.88	449.360
Ten-Daily Mean												
I Ten-Daily	14.52	449.720	18.69	449.790	12.07	449.700	7.18	449.560	8.35	449.560	1.75	449.410
II Ten-Daily	14.28	449.710	14.89	449.760	7.8	449.620	27.89	449.950	4.45	449.480	1.36	449.390
III Ten-Daily	11.39	449.660	9.95	449.660	11.47	449.650	10.85	449.620	1.93	449.420	1.26	449.390
Monthly												
Min.	9.9	449.640	9	449.630	5	449.540	5	449.510	1.5	449.400	0.87	449.360
Max.	15	449.740	31	450.050	29	450.000	55	450.270	10	449.590	2.25	449.430
Mean	13.39	449.700	14.51	449.740	10.45	449.660	15.31	449.710	4.91	449.480	1.46	449.400

Peak Computed Discharge = 1300 cumecs on 15/8/2019 Corres. Water Level 454.2 m

Lowest Computed Discharge = 0cumecs on 2/6/2019 Corres. Water Level 449.12 m

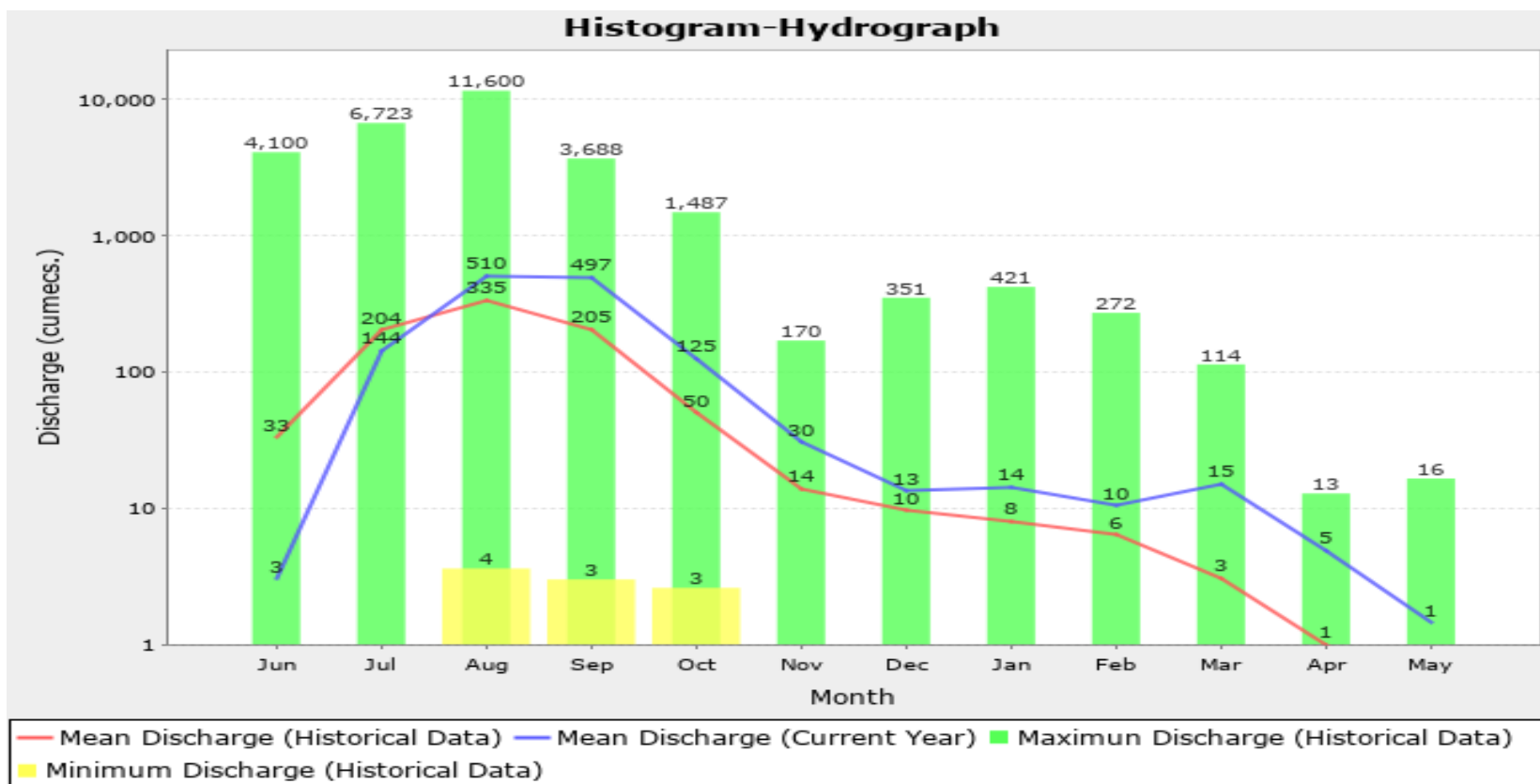
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1977-2019)

Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur



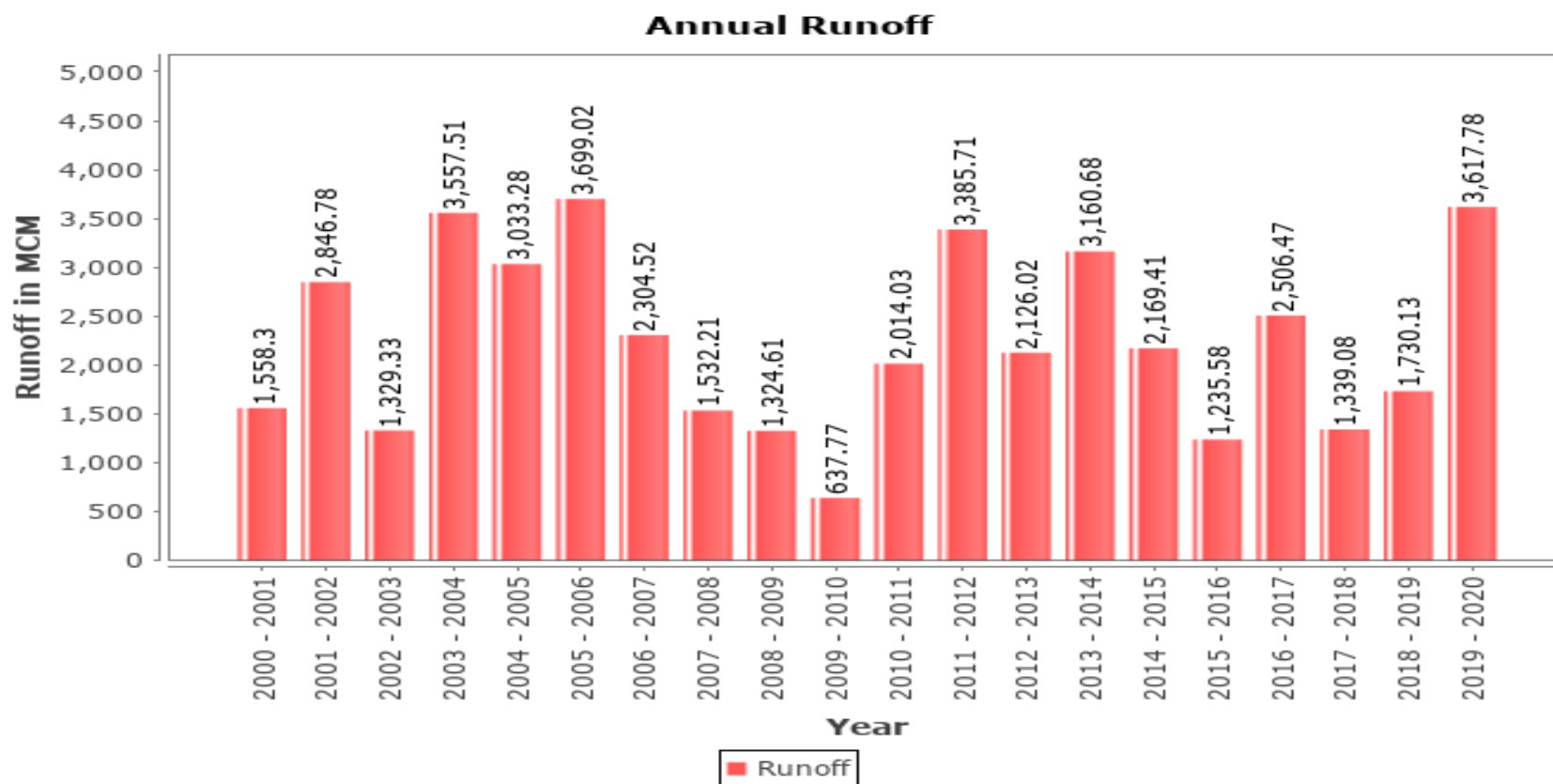
Annual Runoff Values for the period (2000– 2020)

Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur



Monthly Average Runoff based on period (1977– 2020)

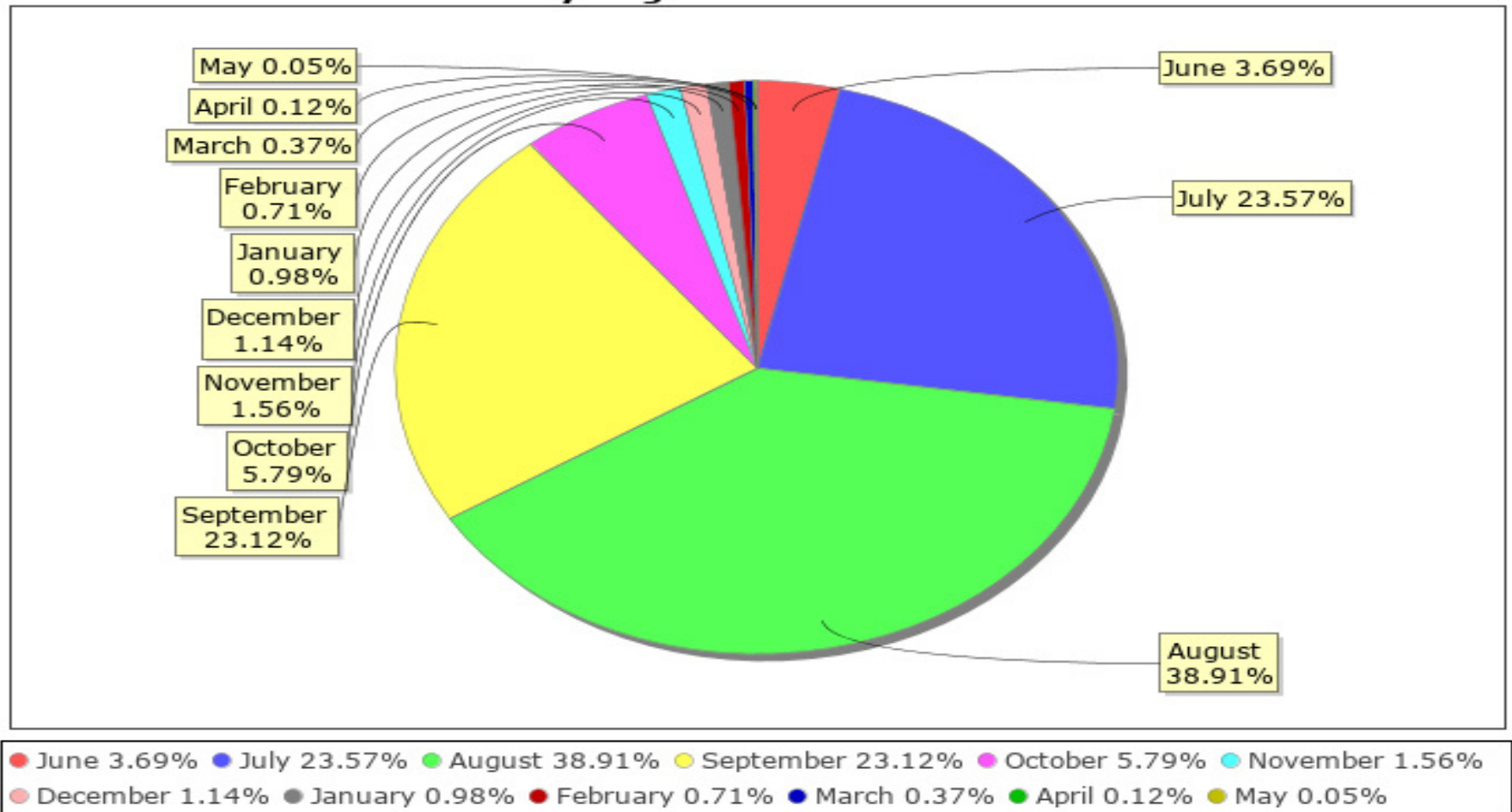
Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Historical Data



Monthly Runoff for the Year (2019-20)

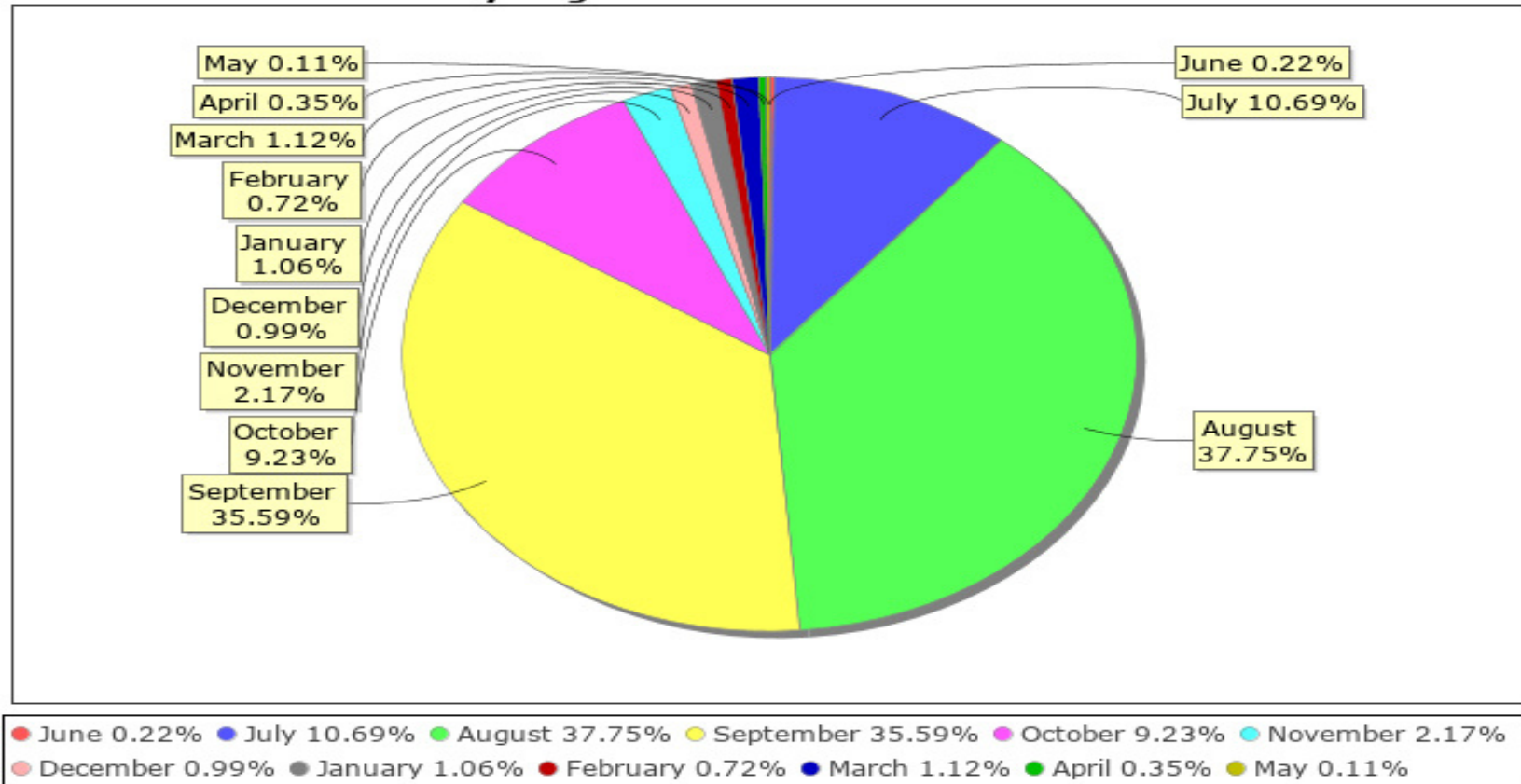
Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



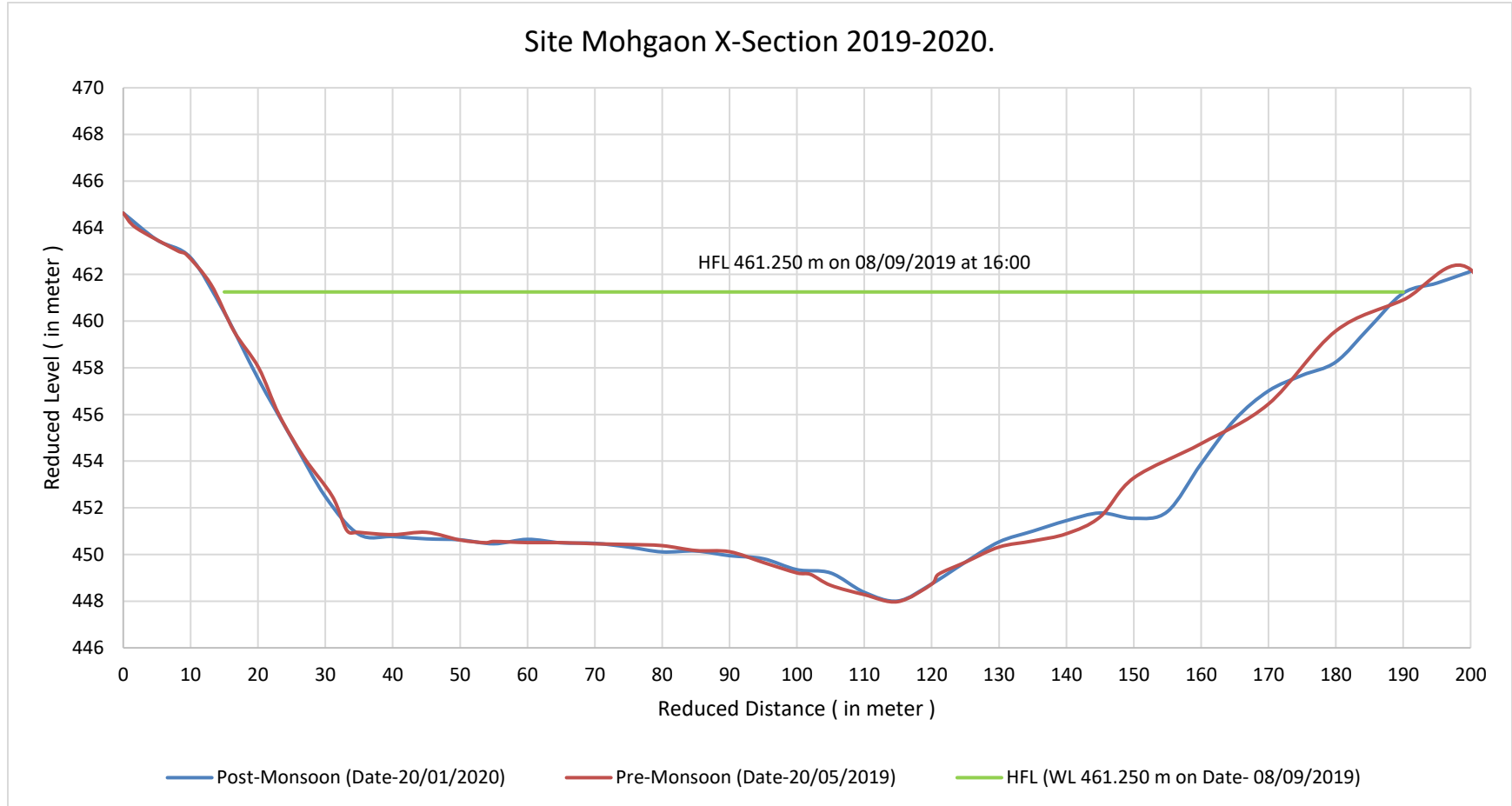
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur



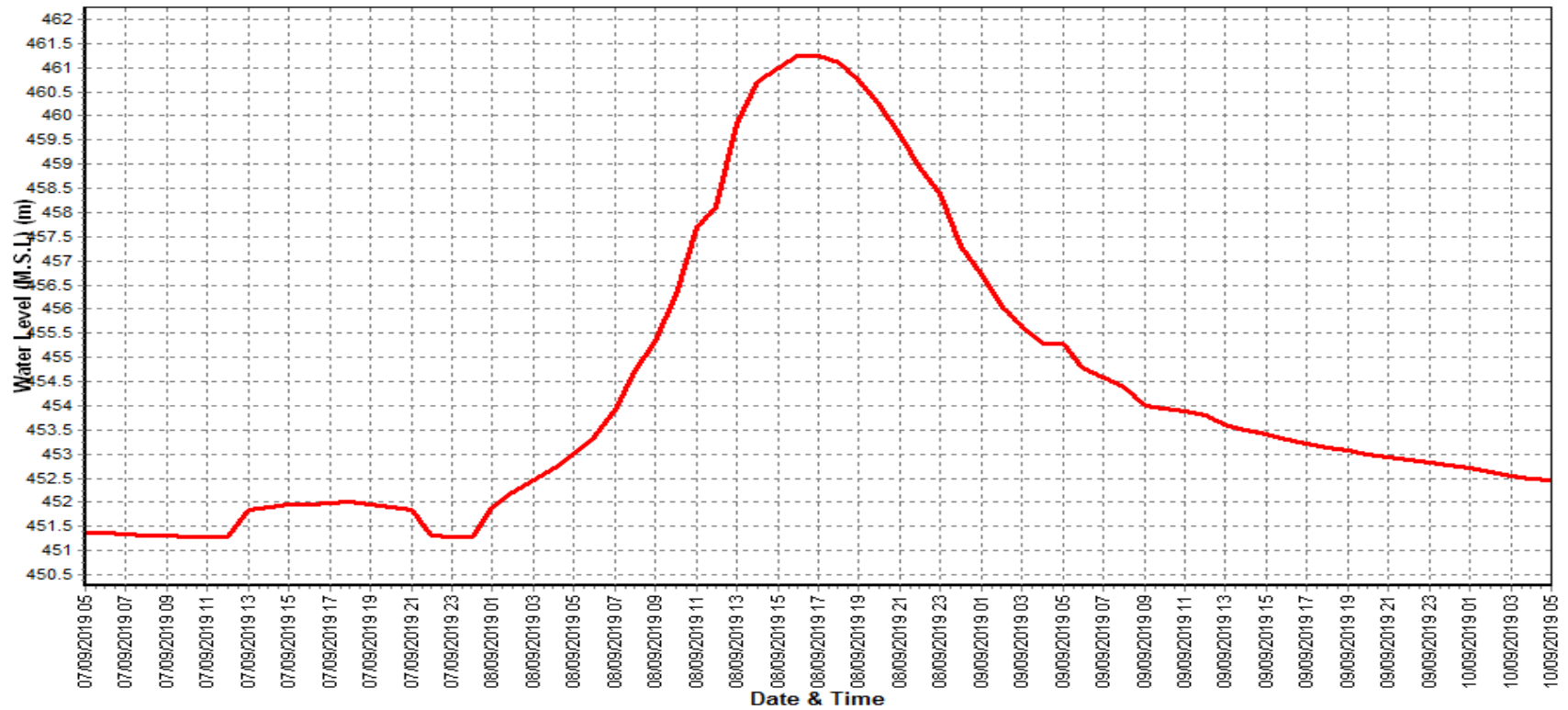
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur



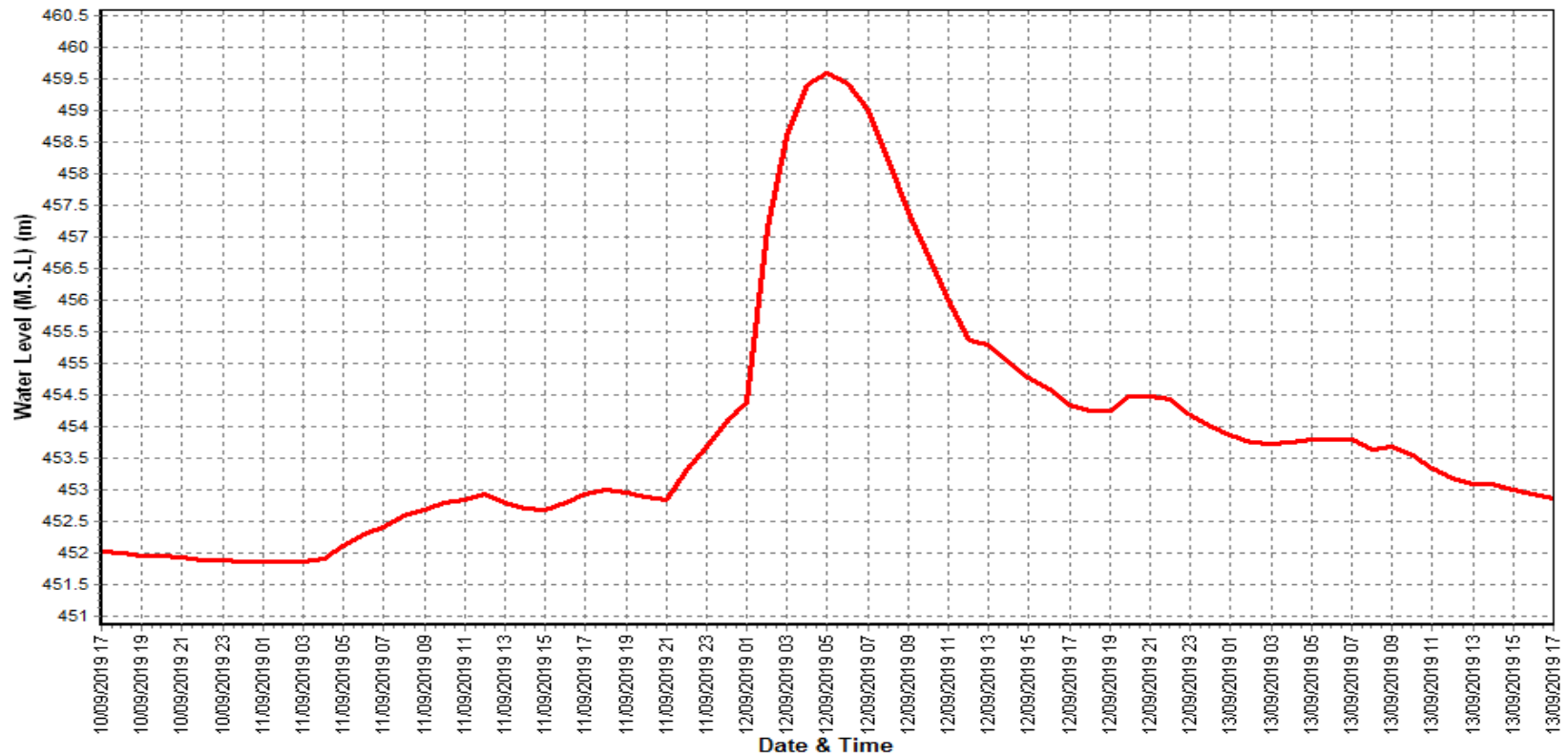
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Burhner at Mohgaon

Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur



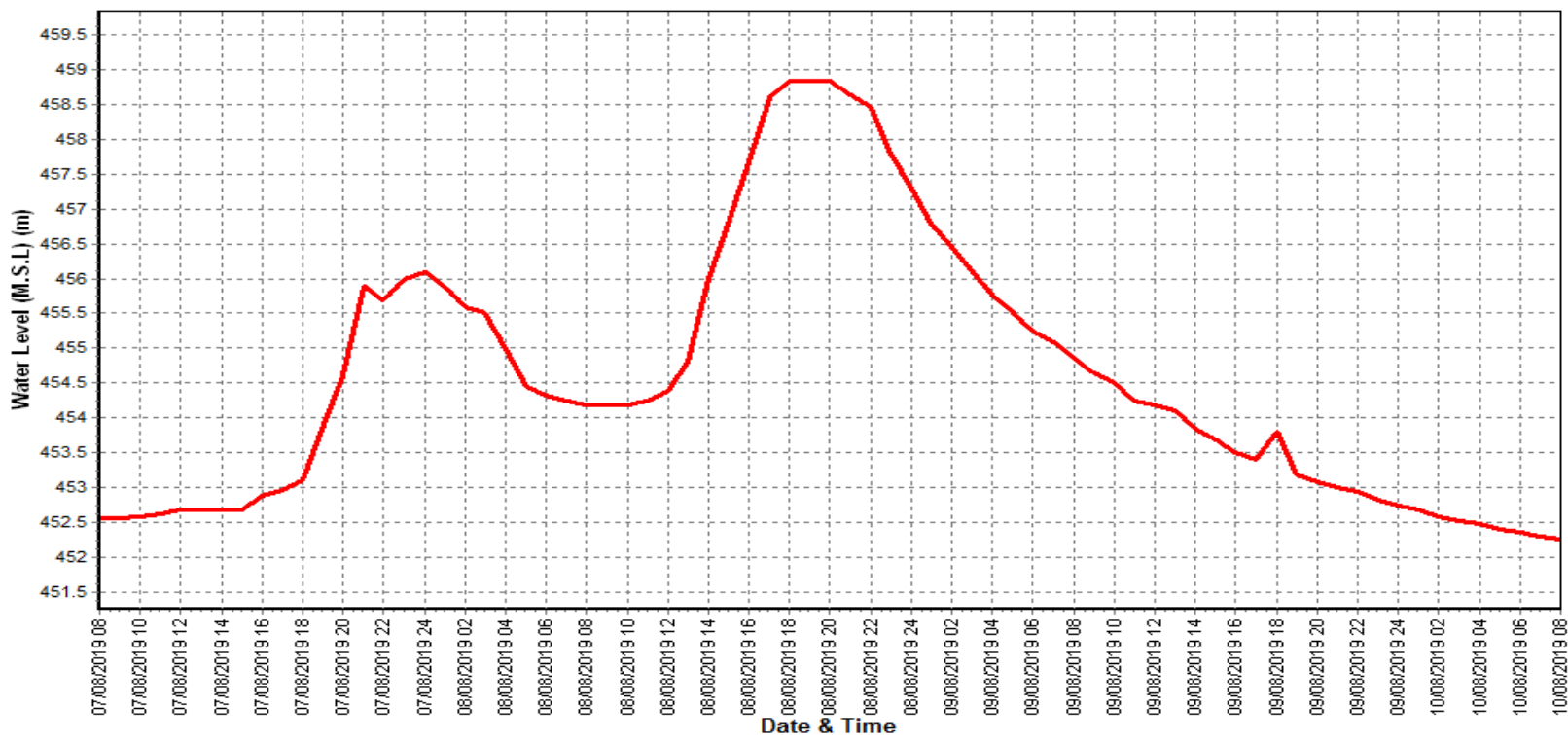
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Burhner at Mohgaon

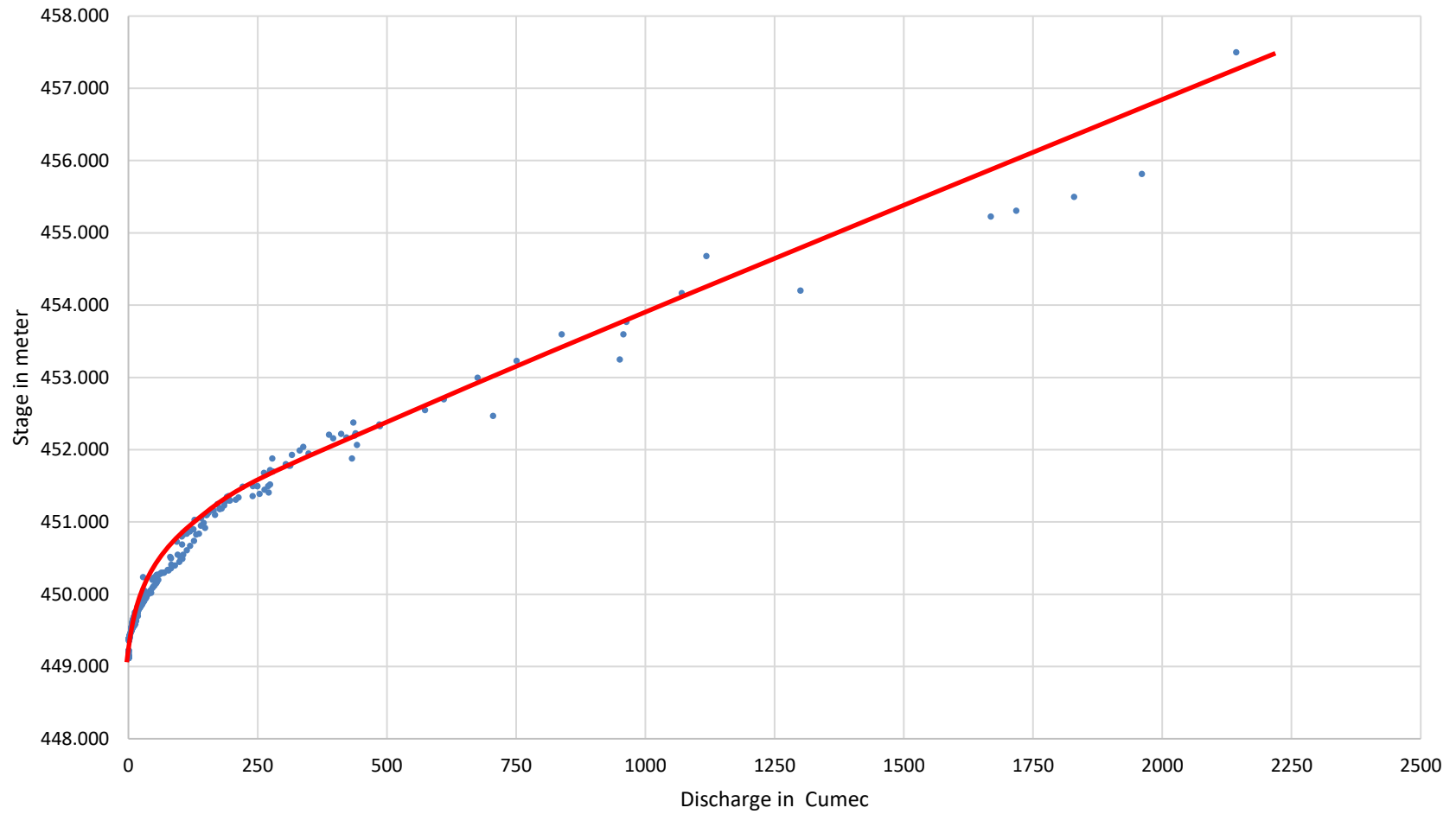
Division : Narmada Division, Bhopal

Local River : Burhner

Sub-Division : UNSD, CWC Jabalpur



Site Mohgaon Stage-Discharge Curve 2019-2020



4.45 Narmada at Manot.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	Manot		Code	:	CW1NAU000378	
State	:	Madhya Pradesh		District	:	MANDLA	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	-		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Narmada	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur	
Drainage Area	:	4467.0 Sq. Km.		Bank	:	Right	
Latitude	:	22°44'09"		Longitude	:	80°30'47"	
Current Zero of Gauge (m)	:	442					
CATEGORY		Opening Date		Closing Date			
Gauge	:	16/12/1976					
Discharge	:	16/12/1976					
Sediment	:	09/11/1979					
Water Quality	:	01/01/1980					
Reduced Level		Opening Date		Closing Date			
442.0		16/12/1976					

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1976-1977	13	442.060	13/05/1977	0.5	442.790	07/05/1977
1977-1978	2125	452.500	07/08/1977	0.2	442.795	03/06/1977
1978-1979	960	446.025	06/08/1978	0.4	442.680	09/05/1979
1979-1980	2380	450.690	09/08/1979	0	442.365	29/05/1980
1980-1981	3277.1	452.115	09/09/1980	0	442.725	13/06/1980
1981-1982	1687.7	447.610	28/07/1981	0.1	442.745	15/06/1981
1982-1983	1242	448.675	16/08/1982	0.1	442.770	27/05/1983
1983-1984	2423	452.700	08/09/1983	0.1	442.790	15/06/1983
1984-1985	5660	459.650	18/08/1984	0.2	442.800	04/06/1984
1985-1986	4850	455.400	08/08/1985	0.2	443.000	11/06/1985
1986-1987	5762	458.000	08/07/1986	0.2	442.860	10/06/1986
1987-1988	6180	457.475	15/09/1987	0.25	442.755	31/05/1988
1988-1989	4130	454.100	04/08/1988	0.19	442.760	17/06/1988
1989-1990	950	446.300	14/08/1989	0.15	442.670	11/06/1989
1990-1991	2300	451.880	25/06/1990	0.6	442.900	31/05/1991
1991-1992	6520	459.300	23/08/1991	0.26	442.995	07/06/1991
1992-1993	3340	453.200	11/09/1992	0.04	442.975	30/05/1993
1993-1994	2980	452.200	17/08/1993	0.02	442.950	13/06/1993
1994-1995	4410	455.550	21/07/1994	0.2	443.200	14/06/1994
1995-1996	3300	453.150	09/08/1995	0.4	443.015	16/06/1995
1996-1997	1650	448.940	27/07/1996	0.34	442.975	04/06/1996
1997-1998	3160	451.600	01/08/1997	0.42	442.975	15/06/1997
1998-1999	2010	449.920	06/07/1998	0.88	443.045	21/05/1999
1999-2000	4390	452.500	18/09/1999	0.84	443.080	08/05/2000
2000-2001	3000	451.620	20/07/2000	0.6	443.020	24/05/2001
2001-2002	3600	452.250	13/07/2001	0.3	442.930	21/05/2002
2002-2003	1940	449.400	09/09/2002	0.1	442.770	29/05/2003
2003-2004	4980	455.900	29/08/2003	0.02	442.490	15/06/2003
2004-2005	5760	458.800	08/08/2004	0.6	442.870	29/05/2005
2005-2006	4485.86	454.775	06/08/2005	0.01	442.850	12/06/2005
2006-2007	6806.05	453.310	31/07/2006	0.09	442.840	31/05/2007
2007-2008	970.67	446.805	06/09/2007	0.01	442.830	02/06/2007
2008-2009	1392.6	447.600	11/08/2008	0.05	442.800	06/06/2008
2009-2010	1068.8	446.850	09/09/2009	0	442.550	30/05/2010
2010-2011	2435.45	449.400	26/07/2010	0	442.515	16/06/2010

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2011-2012	2439.3	451.830	07/09/2011	0	443.035	29/04/2012
2012-2013	1311.72	448.500	11/08/2012	0.29	442.870	14/06/2012
2013-2014	1572.52	449.200	09/08/2013	0.52	442.855	25/05/2014
2014-2015	3474.62	453.190	06/08/2014	0.27	442.780	15/06/2014
2015-2016	1178.44	448.990	04/08/2015	0.01	442.610	27/05/2016
2016-2017	950	448.050	07/08/2016	0	442.660	29/05/2017
2017-2018	316.9	446.050	09/08/2017	0	442.630	17/06/2017
2018-2019	676.9	448.740	08/09/2018	0.15	442.650	11/05/2019
2019-2020	1914	451.830	12/09/2019	0	442.580	01/06/2019

Stage Discharge Sheet for Narmada at Manot for the period 2019-20

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0	442.580	17.37	443.450	236.3	444.840	370	445.140	751.8	446.430	67	443.880
2	0	442.580	35.7	443.890	148.9	444.470	330	444.830	350	445.410	66.3	443.860
3	0	442.580	167.2	444.310	317.5	445.250	369.6	445.120	313	445.060	65.7	443.840
4	0	442.570	189.2	444.530	800	448.650	328.3	445.180	281.2	444.840	65.4	443.810
5	0	442.570	301.6	445.040	603.4	445.980	383.4	445.220	251	444.710	64.8	443.790
6	0	442.570	332.9	445.090	530.4	445.680	272.2	444.880	200	444.550	64.2	443.770
7	0	442.560	315	445.230	306.8	445.030	229.1	444.570	185.5	444.470	63.6	443.750
8	0	442.560	197.4	444.600	674.1	447.570	620	446.920	155	444.370	63.3	443.740
9	0	442.560	310.2	445.100	1491.1	449.780	736	448.120	134.4	444.300	63	443.730
10	0	442.560	350.8	445.640	577.1	445.830	550	445.630	124.3	444.250	62.7	443.720
11	0	442.560	192	444.560	300	445.000	796.6	446.860	124.3	444.210	62.7	443.720
12	0	442.560	109.1	444.190	210	444.700	1914	451.830	106.2	444.170	62	443.700
13	0	442.560	97.32	444.010	159.6	444.450	1253.4	448.510	104	444.150	61.7	443.190
14	0	442.560	87.5	443.850	155.9	444.430	611.1	446.020	92.37	444.090	61.4	443.680
15	0	442.560	85.17	443.800	1600	450.410	350	445.390	83.44	444.040	61.1	443.670
16	0	442.560	73.88	443.730	665.9	446.200	307.9	445.040	77.19	444.000	60.8	443.660
17	0	442.560	23.07	443.560	388.8	445.220	346.4	445.310	72.38	443.970	60.5	443.650
18	0	442.560	21.94	443.510	280	444.820	284.1	444.840	70.14	443.940	60.2	443.640
19	0	442.560	21.04	443.570	223.4	444.560	252.3	444.710	68.94	443.920	59.6	443.620
20	0	442.600	41.72	443.710	231.7	444.610	199.6	444.500	160	444.340	59	443.600
21	0	442.680	50	443.810	362.4	445.470	179.1	444.440	192.6	444.520	58.7	443.590
22	0	442.680	35.74	443.690	514.7	445.500	197	444.440	187.3	444.500	58.4	443.580
23	0	442.850	22.76	443.500	461.2	445.270	172.3	444.410	112.6	444.190	58.4	443.580
24	2.14	442.820	17.62	443.470	701.1	446.260	143.6	444.310	97.29	444.120	58	443.570
25	2.04	442.800	43.71	443.740	720.4	446.560	170	444.400	87.35	444.060	57.6	443.560
26	2.05	442.800	225.3	444.770	524.4	445.620	246.88	444.690	78.81	444.010	57.2	443.550
27	2.15	442.820	147.4	444.450	499	445.950	863	446.530	75	443.990	50	443.510
28	5.44	443.020	122.5	444.250	531.5	445.680	723.1	446.370	71.82	443.970	49	443.490
29	37.21	443.630	123.7	444.270	391	445.190	1400	449.310	70.96	443.950	48.5	443.480
30	37	443.620	189.8	444.600	372.5	445.140	1127.4	447.910	68.81	443.920	48	443.470
31			316.5	445.420	332.9	445.180			67.91	443.900		
Ten-Daily Mean												
I Ten-Daily	0	442.570	221.74	444.690	568.56	446.310	418.86	445.560	274.62	444.840	64.6	443.790
II Ten-Daily	0	442.560	75.27	443.850	421.53	445.440	631.54	446.300	95.9	444.080	60.9	443.610
III Ten-Daily	8.8	442.970	117.73	444.180	491.92	445.620	522.24	445.680	100.95	444.100	54.38	443.540
Monthly												
Min.	0	442.560	17.37	443.450	148.9	444.430	143.6	444.310	67.91	443.900	48	443.190
Max.	37.21	443.630	350.8	445.640	1600	450.410	1914	451.830	751.8	446.430	67	443.880
Mean	2.93	442.700	138.25	444.240	494	445.790	524.21	445.850	157.16	444.340	59.96	443.650

Annual Runoff in MCM 3830.16

Annual Runoff in mm : 857.43

Peak Observed Discharge = 1914 cumecs on 12/9/2019 Corres. Water Level 451.83 m

Lowest Observed Discharge = 0 cumecs on 01/6/2019 Corres. Water Level 442.58 m

Stage Discharge Sheet for Narmada at Manot for the period 2019-20

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	48	443.470	14.08	443.400	9.13	443.310	9.4	443.310	7.62	443.230	5.8	443.130
2	48	443.470	14.55	443.410	9.05	443.310	8.75	443.290	7.3	443.220	7.24	443.160
3	19.44	443.460	15.03	443.420	8.96	443.300	8.68	443.280	7	443.210	7.45	443.210
4	19.31	443.460	16.2	443.450	8.92	443.300	8.58	443.270	7	443.200	7.61	443.230
5	19.2	443.460	17.9	443.500	9.03	443.310	8.54	443.270	7	443.200	7.59	443.230
6	18.78	443.450	19.71	443.550	9.31	443.310	8.91	443.300	6.85	443.190	6.48	443.170
7	18.23	443.440	18.94	443.530	9.2	443.310	9.76	443.320	6.75	443.180	6.2	443.140
8	17.8	443.440	17.4	443.490	9.74	443.320	9.95	443.330	6.75	443.180	5.76	443.120
9	16.86	443.430	16.64	443.470	10	443.330	9.75	443.320	6.75	443.180	5.7	443.120
10	16.52	443.430	15.81	443.450	10.27	443.340	9.97	443.330	6.75	443.180	5.4	443.110
11	15.74	443.420	15.8	443.450	10.03	443.330	11.51	443.370	6.6	443.170	3.99	443.100
12	15.5	443.420	16.3	443.460	9.83	443.320	8.74	443.290	6.6	443.170	6.46	443.170
13	15.46	443.420	16.69	443.470	9.75	443.320	18.95	443.520	6.6	443.170	6.37	443.160
14	18	443.440	15.76	443.450	8.95	443.300	65.5	444.800	6.45	443.160	5.69	443.130
15	20	443.520	14.51	443.430	8.79	443.290	80.5	444.150	6.45	443.160	5.2	443.100
16	22.38	443.630	13.48	443.410	8.65	443.270	69.94	443.950	6.45	443.160	5.07	443.090
17	24.55	443.680	12.98	443.400	8.51	443.260	66.75	443.890	6.25	443.150	5.05	443.090
18	22.78	443.640	12.55	443.390	8.35	443.250	58.74	443.770	6.25	443.150	8.66	443.280
19	20.29	443.570	12	443.380	8.11	443.240	25.51	443.620	6.05	443.140	8.49	443.260
20	19.26	443.530	11.49	443.370	7.83	443.230	19.22	443.530	6.05	443.140	8.47	443.260
21	19.16	443.530	11.39	443.370	7.65	443.220	16.22	443.470	6.05	443.140	7.58	443.220
22	18.5	443.510	11.32	443.370	7.46	443.210	14	443.440	5.7	443.130	6.86	443.190
23	17.99	443.490	11.37	443.370	7.46	443.210	16.72	443.410	5.65	443.110	6.47	443.150
24	17.6	443.470	11.88	443.380	7.47	443.210	12.08	443.380	6.05	443.140	6.15	443.140
25	17.3	443.460	11.22	443.360	7.48	443.210	11	443.370	6	443.120	5.74	443.130
26	17.01	443.450	10.3	443.340	7.45	443.210	11	443.370	5.6	443.120	5.67	443.120
27	16.45	443.440	9.94	443.330	7.61	443.220	9.92	443.310	5.6	443.120	5.18	443.100
28	15.74	443.430	9.93	443.330	8.78	443.290	9.34	443.290	5.6	443.120	5.16	443.100
29	15.4	443.420	10.29	443.340	9.81	443.320	8.77	443.270	5.6	443.120	4.96	443.080
30	14.81	443.410	9.9	443.330			8.5	443.260	5.6	443.120	4.83	443.070
31	14.28	443.400	9.37	443.310			8.2	443.250			4.3	443.050
Ten-Daily Mean												
I Ten-Daily	24.21	443.450	16.63	443.470	9.36	443.310	9.23	443.300	6.98	443.200	6.52	443.160
II Ten-Daily	19.4	443.530	14.16	443.420	8.88	443.280	42.54	443.790	6.38	443.160	6.34	443.160
III Ten-Daily	16.75	443.460	10.63	443.350	7.91	443.230	11.43	443.350	5.75	443.120	5.72	443.120
Monthly												
Min.	14.28	443.400	9.37	443.310	7.45	443.210	8.2	443.250	5.6	443.110	3.99	443.050
Max.	48	443.680	19.71	443.550	10.27	443.340	80.5	444.800	7.62	443.230	8.66	443.280
Mean	20.12	443.480	13.8	443.410	8.72	443.280	21.07	443.480	6.37	443.160	6.2	443.150

Peak Computed Discharge = 1600 cumecs on 15/8/2019 Corres. Water Level 450.41 m
 Lowest Computed Discharge = 0cumecs on 2/6/2019 Corres. Water Level 442.58 m

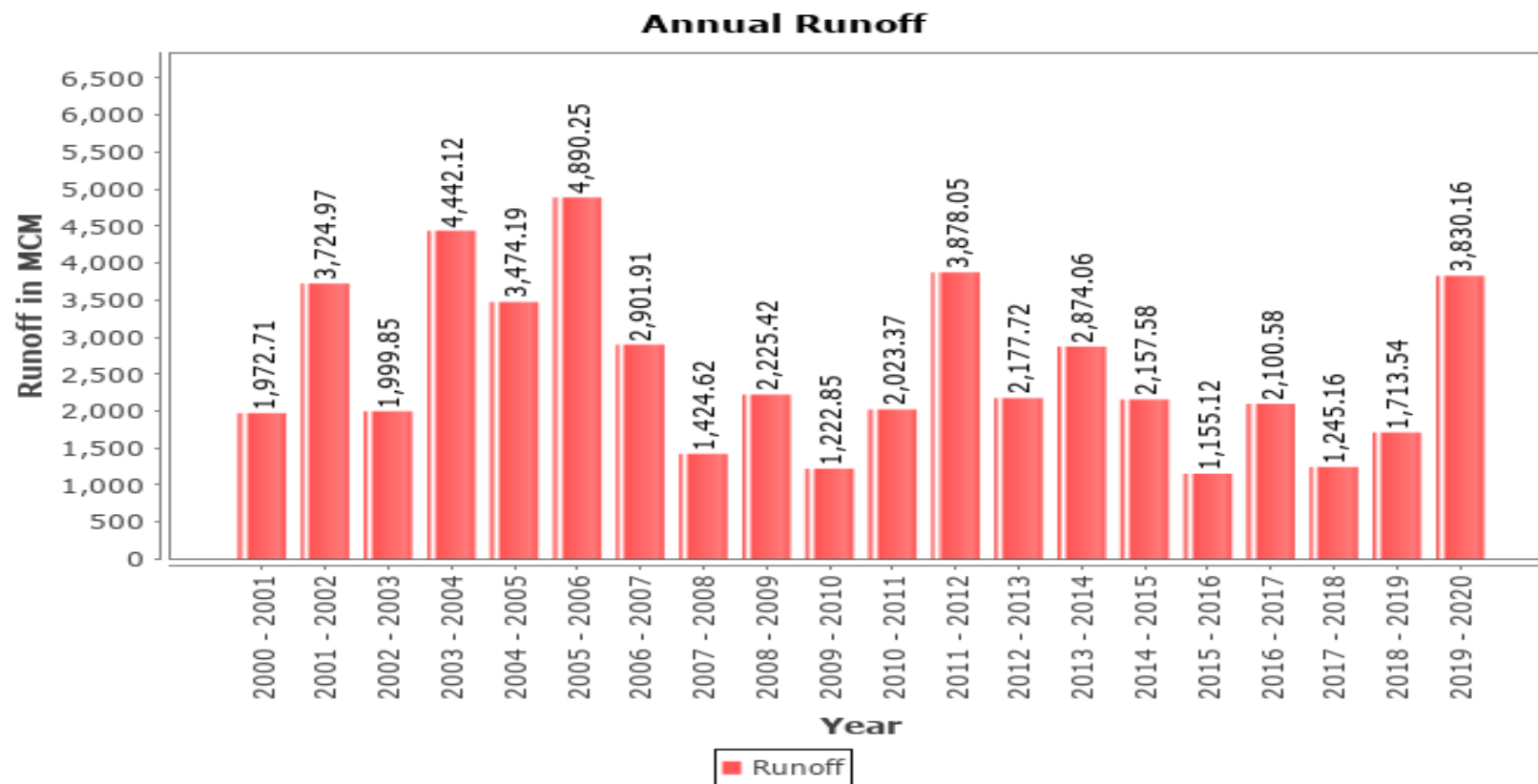
Annual Runoff Values for the period (2000– 2020)

Station Name : Narmada at Manot

Local River : Narmada

Division : Narmada Division, Bhopal

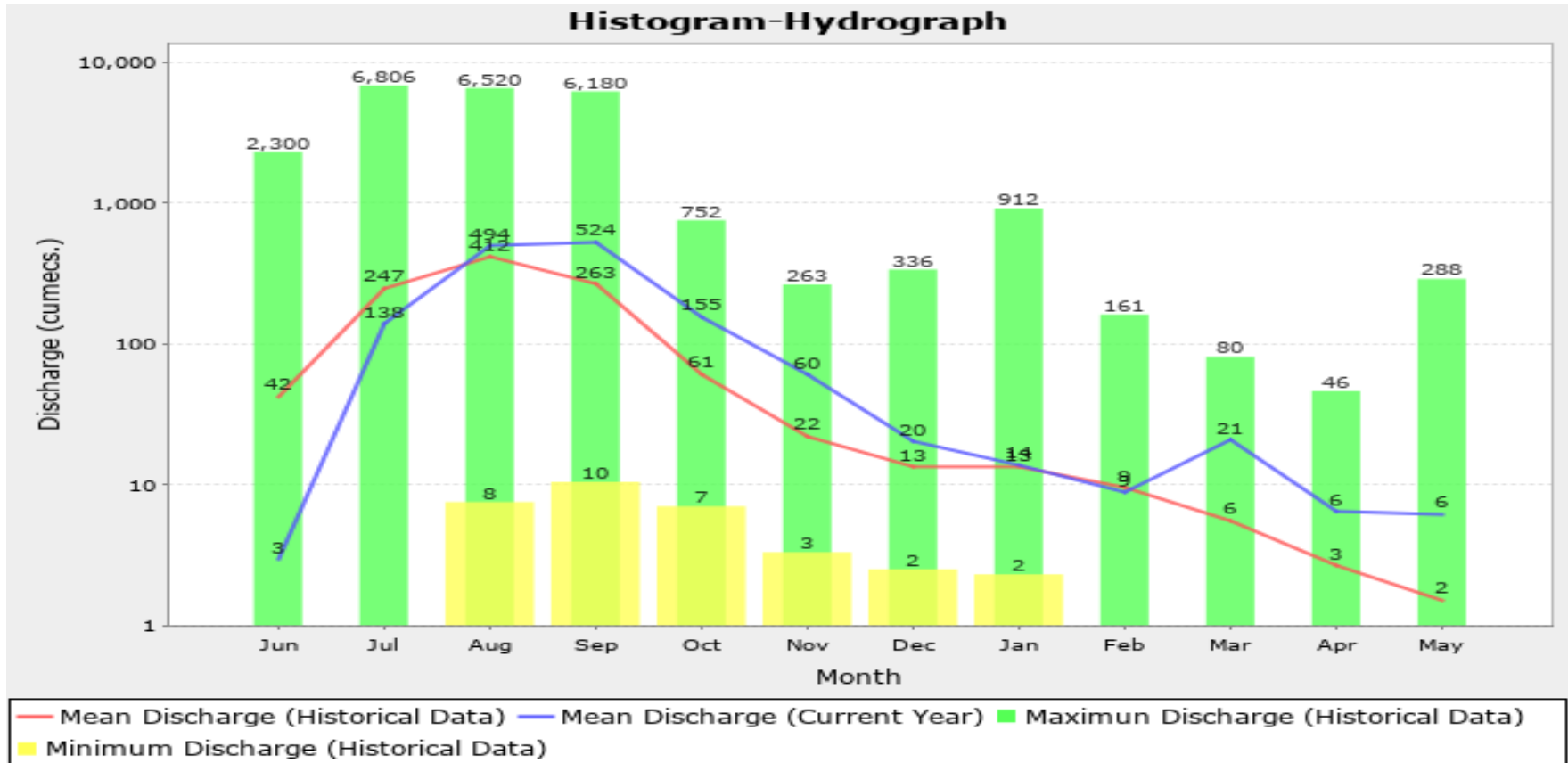
Sub-Division : UNSD, CWC Jabalpur



Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1977-2020)

Station Name : Narmada at Manot
 Local River : Narmada

Division : Narmada Division, Bhopal
 Sub-Division : UNSD, CWC Jabalpur

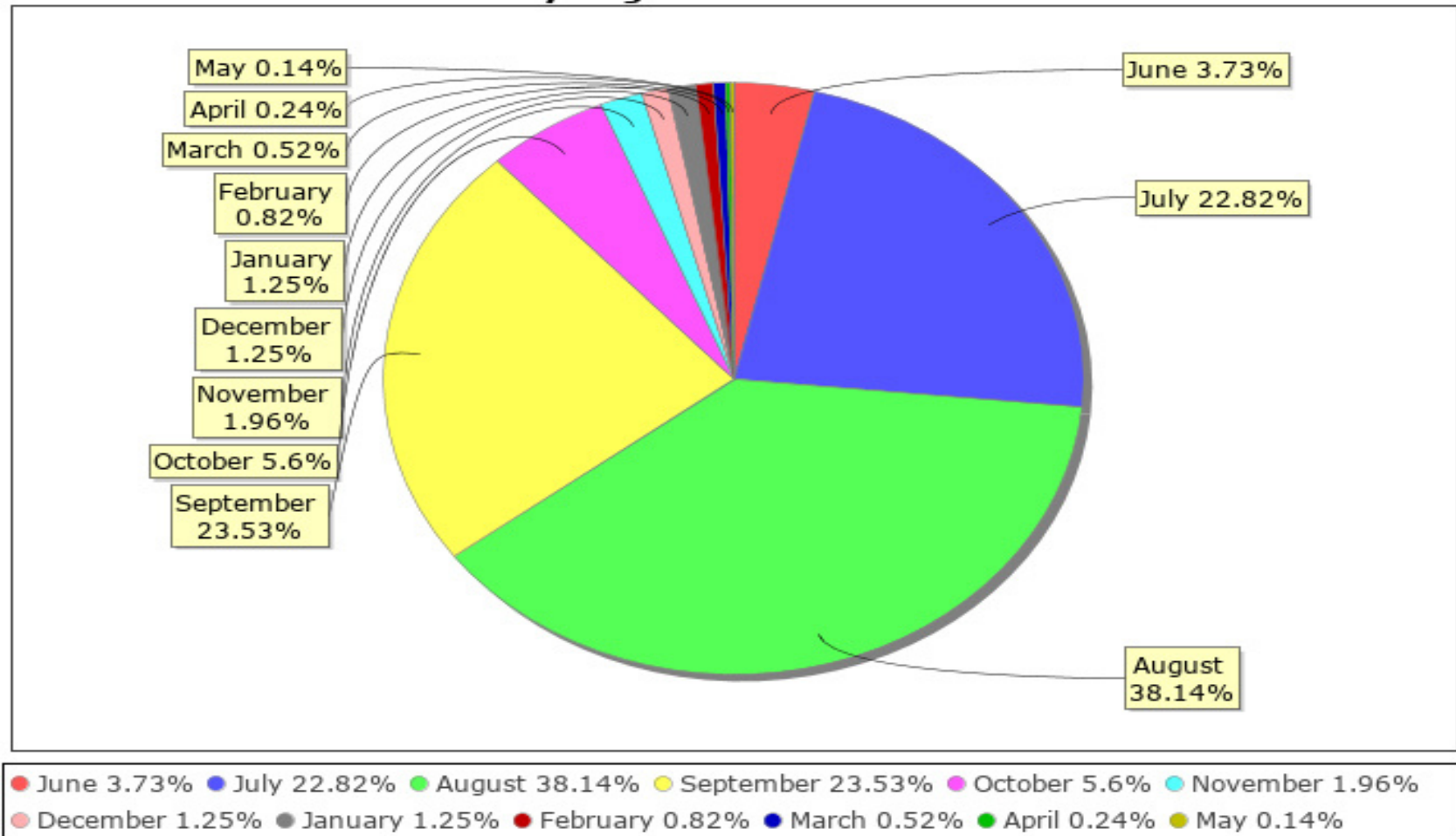


Monthly Average Runoff based on period (1977-2020)

Station Name : Narmada at Manot
Local River : Narmada

Division : Narmada Division, Bhopal
Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Historical Data

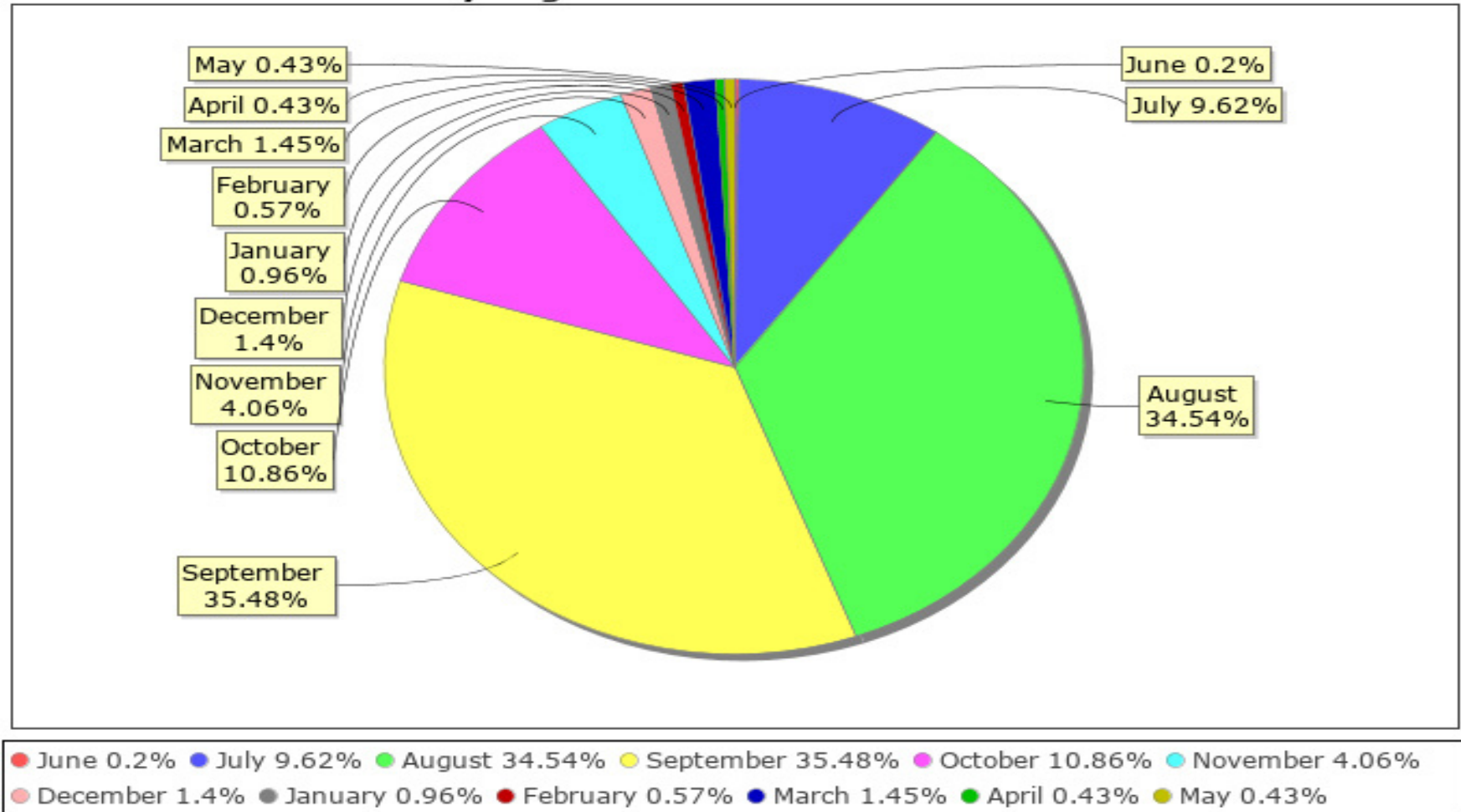


Monthly Runoff for the Year (2019-20)

Station Name : Narmada at Manot
Local River : Narmada

Division : Narmada Division, Bhopal
Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



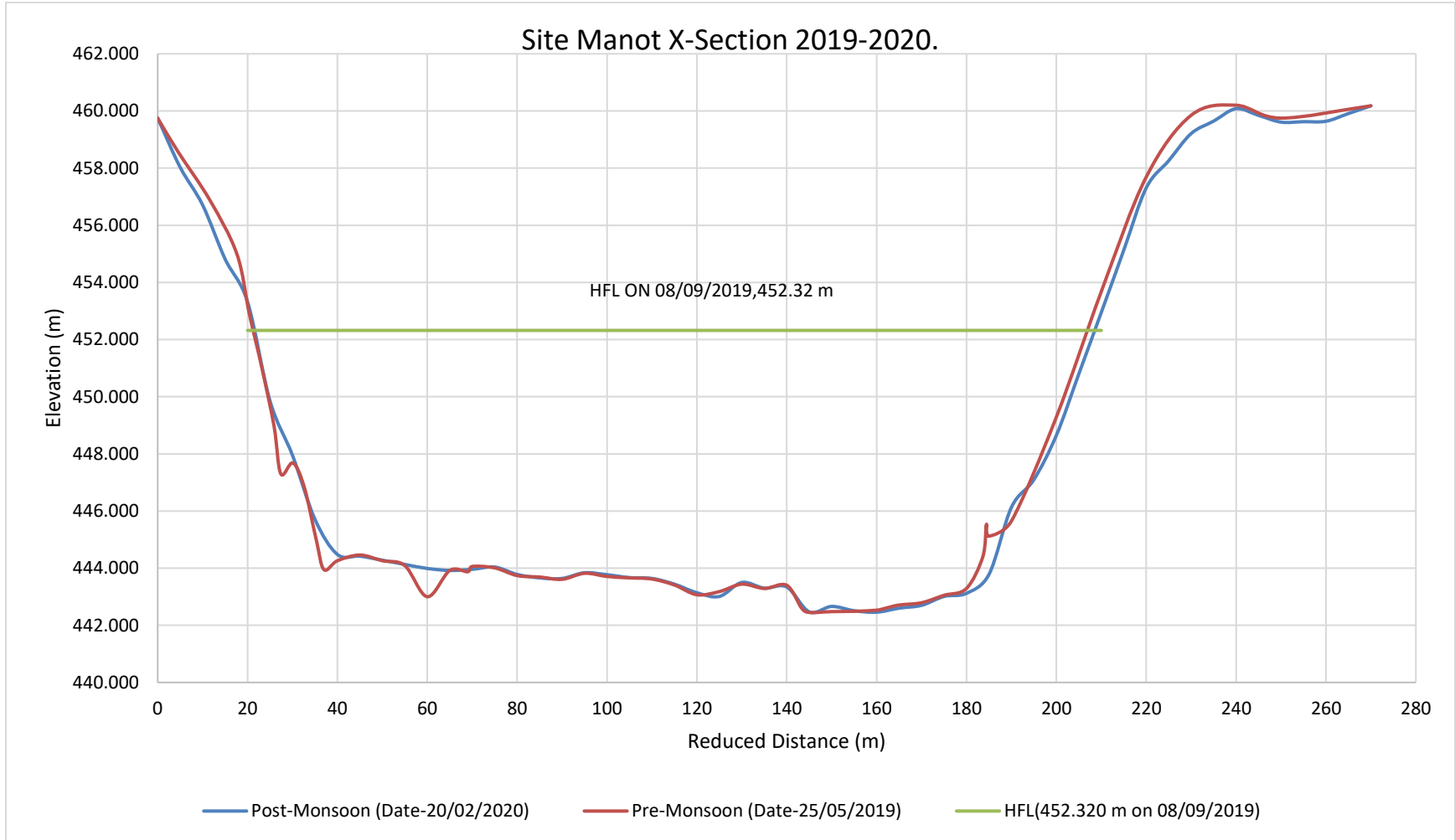
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Manot

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



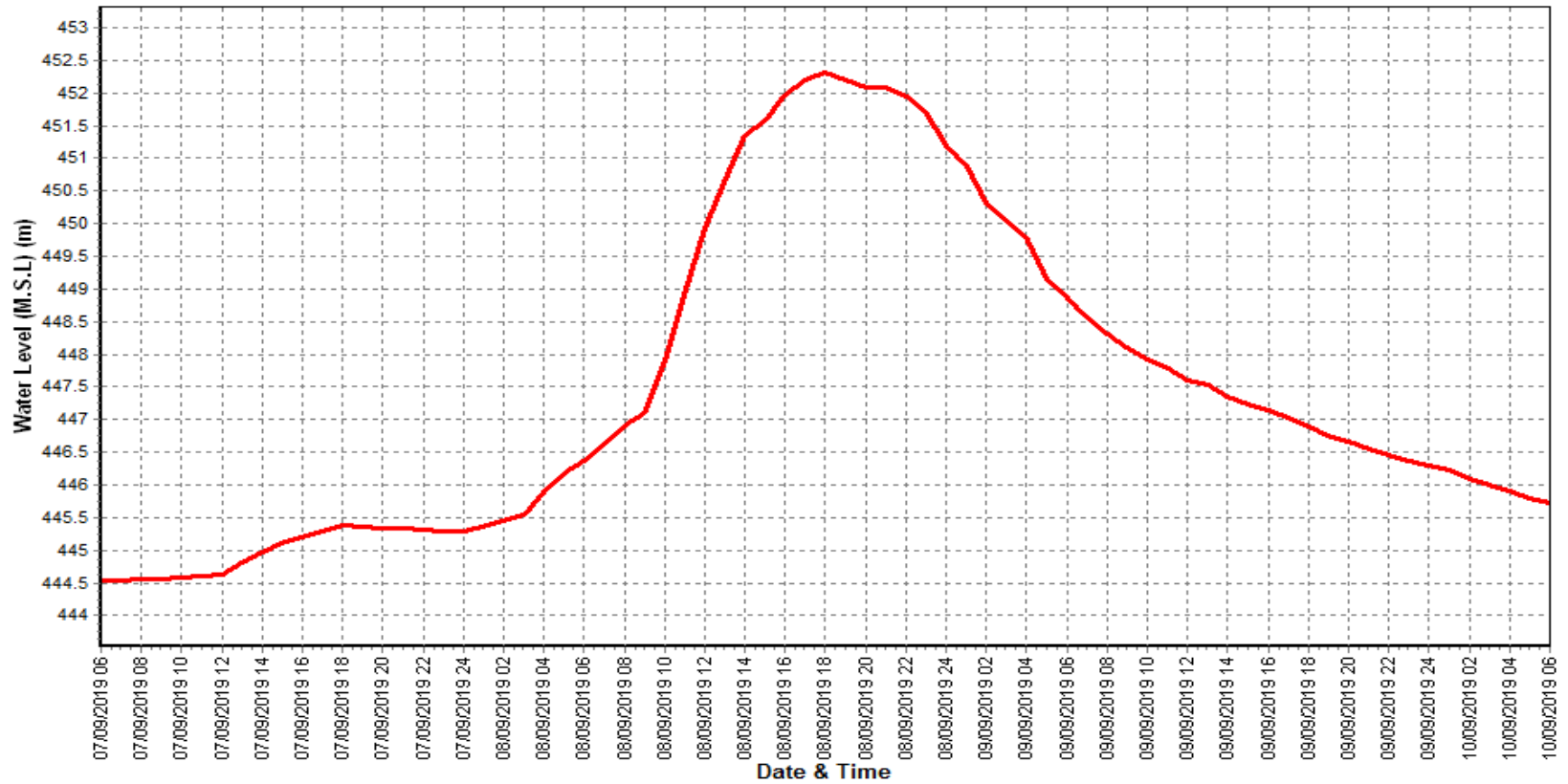
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Manot

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



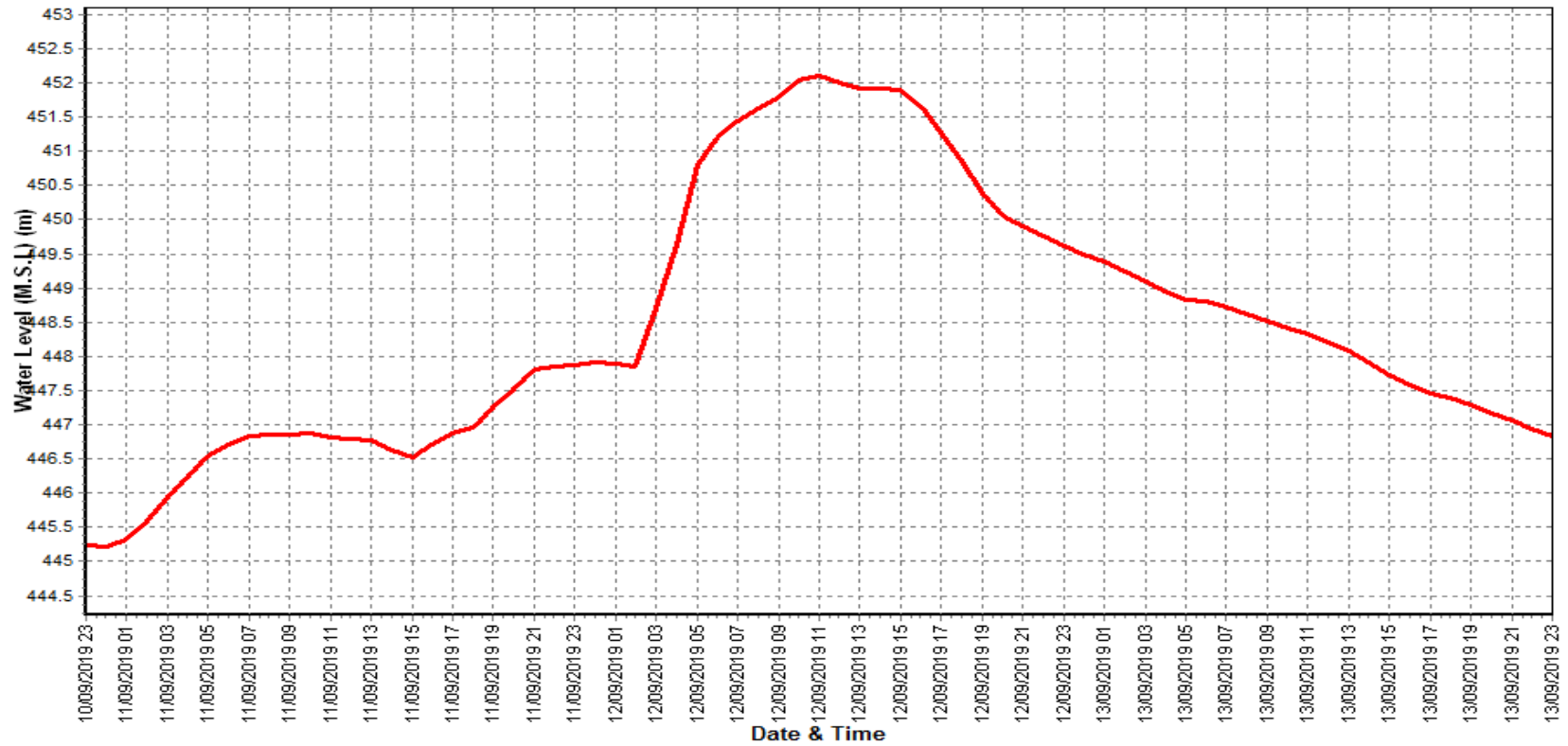
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Manot

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



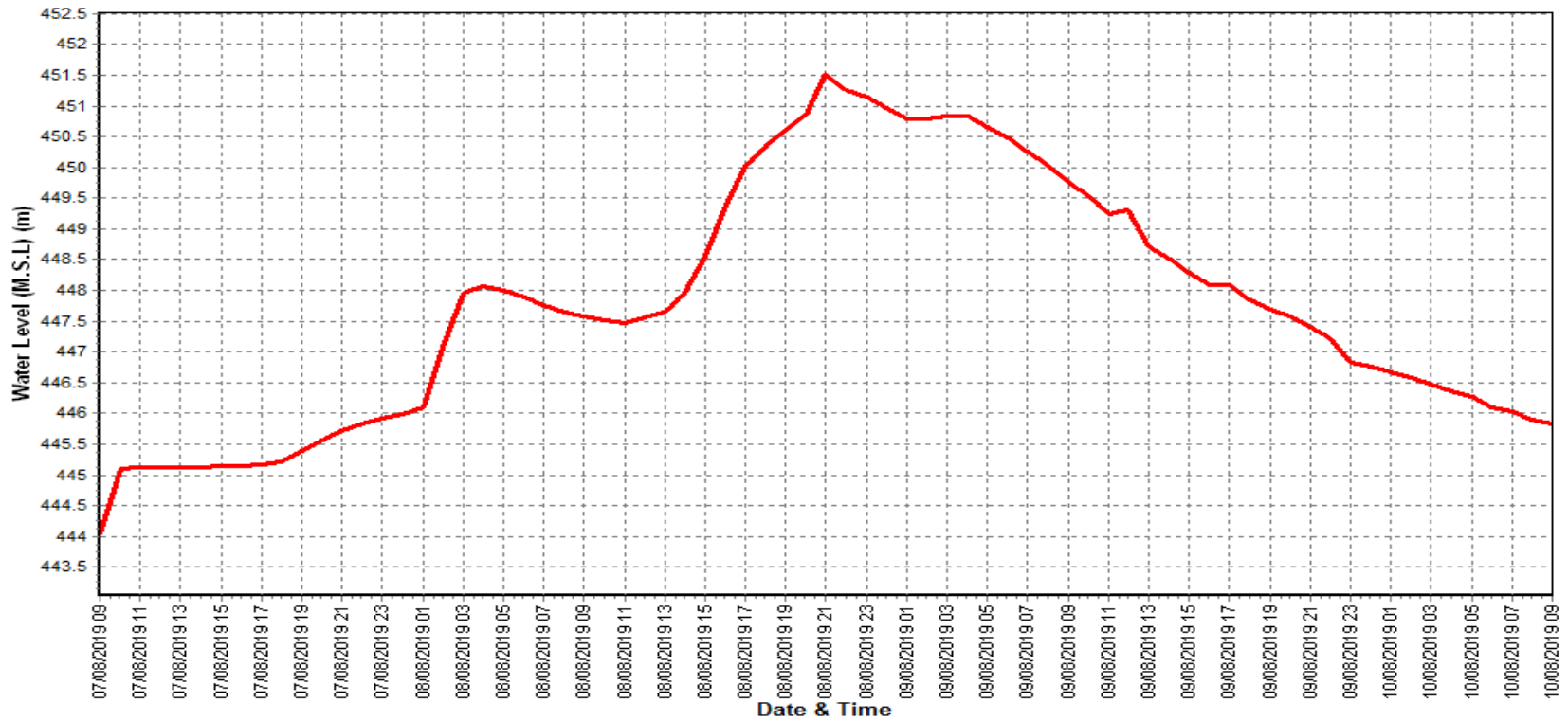
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

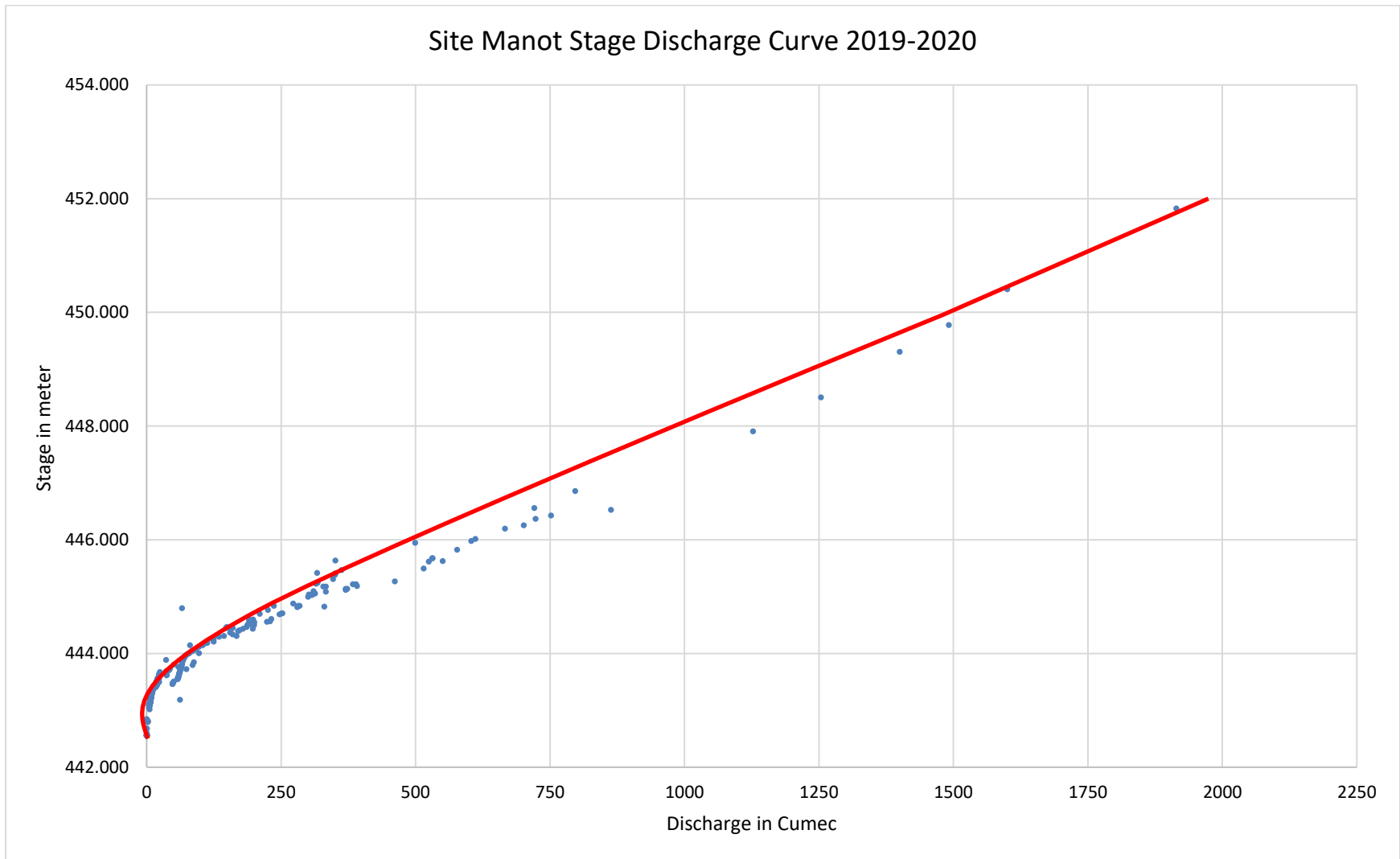
Station Name : Narmada at Manot

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur





4.46 Silgi at Kotrai.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Silgi at Kotrai		Code	:	CW1NAU001468
State	:	Madhya Pradesh		District	:	DINDORI
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Silgi
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	881.2 Sq. Km.		Bank	:	Right
Latitude	:	22°59'07"		Longitude	:	80°35'46"
Current Zero of Gauge (m)	:	509				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
509.0		28/12/2020				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2019-2020	57.5	513.57	08/08/2019	0	-	01-06-2019

Stage Discharge Sheet for Silgi at Kotrai for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	5.4	512.07	9.41	512.20	23.8	512.66	35.09	512.95	2.44	511.98
2	#	#	5.61	512.08	7.01	512.12	21.29	512.57	28.84	512.79	2.35	511.98
3	#	#	6.93	512.12	17.28	512.45	19.82	512.53	21.89	512.59	2.35	511.98
4	#	#	13.95	512.34	16.6	512.43	18.54	512.49	10.32	512.23	2.27	511.98
5	#	#	14.98	512.38	13.41	512.32	21.35	512.58	11.98	512.27	2.25	511.97
6	#	#	17.10	512.44	12.0	512.27	6.0	512.08	9.72	512.20	1.68	511.90
7	#	#	17.80	512.47	20.76	512.55	22.16	512.60	6.81	512.11	0.51	511.85
8	#	#	20.10	512.54	57.5	513.57	29.0	512.79	5.58	512.07	0.5	511.83
9	#	#	22.89	512.62	49.0	513.34	31.93	512.87	2.78	511.99	0.5	511.83
10	#	#	21.30	512.58	23.33	512.64	29.45	512.80	2.2	511.97	0.5	511.82
11	#	#	17.28	512.45	19.8	512.53	25.81	512.71	2.78	511.99	0.47	511.81
12	#	#	19.07	512.51	11.52	512.26	47.5	513.32	2.2	511.97	0.47	511.80
13	#	#	17.83	512.47	8.21	512.17	52.5	513.46	1.63	511.95	0.46	511.79
14	#	#	1.80	511.94	30.02	512.83	51.5	513.43	2.77	511.99	0.46	511.78
15	#	#	1.10	511.90	50.5	513.41	56.00	513.53	2.77	511.99	0.46	511.77
16	#	#	1.82	511.94	32.25	512.88	23.65	512.63	2.78	511.99	0.46	511.77
17	#	#	1.30	511.91	22.81	512.62	22.35	512.60	3.14	511.79	0.44	511.75
18	#	#	1.11	511.90	16.5	512.42	37.05	513.01	3.13	512.01	0.45	511.75
19	#	#	2.02	511.95	9.40	512.19	26.1	512.72	3.11	512.01	0.45	511.75
20	#	#	2.20	511.97	12.86	512.31	8.02	512.16	12.69	512.30	0.45	511.75
21	0.40	511.76	2.70	511.99	28.64	512.79	6.52	512.10	17.65	512.45	0.44	511.74
22	0.49	511.78	2.21	511.97	17.82	512.48	5.60	512.08	12.4	512.29	0.43	511.74
23	0.30	511.75	1.82	511.94	15.91	512.40	19.05	512.51	11.61	512.26	0.43	511.73
24	0.55	511.79	1.31	511.91	49.0	513.34	7.88	512.13	7.22	512.12	0.42	511.73
25	0.32	511.75	2.69	511.99	22.0	512.60	8.60	512.18	4.25	512.04	0.43	511.73
26	0.32	511.75	14.96	512.38	19.8	512.53	12.16	512.28	4.25	512.04	0.43	511.73
27	0.46	511.77	10.39	512.23	33.41	512.91	5.55	512.08	4.22	512.04	0.43	511.73
28	0.49	511.78	8.00	512.15	54.5	513.50	29.46	512.83	4.19	512.04	0.48	511.79
29	1.3	511.91	8.66	512.18	14.95	512.38	37.8	513.06	4.25	512.04	0.48	511.79
30	10	512.21	5.61	512.08	16.74	512.44	35.59	512.97	3.6	512.02	0.46	511.78
31			10.83	512.24	31.05	512.85			3.05	512.01		
Ten-Daily Mean												
I Ten-Daily	0	0	14.61	512.36	22.63	512.59	22.33	512.6	13.52	512.32	1.53	511.91
II Ten-Daily	0	0	6.55	512.09	21.39	512.56	35.05	512.96	3.7	512	0.46	511.77
III Ten-Daily	1.46	511.83	6.29	512.1	27.62	512.75	16.82	512.42	6.97	512.12	0.44	511.75
Monthly												
Min.	0.3	511.75	1.1	511.9	7.01	512.12	5.55	512.08	1.63	511.79	0.42	511.73
Max.	10	512.21	22.89	512.62	57.5	513.57	56	513.53	35.09	512.95	2.44	511.98
Mean	0.49	170.61	9.15	512.18	23.88	512.63	24.73	512.66	8.06	512.15	0.81	511.81

Annual Runoff in

MCM : 183.42

Annual Runoff in

mm : 208.15

Peak Observed Discharge = 37.05 cumecs on 18/9/2019 Corres. Water Level 513.01 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

“#”- Dry

Stage Discharge Sheet for Silgi at Kotrai for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0.46	511.77	0.49	511.78	0.48	511.79	0.5	511.82	0.00	511.72	0.00	511.37
2	0.49	511.76	0.49	511.79	0.48	511.79	0.49	511.80	0.00	511.71	0.00	511.36
3	0.45	511.74	0.5	511.79	0.47	511.78	0.49	511.80	0.00	511.70	0.00	511.34
4	0.44	511.74	0.5	511.79	0.5	511.82	0.49	511.79	0.00	511.69	0.00	511.33
5	0.43	511.74	0.5	511.79	0.5	511.82	0.47	511.78	0.00	511.68	0.00	511.30
6	0.43	511.74	0.5	511.80	0.51	511.82	0.46	511.78	0.00	511.67	0.00	511.29
7	0.42	511.74	0.51	511.80	0.5	511.81	0.46	511.78	0.00	511.66	0.00	511.27
8	0.42	511.73	0.51	511.80	0.5	511.81	0.46	511.78	0.00	511.65	0.00	511.26
9	0.43	511.74	0.5	511.80	0.5	511.81	0.44	511.78	0.00	511.64	0.00	511.24
10	0.57	511.85	0.5	511.79	0.48	511.80	0.44	511.78	0.00	511.62	0.00	511.23
11	0.56	511.82	0.5	511.79	0.49	511.80	0.43	511.78	0.00	511.60	0.00	511.23
12	0.55	511.82	0.5	511.79	0.5	511.80	0.43	511.78	0.00	511.58	0.00	511.20
13	0.55	511.82	0.5	511.79	0.49	511.79	0.48	511.79	0.00	511.57	0.00	511.19
14	0.62	511.95	0.49	511.79	0.49	511.79	0.48	511.79	0.00	511.55	0.00	511.19
15	0.61	511.93	0.49	511.79	0.5	511.79	0.6	511.92	0.00	511.53	0.00	511.18
16	0.61	511.93	0.48	511.78	0.5	511.79	1.59	511.91	0.00	511.52	0.00	511.18
17	0.55	511.87	0.48	511.78	0.48	511.78	1.57	511.90	0.00	511.51	0.00	511.17
18	0.55	511.87	0.48	511.78	0.48	511.78	1.59	511.90	0.00	511.49	0.00	511.17
19	0.54	511.81	0.47	511.77	0.48	511.78	1.52	511.89	0.00	511.47	0.00	511.17
20	0.53	511.81	0.47	511.77	0.48	511.78	1.49	511.88	0.00	511.45	0.00	511.16
21	0.53	511.81	0.47	511.77	0.48	511.78	1.43	511.88	0.00	511.45	0.00	511.16
22	0.54	511.82	0.47	511.77	0.48	511.78	1.26	511.85	0.00	511.44	0.00	511.15
23	0.52	511.81	0.47	511.76	0.48	511.78	1.11	511.82	0.00	511.44	0.00	511.14
24	0.51	511.81	0.47	511.76	0.49	511.79	1.04	511.81	0.00	511.43	0.00	511.14
25	0.51	511.8	0.47	511.76	0.52	511.82	0.98	511.80	0.00	511.42	0.00	511.14
26	0.51	511.8	0.49	511.80	0.52	511.83	0.77	511.79	0.00	511.41	0.00	511.14
27	0.5	511.8	0.49	511.80	0.52	511.83	0.5	511.78	0.00	511.40	0.00	511.13
28	0.5	511.79	0.49	511.79	0.52	511.83	0.38	511.76	0.00	511.39	0.00	511.13
29	0.5	511.79	0.5	511.79	0.51	511.82	0.25	511.74	0.00	511.38	0.00	511.12
30	0.49	511.79	0.48	511.79			0.18	511.74	0.00	511.37	0.00	511.12
31	0.49	511.78	0.49	511.80			0.1	511.73				
Ten-Daily Mean												
I Ten-Daily	0.45	511.75	0.5	511.79	0.49	511.81	0.47	511.79	0	511.67	0	511.3
II Ten-Daily	0.57	511.86	0.49	511.78	0.49	511.79	1.02	511.85	0	511.53	0	511.18
III Ten-Daily	0.51	511.8	0.48	511.78	0.5	511.81	0.73	511.79	0	511.41	0	464.67
Monthly												
Min.	0.42	511.73	0.47	511.76	0.47	511.78	0.1	511.73	0	511.37	0	511.12
Max.	0.62	511.95	0.51	511.80	0.52	511.83	1.59	511.92	0	511.72	0	511.37
Mean	0.51	511.81	0.49	511.79	0.5	511.8	0.74	511.81	0	511.54	0	495.72

Peak Computed Discharge = 57.5 cumecs on 8/8/2019 Corres. Water Level 513.57 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

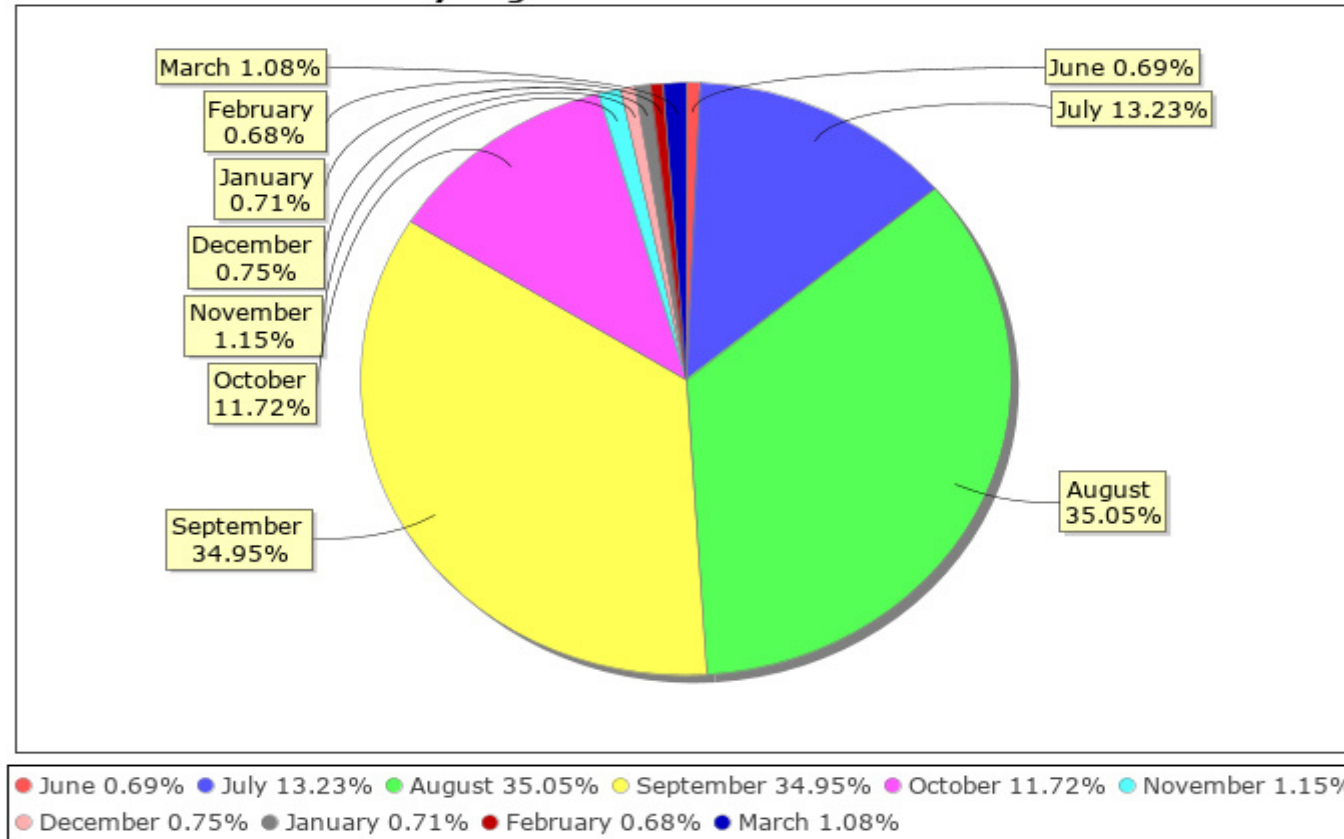
Station Name: Silgi at Kotrai

Local River: Silgi

Division: Narmada Division, Bhopal

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



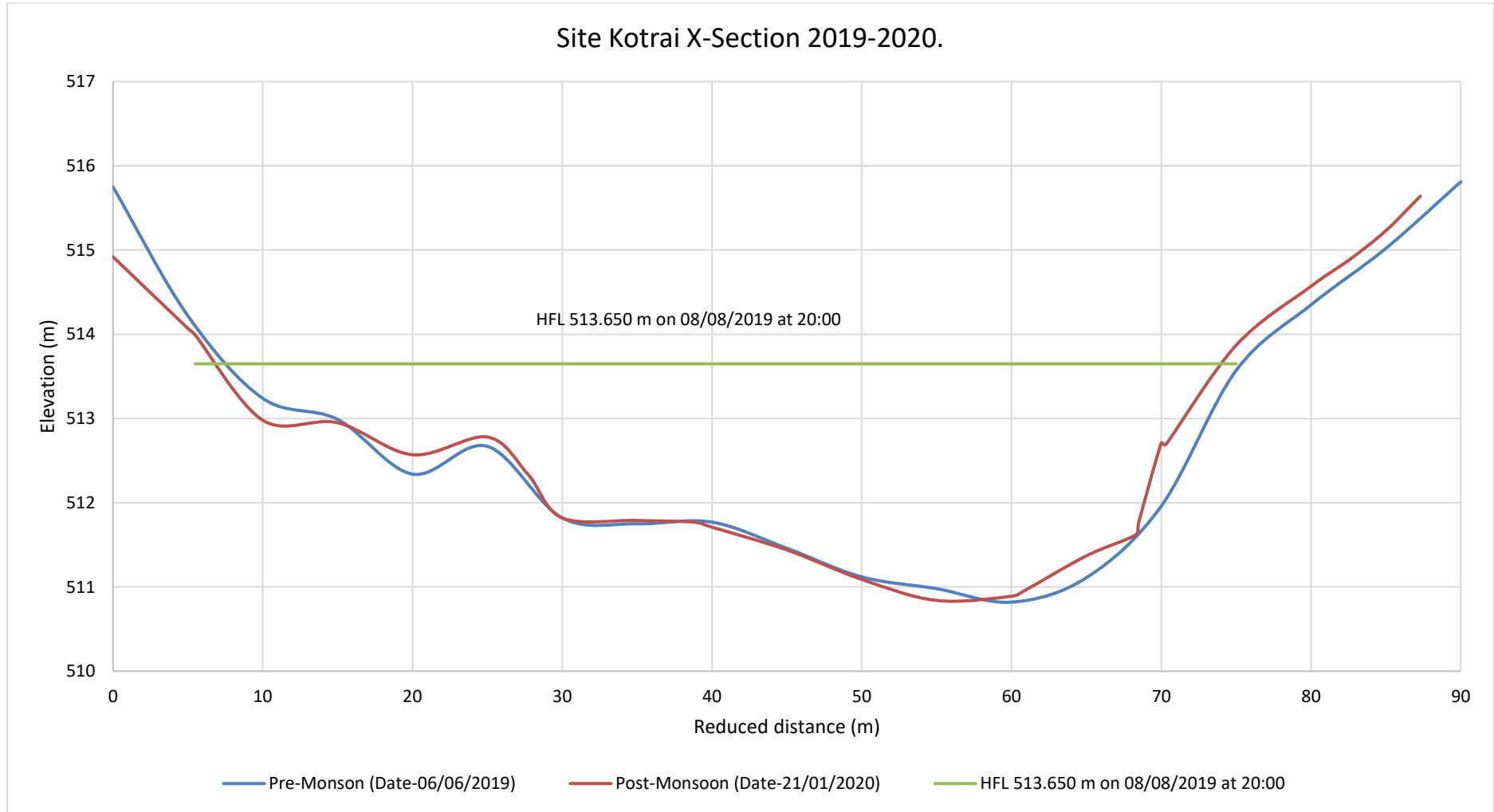
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Silgi at Kotrai

Division: Narmada Division, Bhopal

Local River: Silgi

Sub-Division: UNSD, CWC Jabalpur



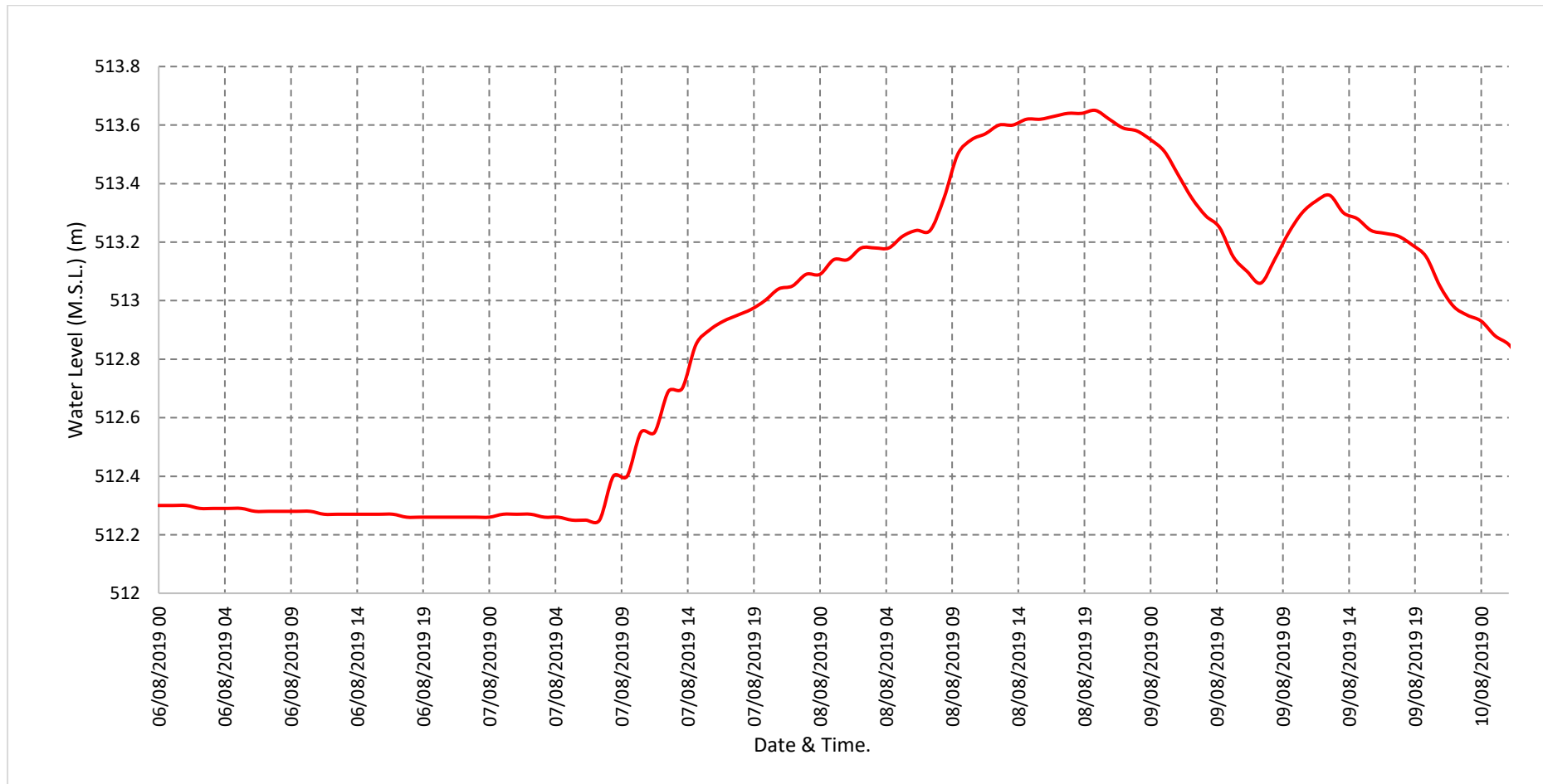
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Silgi at Kotrai

Division: Narmada Division, Bhopal

Local River: Silgi

Sub-Division: UNSD, CWC Jabalpur



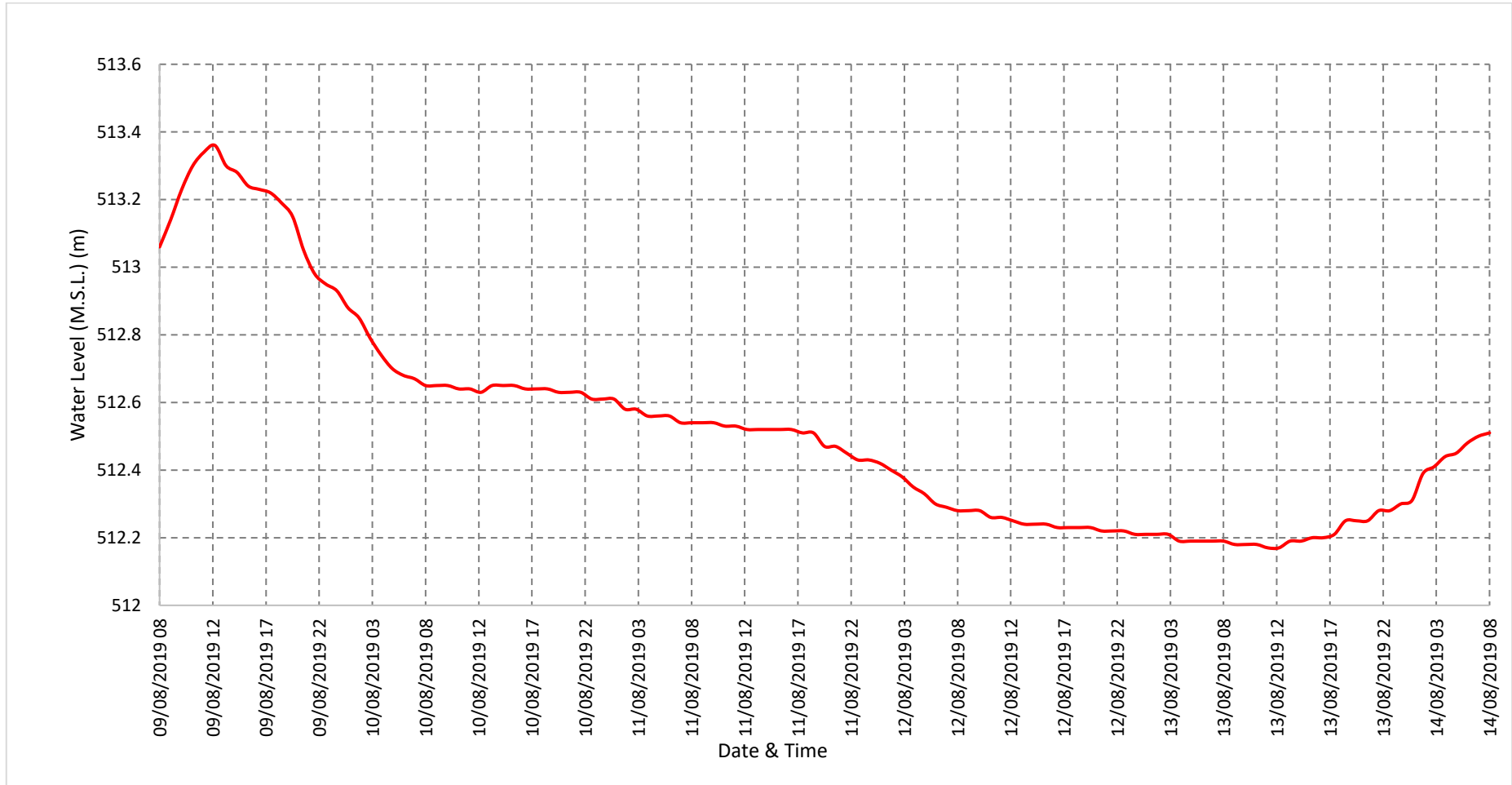
Water Level vs. Time - Graph of 2ndHighest Flood Peak during the Year (2019-20)

Station Name: Silgi at Kotrai

Division: Narmada Division, Bhopal

Local River: Silgi

Sub-Division: UNSD, CWC Jabalpur



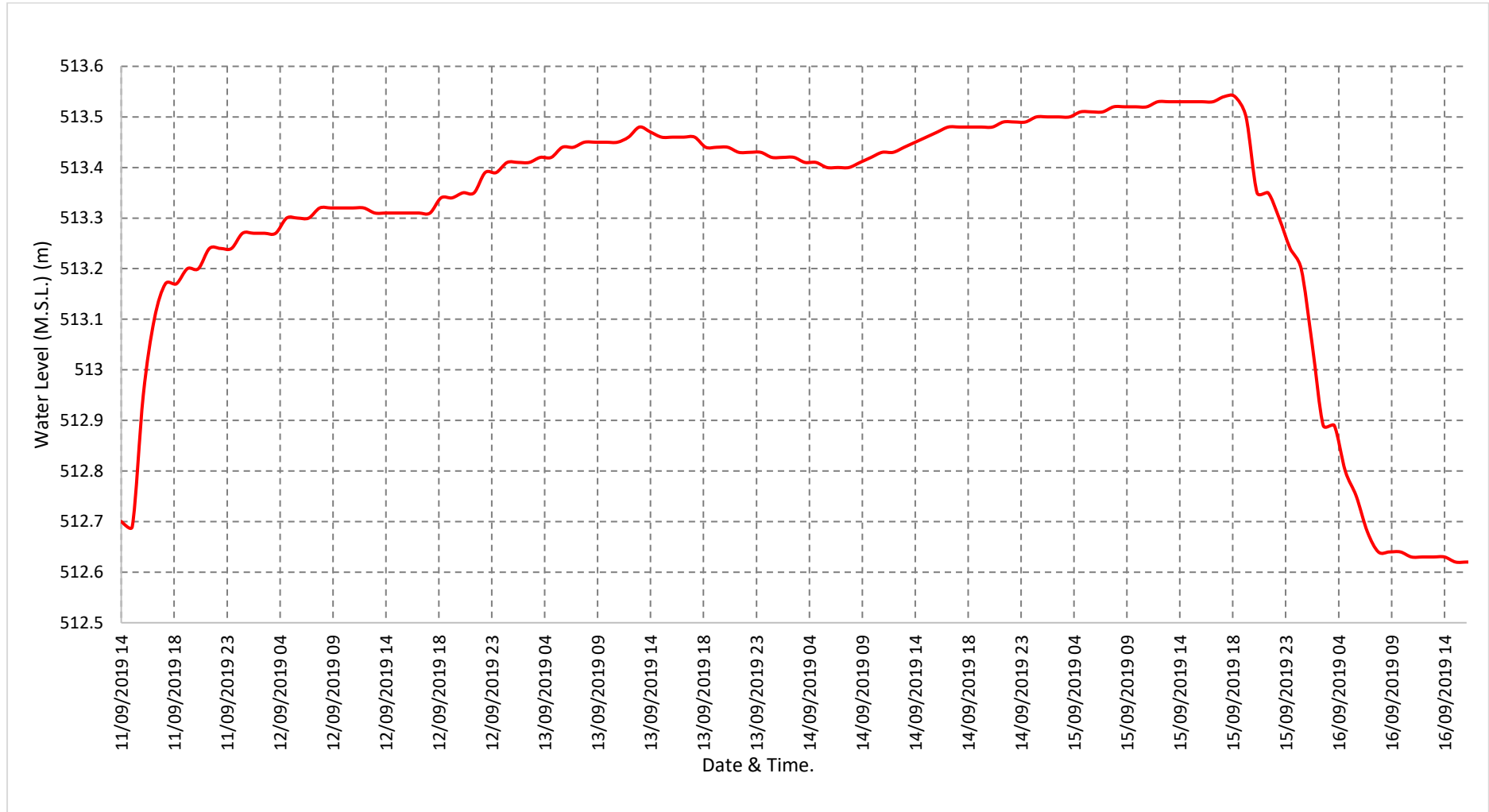
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Silgi at Kotrai

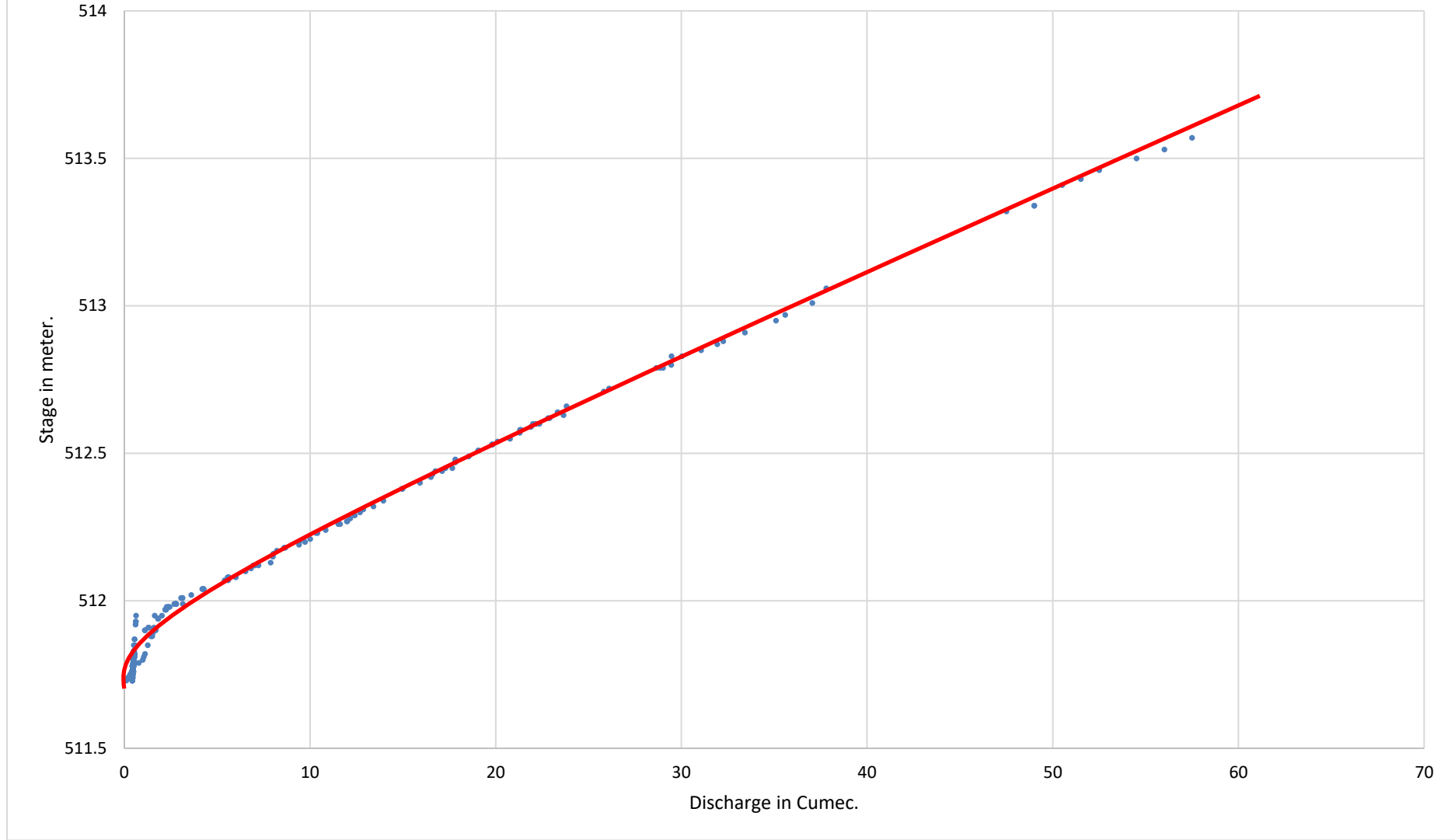
Division: Narmada Division, Bhopal

Local River: Silgi

Sub-Division: UNSD, CWC Jabalpur



Site Kotrai Stage-Discharge Curve 2019-2020.



4.47 Narmada at Dindori

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)							
				Water Year	:	2019 - 2020	
Site	:	Dindori		Code	:	CW1NAU000672	
State	:	Madhya Pradesh		District	:	DINDORI	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	-		Sub Tributary	:	-	
Sub-Sub Tributary	:	-		Local River	:	Narmada	
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur	
Drainage Area	:	2292.0 Sq. Km.		Bank	:	Left	
Latitude	:	22°56'52"		Longitude	:	81°04'34"	
Current Zero of Gauge (m)	:	660					
CATEGORY		Opening Date		Closing Date			
Gauge	:	26/06/1988					
Discharge	:	01/08/1988					
Sediment	:						
Water Quality	:	15/03/1990					
Reduced Level		Opening Date		Closing Date			
660.0		26/06/1988					

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	0	0.000	17/06/1972	0	0.000	17/06/1972
1988-1989	2649	669.000	02/08/1988	0	0.000	01/06/1988
1989-1990	875	665.550	13/08/1989	0.84	662.555	01/06/1989
1990-1991	2250	667.500	05/09/1990	1	662.560	19/05/1991
1991-1992	4710	669.640	23/08/1991	1.15	662.585	20/05/1992
1992-1993	3080	668.500	11/09/1992	0.5	662.570	10/05/1993
1993-1994	2560	667.900	27/09/1993	0.3	662.595	05/06/1993
1994-1995	4350	669.450	20/07/1994	0.9	662.550	20/05/1995
1995-1996	1865	667.170	08/08/1995	0.88	662.545	12/06/1995
1996-1997	1515	666.700	01/08/1996	1.03	662.555	06/06/1996
1997-1998	1085	666.110	29/07/1997	1.28	662.595	07/06/1997
1998-1999	1300	666.420	05/07/1998	1.28	662.575	12/05/1999
1999-2000	3907	669.300	31/08/1999	1.09	662.570	31/05/2000
2000-2001	980	666.250	19/07/2000	0.48	662.540	15/05/2001
2001-2002	2290	667.020	30/06/2001	0.81	662.540	24/05/2002
2002-2003	1130	666.120	24/06/2002	0.5	662.530	20/05/2003
2003-2004	2400	668.000	29/08/2003	0.5	662.520	11/06/2003
2004-2005	1600	667.000	08/08/2004	0.9	662.530	29/05/2005
2005-2006	1305.69	666.550	22/08/2005	0.3	662.505	21/05/2006
2006-2007	1881.53	667.700	31/07/2006	0.3	662.550	14/05/2007
2007-2008	347.62	664.230	21/08/2007	0.41	662.510	20/05/2008
2008-2009	1253.94	667.000	19/09/2008	0.71	662.480	30/04/2009
2009-2010	772.39	665.750	15/08/2009	5.01	663.520	25/08/2009
2010-2011	490.12	665.400	03/08/2010	5.34	662.640	06/02/2011
2011-2012	1044.09	666.440	12/08/2011	0.0	663.060	24/10/2011
2012-2013	570.48	665.500	11/08/2012	0.66	662.830	23/05/2013
2013-2014	844.63	665.750	09/08/2013	0.8	662.850	04/06/2013
2014-2015	1922.22	667.100	14/10/2014	0.73	662.510	26/05/2015
2015-2016	908.88	666.130	23/06/2015	0.61	662.560	10/05/2016
2016-2017	1211.84	664.300	28/08/2016	1.51	662.600	13/05/2017
2017-2018	920.2	666.650	10/08/2017	0.26	662.210	11/05/2018
2018-2019	1919	666.630	07/09/2018	0.32	662.550	01/06/2018
2019-2020	1077.24	666.665	28/09/2019	0.81	663.060	01/04/2020

Stage Discharge Sheet for Narmada at Dindori for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	0.87	662.620	19.98	663.940	37.5	663.840	101.37	664.190	234.72	664.790	29.63	663.730
2	0.89	662.600	18.64	663.940	14.43	663.530	83.55	664.110	161.49	664.460	25.13	663.700
3	0.92	662.580	35.63	663.900	108.28	664.280	110.28	664.230	137.08	664.350	22.88	663.630
4	0.86	662.570	21.85	663.990	73.09	664.050	88.91	664.100	118.98	664.210	20.63	663.620
5	0.86	662.570	14.25	663.490	97.87	664.230	86.4	664.080	98.28	664.190	16.95	663.450
6	1.32	662.810	157.61	664.510	86.02	664.080	70.33	664.020	88.29	664.160	13.89	663.350
7	1.25	662.970	69.15	664.080	80.83	664.060	116.51	664.280	74.97	664.120	13.97	663.350
8	1.08	662.970	36.24	663.920	93.2	664.110	180.07	664.600	73.76	664.110	5.71	663.310
9	1.15	662.970	171.91	664.500	175.14	664.610	195.97	664.680	74.56	664.100	5.18	663.270
10	1.23	662.970	113.76	664.300	109.76	664.240	114.52	664.240	71.02	664.010	4.91	663.230
11	1.19	662.960	34.47	663.980	67.98	664.030	491.5	665.450	60.89	664.060	4.64	663.190
12	1.21	662.950	31.3	663.780	51.64	663.940	620	665.800	57.37	664.030	4.61	663.150
13	1.15	662.950	10.8	663.670	40.74	663.980	252.96	664.830	55.02	664.010	4.57	663.150
14	1.6	663.030	9.73	663.360	917.33	666.550	150.87	664.410	38.59	663.870	6.43	663.130
15	3.52	663.190	8.66	663.200	462.83	665.500	121.43	664.330	40.53	663.880	2.01	663.030
16	2.56	663.150	6.96	663.120	174.81	664.550	102.26	664.210	37.68	663.360	2.2	663.000
17	2.12	663.130	5.15	663.040	98.43	664.210	89.95	664.110	41.59	663.850	2.05	662.990
18	1.93	663.370	2.85	662.700	72.92	664.080	87.24	664.140	40.68	663.870	1.77	662.970
19	1.59	663.020	7.11	663.130	67.45	664.040	84.47	664.100	80.25	664.100	1.83	662.940
20	3.4	663.210	6.22	663.070	229.18	664.770	66.66	664.040	74.08	664.050	1.81	662.940
21	2.32	663.100	4.71	662.700	197.31	664.600	87.4	664.110	90.12	664.180	1.71	662.900
22	1.69	663.040	4.72	662.670	409.62	665.300	64.03	664.040	61.99	664.010	1.71	662.900
23	1.65	663.030	3.1	662.710	171.99	664.530	57.35	664.020	57.61	663.980	1.71	662.900
24	1.62	663.040	5.17	662.690	364.95	665.240	66.23	664.030	46.13	663.940	1.83	662.880
25	3.83	663.300	39.51	663.820	186.03	664.570	89.23	664.100	43.76	663.900	1.95	662.880
26	2.12	663.150	66.18	664.020	213.75	664.650	789.54	666.000	40.59	663.880	1.55	662.880
27	15.89	663.740	32.27	663.840	154.22	664.400	217.1	664.690	38.85	663.870	1.63	662.850
28	21.24	663.780	59.53	663.890	119.76	664.330	1077.24	666.660	37.11	663.860	4.27	662.850
29	6.97	663.350	87.38	664.090	212	664.660	432.27	665.310	35.77	663.830	4.45	662.850
30	3.6	663.180	38.75	663.860	111.03	664.240	362.87	665.230	34.13	663.820	4.39	662.850
31			36.37	663.890	168.19	664.490			34.81	663.810		
Ten-Daily Mean												
I Ten-Daily	1.04	662.760	65.9	664.060	87.61	664.100	114.79	664.250	113.32	664.250	15.89	663.460
II Ten-Daily	2.03	663.100	12.32	663.300	218.33	664.570	206.73	664.540	52.67	663.910	3.19	663.050
III TenDaily	6.09	663.270	34.34	663.470	209.9	664.640	324.33	664.820	47.35	663.920	2.52	662.870
Monthly												
Min.	0.86	662.570	2.85	662.670	14.43	663.530	57.35	664.020	34.13	663.360	1.55	662.850
Max.	21.24	663.780	171.91	664.510	917.33	666.550	1077.24	666.660	234.72	664.790	29.63	663.730
Mean	3.05	663.040	37.52	663.610	171.95	664.440	215.28	664.540	71.11	664.020	7.2	663.130

Annual Runoff in MCM :1532.04

Annual Runoff in mm : 668.43

Peak Observed Discharge = 1077.24 cumecs on 28/9/2019 Corres. Water Level 666.66 m

Lowest Observed Discharge = 0.86cumecs on 4/6/2019 Corres. Water Level 662.57 m

Stage Discharge Sheet for Narmada at Dindori for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	4.41	662.850	15.44	663.290	16.8	663.290	8.32	663.070	0.81	663.060	8.77	663.160
2	4.42	662.850	17.43	663.320	13.67	663.220	8.71	663.120	7.52	663.140	8.57	663.160
3	11.06	662.850	22.45	663.640	9.61	663.100	9.56	663.200	5.84	663.120	8.43	663.160
4	9.99	662.850	22.65	663.640	9.55	663.100	9.08	663.200	5.84	663.120	8.28	663.100
5	10.73	662.850	21.96	663.570	8.95	663.160	8.26	663.200	6.68	663.130	7.85	663.100
6	10.41	662.820	21.27	663.450	9.03	663.160	8.97	663.200	6.68	663.130	7.66	663.100
7	10.44	662.820	20.7	663.450	9.29	663.160	9.19	663.150	6.68	663.130	7.77	663.100
8	10.66	662.820	20.06	663.390	9.25	663.160	9.11	663.130	6.68	663.130	7.87	663.100
9	10.75	662.820	21.14	663.390	9.22	663.160	8.91	663.080	5	663.110	6.85	663.100
10	10.54	662.820	21.34	663.390	9.2	663.160	12	663.160	13.39	663.210	6.33	663.100
11	10.47	662.820	19.28	663.390	9.02	663.150	19.33	663.350	12.55	663.200	7.28	663.100
12	10.69	662.820	18.28	663.390	8.77	663.150	22.15	663.590	10.67	663.180	7.36	663.100
13	10.59	662.820	17.22	663.350	8.91	663.150	36.56	663.770	7.52	663.140	7.1	663.100
14	11.29	662.870	18.05	663.350	8.88	663.150	39.65	663.840	8.36	663.150	6.64	663.100
15	13.75	663.060	17.35	663.350	8.91	663.150	36.12	663.760	8.36	663.150	8.96	663.210
16	20.74	663.600	17.3	663.350	8.31	663.090	35.67	663.750	9.19	663.160	22.08	663.450
17	21.28	663.550	16.96	663.350	7.8	663.040	22.4	663.470	5	663.110	21.32	663.350
18	21.16	663.550	15.76	663.280	7.84	663.040	21.6	663.360	7.52	663.140	20.94	663.300
19	20.78	663.500	15.84	663.280	7.46	663.040	20.82	663.270	11.71	663.190	6.68	663.300
20	21.13	663.500	15.92	663.280	6.81	663.010	22.34	663.350	9.19	663.160	5.59	662.850
21	20.79	663.450	15.71	663.280	6.75	663.000	22.12	663.350	9.18	663.160	5.78	662.780
22	20.45	663.400	8.19	663.160	6.68	663.000	21.65	663.330	9.67	663.160	5.35	662.760
23	20.1	663.400	8.54	663.160	7.45	663.060	20.94	663.300	8.95	663.160	5.2	662.690
24	16.73	663.350	9.16	663.160	8.47	663.140	20.1	663.290	9.27	663.160	5.2	662.690
25	16.57	663.350	8.95	663.160	8.55	663.170	19.2	663.280	9.43	663.160	5.2	662.690
26	17.01	663.350	9.24	663.130	9.7	663.220	18.42	663.270	9.51	663.160	5.2	662.690
27	16.71	663.350	9.53	663.100	8.76	663.150	17.58	663.260	9.59	663.160	5.64	662.880
28	16.72	663.350	9.56	663.110	8.62	663.130	16.75	663.250	8.71	663.160	7.29	663.040
29	16.47	663.330	9.12	663.060	8.4	663.080	15.91	663.240	8.91	663.160	7.95	663.070
30	16.22	663.320	9.01	663.060			15.91	663.240	8.87	663.160	7.34	663.070
31	14.95	663.280	9.02	663.060			3.32	663.090			5.41	662.910
Ten-Daily Mean												
I Ten-Daily	9.34	662.830	20.44	663.450	10.46	663.170	9.21	663.150	6.51	663.130	7.84	663.120
II Ten-Daily	16.19	663.210	17.2	663.340	8.27	663.100	27.66	663.550	9.01	663.160	11.39	663.190
III Ten-Daily	17.52	663.360	9.64	663.130	8.15	663.110	17.45	663.260	9.21	663.160	5.96	662.840
Monthly												
Min.	4.41	662.820	8.19	663.060	6.68	663.000	3.32	663.070	0.81	663.060	5.2	662.690
Max.	21.28	663.600	22.65	663.640	16.8	663.290	39.65	663.840	13.39	663.210	22.08	663.450
Mean	14.35	663.130	15.76	663.310	8.96	663.120	18.11	663.320	8.24	663.150	8.4	663.050

Peak Computed Discharge = 462.83 cumecs on 15/8/2019 Corres. Water Level 665.5 m

Lowest Computed Discharge = 0.81cumecs on 1/4/2020 Corres. Water Level 663.06 m

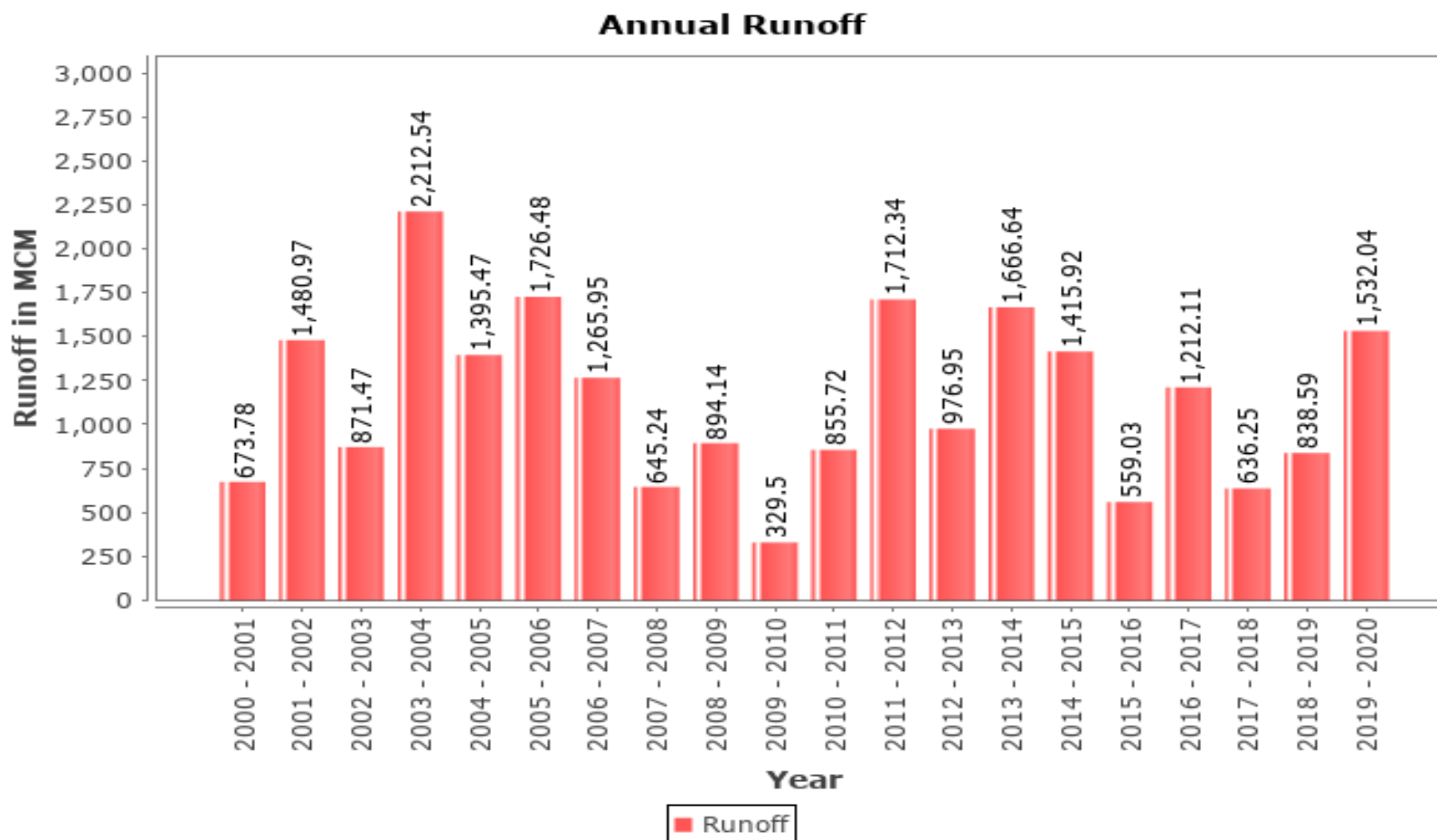
Annual Runoff Values for the period (2000– 2020)

Station Name : Narmada at Dindori

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



Monthly Average Runoff based on period (1988-2020)

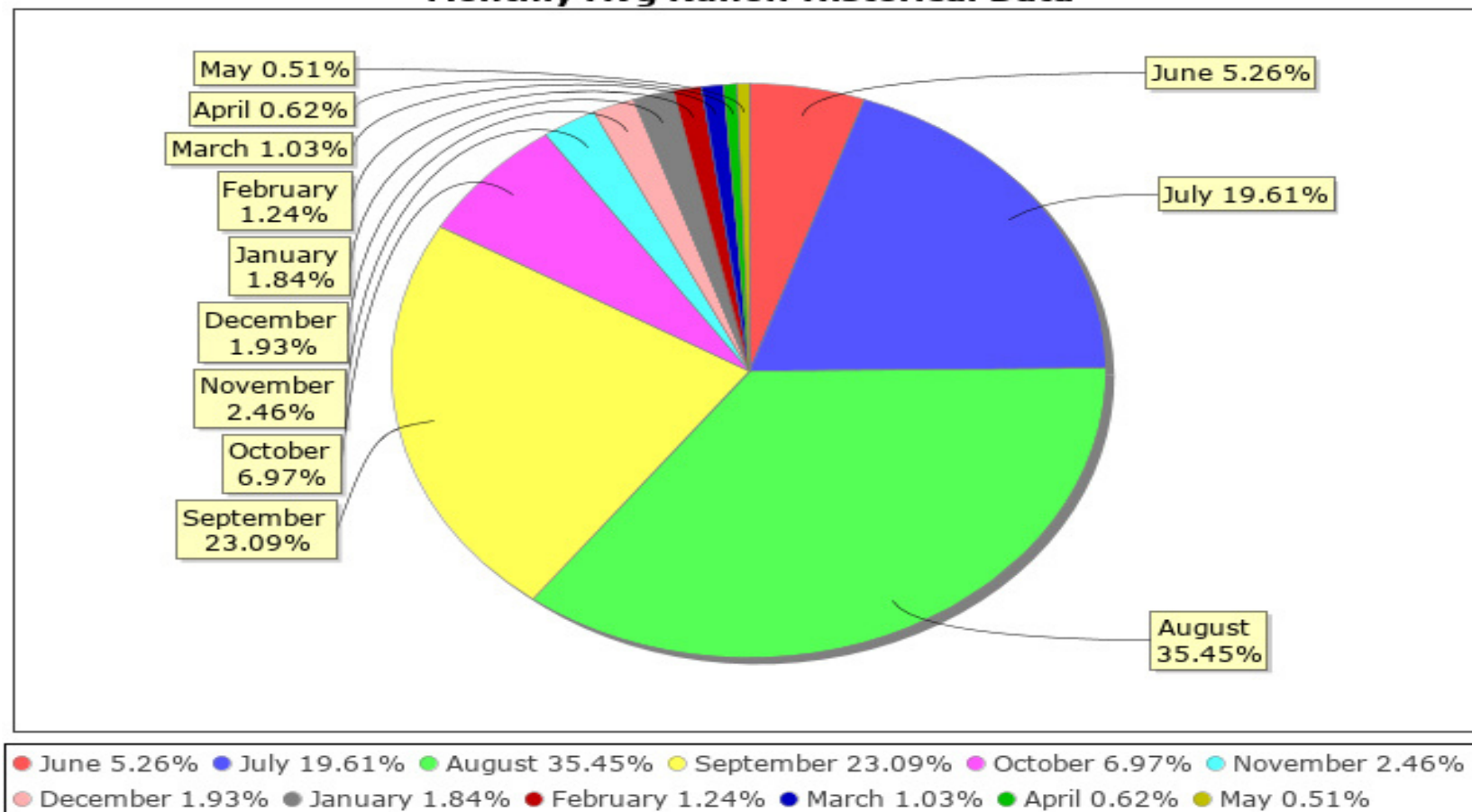
Station Name : Narmada at Dindori

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Historical Data

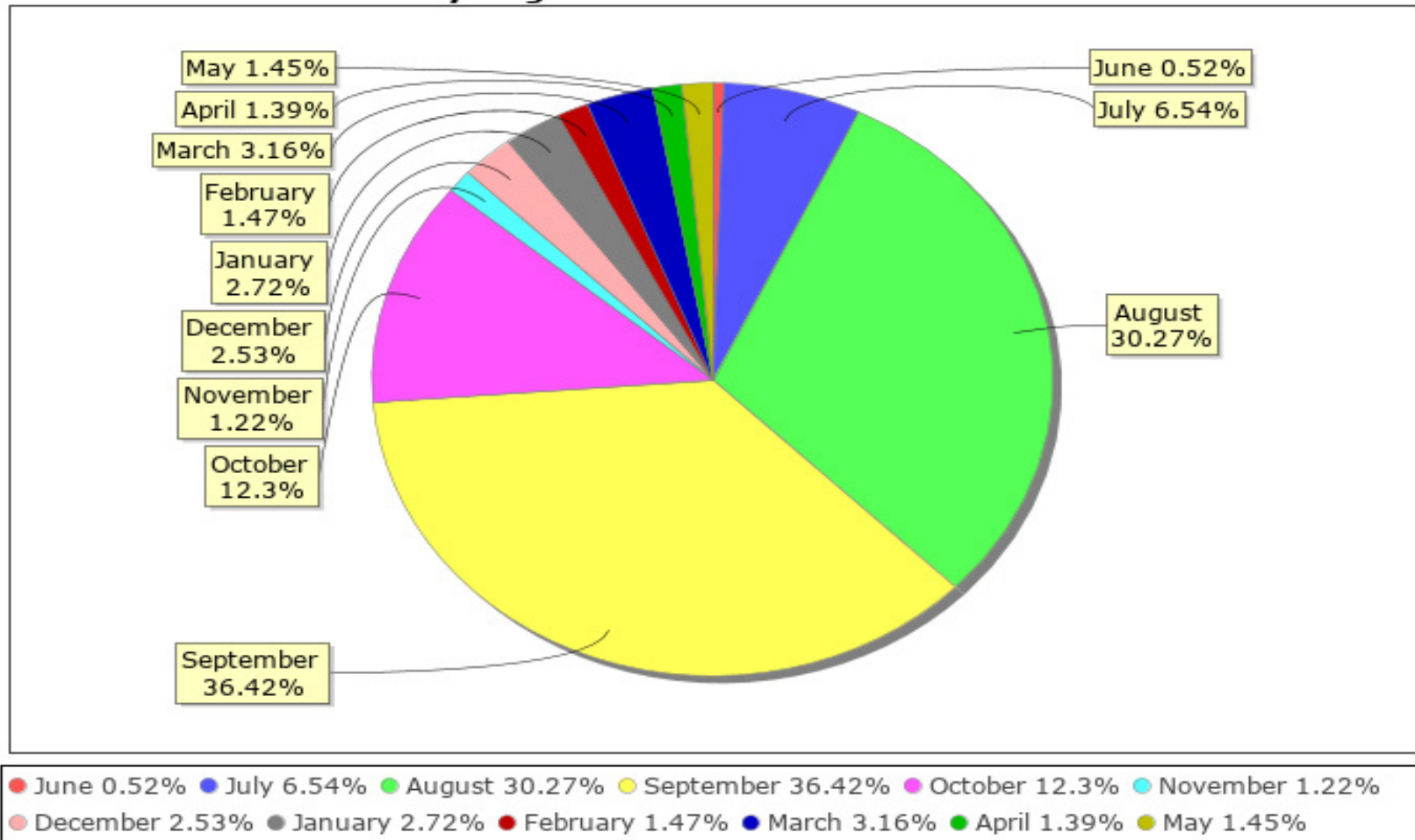


Monthly Runoff for the Year (2019-20)

Station Name : Narmada at Dindori
Local River : Narmada

Division : Narmada Division, Bhopal
Sub-Division : UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



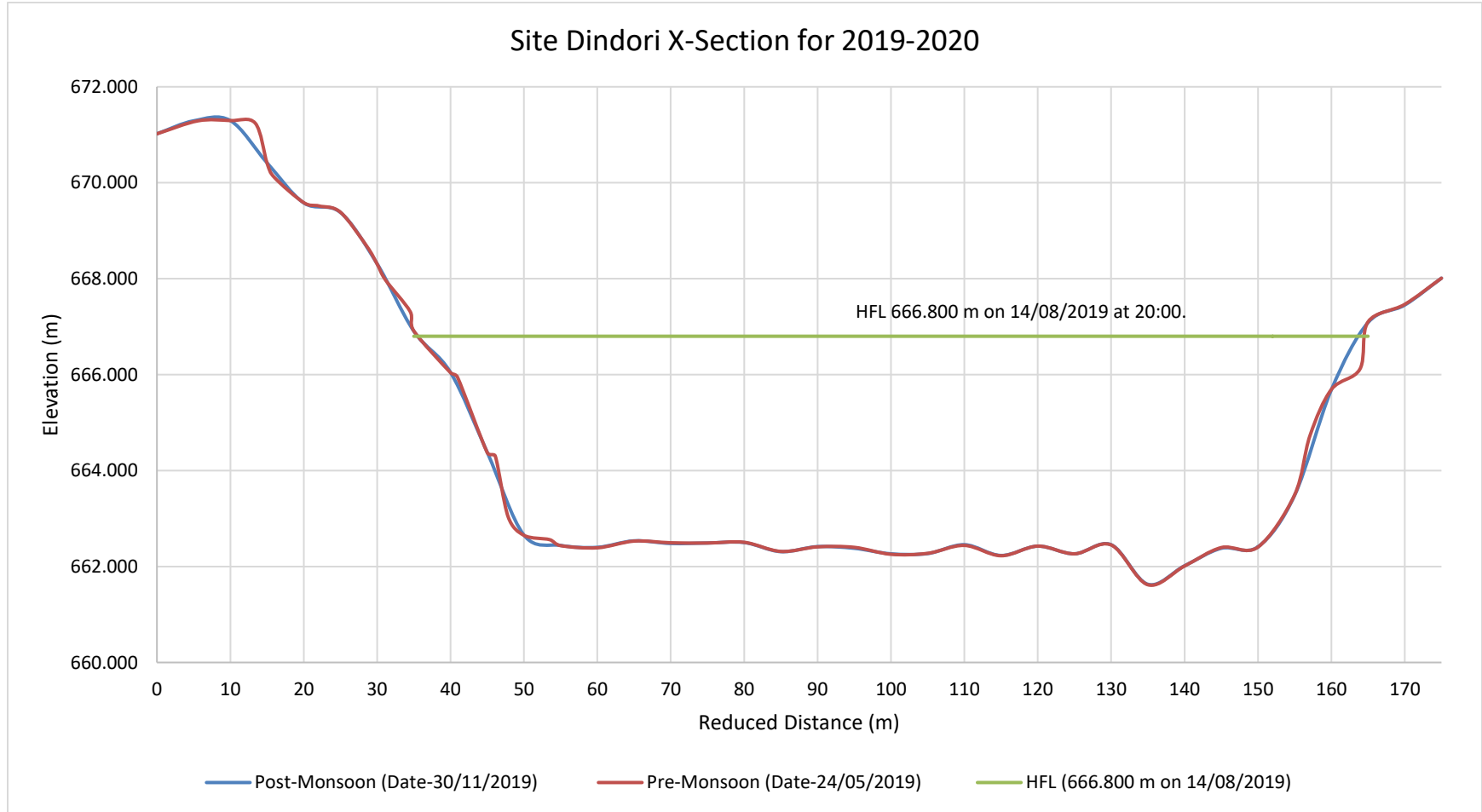
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name : Narmada at Dindori

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



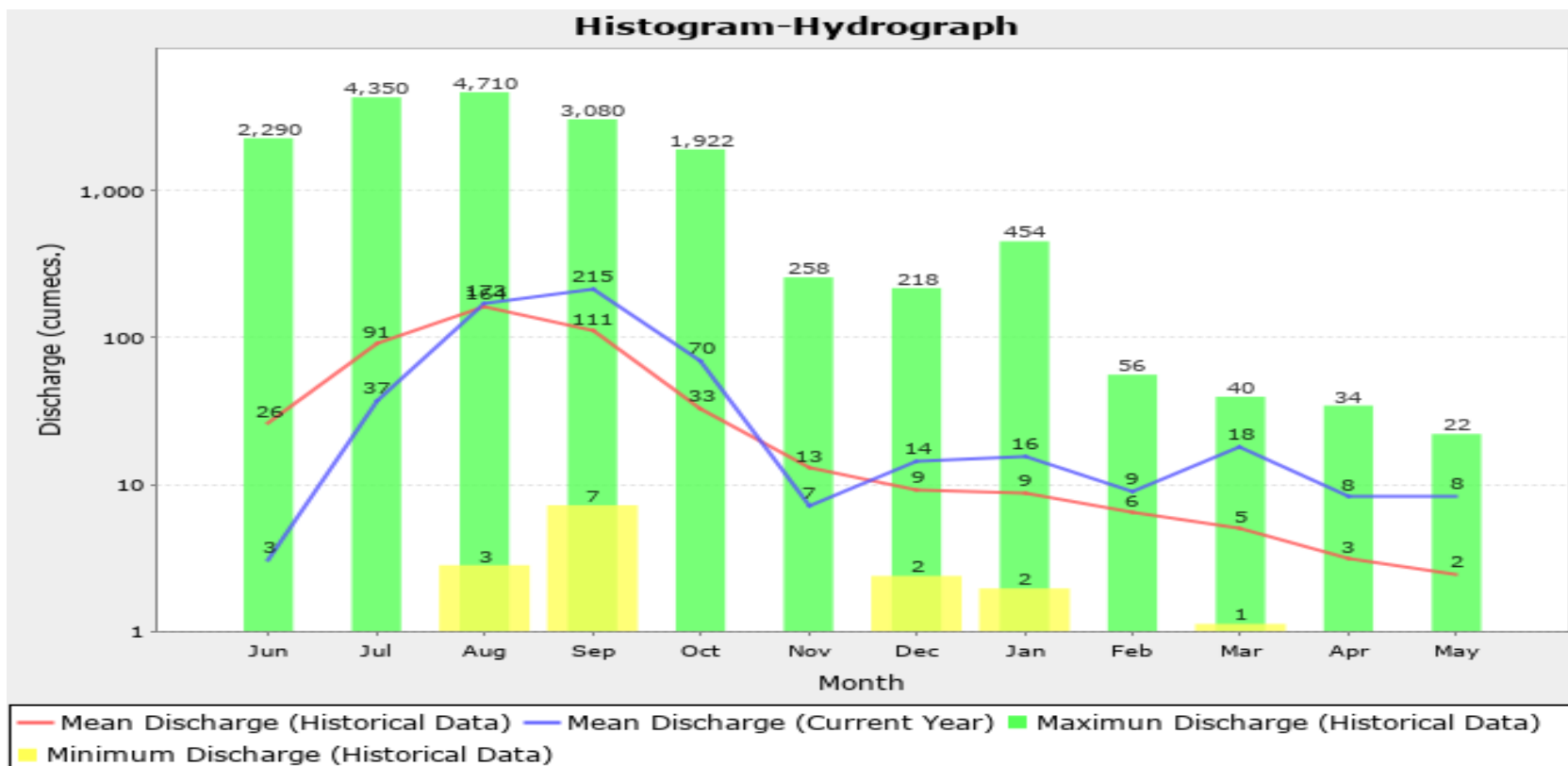
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 1977-2020)

Station Name : Narmada at Dindori

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



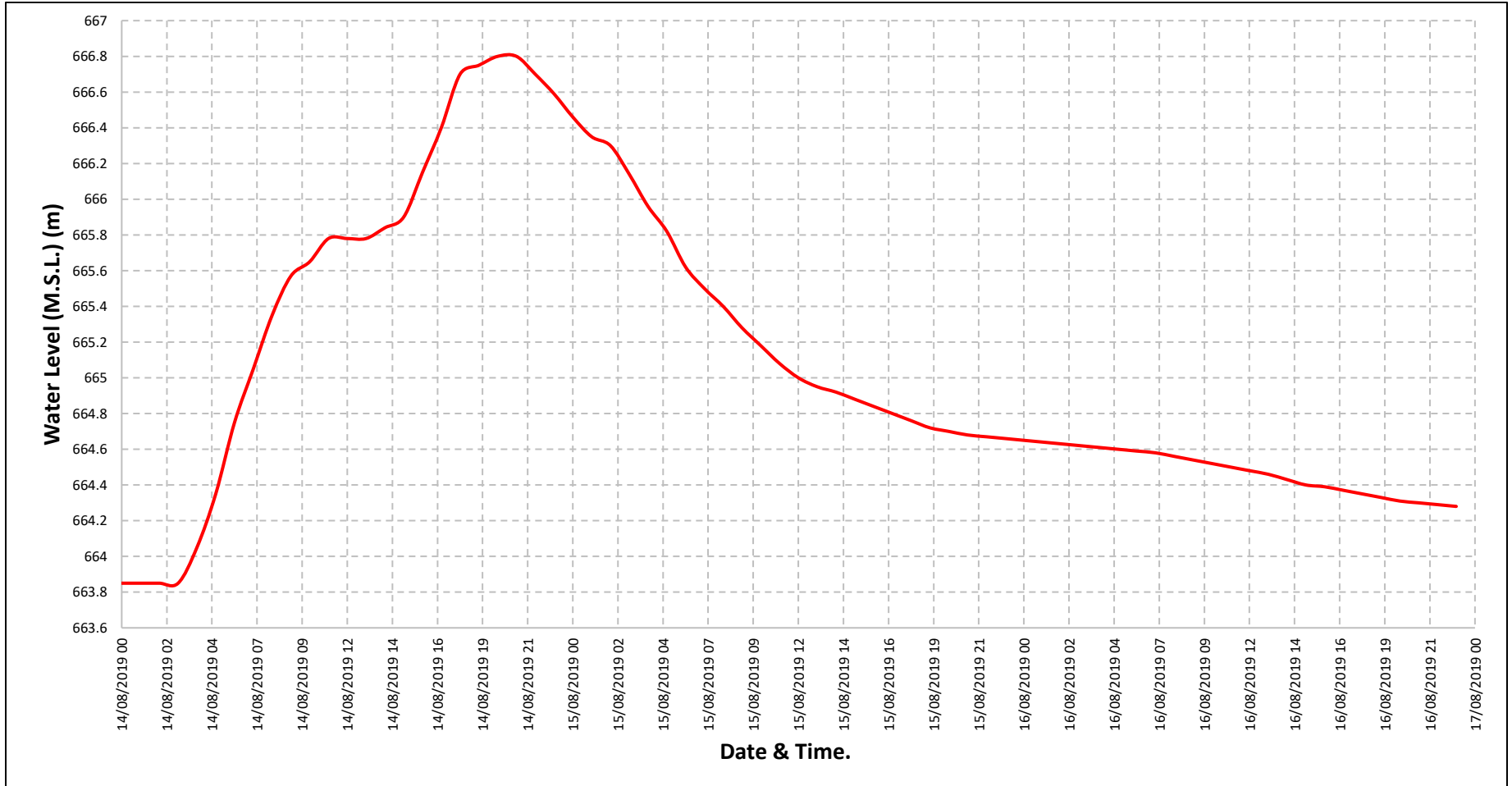
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Dindori

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



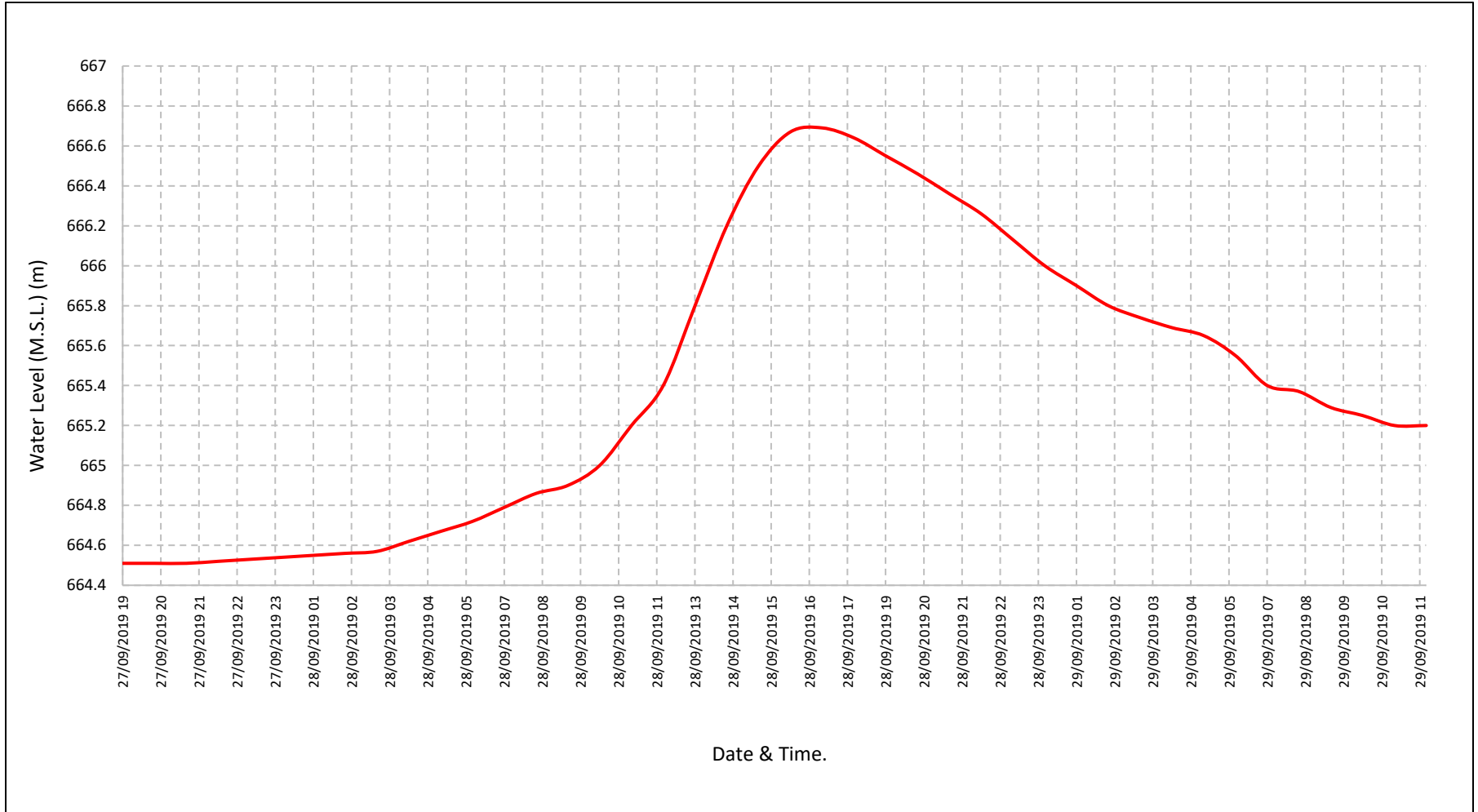
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Dindori

Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



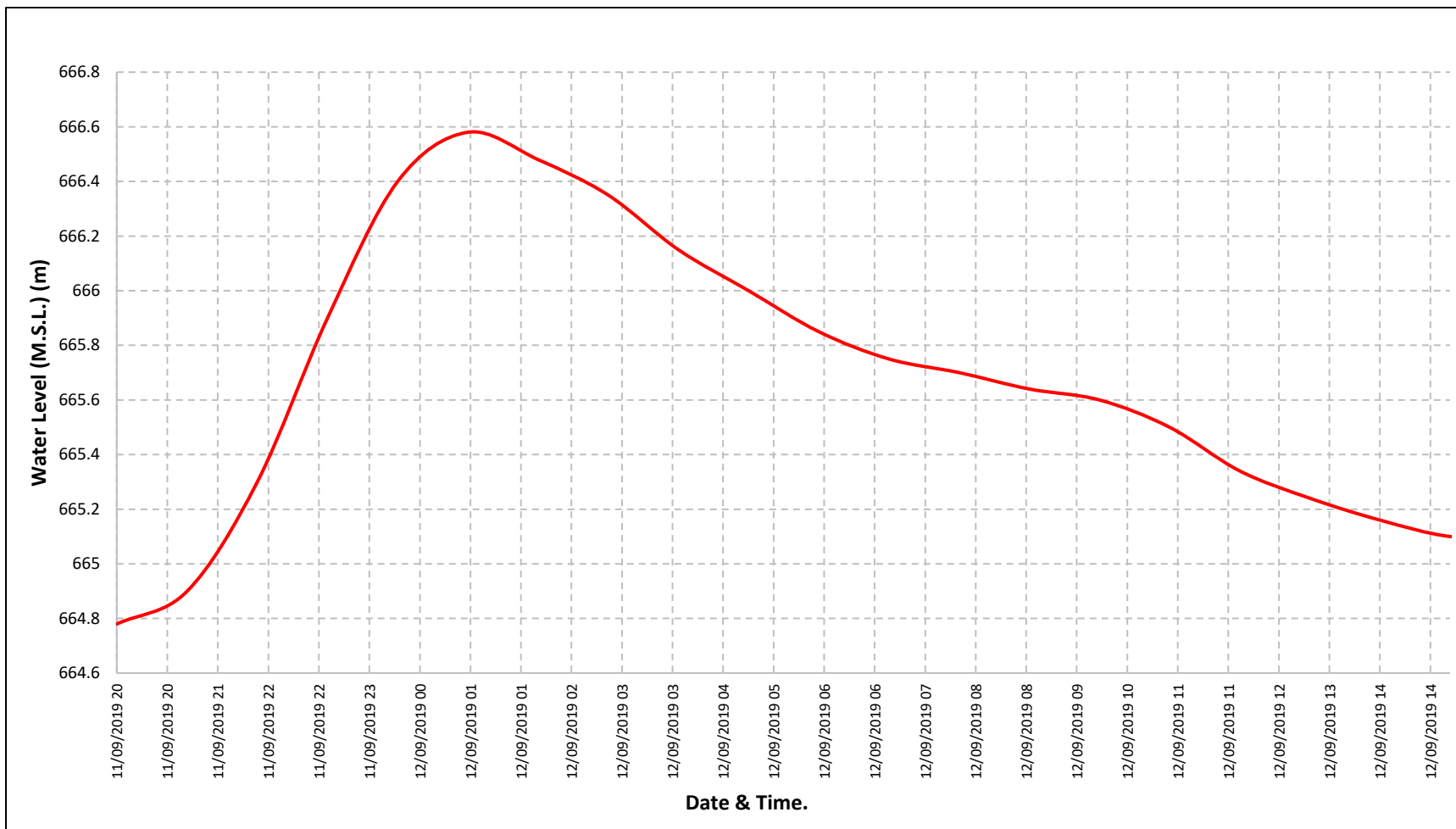
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name : Narmada at Dindori

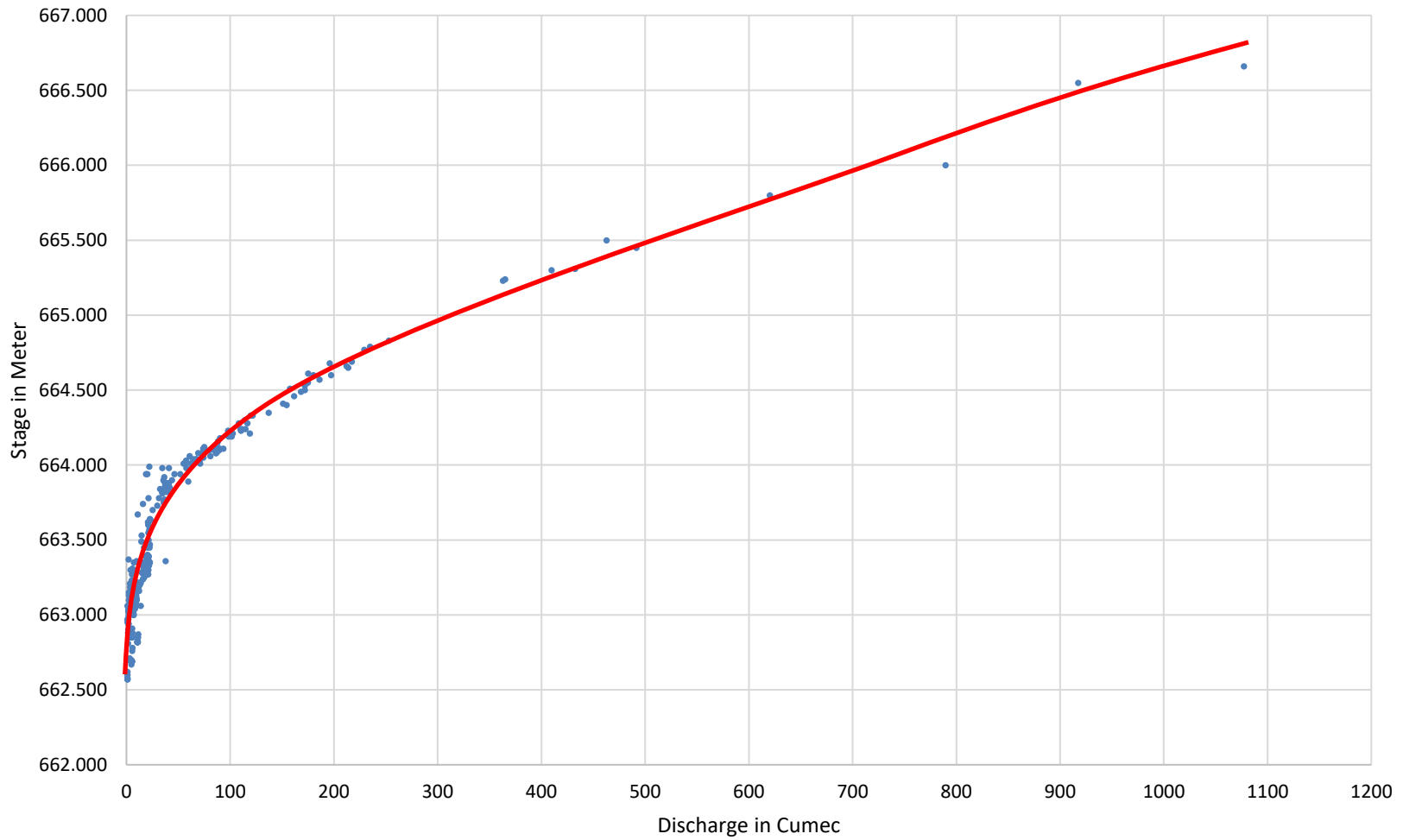
Division : Narmada Division, Bhopal

Local River : Narmada

Sub-Division : UNSD, CWC Jabalpur



Site Dindori Stage Discharge Curve 2019-2020



4.48 Chakrar at Gadasarai.

History Sheet

HISTORY SHEET (DISCHARGE AND WATER LEVEL)						
					Water Year	: 2019 - 2020
Site	:	Chakrar at Gadasarai		Code	:	CW1NAU001456
State	:	Madhya Pradesh		District	:	DINDORI
Basin	:	Narmada		Independent River	:	Narmada
Tributary	:			Sub Tributary	:	
Sub-Sub Tributary	:			Local River	:	Chakrar
Division	:	Narmada Division(ND), Bhopal		Sub-Division	:	Upper Narmada Sub-Division, Jabalpur
Drainage Area	:	647.0 Sq. Km.		Bank	:	Left
Latitude	:	22°49'35"		Longitude	:	81°19'28"
Current Zero of Gauge (m)	:	720				
CATEGORY		Opening Date		Closing Date		
Gauge	:	15-01-2019				
Discharge	:	01-06-2019				
Sediment	:					
Water Quality	:					
Reduced Level		Opening Date		Closing Date		
720.0		19/10/2020				
Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
		Maximum			Minimum	
Year		Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)
2019-2020		175	725.12	26/09/2019	0	-
						01-06-2019

Stage Discharge Sheet for Chakrar at Gadasarai for the period 2019-20.

Day	June		July		August		September		October		November	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	#	#	15.53	721.68	16.23	721.70	48.52	722.51	27.45	721.99	12.44	721.52
2	#	#	17.32	721.72	18.56	721.76	37.25	722.23	26.75	721.96	11.39	721.52
3	#	#	20.01	721.81	24.95	721.91	19.21	721.77	26.05	721.93	11.75	721.51
4	#	#	24.98	721.91	55.07	722.64	18.92	721.76	24.44	721.9	12.11	721.51
5	#	#	28.58	722.03	49.53	722.53	24.45	721.89	23.35	721.88	11.33	721.50
6	#	#	35.45	722.20	25.08	721.92	18.43	721.76	22.72	721.86	12.01	721.50
7	#	#	41.09	722.29	45.19	722.41	113.89	723.88	22.08	721.85	11.18	721.49
8	#	#	43.58	722.37	58.86	722.55	140.0	724.42	21.57	721.84	10.97	721.48
9	#	#	56.09	722.43	49.58	722.53	67.39	722.87	21.06	721.83	10.17	721.48
10	#	#	43.68	722.37	27.2	721.98	64.59	722.82	20.78	721.82	10.58	721.47
11	#	#	42.74	722.33	27.00	721.98	53.24	722.6	20.92	721.82	10.46	721.46
12	#	#	38.28	722.24	14.21	721.57	87.82	723.37	20.07	721.81	10.36	721.46
13	#	#	35.19	722.19	32.18	722.11	43.36	722.35	19.64	721.79	10.26	721.45
14	#	#	33.59	722.14	90.43	723.42	41.65	722.3	19.22	721.77	9.44	721.44
15	#	#	24.23	721.89	155.0	724.70	33.72	722.14	17.65	721.75	9.51	721.44
16	#	#	17.62	721.74	161.0	724.84	28.13	722.01	17.5	721.72	9.42	721.43
17	#	#	15.95	721.70	136.54	724.33	27.21	721.98	16.31	721.7	9.41	721.43
18	#	#	14.36	721.58	112.56	723.85	20.75	721.82	19.23	721.77	9.39	721.42
19	#	#	13.42	721.55	87.32	723.36	17.55	721.74	22.08	721.85	9.45	721.42
20	#	#	13.48	721.55	59.52	722.73	15.58	721.68	19.19	721.80	9.31	721.41
21	#	#	14.4	721.60	56.54	722.67	14.45	721.6	16.31	721.70	8.84	721.4
22	#	#	24.63	721.90	100.42	723.62	13.21	721.54	15.35	721.67	9.22	721.4
23	#	#	38.65	722.25	62.48	722.77	11.23	721.5	14.9	721.65	9.44	721.39
24	2.94	721.21	35.57	722.20	56.04	722.66	21.04	721.83	14.73	721.63	9.26	721.39
25	2.87	721.14	42.08	722.32	49.83	722.53	67.85	722.87	14.62	721.62	9.09	721.38
26	2.75	721.10	35.63	722.20	37.08	722.23	175.0	725.12	14.36	721.59	8.04	721.37
27	12.91	721.53	44.52	722.40	16.85	721.71	100.58	723.62	13.99	721.57	8.26	721.37
28	7.35	721.35	40.17	722.27	10.45	721.46	110.23	723.82	13.61	721.56	8.14	721.36
29	2.94	721.17	43.43	722.32	16.96	721.71	87.96	723.37	13.38	721.54	7.81	721.35
30	9.42	721.42	38.73	722.25	50.32	722.54	48.45	722.5	13.15	721.53	7.67	721.34
31			41.57	722.30	55.67	722.65			12.21	721.52		
Ten-Daily Mean												
I Ten-Daily	0	0	32.63	722.08	37.02	722.19	55.27	722.59	23.62	721.89	11.39	721.5
II Ten-Daily	0	0	24.89	721.89	87.58	723.29	36.9	722.2	19.18	721.78	9.7	721.44
III Ten-Daily	4.12	504.89	36.31	722.18	46.6	722.41	65	722.78	14.24	721.6	8.58	721.38
Monthly												
Min.	2.75	721.1	13.42	721.55	10.45	721.46	11.23	721.5	12.21	721.52	7.67	721.34
Max.	12.91	721.53	56.09	722.43	161	724.84	175	725.12	27.45	721.99	12.44	721.52
Mean	1.37	168.3	31.27	722.05	57.07	722.63	52.39	722.52	19.01	721.75	9.89	721.44

Annual Runoff in

MCM : 555.66

Annual Runoff in

mm : 858.83

Peak Observed Discharge = 67.85 cumecs on 25/9/2019 Corres. Water Level 722.87 m

Lowest Observed Discharge = 0 cumecs on 01/06/2019

Note-

#- Dry

Stage Discharge Sheet for Chakrar at Gadasarai for the period 2019-20.

Day	December		January		February		March		April		May	
	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L
1	7.63	721.34	3.37	721.26	2.35	721.08	2.46	721.08	11.2	721.46	9.31	721.38
2	7.58	721.34	3.43	721.26	2.31	721.08	2.48	721.10	11.2	721.46	8.26	721.37
3	7.65	721.33	3.33	721.25	2.27	721.08	2.84	721.14	11.2	721.46	8.15	721.37
4	7.34	721.33	3.25	721.25	2.6	721.09	3.69	721.30	11.2	721.46	8.04	721.36
5	7.20	721.32	3.12	721.24	3.11	721.13	6.09	721.34	11.2	721.46	8.14	721.36
6	5.38	721.31	2.98	721.23	2.81	721.14	6.85	721.34	11.2	721.46	8.26	721.36
7	5.16	721.30	2.79	721.23	2.92	721.13	8.79	721.39	11.85	721.47	8.04	721.36
8	4.81	721.30	2.81	721.22	2.78	721.12	8.72	721.39	11.85	721.47	7.81	721.35
9	4.47	721.29	2.58	721.22	2.71	721.12	8.66	721.36	11.85	721.47	7.73	721.35
10	4.47	721.29	3.08	721.22	2.63	721.11	8.51	721.36	12.5	721.48	7.69	721.35
11	4.41	721.28	2.96	721.21	2.51	721.10	8.35	721.41	12.5	721.48	7.65	721.35
12	4.34	721.28	2.89	721.21	2.48	721.09	8.33	721.41	12.5	721.48	7.67	721.34
13	4.18	721.27	2.83	721.21	2.81	721.09	9.26	721.43	11.85	721.47	7.58	721.34
14	4.16	721.26	2.93	721.2	2.54	721.08	11.08	721.44	11.85	721.47	6.85	721.34
15	4.41	721.26	2.99	721.19	2.62	721.08	12.00	721.45	11.85	721.47	6.95	721.34
16	4.13	721.25	2.92	721.19	2.59	721.07	12.91	721.50	11.2	721.46	7.20	721.34
17	4.35	721.30	2.99	721.18	2.56	721.07	13.03	721.50	11.2	721.46	7.38	721.34
18	7.57	721.34	2.96	721.17	2.33	721.06	12.92	721.52	10.55	721.45	7.57	721.34
19	7.63	721.33	2.94	721.16	2.03	721.05	13.20	721.50	9.9	721.44	7.65	721.33
20	7.84	721.33	2.94	721.16	2.06	721.05	12.60	721.50	9.26	721.43	7.34	721.33
21	7.53	721.32	2.94	721.15	1.58	721.04	11.68	721.48	9.42	721.43	7.63	721.33
22	7.63	721.31	2.9	721.15	1.95	721.03	11.63	721.48	9.39	721.42	7.84	721.33
23	7.75	721.31	2.83	721.14	2.09	721.03	11.59	721.48	9.45	721.42	7.65	721.33
24	6.95	721.30	2.73	721.13	2.27	721.08	11.20	721.46	9.39	721.42	7.62	721.33
25	6.51	721.29	2.73	721.12	2.61	721.14	11.20	721.46	9.22	721.40	7.58	721.33
26	6.07	721.28	2.63	721.12	2.96	721.13	11.20	721.46	9.23	721.40	7.75	721.33
27	6.10	721.28	2.53	721.11	2.59	721.12	11.20	721.46	9.44	721.39	7.53	721.32
28	5.87	721.27	2.52	721.10	2.52	721.11	11.20	721.46	9.22	721.39	7.63	721.32
29	5.83	721.27	2.63	721.10	2.44	721.10	11.20	721.46	9.31	721.39	7.67	721.32
30	5.80	721.27	2.59	721.09			11.20	721.46	9.09	721.38	7.65	721.32
31	3.84	721.26	2.34	721.08			11.20	721.46			7.65	721.32
Ten-Daily Mean												
I Ten-Daily	6.17	721.32	3.07	721.24	2.65	721.11	5.91	721.28	11.53	721.47	8.14	721.36
II Ten-Daily	5.3	721.29	2.93	721.19	2.45	721.07	11.37	721.47	11.27	721.46	7.39	721.34
III Ten-Daily	6.35	721.29	2.67	721.12	2.33	721.09	11.32	721.47	9.32	721.4	7.65	721.33
Monthly												
Min.	3.84	721.25	2.34	721.08	1.58	721.03	2.46	721.08	9.09	721.38	6.85	721.32
Max.	7.84	721.34	3.43	721.26	3.11	721.14	13.2	721.52	12.5	721.48	9.31	721.38
Mean	5.94	721.3	2.89	721.18	2.48	721.09	9.53	721.4	10.7	721.44	7.73	721.34

Peak Computed Discharge = 175 cumecs on 26/9/2019 Corres. Water Level 725.12 m

Lowest Computed Discharge = 0 cumecs on 02/06/2019

Monthly Runoff for the Year (2019-2020)

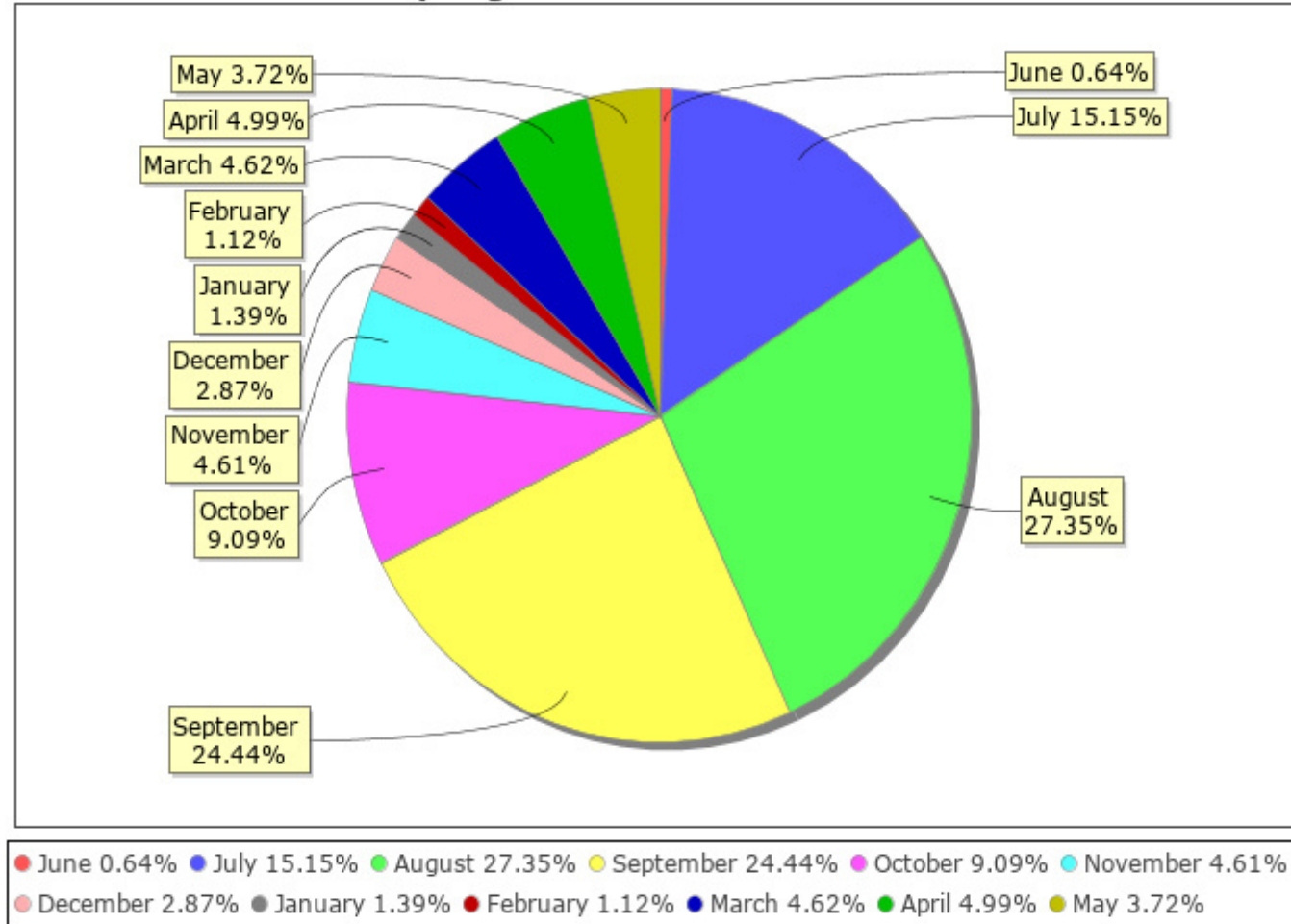
Station Name: Chakrar at Gadasarai

Division: Narmada Division, Bhopal

Local River: Chakrar

Sub-Division: UNSD, CWC Jabalpur

Monthly Avg Runoff Water Year: 2019-2020



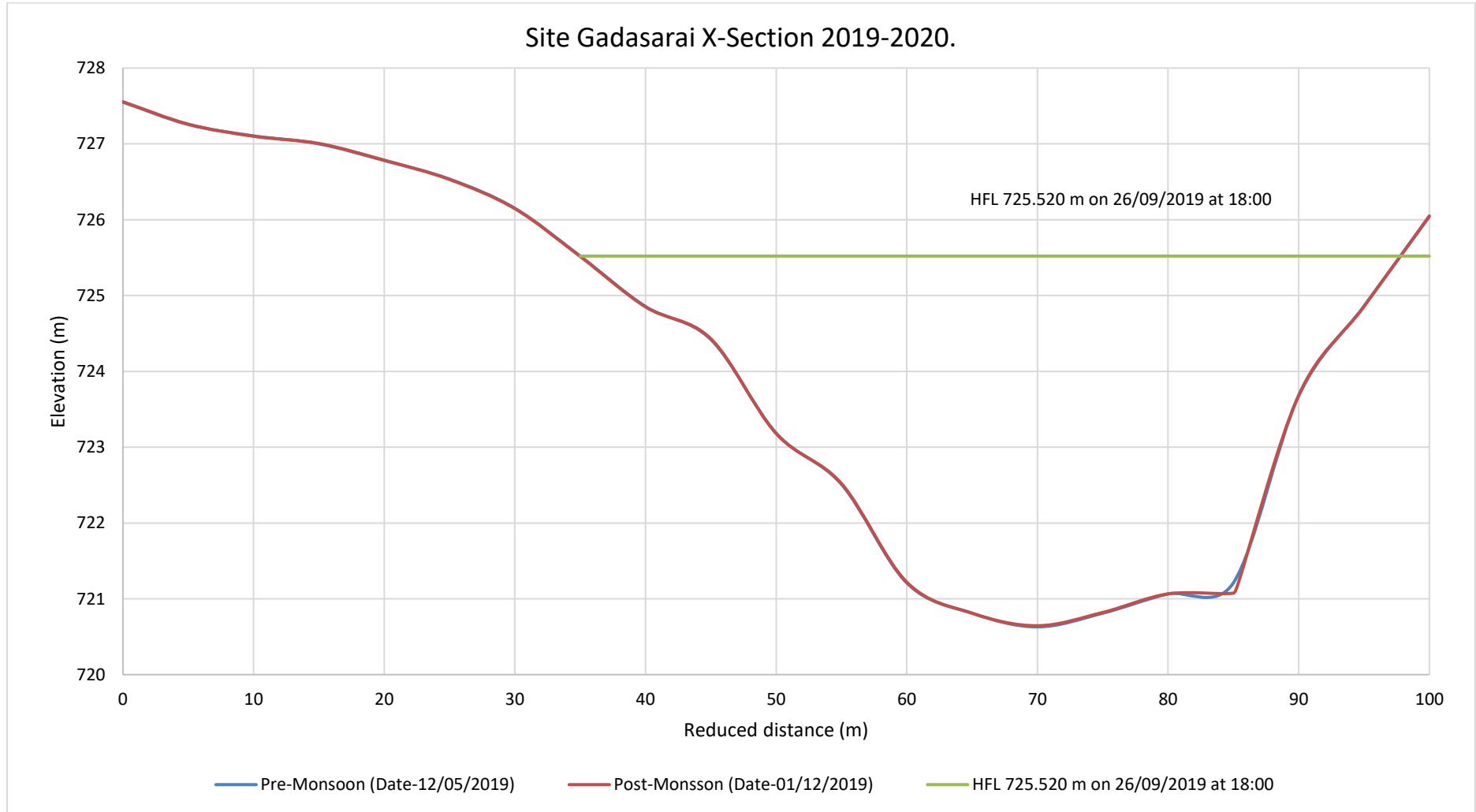
Pre-Monsoon & Post-Monsoon X-Section for Water Year (2019-20)

Station Name: Chakrar at Gadasarai

Division: Narmada Division, Bhopal

Local River: Chakrar

Sub-Division: UNSD, CWC Jabalpur



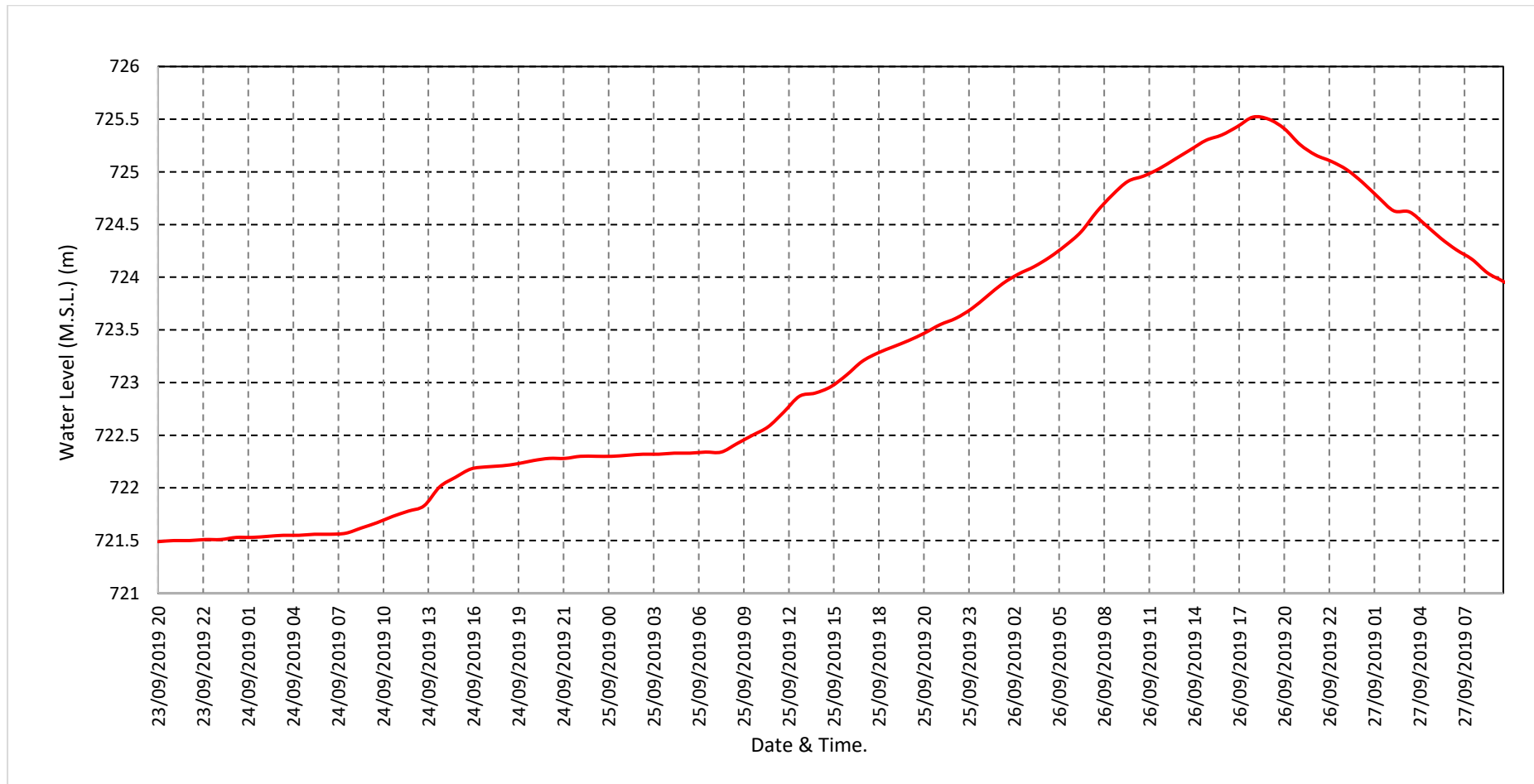
Water Level vs. Time - Graph of Highest Flood Peak during the Year (2019-20)

Station Name: Chakrar at Gadasarai

Division: Narmada Division, Bhopal

Local River: Chakrar

Sub-Division: UNSD, CWC Jabalpur



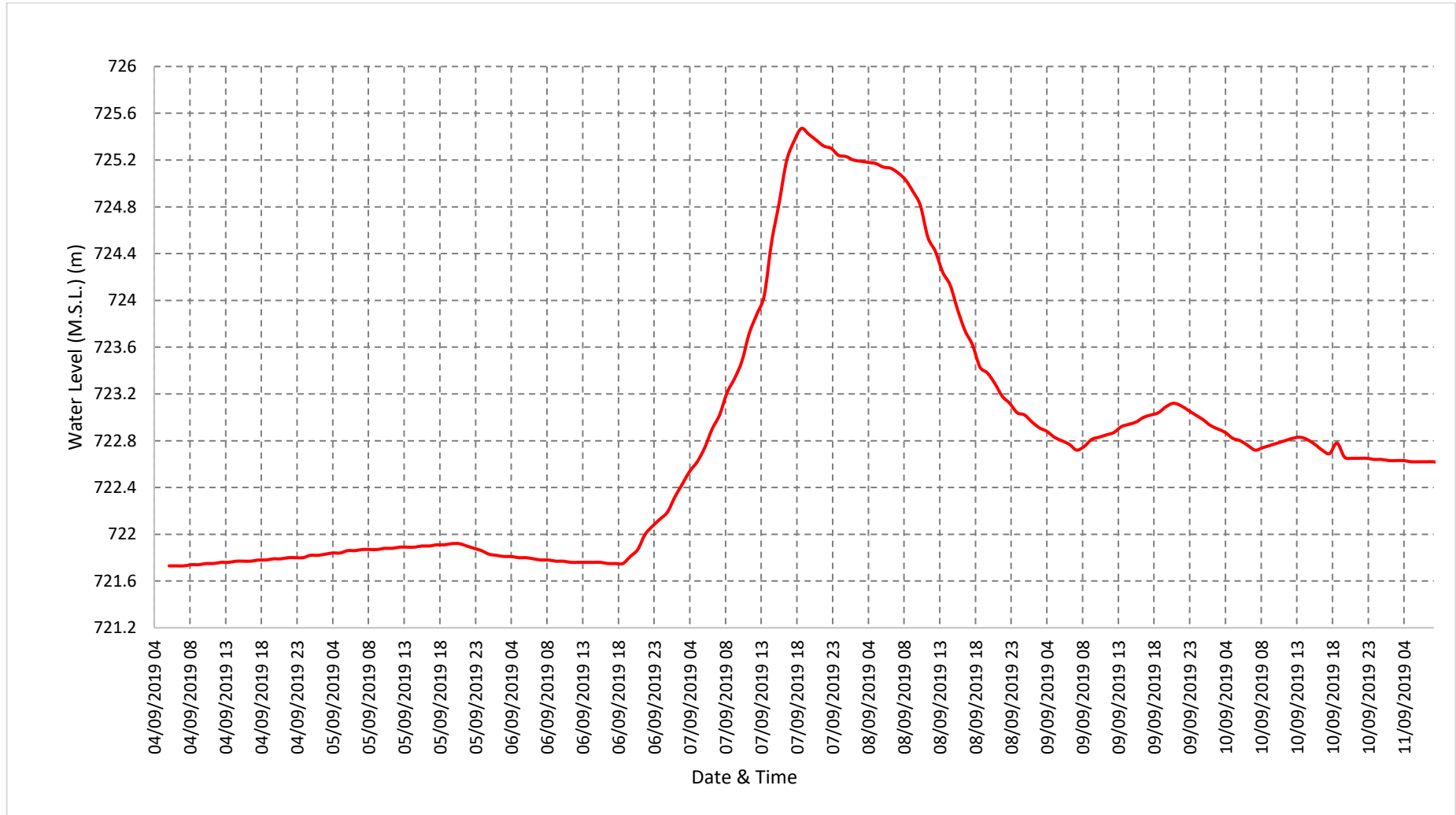
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year (2019-20)

Station Name: Chakrar at Gadasarai

Division: Narmada Division, Bhopal

Local River: Chakrar

Sub-Division: UNSD, CWC Jabalpur



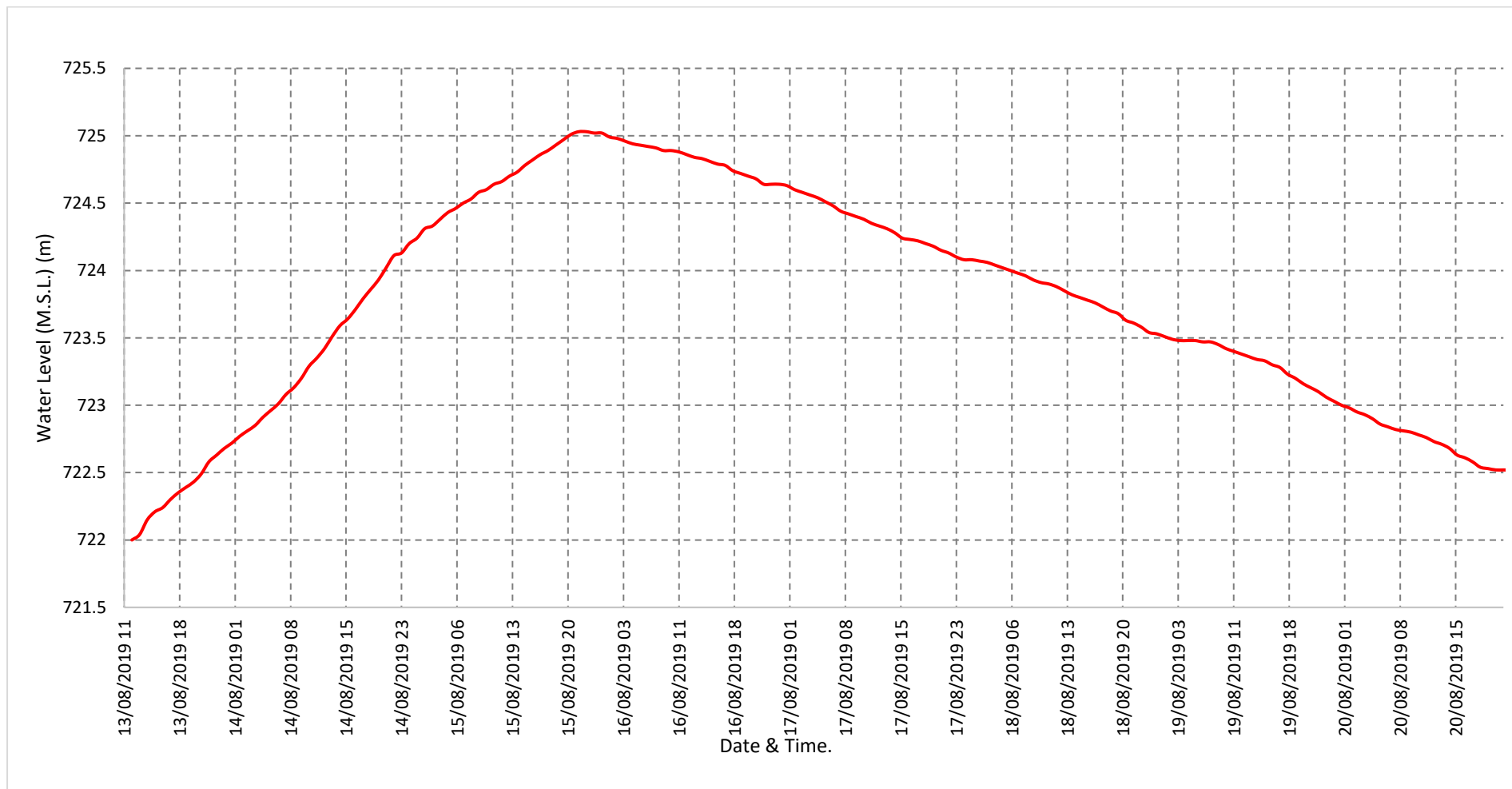
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year (2019-20)

Station Name: Chakrar at Gadasarai

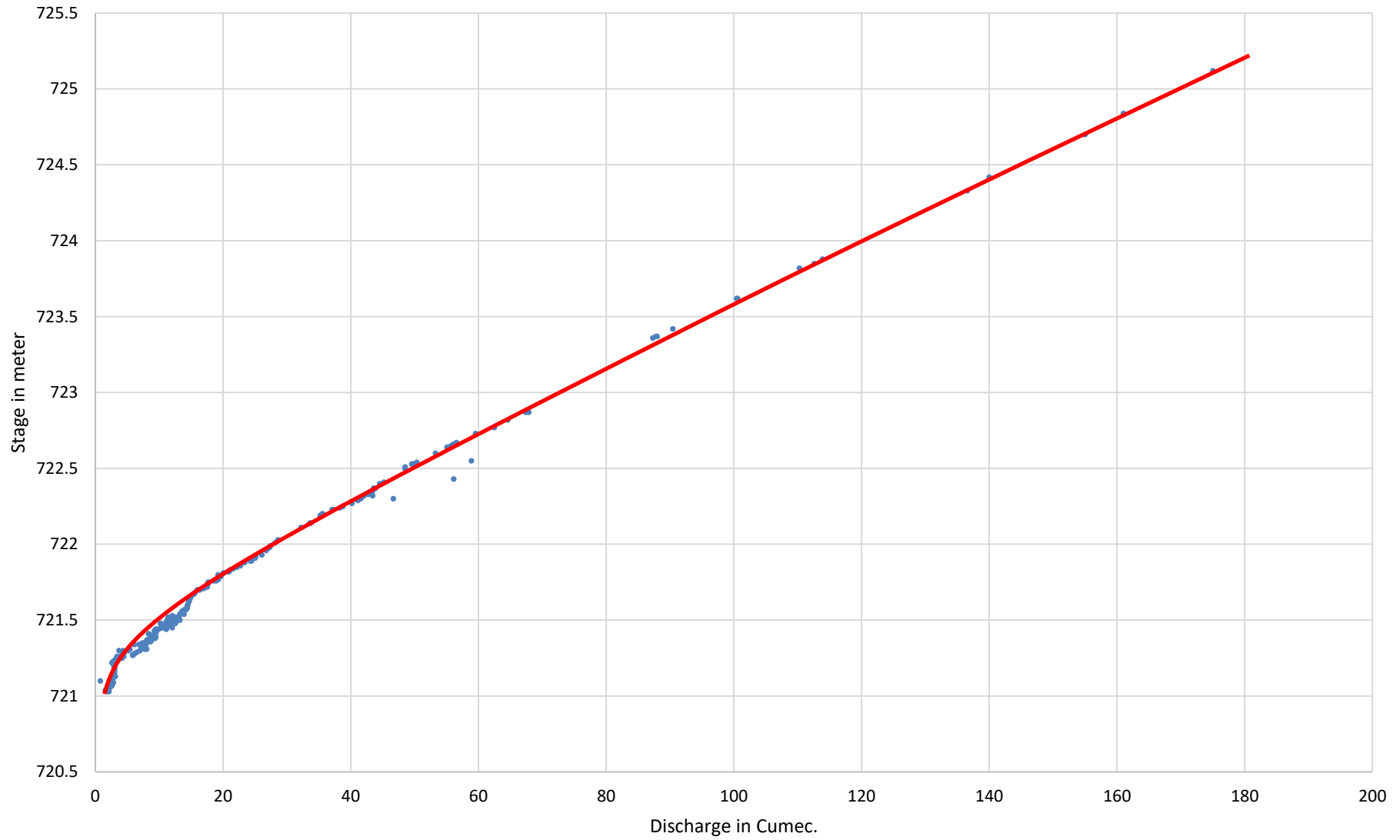
Division: Narmada Division, Bhopal

Local River: Chakrar

Sub-Division: UNSD, CWC Jabalpur



Site Gadasarai Stage-Discharge Curve 2019-2020.



4.49 Narmada at Bijora.

History Sheet.

HISTORY SHEET							
				Water Year	:	2019-2020	
Site	:	Narmada at Bijora		Code	:	NA	
State	:	Madhya Pradesh		District	:	Jabalpur	
Basin	:	Narmada		Independent River	:	Narmada	
Tributary	:	-		Sub Tributary	:		
Sub-Sub Tributary	:			Local River	:	Narmada	
Division	:	DDPC, Bhopal		Sub-Division	:	SDDPC, Bhopal	
Drainage Area	:	14561 Sq. Km.		Bank	:	Left	
Latitude	:	22°55'30"		Longitude	:	79°55'30"	
Zero of Gauge (m)	:	366 (m.s.l)		01-06-1950			
		Opening Date		Closing Date			
Gauge	:	01-06-1950					
Discharge	:	01-06-1967					
Sediment	:	01-06-1980					
Water Quality	:						

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)						
Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2000-2001	1876	372.400	30-07-2000	0	13-01-2001
2001-2002	5776		15-07-2001	0	04-04-2002
2002-2003	1680	372.300	11-09-2002	0	368.000	08-09-2002
2003-2004	5530	373.800	31-08-2003	0	368.000	25-06-2003
2004-2005	4596	375.400	23-08-2004	0	368.000	06-10-2004
2005-2006	6845	377.000	07-08-2005	0	369.700	11-05-2006
2006-2007	1819	372.200	26-08-2006	0	368.000	11-07-2006
2007-2008	234.4	368.000	23-03-2008	0	368.000	15-03-2008
2008-2009	209.6	369.700	11-04-2009	4.96	368.000	11-01-2009
2009-2010	1068	368.000	04-10-2009	0	368.000	06-10-2009
2010-2011	1491	369.700	22-09-2010	0	368.000	30-11-2010
2011-2012	9358	380.500	08-09-2011	0	369.000	11-06-2011
2012-2013	3737	374.200	12-08-2012	71.18	368.000	30-07-2012
2014-2015	4480	374.800	07-08-2014	0	368.000	21-07-2014
2015-2016	216	368.000	26-08-2015	10.42	368.000	02-06-2015
2016-2017	167.4	372.000	02-10-2016	0	368.000	06-07-2016
2017-2018	200	370.000	12-12-2017	0	368.000	01-08-2017
2018-2019	3679	373.800	09-09-2018	102.99	369.300	06-01-2019
2019-2020	7948	378.000	09-09-2019	0	369.300	25-07-2019

Stage Discharge Sheet for Narmada at Bijora for the period 2019-20

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	369.300	103	369.300	100	369.300	100	372.000	1585	372.600	412.2	369.700	192
2	369.300	103	369.300	100	369.300	100	371.200	817	371.100	976	369.700	190
3	369.300	103	368.000	102	369.300	102	370.900	588	370.400	664	369.700	185.9
4	369.300	103	369.300	102	369.700	102	371.300	1129	370.300	428	369.700	192
5	369.300	103	369.300	100	369.700	204	371.800	1591	370.000	272	369.700	181
6	369.300	106	368.000	100	369.300	206	372.800	1899	370.000	272	369.700	188
7	369.300	106	369.300	104	369.700	204	371.200	969	370.000	272	369.700	181
8	369.300	106	369.300	103	369.700	206	373.400	2914	370.000	350	369.300	190
9	369.300	106	369.300	103	369.700	204	378.000	7948	370.000	350	369.300	177
10	368.000	102	369.300	103	373.800	3461	371.400	1260	370.000	350	369.700	188
11	368.000	102	369.300	103	371.000	946	371.400	1263	370.000	350	369.700	190
12	368.000	102	369.300	103	371.000	948	374.700	4498	369.900	272	369.700	190
13	368.000	102	369.300	103	370.600	650	375.200	6053	369.900	272	369.700	195
14	368.000	102	369.300	103	370.250	425	372.100	2008	369.700	194	369.700	193
15	368.000	100	369.300	103	373.800	3650	369.700	177	369.700	214	369.700	193
16	368.000	100	368.000	104	373.800	3630	370.800	429	369.700	192	369.700	193
17	368.000	104	368.000	168	369.700	214	371.100	972	369.700	192	369.700	192
18	368.000	104	368.000	168	369.700	192	371.400	1426	369.700	192	369.300	192
19	368.000	104	368.000	203	369.700	213	370.500	587	369.300	190	369.700	192
20	368.000	104	368.000	56.01	369.700	192	370.500	587	369.700	171	369.300	192
21	368.000	105	368.000	31.01	370.800	815	370.500	569	369.700	209	369.300	95.99
22	369.300	104	369.300	101	372.200	1589	370.200	429	369.700	179	369.700	191
23	369.300	105	368.000	102	371.500	1285	370.200	429	369.700	180	369.700	192
24	369.300	105	369.300	98	371.200	97.99	370.200	429	369.700	188	369.700	188
25	369.300	105	369.300	0	372.200	185	370.200	433	369.700	188	369.300	191
26	369.300	100	369.300	100	372.800	2532	371.100	822	369.700	193	369.700	198
27	369.300	100	369.300	100	371.600	1446	371.800	1598	369.700	190	369.700	191
28	369.300	100	369.300	100	371.400	1288	371.100	971	369.700	190	369.300	192
29	369.300	100	369.300	100	371.200	967	374.700	4297	369.700	190	369.300	95.99
30	368.000	100	368.000	0	371.200	817	374.100	3661	369.700	190	369.300	192
31			368.000	100	371.100	813			369.700	190		
Ten-Daily Mean												
I Ten-Daily	369.170	104.1	369.040	101.7	369.950	488.9	372.400	2070	370.440	434.6	369.620	186.5
II Ten-Daily	368.000	102.4	368.650	121.4	370.925	1106	371.740	1800	369.730	223.9	369.620	192.2
III Ten-Daily	369.040	102.4	368.827	75.64	371.564	1076	371.410	1364	369.700	189.7	369.500	172.7
Monthly												
Min.	368.000	100	368.000	0	369.300	97.99	369.700	177	369.300	171	369.300	95.99
Max.	369.300	106	369.300	203	373.800	3650	378.000	7948	372.600	976	369.700	198
Mean	368.737	103	368.839	98.81	370.837	896.3	371.850	1745	369.948	279.7	369.580	183.8

Annual Runoff in MCM = 11105 Annual Runoff in mm = 763

Stage Discharge Sheet for Narmada at Bijora for the period 2019-20

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	369.300	95.99	369.700	193	369.300	98	369.300	101	369.700	100	369.700	167
2	369.300	95.99	369.300	196	369.300	98	369.300	95.99	369.700	147	369.300	144
3	369.700	188	369.700	188	369.300	98	369.300	101	369.700	122	369.700	111
4	369.000	183	369.300	189	369.300	98	369.300	101	369.700	108	369.300	111
5	369.300	191	369.300	200	369.300	98	369.300	101	369.700	108	369.700	116
6	369.700	95.99	369.700	195	369.300	98	369.300	101	369.700	136.7	369.700	126
7	369.700	190	369.700	194	369.300	98	369.300	101	369.700	133	369.700	125
8	369.700	188	369.700	196	369.300	98	369.300	101	369.700	119	369.700	107
9	369.700	190	369.300	196	369.300	98	369.700	157	369.700	119	369.700	169
10	369.700	191	369.300	196	369.300	98	369.700	205	369.700	121	369.700	208
11	369.700	1911	369.300	95	369.300	98	369.700	184	369.700	203	369.700	204
12	369.700	180	369.300	95	369.300	98	369.700	101	369.700	209	369.700	212
13	369.700	184	369.300	191	369.300	98	369.700	101	369.700	199	369.700	212
14	369.700	193	369.300	190	369.300	98	369.700	103	369.700	207	369.700	177
15	369.700	190	369.300	95.99	369.300	98	369.700	101	369.700	202	369.700	204
16	369.300	188	369.300	95.99	369.300	98	369.700	102	369.700	212	369.700	208
17	369.700	190	369.300	95.99	369.300	98.99	369.700	102	369.700	212	369.700	208
18	369.300	190	369.300	95.99	369.300	98.98	369.700	102	369.700	206	369.700	206
19	369.300	196	369.300	95.99	369.300	98.98	369.700	160	369.700	207	369.700	206
20	369.700	89.99	369.300	98	369.300	98.99	369.700	144	369.700	207	369.700	206
21	369.700	176	369.300	98	369.300	98.99	369.700	141	369.700	208	369.700	202
22	369.700	170	369.300	95	369.300	98.99	369.700	140	369.700	208	369.700	202
23	369.700	181	369.300	95.99	369.300	100	369.700	111	369.700	206	369.700	202
24	369.300	192	369.300	95.99	369.300	100	369.700	102	369.700	210	368.000	170
25	369.700	94.01	369.300	95.99	369.300	98.99	369.700	102	369.700	208	369.700	158
26	369.700	166	369.300	95.99	369.300	98.99	369.700	102	369.700	208	369.700	205
27	369.300	195	369.300	95.99	369.300	98	369.700	103	369.700	206	368.000	102
28	368.300	192	369.300	95.99	369.300	98.99	369.700	102	369.700	195	368.000	101
29	369.300	192	369.300	95.99	369.300	100	369.700	102	369.700	193	368.000	103
30	369.700	172	369.300	95.99			369.700	136	369.700	188	369.300	103
31	369.700	194	369.300	98			418.850	100			369.300	129
Ten-Daily Mean												
I Ten-Daily	369.510	160.9	369.500	194.3	369.300	98	369.380	116.5	369.700	121.4	369.620	138.4
II Ten-Daily	369.580	351.2	369.300	114.9	369.300	98.39	369.700	120	369.700	206.4	369.700	204.3
III Ten-Daily	369.464	174.9	369.300	96.27	369.300	99.22	374.168	112.8	369.700	203	369.009	152.4
Monthly												
Min.	368.300	89.99	369.300	95	369.300	98	369.300	95.99	369.700	100	368.000	101
Max.	369.700	1911	369.700	200	369.300	100	418.850	205	369.700	212	369.700	212
Mean	369.516	227.2	369.365	133.9	369.300	98.51	371.182	116.3	369.700	176.9	369.429	164.6

Peak Computed Discharge = 7948 cumecs on 09/09/2019

Corres. Water Level :378 m

Lowest Computed Discharge = 0.000 cumecs on 25/07/2019

Corres. Water Level :369.3 m

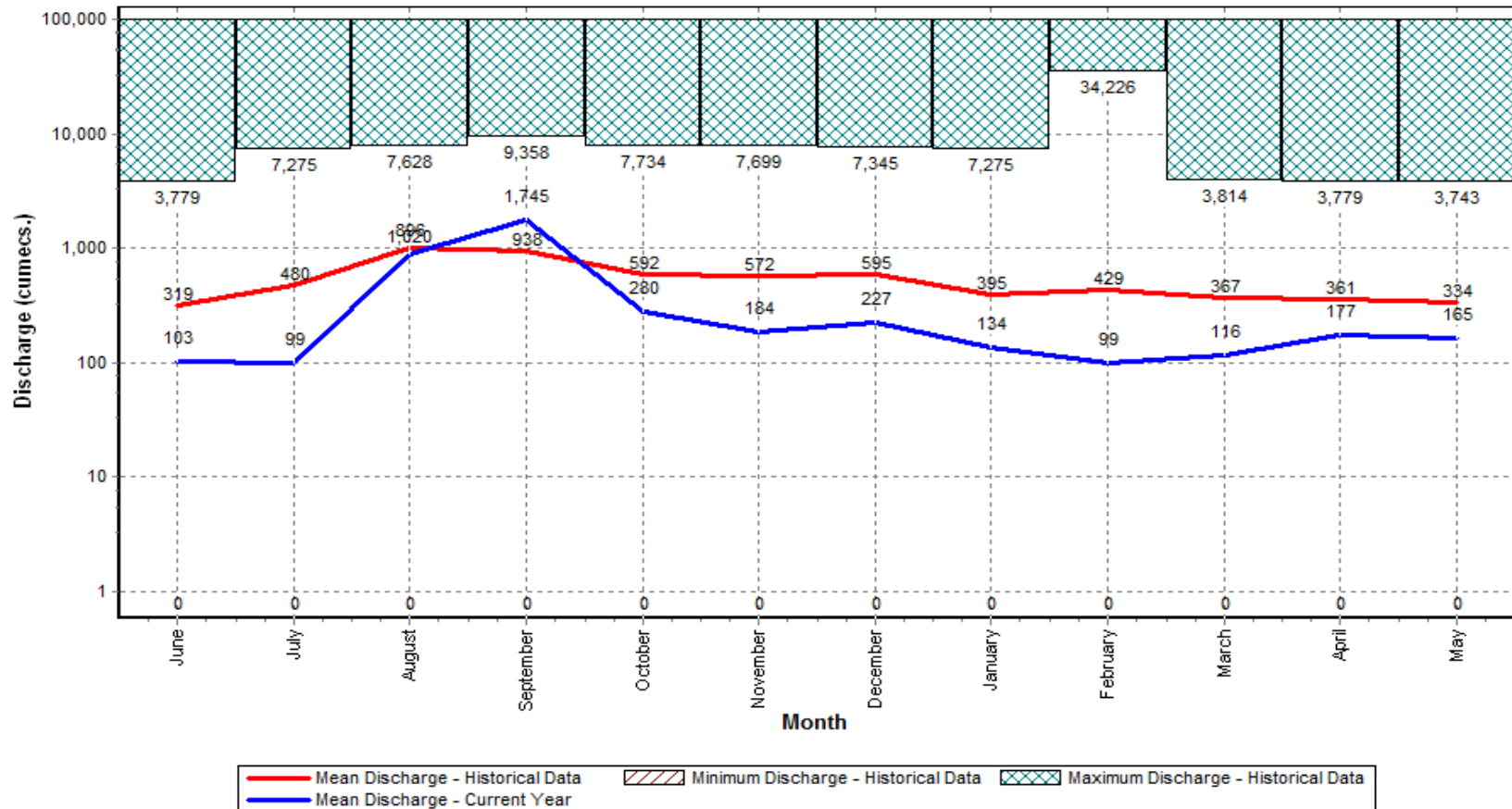
Histogram- Hydrograph for Water Year : 2019-20 (Data considered : 2000-2020)

Station Name : Narmada at Bijora

Division : DDP, Bhopal

Local River : Narmada

Sub-Division : SDDPC, Bhopal



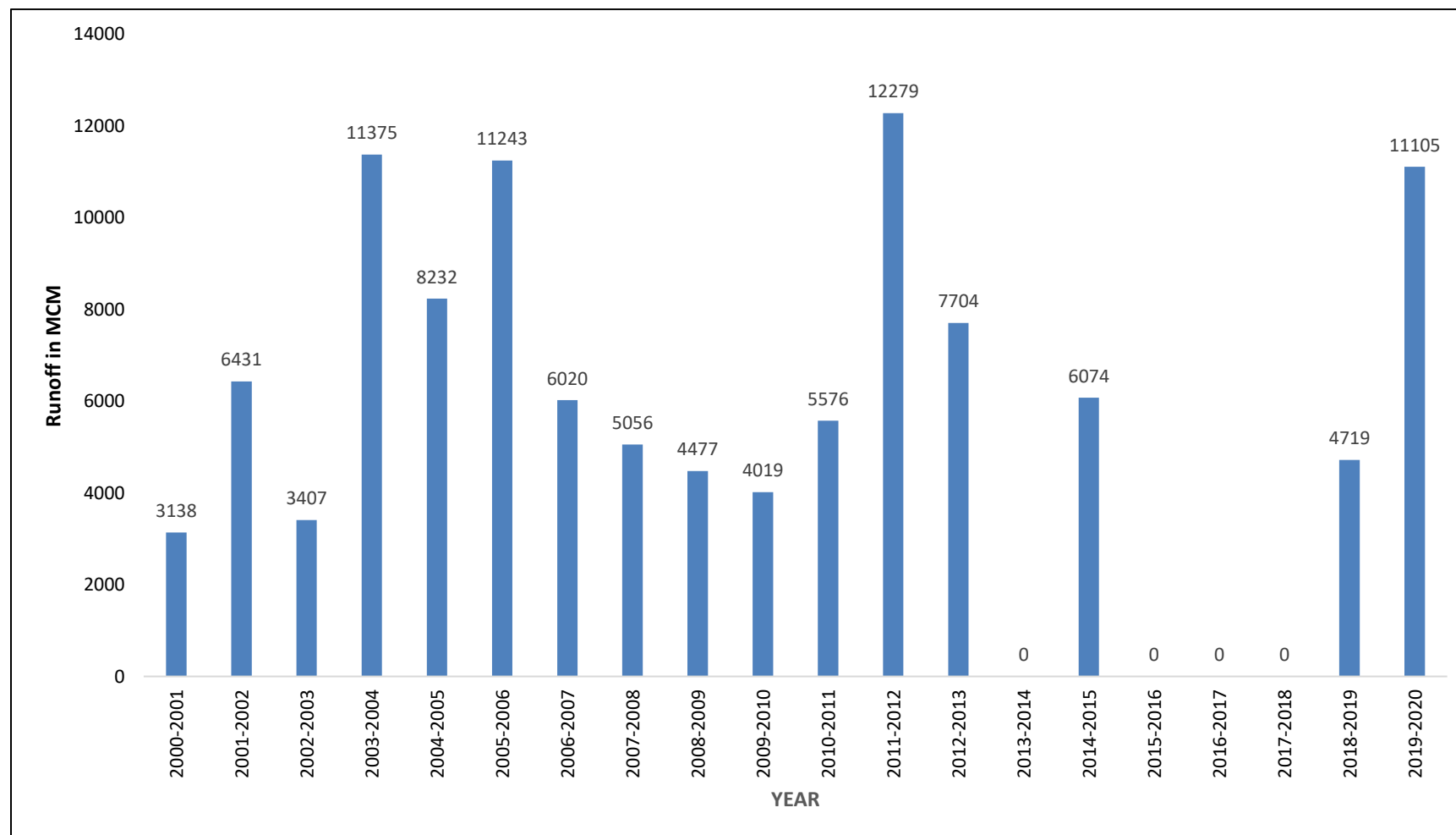
Annual Runoff Values for the period: (2000– 2020)

Station Name : Narmada at Bijora

Division : DDPC, Bhopal

Local River : Narmada

Sub-Division : SDDPC, Bhopal



Monthly Average Runoff for the year (2019-20)

Station Name : Narmada at Bijora (NA)

Local River : Narmada

Division : DDPC, Bhopal

Sub-Division : SDDPC, Bhopal

