

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by State of HP for the month of April & May-2020 (Hon'ble NGT in the matter of OA. No. 673/2018 dated 06.12.2019)

Sr. No.	Activity to be monitored	Timeline	Submission of Progress by State/ UT- Compliance Status			
1.	Ensure 100 % treatment of sewage at least in-situ remediation	31.12.2020	The site is identified for carrying out Phyto-remediation work for treatment of sewage at Samtel Nallah at Priority –I at Parwanoo along the catchment of Sukhna Nallah and Priority –II, Jatta Wala Nallah at Kala Amb on the Catchment of River Markanda. The work for Priority-I started.			
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.12.2020 (Priority-I & II) 31.03.2021 (Priority-III)	The Progress report for setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs for all Priority Stretches is as under:			
			S.No.	Area & Priority	Proposal	Progress
			1.	SUKHNA Nallah Stretch (Priority - I):- Parwanoo Town	Sewage Treatment Plant Proposal (2 No of 1 MLD capacity each including laying of sewerage lines in Zone-I and Zone-II in Parwanoo Town. The proposal of 49.82 Crore prepared by IPH Department.	<ul style="list-style-type: none"> • In Priority – I (Sukhna Nallah at Parwanoo), financial approval amounting Rs. 47.60 Crore has been accorded for the proposal of 02 STPs (01 MLD each. Tender work has been awarded on 19.03.2020. The work will be completed before 31st, December 2020.
			2.	River MARKANDA Stretch (Priority II):	Kala Amb and Moginand Area: Laying of Sewerage Network and Pre-treatment of Sewage. The proposal is of Rs. 30.40 crore.	<ul style="list-style-type: none"> • At, Priority – II (River Markanda at Kala Amb), the contract for installation of primary treatment system for 1.5 MLD sewage treatment and laying of sewer network awarded on 7.03.2020. The pipe line for sewer lines purchased. The work will be completed before 31st December

						2020.
					Trilokpur Area: Laying of Sewerage Network & Setting up of Sewage Treatment Plant of 1 MLD capacity. The proposal is of Rs. 26.00 crores.	<ul style="list-style-type: none"> • Tendering work completed. The contract awarded on 7/03/2020 pipes also procured for sewer line. The land handed over to contractor. The work will be completed before 31st December 2020.
			3.	River Sirsa Stretch (Priority III)	Execution of project proposal for sewage management by laying of pipelines and installation and commissioning of STP at Nalagarh of capacity 3.62 MLD. The cost is Rs. 16.36 crores.	<ul style="list-style-type: none"> • The work of Sewerage network w.r.t Trunk sewer line, its network and setting up of STP have been completed and commissioned. • The Sewerage connections are being released.
					Proper design, execution of Sewerage lines and Pretreatment of Sewage to be incorporated in CETP, Baddi. The capacity is 5.5 MLD. The cost is Rs. 33.34 crore.	<ul style="list-style-type: none"> • Laying of sewerage network and testing is completed. • The Sewerage connections are released and sewage is also received CETP, Baddi.
2.	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	The Time line for completion of all sewage proposals, pertaining to Priority –I (Sukhna Nallah at Parwanoo) and Priority-II (River Markanda at Kala Amb) the timeline is 31.12.2020 .			
3.	Chief Secretaries may set up appropriate monitoring mechanism at State level					
	<ul style="list-style-type: none"> • Specifying accountability of nodal authorities not below the Secretary level. 		The Administrative Secretaries of Industries Deptt., Urban Dev. Deptt., Rural Dev. Deptt., Irrigation & Public Health Deptt. have been made accountable at State level.			

	<ul style="list-style-type: none"> Chief Secretaries may have an accountable person attached in their office for this purpose. 		<p>The Environment Cell has been notified vide notification No. STE-E (3)-16/2019 dated 19th February 2020 comprising of MS, PCB, Director, UD, Director, Environment and Joint Secy, (Env.). (copy of notification enclosed)</p>
	<ul style="list-style-type: none"> Monitoring at State level must take place 	<p>Fortnightly Commencing 21.12.2019</p>	<p>Regular monitoring of the progress on implementation of Action Plans is being undertaken at Chief Secretary level. Last meeting was held on 17.06.2020. w.r.t. reviewing the status.</p>

4. Progress report may be furnished by the States/ UTs to
- Secretary, Ministry of Jal Shakti
 - Member Secretary, CPCB

Monthly (preferably before 20th of every month)

The progress monitored by the Chief Secretary to the GoHP in last meeting held on 17.06.2020. The Latest Progress report is as under.

1. SUKHNA Nallah Stretch (Priority - I):- Parwanoo Town

Sr. No.	Organization Responsible	Work proposed for Execution along with cost and final Timeline.	Percentage (%) of Work to be completed as on date against timeline.	Latest Status
1.	Irrigation and Public Health Department	<p><u>Sewage Treatment Plant Proposal</u> (2 No of 1 MLD capacity each including laying of sewerage lines in Zone-I and Zone-II in Parwanoo Town. The proposal of 49.82 Crore prepared by IPH Department.</p>	33.33%	<ul style="list-style-type: none"> In Priority – I (Sukhna Nallah at Parwanoo), financial approval amounting Rs. 47.60 Crore has been accorded for the proposal of 02 STPs (01 MLD each). Tender work has been awarded on 19.03.2020.
		<p>Installation of Continuous Water Quality Monitoring Station. The proposal of 0.3 crore</p>	100 %	<p>The Online Continuous Water Quality Monitoring Station (OCWQMS) has been installed and online data has been connected to HPSPCB server.</p>

					and completion time was 31st July, 2019.		
					Radar system for depth and flow measurement.	100 %	The system has been provided by IPH and it is installed at River Kaushalya and is functioning properly.
			2.	HIMUDA, Municipal Council, Parwanoo	Sewage Treatment Plant (1 No. of 70 KLD capacity in Sector - 5 Parwanoo) to cater to the additional load of Septic Tanks catering to the residential area. Cleaning and Overhauling of Septic Tanks.	100 %	<ul style="list-style-type: none"> • The Sewage Treatment Plant of 70 KLD capacity at Sector 5 Parwanoo has been commissioned and its operation is meeting the prescribed water quality norms. • The Cleaning and Overhauling is done by MC Parwanoo on regular basis.
			3.	Department of Urban Development	Waste Recovery and Reprocessing of Existing Dumped Waste at Dumping site Sector 5, Parwanoo. Installation of Kiosk for Domestic Hazardous Waste Management.	100%	<ul style="list-style-type: none"> • The legacy waste has been recovered, and dumping site has been cleared. • Domestic Hazardous waste Kiosk has been installed at Parwanoo.

			4	BBNDA, MC Parwanoo & HPSPCB	For collection, Transportation, Processing and disposal of fresh waste at Baddi Cluster.	100 %	<ul style="list-style-type: none"> • The work of Production Shed, Weighbridge, Boundary Wall, CCTV Cameras, ETP for Leachate treatment, Stand Completed. • Plant and Machinery of RDF Section is installed. • Other miscellaneous work electrification is also completed. • The Work of Dryer Installation is in progress.
			5.	Forest Department	Plantation Proposal	100%	2200 plants have been planted so far.
			6.	MC Parwanoo	Phyto-remediation Proposal on Samtel Nallah		One site finalised for Root Zone Treatment (Phytoremediation), tender opened on 14th June, 2020. The plantation of reeds started.
			7.	HPSPCB	Inventorization of Wastewater generating Industries and Legal Action against Non-complying Industrial Units	100 %	<ul style="list-style-type: none"> • The inventorization is completed, 48 Nos of Water Polluting industries exists. • Regular inspections and monitoring carried out, till date 06 nos of closure directions issued.

8.	Health Department	Health Camps and Health Study on the catchment of River.	90%	<ul style="list-style-type: none"> Total 11 Nos of Health Camps conducted an 1428 nos of patients were checked for Air and Water Air, Water and vector Borne diseases and Treatment Provided. Health Study in progress.
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1. River MARKANDA Stretch (Priority II):

Sr. No.	Organization Responsible	Work proposed for Execution along with cost and final Timeline.	Percentage (%) of Work to be completed as on date against timeline.	Existing Status
1.	Irrigation and Public Health Department & Industries Department	Kala Amb and Moginand Area: Laying of Sewerage Network and Pre-treatment of Sewage. The proposal is of Rs. 30.40 crore.	33.33 %	<ul style="list-style-type: none"> At, Priority – II (River Markanda at Kala Amb), the contract for installation of primary treatment system for 1.5 MLD sewage treatment and laying of sewer network awarded on 7.03.2020. The pipe line for sewer lines purchased.

					<p>Trilokpur Area: Laying of Sewerage Network & Setting up of Sewage Treatment Plants. The proposal is of Rs. 26.00 crores.</p>	33.33%	<ul style="list-style-type: none">• Tendering work completed. The contract awarded on 7/03/2020 pipes also procured for sewer line. The land handed over to contractor.	
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			2.	Irrigation and Public Health Department	Installation of Continuous Water Quality Monitoring Station	100 %	<ul style="list-style-type: none"> The Online Continuous Water Quality Monitoring Station (OCWQMS) has been installed.
			3.	Department of Industries.	Kala Amb area : Proposal for setting up of CETP.	33.33%	<ul style="list-style-type: none"> The Notice Inviting Tender for setting up of CETP of 2.5 MLD at Kala Amb was floated on 15th March but no bids were received due to imposition of lockdown. Tender is floated again and closing date is 29.06.2020. As per project report of CETP cum STP, the designed capacity of CETP cum STP is 1.50MLD industrial effluent and 1.0 MLD domestic sewage (Total 2.50MLD) for 1st phase project.
			4.	Special Area Development Authority, Kala Amb, District Administration, Rural Development Department.	Proposal for setting up of Solid Waste Management Facility. Final timeline of completion is 31 st January, 2022. The cost of the project is Rs. 3.5 crores.	33.33%	<ul style="list-style-type: none"> The land measuring 05-04-00 bighas situated at Mohal Ogli has been transferred in favor of SADA Trilokpur for setting up a Solid Waste Management Plant. Demarcation of the plot has been done on 06.08.2019. Leveling of the plot has been done. The administrative approval and expenditure sanction has been accorded by the Chairman SADA for the work of construction of shed along with machine room and work has been awarded on 13.03.2020 but work could not be started due to imposition of lockdown.

				<ul style="list-style-type: none"> Supply order for supply of Balling machine to Scientific & Technologies Equipment's Corporation has been issued on 7.03.2020.
5.	Forest Department	Plantation Proposal Biodiversity park	90 %	<p>800 plants have been planted in Trilokpur Devini Area.</p> <p>The work of Biodiversity park in Kala Amb, work is in progress.</p>
6	IPH Department	Phyto-remediation Proposal on Jattan Wala Nallah	0 %	The work for insitu treatment by phytoremediation in Jatta Wala Nallah. Two sites has been proposed for Phytoremediation work.
7	HPSPCB	Inventorization of Wastewater generating Industries and Legal Action against Non-complying Industrial Units	100 %	<ul style="list-style-type: none"> The inventorization is completed, 94 Nos of Water Polluting industries exists. Regular inspections and monitoring carried out, till date 9 nos of closure directions issued.
8	Health Department	Health Camps and Health Study on the catchment of River.	90%	<ul style="list-style-type: none"> Total 11 Nos of Health Camps conducted an 1816 nos of patients were checked for Air and Water Air, Water and vector Borne diseases and Treatment Provided. Health Study in progress.

River SIRSA Stretch (Priority III):-

Sr. No.	Organization Responsible	Work proposed for Execution along with cost and final Timeline.	Percentage of Work to be completed as on date against timeline. (%)	Existing Status
1.	Irrigation and Public Health Department and Urban Development Department	Execution of project proposal for sewage management by laying of pipelines and installation and commissioning of STP at Nalagarh. The cost is Rs. 16.36 crores.	100%	<ul style="list-style-type: none"> The work of Sewerage network w.r.t Trunk sewer line, its network and setting up of STP have been completed as and commissioned. The Sewerage connections are being released.
		Proper design, execution of Sewerage lines to be incorporated in CETP, Baddi. The cost is Rs. 33.34 crore.	100%	<ul style="list-style-type: none"> Laying of Sewerage network and testing completed. The Sewerage connections are being sanctioned.
	Irrigation and Public Health Department	To undertake channelization of River Sirsa from Sitomajri to Sainimajra (Nalagarh) including main drains contributing to River Sirsa.	33.33%	<ul style="list-style-type: none"> The proposal was submitted to CWC through ePAMs on 26.01.2020 after examining CWC, Shimla raised observation on 13.05.2020 which are being dealt.

			2.	M/s Baddi Infrastructure (CETP) Baddi, Distt. Solan.	Improvement in functioning of existing CETP at Baddi w.r.t. connecting the near about areas with conveyance pipeline to treat the 1.10 MLD wastewater from Industries falling in River Sirsa Catchment. The cost is 2.70 crore.	66%	<ul style="list-style-type: none"> • The pipeline laying work of Phase –I (Baddi- Barotiwala Road to SWCA Building) approx. 1.7 KM is completed. • Phase –II (Remaining work) Bank Guarantee to NHAI is released for obtaining permission of Digging work of road side berms for laying pipelines. Permission awaited
			3.	Department of Industries.	Improvement in functioning of C.E.T.P Baddi.	100%	<ul style="list-style-type: none"> • M/s Baddi Infrastructure (Operators of CETP, Baddi) after consultation with stakeholders submitted the Action Plan for improvement in the functioning of CETP, Baddi which contains advanced treatment technologies (Filtration and Reverse Osmosis along with evaporation) for control of high TDS form industrial units. • M/s Winsome Textile Industries Limited, Baddi and M/s Vardhman Textiles

						Limited, Baddi submitted Action Plans for treating the category –IV effluent containing high Total Dissolved Solids (TDS).	
			4.	Department of Industries	Cleaning of sewage tanks for industrial areas of Baddi, Jharmajri, Lodhimajra, Davni, Thana	100 %	<ul style="list-style-type: none"> • Out of total 15 Sewerage tanks in Industrial Area in Baddi, 12 nos. cleaned and waste transported to CETP Baddi. • Septic Tanks were found cleaned as inspected by HPSPCB, and no overflowing of Tanks observed.

			5.	BBNDA	Setting up of Solid Waste Processing Plant at Baddi. The final timeline for completion was 31st July, 2019.	100%	<ul style="list-style-type: none">• The work of Production Shed, Weighbridge, Boundary Wall, CCTV Cameras, ETP for Leachate treatment, Stand Completed.• Plant and Machinery of RDF Section is installed.• Other miscellaneous work electrification is also completed.• The Work of Dryer Installation is in progress.	
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5.	Forest Department	Plantation Proposal and Bio-diversity Proposal	66.66%	<ul style="list-style-type: none"> • Total number of 8800 plants has been planted so far. • The work for Bio-diversity Park at Nalagarh is in progress.
6.	HPSPCB	Inventorization of Wastewater generating Industries and Legal Action against Non-complying Industrial Units	100 %	<ul style="list-style-type: none"> • The inventorization is completed, 548 Nos of Water Polluting industries exists. • Regular inspections and monitoring carried out, till date 57 nos of closure directions issued.

4.1	Progress Report may be comprised of details along with completion timelines on:																			
(i)	Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment		The action plan of Priority –I to V are prepared based on following identified polluting sources : 1. Domestic Sewage generation and its treatment and proposed timeline to meet the gaps. 2. Industrial Wastewater generation and its treatment and proposed timeline to meet the gaps. 3. Existing solid wastes, bio-medical waste, hazardous waste, e-waste and other waste processing along the catchment of River stretches, gaps and proposed timeline to meet the gap.																	
(ii)	<u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, proposed along with completion timeline		Detailed Gap analysis for the approved action plan for Priority – I and Priority – II is enclosed as under. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Gap Analysis and the Proposed Action Points as per submitted Action Plans : <u>(P-I & II stretches)</u></th> </tr> <tr> <th colspan="2" style="text-align: center;">Details</th> <th style="text-align: center;">Generation</th> <th style="text-align: center;">Existing Capacity</th> <th style="text-align: center;">Gap</th> <th style="text-align: center;">Proposed Treatment facilities</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Sewage Management</td> <td style="text-align: center;">Sukhna Nallah</td> <td>(Residing & Floating) 1357.414 KLD (1.357 MLD)</td> <td> <ul style="list-style-type: none"> • 29 Captive ETP cum STPs • 16 Common Septic tanks • 70 KLD STP <p style="margin-top: 10px;">Total capacity: 858.004 KLD</p> </td> <td style="text-align: center;">499.41 KLD (0.499 MLD)</td> <td> <p>➤ 02 STPs proposed of 01 MLD each.</p> <p>Total Capacity: 2 MLD Timeline: 31/12/2020.</p> </td> </tr> </tbody> </table>	Gap Analysis and the Proposed Action Points as per submitted Action Plans : <u>(P-I & II stretches)</u>					Details		Generation	Existing Capacity	Gap	Proposed Treatment facilities	Sewage Management	Sukhna Nallah	(Residing & Floating) 1357.414 KLD (1.357 MLD)	<ul style="list-style-type: none"> • 29 Captive ETP cum STPs • 16 Common Septic tanks • 70 KLD STP <p style="margin-top: 10px;">Total capacity: 858.004 KLD</p>	499.41 KLD (0.499 MLD)	<p>➤ 02 STPs proposed of 01 MLD each.</p> <p>Total Capacity: 2 MLD Timeline: 31/12/2020.</p>
Gap Analysis and the Proposed Action Points as per submitted Action Plans : <u>(P-I & II stretches)</u>																				
Details		Generation	Existing Capacity	Gap	Proposed Treatment facilities															
Sewage Management	Sukhna Nallah	(Residing & Floating) 1357.414 KLD (1.357 MLD)	<ul style="list-style-type: none"> • 29 Captive ETP cum STPs • 16 Common Septic tanks • 70 KLD STP <p style="margin-top: 10px;">Total capacity: 858.004 KLD</p>	499.41 KLD (0.499 MLD)	<p>➤ 02 STPs proposed of 01 MLD each.</p> <p>Total Capacity: 2 MLD Timeline: 31/12/2020.</p>															
(iii)	<u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status																			

(iv)	Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	31.12.2020			(0.858 MLD)			
			River Markanda	(Residing & Floating) 1146.24 KLD (1.146 MLD)	<ul style="list-style-type: none"> • 06 Captive STPs • Local Household inadequate Designed Septic Tanks. Total: 0.1 MLD	1046.24 KLD (1.046 MLD)	<ul style="list-style-type: none"> ➤ 1 STP proposed for Trilokpur Area having capacity 1 MLD and Sewerage network and pre-treatment of sewage at Kala Amb (1.5 MLD) Total capacity 2.5 MLD Timeline: 31/12/2020.	
			River Sirsa	(Residing & Floating) 9.12 MLD	<ul style="list-style-type: none"> • 20 Captive ETP cum STPs (0.954 MLD) • 16 Common Septic tanks (01 MLD) • 5.5 MLD (Sewerage Network and Pre-treatment & To CETP, Baddi) • 3.62 MLD STP at Nalagarh. • <u>Total Capacity – 11.074 MLD</u> 	No Gap	<ul style="list-style-type: none"> ➤ STP at Nalagarh commissioned in Feb 2020. ➤ Sewerage connections and pre-treatment at CETP Baddi completed. 	
			Industrial Effluent Management	Sukhna Nallah	0.4798 MLD (48 industries)	(1.6383 MLD) 19 Captive ETPs 29 Captive ETP cum STPs	No Gap	➤ NO Proposal
				River Markanda	5.5404 MLD (94 Industries)	7.196 MLD (78 ETPs 06 STPs)	No Gap	➤ 01 CETP of 2.5 MLD capacity at Kala Amb
				River Sirsa	20.779 MLD	CETP: 25 MLD, Captive STPs, ETPs <u>Total Capacity -27.88 MLD</u>	No Gap	Nil

Solid Waste Management	Sukhna Nallah	07-08 MTD	1 MTD	6-7 MTD	➤ Common Facility at Baddi (40 MTD).
	River Markanda	1.5 MTD	1 MTD Composting	0.5 MTD	➤ Proposal for RDF manufacturing (4-6 MT/ Month) at Kala Amb.
	River Sirsa	25-30	Nil	25-30 MTD	➤ Common Facility at Baddi (40 MTD).

(v)

Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;

The latest water quality of polluted rivers are enclosed as under:

Polluted River Stretch Priority-I
(Sukhna at Parwanoo Town, District –Solan, H.P)

Latest Water Quality as per Assessment Targeted (Characteristics of River and major Drains)
Sukhna Nallah upstream of Parwanoo Town at Shivloti Temple, Village – Ambota

Month/Year	pH	D.O. mg/l	BOD mg/l	FC MPN /100ml	TC MPN /100ml
January, 2019	7.8	8.0	1.2	2.0	32.0
April, 2019	7.08	8.0	0.2	<1.8	2.0
July, 2019	7.45	7.2	0.3	6.8	17
October, 2019	7.94	7.2	0.1	<1.8	6.1
January, 2020	7.73	6.6	0.1	<1.8	<1.8
February, 2020	7.34	6.5	0.1	1.8	3.6
March, 2020	6.93	6.4	0.1	<1.8	1.8

April, 2020	7.06	6.4	0.1	<1.8	2
May, 2020	Source Dried				

2. Sukhna Nallah D/s Water Quality at Kalka Barrier.

Month/Year	pH	D.O. mg/l	BOD mg/l	FC MPN /100ml	TC MPN /100ml
Jan., 2019	8.16	4.0	52.0	350	1600
Feb., 2019	7.74	6.3	12.0	26	140
March, 2019	7.69	5.0	72.0	920	>1600
April, 2019	7.55	5.2	16.0	17	47
May, 2019	7.92	4.2	25.0	220	920
June, 2019	7.93	2.5	32.0	240	540
July, 2019	7.60	6.1	2.8	33	70
August, 2019	7.78	6.2	2.8	170	920
Sept., 2019	7.51	5.9	2.2	94	170
Oct., 2019	7.91	5.2	1.6	22	70
Nov., 2019	7.15	4.9	1.8	26	94
Dec., 2019	7.25	5.8	2.8	27	170
Jan, 2020	7.48	5.6	2.8	22	170
Feb, 2020	6.29	5.4	2.8	17	47
March, 2020	7.02	5.3	3.8	7.8	33

April, 2020	Source dried
May, 2020	Source Dried

Characteristics of major drains contributing to Pollution:

Sector IV Nallah

Month/Year	pH	D.O. mg/l	BOD mg/l	FC MPN /100ml	TC MPN /100ml
October, 2019	7.80	3.0	1.0	20	38
November, 2019	8.06	5.9	1.2	17	40
January, 2020	7.03	4	1.2	22	110
March, 2020	7.01	4.9	3.2	6.8	24
April, 2020	Source Dried				
May, 2020	Source Dried				

Samtel Nallah

Month/Year	pH	D.O. mg/l	BOD mg/l	FC MPN /100ml	TC MPN /100ml
October, 2019	7.46	2.5	0.6	4	48
November, 2019	7.03	6.4	1	21	48
January, 2020	6.32	4.3	1.8	26	140
March, 2020	8.04	5.0	4.2	11	32

April, 2020	Source Dried
May, 2020	Source Dried

Polluted River Stretch Priority-II
(River Markanda at Kala Amb, District –Sirmour, H.P.)

Characteristics of River and Major Drains: Water Quality of River Markanda Upstream Kala Amb

Month	Year	pH	DO (mg/L),	BOD (in mg/L),	TC (MPN)
January	2019	8.01	8.9	1.7	47.0
February	2019	8.24	8.4	0.9	63.0
March	2019	8.05	7.4	0.7	79
April	2019	8.14	7.7	0.9	79
May	2019	8.24	7	0.7	110
June	2019	7.98	6	0.7	63
July	2019	7.85	6.8	0.8	63
August	2019	7.87	6.5	0.6	140
September	2019	7.64	6	0.9	70
October	2019	7.43	8.7	0.7	48
November	2019	7.63	9.2	0.5	32.0
December	2019	7.07	8.9	0.4	26
January	2020	7.65	8.8	0.9	21.0
February	2020	7.19	9.0	0.7	41
March	2020	7.17	9	0.8	39

April	2020	7.86	9.1	0.5	38
May	2020	7.61	9	0.6	41

Characteristics of River and Major Drains: Water Quality of River Markanda Downstream Kala Amb

Month	Year	pH	DO (in mg/L)	BOD (in mg/L)	TC (MPN)
January	2019	8.04	9.6	1.8	48.0
February	2019	8.25	9.1	0.8	70.0
March	2019	8.06	8.5	0.9	58
April	2019	8.19	7.4	0.9	84
May	2019	8.29	6.7	0.8	140
June	2019	Source Dry			
July	2019	7.88	6.6	0.9	70
August	2019	7.13	6.4	0.7	220
September	2019	7.77	6.5	0.9	84
October	2019	7.65	8.6	0.8	49
November	2019	7.68	9.1	0.7	41.0
December	2019	7.6	8.8	0.6	34.0
January	2020	7.62	9.0	0.6	21.0
February	2020	7.32	8.8	0.8	40
March	2020	7.18	9	0.8	40

April	2020	Sample not collected			
May	2020	7.32	9	0.8	46

Water Quality of River Markanda D/s Jattan Wala Nallah at Sadhora

Month/year	pH	DO (mg/L)	BOD (mg/L)	FC (MPN/100ml)	TC (MPN/100 ml)
January, 2019	7.78	6.4	5	>1600	>1600
February, 2019	7.88	5.8	7.5	22,000	56,000
March, 2019	7.59	5.3	12	70,000	1,84,000
April, 2019	Source was found dry				
May, 2019					
June, 2019					
July, 2019					
Aug, 2019	7.65	6.7	1.2	58	280
Sep, 2019	7.46	5.5	1.8	58	350
Oct, 2019	7.4	7.5	2	79	350
Nov, 2019	6.8	2.8	6	11000	28000
Dec, 2019	6.8	4.5	2.5	2200	4900
Jan, 2020	7.32	6	12	27000	80000
Feb, 2020	7.08	5.1	6	920	3500
March, 2020	7.22	5.5	3.6	280	1600
April, 2020	Source Dried				

May, 2020	7.43	6	8	2800	9200
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Characteristics of major drains contributing to pollution

Water Quality of Jattan Wala Nallah					
Month/year	pH	DO (mg/L)	BOD (mg/L)	FC (MPN/100ml)	TC (MPN/100 ml)
January, 2019	7.39	0.5	85	>1600	>1600
February, 2019	7.29	1.3	80	40,000	1,80,000
March, 2019	7.5	1.5	65	1,84,000	3,20,000
April, 2019	7.76	0.3	27	70,000	1,84,000
May, 2019	7.5	0.3	20	1,08,000	3,20,000
June, 2019	7.62	0.8	18	70,000	1,84,000
July, 2019	7.24	Nil	45	72,000	1,80,000
Aug, 2019	7.4	2	18	17000	43000
Sep, 2019	7.47	1.1	35	22000	54000
Oct, 2019	7.92	0.5	32	14000	35000
Nov, 2019	6.88	0	45	34000	86000
Dec, 2019	6.88	0.3	34	35000	54000
Jan, 2020	6.99	1	90	92000	160000
Feb, 2020	6.72	1	40	4200	9200
March, 2020	7.21	1	18	1080	3200
April, 2020	6.84	0.5	50	35000	92000

May, 2020	6.73	0.5	40	22000	54000
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Polluted River Stretch Priority-III
(River Sirsa, Baddi, Nalagarh, District- Solan, H.P.)

River Sirsa U/s Sitomajri Nallah

Month and Year	pH	DO	BOD	FC	TC
		(mg/1)	mg/1	MPN/100 ml	MPN/100ml
Jan-19	7.49	9.2	4	17	38
Feb-19	8.12	7.8	1.8	14	40
Mar-19	8.16	7.7	2.2	17	41
Apr-19	8.12	8.9	1.8	11	94
May-19	7.61	8.6	2.2	26	110
Jun-19	7.64	8.9	0.4	21	70
Jul-19	7.96	8.9	2.2	14	84
Aug-19	7.64	8.5	1.2	17	48
Sep-19	7.09	6.5	0.4	4	32
Oct-19	7.37	8.4	0.4	17	41
Nov-19	8.21	8.3	2.8	14	40
Dec-19	8.31	6.5	1.2	17	84
Jan-20	8.02	6.9	1.0	11	33
Feb-20	7.59	5.8	1.4	11	32
Mar-20	7.16	6.7	0.8	6.1	17
Apr-20	7.75	8.5	0.6	21	40

May-20	7.55	8.2	0.8	11	33
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River Sirsa D/s Nalagarh Town

Month/year	pH	D.O.	BOD	F.C.	T.C
		mg/l	mg/l	MPN/100ml	MPN/100ml
Jan-19	7.56	8.2	6.4	31	150
Feb-19	8.9	8.3	6.2	21	70
Mar-19	7.97	7.4	7.2	22	79
Apr-19	7.45	7.8	3.3	17	150
May-19	8.22	6.4	2.2	17	120
Jun-19	7.61	7.8	4	22	110
Jul-19	7.8	8.5	2.6	32	170
Aug-19	8.2	6.8	2.7	70	220
Sep-19	7.25	6.5	0.4	13	32
Oct-19	7.95	8	2	14	84
Nov-19	7.35	6.5	2.8	25	84
Dec-19	8.19	7	4.2	22	170
Jan-20	7.38	5.8	1.2	22	110
Feb-20	7.62	9.9	2.8	14	70
Mar-20	7.15	8.3	1.4	14	48
Apr-20	7.66	7	1.6	17	38

			May-20	7.71	7.5	1.4	21	63
(vi)	Preventing dumping of waste and scientific management including bio-medical wastes, plastic wastes and decentralizing waste processing, including waste generated from hotels, ashrams etc.	<p><u>Solid Waste Management</u></p> <p><u>Priority – I (Sukhna Nallah at Parwanoo)</u></p> <ul style="list-style-type: none"> • At Priority – I, (Sukhna at Parwanoo), total solid waste generation is 7-8 MT/Day. • The legacy waste has been recovered, and dumping site has been cleared. Domestic Hazardous waste Kiosk has been installed at Parwanoo. • The dry waste generated along the stretch of River Sukhna at Prawanoo has been regularly collected and further transported to the Waste processing site at Baddi • The wet waste is processed into Composting Pits constructed. • 5000 MT legacy waste cleared <p><u>Priority – II (River Markanda at Kala Amb)</u></p> <ul style="list-style-type: none"> • Total solid waste generation is 3-4 MT/Day • The waste generated along the stretch of River Markanda at Kala Amb is disposed in the waste processing site at Nahan. • The Solid waste processing facility is proposed for Kala Amb which is to be completed by 31.12.2020. <p><u>Priority – III (River Sirsa at Baddi, Nalagarh in District Solan)</u></p> <ul style="list-style-type: none"> • Total solid waste generation is 25-30 MT/Day • The dry waste generated along the stretch of River Sirsa has been regularly collected and further transported to the Waste processing site at Baddi. • The facility is under construction and likely to be completed soon. <p><u>Hazardous Waste Management :</u></p> <p><u>Priority – I (Sukhna Nallah at Parwanoo)</u></p> <ul style="list-style-type: none"> • There are 48 industrial units falling in the stretch of Sukhna Nallah out of which 06 units are closed. • Total Hazardous waste generation inform ETP Sludge is 97 MT. • There is no common TSDF site in Parwanoo area. • All hazardous waste is being collected by M/s Shivalik Solid Waste Management Ltd (TSDF), Village Dabhota, Tehsil: Nalagarh, District Solan by the TSDF GPS enabled vehicle and same is 						

further treated and landfilled.

- The industries have provided separate storage facilities under covered shed within their premises.
- No incident/accident regarding illegally dumping of hazardous waste has ever been reported
- The capacity of landfill site at Dhabota is 10 Lac MT, hence there is no Gaps in treatment of Industrial Hazardous Waste Treatment.

Priority – II (River Markanda at Kala Amb)

- There are 94 industrial units falling in the stretch of River Markanda.
- Total Hazardous waste generation inform of ETP Sludge is 66 MT.
- There is no common TSDF site in Kala Amb area.
- All hazardous waste is being collected by M/s Shivalik Solid Waste Management Ltd (TSDF), Village Dabhota, Tehsil: Nalagarh, District Solan by the TSDF GPS enabled vehicle and same is further treated and landfilled.
- The industries have provided separate storage facilities under covered shed within their premises.
- No incident/accident regarding illegally dumping of hazardous waste has been reported yet.
- The capacity of landfill capacity of Landfill site at Dhabota is 10 lacs MT, hence there is no Gaps in treatment of Industrial Hazardous Waste Generated by industrial units along River Markanda Stretch.

Priority – III (River Sirsa at Baddi, Nalagarh in District Solan)

- There are 576 industrial units falling in the stretch of River Sirsa.
- Total Hazardous waste generation inform of ETP Sludge is 165 MT.
- All hazardous waste is being collected by M/s Shivalik Solid Waste Management Ltd (TSDF), Village Dabhota, Tehsil: Nalagarh, District Solan by the TSDF GPS enabled vehicle and same is further treated and landfilled.
- The capacity of landfill site at Dhabota is 10 Lac MT, hence there is no Gaps in treatment of Industrial Hazardous Waste Treatment.

Bio-medical Waste Management:

Priority – I (Sukhna Nallah at Parwanoo)

- The bio medical waste generated is being disposed to M/s Enviro Engineers, a Common Bio Medical Waste Disposal Facility having capacity 100 Kg/hr, located at Shalaghat, District - Solan (H.P).
- One Hospital in the name and Style of ESIC Hospital, Parwanoo which generate 4.7 Kg/Day and disposes Bio-medical Waste at afore-mentioned site.

Priority – II (River Markanda at Kala Amb)

- The bio medical waste generated is being disposed to M/s Enviro Engineers, a Common Bio Medical Waste Disposal Facility having treatment capacity 100 Kg/hr, located at Shalaghat, District - Solan (H.P).

			<ul style="list-style-type: none"> One Hospital in the name and Style of ESIC Hospital, Kala Amb and 01 clinic which collectively generate 0.2 Kg/Day and disposes Bio-medical Waste at afore-mentioned site. <p><u>Priority – III (River Sirsa at Baddi, Nalagarh in District Solan)</u></p> <ul style="list-style-type: none"> The bio medical waste generated is being disposed to M/s Enviro Engineers, a Common Bio Medical Waste Disposal Facility having capacity 100 Kg/hr, located at Shalaghat, District - Solan (H.P). 75 Health Care Facilities and 117 Industries collectively produce 765 kg/day and disposes Bio-medical Waste at afore-mentioned site. <p><u>Plastic Waste Management:</u></p> <ul style="list-style-type: none"> Buy back Policy: The Government of Himachal Pradesh has notified a Policy regarding Buy-back of non-recyclable and Single Use Plastic Waste including plastic bags in the Himachal Pradesh from the Rag pickers and households, providing Minimum Support Price of Rs. 75/- (Rupees Seventy Five) only per kilogram. EPR Implementation: Directions are issued to plastic waste Producers and Brand owners to set up waste collection system along Priority- I, II & III.
(vii)	Ground water regulation		Presently Jal Shakti Department has stopped drilling of new bore wells for extraction of ground water in Himachal Pradesh as per order of the Hon'ble High Court of Himachal Pradesh. The Himachal Pradesh Ground Water Regulation & Control of Development & Management Act is under formulation will be notified after approval from the Government.
(viii)	Adopting good irrigation practices,		The Jal Shakti Department now totally discourages Flood irrigation and convergence of water through open channels. The use of irrigation water in the fields is optimized by extension services offered by Horticulture and Agriculture Department by micro irrigation methods.
(ix)	Protection and management of Flood Plain Zones (FPZ)		No flood plain zone have been identified in Himachal Pradesh till date.
(x)	Rain Water Harvesting,		As per Town & Country Planning Act, 1977 (Act No. 12 of 1977), it is mandatory for all the commercial buildings to have roof top rain water harvesting system and recharging pit. The guidelines for capturing, storage, integration and distribution of rain water harvesting is as under as per the aforementioned Act :-

			<ol style="list-style-type: none"> 1. The Rain Water Harvesting Structures are allowed to be constructed in set backs below ground level. If the storage is desired at any level above ground level, it has to be away from set backs within the permitted covered area. 2. The community Rain Water Harvesting Structure shall also be permissible. 3. Proper system for rain water capturing, storage as well as integration and distribution shall be ensured. 4. The stored rain water shall be utilized regularly for non-drinking usages including fire fighting, landscaping, gardening apart from domestic usages. 5. No water supply connection shall be given to any building till Rain Water Harvesting System is put in place and subsequently operationalized. 6. The minimum capacity of Rain Water Harvesting Structure shall be worked out @ 20 Liters per square Metre of the roof top area. 7. Violator shall be liable for disconnection of Public Water Supply connection. 8. The owners of existing buildings without Rain Water Harvesting System shall have to install Rain Water Harvesting System within eighteen months after coming into the operation of these Regulations.
(xi)	Maintaining minimum environmental flow of river		<p>The following steps have been taken to maintain environmental flow in the river/ Nallah</p> <ul style="list-style-type: none"> • The RTWQMS along with Radar system for water quality monitoring and flow measurement, respectively, have been installed in river Markanda near Viii Ogli, Kala Amb town and in river Kaushalya near village Kamli. • Installation of RTWQMS at river Sirsa, the Site is identified, tendering work is in progress. • Total 27 nos of Check Dams constructed in Sukhna (Priority-I) at Parwanoo. • 3 low height dams and 3 rain water harvesting structure will be constructed in Markanda (Priority-II) at Kala Amb during 2020-21.
(xii)	Plantation on both sides of the river	Completed	<p>As per the latest progress on Plantation carried out at Priority – I and Priority – II is as below :-</p> <p><u>Priority-I (Sukhna Nallah at Parwanoo)</u></p> <ol style="list-style-type: none"> 1. Total 2200 Plants are planted. <p><u>Priority-II (River Markanda at Kala Amb)</u></p> <ol style="list-style-type: none"> 1. Total 800 Plants are planted. <p><u>Priority – III (River Sirsa at Baddi, Nalagarh in District Solan)</u></p> <ol style="list-style-type: none"> 1. Total 8800 Plants are planted.
(xiii)	Setting up of biodiversity parks on flood plains by		<ul style="list-style-type: none"> • As per the Action Plan of Priority I & II, Bio-diversity Park is proposed, at Kala Amb and the work is progress. • However, for the Setting up of Bio-diversity Park, for Priority-III the total financial targets estimated by the

	removing encroachment		Department of Forests for the years 2019-20 and 2020-21 are 25.0 Lakh and 32.0 Lakh respectively. For the financial year 2019-20, total budget amounting to Rs. 25 Lakh has been spent for Setting up of Bio-diversity parks along all the polluted river stretches in HP.
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