TEST REPORT

Technical Report **(6819)088-0248** April 17, 2019

Date Received March 28, 2019

Factory Company Name：	Raidha Collections Ltd.
Factory Address:	Zamirdia, Valuka, Mymensingh, 2240, Bangladesh.
Project No.:	/
Client Reference No.:	/
Sample Type:	I001) Incoming water – Grab I002) Wastewater After Treatment – 6 hours Time – weighted Composite
Sample Pick Up Date:	March 28, 2019
Wastewater Discharge to:	Local Drain
On-Site Effluent Treatment Plant (ETP):	Yes
Discharge Type:	Direct Discharge
Test Period:	March 29, 2019 To April 17, 2019

Sample Description:

I001) Colorless liquid - Incoming water
I002) Colorless / grey color liquid - Wastewater after treatment

REMARK

If there are questions or concerns on this report, please contact the following persons:

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This report shown the test result of the auxiliary chemical and/or raw material samples, which collected during particular factory audit. The results of this report shall not be used for any regulatory compliance purposes.

* The sampling is agreed with client.

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Photo of the Sample/ Sampling Location

I001) Incoming Water (GPS Location: N 23° 48’ 0”; E 89° 13’ 0.12”) 	I001) Incoming Water - Surrounding (GPS Location: N 23° 48’ 0”; E 89° 13’ 0.12”) 
I002) Wastewater After Treatment (GPS Location: N 23° 48’ 0”; E 89° 13’ 0.12”) 	I002) Wastewater After Treatment - Surrounding (GPS Location: N 23° 48’ 0”; E 89° 13’ 0.12”) 

Executive Summary

1A) Conventional Parameters	I001	I002
Temperature	N/A	See result in page: 05 – 08
TSS		
COD		
Total-N		
pH Value		
Color [m-1] (436nm; 525nm; 620nm)		
BOD_5		
Ammonium-N		
Total-P		
AOX		
Oil and Grease		
Phenol		
Coliform		
Foam		
ANIONS - Sulfide		
ANIONS - Sulfite		
1B) Conventional Parameters –METALS	•	•

ZDHC MRSL Substances	I001	I002
2A) APs and APEOs	NR	o
2B) Chlorobenzenes and Chlorotoluenes	NR	o
2C) Chlorophenols	NR	o
2D) Azo Dyes	NR	o
2E) Carcinogenic Dyes	NR	o
2F) Disperse Dyes	NR	o
2G) Flame Retardants	NR	o
2H) Glycols	NR	o
2I) Halogenated Solvents	NR	o
2J) Organotin Compounds	NR	o
2K) Perfluorinated and Polyfluorinated Chemicals	NR	o
2L) Phthalates	NR	o
2M) Poly Aromatic Hydrocarbons	NR	o
2N) Volatile Organic Compounds	NR	o

Note / Key :

- • – Detected
- o – Not Detected
- NR – Not Required
- N/A – Not Applicable

Objective

The environment samples were tested for below parameters.

1A) Conventional Parameters
1B) Conventional Parameters – METALS
2A) APs and APEOs
2B) Chlorobenzenes and Chlorotoluenes
2C) Chlorophenols
2D) Azo Dyes
2E) Carcinogenic Dyes
2F) Disperse Dyes
2G) Flame Retardants
2H) Glycols
2I) Halogenated Solvents
2J) Organotin Compounds
2K) Perfluorinated and Polyfluorinated Chemicals
2L) Phthalates
2M) Poly Aromatic Hydrocarbons
2N) Volatile Organic Compounds

Sampling Plan

Basically, two environment samples were sampled per factory, including 1) Incoming water and 2) Discharged Wastewater or Wastewater after Treatment. Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

Method of sampling used is time-weighted composite samples (agreed with client.). Composite sampling shall be performed for no less than six hours, with no more than one hour between discrete samples. Each discrete sample shall be of equal volume. Wastewater and freshwater samples should, as much as possible, be collected simultaneously, during the time that PU is in normal operation. The sampling shall aim to analyse the snapshot of water quality characteristics of the operating PU. Under no circumstance shall samples be taken during times when the production process is not running or the wastewater is diluted due to heavy rainfall, etc.

Remark :

- Sampling procedure is with reference to below standards:
  1) South Australia EPA Guidelines (June 2007), Regulatory Monitoring and Testing Water and Wastewater Sampling.
  2) Australia EPA (Victoria) Guideline (June 2009), Sampling and Analysis of Waters, Wastewaters, Soils and Wastes.
  3) ISO 5667-3:2003, Water Quality - Sampling - Part 3: Guidance on the Preservation and Handling of Water Samples.
  4) ASTM D3976-92 (Reapproved 2010), Standard Practice for Preparation of Sediment Samples for Chemical Analysis.
- Field data records are attached in Appendix B.

Test Result

1A) Conventional Parameters

Temperature

Test Method : Measurement by thermometer

Tested Item(s)	Result	Unit	Conclusion
I002	28.5 (Progressive)	deg. C	DATA

Note:

deg. C = degree Celsius (°C)
Foundational Limit: ▲15 / max. 35°C; Progressive Limit: ▲10 / max. 30°C; Aspirational Limit: ▲5 / max. 25°C

Total Suspended Solids (TSS)

Test Method : Reference to APHA 22nd Edition-2540D & ALPA 2540D

Tested Item(s)	Result	Unit	Conclusion
I002	8 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 50 mg/L; Progressive Limit: 15 mg/L; Aspirational Limit: 5 mg/L

Chemical Oxygen Demand (COD)

Test Method : Reference to ALPA 5220B & EPA 410.3

Tested Item(s)	Result	Unit	Conclusion
I002	52 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 150 mg/L; Progressive Limit: 80 mg/L; Aspirational Limit: 40 mg/L

Total Nitrogen (Total-N)

Test Method : Reference to HJ 636-2012

Tested Item(s)	Result	Unit	Conclusion
I002	0.91 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 20 mg/L; Progressive Limit: 10 mg/L; Aspirational Limit: 5 mg/L

pH Value

Test Method : Reference to ALPA 4500-H+B & EPA150.2

-	Unit	Result
Test Item(s)	-	I002
Parameter	-	-
Temp. of sample	deg. C	22.5
pH value of sample	-	8.6 (Comply with ZDHC WWG requirements)
Conclusion	-	DATA

Note:

Temp. = Temperature deg. C = degree Celsius (°C)
Limit: 6 - 9

Color [m^{-1}] (436nm; 525nm; 620nm)

Test Method : ISO 7887: 2011(E), B

Tested Item(s)	Result	Unit	Conclusion
I002	1.3; 1.0; 0.5 (Aspirational)	m^{-1}	DATA

Note:
Foundational Limit: 7;5;3 m^{-1}; Progressive Limit: 5;3;2 m^{-1}; Aspirational Limit: 2;1;1 m^{-1}

Biochemical Oxygen Demand (BOD_5)

Test Method : Reference to APHA 5210B (5 days)

Tested Item(s)	Result	Unit	Conclusion
I002	17 (Foundational)	mg/L	DATA

Note:
mg/L = milligram per liter
Foundational Limit: 30 mg/L; Progressive Limit: 15 mg/L; Aspirational Limit: 5 mg/L

Ammonia Nitrogen

Test Method : Reference to HJ 535

Tested Item(s)	Result	Unit	Conclusion
I002	0.280 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 10 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.5 mg/L

Total Phosphorus (Total-P)

Test Method : Reference to APHA 22nd Edition -4500-P.E (2012)

Tested Item(s)	Result	Unit	Conclusion
I002	0.008 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 3 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.1 mg/L

Adsorbable Organic Halogen (AOX)

Test Method : Reference to HJ/T 83

Tested Item(s)	Result	Unit	Conclusion
I002	0.041 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 5 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.1 mg/L

Oil and Grease

Test Method : Reference to APHA 22nd Edition -5520 B (2012)

Tested Item(s)	Result	Unit	Conclusion
I002	0.8 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 10 mg/L; Progressive Limit: 2 mg/L; Aspirational Limit: 0.5 mg/L

Phenol

Test Method : APHA 5530 B & D (2012), EPA 420.1

Tested Item(s)	Result	Unit	Conclusion
I002	0.001 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 0.5 mg/L; Progressive Limit: 0.01 mg/L; Aspirational Limit: 0.001 mg/L

Coliform

Test Method : Reference to ISO 9308-1: 2014

Tested Item(s)	Result	Unit	Conclusion
I002	280 (Foundational)	Bacteria / 100 mL	DATA

Note:

bacteria/100 mL = bacteria per 100 milliliters
Foundational Limit: 400 / 100 ml; Progressive Limit: 100 / 100 ml; Aspirational Limit: 25 / 100 ml;

Foam

Test Method : Visual

Tested Item(s)	Result	Unit	Conclusion
I002	No Foam (Comply with ZDHC WWG requirements)	-	DATA

ANIONS - Sulfide

Test Method : Reference to GB/T 16489

Tested Item(s)	Result	Unit	Conclusion
I002	0.016 (Progressive)	mg/L	DATA

Note:
mg/L = milligram per liter
Foundational Limit: 0.5 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.01 mg/L

ANIONS - Sulfite

Test Method : Reference to ISO 10304-3

Tested Item(s)	Result	Unit	Conclusion
I002	<0.1 (Aspirational)	mg/L	DATA

Note:
mg/L = milligram per liter
Foundational Limit: 2 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.2 mg/L

1B) Conventional Parameters – METALS

Heavy Metals	**I001 *(µg/L)***	**I002 *(µg/L)***
Antimony(Sb) *Foundational Limit: 100 µg/L;* *Progressive Limit: 50 µg/L;* *Aspirational Limit: 10 µg/L*	ND (Aspirational)	ND (Aspirational)
Chromium(Cr), total *Foundational Limit: 200 µg/L;* *Progressive Limit: 100 µg/L;* *Aspirational Limit: 50 µg/L*	8 (Aspirational)	3 (Aspirational)
Cobalt(Co) *Foundational Limit:50 µg/L;* *Progressive Limit: 20 µg/L;* *Aspirational Limit: 10 µg/L*	ND (Aspirational)	ND (Aspirational)
Copper(Cu) *Foundational Limit: 1000 µg/L;* *Progressive Limit: 500 µg/L;* *Aspirational Limit: 250 µg/L*	11 (Aspirational)	4 (Aspirational)
Nickel (Ni) *Foundational Limit:.200 µg/L;* *Progressive Limit: 100 µg/L;* *Aspirational Limit: 50 µg/L*	ND (Aspirational)	ND (Aspirational)
Silver (Ag) *Foundational Limit: 100 µg/L;* *Progressive Limit: 50 µg/L;* *Aspirational Limit: 5 µg/L*	ND (Aspirational)	ND (Aspirational)
Zinc(Zn) *Foundational Limit: 5000 µg/L;* *Progressive Limit: 1000 µg/L;* *Aspirational Limit: 500 µg/L*	5845 (Exceeded Foundational Limit)	65 (Aspirational)
Arsenic (As) *Foundational Limit: 50 µg/L;* *Progressive Limit: 10 µg/L;* *Aspirational Limit: 5 µg/L*	ND (Aspirational)	ND (Aspirational)
Cadmium(Cd) *Foundational Limit: 100 µg/L;* *Progressive Limit: 50 µg/L;* *Aspirational Limit: 10 µg/L*	ND (Aspirational)	ND (Aspirational)
Lead(Pb) *Foundational Limit:100 µg/L;* *Progressive Limit: 50 µg/L;* *Aspirational Limit: 10 µg/L*	9 (Aspirational)	3 (Aspirational)
Mercury (Hg) *Foundational Limit: 10 µg/L;* *Progressive Limit: 5 µg/L;* *Aspirational Limit :1 µg/L*	ND (Aspirational)	ND (Aspirational)
Chromium VI(CrVI) *Foundational Limit: 50 µg/L;* *Progressive Limit: 5 µg/L;* *Aspirational Limit: 1 µg/L*	ND (Aspirational)	ND (Aspirational)
Cyanide(CN-) *Foundational Limit: 200 µg/L;* *Progressive Limit: 100 µg/L;* *Aspirational Limit: 50 µg/L*	ND (Aspirational)	ND (Aspirational)

Others Priority Chemical Groups

	I001	**I002**
2A) APs and APEOs	NR	ND
2B) Chlorobenzenes and Chlorotoluenes	NR	ND
2C) Chlorophenols	NR	ND
2D) Azo Dyes	NR	ND
2E) Carcinogenic Dyes	NR	ND
2F) Disperse Dyes	NR	ND
2G) Flame Retardants	NR	ND
2H) Glycols	NR	ND
2I) Halogenated Solvents	NR	ND
2J) Organotin Compounds	NR	ND
2K) Perfluorinated and Polyfluorinated Chemicals	NR	ND
2L) Phthalates	NR	ND
2M) Poly Aromatic Hydrocarbons	NR	ND
2N) Volatile Organic Compounds	NR	ND

Remark：

- Test method, reporting limit and list of chemical are summarized in tables of Appendix A.
- ND = Not detected (Please refer to reporting limit shown in Appendix A.)
- All results are in ppb as unit.
- ppm = part(s) per million; ppb = part(s) per billion.
- NR = Not Requested

APPENDIX A

Parameters, limits and testing method aligned with the ZDHC Wastewater Guidelines

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	5	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS) OPEO/NPEO (n>2): ISO 18254-1 OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2)
	Nonylphenol NP	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)		
	Octylphenol Ethoxylates OPEO (2-16)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)		
	Nonylphenol Ethoxylates NPEO (2-18)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)		
2B. Chlorobenzenes and Chlorotoluenes	Chlorobenzene	108-90-7	0.2	USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS
	1,2-Dichlorobenzene	95-50-1		
	1,3-Dichlorobenzene	541-73-1		
	1,4-Dichlorobenzene	106-46-7		
	1,2,3-Trichlorobenzene	87-61-6		
	1,2,4-Trichlorobenzene	120-82-1		
	1,3,5-Trichlorobenzene	108-70-3		
	1,2,3,4-Tetrachlorobenzene	634-66-2		
	1,2,3,5-Tetraclorobenzene	634-90-2		
	1,2,4,5-Tetrachlorobenzene	95-94-3		
	Pentachlorobenzene	608-93-5		
	Hexachlorobenzene	118-74-1		
	2-Chlorotoluene	95-49-8		
	3-Chlorotoluene	108-41-8		
	4-Chlorotoluene	106-43-4		
	2,3-Dichlorotoluene	32768-54-0		
	2,4-Dichlorotoluene	95-73-8		
	2,5-Dichlorotoluene	19398-61-9		
	2,6-Dichlorotoluene	118-69-4		
	3,4-Dichlorotoluene	95-75-0		
	3,5-Dichlorotoluene	25186-47-4		
	2,3,4-Trichlorotoluene	7359-72-0		
	2,3,6-Trichlorotoluene	2077-46-5		
	2,4,5-Trichlorotoluene	6639-30-1		
	2,4,6-Trichlorotoluene	23749-65-7		
	3,4,5-Trichlorotoluene	21472-86-6		
	2,3,4,5-Tetrachlorotoluene	76057-12-0		
	2,3,5,6-Tetrachlorotoluene	29733-70-8		
	2,3,4,6-Tetrachlorotoluene	875-40-1		
	Pentachlorotoluene	877-11-2		
2C. Chlorophenols	Pentachlorophenol (PCP)	87-86-5	0.5	USEPA 8270 D Solvent extraction, derivatisation with
	2,3,4,5-Tetrachlorophenol	4901-51-3		
	2,3,4,6-Tetrachlorophenol	58-90-2		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	2,3,5,6-Tetrachlorophenol	935-95-5		KOH, acetic anhydride followed by GC/MS ISO 14154:2005
	2,4,6-Trichlorophenol	88-06-2		
	2,3,5-Trichlorophenol	933-78-8		
	2,4,5-Trichlorophenol	95-95-4		
	3,4,5-Trichlorophenol	609-19-8		
	2,3,4-Trichlorophenol	15950-66-0		
	2,3,6-Trichlorophenol	933-75-5		
	2,3-Dichlorophenol	576-24-9		
	3,4-Dichlorophenol	95-77-2		
	2,4-Dichlorophenol	120-83-2		
	2,5-Dichlorophenol	583-78-8		
	2,6-Dichlorophenol	87-65-0		
	3,5-Dichlorophenol	591-35-5		
	2-Chlorophenol	95-57-8		
	3-Chlorophenol	108-43-0		
	4-Chlorophenol	106-48-9		
2D. Dyes - Azo (Forming Restricted Amines)	4-Aminodiphenyl	92-67-1	0.1	EN 14362-1 EN 14362-3 Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS
	Benzidine	92-87-5		
	4-Chloro-o-toluidine	95-69-2		
	2-Naphthylamine	91-59-8		
	o-Aminoazotoluene	97-56-3		
	5-nitro-o-toluidine	99-55-8		
	4-Chloroaniline	106-47-8		
	4-Methoxy-m-phenylenediamine	615-05-4		
	4,4'-methylenedianiline	101-77-9		
	3,3`-Dichlorobenzidine	91-94-1		
	3,3`-Dimethoxybenzidine	119-90-4		
	3,3`-Dimethylbenzidine	119-93-7		
	4,4`-Methylene-di-o-toluidine	838-88-0		
	6-methoxy-m-toluidine (p-Cresidine)	120-71-8		
	4,4`-Methylene-bis-(2-chloro-aniline)	101-14-4		
	4,4`-Oxydianiline	101-80-4		
	4,4`-Thiodianiline	139-65-1		
	o-Toluidine	95-53-4		
	4-Methyl-m-phenylenediamine	95-80-7		
	2,4,5-Trimethylaniline	137-17-7		
	o-Anisidine	90-04-0		
	4-Aminoazobenzene	60-09-3		
	2,4-Xylidine	95-68-1		
	2,6-Xylidine	87-62-7		
2E. Dyes-Carcionogenic or Equivalent Concern	C.I. Direct Black 38	1937-37-7	500	Liquid Extraction LC/MS
	C.I. Direct Blue 6	2602-46-2		
	C.I. Acid Red 26	3761-53-3		
	C.I. Basic Red 9	569-61-9		
	C.I. Direct Red 28	573-58-0		
	C.I. Basic Violet 14	632-99-5		
	C.I. Disperse Blue 1	2475-45-8		
	C.I. Disperse Blue 3	2475-46-9		
	C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5		
	C.I. Basic Green 4 (malachite green chloride)	569-64-2		
	C.I. Basic Green 4 (malachite	2437-29-8		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	green oxalate)			
	C.I. Basic Green 4(malachite green)	10309-95-2		
	Disperse Orange 11	82-28-0		
2F. Dyes-disperse (sensitizing)	Disperse Yellow 1	119-15-3	50	Liquid Extraction LC/MS
	Disperse Blue 102	12222-97-8		
	Disperse Blue 106	12223-01-7		
	Disperse Yellow 39	12236-29-2		
	Disperse Orange 37/59/76	13301-61-6		
	Disperse Brown 1	23355-64-8		
	Disperse Orange 1	2581-69-3		
	Disperse Yellow 3	2832-40-8		
	Disperse Red 11	2872-48-2		
	Disperse Red 1	2872-52-8		
	Disperse Red 17	3179-89-3		
	Disperse Blue 7	3179-90-6		
	Disperse Blue 26	3860-63-7		
	Disperse Yellow 49	54824-37-2		
	Disperse Blue 35	12222-75-2		
	Disperse Blue 124	61951-51-7		
	Disperse Yellow 9	6373-73-5		
	Disperse Orange 3	730-40-5		
	Disperse Blue 35	56524-77-7		
2G. Flame Retardants	Polybromobiphenyls (PBBs)	59536-65-1	5	ISO 22032, USEPA527 and USEPA8321B. Dichloromethane extraction GC/MS or LC/MS(-MS)
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9		
	Octabromodiphenyl ether (OctaBDE)	32536-52-0		
	Decabromodiphenyl ether (DecaBDE)	1163-19-5		
	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7		
	Tetrabromobisphenol A (TBBPA)	79-94-7		
	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9		
	Hexabromocyclododecane (HBCDD)	3194-55-6		
	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0		
	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1		
	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8		
	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8		
	Short chain chlorinated paraffins (SCCPs) (C10-C13)	85535-84-8		
2H. Glycols	Bis(2-methoxyethyl)-ether	111-96-6	50	US EPA 8270 Liquid Extraction LC/MS GC-MS
	2-ethoxyethanol	110-80-5		
	2-ethoxyethyl acetate	111-15-9		
	Ethylene glycol dimethyl ether	110-71-4		
	2-methoxyethanol	109-86-4		
	2-methoxyethylacetate	110-49-6		
	2-methoxypropylacetate	70657-70-4		
	Triethylene glycol dimethyl	112-49-2		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	ether			
2I. Halogenated Solvents	1,2-Dichloroethane	107-06-2	1	USEPA 8260B Headspace GC/MS or Purge-and-Trap-GC/MS
	Methylene Chloride	75-09-2		
	Trichloroethylene	79-01-6		
	Tetrachloroethylene	127-18-4		
2J. Organotin Compounds	Mono-, di- and tri-methyltin derivatives	Various	0.01	ISO 17353 Derivatisation with NaB(C2H5) GC/MS
	Mono-, di- and tri-butyltin derivatives	Various		
	Mono-, di- and tri-phenyltin derivatives	Various		
	Mono-, di- and tri-octyltin derivatives	Various		
2K. Perfluorinated and Polyfluorinated Chemicals (PFCs)	Perfluoro-n-octanoic acid (PFOA)	335-67-1	0.01	DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride, followed by GC/MS
	Perfluorobutanesulfonic acid (PFBS)	29420-49-3, 29420-43-3		
	Perfluorooctanesulfonic acid (PFOS)	355-46-4 ,432-50-7		
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		
	8:2 FTOH	678-39-7	1	
	6:2 FTOH	647-42-7		
2L. Phthalates (including all other esthers of phthalic acid)	Butyl benzyl phthalate (BBP)	85-68-7	10	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dibutyl phthalate (DBP)	84-74-2		
	Di-2-ethylhexyl phthalate (DEHP)	117-81-7		
	Di-n-octyl phthalate (DNOP)	117-84-0		
	Di-iso-nonyl phthalate (DINP)	28553-12-0		
	Di-iso-decyl phthalate (DIDP)	26761-40-0		
	Diethyl phthalate (DEP)	84-66-2		
	Di-n-propyl phthalate (DPRP)	131-16-8		
	Di-iso-butyl phthalate (DIBP)	84-69-5		
	Di-cyclohexyl phthalate (DCHP)	84-61-7		
	Di-n-hexyl phthalate (DnHP)	84-75-3		
	Dinonyl phthalate (DNP)	84-76-4		
	Di-iso-octyl phthalate (DIOP)	27554-26-3		
	Dimethoxyethyl phthalate (DMEP)	117-82-8		
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4		
	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6		
2M. Poly Aromatic Hydrocarbons (PaHs)	Benzo[a]pyrene (BaP)	50-32-8	1	US EPA 8270 DIN 38407-39 Solvent extraction GC/MS
	Anthracene	120-12-7		
	Pyrene	129-00-0		
	Benzo[ghi]perylene	191-24-2		
	Benzo[e]pyrene	192-97-2		
	Indeno[1,2,3-cd]pyrene	193-39-5		
	Benzo[j]fluoranthene	205-82-3		
	Benzo[b]fluoranthene	205-99-2		
	Fluoranthene	206-44-0		
	Benzo[k]fluoranthene	207-08-9		
	Acenaphthylene	208-96-8		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	Chrysene	218-01-9		
	Dibenz[a,h]anthracene	53-70-3		
	Benzo[a]anthracene	56-55-3		
	Acenaphthene	83-32-9		
	Phenanthrene	85-01-8		
	Fluorene	86-73-7		
	Naphthalene	91-20-3		
2N. Volatile Organic Compound (VOCs)	Benzene	71-43-2	1	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS US EPA 8260
	Xylene	1330-20-7		
	o-cresol	95-48-7		
	p-cresol	106-44-5		
	m-cresol	108-39-4		

Group	Parameter/substance	CAS No.	Limits (**mg**/L) or otherwise specified			Testing method
			A	**P**	**F**	
1A. Conventional Parameters (sum parameters)	Temperature	–	▲5/ max. 25ºC	▲10/ max. 30ºC	▲15/ max. 35ºC	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method
	TSS	–	5	15	50	
	COD	–	40	80	150	
	Total-N	–	5	10	20	
	pH	–	6 - 9			
	Color [m-1] (436nm; 526nm; 620nm)	–	2;1;1	5;3;2	7;5;3	
	BOD5	–	5	15	30	
	Ammonium-N	–	0.5	1	10	
	Total-P	–	0.1	0.5	3	
	AoX	–	0.1	1	5	
	Oil and Grease	–	0.5	2	10	
	Phenol	–	0.001	0.01	0.5	
	Coliform(bacteria/100ml)	–	25/100 ml	100/100 ml	400/100 ml	
	Persistent Foam	–	No foam/ Dissipating/ Persistent			
	ANIONS					
	Sulfide	–	0.01	0.05	0.5	
	Sulfite	–	0.2	0.5	2	

Group	Parameter/substance	CAS No.	Detection Limit (µg/L)/ (ppb)	Limits (**µg**/L)			Testing method
				A	**P**	**F**	
1B. Conventional Parameters - **METALS**	Cadmium(Cd)	7440-43-9	0.1	10	50	100	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method
	Lead(Pb)	7439-92-1	1	10	50	100	
	Mercury (Hg)	7439-97-6	0.05	1	5	10	
	Silver (Ag)	7440-22-4	1	5	50	100	
	Cobalt(Co)	7440-48-4	1	10	20	50	
	Nickel (Ni)	7440-02-0	1	50	100	200	
	Antimony(Sb)	7440-36-0	1	10	50	100	
	Arsenic (As)	7440-38-2	1	5	10	50	
	Copper(Cu)	7440-50-8	1	250	500	1000	
	Zinc(Zn)	7440-66-6	1	500	1000	5000	
	Chromium(Cr), total	7440-47-3	1	50	100	200	
	Chromium VI(CrVI)	18540-29-9	1	1	5	50	
	Cyanide(CN-)	Various (incl. 57-12-5)	20	50	100	200	

A: Aspirational P: Progressive F: Foundational

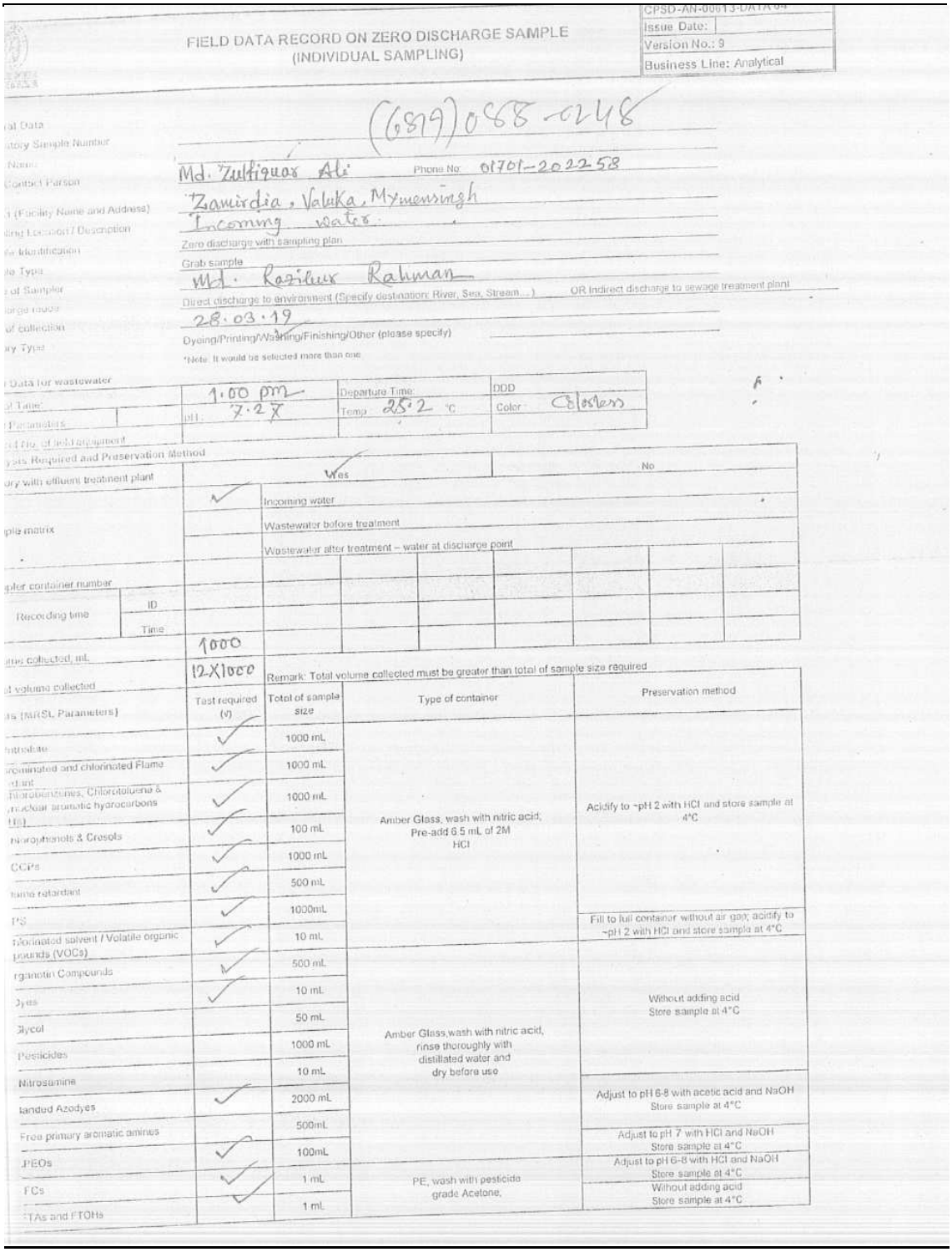
Note / Key :

ppm = part(s) per million; ppb = part(s) per billion
U. S. EPA = United States Environmental Protection Agency
APHA = American Public Health Association

Remark 1: The report [(6819)088-0248] was sub-contracted to BVCPS (Guangzhou, China) for Perfluorinated Chemicals, Flame Retardants, ANIONS – Sulfide, ANIONS – Sulfite, Ammonium-N, Total-N & AOX Tests.

Remark 2: The report [(6819)088-0248] was sub-contracted to India (Testtex India Laboratories Pvt. Ltd) for Coliform Test.

APPENDIX B



FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE
(INDIVIDUAL SAMPLING)

CPSD-AN-00013-DATA 04
Issue Date:
Version No.: 9
Business Line: Analytical

(6819)088-0248

Md. Zulfiquar Ali Phone No: 01701-202258
Zamirdia, Valuka, Mymensingh
Incoming water.
Zero discharge with sampling plan
Grab sample
Md. Rezikur Rahman
Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
28.03.19
Dyeing/Printing/Washing/Finishing/Other (please specify)
*Note: It would be selected more than one

Data for wastewater

	1.00 pm	Departure Time:		DDD	
	pH: 7.27	Temp: 25.2 °C		Color: Colorless	

	Yes	No
	✓	Incoming water
		Wastewater before treatment
		Wastewater after treatment – water at discharge point

Recording time	ID							
	Time							
		1000						
		12X1000						

Remark: Total volume collected must be greater than total of sample size required

Test required (✓)	Total of sample size	Type of container	Preservation method
✓	1000 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
✓	1000 mL		
✓	1000 mL		
✓	100 mL		
✓	1000 mL		
✓	500 mL		
✓	1000mL		
✓	10 mL		Fill to full container without air gap; acidify to ~pH 2 with HCl and store sample at 4°C
✓	500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
✓	10 mL		
	50 mL		
	1000 mL		
	10 mL		
✓	2000 mL		Adjust to pH 6-8 with acetic acid and NaOH Store sample at 4°C
✓	500mL		Adjust to pH 7 with HCl and NaOH Store sample at 4°C
✓	100mL		Adjust to pH 6-8 with HCl and NaOH Store sample at 4°C
✓	1 mL	PE, wash with pesticide grade Acetone,	Without adding acid Store sample at 4°C
✓	1 mL		

CPSD-AN-00613-DATA 04
Issue Date:
Version No.: 9
Business Line: Analytical

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (INDIVIDUAL SAMPLING)

sts (Conventional Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
Heavy Metals except Cr(VI)	✓	9 mL	PE, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO3 and store at 4oC
CrVI	✓	95 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air gap nor acid add and store sample at 4°C *Check pH initially, If pH <7 or pH >9, adjust pH to 8.0 – 8.5. Otherwise, no pH adjustment is required.
Cyanide	✓	500 mL		Adjust pH 12 with 50% NaOH and store sample at 4°C
Chemical oxygen demand (COD)		150 mL	Amber Glass,wash with nitric acid; Pre-add 6.5 mL of 2M H2SO4	Fill to full bottle without any air gap; acidify to ~pH 2 with H2SO4 Store sample at 4°C
Total suspened solids (TSS)		2000 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
5-day Biochemical Oxygen Demand (BOD)		1000 mL		
*Total Dissolved solids (TDS)		2000 mL		
Adsorbable organically bound ogens (AOX)		100 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Fill to full bottle without any air gap; acidify to ~pH 2 with HNO3 Store sample at 4°C
servation Remark:				

marks:
2016 ZDCH guideline test parameters can be allowed to perform individual sampling upon request
The minimum sampling time for 2016 ZDCH guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request
Free primary aromatic amine, pesticides, nitrosamine and TDS are not in the scope of ZDCH Guidline 2016, they are tested upon request.

Recorded by: Razikus Rahman Date: 28.03.19
Full name:

ainment from factory

owledgement by factory
ereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in desinated
ntainer(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-4°C

gnatory of Factory Representative: Nakibullah Roni Date: 28.03.19
Full Name:

Issue Date:	
Version No.:	8
Business Line:	Analytical

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE SAMPLING)

(6819)088-0248

Md. Zulfiqur Ali Phone No: 01701-202258

Zamirdia, Valuka, Mymensingh.

ETP Outlet Water.

Zero discharge with sampling plan

Composite sample

Md. Rezibur Rahman

Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant

28.03.19

Dyeing/ Printing/ Washing/ Finishing/ Other (please specify) Local Drain (No foam)

*(Note: It would be selected more than one

Arrival Time:	1.00 pm			Departure Time:				
Factory with effluent treatment plant	✓ Yes			No				
Sample matrix		Incoming water						
		Wastewater before treatment						
	✓	Wastewater after treatment – water at discharge point						
Field Parameters	1	2	3	4	5	6	7	8
Recording time	1.20 pm	2.20 pm	3.20 pm	4.20 pm	5.20 pm	6.20 pm		
pH	5.1	5.2	5.2	5.7	5.8	5.9		
Temp (°C)	28.4	28.6	28.4	28.3	28.5	28.6		
Color	Colorless	Colorless	Colorless	Colorless	Grey	Grey		
Sample container number	2.4							
Volume collected, mL	167	167	167	167	167	167	1	
Total volume collected	24X1000	Remark: Total volume collected must be greater than total of sample size required						

Analysis Required and Preservation Method

Tests (MRSL Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
1. Phthalate	✓	1000 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
2. Brominated and chlorinated Flame Retardant	✓	1000 mL		
3. Chlorobenzenes, Chlorotoluene & Polynuclear aromatic hydrocarbons (PAHs)	✓	1000 mL		
4. Chlorophenols & Cresols	✓	100 mL		
5. SCCPs	✓	1000 mL		
6. Flame retardant	✓	500 mL		
7. APS	✓	1000mL		
8. Chlorinated solvent / Volatile organic compounds (VOCs)	✓	10 mL		Fill to full container without air gap; acidify to ~pH 2 with HCl and store sample at 4°C
9. Organotin Compounds	✓	500 mL		
10. Dyes	✓	10 mL		

Glycol		50 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
*Pesticides		1000 mL		
*Nitrosamine		10 mL		
Banded Azodyes	✓	2000 mL		Adjust to pH 6-8 with acetic acid and NaOH Store sample at 4°C
*Free primary aromatic amines		500mL		
APEOs	✓	100mL		Adjust to pH 7 with HCl and NaOH Store sample at 4°C
PFCs	✓	1 mL	PE, wash with pesticide grade Acetone;	Adjust to pH 6-8 with HCl and NaOH Store sample at 4°C
FTAs and FTOHs	✓	1 mL		Without adding acid Store sample at 4°C

ts (Conventional Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
Heavy Metals except Cr(VI)	✓	9 mL	PE, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO3 and store at 4oC
CrVI	✓	95 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air gap nor acid add and Store sample at 4°C *Check pH initially. If pH <7 or pH >9, adjust pH to 8.0 – 8.5. Otherwise, no pH adjustment is required.
Cyanide	✓	500 mL		Adjust pH 12 with 50% NaOH and store sample at 4°C
Chemical oxygen demand (COD)	✓	150 mL	Amber Glass;wash with nitric acid; Pre-add 6.5 mL of 2M H2SO4	Fill to full bottle without any air gap; acidify to ~pH 2 with H2SO4 Store sample at 4°C
Total suspend solids (TSS)	✓	2000 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
5-day Biochemical Oxygen Demand (BOD5)	✓	1000 mL		
*Total dissolved solids (TDS)		2000 mL		
Adsorbable organically bound ogens (AOX)	✓	100 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Fill to full bottle without any air gap; acidify to ~pH 2 with HNO3 Store sample at 4°C

servation/ Remark:

marks:
The minimum sampling time for 2016 ZDCH guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
Free primary aromatic amine, pesticides, nitrosamine and TDS are not in the scope of ZDCH Guidline 2016, they are tested upon request.

mment from factory

Recorded by: Md. Mazibur Rahman Date: 28.03.19
Full name:

knowledgement by factory
ereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in desinated
ntainer(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-4°C

gnatory of Factory Representative: Nakibullah Roni Date: 28.03.19
Full Name:

END