



Test Report: (9323)037-2205

Report Date: February 22, 2023

Factory Company Name: Jiafu (Fujian) Dyeing and Finishing Co.,Ltd

Factory Address: No.3 Anka Road, Xiaoxia Village, Dongshi Town 362271 Jinjiang, Fujian, China

Sampling Method & Description:	I001) Untreated wastewater	Composite	Deep grey liquid
	I002) Effluent	Composite	Light brown liquid
	I003) Sludge	Grab	Black solid
	I004) Leachate	-	-

Discharge Type: **Indirect Discharge with Pretreatment**

On-site ETP / Pretreatment: Yes

Discharge Destination: Municipal ETP

Permit Validation Date: Dec 19, 2020 to Dec 18, 2025

Conventional, Anions &amp; Heavy Metals Overall Category: Not applicable ZDHC MRSL Parameters: Detected

Sludge Parameters: Exceed ZDHC Threshold Value

Sample Pick Up Date: February 8, 2023 Sampler Certification Number: C74D106817271  
C74D106817263

Test Period: February 10, 2023 to February 22, 2023

Parameter(s) exceeded maximum holding time: Exceed 24h

**Remark**

The results of this report shall not be used for any regulatory compliance purposes.

Type of Process:	<b>Textile</b>	Average total industrial wastewater generated:	<b>Equal or more than 15m<sup>3</sup>/day</b>
Sludge Disposal Pathway:	Disposal Pathway C		
Type of Sludge:	mechanically dewatered sludge "cake"		

General enquiry and invoicing:  
[bvcps\\_pyinfo@bureauveritas.com](mailto:bvcps_pyinfo@bureauveritas.com)  
(86)20-22902088Technical enquiry:  
[bvcps\\_pyinfo@bureauveritas.com](mailto:bvcps_pyinfo@bureauveritas.com)  
(86)20-22902088

Report reviewed by:

Andy Wang  
Manager

Report approved by:

Nina Ren  
Senior Manager

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**Result Summary - ZDHC MRS� Wastewater Parameters**

Test Items	Untreated wastewater	Effluent
1A) AP and APEOs	ND	NR
1B) Anti-Microbials & Biocides	ND	
1C) Chlorinated Parafins	ND	
1D) Chlorobenzenes and Chlorotoluenes	ND	
1E) Chlorophenols	ND	
1F) DMFa	ND	
1G) Dyes - Carcinogenic or Equivalent Concern	ND	
1H) Dyes - Disperse (Sensitising)	ND	
1I) Dyes - Navy Blue Colourant	ND	
1J) Flame Retardants	ND	
1K) Glycols / Glycol Ethers	ND	
1L) Halogenated Solvents	ND	
1M) Organotin Compounds	ND	
1N) Other / Miscellaneous Chemicals	D	
1O) PFCs	ND	
1P) Phthalates	ND	
1Q) PAHs	ND	
1R) Restricted Aromatic Amines	ND	
1S) UV Absorbers	ND	
1T) VOC	ND	



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**Result Summary - ZDHC Heavy Metals, Conventional and Anions Wastewater Parameters**

Test Items	Untreated wastewater	Effluent
Antimony	NR	NR
Chromium (VI)		Refer to result
Barium		NR
Selenium		NR
Tin		NR
Arsenic		Refer to result
Total Chromium		NR
Cobalt		NR
Cadmium		Refer to result
Copper		NR
Lead		Refer to result
Nickel		NR
Silver		NR
Zinc		NR
Mercury		Refer to result
pH		NR
Temperature difference		NR
E.coli		NR
Colour		NR
Persistent Foam		NR
Wastewater Flowrate		NR
Ammonium-Nitrogen		NR
AOX		NR
BOD <sub>5</sub>		NR
COD		NR
DO		NR
Oil & Grease		NR
Total Phenols / Phenol Index		NR
Total Chlorine		NR
TDS		NR
Total Nitrogen		NR
Total Phosphorus		NR
TSS		NR
Chloride	NR	
Cyanide, total	NR	
Sulfate	NR	
Sulfide	NR	
Sulfite	NR	



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**Result Summary - ZDHC Sludge Parameters**

Test Items	Sludge	Leachate
Antimony	<b>D</b>	Refer to result
Arsenic	ND	NR
Barium	ND	NR
Cadmium	ND	NR
Coblat	ND	NR
Copper	ND	NR
Lead	ND	NR
Nickel	ND	NR
Selenium	ND	NR
Silver	ND	NR
Total Chromium	ND	NR
Zinc	ND	NR
Chromium (VI)	ND	NR
Mercury	ND	NR
Cyanide	ND	NR
pH	ND	
% Solids	Refer to result	
Paint Filter Test	Refer to result	
Fecal Coliform	Refer to result	
AP and APEOs	Refer to result	
PAHs	Refer to result	
Chlorotoluenes	Refer to result	

## Note / Key:

Meet	=	Meet Foundational Limit / Meet Discharge Criteria
<b>Not Meet</b>	=	Exceed Foundational Limit / Exceed Discharge Criteria
NR	=	Not requested / Not required
NA	=	Not applicable
<b>D</b>	=	Detected
ND	=	Not detected
Refer to result	=	Legal parameter(s) and/or parameter(s) requested by factory, please refer to test result



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**Test Result - ZDHC MRLS Parameters**

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate <sup>#</sup> (mg/L)
<b>1A) AP and APEOs: including all isomers</b>							
NPEO	ND	NR	ND	NR	5	0.4 <sup>e</sup>	#
NP, mixed isomers	ND		ND				
OPEO	ND		ND				
OP, mixed isomers	ND		ND				
<b>1B) Anti-Microbials &amp; Biocides</b>							
o-Phenylphenol (+salts)	ND	NR	NR	NR	100	-	-
Triclosan	ND				500		
Permethrin	ND						
<b>1C) Chlorinated Parafins</b>							
MCCPs (C14-C17)	ND	NR	NR	NR	500	-	-
SCCPs (C10-C13)	ND				25		
<b>1D) Chlorobenzenes and Chlorotoluenes</b>							
1,2-dichlorobenzene	ND	NR	NR	NR	0.2	-	-
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- chlorobenzene	ND		NR				
Other isomers of mon-, di-, tri-, tetra- and penta- chlorotoluene	ND		ND				
<b>1E) Chlorophenols</b>							
2-chlorophenol	ND	NR	NR	NR	0.5	-	-
3-chlorophenol	ND						
4-chlorophenol	ND						
2,3-dichlorophenol	ND						
2,4-dichlorophenol	ND						
2,5-dichlorophenol	ND						
2,6-dichlorophenol	ND						
3,4-dichlorophenol	ND						
3,5-dichlorophenol	ND						
2,3,4-trichlorophenol	ND						
2,3,5-trichlorophenol	ND						
2,3,6-trichlorophenol	ND						
2,4,5-trichlorophenol	ND						
2,4,6-trichlorophenol	ND						
3,4,5-trichlorophenol	ND						
2,3,5,6-tetrachlorophenol	ND						
2,3,4,6-tetrachlorophenol	ND						
2,3,4,5-tetrachlorophenol	ND						
Pentachlorophenol (PCP)	ND						
<b>1F) N,N-di-methylformamide (DMFa)</b>							
Dimethyl formamide; N,N-dimethylformamide (DMFa) <sup>a</sup>	ND	NR	NR	NR	1000	-	-

a = Report only for mock leather

e = Sludge parameter limit refers Table 4C and 4D in the ZDHC Wastewater Guidelines.



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**Test Result - ZDHC MRS� Parameters (continued)**

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate <sup>#</sup> (mg/L)
<b>1G) Dyes - Carcinogenic or Equivalent Concern</b>							
Basic violet 3 with >0.1% of Michler's Ketone	ND						
C.I. Acid Red 26	ND						
C.I. Acid Violet 49	ND						
C.I. Basic Blue 26 (with Michler's Ketone >0/1%)	ND						
C.I. Basic Green 4 (Malachite Green Chloride)	ND						
C.I. Basic Green 4 (Malachite Green Oxalate)	ND						
C.I. Basic Green 4 (Malachite Green)	ND						
C.I. Basic Red 9	ND	NR	NR	NR	500	-	-
C.I. Basic Violet 14	ND						
C.I. Direct Black 38	ND						
C.I. Direct Blue 6	ND						
C.I. Direct Red 28	ND						
C.I. Disperse Blue 1	ND						
C.I. Disperse Blue 3	ND						
Disperse Orange 11	ND						
<b>1H) Dyes - Disperse (Allergenic)</b>							
Disperse Blue 102	ND						
Disperse Blue 106	ND						
Disperse Blue 124	ND						
Disperse Blue 26	ND						
Disperse Blue 35 (CAS 12222-75-2)	ND						
Disperse Blue 35 (CAS 56524-77-7)	ND						
Disperse Blue 7	ND						
Disperse Brown 1	ND						
Disperse Orange 1	ND						
Disperse Orange 3	ND	NR	NR	NR	50	-	-
Disperse Orange 37/59/76	ND						
Disperse Red 1	ND						
Disperse Red 11	ND						
Disperse Red 17	ND						
Disperse Yellow 1	ND						
Disperse Yellow 3	ND						
Disperse Yellow 39	ND						
Disperse Yellow 49	ND						
Disperse Yellow 9	ND						
<b>1I) Dyes - Navy Blue Colourant</b>							
Component 1: C39H23Cl-CrN7O12S 2Na	ND						
Component 2: C46H-30CrN10O20S2 3Na	ND	NR	NR	NR	500	-	-



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**Test Result - ZDHC MRSL Parameters (continued)**

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate <sup>#</sup> (mg/L)
<b>1J) Flame Retardants</b>							
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	ND						
Dis(2,3-dibromopropyl) phosphate (BIS)	ND						
Decabromophenyl ether (DecaBDE)	ND						
Hexabromocyclodecane (HBCDD)	ND						
Octabromodiphenyl ether (OctaBDE)	ND						
Pentabromodiphenyl ether (PentaBDE)	ND						
Polybromobiphenyls (PBB)	ND						
Tetrabromobisphenol A (TBBPA)	ND						
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	ND						
Tris(1-aziridinyl)phosphone oxide (TEPA)	ND						
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	ND						
Tris(2-chloroethyl) phosphate (TCEP)	ND						
Tris(2,3-dibromopropyl) phosphate (TRIS)	ND				25		
Decabromobiphenyl (DecaBB)	ND						
Dibromobiphenyls (DiBB)	ND	NR	NR	NR		-	-
Octabromobiphenyls (OctaBB)	ND						
Dibromopropylether	ND						
Heptabromodiphenyl ether (HeptaBDE)	ND						
Hexabromodiphenyl ether (HexaBDE)	ND						
Monobromobiphenyls (MonoBB)	ND						
Monobromodiphenylethers (MonoBDEs)	ND						
Nonabromobiphenyls (NonaBB)	ND						
Nonabromodiphenyl ether (NonaBDE)	ND						
Tetrabromodiphenyl ether (TetraBDE)	ND						
Tribromophenylethers (TriBDEs)	ND						
Boric acid <sup>b</sup>	ND						
Diboron trioxide <sup>b</sup>	ND						
Disodium octaborate <sup>b</sup>	ND				100		
Disodium tetraborate anhydrous <sup>b</sup>	ND						
Tetraboron disodium heptaoxide, hydrate <sup>b</sup>	ND						
<b>1K) Glycols / Glycol Ethers</b>							
2-ethoxyethanol	ND						
2-ethoxyethyl acetate	ND						
2-methoxyethanol	ND						
2-methoxyethylacetate	ND	NR	NR	NR	50	-	-
2-methoxypropylacetate	ND						
Bis(2-methoxyethyl)-ether	ND						
Ethylene glycol dimethyl ether	ND						
Triethylene glycol dimethyl ether	ND						
<b>1L) Halogenated Solvents</b>							
1,2-dichloroethane	ND						
Methylene chloride	ND	NR	NR	NR	1	-	-
Tetrachloroethylene	ND						
Trichloroethylene	ND						

b = Limit refers to elemental boron, not the salt.



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**Test Result - ZDHC MRSL Parameters (continued)**

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate <sup>#</sup> (mg/L)
<b>1M) Organotin Compounds</b>							
Dipropyltin compounds (DPT)	ND	NR	NR	NR	0.01	-	-
Mono, di-, and tri-butyltin derivatives	ND						
Mono, di-, and tri-methyltin derivatives	ND						
Mono, di-, and tri-octyltin derivatives	ND						
Mono, di-, and tri-phenyltin derivatives	ND						
Tetrabutyltin compounds (TeBT)	ND						
Tripropyltin compounds (TPT)	ND						
Tetraoctyltin compounds (TeOT)	ND						
Tricyclohexyltin (TCyHT)	ND						
Tetraethyltin compounds (TeET)	ND						
<b>1N) Other / Miscellaneous Chemicals</b>							
AEEA [2-(2-aminoethylamino)ethanol]	ND	NR	NR	NR	500	-	-
Bisphenol A	ND				10		
Thiourea	59300				50		
Quinoline	ND				100		
Borate, zinc salt <sup>c</sup>	ND						
Silica (used in sand blasting) <sup>d</sup>	NR				Not a ZDHC wastewater parameter		
<b>1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)</b>							
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	ND	NR	NR	NR	0.01	-	-
Perfluorooctanoic acid (PFOA) related substances	ND				1		
<b>1P) Phthalates - including all other esters of ortho-phthalic acid</b>							
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	ND	NR	NR	NR	10	-	-
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUP)	ND						
Bis(2-methoxyethyl)phthalate (DMEP)	ND						
Butyl benzyl phthalate (BBP)	ND						
Di-cyclohexyl phthalate (DCHP)	ND						
Di-iso-decyl phthalate (DIDP)	ND						
Di-iso-octyl phthalate (DIOP)	ND						
Di-iso-butyl phthalate (DIBP)	ND						
Di-iso-nonyl phthalate (DINP)	ND						
Di-n-hexyl phthalate (DnHP)	ND						
Di-n-octyl phthalate (DNOP)	ND						
Di-n-pentylphthalates	ND						
Di-n-propyl phthalate (DPRP)	ND						
Di(ethylhexyl) phthalate (DEHP)	ND						
Dibutyl phthalate (DBP)	ND						
Diethyl phthalate (DEP)	ND						
Diisopentylphthalates	ND						
Dinonyl phthalate (DNP)	ND						

c = Limit refers to elemental boron and/or zinc, not the salt.

d = Not a ZDHC wastewater parameter, and not required to test this parameter as this is related to sand blasting





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**Test Result - ZDHC MRSL Parameters (continued)**

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001	I002	I003	I004	Wastewater	Sludge	Leachate <sup>#</sup>
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(mg/kg)	(mg/L)
<b>1Q) Polycyclic Aromatic Hydrocarbons (PAHs)</b>							
Acenaphthene	ND		ND				
Acenaphthylene	ND		ND				
Anthracene	ND		ND				
Benzo[a]anthracene	ND		ND				
Benzo[a]pyrene (BaP)	ND		ND				
Benzo[b]fluoranthene	ND		ND				
Benzo[e]pyrene	ND		ND				
Benzo[ghi]perylene	ND		ND				
Benzo[j]fluoranthene	ND	NR	ND	NR	1	0.2 <sup>e</sup>	#
Benzo[k]fluoranthene	ND		ND				
Chrysene	ND		ND				
Dibenz[a,h]anthracene	ND		ND				
Fluoranthene	ND		ND				
Fluorene	ND		ND				
Indeno[1,2,3-cd]pyrene	ND		ND				
Naphthalene	ND		ND				
Phenanthrene	ND		ND				
Pyrene	ND		ND				
<b>1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)</b>							
2-naphthylamine	ND						
2-naphthylammoniumacetate	ND						
2,4-xylidine	ND						
2,4,5-trimethylaniline	ND						
2,4,5-trimethylaniline hydrochloride	ND						
2,6-xylidine	ND						
3,3'-dichlorobenzidine	ND						
3,3-dimethoxybenzidine	ND						
3,3-dimethylbenzidine	ND						
4-aminoazobenzene	ND						
4-aminodiphenyl	ND						
4-chloro-o-toluidine	ND						
4-chloro-o-toluidinium chloride	ND						
4-chloroaniline	ND						
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	ND	NR	NR	NR	0.1	-	-
4-methoxy-m-phenylenediamine	ND						
4-methyl-m-phenylenediamine	ND						
4,4-methylene-bis-(2-chloro-aniline)	ND						
4,4-methylenedi-o-toluidine	ND						
4,4-methylenedianiline	ND						
4,4-oxydianiline	ND						
4,4-thiodianiline	ND						
5-nitro-o-toluidine	ND						
6-methoxy-m-toluidine	ND						
Benzidine	ND						
o-aminoazotoluene	ND						
o-anisidine	ND						
o-toluidine	ND						

e = Sludge parameter limit refers Table 4C and 4D in the ZDHC Wastewater Guidelines.



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**Test Result - ZDHC MRSL Parameters (continued)**

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate <sup>#</sup> (mg/L)
<b>1S) UV Absorbers</b>							
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	ND						
2-(2H-benzotriazol-2-yl)-4,6- ditertpentylphenol (UV-328)	ND	NR	NR	NR	100	-	-
2-benzotriazol-2-yl-4,6-di-tert- butylphenol (UV-320)	ND						
2,4-Di-tert-butyl-6-(5- chlorobenzotriazole-2-yl) phenol (UV-327)	ND						
<b>1T) Volatile Organic Compounds (VOC)</b>							
Benzene	ND	NR	NR	NR	1	-	-
m-cresol	ND						
o-cresol	ND						
p-cresol	ND						
Xylene	ND						
Toluene <sup>a</sup>	ND						

a = Report only for mock leather



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**Test Result - ZDHC Heavy Metals Parameters**

Test Parameters	Unit			Results of Test Items				Requirements [Textile]		
	Wastewater	Sludge	Leachate	I001	I002	I003	I004	Wastewater	Sludge	
								Discharge Criteria	Sludge Threshold Values	Leachate Limit#
<b>ZDHC Heavy Metals</b>										
Antimony	mg/L	mg/kg	mg/L	NR	NR	13.6	ND	-	12	#
Chromium (VI)	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	50	
Barium	mg/L	mg/kg	mg/L		NR	ND	NR	-	700	
Selenium	mg/L	mg/kg	mg/L		NR	ND	NR	-	10	
Tin	mg/L	-	-		NR	NR	NR	-	-	
Arsenic	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	10	
Total Chromium	mg/L	mg/kg	mg/L		NR	ND	NR	-	100	
Cobalt	mg/L	mg/kg	mg/L		NR	ND	NR	-	1600	
Cadmium	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	3	
Copper	mg/L	mg/kg	mg/L		NR	ND	NR	-	200	
Lead	mg/L	mg/kg	mg/L		ND	3.08	NR	Not applicable	10	
Nickel	mg/L	mg/kg	mg/L		NR	ND	NR	-	70	
Silver	mg/L	mg/kg	mg/L		NR	ND	NR	-	100	
Zinc	mg/L	mg/kg	mg/L		NR	ND	NR	-	1000	
Mercury	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	1	

#Limit refers to Table 4B to 4D in the ZDHC Wastewater Guidelines.



BUREAU VERITAS refer to leachate limits mentioned in the ZDHC Wastewater Guidelines.

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**Test Result - ZDHC Conventional and Anions Parameters**

Test Parameters	Unit			Results of Test Items				Requirements [Textile]		
	Wastewater	Sludge	Leachate	I001	I002	I003	I004	Wastewater	Sludge	
								Discharge Criteria	Sludge Threshold Values	Leachate Limit <sup>#</sup>
<b>ZDHC Conventional</b>										
pH <sup>e</sup>	pH					7.62				
Temparture difference	Δ °C									
E.coli	MPN/100-ml									
Colour (436 nm)	m <sup>-1</sup>									
Colour (525 nm)	m <sup>-1</sup>									
Colour (620 nm)	m <sup>-1</sup>									
Persistent Foam	-									
Wastewater Flowrate	m <sup>3</sup> /day									
Ammonium-Nitrogen	mg/L									
AOX	mg/L									
BOD <sub>5</sub>	mg/L	-								
COD	mg/L					NR				
DO	mg/L			NR	NR		NR	-	-	-
Oil & Grease	mg/L									
Total Phenols / Phenol Index	mg/L									
Total Chlorine	mg/L									
TDS	mg/L									
Total Nitrogen	mg/L									
Total Phosphorus	mg/L									
TSS	mg/L									
% Solids <sup>e</sup>	-	%				41.29				
Paint Filter Test <sup>e</sup>	-	-				Pass				
Fecal Coliform <sup>e</sup>	-	-				1600				
<b>ZDHC Anions</b>										
Chloride	mg/L	-	-			NR				
Cyanide, total <sup>e</sup>	mg/L	mg/kg	-			ND				
Sulfate	mg/L			NR	NR		NR	-	-	-
Sulfide	mg/L	-	-			NR				
Sulfite	mg/L									

e = Sludge parameter limit refers Table 4C and 4D in the ZDHC Wastewater Guidelines.

#Limit refers to Table 4B to 4D in the ZDHC Wastewater Guidelines.



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**Appendix A - Discharge limit according to regulation / contract limit with CETP**

表9 废水污染物排放

序号	排放口编号	排放口名称	污染物种类	许可排放浓度限值	许可年排放量限值 (t/a)				
					第一年	第二年	第三年	第四年	第五年
主要排放口									
1	DW001	废水总排放口	色度	80	/	/	/	/	/
2	DW001	废水总排放口	悬浮物	100mg/L	/	/	/	/	/
3	DW001	废水总排放口	总磷	0.1mg/L	/	/	/	/	/
4	DW001	废水总排放口	苯胺类	1mg/L	/	/	/	/	/
5	DW001	废水总排放口	化学需氧量	200mg/L	/	/	/	/	/
6	DW001	废水总排放口	硫化物	0.5mg/L	/	/	/	/	/
7	DW001	废水总排放口	氨氮 (NH <sub>3</sub> -N)	20mg/L	/	/	/	/	/
8	DW001	废水总排放口	总磷 (以 P 计)	1.5mg/L	/	/	/	/	/
9	DW001	废水总排放口	pH 值	6-9	/	/	/	/	/
10	DW001	废水总排放口	总氮 (以 N 计)	30mg/L	/	/	/	/	/

序号	排放口编号	排放口名称	污染物种类	许可排放浓度限值	许可年排放量限值 (t/a)				
					第一年	第二年	第三年	第四年	第五年
11	DW001	废水总排放口	五日生化需氧量	50mg/L	/	/	/	/	/
主要排放口合计		CODcr			375	375	375	375	375
		氨氮			37.500000	37.500000	37.500000	37.500000	37.500000
		总氮 (以 N 计)			56.250000	56.250000	56.250000	56.250000	56.250000



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**Appendix B - Sample Photos**

**I001) Sampling point**  
N 24° 41' 33", E 118° 27' 18"



**I001) Sampling location surrounding**  
N 24° 41' 33", E 118° 27' 18"



**I001) Labelled sample bottles**



**I001) Sample for phthalate test**



**I001) Sample packaging**



**I002) Sampling point**  
N 24° 41' 28", E 118° 27' 41"



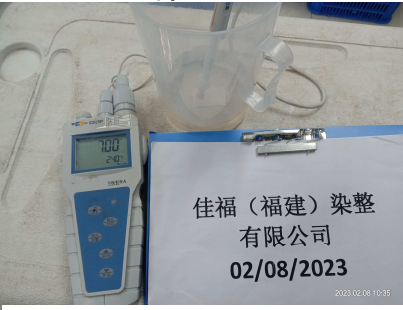
**I002) Sampling location surrounding**  
N 24° 41' 28", E 118° 27' 41"



**I002) Labelled sample bottles**



**I002) pH measurement**



**I002) Sample packaging**







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**Appendix B - Sample Photos (continued)**

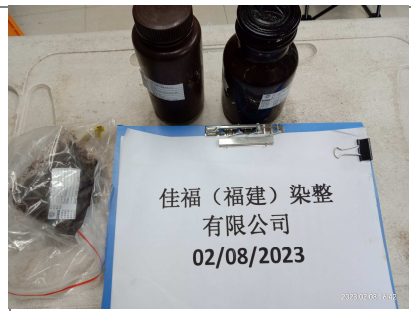
**I003) Sampling point**  
N 24o 41' 28", E 118o 27' 46"



**I003) Sampling location surrounding**  
N 24o 41' 28", E 118o 27' 46"



**I003) Labelled sample bottles**



**I003) Sample packaging**





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**Appendix C - On-site Field Data Record Sheet**

	<b>FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)</b>	CPSD-AN-00613-DATA 04 Issue Date: _____ Version No.: 17 Business Line: Analytical
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**General Data**

Laboratory Sample Number: 93230372205

Client Name: 佳福(福建)鞋业有限公司

Field Contact Person: 谢小姐 Phone No: 15759888256

Project (Facility Name and Address): 福建省泉州市晋江市赤石镇井内村宝开路3号

Sampling Location / Description: Untreated

Sample Identification: Zero discharge with sampling plan

Sample Type: Composite Sample / Grab sample (Please delete as appropriate)

Name of Sampler: YDY, MX

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

Date of collection: 02/08/2023

Factory Type: Dyeing / Printing / Washing / Finishing / Others (please specify):

\*Note: it would be selected more than one.

**Field Data for Wastewater**

Arrival Time:	<u>10:30</u>	Departure Time:	<u>16:50</u>	
Field Parameters	pH: <u>/</u>	Temp: <u>/</u> °C	Color: <u>Deep grey</u>	
Control No. of field equipment:				
Factory with effluent treatment plant:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Sample matrix:	<input checked="" type="checkbox"/> Incoming water (if required)			
	<input type="checkbox"/> Wastewater before treatment			
	<input type="checkbox"/> Wastewater after treatment - water at discharge point			
Sampler container number	<u>1001</u>			
Recording time	ID			
	Time	<u>10:37</u>	<u>11:36</u>	<u>12:37</u>
pH:	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
Temp (°C):	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
Color (visual estimation):	<u>Deep grey</u>	<u>Deep grey</u>	<u>Deep grey</u>	<u>Deep grey</u>
Flow rate (volume/time)	<u>2000</u>	<u>2000</u>	<u>2000</u>	<u>2000</u>
Volume collected, mL	<u>2000</u>	<u>2000</u>	<u>2000</u>	<u>2000</u>
Total volume collected	<u>8.5</u>	Remark: Total volume collected must be greater than total of sample size required		

**Analysis Required and Preservation Method**

Tests (ZDHC MRSL Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method
Combined test or individual test (Remark 4)	1. Phthalate	1000 mL total or 1000 mL each	坐标 E: 118° 27' 18" N: 24° 41' 33"  Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
	2. Chlorobenzenes, Chlorotoluene & PAH			
	3. SCCPs			
	4. APS			
5. APEOs	✓	100 mL		
6. Chlorophenols & Cresols	✓	100 mL		
7. Flame retardant	✓	500 mL		
8. Dyes	✓	10 mL		
9. Glycol	✓	50 mL		
10. *Pesticides	✓	1000 mL		
11. *Microbials	✓	10 mL		
12. Banned Azodyes	✓	2000 mL	PE, washed with pesticide grade Acetone	Fill to full container; without air gap; oxidize to pH 2 with HCl and store sample at 2-8°C  Without adding acid Store sample at 2-8°C
13. *Free primary aromatic amines	✓	500 mL		
14. Organotin Compounds	✓	500 mL		
15. UV absorbers	✓	100		
16. BPA	✓	2		
17. Preservatives	✓	52		
18. VOC & Halogenated Solvents (Remark 6)	✓	10 mL		
19. PFCs (Remark 6)	✓	2 mL		





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**Appendix C - On-site Field Data Record Sheet (continued)**

	<b>FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)</b>	CPSD-AN-00613-DATA 04
		Issue Date:
		Version No.: 17 Business Line: Analytical

Tests (Conventional Parameters)	Test required (v)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4) 20. Total suspended solids (TSS) 21. Total dissolved solids (TDS)		2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
22. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL		
23. Colour		100 mL		
24. Heavy Metals except Cr(VI) & Total-P (Remark 6)		5 mL	PE, washed with nitric acid	Acidify to pH 2 with HNO <sub>3</sub> and store at 2-8°C
25. Cyanide		500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% H <sub>2</sub> O <sub>2</sub> , and store sample at 2-8°C
26. Cr(VI)		95 mL		Filter by 0.45µm filter in field, fill to full container without air gap, adjust pH to 9.0-9.5 by adding ammonium buffer. Store sample at 2-8°C
27. Chemical oxygen demand (COD)		150 mL	Amber Glass, washed with nitric acid	Acidify to pH 2 with H <sub>2</sub> SO <sub>4</sub> Store sample at 2-8°C
28. Phenols		500 mL		
29. Oil and Grease & Total Hydrocarbon		1000 mL		
30. *Formaldehyde		25 mL		Fill to full container without air gap, acidify to pH 2 with H <sub>2</sub> SO <sub>4</sub> and store sample at 2-8°C
31. Sulfide (Remark 5)		50 mL	PE, washed with pesticide grade Acetone;	Fill to full container without air gap, add 2 drops of 2M zinc acetate, adjust pH to 9 with 6M NaOH. Store sample at 2-8°C
32. E.coli (Remark 5)		125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na2S2O3, keep in dark. Store sample at 2-8°C
33. Persistent foam		N.A.	Foam higher than 45 cm (visual estimation)	Yes / No
34. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Add 1ml of 2.5% EDTA. Store sample at 2-8°C
35. Total-N		100 mL		Acidify to pH 2 with H <sub>2</sub> SO <sub>4</sub> Store sample at 2-8°C
36. Ammonium-N		500 mL		Acidify to pH 2 with HNO <sub>3</sub> and store at 2-8°C
37. Adsorbable organically bound halogens (AOX)		100 mL		
38. Acute aquatic toxicity: Luminous Bacteria, Fish Egg, Daphne, Algae;		1000 mL	Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
39. Sulphate		100 mL		
40. Chloride		100 mL		
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.	measure in field	
43. Total Chlorine		N.A.	measure in field	
44. Others:				

**\*Remarks:**

- Individual sampling can be performed upon request
- The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
- Scope of ZDHC guideline: Parameter 1-9, 12, 14-29, 31-37, 39-43  
 Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 25-29, 31-33, 35, 36, 39, 40  
 Scope of MMCF: Parameter 5, 18, 20, 22-24, 28-29, 31, 35-38  
 Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
- Refer to CPSD-AN-000019-STP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
- Refer to CPSD-AN-000670-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
- Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: 李本裕 黄耀星 Date: 02/08/2023

Comments from factory: C74D106817271 C74D106817263

**Acknowledgement by factory**

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in designated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-8°C

Signature of Factory Representative: 李本裕 Date: 2023.02.08  
 Full Name: \_\_\_\_\_



Test Report: (9323)037-2205

Report Date: February 22, 2023

**Appendix C - On-site Field Data Record Sheet (continued)**

	<b>FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)</b>	CPSD-AN-00613-DATA 04 Issue Date: _____ Version No.: 17 Business Line: Analytical
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**General Data**

Laboratory Sample Number: 93230372205  
 Client Name: 佳格(福建)涂装有限公司  
 Field Contact Person: 谢小姐 Phone No: 15759888256  
 Project (Facility Name and Address): 福建省泉州市晋江市赤石镇前下村安开路3号  
 Sampling Location / Description: Effluent  
 Sample Identification: Zero discharge with sampling plan  
 Sample Type: Composite Sample / Grab sample (Please delete as appropriate)  
 Name of Sampler: YDY.MX  
 Discharge mode: Direct discharge to environment (Specify destination: River, Sea, Stream... ) OR Indirect discharge to sewage treatment plant  
 Date of collection: 02/08/2023 如: 晋江泉莱运东水处理有限公司  
 Factory Type: Dyeing / Printing / Washing / Finishing / Others (please specify):  
如: 3000m<sup>2</sup>/d. 地址: 晋江市安东工业区  
\*Note: It would be selected more than one

**Field Data for Wastewater**

Arrival Time:	<u>10:30</u>	Departure Time:	<u>16:50</u>
Field Parameters	pH: <u>/</u>	Temp: <u>/</u> °C	Color: <u>light yellow</u> Flow rate (volumetric): <u>we. YDY. 2023</u>
Control No. of field equipment	<u>/</u>		
Factory with effluent treatment plant:	Yes <input checked="" type="checkbox"/>		<u>light brown</u> No <input type="checkbox"/>
Sample matrix:	Incoming water (if required)		
	Wastewater before treatment		
	Wastewater after treatment - water at discharge point		
Sampler container number	<u>I002</u>		
Recording time	ID		
	Time	<u>10:34</u>	<u>11:33</u>
		<u>12:32</u>	<u>13:33</u>
		<u>14:34</u>	<u>15:32</u>
		<u>16:29</u>	
pH:			
Temp (°C):			
Color (visual estimation)	<u>light brown</u>	<u>light brown</u>	<u>light brown</u>
Flow rate (volume/time)			
Volume collected, mL	<u>1000</u>	<u>1000</u>	<u>1000</u>
Total volume collected	<u>700ml</u>	Remark: Total volume collected must be greater than total of sample size required	

**Analysis Required and Preservation Method**

Tests (ZDHC MRSL Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method
Combined test or individual test (Remark 4)	1. Phthalate	1000 mL total or 1000 mL each	坐标: E: 118° 27' 41" N: 24° 41' 28"  Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
	2. Chlorobenzenes, Chlorotoluene & PAH			
	3. SOCPs			
	4. APS			
5. APEOs		100 mL		
6. Chlorophenols & Cresols		100 mL		
7. Flame retardant		500 mL		
8. Dyes		10 mL		
9. Glycol		50 mL		
10. *Pesticides		1000 mL		
11. *Nitrosamine		10 mL		
12. Banned Azodyes		2000 mL		
13. *Free primary aromatic amines		500 mL		
14. Organotin Compounds		500 mL		
15. UV absorbers		100		
16. BPA		2		
17. Preservatives		52		
18. VOC & Halogenated Solvents (Remark 5)		10 mL	PE, washed with pesticide grade Acetone	Fill to full container without air gas; acidify to pH 2 with HCl and store sample at 2-8°C
19. PFCs (Remark 6)		2 mL		Without adding acid Store sample at 2-8°C



Test Report: (9323)037-2205

Report Date: February 22, 2023

**Appendix C - On-site Field Data Record Sheet (continued)**

	<b>FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)</b>	CPSD-AN-00613-DATA 04
		Issue Date:
		Version No.: 17
		Business Line: Analytical

Tests (Conventional Parameters)	Test required (✓)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4) 20. Total suspended solids (TSS) 21. Total dissolved solids (TDS)		2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
22. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL		
23. Colour		100 mL		
24. Heavy Metals except Cr(VI) & Total-P (Remark 6)	✓	9 mL	PE, washed with nitric acid	Acidity to pH 2 with HNO <sub>3</sub> and store at 2-8°C
25. Cyanide		500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> and store sample at 2-8°C
26. Cr(VI)	✓	95 mL	Amber Glass, washed with nitric acid	Filter by 0.45µm filter in field, fill to full container without air gap; adjust pH to 9.0-9.5 by adding ammonium buffer. Store sample at 2-8°C
27. Chemical oxygen demand (COD)		150 mL		Acidity to pH 2 with H <sub>2</sub> SO <sub>4</sub> Store sample at 2-8°C
28. Phenols		500 mL		
29. Oil and Grease & Total Hydrocarbon		1000 mL		
30. *Formaldehyde		25 mL		Fill to full container without air gap; acidity to pH 2 with H <sub>2</sub> SO <sub>4</sub> and store sample at 2-8°C
31. Sulfide (Remark 5)		50 mL	PE, washed with pesticide grade Acetone;	Fill to full container without air gap; add 2 drops of 2M zinc acetate, adjust pH to 9 with 6M NaOH Store sample at 2-8°C
32. E.coli (Remark 6)		125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> keep in dark Store sample at 2-8°C
33. Persistent foam		N.A.	Foam higher than 45 cm (visual estimation): Yes / No	
34. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Add 1ml of 2.5% EDTA Store sample at 2-8°C
35. Total-N		100 mL	Amber Glass, washed with nitric acid;	Acidity to pH 2 with H <sub>2</sub> SO <sub>4</sub> Store sample at 2-8°C
36. Ammonium-N		500 mL		Acidity to pH 2 with HNO <sub>3</sub> and store at 2-8°C
37. Adsorbable organically bound halogens (AOX)		100 mL		
38. Acute aquatic toxicity Luminus Bacteria, Fish Egg, Daphnia, Algae;		1000 mL		
39. Sulphate		100 mL		Without adding acid Store sample at 2-8°C
40. Chloride		100 mL		
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.	measure in field	
43. Total Chlorine		N.A.		
44. Others:				

**\*Remarks:**

- Individual sampling can be performed upon request.
- The minimum sampling time for ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
- Scope of ZDHC guideline: Parameter 1-9, 12, 14-29, 31-37, 39-43  
 Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31-33, 35, 36, 39, 40  
 Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 31, 35-39  
 Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
- Refer to CPSD-AN-G00019-STIP01, locations with these CPSD test capability inside TCD matrix can perform the combined test.
- Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
- Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: 乐东裕 黄耀华 Date: 02/08/2023

Comment from factory: C14D106817271 C14D106817263

Acknowledgement by factory:  
 I hereby confirmed that Bureau Veritas has completed the stored sampling activity at captioned date, time and location. All sample(s) is/are collected in designated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-6°C

Signature of Factory Representative: 陈永泉 Date: 2023.02.08  
 Full Name:





Test Report: (9323)037-2205

Report Date: February 22, 2023

**Appendix C - On-site Field Data Record Sheet (continued)**

<b>FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)</b>										CPSD-AN-00613-DATA 04 Issue Date: _____ Version No.: 17 Business Line: Analytical	
<b>Field Data for Sludge</b> Arrival Time: _____ Departure Time: _____										black	
Field Parameters: pH: _____ Temp: _____ °C Flow rate (volume/time) / sludge flux (weight/time): _____ Control No. of field equipment: _____											
Recording time: ID _____ Time _____											
pH: _____ Temp (°C): _____ Flow rate (volume/time) / sludge flux (weight/time): _____ Volume collected, mL: _____ Total volume collected: _____ Remark: Total volume collected must be greater than total of sample size required											

2/8/2023  
陈东裕

C74D10681 7271

黄耀星  
C74D10681

Analysis Required and Preservation Method		Yes	No	
Factory with effluent treatment plant		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sample matrix		Sludge in clarifier (sedimentation tank)		
Sampler container number		I003		
Recording time		1840		
Tests (MRSL Parameter)	Test required (v)	Total of sample size	Preservation method	
Combined test or Individual test (Remark 3)	1. Phthalate	10g total or 10g each	坐标 E: 118° 27' 46" N: 24° 41' 28" 陈孔泉 2023.02.01	
	2. Chlorobenzenes, Chlorotoluene & PAHs			<input checked="" type="checkbox"/>
	3. SCCPs			<input type="checkbox"/>
	4. APS			<input checked="" type="checkbox"/>
5. APEOs	<input checked="" type="checkbox"/>	20 g	Amber Glass, washed with nitric acid  Add 0.2 mL of 10% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (0.008% WVW). Store sample at 4°C  Acidity to -pH 2 with H <sub>2</sub> SO <sub>4</sub> . Add 0.02 mL of 10% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (0.008% WVW). Store sample at 4°C  Fill to full container without any air gap and acid add and store at 4°C *FRAS USE EGWB without any air gap. Acidity to -pH 2 with HCl. Store sample at 4°C  Add 0.02 mL of 10% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (0.008% WVW). Store sample at 4°C	
6. Flame retardant	<input type="checkbox"/>	10 g		
7. Dyes	<input type="checkbox"/>	10 g		
8. Glycols	<input type="checkbox"/>	100 g		
9. *Pesticides	<input type="checkbox"/>	20g		
10. Banned Azodyes	<input type="checkbox"/>	20 g		
11. *Free primary aromatic amines	<input type="checkbox"/>	10 g		
12. Chlorophenols & Cresols	<input type="checkbox"/>	20 g		
13. Organotin Compounds	<input type="checkbox"/>	10 g		
14. VOC & Halogenated Solvents (Remark 5)	<input type="checkbox"/>	10 g		
15. PFCs (Remark 5)	<input type="checkbox"/>	10 g		
Tests (Conventional Parameters)	Test required (v)	Total of sample size		Preservation method
16. Heavy Metals except Cr(VI) (Remark 5)	<input checked="" type="checkbox"/>	0.2 g		PE, wash with nitric acid Acidity to -pH 2 with HNO <sub>3</sub> . Store sample at 4°C
17. Cr(VI)	<input checked="" type="checkbox"/>	2.5 g		Amber Glass, wash with nitric acid Fill to full container without any air gap and acid add and store at 4°C
18. Antineoplastic organically bound halogens (AOX)	<input type="checkbox"/>	1 g		
19. Extractable organohalides (EOX)	<input type="checkbox"/>	20 g		
20. Total organic carbon (TOC)	<input type="checkbox"/>	20 g		
21. Cyanide	<input checked="" type="checkbox"/>	50 g	Amber Glass, wash with pesticide grade acetone Adjust pH to 12-13 with 50% NaOH and store at 4°C	
22. Faecal Coliform	<input checked="" type="checkbox"/>	20 g	PE, clean, sterile, non-reactive Add 0.1 mL of 10% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> . keep in dark. Store sample at 2-8°C	
23. % Solids	<input checked="" type="checkbox"/>	20 g	Amber Glass, wash with nitric acid Acidity to -pH 2 with HNO <sub>3</sub> . Store sample at 4°C	
24. Paint Fiber Test	<input checked="" type="checkbox"/>	20 g		



Test Report: (9323)037-2205

Report Date: February 22, 2023

**Appendix D - Test methods, reporting limits and CAS numbers**

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
<b>1A) AP and APEOs: including all isomers</b>						
Nonylphenol ethoxylates (NPEO)	µg/L	mg/kg	9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0	5	0.4	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(-MS)), OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2
Nonylphenol (NP), mixed isomers			104-40-5, 11066-49-2, 25154-52-3, 84852-15-3			
Octylphenol ethoxylates (OPEO)			9002-93-1, 9036-19-5, 68987-90-6			
Octylphenol (OP), mixed isomers			140-66-9, 1806-26-4, 27193-28-8			
<b>1B) Anti-Microbials &amp; Biocides</b>						
o-Phenylphenol (+salts)	µg/L	-	90-43-7	100	-	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 USEPA 8270E Solvent extraction followed by GC-MS or ISO 14154:2005 and determination by LCMS/LCMSMS
Triclosan			3380-34-5			
Permethrin			Multiple	500		
<b>1C) Chlorinated Paraffins</b>						
Medium-chain chlorinated paraffins (MCCPs) (C14-C17)	µg/L	-	85535-85-9	500	-	EPA 3510 and analyzed by ISO18219-2:2021 Method for MCCP with GC-MS(NCI) or LC-MS/MS EPA 3510 and analyzed by ISO18219-1:2021, ISO 12010:2019 Methods for SCCP with GC-MS(NCI) or LC-MS/MS
Short-chain chlorinated paraffins (SCCPs) (C10-C13)			85535-84-8	25		
<b>1D) Chlorobenzenes and Chlorotoluenes</b>						
1,2-dichlorobenzene	µg/L	-	95-50-1	0.2	-	USEPA 8260D, 8270E, Purge and Trap, Head Space, Dichloromethane extraction followed by GC-MS
Other isomers of mono-, di, tri-, tetra-, penta-, and hexa-chlorobenzene			Multiple			
Other isomers of mono-, di-, tri-, tetra-, and penta- chlorotoluene			mg/kg			
<b>1E) Chlorophenols</b>						
2-chlorophenol	µg/L	-	95-57-8	0.5	-	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS, BS EN 12673-1999 the procedure of solvent extraction and derivatization are included
3-chlorophenol			108-43-0			
4-chlorophenol			106-48-9			
2,3-dichlorophenol			576-24-9			
2,4-dichlorophenol			120-83-2			
2,5-dichlorophenol			583-78-8			
2,6-dichlorophenol			87-65-0			
3,4-dichlorophenol			95-77-2			
3,5-dichlorophenol			591-35-5			
2,3,4-trichlorophenol			15950-66-0			
2,3,5-trichlorophenol			933-78-8			
2,3,6-trichlorophenol			933-75-5			
2,4,5-trichlorophenol			95-95-4			
2,4,6-trichlorophenol			88-06-2			
3,4,5-trichlorophenol			609-19-8			
2,3,5,6-tetrachlorophenol			935-95-5			
2,3,4,6-tetrachlorophenol			58-90-2			
2,3,4,5-tetrachlorophenol	4901-51-3					
Pentachlorophenol (PCP)	87-86-5					
<b>1F) Dimethyl Formamide (DMFa)</b>						
Dimethyl formamide; N,N-dimethylformamide (DMFa) <sup>a</sup>	µg/L	-	68-12-2	1000	-	EPA 8015, EPA 8270E

a = Report only for mock leather



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**Appendix D - Test methods, reporting limits and CAS numbers (continued)**

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
<b>1G) Dyes - Carcinogenic or Equivalent Concern</b>						
Basic Violet 3 with >0.1% of Michler's Ketone	µg/L	-	548-62-9	500	-	Liquid extraction, LC-MS
C.I. Acid Red 26			3761-53-3			
C.I. Acid Violet 49			1694-09-3			
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 Green Oxalate)			2437-29-8			
C.I. Basic Green 4 (Malachite Green)			10309-95-2			
C.I. Basic Red 9			569-61-9			
C.I. Basic Violet 14			632-99-5			
C.I. Direct Black 38			1937-37-7			
C.I. Direct Blue 6			2602-46-2			
C.I. Direct Red 28			573-58-0			
C.I. Disperse Blue 1			2475-45-8			
C.I. Disperse Blue 3			2475-46-9			
Disperse Orange 11			82-28-0			
<b>1H) Dyes - Disperse (Allergenic)</b>						
Disperse Blue 102	µg/L	-	12222-97-8	50	-	Liquid extraction, LC-MS
Disperse Blue 106			12223-01-7			
Disperse Blue 124			61951-51-7			
Disperse Blue 26			3860-63-7			
Disperse Blue 35			12222-75-2			
Disperse Blue 7			56524-77-7			
Disperse Brown 1			3179-90-6			
Disperse Orange 1			23355-64-8			
Disperse Orange 3			2581-69-3			
Disperse Orange 37/59/76			730-40-5			
Disperse Red 1			13301-61-6			
Disperse Red 11			2872-52-8			
Disperse Red 17			2872-48-2			
Disperse Yellow 1			3179-89-3			
Disperse Yellow 3			119-15-3			
Disperse Yellow 39			2832-40-8			
Disperse Yellow 49			12236-29-2			
Disperse Yellow 9			54824-37-2			
			6373-73-5			
<b>1I) Dyes - Navy Blue Colourant</b>						
Component 1: C39H23Cl-CrN7O12S 2Na	µg/L	-	118685-33-9	500	-	Liquid extraction, LC-MS
Component 2: C46H-30CrN10O20S2 3Na			Not Allocated			



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**Appendix D - Test methods, reporting limits and CAS numbers (continued)**

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
<b>1J) Flame Retardants</b>						
2,2-bis(bromomethyl)- 1,3-propanediol (BBMP)	µg/L	-	3296-90-0	25	-	USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Bis(2,3-dibromopropyl) phosphate (BIS)			5412-25-9			
Decabromodiphenyl ether (DecaBDE)			1163-19-5			
Hexabromocyclodecane (HBCDD)			3194-55-6			
Octabromodiphenyl ether (OctaBDE)			32536-52-0			
Pentabromodiphenyl ether (PentaBDE)			32534-81-9			
Polybromobiphenyls (PBB)			59536-65-1			
Tetrabromobisphenol A (TBBPA)			79-94-7			
Tris-(2-chloro-1-methylethyl)phosphate (TCPP)			13674-84-5			
Tris(1-aziridinyl)phosphine oxide (TEPA)			545-55-1			
Tris(1,3-dichloroisopropyl)phosphate (TDCP)			13674-87-8			
Tris(2-chloroethyl)phosphate (TCEP)			115-96-8			
Tris(2,3-dibromopropyl)phosphate (TRIS)			126-72-7			
Decabromobiphenyl (DecaBB)			13654-09-6			
Dibromobiphenyls (DiBB)			Multiple			
Octabromobiphenyls (OctaBB)			Multiple			
Dibromopropylether			21850-44-2			
Heptabromodiphenyl ether (HeptaBDE)			68928-80-3			
Hexabromodiphenyl ether (HexaBDE)			36483-60-0			
Monobromobiphenyls (MonoBB)			Multiple			
Monobromodiphenylethers (MonoBDEs)			Multiple			
Nonabromobiphenyls (NonaBB)			Multiple			
Nonabromodiphenyl ether (NonaBDE)			63936-56-1			
Tetrabromodiphenyl ether (TetraBDE)	40088-47-9					
Tribromodiphenylethers (TriBDEs)	Multiple					
Boric acid <sup>b</sup>	100	-	10043-35-3, 11113-50-1	100	-	Determined as total boron via ICP
Diboron trioxide <sup>b</sup>			1303-86-2			
Disodium octaborate <sup>b</sup>			12008-41-2			
Disodium tetraborate anhydrous <sup>b</sup>			1303-96-4, 1330-43-4			
Tetraboron disodium heptaoxide, hydrate <sup>b</sup>			12267-73-1			

b = Limit refer to elemental boron, not the salt.



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**Appendix D - Test methods, reporting limits and CAS numbers (continued)**

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
<b>1K) Glycols / Glycol Ethers</b>						
2-ethoxyethanol	µg/L	-	110-80-5	50	-	USEPA 8270E Liquid extraction, LC-MS GC-MS
2-ethoxyethyl acetate			111-15-9			
2-methoxyethanol			109-86-4			
2-methoxyethylacetate			110-49-6			
2-methoxypropylacetate			70657-70-4			
Bis(2-methoxyethyl)-ether			111-96-6			
Ethylene glycol dimethyl ether			110-71-4			
Triethylene glycol dimethyl ether			112-49-2			
<b>1L) Halogenated Solvents</b>						
1,2-dichloroethane	µg/L	-	107-06-2	1	-	USEPA 8260D Headspace GC-MS or Purge and trap GC-MS
Methylene chloride			75-09-2			
Tetrachloroethylene			127-18-4			
Trichloroethylene			79-01-6			
<b>1M) Organotin Compounds</b>						
Dipropyltin compounds (DPT)	µg/L	-	Multiple	0.01	-	ISO 17353 Derivatisation with NaB (C2H5)4 GC-MS
Mono-, di- and tri-butyltin derivatives						
Mono-, di- and tri-methyltin derivatives						
Mono-, di- and tri-octyltin derivatives						
Mono-, di- and tri-phenyltin derivatives						
Tetrabutyltin compounds (TeBT)						
Tripropyltin Compounds (TPT)						
Tetraoctyltin compounds (TeOT)						
Tricyclohexyltin (TCyHT)						
Tetraethyltin Compounds (TeET)						
<b>1N) Other/Miscellaneous Chemicals</b>						
AEEA	µg/L	-	111-41-1	500	-	Liquid extraction, LC-MSMS
[2-(2-aminoethylamino)ethanol]						
Bisphenol A			80-05-7	10		Liquid extraction, LC-MS
Thiourea			62-56-6	50		
Quinoline			91-22-5	50		
Borate, zinc salt <sup>c</sup>			12767-90-7	100		
Silica (Used in sand blasting) <sup>d</sup>	14464-46-1	NA	Not a ZDHC Wastewater parameter			
<b>1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)</b>						
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	µg/L	-	Multiple	0.01	-	PFCs: EPA 537:2020 FTOH: BS EN 12673-1999, EPA 8270 PFCs: LC-MSMS FTOH: GC-MS Derivatisation with acetic anhydride followed by GC-MS
Perfluorooctanoic acid (PFOA) related substances				1		

c = Limit refers to elemental boron and/or zinc, not the salt.

d = Not required to test this parameter as this is related to sand blasting





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**Appendix D - Test methods, reporting limits and CAS numbers (continued)**

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
<b>1P) Phthalates - including all other esters of ortho-phthalic acid</b>						
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	µg/L	-	71888-89-6, 84777-06-0	10	-	USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUP)			68515-42-4, 68515-50-4			
Bis(2-methoxyethyl)phthalate (DMEP)			117-82-8			
Butyl benzyl phthalate (BBP)			85-68-7			
Di-cyclohexyl phthalate (DCHP)			84-61-7			
Di-iso-decyl phthalate (DIDP)			26761-40-0			
Di-iso-octyl phthalate (DIOP)			27554-26-3			
Di-iso-butyl phthalate (DIBP)			84-69-5			
Di-iso-nonyl phthalate (DINP)			28553-12-0			
Di-n-hexyl phthalate (DnHP)			84-75-3			
Di-n-octyl phthalate (DNOP)			117-84-0			
Di-n-pentylphthalates			131-18-0			
Di-n-propyl phthalate (DPRP)			131-16-8			
Di(ethylhexyl) phthalate (DEHP)			117-81-7			
Dibutyl phthalate (DBP)			84-74-2			
Diethyl phthalate (DEP)			84-66-2			
Diisopentylphthalates			605-50-5			
Dinonyl phthalate (DNP)	84-76-4					
<b>1Q) Polycyclic Aromatic Hydrocarbons (PAHs)</b>						
Acenaphthene	µg/L	mg/kg	83-32-9	1	0.2	USEPA 8270E DIN 38407-39 Solvent extraction GC-MS
Acenaphthylene			208-96-8			
Anthracene			120-12-7			
Benzo[a]anthracene			56-55-3			
Benzo[a]pyrene (BaP)			50-32-8			
Benzo[b]fluoranthene			205-99-2			
Benzo[e]pyrene			192-97-2			
Benzo[ghi]perylene			191-24-2			
Benzo[j]fluoranthene			205-82-3			
Benzo[k]fluoranthene			207-08-9			
Chrysene			218-01-9			
Dibenz[a,h]anthracene			53-70-3			
Fluoranthene			206-44-0			
Fluorene			86-73-7			
Indeno[1,2,3-cd]pyrene			193-39-5			
Naphthalene			91-20-3			
Phenanthrene			85-01-8			
Pyrene	129-00-0					



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**Appendix D - Test methods, reporting limits and CAS numbers (continued)**

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
<b>1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)</b>						
2-naphthylamine	µg/L	-	91-59-8	0.1	-	Reduction step with sodium dithionite, solvent extraction EPA 8270
2-naphthylammoniumacetate			553-00-4			
2,4-xylidine			95-68-1			
2,4,5-trimethylaniline			137-17-7			
2,4,5-trimethylaniline			21436-97-5			
2,6-xylidine			87-62-7			
3,3'-dichlorobenzidine			91-94-1			
3,3-dimethoxybenzidine			119-90-4			
4-aminoazobenzene			60-09-3			
4-aminodiphenyl			92-67-1			
4-chloro-o-toluidine			95-69-2			
4-chloro-o-toluidinium chloride			3165-93-3			
4-chloroaniline			106-47-8			
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate			39156-41-7			
4-methoxy-m-phenylenediamine			615-05-4			
4-methyl-m-phenylenediamine			95-80-7			
4,4-methylene-bis-(2-chloro-aniline)			101-14-4			
4,4-methylenedi-o-toluidine			838-88-0			
4,4-methylenedianiline			101-77-9			
4,4-oxydianiline			101-80-4			
4,4-thiodianiline			139-65-1			
5-nitro-o-toluidine			99-55-8			
6-methoxy-m-toluidine			120-71-8			
Benzidine			92-87-5			
o-aminoazotoluene			97-56-3			
o-anisidine			90-04-0			
o-toluidine	95-53-4					
<b>1S) UV Absorbers</b>						
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	µg/L	-	36437-37-3	100	-	USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC-MS or LC-MS(-MS)
2-(2H-benzotriazol-2-yl)-4,6-diterpentyphenol (UV-328)			25973-55-1			
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)			3846-71-7			
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)			3864-99-1			
<b>1T) Volatile Organic Compounds (VOC)</b>						
Benzene	µg/L	-	71-43-2	1	-	ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D Add ISO 20595 Static headspace for determination of VOC in wastewater
m-cresol			108-39-4			ISO 11423-1 Headspace or Purge and trap GC-MS EPA 8270 BS EN 12673-1999
o-cresol			95-48-7			
p-cresol			106-44-5			ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D
Xylene			1330-20-7			
Toluene <sup>a</sup>			108-88-3			HJ 1067 or EPA 8260D or ISO 11423-1

a = Report only for mock leather



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**Appendix D - Test methods, reporting limits and CAS numbers (continued)**

Test Parameters	Unit		CAS No.	LOQ			Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	Leachate	
<b>Heavy Metals</b>							
Antimony	mg/L	mg/kg	7440-36-0	0.01	5	0.01	With reference to EPA 3015A, 6020A, 200.8, 6020B, 3051A and ISO 17294-2 and analyzed by ICP-MS With reference to EPA 1311 and HJT 300 for leachate
Chromium (VI)			18540-29-9	0.001	20	0.001	
Barium			7440-39-3	1	200	1	
Selenium			7782-49-2	1	5	1	
Tin			7440-31-5	1	-	1	
Arsenic			7440-38-2	0.005	5	0.005	
Total Chromium			7440-47-3	0.05	50	0.05	
Cobalt			7440-48-4	0.01	400	0.01	
Cadmium			7440-43-9	0.01	1	0.01	
Copper			7440-50-8	0.25	50	0.25	
Lead			7439-92-1	0.01	5	0.01	
Nickel			7440-02-0	0.05	20	0.05	
Silver			7440-22-4	0.005	50	0.005	
Zinc			7440-66-6	0.5	400	0.5	
Mercury			7439-97-6	0.001	1	0.001	
<b>Conventional</b>							
pH	pH	pH		6 - 9			With reference to ISO 10523, EPA 150.2, APHA 4500-H+
Temperature difference	°C			-			USEPA 170.1 or GB/T 13195
E.coli	MPN/100-ml			126			-
Colour	m <sup>-1</sup>			2;1;1			ISO 7887 (Method A and B)
Persistent Foam	-			-			-
Wastewater Flowrate	m <sup>3</sup> /day			-			-
Ammonium-Nitrogen	mg/L			0.5			ISO 11732, ISO 7150, USEPA 350.1, APHA 4500 NH <sup>3</sup> -N, HJ 535 or HJ 536
AOX	mg/L			0.1			ISO 9562, EN ISO 9563, USEPA 1650, HJ.T 83-2001
Biochemical Oxygen Demand 5-days concentration (BOD <sub>5</sub> )	mg/L			8			ISO 5815-1 & -2, EN1899-1, USEPA 405.1, APHA 5210B or HJ 505
Chemical Oxygen Demand (COD)	mg/L			40			ISO 6060, USEPA 410.4, APHA 5220D or GB/T 11914
Dissolved Oxygen (DO)	mg/L			-	-	-	ISO 5814, EPA 360.1 or HJ 506
Oil & Grease	mg/L			0.5			ISO 9377-2, USEPA 1664 or HJ 637
Total Phenols / Phenol Index	mg/L			0.001			ISO 14402, APHA 5530B, C, D or HJ 503
Total Chlorine	mg/L			0.1			ISO 7393-2, EPA 330.5 or HJ 586
Total Dissolved Solids (TDS)	mg/L			5			APHA 2540C, GB/T 5750.4
Total Nitrogen	mg/L			5			ISO 5663, ISO 29411, USEPA 351.2, APHA 4500P-J, APHA 4500N-C/ HJ 636 or GB 11891
Total Phosphorus	mg/L			0.1			ISO 11885, ISO 6878, USEPA 365.4, APHA 4500P-J or GB/T 11893
Total Suspended Solids (TSS)	mg/L			5			ISO 11923, USEPA 160.2, APHA 2540D or GB/T 11901
% Solids	-	%			-	-	USEPA 160.3
Paint Filter Test	-	-			-	-	EPA SW-846 or EPA 9095B
Fecal Coliform	-	bacteria/100ml			-	-	EPA 1681

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Test Parameters	Unit		CAS No.	LOQ			Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	Leachate	
<b>Anions</b>							
Chloride	mg/L	-	-	-	-	-	ISO 10304-1, ISO 15923-1, USEPA 300, HJ 84-2016, IS 3025 (part 32)
Cyanide, total		mg/kg		0.05	20	-	ISO 6703-1 & 2, ISO 14403-1 & 2, USEPA 335.2, APAH 4500-CN or HJ 484
Sulfate		-		-	-	-	ISO 10304-1, ISO 15923-1, USEPA 300, HJ 84-2016, IS 3025 (part 24)
Sulfide		-		0.01	-	-	ISO 10530, SM 4500-S2-D, E, G or I, GB/T 16489 or IS 3025 (part 29)
Sulfite		-		0.2	-	-	ISO 10304-3, SM 4500-SO32-C or HJ 84-2016

**END OF REPORT**