



Test Report: (6623)150-0474

Report Date: June 12, 2023

Factory Company Name: WUJIANG CITY XINDA PRINTING AND DYEING FACTORY

Factory Address: Meiyan Community, Pingwang Town, Wujiang District, Suzhou City, Jiangsu Province, China

Sampling Method & Description:	I001) Untreated wastewater	Grab	Brown liquid
	I002) Effluent	Composite	Light yellow liquid
	I003) Sludge	Composite	Black solid
	I004) Leachate	Composite	Black Liquid
	I005) Incoming water	-	Not tested

Discharge Type: **Direct Discharge**

On-site ETP / Pretreatment: <Yes>

Homgenization Tank & Holding Time: No

Discharge Destination: Nearby river or waterbody

Permit Validation Date: 2020-12-13 to 2025-12-12

Conventional, Anions & Heavy Metals Overall Category: Exceed Foundational Limit

ZDHC MRSL Parameters: Detected

Sludge Parameters: Exceed ZDHC Threshold Value

Sample Pick Up Date: May 30, 2023

Sampler Number: <Certification Number>

Test Period: May 30, 2023 to June 12, 2023

Parameter(s) exceeded maximum holding time: Not exceeded

Remark

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

Type of Process: **Textile**

Sludge Disposal Pathway: Disposal Pathway A

Average total industrial wastewater generated: **Equal or more than 15m3/day**

General enquiry and invoicing:
Mr. Henry Chen
Henry.Chen@bureauveritas.com
(021) 24081953

Technical enquiry:
Mr. Steven Han
Steven-Z.han@bureauveritas.com
(021) 24081838

Report reviewed by:

Amy

Report approved by:

< Aten Wu, Technical Support >

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Bureau Veritas Consumer Products Services, Inc.
(Shanghai)No. 168, GuangHua Road, Zhuangqiao Town,
Minhang, Shanghai, China. Post Code:201108
Tel:86-21-24081888 ;Fax:86-21-64890042
Website:cps.bureauveritas.com



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Result Summary - ZDHC MRSL Wastewater Parameters

Test Items	Untreated wastewater	Effluent	Incoming water
1A) AP and APEOs	ND	NR	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	D		
1K) Glycols / Glycol Ethers	ND		
1L) Halogenated Solvents	ND		
1M) Organotin Compounds	ND		
1N) Other / Miscellaneous Chemicals	ND		
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	Incoming water
Antimony		Meet	
Chromium (VI)		Meet	
Barium		Refer to result	
Selenium		Refer to result	
Tin		Refer to result	
Arsenic		Meet	
Total Chromium		Meet	
Cobalt		Meet	
Cadmium		Meet	
Copper		Meet	
Lead		Meet	
Nickel		Meet	
Silver		Meet	
Zinc		Meet	
Mercury		Meet	
pH		Meet	
Temperature difference		Not Meet	
E.coli		Meet	
Colour		Meet	
Persistent Foam		Meet	
Wastewater Flowrate		Refer to result	
Ammonium-Nitrogen		Meet	
AOX		Meet	
BOD ₅		Meet	
COD		Meet	
DO		Refer to result	
Oil & Grease		Meet	
Total Phenols / Phenol Index		Meet	
Total Chlorine		Refer to result	
TDS		Refer to result	
Total Nitrogen		Meet	
Total Phosphorus		Meet	
TSS		Meet	
Chloride		Refer to result	
Cyanide, total		Meet	
Sulfate		Refer to result	
Sulfide		Meet	
Sulfite		Meet	
	NR		NR



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Result Summary - ZDHC Sludge Parameters

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

Note / Key:

Meet	=	Meet Foundational Limit / Meet Discharge Criteria
Not Meet	=	Exceed Foundational Limit / Exceed Discharge Criteria
NR	=	Not requested / Not required
NA	=	Not applicable
D	=	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 MRSL Parameters

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1A) AP and APEOs: including all isomers								
NPEO	ND		ND					
NP, mixed isomers	ND	NR	ND	NR	NR	5	0.4	-
OPEO	ND		ND					
OP, mixed isomers	ND		ND					
1B) Anti-Microbials & Biocides								
o-Phenylphenol (+salts)	ND	NR	NR	NR	NR	100	-	-
Triclosan	ND							
Permethrin	ND							
1C) Chlorinated Parafins								
MCCPs (C14-C17)	ND	NR	NR	NR	NR	500	-	-
SCCPs (C10-C13)	ND					25		
1D) Chlorobenzenes and Chlorotoluenes								
1,2-dichlorobenzene	ND	NR	NR	NR	NR	0.2	-	-
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- chlorobenzene	ND		NR					
Other isomers of mono-, di-, tri-, tetra- and penta- chlorotoluene	ND		ND				0.2	
1E) Chlorophenols								
2-chlorophenol	ND	NR	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							
1F) N,N-di-methylformamide (DMFa)								
Dimethyl formamide; N,N-dimethylformamide (DMFa) ^a	ND	NR	NR	NR	NR	1000	-	-

a = Report only for mock leather

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1G) Dyes - Carcinogenic or Equivalent Concern								
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	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							
1H) Dyes - Disperse (Allergenic)								
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	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							
1I) Dyes - Navy Blue Colourant								
Component 1: C39H23Cl-CrN7O12S 2Na	ND	NR	NR	NR	NR	500	-	-
Component 2: C46H-30CrN10O20S2 3Na	ND							

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1J) Flame Retardants								
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	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							
Tribromodiphenylethers (TriBDEs)	ND							
Boric acid ^b	131							
Diboron trioxide ^b	131							
Disodium octaborate ^b	131					100		
Disodium tetraborate anhydrous ^b	131							
Tetraboron disodium heptaoxide, hydrate ^b	131							
1K) Glycols / Glycol Ethers								
2-ethoxyethanol	ND							
2-ethoxyethyl acetate	ND							
2-methoxyethanol	ND							
2-methoxyethylacetate	ND	NR	NR	NR	NR	50	-	-
2-methoxypropylacetate	ND							
Bis(2-methoxyethyl)-ether	ND							
Ethylene glycol dimethyl ether	ND							
Triethylene glycol dimethyl ether	ND							
1L) Halogenated Solvents								
1,2-dichloroethane	ND							
Methylene chloride	ND	NR	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)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1M) Organotin Compounds								
Dipropyltin compounds (DPT)	ND							
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	NR	NR	NR	NR	0.01	-	-
Tetrabutyltin compounds (TeBT)	ND							
Tripropyltin compounds (TPT)	ND							
Tetraoctyltin compounds (TeOT)	ND							
Tricyclohexyltin (TCyHT)	ND							
Tetraethyltin compounds (TeET)	ND							
1N) Other / Miscellaneous Chemicals								
AEEA [2-(2-aminoethylamino)ethanol]	ND					500		
Bisphenol A	ND					10		
Thiourea	ND	NR	NR	NR	NR	50	-	-
Quinoline	ND							
Borate, zinc salt ^c	ND					100		
Silica (used in sand blasting) ^d	NR					-		
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)								
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	ND	NR	NR	NR	NR	0.01	-	-
Perfluorooctanoic acid (PFOA) related substances	ND					1		
1P) Phthalates - including all other esters of ortho-phthalic acid								
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	ND							
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNU)	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	NR	NR	NR	NR	10	-	-
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 (µg/L)	I002 (µg/L)	I003# (mg/kg)	I004# (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge# (mg/kg)	Leachate# -
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)								
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	NR	1	0.2	-
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					
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)								
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	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							

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Bureau Veritas Consumer Products Services, Inc.

(Shanghai)No. 168, GuangHua Road, Zhuangqiao Town,

Minhang, Shanghai, China. Post Code:201108

Tel:86-21-24081888 ;Fax:86-21-64890042

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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)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1S) UV Absorbers								
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	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							
	ND							
1T) Volatile Organic Compounds (VOC)								
Benzene	ND	NR	NR	NR	NR	1	-	-
m-cresol	ND							
o-cresol	ND							
p-cresol	ND							
Xylene	ND							
Toluene ^a	ND							

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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#	I005	Wastewater				Sludge	
									Foundational	Progressive	Aspirational	Discharge Limit	Sludge Threshold Values	
ZDHC Heavy Metals														
Antimony	mg/L	mg/kg	mg/L	NR	0.024	6	NR	NR	0.1	0.05	0.01	0.05	12	
Chromium (VI)	mg/L	mg/kg	mg/L		ND	ND			NR	0.05	0.005	0.001	Sample & Report	50
Barium	mg/L	mg/kg	mg/L		ND	361				700				
Selenium	mg/L	mg/kg	mg/L		ND	ND	10							
Tin	mg/L	-	-		ND	NR	-							
Arsenic	mg/L	mg/kg	mg/L		ND	24	0.127		0.05	0.01	0.005	10		
Total Chromium	mg/L	mg/kg	mg/L		ND	116	0.545		0.2	0.1	0.05	100		
Cobalt	mg/L	mg/kg	mg/L		0.04	ND	NR		0.05	0.02	0.01	NR	1600	
Cadmium	mg/L	mg/kg	mg/L		ND	ND			NR	0.1	0.05		0.01	3
Copper	mg/L	mg/kg	mg/L		ND	ND	200		1	0.5	0.25		200	
Lead	mg/L	mg/kg	mg/L		ND	29	0.013		0.1	0.05	0.01		10	
Nickel	mg/L	mg/kg	mg/L		ND	45	NR		0.2	0.1	0.05		70	
Silver	mg/L	mg/kg	mg/L		ND	ND			100	0.1	0.05		0.005	100
Zinc	mg/L	mg/kg	mg/L		ND	430			1000	5	1		0.5	1000
Mercury	mg/L	mg/kg	mg/L		ND	ND	1		0.01	0.005	0.001		1	

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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#	I005	Wastewater			Discharge Limit	Sludge Threshold Values	
									Foundational	Progressive	Aspirational			
ZDHC Conventional														
pH	pH				6.7	5.8					6 - 9	6-9		
Temparture difference	Δ °C				18						15	10	5	
E.coli	MPN/100-ml				ND						126			
Colour (436 nm)	m ⁻¹				ND						7	5	2	
Colour (525 nm)	m ⁻¹				ND						5	3	1	NR
Colour (620 nm)	m ⁻¹				ND						3	2	1	
Persistent Foam	-				Absent						No indication of Persistent Foam			
Wastewater Flowrate	m ³ /day				5400						-			
Ammonium-Nitrogen	mg/L				0.78						10	1	0.5	5
AOX	mg/L				0.64						3	0.5	0.1	NR
BOD ₅	mg/L				8.59	NR					30	15	8	20
COD	mg/L			NR	ND		NR	NR			150	80	40	60
DO	mg/L				5.54						Sample & Report			
Oil & Grease	mg/L				4.19						10	2	0.5	
Total Phenols / Phenol Index	mg/L				ND						0.5	0.01	0.001	NR
Total Chlorine	mg/L				0.39						Sample & Report			
TDS	mg/L				2.52×10 ³						Sample & Report			
Total Nitrogen	mg/L				9.49						20	10	5	12
Total Phosphorus	mg/L				ND						3	0.5	0.1	0.5
TSS	mg/L				ND						50	15	5	50
% Solids	-	%				42.6					-			
Paint Filter Test	-	-			NR	Pass					-			NR
Fecal Coliform	-	MPN/g				<6.61					-			
ZDHC Anions														
Chloride	mg/L	-	-		97	NR					Sample & Report			
Cyanide, total	mg/L	mg/kg	-		ND	ND					0.2	0.1	0.05	NR
Sulfate	mg/L			NR	2.37×10 ³		NR	NR			Sample & Report			
Sulfide	mg/L	-	-		ND	NR					0.5	0.05	0.01	0.5
Sulfite	mg/L				ND						2	0.5	0.2	NR

#Limit refers to the chosen ZDHC sludge disposal pathway in Table 4 in accordance with the ZDHC Wastewater Guidelines.



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

当前位置: 水污染物排放信息审核

1、废水污染物排放许可限值

(1) 主要排放口

排放口编号	排放口名称	污染物种类	许可排放浓度限值 (mg/L)
DW001	废水排放口	氨氮 (NH ₃ -N)	5mg/L
DW001	废水排放口	苯胺类	1.0mg/L
DW001	废水排放口	总磷 (以P计)	0.5mg/L
DW001	废水排放口	总镉	0.05mg/L
DW001	废水排放口	pH值	6-9
DW001	废水排放口	化学需氧量	60mg/L
DW001	废水排放口	硫化物	0.5mg/L
DW001	废水排放口	五日生化需氧量	20mg/L
DW001	废水排放口	总氮 (以N计)	12mg/L
DW001	废水排放口	悬浮物	50mg/L
DW001	废水排放口	色度	50
主要排放口合计			CODcr
			氨氮
			总磷 (以P计)
			总氮 (以N计)



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Appendix B - Sample Photos

I001) Sampling point
<N 30°59'51";E 120°36'08" >

I001) Sampling location surrounding
<N 30°59'51";E 120°36'08" >

I001) Labelled sample bottles



I001) Sample for phthalate test

I001) Sample packaging



I002) Sampling point
<N 30°59'59";E 120°36'17" >

I002) Sampling location surrounding
<N 30°59'59";E 120°36'17" >

I002) Labelled sample bottles



I002) pH measurement

I002) Sample packaging





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Appendix B - Sample Photos (continued)

I003) Sampling point
<N 30°59'54";E 120°36'04" >



I003) Sampling location surrounding
<N 30°59'54";E 120°36'04" >



I003) Labelled sample bottles



I003) Sample packaging





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Appendix C - On-site Field Data Record Sheet

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

General Data

Laboratory Sample Number: 6623150 0474

Client Name: _____

Field Contact Person: 丁文波 Phone No: 1580156554

Project (Facility Name and Address): 912 华英达 电镀厂

Sampling Location / Description: 5.1.2 污水处理池

Sample Identification: GTW 2.1

Sample Type: Composite Sample / Grab sample (Please delete as appropriate) 1.2.2.3 6000 ml

Name of Sampler: 丁文波

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

Date of collection: 2023.5.30

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

*Note: It should be selected more than one

Field Data for Wastewater

Arrival Time:	<u>8:45</u>	Departure Time:	<u>15:15</u>
Field Parameters:	pH: _____	Temp: _____ °C	Color: _____
Control No. of field equipment:	_____		
Factory with effluent treatment plant:	Yes/No		
Sample matrix:	<input checked="" type="checkbox"/> Incoming water (if required) <input checked="" type="checkbox"/> Wastewater before treatment <input type="checkbox"/> Wastewater after treatment - water at discharge point		
Sampler container number:	<u>6.1</u>		
Recording time:	ID	Time	
pH:		<u>8.7</u>	
Temp (°C):		<u>40.8</u>	
Color (visual estimation):		<u>棕色</u>	
Flow rate (volume/time):		<u>500 ml/min</u>	
Volume collected, mL:		<u>6.8L</u>	
Total volume collected:		<u>6.8L</u>	Remark: Total volume collected must be greater than total of sample size required

Analysis Required and Preservation Method

Tests (ZDHC MRLS Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method		
1. Phthalate	✓	1000 mL total or 1000 mL each	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. 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	✓	50				
18. VOC & Halogenated Solvents (Remark 6)	✓	10 mL			PE, washed with pesticide grade Acetone	Fill to full container without air gap, acidify to pH 2 with HCl and store sample at 2-8°C
19. PFCs (Remark 6)	✓	2 mL				



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

Tests (Conventional Parameters)	Test required (Y)	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	Acidify to pH 2 with HNO ₃ 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 ₂ S ₂ O ₅ 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		
28. Phenols		500 mL	Amber Glass, washed with nitric acid	Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
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 ₂ SO ₄ 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% 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		
36. Ammonium-N		500 mL		Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
37. Adsorbable organically bound halogens (AOX)		100 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
38. Acute aquatic toxicity: Lumines Bacteria, Fish Egg, Daphne, Algae;		1000 mL	Amber Glass, washed with nitric acid.	
39. Sulphate		100 mL		
40. Chloride		100 mL		Without adding acid Store sample at 2-8°C
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.	measure in field	
43. Total Chlorine		N.A.	measure in field	
44. Others:				
Observation/ Remark:				

- *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, 26-29, 31-33, 35, 36, 39, 40
Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 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-00019-STIP01, locations with those 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: 汪磊 Date: 2023.5.30

Comment from factory: 51500前GPS: E 170° 36' 8" N 30° 59' 51"

Acknowledgement by factory
I hereby confirm 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 1-6°C

Signature of Factory Representative: 汪磊 Date: 2023.5.30
Full Name:





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

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)	✓	9 mL	PE, washed with nitric acid	Acidify to pH 2 with HNO ₃ 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 ₂ S ₂ O ₅ , 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 0.0±0.5 by adding ammonium buffer. Store sample at 2-8°C
27. Chemical oxygen demand (COD)	✓	150 mL		
28. Phenols	✓	500 mL	Amber Glass, washed with nitric acid	Acidify to pH 2 with H ₂ SO ₄ , Store sample at 2-8°C
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 ₂ SO ₄ 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 0.5M 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 ₂ S ₂ O ₃ 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 ₂ SO ₄ , Store sample at 2-8°C
36. Ammonium-N		500 mL		
37. Adsorbable organically bound halogens (AOX)	✓	100 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
38. Acute aquatic toxicity: Luminous Bacteria, Fish Egg; Daphne; Algae;		1000 mL	Amber Glass, washed with nitric acid;	
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)	5.54 mg/L	N.A.	measure in field	
43. Total Chlorine	0.39 mg/L	N.A.	measure in field	
44. Others:				

Remarks:

1. Individual sampling can be performed upon request
 2. 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.
 3. Scope of ZDHC guideline: Parameter 1-9, 12, 14-20, 31-37, 38-43
 Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31-33, 35, 36, 38, 40
 Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 31, 35-38
 Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
 4. Refer to CPSD-AN-G00019-STP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
 5. Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
 6. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: 江磊 Date: 2023.5.30

Comment from factory: 工厂经纬度: E 120° 36' 17" N 30° 59' 59"

Acknowledgement of factory: I hereby confirm 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 lab. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-6°C

Signature of Factory Representative: 王法毅 Date: 2023.5.30





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

Field Data for Sludge								
Arrival Time:	8:45		Departure Time:	15:15				
Field Parameters	pH:	Temp:	°C					Flow rate (volume/time) / sludge flux (weight/time)
Control No. of field equipment	黑色固体							
Recording time	ID	✓	1	2	3	4	5	
	Time	✓	6	7	8			
pH:	✓							
Temp (°C):	✓							
Flow rate (volume/time) / sludge flux (weight/time)	✓							
Volume collected, ml	1253 ml							
Total volume collected	1253 mL	Remark: Total volume collected must be greater than total of sample size required						

Analysis Required and Preservation Method					
Factory with effluent treatment plant	Yes	No			
Sample matrix	✓	Sludge in clarifier (sedimentation tank)			
Sampler container number	A4				
Recording time	9:45				
Tests (MRSL Parameter)	Test required (Y)	Total of sample size	Type of container	Preservation method	
Combined test or individual test (Remark 3)	1. Phthalate	✓	Amber Glass, washed with nitric acid	Add 0.2 mL of 10% Na ₂ S ₂ O ₃ (0.008% VWV). Store sample at 4°C	
	2. Chlorobenzenes, Chlorotoluene & PAHs	✓			
	3. SCCPs	✓			
	4. APS	✓			
5. APEOs	✓	20 g			
6. Flame retardant		10 g			
7. Dyes		10 g			
8. Glycols		100 g			
9. Pesticides		20g			
10. Banned Azodyes		20 g			
11. Free primary aromatic amines		10 g			
12. Chlorophenols & Cresols		20 g			Acidify to -pH 2 with H ₂ SO ₄ . Add 0.02 mL of 10% Na ₂ S ₂ O ₃ (0.008% WWV). Store sample at 4°C
13. Organotin Compounds		10 g			Fill to full container without any air gap and acid add and store at 4°C
14. VOC & Halogenated Solvents (Remark 5)		10 g			Fill to full container without any air gap. Acidify to -pH 2 with HCl. Store sample at 4°C
15. PFCs (Remark 5)		10 g			PE, wash with pesticide grade acetone
Tests (Conventional Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method	
16. Heavy Metals except Cr(VI) (Remark 5)	✓	0.2 g	PE, wash with nitric acid	Acidify to -pH 2 with HNO ₃ . Store sample at 4°C	
17. Cr(VI)	✓	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. Adsorbable organically bound halogens (AOX)		1 g			
19. Extractable organochlorides (EOX)		20 g			
20. Total organic carbon (TOC)		20 g			
21. Cyanide	✓	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	✓	20 g	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na ₂ S ₂ O ₃ . Keep in dark. Store sample at 2-8°C	
23. % Solids	✓	20 g	Amber Glass, wash with nitric acid	Acidify to -pH 2 with HNO ₃	



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

24. Paint Filler Test	✓	20 g	Store sample at 4°C
25. Others			
Observation/Remark	is.ve.695: E 120° 36' 4" N 30° 59' 54"		

- *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, 2, 4, 5, 16-17, 21-24
Scope of synthetic leather industry: Parameter 1-6, 10, 12-17
Scope of MMCF: Parameter 16, 18-20
Free primary aromatic amine and pesticides are not in the scope of ZDHC Guideline, they are tested upon request.
 - Refer to CPSD-AN-00019-STIP01, locations with these CPSD test capability inside TCD matrix can perform the combined test.
 - Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.



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Appendix D - Test methods, reporting limits and CAS numbers

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1A) AP and APEOs: including all isomers						
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			
1B) Anti-Microbials & Biocides						
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
Triclosan			3380-34-5			
Permethrin			Multiple	500		
1C) Chlorinated Paraffins						
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		
1D) Chlorobenzenes and Chlorotoluenes						
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				
1E) Chlorophenols						
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					
1F) Dimethyl Formamide (DMFa)						
Dimethyl formamide; N,N-dimethylformamide (DMFa) ^a	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	
1G) Dyes - Carcinogenic or Equivalent Concern						
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			
1H) Dyes - Disperse (Allergenic)						
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			
			56524-77-7			
Disperse Blue 7			3179-90-6			
Disperse Brown 1			23355-64-8			
Disperse Orange 1			2581-69-3			
Disperse Orange 3			730-40-5			
Disperse Orange 37/59/76			13301-61-6			
Disperse Red 1			2872-52-8			
Disperse Red 11			2872-48-2			
Disperse Red 17			3179-89-3			
Disperse Yellow 1			119-15-3			
Disperse Yellow 3			2832-40-8			
Disperse Yellow 39			12236-29-2			
Disperse Yellow 49			54824-37-2			
Disperse Yellow 9			6373-73-5			
1I) Dyes - Navy Blue Colourant						
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	
1J) Flame Retardants						
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-dichloro-isopropyl)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)			21850-44-2			
Dibromopropylether			68928-80-3			
Heptabromodiphenyl ether (HeptaBDE)			36483-60-0			
Hexabromodiphenyl ether (HexaBDE)			Multiple			
Monobromobiphenyls (MonoBB)			Multiple			
Monobromodiphenylethers (MonoBDEs)			63936-56-1			
Nonabromobiphenyls (NonaBB)			40088-47-9			
Nonabromodiphenyl ether (NonaBDE)			Multiple			
Tetrabromodiphenyl ether (TetraBDE)			10043-35-3, 11113-50-1			
Tribromodiphenylethers (TriBDEs)			1303-86-2			
Boric acid ^b			12008-41-2			
Diboron trioxide ^b			1303-96-4, 1330-43-4			
Disodium octaborate ^b	12267-73-1					
Disodium tetraborate anhydrous ^b						
Tetraboron disodium heptaoxide, hydrate ^b						
1K) Glycols / Glycol Ethers						
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			
1L) Halogenated Solvents						
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 = 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	
1M) Organotin Compounds						
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)						
1N) Other/Miscellaneous Chemicals						
AEEA [2-(2-aminoethylamino)ethanol]	µg/L	-	111-41-1	500	-	Liquid extraction, LC-MSMS
Bisphenol A			80-05-7	10		
Thiourea			62-56-6	50		Liquid extraction, LC-MS
Quinoline			91-22-5	50		Determine as total boron and total zinc via ICP
Borate, zinc salt ^c			12767-90-7	100		Not a ZDHC Wastewater parameter
Silica (Used in sand blasting) ^d			14464-46-1	NA		
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)						
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		
1P) Phthalates - including all other esters of ortho-phthalic acid						
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			

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	
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)						
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					
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)						
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 hydrochloride			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;			39156-41-7			
2,4-diaminoanisole sulphate						
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			
Benzdine			92-87-5			
o-aminoazotoluene			97-56-3			
o-anisidine	90-04-0					
o-toluidine	95-53-4					
						Reduction step with sodium dithionite, solvent extraction EPA 8270E and ISO 14362-1 GC/MS and LC/MS/MS



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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	
1S) UV Absorbers						
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- ditertpentylphenol (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			
1T) Volatile Organic Compounds (VOC)						
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 ISO 11423-1 Headspace or Purge and trap GC-MS EPA 8270 BS EN 12673-1999 ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D HJ 1067 or EPA 8260D or ISO 11423-1
m-cresol			108-39-4			
o-cresol			95-48-7			
p-cresol			106-44-5			
Xylene			1330-20-7			
Toluene ^a			108-88-3			

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	
Heavy Metals						
Antimony	mg/L	mg/kg	7440-36-0	0.01	5	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 HJ/T 300 for leachate
Chromium (VI)			18540-29-9	0.001	20	
Barium			7440-39-3	1	200	
Selenium			7782-49-2	1	5	
Tin			7440-31-5	1	-	
Arsenic			7440-38-2	0.005	5	
Total Chromium			7440-47-3	0.05	50	
Cobalt			7440-48-4	0.01	400	
Cadmium			7440-43-9	0.01	1	
Copper			7440-50-8	0.25	50	
Lead			7439-92-1	0.01	5	
Nickel			7440-02-0	0.05	20	
Silver			7440-22-4	0.005	50	
Zinc			7440-66-6	0.5	400	
Mercury	7439-97-6	0.001	1			
Conventional						
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 ⁻¹			2;1;1		ISO 7887 (Method A and B)
Persistent Foam	-			-		-
Wastewater Flowrate	m ³ /day			-		-
Ammonium-Nitrogen	mg/L			0.5		ISO 11732, ISO 7150, USEPA 350.1, APHA 4500 NH ³ -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 ₅)	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, HJ 613
Paint Filter Test	-	-		-	-	EPA SW-846 or EPA 9095B
Fecal Coliform	-	MPN/g		-	-	EPA 1681



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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	
Anions						
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), HJ 1226-2021
Sulfite		-		0.2	-	ISO 10304-3, SM 4500-SO32-C or HJ 84-2016

END OF REPORT