TEST REPORT

Technical Report **(6818)293-0035** November 03, 2018

Date Received October 18, 2018 Page 1 of 18

Factory Company Name：	Denitex Ltd.
Factory Address:	9/1 Karnapara, Savar, Dhaka, 1340, Bangladesh.
Project No.:	/
Client Reference No.:	/
Sample Type:	I001) Raw Wastewater – Time-Weighted Composite Grab Samples* I002) Discharged Wastewater – Time-Weighted Composite Grab Samples*
Sample Pick Up Date:	October 18, 2018
Discharge Type:	Direct Discharge
Wastewater Discharge to:	Government Canal
On-Site Effluent Treatment Plant (ETP):	Yes
Test Period:	October 20, 2018 To November 03, 2018
Testing Option:	Option 2 – Incoming Water, Raw / Untreated Wastewater
Sample Description:	I001) Light blue / blue color liquid - Raw Wastewater I002) Light blue color liquid - Discharged Wastewater

REMARK

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

General enquiry	Mr. Sharan Roy, Mail: environment.lab@bd.bureauveritas.com
Invoicing	Mr. Mahabubur Rahman, Mail: mahabubur.rahman@bd.bureauveritas.com
Technical enquiry-Chemical	Mr. M. Nur Alam, Mail: nur.alam@bd.bureauveritas.com

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

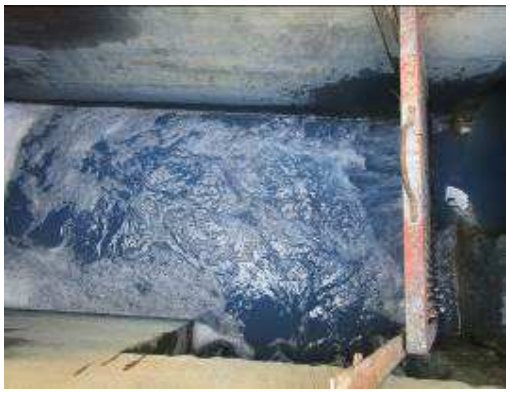
* The sampling is agreed with client.

BUREAU VERITAS
CONSUMER PRODUCTS SERVICES (BANGLADESH) LTD.

M. NUR ALAM
SENIOR MANAGER
ANALYTICAL LABORATORY

Bureau Veritas
Consumer Products Services (BD) Ltd.
Plot # 130, DEPZ Extension Area
Ganakbari, Savar, Dhaka, Bangladesh
Tel: 88-02-7701464-6, Fax: 88-02-7701463
E-mail: bvcps.bd@bd.bureauveritas.com
website: cps.bureauveritas.com

Photo of the Sample/ Sampling Location

I001) Raw Wastewater (GPS Location: N 23° 49' 24.569"; E 90° 15' 23.678")	I002) Discharged Wastewater (GPS Location: N 23° 49' 24.569"; E 90° 15' 23.678")
	

Executive Summary

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

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

Note / Key:

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

Objective

The environment samples were tested for below parameters.

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

Sampling Plan

Basically, three environment samples were sampled per factory, including 1) Raw Wastewater and 2) Discharged Wastewater. Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

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

Remark :

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

Test Result

1A) Conventional Parameters

Temperature

Test Method : Measurement by thermometer

Tested Item(s)	Result	Unit	Conclusion
I002	30.3 (Foundational)	deg. C	DATA

Note:

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

Total Suspended Solids (TSS)

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

Tested Item(s)	Result	Unit	Conclusion
I002	24 (Foundational)	mg/L	DATA

Note:

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

Chemical Oxygen Demand (COD)

Test Method : Reference to ALPA 5220B & EPA 410.3

Tested Item(s)	Result	Unit	Conclusion
I002	80 (Progressive)	mg/L	DATA

Note:

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

Total Nitrogen (Total-N)

Test Method : Reference to HJ 636

Tested Item(s)	Result	Unit	Conclusion
I002	7.85 (Progressive)	mg/L	DATA

Note:

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

pH Value

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

-	Unit	Result
Test Item(s)	-	I002
Parameter	-	-
Temp. of sample	deg. C	22
pH value of sample	-	7.2
Conclusion	-	DATA

Note:

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

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

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

Tested Item(s)	Result	Unit	Conclusion
I002	2.0; 1.3; 0.7 (Progressive)	m^{-1}	DATA

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

Biochemical Oxygen Demand (BOD_5)

Test Method : Reference to APHA 22nd Edition-5210B & ALPA 5210B

Tested Item(s)	Result	Unit	Conclusion
I002	26 (Foundational)	mg/L	DATA

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

Ammonia Nitrogen

Test Method : Reference to HJ 535

Tested Item(s)	Result	Unit	Conclusion
I002	0.282 (Aspirational)	mg/L	DATA

Note:

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

Total Phosphorus (Total-P)

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

Tested Item(s)	Result	Unit	Conclusion
I002	0.061 (Aspirational)	mg/L	DATA

Note:

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

Adsorbable Organic Halogen (AOX)

Test Method : Reference to HJ/T 83

Tested Item(s)	Result	Unit	Conclusion
I002	0.21 (Progressive)	mg/L	DATA

Note:

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

Oil and Grease

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

Tested Item(s)	Result	Unit	Conclusion
I002	3.6 (Foundational)	mg/L	DATA

Note:

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

Phenol

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

Tested Item(s)	Result	Unit	Conclusion
I002	0.028 (Foundational)	mg/L	DATA

Note:

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

Coliform

Test Method : Reference to APHA 22nd Edition -9221 B

Tested Item(s)	Result	Unit	Conclusion
I002	79 (Progressive)	MPN / 100 mL	DATA

Note:

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

Foam

Test Method : Visual

Tested Item(s)	Result	Unit	Conclusion
I002	No Foam	-	DATA

ANIONS - Sulfide

Test Method : Reference to GB/T 16489

Tested Item(s)	Result	Unit	Conclusion
I001	0.170 (Foundational)	mg/L	DATA
I002	0.045 (Progressive)	mg/L	DATA

Note:

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

ANIONS - Sulfite

Test Method : Reference to ISO 10304-3

Tested Item(s)	Result	Unit	Conclusion
I001	<0.2 (Aspirational)	mg/L	DATA
I002	<0.2 (Aspirational)	mg/L	DATA

Note:

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

Cyanide

Test Method : With reference to APHA 4500 CN- C:2012 & APHA 4500 CN- E:2012

Tested Item(s)	Result	Unit	Conclusion
I001	ND	mg/L	DATA
I002	ND	mg/L	DATA

Note:

mg/L = milligram per liter ND=Not Detected
Detection Limit (mg/L) : 0.004
APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

1B) Conventional Parameters – METALS

Heavy Metals	**I001** ***(mg/L)***	**I002** ***(mg/L)***
Antimony(Sb) *Foundational Limit: 0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.01 mg/L*	ND (Aspirational)	ND (Aspirational)
Chromium(Cr), total *Foundational Limit: 0.2 mg/L;* *Progressive Limit: 0.1 mg/L;* *Aspirational Limit: 0.05 mg/L*	0.001 (Aspirational)	ND (Aspirational)
Cobalt(Co) *Foundational Limit: 0.05 mg/L;* *Progressive Limit: 0.02 mg/L;* *Aspirational Limit: 0.01 mg/L*	ND (Aspirational)	ND (Aspirational)
Copper(Cu) *Foundational Limit: 1 mg/L;* *Progressive Limit: 0.5 mg/L;* *Aspirational Limit: 0.25 mg/L*	ND (Aspirational)	ND (Aspirational)
Nickel (Ni) *Foundational Limit: 0.2 mg/L;* *Progressive Limit: 0.1 mg/L;* *Aspirational Limit: 0.05 mg/L*	ND (Aspirational)	ND (Aspirational)
Silver (Ag) *Foundational Limit: 0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.005 mg/L*	ND (Aspirational)	ND (Aspirational)
Zinc(Zn) *Foundational Limit: 5 mg/L;* *Progressive Limit: 1 mg/L;* *Aspirational Limit: 0.5 mg/L*	ND (Aspirational)	ND (Aspirational)
Arsenic (As) *Foundational Limit: 0.05 mg/L;* *Progressive Limit: 0.01 mg/L;* *Aspirational Limit: 0.005 mg/L*	ND (Aspirational)	ND (Aspirational)
Cadmium(Cd) *Foundational Limit: 0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.01 mg/L*	ND (Aspirational)	ND (Aspirational)
Lead(Pb) *Foundational Limit:0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.01 mg/L*	ND (Aspirational)	ND (Aspirational)
Mercury (Hg) *Foundational Limit: 0.01 mg/L;* *Progressive Limit: 0.005 mg/L;* *Aspirational Limit: 0.001 mg/L*	ND (Aspirational)	ND (Aspirational)
Chromium VI(CrVI) *Foundational Limit: 0.05 mg/L;* *Progressive Limit: 0.005 mg/L;* *Aspirational Limit: 0.001 mg/L*	ND (Aspirational)	ND (Aspirational)

Others Priority Chemical Groups

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

Remark：

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

APPENDIX A

Group	Substance (Testing parameter)	CAS No.	Report Limit Wastewater (ug/L)/(ppb)	Name of the testing method
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	1	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS) OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2) APEO 1-18
	Nonylphenol NP	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)	1	
	Nonylphenol Ethoxylates OPEO (2-16)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)	1	
	Nonylphenol Ethoxylates NPEO (2-18)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)	1	
2B. Chlorobenzenes and Chlorotoluenes	Chlorobenzene	108-90-7	0.02	USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS
	Dichlorobenzene	Various	0.02	
	Trichlorobenzene	Various	0.02	
	Tetrachlorobenzene	Various	0.02	
	1,2-Dichlorobenzene	95-50-1	0.02	
	1,3-Dichlorobenzene	541-73-1	0.02	
	1,4-Dichlorobenzene	106-46-7	0.02	
	1,2,3-Trichlorobenzene	87-61-6	0.02	
	1,2,4-Trichlorobenzene	120-82-1	0.02	
	1,3,5-Trichlorobenzene	108-70-3	0.02	
	1,2,3,4-Tetrachlorobenzene	634-66-2	0.02	
	1,2,3,5-Tetraclorobenzene	634-90-2	0.02	
	1,2,4,5-Tetrachlorobenzene	95-94-3	0.02	
	Pentachlorobenzene	608-93-5	0.02	
	Hexachlorobenzene	1198-74-1	0.02	
	2-Chlorotoluene	95-49-8	0.02	
	3-Chlorotoluene	108-41-8	0.02	
	4-Chlorotoluene	106-43-4	0.02	
	2,3-Dichlorotoluene	32768-54-0	0.02	
	2,4-Dichlorotoluene	95-73-8	0.02	
	2,5-Dichlorotoluene	19398-61-9	0.02	
	2,6-Dichlorotoluene	118-69-4	0.02	
	3,4-Dichlorotoluene	95-75-0	0.02	
	3,5-Dichlorotoluene	25186-47-4	0.02	
	2,3,4-Trichlorotoluene	7359-72-0	0.02	
	2,3,6-Trichlorotoluene	2077-46-5	0.02	
	2,4,5-Trichlorotoluene	6639-30-1	0.02	
	2,4,6-Trichlorotoluene	23749-65-7	0.02	
	3,4,5-Trichlorotoluene	21472-86-6	0.02	
	2,3,4,5-Tetrachlorotoluene	76057-12-0	0.02	
	2,3,5,6-Tetrachlorotoluene	29733-70-8	0.02	
	2,3,4,6-Tetrachlorotoluene	875-40-1	0.02	
	Pentachlorotoluene	877-11-2	0.02	
2C. Chlorophenols	2-Chlorophenol	95-57-8	0.5	USEPA 8270 D Solvent extraction, derivatisation with KOH, acetic anhydride
	3-Chlorophenol	108-43-0	0.5	
	4-Chlorophenol	106-48-9	0.5	
	2,3-Dichlorophenol	576-24-9	0.5	

Group	Substance (Testing parameter)	CAS No.	Report Limit Wastewater (ug/L)/(ppb)	Name of the testing method
	2,4-Dichlorophenol	120-83-2	0.5	followed by GC/MS
	2,5-Dichlorophenol	583-78-8	0.5	
	2,6-Dichlorophenol	87-65-0	0.5	
	3,4-Dichlorophenol	95-77-2	0.5	
	3,5-Dichlorophenol	591-35-5	0.5	
	2,3,4-Trichlorophenol	15950-66-0	0.5	
	2,3,5-Trichlorophenol	933-78-8	0.5	
	2,3,6-Trichlorophenol	933-75-5	0.5	
	2,4,5-Trichlorophenol	95-95-4	0.5	
	2,4,6-Trichlorophenol	88-06-2	0.5	
	3,4,5-Trichlorophenol	609-19-8	0.5	
	2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	
	2,3,4,6-Tetrachlorophenol	58-90-2	0.5	
	2,3,5,6-Tetrachlorophenol	935-95-5	0.5	
	Pentachlorophenol (PCP)	87-86-5	0.5	
	Tetrachlorophenol (TeCP)	Various (incl. 25167-83-3)	0.5	
2D. Dyes - Azo (Forming Restricted Amines)	4,4`-Methylene-bis-(2-chloro-aniline)	101-14-4	0.1	EN 14362. Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS
	4,4'-methylenedianiline	101-77-9	0.1	
	4,4`-Oxydianiline	101-80-4	0.1	
	4-Chloroaniline	106-47-8	0.1	
	3,3`-Dimethoxybenzidine	119-90-4	0.1	
	3,3`-Dimethylbenzidine	119-93-7	0.1	
	6-methoxy-m-toluidine (p-Cresidine)	120-71-8	0.1	
	2,4,5-Trimethylaniline	137-17-7	0.1	
	4,4`-Thiodianiline	139-65-1	0.1	
	4-Aminoazobenzene	60-09-3	0.1	
	4-Methoxy-m-phenylenediamine / 2,4-Diaminoanisole	615-05-4	0.1	
	4,4`-Methylene-di-o-toluidine / 3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	0.1	
	2,6-Xylidine	87-62-7	0.1	
	o-Anisidine	90-04-0	0.1	
	2-Naphthylamine	91-59-8	0.1	
	3,3`-Dichlorobenzidine	91-94-1	0.1	
	4-Aminodiphenyl	92-67-1	0.1	
	Benzidine	92-87-5	0.1	
	o-Toluidine	95-53-4	0.1	
	2,4-Xylidine	95-68-1	0.1	
	4-Chloro-o-toluidine	95-69-2	0.1	
	4-Methyl-m-phenylenediamine	95-80-7	0.1	
	o-Aminoazotoluene	97-56-3	0.1	
	5-nitro-o-toluidine	99-55-8	0.1	
2E. Dyes-Carcionogenic or Equivalent Concern	C.I. Direct Black 38	1937-37-7	500	Liquid Extraction LC/MS
	C.I. Direct Blue 6	2602-46-2	500	
	C.I. Acid Red 26	3761-53-3	500	
	C.I. Basic Red 9	569-61-9	500	
	C.I. Direct Red 28	573-58-0	500	
	C.I. Basic Violet 14	632-99-5	500	

Group	Substance (Testing parameter)	CAS No.	Report Limit	Name of the testing method
			Wastewater (ug/L)/(ppb)	
	C.I. Disperse Blue 1	2475-45-8	500	
	C.I. Disperse Blue 3	2475-46-9	500	
	C.I. Basic Blue 26 (withMichler's Ketone > 0.1%)	2580-56-5	500	
	C.I. Basic Green 4(malachite green chloride)	569-64-2	500	
	C.I. Basic Green 4 (malachite green oxalate)	2437-29-8	500	
	C.I. Basic Green 4(malachite green)	10309-95-2	500	
	Disperse Orange 11	82-28-0	500	
2F. Dyes-disperse (sensitizing)	Disperse Yellow 1	119-15-3	50	Liquid Extraction LC/MS
	Disperse Blue 102	12222-97-8	50	
	Disperse Blue 106	12223-01-7	50	
	Disperse Yellow 39	12236-29-2	50	
	Disperse Orange 37/59/76	13301-61-6	50	
	Disperse Brown 1	23355-64-8	50	
	Disperse Orange 1	2581-69-3	50	
	Disperse Yellow 3	2832-40-8	50	
	Disperse Red 11	2872-48-2	50	
	Disperse Red 1	2872-52-8	50	
	Disperse Red 17	3179-89-3	50	
	Disperse Blue 7	3179-90-6	50	
	Disperse Blue 26	3860-63-7	50	
	Disperse Yellow 49	54824-37-2	50	
	Disperse Blue 35	12222-75-2	50	
	Disperse Blue 124	61951-51-7	50	
	Disperse Yellow 9	6373-73-5	50	
	Disperse Orange 3	730-40-5	50	
2G. Flame Retardants	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	0.05	ISO 22032, USEPA527 and USEPA8321B. Dichloromethane extraction GC/MS or LC/MS(-MS)
	Decabromodiphenyl ether (DecaBDE)	1163-19-5	0.05	
	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7	0.5	
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9	0.05	
	Octabromodiphenyl ether (OctaBDE)	32536-52-0	0.05	
	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9	0.5	
	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1	0.5	
	Polybromobiphenyls (PBBs)	59536-65-1	0.05	
	Tetrabromobisphenol A (TBBPA)	79-94-7	0.5	
	Hexabromocyclododecane (HBCDD)	3194-55-6	0.5	
	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	5	
	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	0.5	
	Short chain chlorinated	85535-84-8	0.5	

Group	Substance (Testing parameter)	CAS No.	Report Limit Wastewater (ug/L)/(ppb)	Name of the testing method
	paraffins (SCCPs)			
2H. Glycols	Bis(2-methoxyethyl)-ether	111-96-6	50	US EPA 8270 Liquid Extraction LC/MS
	2-ethoxyethanol	110-80-5	50	
	2-ethoxyethyl acetate	111-15-9	50	
	Ethylene glycol dimethyl ether	110-71-4	50	
	2-methoxyethanol	109-86-4	50	
	2-methoxyethylacetate	110-49-6	50	
	2-methoxypropylacetate	70657-70-4	50	
	Triethylene glycol dimethyl ether	112-49-2	50	
2I. Halogenated Solvents	1,2-Dichloroethane	107-06-2	1	USEPA 8260B Headspace GC/MS or Purgeand-Trap-GC/MS
	Methylene Chloride	75-09-2	1	
	Trichloroethylene	79-01-6	1	
	Tetrachloroethylene	127-18-4	1	
2J. Organotin Compounds	Mono-, di- and tri-methyltin derivatives	Various (incl. 993-16-8, 753-73-1, 1066-45-1)	0.01	ISO 17353 Derivatisation with NaB(C2H5) GC/MS
	Mono-, di- and tri-butyltin derivatives	Various (incl. 78763-54-9, 1118-46-3, 1002-53-5, 683-18-1, 36643-28-4, 56573-85-4, 1461-22-9)	0.01	
	Mono-, di- and tri-phenyltin derivatives	Various (1124-19-2, 1011-95-6, 6381-06-2, 1135-99-5, 892-20-6, 639-58-7, 668-34-8)	0.01	
	Mono-, di- and tri-octyltin derivatives	Various (incl. 15231-44-4, 3091-25-6, 94410-05-6, 3542-36-7, 869-59-0, 2587-76-0)	0.01	
2K. Perfluorinated and Polyfluorinated Chemicals (PFCs)	Perfluorooctanesulfonic acid (PFOS)	355-46-4 ,432-50-7	0.01	DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride, followed by GC/MS
	Perfluoro-n-octanoic acid (PFOA)	335-67-1/ 335-95-5	0.01	
	Perfluorobutanesulfonic acid (PFBS)	29420-49-3, 29420-43-3	0.01	
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	0.01	
	8:2 FTOH	678-39-7	1	
	6:2 FTOH	647-42-7	1	
2L. Phthalates (including all other esthers of phthalic acid)	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	1	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dimethoxyethyl phthalate (DMEP)	117-82-8	1	
	Di-n-octyl phthalate (DNOP)	117-84-0	1	
	Di-iso-decyl phthalate (DIDP)	26761-40-0	1	
	Di-iso-nonyl phthalate (DINP)	28553-12-0	1	
	Di-n-hexyl phthalate (DnHP)	84-75-3	1	
	Dibutyl phthalate (DBP)	84-74-2	1	
	Butyl benzyl phthalate (BBP)	85-68-7	1	
	Dinonyl phthalate (DNP)	84-76-4	1	
	Diethyl phthalate (DEP)	84-66-2	1	

Group	Substance (Testing parameter)	CAS No.	Report Limit Wastewater (ug/L)/(ppb)	Name of the testing method
	Di-n-propyl phthalate (DPRP)	131-16-8	1	
	Di-iso-butyl phthalate (DIBP)	84-69-5	1	
	Di-cyclohexyl phthalate (DCHP)	84-61-7	1	
	Di-iso-octyl phthalate (DIOP)	27554-26-3	1	
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4	1	
	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	1	
2M. Poly Aromatic Hydrocarbons (PaHs)	Benzo[a]pyrene (BaP)	50-32-8	1	DIN 38407-39 Solvent extraction GC/MS
	Anthracene	120-12-7	1	
	Pyrene	129-00-0	1	
	Benzo[ghi]perylene	191-24-2	1	
	Benzo[e]pyrene	192-97-2	1	
	Indeno[1,2,3-cd]pyrene	193-39-5	1	
	Benzo[j]fluoranthene	205-82-3	1	
	Benzo[b]fluoranthene	205-99-2	1	
	Fluoranthene	206-44-0	1	
	Benzo[k]fluoranthene	207-08-9	1	
	Acenaphthylene	208-96-8	1	
	Chrysene	218-01-9	1	
	Dibenz[a,h]anthracene	53-70-3	1	
	Benzo[a]anthracene	56-55-3	1	
	Acenaphthene	83-32-9	1	
	Phenanthrene	85-01-8	1	
	Fluorene	86-73-7	1	
	Naphthalene	91-20-3	1	
2N. Volatile Organic Compound (VOCs)	Benzene	71-43-2	1	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS
	Xylene	1330-20-7	1	
	o-cresol	95-48-7	1	
	p-cresol	106-44-5	1	
	m-cresol	108-39-4	1	
1A. Conventional Parameters	Temperature	—	N/A	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Exceeded Foundational Limit, Foundational, Progressive, and Aspirational).
	TSS	—	N/A	
	COD	—	N/A	
	Total-N	—	N/A	
	pH	—	N/A	
	Color [m^{-1}] (436nm; 526nm; 620nm)	—	N/A	
	BOD5	—	N/A	
	Ammonium-N	—	N/A	
	Total-P	—	N/A	
	AoX	—	N/A	
	Oil and Grease	—	N/A	
	Phenol	—	N/A	
	Coliform(bacteria/100ml)	—	N/A	
	Persistent Foam	—	Not visible	
	ANIONS			

Group	Substance (Testing parameter)	CAS No.	Report Limit Wastewater (ug/L)/(ppb)	Name of the testing method
	Sulfide	—	10	
	Sulfite	—	200	
Group	**Substance (Testing parameter)**	**CAS No.**	**Report Limit Wastewater (mg/L)/(ppm)**	**Name of Testing Method**
1B. Conventional Parameters - **METALS**	Antimony(Sb)	7440-36-0	0.001	Various Acid Digestion with ICP analysis please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Exceeded Foundational Limit, Foundational, Progressive, and Aspirational).
	Chromium(Cr), total	7440-47-3	0.001	
	Cobalt(Co)	7440-48-4	0.001	
	Copper(Cu)	7440-50-8	0.001	
	Nickel (Ni)	7440-02-0	0.001	
	Silver (Ag)	7440-22-4	0.005	
	Zinc(Zn)	7440-66-6	0.001	
	Arsenic (As)	7440-38-2	0.001	
	Cadmium(Cd)	7440-43-9	0.0001	
	Lead(Pb)	7439-92-1	0.001	
	Mercury (Hg)	7439-97-6	0.00005	
	Chromium VI(CrVI)	18540-29-9	0.001	Various Solvent extraction and derivatisation followed by UV analysis
	Cyanide(CN-)	Various (incl. 57-12-5)	0.004	With reference to APHA 4500 CN— B,C&E and followed by UV analysis

Note / Key :

ppb = part(s) per billion ; ppm – part(s0 per million
U. S. EPA = United States Environmental Protection Agency
APHA = American Public Health Association

Comment 1: The report [(6818)293-0035] was sub-contracted to BVCPS (Shanghai, China) for ANIONS – Sulfide, ANIONS – Sulfite, Ammonium-N, Total-N & AOX Tests.

Comment 2: The report [(6818)293-0035] was sub-contracted to BVCPS (Katubedda, Moratuwa, Sri Lanka) for Coliform Test.
Comment 3: The report [(6818)293-0035] was sub-contracted to BVCPS (Shanghai, China) for Perfluorinated Chemicals, Flame Retardants & Glycols Tests.

APPENDIX B

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE SAMPLING)

General Data

Laboratory Sample Number	(6818)293-0035
Client Name	/
Field Contact Person	Mr. Md. Roshidul Islam Phone No: 01744400114
Project (Facility Name and Address)	Denitex Ltd, 9/1 Karnapara, Savar, Dhaka, 1340, Bangladesh.
Sampling Location / Description	Raw Wastewater
Sample Identification	Zero discharge with sampling plan
Sample Type	Time-Weighted Composite Grab Samples*
Name of Sampler	Mr. Asad
Discharge mode	Direct discharge to environment (Specify destination:/)
Date and time collected	18/10/2018 (10.10 am, 11.10 am, 12.10 pm, 01.10 pm, 02.10 pm & 03.10 pm)
Factory Type	Dyeing/Printing/Washing/Finishing/Other (please specify: Dyeing / Washing) *Note: It would be selected more than one

Field Data for wastewater

Field Parameters	pH : 7.4, 7.2, 7.8, 8.0, 7.6, 8.0	Temp : 30.0, 28.9, 30.2, 33.0, 32.0, 32.9 ^{o}C	Color : Light blue / blue color liquid
Control No. of field equipment			

Analysis Required and Preservation Method

Factory with effluent treatment plant	Yes					
Sample matrix		Raw Wastewater				
Sampler container number	14					
Recording time	10.10 am - 03.10 pm					
Volume collected, mL	14x167					
Total volume collected	14,000	Remark: Total volumn collected must be greater than total of sample size required				

Tests	Test required	Total of sample size	Type of container	Preservation method
1. Phthalate	√	500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
2. Brominated and chlorinated Flame retardant	√	500 mL		
3. Banned Azodyes	√	500 mL		
4. Organotin Compounds	√	500 mL		
5. SCCPs	√	500 mL		
6. Glycol	√	10 mL		
7. Free primary aromatic amines	√	500 mL		
8. Dyes	√	500 mL		
9. Flame Retardant	√	500 mL		
10. Chlorobenzenes & Polynuclear aromatic hydrocarbons (PAHs)	√	500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
11. Chlorophenols	√	1000 mL		
12. APEOs/APs	√	500 mL		
13. Chlorinated Solvents	√	500 mL		Fill to full bottle without air; acidify to ~pH 2 with HCl and store sample at 4°C
14. Heavy Metals except CrVI	√	500 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO_3 and store at 4^{o}C
15. CrVI	√	500 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air nor adding acid and store sample at 4°C
16. PFCs	√	500 mL	PE, wash with pesticide grade Acetone;	Without adding acid Store sample at 4°C
17. Cyanide	√	500 mL	Amber Glass, wash with pesticide grade acetone	Adjust pH 12 with 50% NaOH and store at 4^{o}C

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE SAMPLING)

General Data

Laboratory Sample Number	(6818)293-0035
Client Name	/
Field Contact Person	Mr. Md. Roshidul Islam Phone No: 01744400114
Project (Facility Name and Address)	Denitex Ltd, 9/1 Karnapara, Savar, Dhaka, 1340, Bangladesh.
Sampling Location / Description	Discharged Wastewater
Sample Identification	Zero discharge with sampling plan
Sample Type	Time-Weighted Composite Grab Samples*
Name of Sampler	Mr. Asad
Discharge mode	Direct discharge to environment (Specify destination: Government Canal)
Date and time collected	18/10/2018 (10.00 am, 11.00 am, 12.00 pm, 01.00 pm, 02.00 pm & 03.00 pm)
Factory Type	Dyeing/Printing/Washing/Finishing/Other (please specify: Dyeing / Washing)

*Note: It would be selected more than one

Field Data for wastewater

Field Parameters	pH : 7.2, 7.0, 8.0, 8.2, 7.4, 7.9	Temp : 30.0, 29.0, 30.0, 30.1, 31.0, 32.0 °C	Color : Light blue color liquid
Control No. of field equipment			

Analysis Required and Preservation Method

Factory with effluent treatment plant	Yes					
Sample matrix		Discharged Wastewater – water at discharge point				
Sampler container number	22					
Recording time	10.00 am - 03.00 pm					
Volume collected, mL	22x167					
Total volume collected	22,000	Remark: Total volumn collected must be greater than total of sample size required				

Tests	Test required	Total of sample size	Type of container	Preservation method
1. Phthalate	√	500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
2. Brominated and chlorinated Flame retardant	√	500 mL		
3. Banned Azodyes	√	500 mL		
4. Organotin Compounds	√	500 mL		
5. SCCPs	√	500 mL		
6. Glycol	√	10 mL		
7. Free primary aromatic amines	√	500 mL		
8. Dyes	√	500 mL		
9. Flame Retardant	√	500 mL		
10. Chlorobenzenes & Polynuclear aromatic hydrocarbons (PAHs)	√	500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
11. Chlorophenols	√	500 mL		
12. APEOs/APs	√	500 mL		
13. Chlorinated Solvents	√	500 mL		Fill to full bottle without air; acidify to ~pH 2 with HCl and store sample at 4°C
14. Heavy Metals except CrVI	√	500 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO_3 and store at 4°C
15. CrVI	√	500 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air nor adding acid and store sample at 4°C
16. PFCs	√	500 mL	PE, wash with pesticide grade Acetone;	Without adding acid Store sample at 4°C
17. Cyanide	√	500 mL	Amber Glass, wash with pesticide grade acetone	Adjust pH 12 with 50% NaOH and store at 4°C

END