TEST REPORT

Technical Report **(6720)286-0685** October 21, 2020

Date Received October 12, 2020

Factory Company Name:	MARAL OVERSEAS LIMITED
Factory Address:	POST MARAL SAROVAR, VILLAGE KHALBUJURG 451660, DISTRICT KHARGONE, M.P.
Project No.:	/
Client Reference No.:	/
Sampling Method:	I002) Raw Wastewater (Before Treatment) – 6 hours - Time – weighted Composite
Sample Pick Up Date:	October 09, 2020
On-Site Effluent Treatment Plant (ETP):	YES
Discharge Type:	Zero Liquid Discharge
Off-site ETP name (if applicable):	/
Off-site ETP address (if applicable):	/
Test Period:	October 12, 2020 to October 21, 2020

Sample Description:

I001) Dark Bluish color liquid – Raw Wastewater (Before Treatment)

REMARK

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

General enquiry and invoicing	amit.roy@in.bureauveritas.com 0120-4368216/205/267
Technical enquiry-Chemical	ramesh.kumar@in.bureauveritas.com 0120-4768264/265/249/277

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 (INDIA) PVT. LTD.

SIGNATORIES

RAHUL SRIVASTAVA
(Manager – Analytical)

"Pls. refer the website www.nabl-india.org to view our Scope of accredited Test"

Bureau Veritas Consumer Products Services (India) Pvt. Ltd.,
C-19, Sec – 7 Noida (U.P.) 201301 PH: 4368283/205

Executive Summary

ZDHC MRSL Substances	I001
2A) APs and APEOs	o
2B) Chlorobenzenes and Chlorotoluenes	o
2L) Phthalates	o

Note / Key :

- ● – Detected
- o – Not Detected
- NR – Not Requested
- N/A – Not Applicable

Objective

The environment samples were tested for below parameters.

2A) APs and APEOs
2B) Chlorobenzenes and Chlorotoluenes
2L) Phthalates

Sampling Plan

Basically, three environment samples were sampled per factory, including 1) Discharged Wastewater (raw wastewater) and. 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

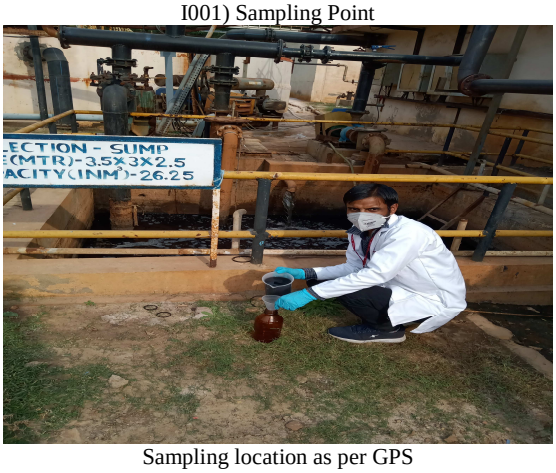
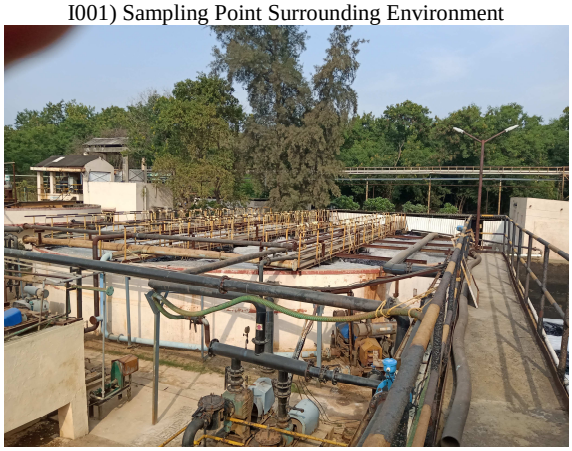
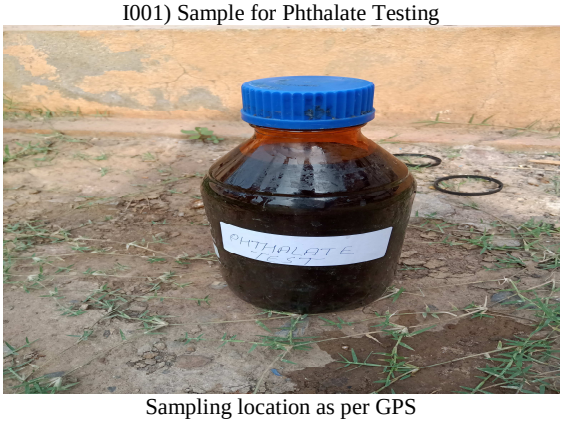
Others Priority Chemical Groups

	I001 ***(ug/L)***
2A) APs and APEOs	ND
2B) Chlorobenzenes and Chlorotoluenes	ND
2L) Phthalates	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.

APPENDIX A - Photo of the Sample/ Sampling Location

I001) Sampling Point  Sampling location as per GPS (North 25.3506623, East 74.2851714)	I001) Sampling Point Surrounding Environment  Sampling location as per GPS (North 25.3506623, East 74.2851714)
I001) Sample for Phthalate Testing  Sampling location as per GPS (North 25.3506623, East 74.2851714)	I001) Packaging  Sampling location as per GPS (North 25.3506623, East 74.2851714)

APPENDIX B

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Nonylphenol NP, mixed isomers	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)	5	0.2	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
	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	5	0.2	
	Octylphenol ethoxylates (OPEO)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)	5	0.2	
	Nonylphenol ethoxylates (NPEO)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)	5	0.2	
2B. Chlorobenzenes and Chlorotoluenes	Monochlorobenzene	108-90-7	0.2	0.1	USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS
	1,2-Dichlorobenzene	95-50-1	0.2	0.1	
	1,3-Dichlorobenzene	541-73-1	0.2	0.1	
	1,4-Dichlorobenzene	106-46-7	0.2	0.1	
	1,2,3-Trichlorobenzene	87-61-6	0.2	0.1	
	1,2,4-Trichlorobenzene	120-82-1	0.2	0.1	
	1,3,5-Trichlorobenzene	108-70-3	0.2	0.1	
	1,2,3,4-Tetrachlorobenzene	634-66-2	0.2	0.1	
	1,2,3,5-Tetraclorobenzene	634-90-2	0.2	0.1	
	1,2,4,5-Tetrachlorobenzene	95-94-3	0.2	0.1	
	Pentachlorobenzene	608-93-5	0.2	0.1	
	Hexachlorobenzene	118-74-1	0.2	0.1	
	2-Chlorotoluene	95-49-8	0.2	0.1	
	3-Chlorotoluene	108-41-8	0.2	0.1	
	4-Chlorotoluene	106-43-4	0.2	0.1	
	2,3-Dichlorotoluene	32768-54-0	0.2	0.1	
	2,4-Dichlorotoluene	95-73-8	0.2	0.1	
	2,5-Dichlorotoluene	19398-61-9	0.2	0.1	
	2,6-Dichlorotoluene	118-69-4	0.2	0.1	
	3,4-Dichlorotoluene	95-75-0	0.2	0.1	
	3,5-Dichlorotoluene	25186-47-4	0.2	0.1	
	2,3,4-Trichlorotoluene	7359-72-0	0.2	0.1	
	2,3,6-Trichlorotoluene	2077-46-5	0.2	0.1	
	2,4,5-Trichlorotoluene	6639-30-1	0.2	0.1	
	2,4,6-Trichlorotoluene	23749-65-7	0.2	0.1	
	3,4,5-Trichlorotoluene	21472-86-6	0.2	0.1	
	2,3,4,5-Tetrachlorotoluene	76057-12-0	0.2	0.1	
	2,3,5,6-Tetrachlorotoluene	29733-70-8	0.2	0.1	
	2,3,4,6-Tetrachlorotoluene	875-40-1	0.2	0.1	
	Pentachlorotoluene	877-11-2	0.2	0.1	
2L. Phthalates (including all other esthers of phthalic acid)	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	10	1	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dimethoxyethyl phthalate (DMEP)	117-82-8	10	1	
	Di-n-octyl phthalate (DNOP)	117-84-0	10	1	
	Di-iso-decyl phthalate (DIDP)	26761-40-0	10	1	
	Di-iso-nonyl phthalate (DINP)	28553-12-0	10	1	
	Di-n-hexyl phthalate	84-75-3	10	1	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg) /(ppm)	
	(DnHP)				
	Dibutyl phthalate (DBP)	84-74-2	10	1	
	Butyl benzyl phthalate (BBP)	85-68-7	10	1	
	Dinonyl phthalate (DNP)	84-76-4	10	1	
	Diethyl phthalate (DEP)	84-66-2	10	1	
	Di-n-propyl phthalate (DPRP)	131-16-8	10	1	
	Di-iso-butyl phthalate (DIBP)	84-69-5	10	1	
	Di-cyclohexyl phthalate (DCHP)	84-61-7	10	1	
	Di-iso-octyl phthalate (DIOP)	27554-26-3	10	1	
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4	10	1	
	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	10	1	

Note / Key :

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

APPENDIX C – Onsite Field Data Record Sheet

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)

CPSD-AN-00613-DATA 04
Issue Date:
Version No.: 13
Business Line: Analytical

General Data

Laboratory Sample Number:
Client Name: Maral overseas limited
Field Contact Person: Piyush Raval Phone No: 9926023797
Project (Facility Name and Address): Maral overseas Distric Khargone M.P
Sampling Location / Description: Village Khalbujurg, Distric Khargone, M.P
Sample Identification:
Sample Type: Zero discharge with sampling plan
Name of Sampler: Composite Sample / Grab sample (Please delete as appropriate)
Discharge mode: Anil Rana
Date of collection: Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
Factory Type: 09/10/2020
Dyeing / Printing / Washing / Finishing / Others (please specify): Dyeing
*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time:	12:45 PM	Departure Time:	5:30 PM					
Field Parameters	pH :	Temp : °C	Color :	Flow rate : (volume/min)				
Control No. of field equipment								
Factory with effluent treatment plant:	Yes		No					
Sample matrix:	✓ Incoming water (If required)	Wastewater before treatment Before Treatment water	Wastewater after treatment – water at discharge point					
Sampler container number								
	1	2	3	4	5	6	7	8
Recording time – ID								
Recording time – Time	12:15	1:15	2:15	3:15	4:15	5:15		
pH :	10.3	10	10.2	10	10.1	10.3		
Temp (°C) :	47°C	48°C	48.1°C	43°C	47°C	48°C		
Color (visual estimation):			Dark Brush					
Flow rate (volume/time)								
Volume collected, mL	1000	1000	1000	1000	1000	1000		
Total volume collected	6Ltr.	Remark: Total volume collected must be greater than total of sample size required						

Analysis Required and Preservation Method

Tests (ZDHC MRSL Parameters)		Test required (V)	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	Amber Glass,washed with nitric acid, rinsed thoroughly with distillated water and dried before use	Without adding acid Store sample at 6°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	Amber Glass, washed with nitric acid	Acidify to pH 2 with HCl and store sample at 6°C
15. VOC & Halogenated Solvents (Remark 6)			10 mL		Fill to full container without air gap, acidify to pH 2 with HCl and store sample at 6°C
16. PFCs			2 mL	PE, washed with pesticide grade Acetone	Without adding acid Store sample at 6°C

CPSD-AN-00613-DATA 04-FIELD DATA RECORD ZDHC SAMPLING-V13

Page 1 of 3

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)

CPSD-AN-00613-DATA 04
Issue Date:
Version No.: 13
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)	17. Total suspened solids (TSS)		2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid, rinsed thoroughly with distillated water and dried before use	Without adding acid Store sample at 6°C
	18. *Total dissolved solids (TDS)				
19. 5-day Biochemical Oxygen Demand (BOD5)			1000 mL		
20. 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 6°C
21. Cr(VI)			95 mL	Amber Glass, washed with pesticide grade acetone	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 6°C
22. Cyanide			500 mL		Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% $Na_2S_2O_3$, and store sample at 6°C
23. Chemical oxygen demand (COD)			150 mL	Amber Glass; washed with nitric acid	Acidify to pH 2 with H_2SO_4, Store sample at 6°C
24. Phenols			500 mL		
25. *Formaldehyde			25 mL		Fill to full container without air gap; acidify to pH 2 with H2SO4 and store sample at 6°C
26. 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 6°C
27. Adsorbable organically bound halogens (AOX)			100 mL	Amber Glass, washed with nitric acid	Add 0.05 ml of 10% $Na_2S_2O_3$, acidify to pH 2 with H_2SO_4, Store sample at 6°C
28. Total Coliform (Remark 6)			125 mL	PE, clean, sterile, non-reactive	Add 0.05 ml of 10% Na2S2O3. Store sample at 6°C
29. Persistent foam			N.A.	Foam higher than 45 cm (visual estimation): Yes / No	
30. Sulfite			100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA, 0.5g zinc acetate Store sample at 6°C
31. Total-N			100 mL	Amber Glass with wide-mouth PTFE lid;washed with nitric acid;	Acidify to pH 2 with H2SO4 Store sample at 6°C
32. Ammonium-N			500 mL		
33. Oil and Grease & Total Hydrocarbon			1000 mL	Amber Glass; washed with nitric acid;	Acidify to pH 2 with HCl Store sample at 6°C
34. Luminus Bacteria Toxicity			1000 mL	Amber Glass, washed with nitric acid, rinsed thoroughly with distillated water and dried before use	Without adding acid Store sample at 6°C
35. Sulphate			100 mL		
36. Chloride			100 mL		
37. Color			100 mL		
38. Others:					
Observation/ Remark:					

*Remarks:

1. Individual sampling can be performed upon request
2. The minimum sampling time for 2016 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, 2, 4-9, 12, 14-17, 19-24, 26-33
   Scope of synthetic leather industry: Parameter 1, 2, 4-9, 12, 14-17, 19-33
   Scope of MMCF: Parameter 4, 5, 15, 17, 19-21, 23, 24, 26, 27, 31-34, 37
   Free primary aromatic amine, pesticides, nitrosamine and TDS are not in the scope of ZDHC Guidline, they are tested upon request.
4. Refer to CPSD-AN-G00019-STIP01, loactions 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 preparatiog of field blank for specific parameters.

Recorded by: Anil Rana Date: 09/10/2020
Full name:

Comment from factory

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 desinated 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: PIYOOSH CHAND Date: 09/10/2020
Full Name:

CPSD-AN-00613-DATA 04-FIELD DATA RECORD ZDHC SAMPLING-V13

Page 2 of 3