TEST REPORT

Technical Report: **(8214)170-0068** July 09, 2014

Date Received: June 17, 2014

JACK WOLFSKIN
Ausrüstung für Draussen GmbH & Co. KGaA
Jack Wolfskin Kreisel 1 · 65510 Idstein/Ts., Germany

Factory Company Name:	5160
Factory Address:	5160
Project No.:	/
Client Reference No.:	/
Sample Type:	Grab Sample*
Sample Pick Up Date:	June 17, 2014, 10:00 - 11:00 AM
Test Period:	June 17, 2014 - July 08, 2014

Sample Description: Sample(s) received is/are stated to be:
I001) Transparent liquid (Incoming water)
I002) Light Violet liquid (Wastewater before treatment)
I003) Light Beige liquid (Wastewater after treatment)
I004) Dark Brown (Sludge in clarifier)

REMARK
If there are questions or concerns on this report, please contact:

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This report shown the test result of the environment samples of above factory which collected on specific date and time. The results of this report shall not be used for any regulatory compliance purposes.

* The grab sampling is agreed with client.

NOTE : Wastewater After Treatment and Sludge were taken from joint wastewater treatment facility operated by the Daegu city.

REMARK : Contact information for this report (technical questions and general inquiries)

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Photo of the Sample/ Sampling Location

I001) Transparent liquid (Incoming water) 	I003) Light Beige liquid (Wastewater after treatment) 
I002) Light Violet liquid (Wastewater before treatment) 	I004) Dark Brown (Sludge in clarifier) 

Executive Summary

11 Priority Chemical Groups	I001	I002	I003	I004
Phthalates	●	●	●	●
Brominated and Chlorinated Flame Retardants	o	o	o	o
Azo Dyes	o	o	o	o
Organotin Compounds	o	o	o	●
Chlorobenzenes	o	o	o	●
Chlorinated Solvents	o	o	o	o
Chlorophenols	o	o	o	●
Short-Chained Chlorinated Paraffins	o	o	o	o
Heavy Metals	●	●	●	●
APs and APEOs	o	o	●	●
Perfluorinated Chemicals	o	o	o	o

Traditional Parameters	I003
Color	See result in page 10 - 11
pH Value	
Total Suspended Solids (TSS)	
Biochemical Oxygen Demand (BOD_5)	
Chemical Oxygen Demand (COD)	

Note / Key :

- ● – Detected
- o – Not Detected

Objective

The environment samples were tested for below 11 Priority Chemical Groups according to the Joint Roadmap: Toward Zero Discharge of Hazardous Chemicals.

11 Priority Chemical Groups
1) Phthalates
2) Brominated and Chlorinated Flame Retardants
3) Azo Dyes
4) Organotin Compounds
5) Chlorobenzenes
6) Chlorinated Solvents
7) Chlorophenols
8) Short-Chained Chlorinated Paraffins
9) Heavy Metals
10) APs and APEOs
11) Perfluorinated Chemicals

Sampling Plan

Basically, four environment samples were sampled per factory, including 1) Incoming water; 2) Wastewater before treatment; 3) Wastewater after treatment; and 4) Sludge in clarifier. Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

Method of sampling used is grab sampling (agreed with client.). Grab samples are discrete samples that are taken at a location to provide a 'snapshot' of the water quality characteristics at that time. For the purposes of quantifying water or wastewater constituents, grab samples will show the concentrations at that location and time of sampling. They will not provide any information about the concentrations outside that point in time.

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

11 Priority Chemical Groups

Phthalates

Test results of Phthalates are as below.

Phthalates	I001	I002	I003	I004
BBP	ND	ND	ND	ND
DBP	ND	ND	ND	ND
DEHP	0.00404	0.438	0.720	5.06
DNOP	ND	ND	ND	ND
DINP	ND	ND	ND	ND
DIDP	ND	ND	ND	ND
DMP	ND	ND	ND	ND
DEP	ND	ND	ND	ND
DPRP	ND	ND	ND	ND
DIBP	ND	ND	ND	ND
DCHP	ND	ND	ND	ND
DnHP	ND	ND	ND	ND
DNP	ND	ND	ND	ND
DIOP	ND	ND	ND	ND
DMEP	ND	ND	ND	ND

Organotin Compounds

Test results of Organotin Compounds are as below.

Organotin Compounds	I001	I002	I003	I004
MBT	ND	ND	ND	ND
DBT	ND	ND	ND	ND
DOT	ND	ND	ND	0.339
TBT	ND	ND	ND	ND
TPhT	ND	ND	ND	ND
TCyHT	ND	ND	ND	ND
TOT	ND	ND	ND	ND
TPT	ND	ND	ND	ND

Chlorobenzenes

Test results of Chlorobenzenes are as below.

Chlorobenzenes	**I001**	**I002**	**I003**	**I004**
Chlorobenzene	ND	ND	ND	23.2
1,2-Dichlorobenzene	ND	ND	ND	ND
1,3-Dichlorobenzene, 1,4-Dichlorobenzene	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
1,3,5-Trichlorobenzene	ND	ND	ND	ND
1,2,3,4-Tetrachlorobenzene	ND	ND	ND	ND
1,2,3,5-Tetrachlorobenzene, 1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND

Chlorophenols

Test results of Chlorophenols are as below.

Chlorophenols	**I001**	**I002**	**I003**	**I004**
Pentachlorophenol	ND	ND	ND	0.254
2,3,4,5-Tetrachlorophenol	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	0.174
2,3,5,6-Tetrachlorophenol	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	0.0347
2,3,5-Trichlorophenol	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND
3,4,5-Trichlorophenol, 2,3,4-Trichlorophenol	ND	ND	ND	ND
2,3-Dichlorophenol	ND	ND	ND	ND
3,4-Dichlorophenol	ND	ND	ND	ND
2,4-Dichlorophenol, 2,5-Dichlorophenol, 2,6-Dichlorophenol, 3,5-Dichlorophenol	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	0.663
3-Chlorophenol	ND	ND	ND	0.677
4-Chlorophenol	ND	ND	ND	0.341

Heavy Metals

Test results of Heavy Metals are as below.

Heavy Metals	**I001**	**I002**	**I003**	**I004**
As	0.002	ND	ND	ND
Cd	ND	ND	ND	ND
Hg	ND	ND	ND	ND
Pb	ND	ND	ND	ND
Sb	0.001	0.002	ND	ND
Co	ND	ND	ND	ND
Ni	0.002	0.002	ND	ND
Cu	0.007	0.008	0.003	0.002
Zn	0.011	0.007	ND	ND
Cr	ND	ND	ND	ND
Mn	0.010	0.050	0.005	0.026
Cr VI	ND	ND	ND	ND
CN^-	ND	ND	ND	77.49

APs and APEOs

Test results of APs and APEOs are as below.

APs and APEOs	**I001**	**I002**	**I003**	**I004**
OP	ND	ND	ND	ND
NP	ND	ND	0.006	37.6
OPEOs	ND	ND	ND	ND
NPEOs	ND	ND	ND	54.0

Others Priority Chemical Groups

	I001	**I002**	**I003**	**I004**
Brominated and Chlorinated Flame Retardants	ND	ND	ND	ND
Azo Dyes	ND	ND	ND	ND
Chlorinated Solvents	ND	ND	ND	ND
Short-Chained Chlorinated Paraffins	ND	ND	ND	ND
Perfluorinated Chemicals	ND	ND	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.).
- NA = Not applicable.
- All results are in ppm as unit.
- ppm = part(s) per million.

Traditional Parameters

Color

Test Method : Qualitative Observation by Visual

Tested Item(s)	Result	Unit	Conclusion
I003	Beige Transparent liquid	-	DATA

pH Value

Test Method : With reference to APHA 4500-H+ B:2012 & U. S. EPA 150.2

-	Unit	Result
Test Item(s)	-	I003
Parameter	-	-
Temp. of sample	deg. C	10.5 °C
pH value of sample	-	7.8
Conclusion	-	DATA

Note:

Temp. = Temperature deg. C = degree Celsius (°C)
APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater
U. S. EPA = United States Environmental Protection Agency

Total Suspended Solids (TSS)

Test Method : With reference to APHA 2540 D:2012

Tested Item(s)	Result	Unit	Conclusion
I003	**102**	mg/L	DATA

Note:

mg/L = milligram per liter
Detection Limit (mg/L) : 5
APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

Biochemical Oxygen Demand (BOD_5)

Test Method **:** With reference to APHA 5210 B:2012

Tested Item(s)	Result	Unit	Conclusion
I003	**6.6**	mg/L	DATA

Note:

mg/L = milligram per liter
Detection Limit (mg/L) : 2
APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

Chemical Oxygen Demand (COD)

Test Method **:** With reference to APHA 5220 B:2012 & U. S. EPA 410.3

Tested Item(s)	Result	Unit	Conclusion
I003	**106.9**	mg/L	DATA

Note:

mg/L = milligram per liter
Detection Limit (mg/L) : 2
APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater
U. S. EPA = United States Environmental Protection Agency

END

APPENDIX A

List of Phthalates :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to U. S. EPA 8270D. (For Wastewater)			Each: 0.001	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C and with reference to U. S. EPA 8270D. (For Sludge)			Each: 0.3	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Butyl benzyl phthalate (BBP)	85-68-7	9	Di-n-propyl phthalate (DPRP)	131-16-8
2	Dibutyl phthalate (DBP)	84-74-2	10	Di-iso-butyl phthalate (DIBP)	84-69-5
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	11	Di-cyclohexyl phthalate (DCHP)	84-61-7
4	Di-n-octyl phthalate (DNOP)	117-84-0	12	Di-n-hexyl phthalate (DnHP)	84-75-3
5	Di-iso-nonyl phthalate (DINP)	28553-12-0 & 68515-48-0	13	Dinonyl phthalate (DNP)	84-76-4
6	Di-iso-decyl phthalate (DIDP)	26761-40-0 & 68515-49-1	14	Di-iso-octyl phthalate (DIOP)	27554-26-3
7	Dimethyl phthalate (DMP)	131-11-3	15	Dimethoxyethyl phthalate (DMEP)	117-82-8
8	Diethyl phthalate (DEP)	84-66-2	-	-	-

List of Brominated Flame Retardants :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to U. S. EPA 527 and with reference to U. S. EPA 8321B. (For Wastewater)			Each (PBBs & PBDEs): 0.00005; Each (TRIS, TBBPA & HBCCD): 0.0005; Each (Others): 0.025	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C, with reference to U. S. EPA 527 and with reference to U. S. EPA 8321B. (For Sludge)			Each (PBBs & PBDEs): 0.3; Each (Others): 0.25	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Polybromobiphenyls (PBBs)	Various	5	Bis(2,3-dibromopropyl) phosphate	5412-25-9
2	Tris(2,3-dibromopropyl) phosphate (TRIS)	126-72-7	6	Hexabromocyclododecane (HBCDD)	3194-55-6
3	Polybromodiphenyl ethers (PBDEs)	Various	7	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0
4	Tetrabromobisphenol A (TBBPA)	79-94-7	-	-	-

List of Chlorinated Flame Retardants :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to U. S. EPA 527 and with reference to U. S. EPA 8321B. (For Wastewater)			TCEP: 0.00005; TDCP: 0.0005	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C, with reference to U. S. EPA 527 and with reference to U. S. EPA 8321B. (For Sludge)			Each: 0.5	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	2	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8

List of Aromatic Amines in Azo Colorants :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to German Standard DIN 38407-16, with reference to European Standard EN 14362-1 incorporating Corrigendum and with reference to European Standard EN 14362-3. (For Wastewater)			Each: 0.0001	ppm
2	With reference to German Standard DIN 38407-16, with reference to European Standard EN 14362-1 incorporating Corrigendum and with reference to European Standard EN 14362-3. (For Sludge)			Each: 0.1	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	4-Aminodiphenyl (Biphenyl-4-ylamine or Xenylamine)	92-67-1	14	p-Cresidine (6-Methoxy-m-toluidine)	120-71-8
2	Benzidine	92-87-5	15	4,4`-Methylene-bis-(2-chloraniline) (2,2`-Dichloro-4,4`-methylene-dianiline)	101-14-4
3	4-Chloro-o-toluidine	95-69-2	16	4,4`-Oxydianiline	101-80-4
4	2-Naphthylamine	91-59-8	17	4,4`-Thiodianiline	139-65-1
5	o-Aminoazotoluene (4-Amino-2`,3-dimethylazobenzne or 4-o-tolyazo-o-toluidine)	97-56-3	18	o-Toluidine (2-Aminotoluene)	95-53-4
6	5-nitro-o-toluidine (2-Amino-4-nitrotoluene)	99-55-8	19	4-Methyl-m-phenylenediamine (2,4-Toluenediamine)	95-80-7
7	4-Chloroaniline (p-Chloroaniline)	106-47-8	20	2,4,5-Trimethylaniline	137-17-7
8	4-Methoxy-m-phenylenediamine (2,4-Diaminoanisole)	615-05-4	21	o-Anisidine (2-Methoxyaniline)	90-04-0
9	4,4`-Diaminodiphenylmethane (4,4`-Methylenedianiline)	101-77-9	22	4-Aminoazobenzene (p-Aminoazobenzene)	60-09-3
10	3,3`-Dichlorobenzidine (3,3`-Dichlorobiphenyl-4,4`-ylenediamine)	91-94-1	23	2,4-Xylidine (2,4-dimethylaniline)	95-68-1
11	3,3`-Dimethoxybenzidine (o-Dianisidine)	119-90-4	24	2,6-Xylidine (2,6-dimethylaniline)	87-62-7
12	3,3`-Dimethylbenzidine (4,4`-Bi-o-tolidine)	119-93-7	25	Aniline	62-53-3
13	4,4`-Methylenedi-o-toluidine (3,3`-Dimethyl-4,4`-diaminodiphenylmethane)	838-88-0	-	-	-

List of Organotin Compounds :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to European Standard EN ISO 17353. (For Wastewater)			Each: 0.00001	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C and with reference to International Standard ISO 23161. (For Sludge)			Each: 0.01	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Monobutyltin (MBT)	Various	5	Triphenyltin (TPhT)	Various
2	Dibutyltin (DBT)		6	Tricyclohexyltin (TCyHT)	
3	Dioctyltin (DOT)		7	Trioctyltin (TOT)	
4	Tributyltin (TBT)		8	Tripropyltin (TPT)	

List of Chlorobenzenes :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to U. S. EPA 8260B and with reference to U. S. EPA 8270D. (For Wastewater)			Each: 0.00002	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C, with reference to U. S. EPA 8260B and with reference to U. S. EPA 8270D. (For Sludge)			Each: 0.1	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Chlorobenzene	108-90-7	6	1,3,5-Trichlorobenzene	108-70-3
2	1,2-Dichlorobenzene	95-50-1	7	1,2,3,4-Tetrachlorobenzene	634-66-2
3	1,3-Dichlorobenzene, 1,4-Dichlorobenzene	541-73-1, 106-46-7	8	1,2,3,5-Tetrachlorobenzene, 1,2,4,5-Tetrachlorobenzene	634-90-2, 95-94-3
4	1,2,3-Trichlorobenzene	87-61-6	9	Pentachlorobenzene	608-93-5
5	1,2,4-Trichlorobenzene	120-82-1	10	Hexachlorobenzene	118-74-1

List of Chlorinated Solvents :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to U. S. EPA 8260B. (For Wastewater)			Each: 0.1	ppm
2	With reference to U. S. EPA 5021, with reference to U. S. EPA 8021B and with reference to U. S. EPA 8260B. (For Sludge)			Each: 0.3	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	1,2-Dichloroethane	107-06-2	7	1,1,1-Trichloroethane	71-55-6
2	1,1-Dichloroethylene	75-35-4	8	Carbon Tetrachloride	56-23-5
3	Methylene Chloride	75-09-2	9	Trichloroethylene	79-01-6
4	cis-1,2-Dichloroethylene	156-59-2	10	1,1,2-Trichloroethane	79-00-5
5	trans-1,2-Dichloroethylene	156-60-5	11	1,1,1,2-Tetrachloroethane	630-20-6
6	Chloroform	67-66-3	12	Tetrachloroethylene	127-18-4

List of Chlorophenols :					
No.	**Test Method**			**Reporting Limit**	**Unit**
1	With reference to U. S. EPA 8270D. (For Wastewater)			Each: 0.0005	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C and with reference to U. S. EPA 8270D. (For Sludge)			Each: 0.025	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Pentachlorophenol	87-86-5	8	3,4,5-Trichlorophenol, 2,3,4-Trichlorophenol	609-19-8, 15950-66-0
2	2,3,4,5-Tetrachlorophenol	4901-51-3	9	2,3-Dichlorophenol	576-24-9
3	2,3,4,6-Tetrachlorophenol	58-90-2	10	3,4-Dichlorophenol	95-77-2
4	2,3,5,6-Tetrachlorophenol	935-95-5	11	2,4-Dichlorophenol, 2,5-Dichlorophenol, 2,6-Dichlorophenol, 3,5-Dichlorophenol	120-83-2, 583-78-8, 87-65-0, 591-35-5
5	2,4,6-Trichlorophenol	88-06-2	12	2-Chlorophenol	95-57-8
6	2,3,5-Trichlorophenol	933-78-8	13	3-Chlorophenol	108-43-0
7	2,4,5-Trichlorophenol	95-95-4	14	4-Chlorophenol	106-48-9

List of Short Chain Chlorinated Paraffins :

No.	Test Method			Reporting Limit	Unit
1	With reference to International Standard ISO 12010. (For Wastewater)			0.0004	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C and with reference to International Standard ISO 12010. (For Sludge)			0.03	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Short Chain Chlorinated Paraffins	85535-84-8	-	-	-

List of Heavy Metals :

No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 3015A and with reference to U. S. EPA 6020A./ With reference to U. S. EPA 7196A./ With reference to APHA 4500 CN- C:2012 & APHA 4500 CN- E:2012 (For Wastewater)			Cd: 0.0001; Hg: 0.00005; CN^-: 0.02 Each (Others): 0.001	ppm
2	With reference to U. S. EPA 3051A and with reference to U. S. EPA 6020A./ With reference to U. S. EPA 3051A, with reference to U. S. EPA 6020A, with reference to U. S. EPA 3060A and with reference to U. S. EPA 7196A./ With reference to U. S. EPA 9010C, with reference to U. S. EPA 9013 and with reference to U. S. EPA 9014 (For Sludge)			Hg: 0.02; Zn: 4; Cr VI: 0.4; CN^-: 0.5 Each (Others): 1	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Arsenic (As)	Various	8	Copper (Cu)	Various
2	Cadmium (Cd)		9	Zinc (Zn)	
3	Mercury (Hg)		10	Chromium (Cr)	
4	Lead (Pb)		11	Manganese (Mn)	
5	Antimony (Sb)		12	Chromium VI (Cr VI)	
6	Cobalt (Co)		13	Cyanide (CN^-)	
7	Nickel (Ni)		-	-	

List of Alkylphenols & Alkylphenol Ethoxylates :

No.	Test Method			Reporting Limit	Unit
1	With reference to ASTM International Standard ASTM D7065. (For Wastewater)			Each (OP & NP): 0.001; Each (OPEOs & NPEOs): 0.005	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C and with reference to ASTM International Standard ASTM D7065. (For Sludge)			Each: 0.2	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Octylphenol (OP)	Various	3	Nonylphenol (NP)	Various
2	Octylphenolethoxylates (OPEOs)		4	Nonylphenolethoxylates (NPEOs)	

List of Perfluorinated Chemicals :

No.	Test Method			Reporting Limit	Unit
1	In house method and analysis by Liquid Chromatograph Mass Spectrometer (LC-MS). (For Wastewater)			Each: 0.00001	ppm
2	With reference to ASTM International Standard D5369, with reference to U. S. EPA 3540C, in house method and analysis by Liquid Chromatograph Mass Spectrometer (LC-MS). (For Sludge)			Each: 0.001	ppm
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Perfluorooctanoic acid (PFOA)	335-67-1	4	Perfluorohexane sulphonates (PFHxS)	3871-99-6

2	Perfluorooctane sulphonates (PFOS)	2795-39-3	5	Perfluorobutanoic acid (PFBA)	375-22-4
3	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	6	Perfluorobutane sulphonates (PFBS)	29420-49-3

Note / Key :

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

APPENDIX B

1. General Data	
Client Name	5160
Field Contact Person	5160
Facility Address	5160
Sample Type	Grab Sample
Name of Sampler	Chad Jeon
Dae and time collected	Jun. 16, 2014, PM 14:30 ~ 16:30

2. Field Data

1) Incoming water

Parameter	Result
Temperature	26.9 ℃
pH	7.83
Visible Color	Transparent
Sampling Time	PM 15:50 ~ 16:10

2) Wastewater before treatment

Parameter	Result
Temperature	42.9 ℃
pH	8.35
Visible Color	Light vilolet
Sampling Time	PM 16:20 ~ 16: 50

3) Wastewater after treatment

Parameter	Result
Temperature	36.1 ℃
pH	7
Visible Color	Light Beige
Sampling Time	PM 14:30 ~ 14:50

4) Sludge

Parameter	Result
Temperature	
pH	
Visible Color	Dark Brown
Sampling Time	PM 15:00 ~ 15:20