

**ALS Group USA, Corp**

Date: 12-Feb-14

**Client:** WV Department of Environmental Protection  
**Project:** CM-DAK-02-06-14-1  
**Sample ID:** CM-DAK-02-06-14-1  
**Collection Date:** 2/6/2014 05:30 PM

**Work Order:** 1402345  
**Lab ID:** 1402345-01  
**Matrix:** WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>ORGANIC COMPOUNDS BY GC-FID</b>			Method: SW8015M		Prep: SW3510 / 2/10/14		Analyst: JD
4-Methyl-1-cyclohexanemethanol	180		7.9	50	µg/L	1	2/11/2014 13:42
Surr: Nonane	55.0			35-70	%REC	1	2/11/2014 13:42

CULVERT INSIDE CONTAINMENT  
FREEDOM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



12-Feb-2014

Douglas Kee  
WV Department of Environmental Protection  
P.O. Box 662  
#18 Putnam Village  
Teays, WV 25569

Re: **CM-DAK-02-06-14-1**

Work Order: **1402345**

Dear Douglas,

ALS Environmental received 1 sample on 07-Feb-2014 04:18 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 7.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Kiser".

Electronically approved by: Joseph Ribar

Rebecca Kiser  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185  
ALS GROUP USA, CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** WV Department of Environmental Protection  
**Project:** CM-DAK-02-06-14-1  
**Work Order:** 1402345

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1402345-01	CM-DAK-02-06-14-1	Water		2/6/2014 17:30	2/7/2014 16:18	<input type="checkbox"/>

**Client:** WV Department of Environmental Protection  
**Project:** CM-DAK-02-06-14-1  
**WorkOrder:** 1402345

**QUALIFIERS,  
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter

ALS Group USA, Corp

Date: 12-Feb-14

**Client:** WV Department of Environmental Protection  
**Work Order:** 1402345  
**Project:** CM-DAK-02-06-14-1

**QC BATCH REPORT**

Batch ID: 55631 Instrument ID GC11 Method: SW8015M

MBLK		Sample ID: GBLKW1-55631-55631				Units: µg/L		Analysis Date: 2/11/2014 12:50 PM		
Client ID:		Run ID: GC11_140211A				SeqNo: 2639831		Prep Date: 2/10/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4-Methyl-1-cyclohexanemethanol	U	50	0	0	0		0			
Surr: Nonane	55.52	0	100	0	55.5	35-70	0			

LCS		Sample ID: GLCSW1-55631-55631				Units: µg/L		Analysis Date: 2/11/2014 01:03 PM		
Client ID:		Run ID: GC11_140211A				SeqNo: 2639832		Prep Date: 2/10/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4-Methyl-1-cyclohexanemethanol	89.84	50	125	0	71.9	44-83	0			
Surr: Nonane	47.98	0	100	0	48	35-70	0			

LCSD		Sample ID: GLCSDW1-55631-55631				Units: µg/L		Analysis Date: 2/11/2014 01:16 PM		
Client ID:		Run ID: GC11_140211A				SeqNo: 2639833		Prep Date: 2/10/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4-Methyl-1-cyclohexanemethanol	92.61	50	125	0	74.1	44-83	89.84	3.04	25	
Surr: Nonane	51.58	0	100	0	51.6	35-70	47.98	7.23		

The following samples were analyzed in this batch:

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



1402345

2.6

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL ENFORCEMENT  
Analysis Request Form

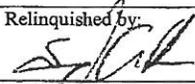
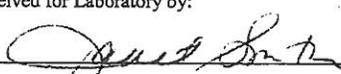
Sample no. CM-DAK-02-06-14-1 # of containers 2 Sampler(s) KIEZ

Sample Type:  Water  Sediment  Influent  Effluent  Other Specified Method \_\_\_\_\_

GRAB: Date-Time 2-6-14 1737 COMP. start \_\_\_\_\_ stop \_\_\_\_\_

FIELD VALUES 1.: pH (meter) \_\_\_\_\_ pH (paper/kit) \_\_\_\_\_ Cond. \_\_\_\_\_ D.O. (probe) \_\_\_\_\_ Chlorine \_\_\_\_\_ Temp \_\_\_\_\_

Pre.	ANALYSIS	Pre.	ANALYSIS	Pre.	ANALYSIS	Tot	Dls*	PRESERVATION
3	Acidity (H)	3	Tot. Solids	5	Ca			1. None - determine on site
3	Acidity	3	Dis. Solids	5	Mg			2. None
3	Alkalinity	3	Sus. Solids	5	K			3. Iced
3	Bicarbonate	3	Vol. Sus. Solids	5	Na			4. H2SO4 to pH <2, iced
5	Hardness	3	% solids	5	Al			5. HNO3 to pH <2
3	Sulfate	3	MBAS	5	Sb			6. NaOH to pH > 12, iced (0.6 g ascorbic acid used on samples with residual chlorine)
9	Sulfide	4	Phenols	5	As			7. Sterile + .008% Na2S2O3, iced
3	Color	6	Cyanide, amenable	5	Ba			8. Filter immediately, iced
3	Turbidity	6	Total Cyanide	5	Be			9. 4 drops of 2N Zinc Acetate/100ml + NaOH to pH>9
2	Chloride	10	Free Cyanide	5	B			10. NaOH to pH>12, store in dark, iced
3	BOD5	3	HexCr	5	Cd			11. Other (specify):
3	BOD5 carb	4	Oil-Grease	5	Cr			12. HCl pH<2, iced
4	COD	2	Fluoride	5	Cu			
4	TOC	4	Tot. Phos.	5	Fe			
7	Tot. coli	8	Ortho Phos.	5	Pb			
7	fecal coli.	4	TKN.	5	Mn			
3	Bioassay acute	4	NH3-N	5	Hg			
3	Bioassay screen	4	ORG-N	5	Mo			
12♣	624	3	NO3-N	5	Ni			* filtered in field, Nitric added
3♣	625	3	NO2-N	5	Se			♣sodium thiosulfate if chlorinated
12♣	8260	4	NO2-NO3	5	Ag			REMARKS:
3♣	8270			5	Tl			* MCHM
*	8015			5	V			
				5	Zn			

Relinquished by: 	Date <u>2-7-14</u> Time <u>1615</u>	Received by:	Relinquished by:	Date	Received by
Relinquished by:	Date	Received by:	Relinquished by:	Date	Received by
Relinquished by:	Date	Received for Laboratory by: 		Date <u>2/7/14</u> Time <u>1618</u>	

MAIL RESULTS TO: WV Dept. of Environmental Protection  
Environmental Enforcement  
ATTN: Original - Inspector Copy - Laboratory  
revised 7/12/07 jdp

*Handwritten:* Recd 2/8/14 1115 2:00pm

**DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL ENFORCEMENT  
Analysis Request Form**

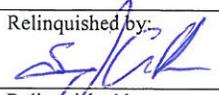
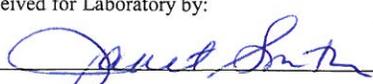
Sample no. CM-DAK-02-06-14-1 # of containers 2 Sampler (s) KEP

Sample Type:  Water  Sediment  Influent  Effluent  Other Specified Method \_\_\_\_\_

GRAB: Date-Time 2-6-14 1730 COMP. start \_\_\_\_\_ stop \_\_\_\_\_

FIELD VALUES 1.: pH (meter) \_\_\_\_\_ pH (paper/kit) \_\_\_\_\_ Cond. \_\_\_\_\_ D.O. (probe) \_\_\_\_\_ Chlorine \_\_\_\_\_ Temp \_\_\_\_\_

Pre.	ANALYSIS	Pre.	ANALYSIS	Pre.	ANALYSIS	Tot	Dls*	PRESERVATION
3	Acidity (H)	3	Tot. Solids	5	Ca			1. None - determine on site
3	Acidity	3	Dis. Solids	5	Mg			2. None
3	Alkalinity	3	Sus. Solids	5	K			3. Iced
3	Bicarbonate	3	Vol. Sus. Solids	5	Na			4. H2SO4 to pH <2, iced
5	Hardness	3	% solids	5	Al			5. HNO3 to pH <2
3	Sulfate	3	MBAS	5	Sb			6. NaOH to pH > 12, iced (0.6 g ascorbic acid used on samples with residual chlorine)
9	Sulfide	4	Phenols	5	As			7. Sterile + .008% Na2S2O3, iced
3	Color	6	Cyanide, amenable	5	Ba			8. Filter immediately, iced
3	Turbidity	6	Total Cyanide	5	Be			9. 4 drops of 2N Zinc Acetate/100ml + NaOH to pH>9
2	Chloride	10	Free Cyanide	5	B			10. NaOH to pH>12, store in dark, iced
3	BOD5	3	HexCr	5	Cd			11. Other (specify):
3	BOD5 carb	4	Oil-Grease	5	Cr			12. HCl pH<2, iced
4	COD	2	Fluoride	5	Cu			
4	TOC	4	Tot. Phos.	5	Fe			
7	Tot. coli	8	Ortho Phos.	5	Pb			
7	fecal coli.	4	TKN.	5	Mn			
3	Bioassay acute	4	NH3-N	5	Hg			* filtered in field, Nitric added
3	Bioassay screen	4	ORG-N	5	Mo			♣sodium thiosulfate if chlorinated
12♣	624	3	NO3-N	5	Ni			REMARKS:
3♣	625	3	NO2-N	5	Se			* MCHM
12♣	8260	4	NO2-NO3	5	Ag			
3♣	8270			5	Tl			
* 8015				5	V			
				5	Zn			

Relinquished by: 	Date <u>2-7-14</u> Time <u>1618</u>	Received by:	Relinquished by:	Date	Received by
Relinquished by:	Date	Received by:	Relinquished by:	Date	Received by
Relinquished by:	Date	Received for Laboratory by: 	Date <u>2/7/14</u> Time <u>1618</u>		

MAIL RESULTS TO: WV Dept. of Environmental Protection  
Environmental Enforcement  
ATTN:

Original - Inspector Copy - Laboratory  
revised 7/12/07 jdp