



April 21, 2016

Service Request No:R1603661

Jennifer Good  
H & S Environmental  
160 East Main Street, 2F  
Westborough, MA 01581

**Laboratory Results for: Bethpage GM-38**

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory April 15, 2016  
For your reference, these analyses have been assigned our service request number **R1603661**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

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Project Manager

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ALS Group USA, Corp.

dba ALS Environmental

**H&S**  
**R1603661**

**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
SDG Narrative .....	3
Sample Results. ....	7
Chain of Custody .....	12

## ALS Environmental

**Client:** H&S Environmental  
**Service Request No.:** R1603661  
**Project:** Bethpage GM-38  
**Date Received:** 04/15/16  
**Sample Matrix:** Water  
**Project/Case No.:**

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS).

#### Sample Receipt

Water samples were received for analysis at ALS Environmental on 04/15/16. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

#### 1,4-Dioxane

Water samples were analyzed for 1,4-Dioxane by method 8270D-LL from SW-846.

All initial calibration and continuing criteria were met for all analytes.

All Tuning criteria were within QC limits.

All Laboratory Control Sample (LCS) recoveries were within limits.

Site specific QC was performed on BP-GM-38-PS-RW1-041416 as requested. All MS/MSD recoveries and RPD's were acceptable.

All Internal Standard Areas were within limits.

All surrogate standard recoveries were within limits.

The Method blanks associated with these samples were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

**Client:** H & S Environmental  
**Project:** Bethpage GM-38

**Service Request:**R1603661

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1603661-001	BP-GM-38-PS-RW1-041416	4/14/2016	0805
R1603661-002	BP-GM-38-PS-RW1-DUP-041416	4/14/2016	0805

**Client:** H & S Environmental  
**Project:** Bethpage GM-38

**Service Request:** R1603661

**Non-Certified Analytes**

**Certifying Agency:** New York Department of Health

<b>Method</b>	<b>Matrix</b>	<b>Analyte</b>
8270D	Water	1,4-Dioxane

## REPORT QUALIFIERS AND DEFINITIONS

<p>U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p>J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p>B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p>E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p>E Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p>D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p>* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p>H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p># Spike was diluted out.</p>	<p>+ Correlation coefficient for MSA is &lt;0.995.</p> <p>N Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p>N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p>S Concentration has been determined using Method of Standard Additions (MSA).</p> <p>W Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p>P Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p>C Confirmed by GC/MS</p> <p>Q DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\times 100\%</math> Difference between two GC columns).</p> <p>X See Case Narrative for discussion.</p> <p>MRL Method Reporting Limit. Also known as:</p> <p>LOQ Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p>MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p>LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p>ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p>
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### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID #
Delaware Accredited	Nebraska Accredited	294100 A/B
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

<sup>1</sup> Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads>

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** H & S Environmental  
**Project:** Bethpage GM-38  
**Sample Matrix:** Water

**Service Request:** R1603661  
**Date Collected:** 04/14/16 08:05  
**Date Received:** 04/15/16 09:20

**Sample Name:** BP-GM-38-PS-RW1-041416  
**Lab Code:** R1603661-001

**Units:** ug/L  
**Basis:** NA

**1,4-Dioxane by GC/MS**

**Analysis Method:** 8270D  
**Prep Method:** EPA 3535A

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	3.2	0.50	0.10	0.013	1	04/19/16 13:37	4/19/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	104	70 - 130	04/19/16 13:37	

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Analytical Report

**Client:** H & S Environmental  
**Project:** Bethpage GM-38  
**Sample Matrix:** Water

**Service Request:** R1603661  
**Date Collected:** 04/14/16 08:05  
**Date Received:** 04/15/16 09:20

**Sample Name:** BP-GM-38-PS-RW1-DUP-041416  
**Lab Code:** R1603661-002

**Units:** ug/L  
**Basis:** NA

1,4-Dioxane by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3535A

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	3.1	0.50	0.10	0.013	1	04/19/16 14:36	4/19/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	101	70 - 130	04/19/16 14:36	



ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** H & S Environmental  
**Project:** Bethpage GM-38  
**Sample Matrix:** Water

**Service Request:** R1603661  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** RQ1604069-01

**Units:** ug/L  
**Basis:** NA

1,4-Dioxane by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3535A

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	ND U	0.50	0.10	0.013	1	04/19/16 11:41	4/19/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	98	70 - 130	04/19/16 11:41	

ALS Group USA, Corp.  
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QA/QC Report

**Client:** H & S Environmental  
**Project:** Bethpage GM-38  
**Sample Matrix:** Water

**Service Request:** R1603661  
**Date Analyzed:** 04/19/16

**Duplicate Lab Control Sample Summary**  
**1,4-Dioxane by GC/MS**

**Units:**ug/L  
**Basis:**NA

**Lab Control Sample**  
RQ1604069-02

**Duplicate Lab Control Sample**  
RQ1604069-03

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
1,4-Dioxane	8270D	8.78	9.88	89	8.88	9.88	90	70-130	1	30

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QA/QC Report

**Client:** H & S Environmental  
**Project:** Bethpage GM-38  
**Sample Matrix:** Water

**Service Request:** R1603661  
**Date Collected:** 04/14/16  
**Date Received:** 04/15/16  
**Date Analyzed:** 04/19/16  
**Date Extracted:** 04/19/16

**Duplicate Matrix Spike Summary**  
**1,4-Dioxane by GC/MS**

**Sample Name:** BP-GM-38-PS-RW1-041416  
**Lab Code:** R1603661-001  
**Analysis Method:** 8270D  
**Prep Method:** EPA 3535A

**Units:** ug/L  
**Basis:** NA

Analyte Name	Sample Result	Result	Matrix Spike RQ1604069-04		Result	Duplicate Matrix Spike RQ1604069-05		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
1,4-Dioxane	3.2	12.3	9.88	92	12.6	9.88	94	70-130	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





Cooler Receipt and Preservation Check Fo

R1603661

5

H & S Environmental  
Bethpage GM-38



Project/Client KOMAN

Folder Number R1603661

Cooler received on 4/15/16 by: [Signature]

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="radio"/> N <input type="radio"/>
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y <input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y <input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y <input type="radio"/> N

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<input checked="" type="radio"/> Y N NA
6	Where did the bottles originate?	<u>ALS/ROC</u> <u>CLIENT</u>
7	Soil VOA received as: Bulk Encore 5035set	<input checked="" type="radio"/> NA

8. Temperature Readings Date: 4/15/16 Time: 10:05 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>2.7</u>	<u>2.8</u>					
Correction Factor (°C)	<u>±0.0</u>	<u>-0.1</u>					
Corrected Temp (°C)	<u>2.7</u>	<u>2.7<sup>0</sup></u>					
Within 0-6°C?	<input checked="" type="radio"/> Y <input type="radio"/> N	<input checked="" type="radio"/> Y <input type="radio"/> N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted \_\_\_\_\_ Poorly Packed \_\_\_\_\_ Same Day Rule \_\_\_\_\_  
& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval \_\_\_\_\_ Client aware at drop-off \_\_\_\_\_ Client notified by: \_\_\_\_\_

All samples held in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: [Signature] 4/18/16

Cooler Breakdown: Date: 4-15-16 Time: 15:07 by: [Signature]

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact \_\_\_\_\_ Canisters Pressurized \_\_\_\_\_ Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

Yes=All samples OK  
No=Samples were preserved at The lab as listed  
PM OK to Adjust: \_\_\_\_\_

\*\*Not to be tested before analysis - pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: 110915-1B1C  
Other Comments:

headspace: BFE (1 vial)

PC Secondary Review: [Signature] 4/18/16

\*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter