

Re:	(NJIT NEWARK CAMPUS WASTEWATER DISCHARGE SARS-CoV-2 SAMPLING & PCR ANALYSIS) WEEKLY DATA SUMMARY FOR 9/21-9/23/2020 {Omega Project #: 20-1177}
From:	David Ekstrand Kadeem Hill Veronica Kero, CIH, P.E.
To:	Mitchell Gayer
Date:	9/25/2020

Attachment(s):

• Prestige EnviroMicrobiology Laboratory Analysis Reports for samples collected 9/14-9/16/2020

Project Overview:

In order to proactively predict potential escalation of COVID-19 cases in occupied campus dormitory buildings, 24-hour composite wastewater (WW) discharge sampling is being performed, followed by 3rd party laboratory analysis in accordance with the published method cited on the attached laboratory analysis report using the approved CDC EUA Kit.

WW Discharge Sampling Location	24-hr Sampling Date Range	2019-nCoV (N1 Protein)	Cycle Threshold Value ³ (N1 Protein)	2019-nCoV (N2 Protein)	Cycle Threshold Value ³ (N2 Protein)	Conc. (Copies of RNA/mL)
Laurel M-04 Laurel Man Trap	9/21- 9/22/2020	ND	ND	ND	ND	NA
Laurel E-02 Laurel Extension Manhole	9/21- 9/22/2020	ND	ND	ND	ND	NA
Oak-05 Oak Building Trap	9/21- 9/22/2020	ND	ND	ND	ND	NA
Cypress-04 Cypress Trap	9/21- 9/22/2020	ND	ND	ND	ND	NA
Redwood 3	9/22- 9/23/2020	ND	ND	ND	ND	NA
Greek Honors 5	9/22- 9/23/2020	ND	ND	ND	ND	NA

Weekly Data Summary:

Data Interpretation:

The NJ published COVID-19 infection rate was <2%, this data set reflects a full occupancy baseline with multiple reported COVID-19 cases on the NJIT campus.

Prestige EnviroMicrobiology, Inc.

Analytical Test Report

Client: Omega Environmental Services, Inc., 280 Huyler Street, South Hackensack, NJ 07606

Client Project/Name: 20-1177

Sample date: 9-21-2020 & 9-22-2020

Submittal date: 9-22-2020

Sample received: 9-23-2020

Samples submitted by: David Ekstrand

Date analysis completed: September 23, 2020

Prestige Report number: 200923-02

RT-PCR 2019-nCoV: Analysis of Water samples for the detection of SARS-CoV-2 Genetic Markers

Prestige # Client sample ID Location	2019-nCoV (N1 Protein)	Cycle Threshold (Ct) Value ³ (Nl Protein)	2019-nCoV (N2 Protein)	Cycle Threshold Value ³ (N2 Protein)	Conc. (copies of RNA/mL)
200923-02-002 Laurel M-04 Laurel Man Trap	ND	ND	ND	ND	NA
200923-02-003 Laurel E-02 Laurel Extension Manhole	ND	ND	ND	ND	NA
200923-02-004 Oak-05 Oak Building Trap	ND	ND	ND	ND	NA
200923-02-005 Cypress-04 Cypress Trap	ND	ND	ND	ND	NA

Theresa Lehman, MPH, Lab Director

Report approved: _____

Technical Manager: __________ Chin S Yang, Ph D

Analyst: Ching-Yi Tsai, Ph.D.

The samples in this report were received in good, acceptable conditions. Results relate only to the items tested.
 Wastewater samples are processed following the protocol described in the article: Ahmed, W., et al. 2020. First confirmed detection of SARS-CoV-2 in untreated wastewater in Australia: A proof of concept for the wastewater surveillance of COVID-19 in the community. Science of the Total Environment 728. https://doi.org/10.1016/j.scitotenv.2020.138764
 The primers and probes in 2019-nCoV CDC EUA Kit are designed for the detection of the two SARS-CoV-2 genes that encode for the N1 and N2 proteins. The kit is manufactured and supplied by Integrated DNA Technologies and approved by the U.S. Centers for Disease Control and Prevention (CDC). Three controls, two positive controls for N proteins and one internal control for the RNA extraction process, are simultaneously run with the samples.

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Prestige EnviroMicrobiology, Inc.

4. Cycle Threshold Value refers to the number of cycles required for the fluorescent signal to cross the detectable threshold in Reverse Transcriptase Polymerase Chain Reaction (RT-PCR); a lower cycle threshold value indicates a higher viral load.
5. ND = not detected, no genetic marker is detected within 40 PCR cycles. NA = not applicable. The detection limit is 10 copies/reaction.

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Prestige EnviroMicrobiology, Inc.

Analytical Test Report

Client: Omega Environmental Services, Inc., 280 Huyler Street, South Hackensack, NJ 07606

Client Project/Name: 20-1177

Sample date: 9-22-2020 & 9-23-2020

Submittal date: 9-23-2020

Sample received: 9-24-2020

Samples submitted by: David Ekstrand

Date analysis completed: September 24, 2020

Prestige Report number: 200924-01

RT-PCR 2019-nCoV: Analysis of Water samples for the detection of SARS-CoV-2 Genetic Markers

Prestige # Client sample ID Location	2019-nCoV (N1 Protein)	Cycle Threshold (Ct) Value ³ (Nl Protein)	2019-nCoV (N2 Protein)	Cycle Threshold Value ³ (N2 Protein)	Conc. (copies of RNA/mL)
200924-01-001 Redwood 3	ND	ND	ND	ND	NA
200924-01-002 Greek Honors 5	ND	ND	ND	ND	NA

Report approved:

Theresa Lehman, MPH, Lab Director

Technical Manager:

Chin S Yang, Ph.D.

Analyst: Ching-Yi Tsai, Ph.D.

1. The samples in this report were received in good, acceptable conditions. Results relate only to the items tested.

 Wastewater samples are processed following the protocol described in the article: Ahmed, W., et al. 2020. First confirmed detection of SARS-CoV-2 in untreated wastewater in Australia: A proof of concept for the wastewater surveillance of COVID-19 in the community. Science of the Total Environment 728. <u>https://doi.org/10.1016/j.scitotenv.2020.138764</u>

3. The primers and probes in 2019-nCoV CDC EUA Kit are designed for the detection of the two SARS-CoV-2 genes that encode for the N1 and N2 proteins. The kit is manufactured and supplied by Integrated DNA Technologies and approved by the U.S. Centers for Disease Control and Prevention (CDC). Three controls, two positive controls for N proteins and one internal control for the RNA extraction process, are simultaneously run with the samples.

4. Cycle Threshold Value refers to the number of cycles required for the fluorescent signal to cross the detectable threshold in Reverse Transcriptase Polymerase Chain Reaction (RT-PCR); a lower cycle threshold value indicates a higher viral load.
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Company Name: Omega Environmental	umental	custouy and	iental		Client Proj. #: 20-1177
Company Address:280 Huyler St., S. Hackensack, NJ	Hackensack, N	ſ		PO#:	
				Date Sampled:	9/21-9/22/202
Contact Name: David Ekstrand	Phone	Phone: 201-522-9879		: Davide@omega-e	Report E-mail: Davide@omega-env.com/lab@omega-env.com
Sample ID Location or source	Sample type	Area (inch ²)	Analysis requests code or description	Turnaround time*	Notes or special instructions
ancel was Lauce / Man Trap	Water	NA	PCR for COVID19	Same Day	
- 19	Water	NA	PCR for COVID19	Same Day	
Oak-05 Nak Buillie had	Water	NA	PCR for COVID19	Same Day	
(vores Trai	Water	NA	PCR for COVID19	Same Day	
A so allo and	Water	NA	PCR for COVID19	Same Day	
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	Water	NN	PCR for COVID19	Same Day	
	Water	NA	PCR for COVID19	Same Day	
	Water	NA	PCR for COVID19	Same Day	
	Water	NA	PCR for COVID19	Same Day	
	Water	NA	PCR for COVID19	Same Day	
*Indicate your request, either standard (3 business days), next day, same day or Saturday	Joff e	, next day, same day or Satt	day or Saturday.	M. O	aracher la

	Name: Omega Environmental Cli Address: 280 Huyler St., S. Hackensack, NJ PO#. Date Samplet, NJ PO#. ame: David Ekstrand Phome: 201-522-9879 Report F-mail: DavideGomega- 0 Location or source Sample type Area (inch ³) Analysis requests Turnaround time* 3 Vater NA PCR for COVID19 Same Day 10 Vater NA PCR for COVID19 Same Day 10 Water NA PCR for COVID19 <th>*</th> <th>D</th> <th>3</th> <th></th> <th>20</th>	*	D	3		20
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Company Name: Omega Environmental Company Address: 280 Huyler St., S. Hackensack, NJ Contact Name: $David Ekstrand$ Phone: $201-522-9879$ Sample ID Location or source Sample type Area (inch ³) code $\mathcal{R} \in 0 \le 00^{\circ}$ \mathcal{S} \mathcal{S} \mathcal{M} atter NA PCR $\mathcal{R} \in 0 \le 00^{\circ}$ \mathcal{S} \mathcal{S} \mathcal{M} atter NA PCR $\mathcal{R} \in 0 \le 00^{\circ}$ \mathcal{S} \mathcal{S} \mathcal{M} atter NA PCR $\mathcal{R} \in \mathcal{R} \models 0 \le 00^{\circ}$ \mathcal{S} \mathcal{M} \mathcal{M} atter NA PCR \mathcal{M} \mathcal{M} \mathcal{M} atter NA \mathcal{M} atter NA \mathcal{R} atter \mathcal{M} \mathcal{M} \mathcal{M} atter NA \mathcal{M} atter NA \mathcal{M} atter \mathcal{M} \mathcal{M} \mathcal{M} atter NA \mathcal{M} atter NA \mathcal{M} atter \mathcal{M} \mathcal{M} \mathcal{M} atter NA \mathcal{M} atter NA \mathcal{M} atter \mathcal{M} \mathcal{M} \mathcal{M} atter NA \mathcal{M} atter NA \mathcal{M} atter NA	Name: Omega Environmental Address: 280 Huyler St., S. Hackensack, NJ ame: David Ekstrand Phome: 201-522-9879 D Location or source Sample type Area (inch ³) Code 3 Jocation or source Water NA PCR 3 Location or source Water NA PCR 3 Jocation or source Water NA PCR 4 Jocation Water NA PCR 4 Water NA PCR Water NA PCR PCR Water NA P	ibmitted by: (print) ひみりゆ チド		Samples Submitte	where (sime)	7
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Omega Environmental	Omega Environmental	T	S. Hackensack,	NJ		
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			Name: Omega Envi Address: 280 Huyler St., ame: David Ekstrand ID Location or source 3 5 $40 \sqrt{2} \beta 5$ 7 $40 \sqrt{2} \beta 5$	Name: Omega Environm Address: 280 Huyler St., S. H ame: David Ekstrand D Location or source S 3 0.000 5 5^{-} 1000 5 5^{-} 1000 5 5^{-} 1000 5 5^{-} 1000 5 5^{-} 1000 100 5 5^{-} 1000 100	Name: Omega Environm Address: 280 Huyler St., S. H ame: David Ekstrand D Location or source S 3 0.000 S 5^{-} 10.000 S 5^{-} 10.0000 S 5^{-} 10.0000 S 5^{-} 10	Chain-of-Custody and Ana Name: Omega Environmental Address: 280 Huyler St., S. Hackensack, NJ ame: David Ekstrand Phone: 201-522-9879 D Location or source Sample type Area (inch ⁺) Ana G Source Water NA PCR G Location or source Water NA PCR G Source Water NA PCR G Water NA PCR G Water NA PCR Water NA P