ADDENDA C Landfill Site Summary

NYSDEC Division of Materials Management Inactive Landfill Initiative Landfill Site Summary Quogue Landfill

Regulatory Status / Location

SWID: 52S28 Inactive Registry Number: 152050 Location: 40.848246, -72.598190

Site History/ Background

The landfill is located at the dead end of Damascus Rd, in East Quogue, Suffolk County, NY. The site is bounded by residential properties on all four sides. The capped area of the landfill is about 2 acres, and the site is not fenced. The landfill primarily received municipal waste from the 1930s until 1973 and was later used for material storage, occasional dumping of leaves and brush, and an animal shelter. The site currently consists of vacant land. Storage of used cars, disposal of sewage by means of a leaching field, operation of a transfer station and fire training were all done on site without department oversight. Waste received at the landfill was almost entirely from businesses and residences within the Village of Quogue. No evidence of disposal of hazardous wastes has been found at the site (NYSDEC DER).

The Town of Southampton was considering redeveloping the site into athletic fields and related facilities, resulting in the conducting of a Phase II Environmental Assessment in 2007 and a supplemental Phase II in 2009 that consisted of surface soil testing. Samples exceeding unrestricted use RSCOs but below restricted residential RSCOs were detected for zinc, PCBs, and pesticides. Only zinc was detected above unrestricted use RSCOs during the initial Phase II investigation (Dvirka and Bartilucci Consulting Engineers, 2007 and 2009).

The site is generally flat, but based on topographic maps of the area, the general topographic gradient is toward the south. Various mounds ranging in height from 3 to 8-feet high are scattered throughout the site. These appear to consist of mostly soil and debris. The shallow geology of the site generally consists of sand and gravel. There are no large bodies of water in close proximity to the site. Based on discussions with NYSDEC, groundwater flow is presumed to be in a southeasterly direction.

Inactive Landfill Initiative Work

Work performed for the Inactive Landfill Initiative has included a pre-drill site inspection, the installation of 3 wells, and groundwater sampling. The pre-drill site inspection was conducted on October 11, 2017, by Parsons and NYSDEC personnel. Scattered debris, including car parts, tires, and household waste were visible at the site. What appeared to be a small production well was found near the center of the site.

Three wells were installed at the site on January 11-15, 2018 in accordance with the NYSDECapproved Hydrogeologic Investigation work plan for the site (Parsons, December 2017). One upgradient well (MW-1) was installed in the northeast corner of the site. Two downgradient wells (MW-

Well ID	Northing	Easting	Total	Screened
			Depth (ft)	Interval (Ft)
MW-1	251604.494	1372326.341	50.0	39.5-49.5
MW-2	250976.677	1372070.065	50.0	39.5-49.5
MW-3	251135,393	1371769.172	50.0	39.5-49.5

02 and MW-3) were installed along the south and southwest boundaries of the site respectively. Well details are summarized below:

The three wells were sampled on February 7, 2018. Samples were analyzed for PFAS, metals, anions, alkalinity, ammonia, COD, hardness, TDS, TOC, and various organics including VOCs and SVOCs. No Class GA groundwater standards were exceeded; however, the EPA Drinking Water Advisory Levels were exceeded for PFAS parameters at MW-2. Laboratory Level 2 reports are provided in Attachment A.

Monitoring Well PFAS Highest Sampling Results

	MW-2
PFOS (ng/L)	11,200
PFOA (ng/L)	424

Residential Sampling

A focus list (residents/wells recommended for sampling) was submitted to NYSDOH on April 4, 2018. This list conservatively encompasses downgradient homes on private wells, and upgradient homes in very close proximity to the landfill boundary, where micro variations in gradient could lead to localized impacted groundwater conditions (Attachment B).

Attachment A – Laboratory Level 2 Reports



Dayton, NJ

The results set forth herein are provided by SGS North America Inc.

Reissue #2 04/12/18

e-Hardcopy 2.0 Automated Report

Technical Report for

Parsons Engineering Science for ILI PESNYL: ILI - Region 1, Quogue Landfill, East Quogue, NY 450619.02000 SGS Job Number: JC60421

Sampling Date: 02/07/18

Report to:

Parsons Engineering Science

Lorraine.Weber@parsons.com

ATTN: Lorraine Weber

Total number of pages in report: 46



Maney t. Cole

Nancy Cole Laboratory Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Client Service contact: Kristin Degraw 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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April 5, 2018

Ms. Sara Weishaupt Parsons 301 Plainfield Road, Suite 350 Syracuse, NY 13212

Re: SGS North America - Dayton, NJ Jobs # JC60421 - Reissue

Dear Ms. Weishaupt,

The final report for SGS job number JC60421 has been edited to reflect corrections to the final results. These edits have been incorporated into the revised report which is attached.

Specifically, the metals reporting list was changed, and the reporting units for metals were changed to mg/L per the project requirements. The attached revised report incorporates these revisions.

SGS apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

Kistung Delfan

Kristin B. DeGraw Project Manager

SGS North America Inc.



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Member of the SGS Circup (SGS SA)





April 6, 2018

Ms. Sara Weishaupt Parsons 301 Plainfield Road, Suite 350 Syracuse, NY 13212

Re: SGS North America - Dayton, NJ Job # JC60421 - Reissue #2

Dear Ms. Weishaupt,

The final report for SGS job number JC60421 has been edited to reflect corrections to the final results. These edits have been incorporated into the revised report which is attached.

Specifically, the Antimony from samples JC60421-2, -4, and -5 has been omitted and Boron was retrieved as per the project requirements.

Please contact me if I can be of further assistance in this matter.

Sincerely,

Kustun BDelfan

Kristin B. DeGraw Project Manager

SGS North America Inc



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Sample Summary

Parsons Engineering Science for ILI

Job No: JC60421

PESNYL: ILI - Region 1, Quogue Landfill, East Quogue, NY Project No: 450619.02000

Sample Number	Collected Date	Time By	Received	Matri Code		Client Sample ID
JC60421-1	02/07/18	08:15 SW/CI	L02/07/18	AQ	Field Blank Water	1-SUF-010-001-01
JC60421-2	02/07/18	08:40 SW/CI	L02/07/18	ΛQ	Ground Water	1-SUF-010-001-02
JC60421-3	02/07/18	10:30 SW/Cl	1.02/07/18	ΛQ	Equipment Blank	1-SUF-010-001-03
JC60421-4	02/07/18	12:15 SW/CI	1.02/07/18	AQ	Ground Water	1-SUF-010-001-04
JC60421-5	02/07/18	14:15 SW/CI	L02/07/18	AQ	Ground Water	1-SUF-010-001-05

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CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Parsons Engineering Science for ILI	Job No	JC60421
Sitet	PESNYL: ILI - Region I. Ouogue Landfill, East Ouogue, NY	Report Date	4/6/2018 3:12:09 PM

On 02/07/2018, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 4.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC60421 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260C

Matrix: AQ	Batch ID: V2E6143	
------------	-------------------	--

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC60393-1MS, JC60421-2DUP were used as the QC samples indicated.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: AQ Batch ID: F:OP68767

The data for EPA 537M BY ID meets quality control requirements.

The following samples were run outside of holding time for method EPA 537M BY ID: JC60421-3

- JC60421-2: Analysis performed at SGS Orlando, FL.
- JC60421-3: Analysis performed at SGS Orlando, FL.
- JC60421-3: Analysis performed at SGS Orlando, FL.
- JC60421-2 for PFOSA: Associated ID Standard outside control limits due to matrix interference. Insufficient sample for reextraction.

Matrix: AQ

Batch ID: P.OP68958

- The data for EPA 537M BY ID meets quality control requirements.
- JC60421-5: Analysis performed at SGS Orlando, FL.
- JC60421-1: Analysis performed at SGS Orlando, FL.
- JC60421-4: Analysis performed at SGS Orlando, FL.

JC60421-4 Analysis performed at SGS Orlando, FL.

Friday, April 06, 2018

Page 1 of 3





MS Semi-volatiles By Method SW846 8270D BY SIM

Γ	Matrix: AQ	Batch ID:	OP9895A	
	All samples were extracted within	the recommended method	od holding time.	
e,	All method blanks for this batch i	meet method specific crite	eria.	
	JC60421-2 for Phenanthrene: Ast	sociated CCV outside of	control limits low.	

- JC60421-5 for Fluorene: Associated CCV outside of control limits low.
- JC60421-5 for 1,4-Dioxane: Associated CCV outside of control limits low.
- JC60421-4 for Phenanthrene: Associated CCV outside of control limits low.
- JC60421-4 for Fluorene: Associated CCV outside of control limits low.
- JC60421-4 for 1,4-Dioxane: Associated CCV outside of control limits low.
- JC60421-2 for Fluorene: Associated CCV outside of control limits low.
- JC60421-5 for Phenanthrene: Associated CCV outside of control limits low.
- JC60421-2 for 1,4-Dioxane: Associated CCV outside of control limits low.

Metals Analysis By Method SW846 6010C

Matrix: AQ	Batch ID: MP5662	
All samples were digested within	the recommended method holding time.	

All method blanks for this batch meet method specific criteria.

- Sample(s) JC60394-4MS, JC60394-4MSD, JC60394-4SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Boron, Chromium, Copper, Nickel, Zinc are outside control limits for sample MP5662-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7470A

Matrix: AQ	Batch ID: MP5663
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- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC60369-1MS, JC60369-1MSD were used as the QC samples for metals.

General Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP11174	
	de anne Educate Detter d'an	

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC60369-1MS, JC60624-1DUP, JC60369-1MS were used as the QC samples for Chloride, Sulfate, Chloride, Bromide.

General Chemistry By Method SM2320 B-11

Matrix: AQ	Batch ID: GN76125	
I sense he uses in shored within	the recommended method halding time	

- in and is not and is in the second second
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC60369-1DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JC60421-2 for Alkalimity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC60421-5 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.2.
- JC60421-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

Friday, April 06, 2018

Page 2 of 3



Ν

General Chemistry By Method SM2340 C-11

- Matrix: AQ Batch ID: GN76051
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC60369-1DUP, JC60369-1MS were used as the QC samples for Hardness, Total as CaCO3.

General Chemistry By Method SM2540 C-11

- Matrix: AQ Batch ID: GN76031
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC60369-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ Batch ID: GP11015

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC60421-4DUP, JC60421-4MS, JC60421-4MSD were used as the QC samples for Nitrogen, Ammonia.

General Chemistry By Method SM5220 C-11,HACH8000

Matrix: AQ Batch ID: GP11117

All samples were prepared within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC60323-13DUP, JC60323-13MS were used as the QC samples for Chemical Oxygen Demand.

General Chemistry By Method SW846 9060A

Matrix: AQ	Batch ID: GP11207	

All samples were prepared within the recommended method holding time

All method blanks for this batch meet method specific criteria.

Sample(s) JC60421-2MS, JC60421-2MSD were used as the QC samples for Total Organic Carbon.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Friday, April 06, 2018

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SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS Dayton, NJ

Matrix: AQ

Job No:

JC60421 Report Date: 3/5/2018 2:01:23 PM

ILINY: PESNYL: ILI - Region 1, Old Quogue Landfill, East Site:

4 Sample(s) and 1 Field Blank(s) were collected on 02/07/2018 and were received at SGS North America Inc - Orlando on 02/09/2018 properly preserved, at 2.6 Deg. C and intact. These Samples received an SGS Orlando job number of JC60421. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Batch ID: OP68767

All samples were extracted within the recommended method holding time,

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC60421-2MS, JC60499-3DUP were used as the QC samples indicated.

Sample(s) JC60421-3 have compounds reported from the diluted analysis.

RPD(s) for Duplicate for Perfluorodecanoic acid are outside control limits for sample OP68767-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) JC60421-2, OP68767-BS, OP68767-DUP have surrogates outside control limits.

JC60421-2 for PFOSA: Associated ID Standard outside control limits due to matrix interference. Insufficient sample for re-extraction.

JC60421-2 for 13C8-FOSA: Outside control limits.

Batch ID: OP68958 Matrix: AO

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC60421-4 have compounds reported from the diluted analysis.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Kim Benham, Client Services (signature on file)



Summary of Hits Job Number: JC60421 Account: Parsons Engineering Science for ILI PESNYL: ILI - Region 1, Quogue Landfill, East Quogue, NY Project: Collected: 02/07/18

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL.	MDL.	Units	Method
IC60421-1	1-SUF-010-001-0					1
erfluoropentan	oic acid ^a	0.00129 J	0,0040	0.0010	ug/l	EPA 537M BY 1D
erfluorooctano		0.00122 J	0.0040	0.0010	ug/l	EPA 537M BY ID
erfluorotetrade	canoic acid a	0.00155 J	0.0040	0.0010	ug/I	EPA 537M BY 1D
FOSA ^a		0.00113 J	0.0040	0.0010	ug/l	EPA 537M BY ID
C60421-2	1-SUF-010-001-02	5				
erfluoropentan	oic acid a	0.00140 J	0.0036	0.00089	ug/l	EPA 537M BY ID
erfluorooctano	ic acid a	0.00146 J	0.0036	0.00089	ug/l	EPA 537M BY ID
erfluorotetrade	canoic acid a	0.00167 J	0.0036	0.00089	ug/l	EPA 537M BY ID
arium		0.0195 J	0.20	0.0013	mg/l	SW846 6010C
on		0.0785 J	0.10	0.032	mg/l	SW846 6010C
langanese		0.0289	0.015	0.00042	mg/l	SW846 6010C
Ikalinity, Tota	as CaCO3 b	1.5 J	5.0	1.1	mg/1	SM2320 B-11
hloride		4.7	2.0	0.070	mg/l	EPA 300/SW846 9056A
fardness, Total	as CaCO3	16.0	4.0	2.5	mg/l	SM2340 C-11
olids, Total Dis	ssolved	20.0	10	1.8	mg/l	SM2540 C-11
ulfate		8.3	2.0	0.53	mg/l	EPA 300/SW846 9056A
C60421-3	1-SUF-010-001-03	6				
erfluoropentan		0.00131 J	0.0036	0.00089	ug/l	EPA 537M BY ID
erfluorooctanoi		0.00138 J	0.0036	0.00089	ug/l	EPA 537M BY ID
erfluorotetrade	canoic acid *	0.0317 J	0.071	0.018	ug/l	EPA 537M BY ID
C60421-4	1-SUF-010-001-04	6				
erfluorobutano	ic acid a	0.0804	0.080	0.020	ug/l	EPA 537M BY ID
erfluoropentan	oic acid a	0.177	0.040	0.010	ug/I	EPA 537M BY ID
erfluorohexano	ic acid a	1.01	0.040	0.010	ug/l	EPA 537M BY ID
erfluoroheptan		0.181	0.040	0.010	ug/l	EPA 537M BY ID
erfluorooctanoi		0.424	0.040	0.010	ug/l	EPA 537M BY ID
erfluorotetrade	canoic acid a	0.0796 J	0.20	0.050	ug/l	EPA 537M BY ID
erfluorobutane		0,241	0.040	0.010	ug/l	EPA 537M BY ID
erfluorohexane		3,70	0.20	0.050	ug/l	EPA 537M BY ID
erfluoroheptan	esulfonic acid a	0.621	0.040	0.010	ug/l	EPA 537M BY ID
erfluorooctanes		11.2	0.40	0.10	ug/I	EPA 537M BY ID
karium		0.0317 J	0.20	0.0013	mg/l	SW846 6010C
loron		0.157	0.10	0.013	mg/l	SW846 6010C
hromium		0.00090 J	0.010	0.00085	mg/l	SW846 6010C
ron		0.187	0.10	0.032	mg/l	SW846 6010C
Aanganese		0.0140 J	0.015	0.00042	mg/l	SW846 6010C
		0.0778	0.020	0.0040	mg/l	SW846 6010C

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SGS

Summary	of Hits
Job Number:	JC60421
Account:	Parsons Engineering Science for II.1
Project:	PESNYL: IL1 - Region 1, Quogue Landfill, East Quogue, NY
Collected:	02/07/18

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Alkalinity, Total as CaCO3 c	118	5,0	1.1	mg/l	SM2320 B-11
Chemical Oxygen Demand	7.7 J	20	6.3	mg/l	SM5220 C-11,ITACI18000
Chloride	6.4	2.0	0.070	mg/1	EPA 300/SW846 9056A
Hardness, Total as CaCO3	160	4.0	2,5	mg/l	SM2340 C-11
Solids, Total Dissolved	160	10	1.8	mg/l	SM2540 C-11
Sulfate	29.1	4.0	1,1	mg/l	EPA 300/SW846 9056A
Total Organic Carbon	1.9	1.0	0.60	mg/l	SW846 9060A
JC60421-5 1-SUF-010-001-05					
Chloroform	0.36 J	1.0	0.29	ug/I	SW846 8260C
Perfluorobutanoic acid a	0.00609 J	0.0077	0.0019	ug/l	EPA 537M BY ID
Perfluoropentanoic acid a	0.0158	0.0038	0,00096	ug/l	EPA 537M BY ID
Perfluorohexanoic acid "	0.0102	0.0038	0.00096	ug/l	EPA 537M BY ID
Perfluoroheptanoic acid a	0.00471	0.0038	0.00096	ug/l	EPA 537M BY ID
Perfluorotetradecanoic acid a	0.00148 J	0.0038	0.00096	ug/l	EPA 537M BY ID
Perfluorobutanesulfonic acid a	0.00235 J	0.0038	0.00096	ug/I	EPA 537M BY ID
Perfluorohexanesulfonic acid a	0.00151 J	0.0038	0.00096	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid a	0.00580 J	0.0077	0.0019	ug/l	EPA 537M BY ID
Barium	0.0487 J	0.20	0.0013	mg/l	SW846 6010C
Boron	0.0208 J	0.10	0.013	mg/1	SW846 6010C
Iron	0.0714 J	0.10	0.032	mg/1	SW846 6010C
Manganese	0.136	0.015	0.00042	mg/1	SW846 6010C
Zinc	0.0044 J	0.020	0.0040	mg/l	SW846 6010C
Alkalinity, Total as CaCO3 b	4.0 J	5.0	1.1	mg/1	SM2320 B-11
Chemical Oxygen Demand	7.7 3	20	6.3	mg/1	SM5220 C-11, HACH800
Chloride	17.7	2.0	0.070	mg/l	EPA 300/SW846 9056A
Hardness, Total as CaCO3	36.0	4.0	2.5	mg/1	SM2340 C-11
Solids, Total Dissolved	60.0	10	1.8	mg/l	SM2540 C-11
Sulfate	22.4	4.0	1.)	mg/l	EPA 300/SW846 9056A
Total Organic Carbon	0.83 1	1.0	0.60	mg/L	SW846 9060A

(a) Analysis performed at SGS Orlando, FL.(b) Sample was titrated to a final pH of 4.2.

(c) Sample was titrated to a final pH of 4.5.

SGS

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Dayton, NJ



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Sample Results

Report of Analysis



Client Sample	ine Listu	F-010-001-0	01				
	b Sample ID: JC60421-1		0421-1 Date Sampled				
Method:	EPA :	and a new manufacture of the second		rcent Solids:			
Project:	PESN	IYL; IL1 - I	Region 1, Quogue La	andfill,	East Quogue, NY	ſ	
	le ID	DF	Analyzed	Ву	Prep Date	Prep Batch	1
Run #1 ª 20	011971.D	1	03/01/18 21:27	AFL.	03/01/18 08:00	F:OP68958	F:S2Q21

Report of Analysis

Run #2

Run #1

Run #2

Initial Volume Final Volume

250 ml 1.0 ml

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q	
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l		
2706-90-3	Perfluoropentanoic acid	0.00129	0.0040	0.0010	ug/]	1	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/I		
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l		
335-67-1	Perfluorooctanoic acid	0.00122	0.0040	0.0010	ug/l	J.	
375-95-1	Perfluorononanoic acid	ND	0.0040	0:0010	ug/l		
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l		
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l		
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l		
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l		
376-06-7	Perfluorotetradecanoic acid	0.00155	0.0040	0.0010	ug/l	3	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l		
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l		
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l		
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/1		
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l		
754-91-6	PFOSA	0.00113	0.0040	0.0010	ug/l	J.	
2355-31-9	MeFOSAA	ND	0.020	0.0040	ug/l		
2991-50-6	EtFOSAA	ND	0.020	0.0040	ug/l		
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l		
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
	13C4-PFBA	84%		50-1	50%		
	13C5-PFPeA	84%		50-1	50%		
	13C5-PFHxA	85%		50-1	50%		
	13C4-PFHpA	86%		50-1	50%		
	13C8-PFOA	89%		50-1	50%		
	13C9-PFNA	89%		50-1	50%		
	13C6-PFDA	89%		50-1	50%		
	13C7-PFUnDA	87%		50-1	50%		

ND = Not detected MDL = Method Detection Limit

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E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 1 of 2

	Report of Analysis			Page 2 of 2
Client Sample ID:	1-SUF-010-001-01	A	10.00	
Lab Sample ID:	JC60421-1	Date Sampled:	02/07/18	
Matrix:	AQ - Field Blank Water	Date Received:	02/07/18	
Method:	EPA 537M BY ID EPA 537 MOD	Percent Solids:	n/a	
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue,	NY		

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	13C2-PFDoDA	83%		50-150%
	13C2-PFTeDA	77%		50-150%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	51%		50-150%
	d3-MeFOSAA	92%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	97%		50-150%

(a) Analysis performed at SGS Orlando, FL.

ND = Not detected MDL = Method Detection Limit

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J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



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Re	port	of	Ana	lysis

Client Sample ID: 1-SUF-010-001-02 Lab Sample 1D: Date Sampled: 02/07/18 JC60421-2 AQ - Ground Water Date Received: 02/07/18 Matrix: Percent Solids: n/a Method: SW846 8260C PESNYL: IL1 - Region 1, Quogue Landfill, East Quogue, NY Project: Analytical Batch DF By Prep Date Prep Batch File ID Analyzed V2E6143 02/09/18 21:59 JP n/a 2E140762.D 1 n/a Run #1 Run #2

1.

Purge Volume

Run #1 5.0 ml

Run #2

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
107-13-1	Acrylonitrile	ND	10	1.9	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.38	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/I	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.50	ug/I	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/1	
75-00-3	Chloroethane	ND	1.0	0.59	ug/I	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.21	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
110-57-6	trans-1,4-Dichloro-2-Butene	ND	5.0	1.6	ug/I	
75-34-3	1, I-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/I	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
74-88-4	Iodomethane	ND	2.0	0.27	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/I	

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	Report of Analysis			Page 2 of
Client Sample ID:	1-SUF-010-001-02			
Lab Sample ID:	JC60421-2	Date Sampled:	02/07/18	
Matrix:	AQ - Ground Water	Date Received:	02/07/18	
Method:	SW846 8260C	Percent Solids:	n/a	
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue	NY		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q	
74-95-3	Methylene bromide	ND	1.0	0.45	ug/I		
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l		
100-42-5	Styrene	ND	1.0	0.24	ug/l		
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.19	ug/t		
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l		
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l		
108-88-3	Toluenc	ND	1.0	0.25	ug/l		
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/l		
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l		
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/I		
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.47	ug/I		
108-05-4	Vinyl Acetate	ND	10	3.2	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l		
	m,p-Xylene	ND	1.0	0.43	ug/l		
95-47-6	o-Xylene	ND	1.0	0.22	ug/l		
1330-20-7	Xylene (total)	ND	1.0	0.22	ug/l		
CAS No.	Surrogate Recoveries	Run# I	Run# 2	Lim	its		
1868-53-7	Dibromofluoromethane	97%		80-1	20%		
17060-07-0	1,2-Dichloroethane-D4	93%		81-1	24%		
2037-26-5	Toluene-D8	100%		80-1	20%		
460-00-4	4-Bromofluorobenzene	95%		80-1	20%		
CAS No.	Tentatively Identified Comp	pounds	R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile			0		ug/l	

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_								0.767.0.70
Client Sa	mple ID:	1-SUF	-010-001-0	2				
Lab Sample ID: Matrix:		JC604	21-2			Date	02/07/18	
		AQ - (Ground W:	ter		Date	02/07/18	
Method:		SW84	6 8270D B	Y SIM SW846 351	0C	Perc	ent Solids:	n/a
Project:		PESN	YL: ILI - I	Region 1, Quogue La	andfill,	East Quogue, NY		
	File 1D		DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
				02/15/18 05:44		02/09/18 02:30	OP9895A	E4P1435

Report of Analysis

#1 1000 ml 1.0 ml

Run #1 1000 ml Run #2

BN PAH List

83-32-9 Acenaphthene ND 0.10 208-96-8 Acenaphthylene ND 0.10 120-12-7 Anthracene ND 0.10 56-55-3 Benzo(a)anthracene ND 0.050 50-32-8 Benzo(a)pyrene ND 0.050 205-99-2 Benzo(b)fluoranthene ND 0.10 191-24-2 Benzo(g, h, i)perylene ND 0.10 207-08-9 Benzo(k)fluoranthene ND 0.10	the second se
208-96-8 Acenaphthylene ND 0.10 120-12-7 Anthracene ND 0.10 56-55-3 Benzo(a)anthracene ND 0.050 50-32-8 Benzo(a)pyrene ND 0.050 205-99-2 Benzo(b)fluoranthene ND 0.10 191-24-2 Benzo(g,h,i)perylene ND 0.10	0.020 ug/l
120-12-7 Anthracene ND 0.10 56-55-3 Benzo(a)anthracene ND 0.050 50-32-8 Benzo(a)pyrene ND 0.050 205-99-2 Benzo(b)fluoranthene ND 0.10 191-24-2 Benzo(g,h,i)perylene ND 0.10	0.020 ug/I
50-32-8 Benzo(a)pyrene ND 0.050 205-99-2 Benzo(b)fluoranthene ND 0.10 191-24-2 Benzo(g,h,i)perylene ND 0.10	0.023 ug/1
205-99-2Benzo(b)fluorantheneND0.10191-24-2Benzo(g,h,i)peryleneND0.10	
191-24-2 Benzo(g,h,i)perylene ND 0.10	0 0.033 ug/l
	0.043 ug/1
	0.036 ug/i
	0.033 ug/l
218-01-9 Chrysene ND 0.10	0.026 ug/l
53-70-3 Dibenzo(a,h)anthracene ND 0.10	0.036 ug/l
206-44-0 Fluoranthene ND 0.10	0.022 ug/l
86-73-7 Fluorene a ND 0.10	0.025 ug/l
193-39-5 Indeno(1,2,3-cd)pyrene ND 0.10	0.038 ug/l
91-20-3 Naphthalene ND 0.10	0.029 ug/l
85-01-8 Phenanthrene ND 0.10	0.023 ug/l
129-00-0 Pyrene ND 0.10	0.019 ug/l
123-91-1 1,4-Dioxane ^a ND 0.10	0.049 ug/l
CAS No. Surrogate Recoveries Run# 1 Run#	# 2 Limits
4165-60-0 Nitrobenzene-d5 60%	29-124%
321-60-8 2-Fluorobiphenyl 42%	23-122%
1718-51-0 Terphenyl-d14 64%	22-130%

(a) Associated CCV outside of control limits low.

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			Report	of An	alysis			Page 1 of 2
Client San Lab Samp Matrix: Method: Project:	le ID: JC6042 AQ - G EPA 53	round Water 37M BY ID	EPA 537 MOD gion 1, Quogue L	andfill,	East Quog	Date Perc		2/07/18 2/07/18 a
Run #1 ª Run #2	File ID 2Q11748.D	DF 1	Analyzed 02/23/18 19:15	By AFL	Prep Da 02/14/18		Prep Batch F:OP68767	Analytical Batch F:S2Q215
Run #1 Run #2	Initial Volume 280 ml	Final Vol 1.0 ml	ume					
PFAS List			1					
CAS No.	Compound		Result	RL	MDL	Units	Q	
375-22-4 2706-90-3 307-24-4	Perfluorobutanoic acid Perfluoropentanoic acid Perfluoropexanoic acid		0.00140	0.0071	0.0018 0.00089 0.00089		J.	
375-85-9 335-67-1 375-95-1	Perfluoroheptan Perfluorooctan Perfluorononan	oic acid	0.00146	0.0036 0.0036 0.0036	0.00089 0.00089 0.00089	ug/l ug/l	L	
335-76-2 2058-94-8	Perfluorodecan Perfluoroundec		ND	0.0036	0.00089	ug/l		

333-07-1	remuorooctanoje aciu	0.00140	0.0030	0.00003	ug/1	
375-95-1	Perfluorononanoic acid	ND	0.0036	0.00089	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0036	0.00089	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0036	0.00089		
307-55-1	Perfluorododecanoic acid	ND	0,0036	0.00089		
72629-94-8	Perfluorotridecanoic acid	ND	0.0036		ug/l	
376-06-7	Perfluorotetradecanoic acid	0.00167	0.0036	0.00089	ug/l	1
375-73-5	Perfluorobutanesulfonic acid	ND	0.0036	0.00089	ug/1	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0036		ug/l	
375-92-8	Perfluoroheptanesulfonic acid.	ND	0.0036	0.00089	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0071	0.0018	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0036	0.00089	ug/I	
754-91-6	PFOSA b	ND	0.0036	0.00089	ng/l	
2355-31-9	MeFOSAA	ND	0.018		ug/I	
2991-50-6	EIFOSAA	ND	0.018	0.0036	ug/I	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0071	0.0018	ug/I	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0071	0.0018	ug/I	
CAS No.	Surrogate Recoveries	Run# L	Run# 2	Limits	-	
	13C4-PFBA	93%		50-150	9%	
	13C5-PFPeA	90%		50-150	194	
	13C5-PFHxA	92%		50-150	1%	
	13C4-PFHpA	91%		50-150	1%	
	13C8-PFOA	91%		50-150	1%	
	13C9-PFNA	92%		50-150	1%	
	13C6-PFDA	88%		50-150	1%	
	13C7-PFUnDA	81%		50-150	0.0	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

5

Report of Analysis

Client Sample ID:	1-SUF-010-001-02		
Lab Sample ID:	JC60421-2	Date Sampled:	02/07/18
Matrix:	AQ - Ground Water	Date Received:	02/07/18
Method:	EPA 537M BY ID EPA 537 MOD	Percent Solids:	n/a
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue,	NY	

PFAS List

CAS No.	Surrogate Recoveries	Run#1	Run# 2	Limits	
	13C2-PFDoDA	78%		50-150%	
	13C2-PFTeDA	82%		50-150%	
	13C3-PFBS	93%		50-150%	
	13C3-PFHxS	93%		50-150%	
	13C8-PFOS	90%		50-150%	
	13C8-FOSA	39% c		50-150%	
	d3-McFOSAA	86%		50-150%	
	13C2-6:2FTS	90%		50-150%	
	13C2-8:2FT5	94%		50-150%	

(a) Analysis performed at SGS Orlando, FL.

(b) Associated ID Standard outside control limits due to matrix interference. Insufficient sample for reextraction.

(c) Outside control limits.

ND = Not detected MDL = Method Detection Limit

- RL = Reporting Limit
- E = Indicates value exceeds calibration range
- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



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N

Client Sample 1D:	1-SUF-010-001-02	1	
Lab Sample ID:	JC60421-2	Date Sampled:	02/07/18
Matrix:	AQ - Ground Water	Date Received:	02/07/18
200		Percent Solids:	n/a
Project:	PESNYL: ILI - Region J, Quogue Landfill, East Quogue	NY	

Report of Analysis

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method	
Arsenic	ND	0.0030	0.0027	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Barium	0.0195 J	0.20	0.0013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Beryllium	ND	0.0010	0.00040	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Boron	ND	0.10	0.013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Chromium	ND	0.010	0.00085	mg/1	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Copper	ND	0.010	0.0032	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	5W846 3010A 3	
Iron	0.0785 J	0.10	0.032	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Lead	ND	0.0030	0.0026	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Manganese	0.0289	0.015	0.00042		1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Mercury	ND	0.00020	0008030		1	02/08/18	02/08/18	JA	SW846 7470A	SW846 7470A 4	
Nickel	ND	0.010	0.0013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Selenium	ND	0.010	0.0066	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Thallium	ND	0,0020	0.0016	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3	
Zinc	ND	0.020	0.0040	mg/1	1	02/08/18	02/09/18		SW846 6010C 2	SW846 3010A 3	
						and the second second	100 100 100 100 100 100 100 100 100 100				

(1) Instrument QC Batch: MA43734

(2) Instrument QC Batch: MA43750

(3) Prep QC Batch: MP5662

(4) Prep QC Batch: MP5663

RL = Reporting Limit MDL = Method Detection Limit



Page 1 of 1

			Repo	rt of Ar	nalysis		Page 1 of 1
	JC60421-	10-001-02 -2 ound Water				Date I	Sampled: 02/07/18 Received: 02/07/18 nt Solids: n/a
Project:	PESNYL	: ILI - Region	n I, Quogu	e Landfill,	East Quogi	ae, NY	
General Chemistry							
Analyte		Result	RL	MDL.	Units	DF	Analyzed By Method
Alkalinity, Total as C	CaCO3 a	1.5 J	5.0	1.1	mg/l	1	02/12/18 19:20 LS SM2320 B-11
Bromide		ND	0.50	0,060	mg/l	1	02/18/18 15:15 JN EPA 300/SW846 9056A
Chemical Oxygen De	emand	ND	20	6.3	mg/t	1	02/14/18 13:03 MP SM5220 C-11, HACH8000
Chloride		4.7	2.0	0.070	mg/I	1	02/18/18 15:15 JN EPA 300/SW846 9056A
Hardness, Total as C	aCO3	16.0	4.0	2.5	mg/l	1	02/09/18 16:56 MP SM2340 C-11
Nitrogen, Ammonia		ND	0.20	0.14	mg/l	1	02/08/18 12:01 BM SM4500NH3 H-11LACHA
Solids, Total Dissolv	ed	20.0	10	1,8	mg/l	1	02/09/18 12:58 MW SM2540 C-11
Sulfate		8.3	2.0	0.53	mg/t	1	02/18/18 15:15 JN EPA 300/SW846 9056A
Total Organic Carbo	n	ND	1.0	0.60	mg/I	1	02/20/18 02:21 CD SW846 9060A

(a) Sample was titrated to a final pH of 4.2.

RL = Reporting Limit MDL = Method Detection Limit ND = Not detected J = Indicates a result > = MDL but < RL



JC60421

			Report	or An	arysis		_	Page 1 of
Client Sam Lab Sampl Matrix: Method: Project:	e ID: JC6042 AQ - E EPA 53	quipment Blar 7M BY ID 1	nk EPA 537 MOD on 1, Quogue L	andfill, I	East Quog	Date Perc	and the second	2/07/18 2/07/18 /u
diaman and a	File ID		Analyzed	Ву	Prep Da		Prep Batch	Analytical Batch
Run #1 a	2Q11762.D		02/24/18 00:13		02/14/18		F:OP68767	F:S2Q215
Run #2 ª	2Q12010.D	20	03/02/18 11:49	AFL	02/14/18	\$ 09:00	F:OP68767	F:S2Q217
	Initial Volume	Final Volu	ne	_	_			
Run #1	280 ml	1.0 ml	ue					
Run #2	280 ml	1.0 ml						
PFAS List								
CAS No.	Compound		Result	RL	MDL	Units	Q	
375-22-4	Perfluorobutan		and the second se	0.0071	0.0018	ug/1		
2706-90-3	Perfluoropentar		0.00131	0.0036	0.00089			
307-24-4	Perfluorohexan			0.0036	0.00089			
375-85-9	Perfluoroheptar			0.0036	0.00089		2	
335-67-1	Perfluorooctan			0.0036	0.00089		1	
375-95-1	Perfluorononan	a constant and the second s		0.0036	0.00089			
335-76-2	Perfluorodecan			0.071	0.018	ug/l		
2058-94-8	Perfluoroundee		NDb	0.071	0.018	ug/I		
307-55-1	Perfluorododec	and the second	ND b	0.071	0.018	ug/l		
72629-94-8	Perfluorotridec			0.0036	0.00089		4	
376-06-7	Perfluorotetrad		0.0317 b	0.071	0.018	ug/f	1	
375-73-5	Perfluorobutan			0.0036	0.00089			
355-46-4	Perfluorohexan			0.0036	0.00089			
375-92-8	Perfluoroheptar			0.0036	0.00089			
1763-23-1	Perfluorooctane			0.0071	0.0018 0.00089	ug/f		
335-77-3	Perfluorodecan	esunonic acid		0.0036	0.00089			
754-91-6	PFOSA			0.0036				
2355-31-9	MeFOSAA		ND ND	0.018	0.0036	ug/1		
2991-50-6 27619-97-2	EtFOSAA 6:2 Fluorotelon	nor culfanate		0.018	0.0038	ug/l		
39108-34-4	8:2 Fluorotelon			0.14	0.036	ug/l		
CAS No.	Surrogate Rec	overies	Run#1	Run# 2	Limi	ts		
	13C4-PFBA		83%		50-15	50%		
	13C5-PFPeA		82%		50-15	50%		
	13C5-PFHxA		86%		50-15	50%		
	13C4-PFHpA		87%		50-15			
	13C8-PFOA		90%		50-15	50%		
	13C9-PFNA		84%		50-15			
	13C6-PEDA			127%	50-15			
	13C7-PFUnDA	¥		122%	50-15	50%		

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound

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JC60121

Report of Analysis

Client Sample ID: 1-SUF-010-001-03 Lab Sample ID: Date Sampled: 02/07/18 JC60421-3 Matrix: Date Received: 02/07/18 AQ - Equipment Blank Method: EPA 537M BY ID EPA 537 MOD Percent Solids: n/a PESNYL: IL1 - Region 1. Quogue Landfill, East Quogue, NY Project:

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
	13C2-PFDoDA		108%	50-150%	
	13C2-PFTeDA		130%	50-150%	
	13C3-PFBS	90%		50-150%	
	13C3-PFHxS	90%		50-150%	
	13C8-PFOS	86%		50-150%	
	13C8-FOSA	86%		50-150%	
	d3-MeFOSAA	97%		50-150%	
	13C2-6:2FTS	87%		50-150%	
	13C2-8:2FTS		131%	50-150%	

(a) Analysis performed at SGS Orlando, FL, (b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

- E = Indicates value exceeds calibration range
- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



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in

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				Report	of A	nalysis		Page 1 of 2
Client Sample ID: Lab Sample ID: Matrix: Method: Project:		JC6042 AQ - 0 SW846	iround Wi 8260C			Date Received: 02 Percent Solids: n/	2/07/18 2/07/18 /a	
Run #1. Run #2	File ID 2E14076	53.D	DF 1	Analyzed 02/09/18 22;27	By JP	Prep Date n/a	Prep Batch n/a	Analytical Batch V2E6143

Purge Volume

Run #1 5.0 ml

Run #2

VOA Special List

CAS No.	Compound	Result	RL.	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/I	
107-13-1	Acrylonitrile	ND	10	1.9	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/I	
74-97-5	Bromochloromethane	ND	1.0	0.38	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.42	ug/l	
74-83-9	Bromomethane	ND	2.0	1.4	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
75-00-3	Chloroethane	ND	1.0	0.59	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
74-87-3	Chloromethane	ND	1.0	0.53	ug/I	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/i	
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.21	ug/I	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/)	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/1	
110-57-6	trans-1,4-Dichloro-2-Butene	ND	5.0	1.6	ug/I	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/1	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/I	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/I	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/I	
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l	
74-88-4	Iodomethane	ND	2.0	0.27	ug/I	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l	

ND = Not detected MDL = Method Detection Limit

RI. - Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Client Sample ID:	1-SUF-010-001-04		
Lab Sample ID:	JC60421-4	Date Sampled:	02/07/18
Matrix:	AQ - Ground Water	Date Received:	02/07/18
Method:	SW846 8260C	Percent Solids:	n/a
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue,	NY	

Report of Analysis

VOA Special List

nits	Q
2/1	
	nits g/l

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 2 of 2

				Report	of A	nalysis		Page 1 of 1
Client Sa Lab Samj Matrix: Method: Project:		JC604 AQ - Q SW84	Fround Wa 6 8270D B			Date	e Received: cent Solids:	02/07/18 02/07/18 n/a
Run #1 Run #2	File 1D 4P2574	I.D	DF 1	Analyzed 02/15/18 06:15	By CS	Prep Date 02/09/18 02:30	Prep Batch OP9895A	Analytical Batch E4P1435
	Initial V	olume	Final	/olume				

Run #1 1000 ml 1.0 ml

Run #2

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.025	ug/I	
208-96-8	Acenaphthylene	ND	0.10	0.021	ug/I	
120-12-7	Anthracene	ND	0.10	0.020	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	0.023	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.050	0.033	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.043	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.036	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.033	ug/l	
218-01-9	Chrysene	ND	0.10	0.026	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.036	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.022	ug/l	
86-73-7	Fluorene a	ND	0.10	0.025	ug/l	
193-39-5	Indeno(1,2,3-ed)pyrene	ND	0.10	0.038	ug/l	
91-20-3	Naphthalene	ND	0.10	0.029	ug/l	
85-01-8	Phenanthrene a	ND	0,10	0.023	ug/1	
129-00-0	Pyrene	ND	0.10	0.019	ug/i	
123-91-1	1,4-Dioxane ^a	ND	0.10	0.049	ug/I	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
4165-60-0	Nitrobenzene-d5	65%		29-1	24%	
321-60-8	2-Fluorobiphenyl	49%		23-1	22%	
1718-51-0	Terphenyl-d14	53%		22-1	30%	

(a) Associated CCV outside of control limits low.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



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			Report	of An	alysis			Page 1 of
Client Sam Lab Sampl Matrix: Method: Project:	e ID: JC6043 AQ - C EPA 5	iround Water 37M BY ID	EPA 537 MOD ion 1, Quogue L	andfill, I	East Quoj	Date Perc	the second	2/07/18 2/07/18 a
Run #1 # Run #2 ª	File 1D 2Q11973.D 2Q12011.D	DF 10 50	Analyzed 03/01/18 22:09 03/02/18 12:11			ate 8 08:00 8 08:00	Prep Batch F:OP68958 F:OP68958	Analytical Batch F:S2Q217 F:S2Q217
Run #1 Run #2	Initial Volume 250 ml 250 ml	Final Volu 1.0 ml 1.0 ml	me					
PFAS List								
CAS No.	Compound		Result	RL	MDL	Units	Q	
375-22-4 2706-90-3 307-24-4 375-85-9 335-67-1 335-76-2 2058-94-8 307-55-1 72629-94-8 376-06-7 375-73-5 355-46-4 375-92-8 1763-23-1 335-77-3 754-91-6 2355-31-9 2991-50-6 27619-97-2	Perfluorotetrad Perfluorobutar Perfluorohexa Perfluorohepta Perfluorodecar Perfluorodecar PFOSA MeFOSAA EtFOSAA 6:2 Fluorotelo	anoic acid noic acid noic acid noic acid noic acid noic acid canoic acid canoic acid canoic acid decanoic acid nesulfonic acid nesulfonic acid nesulfonic acid nesulfonic acid nesulfonic acid nesulfonic acid	0.177 1.01 0.181 0.424 ND ND ND ND ND 0.0796 ^b 4 0.241 d 3.70 ^b id 0.621 1 11.2 ^b d ND ND ND ND ND ND ND ND ND ND	0.080 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.20 0.040 0.20 0.040 0.20 0.040 0.20 0.040 0.20 0.040 0.20 0.040 0.040	0.020 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.050 0.010 0.050 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	Ţ	
39108-34-4	8:2 Fluorotelo Surrogate Re		ND Run# 1	0.080 Run# 2	0.020 Lim	ug/i		
CAS No.	13C4-PFBA 13C5-PFPeA 13C5-PFHxA 13C4-PFHpA 13C8-PFOA 13C9-PFNA 13C6-PFDA		Runa 1 74% 73% 73% 73% 81% 86% 80%	93% 92% 95% 97% 102% 100% 104%	50-1 50-1 50-1 50-1 50-1 50-1	50% 50% 50% 50% 50% 50% 50%		

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



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	Report of Analysis		Page 2 of 2
Client Sample ID:	1-SUF-010-001-04	1. There is	
Lab Sample ID:	JC60421-4	Date Sampled:	02/07/18
Matrix:	AQ - Ground Water	Date Received:	02/07/18
Method:	EPA 537M BY ID EPA 537 MOD	Percent Solids:	n/u
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue,	NY	

PFAS List

CAS No.	Surrogate Recoveries	Run#1	Run# 2	Limits
	13C2-PFDoDA	73%	105%	50-150%
	13C2-PFTeDA	61%	101%	50-150%
	13C3-PFBS	75%	97%	50-150%
	13C3-PFHxS	72%	98%	50-150%
	13C8-PFOS	77%	97%	50-150%
	13C8-FOSA	70%	112%	50-150%
	d3-MeFOSAA	90%	T10%	50-150%
	13C2-6:2FTS	83%	98%	50-150%
	13C2-8:2FTS	76%	111%	50-150%

(a) Analysis performed at SGS Orlando, FL.

(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit RL = Reporting Limit

E = Indicates value exceeds calibration range

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound

			F	Repor	t of	Analysis	8			Page 1 of 1
Client Sample Lab Sample I Matrix: Project:	D: JC6042 AQ - C	iround Wa	ter	Quogue	Land	fill, East Qu	Date Perc	Rec	npled: 02/07/18 eived: 02/07/18 Solids: n/a	
Total Metals	Analysis									
Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	ND	0.0030	0.0027	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Barium	0.0317 J	0.20	0.0013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Beryllium	ND	0.0010	0.00040	mg/l	Ĩ.	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Boron	0.157	0.10	0.013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Chromium	0.00090 J	0.010	0.00085	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Copper	ND	0.010	0.0032	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Iron	0.187	0.10	0.032	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Lead	ND	0.0030	0.0026	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Manganese	0.0140 J	0.015	0.00042	mg/l	1	02/08/18	02/09/18	RP-	SW846 6010C 2	SW846 3010A 3
Mercury	ND	0.00020	0.000083	3mg/l	t .	02/08/18	02/08/18	JA	SW846 7470A	SW846 7470A 4
Nickel	ND	0.010	0.0013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Selenium	ND	0.010	0.0066	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Thallium	ND	0.0020	0.0016	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Zinc	0.0778	0.020	0.0040	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3

(1) Instrument QC Batch: MA43734

(2) Instrument QC Batch: MA43750

(3) Prep QC Batch: MP5662

(4) Prep QC Batch: MP5663

RL = Reporting Limit MDL = Method Detection Limit ND = Not detected J = Indicates a result > = MDI. but < RI.



			Repo	rt of A	nalysis		Page 1 of 1
Client Sample ID: Lab Sample ID: Matrix: Project:	JC60421 AQ - Gro	10-001-04 -4 ound Water .: II.I - Regio	n 1. Quogu	e Landfill	East Ouroe	Date Perce	Sampled: 02/07/18 Received: 02/07/18 nt Solids: n/a
General Chemistry	- insite i		a a cuelo	ie indiratini	man KanP		
Analyte		Result	RL	MDL	Units	DF	Analyzed By Method
Alkalinity, Total as (CaCO3 a	118	5.0	1.1	mg/l	1	02/12/18 19:20 LS SM2320 B-11
Bromide		ND	0.50	0.060	mg/l	1	02/18/18 16:51 JN EPA 300/SW846 9056A
Chemical Oxygen De	emand	7.7 J	20	6.3	mg/l	1	02/14/18 13:03 MP SM5220 C-11, HACH8000
Chloride		6.4	2.0	0.070	mg/l	1	02/18/18 16:51 JN EPA 300/SW846 9056A
Hardness, Total as C	aCO3	160	4.0	2.5	mg/l	1	02/09/18 16:56 MP SM2340 C-11
Nitrogen, Ammonia	2011 - E	ND	0.20	0.14	mg/l	1	02/08/18 12 03 BM SM4500NH3 H-11LACHA1
Solids, Total Dissolv	ed	160	10	1.8	mg/1	T	02/09/18 12:58 MW SM2540 C-11
Sulfate		29.1	4.0	1.1	mg/l	2	02/19/18 21 12 JN EPA 300/SW846 9056A
Total Organic Carbo	n	1.9	1.0	0.60	mg/l	1	02/20/18 03:40 CD SW846 9060A

(a) Sample was titrated to a final pH of 4,5.

RL = Reporting Limit MDL = Method Detection Limit

ND = Not detected J = Indicates a result > = MDL but < RL



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Report of Analysis

Client Sample 1D: 1-SUF-010-001-05 Lab Sample ID: Date Sampled: 02/07/18 JC60421-5 Matrix: AQ - Ground Water Date Received: 02/07/18 Percent Solids: n/a Method: SW846 8260C PESNYL: IL1 - Region 1, Quogue Landfill, East Quogue, NY Project: By Analytical Batch File ID DF Prep Batch Analyzed Prep Date 2E140764.D 02/09/18 22:55 JP V2E6143 Run #1 n/a n/a 1 Run #2

Purge Volume

Run #1 5.0 ml Run #2

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q	
67-64-1	Acetone	ND	10	5.0	ug/l		
107-13-1	Acrylonitrile	ND	10	1.9	ug/l		
71-43-2	Benzene	ND	0.50	0.17	ug/l		
74-97-5	Bromochloromethane	ND	1.0	0.38	ug/l		
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/1		
75-25-2	Bromoform	ND	1.0	0.42	ug/l		
74-83-9	Bromomethane	ND	2.0	1.4	ug/l		
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/I		
75-15-0	Carbon disulfide	ND	2.0	0.50	ug/1		
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l		
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l		
75-00-3	Chloroethane	ND	1.0	0.59	ug/l		
67-66-3	Chloroform	0.36	1.0	0.29	ug/l	л.	
74-87-3	Chloromethane	ND	1.0	0.53	ug/l		
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/l		
124-48-1	Dibromochloromethane	ND	1.0	0.16	ug/l		
106-93-4	1,2-Dibromoethane	ND	1.0	0.21	ug/l		
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l		
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l		
110-57-6	trans-1,4-Dichloro-2-Butene	ND	5.0	1.6	ug/l		
75-34-3	1, 1-Dichloroethane	ND	1.0	0.21	ug/l		
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l		
75-35-4	1, I-Dichloroethene	ND	1.0	0.47	ug/l		
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l		
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l		
78-87-5	1,2-Dichloropropane	ND	1.0	0.24	ug/l		
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l		
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.22	ug/l		
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l		
591-78-6	2-Hexanone	ND	5.0	3.3	ug/l		
74-88-4	Iodomethane	ND	2.0	0.27	ug/l		
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	3.0	ug/l		

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B - Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Page 1 of 2

Client Sample ID:	1-SUF-010-001-05		
Lab Sample ID:	JC60421-5	Date Sampled:	02/07/18
Matrix:	AQ - Ground Water	Date Received:	02/07/18
Method:	SW846 8260C	Percent Solids:	n/a
Project:	PESNYL: II.1 - Region 1, Quogue Landfill, East Quogue,	NY	

Report of Analysis

VOA Special List

CAS No.	Compound	Result	RL	MDL.	Unit	Q	
74-95-3	Methylene bromide	ND	1.0	0.45	ug/I		
75-09-2	Methylene chloride	ND	2.0	1.0	ug/I		
100-42-5	Styrene	ND	1.0	0.24	ug/I		
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.19	ug/l		
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.17	ug/l		
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l		
108-88-3	Toluene	ND	1.0	0.25	ug/I		
71-55-6	1, 1, 1-Trichloroethane	ND	1.0	0.25	ug/l		
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.24	ug/1		
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l		
75-69-4	Trichlorofluoromethane	ND	2.0	0.60	ug/l		
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.47	ug/l		
108-05-4	Vinyl Acetate	ND	10	3.2	ug/l		
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l		
	m,p-Xylene	ND	1.0	0.43	ug/l		
95-47-6	o-Xylene	ND	1.0	0.22	ug/I		
1330-20-7	Xylene (total)	ND	1.0	0.22	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim			
1868-53-7	Dibromofluoromethane	96%	80-120%				
17060-07-0	1,2-Dichloroethane-D4	91%	81-124%				
2037-26-5	Toluene-D8	99%	80-120%				
460-00-4	4-Bromofluorobenzene	94%	80-120%				
CAS No.	Tentatively Identified Compounds		R.T.	Est.	Conc.	Units	Q
	Total TIC, Volatile		.0			ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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JC60421

Page 2 of 2

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				Report	of A	nalysis		Page 1 of 1
Client San Lab Sam Matrix: Method: Project:	ple ID: JC A S'	260421 Q - Gr W846 8	ound Wa 8270D B	iter		Date Perc		2/07/18 2/07/18 /a
Run #1 Run #2	File 1D 4P25742.1	,	DF 1	Analyzed 02/15/18 06:46	By CS	Prep Date 02/09/18 02:30	Prep Batch OP9895A	Analytical Batch E4P1435
Run #1 Run #2	Initial Vo 920 ml	lume	Final V 1.0 ml	olume				

BN PAH List

CAS No.	Compound	Result	RL	MBL	Units	Q
83-32-9	Acenaphthene	ND	0.11	0.027	ug/l	
208-96-8	Acenaphthylene	ND	0.11	0.023	ug/l	
120-12-7	Anthracene	ND	0.11	0.021	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.054	0.025	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.054	0.036	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.11	0.047	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.11	0.039	ug/1	
207-08-9	Benzo(k)fluoranthene	ND	0.11	0.036	ug/l	
218-01-9	Chrysene	ND	0.11	0.028	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.11	0.039	ug/l	
206-44-0	Fluoranthene	ND	0.11	0.024	ug/l	
86-73-7	Fluorene a	ND	0.11	0.027	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.11	0.041	ug/l	
91-20-3	Naphthalene	ND	0.11	0.032	ug/l	
85-01-8	Phenanthrene #	ND	0.11	0.025	ug/l	
129-00-0	Pyrene	ND	0.11	0.021	ug/l	
123-91-1	1,4-Dioxane ^a	ND	0.11	0.053	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
4165-60-0	Nitrobenzene-d5	81%		29-1	24%	
321-60-8	2-Fluorobiphenyl	68%		23-1	22%	
1718-51-0	Terphenyl-d14	82%		22-1	30%	

(a) Associated CCV outside of control limits low.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



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				Report	of An	alysis		Page 1 of 2
Client San Lab Samp Matrix: Method: Project:	ole ID:	conclusion and constraints	d Water BY ID	EPA 537 MOD	andfill,	Date	e Sampled: 02 e Received: 02 cent Solids: n/	
Run #1 ^a Run #2	File ID 2Q1197	5.D 1	F	Analyzed 03/01/18 22:52	By AFL	Prep Date 03/01/18 08:00	Prep Batch F:OP68958	Analytical Batch F:S2Q217

Initial Volume Final Volume

Run #1 260 ml 1.0 ml Run #2

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	0.00609	0.0077	0.0019	ug/I	1
2706-90-3	Perfluoropentanoic acid	0.0158	0.0038	0.00096	1.000	
307-24-4	Perfluorohexanoic acid	0.0102	0.0038	0.00096		
375-85-9	Perfluoroheptanoic acid	0.00471	0.0038	0.00096	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0038	0.00096	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0038	0.00096	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0038	0.00096	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0038	0.00096	ug/1	
307-55-1	Perfluorododecanoic acid	ND	0.0038	0.00096	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0038	0.00096	ug/I	
376-06-7	Perfluorotetradecanoic acid	0.00148	0.0038	0.00096	ug/1	3
375-73-5	Perfluorobutanesulfonic acid	0.00235	0.0038	0.00096		J.
355-46-4	Perfluorohexanesulfonic acid	0.00151	0.0038	0.00096	ug/l	1
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0038	0.00096	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.00580	0.0077	0.0019	ug/1	J
335-77-3	Perfluorodecanesulfonic acid	ND	0.0038	0.00096	ug/l	
754-91-6	PFOSA	ND	0.0038	0.00096	ug/I	
2355-31-9	MeFOSAA	ND	0.019	0.0038	ug/l	
2991-50-6	EtFOSAA	ND	0.019	0.0038	ug/I	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0077	0.0019	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0077	0.0019	ug/I	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ls	
	13C4-PFBA	92%		50-15	0%	
	13C5-PFPeA	91%		50-15	0%	
	13C5-PFHxA	96%		50-15	0%	
	13C4-PFHpA	97%		50-15	0%	
	13C8-PFOA	104%		50-15	0%	
	13C9-PFNA	105%		50-15	0%	
	13C6-PFDA	98%		50-15	0%	
	13C7-PFUnDA	90%		50-15	0%5	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

J = Indicates an estimated value

Report	of Ana	lysis
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Client Sample ID:	1-SUF-010-001-05		
Lab Sample ID:	JC60421-5	Date Sampled:	02/07/18
Matrix:	AQ - Ground Water	Date Received:	02/07/18
Method:	EPA 537M BY ID EPA 537 MOD	Percent Solids:	n/a
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue,	NY	

PFAS List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
	13C2-PFDoDA	88%		50-150%	
	13C2-PFTeDA	87%		50-150%	
	13C3-PFBS	95%		50-150%	
	13C3-PFHxS	101%		50-150%	
	13C8-PFOS	105%		50-150%	
	13C8-FOSA	92%		50-150%	
	d3-MeFOSAA	92%		50-150%	
	13C2-6:2FTS	102%		50-150%	
	13C2-8:2FTS	103%		50-150%	

(a) Analysis performed at SGS Orlando, FL.

ND = Not detected MDL = Method Detection Limit

- RL = Reporting Limit
- E = Indicates value exceeds calibration range
- J= Indicates an estimated value
- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



Page 2 of 2

	Report of Analysis			Page 1 of 1
Client Sample ID:	1-SUF-010-001-05	A		
Lab Sample ID:	JC60421-5	Date Sampled:	02/07/18	
Matrix:	AQ - Ground Water	Date Received:	02/07/18	
		Percent Solids:	n/a	
Project:	PESNYL: ILI - Region 1, Quogue Landfill, East Quogue	NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	ND	0.0030	0.0027	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Barium	0.0487 J	0.20	0.0013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Beryllium	ND	0.0010	0.00040	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Boron	0.0208 J	0.10	0.013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A J
Chromium	ND	0.010	0.00085	mg/1	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Copper	ND	0.010	0.0032	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Iron	0.0714 J	0.10	0.032	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Lead	ND	0.0030	0.0026	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Manganese	0.136	0.015	0.00042		1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Mercury	ND	0.00020	0.00008		L	02/08/18	02/08/18	JA	SW846 7470A	SW846 7470A 4
Nickel	ND	0.010	0.0013	mg/l	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Selenium	ND	0.010	0.0066	mg/1	1	02/08/18	02/09/18	RP	SW846 6010C 2	SW846 3010A 3
Thallium	ND	0.0020	0.0016	mg/l	î.	02/08/18	02/09/18	RP	SW846 6010C 2	5W846 3010A 3
Zinc	0.0044 J	0.020	0.0040	mg/l	T.		and the second	RP	SW846 6010C ⁻²	SW846 3010A 3
			0.000	- HO				0.00	and the second se	

(1) Instrument QC Batch: MA43734

(2) Instrument QC Batch: MA43750

(3) Prep QC Batch: MP5662

(4) Prep QC Batch: MP5663

RL = Reporting Limit MDL = Method Detection Limit ND = Not detected J = Indicates a result > = MDL but < RL



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			Repo	rt of An	alysis		Page 1 of 1
Lab Sample ID: J Matrix: 7	JC60421- AQ - Gro	ound Water				Date F Percer	Sampled: 02/07/18 Received: 02/07/18 nt Solids: n/a
Project: 1	PESNYL	: ILI - Region	11. Quogu	e Landfill,	East Quogu	e, NY	
General Chemistry							
Analyie		Result	RL	MDL	Units	DF	Analyzed By Method
Alkalinity, Total as C	aCO3 a	4.0 J	5.0	1.1	mg/l	1	02/12/18 19:20 LS SM2320 B-11
Bromide		ND	0.50	0.060	mg/1	1	02/18/18 17 19 JN EPA 300/SW846 9056A
Chemical Oxygen Der	mand	7.7 3	20	6.3	mg/1	1	02/14/18 13:03 MP SM5220 C-11, HACH8000
Chloride		17.7	2,0	0.070	mg/l	1	02/18/18 17:19 JN EPA 300/SW846 9056A
Hardness, Total as Ca	aCO3	36.0	4.0	2.5	mg/1	1	02/09/18 16:56 MP SM2340 C-11
Nitrogen, Ammonia		ND	0.20	0.14	mg/l	1	02/08/18 12:04 BM SM4500NH3 H-11LACHAT
Solids, Total Dissolve	. ba	60.0	10	1.8	mg/l	1	02/09/18 12 58 MW SM2540 C-11
Sulfate		22.4	4.0	1.1	mg/I	2	02/19/18 21:40 JN EPA 300/SW846 9056A
Total Organic Carbon	6	0.83 J	1.0	0.60	mg/l	1	02/20/18 04 00 CD SW846 9060A

(a) Sample was titrated to a final pH of 4.2.

RL = Reporting Limit MDL = Method Detection Limit



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JC60121



Section 5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- · Chain of Custody
- · Chain of Custody (SGS Orlando, FL)



			Job Change Order:	Irder:	JC60421	
Requested Date:	te:	2/12/2018		Received Date:	2/7/2018	
Account Name:		NY Inactive Landfill Initiative (Pars	tive (Pars	Due Date:	2/21/2018	
Project Descri	iption:	PESNYL: ILI - Region 1,	Project Description: PESNYL: ILI - Region 1, Old Quogue Landfill, East	Deliverable:	NYASPB	
C/O Initiated By: peted	ted By:	peled PM:	PM: TM	TAT (Days):	4	
Sample #: JC60421-2, -4, -5	JC6042		Change:			1
Dept:			Revise V8260SL to V8260SL+	5		
TAT:	7					

To Clent: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative. Above Changes Per: Tarruny McCloskey

JC60421: Chain of Custody Page 1 of 6

Page 1 of 1

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Date/Time: 2/12/2018 2:21:58 PW

SGS

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1. Custody Seals Present. Image: Scole Present Present Present. Image: Scole Present Prese	ate / Time Received: 2/7	/2018 6	45.00 PM	A Delivery	wethod:	AD	outest Courier	Airbill #'s:			-
Cooler Security Y or N Y or N Y or N Sample Integrity - Documentation Y or N 1. Custody Seals Present. Image: State of the	cooler Temps (Raw Measu	red) *C:	Cooler	1: (2.9); Cooler 2:	(3.3);						
1. Custody Seals Present. Image: Scole Present Present Present Present Present Present. Image: Scole Present Prese	Cooler Temps (Correc	ted) *C:	Cooler	1: (4.4); Cooler 2:	(4.8);						
1. Costody Statis Present 2 2. Custody Seals Intact: 4. Smpl Dates/Time OK 2. Custody Seals Intact: 4. Smpl Dates/Time OK 2. Custody Seals Intact: Y or N 1. Temp ontena achieved: Y 2. Cooler temp verification: IR Gun 3. Cooler reedia: Ice (Bag) 4. No. Coolers: 2 2. Control Preservation Y or N 1. Trip Btank present / cooler. Y or N 2. Trip Btank isted on COC: Y 3. Samples preserved properly: Image: Cooler temp verification:	Cooler Security	Y or I	4_		Y or	N	Sample Integr	ity - Documentation	Y	or N	
Cooler Temperature Y or N 1. Temp entena achieved: Image: Cooler temp verification: 2. Cooler temp verification: IR Gun 3. Cooler media: Ince (Bag) 4. No. Coolers: 2 2. Cooler temp verification: IR Gun 3. Cooler media: Ince (Bag) 4. No. Coolers: 2 2. Cooler reservation Y or N Y or N N/A 3. Cooler reservation Y or N 1. Trip Blank present / cooler. Image: Cooler reservation 2. Trip Blank listed on COC: Image: Cooler reserved properity: 3. Samples preserved properity: Image: Cooler reserved for unspecified tests 3. Sufficient volume recvd for analysis: Image: Cooler reserved for analysis:	to ensure a second second		-		¥	0	1. Sample label	s present on bottles:	×		
Sample Integrity - Condition Y or N 2. Cooler temp verification: IR Gun 2. Cooler temp verification: IR Gun 3. Cooler readia: Ice (Bag) 4. No. Coolers: 2 2. Cooler served and the coolers: 2 2. All containers accounted for: 2 3. Coolers: 2 3. Coolers: 2 3. Coolers: 2 3. Condition of sample: Intaid 2. All containers accounted for: 2 3. Condition of sample: Intaid 2. All containers accounted for: 2 3. Condition of sample: Intaid 2. All containers accounted for: 2 3. Condition of sample: Intaid 2. Trip Blank present / cooler: 2 3. Samples preserved property: 2 3. Sufficient volume recove for analysis: 2	2. Custody Seals Intact:	8	4,5	mpl Dates/Time OK	*	а,	2. Container lab	eling complete	V		
2. Cooler temp verification: IR Gun 1. Sample record within HT: Image: containers accounted for: 3. Cooler media: Ice (Bag) 2. All containers accounted for: Image: control Preservation 4. No. Coolers: 2 3. Condition of sample: Intacl Quality Control Preservation Y or N N/A Sample Integrity - Instructions Y or N 1. Trip Blank present / cooler: Image: cooler	Cooler Temperature	Y	or N				3. Sample conta	iner label / COC agree:	2	D	
3. Cooler media: Ice (Bag) 1. Sample recvd within HT: X 3. Cooler media: Ice (Bag) 2. All containers accounted for: X Image: Interded to the sample: 4. No. Coolers: 2 3. Coedition of sample: Interded to the sample: Interded to the sample: Image: I	T. Temp ontena achieved:	V	0				Sample Integ	rity - Condition	Y	or N	
4. No. Coolers: 2 4. No. Coolers: 2 2. All containers accounted for: 1. Introd 3. Condition of sample: Introd 1. Trip Blank present / cooler: 2 2. Trip Blank listed on COC: 2 3. Samples preserved property: 2 3. Samples preserved property: 2	Service and the service of the servi	_		_			1. Sample recvo	within HT:	2	D	
Quality Control Preservation Y or N N/A Sample Integrity - Instructions Y or N N 1, Trip Blank present / cooler. Image: Control Preservation Image: Control Preservation Y or N N 2, Trip Blank listed on COC: Image: Control Preservation Image: Control Preservation Image: Control Preservation Y or N N 3, Samples preserved property: Image: Control Preservation Image: Control Preservation Image: Control Preservation Image: Control Preservation Y or N N 3, Samples preserved property: Image: Control Preservation Image:		_					2. All containers	accounted for:	×	17	
1. Trip Blank present / cooler. Image: Cooler. <td>4. No. Coolers:</td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td>3. Condition of s</td> <td>ample:</td> <td>Ir</td> <td>vtact</td> <td>_</td>	4. No. Coolers:		2				3. Condition of s	ample:	Ir	vtact	_
2. Trip Blank listed on COC: Image: Section of Coc: Image:	Quality Control Preservation	Y no	or N	N/A			Sample Integ	rity - Instructions	Y.	or N	N/A
2. Trip Blank listed on COC: Image: Construction of the second of th	1, Trip Blank present / cooler.	0					1. Analysis reg	uested is clear;	1		
	2, Trip Blank listed on COC:		×				2. Bottles recei	ved for unspecified tests			
The second sec	3. Samples preserved properly						3. Sufficient vol	ume recvd for analysis:			
4. vocs negacional de servicio de servici de servici de servicio de servicio de servicio de servicio d	4. VOCs headspace free:	V	D	E7.			4. Compositing	instructions clear:	0		×
5. Fitning instructions clear:							5. Filtering inst	ructions clear.		E	¥
Test Strip Lot #s: pH 1-12: 216017 pH 12+ 208717 Other: (Specify)	Test Strip Lot #s: p	H 1-12:	2	16017	pH 1	24	208717	Other: (Specify)			

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SGS Sample Receipt Summary

JC60421: Chain of Custody Page 2 of 6

SGS

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Responded to by. CSR: N/A

Response

Response: Proceed with analysis

Response Date: Response Date: 2/7/2018

JC60421: Chain of Custody Page 3 of 6

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	HAIN-OF-CUSTO					cumen		-	-	-		-	-	-	_	_	-
tion A Laboratory Information		Section B Company:			don	_		COO	-	:	K	of	-01	0 -	00	<u> </u>	-
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Start End Depth Depth Location ID (ft) (ft)	Field Sample ID HUST ME UNIQUE	Sample Date	Sample Time	Sample Purpose		Sample Type	e of Cent.	Outlies.	115.00	-	N DOWNER	10 mm	-	X	- 2040 H	11	Н
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JC60421: Chain of Custody Page 4 of 6 5,1 5

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JC60421

	Job Change Order:	rder:	JC60421
Requested Date:	4/5/2018	Received Date:	2/7/2018
Account Name:	Parsons Engineering Science for	Due Date:	2/21/2018
Project Description:	Project Description: PESNYL ILI - Region 1, Quogue Landfil, East Quo Deliverable:	Deliverable:	NYASPB
C/O Initiated By: kristin.degra	: kristin.degra PM: TM	TAT (Days):	1
Sample #: JC60421-2, 4, -5			
Dept:	Please NO OUT data for AG, AL, CA, CD, CO, K, MG, NA, B and V. Please adest metals units to mg/L	AL, CA, CD, CO,	(, MG, NA, B and V, Please
TAT: 1			

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Above Changes Per: Client / Maryanne Kosciewicz Date/Time: 4/5/2018 2:19:35 PM To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative. Page 1 of 1

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JC60421: Chain of Custody Page 5 of 6

SGS

Due Date: 2/21/2018 Deliverable: NYASPB
TAT (Days): 1
Please NO OUT data for SB and retrieve/add data for B (already run).
Date/Time: 4/6/2018 1:41:05 PM

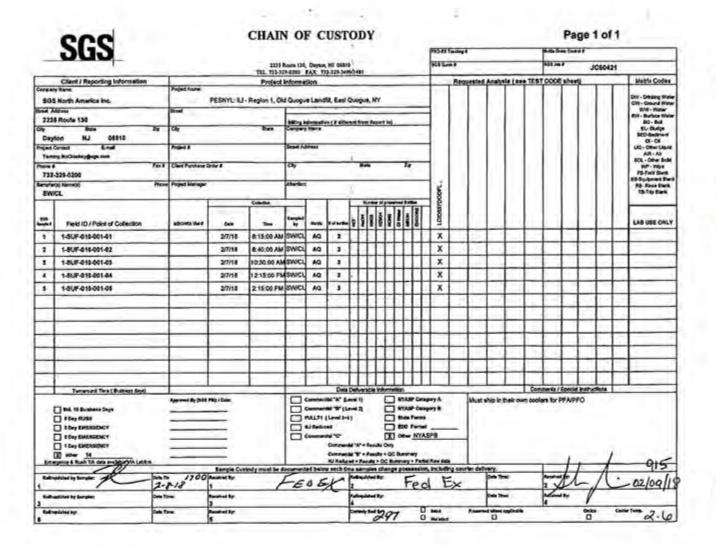
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JC60421: Chain of Custody Page 6 of 6

SGS

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JC60421: Chain of Custody Page 1 of 2 SGS Orlando, FL 5.2

SGS Sample Receipt Summary

1. Custody Seals Present ✓ 2. Custody Seals Intact ✓ 3. Temp criteria achieved ✓ 4. Cooler temp verification IR Gun 5. Cooler media Iou (Bag)	# of Coolers: 1 Sample Information Y or N N/A 1. Sample labels present on bottlen V 2. Samples preserved property V 3. Sufficient volume/containers recvd for analysis: V 4. Condition of sample Infasta 5. Sample recvd within HT V 6. Dates/Times/IDs on COC match Sample Label V
Cooler Temps (Raw Measured) *C: Cooler 1: (2.2); Cooler Temps (Corrected) *C: Cooler 1: (2.6); Cooler Information Y or N 1. Custody Seals Present I I 2. Custody Seals Intact I I 3. Temp criteria achievent I I 4. Cooler temp verification IR Gun 5. Cooler media Ion (Bag) Frip Blank Information Y or N N/A	Sample Information Y or N 1. Sample labels present on bother V Image: Constraint of the second
Cooler Temps (Corrected) *C: Cooler 1: (2.6); Cooler Information Y or N 1. Custody Seals Present Image: Control of the seal of th	1. Sample labels present on bothell Image: Contrainer of the contrainer
Cooler Information Y or N 1. Custody Seals Present Image: Custody Seals Intact Image: Custody Intac	1. Sample labels present on bothell Image: Contrainer of the contrainer
1. Custody Seals Present ✓ 2. Custody Seals Intact ✓ 3. Temp criteria achieved ✓ 4. Cooler temp verification IR Gun 5. Cooler media Iou (Bag)	1. Sample labels present on bothell Image: Contrainer of the contrainer
2. Custody Seals Intact 3. Temp criteria achievent 4. Cooler temp verification (R.Gun 5. Cooler media (B.g.) Trip Blank Information Y or N N/A	2. Samples preserved properly 3. Sufficient volume/containers recvol for analysis 4. Condition of sample 5. Sample recvd within HT 5. Dates/Times/IDs on COC match Sample Label 5. Context Sample Lab
3. Temp criteria achievent 4. Cooler temp verification 5. Cooler media ken (Bag)	2. Samples preserved properly 3. Sufficient volume/containers recvol for analysis 4. Condition of sample 5. Sample recvd within HT 5. Dates/Times/IDs on COC match Sample Label 5. Context Sample Lab
4. Cooler temp verification IR Gun 5. Cooler media Ica (Bag) Trip Blank Information Y or N N/A	3. Sufficient volume/containers recvol for analysis: 4. Condition of sample 5. Sample recvol within HT 6. Dates/Times/IDs on COC match Sample Label 7
5. Cooler media <u>Ion (Bag)</u> Trip Blank Information <u>Y or N N/A</u>	5. Sample recvd within HT 😿 🗌 6. Dates/Times/IDs on COC match Sample Label 🐼 🗍
Trip Blank Information Y or NN/A	6. Dates/Times/IDs on COC match Sample Label
Trip Blank Information Y or N N/A	6. Dates/Times/IDs on COC match Sample Label 🐼 🔲
1. Trip Blank present / cooler	7, VOCs have headspace
	8. Bottles received for unspecified tests.
2. Trip Blank listed on COC	9, Compositing instructions clear
W or 5 N/A	10. Voa Soil Kits/Jars received past 48/ws?
and the second	11. % Solids Jar received?
3. Type Of TB Rincelved	12. Residual Chlorine Present?
Misc. Information	
Number of Encores: 25-Gram 5-Gram Number	of 5035 Field Kits: Number of Lab Fillered Metals
Test Strip Lot #s: pH 0-3 230315 pH 10	2-12 219813A Other (Specify)
Residual Chlorine Test Strip Lot #:	

0

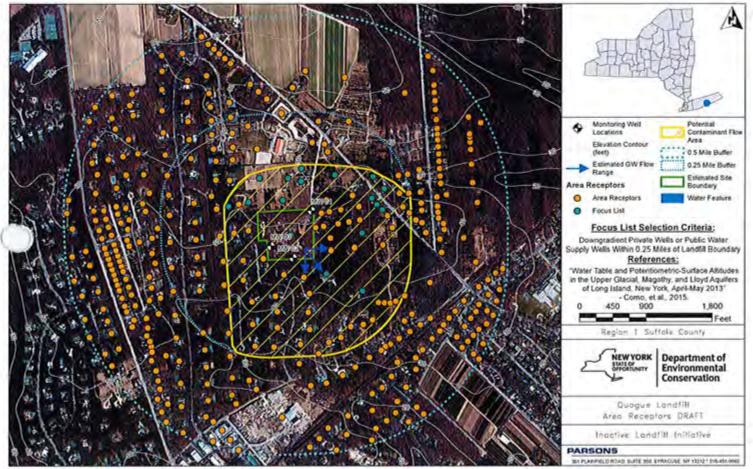
JC60421: Chain of Custody Page 2 of 2

SGS

5.2

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Attachment B – Quogue Landfill Area Receptors Figure



Document Path: Q. GISINYSDECI450519-WA#33-Inactive Landfil Initiative/MXD#IVYSDEC ILI Region 1 Water Receptors mud