

Data Documentation

Dataset Information

Dataset Title:

NCCOS Assessment: Baseline Chemical Contaminants Data from the Nu'uuli Pala Lagoon, American Samoa from 2017-07-11 to 2017-07-14

Description:

This dataset represents a one-time sediment sampling effort from the Nu'uuli Pala Lagoon, American Samoa. A suite of organic and inorganic parameters were quantified at twelve randomly selected sites and one targeted site in 2017, including: polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), pesticides, human-use pharmaceuticals and personal care products, trace elements, carbon, *Clostridium perfringens* abundance, and sediment grain size.

Purpose:

American Samoa's reefs are considered to be among the most pristine in the United States. These reefs host approximately 950 species of fish, 240 species of algae, 330 species of coral and many other species of invertebrates. The Nu'uuli Pala Lagoon is located on the south shore of the island of Tutuila, the largest and most populous island of the U.S. territory of American Samoa. The Nu'uuli Pala Lagoon is a vital habitat for juvenile fish and is classified as a Special Management Area. There have been local concerns about the impacts of land based sources of pollution and water quality of the Lagoon and on the coral reef ecosystems adjacent to the mouth of the Pala Lagoon. Organic and inorganic chemical contaminants have a wide range of potential negative impacts on the marine environment. Environmental data, such as the dataset presented here, serve as a baseline of current conditions, which are needed determine the efficacy of management efforts, i.e. measuring change over time. The data presented here can be utilized by coastal managers to best prioritize management strategies in a way to maximize success in decreasing stressors on coral reef ecosystems. Partners included: American Samoa's Coral Reef Advisory Group, ASEPA, and American Samoa Community College.

Methods:

Three strata were delineated within the Lagoon based on geography. Within each strata, four sites were randomly selected (using ArcGIS) in order to capture the spatial variability within the Lagoon. This stratified random sampling design allows for statistical comparisons among the articulated strata. Additionally, one targeted site was selected at the direction of our partners, adjacent to a construction site at the south end of Lion's Park (site TS-1, on the east side of the Lagoon). Sites were accessed by sea kayak. Nitrile gloves were worn and certified pre-cleaned jars were used to minimize the potential for contamination or cross contamination between sites. In an effort to quantify loading of land-based sources of pollution entering the Pala Lagoon, surface salinity was measured using a hand-held refractometer at each sediment collection site. Samples were labelled and placed on ice in a cooler until they could be transferred to a freezer at the conclusion of each sampling day. A subset of each sample was placed into a Whirl-pak™ bag for *Clostridium perfringens* and grain size analysis and refrigerated

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upon the conclusion of each sample day. Samples were shipped under chain-of-custody and arrived in good condition to TDI Brooks International in College Station, TX for analytical services. All laboratory analysis were performed using protocols from the NS&T Program by TDI-Brooks, International or their subcontractor, AXYS Analytical. Detailed descriptions of NS&T protocols, including quality assurance/quality control (QA/QC) and analytical methods used can be found in Kimbrough *et al.*, 2006. Laboratory analysis methods specifically for AXYS related analytical results (current use pesticides and human use pharmaceuticals) are proprietary and confidential. The method names used for this study were MLA-035 REV.07.04 and MLA-070 REV.07.04. Contact information for further references is: AXYS Analytical Services Ltd, 2045 Mills Road W., Sidney, BC, Canada, V8L 5X2. Tel. (250) 655-5800, fax (250) 655-5811.

For a complete description of the methods and analyses see Mason and Whitall (2019).

Cited Publications:

- Kimbrough, K.L., and G.G. Lauenstein. 2006. Major and Trace Element Analytical Methods of the National Status and Trends Program: Update 2000 - 2006. NOAA Technical Memorandum NOS NCCOS 29. Silver Spring, MD. 19 pp. <https://repository.library.noaa.gov/view/noaa/17784>
- Mason, A.L., and D.R. Whitall. 2019. A Baseline Chemical Contaminants Assessment of Sediment from the Nu'uuli Pala Lagoon, American Samoa. NOAA Technical Memorandum NOS NCCOS 267. Silver Spring, MD. 35 pp. <https://doi.org/10.25923/3sqf-vh06>

People & Projects

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- US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)
- US DOC; NOAA; NOS; Coral Reef Conservation Program (CRCP)

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Associated Projects:

- NCCOS Project #317, A Baseline Chemical Contaminants Study of Marine Sediments in Nu'uuli Pala Lagoon, American Samoa, <https://coastalscience.noaa.gov/project/chemical-contaminants-study-marine-sediments-nuuuli-pala-lagoon-american-samoa/>

Extents

Start Date: 2017-07-11

End Date: 2017-07-14

Northern Boundary: -14.31352

Southern Boundary: -14.32568

Western Boundary: -170.71639

Eastern Boundary: -170.70149

Keywords

Sea Areas, Water Bodies, Marine Protected Areas:

- Coastal Ocean
- American Samoa
- Tutuila
- Nu'uuli Pala Lagoon

NCCOS Keywords:

- NCCOS Research Priority > Stressor Impacts and Mitigation
- NCCOS Research Topic > Biological Effects of Contaminants and Nutrients
- NCCOS Research Location > Region > Pacific Ocean
- NCCOS Research Location > U.S. States and Territories > American Samoa
- NCCOS Research Data Type > Field Observation

CoRIS Keywords:

- CoRIS Discovery Thesaurus:
 - Numeric Data Sets > Chemical Contaminants
- CoRIS Theme Thesaurus:
 - EARTH SCIENCE > Oceans > Ocean Chemistry > Chemistry Monitoring and Assessment
- CoRIS Place Country/Territory Keywords:
 - COUNTRY/TERRITORY > United States of America > American Samoa > American Samoa > Tutuila Island (14S170W0016)
 - COUNTRY/TERRITORY > United States of America > American Samoa > Tutuila Island > Nu'uuli (14S170W0037)
- CoRIS Place Ocean/Seas Keywords:
 - OCEAN BASIN > Pacific Ocean > American Samoa > Tutuila Island (14S170W0016)

File Information

Total File Size: 1.50 MB total, 8 files in 0 folders (unzipped), 664 KB (zipped)

Data File Format(s): Comma-separated value (.CSV)

Data File Compression: no compression

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Data Files:

- Data01_OrganicChemicals.csv
- Data02_PesticidesPharmaceuticals.csv
- Data03_Carbon.csv
- Data04_Bacteria.csv
- Data05_GrainSize.csv

Documentation Files:

- BrowseGraphic.jpg
- DataDocumentation.pdf
- Nu'uuli_site_info_2017.csv

Parameter Information

Parameter Description

Parameter: ORGANIC CHEMICALS

Property Type: Measured

Units: ng/g

Observation Category: Laboratory analysis

Sampling Instrument: none

Sampling and Analyzing Method:

Organic chemicals analyzed include:

- Polynuclear aromatic hydrocarbons (PAH),
- Polychlorinated biphenyls (PCB),
- Organochlorines, Perfluorinated compounds (PFCs), Polybrominated diphenyl ethers (PBDE),
- Pesticides: Multiresidue pesticides (MRES), and
- Human-use pharmaceuticals, personal care products, trace elements.

For a complete description of the methods and analyses see Mason and Whitall (2019).

Data Quality Method:

All laboratory data contained blanks, spikes and percent recoveries. Data were QA/QC'd using National Status and Trends protocols. For a complete description of the methods and analyses see Mason and Whitall (2019).

Parameter Description

Parameter: CARBON

Property Type: Measured

Units: mg C

Observation Category: Laboratory analysis

Sampling Instrument: none

Sampling and Analyzing Method:

Carbon analyzed includes:

- Total Carbon (TC),
- Total Inorganic Carbon (TIC), and
- Total Organic Carbon (TOC).

For a complete description of the methods and analyses see Mason and Whitall (2019).

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Data Quality Method:

All laboratory data contained blanks, spikes and percent recoveries. Data were QA/QC'd using National Status and Trends protocols. For a complete description of the methods and analyses see Mason and Whitall (2019).

Parameter Description

Parameter: BACTERIA
Property Type: Measured
Units: colony forming units (cfu)
Observation Category: Laboratory analysis
Sampling Instrument: none

Sampling and Analyzing Method:

Bacteria analyzed as *Clostridium perfringens* abundance. For a complete description of the methods and analyses see Mason and Whitall (2019).

Data Quality Method:

All laboratory data contained blanks, spikes and percent recoveries. Data were QA/QC'd using National Status and Trends protocols. For a complete description of the methods and analyses see Mason and Whitall (2019).

Parameter Description

Parameter: SEDIMENT - GRAIN SIZE
Property Type: Measured
Units: percent
Observation Category: Laboratory analysis
Sampling Instrument: none

Sampling and Analyzing Method:

For a complete description of the methods and analyses see Mason and Whitall (2019).

Data Quality Method:

All laboratory data contained blanks, spikes and percent recoveries. Data were QA/QC'd using National Status and Trends protocols. For a complete description of the methods and analyses see Mason and Whitall (2019).

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Table 1A: Organic Chemicals Data Dictionary

Column	Variable Name	Definition	Units	Ranges
1	ID	ID	NA	NA
2	BlankConc	Blank concentration	ng/g (dry weight basis)	0 to 109.3
3	CollectionDate	Collection date	Day	7/11/17 to 7/14/17
4	Compound	Compound	NA	NA
5	Dilution	Dilution	NA	NA
6	ExtractionBatch	Extraction batch	NA	NA
7	FileName	File name	NA	NA
8	LaboratoryID	Laboratory ID	NA	NA
9	Matrix	Matrix	NA	NA
10	Method	Method	NA	NA
11	MoisturePercnt	Moisture percent	percent	30.73770492 to 73.95
12	PercentDry	Percent dry	percent	26.05 to 69.26229508
13	SampleDryWtGram	Sample dry weight in grams	gram	14.999925 to 15.08
14	SampleID	Sample ID	NA	NA
15	SampleWetWtGram	Sample wet weight in grams	gram	21.7 to 57.66
16	Species	Species	NA	NA
17	qual_cd	Quality control	NA	NA
18	result	Result	ng/g (dry weight basis)	0 to 141.578
19	Site	Site	NA	NA
20	Latitude	Latitude	Decimal degrees	-14.32568 to -14.31352
21	Longitude	Longitude	Decimal degrees	-170.71639 to -170.70149
22	Salinity	Salinity	PSU	10 to 36

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Table 1B: List of Organic Chemicals

[13C12]-PBDE-209	C1-Naphthalenes	Dibenzothiophene
1,2,3,4-Tetrachlorobenzene	C1-Naphthobenzothiophenes	Dibutyltin
1,2,4,5-Tetrachlorobenzene	C1-Phenanthrenes/Anthracenes	Dieldrin
1,6,7-Trimethylnaphthalene	C20-TAS	Endosulfan I
18a-Oleanane	C21-TAS	Endosulfan II
1-Methyldibenzothiophene	C26(20R)/C27(20S)-TAS	Endosulfan Sulfate
1-Methylfluorene	C26(20S)-TAS	Endrin
1-Methylnaphthalene	C27(20R)-TAS	Fluoranthene
1-Methylphenanthrene	C28(20R)-TAS	Fluorene
2,4'-DDD	C28(20S)-TAS	Gamma-Chlordane
2,4'-DDE	C29-Hopane	Gamma-HCH
2,4'-DDT	C2-Benzothiophenes	Heptachlor
2,6-Dimethylnaphthalene	C2-Chrysenes	Heptachlor-Epoxyde
2/3-Methyldibenzothiophene	C2-Decalins	Hexachlorobenzene
2-Methylanthracene	C2-Dibenzo(a,h)anthracenes	Indeno(1,2,3-c,d)pyrene
2-Methylfluoranthene	C2-Dibenzothiophenes	Mirex
2-Methylnaphthalene	C2-Fluoranthenes/Pyrenes	Monobutyltin
2-Methylphenanthrene	C2-Fluorenes	Naphthalene
3,6-Dimethylphenanthrene	C2-Naphthalenes	Naphthalene-d8
3-Methylphenanthrene	C2-Naphthobenzothiophenes	Naphthobenzothiophene
4,4'-DDD	C2-Phenanthrenes/Anthracenes	Oxychlordane
4,4'-DDE	C30-Hopane	PBB 1
4,4'-DDT	C3-Benzothiophenes	PBB 10
4/9-Methylphenanthrene	C3-Chrysenes	PBB 103
4'-Fluoro-PBDE160	C3-Decalins	PBB 15
4-Methyldibenzothiophene	C3-Dibenzo(a,h)anthracenes	PBB 155
Acenaphthene	C3-Dibenzothiophenes	PBB 18
Acenaphthene-d10	C3-Fluoranthenes/Pyrenes	PBB 2
Acenaphthylene	C3-Fluorenes	PBB 26
Aldrin	C3-Naphthalenes	PBB 3
Alpha-Chlordane	C3-Naphthobenzothiophenes	PBB 30
Alpha-HCH	C3-Phenanthrenes/Anthracenes	PBB 31
Anthracene	C4-Benzothiophenes	PBB 4
Benz(a)anthracene	C4-Chrysenes	PBB 49
Benzo(a)fluoranthene	C4-Decalins	PBB 52
Benzo(a)pyrene	C4-Dibenzothiophenes	PBB 53
Benzo(b)fluoranthene	C4-Fluoranthenes/Pyrenes	PBB 7
Benzo(b)fluorene	C4-Naphthalenes	PBB 77
Benzo(e)pyrene	C4-Naphthobenzothiophenes	PBB 80
Benzo(g,h,i)perylene	C4-Phenanthrenes/Anthracenes	PBB 9
Benzo(k,j)fluoranthene	Carbazole	PBDE-1
Benzothiophene	Chlorpyrifos	PBDE-10
Beta-HCH	Chrysene/Triphenylene	PBDE-100
Biphenyl	Chrysene-d12	PBDE-11
C1-Benzothiophenes	cis/trans Decalin	PBDE-116
C1-Chrysenes	Cis-Nonachlor	PBDE-118
C1-Decalins	DBOFB	PBDE-119
C1-Dibenzo(a,h)anthracenes	DDMU	PBDE-12
C1-Dibenzothiophenes	Delta-HCH	PBDE-126
C1-Fluoranthenes/Pyrenes	Dibenzo(a,h)anthracene	PBDE-13
C1-Fluorenes	Dibenzofuran	PBDE-138

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PBDE-15	PCB141/179	PCB66
PBDE-153	PCB146	PCB7/9
PBDE-154	PCB149/123	PCB70
PBDE-155	PCB15	PCB74/61
PBDE-166	PCB151	PCB8/5
PBDE-17	PCB153/132	PCB81
PBDE-181	PCB156/171/202	PCB82
PBDE-183	PCB158	PCB83
PBDE-190	PCB16/32	PCB84
PBDE-194	PCB166	PCB85
PBDE-195	PCB167	PCB86
PBDE-196	PCB169	PCB87/115
PBDE-197	PCB170/190	PCB88
PBDE-198/199/203/200	PCB172	PCB92
PBDE-2	PCB174	PCB95
PBDE-201	PCB176/137	PCB97
PBDE-202	PCB177	PCB99
PBDE-204	PCB178	Pentachloroanisole
PBDE-205	PCB18	Pentachlorobenzene
PBDE-206	PCB180	Perylene
PBDE-207	PCB183	Perylene-d12
PBDE-208	PCB185	Phenanthrene
PBDE-209	PCB187	Phenanthrene-d10
PBDE-25	PCB189	Pyrene
PBDE-28	PCB191	Retene
PBDE-3	PCB194	TCMX
PBDE-30	PCB195/208	Tetrabutyltin
PBDE-32	PCB196/203	Trans-Nonachlor
PBDE-33	PCB199	Tributyltin
PBDE-35	PCB200	Tri-n-propyltin
PBDE-37	PCB201/157/173	Tripentyltin
PBDE-47	PCB205	
PBDE-66	PCB206	
PBDE-7	PCB209	
PBDE-71/49	PCB22/51	
PBDE-75	PCB24/27	
PBDE-77	PCB25	
PBDE-8	PCB26	
PBDE-85	PCB28	
PBDE-99	PCB29	
PCB 103	PCB31	
PCB 198	PCB33/53/20	
PCB1	PCB40	
PCB101/90	PCB41/64	
PCB105	PCB42/59/37	
PCB107	PCB43	
PCB110/77	PCB44	
PCB114/131/122	PCB45	
PCB118	PCB46	
PCB128	PCB47/48/75	
PCB129/126	PCB49	
PCB136	PCB52	
PCB138/160	PCB56/60	

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Table 2A: Pesticides and Pharmaceuticals Data Dictionary

Column	Variable Name	Definition	Units	Ranges
1	ID	ID	NA	NA
2	SampleID	Sample ID	NA	NA
3	LaboratoryID	Laboratory ID	NA	NA
4	Compound	Compound	NA	NA
5	qual_cd	Quality control	NA	NA
6	result	Result	ng/g (dry weight basis)	0 to 15.7
7	MDL	Method detection limit	ng/g (dry weight basis)	0 to 502
8	Units	Units	NA	NA
9	SAMPLE_SIZE	Sample size	g (dry)	0.496 to 10
10	SAMPLE_SIZE_UNIT	Sample size unit	NA	NA
11	CollectionDate	Collection Date	Day	7/11/17 to 7/12/17
12	Matrix	Matrix	NA	NA
13	Method	Method	NA	NA
14	ExtractionBatch	Extraction batch	NA	NA
15	SAMPLE_TYPE	Sample type	NA	NA
16	ANALYTE_TYPE	Analyte type	NA	NA
17	FileName	File name	NA	NA
18	MoisturePercnt	Moisture percent	Percent	0 to 5.38
19	BlankConc	Blank concentration	ng/g (dry weight basis)	0 to 2.39
20	Site	Site	NA	NA
21	Latitude	Latitude	Decimal degrees	-14.322 to -14.3147
22	Longitude	Longitude	Decimal degrees	-170.716 to -170.703
23	Salinity	Salinity	PSU	10 to 33

Table 2B: List of Pesticides and Pharmaceuticals

1,7-Dimethylxanthine	Cimetidine	Gemfibrozil
10-hydroxy-amitriptyline	Ciprofloxacin	Glipizide
2,4'-DDD	Citalopram	Glyburide
2,4'-DDE	Clarithromycin	HCH, alpha
2,4'-DDT	Clinafloxacin	HCH, beta
2-Hydroxy-ibuprofen	Clonidine	HCH, delta
4,4'-DDD	Clotrimazole	HCH, gamma
4,4'-DDE	Cloxacillin	Heptachlor
4,4'-DDT	Cocaine	Heptachlor Epoxide
4-Epianhydrochlortetracycline [EACTC]	Codeine	Hexachlorobenzene
4-Epianhydrotetracycline [EATC]	Colchicine	Hexazinone
4-Epichlortetracycline [ECTC]	Cotinine	Hydrochlorothiazide
4-Epioxytetracycline [EOTC]	Cyanazine	Hydrocodone
4-Epitetracycline [ETC]	Cyclophosphamide	Hydrocortisone
Acetaminophen	Dacthal	Ibuprofen
Albuterol	Daunorubicin	Iopamidol
Aldrin	DEET	Isochlortetracycline [ICTC]
alpha-Endosulphan	Dehydronifedipine	Lincomycin
Alprazolam	Demeclocycline	Lomefloxacin
Ametryn	Desethylatrazine	Malathion
Amitriptyline	Desmethyldiltiazem	Medroxyprogesterone Acetate
Amlodipine	Diatrizoic acid	Melphalan
Amphetamine	Diazepam	Meprobamate
Amsacrine	Diazinon	Metformin
Anhydrochlortetracycline [ACTC]	Diazinon-Oxon	Methoxychlor
Anhydrotetracycline [ATC]	Dieldrin	Methylprednisolone
Atenolol	Digoxigenin	Metoprolol
Atorvastatin	Digoxin	Metribuzin
Atrazine	Diltiazem	Metronidazole
Azathioprine	Dimethoate	Miconazole
Azinphos-Methyl	Diphenhydramine	Minocycline
Azithromycin	Disulfoton	Mirex
Benzoylecgonine	Disulfoton Sulfone	Moxifloxacin
Benztropine	Doxorubicin	Naproxen
beta-Endosulphan	Doxycycline	Nonachlor, cis-
Betamethasone	Drospirenone	Nonachlor, trans-
Bisphenol A	Enalapril	Norfloxacin
Busulfan	Endosulphan Sulphate	Norfluoxetine
Caffeine	Endrin	Norgestimate
Captan	Endrin Ketone	Norverapamil
Carbadox	Enrofloxacin	Ofloxacin
Carbamazepine	Erythromycin-H2O	Ormetoprim
Cefotaxime	Ethion	Oxacillin
Chlordane, alpha (cis)	Etoposide	Oxazepam
Chlordane, gamma (trans)	Fenitrothion	Oxolinic Acid
Chlordane, oxy-	Flumequine	Oxycodone
Chlorothalonil	Fluocinonide	Oxytetracycline [OTC]
Chlorpyrifos	Fluoxetine	Parathion-Ethyl
Chlorpyrifos-Methyl	Fluticasone propionate	Parathion-Methyl
Chlorpyrifos-Oxon	Fonofos	Paroxetine
Chlortetracycline [CTC]	Furosemide	Penicillin G

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Penicillin V	Tylosin	
Perthane	Valsartan	
PFBA	Venlafaxine	
PFBS	Verapamil	
PFDA	Virginiamycin M1	
PFDoA	Warfarin	
PFHpA	Zidovudine	
PFHxA		
PFHxS		
PFNA		
PFOA		
PFOS		
PFOSA		
PFPeA		
PFUnA		
Phorate		
Phosmet		
Pirimiphos-Methyl		
Prednisolone		
Prednisone		
Promethazine		
Propoxyphene		
Propranolol		
Quintozene		
Ranitidine		
Rosuvastatin		
Roxithromycin		
Sarafloxacin		
Sertraline		
Simazine		
Simvastatin		
Sulfachloropyridazine		
Sulfadiazine		
Sulfadimethoxine		
Sulfamerazine		
Sulfamethazine		
Sulfamethizole		
Sulfamethoxazole		
Sulfanilamide		
Sulfathiazole		
Tamoxifen		
Tecnazene		
Teniposide		
Terbufos		
Tetracycline [TC]		
Theophylline		
Thiabendazole		
Trenbolone		
Trenbolone acetate		
Triamterene		
Triclocarban		
Triclosan		
Trimethoprim		

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Table 3: Carbon Data Dictionary

Column	Variable Name	Definition	Units	Ranges
1	ID	ID	NA	NA
2	CollectionDate	Collection date	Day	7/11/17 to 7/14/17
3	Compound	Compound	NA	NA
4	Matrix	Matrix	NA	NA
5	SampleDryWtMg	Sample dry weight in milligrams	milligrams	250 to 502.5
6	SampleID	Sample ID	NA	NA
7	Units	Units	NA	NA
8	LaboratoryID	Laboratory ID	NA	NA
9	result	Result	mg Carbon or percent Carbon	2.2448 to 44.941 mg C 0.89612 to 13.289 % C
10	FileName	File Name	NA	NA
11	Site	Site	NA	NA
12	Latitude	Latitude	Decimal degrees	-14.3257 to -14.3135
13	Longitude	Longitude	Decimal degrees	-170.716 to -170.701
14	Salinity	Salinity	PSU	10 to 36

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Table 4: Bacteria Data Dictionary

Column	Variable Name	Definition	Units	Ranges
1	ID	ID	NA	NA
2	LaboratoryID	Laboratory ID	NA	NA
3	SampleID	Sample ID	NA	NA
4	CollectionDate	Collection date	Day	7/11/17 to 7/14/17
5	Sampletype	Sample type	NA	NA
6	count1	First count of bacterial spore growth on plate	Colony Forming Units (CFU)	1 to 72
7	count2	Second count of bacterial spore growth on plate	Colony Forming Units (CFU)	1 to 51
8	mean	Mean of counts	Colony Forming Units (CFU)	1 to 61.5
9	volAssayed	Volume assayed	mL	2 to 5
10	assayWt	assay weight	gram	0.93 to 1.86
11	CperfDry	Clostridium perfringens dry weight	CFU/g	20.1978 to 1183.767
12	CperfDryUnits	Clostridium perfringens dry weight units	NA	NA
13	Site	Site	NA	NA
14	Latitude	Latitude	Decimal degrees	-14.3234 to -14.3135
15	Longitude	Longitude	Decimal degrees	-170.716 to -170.703
16	Salinity	Salinity	PSU	10 to 36

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Table 5: Grain Size Data Dictionary

Column	Variable Name	Definition	Units	Ranges
1	ID	ID	NA	NA
2	LaboratoryID	Laboratory ID	NA	NA
3	SampleID	Sample ID	NA	NA
4	Matrix	Matrix	NA	NA
5	CollectionDate	Collection date	Day	7/11/17 to 7/14/17
6	Method	Method	NA	NA
7	SampleWtGrams	Sample weight in grams	grams	27.981 to 51.158
8	%PercentGRAVEL	Percent gravel	percent	0 to 47.28
9	PercentSAND	Percent sand	percent	29.43 to 91.58
10	PercentSILT	Percent silt	percent	0.17 to 50.39
11	PercentCLAY	Percent clay	percent	1.7 to 16.51
12	Site	Site	NA	NA
13	Latitude	Latitude	Decimal degrees	-14.32568 to -14.31352
14	Longitude	Longitude	Decimal degrees	-170.71639 to -170.70149
15	Salinity	Salinity	PSU	10 to 36

Document Information

Date: 2020-10-22

Resource Provider: NCCOS Data Manager, nccos.data@noaa.gov, US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)

Comment: This data documentation describes data files archived as a NOAA NCEI data accession, and is intended to provide dataset-level metadata for the purposes of discovery, use, and understanding.

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