

CTD QC Report: Hawaiian Archipelago 2016

The file used in this QC routine is: ESD_NCRMP_CTD_2016_HI.csv

QC run at: 2021-03-03 08:28:51 HST

Number of rows in data file: 2539

Number of casts in data file: 141

Check the location and time ranges

	Min	Max
LATITUDE	19.05712	28.45790
LONGITUDE	-178.3891	-154.8055
UTCDATETIME	2016-07-14 20:18:00	2016-09-27 20:05:00

Check the cruises, dates, and number of casts associated with each island.

LOCATION	CRUISE	NO.CASTS	UTCDATETIME.range
French Frigate Shoals	HA1606_NWHI	15	2016-09-01 21:39:00, 2016-09-27 20:05:00
Hawai'i (Big Island)	HA1606_MHI	21	2016-08-07 20:54:00, 2016-08-16 00:30:00
Kaho'olawe	HA1606_MHI	6	2016-07-14 20:18:00, 2016-08-21 23:19:00
Kaua'i	HA1606_MHI	10	2016-07-23 21:28:00, 2016-07-27 22:26:00
Kure Atoll	HA1606_NWHI	11	2016-09-12 21:27:00, 2016-09-15 21:37:00
Lana'i	HA1606_MHI	7	2016-07-18 21:35:00, 2016-08-12 21:40:00
Lisianski Island	HA1606_NWHI	13	2016-09-17 20:22:00, 2016-09-20 22:21:00
Maui	HA1606_MHI	7	2016-07-14 21:26:00, 2016-08-13 23:03:00
Molokai	HA1606_MHI	10	2016-07-17 20:05:00, 2016-07-20 22:18:00
Niihau	HA1606_MHI	5	2016-07-28 21:02:00, 2016-07-29 22:38:00
Oahu	HA1606_MHI	20	2016-08-17 21:45:00, 2016-08-24 18:09:00
Pearl and Hermes Atoll	HA1606_NWHI	16	2016-09-06 22:08:00, 2016-09-11 23:19:00

Check for NULLs in all metadata fields

“No” signifies that no NULL data exist. “Yes” signifies that NULL values are present. NULL values are only ok if present in the ASSOC_OCC_SITEID field (not every cast is associated with an OCC site).

	NULLs?
SHALLOWCTDID	No
CTDCASTID	No
REGIONCODE	No
CASTYEAR	No
CRUISE	No

(continued)

	NULLs?
LOCATION	No
LATITUDE	No
LONGITUDE	No
UTCDATETIME	No
WATERSAMPLE	No
ASSOC_OCC_SITEID	Yes
ASSOC_REA_SITE	No
OFFSHORE_YN	No
SURVEY_DESIGN	No

Check for NULLs in all data fields

“No” signifies that no NULL data exist. “Yes” signifies that NULL values are present. NULL values may be present in data fields if there were bad or missing data in a cast.

	NULLs?
PRESSURE_DB	No
DEPTH_M	No
TEMP_DEGC	Yes
COND_S_PER_M	Yes
SALN_PSU	Yes
DENSITY_SIGMAT	Yes

[1] “The following casts are missing at least one temperature value:”

Casts missing temperature values
HA1606_MHI_OAH_SN4818_012
HA1606_NWHI_KUR_SN4818_022
HA1606_MHI_LAN_SN5251_014
HA1606_MHI_KAU_SN5251_015
HA1606_MHI_OAH_SN4818_004

[1] “The following casts are missing at least one salinity value:”

Casts missing salinity values
HA1606_MHI_OAH_SN3029_004
HA1606_MHI_KAH_SN3029_007
HA1606_NWHI_FFS_SN3029_001
HA1606_NWHI_FFS_SN3029_002
HA1606_NWHI_FFS_SN3029_003
HA1606_NWHI_PHR_SN3029_004
HA1606_NWHI_PHR_SN3029_005
HA1606_NWHI_PHR_SN3029_007
HA1606_NWHI_PHR_SN3029_009
HA1606_NWHI_PHR_SN3029_010

(continued)

Casts missing salinity values

HA1606_MHI_KAU_SN3029_015
HA1606_MHI_KAU_SN3029_016
HA1606_MHI_MOL_SN3029_005
HA1606_NWHI_LIS_SN3029_005
HA1606_NWHI_FFS_SN3029_201
HA1606_NWHI_FFS_SN3029_205

Check for data values out of expected ranges

Make sure that the CTD data values are within a reasonable range. Parameters with “Yes” flags are outside a general expected range (but may not necessarily be incorrect).

	Min	Max	Flag
PRESSURE_DB	1.005	28.162	No
DEPTH_M	0.9	28.255	No
TEMP_DEGC	24.1476	28.7508	No
COND_S_PER_M	4.966385	5.875978	No
SALN_PSU	31.5108	37.4261	No
DENSITY_SIGMAT	20.1544	24.6391	Yes

Summary of casts

SHALLOWCTDID	LATITUDE	LONGITUDE	UTCDATETIME	ASSOC_OCC_SITEID	ASSOC_REA_SITE	SURVEY_DESIGN	MIN_DEPTH	MAX_DEPTH
HA1606_MHI_HAW_SN3029_001	19.08456	-155.5428	2016-08-07 21:46:00	NA	HAW-3261	Stratified_Random	1.999	17.998
HA1606_MHI_HAW_SN3029_002	19.73307	-156.0568	2016-08-10 18:40:00	NA	HAW-3326	Stratified_Random	2.000	19.997
HA1606_MHI_HAW_SN3029_003	19.54732	-155.9618	2016-08-10 21:58:00	NA	HAW-3042	Stratified_Random	1.999	13.999
HA1606_MHI_HAW_SN3029_004	19.38397	-155.9034	2016-08-11 20:25:00	NA	HAW-3057	Stratified_Random	2.000	16.999
HA1606_MHI_HAW_SN3029_005	19.15241	-155.9161	2016-08-12 01:40:00	NA	HAW-3321	Stratified_Random	1.999	12.999
HA1606_MHI_HAW_SN3029_009	19.87484	-155.9204	2016-08-14 23:00:00	NA	HAW-3079	Stratified_Random	1.999	12.998
HA1606_MHI_HAW_SN3029_010	20.13448	-155.8935	2016-08-15 22:30:00	NA	HAW-3077	Stratified_Random	1.999	13.000
HA1606_MHI_HAW_SN3029_011	20.06528	-155.8544	2016-08-16 00:30:00	NA	HAW-3075	Stratified_Random	1.999	12.000
HA1606_MHI_HAW_SN4818_001	19.05712	-155.5422	2016-08-07 20:54:00	NA	HAW-4589	Random	0.997	27.504
HA1606_MHI_HAW_SN4818_002	19.06071	-155.5524	2016-08-07 22:14:00	OCC-HAW-008	HAW-48	Permanent	1.019	20.053
HA1606_MHI_HAW_SN4818_003	19.66466	-154.9747	2016-08-08 22:08:00	OCC-HAW-004	HAW-45	Permanent	1.007	14.084
HA1606_MHI_HAW_SN4818_004	19.74694	-155.0581	2016-08-09 00:45:00	OCC-HAW-003	HAW-44	Permanent	1.005	18.065
HA1606_MHI_HAW_SN4818_005	19.48638	-154.8177	2016-08-09 23:24:00	OCC-HAW-006	HAW-46	Permanent	0.977	23.273
HA1606_MHI_HAW_SN4818_006	19.48821	-154.8055	2016-08-10 00:27:00	NA	HAW-4590	Random	1.018	25.166
HA1606_MHI_HAW_SN4818_007	19.24436	-155.9003	2016-08-10 20:24:00	OCC-HAW-010	HAW-43	Permanent	0.970	22.394
HA1606_MHI_HAW_SN4818_008	19.24320	-155.9102	2016-08-11 22:11:00	NA	HAW-4591	Random	1.046	27.132
HA1606_MHI_HAW_SN4818_009	19.93087	-155.8921	2016-08-14 19:16:00	OCC-HAW-013	HAW-49	Permanent	1.007	25.044
HA1606_MHI_HAW_SN4818_010	19.88451	-155.9139	2016-08-14 21:27:00	OCC-HAW-012	HAW-73	Permanent	1.009	27.052
HA1606_MHI_HAW_SN4818_011	20.27871	-155.8574	2016-08-15 21:33:00	NA	HAW-4592	Random	1.018	26.088
HA1606_MHI_HAW_SN4818_012	20.26824	-155.8604	2016-08-15 20:58:00	OCC-HAW-002	HAW-41	Permanent	1.004	22.285
HA1606_MHI_HAW_SN4818_013	20.24916	-155.8909	2016-08-15 23:30:00	OCC-HAW-014	HAW-42	Permanent	1.001	24.396
HA1606_MHI_KAH_SN3029_003	20.55450	-156.6793	2016-07-15 22:40:00	NA	KAH-363	Stratified_Random	2.000	19.000
HA1606_MHI_KAH_SN3029_006	20.51269	-156.5430	2016-07-14 20:18:00	NA	KAH-419	Stratified_Random	1.999	14.996
HA1606_MHI_KAH_SN3029_007	20.51305	-156.6098	2016-07-14 20:18:00	NA	KAH-362	Stratified_Random	0.999	19.994
HA1606_MHI_KAH_SN4818_009	20.60048	-156.5604	2016-08-21 19:22:00	NA	KAH-03	Stratified_Random	0.992	17.108
HA1606_MHI_KAH_SN4818_010	20.52531	-156.7099	2016-08-21 23:19:00	NA	KAH-678	Stratified_Random	0.998	13.199
HA1606_MHI_KAH_SN5251_003	20.87540	-156.1522	2016-07-15 19:34:00	NA	KAH-673	Random	0.974	16.217
HA1606_MHI_KAU_SN3029_011	21.88535	-159.5067	2016-07-23 21:50:00	NA	KAU-1732	Stratified_Random	1.999	10.000
HA1606_MHI_KAU_SN3029_012	21.93289	-159.6694	2016-07-24 00:41:00	NA	KAU-1764	Stratified_Random	1.999	9.999
HA1606_MHI_KAU_SN3029_013	22.16623	-159.6870	2016-07-26 22:03:00	NA	KAU-1848	Stratified_Random	2.999	11.999
HA1606_MHI_KAU_SN3029_014	22.07709	-159.7767	2016-07-27 00:24:00	NA	KAU-1851	Stratified_Random	2.000	14.999
HA1606_MHI_KAU_SN3029_015	22.08463	-159.3010	2016-07-27 20:33:00	NA	KAU-1766	Stratified_Random	0.999	15.999
HA1606_MHI_KAU_SN3029_016	21.98523	-159.3309	2016-07-27 22:26:00	NA	KAU-1763	Stratified_Random	1.000	13.998
HA1606_MHI_KAU_SN5251_015	21.87666	-159.5255	2016-07-23 21:28:00	OCC-KAU-004	KAU-22	Permanent	0.977	24.384
HA1606_MHI_KAU_SN5251_016	21.86603	-159.5236	2016-07-23 22:38:00	NA	KAU-2318	Random	0.900	23.071
HA1606_MHI_KAU_SN5251_017	22.16847	-159.6856	2016-07-26 22:00:00	OCC-KAU-007	KAU-21	Permanent	1.031	24.045
HA1606_MHI_KAU_SN5251_018	22.17738	-159.6859	2016-07-26 22:37:00	NA	KAU-2319	Random	0.983	28.093
HA1606_MHI_LAN_SN3029_006	20.92628	-156.9324	2016-07-19 22:04:00	NA	LAN-1618	Stratified_Random	1.999	19.997
HA1606_MHI_LAN_SN3029_009	20.78408	-156.8174	2016-07-13 21:09:00	NA	LAN-1701	Stratified_Random	2.000	11.999
HA1606_MHI_LAN_SN3029_010	20.73176	-156.9553	2016-07-22 01:04:00	NA	LAN-1679	Stratified_Random	1.999	16.998
HA1606_MHI_LAN_SN5251_006	20.91543	-156.8864	2016-07-18 21:35:00	OCC-LAN-002	LAN-10	Permanent	1.001	16.181
HA1606_MHI_LAN_SN5251_007	20.92650	-156.9385	2016-07-19 01:15:00	OCC-LAN-001	LAN-11	Permanent	0.983	15.214
HA1606_MHI_LAN_SN5251_013	20.73574	-156.9155	2016-07-21 19:44:00	OCC-LAN-003	LAN-12	Permanent	0.998	18.140
HA1606_MHI_LAN_SN5251_014	20.72652	-156.9135	2016-07-21 22:50:00	NA	LAN-2167	Random	0.994	27.443
HA1606_MHI_MAI_SN3029_001	20.82950	-156.0858	2016-07-14 21:26:00	NA	MAI-2104	Stratified_Random	0.999	16.998
HA1606_MHI_MAI_SN3029_002	20.94041	-156.2627	2016-07-15 01:04:00	NA	MAI-2109	Stratified_Random	1.999	15.999
HA1606_MHI_MAI_SN3029_004	20.97113	-156.6869	2016-07-19 21:25:00	NA	MAI-2297	Stratified_Random	1.000	19.997
HA1606_MHI_MAI_SN3029_007	20.80010	-156.5978	2016-08-13 21:30:00	NA	MAI-2192	Stratified_Random	1.000	14.998
HA1606_MHI_MAI_SN3029_008	20.80389	-156.6171	2016-08-13 23:03:00	NA	MAI-2196	Stratified_Random	1.999	4.999
HA1606_MHI_MAI_SN5251_001	20.86862	-156.1463	2016-07-14 22:10:00	OCC-MAI-002	MAI-30	Permanent	0.965	18.145
HA1606_MHI_MAI_SN5251_002	20.87793	-156.1431	2016-07-15 00:01:00	NA	MAI-4271	Random	0.983	28.255
HA1606_MHI_MOL_SN3029_005	21.18461	-157.2626	2016-07-17 20:05:00	NA	MOL-2099	Stratified_Random	1.000	11.999
HA1606_MHI_MOL_SN3029_007	21.17276	-156.8235	2016-07-19 21:43:00	NA	MOL-1953	Stratified_Random	2.000	17.999
HA1606_MHI_MOL_SN3029_008	21.03225	-156.8797	2016-07-20 21:09:00	NA	MOL-2036	Stratified_Random	2.000	16.999
HA1606_MHI_MOL_SN5251_004	21.13409	-157.3003	2016-07-17 22:57:00	OCC-MOL-008	MOL-22	Permanent	0.950	17.221
HA1606_MHI_MOL_SN5251_005	21.13380	-157.3099	2016-07-18 01:14:00	NA	MOL-335	Random	0.963	25.181
HA1606_MHI_MOL_SN5251_008	21.17694	-156.7605	2016-07-19 20:31:00	OCC-MOL-003	MOL-23	Permanent	1.014	19.149
HA1606_MHI_MOL_SN5251_009	21.18725	-156.7608	2016-07-19 21:32:00	NA	MOL-2565	Random	0.928	26.054
HA1606_MHI_MOL_SN5251_010	21.20705	-156.9847	2016-07-20 00:20:00	OCC-MOL-001	MOL-24	Permanent	1.012	24.211
HA1606_MHI_MOL_SN5251_011	21.03574	-156.8904	2016-07-20 20:05:00	OCC-MOL-005	MOL-20	Permanent	0.955	21.193
HA1606_MHI_MOL_SN5251_012	21.08299	-157.0642	2016-07-20 22:18:00	OCC-MOL-006	MOL-21	Permanent	1.021	23.174
HA1606_MHI_NII_SN3029_017	21.96689	-160.1311	2016-07-28 21:02:00	NA	NII-1726	Stratified_Random	1.999	16.998
HA1606_MHI_NII_SN3029_018	21.86845	-160.2363	2016-07-28 23:26:00	NA	NII-1719	Stratified_Random	1.999	13.998
HA1606_MHI_NII_SN5251_019	21.89758	-160.2339	2016-07-28 21:20:00	OCC-NII-003	NII-11	Permanent	0.994	18.145
HA1606_MHI_NII_SN5251_020	21.89719	-160.2449	2016-07-28 22:25:00	NA	NII-2698	Random	1.001	27.200
HA1606_MHI_NII_SN5251_021	21.94134	-160.0700	2016-07-29 22:38:00	OCC-NII-001	NII-10	Permanent	0.972	14.217
HA1606_MHI_OAH_SN3029_001	21.26175	-157.7458	2016-08-17 21:45:00	NA	OAH-2846	Stratified_Random	1.999	17.996
HA1606_MHI_OAH_SN3029_002	21.37195	-158.1467	2016-08-18 22:50:00	NA	OAH-2858	Stratified_Random	1.999	19.995
HA1606_MHI_OAH_SN3029_003	21.56482	-158.2672	2016-08-19 21:30:00	NA	OAH-2605	Stratified_Random	1.999	13.997
HA1606_MHI_OAH_SN3029_004	21.64586	-158.0669	2016-08-20 21:00:00	NA	OAH-2781	Stratified_Random	1.000	16.996
HA1606_MHI_OAH_SN3029_005	21.67683	-158.0476	2016-08-20 23:30:00	NA	OAH-2766	Stratified_Random	2.999	15.996
HA1606_MHI_OAH_SN3029_008	21.38737	-157.6906	2016-08-22 23:18:00	NA	OAH-2521	Stratified_Random	2.000	15.996
HA1606_MHI_OAH_SN3029_009	21.33058	-157.6603	2016-08-23 01:30:00	NA	OAH-2538	Stratified_Random	1.999	17.996
HA1606_MHI_OAH_SN3029_010	21.53146	-157.8204	2016-08-23 20:20:00	NA	OAH-2687	Stratified_Random	1.999	13.997
HA1606_MHI_OAH_SN4818_001	21.28838	-157.8654	2016-08-17 22:57:00	OCC-OAH-010	OAH-23	Permanent	1.017	13.026
HA1606_MHI_OAH_SN4818_002	21.30577	-158.1265	2016-08-18 22:12:00	OCC-OAH-013	OAH-21	Permanent	1.050	25.069
HA1606_MHI_OAH_SN4818_003	21.30557	-158.1262	2016-08-18 22:30:00	OCC-OAH-014	OAH-21	Permanent	0.965	16.437
HA1606_MHI_OAH_SN4818_004	21.30082	-158.1364	2016-08-18 23:11:00	NA	OAH-4099	Random	0.995	10.330
HA1606_MHI_OAH_SN4818_005	21.53412	-158.2344	2016-08-19 23:20:00	OCC-OAH-012	OAH-25	Permanent	1.021	17.204
HA1606_MHI_OAH_SN4818_006	21.52897	-158.2437	2016-08-20 00:12:00	NA	OAH-4090	Random	1.001	22.090
HA1606_MHI_OAH_SN4818_007	21.59095	-158.1746	2016-08-21 00:02:00	OCC-OAH-002	OAH-20	Permanent	1.015	21.107
HA1606_MHI_OAH_SN4818_008	21.60083	-158.1767	2016-08-21 01:15:00	NA	OAH-4091	Random	1.011	9.109
HA1606_MHI_OAH_SN4818_011	21.47971	-157.7830	2016-08-23 21:00:00	OCC-OAH-005	OAH-22	Permanent	0.954	16.192
HA1606_MHI_OAH_SN4818_012	21.48922	-157.7807	2016-08-23 22:11:00	NA	OAH-4092	Random	0.999	11.186
HA1606_MHI_OAH_SN4818_013	21.50842	-157.8052	2016-08-23 23:43:00	OCC-OAH-036	OAH-471	Permanent	1.047	24.181
HA1606_MHI_OAH_SN4818_014	21.26187	-157.7655	2016-08-24 18:09:00	OCC-OAH-008	OAH-24	Permanent	0.990	17.209
HA1606_NWHI_FFS_SN3029_001	23.63988	-166.1786	2016-09-01 23:38:00	NA	FFS-1284	Stratified_Random	1.000	9.998

(continued)

SHALLOWCTDID	LATITUDE	LONGITUDE	UTCDATETIME	ASSOC_OCC_SITEID	ASSOC_REA_SITE	SURVEY_DESIGN	MIN_DEPTH	MAX_DEPTH
HA1606_NWHI_FFS_SN3029_002	23.84868	-166.3072	2016-09-04 00:32:00	NA	FFS-1355	Stratified_Random	0.999	10.999
HA1606_NWHI_FFS_SN3029_003	23.80920	-166.2114	2016-09-04 00:45:00	NA	FFS-1350	Stratified_Random	1.000	9.000
HA1606_NWHI_FFS_SN3029_201	23.87111	-166.2048	2016-09-25 21:53:00	NA	FFS-1288	Stratified_Random	0.999	16.998
HA1606_NWHI_FFS_SN3029_202	23.87658	-166.2271	2016-09-25 23:47:00	NA	FFS-1317	Stratified_Random	2.999	5.999
HA1606_NWHI_FFS_SN3029_203	23.87943	-166.2815	2016-09-26 21:45:00	NA	FFS-1309	Stratified_Random	2.999	11.999
HA1606_NWHI_FFS_SN3029_204	23.86382	-166.3252	2016-09-26 23:38:00	NA	FFS-1279	Stratified_Random	2.999	14.999
HA1606_NWHI_FFS_SN3029_205	23.77460	-166.1987	2016-09-27 20:05:00	NA	FFS-1394	Stratified_Random	1.000	15.999
HA1606_NWHI_FFS_SN4818_001	23.63690	-166.1853	2016-09-01 21:39:00	OCC-FFS-010	FFS-40	Permanent	0.987	19.189
HA1606_NWHI_FFS_SN4818_002	23.62822	-166.1873	2016-09-01 22:37:00	NA	FFS-4604	Random	0.992	9.135
HA1606_NWHI_FFS_SN4818_003	23.79240	-166.2538	2016-09-02 23:38:00	OCC-FFS-014	FFS-41	Permanent	1.070	18.043
HA1606_NWHI_FFS_SN4818_004	23.79036	-166.2640	2016-09-03 00:44:00	NA	FFS-4605	Random	0.997	10.115
HA1606_NWHI_FFS_SN4818_018	23.87811	-166.2910	2016-09-25 20:38:00	OCC-FFS-002	FFS-42	Permanent	1.010	25.992
HA1606_NWHI_FFS_SN4818_019	23.88689	-166.2929	2016-09-25 21:51:00	NA	FFS-4651	Random	1.037	26.319
HA1606_NWHI_FFS_SN4818_020	23.88022	-166.2771	2016-09-25 23:57:00	OCC-FFS-004	FFS-43	Permanent	1.057	18.482
HA1606_NWHI_KUR_SN3029_011	28.38916	-178.3583	2016-09-12 22:40:00	NA	KUR-736	Stratified_Random	2.000	10.999
HA1606_NWHI_KUR_SN3029_012	28.44253	-178.3622	2016-09-14 21:20:00	NA	KUR-754	Stratified_Random	1.999	15.999
HA1606_NWHI_KUR_SN4818_017	28.38505	-178.3409	2016-09-12 21:27:00	OCC-KUR-010	KUR-52	Permanent	1.025	22.034
HA1606_NWHI_KUR_SN4818_018	28.37532	-178.3422	2016-09-12 22:37:00	NA	KUR-4213	Random	1.038	24.069
HA1606_NWHI_KUR_SN4818_019	28.40911	-178.3781	2016-09-13 20:30:00	OCC-KUR-013	KUR-51	Permanent	1.017	18.048
HA1606_NWHI_KUR_SN4818_020	28.41371	-178.3891	2016-09-13 21:48:00	NA	KUR-4242	Random	0.978	23.159
HA1606_NWHI_KUR_SN4818_022	28.45297	-178.3472	2016-09-14 21:54:00	OCC-KUR-002	KUR-53	Permanent	1.021	15.443
HA1606_NWHI_KUR_SN4818_023	28.45790	-178.3573	2016-09-14 23:03:00	NA	KUR-4214	Random	1.004	20.189
HA1606_NWHI_KUR_SN4818_024	28.42248	-178.3765	2016-09-15 01:20:00	OCC-KUR-016	KUR-50	Permanent	1.049	21.059
HA1606_NWHI_KUR_SN4818_026	28.43037	-178.2852	2016-09-15 21:01:00	OCC-KUR-006	KUR-54	Permanent	1.007	19.952
HA1606_NWHI_KUR_SN4818_027	28.43414	-178.2761	2016-09-15 21:37:00	NA	KUR-4215	Random	1.041	25.411
HA1606_NWHI_LIS_SN3029_002	25.94903	-173.9650	2016-09-17 22:35:00	NA	LIS-804	Stratified_Random	1.999	14.999
HA1606_NWHI_LIS_SN3029_003	25.97337	-173.9786	2016-09-18 00:35:00	NA	LIS-785	Stratified_Random	2.999	17.998
HA1606_NWHI_LIS_SN3029_005	25.98768	-173.8822	2016-09-18 22:48:00	NA	LIS-783	Stratified_Random	1.000	11.000
HA1606_NWHI_LIS_SN3029_006	26.00296	-173.8982	2016-09-19 00:43:00	NA	LIS-795	Stratified_Random	1.999	8.999
HA1606_NWHI_LIS_SN4818_001	25.93504	-173.8910	2016-09-17 20:22:00	OCC-LIS-008	LIS-52	Permanent	1.052	22.069
HA1606_NWHI_LIS_SN4818_002	25.93229	-173.9064	2016-09-17 22:35:00	NA	LIS-4479	Random	1.010	13.026
HA1606_NWHI_LIS_SN4818_003	25.93832	-173.9542	2016-09-18 02:00:00	OCC-LIS-011	LIS-53	Permanent	1.000	11.109
HA1606_NWHI_LIS_SN4818_004	26.03739	-173.8791	2016-09-18 20:09:00	OCC-LIS-005	LIS-50	Permanent	1.002	22.192
HA1606_NWHI_LIS_SN4818_005	26.03759	-173.8686	2016-09-18 22:33:00	NA	LIS-4491	Random	0.996	18.182
HA1606_NWHI_LIS_SN4818_007	26.07838	-173.9970	2016-09-19 20:44:00	OCC-LIS-002	LIS-24	Permanent	1.000	17.067
HA1606_NWHI_LIS_SN4818_008	26.07263	-174.0141	2016-09-19 21:56:00	NA	LIS-4492	Random	1.050	19.369
HA1606_NWHI_LIS_SN4818_009	25.98707	-173.9944	2016-09-20 20:33:00	OCC-LIS-013	LIS-54	Permanent	1.040	16.143
HA1606_NWHI_LIS_SN4818_010	25.99216	-174.0047	2016-09-20 22:21:00	NA	LIS-4493	Random	1.002	17.131
HA1606_NWHI_PHR_SN3029_004	27.96439	-175.7821	2016-09-06 22:08:00	NA	PHR-1066	Stratified_Random	1.000	11.999
HA1606_NWHI_PHR_SN3029_005	27.87231	-175.9595	2016-09-07 21:40:00	NA	PHR-1064	Stratified_Random	1.000	15.999
HA1606_NWHI_PHR_SN3029_006	27.90525	-175.9130	2016-09-08 00:36:00	NA	PHR-1071	Stratified_Random	1.999	10.000
HA1606_NWHI_PHR_SN3029_007	27.76399	-175.9155	2016-09-08 09:40:00	NA	PHR-1095	Stratified_Random	0.999	11.000
HA1606_NWHI_PHR_SN3029_008	27.80817	-175.7607	2016-09-09 21:39:00	NA	PHR-1097	Stratified_Random	2.000	15.999
HA1606_NWHI_PHR_SN3029_009	27.79347	-175.9964	2016-09-11 21:37:00	NA	PHR-1076	Stratified_Random	1.000	11.999
HA1606_NWHI_PHR_SN3029_010	27.77751	-175.9907	2016-09-11 23:02:00	NA	PHR-1093	Stratified_Random	1.000	15.999
HA1606_NWHI_PHR_SN4818_005	27.94050	-175.8617	2016-09-06 23:16:00	OCC-PHR-002	PHR-52	Permanent	0.995	18.097
HA1606_NWHI_PHR_SN4818_006	27.95015	-175.8660	2016-09-07 00:12:00	NA	PHR-4477	Random	1.034	22.425
HA1606_NWHI_PHR_SN4818_008	27.95763	-175.7802	2016-09-07 21:00:00	OCC-PHR-005	PHR-4508	Permanent	1.039	20.127
HA1606_NWHI_PHR_SN4818_010	27.78237	-175.8819	2016-09-09 21:30:00	OCC-PHR-012	PHR-50	Permanent	0.987	18.078
HA1606_NWHI_PHR_SN4818_011	27.77441	-175.8778	2016-09-09 21:50:00	NA	PHR-4478	Random	0.963	28.091
HA1606_NWHI_PHR_SN4818_012	27.86691	-175.7335	2016-09-10 21:42:00	OCC-PHR-007	PHR-51	Permanent	1.000	19.069
HA1606_NWHI_PHR_SN4818_013	27.86546	-175.7239	2016-09-10 22:57:00	NA	PHR-4479	Random	0.991	13.297
HA1606_NWHI_PHR_SN4818_015	27.79317	-175.9971	2016-09-11 22:03:00	OCC-PHR-016	PHR-54	Permanent	0.970	12.030
HA1606_NWHI_PHR_SN4818_016	27.79761	-176.0086	2016-09-11 23:19:00	NA	PHR-4480	Random	1.010	15.273