

# POWOW #2 (KM13-01)

CTD# 1 / Station# 1 / Cast# 1

max CTD depth: 1000 m  
 bottom depth 1544 m  
 Start Time UTC: 00:16  
 Start Lat: 21 20.569  
 Start Lon: -158 16.413

Operator(s): ZJ/EZ  
 Year Day UTC: 11  
 Finish Time UTC: 01:29  
 Finish Lat: 21 20.616  
 Finish Lon: 158 16.519

Rosette Position	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	Erik	Steve	Chl/ FCM	Marty	Ap	YMa
1	<b>1000</b>	1000	X									X
2	<b>1000</b>	1000		X	X				X			
3	Chlmax=115	115										
4	Chlmax=115	115										
5	Chlmax=115	115										
6	Chlmax=115	115	X									
7	Chlmax=115	115		X	X				X			
8	Chlmax=115	115					X					
9	Chlmax=115	115						X				
10	Chlmax=115	115										
11	Chlmax=115	115										
12	Chlmax=115	115										
13	Chlmax=115	115										
14	<b>0</b>	3										
15	<b>0</b>	3										
16	<b>0</b>	3										
17	<b>0</b>	3										
18	<b>0</b>	3										
19	<b>0</b>	3										
20	<b>0</b>	3					X					
21	<b>0</b>	3						X				
22	<b>0</b>	3										
23	<b>0</b>	3	X									
24	<b>0</b>	3		X	X				X			

Notes: practice cast

# POWOW #2 (KM13-01)

CTD# 02 / Station# 02 / Cast# 1

max CTD depth: 750 m  
 bottom depth 4740 m  
 Start Time UTC: 14:10  
 Start Lat: 22 44.985  
 Start Lon: -158 00.012

Operator(s): EZ/ZJ  
 Year Day UTC: 11  
 Finish Time UTC: 15:31  
 Finish Lat: 22 44.990  
 Finish Lon: -158 00.015

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Marty	Ap	YMa
1	200	200	X				X	X					
2	200	200		X	X	X			X				
3	150	150	X				X						
4	150	150		X	X	X			X				
5	Chlmax=135	135	X				X	X					
6	Chlmax=135	135		X	X	X			X				
7	125	125					X						
8	125	125		X	X	X			X				
9	125	125								X			
10	100	100	X				X	X					
11	100	100		X	X	X			X				
12	75	75	X				X						
13	75	75		X	X	X			X				
14	50	50	X				X						
15	50	50		X	X	X		X	X				
16	25	25	X				X						
17	25	25		X	X	X			X				
18	25	25						X					
19	15	15					X			X			
20	15	15		X	X	X			X				
21	0	4											
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes: station ALOHA, first ISUS deployment

## POWOW #2 (KM13-01)

CTD# 03 / Station# 03 / Cast# 1

max CTD depth: 200 m  
 bottom depth 4495 m  
 Start Time UTC: 22:09  
 Start Lat: 23 52.308  
 Start Lon: -158 00.028

Operator(s): EZ/ZJ  
 Year Day UTC: 11  
 Finish Time UTC: 22:40  
 Finish Lat: 23 52.304  
 Finish Lon: -158 00.031

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Marty	Ap	YMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	200	200											
14	200	200											
15	200	200											
16	200	200											
17	200	200											
18	200	200											
19	200	200											
20	200	200											
21	200	200											
22	200	200											
23	200	200											
24	200	200											

Notes: no ISUS

# POWOW #2 (KM13-01)

CTD# 04 / Station# 04 / Cast# 1

max CTD depth: 750 m  
 bottom depth 4258 m  
 Start Time UTC: 13:59  
 Start Lat: 26 41.066  
 Start Lon: -158 00.004

Operator(s): EZ/ZJ  
 Year Day UTC: 12  
 Finish Time UTC: 15:17  
 Finish Lat: 26 41.066  
 Finish Lon: -158 00.004

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Marty	Ap	YMa
1	200	200	X				X	X					
2	200	199		X	X	X			X				
3	150	150	X				X						
4	150	150		X	X	X			X				
5	Chlmax=130	130	X				X	X					
6	Chlmax=130	130		X	X	X			X				
7	125	125					X						
8	125	125		X	X	X			X				
9	125	125								X			
10	100	100	X				X	X					
11	100	100		X	X	X			X				
12	75	75	X				X						
13	75	75		X	X	X			X				
14	50	50	X				X						
15	50	50		X	X	X		X	X				
16	25	25									X		
17	25	25	X				X				X		
18	25	25		X	X	X			X				
19	25	25						X			X		
20	15	15					X			X			
21	15	15		X	X	X			X				
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes:

# POWOW #2 (KM13-01)

CTD# 05 / Station# 05 / Cast# 1

max CTD depth: 750 m  
 bottom depth 5660 m  
 Start Time UTC: 21:59  
 Start Lat: 27 51.620  
 Start Lon: -157 59.785

Operator(s): EZ/ZJ  
 Year Day UTC: 12  
 Finish Time UTC: 22:31  
 Finish Lat: 27 51.634  
 Finish Lon: -157 59.768

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Marty	Ap	YMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	200	200											
14	200	200											
15	200	200											
16	200	200											
17	200	200											
18	200	200											
19	200	200											
20	200	200											
21	200	200											
22	200	200											
23	200	200											
24	200	200											

Notes:

# POWOW #2 (KM13-01)

CTD# 06 / Station# 06 / Cast# 2

max CTD depth: 750 m  
 bottom depth: 5498 m  
 Start Time UTC: 22:17  
 Start Lat: 31 43.850  
 Start Lon: -158 43.936

Operator(s): EZ/ZJ  
 Year Day UTC: 13  
 Finish Time UTC: 00:13  
 Finish Lat: 31 43.715  
 Finish Lon: -158 43.692

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	Chlmax= 135	135	X				X	X					
6	Chlmax= 135	135		X	X				X				
7	125	125					X						
8	125	125		X	X				X				
9	125	125								X			
10	100	100	X				X	X					
11	100	100		X	X				X				
12	75	75	X				X						
13	75	75		X	X				X				
14	50	50	X				X						X
15	50	50		X	X			X	X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X				X				
19	25	25						X				X	
20	15	16					X			X			
21	15	16		X	X				X				
22	0	5						X					
23	0	5	X				X						
24	0	5		X	X				X				

**Notes:** cast #1 was aborted because of wrapped line

# POWOW #2 (KM13-01)

CTD# 07 / Station# 07 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5663 m  
 Start Time UTC: 17:28  
 Start Lat: 33 19.981  
 Start Lon: -159 00.032

Operator(s): EZ/ZJ  
 Year Day UTC: 14  
 Finish Time UTC: 18:23  
 Finish Lat: 33 19.974  
 Finish Lon: -159 00.127

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	151	X				X						
4	150	150		X	X				X				
5	125	125					X						
6	125	125		X	X	X			X				
7	125	125								X			
8	Chlmax= 105	105	X				X	X					
9	Chlmax= 105	105		X	X	X			X				
10	100	100	X				X	X					
11	100	100		X	X	X			X		X		
12	75	75	X				X						
13	75	75		X	X	X			X				
14	50	50	X				X						X
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X	X			X		X		
19	25	25						X				X	
20	15	15					X			X			
21	15	15		X	X				X				
22	0	5						X					
23	0	5	X				X						
24	0	5		X	X	X			X				

Notes: chlorophyll max is ~100-105 m

## POWOW #2 (KM13-01)

CTD# 08 / Station# 07 / Cast# 2

max CTD depth: 50 m  
 bottom depth 5687 m  
 Start Time UTC: 19:17  
 Start Lat: 33 19.978  
 Start Lon: -159 00.158

Operator(s): EZ/ZJ  
 Year Day UTC: 14  
 Finish Time UTC: 19:31  
 Finish Lat: 33 19.988  
 Finish Lon: -159 00.204

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	50	50											
2	50	50											
3	50	50											
4	50	50											
5	50	50											
6	50	50											
7	50	50											
8	50	50											
9	50	50											
10	50	50											
11	50	49											
12	50	50											
13	50	50											
14	50	50											
15	50	50											
16	50	50											
17	50	50											
18	50	50											
19	50	50											
20	50	50											
21	50	50											
22	50	50											
23	50	50											
24	50	50											

**Notes:** incubator water for T-shift #1, potentially niskin #9 leaking o-ring (see next cast), don't think we used this bottle for incubation fills



# POWOW #2 (KM13-01)

CTD# 09 / Station# 08 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5978 m  
 Start Time UTC: 22:03  
 Start Lat: 33 41.035  
 Start Lon: -158 59.979

Operator(s): EZ/ZJ  
 Year Day UTC: 14  
 Finish Time UTC: 22:35  
 Finish Lat: 33 41.042  
 Finish Lon: -159 0.014

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex	Ap	Marty	YMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	200	200											
14	200	200											
15	200	200											
16	200	200											
17	200	200											
18	200	200											
19	200	200											
20	200	200											
21	200	200											
22	200	200											
23	200	200											
24	200	200											

Notes: light cast + ISUS, niskin #9 leaking o-ring

# POWOW #2 (KM13-01)

CTD# 10 / Station# 09 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5786 m  
 Start Time UTC: 14:05  
 Start Lat: 36 27.314  
 Start Lon: -159 00.154

Operator(s): EZ/ZJ  
 Year Day UTC: 15  
 Finish Time UTC: 14:59  
 Finish Lat: 36 27.356  
 Finish Lon: -159 00.144

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125					X						
6	125	125		X	X	X			X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X	X			X		X		
10	75	75	X				X						
11	75	74		X	X	X			X				
12	50	50	X				X						X
13	50	50		X	X	X		X	X				
14	Chlmax= 35	35	X				X	X					
15	Chlmax= 35	35		X	X	X			X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X				X		X		
19	25	25						X				X	
20	15	15					X			X			
21	15	15		X	X	X			X				
22	0	3						X					
23	0	3	X				X						
24	0	3		X	X	X			X				

Notes: high surface chlorophyll

# POWOW #2 (KM13-01)

CTD# 11 / Station# 10 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5379 m  
 Start Time UTC: 22:02  
 Start Lat: 37 41.664  
 Start Lon: -159 00.036

Operator(s): ZJ  
 Year Day UTC: 15  
 Finish Time UTC: 22:36  
 Finish Lat: 37 41.683  
 Finish Lon: 158 59.991

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	0	4											
14	0	4											
15	0	4											
16	0	4											
17	0	4											
18	0	4											
19	0	4											
20	0	4											
21	0	4											
22	0	4											
23	0	4											
24	0	4											

Notes: light cast + ISUS

# POWOW #2 (KM13-01)

CTD# 12 / Station# 11 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5367 m  
 Start Time UTC: 14:05  
 Start Lat: 40 28.441  
 Start Lon: 158 59.949

Operator(s): EZ/ZJ  
 Year Day UTC: 16  
 Finish Time UTC: 15:13  
 Finish Lat: 40 28.430  
 Finish Lon: -158 59.963

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	200	199	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125					X						
6	125	125		X	X	X			X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X	X			X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	60	60	X				X	X					
13	60	60		X	X	X			X				
14	50	50	X				X						X
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X	X			X		X		
19	25	25						X				X	
20	Chlmax= 15	15					X			X			
21	Chlmax= 15	15		X	X	X			X				
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes: high surface chlorophyll

**POWOW #2 (KM13-01)**CTD# 13 / Station# 12 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5444  
 Start Time UTC: 22:01  
 Start Lat: 39 54.255  
 Start Lon: -159 17.690

Operator(s): ZJ  
 Year Day UTC: 16  
 Finish Time UTC: 22:06  
 Finish Lat: 39 54.257  
 Finish Lon: -159 17.691

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	<b>200</b>												
2	<b>200</b>												
3	<b>150</b>												
4	<b>150</b>												
5	<b>125</b>												
6	<b>125</b>												
7	<b>125</b>												
8	<b>100</b>												
9	<b>100</b>												
10	<b>75</b>												
11	<b>75</b>												
12	<b>60</b>												
13	<b>60</b>												
14	<b>50</b>												
15	<b>50</b>												
16	<b>25</b>												
17	<b>25</b>												
18	<b>25</b>												
19	<b>25</b>												
20	Chlmax= 15												
21	Chlmax= 15												
22	<b>0</b>												
23	<b>0</b>												
24	<b>0</b>												

**Notes: aborted cast – tangled lines**

# POWOW #2 (KM13-01)

CTD# 13 / Station# 12 / Cast# 2

max CTD depth: 200 m  
 bottom depth: 5446 m  
 Start Time UTC: 22:09  
 Start Lat: 39 54.257  
 Start Lon: -159 17.685

Operator(s): ZJ  
 Year Day UTC: 16  
 Finish Time UTC: 22:57  
 Finish Lat: 39 54.278  
 Finish Lon: -159 17.649

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex	Ap	Marty	YMa
1	200	200					X						
2	200	200		X					X				
3	150	150					X						
4	150	150		X					X				
5	125	125					X						
6	125	125		X					X				
7	125	125								X			
8	100	100					X						
9	100	100		X					X				
10	75	75					X						
11	75	75		X					X				
12	50	50					X						
13	50	50		X					X				
14	Chlmax= 35	Chlmax= 35					X						
15	Chlmax= 35	Chlmax= 35		X					X				
16	25	25											
17	25	25					X						
18	25	25		X					X				
19	25	25											
20	15	15					X			X			
21	15	15		X					X				
22	0	4											
23	0	4					X						
24	0	4		X					X				

Notes: chlorophyll max is diffuse ~ 20-50 m

# POWOW #2 (KM13-01)

CTD# 15 / Station# 13 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5532 m  
 Start Time UTC: 13:59  
 Start Lat: 38 31.925  
 Start Lon: 160 36.997

Operator(s): EZ/ZJ  
 Year Day UTC: 17  
 Finish Time UTC: 14:51  
 Finish Lat: 38 31.929  
 Finish Lon: 160 36.977

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	<b>200</b>	200	X				X	X					
2	<b>200</b>	200		X	X				X				
3	<b>150</b>	151	X				X						
4	<b>150</b>	150		X	X				X				
5	<b>125</b>	125					X						
6	<b>125</b>	125		X	X	X			X				
7	<b>125</b>	125								X			
8	<b>100</b>	100	X				X	X					
9	<b>100</b>	100		X	X	X			X		X		
10	<b>75</b>	75	X				X						
11	<b>75</b>	75		X	X	X			X				
12	<b>60</b>	60	X				X						
13	<b>60</b>	60		X	X	X			X				
14	<b>50</b>	50	X				X						X
15	<b>50</b>	50		X	X	X		X	X				
16	<b>25</b>	25										X	
17	<b>25</b>	25	X				X					X	
18	<b>25</b>	25		X	X	X			X		X		
19	<b>25</b>	25						X				X	
20	Chlmax= 15	15					X	X		X			
21	Chlmax= 15	15		X	X	X			X				
22	<b>0</b>	4						X					
23	<b>0</b>	4	X				X						
24	<b>0</b>	4		X	X	X			X				

**Notes:** high surface chlorophyll

# POWOW #2 (KM13-01)

CTD# 16 / Station# 13 / Cast# 2

max CTD depth: 200 m  
 bottom depth 5570 m  
 Start Time UTC: 21:59  
 Start Lat: 38 31.656  
 Start Lon: -160 36.632

Operator(s): ZJ  
 Year Day UTC: 17  
 Finish Time UTC: 22:38  
 Finish Lat: 38 31.645  
 Finish Lon: 160 36.606

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex	Ap	Marty	YMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	5	5											
14	5	5											
15	5	5											
16	5	5											
17	5	5											
18	5	5											
19	5	5											
20	5	5											
21	5	5											
22	5	5											
23	5	5											
24	5	5											

**Notes:** high surface chlorophyll



# POWOW #2 (KM13-01)

CTD# 17 / Station# 14 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5551 m  
 Start Time UTC: 22:23  
 Start Lat: 39 22.337  
 Start Lon: -159 52.196

Operator(s): ZJ  
 Year Day UTC: 18  
 Finish Time UTC: 23:13  
 Finish Lat: 39 22.314  
 Finish Lon: -159 52.205

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	<b>200</b>	200	X				X	X					
2	<b>200</b>	200		X					X				
3	<b>150</b>	150	X				X						
4	<b>150</b>	150		X					X				
5	<b>125</b>	124					X						
6	<b>125</b>	125		X					X				
7	<b>125</b>	125			X					X			
8	<b>100</b>	100	X				X	X					
9	<b>100</b>	100		X					X				
10	<b>75</b>	75	X				X						
11	<b>75</b>	75		X					X				
12	<b>50</b>	50	X				X						
13	<b>50</b>	50		X				X	X				
14	Chlmax= 40	40	X				X	X					
15	Chlmax= 40	40		X					X				
16	<b>25</b>	25											
17	<b>25</b>	25	X				X						
18	<b>25</b>	25		X					X				
19	<b>25</b>	25						X					
20	<b>15</b>	15					X	X					
21	<b>15</b>	15		X	X				X	X			
22	<b>0</b>	4						X					
23	<b>0</b>	4	X				X						
24	<b>0</b>	4		X					X				

Notes:

# POWOW #2 (KM13-01)

CTD# 18 / Station# 15 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5784 m  
 Start Time UTC: 14:00  
 Start Lat: 36 39.216  
 Start Lon: -158 43.978

Operator(s): EZ/ZJ  
 Year Day UTC: 19  
 Finish Time UTC: 15:05  
 Finish Lat: 36 29.242  
 Finish Lon: 158 44.066

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	149		X	X				X				
5	125	125					X						
6	125	125		X	X				X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X	X			X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	Chlmax=60	60	X				X	X					
13	Chlmax=60	60		X	X	X			X				
14	50	50	X				X						X
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X	X			X		X		
19	25	25						X				X	
20	15	15					X		X	X			
21	15	15		X	X	X							
22	0	5						X					
23	0	5	X				X						
24	0	5		X	X	X			X				

Notes: well mixed chlorophyll in 0-100 m

# POWOW #2 (KM13-01)

CTD#     19     / Station#     17     / Cast#     1    

max CTD depth:     200 m      
 bottom depth     5877 m      
 Start Time UTC:     21:55      
 Start Lat:     35 46.479      
 Start Lon:     -158 19.587    

Operator(s):     EZ/ZJ      
 Year Day UTC:     19      
 Finish Time UTC:     22:39      
 Finish Lat:     35 46.529      
 Finish Lon:     -158 19.554    

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	<b>200</b>	200											
2	<b>200</b>	200											
3	<b>150</b>	150											
4	<b>150</b>	150											
5	<b>125</b>	125											
6	<b>125</b>	125											
7	<b>125</b>	125											
8	<b>100</b>	100											
9	<b>100</b>	100											
10	Chlmax= 75	100											
11	Chlmax= 75	100											
12	<b>60</b>	60											
13	<b>60</b>	60											
14	<b>25</b>	25											
15	<b>25</b>	25											
16	<b>25</b>	25											
17	<b>25</b>	25											
18	<b>25</b>	25											
19	<b>25</b>	25											
20	<b>15</b>	15											
21	<b>15</b>	15											
22	<b>0</b>	5											
23	<b>0</b>	5											
24	<b>0</b>	5											

Notes:

# POWOW #2 (KM13-01)

CTD# 20 / Station# 18 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 6055  
 Start Time UTC: 13:56  
 Start Lat: 33 45.066  
 Start Lon: 157 18.311

Operator(s): EZ/ZJ  
 Year Day UTC: 20  
 Finish Time UTC: 14:45  
 Finish Lat: 33 45.129  
 Finish Lon: 157 18 382

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125					X						
6	125	125		X	X				X				
7	125	125								X			
8	Chlmax=100	100	X				X	X					
9	Chlmax=100	100		X	X	X			X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	60	60	X				X	X					
13	60	60		X	X	X			X				
14	50	50	X				X						X
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X	X			X		X		
19	25	25						X				X	
20	15	15					X		X	X			
21	15	15		X	X	X							
22	0	5						X					
23	0	5	X				X						
24	0	5		X	X	X			X				

Notes:

## POWOW #2 (KM13-01)

CTD# 21 / Station# 18 / Cast# 2

max CTD depth: 200 m  
 bottom depth 6054 m  
 Start Time UTC: 18:48  
 Start Lat: 33 44.959  
 Start Lon: -157 18.134

Operator(s): EZ/ZJ  
 Year Day UTC: 20  
 Finish Time UTC: 19:19  
 Finish Lat: 33 44.986  
 Finish Lon: 157 18.158

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty	YMa
1	35	36											
2	35	36											
3	35	36											
4	35	36											
5	35	36											
6	35	36											
7	35	36											
8	35	36											
9	35	36											
10	35	36											
11	35	36											
12	35	36											
13	35	36											
14	35	36											
15	35	36											
16	35	36											
17	35	36											
18	35	36											
19	35	36											
20	35	36											
21	35	36											
22	35	36											
23	35	36											
24	35	36											

**Notes: T-Shift #2 Fill Cast (~20% surface irradiance at 35 m) – CTD hex files may be mislabeled C1 (it should be C2)**

# POWOW #2 (KM13-01)

CTD# 22 / Station# 19 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5918  
 Start Time UTC: 13:58  
 Start Lat: 31 36.333  
 Start Lon: -156 15.058

Operator(s): EZ/ZJ  
 Year Day UTC: 21  
 Finish Time UTC: 14:54  
 Finish Lat: 31 36.316  
 Finish Lon: -156 15.075

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X	X			X				
5	125	125					X						
6	125	125		X	X	X			X				
7	125	125								X			
8	Chlmax=110	110	X				X	X					
9	Chlmax=110	110		X	X	X			X				
10	100	100	X				X	X					
11	100	100		X	X	X			X		X		
12	75	75	X				X						
13	75	75		X	X	X			X				
14	50	50	X				X						X
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X	X			X		X		
19	25	25						X				X	
20	15	15					X		X	X			
21	15	15		X	X								
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes:

# POWOW #2 (KM13-01)

CTD# 23 / Station# 20 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5842 m  
 Start Time UTC: 21:57  
 Start Lat: 30 54.086  
 Start Lon: -155 54.532

Operator(s): EZ/ZJ  
 Year Day UTC: 21  
 Finish Time UTC: 22:34  
 Finish Lat: 30 54.103  
 Finish Lon: -155 54.522

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty	YMa
1	50	50											
2	50	50											
3	50	50											
4	50	50											
5	50	50											
6	50	50											
7	50	50											
8	50	50											
9	50	50											
10	50	50											
11	50	50											
12	50	50											
13	50	50											
14	50	50											
15	50	50											
16	50	50											
17	50	50											
18	50	50											
19	50	50											
20	50	50											
21	50	50											
22	50	50											
23	50	50											
24	50	50											

Notes:

# POWOW #2 (KM13-01)

CTD# 24 / Station# 21 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5693 m  
 Start Time UTC: 13:53  
 Start Lat: 29 00.007  
 Start Lon: -155 00.207

Operator(s): EZ/ZJ  
 Year Day UTC: 22  
 Finish Time UTC: 14:46  
 Finish Lat: 28 59.979  
 Finish Lon: -155 00.238

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	Chlmax=150	150	X				X	X					
4	Chlmax=150	150		X	X				X				
5	125	125					X						
6	125	126		X	X	X			X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X	X			X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	50	50	X				X						
13	50	50		X	X			X	X				
14	37	37	X				X						
15	37	37		X	X	X			X				
16	25	25										X	
17	25	25	X				X						
18	25	25		X	X	X			X		X		
19	25	25						X					
20	15	15					X		X	X			
21	15	15		X	X								
22	0	3						X					
23	0	3	X				X						
24	0	3		X	X	X			X				

Notes:



# POWOW #2 (KM13-01)

CTD# 25 / Station# 22 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5718 m  
 Start Time UTC: 21:56  
 Start Lat: 30 15.279  
 Start Lon: -154 50.488

Operator(s): EZ/ZJ  
 Year Day UTC: 22  
 Finish Time UTC: 22:38  
 Finish Lat: 30 15.278  
 Finish Lon: -154 50.457

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	YMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	200	200											
14	200	200											
15	200	200											
16	200	200											
17	200	200											
18	200	200											
19	200	200											
20	200	200											
21	200	200											
22	200	200											
23	200	200											
24	200	200											

Notes:

# POWOW #2 (KM13-01)

CTD# 26 / Station# 24 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5631 m  
 Start Time UTC: 15:59  
 Start Lat: 33 39.127  
 Start Lon: 154 25.314

Operator(s): EZ/ZJ  
 Year Day UTC: 23  
 Finish Time UTC: 17:00  
 Finish Lat: 33 39.128  
 Finish Lon: 154 25.316

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	155	155	X				X	X					
4	155	155		X	X	X			X				
5	Chlmax=125	125	X				X	X					
6	Chlmax=125	125		X	X	X			X				
7	Chlmax=125	125								X			
8	100	100	X				X	X					
9	100	101		X	X	X			X		X		
10	85	85					X						
11	85	85		X	X	X			X				
12	75	75	X				X						
13	75	75		X	X	X			X				
14	50	50	X				X						
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X						
18	25	25		X	X	X			X		X		
19	25	25						X					
20	15	15					X		X	X			
21	15	15		X	X								
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes: second small DCM at ~155 m

# POWOW #2 (KM13-01)

CTD# 26 / Station# 24 / Cast# 2

max CTD depth: 200 m  
 bottom depth 5628 m  
 Start Time UTC: 17:47  
 Start Lat: 33 39.120  
 Start Lon: -154 25.294

Operator(s): EZ/ZJ  
 Year Day UTC: 23  
 Finish Time UTC: 18:18  
 Finish Lat: 33 39.121  
 Finish Lon: -154 25.298

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty	LMa
1	<b>200</b>	200											
2	<b>200</b>	200											
3	<b>200</b>	200											
4	<b>200</b>	200											
5	<b>200</b>	200											
6	<b>200</b>	200											
7	<b>200</b>	200											
8	<b>200</b>	200											
9	<b>200</b>	200											
10	<b>200</b>	200											
11	<b>200</b>	200											
12	<b>200</b>	200											
13	<b>200</b>	200											
14	<b>200</b>	200											
15	<b>200</b>	200											
16	<b>200</b>	200											
17	<b>200</b>	200											
18	<b>200</b>	200											
19	<b>200</b>	200											
20	<b>200</b>	200											
21	<b>200</b>	200											
22	<b>200</b>	200											
23	<b>200</b>	200											
24	<b>200</b>	200											

Notes: PAR cast

# POWOW #2 (KM13-01)

CTD# 28 / Station# 27 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5833 m  
 Start Time UTC: 13:56  
 Start Lat: 37 11.808  
 Start Lon: -153 57.195

Operator(s): EZ/ZJ  
 Year Day UTC: 24  
 Finish Time UTC: 14:53  
 Finish Lat: 37 11.794  
 Finish Lon: -153 57.191

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125	X				X						
6	125	125		X	X	X			X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X	X			X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	50	50	X				X						
13	50	50		X	X	X		X	X				
14	Chlmax= 40	40					X						
15	Chlmax= 40	40		X	X	X		X	X				
16	25	26										X	
17	25	25	X				X						
18	25	25		X	X	X			X		X		
19	25	25						X					
20	15	15					X		X	X			
21	15	15		X	X								
22	0	3						X					
23	0	3	X				X						
24	0	3		X	X	X			X				

Notes: diffuse chlorophyll in upper ~75 m

# POWOW #2 (KM13-01)

CTD# 29 / Station# 29 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5436 m  
 Start Time UTC: 16:10  
 Start Lat: 41 30.025  
 Start Lon: -155 16.916

Operator(s): EZ/ZJ  
 Year Day UTC: 25  
 Finish Time UTC: 17:09  
 Finish Lat: 41 29.985  
 Finish Lon: -155 16.921

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125	X				X						
6	125	125		X	X				X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X				X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	Chlmax=60	60					X						
13	Chlmax=60	60		X	X	X		X	X				
14	50	50	X				X						
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X						
18	25	25		X	X	X			X		X		
19	25	25						X					
20	15	15					X		X	X			
21	15	15		X	X	X							
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes: diffuse and high chlorophyll in upper ~105 m

# POWOW #2 (KM13-01)

CTD# 30 / Station# 30 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5425 m  
 Start Time UTC: 25  
 Start Lat: 40 41.094  
 Start Lon: -154 59.958

Operator(s): ZJ  
 Year Day UTC: 25  
 Finish Time UTC: 22:23  
 Finish Lat: 40 41.102  
 Finish Lon: -154 59.955

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty	LMa
1	75	75											
2	75	75											
3	75	75											
4	75	75											
5	75	75											
6	75	75											
7	75	75											
8	75	75											
9	75	75											
10	75	75											
11	75	75											
12	0	5											
13	0	5											
14	0	5											
15	0	5											
16	0	5											
17	0	5											
18	0	5											
19	0	5											
20	0	5											
21	0	5											
22	0	5											
23	0	5											
24	0	5											

Notes:

**POWOW #2 (KM13-01)**CTD# 31 / Station# 31 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5061 m  
 Start Time UTC: 13:54  
 Start Lat: 38 40.003  
 Start Lon: -154 00.0037

Operator(s): EZ/ZJ  
 Year Day UTC: 26  
 Finish Time UTC: 14:46  
 Finish Lat: 38 40.032  
 Finish Lon: -154 00.017

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125	X				X						
6	125	125		X	X				X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X				X		X		
10	75	75	X				X						
11	75	75		X	X	X			X				
12	60	60					X						
13	60	60		X	X	X			X				
14	50	50	X				X						
15	50	50		X	X	X		X	X				
16	25	25										X	
17	25	25	X				X						
18	25	25		X	X	X			X		X		
19	25	25						X					
20	Chlmax= 15	15					X		X	X			
21	Chlmax= 15	15		X	X	X		X					
22	0	4						X					
23	0	4	X				X						
24	0	4		X	X	X			X				

Notes: diffuse chlorophyll in upper 100 m with minor peaks at 15 m and ~100 m

# POWOW #2 (KM13-01)

CTD# 32 / Station# 32 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5602 m  
 Start Time UTC: 21:49  
 Start Lat: 37 25.114  
 Start Lon: -153 59.832

Operator(s): EZ/ZJ  
 Year Day UTC: 26  
 Finish Time UTC: 22:28  
 Finish Lat: 37 25.099  
 Finish Lon: -153 59.852

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty	LMa
1	200	200											
2	200	200											
3	200	200											
4	200	200											
5	200	200											
6	200	200											
7	200	200											
8	200	200											
9	200	200											
10	200	200											
11	200	200											
12	200	200											
13	200	200											
14	200	200											
15	200	200											
16	200	200											
17	200	200											
18	200	200											
19	200	200											
20	200	200											
21	200	200											
22	200	200											
23	200	200											
24	200	200											

Notes:



# POWOW #2 (KM13-01)

CTD# 33 / Station# 33 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5321 m  
 Start Time UTC: 21:50  
 Start Lat: 32 10.358  
 Start Lon: -154 00.141

Operator(s): EZ/ZJ  
 Year Day UTC: 28  
 Finish Time UTC: 22:53  
 Finish Lat: 32 10.371  
 Finish Lon: -154 00.172

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200	199	X				X	X					
2	200	200		X					X				
3	150	150	X				X						
4	150	150		X					X				
5	125	125	X				X						
6	125	125		X					X				
7	125	125								X			
8	Chlmax= 115	115					X		X				
9	Chlmax= 115	115		X				X					
10	100	100	X				X	X					
11	100	100		X					X				
12	75	75	X				X						
13	75	75		X					X				
14	50	50	X				X						
15	50	50		X				X	X				
16	25	25										X	
17	25	25	X				X						
18	25	25		X					X				
19	25	25						X					
20	15	15					X			X			
21	15	15		X					X				
22	0	3						X					
23	0	3	X				X						
24	0	3		X					X				

Notes:

# POWOW #2 (KM13-01)

CTD# 34 / Station# 34 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5480 m  
 Start Time UTC: 13:54  
 Start Lat: 32 07.513  
 Start Lon: -154 01.677

Operator(s): EZ/ZJ  
 Year Day UTC: 29  
 Finish Time UTC: 15:06  
 Finish Lat: 32 07.717  
 Finish Lon: -154 01.877

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	<b>200</b>	200	X				X	X					
2	<b>200</b>	200		X	X				X				
3	<b>150</b>	150	X				X						
4	<b>150</b>	150		X	X				X				
5	<b>125</b>	125	X				X						
6	<b>125</b>	125		X	X	X			X				
7	<b>125</b>	125								X			
8	Chlmax= 115	112					X		X				
9	Chlmax= 115	112		X	X	X		X					
10	<b>100</b>	100	X				X	X					
11	<b>100</b>	100		X	X	X			X		X		
12	<b>75</b>	75	X				X						
13	<b>75</b>	75		X	X	X			X				
14	<b>50</b>	50	X				X						
15	<b>50</b>	53		X	X	X		X	X				
16	<b>25</b>	25										X	
17	<b>25</b>	25	X				X						
18	<b>25</b>	25		X	X	X			X				
19	<b>25</b>	25						X			X		
20	<b>15</b>	15					X			X			
21	<b>15</b>	15		X	X				X				
22	<b>0</b>	4						X					
23	<b>0</b>	4	X				X						
24	<b>0</b>	4		X	X	X			X				

Notes:

**POWOW #2 (KM13-01)**CTD# 35 / Station# 35 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5729 m  
 Start Time UTC: 05:43  
 Start Lat: 34 41.945  
 Start Lon: -154 00.254

Operator(s): EZ/ZJ  
 Year Day UTC: 30  
 Finish Time UTC: 06:41  
 Finish Lat: 34 41.917  
 Finish Lon: -154 00.288

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200	200	X				X	X					
2	200	200		X	X				X				
3	150	150	X				X						
4	150	150		X	X				X				
5	125	125	X				X						
6	125	125		X	X				X				
7	125	125								X			
8	100	100	X				X	X					
9	100	100		X	X	X			X		X		
10	Chlmax= 75	75	X				X	X					
11	Chlmax= 75	75		X	X	X			X				
12	50	50	X				X						
13	50	50		X	X	X		X	X				
14	32	32					X		X				
15	32	32		X	X	X							
16	25	25										X	
17	25	25	X				X					X	
18	25	25		X	X	X			X			X	
19	25	25						X			X	X	
20	15	15					X			X			
21	15	15		X	X	X			X				
22	0	5						X					
23	0	5	X				X						
24	0	5		X	X	X			X				

Notes:

# POWOW #2 (KM13-01)

CTD# 36 / Station# 36 / Cast# 1

max CTD depth: 200 m  
 bottom depth ? m  
 Start Time UTC: 21:48  
 Start Lat: 32 24.701  
 Start Lon: -154 14.992

Operator(s): EZ/ZJ  
 Year Day UTC: 30  
 Finish Time UTC: 22:26  
 Finish Lat: 32 24.702  
 Finish Lon: -154 14.985

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty	LMa
1	200												
2	200												
3	200												
4	200												
5	200												
6	200												
7	200												
8	200												
9	200												
10	200												
11	200												
12	200												
13	200												
14	200												
15	200												
16	200												
17	200												
18	200												
19	200												
20	200												
21	200												
22	200												
23	200												
24	200												

Notes:

# POWOW #2 (KM13-01)

CTD# 37 / Station# 37 / Cast# 1

max CTD depth: 300 m  
 bottom depth: -  
 Start Time UTC: 13:51  
 Start Lat: 32 24.713  
 Start Lon: -154 14.988

Operator(s): EZ/ZJ  
 Year Day UTC: 31  
 Finish Time UTC: 14:54  
 Finish Lat: 32 24.671  
 Finish Lon: -154 15.001

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200	X				X	X				
2	200	200		X	X				X			
3	150	150	X				X					
4	150	150		X	X				X			
5	125	125	X				X					
6	125	125		X	X	X			X			
7	125	125								X		
8	Chlmax= 110	113					X	X				
9	Chlmax= 110	110		X	X				X			
10	100	100	X				X	X				
11	100	100		X	X	X			X		X	
12	75	75	X				X					
13	75	75		X	X	X			X			
14	50	50	X				X					
15	50	50		X	X	X		X	X			
16	25	25										
17	25	25	X				X					
18	25	25		X	X	X			X			
19	25	25						X			X	
20	15	15					X			X		
21	15	15		X	X				X			
22	0	5						X				
23	0	5	X				X					
24	0	5		X	X	X			X			

Notes:

# POWOW #2 (KM13-01)

CTD# 38 / Station# 37 / Cast# 2

max CTD depth: 300 m  
 bottom depth: -  
 Start Time UTC: 15:37  
 Start Lat: 32 24.689  
 Start Lon: -154 14.994

Operator(s): EZ/ZJ  
 Year Day UTC: 31  
 Finish Time UTC: 15:51  
 Finish Lat: 32 24.683  
 Finish Lon: -154 14.997

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	50	50										
2	50	50										
3	50	50										
4	50	50										
5	50	50										
6	50	50										
7	50	50										
8	50	50										
9	50	50										
10	50	50										
11	50	50										
12	50	50										
13	50	50										
14	50	50										
15	50	50										
16	50	50										
17	50	50										
18	50	50										
19	50	50										
20	50	50										
21	50	50										
22	50	50										
23	50	50										
24	50	50										

Notes: T-shift #3 fill

## POWOW #2 (KM13-01)

CTD# 39 / Station# 38 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5661 m  
 Start Time UTC: 21:50  
 Start Lat: 32 09.368  
 Start Lon: -154 54.444

Operator(s): EZ/ZJ  
 Year Day UTC: 31  
 Finish Time UTC: 22:23  
 Finish Lat: 32 09.345  
 Finish Lon: -154 54.449

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200										
2	200	200										
3	200	200										
4	200	200										
5	200	200										
6	200	200										
7	200	200										
8	200	200										
9	200	200										
10	200	200										
11	200	200										
12	200	200										
13	200	200										
14	200	200										
15	200	200										
16	200	200										
17	200	200										
18	200	200										
19	200	200										
20	200	200										
21	200	200										
22	200	200										
23	200	200										
24	200	200										

Notes: PAR Cast

# POWOW #2 (KM13-01)

CTD# 40 / Station# 39 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5718 m  
 Start Time UTC: 05:54  
 Start Lat: 31 49.383  
 Start Lon: -155 53.277

Operator(s): EZ/ZJ  
 Year Day UTC: 32  
 Finish Time UTC: 06:18  
 Finish Lat: 31 49.382  
 Finish Lon: -155 53.277

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty
1	50	50										
2	50	50										
3	50	50										
4	50	50										
5	50	50										
6	50	50										
7	50	50										
8	50	50										
9	50	50										
10	50	50										
11	50	50										
12	50	50										
13	50	50										
14	50	50										
15	50	50										
16	50	50										
17	50	50										
18	50	50										
19	50	50										
20	50	50										
21	50	50										
22	50	50										
23	50	50										
24	50	50										

Notes: Marty Cast



# POWOW #2 (KM13-01)

CTD# 41 / Station# 40 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5736 m  
 Start Time UTC: 13:51  
 Start Lat: 31 55.008  
 Start Lon: -156 52.675

Operator(s): EZ/ZJ  
 Year Day UTC: 32  
 Finish Time UTC: 15:00  
 Finish Lat: 31 54.974  
 Finish Lon: -156 52.707

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200	X				X	X				
2	200	200		X	X				X			
3	150	150	X				X					
4	150	150			X				X			
5	125	125	X				X					
6	125	125		X	X				X			
7	125	125								X		
8	Chlmax= 110	110					X	X				
9	Chlmax= 110	110		X	X				X			
10	100	101	X				X	X				
11	100	101		X	X	X			X			
12	75	75	X				X					
13	75	75			X	X			X			
14	50	50	X				X					
15	50	50		X	X	X		X	X			
16	25	25										
17	25	25	X				X					
18	25	25			X	X			X			
19	25	25						X				
20	15	15					X			X		
21	15	15			X				X			
22	0	5						X				
23	0	5	X				X					
24	0	5		X	X	X			X			

Notes:

## POWOW #2 (KM13-01)

CTD# 42 / Station# 41 / Cast# 1

max CTD depth: 200 m  
 bottom depth 5563 m  
 Start Time UTC: 21:49  
 Start Lat: 31 41.685  
 Start Lon: -157 46.718

Operator(s): EZ/ZJ  
 Year Day UTC: 32  
 Finish Time UTC: 22:26  
 Finish Lat: 31 41.643  
 Finish Lon: -157 56.719

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200										
2	200	200										
3	200	200										
4	200	200										
5	200	200										
6	200	200										
7	200	200										
8	200	200										
9	200	200										
10	200	200										
11	200	200										
12	200	200										
13	200	200										
14	200	200										
15	200	200										
16	200	200										
17	200	200										
18	200	200										
19	200	200										
20	200	200										
21	200	200										
22	200	200										
23	200	200										
24	200	200										

Notes:

# POWOW #2 (KM13-01)

CTD# 43 / Station# 42 / Cast# 1

max CTD depth: 300 m  
 bottom depth: 5809 m  
 Start Time UTC: 13:49  
 Start Lat: 31 26.607  
 Start Lon: -158 45.091

Operator(s): EZ/ZJ  
 Year Day UTC: 33  
 Finish Time UTC: 14:55  
 Finish Lat: 31 26.606  
 Finish Lon: -158 45.104

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty
1	200	200	X				X	X				
2	200	200		X					X			
3	150	150	X				X					
4	150	150		NH4 only					X			
5	Chlmax=135	135					X	X				
6	Chlmax=135	135		X					X			
7	125	125	X				X					
8	125	125		X					X	X		
9	100	100	X				X	X				
10	100	100		X		X			X			
11	82	82				X						
12	75	75	X				X					
13	75	75		NH4 only		X			X			
14	61	61				X						
15	50	50	X				X					
16	50	50		X	X			X	X			
17	35	35				X						
18	25	25	X				X	X				
19	25	25		NH4 only					X			
20	15	15				X	X			X		
21	15	15		NH4 only					X			
22	0	4				X		X				
23	0	4	X				X					
24	0	4		X					X			

Notes:

## POWOW #2 (KM13-01)

CTD# 44 / Station# 42 / Cast# 2

max CTD depth: 50 m  
 bottom depth 5808 m  
 Start Time UTC: 15:39  
 Start Lat: 31 26.630  
 Start Lon: -158 44.993

Operator(s): EZ/ZJ  
 Year Day UTC: 33  
 Finish Time UTC: 15:56  
 Finish Lat: 31 26.637  
 Finish Lon: -158 44.957

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/ DIC	nuts	RNA	PP	qPCR	virus/ b-prod	Chl/ FCM	Sterivex /Isolates	Ap	Marty
1	41	41										
2	41	41										
3	41	41										
4	41	41										
5	41	41										
6	41	41										
7	41	41										
8	41	41										
9	41	41										
10	41	41										
11	41	41										
12	41	41										
13	41	41										
14	41	41										
15	41	41										
16	41	41										
17	41	41										
18	41	41										
19	41	41										
20	41	41										
21	41	41										
22	41	41										
23	41	41										
24	41	41										

**Notes:** T-shift #4 Fill, replaced lanyard on niskin bottle #12 prior to cast

## POWOW #2 (KM13-01)

CTD# 45 / Station# 43 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5919 m  
 Start Time UTC: 21:49  
 Start Lat: 31 14.775  
 Start Lon: -158 00.960

Operator(s): ZJ  
 Year Day UTC: 33  
 Finish Time UTC: 22:23  
 Finish Lat: 31 14.775  
 Finish Lon: -158 00.957

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200										
2	200	200										
3	200	200										
4	200	200										
5	200	200										
6	200	200										
7	200	200										
8	200	200										
9	200	200										
10	200	200										
11	200	200										
12	200	200										
13	200	200										
14	200	200										
15	200	200										
16	200	200										
17	200	200										
18	200	200										
19	200	200										
20	200	200										
21	200	200										
22	200	200										
23	200	200										
24	200	200										

Notes: PAR Cast

**POWOW #2 (KM13-01)**CTD# 46 / Station# 44 / Cast# 1

max CTD depth: 300 m  
 bottom depth 5796 m  
 Start Time UTC: 13:48  
 Start Lat: 30 45.042  
 Start Lon: -156 12.059

Operator(s): EZ/ZJ  
 Year Day UTC: 34  
 Finish Time UTC: 14:51  
 Finish Lat: 30 45.035  
 Finish Lon: -156 12.032

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200	X				X	X				
2	200	200		X	X				X			
3	150	150	X				X					
4	150	150		NH4 only	X				X			
5	Chlmax=132	132					X	X				
6	Chlmax=132	132		X	X				X			
7	125	125	X				X					
8	125	125		X	X	X			X	X		
9	100	100	X				X	X				
10	100	100		X	X	X			X			
11	96	96				X						
12	90	90				X						
13	75	75	X				X					
14	75	75		NH4 only	X	X			X			
15	50	50	X				X					
16	50	50		X	X			X	X			
17	44	44				X						
18	25	25	X				X	X				
19	25	25		NH4 only	X	X			X			
20	15	15					X			X		
21	15	15		NH4 only	X				X			
22	0	3				X		X				
23	0	3	X				X					
24	0	3		X	X				X			

Notes:

# POWOW #2 (KM13-01)

CTD# 47 / Station# 45 / Cast# 1

max CTD depth: 200 m  
 bottom depth 4946 m  
 Start Time UTC: 03:56  
 Start Lat: 25 32.067  
 Start Lon: -156 07.761

Operator(s): EZ/ZJ  
 Year Day UTC: 36  
 Finish Time UTC: 04:34  
 Finish Lat: 25 32.072  
 Finish Lon: -156 07.865

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM/FIRe	Sterivex/Isolates	Ap	Marty
1	75	75	X				X		X			
2	75	75		X				X				
3	50	50										X
4	50	50										X
5	50	50										X
6	50	50										X
7	50	50										X
8	50	50										X
9	50	50										X
10	50	50										X
11	50	50										X
12	50	50										X
13	50	50										X
14	50	50										X
15	50	50										X
16	50	50										X
17	50	50										X
18	50	50										X
19	50	50										X
20	50	50										X
21	50	50	X				X		X			
22	50	50		X				X				
23	0	5	X				X		X			
24	0	5		X				X				

Notes:

**POWOW #2 (KM13-01)**CTD# 48 / Station# 46 / Cast# 1

max CTD depth: 300 m  
 bottom depth: -  
 Start Time UTC: 21:48  
 Start Lat: 22 46.224  
 Start Lon: -157 56.133

Operator(s): EZ/ZJ  
 Year Day UTC: 36  
 Finish Time UTC: 22:45  
 Finish Lat: 22 46.214  
 Finish Lon: -157 56.135

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	200	200	X				X					
2	200	200		X					X			
3	150	150	X				X					
4	150	150		X					X			
5	Chlmax= 145	145					X					
6	Chlmax= 145	145		X					X			
7	125	125	X				X					
8	125	125		X					X			
9	125	125								X		
10	100	100	X				X					
11	100	100		X					X		X	
12	75	75	X				X					
13	75	75		X					X			
14	50	50	X				X					
15	50	50		X					X			
16	25	25									X	
17	25	25	X				X					
18	25	25		X					X			
19	25	25										
20	15	15					X			X		
21	15	15		X					X			
22	0	7										
23	0	7	X				X					
24	0	7		X					X			

**Notes:** Surface samples may have fish juices in them



# POWOW #2 (KM13-01)

CTD# 49 / Station# 47 / Cast# 1

max CTD depth: 4000 m  
 bottom depth: -  
 Start Time UTC: 00:30  
 Start Lat: 22 45.074  
 Start Lon: -158 00.029

Operator(s): ZJ  
 Year Day UTC: 37  
 Finish Time UTC: 03:55  
 Finish Lat: 22 45.074  
 Finish Lon: -158 00.029

Niskin #	Desired Depth (m)	Actual Depth (m)	pH/DIC	nuts	RNA	PP	qPCR	virus/b-prod	Chl/FCM	Sterivex/Isolates	Ap	Marty
1	4000	4000	X	X					X			
2	4000	4000								X		
3	4000	4000										
4	4000	4000										
5	3000	3000	X	X					X			
6	3000	3000										
7	3000	3000										
8	3000	3000										
9	2000	2000	X	X					X			
10	2000	2000										
11	2000	2000										
12	2000	2000										
13	1000	1000	X	X					X			
14	1000	1000										
15	1000	1000										
16	1000	1000										
17	770	770	X	X					X			
18	770	770										
19	770	770										
20	770	770										
21	500	500	X	X					X			
22	500	500								X		
23	500	500										
24	500	500										

**Notes:** Both fluorescence traces are noisy