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16 GOA-IERP-UTL July 2011	STA. NAME/ID	DIRN. SPO. CLOUD (amt) TYPE WEATHER DEPTH	WET BULB				ONGITUDE		LATITUDE	TIVE	CONSECUTIVE
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CAST # (CTD#) FV Northwest Explorer Bucket Niskin o ω H 0 03 56 SBE 9+ to PRESS SN PESSED SEC TEMP SN PRI COND SN PRI TEMP SN SEC COND SN DEPTH జన్ను ర 40 0 Ò SST= Rosette Notes 23.788 N 35 7 SAS WOD 07 LATITUDE Sal Btl # DEG Transmissometer
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CAST # (CTD#) Bucket FV Northwest Explorer **JESSEL** Niskin No. ത S 4 ω N 0 SEC TEMP SN SBE 9+ PRESS SN PRI TEMP SN DEPTH DESIRED SEC COND SN z <u>م</u> 9 0 00 Ø 8 DEG Rosette Notes LATITUDE 43.733 N 135 MIN Sal Btl # CRUISE ID E E E PAR S/N SBE43-Oxy (prime) FLUOR S/N SSSal= Transmissometer Hydro Team-PMEL AKST Date and Time = LONGITUDE 37 103 w06 Nut Btl# 4 27 در در 00 ف 50 7 __ 0₂ Btl # đΨ DAY DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG ĕ Kristan Shake DATE (GMT) DOC REMARKS HR MIN (GMT) کر عہ ٧ 77 % 2 <u>م</u> Chl. Btl # Phyto Btl # MZ Bottle # S Q ے S-Strom/Fredrickson DRY BULB ೆ WET BULB (°C PRESSURE SEA STATE VISIBILITY WIND DIRN. (deg) * CLOUD (amt)

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CAST # (CTD#) Bucket FV Northwest Explorer Niskin ٧ ٥ 6 G ω SEC COND SN SEC TEMP SN PRI COND SN PRI TEMP SN PRESS SN DEPTH DESIRED SST= Rosette Notes LATITUDE 45.323 N 136 Sal Btl # busis bounds to your only of the service of the device of Transmissometer
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CAST # (CTD#) VESSEL FV Northwest Explorer Bucket Niskin Z O 4 ω 2 σ Çī 05 1-1 B SBE 9+ PRI COND SN PRI TEMP SN SEC TEMP SN PRESS SN SEC COND SN DESIRED DEPTH ō SST= Rosette Notes SD .305 N 135 LATITUDE Z 1 Sal Btl # CRUISE ID DEG SBE43-Oxy (prime) PAR S/N FLUOR S/N Transmissometer NWC Hydro Team-PMEL AKST Date and Time = LONGITUDE 53 . \$111 w 08 Nut Btl # Z Z O₂ Btl # DAY DIC/AIk GOA-IERP-UTL July 2011 7 PROJECT & LEG S Kristan Shake DATE (GMT) ¥ D_OC REMARKS HR MIN TIME (GMT) Chl. Btl # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB Ĉ WET BULB (°C) PRESSURE SEA STATE VISIBILITY Down Chy اس جن اج 「るかいしからのからのい DIRN. (deg) p.w.W.y CLOUD (amt)
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CAST # (CTD#) Bucket FV Northwest Explorer Niskin No. ω o, G 4 N 016 PRI TEMP SN SBE 9+ SEC COND SN PRI COND SN PRESS SN DESIRED DEPTH 8 SST= Rosette Notes LATITUDE 55 319 N 135 38 010 W D B Ν Sal Btl # __FLUOR S/N PAR S/N SBE43-Oxy (prime) Transmissometer SSSal= IMM Hydro Team-PMEL AKST Date and Time = LONGITUDE Nut Btl # <u>₹</u> 0₂ Btl # DAY DIC/AIk 9 GOA-IERP-UTL July 2011 PROJECT & LEG ĕ Kristan Shake DATE (GMT) Ϋ́R DOC REMARKS HR MIN TIME (GMT) Chl. Btl # | Phyto Btl # | MZ Bottle # Strom/Fredrickson DRY BULB C. WET BULB 0 (mb) PRESSURE download SEA STATE 013716 CUB STYCHIA エジネ VISIBILITY SED LIN Desk. WIND DIRN. (deg) CLOUD (amt)
TYPE
WEATHER (kts) duta MAX. DEPTH = 5) 3 STATION NO. or alt. name Comments "Charles" かべ RO Ø BOTTOM DEPTH e, O <u>a</u> 80 STA. NAME/ID SEDD 3 Nis œ σ 5 ω 2 No.

CAST # (CTD#) Bucket FV Northwest Explorer Niskin S O φ ú ω 98 410 PRESS SN SBE 9+ DESIRED SEC COND SN SEC TEMP SN PRI TEMP SN PRI COND SN Z ري 00 9 6 0 Ø SST= Rosette Notes LATITUDE ŽΝ 654 N 136 去 Sal Btl # SBE43-Oxy (prime) CRUISE ID DEG FLUOR S/N PAR S/N NWE SSSal= Transmissometer AKST Date and Time = Hydro Team-PMEL ONGITUDE 224 Nut Btl # 67 6 0 Ž 7.803 w & 9 5 Z 0₂ Btl # DAY DIC/AJK SAH SEMPER HEEP GOA-IERP-UTL July 2011 PROJECT & LEG Š Kristan Shake DATE (GMT) ⋨ DOC REMARKS (GMT) 윤 Chl. BI # Phyto Btl # MZ Bottle # ~1 700 MIN 520 (د' Strom/Fredrickson DRY BULB ŝ WET BULB (°C) PRESSURE CH) SEA STATE VISIBILITY after The DIRN. (deg) CLOUD (amt)
TYPE
WEATHER To the miredian i solu (kts) 25 Br MAX. DEPTH = Comments STATION NO. or alt. name 335 ВОТТОМ <u>E</u> " abh STA. NAME/ID SEEZS В No Nis σ Çī ω

ACCORL	CROISE ID	PROJECT & LEG		CTATION NO AF SHE PARTS	
FV Northwest Explorer		GOA-IERP-UTL July 2011	ly 2011	VI 23 S	
CONSECUTIVE			11	D (amt)	
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_	Hydro Team-PMEL	Kristan Shake	Strom/Fredrickson	n Comments	Z. S
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STATION NO. or alt. name	STAT		111	TL July 20	GOA-IERP-UTL July 2011		INWEII	IN M	orer	FV Northwest Explorer	FV North
					SOLUTION INCOME		ĵ.	CRITISE			VESSEL

CAST # (CTD#) FV Northwest Explorer Bucket Niskin No. Çī N თ 4 ω 020 54 PRESS SN SBE 9+ PRI COND SN SEC TEMP SN DESIRED SEC COND SN DEPTH 3 SST= Rosette Notes LATITUDE 11 849 N 135 Sal Btl # Y S CRUISE ID PAR S/N DEG SBE43-Oxy (prime) Transmissometer FLUOR S/N SSSal= 119MN AKST Date and Time = Hydro Team-PMEL LONGITUDE 261 244 Nut Btl # Σ 0₂ Btl # 8 0 DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG 6 § Kristan Shake DATE (GMT) DOC REMARKS HR MIN TIME (GMT) Chl. Btl # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB c WET BULB ೆ PRESSURE SEA STATE VISIBILITY VIND SPECIAL SEPTIMENT (SPECIAL SEPTIMENT)

CLOUD (amt)

TYPE

WEATHER (deg) (kts) MAX. DEPTH = STATION NO. or alt. name Comments BOTTOM DEPTH <u>e</u> 26 5675 STA. NAME/ID 3 ω No Nis. œ σ v 4

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Bucket CAST # (CTD#) FV Northwest Explorer Niskin No. ത G ω 4 N ts 170 PRI TEMP SN SEC TEMP SN PRESS SN SBE 9+ DEPTH DESIRED PRI COND SN SEC COND SN =TSS Rosette Notes LATITUDE N OFT Sal Btl # 17 CRUISE ID SSSal= 3MM PAR S/N SBE43-Oxy (prime) Transmissometer FLUOR S/N Hydro Team-PMEL AKST Date and Time = TONGITUDE Nut Btl # M 263w10 0₂ Btl # DAY DIC/AIK GOA-IERP-UTL July 2011 PROJECT & LEG Kristan Shake š DATE (GMT) 8 ı≾ REMARKS HR MIN (GMT) Chl. Btl # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB Ĉ WET BULB <u>ೆ</u> PRESSURE SEA STATE VISIBILITY DIRN. WIND
CLOUD (amt)
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CAST # (CTD#) Bucket FV Northwest Explorer VESSEL Niskin No. σ ω Ç 4 N 25/79 SEC TEMP SN SBE 9+ SEC COND SN PRI TEMP SN PRESS SN 8 DESIRED =TSS Rosette Notes LATITUDE 3.149 N 13629. 910W N N Sal Btl# FLUOR S/N
SBE43-Oxy (prime) DEG PAR S/N SSSal= Transmissometer Hydro Team-PMEL AKST Date and Time = ONGITUDE Nut Btl # O₂ Btl # <u></u> DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG ĕ Kristan Shake DATE (GMT) DOC ¥ REMARKS HR MIN TIME (GMT) Chl. Btl # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB ු WET BULB <u>ೆ</u> PRESSURE bothe * SEA STATE
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CAST # (CTD#) Bucket FV Northwest Explorer VESSEL Niskin Ν_ο o (J N 4 ω PRI TEMP SN SBE 9+ PRI COND SN PRESS SN SEC COND SN DEPTH 00 Z) Ø 0 \mathcal{E}_{l} J 4 SST= Rosette Notes LATITUDE N 9/19 0 Sal Btl # 98 CRUISE ID 530 Transmissometer
PAR S/N SBE43-Oxy (prime) MMC SSSal= FLUOR S/N Hydro Team-PMEL AKST Date and Time = 20 LONGITUDE Nut Btl # 88 ే. చా 90 42 WIS 10 O₂ Btl # DIC/AIK 0 GOA-IERP-UTL July 2011 PROJECT & LEG Mo Kristan Shake (GMT) DOC 쏬 REMARKS HR MIN TIME (GMT) マナた 1 K 7 <u>~7</u> Chl. Btl # Phyto Btl # MZ Bottle # 0 2 2 9 Strom/Fredrickson DRY BULB ್ತಿ 6 WET BULB 22 (°C) 7 PRESSURE SEA STATE VISIBILITY WIND DIRN. (deg) CLOUD (amt)
TYPE
WEATHER (kts) MAX. DEPTH = STATION NO. or alt. name Comments ВОТТОМ ВЕРТН 26612 STA, NAME/ID EGIO 3 No. Sin ₩ 6 G 4 w 2

VESSEL CAST # (CTD#) FV Northwest Explorer Bucket Niskin A/10 Š. 6 S 4 ω 2 SBE 9+ DEPTH DESIRED SEC TEMP SN PRESS SN PRI COND SN PRI TEMP SN SEC COND SN S 00 S ₹ V S 0 4.5 SST= Rosette Notes LATITUDE 9 . 466 N 136 <u>S</u> Sal Btl # CRUISE ID 230 Transmissometer
PAR S/N SBE43-Oxy (prime) NWK FLUOR S/N SSSal= AKST Date and Time = Hydro Team-PMEL LONGITUDE Nut Btl # 27 古品 *و* ىي رى W. C. 0₂ Btl # DAY DIC/AIk GOA-IERP-UTL July 2011 PROJECT & LEG 4 ĕ Kristan Shake DATE (GMT) ¥ DOC REMARKS HR MIN TIME (GMT) **₩** 4 -C 50 50 50 50 So. Chl. Btl # | Phyto Btl # | MZ Bottle # Ś Strom/Fredrickson DRY BULB c 4 WET BULB な Z c 25 2 PRESSURE SEA STATE VISIBILITY DIRN. (deg) * CLOUD (amt)

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CAST # (CTD#) Bucket VESSEL FV Northwest Explorer Niskin <u>N</u>0. S 4 σ w N JPRESS SN SBE 9+ DEPTH DESIRED PRI COND SN SEC TEMP SN PRI TEMP SN SEC COND SN 目 5 5 S) چې ð 0 SST= Rosette Notes LATITUDE 21 800 N Z N Sal Btl # Ø CRUISE ID is of Transmissometer PAR S/N SBE43-Oxy (prime) FLUOR S/N DEG SSSal= Hydro Team-PMEL AKST Date and Time = MIN Nut Btl # 8 00 2 na 101 Š 357 W 0₂ Btl # DAY DIC/Alk GOA-IERP-UTL July 2011 40 MO Kristan Shake DATE (GMT) DOC ≴ REMARKS HR MIN (GMT) S SS ಕ್ 8 Chl. Btl # Phyto Btl # MZ Bottle # 2 Strom/Fredrickson DRY BULB ್ತಿ O WET BULB જ 2 Ĉ 50 PRESSURE SEA STATE VISIBILITY DIRN. CLOUD (amt)
TYPE (kts) MAX. DEPTH = Comments STATION NO. or alt. name WEATHER <u>VE</u> 6 DEPTH 0 3 5.660 STA. NAME/ID Ø 3 No. Sik B თ Ü ω

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VESSEL CAST # (CTD#) FV Northwest Explorer Bucket Niskin Ņ, ტ ហ ω N 870 SEC TEMP SN PRI COND SN SBE 9+ DEPTH DESIRED SEC COND SN PRI TEMP SN PRESS SN 4~ SST= Rosette Notes LATITUDE N 24. 08 Sal Btl # ون CRUISE ID DEG ZME PAR S/N SBE43-Oxy (prime) FLUOR S/N Transmissometer SSSal= Hydro Team-PMEL AKST Date and Time = LONGITUDE 13 Nut Bti # M W OK! O₂ Btl # 2 DAY DIC/AIk GOA-IERP-UTL July 2011 PROJECT & LEG 47 0 N Kristan Shake DATE (GMT) ¥ DOC REMARKS HR MIN TIME (GMT) Chl. Btl # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB WET BULB C (°C) PRESSURE SEA STATE VISIBILITY DIRN. (deg) * CLOUD (amt)

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	7													Rosette Notes	SN	SN SN	Š				2	LATITUDE	plorer		
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CRUISE ID PROJECT & LEG STATION NO. or				+(3)			Date and Time	AKST			
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PROJECT & LEG STATION NO.	<u> </u>	SEH		uly 2011	-IERP-UTL J	GOA	MAR	i M	rer	west Explo	V North
		STATION NO. or alt. name			CT & LEG	PROJE		CRUISE 1D			VESSEL

Bucket CONSECUTIVE CAST # (CTD#) VESSEL FV Northwest Explorer Niskin No. თ S 4 w N 202 PRESS SN SBE 9+ PRI TEMP SN SEC COND SN PRI COND SN SEC TEMP SN DESIRED DEPTH SST= 7 Rosette Notes BOUTITAL 8 MIN Sal Btl # 136 44 578w CRUISE ID FLUOR S/N SBE43-Oxy (prime) Transmissometer
PAR S/N PEG SSSal= NWEL Hydro Team-PMEL AKST Date and Time = LONGITUDE Nut Btl # MIN O₂ Btl # DAY DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG Kristan Shake S DATE (GMT) DOC ¥ REMARKS HR MIN TIME (GMT) Chl. Btl # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB ೆ WET BULB ೆ PRESSURE SEA STATE VISIBILITY DIRN. (deg) CLOUD (amt)
TYPE
WEATHER (kts) * MAX. DEPTH = Comments STATION NO. or alt. name でガル BOTTOM DEPTH 17 3 STA. NAME/ID SEHTO 5 3 No. Nis 8 6 5 w

CAST # (CTD#) VESSEL FV Northwest Explorer Bucket Niskin Z O മ G 4 w 2 750 SBE 9+ PRESS SN DEPTH DESIRED SEC COND SN PRI COND SN SEC TEMP SN PRI TEMP SN 100 5 0 SST= Rosette Notes LATITUDE 2 834 N Sal Btl # 136 53 564 HAMEI DEG PAR S/N SBE43-Oxy (prime) Transmissometer FLUOR S/N SSSal= Hydro Team-PMEL AKST Date and Time = LONGITUDE 19/ Nut Btl # -70 801 00 O₂ Btl # ٤ DAY DIC/Alk 4 GOA-IERP-UTL July 2011 PROJECT & LEG 8 Kristan Shake DATE (GMT) ⋨ DOC REMARKS HR MIN TIME (GMT) alba Chl. Btl # Phyto Btl # MZ Bottle # 424 1926 910 12 56 d U d Strom/Fredrickson DRY BULB c WET BULB ರೆ (mb) PRESSURE SEA STATE VISIBILITY WIND DIRN. (deg) SPD CLOUD (amt)
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CAST # (CTD#) FV Northwest Explorer Niskin Bucket No. 4 ω σ G 2 PRI TEMP SN SBE 9+ PRI COND SN PRESS SN SEC COND SN DESIRED 000 DEPTH ं 0 **~** 9 Rosette Notes LATITUDE 名。四次初 Z Z Sal Btl # CRUISE ID SBE43-Oxy (prime) DEG PAR S/N FLUOR S/N Transmissometer SSSal= NEGH AKST Date and Time = Hydro Team-PMEL MIN 29 629 w 13 Nut Bti# 5 172 77 17 2 5 0₂ Btl # DAY DIC/Alk GOA-IERP-UTL July 2011 2 PROJECT & LEG ĕ Kristan Shake DATE (GMT) ¥ DOC REMARKS HR MIN TIME 103 / P 50 J 10 में Chl. Btl # Phyto Btl # MZ Bottle # 1084 18/18 10/10/ Strom/Fredrickson DRY BULB c WET BULB ಿ PRESSURE SEA STATE VISIBILITY WIND DIRN. CLOUD (amt)
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PAR S/N Sal Btl# CRUISE ID 000 SBE43-Oxy (prime) SSSal= FLUOR S/N MARNI AKST Date and Time = Hydro Team-PMEL LONGITUDE 12 ALS Nut Btl # O₂ Btl # DAY DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG Νö Kristan Shake DATE (GMT) ¥ 000 REMARKS HR MIN (GMT) Chl. Btl # | Phyto Btl # | MZ Bottle # Strom/Fredrickson DRY BULB Ĉ WET BULB ್ತಿ PRESSURE SEA STATE VISIBILITY WIND DIRN. CLOUD (amt)
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Niskin No.

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Hydro Team-PMEL

Kristan Shake

DEPTH DESIRED

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PAR S/N FLUOR S/N SBE43-Oxy (prime) SSSal= Hydro Team-PMEL AKST Date and Time = LONGITUDE 4 122 W Nut Btl # O₂ Btl # DAY 9 DIC/AIk GOA-IERP-UTL July 2011 40 PROJECT & LEG Νo Kristan Shake DATE (GMT) ž DOC REMARKS HR MIN TIME (GMT) Chl. Bti # Phyto Btl # MZ Bottle # Strom/Fredrickson DRY BULB ි WET BULB C. PRESSURE SEA STATE VISIBILITY WIND DIRN. S E CLOUD (amt) TYPE WEATHER MAX. DEPTH = STATION NO. or alt. name Comments W BOTTOM DEPTH 30 3 7 a 90 STA. NAME/ID 3 No Nis ω 6

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PAR S/N SBE43-Oxy (prime) FLUOR S/N NAMMIN Hydro Team-PMEL AKST Date and Time = LONGITUDE 45 163 000 4 79 445 W Nut Bt! # 59 0 0₂ Btl # T-PAY DIC/AIk GOA-IERP-UTL July 2011 7 PROJECT & LEG š Kristan Shake DATE (GMT) ¥ DOC REMARKS HR MIN TIME (GMT) 142 H 143<u>1</u> 141 <u>--</u> 2 Chl. Btl # Phyto Btl # MZ Bottle # Pohl Strom/Fredrickson DRY BULB ි WET BULB ೦ PRESSURE SEA STATE VISIBILITY WIND DIRN. (deg) * CLOUD (amt)
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CAST # (CTD#) FV Northwest Explorer Bucket Niskin No. თ ഗ ω 2 4 25 SEC TEMP SN SBE 9+ PRESS SN PRI TEMP SN DESIRED SEC COND SN DEPTH S. 2 ار خ Ç 50 5 DEG Rosette Notes LATITUDE M 623 N 137 Sal Btl # **%** CRUISE ID PAR S/N DEG SBE43-Oxy (prime) Transmissometer FLUOR S/N SSSal≍ AKST Date and Time = Hydro Team-PMEL LONGITUDE 25 سب آنادار آسال CC Nut Btl # 4 831w 33 O₂ Bti # DAY ĬĒ. DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG ĕ Kristan Shake (GMT) DOC ¥ REMARKS HR MIN (GMT) 7 0 Chl. Btl # Phyto Btl # MZ Bottle # 7 S 2 9-Strom/Fredrickson DRY BULB (°C) WET BULB c PRESSURE SEA STATE VISIBILITY WIND DIRN. (deg) S VIN CLOUD (amt) (kts) MAX. DEPTH = * TYPE * WEATHER STATION NO. or alt. name Comments SEM S BOTTOM 3 Sex-5 STA. NAME/ID 3 Nis No. 6 ÇTI 4 w 2 ω

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CAST # (CTD#) FV Northwest Explorer Bucket Niskin No. თ G 4 ω N 2 PRI TEMP SN SEC TEMP SN PRI COND SN SBE 9+ PRESS SN DEPTH DESIRED SEC COND SN Ŷ G S 0 SST= Rosette Notes LATITUDE .018 N Sal Btl # 3 SBE43-Oxy (prime) DEG PAR S/N FLUOR S/N Transmissometer Hydro Team-PMEL AKST Date and Time = LONGITUDE 00 Nut Btl # 56 693 W 183 اي 282 000 00° 64. MN O₂ Btl # DAY DIC/Alk GOA-IERP-UTL July 2011 PROJECT & LEG 10 š Kristan Shake DATE (GMT) ≴ DOC REMARKS HR MIN TIME 1471 09 1594 Chl. Btl # Phyto Btl # MZ Bottle # 1.9 5 1289 <u>~</u> Strom/Fredrickson DRY BULB Ĉ WET BULB <u>ೆ</u> PRESSURE SEA STATE VISIBILITY DIRN. (deg) * CLOUD (amt)

* TYPE

* WEATHER (kts) MAX. DEPTH = STATION NO. or alt. name Comments SKMO BOTTOM STA. NAME/ID SEMO 3 В G 4 ω Z₀ 6 N