

# Weekly Summary Report

Project Name:	Gasco Sediments Site ISS Field Pilot Study		
Project No:	000029-02.85 <b>Report Date:</b> October 24, 2023		October 24, 2023
Week of:	October 16, 2023	Report No:	6

Weekly Summary				
ltem	Approximate Production This Week	Approximate Total Cumulative Production	Approximate Task Percent Completion	
Mobilization activities	NA	NA	100%	
Dolphin pile removal	NA	NA	100%	
Debris removal	6 су	16 cy	100%	
ISS auguring	31 columns	47 columns	>100% <sup>1</sup>	
Swell material removal	80 cy	80 cy	NA <sup>2</sup>	

Notes:

1. The task percent complete for in situ stabilization and solidification (ISS) auguring is based on the Work Plan-identified goal of 29 columns.

2. Long-term sampling port leveling: The U.S. Environmental Protection Agency (EPA)-approved Work Plan states, "If necessary, small-scale regrading of the target sampling locations may be performed by the swell materials removal excavator or divers to prepare a surface that is as flat and level as practicably possible," but the Work Plan does not provide a specific removal volume.

#### Work Performed This Period

Monday (10/16/2023)

Performed ISS auguring and ISS quality assurance/quality control (QA/QC) sample collection at columns 2-12 and 3-11. Refusal was encountered at column 2-12. Prepared for targeted debris removal near column 1-9 where subsurface debris was previously encountered, leading to refusal above the design 30-foot depth of contamination (DOC).

#### Tuesday (10/17/2023)

Performed targeted debris removal near column 1-9. Performed ISS auguring and ISS QA/QC sample collection at column 1-9. Refusal was encountered. Removed 8-foot auger bit on Bauer 28H drill rig and replaced with 3-foot auger bit for ISS auguring.

Wednesday (10/18/2023)

Performed ISS auguring using a single 3-foot auger bit and ISS QA/QC sample collection at columns 3-7 (refusal previously encountered prior to the design 30-foot DOC) and 6-0 (previously undrilled location). The 30-foot DOC was achieved for both columns. Performed removal of ISS-treated surface at rows 2 and 3 to create an approximately level plateau for installation of the long-term sampling ports.

#### Thursday (10/19/2023)

Performed removal of ISS-treated surface at rows 6, 7, and 8 to create an approximately level plateau for installation of the long-term sampling ports.

Friday (10/20/2023)

Mixed swell materials on barge and housekeeping and maintenance.

Saturday (10/21/2023)

No work was performed.

#### Water Quality Monitoring

Monday (10/16/2023)

Performed visual inspection of river outside the outer containment barriers during ISS auguring, and no turbidity plumes, sheens, or odors were observed. Four rounds of water quality monitoring were performed (three ebb tide and one flood tide) during ISS auguring activities, with field parameters collected. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities.

#### Tuesday (10/17/2023)

Performed visual inspection of river outside the outer containment barriers during debris removal and ISS auguring activities, and no turbidity plumes, sheens, or odors were observed. Three rounds of water quality monitoring were performed (two ebb tide and one flood tide) during debris removal and ISS auguring activities, with field and chemical parameters collected at background stations NWN-BG1N and NWN-BG1S and compliance stations NWN-CS1N, NWN-CS2N, and NWN-CS2S. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities.

#### Wednesday (10/18/2023)

Performed visual inspection of river outside the outer containment barriers during ISS auguring and ISS-treated surface removal leveling activities, and no turbidity plumes, sheens, or odors were observed. Four rounds of water quality monitoring were performed (three ebb tide and one flood tide) during ISS auguring and ISS-treated surface removal leveling activities, with field and chemical parameters collected at background station NWN-BG1S and compliance station NWN-CS2N. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities.

#### Thursday (10/19/2023)

Performed visual inspection of river outside the outer containment barriers during ISS-treated surface leveling removal, and no turbidity plumes, sheens, or odors were observed. Two rounds of water quality monitoring were performed during ebb tide during ISS-treated surface leveling removal, with field and chemical parameters collected at background station NWN-BG1S and compliance stations NWN-CS1N and NWN-CS2N. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities.

Friday (10/20/2023)

No water quality monitoring was performed.

Saturday (10/21/2023)

No work was performed.

#### Findings:

At one of the compliance stations (i.e., station CS-1N) during round 2 of monitoring on Tuesday, October 17, 2023, the following concentrations above the chronic and acute standards were detected:

- The benzo(a)anthracene concentration exceeded the chronic water quality criterion at the bottom depth only. The chronic criterion is based on a 4-day average concentration. The 1-day average concentration for the compliance station was below the chronic criterion.
- The benzo(a)pyrene concentration exceeded the acute and chronic criteria at the bottom depth only. The chronic criterion is based on a 4-day average concentration. The 1-day average concentration for the compliance station was below the chronic criterion.

The single exceedance of the acute concentration was reported to EPA at approximately 2:30 pm on Friday, October 20. Following consultation with EPA, no additional best management practices were triggered because work activities during the sampling were no longer being performed. A compilation of water quality daily field forms from the week (Attachments 1 through 4), tabulated field parameter data (Attachment 5), and tabulated chemistry data (Attachment 6) are attached.

#### For Informational Purposes Only

In accordance with EPA's comments on the EPA-approved *Final Revised In Situ Stabilization and Solidification Field Pilot Study Work Plan*,<sup>1</sup> for informational purposes only, pH and temperature samples were collected from the moonpool prior to initiation of ISS auguring and following completion of ISS auguring and prior to raising the moonpool curtain. These informational moonpool measurements are included in Attachment 7.

#### Scheduled Construction Work This Week (Next Reporting Week)

Continue focused ISS-treated surface removal to facilitate installation of the long-term sampling ports, place clean sand over the dolphin removal footprint, and begin demobilization.

#### Problems Encountered and Contingency Actions Implemented

Due to the presence of encountered subsurface debris during ISS auguring at columns 2-12 and 1-9, ISS treatment was extended to 25.2 and 29 feet below mudline, respectively, relative to the target 30-foot DOC.

<sup>&</sup>lt;sup>1</sup> Anchor QEA, LLC, 2023. *Final Revised In Situ Stabilization and Solidification Field Pilot Study Work Plan*. Gasco Sediments Project Area. Prepared for U.S. Environmental Protection Agency, Region 10. September 12, 2023.

Prepared by:	Kendra Skellenger	Contact Information:	503-752-4218 kskellenger@anchorqea.com
сс:	Bob Wyatt, Patty Dost, Mike Crystal, Tim Donegan, Taylor Crystal, Gary Rose, Joe Burke, Rob Ede, Jen Mott, Ryan Barth, Tim Stone, Ben Uhl, Billie-Jo Gauley, Joe Smith, Ross Pickering, Louisa Orr, Elizabeth Greene		, Taylor Crystal, Gary Rose, ne, Ben Uhl, Billie-Jo Gauley, eene
Attachments:	Attachment 1DailAttachment 2WatAttachment 3WatAttachment 4WatAttachment 5WatAttachment 6WatAttachment 7Mod	/ Monitoring Logs er Quality Monitoring Calik er Quality Monitoring Forn er Quality Sampling Forms er Quality Field Parameter er Quality Chemical Param onpool Informational Meas	pration Log ns – Field Parameters – Chemical Parameters Measurements eter Measurements urements

# Photographs





Collecting ISS QA/QC sample from middle interval of column 3-11 (10/16/2023).





Performing ISS-treated surface leveling removal near rows 2 and 3. Swell material barge in foreground (10/18/2023).

Attachment 1 Daily Monitoring Logs

Anchor QEA, LLC Phone 503.670.1108		
	Portland, OR 97219	
	Date: 10 - 16 - 2023	
	Personnel: Simon Dudenheter	
	WING FROM: N NE E SE SJ SW W NW NONE LIGHT C MEDIUM	HEAVY
	SUNNY CLOUDE RAIN Temperature: (°F)59	e constant
	turce appro-	phate unit
Time	Comments	
0620	Arrive C basco trailer -> print tield torms -> Calibrate YSL	
0700	His meeting: wet, slippery sintaces entering - criting local,	1.
0.000-	Clossing booms, low visibility on river in Reavy rain -> extra cau	itio.
0/30	155 Drilling Start time -> Start WQM Circuit # 2 @ 0830	2
0000	Tites: High @ 0644, Low @ 1331, High @ 1842	
2825	ON WATER > TO BG-15 ( downriver flow confirmed visually	+
	W/ NOAA tidal data + USGS Morrison Britse Gause data	
0830	C BG-15, confirmed 300' boom distance w/ range tind	Ler
	Continued Garmin Lepth reading w/ lead line	1.1
2902	@ EW-IN, confirmed 100'600m dist. w/ range tinder	
2910	CC5-1N, " " " 190' "	1
2918	CCS-2N, N	1
1936	FINISH WQM C#2 → NO EXCEEDANCES → WQM C#2@ 1030	С
0940	OFFWATER	1
1020	ON WATER > TO BG-15 FOI WOM C#2 (eb6 fide)	
1030	CBG-15, confirmed 300 boom dat. w/ range finder	~
1055	@ EW-IN, " " 100' "	11
1106	C CS- IN, " // 150'"	11
1114	CCS-2N,	11
1120	FINISH WOM C#2 - NO EXCEEDANCES - WQM C#3@1230	
1125	OFF WATER	
1215	ON WATER -> TO B.G-15 FOR WQMC#3 (ebb +i to)	_
1230	CBG-15, confirmed 300' boom dist. w/ rave finder	
1240	CEW-IN, " " 100' "	
1247	@ CS-IN, " " (50' \" "	
1257	CC9-2N, 11 "	
1305	FINISH WAM (#3 - NO EXCEEDANCES -> WIGM 1 #4 @ 1420	
1310	OFF WATER	_
1425	ON WATER > TO BG-IN For WAM CHA (44 finand rive	C
		1

Cont. ->

10f2

GASCO0054359

## 2 of 2

-	Gasco Sediments Site ISS Pilot Study
Z	Anchor QEA, LLC Phone 503.670.1108 DEA CONTRACTOR OF 97219 Phone 503.670.1108 Phone 503.670 Phon
	Date: 10-16-2023 Personnel: SIMON DUTENHOPEN
	Wind from: N NE E SE SW W NW NONE LIGHT MEDIUM HEAT SUNNY CLOUDY RAIN Temperature: 563 [Circle appropriate of the second
Time	Comments
430	CBG-IN CONPUT 3001 from distance ind canno line
444	PENER IN TIDO'N
452	10 (S-15 ) (1150' )
1500	@ C3-75 \\
505	FINISH WOM (#4 AND EXCEEDANCES -) START WOM OH
	@1630 OR Labour offer exception start time
510	OFF INATER
210	No furting construction actinties today - AND MORE LANDM
	*

lof2

	Daily L	og
C QEA	HOR	Anchor QEA. LLC 6720 South Macadam Ave, Suite 300 Portland, OR 97219 Phone 503.670.1108
PROJECT NAM	E: GASCO ISS PILOT STUDY	DATE: 10-17-2023 WORK: ISS WOM,
SITE ADDRESS	: GASCO	PERSONNEL: Simon Dudenhoeter
WEATHER:	WIND FROM: N NE E SE S SW SUNNY COUDY RAIN	W NW NONE (LIGHT, MEDIUM HEAVY F066 5 ? TEMPERATURE: CFS5 (Cricle appropriate units)
TIME	COMMENTS	1 1 1 107
2610	Arrive @ Gasco Trailer -> ca	librate YSL
0650	H/S meeting: foggy, USS VISID	ility on river - put lights on boar,
	wet surfaces entering/exiting	boat, staying warm - propercives
0738	Excavation start time -> wo	M Circuit #2 start @ 0808
	Tides: High@0723, Low@	2 1403, High @ 1917
0800	ON WATER -> TO BG-15 for	WGM firewit # 2 (ebb tide)
	River flow downstream -> confi	runed visually + w/ USGS and
	NOAA tidal data/dischars	e data
0808	@ BG-15 confirmed Garmi	in depth reading w/ lead line
	Confirmed 300' boom disto	nce w/ range finder + Decon Vanl
0815	Collected NWN-BG15-2310179	815 C BG-19 CI' - Decon
0820	Collected NWN-BG15-7310	170820 @BG-15@21.1 (M5/M5D) - Deco
0825	Collected NWN - BG15-23101	70825CBG-15C39,2' > Decan
0894	QEW-IN, confirmed 100' boo	m dist. w/ range finder
0842	@ CS-IN. " "150"	11
0851	QCS-2N, "	11
0051	CS-2N had histest Complia	nce station twoidity (7.12) ->
	collected chuncitry samples a	each teath interval
0905	Collected NWN-C52N-231017090	5 CC5-2NQ1' -> Decon
0910	Collected NWN- (52N-23/01709	NOC CS-2N@ 24' -> Decon
0915	COLLACTED ALLAND - CST N -23101	70915 @ 155-2N @45' -> Decon
0415	Daish WOM CICCULT#2 -> NO	EXCEEDANCES -> START WOM (#210 100)
0920	OFF WATER	
1005	ON WATER -> To DG-1S FOR	WOM CITCHIT #2 (ebb tile)
1000	BBG-15 confirmed 300'	600m dist. w/ manap finder
1020	Called Hun-BGIS-7310171070	@BG-15@1' > D/COD
1025	Callerted MINN-BG15-23101710	25 CBG-15 C211' > Decon
1020	Collecter MUN - RAIS-2810	171030 @BG-15 @ 39 9 - DUNOV
	Contected Ivan Bord 2510	ma distance ul sance Sinder
1030		

0		r	0
2	6	T	1
_			-

	Daily Log
C QEA	CHOR Anchor QEA, LLC 6720 South Macadam Ave, Suite 300 Portland, OR 97219 Phone 503.670.1108
PROJECT NAM	ME: GASCO IS9 PILOT STUDY DATE: 10-17-2023 WORK: ISS WOM
SITE ADDRES	S: GASCO PERSONNEL: Simon Dudenhoefer
WEATHER:	WIND FROM: N NE E S S W W NW NONE (GHT) MEDIUM HEAVY SUNNY CLOUD RAIN 7 TEMPERATURE: 0.60.
TIME	COMMENTS
1044	OCS-IN, confirmed Iso' boom distance w/ range tinter
1051	@C5-2N "
1100	collecting chunstry samples @ CS-IN @ each tepthinterve
0	CS-IN had the highest NTU reading of the compliance statio
1103	CCS-IN for sample collection, confirmed 150 600m dist
1110	Collected NWN-CSIN-2310171110 @ CS-IN CI' -> Decon
1115	Collected NWN-CSIN-2310171115@CS-IN@22.7' > Decon
1120	Collected NWN - CSIN - 2310171120 C CS-IN @ 42. 4' -> Decon
	FINISH WOM CITCUIT# 2 - NO EXCEEPANCES - Excavation complete
1125	OFF WATER -> Waiting to start WOM Circuit#3 until
	ISS Basses re-configured and ISS drilling starts - wait 240
1257	Barge back in place, will start WOM Circuit#3 I hour
	after Iss drilling start -> still collecting chemistry sample
1330	ISS Drilling start time -> WQM Circuit #3 Start @ 1430
	Low tite @ 1403 - river may be @ siach @ starl of WQMC#3.
	will switch to upriver flow dwing round. Will start wanch:
	- C. BG-IN For flood tibe circuit. 1)
1422	Upstream flow visually confirmed
1429	ON WATER > TO BG-IN for WQM C#3
1430	CBG-IN, confirmed 300' boom distance w/ range finder
1440	Collected NWN-BGIN-2310171440 @BG-IN @1 -> Decon
144-5	Collected NWN-BGIN-2310171945 CBGINC 21' - Decon
1450	Collected NWN-BGIN-2310171450 @BG-IN @ 39' > Decon
1453	CEW-IS, confirmed loe' boom dist. w/ I and tinder
1502	@ CS-15, 11 " 150'11 "
1520	is25 had highest NTU → collected NWN-CS2S+2310171520 @ 1 → Deron
1525	Colucted NWN-C325-Z310171525@ 24.3' -> Decon
1530	Collected NWN-CS2S-2319171520 @45.6 -> Decon -> FINISH WOMCH -
1540	OFF WATER - ISS drilling Strished - ne more WOM GNO EXCEEPANCE.

1	Daily Monitoring I Gasco Sediments Site ISS	Log Pilot Study
Z	ANCHOR Anchor QEA, LLC QEA CONTRACTOR OF THE Portland, OR 97219	Phone 503.670.1108 9 300
	Date: 0 - Personnel: 51	18-2023 Mon Dudenhoefer
	Wind from: D NE E SE S SW W NW SUNNY CHOUDD RAIN FOGGY	NONE LIGHT MEDIUM HEAVY Temperature: 47 °C [Circle appropriate units]
Time	Comments	
0620	) Arrive @ Gasco -> Calibrate	VSI, prepsample containers
0110	H/S meeting: very thick fog today, ve	Bry low visibility -> lights an
	boat, extra caution navigating in ni	ver + around drill barge -
	- boat horn location, PFDS, Slip, to	ips, faks, overhead hazarts near base
0742	TIDES: HIGH CO805, LOW C 14	38, HIGH @ 1957
	- WQ: Temp: 15.1°C, pH: 7.4, DO:	10.8 Mg/L, Turbidity: 2.6 FNU
	- WILL CONTINUE COLLECTING CHEN	ISTRY SAMPLES TODAY
0746	ISS Drilling Start time - Start WOM	Circuit #1 @ 0846 (E66Hik)
0835	ON WATER - TO BG-15 for WOM	1 C#2 - E66 Tide
0846	@BG-13, heavy fog, mable to use range	efindes to betermine boom dist.
	- Gusing pre-set GPS coordinate	25
-	- Confirmed river flow direction (downstroom	) VISUAlly + W/ tidal data (USG3/here
	Continued Gormin tepth reading of le	as line -> Decan Van Dan Sampler
0859	Callected NWN-15615-2310100850 (	- Decon
0800	Colucted NWN - BG15 - 231018 P035	CZI.J' Pecon
0400	(0/U(4() NWN-15615-231018090	C (C 40' → Decan
0900	CEW-INTUSED GPS CONTINUTES,-	OUTSD CONTSEE DROW ONE TO
0010	- Swell Dauge 10 carron	denie i Laisan Cala
0919	Q C3-1N, CONFIRMENTSO GODIM OTS	TONCE WI TONSE FINDER
0990	CE ON has bush and compliance shakes	turt data a collecture of the court
0940	Collected Allela CEON-2310180945	Twording - concern chur samples
0945	Collected NUNAL CS2N-2310180445	000021200
0955	Collected NINN- CS2N-23101809	ISE R ACCI D RADO
	ETNTSH WAM PROMIT HI > NO EY	CCEEDANCES , CHO QUOLC
1000	OFE WATER	CLEDINCE SACHLEIDTE
1035	QN WATER > To BG-15 For	WOM (in + #0 lold+ lot
104-6	CBG-15 confirmed 3001 L	andist ul coord fade
10.50	Collected NWN-RGIS-231018105	CC / -> Dera
1050	Collected NWN-BRIS- 2310 18/05	SC245' - Deron

Signature: \_\_\_\_\_

cont ->

lof3

2of3

	Daily Monitoring Log Gasco Sediments Site ISS Pilot Study		
V2 C	NCHOR Anchor QEA, LLC Phone 503.670.1108 DEA CONTRACTOR OF 97219		
	Date: 10-18-2023 Personnel: Suma Diverse		
	Wind from: N NE E SE S SW W NW NONE LIGHT MEDIUM HEAVY		
Time	Comments		
1100	Collected NWN-BGIS-2310181100 @ 40' -> Peron		
108	CEW-IN, confirmed 100' boom distance ul range finter		
1118	@CS-IN, " " 150' "		
1126	QCS-2N,		
1130	CS-2N had highest compliance station NTU reading -> collecting samples		
1135	Collected NWN-CS2N-2310181135 CI-> Decon		
1140	Collected NWN-CS2N-2310181140 @ Z3.8' -> Decon		
1145	Collected NWN-C32N-2310181145@44.6' -> Decon		
	FINISH WOM CITCUIT # 2 > NO EXCERPANCES > # 3 @ 1246		
1155	OFFWATER		
1240	ONWATER - TO BG-15 FOR WQM C#3 (ebb file)		
1246	@ BG-15, confirmed 300' 600m dist. w/ range tinter		
1255	Collected NWN-BGIS-2310181255 CT - Decon		
1300	Callected NWN-DG15-2310181300 @ 19.41 - Decen		
1505	Collected NWN-BGIS-2510181305 @ 35.0 -> Recon		
1514	OEW-IN, CONTINUED 350 100 6000 Jist. W/ range tinder		
1226			
1335	US-ON had been still of the file allowing of flow i have		
1240	Collegia Aller CSPN-22101812450 15 2000		
1245	Calle Led NUN-CS2N-2310101345 @ 1-Lecon		
1350	Callected AUNAL-CSPAL- 2710181255 @ 421 - D.		
1222	Elacele WOM alcount #2 200 Decompany		
1405	DECLIPTED A HOM CIRVITAL STATE 1440		
1440	LINARIE TO CTORT WOM CHA LIGE DO DOG CONTROL		
1740	CONSTOLL TO START WORTLEFT OUR TO TE-CONFIGURED		
	OCCUPDING - WILL STATE WOM CHA CHAR SWALL		
	Manoval contrative and the mix a safe have		
	HAN IN AN hast to look the hour maling alog		
-	The more bout is leave the poort (orth) guation		

Signature: \_\_\_\_

Cont ->

GASCO0054364

Daily Monitoring Log         Gasco Sediments Site ISS Pilot Study         Anchor QEA, LLC       Phone 503.670.1108         6720 South Macadam Avenue, Suite 300       Portland, OR 97219		
Time	Comments	Rea CHA (CL-1 + Ja)
1605	ON WATER - TO BG-IN FOR WI	SM CH + (+1000 Fite)
1620	Collected Anna Dent azionaliza	Study with the
1030	Collected NWN-BGIN-2310101630 (	21 - 12e(UN)
1640	Collected NUN-DGIN-2010101635	Can a ga a Dem
1640	Competed NWN - 15GIN - 2510151	tan in pring Sinter
1649	PCS-IS IN 11 150' IN	stand any table time
1656	@ CS- 25 \	11
1655	C3-25 has highest compliance station	turbidity reading @45
1705	3.67 NTU + Collected NWN-CS25=23	10181705 C. 1-Decon
1710	Collected NWN-CS29-2310/81710	@24' -> Decon
1715	Collected NWN- C525 - 2310181715	@ 45' -> Decon
	FINISH WOM CITUIT #4 -> NO EX	CEED ANCES
	To Cathedral Park boat ramp to to	zhe boat off water
1720	OFF WATER - NO FURTHER L	IQM TOPAY
	1	

Signature:

GASCO0054365

3.F3

Daily Monitoring Log Gasco Sediments Site ISS Pilot Study		
V2 O	Anchor QEA, LLC Phone 503.670.1108 6720 South Macadam Avenue, Suite 300 Portland, OR 97219	
	Date: 10-19-2023 Personnel: Simon Dutenhoefer	
v	Vind from: N NE E SE S SW W NW NONE LIGHT MEDIUM HEAVY SUNNY CLOUDY RAIN FOGGY Temperature: 949 C [Circle appropriate units]	
Time	Comments	
0605	Arrive & Gasco Trailer, print field forms, calibrate YSI	
0630	HIS meeting; foggy again, launching boat @ Cothedra I Park	
	- extra caution onriver, lights, worn throwable location	
	TIDES: LOW @ OSIO, HIGH @ 0853, LOW @ 1537, HIGHE 204)	
0745	Juell removal start time → start Wan Circuit# 200845	
0800	To Cathedral Park boat launch to put boat in water	
0830	ON WATER -> To work site, tite high C 0853, currently	
	Slack (confirmed w/ velocimeter(0.036)+ fidal charts + visually)	
	- will start wame #2 C BG-15 as flow will be downinver	
	areunderso	
0845	CBG-15, confirmed 300' boom distance w/ range finder	
	Contirmed Garmin tepth reading w/ had line - Decon Van Dom	
0900	Collected NWN-BGIS-2310190900 @ 1 > Decon	
0905	Collected NWN-BGIS-2310190905@20.21 -> Proon	
0910	Collected MS/MSD QS sample NWN-BGIS-2310190910 @ 37.4' - Dec	
0916	EEW-IN, confirmed 100' boom distonce w/ ronge finder	
0930	CS-IN 11 1150111 11	
0943	CS-2N W	
0950	(5-2N has highest CS NTU (249. 4' (4.58) -) collecting samples here	
0955	Collected NWN-CS2N-2310190955 CI -> DeCON	
1000	Collected NWN-CS2N-2310191000 C23.7' > Decon	
1005	Collected NWN-CS2N-2310191005 @ 44.4'	
	Collected QC Field Dup Somple NivAl-CS2N-2310191 SD	
	1200 - 2310191005 - D(0)	
1010	FINISH WICH CITCHIT #1 -> NO EXCEEDANCES	
1010	swell removal excavator broken, no twither wam until	
	IF is tike a una in operation/conducting sediment	
1014	Tied of the English activities - Continued w/ Doug L.	
	to start 110M Creat + ON WATER Waiting	

Signature: \_\_\_\_

GASCO0054366

10f2

## 2of2

	Daily Monitoring Log Gasco Sediments Site ISS Pilot Study
V2 OI	NCHOR Anchor QEA, LLC Phone 503.670.1108 6720 South Macadam Avenue, Suite 300 Portland, OR 97219
W	Date:       10-18-2023         Personnel:       Simon       Dudenhaefer         Vind from:       NE       E       SE       SW       NW       NONE       UGHT       MEDIUM       HEAVY         SUNND       CLOUDY       RAIN       Temperature:       0.63       °C
Time	Comments
1347	Swell Removal Start time - Stort WOM Circuit #2
-	@BG-15 confirmed 300' boom distance wirms of mer
1355	Gillerted NWN-BG15-2310191355 C1 -> DECOD
1400	Collected NWN-BGIS-2310191400 @ 20.8' -> Pero?
1405	Collected NWN-BGIS-2310191405 and RC rample
	Field dyn, NWN-BG1013-2310191405 @38.6-> Decon
1408	CEW-IN, confirmed 100' boom dist, w/ range finter
1419	@CS-IN / // 150' **
1427	(° (3-2N ) *
1435	CS-IN has highest CS NTU C 41.2' (5.25) -1 collecting sample.
1436	CCS-IN confirmed 100 boom distance w/ rance finder
1440	COLUCHED NWN-CSIN-2310191440 CT -> Decon
1445	Colucted NWN-CSIN-231019 1445@ 22.5' > Decon
1450	6111CHO (QC MS/FISD Sumple NWN-CSIN-2310191450 @ 42' > Decon
1500	FINISH WORM CITCUIT IF I TNO EXCEEDANCES
1500	DEE MOTER
1364	SEL OUTLER

L

f

# Attachment 2 Water Quality Monitoring Calibration Logs

6720 South Macadam Avenue, Suite 300 Portland, OR 98219

-		Water Qua Gas	ality Moni co Sedim	itoring – Ca ents Site IS	libration L S Pilot Stu	og Form dy	
Date: 10-16-2 Probe S/N: 21E103	023			Calibrated by: Meter(s) Model:	Simon YSI P	Dudenha modes ;	efer #6970
Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
H 7.00 (Standard Units)	7.06	3660021	07/25	7.10	7.04	13.5	A stradard for tomo
H 4.00 (Standard Units)	4.00	36F1085	06/25	4.05	4.00	13.7	- side of the Brip.
Dissolved Oxygen (DO) <sup>1</sup>	99.7	NA	NA	99.6	99.7	193	AZR
urbidity (NTU) <sup>1</sup> .	0	NA	NA	0.14	0.00	14.1	DT MATEIR
urbidity (NTU) <sup>1</sup>	124	23F24003635	06/24	121.41	124.01	14	P-VITCA .

-

-				
	-	4	-	
D	d	ю	2	
-	-		-	٠

Probe S/N:

Calibrated by: Meter(s) Model:

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Commente
pH 7.00 (Standard Units)	7.00	1					connents
pH 4.00 (Standard Units)	4.00				11 ·····	-	*
Dissolved Oxygen (DO) <sup>1</sup>	************************************						
Turbidity (NTU) <sup>1</sup>		DID NOT CALT	BRATE	OR CHE	KT AC		
Turbidity (NTU) <sup>1</sup>				OJE	127 4200	6	

Note:

1. Calibration standards are entered by hand depending on the monitoring instrument being used.

-

### Water Quality Monitoring – Calibration Log Form Gasco Sediments Site ISS Pilot Study

-

Date: 10-17-2023 Probe S/N: 21E103678

-

Calibrated by: Simon Dutenhoefer Meter(s) Model. YSI ProDSS #6970

-

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.06	3660021	07/25	6.99	7.07	11.3	A standard for temp
pH 4.00 (Standard Units)	4 00	36F1085	06/25	3.92	4.00	11.6	
Dissolved Oxygen (DO) <sup>1</sup>	100.8	NA	NA	101.3	100.7	19.3	AIR
Turbidity (NTU) <sup>1</sup>	0	NA	NA	-0.13	0.00	11.7	DIWATER
Turbidity (NTU) <sup>1</sup>	124	23F24003635	06/24	121.28	123.90	11.7	

Date:

D

Calibrated by:

Probe S/N:

Meter(s) Model:

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.00						
pH 4.00 (Standard Units)	4.00						
Dissolved Oxygen (DO) <sup>1</sup>							
Turbidity (NTU) <sup>1</sup>		YSI #50061	OT CALI	BRATEP OR	USEP		
Turbidity (NFU)			SD 10/	17/23			

Note

1. Calibration standards are entered by hand depending on the monitoring instrument being used.

- 44

### Water Quality Monitoring – Calibration Log Form Gasco Sediments Site ISS Pilot Study

-

Date: 10-18-2023 Probe S/N: 21E103678

-

Calibrated by: Simon Dudenhoefer

3

Meter(s) Model: YSI ProDS5 #6970

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.07	3660021	07/25	7.07	7.08	9.7	o standard for temp
pH 4.00 (Standard Units)	4.00	36F1085	06/25	4.05	4.00	10.7	
Dissolved Oxygen (DO) <sup>1</sup>	100.4	NA	NA	100.2	100.5	17.4	AIR
Turbidity (NTU) <sup>1</sup>	0	NA	NA	0.03	0.00	10.0	DI WATER
Turbidity (NTU) <sup>1</sup>	124	23F24003635	06/24	121.91	123.91	10.0	

Date:

Probe S/N:

Calibrated by:

Meter(s) Model:

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.00						
pH 4.00 (Standard Units)	4.00		- Contraction of the second		><		
Dissolved Oxygen (DO) <sup>1</sup>							
Turbidity (NTU)!		· · · · · · · · · · · · · · · · · · ·	DID NOT	USEORCA	LIBRATE	YSI #SOOG	90
Turbidity (NTU)							

Note:

1. Calibration standards are entered by hand depending on the monitoring instrument being used.

### Water Quality Monitoring - Calibration Log Form **Gasco Sediments Site ISS Pilot Study**

Date: 10-19-2023 Probe S/N: 21E103678

Calibrated by: Simon Dudenhoefer Meter(s) Model: YSI ProDSS 6970

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.087 50	3660021	07/25	7.09	7.08	10.6	s standard for temp
pH 4 00 (Standard Units)	4.00	36F1085	06/25	4.02	4.00	10.7	
Dissolved Oxygen (DO) <sup>1</sup>	100.3	NA	NA	100.9	100.3	17.6	AZR
Turbidity (NTU) <sup>1</sup>	0	NA	NA	0.07	0.00	11.2	DI WATER
Turbidity (NTU) <sup>1</sup>	124	23F24003635	06/24	120.54	123.94	11.2	
					4124.0	4	

Date:

Probe S/N:

Calibrated by: Meter(s) Model:

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.00						
pH 4.00 (Standard Units)	4.00						
Dissolved Oxygen (DO) <sup>1</sup>			1				
Turbidity (NTU) <sup>1</sup>							
Turbidity (NTU) <sup>1</sup>		DID NOTC	LIBRAT	E OR USE	KSI # Soc	e SD	

Note:

1. Calibration standards are entered by hand depending on the monitoring instrument being used.

Attachment 3 Water Quality Monitoring Forms – Field Parameters

Date: [0 - [[ Station: BG loo	5-2023 EW CS-1				
Station: BG	EW CS-1		Circuit Numbe	r: 1	
at/Northing 4	a data and the second second	CS-2 N (S)		Time: 0830	
at/Marthink A	d (Ebb)	Up River D	own River	Avg. Velocity: O	.759
at/Northing: 4	5.57879	Long/Easting: 122	1,75405	Total Water Depth	43
1.1	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	1.65	7.11	10.35	15.5
Middle	21.5	1.90	7.13	10.34	15.5
Deep	40	2.26	7.11	10.29	15.5
Construction Ad	ctivity: ZSS J	<u>Srilling</u> cs-2 (N) s		Time: 0902	observed
Construction A Station: BG	ctivity: <u>ZSS</u> <b>EW</b> CS-1 od /EbD	CS-2 D S Up River	Down River	Time: 0902 Avg. Velocity: 0,	474
Construction A Station: BG	ctivity: <u>ZSS</u> €W CS-1 od /EbB <del>1</del> 5. S8Q11	CS-2 V S Up River	Down River	Time: 0902 Avg. Velocity: 0, Total Water Depth	474 45
Construction A Station: BG	ctivity: <u>ZSS</u> <b>EW</b> CS-1 od /Ebb HS. S8011 Water Depth (feet)	CS-2 N S Up River D Long/Easting: 120 Turbidity (NTU)	Down Rives 2.75701 pH (-)	Time: 0902 Avg. Velocity: 0, Total Water Depth DO (mg/L)	474 45 Temp. (°C)
Surface	ctivity: <u>ZSS</u> <b>EW</b> CS-1 bd /Ebb HS. S8011 Water Depth (feet)	CS-2 S Up River Long/Easting: 120 Turbidity (NTU)	Down Rived 2.75701 pH (-) 7.13	Time: 0902 Avg. Velocity: 0. Total Water Depth DO (mg/L) N.36	474 45 Temp. (°C) 15.5
Surface Middle	ctivity: <u>ZSS</u> (EW) CS-1 Dod /(Eb) HS. 58011 Water Depth (feet) 1 22:5	CS-2 N S Up River Long/Easting: 120 Turbidity (NTU)	Down Rived Down Rived D. 75701 PH (-) 7.13 7.1]	Time: 0902 Avg. Velocity: 0, Total Water Depth DO (mg/L) 10,30	474 45 Temp. (°C) 15.5 15.5

ĵ

Y

à

6720 South Macadam Avenue, Suite 300 COEA .... Probe # 21 E103678 YSI ProDSS #69 Water Quality Monitoring Form – Field Parameters **Gasco Sediments Site ISS Pilot Study** Circuit Number: 1 Date: 0-16-2023

Time: 0910 (CS-1) CS-2 (N) S Station: BG EW 4 Avg. Velocity: Q. Flood /(Ebb) Up River Down River Total Water Depth: 4-5, Lat/North r.g: Long/Easting: D.O. Temp. Water Depth pH Turbidity (°C) (feet) (NTU) (-) (mg/L)15.5 10.34 1.9 7.12 Surface 6 10.31 15.5 22.75 Middle 2.05 1.13 7.15 15.5 S 10.28 2.33 Deep comments . No odor, sheen, discoloration, or suspended material observed

Construction Activity: ISS Drilling

CS-1 (CS-2) (N) Time: 0918 Station: JG EW S Avg. Velocity: 0.827 Hood /(Ebb Up River / Down Rived Total Water Depth: 47.6 Lat/Northing:45,85024 Long/Easting: 122,75679 Water Depth Turbidity pH DO Temp. (feet) (NTU) (-) (mg/L)(°C) 2.36 7.13 15.5 10.34 Surface 2,50 7.14 10.31 15.5 23.8 Middle 49.6 3.32 7.16 15.5 10.29 Deep comments . No shiph, odor, discoloration, or suspended material observed

Construction Activity: ISS Drilling Recorded by: Simon

1. Include observations of floating/suspended material, sheens, discoloration, and odors.

ridentiopfe

Portland, OR 97219

C OEA -

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

	Gas	co Sediments	Site ISS Pil	ot Study	5
Date: 10 - 1	6-2023		Circuit Numbe	r: 2	
Station: BG	EW CS-1	CS-2 N (S)		Time: 1030	
Floo	od (Ebb	Up River 🖉	Down Rive	Avg. Velocity: 🔾 🕯	254
Lat/Northing: 4	15.57874	Long/Easting: 12	2.75405	Total Water Depth:	40
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface		2.55	7.19	19.34	15.5
Middle	20	3.01	7.20	10.32	15.5
Deep	37	3.56	7.17	10.31	15.4
Construction A Station: BG Floc	ctivity: ISS ( EW CS-1	CS-2 N S	Down River	Time: 1055 Avg. Velocity: O a	150
Construction A Station: BG Floc Lat/Northing: 4	ctivity: <u>ISS</u> <b>EW</b> CS-1 od (bb) S.S8011	CS-2 N S Up River Long/Easting: 12	2.75691	Time: 1055 Avg. Velocity: 0 & Total Water Depth:	150
Construction A Station: BG Floc Lat/Northing: 4	ctivity: <u>TSS</u> <b>EW</b> CS-1 od (bb) S.SSO]  Water Depth (feet)	CS-2 N S Up River Long/Easting: 12 Turbidity (NTU)	2.75691 pH (-)	Time: 1055 Avg. Velocity: 0 « Total Water Depth: DO (mg/L)	150 46.4 Temp. (°C)
Construction A Station: BG Floc Lat/Northing: 4 Surface	ctivity: <u>LSS</u> <b>EW</b> CS-1 od (bb) S.S80]  Water Depth (feet) ]	CS-2 N S Up River Long/Easting: 12 Turbidity (NTU) 2.68	2.75691 pH (-) 7.21	Time: 1055 Avg. Velocity: 0 , Total Water Depth: DO (mg/L) 10.32	150 46.4 Temp. (°C) 15.5
Construction A Station: BG Floc Lat/Northing: 4 Surface Middle	ctivity: ISS ( W CS-1 od (bb) -S.S8011 Water Depth (feet) 1 23.2	Drilling CS-2 N S Up River Long/Easting: 12 Turbidity (NTU) 2.68 2.54	2.75691 pH (-) 7.21 7.20	Time: 1055 Avg. Velocity: 0 , Total Water Depth: DO (mg/L) 10,32 10,31	150 46.4 Temp. (°C) 15.5 15.5
Construction A <b>Station: BG</b> Floc Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> : 4	ctivity: <u>TSS</u> <b>EW</b> CS-1 od (bb) S.S8011 Water Depth (feet) 1 23.2 43.4 Vo sheen 104	Drilling CS-2 N S Up River Long/Easting: 12 Turbidity (NTU) 2.68 2.54 5.83 Dr, discolore	2.75691 pH (-) 7.21 7.20 8.29 xtion, or s	Time: 1055 Avg. Velocity: O. Total Water Depth: DO (mg/L) 10.32 10.31 10.30 USpended mar	150 46.4 Temp. (°C) 15.5 15.5 15.5 15.4

Proba # 21 F 103678

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Station: BG Floo Lat/Northing: 4	EW CS-1	Circuit Number: 2			
Floo Lat/Northing: 4		cs-2 N s		Time: 1106	
Lat/Northing:	Flood Ebb		Down River)	Avg. Velocity: Ø	.180
	15.58035	Long/Easting: 12	75746	Total Water Depth	45.3
L	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp (°C)
Surface	1	3.16	7.22	10.33	15.5
Middle	22.65	2.62	7.21	10.31	15.5
Deep	42.3	4.02	7.95	10.32	15.4
Construction A Station: BG Floc	ctivity: ISS D EW CS-1 ( od (Ebb)	CS-2 (N) S Up River (1	Down River	Time: 1114 Avg. Velocity: O	,297
Construction A Station: BG Floc .at/Northing: 4	ctivity: ISS D EW CS-1 ( od (Ebb) IS. 58033	CS-2 N S Up River (1 Long/Easting: 12)	Down River 2,75676	Time: 1114 Avg. Velocity: O Total Water Depth	,297 : 47.9
Construction A Station: BG Floc Lat/Northing: 4	ctivity: ISS D EW CS-1 ( od (Ebb) S. 58 0 3 3 Water Depth (feet)	CS-2 N S Up River (I Long/Easting: /2) Turbidity (NTU)	Down River 2,75676 pH (-)	Time: 1114 Avg. Velocity: O Total Water Depth DO (mg/L)	2-97 : 47.9 Temp (°C)
Construction A Station: BG Floc Lat/Northing: 4 Surface	ctivity: ISS D EW CS-1 ( od (Ebb) -S. S& 033 Water Depth (feet)	CS-2 N S Up River (I Long/Easting: /2? Turbidity (NTU) 2.02	Down River 2,75676 pH (-) 7,19	Time: 1114 Avg. Velocity: O Total Water Depth DO (mg/L) 10:35	2-97 47.4 Temp (°C) 15.5
Construction A Station: BG Floc Lat/Northing: 4 Surface Middle	ctivity: ISS D EW CS-1 ( od (Ebb) HS. 58033 Water Depth (feet) 1 23.7	CS-2 N S Up River ( Long/Easting: /2? Turbidity (NTU) 2.02 2.26	Down River 2, 75676 pH (-) 7, 19 7, 17	Time: 1114 Avg. Velocity: O Total Water Depth DO (mg/L) 10.35 10.34	297 47.4 Temp (°C) 15.5 15.5

ANCHOR

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Date:  O -   Station: BG Flood Lat/Northing: 4	6-2023 EW CS-1 (Ebb) 5.57878	C5-2 N (S)	Circuit Numbe		
Station: BG Flood Lat/Northing: 4	EW CS-1	CS-2 N (S)	circuit indinibe	r3	
Flood Lat/Northing: 44	(Ebb) 5.57878	CS-2 N (S)		Time: 1230	
Lat/Northing: 44	5.57878	Up River	Down River	Avg. Velocity: 🔘	.526
Curture	Lat/Northing: 45. 57878		2.75406	Total Water Depth	40
Curtar	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface		1.89	7.20	10.37	15.6
Middle	20	2.39	7.17	10.35	15.4
Deep	37	2.80	7.16	10.33	15.4
Station: BG	EW CS-1	CS-2 ( ) S		Time: 1240	
Station: BG Flood	Ebb CS-1	CS-2 (D) S Up River (D)	Down River	Time: 1240 Avg. Velocity: 0.	358
Station: BG Flood Lat/Northing: 49	EW CS-1	CS-2 (D) S Up River (D Long/Easting: j2 (	Down River) 2,75689	Time: 1240 Avg. Velocity: 0. Total Water Depth:	358
Station: BG Flood Lat/Northing: 4 오	Ebb SS0/2 Water Depth (feet)	CS-2 D S Up River C Long/Easting: j2 Turbidity (NTU)	Down River 2.75689 pH (-)	Time: 1240 Avg. Velocity: 0. Total Water Depth: DO (mg/L)	358 45,2 Temp. (°C)
Station: BG Flood Lat/Northing: 4 S Surface	EW CS-1 (Eb) S. S8012 Water Depth (feet)	CS-2 D S Up River C Long/Easting: 12 Turbidity (NTU)	Down River 2.75689 pH (-) 7.18	Time: 1240 Avg. Velocity: 0. Total Water Depth: DO (mg/L) 10.39	358 45.2 Temp. (°C) 15.5
Station: BG Flood Lat/Northing: 4 S Surface Middle	EW CS-1 Ebp S8012 Water Depth (feet) 22.6	CS-2 D S Up River C Long/Easting: 12 Turbidity (NTU) 1.82 2.09	Down River 2.75689 pH (-) 7.18 7.17	Time: 1240 Avg. Velocity: 0. Total Water Depth: DO (mg/L) 10.39 10.37	358 45.2 Temp. (°C) 15.5 15.4

L'ANCHOR

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

D 23 D cs-2 N s Up River 33 Long/Easting: 12 pth Turbidity (NTU) 1,94 2.06 4 2.31 en, odor, dis 5 Drilling -1 CS-2 N s Up River	Circuit Number Down River 2.75748 PH (-) 7.15 7.15 7.19 7.18 Coloration	r: 3 Time: 12,47 Avg. Velocity: 0 Total Water Depth D.O. (mg/L) 10,39 10,39 10,37 10,37 10,34 ,05 55 0 b 5 Time: 12,57 Avg. Velocity: 0	30 1.006 : 43.4 Temp. (°C) 15.4 15.4 15.4 15.4 15.4 served
CS-2 N S Up River 33 Long/Easting: 12 pth Turbidity (NTU) 1.94 2.06 4 2.31 en, odor, dis 5 Drilling -1 CS-2 N S Up River	Down River 2.75748 PH (-) 7.15 7.15 7.19 7.18 coloration	Time: 1247 Avg. Velocity: 0 Total Water Depth D.O. (mg/L) 10,39 10,39 10,37 10,37 10,37 10,34 ,05 55 0bs	30 1.006 43.4 Temp. (°C) 15.4 15.4 15.4 15.4 15.4 served
Up River 33 Long/Easting: 12 pth Turbidity (NTU) 1.94 2.06 4 2.31 en, odor, dis 5 Drilling -1 CS-2 N S Up River	Down River 2.75748 PH (-) 7.15 7.15 7.19 7.18 coloration	Avg. Velocity: 0 Total Water Depth D.O. (mg/L) 10.39 10.37 10.37 10.34 ,or SS obs Time: 1257 Avg. Velocity: 0	50 1.006 43.4 Temp. (°C) 15.4 15.4 15.4 15.4 15.4 served
33 Long/Easting: 12 pth Turbidity (NTU) 1.94 2.06 4 2.31 en, odor, dis 5 Drilling -1 CS-2 N S Up River	2.75748 рн (-) 7.15 7.15 7.19 7.18 сологатіол	Total Water Depth D.O. (mg/L) 10,39 10,39 10,37 10,37 10,37 10,37 10,34 ,05 50 55 05 7 Avg. Velocity: 0	43.4 Temp. (°C) 15.4 15.4 15.4 15.4 served
Turbidity (NTU) 1.94 2.06 4 2.31 en, odor, dis 5 Drilling -1 CS-2 N S Up River	рн (-) 7.15 7.15 7.19 7.18 сологатіол	D.O. (mg/L) 10,39 10.37 10.37 10.34 ,or 55 obs 7 Avg. Velocity: Q	Temp. (°C) 15.4 15.4 15.4 15.4 served
1.94 2.06 4 2.31 en, odor, dis 5 Drilling -1 (5-2) (P) S Up River	7.15 7.19 7.18 Coloration	10.39 10.37 10.37 10.34 ,or 55 obs ,or 55 obs	15.4 15.4 15.4 served
2.06 4 2.31 en, odor, dis 5 Drilling -1 (5-2) (P) S UD River	To 19 To 18 Coloration	10.37 10.34 , or 55 obs Time: 1257 Avg. Velocity: 0	15.4 15.4 served
<ul> <li>4 2.31</li> <li>en, odor, dis</li> <li>5 Drilling</li> <li>-1 (5-2) (N) S</li> <li>Up River</li> </ul>	7:018 coloration	10.34 , or 55 obs Time: 1257 Avg. Velocity: 0	15.4 Served 7 .782
En, odor, dis S Drilling -1 (5-2) (P) S Up River	Down River	Time: 1257 Avg. Velocity: O	served 7 .782
	0	Tatal Mater Danth	Ara
4 Long/Easting: 2	2.75667	Total Water Depth: 46.4	
(NTU)	рн (-)	DO (mg/L)	(°C)
1.84	7.12	10.42	15.4
2 1.97	7.14	10,39	15.4
4 2.53	7.15	10.35	15.3
S Drilling Dufenhaefe g/suspended material, she	ens, discoloration, a	nd odors.	
g	5 Drilling Dutinhoefe /suspended material, she Dented Solid	5 Drilling Dufenhaefer /suspended material, sheens, discoloration, a penfed solits/mater	5 Drilling Dutenhoefer /suspended material, sheens, discoloration, and odors. Dented solits/materials

COEA .....

1

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Station: BG	EW CS-1 Ebb S8037 Water Depth	cs-2 (N) s	1.000.000.000.000		
Lat/Northin 3: 4-5 Surfac 2	Ebb S8037 Water Depth	to River / 1		Time: 1430	
Lat/Northin ): 4-5 Surfac 2	water Depth		Down River	Avg. Velocity: A	(460 SA
Surfac a	Water Depth	Long/Easting: 122.75802		Total Water Depth	41.6
Surface	(feet)	Turbidity (NTU)	pH (-)	D.O. (mg/L)	Temp. (°C)
	1	2.02	7.17	10.37	15.5
Middle	20.8	2.15	7.23	10.37	15.4
Deep	38.6	2.99	7.21	10.37	15.3
Flood	Ebb	CS-2 (N) (S)	Down River	Time: 1944 Avg. Velocity: O	032000
Flood at/North r 9:45	Ebb S75119	CS-2 N S Op Rived / I Long/Easting: 12	Down River	Time: 1944 Avg. Velocity: Of Total Water Depth	032Ø3
Flood Lat/North r.g:45	Ebb S7519 Water Depth (feet)	CS-2 N S Op Rived / I Long/Easting: j2 Turbidity (NTU)	Down River 2.75500 <b>pH</b> (-)	Time: 1944 Avg. Velocity: Total Water Depth DO (mg/L)	03200 43 Temp. (°C)
Flood at/North r.g:4-S Surface	Ebb S7 Fil 9 Water Depth (feet)	CS-2 (N) (S) Op Rived / I Long/Easting: (2) Turbidity (NTU) 1,75	Down River 2.75500 pH (-) 7.29	Time: 1944 Avg. Velocity: Of Total Water Depth DO (mg/L) 10.36	03200 43 Temp. (°C) 15,5
Flood at/North r 3:45 Surface Middl	Ebb S7519 Water Depth (feet) 1 21,5	CS-2 (N) (S) Up Rive) / 1 Long/Easting: 12 Turbidity (NTU) 1.75 1.86	Down River 2.75500 pH (-) 7.29 7.25	Time: 1944 Avg. Velocity: Of Total Water Depth DO (mg/L) 10.36	03200 43 Temp. (°C) 15.5 [S.4

COEL CHOR 6720 South Macadam Avenue, Suite 300 Portland, OR 97219 Probe #21E103678 YSI ProDS5 #6970 Water Quality Monitoring Form - Field Parameters Gasco Sediments Site ISS Pilot Study Circuit Number: 4 Date: 0-16-2023 Time: 1452 EW CS-1) CS-2 Station: 3G NG Avg. Velocity: 0.035 Up River Down River Elood / Ebb Lat/Northing: 45. 57893 Total Water Depth: 39.4 Long/Easting: 122.75459

Water Depth Turbidity pH D.O. Temp. (feet) (NTU) (-) (°C) (mg/L)15.4 Surface 7.24 10.41 19.7 5.3 10.42 Middle 2.14 7,21 36.4 3.25 8 10.39 5.3 Deep Comment . No sween, odor, dracoloration, or 55 observed

Construction Activity: ISS Drilling

(S-2 N (\$ Station: BG EW CS-1 Time: 1500 Lood / Ebb Avg. Velocity: 0.223 Up River Down River Lat/Northing:45.57958 Total Water Depth: 47,4 Long/Easting: 122.75493 pH Water Depth Turbidity DO Temp. (feet) (NTU) (-) (mg/L)(°C) 2.22 7.16 10.94 15.3 Surface 15.3 Middle 2.75 7.19 0.42 23.7 44.4 3.07 7.20 10.38 15.3 Deep . No sheen, odor, discoloration, or 53 observed Comments Construction Activity: ISS Drilling Recorded or: Simon Dudenhoefer

1. Include content of floating/suspended material, sheens, discoloration, and odors.

\*- ss=susputed solids/material

COEA ....

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Gasco Sediments Site ISS Pilot Study         Date: 10 - 17 - 2023       Circuit Number: 1         Station: BG EW CS-1 CS-2 N S       Time: Q808         Flood Ebb       Up River / Down River       Avg. Velocity: 0 - 248         Mater Depth       Up River / Down River       Avg. Velocity: 0 - 248         Water Depth       Up River / Down River       Avg. Velocity: 0 - 248         Water Depth       Up River / Down River       Avg. Velocity: 0 - 248         Water Depth       Up River / Down River       Avg. Velocity: 0 - 248         Water Depth       Up River / Down River       Avg. Velocity: 0 - 248         Water Depth       Turbidity       pH       D.0.         Surface       10.32       15	3
Date:       IO       IO	3
Station:         BG         EW         CS-1         CS-2         N         S         Time:         Q808           Flood         Ebb         Up River         Avg. Velocity:         0.248           Lat/Northing:         45.57880         Long/Easting:         422.75406         Total Water Depth:         42.           Water Depth         Turbidity         pH         D.O.         Term           (feet)         (NTU)         (-)         (mg/L)         (           Surface         2.74         7.22         10.32         15	3
Flood (Ebb)       Up River / Bown River       Avg. Velocity: 0 = 2.4 &         Lat/Northing: 45.57880       Long/Easting: 422 • 75406       Total Water Depth: 42.         Water Depth (feet)       Turbidity (NTU)       pH       D.O.       Technology         Surface       2 • 74       7 • 22       10 • 32       15	3
Lat/Northing:         45.57880         Long/Easting:         422.75406         Total Water Depth:         42.           Water Depth (feet)         Turbidity (NTU)         pH         D.O.         Telefonce           Surface         2.74         7.22         10.32         15	2
Water Depth (feet)         Turbidity (NTU)         pH (-)         D.O. (mg/L)         Te (0,000)           Surface         2.74         7.22         10.32         15	
Surface   2.74 7.22 10.32 15	emp. (°C)
	.2
Middle 21.1 2.63 7.21 10.30 15	.2
Deep 39.2 2.81 7.20 10.26 15	.2
Flood (Ebb) Up River Down River Avg. Velocity: 0 - 534	ŀ
Flood (Fbb) Up River ( Down River Avg Velocity: 0 - 534	F
at/Northing de BROLO Long/Enting 100 accord Turling and de	4
Long/casting: 122.75697 Total Water Depth: 45.	mp.
Water DepthTurbiditypHDOTe(feet)(NTU)(-)(mg/L)(*	°C)
Water Depth (feet)         Turbidity (NTU)         pH (-)         DO (mg/L)         Te (mg/L)           Surface         I         2.045         7.21         IQ.33         IS.	°c) 2
Water Depth         Turbidity         pH         DO         Te           (feet)         (NTU)         (-)         (mg/L)         ('           Surface         I         2.045         7.21         10.33         15.           Middle         2.2.7         2.72         7.19         10.29         15.	°C) 2 2

C OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Date: 10 -	17-2003		Circuit Numbe	r. 1	
Station: BG	FW (CS-1)	CS-2 N S		Time: 0842	2
Floo	od (Ebb)	Up River (	Down River	Avg. Velocity: O	.112
Lat/Northing:4	5 58031	Long/Easting: 17	2.75743	Total Water Depth:	45.2
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface		2.48	7.20	10.33	15.2
Middle	22.6	2.37	7.20	10.29	15.2
Deep	42.2	6.96	7.50	10.22	15.2
Construction A Station: BG Floo	EW CS-1 (	tion / Debr	Down River	Time: 0851 Avg. Velocity: () -	358
Construction A Station: BG Floc .at/Northing: 4	EW CS-1 ( EW CS-1 ( Dd (Ebb) 45.58026	tion / Debr CS-2 N S Up River (1) Long/Easting: 12	Down River	Time: 0851 Avg. Velocity: 0, Total Water Depth:	358 48
Construction A Station: BG Floc Lat/Northing: 4	ctivity: E×cava EW CS-1 ( od (Ebb) HS. 58026 Water Depth (feet)	tion / Deba CS-2 (N) S Up River ( Long/Easting: 1/2 Turbidity (NTU)	Down River 2.75675 PH (-)	Time: 085 Avg. Velocity: 0, Total Water Depth: DO (mg/L)	358 48 Temp. (°C)
Construction A Station: BG Floc .at/Northing: 4 Surface	ctivity: E×cava EW CS-1 ( od Æbb HS. 58026 Water Depth (feet)	tion / Debr cs-2 (N) s Up River ( Long/Easting: 12 Turbidity (NTU) 2.45	Down River 2.75675 PH (-) 7.18	Time: 0851 Avg. Velocity: 0 , Total Water Depth: DO (mg/L) 10.34	358 48 Temp. (°C) 15,2
Construction A Station: BG Floc .at/Northing: 4 Surface Middle	ctivity: E×cava EW CS-1 ( od (Ebb) HS. 58026 Water Depth (feet) 1 2.4	tion / Deba CS-2 (N) S Up River (1) Long/Easting: 12 Turbidity (NTU) 2.45 2.76	2.75675 POWN River 2.75675 PH (-) 7.18 7.23	Time: 0851 Avg. Velocity: 0 , Total Water Depth: DO (mg/L) 10.34 10.30	358 48 Temp. (°C) 15.2 15.2
Construction A Station: BG Floc Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> : o	ctivity: Excave EW CS-1 ( bd (Ebb) HS. 58026 Water Depth (feet) 1 2.4 45 No Shopp. 00	tion / Deba cs-2 (N) s Up River (1) Long/Easting: 12 Turbidity (NTU) 2.45 2.76 7.12 95, discolorit	Down River 2.75675 PH (-) 7.18 7.23 7.60 Atton, or s	Time: 0851 Avg. Velocity: (), Total Water Depth: DO (mg/L) 10.34 10.34 10.30 10.16 5 observed	358 48 Temp. (°C) 15.2 15.2 15.2

4

÷

CANCHOR OEA ..... 6720 South Macadam Avenue, Suite 300 Portland, OR 97219

	Water Qua Gas	lity Monitorir co Sediments	ng Form – F Site ISS Pil	ield Parameter ot Study	rs
Date: 10 - 1	7-2023		Circuit Numbe	r: 2	
Station: BG	EW CS-1	CS-2 N 🕥		Time: 1008	
Floo	od (Ebb)	Up River 🕫	Down River	Avg. Velocity: ()	519
.at/Northing: 4	15.57880	Long/Easting: 12	2.75405	Total Water Depth: 42.2	
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp (°C)
Surface	1	2.59	7.14	10.41	15.2
Middle	21.1	2.66	7.20	10.38	15.2
Deep	39.2	2.94	7.24	10.35	15.2
• Collecting Construction A Station: BG	ctivity: Excava	tion / Debris	removal	Time: 1035	
• Collecting Construction A Station: BG Floc	chunistry ctivity: Excava (EW) CS-1	tion / Debros cs-2 () s Up River / D	<u>removal</u>	Time: 1035 Avg. Velocity: 0	548
• Co llecting Construction A Station: BG Floc .at/Northing: 1	chun istry ctivity: Excava (EW) CS-1 od/(60) cS. S8012 Water Depth (feet)	Samples C is tion / Debris CS-2 N S Up River E Long/Easting: 12 Turbidity (NTU)	2 ach depth 2 removal 2 .75693 pH (-)	Time: 1035 Avg. Velocity: 0 Total Water Depth: DO (mg/L)	548 46.6 Temp. (°C)
• Co Ilection A Station: BG Floc at/Northing: f	chun istry ctivity: Excava (EW) CS-1 od/(b)) cS. S8012 Water Depth (feet)	Turbidity (NTU)	2 ach depth 2 removal Down-River 2 .75693 pH (-) 7.15	Time: 1035 Avg. Velocity: O. Total Water Depth: DO (mg/L) 10.39	548 46.6 Temp. (°C)
• Co Ilection A Station: BG Floc at/Northing: 1 Surface Middle	chun istry ctivity: E×ca va (EW) CS-1 od/(b)) S. S8012 Water Depth (feet) 1 2.3.3	Tion / Debris cs-2 (N S Up River / Debris Up River / Debris Long/Easting: 12: Turbidity (NTU) 2.61 2.75	2.75693 POWN-River 2.75693 PH (-) 7.15 7.16	Time: 1035 Avg. Velocity: O. Total Water Depth: DO (mg/L) 10.39 10.37	548 46.6 Temp. (°C) 15.2
• Co Ilection A Station: BG Floc at/Northing: A Surface Middle Deep Comments <sup>1</sup> :	chunistry ctivity: Excava (EW) CS-1 od/(bb) cS. S8012 Water Depth (feet) 1 2.3.3 43.6 No sheen	Turbidity (NTU) 2.61 2.75 4.12	2.75693 PH (-) 7.15 7.29 oloration	Time: 1035 Avg. Velocity: O. Total Water Depth: DO (mg/L) 10.39 10.37 10.34	548 46.6 Temp. (°C) 15.2 15.2 15.2

C OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

023 (S) 032 r Depth eet) 1 2.8 6 len, odo unistry 1~ h =xcavat (S-1)	Up River ( Long/Easting: 12 Turbidity (NTU) 2.41 2.84 7.27 5. discolor Samples ad highest ion/Debris S-2 N S Up River (D	Circuit Numbe Down River 2.75750 PH (-) 7.19 7.19 7.19 7.19 7.19 7.28 action, or here @ each compliance s removal	r: 2 Time: 1044 Avg. Velocity: 0. Total Water Depth: D.O. (mg/L) 10.38 10.31 SS observe h depth int station NTU Time: 1051 Avg. Velocity: 0	429 45.6 Temp. (°C) 15.2 15.2 15.2 15.2 ed erval
CS-1 C 032 r Depth eet) 1 2.8 1.2.8 1	Up River ( Long/Easting: 12 Turbidity (NTU) 2.41 2.84 7.27 5., discolor Samples ad highest ion/Debris S-2 N S Up River (D	Down River 2.75750 PH (.) 7.19 7.19 7.19 7.19 7.28 action, or here @ eac compliance s removal	Time: 1044 Avg. Velocity: 0. Total Water Depth: D.O. (mg/L) 10.41 10.38 10.38 10.31 SS observe h depth int station NTU Time: 1051 Avg. Velocity: 0	429 45.6 Temp. (°C) 15.2 15.2 15.2 15.2 ed ed
) O32 r Depth eet) 1 2.8 2.8 2.8 2.8 2.6 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Up River ( Long/Easting: 12 Turbidity (NTU) 2.41 2.84 7.27 5.27 5.27 5.27 5.27 5.27 5.27 5.27	Down River 2.75750 PH (.) 7.19 7.19 7.19 7.19 7.19 7.28 action, or here @ each compliance s removal	Avg. Velocity: D. Total Water Depth: D.O. (mg/L) 10.41 10.38 10.31 SS observe h depth int station NTU Time: 1051 Avg. Velocity: D	429 45.6 Temp. (°C) 15.2 15.2 15.2 15.2 ed ed
r Depth eet) 1 2.8 2.8 2.6 2en, odo 2en, odo 2en, odo 2en, odo 2en, odo 2en, odo 2en, odo	Long/Easting: 12 Turbidity (NTU) 2.41 2.84 7.27 or, discolor Samples ad highest ion/Debris S-2 N S Up River/E	2.75750 PH (.) 7.19 7.19 7.19 7.28 action, or here @ each compliance s removal	Total Water Depth: D.O. (mg/L) 10.41 10.38 10.38 10.31 SS observe h depth int station NTU Time: 1051 Avg Velocity: 0	45.6 Temp. (°C) 15.2 15.2 15.2 15.2 ed erval
r Depth Feet) 1 2.8 2.8 2.8 2.6 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	Turbidity (NTU) 2.41 2.84 7.27 7.27 or, discolor samples ad highest ion/Debris S-2 N S Up River/E	pH (-) 7.19 7.19 7.28 action, or here @ eac compliance s removal	D.O. (mg/L) 10.41 10.38 10.38 10.31 S5 observe h depth int station NTU Time: 1051 Avg Velocity: 0	Temp. (°C) 15.2 15.2 15.2 15.2 ed ed erval
1 2.8 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.8 2.6 2.6 2.8 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	2.41 2.84 7.27 or, discolor samples ad highest ion/Debris S-2 N S Up River/E	7.19 7.19 7.28 action, or here @ eac compliance s removal	10.41 10.38 10.31 SS observe h depth int station NTU Time: 1051 Ava Velocity: 0	15.2 15.2 15.2 ed erval
2.8 Len, odo unistry -in h Excavat	2.84 7.27 r, discolor samples ad highest ion/Debris S-2 N S Up River/E	7.19 7.28 action, or here @ eac compliance s removal	10.38 10.31 SS observe h depth int station NTU Time: 1051 Ava Velocity: 0	15.2 15.2 ed erval
unistry - in h = xcavat	7.27 samples ad highest son/Debris S-2 N S Up River/E	7.2.8 action, or here @ eac compliance s remova	10.31 S5 observe h depth int station NTU Time: 1051	15.2 ed erval
uen, odo unistry - i N h =>cavat cs-1 (	samples ad highest son/Debris S-2 N S Up River/E	iation, or here @ eac compliant s removal	SS observe h depth int station NTU Time: 1051	ederval
020 1	Long/Easting: 12	2.75677	Total Water Depth: 47.5	
r Depth eet)	Turbidity (NTU)	рН (-)	DO (mg/L)	Temp. (°C)
1	2.34	7.24	10.42	15.2
.75	2.63	7.18	10.39	15.2
.5	5.52	7.49	10.29	15.2
ven, e	dor, drsco,	comoval	or SS obs	served
ian Du	denhace			
1000	xcavat n Du ating/susper	xcavation / debris in Dudenhoppe ating/suspended material, sheer ver fed so 1123/Mi	xcavation / debris removal in Dudenhooser ating/suspended material, sheens, discoloration, an ver ted so lits/material	xcavation / debris removal n Dudenhocker ating/suspended material, sheens, discoloration, and odors. er ded so 1123/Material
C OEA .

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Date:       10-17-2023       Circuit Number: 3         Station:       BG       EW       CS-1       CS-2       N       S       Time: [430         Eload/Ebb       Up RiveP/Down River       Avg. Velocity:       0.083         Lat/Northing:       45.85035       Long/Easting: [22.75807       Total Water Depth:       42         Water Depth       Turbidity       pH       D.O.       Total Water Depth:       42         Water Depth       Turbidity       pH       D.O.       Total Water Depth:       42         Surface       1       2.21       7.39       10.43       15         Middle       21       3.32       7.37       10.40       15         Deep       39       3.49       7.27       10.38       15         Comments':       No       Sheen, odor, discoloration, or SS observe       * Collected       Churstry sample       Ceach depth       interval	3       Circuit Number: 3         1       CS-2 (N) S       Time: [430         Up. River/Down River       Avg. Velocity: 0.083         35       Long/Easting: 122.75807       Total Water Depth: 42         oth       Turbidity       pH       D.O.         (NTU)       (·)       (mg/L)       (°C)         2.21       7.39       10.43       15.5         3.32       7.37       10.40       15.2         3.49       7.27       10.38       15.1         en, odor, discoloration, or SS observed       Stry Sample Ceach depth interval         stry Sample Ceach depth interval       Time: [453         (Up. River/Down River       Avg. Velocity: 0.183         Up. River/Down River       Avg. Velocity: 0.183
Station:BGEWCS-1CS-2CNSTime: [430(Elocat / EbbUp RiveP / Down RiverAvg, Velocity: 0.083Lat/Northing: 45.85035Long/Easting: 122.75807Total Water Depth: 42Water DepthTurbiditypHD.O.Mater DepthTurbiditypHD.O.Trime: [430Lat/Northing: 45.85035Long/Easting: 122.75807Total Water Depth: 42Water DepthTurbiditypHD.O.Trime: [430Water DepthMater Depth(Introduction: 122.75807Total Water Depth: 42Water Depth(Feet)NUUColspan="4">CS/AColspan="4">Colspan="4"Colspan="4">Colspan="4">Colspan="4">Colspan	1 CS-2 $(N \ S)$ Up RiveP/Down River Avg. Velocity: 0.083 35 Long/Easting: 122.75807 Total Water Depth: 42 oth Turbidity pH D.O. Temp. (NTU) (-) (mg/L) (°C) 2.21 7.39 10.43 15.5 3.32 7.37 10.40 15.2 3.49 7.27 10.38 15.1 en, odor, discoloration, or 55 observed stry sample Ceach depth interval 2.21 S. Time: 1453 (Up River/Down River Avg. Velocity: 0.183 Long Factors 100 2000 2000
Elocal/EbbUp. RiveP/Down RiverAvg. Velocity: 0.083Lat/Northing: 45.85035Long/Easting: 122.75807Total Water Depth: 42Water Depth (feet)Turbidity (NTU)pHD.O.Surface12.217.3910.43Middle213.327.3710.4015Deep393.497.2710.3815Comments1: No sheen, odor, discoloration, or 55 observe* Collected churstry sample Ceach depth interval	Up. RiveP/ Down River       Avg. Velocity: 0.083         35       Long/Easting: 122.75807       Total Water Depth: 42         Turbidity       pH       D.O.       Temp.         (NTU)       (-)       (mg/L)       (°C)         2.21       7.39       10.43       15.5         3.32       7.37       10.40       15.2         3.49       7.27       10.38       15.1         en, odor, discoloration, or 55 observed       15.1         stry sample @ each depth interval       1         Cuation/debris removal, ISB Drilling       1         Custion/debris removal, ISB Drilling       1         Custion/debris removal, ISB Drilling       1         Custion/debris removal, ISB Drilling       1         Luation/debris removal, ISB Drilling       1         Custion/debris removal, ISB Drilling       1         Luation/debris removal, ISB Drilling       1         Custion/debris removal, ISB Drilling       1         Luation/debris removal, ISB Drilling       1
Lat/Northing: 45.85035       Long/Easting: 122.75807       Total Water Depth: 42         Water Depth (feet)       Turbidity (NTU)       pH       D.O.       Total Water Depth: 42         Surface       1       2.21       7.39       10.43       15         Middle       21       3.32       7.37       10.40       15         Deep       39       3.49       7.27       10.38       15         Comments1:       No sheen, odor, discoloration, erss observe       * Collected churstry sample @ each depth interval	SS       Long/Easting: 122.75807       Total Water Depth: 42         Turbidity       pH       D.O.       Temp.         (NTU)       (·)       (mg/L)       (°C)         2.21       7.39       10.43       15.5         3.32       7.37       10.40       15.2         3.49       7.27       10.38       15.1         en, odor, discoloration, or 55 observed       15.1         stry sample @ each depth interval         1       CS-2       N S         1       CS-2       N S         Up River/Down River       Avg. Velocity: 0.183
Water Depth (feet)         Turbidity (NTU)         pH (-)         D.O. (mg/L)           Surface         1         2.21         7.39         10.43         15           Middle         21         3.32         7.37         10.40         15           Deep         39         3.49         7.27         10.38         15           Comments':         No sheen, odor, discoloration, or ss observe         15           'Collected         chunistry sample         Ceach depth         interval	Turbidity         pH         D.O.         Temp.           (NTU)         (-)         (mg/L)         (°C)           2.21         7.39         10.43         15.5           3.32         7.37         10.40         15.2           3.49         7.27         10.38         15.1           en, odor, discoloration, or ss observed         15.1           stry sample @ each depth interval           1         CS-2         N (S)           1         CS-2         N (S)           Image: The string of the
Surface         1         2.21         7.39         10.43         15           Middle         21         3.32         7.37         10.40         15           Deep         39         3.49         7.27         10.38         15           Comments':         No         sheen, odor, discoloration, or ss observe         * Collected         churstry sample         Ceach         depth         interval	2.21 7.39 10.43 15.5 3.32 7.37 10.40 15.2 3.49 7.27 10.38 15.1 en, odor, discoloration, or ss observed stry sample @ each depth interval <u>uation/debris removal, Iss Drilling</u> 1 CS-2 N S Time: 1453 <u>Up River/Down River</u> Avg. Velocity: 0.183
Middle 21 3.32 7.37 10.40 15 Deep 39 3.49 7.27 10.38 15 Comments': No sheen, odor, discoloration, or ss observe 'Collected churistry sample Ceach depth interval	3.32 7.37 10.40 15.2 3.49 7.27 10.38 15.1 en, odor, discoloration, or ss observed stry sample Ceach depth interval 1 CS-2 N S Time: [453 Up River/ Down River Avg. Velocity: 0.183
Deep 39 3.49 7.27 10.38 15 Comments': No sheen, odor, discoloration, or 55 observe "Collected churistry sample Ceach depth interval	3.49 7.27 10.38 15.1 en, odor, discoloration, or ss observed stry sample Ceach depth interval uation/debris removal, Iss Drilling 1 CS-2 N (3) Time: 1453 Up River/ Down River Avg. Velocity: 0.183
comments": No sheen, odor, discoloration, or ss observe "Collected churstry sample Ceach depth interval	en, odor, discoloration, or SS observed stry sample C each depth interval <u>uvation/debris removal, ISB Drilling</u> 1 CS-2 N S Time: 1453 <u>Up River/Down River</u> Avg. Velocity: 0.183
at/Northing: 45, 57,911 Long/Easting: 122 75498 Total Water Depth: 39	I I I ONO PASIDO I V I S 4 0 X I Total Water Denth. K 9
Water DepthTurbiditypHDOTe(feet)(NTU)(-)(mg/L)(	th Turbidity pH DO Temp. (NTU) (-) (mg/L) (°C)
Surface     97 741 10 42 10	1.97 7.41 10.43 15.7
Junace   10   1 1.T  10.TS   7.	
Middle 19.5 3.23 7.29 10.41 15	3.23 7.29 10.41 15.1
1 1011 1.TI 10.TS 17.	
Middle 19.5 3.23 7.29 10.41 15	3.23 7.29 10.41 15.1

C OEA ....

	Gas	co Sediments	Site ISS Pile	ot Study	
Date: 10 - 1	7-2023		Circuit Numbe	r: 3	
Station: BG	EW (S-1)	CS-2 N 3		Time: 1502	
Floo	Ebb	Up River / I	Down River	Avg. Velocity: 🔘	.033
Lat/Northing:4	5.57884	Long/Easting: 12	2.75463	Total Water Depth	: 29.6
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp (°C)
Surface	1	1.91	7.29	10.46	15.7
Middle	14.8	2.97	7.24	10.41	15.1
Deep	26.6	3.62	7.24	10.39	15.1
Construction Action Station: BG	etivity: Excava EW CS-1 C	CS-23 N S Up River/1	re moval, 7	Time: 1511	102
Construction Act Station: BG Floo .at/Northing:4	etivity: Excava EW CS-1 C D) Ebb S. S7955	CS-2) N S Up River / I Long/Easting: 12	removal, 7 Down River 2.7549D	Time: 1511 Avg. Velocity: 0 Total Water Depth	.102
Construction Action: BG	etivity: Excava EW CS-1 c d) Ebb S. S7955 Water Depth (feet)	CS-2 N S Up River / I Long/Easting: 12 Turbidity (NTU)	Fe moval, 7 Down River 2.7549D pH (-)	Time: 1511 Avg. Velocity: 0 Total Water Depth DO (mg/L)	. 102 : 48.6 Temp (°C)
Construction Ac Station: BG Floo Lat/Northing: 4 Surface	etivity: Excava EW CS-1 c d) Ebb S. S7955 Water Depth (feet)	tion/Jebris CS-2 N S Up River/I Long/Easting: 12 Turbidity (NTU) 1.88	Fe moval, 7 Down River 2.7549D PH (-) 7.35	Time: 1511 Time: 1511 Avg. Velocity: 0 Total Water Depth DO (mg/L) 10 = 44	. 102 : 48.6 Temp (°C) 15.7
Construction Ac Station: BG Floo .at/Northing: 4 Surface Middle	Etivity: Excava EW CS-1 C d) Ebb S. S7955 Water Depth (feet) 1 2.4.3	tion/Jebris CS-23 N S Up River/I Long/Easting: 12 Turbidity (NTU) 1.88 3.05	Fe moval, 7 Down River 2.7549D PH (-) 7.35 7.26	Time: 1511 Time: 1511 Avg. Velocity: 0 Total Water Depth DO (mg/L) 10 • 44 10 • 42	. 102 : 48.6 Temp (°C) 15.7 15.1
Construction Ac Station: BG Floo Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> :	etivity: Excava EW CS-1 c d) Ebb S. S7955 Water Depth (feet) 1 24.3 45.6	CS-2) N S Up River / L Long/Easting: 12 Turbidity (NTU) 1.88 3.05 4.10 DEC JISCOLO	removal, 7 Down River 2.7549D PH (-) 7.35 7.26 7.25 ration or	Time: 1511 Avg. Velocity: 0 Total Water Depth DO (mg/L) 10.44 10.42 10.39	. 102 : 48.6 Temp (°C) 15.7 15.1 15.0

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

1.0

# Probe # 21E103678 YSI Pro DSS #6970

Station: BG	- 20.20		Circuit Numbe	r: 1	
	EW CS-1	CS-2 N (S)		Time: 0846	
Flood	Ebb	Up River / I	Down River	Avg. Velocity: 🔘	040
Lat/Northing: 49	5.57878	Long/Easting: 12	2.75407	Total Water Depth	43
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.05	7.18	10.51	15.0
Middle	21.5	2.17	7.20	10.47	15.0
Deep	40	2.40	7.21	10.43	15.0
Construction Act	tivity: ISS P	rilling			
Construction Act Station: BG	(EW) CS-1	CS-2 (N) S		Time: 0908	
Construction Act Station: BG Flooc	EW CS-1	CS-2 N S Up Rive	Down River	Time: 0908 Avg. Velocity: 0	400
Construction Act Station: BG Flood Lat/Northing: 4 C	EW CS-1 EW CS-1 1/ED 5.58018	CS-2 V S Up Rive	Down River 2.75692	Time: 0908 Avg. Velocity: 0 Total Water Depth	400
Construction Act Station: BG Flood Lat/Northing:49	EW CS-1 EW CS-1 CED EW EW CS-1 EV CS-1	CS-2 N S Up Rive Long/Easting: 122 Turbidity (NTU)	Down River 2.75692 pH (-)	Time: 908 Avg. Velocity: 0. Total Water Depth DO (mg/L)	400 47,9 Temp. (°C)
Construction Act Station: BG Flood Lat/Northing: 4 C Surface	tivity: 155 D (EW) CS-1 (ED) 5. 580   8 Water Depth (feet) ]	CS-2 N S Up Rive Long/Easting: 122 Turbidity (NTU) 2.00	Down River 2.75692 pH (-) 7.17	Time: 0908 Avg. Velocity: 0. Total Water Depth DO (mg/L) 10.49	400 47,9 Temp. (°C) 15,0
Construction Act Station: BG Flood Lat/Northing: 4 G Surface Middle	EW CS-1 EW CS-1 5.58018 Water Depth (feet) 1 23.75	CS-2 N S Up Rive (1 Long/Easting: 122 Turbidity (NTU) 2.00 2.13	Down_River 2.75692 pH (-) 7.17 7.17	Time: 0908 Avg. Velocity: 0. Total Water Depth DO (mg/L) 10.49 10.46	400 47,9 Temp. (°C) 15,0 15,0

V OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

10/10/10 # 21 E10 3678 YSI Pro DSS #6970 Water Quality Monitoring Form – Field Parameters Gasco Sediments Site ISS Pilot Study Circuit Number: 1 Date: 10-18-2023 EW (CS-T) Time: 0919 Station: BG CS-2 (N) S Avg. Velocity: 0.278 Flood Ebb Up River / Down River) Lat/Northing: 45, 5803 Total Water Depth: 46 Long/Easting: 122.75745 Water Depth Turbidity D.O. Temp. pH (feet) (NTU) (-) (mg/L)(°C) 10.50 15.0 Surface 7.19 2.01 23 2.13 10.47 15.0 Middle 7.15 7.21 2.22 10.44 15.0 Deep comments :. No sheen odor discoloration or S5 observed Construction Activity: ISS Drilling CS-1 CS-2 N S Station: BG EW Time: 0930 Avg. Velocity: Q. 605 Flood Ebb Up River / Down River Lat/Northing: 45, 58098 Long/Easting: 122, 75673 Total Water Depth: 48.6 Water Depth Turbidity pH DO Temp. (feet) (NTU) (-) (mg/L)(°C) 7.18 15.0 1.99 10.50 Surface 7.17 24.3 2.08 10.47 15.0 Middle 7.20 2.36 45.6 15.0 10.44 Deep comments :. No siver, odor, discoloration, or ss observed · Collected samples @ each depth in terval - CS2N had highest compliance station turbidity (2.36 NTU) @45.6' Construction Activity: TS5 Prilling Recorded by: Simon Dutenhoefer 1. Include observations of floating/suspended material, sheens, discoloration, and odors. \* 55 = suspended solids/material

COEA ....

	Water Qua Gase	lity Monitorir co Sediments	Site ISS Pile	eld Parameter ot Study	S
Date: 10-18	8-2023		Circuit Numbe	r: 2	
Station: BG	EW CS-1	CS-2 N 5		Time: 1046	
Floo	d (Ebb)	Up River / I	Down River	Avg. Velocity:	.747
Lat/Northing: 4	5.57878	Long/Easting: 12	2.75405	Total Water Depth	:43
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.14	7.13	10.53	15.0
Middle	21.5	2.62	7.11	10,79	15.0
Deep	40	2.90	7.13	10.46	14.9
Construction Ac	Etivity: ISS E	cs-2 N s		Time: 1108	200
Construction Ac Station: BG Floo	tivity: ISS E EW CS-1 d (Ebb)	CS-2 N S Up River /C	Down River	Time: 1108 Avg. Velocity: 0	399 4/ 1
Construction Ac Station: BG Floo Lat/Northing: 4	tivity: ISS E CS-1 d (Ebb) HS.S8013 Water Depth (feet)	CS-2 N S Up River /C Long/Easting: 127 Turbidity (NTU)	Down River 2.75699 pH (-)	Time: 1108 Avg. Velocity: 0 Total Water Depth: DO (mg/L)	399 46,4 (°C)
Construction Ad Station: BG Floo Lat/Northing: 4 Surface	tivity: ISS D CS-1 d (Ebb) HS.S8013 Water Depth (feet) I	CS-2 N S Up River /C Long/Easting: 127 Turbidity (NTU) 2.25	Down River 2.75699 pH (-) 7.07	Time: 1108 Avg. Velocity: 0 Total Water Depth: DO (mg/L) 10 . 49	399 46,4 Temp. (°C) IS,0
Construction Ad Station: BG Floo Lat/Northing: A Surface Middle	tivity: ISS D W CS-1 d Ebb KS.S8013 Water Depth (feet) 1 23,2	CS-2 N S Up River /C Long/Easting: 12 Turbidity (NTU) 2.25 2.56	Down River 2.75699 pH (-) 7.07 7.07	Time: 1108 Avg. Velocity: 0, Total Water Depth: DO (mg/L) 10, 49 10, 48	399 46,4 Temp. (°C) 15,0 14,9
Construction Ad Station: BG Floo Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> :	tivity: ISS D CS-1 d CEDD HS.S8013 Water Depth (feet) 1 23.2 43.4 No Sheln,	CS-2 N S Up River /( Long/Easting: 127 Turbidity (NTU) 2.25 2.56 2.87	Down River 2.75699 pH (-) 7.07 7.07 7.15	Time: 1108 Avg. Velocity: 0. Total Water Depth: DO (mg/L) 10.49 10.48 10.48 10.46 or SS 0656	399 46.4 Temp. (°C) 15.0 14.9 14.9 14.9

	Water Qua	lity Monitorin	ig Form – F	ield Parameter	s
Data i o	Gas	co Sediments	Site ISS Pil	ot Study	
Station: BG	8-2023	(5.2 M 5	Circuit Numbe	Time: 1118	
Flo	od / Ehb		Down River	Ava Velocity: O	435
Lat/Northing:	45 58033	Long/Easting: 12	0 75750	Total Water Depth:	448
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.57	7.18	10.50	15.0
Middle	22.4	2.54	7.11	10.48	15.0
Deep	41.8	2.72	7.15	10.46	15.050*
米し4。 Construction A Station: BG	9 Activity: ISS D EW CS-1	(5-2) N S		Time: 1126	-
↓14。 Construction A Station: BG Flo	P Activity: ISS D EW CS-1 od /Ebb	€111;ng €5-2 № S Up River \Q	Down River	Time: 1126 Avg. Velocity: 8	645
↓ 14. Construction A Station: BG Flo Lat/Northing:4	P Activity: ISS D EW CS-1 od /EDD AS. S&029	(5-2) (N S Up River X Long/Easting: 12/2	Down River	Time: 1126 Avg. Velocity: 8 Total Water Depth:	645
★ 14. Construction A Station: BG Flo Lat/Northing:4	T Activity: ISS D EW CS-1 od /Ebb AS. S&029 Water Depth (feet)	Up River Long/Easting: [22]	Down River 2 - 75672 pH (-)	Time: 1126 Avg. Velocity: 8 Total Water Depth: DO (mg/L)	645 47.6 Temp. (°C)
★ 14. Construction A Station: BG Flo Lat/Northing:4	T Activity: ISS D EW CS-1 od /EbD AS. S8024 Water Depth (feet) I	Up River Up River Long/Easting: 122 Turbidity (NTU) 2,20	Down River 2.75672 pH (-) 7.13	Time: 1126 Avg. Velocity: 8 Total Water Depth: DO (mg/L)	645 47.6 Temp. (°C) IS.0
K ( 4 . Construction A Station: BG Flo Lat/Northing: 4 Surface Middle	P Activity: ISS D EW CS-1 od /EbD AS. S&024 Water Depth (feet) I 23.8	CIII:09 CS-2 N S Up River X Long/Easting: [22 Turbidity (NTU) 2:20 2:46	Down River 2.75672 pH (-) 7.13 7.11	Time: 1126 Avg. Velocity: 8 Total Water Depth: DO (mg/L) 10,54 10,50	645 47.6 Temp. (°C) 15.0
X 14. Construction A Station: BG Flo Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> :	P EW CS-1 od /EDD AS. S&024 Water Depth (feet) 1 23.8 44.6 No Sheen,	CIII;ng CS-2 N S Up River X Long/Easting: [22 Turbidity (NTU) 2:20 2:46 3:25 o for, frsc	Down River 2.75672 pH (-) 7.13 7.11 7.16 2.000	Time: 1126 Avg. Velocity: 8 Total Water Depth: DO (mg/L) 10.50 10.46	645 47.6 Temp. (°C) 15.0 15.0 14.9

C OEA ....

5

Date: 10 - 1	8-2023		Circuit Numbe	<u>т</u> . З	
Station: BG	) EW CS-1	CS-2 N (S)		Time: 1246	
Flor	od / Ebb)	Up River	Down River	Avg. Velocity: O	. 199
Lat/Northing: 4	+5.75871	Long/Easting: 10	22.75405	Total Water Depth	: 38 8
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	1.84	7.18	10.53	15.3
Middle	19.4	2.56	7.18	10.49	15.0
Deep	35.8	2.67	7.14	10.45	15.0
= Colle C Construction A Station: BG Floo	ted Samply ctivity: ISS D EW CS-1 od (Ebb)	Ceach Swi Drilling , De CS-2 N S Up River F	Pown River	Time: 1314	1 Dorn samp
Construction A Station: BG Floc	ted Samply <u>ctivity: ISS D</u> <u>EW</u> CS-1 Dd (Ebb) HS, SB013	C each Swa Drilling i De CS-2 N S Up River F Long/Easting: [2]	Rown River	Time: 1314 Avg. Velocity: O	487
Colle C Construction A Station: BG Floc Lat/Northing: <sup>C</sup>	Ctivity: ISS D (EW) CS-1 DOD (Ebb) S.S3013 Water Depth (feet)	C each Sur CS-2 N S Up River Long/Easting: [2 Turbidity (NTU)	Rown River 22.75695 PH (-)	Time: 1314 Avg. Velocity: O Total Water Depth DO (mg/L)	487 49,4 Temp. (°C)
Colle C Construction A Station: BG Floc Lat/Northing: C Surface	ectivity: ISS D EW CS-1 od (Ebb) S, S3013 Water Depth (feet)	C each Simple CS-2 N S Up River $F$ Long/Easting: [2 Turbidity (NTU) 2-1]	Rown River 22.75695 PH (-) 7.22	Time: 1314 Avg. Velocity: O. Total Water Depth DO (mg/L) 10 = 52	487 49,4 Temp. (°C)
<ul> <li>Construction A</li> <li>Station: BG</li> <li>Floc</li> <li>Lat/Northing: Construction</li> <li>Surface</li> <li>Middle</li> </ul>	ectivity: ISS D EW CS-1 od (Ebb) S. SB013 Water Depth (feet) ] 22=2	C each Sur Sur CS-2 N S Up River Long/Easting: 12 Turbidity (NTU) 2-11 2.47	Rown River 2.75695 PH (-) 7.22 7.17	Time: 1314 Avg. Velocity: O. Total Water Depth DO (mg/L) 10.52 10.49	487 49.4 Temp. (°C) 15.1
<ul> <li>Colle C</li> <li>Construction A</li> <li>Station: BG</li> <li>Floc</li> <li>Lat/Northing: C</li> <li>Surface</li> <li>Middle</li> </ul>	ectivity: ISS D EW CS-1 od (Ebb) HS, SB013 Water Depth (feet) ] 22.22	Ceach Sur CS-2 N S Up River & Long/Easting: 12 Turbidity (NTU) 2-11 2.47	Rown River 22.75695 PH (-) 7.22 7.17	Time: 1314 Avg. Velocity: O. Total Water Depth DO (mg/L) 10.52 10.49	487 49.4 Temp. (°C) 15.1
<ul> <li>Colle C</li> <li>Construction A</li> <li>Station: BG</li> <li>Floc</li> <li>Lat/Northing: C</li> <li>Surface</li> <li>Middle</li> <li>Deep</li> <li>Comments<sup>1</sup>: o</li> <li>Construction A</li> </ul>	etivity: ISS D EW CS-1 Dod (Ebb) HS, SB013 Water Depth (feet) 1 22.2 41.04 No sheen, of ctivity: ISS D	Ceach Sur CS-2 N S Up River F Long/Easting: 12 Turbidity (NTU) 2.11 2.47 3.29 odor, drsa	Rown River 22.75695 PH (-) 7.22 7.19 Ploration, of Swell reno	Time: 1314 Avg. Velocity: O. Total Water Depth DO (mg/L) 10.52 10.49 10.49 10.49	487 49,4 Temp. (°C) 15.1 15.0 14.9
<ul> <li>Coll&amp; C</li> <li>Construction A</li> <li>Station: BG</li> <li>Floc</li> <li>Lat/Northing: C</li> <li>Surface</li> <li>Middle</li> <li>Deep</li> <li>Comments<sup>1</sup>: o</li> <li>Construction A</li> <li>Recorded by:</li> </ul>	ctivity: ISS D EW CS-1 DOD (Ebb) HS.SB013 Water Depth (feet) 1 22.2 41.04 No sheen, of Simon D	Ceach Sur Crilling, De CS-2 N S Up River & Long/Easting: 12 Turbidity (NTU) 2.11 2.47 3.29 odor, drsa n'11:09, de udenhoefe	Rown River 22.75695 PH (-) 7.22 7.19 Ploration, of Swell reno	Time: 1314 Avg. Velocity: O. Total Water Depth DO (mg/L) 10.52 10.49 10.49 10.49	487 49,4 Temp. (°C) 15.1 15.0 14.9

L ANCHOR DEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

	Water Oual	lity Monitorin	a Form - Fi	ield Parameter	s
	Gase	co Sediments	Site ISS Pile	ot Study	3
Date: 10 - 1	8-2023		Circuit Numbe	r:3	
Station: BG	EW S-D	CS-2 (N) S		Time: 1326	
Floc	d (Ebb	Up River 🖉	own River	Avg. Velocity: O	.541
Lat/Northing: 4	15.58035	Long/Easting: 12	2.75751	Total Water Depth:	43.6
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.61	7.17	10.52	15.0
Middle	21.8	2.91	7.19	10.48	15.0
Deep	40.6	3.03	7.20	10.45	14,9
Construction A Station: BG	EW CS-1	(11)10,9/5wel	1 removal	Time: 1335	44 -
Construction A Station: BG Floo	EW CS-1	CS-2 (S-2) Up River / E	remoral	Time: 1335 Avg. Velocity: Q ,	420
Construction A Station: BG Floo Lat/Northing:4	Ctivity: ISS D EW CS-1 ( Ind (EBD) G. S8026	CS-2 (S-2) Up River / E Long/Easting: 12	1 rennoval Down River 2.75676	Time: 1335 Avg. Velocity: () . Total Water Depth:	420 46
Construction A Station: BG Floc Lat/Northing:4	EW CS-1 EW CS-1 G.S8026 Water Depth (feet)	CS-2 (S-2) Up River / E Long/Easting: 1/2 Turbidity (NTU)	1 removal Down River 2.75676 pH (-)	Time: 1335 Avg. Velocity: () , Total Water Depth: DO (mg/L)	420 46 Temp. (°C)
Construction A Station: BG Floc Lat/Northing: 4 Surface	EW CS-1 EW CS-1 d (EDD G. S8026 Water Depth (feet)	rilling / Swel CS-2 () S Up River / E Long/Easting: 1/2 Turbidity (NTU) 2, 47	2.75676 PH (-) 7.14	Time: 1335 Avg. Velocity: Q. Total Water Depth: DO (mg/L) i Q. 52	420 46 Temp. (°C) 15.0
Construction A Station: BG Floc Lat/Northing: 4 Surface Middle	EW CS-1 EW CS-1 G.S8026 Water Depth (feet) 1 23	rilling/Swell CS-2 () S Up River/E Long/Easting: 12 Turbidity (NTU) 2:47 3:21	1 remoral 2.75676 pH (-) 7.14 7.20	Time: 1335 Avg. Velocity: Q. Total Water Depth: DO (mg/L) 10.52 10.47	420 46 Temp. (°C) 15.0 15.0
Construction A Station: BG Floc Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> :	EW CS-1 EW CS-1 d (EDD G. S8026 Water Depth (feet) 1 23 43 NO SWEEN	111119/5421 CS-2 () S Up River/E Long/Easting: 12 Turbidity (NTU) 2:47 3.21 3.21 3.07 0 dor, drs.co	1 remoral 2.25676 pH (-) 7.14 7.20 7.16 10ration, 5	Time: 1335 Avg. Velocity: Q. Total Water Depth: DO (mg/L) 10.52 10.47 10.43 10.43	420 46 Temp. (°C) 15.0 15.0 15.0 15.0 Ned

COEA .

Date: 10 - 14	+-2023		Circuit Numbe	er: 4	
Station: BG	EW CS-1	CS-2 (N) S		Time: 1621	
Flo	od) Ebb	Up Rived/	Down River	Avg. Velocity: O	.134
Lat/Northing:	45.58036	Long/Easting: 12	2,75792	Total Water Depth	: 42.2
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.46	7.11	10.39	15:2
Middle	21.1	2.71	7.15	10.43	15.1
Deep	39.2	3.43	7.24	10.41	15.0
Construction A Station: BG	CEW CS-1	CS-2 N S	Down River	Time: 1643	518
Construction A Station: BG	CEW CS-1	CS-2 N S	Down River	Time: 1643 Avg. Velocity: 0	.518
Construction A Station: BG (Floo Lat/Northing:	CEN CS-1 CEN CS-1 CED CS-1	CS-2 N S Dp River / Long/Easting: 1/2	Down River	Time: 1643 Avg. Velocity: O Total Water Depth	S18 :44.8
Construction A Station: BG (Floo Lat/Northing:	EW CS-1 CEW CS-1 CS-1 CS-57925 Water Depth (feet)	CS-2 N S DP River / Long/Easting: 1/2 Turbidity (NTU)	Down River 22,75487 PH (-)	Time: 1643 Avg. Velocity: 0 Total Water Depth D0 (mg/L)	SIS : 44.8 Temp. (°C)
Construction A Station: BG (Flor Lat/Northing: Surface	EW CS-1 CEW CS-1 CS-1 CEW CS-1 C	CS-2 N S Up River / Long/Easting: 1/2 Turbidity (NTU) 1.99	Down River 22.75487 PH (-) 7.25	Time: 1643 Avg. Velocity: O Total Water Depth DO (mg/L) 10.51	Si8 : 44.8 Temp. (°C) 15.4
Construction A Station: BG (Flor Lat/Northing: Surface Middle	EV CS-1 Del/Ebb 46.57925 Water Depth (feet) 1 22.4	CS-2 N S DP River / Long/Easting: 1/2 Turbidity (NTU) 1.99 2.65	Down River 22.75487 PH (-) 7.25 7.25	Time: 1643 Avg. Velocity: O Total Water Depth DO (mg/L) 10.51 10.46	Si8 44.8 Temp. (°C) 15.4 15.9
Construction A Station: BG (Flow Lat/Northing: Surface Middle Deep Comments <sup>1</sup> : o	EW CS-1 Gev CS-	CS-2 N S (CS-2 N S) (D) River / Long/Easting: 1/2 Turbidity (NTU) 1.99 2.85 3.48 Meen, drs	Down River 22.75487 PH (-) 7.25 7.25 7.28 Coloration	Time: 1643 Avg. Velocity: O Total Water Depth DO (mg/L) 10.51 10.46 10.46 10.42 or SS obser	Si8 44.8 Temp. (°C) 15.4 15.0 14.9 rved

C OEA ....

Date: 10-1	5-2023-50	10-18-2023	Circuit Numbe	r: 4	
Station: BG	EW CS-D	CS-2 N (5)		Time: 1649	
Floo	Ebb	Up River /	Down River	Avg. Velocity: 🔿 🖕	527
Lat/Northing:	45.57898	Long/Easting: 12	2.75443	Total Water Depth:	41.2
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2,10	7.23	10.53	15.3
Middle	20.6	2.67	7.22	10.48	15.0
Deep	38.2	3.49	7.20	10.43	15.0
Construction A Station: BG	EW CS-1	CILLING /SWE	11 Removal	Time: 1656 Avg. Velocity: O	537
Construction A Station: BG (Flo Lat/Northing:	EW CS-1 (	Up River/	11 Removal Down River 0.75485	Time: 1656 Avg. Velocity: 0 . Total Water Depth:	537 48
Construction A Station: BG (Flor Lat/Northing:	EW CS-1 ( Fbb 45. 57959 Water Depth (feet)	CS-2 N S Up River/ Long/Easting: 12 Turbidity (NTU)	Down River	Time: 1656 Avg. Velocity: O. Total Water Depth: DO (mg/L)	537 48 Temp. (°C)
Construction A Station: BG (Flor Lat/Northing: Surface	EW CS-1 ( EW CS-1 ( Cod / Ebb 4S. S7959 Water Depth (feet)	Constant of the second	11 <u>Remaval</u> Down River 2.75485 pH (-) 7.08	Time: 1656 Avg. Velocity: O. Total Water Depth: DO (mg/L) 10.49	537 48 Temp. (°C) 15.3
Construction A Station: BG (Flor Lat/Northing: Surface Middle	EW CS-1 ( EW CS-1 ( COD / Ebb 45. 57959 Water Depth (feet) 1 2.4	Constant of the second	11 <u>Remaval</u> Down River 2.75485 <b>pH</b> (-) 7.08 7.08	Time: 1656 Avg. Velocity: 0. Total Water Depth: DO (mg/L) 10.49 10.44	537 48 Temp. (°C) 15.3 15.0
Construction A Station: BG (Flo Lat/Northing: Surface Middle Deep Comments <sup>1</sup> :	EW CS-1 ( D) / Ebb 45.57959 Water Depth (feet) 1 2.4 45 No sheen,	Cilling/Swe CIPRIVER/ Long/Easting: 12 Turbidity (NTU) 2.08 3.18 3.67 odor, disc	11 Removal Down River 2.75485 PH (-) 7.08 7.19 7.17 Noration,	Time: 1656 Avg. Velocity: 0. Total Water Depth: DO (mg/L) 10.49 10.44 10.41 0.41	537 48 Temp. (°C) 15.3 15.0 15.0 Med

6720 South Macadam Avenue, Suite 300

Portland, OR 97219

Circuit Number: 1         Station: (BG) EW CS-1 CS-2 N (S)       Time: 0.845         Flood (Ebb)       Up River / Down River       Avg. Velocity: 0.         Lat/Northing: 45, 57874       Long/Easting: 12/2, 75399       Total Water Depth         Water Depth       Turbidity       pH       D.0.         Middle       2.99       6.88       10.49         Deep       37.4       3.08       6.98       10.49	Circuit Number: 1         S-2 N (S)       Time: 0845         Up River / Down River       Avg. Velocity: 0.036         ong/Easting: 122.75399       Total Water Depth: 40.4         Turbidity       pH       D.O.       Temp.         (NTU)       (-)       (mg/L)       (°C)         2.42       6.88       10.57       14.9         2.99       6.93       10.49       14.9         3.08       6.98       10.46       14.9
Station:         G         EW         CS-1         CS-2         N         S         Time:         O         S         Avg. Velocity:         O.         Avg. Velocity:         O.         Avg. Velocity:         O.         O. <th< th=""><th>S-2       N       S       Time:       0.845         Up River / Down River       Avg. Velocity:       0.036         ong/Easting:       122.75399       Total Water Depth:       40.4         Turbidity       pH       D.0.       Temp.         (NTU)       (-)       (mg/L)       (°O)         2.42       6.88       10.57       14.9         2.99       6.93       10.49       14.9         3.08       6.98       10.46       14.9</th></th<>	S-2       N       S       Time:       0.845         Up River / Down River       Avg. Velocity:       0.036         ong/Easting:       122.75399       Total Water Depth:       40.4         Turbidity       pH       D.0.       Temp.         (NTU)       (-)       (mg/L)       (°O)         2.42       6.88       10.57       14.9         2.99       6.93       10.49       14.9         3.08       6.98       10.46       14.9
Flood (Ebb)         Up River / Bown River         Avg. Velocity: 0 ,           Lat/Northing: 45, 57874         Long/Easting: 122,75399         Total Water Depth           Water Depth (feet)         Turbidity (NTU)         pH         D.O.           Surface         1         2,422         6.888         10.57           Middle         20.2         2,99         6.93         10,49           Deep         37,4         3,08         6.98         10,46	Up River / Down River         Avg. Velocity: 0.036           ong/Easting: 122.75399         Total Water Depth: 40.4           Turbidity         pH         D.O.         Temp.           (NTU)         (-)         (mg/L)         (°O)           2.42         6.88         10.57         14.9           2.99         6.93         10.49         14.9           3.08         6.98         10.46         14.9
Lat/Northing:         45.57874         Long/Easting:         122.75399         Total Water Depth           Water Depth (feet)         Turbidity (NTU)         pH         D.O.           Surface         1         2.422         6.88         10.57           Middle         20.2         2.99         6.93         10.49           Deep         37.4         3.08         6.98         10.46	ong/Easting: 122.75399       Total Water Depth: 40.4         Turbidity       pH       D.O.       Temp.         (NTU)       (-)       (mg/L)       (°O)         2.42       6.88       10.57       14.9         2.99       6.93       10.49       14.9         3.08       6.98       10.46       14.9
Water Depth (feet)         Turbidity (NTU)         pH (-)         D.O. (mg/L)           Surface         1         2,42         6.88         10.57           Middle         20.2         2,99         6.93         10.49           Deep         37.4         3.08         6.98         10.46	Turbidity         pH         D.O.         Temp.           (NTU)         (-)         (mg/L)         (°C)           2.42         6.88         10.57         14.9           2.99         6.93         10.49         14.9           3.08         6.98         10.46         14.9
Surface         1         2.42         6.88         10.57           Middle         20.2         2.99         6.93         10.49           Deep         37.4         3.08         6.98         10.46	2.42 6.88 10.57 14.9 2.99 6.93 10.49 14.9 3.08 6.98 10.46 14.9
Middle 20.2 2,99 6.93 10.49 Deep 37.4 3.08 6.98 10.46	2.99 6.93 10.49 14.9 3.08 6.98 10.46 14.9
Deep 37.4 3.08 6.98 10.46	3.08 6.98 10.46 14.9
Fland / PER Lin Diver / Down Diver	5-2 N S Time: 0916
Station: BG EW CS-1 CS-2 (N) S Time: 0916	emoval
HOOD / MEDDI UD KIVER / 200WD KIVER IAVU, VEIOCIU, U	5-2 N S Time: 0916 Up River (Down River) Avg. Velocity: 0-005
Lat/Northing: 44 S 8006 Long/Easting: 10 9 75689 Total Water Depth:	S-2       N       S       Time: 0916         Up River (Down River       Avg. Velocity: 0.005         ong/Easting: (2.2)       75689       Total Water Depth: 45.2
Lat/Northing: 45.58006 Long/Easting: 122.75689 Total Water Depth Water Depth Turbidity pH DO (feet) (NTU) (-) (mg/L)	S-2     N     S     Time: 0916       Up River (Bown River)     Avg. Velocity: 0.005       ong/Easting:     122.75689     Total Water Depth: 45.2       Turbidity     pH     D0     Temp.       (NTU)     (-)     (mg/L)     (°C)
Value     Verocity     Avg. Verocity       Lat/Northing:     45.58006     Long/Easting:     12.75689     Total Water Depth       Water Depth (feet)     Turbidity (NTU)     pH     DO       Surface     1     2.34     7.09     10.50	removal         Time: 0916         Up River / Down River       Avg. Velocity: 0.005         ong/Easting: 122.75689       Total Water Depth: 45.2         Turbidity       pH       DO       Temp.         (NTU)       (-)       (mg/L)       (°C)         2.34       7.09       10.50       14.9
Value         Verocity         Avg. Verocity	removal         S-2 N s       Time: 0916         Up River / Down River       Avg. Velocity: 0.005         ong/Easting: 122.75689 Total Water Depth: 45.2         Turbidity       pH       DO       Temp.         (NTU)       (-)       (mg/L)       (°C)         2.34       7.09       10.50       14.9         2.45       7.06       10.42       14.9

CANCHOR CEA

	Gas	co Sediments	Site ISS Pile	ot Study	
Date: 10 -1	9-2023		Circuit Numbe	r: 1	
Station: BG	EW CS-D	CS-2 (N) S		Time: 0930	)
Floc	d /Ebb	Up River / (	Down River	Avg. Velocity: 🔿	.032
at/Northing: 4	45.58034	Long/Easting: j2	2,75750	Total Water Depth	45
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.16	7.02	10.49	14.9
Middle	22.5	2.43	7.11	10.43	14.9
Deep	42	*2.82ª	7.10	10.38	14.9
Tonstruction A Station: BG	Ctivity: Swells EW CS-1	(5-2) N S		Time: 0943	3
T D = Construction A Station: BG Floo	EW CS-1	emova CS-2 N S Up River≠	Down River	Time: 0943 Avg. Velocity: 0	3.236
T D = Construction A Station: BG Floc Lat/Northing: 4	TT <u>etivity: Swell r</u> <u>EW CS-1</u> od (Ebb) AS. S8029	CS-2 N S Up River≮ Long/Easting: 1/2	Down River) 2.75678	Time: 0943 Avg. Velocity: 0 Total Water Depth:	3 236 47.4
T D = Construction A Station: BG Floc Lat/Northing: 4	EW CS-1 EW CS-1 od (Ebb) AS. 58029 Water Depth (feet)	CS-2 N S Up River ≠ Long/Easting: 12 Turbidity (NTU)	Down River) 2.75678 pH (-)	Time: 0943 Avg. Velocity: 0 Total Water Depth: DO (mg/L)	3 • 236 • 47.4 Temp. (°C)
T D = Construction A Station: BG Floc Lat/Northing: 4 Surface	Ctivity: Swell r EW CS-1 od (Ebb) AS. S8024 Water Depth (feet)	CS-2 N S Up River≮ Long/Easting: 12 Turbidity (NTU) 2.3	Down River) 2.75678 pH (-) 7.12	Time: 0943 Avg. Velocity: 0 Total Water Depth: DO (mg/L) 10.47	3 • 236 • 47.4 Temp. (°C) I 4.9
The Des Construction A Station: BG Floc Lat/Northing: 4 Surface Middle	EW CS-1 EW CS-1 od (Ebb) AS. S8024 Water Depth (feet) 1 23.7	emova CS-2 N S Up River≮ Long/Easting: 12 Turbidity (NTU) 2.39 2.68	Down River) 2.75678 pH (-) 7.12 7.11	Time: 0943 Avg. Velocity: 0 Total Water Depth: DO (mg/L) 10.47 10.42	3 • 236 • <del>17.4</del> Temp. (°C) 14.9 14.9
Construction A Station: BG Floc Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> : 6	T 1 ctivity: <u>Swell r</u> EW CS-1 od (Ebb) 45. 58029 Water Depth (feet) 1 23.7 44.4 No Sheen.0	CS-2 N S Up River Long/Easting: 12 Turbidity (NTU) 2.39 2.68 *3.9650 dor, discolor	Down River) 2.75678 pH (-) 7.12 7.11 7.07 ration, or	Time: 0943 Avg. Velocity: 0 Total Water Depth: DO (mg/L) 10.47 10.42 10.44 10.44	236 47.4 Temp. (°C) 14.9 14.9 14.9 14.9

ANCHOR OEA

	Probet	\$21E1036	18 YS	I ProDSS #	16970
	Water Qua	ity Monitorin	ng Form – Fi	eld Parameter	s
<b>D</b> 10	Gase	o Sediments	Site ISS Pile		
Date:  () -	9-20:23	(1) N (2)	circuit indilibe	Time: 1217	
Station: (BG	EW CS-1	CS-2 N (S		11me. [ 34 /	0
Floc	od (EDD)	Up River/L	Down River	Avg. velocity:	-263
Lat/Northing: 4	+5.57881	Long/Easting: 1/2	2.75405	Total Water Depth	41.6
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	(°C)
Surface	1	2,31	7.20	10.70	15.0
Middle	20.8	2.96	7.18	10.69	14.9
Deep	38.6	4.46	7.09	10.69	14.9
Collecter	ctivity: Sw/l r	emoval cs-2 R s	ample Ce -	Time: 1408	
Station: BG	EVV CS-1	Lin River H	Down River	Ava Velocity: O	391
Lat/Northing: /	16 58015	Long/Easting: 12	2 75 690	Total Water Depth	45 6 SP
	Water Depth (feet)	Turbidity (NTU)	рН (-)	DO (mg/L)	Temp. (°C)
Surface	1	3.10	7.20	10.70	14.9
Middle	22.0	4.32	7.26	10.68	14.9
Deep	42.0	5.64	7.25	10.66	14.7
Construction A Recorded by: 1. Include observ & SS	ctivity: Swell Simon D ations of floating/susp = SUSPUD	emoval Udenhoefe ended material, sheer ed Solids/	S Maturial	nd odors.	

ANCHOR

D

6720 South Macadam Avenue, Suite 300 Portland, OR 97219 VCT PODSS #1970

	Water Qual Gase	lity Monitorir co Sediments	ng Form – Fi Site ISS Pilo	eld Parameter ot Study	s
Date: 10 - 1	9-2023		Circuit Number	: 2	
Station: BG	EW CS-D	CS-2 🕥 S		Time: 1419	
Floo	od / Ebb	Up River 70	Down River	Avg. Velocity: 🔘	.109
Lat/Northing:	5 58035	Long/Easting: 12	2.75739	Total Water Depth:	44.2
	Water Depth (feet)	Turbidity (NTU)	рН (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.79	7.24	10.72	15.0
Middle	22.1	4.38	7.23	10.69	14.9
Deep	41.2	5.29	7.20	10.66	14.9
		Ite Divise Let	COLUMN AND	Ava Velocity:	nn 410
Floo	AC SS023	Long/Easting: 19	O TSGT	Total Water Depth:	45.2
Floa Lat/Northing:	45.58023 Water Depth (feet)	Long/Easting: 12 Turbidity (NTU)	2.75677 рн (-)	Total Water Depth: DO (mg/L)	45.2 Temp. (°C)
Floo Lat/Northing: 4 Surface	od / (tbb) 45, 58023 Water Depth (feet)	Long/Easting: 12 Turbidity (NTU) 2.37	2.75677 pH (-) 7.22	Total Water Depth: DO (mg/L)	45.2 Temp. (°C)
Flor Lat/Northing: 4 Surface Middle	od / (tbb) 45.58023 Water Depth (feet) 1 22.6	Long/Easting: 12 Turbidity (NTU) 2.37 3.81	2.75677 pH (-) 7.22 7.22	Total Water Depth: DO (mg/L) 10.71 10.70	45.2 Temp. (°C) 15.1 14.9
Flor Lat/Northing: 4 Surface Middle Deep Comments <sup>1</sup> : 9	od / (bb) 45.58023 Water Depth (feet) 1 22.6 42.02 No SW.ED.0	Up River /4 Long/Easting: 12 Turbidity (NTU) 2.37 3.81 4.61	2.75677 PH (-) 7.22 7.203 7.203 7.203 0.26	Total Water Depth: DO (mg/L) 10.71 10.70 10.67 10.67 r S5 obs:crv	45.2 Temp. (°C) 15.1 14.9 14.8

Attachment 4 Water Quality Sampling Forms – Chemical Parameters CANCHOR OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Water	Quality Sampling For Gasco Sediments Si	rm – Chemical Para te ISS Pilot Study	meters
Background Station ID:	36-15		L K S L
Lat/Northing: 4ら. らっと	380	Long/Easting: 122	.75406
Total Water Depth: 42.	2	Sample Depth:	21.1,39.2
Sample ID: NWN - BG15	1-231017 +0815	Date: 10-17-23	Time:0815,0820
comments': . Collected . No sheen, odor,	samples C each dep discoloration, or si	th interval w/ var uspended material	observed
Depth Time 1' 0815 1 21.1 0829 39.2 0825 N	Sample ID VWN-BGIS-231017 VWN-BGIS-231017 WN-BGIS-231017	0815 70820 (MS/MSD- 9825	> x3 volume)
Compliance Station ID:	25-2N		
at/Northing: 45.580	26	Long/Easting: 122 .	75675
Total Water Depth: 48		Sample Depth: )	24,45
Sample ID: NWN - CS2N	1-231017 +0910	Date: 10-17-23	3 Time:0905 -0915
Comments': · Collected · No Sheen, odor, Depty Time Son 1 0905 NWN 24 0910 NWN	sample C each dept discoloration, or su nple ID - CS2N-23101709 - CS2N-23101709	n interval w/ Van specified material 25	Dom sampler observed
45 0915 NWN	- CS2N-123101705	115	
Analuta	Analytica	I Suite Mothod	Decrementing
Free Cvanide	125-mL Amber Poly	ASTM D4282	NaOH
	-125-mL Amber Poly		-None-SD
Observations of floating/susp Recorded and Co	pended material, sheens, discolorat	ion, and /or odors will be record	led in the comments.

C OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

	Water	Quality Sampling For Gasco Sediments Si	rm – Chemical Para te ISS Pilot Study	meters
Backgro	und Station ID: $\mathbb B$	6-15		
Lat/North	ning: 45. 578	80	Long/Easting: 122	75405
Total Wa	ter Depth: 42.2	2	Sample Depth: j	21.1, 39.2
Sample II	D:NWN-BGIS	-231017+1020	Date: 10-17-23	3 Time: 1020 - 1030
Commen No S' DCPHU	ts: Collected neen, odor, Time samp	sample @ cach de discoloration.or si u ID	pth interval w/ V. ispended material	an Dorn sompler lobserved
21.1	1020 NWN	-BG15-231011102	25	
39.2	1030 NWN	-BGIS-23101710	30	
Complia	nce Station ID:	S-IN		
Lat/North	ning:45.580	32	Long/Easting: 122	75747
Total Wa	ter Depth: 45.4		Sample Depth: 1,2	2.7 , 42.4
Sample I	D:NWN - CSI	V-231017+1115 +1120	Date: 10-17-23	Time: 11/0 -1120
Commen ∘N9 51	nts': . (ollected	sample C each dept1 liscoloration, or su	n interval w/Van spended material	Dorn sampler observed
Depth	Time Sami	pleID		
00 7	IIIO NWN	-CSIN-2310171110		
LLel	IIIS NWN	COIN - 2310171113	>	
72.4	1120 NWN	-COIN-231017112	0	
_	Analista	Analytica	I Suite	
/		(125-ml Amber Poly	Wethod	NaOH
F	ree Cyanide	125-mL Amber Poly ST	ASTM D4282	None
C	PAHS	2 X 125-mL Amber Glass	EPA 8270D SIM	None
1. Observa Reco	ations of floating/susp or fed cMd	ended material, sheens, discoloration of the collected by Simo	ion, and /or odors will be record on Dudenhoef	ded in the comments.

C OEA ....

s,

Water Quality Sampling F Gasco Sediments	orm – Chemical Parar Site ISS Pilot Study	neters
Background Station ID: BG-1N		
Lat/Northing: 45, 85035	Long/Easting: 122 .	75807
Total Water Depth: 42	Sample Depth:	21,39
Sample ID: NWN - BGIN - 231017 + 1440	Date: 10-17-23	Time: 1440 - 1450
Comments': Collected Sample @ each dep NO SWED, Odor, discoloration, or sus Depth Time Sample ID 1 1440 NWN-BGIN-23101711 2.1 1445 NWN-BGIN-231017 39 1450 NWN-BGIN-2310	th interval W/ Van Do spended material 1440 171450	m samples observed
Compliance Station ID: $CS - 2S$		
Lat/Northing: 45. 57955	Long/Easting: 122	15490
Total Water Depth: 48.6	Sample Depth:	24.3, 45.6
Sample ID: NWN - C525 - 231017 +1525	Date: 10-17-23	Time: 1520 - 1530
Comments': · Collected Sample @ each Lepth · No Shepn, ador, discoloration, or su Depth Time Sample IP 1 1520 NWN-CS25-25	interval using Van D Ispented material obs 310171520	erved
24.3 1525 NWN- C525-2	310171525	
45.6 1530 NWN- C525-2	310 17 1530	
Analyte Bottle	Method	Preservative
Free Cyanide 125-mL Amber Poly	ASTM D4282	NaOH None
PAHE 2X 125-ml Amber Glass	EPA 8270D SIM	None

VE ANCHOR

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

## Circuit#1 - Ebb Tide - ISS Drilling

	Wate	er Quality Sampling F Gasco Sediments	orm – Chemical Para Site ISS Pilot Study	meters			
Backgrou	und Station ID:	BG-15					
Lat/North	ning: 45. 57	878	Long/Easting: 122.	75907			
Total Wat	ter Depth: 43	1	Sample Depth: 1,	21.5,40			
Sample II	NWN-BG	15-231018++1me	Date: 10-18-23	Time: 0850-0900			
Commen • No < Depth	ts': · Samples sheen, odor Time	collected & each depth in 1 discoloration, or Si Somple ID	s observed	sompler			
1	0850	NWN-BG15-2310180	0850				
21,5	0855	NWN-BG13-2310	180855				
40	0900	NWN-BG13-29101	80902				
Complia	nce Station ID:	CS-2N					
Lat/North	ning:45.58	028	Long/Easting: 122	.75673			
Total Wa	ter Depth: 48	3.6	Sample Depth: 1, 2	Sample Depth: 1, 24.3, 45.6			
Sample II	D: NWN-CS	2N-231018 +time	Date: 10-18-23	Time: 0945-0955			
Commen • No	ts: · Sample	collected & each dept	observed w/ Van D	orn sompler			
Pepth	Time	Sample IP	18-0010				
	0945	NWN- C52N-2310	100945				
24.3	0950	NWN- C52N- 2319	180959				
45.6	0955	NWN- CS2N- 2310	0180955				
		Analyt	ical Suite	Drocomustive			
()	Analyte	Bottle	Method	NaOH			
F	ee Cyanide	125-mL Amber Poly	SP ASTM D4282	None			
0	PAHS	2 X 125-mL Amber Glass	EPA 8270D SIM	None			
1. Observa * S' RL	tions of floating/: S = suspend corded + (	suspended material, sheens, discolo ed solids/material Collucted by Simon	Dudenho efer	ded in the comments.			

V ANCHOR OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

## Circuit#2-EbbTite-ISS Prilling

Wate	r Quality Sampling Fo Gasco Sediments S	rm – Chemical Para ite ISS Pilot Study	meters			
Background Station ID:	BG-15					
Lat/Northing: 45.5	7878	Long/Easting: 12.2	75405			
Fotal Water Depth: 4-3		Sample Depth:   , 2	Sample Depth: 1, 21.5, 40			
Sample ID: NWN- B	G15-231018 +tim	4 Date: 10-18-23	Time: 1050-1100			
comments1: · Sample	collected @ each depth , drscoloration, or SS	observed using Va	n Dorn sampler			
1 1050	NWN-BG15-2310	0181050				
21.5 1055	NWN-BG15-231	0181055				
40 1100	NWN-BGIS-2	310181100				
Compliance Station ID:	CS-2N					
Lat/Northing: 45,58	3024	Long/Easting: 122 .	Long/Easting: 122,75672			
Total Water Depth: 4 -	.6	Sample Depth:   2	Sample Depth: 1, 23.8, 44.6			
Sample ID: NWN - C	S N-231018 + time	Date: 10 - 18 - 23	Date: 10-18-23 Time: 1135-1145			
Comments1: Somple No Sheen, odor, J	collected @ each tep iscoloration, or 35 obs	oth interval w/ Vo erved	n Dorn sampler			
Depth Time	Somple 10 NIINI-052NI-2310	8 1135				
1 1135	NUMAI- (SON- 23)	0181140				
2010 11 10	NUMAI- CON-03	1018 1145				
44.6 1173	Analytic	al Suite				
Analyte	Bottle	Method	Preservative			
Free Cyanide	125-mL Amber Poly	ASTM D4282	NaOH None			
PAHs	2 X 125-mL Amber Glass	EPA 8270D SIM	None			
1. Observations of floating/s $\neq SS = SUS/$ Raccology (1)	uspended material, sheens, discolora	enial DINTENTAOPFER	ded in the comments.			

CEA CEA

6720 South Macadam Avenue, Suite 300

Wat	er Quality Sampling Fo	orm – Chemical Para	ameters			
	Gasco Sediments S	ite ISS Pilot Study				
ackground Station ID	BG-IS					
at/Northing: 45.5	157871	Long/Easting: 122	.75405			
otal Water Depth: 38	3.8	Sample Depth:	19.4,35.8			
ample ID: NWN -	BG15-231018+7;	MAR Date: 10-18-23	Time: 1255 - 1305			
omments': « Cellette » No Siven, ode	d sample @ each dept	h interval using 1 SS observed	Jon Dom Sompler			
Lizee	Sample ID	0161005				
10 1 1200	NWN-OGI)-LSI	0161233				
19.9 1300	NWN-13613-23	10101500				
35.8 1305	NWN - BG15-23	10181303				
ompliance Station ID	: C5-2N					
at/Northing: 45 . S	8028	Long/Easting: 122	Long/Easting: 122, 75676			
otal Water Depth: 4-(	6	Sample Depth: \	Sample Depth: 1, 23, 43			
ample ID: NWN -	C52N-231018+Ti	ML Date: 10-18-23	Time: 1345 - 1355			
No SWLIN, 000	d sample c each tept	n interval w/ Van D SS sbserved	orn-sampler			
Depth Time	Sample ID	- 1240				
1 1345	NWN = C32N = 231	0121343				
125 1330	NWN-COLN 23	10101330				
43 1255	NWN-C52N-23	10101335				
Analista	Rottlo	al Suite Method	Preservative			
Analyte	125-ml Amber Poly	Wethou	NaOH			
Free Cyanide	125-mL Amber Poly	ASTM D4282	None			
PAHs	2 X 125-mL Amber Glass	EPA 8270D SIM	None			
Observations of floating, *SS = 5US	suspended material, sheens, discolora	ation, and /or odors will be reco erial	rded in the comments.			

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Circuit #4 - Flood Tite - Iss Drilling, Swell Removal

	Wate	Quality Sampling For Gasco Sediments Sit	m – Chemical Parar e ISS Pilot Study	neters
Background	d Station ID:	3G-1N		
Lat/Northin	9: 45, 58	036	Long/Easting: [22.	75792
Total Water	Depth: 42.	2	Sample Depth: ( , 2	1.1,39.2
Sample ID:	NWN-BG	IN-231016 + Time	Date: 10-18-23	Time: 1630-1640
No shee	n, odor, dis	collected @ each tept	h interval using ended material o	Van Domsomple
Depth	Time	Sample ID	1/20	
	1630 M	JWN - DGIN - 251018	51630	
2101	1635 N	IWN-1361N-2310	181635	
39.2	1640 M	WN-BGIN-231	0181640	
Compliance	e Station ID:	CS-25		
Lat/Northin	g: 45. 5-	7959	Long/Easting: 122.	75485
Total Water	Depth: 48		Sample Depth:	24,45
Sample ID:	JWN-C	625-231018+Tim	e Date: 10-18-23	Time: 1705-1715
Comments <sup>1</sup> •NO SW	en, odor	ellected C each tepth	interval wy van suspended mate	Dorn sampler erial observed
Depth	Time	Sample ID		
1	1705	NWN-C525-2-	310181705	
24	1710	NWN - C525-23	510181710	
45	1715	NWN - C525 - 25	310181715	
		Analytical	Suite	
A	nalyte	Bottle	Method	Preservative
Free	Cyanide	125-mL Amber Poly 125-mL Amber Poly	ASTM D4282	NaOH None
$\langle$	PAHs).	2 X 125-mL Amber Glass	EPA 8270D SIM	None
1. Observatio	ns of floating/su	spended material, sheens, discolorations of the second s	n, and for odors will be record udenhoefer	ed in the comments.

V ANCHOR OEA

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

Circuit # 2 - Ebb Tite - Swell Removal

	Wate	r Quality Sampling For Gasco Sediments Si	rm – Chemical Para te ISS Pilot Study	meters
Backgrou	nd Station ID:	36-15		
Lat/Northi	ng:45.57	874	Long/Easting: 122	.75399
Total Wate	er Depth: 40	.4	Sample Depth: 1, 2	0.2,37.4
Sample ID	NWN-BG	15-231019+TIM	E Date: 10-19-2:	3 Time: 0900 - 0910
Comment:	1:. Sample c	oilected @ each dept discoloration, or susp	hinterval using Vi ended material s	NDom sanpler bserved
	0900	NWN - BGIS - 2310	190900	
20.2	0905	NWN-BGIS-231	0190905	
37.4	0910	NWN-BGIS-231	0190910 (MS/	MSD)
Complian	ce Station ID:	CS-2N		
Lat/North	ing: 45.5	8024	Long/Easting: 122	.75678
Total Wate	er Depth: 47	.4	Sample Depth:   ,	23.7,44.4
Sample ID	NWN-C	52N-231019+TIM	E Date: 10-19-23	Time: 0955-1005
Comment No sh	s': · Somple, een, odor, d	collected @ each tepth in iscoloration, or suspen	terval using Van Da ded material obser	ved sampler
Depth	Time	Sample ZD	10.0955	
1	0955	NWN-C52N-2510	190955	
23.1	1000	NWN - CS2N - 2310	191000	
44.4	1005	NWN-CS2N-231019100	5/NWN-C5102N-	2310191005 (Field Dup)
_	Analute	Bottle	Method	Preservative
Fre	ee Cyanide	125-mL Amber Poly	ASTM D4282	NaOH None
0	PAHS	2 X 125-mL Amber Glass	> EPA 8270D SIM	None
1. Observat	rions of floating/su	collected by Siw	ion, and /or odors will be record	ded in the comments.

C OEA

	Wate	r Quality Sampling For Gasco Sediments Sit	m – Chemical Para te ISS Pilot Study	meters			
Backgroun	d Station ID:	BG-15					
_at/Northin	9:45.5	788)	Long/Easting 12 2	2,75405			
lotal Wate	Depth: 41.	6	Sample Depth:	20.8,38.6			
Sample ID:	NWN-B	615-231019 + TIME	Date: 0-19-2	3 Time:			
No Sh	en odor.	Joseph C each tepth	interval using Var pented material o	born sampler beened			
1	1355	NWN-BGIS-2310	191355				
20.8	1400 1	NWN-BG15-2310	0191400				
386	1405	WW-BG15-231019140	S NWN-BGIOIS	-2310191405/F			
Compliance	e Station ID:	(S-IN	/				
Lat/Northin	ng: 45, 58	037	Long/Easting: 12.2.	75738			
Total Wate	r Depth: 45		Sample Depth: $I_1$ Z	Sample Depth: 1, 22.5, 42			
Sample ID:	NWN-CSI	N-231019 + TIME	Date: 10-19-22	3 Time: 140-1450			
Comments - No Sive	en, odor,	Swall Q each tepth inter discoloration, OF Suspend	wal using Van Dom waterial obser	sampler ved			
Depth	TIME	Sample ID	01440				
1	1440 1	VWN- 651N- 23101	91440				
22.5	1445 1	VWN-CSIN-2310	191445				
42	1450	JWN - CSIN-231 01914	-SO (MS/MSD)				
	(,	Analytical	Suite				
1	nalyte	Bottle	Method	Preservative			
Fe	e Cyanide	125-mL Amber Poly	ASTM D4282	NaOH			
	PAHS	20 125-mL Amber Glass	EPA 8270D SIM	None			
I. Observati	rifed and	spended material, sheens, discoloration Collected by Si'Mer	on, and /or odors will be record Duten Hotter	ded in the comments.			

Attachment 5 Water Quality Field Parameter Measurements

			Flow Direction			Total Water	Monitoring		Measured	Background Corrected				
Circuit	Monitorina		(Upriver/		North/	Depth	Depth	Depth	Turbidity	Turbidity		DO	Temperature	Chemistry
No.	Date	Time	Downriver)	Station	South	(feet)	(feet)	Zone	(NTU)	(NTU) <sup>1</sup>	pН	(mg/L)	(C°)	Sample
							1	Surface	1.65		7.11	10.35	15.5	•
		8:30		BG-1S	South	43.0	21.5	Middle	1.90		7.13	10.34	15.5	
							40.0	Deep	2.26		7.11	10.29	15.5	
							1	Surface	1.91	0.26	7.13	10.36	15.5	
		9:02		EW-1N	North	45	22.5	Middle	1.95	0.05	7.11	10.30	15.5	
1	10/16/2023		Downriver				42	Deep	2.29	0.03	7.17	10.28	15.5	
	10/10/2023		Downine				1	Surface	1.96	0.31	7.12	10.34	15.5	
		9:10 9:18		CS-1N CS-2N	North	45.5	22.75	Middle	2.05	0.15	7.13	10.31	15.5	
							42.5	Deep	2.33	0.07	7.15	10.28	15.5	
					l North	47.6	1	Surface	2.36	0.71	7.13	10.34	15.5	
							23.8	Middle	2.50	0.6	7.14	10.31	15.5	
							44.6	Deep	3.32	1.06	7.16	10.29	15.5	
		10:30	5	BG-1S	South	40.0	1	Surface	2.55		7.19	10.34	15.5	
							20	Middle	3.01		7.20	10.32	15.5	
							37.0	Deep	3.56		7.17	10.31	15.4	
							1	Surface	2.68	0.13	7.21	10.32	15.5	
		10:55		EW-1N	North	46.4	23.2	Middle	2.54	-0.47	7.20	10.31	15.5	
2	10/16/2023		Downriver				43.4	Deep	5.83	2.27	8.29	10.30	15.4	
	,,						1	Surface	3.16	0.61	7.22	10.33	15.5	
		11:06		CS-1N	North	45.3	22.65	Middle	2.62	0.08	7.21	10.31	15.5	
							42.3	Deep	4.02	0.46	7.95	10.32	15.4	
							1	Surface	2.02	-0.53	7.19	10.35	15.5	
		11:14		CS-2N	North	47.4	23.7	Middle	2.26	-0.75	7.17	10.34	15.5	
							44.4	Deep	2.58	-0.98	7.16	10.35	15.4	

			Flow Direction			Total Water	Monitoring		Measured	Background Corrected				
Circuit	Monitoring		(Upriver/		North/	Depth	Depth	Depth	Turbidity	Turbidity		DO	Temperature	Chemistry
No.	Date	Time	Downriver)	Station	South	(feet)	(feet)	Zone	(NTU)	(NTU) <sup>1</sup>	рН	(ma/L)	(C°)	Sample
			,			(	1	Surface	1.89		7.20	10.37	15.6	
		12:30		BG-1S	South	40.0	20	Middle	2.39		7.17	10.35	15.4	
							37.0	Deep	2.80		7.16	10.33	15.4	
							1	Surface	1.82	-0.07	7.18	10.39	15.5	
		12:40		EW-1N	North	45.2	22.6	Middle	2.09	-0.3	7.17	10.37	15.4	
3	10/16/2023		Downriver				42.2	Deep	2.53	-0.27	7.20	10.33	15.4	
5	10/10/2023		Downiver				1	Surface	1.94	0.05	7.15	10.39	15.4	
		12:47 12:57		CS-1N	North	43.4	21.7	Middle	2.06	-0.33	7.14	10.37	15.4	
							40.4	Deep	2.31	-0.49	7.18	10.34	15.4	
			7			46.4	1	Surface	1.84	-0.05	7.12	10.42	15.4	
				CS-2N	l North		23.20	Middle	1.97	-0.42	7.14	10.39	15.4	
							43.4	Deep	2.53	-0.27	7.15	10.35	15.3	
					North	41.6	1	Surface	2.02		7.17	10.37	15.5	
		14:30		BG-1N			20.8	Middle	2.15		7.23	10.37	15.4	
							38.6	Deep	2.99		7.21	10.37	15.3	
							1	Surface	1.75	-0.27	7.29	10.36	15.5	
		14:44		EW-1S	South	43	21.5	Middle	1.86	-0.29	7.25	10.38	15.4	
Л	10/16/2023		Upriver				40	Deep	2.90	-0.09	7.21	10.38	15.3	
-	10/10/2023		opinei				1	Surface	1.78	-0.24	7.24	10.41	15.4	
		14:52		CS-1S	South	39.4	19.7	Middle	2.14	-0.01	7.21	10.42	15.3	
							36.4	Deep	3.25	0.26	7.18	10.39	15.3	
							1	Surface	2.22	0.2	7.16	10.44	15.3	
		15:00		CS-2S	South	47.4	23.70	Middle	2.75	0.6	7.19	10.42	15.3	
							44.4	Deep	3.07	0.08	7.20	10.38	15.3	

			Flow Direction			Total Water	Monitoring		Measured	Background Corrected				
Circuit	Monitoring		(Upriver/		North/	Depth	Depth	Depth	Turbidity	Turbidity		DO	Temperature	Chemistry
No.	Date	Time	Downriver)	Station	South	(feet)	(feet)	Zone	(NTU)	(NTU) <sup>1</sup>	рН	(ma/L)	(C°)	Sample
						()	1	Surface	2.74		7.22	10.32	15.2	Х
		8:08		BG-1S	South	42.2	21.1	Middle	2.63		7.21	10.30	15.2	Х
							39.2	Deep	2.81		7.20	10.26	15.2	Х
							1	Surface	2.45	-0.29	7.21	10.33	15.2	
		8:34		EW-1N	North	45.4	22.7	Middle	2.72	0.09	7.19	10.29	15.2	
1	10/17/2023		Downriver				42.4	Deep	7.31	4.5	7.61	10.22	15.2	
'	10/17/2025		Downiver				1	Surface	2.48	-0.26	7.20	10.33	15.2	
		8:42		CS-1N	North	45.2	22.6	Middle	2.37	-0.26	7.20	10.29	15.2	
							42.2	Deep	6.96	4.15	7.50	10.22	15.2	
							1	Surface	2.45	-0.29	7.18	10.34	15.2	Х
		8:51		CS-2N	North	48.0	24.0	Middle	2.76	0.13	7.23	10.30	15.2	Х
							45.0	Deep	7.12	4.31	7.60	10.16	15.2	Х
							1	Surface	2.59		7.14	10.41	15.2	Х
		10:08		BG-1S	South	42.2	21.1	Middle	2.66		7.20	10.38	15.2	Х
							39.2	Deep	2.94		7.24	10.35	15.2	Х
							1	Surface	2.61	0.02	7.15	10.39	15.2	
		10:35		EW-1N	North	46.6	23.3	Middle	2.75	0.09	7.16	10.37	15.2	
2	10/17/2023		Downriver				43.6	Deep	4.12	1.18	7.29	10.34	15.2	
-	10/11/2023		Downinger				1	Surface	2.41	-0.18	7.19	10.41	15.2	Х
		10:44		CS-1N	North	45.6	22.8	Middle	2.84	0.18	7.19	10.38	15.2	Х
							42.6	Deep	7.27	4.33	7.28	10.31	15.2	Х
							1	Surface	2.34	-0.25	7.24	10.42	15.2	
		10:51		CS-2N	North	47.5	23.75	Middle	2.63	-0.03	7.18	10.39	15.2	
							44.5	Deep	5.52	2.58	7.49	10.29	15.2	

			Flow Direction	irection iver/ iriver) BG-1N EW-1S iver CS-1S CS-2S BG-1S		Total Water	Monitoring		Measured	Background Corrected				
Circuit	Monitoring		(Upriver/		North/	Depth	Depth	Depth	Turbidity	Turbidity		DO	Temperature	Chemistry
No.	Date	Time	Downriver)	Station	South	(feet)	(feet)	Zone	(NTU)	(NTU) <sup>1</sup>	рН	(mg/L)	(C°)	Sample
							1	Surface	2.21		7.39	10.43	15.5	X
		14:30		BG-1N	North	42.0	21	Middle	3.32		7.37	10.40	15.2	Х
							39.0	Deep	3.49		7.27	10.38	15.1	Х
							1	Surface	1.97	-0.24	7.41	10.43	15.7	
		14:53		EW-1S	South	39	19.5	Middle	3.23	-0.09	7.29	10.41	15.1	
3	10/17/2023		Upriver				36	Deep	3.53	0.04	7.26	10.38	15.1	
5	10/17/2023		opiivei				1	Surface	1.91	-0.3	7.29	10.46	15.7	
		15:02		CS-1S	South	29.6	14.8	Middle	2.97	-0.35	7.24	10.41	15.1	
							26.6	Deep	3.62	0.13	7.24	10.39	15.1	
							1	Surface	1.88	-0.33	7.35	10.44	15.7	Х
		15:11		CS-2S	South	48.6	24.30	Middle	3.05	-0.27	7.26	10.42	15.1	Х
							45.6	Deep	4.10	0.61	7.25	10.39	15.0	Х
							1	Surface	2.05		7.18	10.51	15.0	Х
		8:46		BG-1S	South	43.0	21.5	Middle	2.17		7.20	10.47	15.0	Х
							40.0	Deep	2.40		7.21	10.43	15.0	Х
							1	Surface	2.00	-0.05	7.17	10.49	15.0	
		9:08		EW-1N	North	47.9	23.95	Middle	2.13	-0.04	7.18	10.46	15.0	
1	10/18/2023		Downriver				44.9	Deep	2.25	-0.15	7.19	10.43	15.0	
	10, 10, 2023		Dominici				1	Surface	2.01	-0.04	7.19	10.50	15.0	
1		9:19		CS-1N	North	46.0	23	Middle	2.13	-0.04	7.15	10.47	15.0	
							43	Deep	2.22	-0.18	7.21	10.44	15.0	
							1	Surface	1.99	-0.06	7.18	10.50	15.0	Х
		9:30		CS-2N	North	48.6	24.3	Middle	2.08	-0.09	7.17	10.47	15.0	Х
							45.6	Deep	2.36	-0.04	7.20	10.44	15.0	Х

			Flow Direction			Total Water	Monitoring		Measured	Background Corrected				
Circuit	Monitoring		(Upriver/		North/	Depth	Depth	Depth	Turbidity	Turbidity		DO	Temperature	Chemistry
No.	Date	Time	Downriver)	Station	South	(feet)	Depth         Depth         Turbidity (NTU)           1         Surface         2.14           3.0         21.5         Middle         2.62           40.0         Deep         2.90           1         Surface         2.25           46.4         23.2         Middle         2.56           43.4         Deep         2.87           1         Surface         2.57           44.8         22.4         Middle         2.54           41.8         Deep         2.72           1         Surface         2.20           47.6         23.8         Middle         2.46           44.8         Deep         3.25         1           88.8         19.4         Middle         2.56           35.8         Deep         3.67         1.84           44.4         22.2         Middle         2.56           35.8         Deep         2.67         1.44           44.4         22.2         Middle         2.47           41.4         Deep         3.29         1.44		(NTU) <sup>1</sup>	рН	(mg/L)	(C°)	Sample	
							1	Surface	2.14		7.13	10.53	15.0	Х
		10:46		BG-1S	South	43.0	21.5	Middle	2.62		7.11	10.49	15.0	Х
							40.0	Deep	2.90		7.13	10.46	14.9	Х
							1	Surface	2.25	0.11	7.07	10.49	15.0	
		11:08		EW-1N	North	46.4	23.2	Middle	2.56	-0.06	7.07	10.48	14.9	
2	10/18/2023		Downriver				43.4	Deep	2.87	-0.03	7.15	10.46	14.9	
-	10,10,2025		Downiver				1	Surface	2.57	0.43	7.18	10.50	15.0	
		11:18		CS-1N	North	44.8	22.4	Middle	2.54	-0.08	7.11	10.48	15.0	
							41.8	Deep	2.72	-0.18	7.15	10.46	14.9	
							1	Surface	2.20	0.06	7.13	10.54	15.0	Х
		11:26		CS-2N	North	47.6	23.8	Middle	2.46	-0.16	7.11	10.50	15.0	Х
							44.6	Deep	3.25	0.35	7.16	10.46	14.9	Х
							1	Surface	1.84		7.18	10.53	15.3	Х
		12:46		BG-1S	South	38.8	19.4	Middle	2.56		7.18	10.49	15.0	Х
							35.8	Deep	2.67		7.14	10.45	15.0	Х
							1	Surface	2.11	0.27	7.22	10.52	15.1	
		13:14		EW-1N	North	44.4	22.2	Middle	2.47	-0.09	7.17	10.49	15.0	
3	10/18/2023		Downriver				41.4	Deep	3.29	0.62	7.19	10.44	14.9	
5	10/10/2023		Downiver				1	Surface	2.61	0.77	7.17	10.52	15.0	
		13:26		CS-1N	North	43.6	21.8	Middle	2.91	0.35	7.19	10.48	15.0	
							40.6	Deep	3.03	0.36	7.20	10.45	14.9	
							1	Surface	2.47	0.63	7.14	10.52	15.0	Х
		13:35		CS-2N	North	46.0	23.0	Middle	3.21	0.65	7.20	10.47	15.0	Х
							43.0	Deep	3.07	0.4	7.16	10.43	15.0	Х

			Flow Direction			Total Water	Monitoring		Measured	Background Corrected				
Circuit	Monitoring		(Upriver/		North/	Depth	Depth	Depth	Turbidity	Turbidity		DO	Temperature	Chemistry
No.	Date	Time	Downriver)	Station	South	(feet)	(feet)	Zone	(NTU)	(NTU) <sup>1</sup>	рН	(mg/L)	(C°)	Sample
							1	Surface	2.46		7.11	10.39	15.2	Х
		16:21		BG-1S	South	42.2	21.1	Middle	2.71		7.15	10.43	15.1	Х
							39.2	Deep	3.43		7.24	10.41	15.0	Х
							1	Surface	1.99	-0.47	7.25	10.51	15.4	
		16:43		EW-1N	North	44.8	22.4	Middle	2.85	0.14	7.26	10.46	15.0	
1	10/18/2023		Upriver				41.8	Deep	3.48	0.05	7.28	10.42	14.9	
-	10/10/2023		opiivei				1	Surface	2.10	-0.36	7.23	10.53	15.3	
		16:49		CS-1N	North	41.2	20.6	Middle	2.67	-0.04	7.22	10.48	15.0	
							38.2	Deep	3.49	0.06	7.20	10.43	15.0	
							1	Surface	2.08	-0.38	7.08	10.49	15.3	Х
		16:56		CS-2N	North	48.0	24.0	Middle	3.18	0.47	7.19	10.44	15.0	Х
							45.0	Deep	3.67	0.24	7.17	10.41	15.0	Х
							1	Surface	2.42		6.88	10.57	14.9	Х
		8:45		BG-1S	South	40.4	20.2	Middle	2.99		6.93	10.49	14.9	Х
							37.4	Deep	3.08		6.98	10.46	14.9	Х
							1	Surface	2.34	-0.08	7.09	10.50	14.9	
		9:16		EW-1N	North	45.2	22.6	Middle	2.45	-0.54	7.06	10.42	14.9	
1	10/19/2023		Downriver				42.2	Deep	2.35	-0.73	7.08	10.39	14.9	
	10, 19, 2023		Dominici				1	Surface	2.16	-0.26	7.02	10.49	14.9	
		9:30		CS-1N	North	45.0	22.5	Middle	2.43	-0.56	7.11	10.43	14.9	
							42	Deep	3.77	0.69	7.10	10.38	14.9	
							1	Surface	2.39	-0.03	7.12	10.47	14.9	Х
		9:43		CS-2N	North	47.4	23.7	Middle	2.68	-0.31	7.11	10.42	14.9	Х
							44.4	Deep	4.58	1.5	7.07	10.44	14.9	Х

Circuit No.	Monitoring Date	Time	Flow Direction (Upriver/ Downriver)	Station	North/ South	Total Water Depth (feet)	Monitoring Depth (feet)	Depth Zone	Measured Turbidity (NTU)	Background Corrected Turbidity (NTU) <sup>1</sup>	рН	DO (mg/L)	Temperature (C°)	Chemistry Sample
							1	Surface	2.31		7.20	10.70	15.0	Х
		13:47		BG-1S	South	41.6	20.8	Middle	2.96		7.18	10.69	14.9	Х
							38.6	Deep	4.46		7.09	10.69	14.9	Х
							1	Surface	3.10	0.79	7.20	10.70	14.9	
		14:08		EW-1N	North	45.0	22.0	Middle	4.32	1.36	7.26	10.68	14.9	
2	10/10/2022		Downriver				42.0	Deep	5.64	1.18	7.25	10.66	14.9	
2	10/19/2023		Downine				1	Surface	2.79	0.48	7.24	10.72	15.0	Х
		14:19		CS-1N	North	44.2	22.1	Middle	4.38	1.42	7.23	10.69	14.9	Х
							41.2	Deep	5.29	0.83	7.20	10.66	14.9	Х
							1	Surface	2.37	0.06	7.22	10.71	15.1	
		14:27		CS-2N	North	45.2	22.6	Middle	3.81	0.85	7.20	10.70	14.9	
							42.2	Deep	4.61	0.15	7.26	10.67	14.8	

Notes:

--: not applicable

1. The background corrected turbidity is calculated by subtracting the measured turbidity at each of the non-background stations (i.e., EW, CS-1, and CS-2) from the background station.

BG: background

CS: compliance station

DO: dissolved oxygen

EW: early warning

mg/L: milligram per liter

NTU: nephelometric turbidity unit

Attachment 6 Water Quality Chemical Parameter Measurements

#### Water Quality Monitoring Chemical Results Gasco Sediments Site ISS Field Pilot Study

												Excavation/D	Debris Remova	al						
	S	ample Date	10/17/202	23	10/17/202	23	10/17/202	23	10/17/20	023	10/17/2023	10/17/2023	10/17/2023	10/17/2	023	10/17/2	023	10/17/2023	10/17/2023	10/17/2023
		Time	8:15		8:20		8:25		9:05		9:10	9:15	10:20	10:2	;	10:30		11:10	11:15	11:20
		Location ID	BG-1S		BG-1S		BG-1S		CS-2N	ı I	CS-2N	CS-2N	BG-1S	BG-1	5	BG-19	5	CS-1N	CS-1N	CS-1N
	I	Depth (feet)	1.0		21.1		39.2		1.0		24.0	45.0	1.0	21.1		39.2		1.0	22.7	42.4
	Chronic	Acute										• •						•		
Analyte	WQC <sup>1,2</sup>	<b>WQC</b> <sup>1,2</sup>																		
Polycyclic Aromatic Hydroca	rbons (µg/L)	)																		
Benzo(a)anthracene	2.2	9.2	0.017	U	0.017	J	0.023	J	0.017	U	0.089	0.138	0.016 U	0.017	U	0.019	J	0.161	0.048	<b>5.4</b> <sup>5</sup>
Benzo(a)pyrene	0.96	4	0.017	J	0.021	J	0.035		0.018	J	0.125	0.188	0.016 U	0.017	U	0.024	J	0.221	0.065	7.9

Page 1 of 4

#### Water Quality Monitoring Chemical Results Gasco Sediments Site ISS Field Pilot Study

						15	SS Mi	ixing														ISS M	lixing								
	S	Sample Date	10/17/202	3 10/17/	2023	10/17/2	023	10/17/202	23 10	0/17/2023	10/17/	2023	10/18/20	23 10/	18/202	10/18/	2023	10/18/20	23 1	10/18/2023	10/18	2023	10/18/20	)23	10/18/20	23 1	10/18/2023	10/18/20	3 10/18/2	023 10,	/18/2023
		Time	14:40	14:4	15	14:50		15:20		15:25	15:3	80	8:50		8:55	9:0	)	9:45		9:50	9:5	5	10:50		10:55		11:00	11:35	11:40		11:45
		Location ID	BG-1N	BG-1	IN	BG-1N	N	CS-2S		CS-2S	CS-2	2S	BG-1S	1	BG-1S	BG-1	S	CS-2N		CS-2N	CS-	2N	BG-19	;	BG-1S		BG-1S	CS-2N	CS-2		CS-2N
	I	Depth (feet)	1.0	21.	0	39.0		1.0		24.3	45.	6	1.0		21.5	40.	)	1.0		24.3	45	.6	1.0		21.5		40.0	1.0	23.8		44.6
	Chronic	Acute											•															•	•		
Analyte	WQC <sup>1,2</sup>	WQC <sup>1,2</sup>																													
Polycyclic Aromatic Hydroca	rbons (µg/L)	)																													
Benzo(a)anthracene	2.2	9.2	0.043	0.019	J	0.029	J	0.017	U O	0.016 U	0.016	U	0.016	U 0.	017 L	0.162	U	0.017	U	0.017 U	0.016	U	0.017	U	0.017	U	0.017 U	0.0164	U 0.017	U 0.0	0162 U
Benzo(a)pyrene	0.96	4	0.061	0.022	J	0.031	J	0.017	U 0	0.016 U	0.016	U	0.016	U 0.	017 L	0.162	U	0.017	U	0.017 U	0.016	U	0.017	U	0.017	U	0.017 U	0.0164	U 0.017	U 0.0	<b>0187</b> J

Page 2 of 4

#### Water Quality Monitoring Chemical Results Gasco Sediments Site ISS Field Pilot Study

													ISS Mixing,	/Sw	vell Remov	al									
	S	ample Date	10/18/20	23	10/18/202	3 1(	0/18/20	23	10/18/20	)23	10/18/20	23	10/18/202	3	10/18/202	23	10/18/2023	10/	18/20	)23	10/18/20	023	10/18/2	023	10/18/2023
		Time	12:55		13:00		13:05		13:45		13:50		13:55		16:30		16:35		16:40		17:05		17:10	)	17:15
		Location ID	BG-1S		BG-1S		BG-1S		CS-2N		CS-2N		CS-2N		BG-1N		BG-1N	E	G-1N	1	CS-2S	;	CS-25	5	CS-2S
	1	Depth (feet)	1.0		19.4		35.8		1.0		23.0		43.0		1.0		21.1		39.2		1.0		21.0		45.0
	Chronic	Acute																							•
Analyte	<b>WQC</b> <sup>1,2</sup>	<b>WQC</b> <sup>1,2</sup>																							
Polycyclic Aromatic Hydroca	rbons (µg/L)	)																							
Benzo(a)anthracene	2.2	9.2	0.017	U	0.016	U	0.017	U	0.017	U	0.016	U	0.043		0.017	U	0.016 U	0.0	)17	U	0.017	U	0.016	U	0.043
Benzo(a)pyrene	0.96	4	0.017	U	0.016	U	0.017	U	0.017	U	0.016	U	0.059		0.017	U	0.016 U	0.0	)17	U	0.017	U	0.016	U	0.059

Page 3 of 4
#### Water Quality Monitoring Chemical Results Gasco Sediments Site ISS Field Pilot Study

Notes:

1. Acute criteria will be the compliance criteria for water quality monitoring during all Pilot Study activities because such activities are intermittent and ephemeral in nature. Chronic criteria will be used to evaluate the effectiveness of construction BMPs and the potential need for additional or enhanced BMPs but will not be used for compliance purposes.

2. Acute and chronic PAH criteria are from Procedures for Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures (EPA 2003).

3. The result for Benzo(a) pyrene was higher than the chronic water quality criterion at both the background and compliance stations on 10/3. The chronic criterion is based on a 4-day average concentration. The 2-day average (10/3 and 10/4) concentrations for both the background and compliance stations are below the chronic criterion.

4. The result for Benzo(a)anthracene was higher than the chronic water quality criterion at the compliance station during circuit 2 on 10/17 at the bottom depth. The chronic criterion is based on a 4-day average concentration. The 1-day average (on 10/17) concentration for the compliance stations were below the chronic criterion.

Detected concentration is greater than the acute water quality criteria

Detected concentration is greater than the chronic water quality criteria

Bold: Detected result

J: Estimated value

U: Compound analyzed but not detected above detection limit

µg/L: micrograms per liter

BMP: best management practice

ISS: in situ stabilization and solidification

WQC: water quality criteria

#### Reference:

EPA (U.S. Environmental Protection Agency), 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. Office of Research and Development. EPA 600-R-02-013. November 2003. Available at: https://cluin.org/conf/tio/porewater1/resources/EPA-ESB-Procedures-PAH-mixtures.pdf.

Page 4 of 4

### GASCO0054422

# Attachment 7 Moonpool Informational Measurements



## **Moon Pool Water Quality Field Parameters**

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

## Gasco Sediments Site ISS Field Pilot Study

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рН	Temperature (°C)
* (-1	9-23-23	7:34	PRE	13.6	9.6	7.25	19.5
1-2	9-25-23	7:15	PRE	12.	1	7.14	19-1
1-2		7:17	1	1	6	7.10	19.1
1-2		7:19		4	8	7.10	19.1
1-2		9:45	POST	12	1	6.93	19.3
1-2		9:47			6	7.23	19.3
1-2		9:49	1	1	8	7.73	19,2
1-4	9-26-23	14:50	PRE	13	1	7.12	18.8
1-4	1	14:52		1	6	7.31	18.4
1-4		14:55			10	7.30	18.4
1-4		18:30	Post	1.3	1	7.16	18.3
1-4		18:32		Ĩ	5	7.54	18.3
1-4		18:35			10	7.50	18.2
1-6	9-27-23	06:51	PRE	14	1	7.12	16.9
1-1.	1	06.53	1	1	7	7.23	16.2
1-6		06:55			11	7.44	16.5
1-6	9-27-23	09:38	POST	OL4 13	1	7.11	17.8
1-6	1 1	09:40			7	7.24	17.5
1-6		09:42			10	7.25	16.6
2-1	9-28-23	10:38	PRE	13	1	6.95	20.8
2-1		10:41		1	6	7.16	21.

\*= Parameters collect @ beginning of mixing

V QEA

## **Moonpool Informational Measurements**

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рH	Temperature (°C)
2-1	9-28-23	10:43	PRE	13	10	7.37	21.
2-1	9-28-23	12:00	Past	13	1	7.04	199
2.1		12:03			1	316	19.9
2-1	-	12:06	4		10	751	19.5
2-6	9-29-23	07:45	PRE	14	1	7.03	17
2-6		07:47			7	7.26	16.2
2-6	*	07:49			11	7.78	16.2
2-6	9-29-23	09:12	Post	14		3.20	11. 3
2-6		09:20		1	3	7.00	19.7
2-6		09:25	4		11	715	17
3-1	10-2-2023	D7:17	PRE	15	1	20/	14.5
3-1		07:19			7	7.00	16.5
3-1	1	07:22	T T	4	12	7 21	10.5
3-1	10-2-2023	08:10	POST	14.0	1	7.7	15.5
3-1		08:12			6	T.17	13.5
3-1	1 to	08:15	+		11	+ 4+	15.5
6-9	10-3-2023	06: 1-07:11	PRE	110		7.56	15.8
6-9		07:14	1	1 i	6	6.98	16.5
6-9		07:19	1		12	7.22	16.2
6-9	10 -3-2023	08:01	MIDI	16		F. 29	16.0
6-9	1	08:05	¥	14	10	1.26	16.0
					6	7.71	160

PAGE: 2

V ANCHOR QEA

## Moonpool Informational Measurements Gasco Sediments Site ISS Field Pilot Study

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рН	Temperature (°C)
1.0	10-3-2023	08.09	MID	16	13	7.72	16.0
6-9	10-3-2023	80:00	Post	17		7.26	1.5.6
6-1	10 1000	09:11	1	17	7	7.58	15.6
6-9	4	09:14	-	17	14	7.64	15,8
			1				
			+				
				li			
					1 Section 1		
				1			

Notes:

GASC00054426

.



## Moonpool Informational Measurements

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

## **Gasco Sediments Site ISS Field Pilot Study**

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рН	Temperature (°C)
7-9	10-4-2023	08:38	PRE	14	1	6.95	* 59 15.4
7-9	1	06:42	1	i	7	7.28	15.4
7-9		06:45	1 V	V.	11	7.46	15.5
7-9	10-4-2023	07:39	POST	14	1	7.64	15.1
7-9	1	07:42	1	1	7	7.66	15.4
7-9	J	07:46		L L	11	7.61	15.5
		-					



## Moonpool Informational Measurements Gasco Sediments Site ISS Field Pilot Study

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рН	Temperature (°C)
BARGE MEDE N	10/9/23	07:35	Pre	14.5	1	7.09	16.3
count s-1	1	07:38	Pre	14.5	7.25	7.33	16.2
county 8-1	5	07:411	Pre	14.5	11.5	7.40	16.2
Count S-1	10/9/23	10734	Pre	16.6	1	7.19	16.8
com 8-1	1	10:38	Pre	166	8.3	7.39	165
Conno 8-1	L	10:42	Pre	16.6	13.6	7.42	16.5
	10/9/23	12:23	Post	16.1	ľ	7.10	16.9
	1	12:25	Post	16.1	8.05	7.45	16.7
J.	l.	12:27	Post	16.1	13.1	7.42	16.6 16.6
Column 8-2	10/10/2023	06:52	Pre	19.9	1'	7.05	15.3
1	1	06:58	fre	19.9	16	7.44	15.6
L	L.	07:06	Pre	19.9	17'	7.49	15.6
Column 8-2	10/10/2023	10:21	Post	15.3	1'	2.05	15.4
1	1	12:25	Post	15.3	7.6	7.66	15.6
Y	V	10:29	Post	15.3	12.3'	7.73	15.8
Column 8-10	10/12/2023	1.15:58.	Pre	18.5	11	7.04	~6 17.7
1	1	1.16:01	Pre	19.5	9.75'	7.41	17.2
Y	1	16:05	Pre	19.5	16.5	7.43	17.0
Column - 8-10	10/12/2023	18:22	Post	20.1	1' .	7.52	16.9
1	1	18:25	Past	20.1	10.0	8.02	16.9
V	t	18:29	Post	20.1	17.11	8.27	16.9

THE .

Notes:

GASCO0054428

VE ANCHOR QEA

Moonpool Informational Measurements Gasco Sediments Site ISS Field Pilot Study 6720 South Macadam Avenue, Suite 300 Portland, OR 97219

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рН	Temperature (°C)
Column 8-9	10-13-2023	0630	Pre	20.2	1'	7.16	15.1
1	I I	0634	Pre	Ť	10.1'	7.39	15.6
t.	L	0640	Pre	6	17.2	7.35	15-3
Column 8-9	10-13-2023	0743	Post	19.0	1'	7.93	15.9
1	1	0747	Post	1	9.5'	9.10	16.0
L		0752	Post		16.0'	9.30	16.2
Column 6-11	10-14-2023	0711	Pre	18.2	1'	6.91	15.8
1		0715	Pre		9.11	7.34	16.0
V.	1	0719	Pre	4	15.2'	7.45	16.2
Column 6-11	10-14-2023	0831	Post	22.0'	1'	7.57	15.2
1	1	0834	Post	1	<i>i</i> 1'	8.77	16.0
1	V	0838	Post	b	19'	8.84	16.0

Recheck calibration after post readings on 10-13-2023 - POK.

VE ANCHOR QEA

## Moonpool Informational Measurements

6720 South Macadam Avenue, Suite 300 Portland, OR 97219

## **Gasco Sediments Site ISS Field Pilot Study**

ISS Column Location	Date	Time	Pre-/Post- Measurement	Water Column Thickness (feet)	Measurement Depth (feet below surface)	рН	Temperature (°C)
Column 2-12	10-16-2023	07:16	Pre	15.7	j,o	7.15	+ +5c6 15.6
1	1	07:18	Pre	T	7.8	7.34	At15 15.5
L	V	07:21	Pre	V	12.7	7.35	15.6
Column 2-12	10-16-23	08:38	Post	15.7	1,0	7,33	15,5
1	i	08:42	Post	1	7.8	7.62	15.5
V.	1 V	68:47	Post	V	12.7	7.68	15.6
Column 1-9	10-17-23	13:02	Pre	14.3	1,0	7.27	16.7
1	1	13:05	Pre	1	7.1	7.41	15.8
V		13:07	Pre	L	11.3	7.43	15.8
Column 1-9	10-17-2023	15:13	Post	14.1	1.0	7.52	16-6
1	1	15:17	Post	1	7.0	8.12	16.2
t	1 V	15:20	Post	1 V	13.1	9.07	16.0
Column 3-7	10-18-2023	06:52	Pre	16.0	1.0	6.93	13.9
I	1	06:57	Pre	1	8.0	7.20	14.3
L.	1	07:01	Pre	1 de	13.0	7.29	14.3
Column 3-7	10-18-2023	08:41	Post	16.0	1.0	7.00	14.1
1	1	08:45	Post	T	8.0	7.35	14.2
J.	V	08:49	Post	L	13.0	7.41	14.5