

Company: L-DEO - Lamont - Doherty Earth Observatory
Vessel: Marcus G. Langseth
Client: Carbotte/NSF

Project: MGL2104
Area: Cascadia
Start Date: 1-Jun-21

Vessel Sensor Offsets

Towing Offsets

Towing Configuration

Acoustic Overhead

Gun Array Offsets

Streamer Front End

Streamer Tail End

Streamer Complete

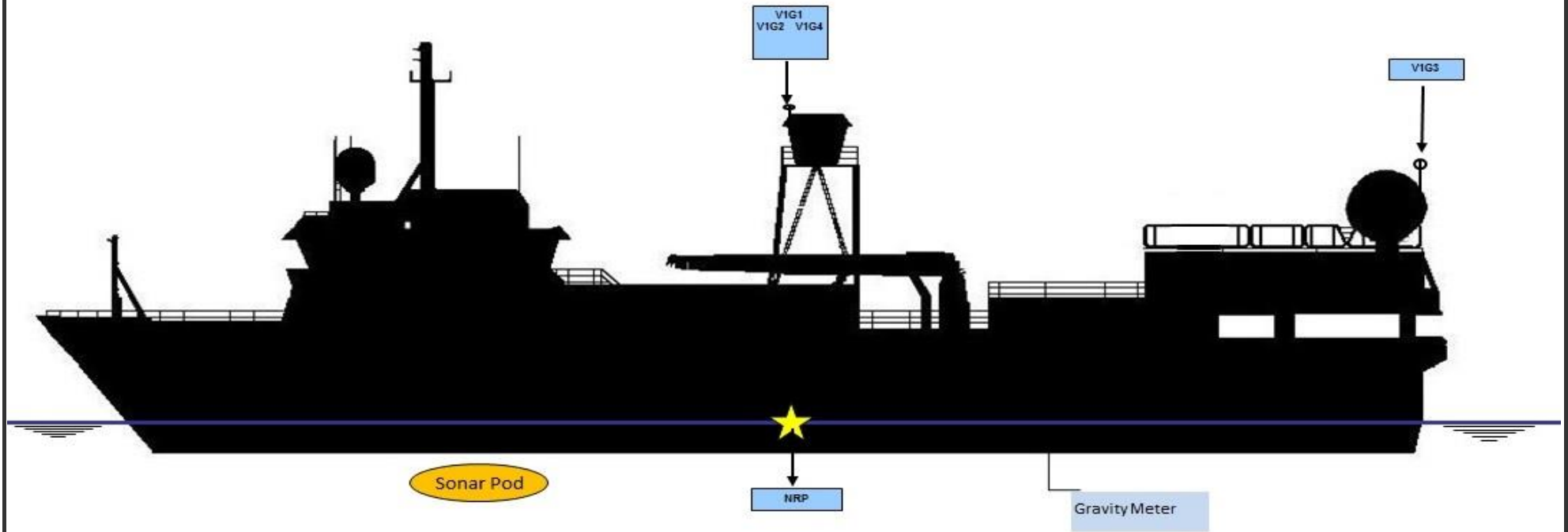
Hydrophone Offsets

Tailbuoy Offsets

Timing

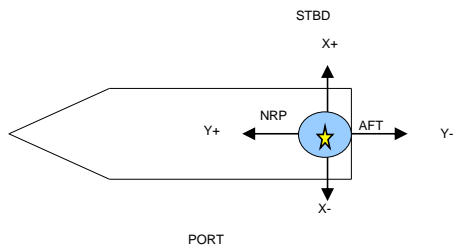


R/V Marcus G. Langseth - Vessel Sensor Offsets



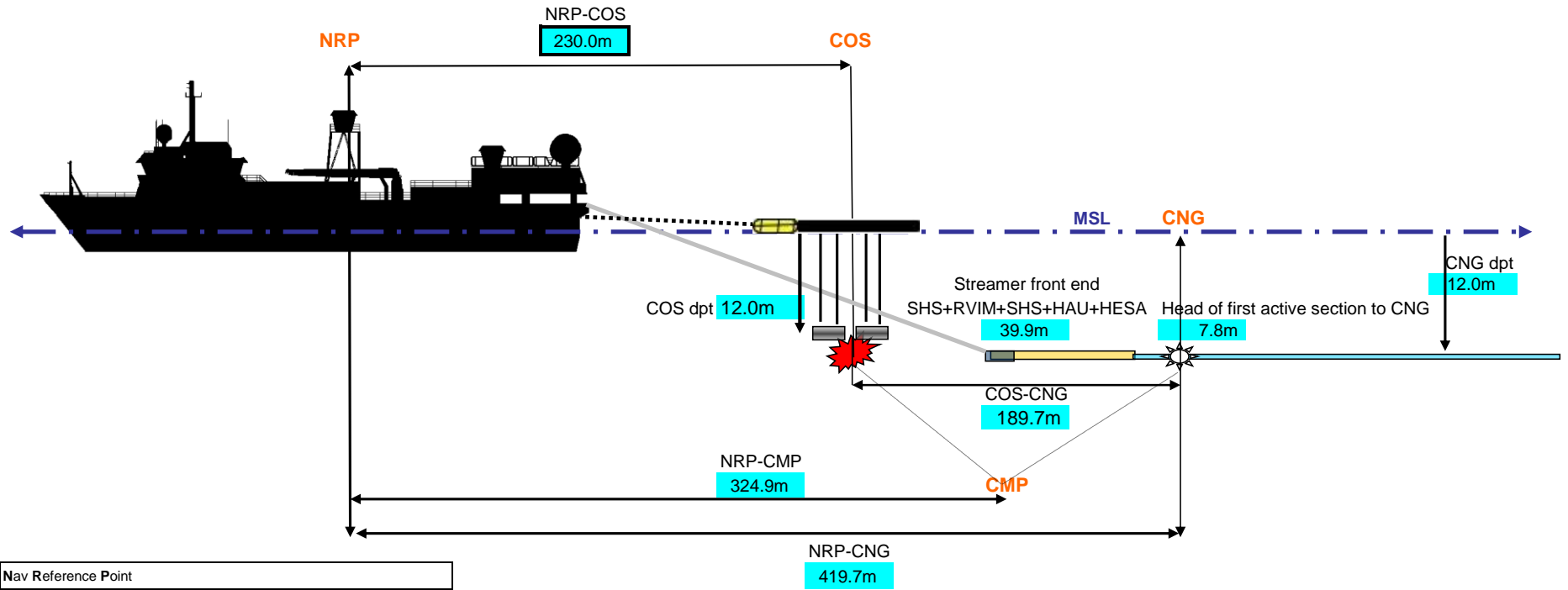
Negative values are above water line

All measurements in meters



		STBD/PORT (X)	FORE/AFT (Y)	UP/DOWN (Z)	
NRP	NAVIGATION REFERENCE POINT	0.00	0.00	0.00	
V1G1	C-Nav 3050	0.00	0.00	-16.90	
V1G2	SeaPath 200	0.00	1.50	-16.90	
V1G3	C-Nav 2000	-2.10	-29.20	-14.50	
V1G4	Pos MV	-1.30	1.20	-16.90	
V1R1	PosNet	-1.30	0.00	-16.90	
Sonar Pod	EM122 Knudsen ADCP	0.00	20.20	7.49	
	EM122 Center Beam offset (in Spectra)	0.00	13.4	7.49	
MRU	Seapath MRU	2.30	14.16	-4.30	
BGM	Bell Gravity Meter	0.00	-13.10	1.10	

R/V Marcus G. Langseth - Towing Offsets



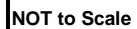
NRP	Nav Reference Point
COS	Centre of Source
CNG	Centre of Near Group
CMP	Common Mid-Point
MSL	Mean Sea Level
NRP-Sterr	29.5m
NRP-COS	230.0m

All measurements in meters



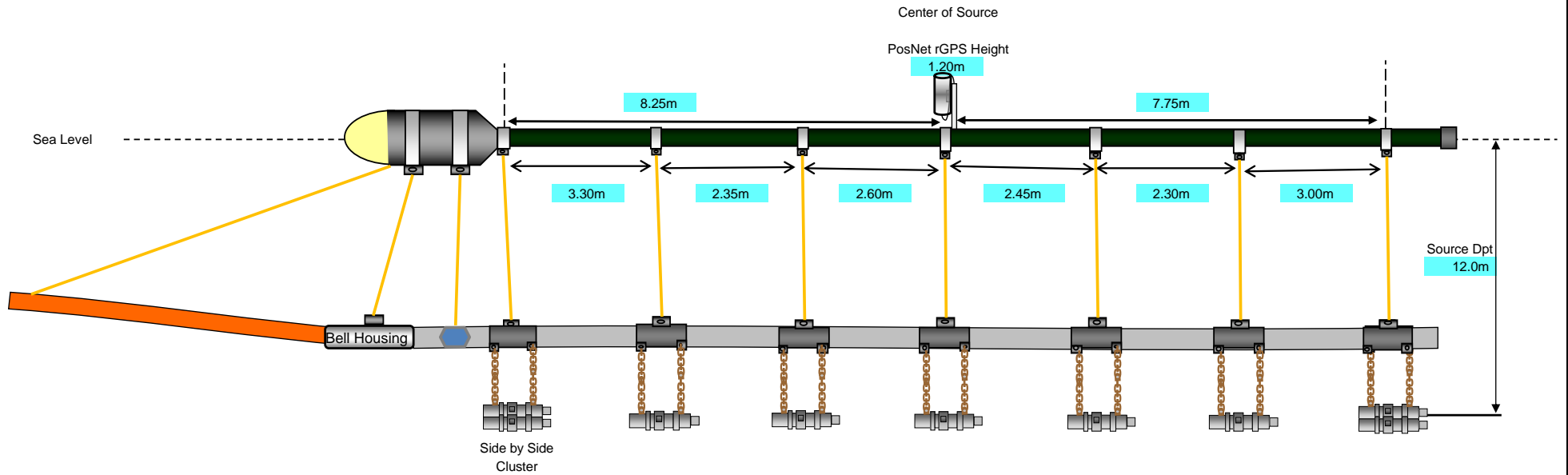
Cell contents referenced from Config_offsets tab

	# Streamers	Length	Channels	Spacing
SEAL	1	15000	1200	12.5m
# Gun Strings Used	4		Vol (in^3)	6600

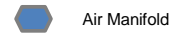


Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Gun Array Offsets



Gun volumes by number		
Gun	Volume	Status
Gun 1	360 cu. in.	Primary
Gun 2	360 cu. in.	Primary
Gun 3	40 cu. in.	Primary & Mitigation
Gun 4	180 cu. in.	Primary
Gun 5	90 cu. in.	Primary
Gun 6	120 cu. in.	Primary
Gun 7	60 cu. in.	Primary
Gun 8	220 cu. in.	Primary
Gun 9	220 cu. in.	Primary



Air Manifold

Array total volume (without spares) is 6600 cu. in. Total volume/string (without spare) 1650 cu. in.

Guns (1 & 2) & (8 & 9) in a horizontal cluster.

Gun clusters have 0.75m between guns and hang 0.95m from center of hanger

Horizontal Clusters are 1m from gun port to gun port

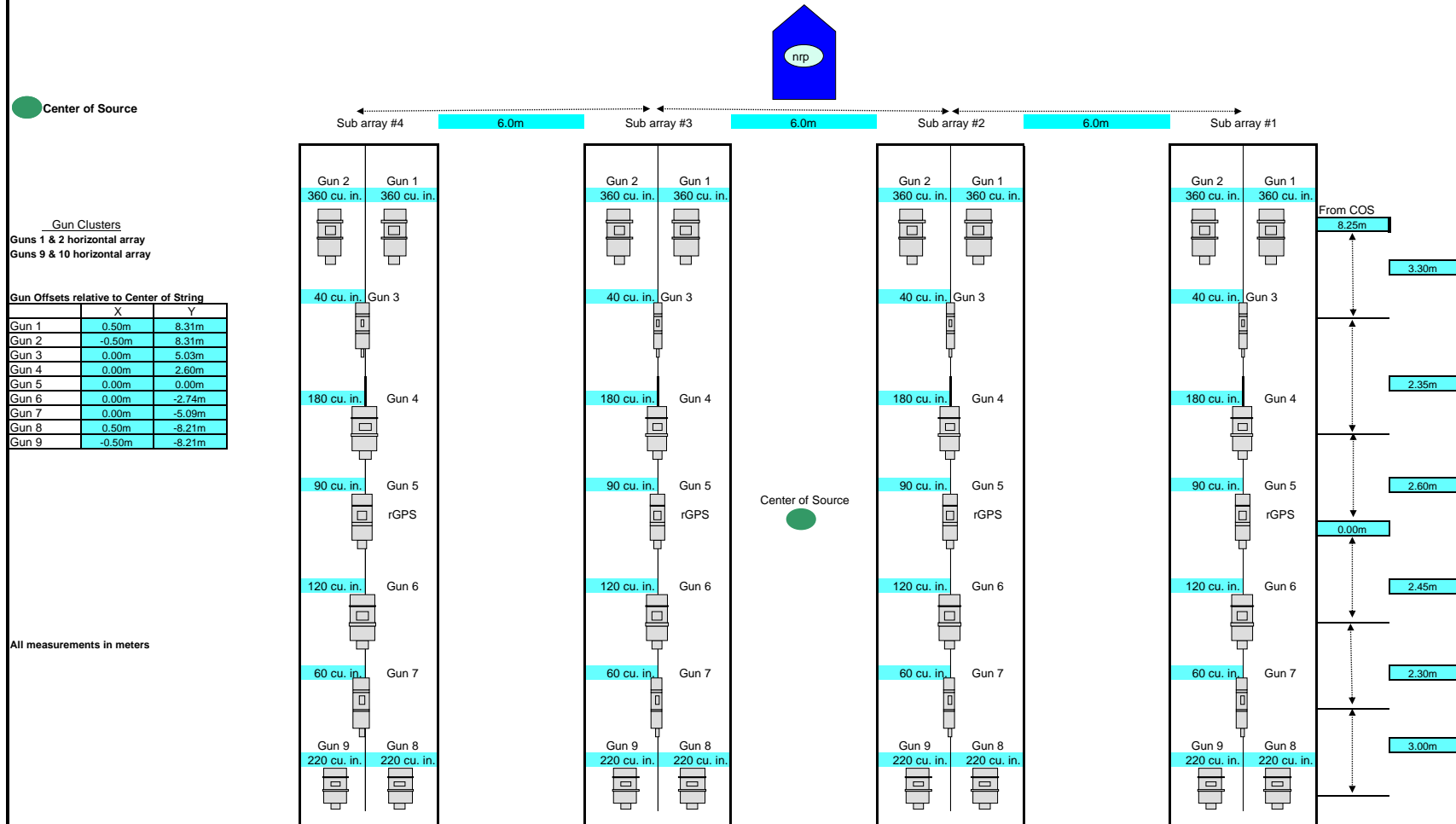
Single guns hang from hanger 1.15m

All gun volumes, numbering, locations, and offsets were inspected and verified by Chief Source Mechanic.

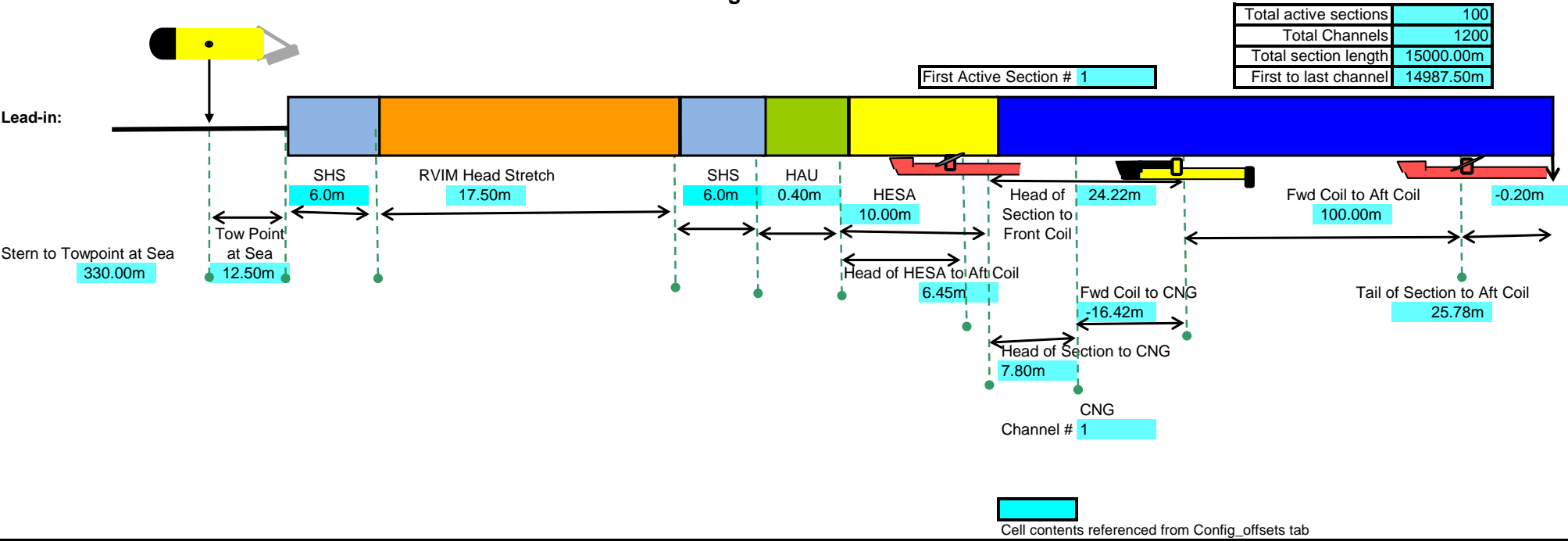
All measurements in meters
NOTE: drawing not to scale

Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Gun Configuration



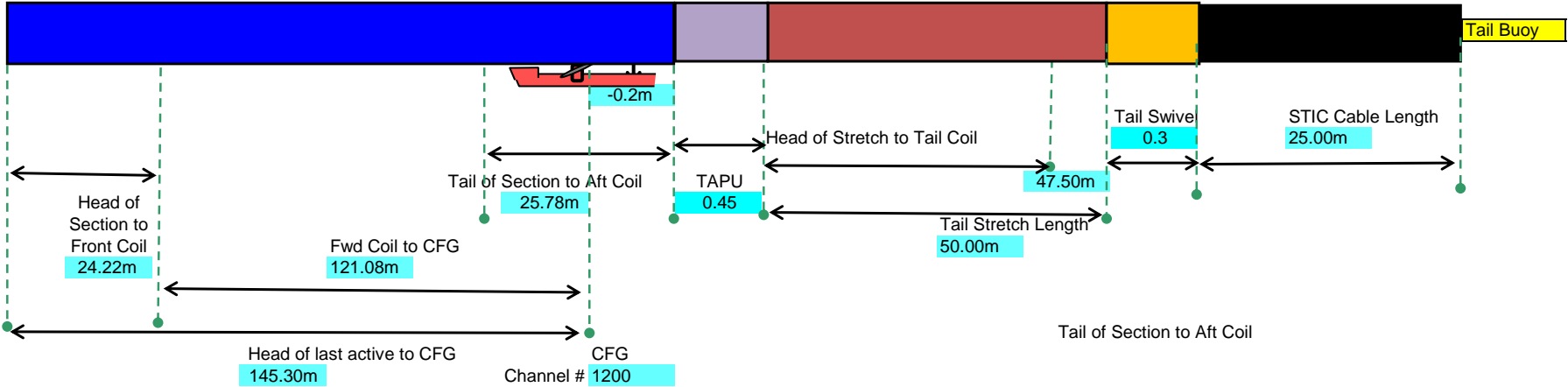
R/V Marcus G. Langseth - Streamer Front End



R/V Marcus G. Langseth - Streamer Tail End

Total active sections	100
Total Channels	1200
Total section length	15000.00m
First to last channel	14987.50m
CFG to TB RGPS	81.95m

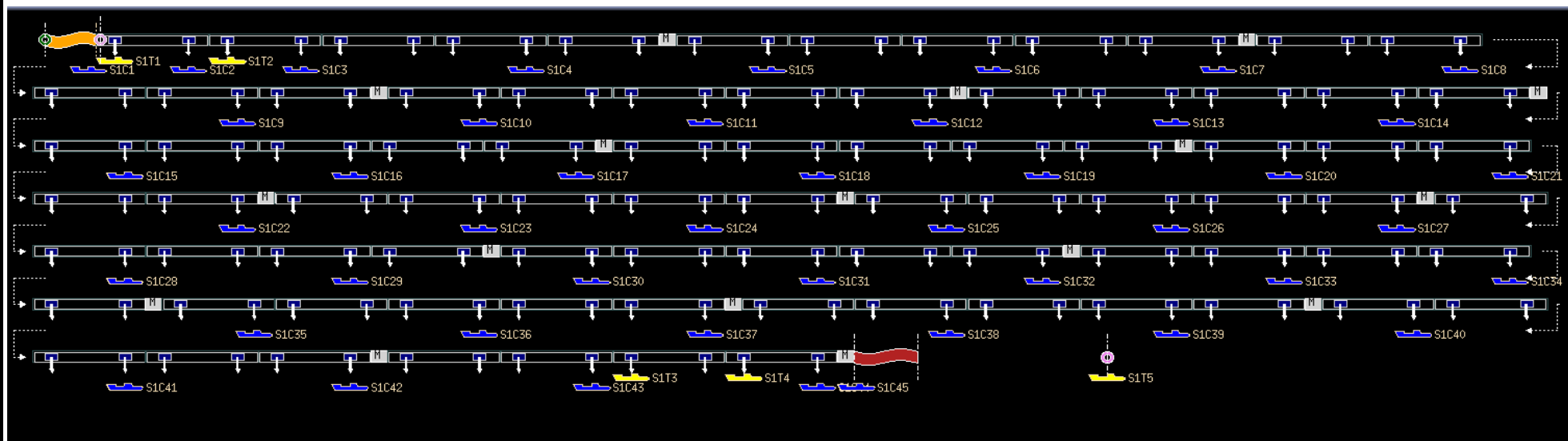
Last Active Section # 100



Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Streamer Complete

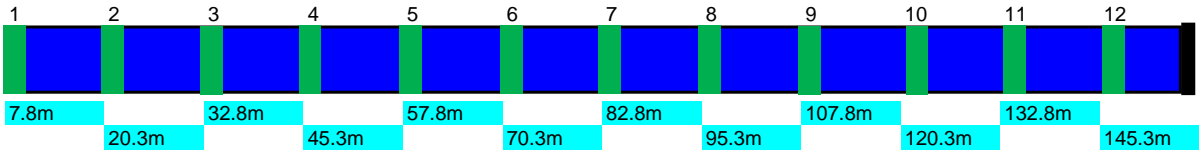
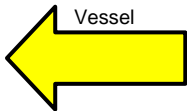
Total active sections	100
Total Channels	1200
Total section length	15000.00m
First to last channel	14987.50m



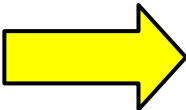
Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Hydrophone Offsets
Sercel 150meter SSAS

Number of SSAS Sections 100
Channels per active section 12
Total channels 1200

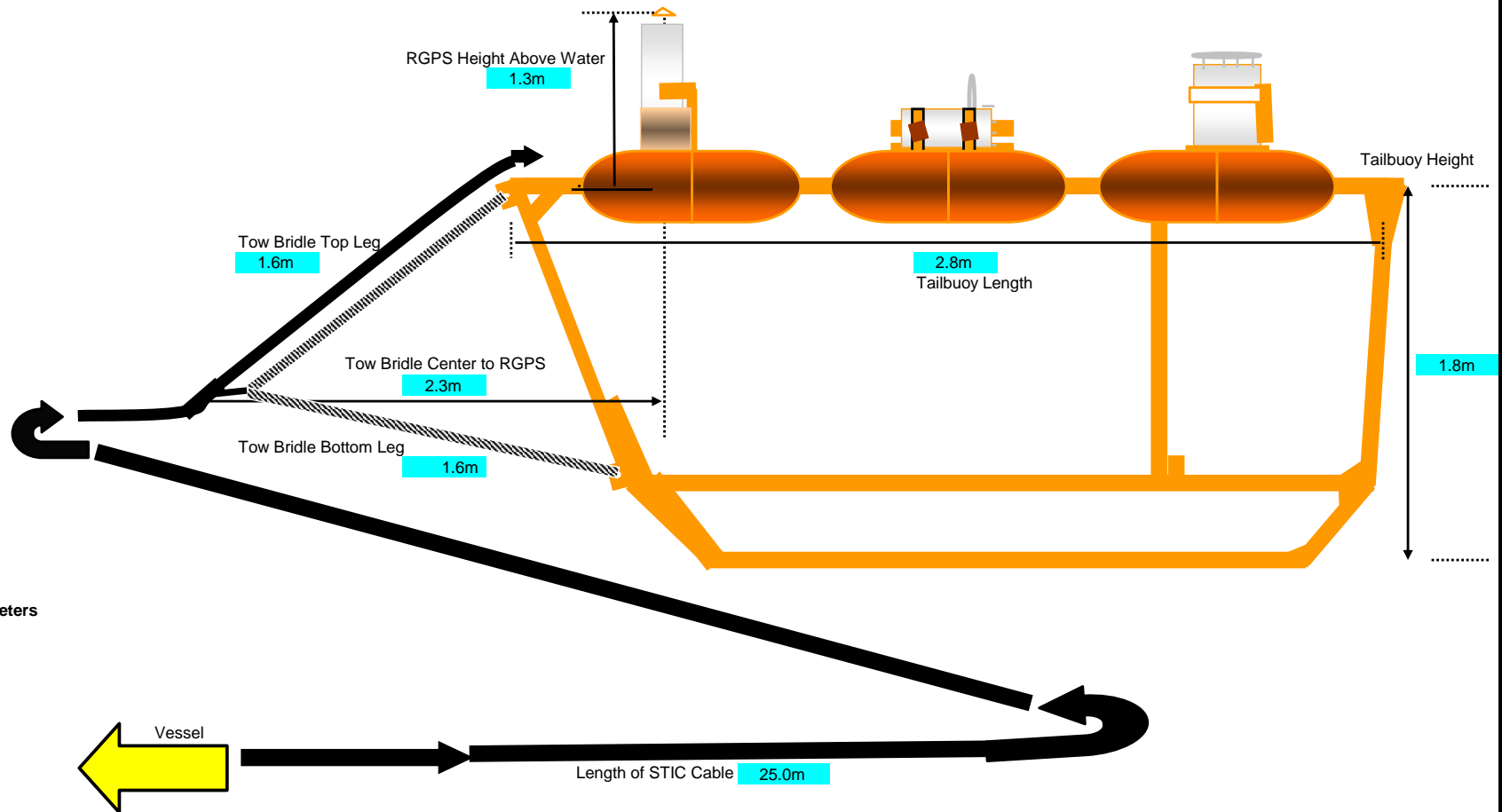


Tail buoy



Cell contents referenced from Config_offsets tab

R/V Marcus G. Langseth - Tailbuoy



All measurements in meters

Cell contents referenced from Config_offsets tab

Job Specific	
NPB to COS Y	230
NPB to COS X	0
Source Depth	12
Streamer Depth	12
# streamer sections	100
# channels	1200
CGS Channel #	1
CPG Channel #	1200
IMCS Streamers	1
lead-in stream to tow point	330
IMCS Streamer Gap	0
Gun volume total	6000
Volume per string	1650
# of guns used	36
# Gun Strings	4
gun string separation	6
PMG Y - (outside of stream)	80
PMG X - (outside of stream)	113
Stream to MAG Y - (outside of stream rail)	3

Feed Positions	
Distance	
NMP to Stem	29.75
new point at base to end of lead-in	12.50
STUIModule length	0.40
coil to coil	1.00
head of section to coil	24.22
section to section to coil	25.77
aligned section	12.50
NMP to PWRtoBED Rail	7.50
Head to First RX	7.50
Head to Last RX	145.50
Channels per section	12
Center of section to Axis transducer	-0.2
First Section Number	1
HSL/HSPU Length	0.40
SPS Length	6.00
RVM Length	17.50
HSSA Length	10
Active Section Length (HSSAC)	50
TED tail stretch	150
WTE	20
TBS Pad Coil	27
TES AB Coil	47.50
SPS Coil	6.50

Tailrace offsets	
RGPS height above water	1.3
TR length	2.8
TR height	1.83
RGPS-ACX	1
Head-RGPS	2.24
Tot. Len	1.55
Bottom Lag	1.6
STC	24
ACX below water line	1.3

Device C/N0 (dBm/Hz)	
WPP to CWP	324.85
COS-CNG	189
CNG-CFG	-14987.57
WPP-Mag Y	142.9
WPP-Mag X	10.1
WPP to half busy RGPS	15464.5
Total Length of Streamer indecodes	1500
PWM-COS Y	120.3
PWM-COS X	10.1
WPP-PWM Y	100.9
WPP-PWM X	10.1
WPP-COS	419

Gunn	
Source GPS-COS Y	0
Bracket distance 2-3	2.37
Bracket distance 3-4	3.79
Bracket distance 4-5	2.4
Bracket distance 5-6	2.43
Bracket distance 6-7	2.43
Bracket distance 7-8	1
COS - Acoustic Y	-5.43
GPS height above water line	1.2
G1 Volume	350
G2 Volume	350
G3 Volume	40
G4 Volume	180
G5 Volume	180
G6 Volume	90
G7 Volume	120
G8 Volume	60
G9 Volume	220
G10 Volume	220

Acoustics referenced to CNG or COS	
51T1	-9.15
51T2	-9.14
51T3	-9.15
51T4	-9.15
51T5	-10.24
51T6	-10.2
51T7	-
51T8	-
51T9	-12.72
51T10	-12.72
51T11	-
51T12	-
51T13	-
51T14	-
51T15	-
51T16	-
51T17	-
51T18	-
51T19	-
51T20	-
51T21	-
51T22	-
51T23	-
51T24	-
51T25	-
51T26	-
51T27	-
51T28	-
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51T80	-
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51T82	-
51T83	-
51T84	-
51T85	-
51T86	-
51T87	-
51T88	-
51T89	-
51T90	-
51T91	-
51T92	-
51T93	-
51T94	-
51T95	-
51T96	-
51T97	-
51T98	-
51T99	-
51T100	-

Derived Offsets (Formula)	
Towing Offsets Tab	
NRP-COS	21
NRP-CNG	419
NRP-CMP	304.6
COS-CNG	189
CNG Channel #	
NRP-Stem	29
Distance from Head of first section to CNG	7
Source Depth:	1
Sreamer Depth	1
Front End Length	39

Neutral Configuration TAB	
Twisting Configuration TAB	
NRP-COS	230
NRP-CNG	419.7
COS-CNG	189.7
NRP-Phasable CNG	0
COS-Phasable CNG	0
Ph-Cable Streamer Segs	0
NRP-PAM-Y	10.5
NRP-PAM-X	10.5
PAM-COS-Y	120.5
PAM-COS-X	0
9 Gun Strings	4
gun volume	6500
Gun separation	0
# 2D Streamers	1
2D Streamer Cut Spacing	12.5
Number 2D Streamers	1200
2D Streamer Length	15000
2D Streamer Seg	0
NRP-MAG-X	10.5
NRP-MAG-Y	142.5

X	0.4
Y	8.31
X	-0.4
Y	8.31
X	0
Y	5.03
X	0
Y	2.6
X	0
Y	2.6
X	0
Y	0
X	0
Y	-2.74
X	0
Y	-5.09
X	-0.4
Y	-8.21
0	-0.5
0	-8.21

Demanded Officers	
Acoustic Overhead T&E	
G1T1	-0.9%
G2T1	-4%
G3T1	-0.9%
G4T1	-0.9%
S1T1	-16.9%
S1T2	-16.2T3
S1T3	-1232.9%
S1T4	-12472.9%
S1T5	
S1T6	
S1T7	
S2T1	
S2T2	
S2T3	
S2T4	
S2T5	
S2T6	
S2T7	
S3T1	
S3T2	

S1T3	
S1T4	
S1T5	
S1T6	
S1T7	
S4T1	
S4T2	
S4T3	
S4T4	
S4T5	
S4T6	
S4T7	
Front to TB	150.77
S1T1-S1T2	150.33
S1T3-S1T4	148.65
S1T4-S1T5	100.77

Gun array offsets	
Bracket distance 1-2	0
Bracket distance 2-3	3.1
Bracket distance 3-4	2.35
Bracket distance 4-5	3
Bracket distance 5-6	2.45
Bracket distance 5-7	2.45
Bracket distance 7-8	3
Source-GP-CDS Y	0
ACS - Absolute Y	-0.47
GP2 Height above	1.2
GP2 Volume	360
GP2 Volume	360
GP3 Volume	13.4
GP4 Volume	180
GP5 Volume	180
GP6 Volume	90
GP7 Volume	60
GP8 Volume	60
GP9 Volume	230
GP10 Volume	230
GP Depth 1	0.96
GP Depth 2	0.96
GP Depth 3	1.13
GP Depth 4	1.13
GP Depth 5	1.13
GP Depth 6	1.13
GP Depth 7	1.13
GP Depth 8	1.13
GP Depth 9	0.95
GP Depth 10	0.95
GP Depth 11	0.95
GP Depth 12	0.95
GP Depth 13	0.95
GP Depth 14	0.95
GP Depth 15	0.95
GP Depth 16	0.95
GP Depth 17	0.95
GP Depth 18	0.95
GP Depth 19	0.95
GP Depth 20	0.95
GP Depth 21	0.95
GP Depth 22	0.95
GP Depth 23	0.95
GP Depth 24	0.95
GP Depth 25	0.95
GP Depth 26	0.95
GP Depth 27	0.95
GP Depth 28	0.95
GP Depth 29	0.95
GP Depth 30	0.95
GP Depth 31	0.95
GP Depth 32	0.95
GP Depth 33	0.95
GP Depth 34	0.95
GP Depth 35	0.95
GP Depth 36	0.95
GP Depth 37	0.95
GP Depth 38	0.95
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GP Depth 40	0.95
GP Depth 41	0.95
GP Depth 42	0.95
GP Depth 43	0.95
GP Depth 44	0.95
GP Depth 45	0.95
GP Depth 46	0.95
GP Depth 47	0.95
GP Depth 48	0.95
GP Depth 49	0.95
GP Depth 50	0.95
GP Depth 51	0.95
GP Depth 52	0.95
GP Depth 53	0.95
GP Depth 54	0.95
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GP Depth 60	0.95
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GP Depth 62	0.95
GP Depth 63	0.95
GP Depth 64	0.95
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GP Depth 72	0.95
GP Depth 73	0.95
GP Depth 74	0.95
GP Depth 75	0.95
GP Depth 76	0.95
GP Depth 77	0.95
GP Depth 78	0.95
GP Depth 79	0.95
GP Depth 80	0.95
GP Depth 81	0.95
GP Depth 82	0.95
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GP Depth 84	0.95
GP Depth 85	0.95
GP Depth 86	0.95
GP Depth 87	0.95
GP Depth 88	0.95
GP Depth 89	0.95
GP Depth 90	0.95
GP Depth 91	0.95
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GP Depth 96	0.95
GP Depth 97	0.95
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GP Depth 101	0.95
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GP Depth 105	0.95
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GP Depth 108	0.95
GP Depth 109	0.95
GP Depth 110	0.95
GP Depth 111	0.95
GP Depth 112	0.95
GP Depth 113	0.95
GP Depth 114	0.95
GP Depth 115	0.95
GP Depth 116	0.95
GP Depth 117	0.95
GP Depth 118	0.95
GP Depth 119	0.95
GP Depth 120	0.95
GP Depth 121	0.95
GP Depth 122	0.95
GP Depth 123	0.95
GP Depth 124	0.95
GP Depth 125	0.95
GP Depth 126	0.95

Delivered Offsets	
Streamers Front-End	
Stream- timestep as sec	33
timestep at end of lead-in	
SBS Length	
rim length	17
HAUSTU length	0
HESA Lgth	1
Pwd Coil to AB Coil	10
Pwd to Flux-S-V	7
Pwd Coil to CNG	-16.40
Pwd to Pwd Coil	24.22
Pwd to AB Coil	25.77
CNG Channel #	
Center of streamer to Ace nuclear	0
First Section #	
# channels	1.20
section length	1.500
# sections	10
channel spacing	12
First to last	9.6867
HESA Pwd to coil	6.4

Customer Orders	
Steamer Tail End	
Head to First Coil	24
Tail to All Coils	25
Head to CPG	14
Coil to Coil	
TAPU Length	6
Swish Length	
Traxial Length	
STC Length	
Last active	
# channels	1
# sections	
total section length	15
First to last	1400
Swish Coils	
Center of streamer to Ace transducer channel	1
CPG #	
First coil to CPG	121
CPG to TBDRGPS	8
Swish head to head coil	
Swish head to all coil	

Derived Objects	
Streamer complete	
#Sections	100
# Channels	1200
First to last	14057.5
Total section length	15000

Derived Offsets	
Hydrophone Offsets	
Channel 1	7.82
2	20.32
3	32.82
4	45.32
5	57.82
6	70.32
7	82.82
8	95.32
9	107.82
10	120.32
11	132.82
12	145.32
# channels	12
# Active's	10
Total Channels	1200

Derived Offsets	
Tailbuoy offsets	
RGPS height above water	1.2
TB length	2.9
TB height	1.83
RGPS-ACX	1
Bride-RGPS	3.25
Top Leg	1.55
Bottom Leg	1.8
STIC	25
ACX below water line	1.3