Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	1	5
SP#	833	2064

	Streamer Para	meters		
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS11
Sequence	001
Direction	350

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	16384ms
Total recording delay	0
Sample Rate	2ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
SP	833	2064
Date MM/DD/YY	13/07/12	07/13/12
Time UTC	0938	1726
Volume (cu in.)	6560in3	1650in3
Wind (kts)	19 NW	18 nw
Sea State (m)	2m	3m
Water Depth (m)	1937m	1894m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
·	ProMay - OC the above

**Promax** - QC the above channels

<i>I</i>	Auxiliaries	
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General /	Line	Comments

SP 833 is in file, SPECTRA required a RTNU reboot. NO SPECTRA RECORDED at SP 833. Reset corrected SP 838 File 538

SOL NOISY CHANNELS

SP1364-SP1474 ALL BAD\*\*\*\* Spectra crashed
\*\*\*\*\*LINE ENDED EARLY\*\*\*\*\*\* due to tow rope parting on GS 2. This caused the gun array to entangle the lead in, and gun string 3 and 4.

EOL NOISY CHANNELS

Abbreviations		
	1000 1 10 100	
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
??	01	833	01	SOL MGL1212MCS11 - turn noise evident in record
09:38	05	838	01	Restart RJNU to get SPECTRA update
1044	192	1026	01	Streamer noise abated
1102	240	1075	002	Switch Tape
1221	466	1300	002	Comm error S3G06, S3G07
1227	480	1314	003	tape change
1230	491	1325	003	Comm error S3G08
1231	494	1328	003	Comm error S3G07
1231	495	1329	003	Comm error S3G07
1231	496	1330	003	Comm error S3G10
1241	522	1356	003	Comm error S3G10
1244	530	1363	003	Last shot on record bnefore SPECTRA crashed
1337	538	1475	003	First Good file after multiple boots.
1444	720	1657	04	tape change
1552		1846	004	Power down GUN array 1 and Gun Array 2 new vol 3300 in3
1619		1904	004	Power down GUN array 3 new volume 1650
1726		2064	005	EOL due to gun string 2 entangl; em, ent with Gun array 3 and 4 with Lead in.
			1	
			1	
			1	
			-	
			1	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	6	7
SP#	2981	3292

Streamer Parameters					
	1	2	3	4	
Length (m)	8000				
Auxiliaries	n/a				
Shotpoint Interval: (m)	50				
Offset CS - CNG (m)	264				
Group Interval: (m)	12.5				
Number of channels	636				
Streamer Depth (m)	15.0				
SOL Cable Noise, µB					
EOL Cable Noise, μΒ					

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212T01
Sequence	002
Direction	267

Source Parameters			
Total Volume 6600 in3			
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	15m		
Source Separation	n/a		
COS to COS			

Recording Parameters				
Record Length	16384ms			
Total recording delay	0			
Sample Rate	2ms			
Polarity	N/A			
Low-Cut	2Hz /12DB			
Hi-Cut	103Hz/276 DB			
Tape Format	SEGD rev. 2			

Description	SOL/FQCSP	EOL/LQCSP	
SP	2981	3292	
Date MM/DD/YY	13/07/12	13/07/12	
Time UTC	01:33	03:33	
Volume (cu in.)	4950in3	6600in3	
Wind (kts)	15 NW	22 NW	
Sea State (m)	2m	2m	
Water Depth (m)	2295m	2548m	

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

Auxiliaries				
Aux. 1-8	Empty			
Aux. 13-16	Empty			
	_			
Aux 9 Gun hydrophone	Empty			
Aux 10 Gun hydrophone	Empty			
Aux 11 Gun hydrophone	Empty			
Aux 12 Gun hydrophone	Empty			

General / Line Comments			
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
01:28	01	2981	06	SOL MGL1212T01 - Source volume = 4950 in3
01:34	15	2995	06	S3G1 Delta error 3.0 ms
02:25	127	3107	06	Source volume = 6600 in3
02:46	181	3162	06	S3G1 Delta error 2.1 ms
03:06	240	3220	06	EOT 06
03:06	241	3221	07	BOT 07
03:30	307	3287	07	S3G1 Delta error -2.2 ms
03:33	312	3292	07	EOL MGL1212T01
	1	1	1	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	8	8
SP#	3226	3433

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS01
Sequence	003
Direction	82.4

Source Parameters		
Total Volume 6600 in 3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	15m	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length 16384ms		
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP	
SP	3226	3433	
Date MM/DD/YY	07/14/12	7/14/12	
Time UTC	04:41	06:04	
Volume (cu in.)	6600in3	6600in3	
Wind (kts)	20NW	20NW	
Sea State (m)	2m	2m	
Water Depth (m)	2558m	1894m	

	Cable	EOL High Noise Channels (in u-bar)
	1	
	2	
	3	
	4	
•		ProMax - OC the above

ProMax - QC the above channels

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

#### **General / Line Comments**

S4G4 disabled at start of line. S4G5 enabled at start of line.

SOL NOISY CHANNELS

\*\*\*\*Line ended due to complete power failure after sunset and exceeded the 8 minute allowance for shut down. No rampup.

EOL NOISY CHANNELS

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
04:41	01	3226	08	SOL MGL1212MCS01
04:45	11	3236	08	S3G1 delta timing at 2.2ms
05:27	108	3333	08	Streamer straight after turn - no noise on streamer from turn
06:04		3433	08	Streamer straight after turn - no noise on streamer from turn  EOL MGL1212MC01 - complete power outage; reshoot in the morning
<del></del>				
<del></del>				

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	009	016
SP#	3632	5517

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
<b>Acquisition Leader</b>	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS01A
Sequence	004
Direction	82

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	15	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length	12288ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	3632	5517
Date MM/DD/YY	07/14/12	07/15/12
Time UTC	1310	0042
Volume (cu in.)	6600in3	6600in3
Wind (kts)	12 nw	1.7 NE
Sea State (m)	1m	1m
Water Depth (m)	2552m	148.5m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments		
SOL NOISY CHANNELS		
EOL early due to fishing traffic ahead		
EOL NOISY CHANNELS		

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Tape	Description		
1310	001	3632	009	SOL MGL1212MCS01A sequence 004 6600 in 3 no noise in record.		
1319	26	3657	009	DT S3G01 2.1 ms		
1327	46	3677	009	DT S3G01 -2.3 ms		
1400	134	3765	009	DT S3G01 2.1 ms		
1442	240	3871	010	Tape change		
1530	372	4003	010	DT S3G01 2.1 ms		
1610	480	4111	011	Tape change		
1612	489	4120	011	DT S3G01 2.1 ms		
1629	537	4168	011	DT S3G01 -2.2 ms		
1737	721	4352	012	Tape change		
1743	740	4371	012	DT S3G01 -2.2 ms		
1744	743	4374	012	DT S3G01 -2.2 ms		
1748	753	4384	012	DT S3G01 -2.1 ms		
1752	766	4397	012	DT S3G01 -2.1 ms		
1804	797	4428	012	DT S3G01 -2.1 ms		
1811	817	4448	012	DT S3G01 -2.1 ms		
1826	859	4490	012	DT S3G01 -2.3 ms		
1832	874	4505	012	DT S3G01 -2.1 ms		
1837	886	4517	012	DT S3G01 -2.1 ms		
1848	917	4548	012	DT S3G01 2.2 ms		
1851	923	4554	012	DT S3G01 -2.3 ms		
1857	940	4571	012	DT S3G01 -2.2 ms		
1858	942	4573	012	DT S3G01 2.1 ms		
1902	954	4585	012	DT S3G01 -2.2 ms		
1907	961	4592	013	Tape change to 013		
1907	966	4597	013	DT S3G01 -2.3 ms		
1914	984	4615	013	DT S3G01 -2.1 ms		
1919	998	4629	013	DT S3G01 -2.4 ms		
1927	1020	4651	013	DT S3G01 -2.2 ms		
1929	1025	4656	013	DT S3G01 -2.2 ms		
1930	1028	4659	013	DT S3G01 -2.3 ms		
1943	1064	4695	013	DT S3G01 -2.1 ms		
1945	1069	4700	013	DT S3G01 -2.7 ms		
1951	1085	4716	013	DT S3G01 -2.5 ms		
1954	1092	4723	013	DT S3G01 -2.5 ms		
1956	1099	4730	013	DT S3G01 -2.4 ms		
1957	1102	4733	013	DT S3G01 -2.1 ms  DT S3G01 -2.2 ms		
2000	1109	4740	013	DT S3G01 -2.2 ms  DT S3G01 -2.4 ms		
2001	1113	4744	013	DT S3G01 2.4 ms  DT S3G01 +2.1 ms		
2002	1117	4748	013	DT S3G01 +2.1 ms  DT S3G01 -2.1 ms		
2006	1126	4757	013	DT S3G01 -2.3 ms		
2009	1134	4765	013	DT S3G01 -2.1 ms		
2015	1150	4781	013	DT S3G01 -2.1 ms  DT S3G01 -2.4 ms		
2020	1164	4795	013	DT S3G01 -2.4 ms  DT S3G01 -2.2 ms		
2031	1198	4829	013	DT S3G01 -2.2 ms  DT S3G01 -2.4 ms		
2032	1200	4831	013	DT S3G01 -2.4 ms  DT S3G01 -2.3 ms		
2032	1200	4831	013	Tape change to 014		
2032	1205	4836	014	DT S3G01 -2.3 ms		
2034	1203	4844	014	DT S3G01 -2.3 ms  DT S3G01 -2.4 ms		
2043	1213	4861	014	DT S3G01 -2.4 ms  DT S3G01 -2.4 ms		
2043	1233	4864	014	DT S3G01 -2.4 ms  DT S3G01 -2.5 ms		
2044	1235	4867	014	DT S3G01 -2.3 ms  DT S3G01 -2.4 ms		
2045	1238	4869	014	DT S3G01 -2.4 ms  DT S3G01 -2.4 ms		
2046	1240	4809	014	DT S3G01 -2.4 ms  DT S3G01 -2.2 ms		
2046	1276	4907	014	DT S3G01 -2.2 ms  DT S3G01 -2.1 ms		
2159	1441	5072				
	1441		015	Tape Change to 015		
2326	1681	5311	015	End of tape 015		
2326 0042	1886	5312 5517	016	start of tape 016 EOL MGL1212MCS01A sequence 004 6600 in3		
UU4 <i>L</i>	1000	3317	010	LOL MOLIZIZMOSUIA SEQUENCE 004 0000 IIIS		

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	0017	25
SP#	6371	8484

	Streamer Para	meters		
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
<b>Acquisition Leader</b>	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS03
Sequence	005
Direction	263.4

Source Parameters			
Total Volume	6600 in3		
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	15		
Source Separation	n/a		
COS to COS			

Recording Parameters		
Record Length 12288ms		
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	6371	8484
Date MM/DD/YY	07/15/12	07/15/12
Time UTC	0515	1837
Volume (cu in.)	6600in3	6600in3
Wind (kts)	12 nnw	22 NW
Sea State (m)	1m	3-4m
Water Depth (m)	326m	2599.4m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
·	ProMay - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments			
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
0515	1	6371	017	SOL MGL1212MCS03 SEQ5
0522	21	6391	017	S3G1 dt -2.5 ms
0551	98	6468	017	S3G1 dt -2.1 ms
0559	119	6489	017	S3G1 dt -2.1 ms
0644	240	6610	017	End of tape 017
0644	241	6611	018	Start of tape 018
0812	480	6850	019	Start of tape 019 sea noise evident in record
0942	720	7090	020	start of tape 020 sea noise in record
1114	960	7330	021	tape change - end of 020 - SP 7090
1244	1200	7570	022	tape change - end of 021 - SP 7330
1415	1440	7810	023	tape change
1543	1680	8050	024	tape change
1717	1920	8290	025	tape change
1721	1931	8301	025	Last full volume 6600in3 shot
1721	1932	8302	025	Powered down to mitigation gun 40 in 3 for porpoise
1736	1964	8334	025	last SP 40 in3
1736	1965	8335	025	First full volume shot 6600in3
1837	2114	8484	025	EOL mgl12mcs03

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	26	37
SP#	9419	12085

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ		·		

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS05	
Sequence	006	
Direction	82.4	

Source Parameters			
Total Volume 6600 in3			
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	15		
Source Separation	n/a		
COS to COS			

Recording Parameters			
Record Length 16384ms			
Total recording delay 0			
Sample Rate 2ms			
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	9419	12085
Date MM/DD/YY	07/16/12	07/16/12
Time UTC	0104	1730
Volume (cu in.)	6600in3	6600in3
Wind (kts)	20 N	0
Sea State (m)	4m	1m
Water Depth (m)	2625m	131m

	Cable	EOL High Noise Channels (in u-bar)
	1	
	2	
	3	
	4	
•		ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments		
Ended line early due to humback sighting.		
SOL NOISY CHANNELS		
EOL NOISY CHANNELS		

Abbreviations			
SOL/EOL - Start/End of Line	LGSP - Last Good SP		
FGSP- First Good SP	LCSP - Last Chargable SP		
FCSP - First Chargable SP	LFFSP - Last Full Fold SP		
FOLSP - First Overlap SP	Fa - Feather Angle		
BOT/EOT - Begin/End of Tape	SI - Seismic Interference		
NDR - No Data Recorded	ITB - Imitation Time Break		
NDR - No Data Recorded	ITB - Internal Time Break		
N.T.B.P Not To Be Processed			

Time UTC	FILE	SP	Таре	Description
0104	1	9419	26	SOL, MGL1212 MCS05 sea state noise evident in record
0200	154	9564	26	Streamer depth consistent at 15 m
0233	240	9651	26	End of tape, last shot on tape 26
0233	241	9652	27	Tape change, first shot tape 27
0301	316	9727	27	end of tape 27; power down to streamer lost 26 shots
0311	1	9753	28	start of tape 28
0440	240	9992	28	end of tape 28
0441	241	9993	29	start of tape 29
0608	480	10232	29	end of tape 29
0608	481	10233	30	start of tape 30
0738	720	10472	30	end of tape 30
0738	721	10473	31	start of tape 31
0907	960	10712	31	end of tape 31
0908	961	10713	32	start of tape 32
1036	1200	10952	32	end of tape 032
1036	1201	10953	33	Start of tape 33
1202	1440	11192	33	End of tape 33
1203	1441	11193	34	Start of tape 34
1301	1602	11355	34	sea noise abated in record, no longer apparent.
1329	1680	11432	34	end of tape 34
1330	1681	11433	35	start of tape 35
1457	1920	11672	35	end of tape 35
1457	1921	11673	36	start of tape 36
1513	1962	11714	36	last full volume
1513	1963	11715	36	no shot
1513	1964	11716	36	mitigation gun
1525	1989	11741	36	last mit gun SP
1525	1990	11742	36	No fire
1526	1991	11743	36	Full volume
1627	2160	11912	36	end of tape 36
1627	2161	11913	37	start of tape 37
1720	2297	12049	37	start of turn to avoid humback whales as reported by Northen Light
1730	2333	12085	37	EOL due to humpback sightings.

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	38	39
SP#	12346	12633

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST02	
Sequence	007	
Direction	172	

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	15	
Source Separation	n/a	
COS to COS		

Recording Parameters			
Record Length	16384ms		
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	12346	12633
Date MM/DD/YY	07/16/12	07/16/12
Time UTC	1739	1938
Volume (cu in.)	40in3	40in3
Wind (kts)	0	0
Sea State (m)	1m	1m
Water Depth (m)	131m	124m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
	_	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments		
EOL coming onto Line 07		
SOL NOISY CHANNELS		
EOL NOISY CHANNELS		

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
1739	001	12346	38	SOL MGL1212MCST02 40 in3
1918	240	12585	38	End of tape 38
1918	241	12586	39	Start of tape 39
1923	253	12598	39	start of stbd turn
1929	267	12612	39	Shutdown - mammal in area
1938	288	12633	39	EOL MGL1212MCST02 40 in3
		+		
		1	-	
			1	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	40	49
SP#	13293	15320

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS07
Sequence	800
Direction	263.46

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	15	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length 16384ms		
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	13293	15320
Date MM/DD/YY	7/16/12	7/17/12
Time UTC	2102	1038
Volume (cu in.)	40in3	6600in3
Wind (kts)	5 NNW	CALM
Sea State (m)	1m	~1m
Water Depth (m)	370m	2633m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments		
SOL shooting with 40in3 mitigation gun only.		
SOL NOISY CHANNELS		
EOL NOISY CHANNELS		

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
2102	1	13293	40	SOL MGL1212MCS07 migitation gun 40in3 only.
2140	86-87	13377-13378	40	ITB
2141	87	13379	40	soft start begins
2207	150	13442	40	Power down
2207	151			ITB
2207	152	13444	40	Migitation gun on
2230	210	13502	40	Migitation gun off
2330	211-212			ITB
2331	213	13505	40	soft start begins
2343	241	13533	40	end of tape 40
2343	242	13534	41	start of tape 41
2313	319	13611	41	end of soft start; full gun array 6600 in3
2330	364	13656	41	power down to mit gun for dolphins
2339	384			ITB
2339	385	13677	41	full power
2359	436		41	ITB
2359	437	13729	41	power down to mit gun for dolphins
0002	443	13735	41	shutdown
0016	476	13768	41	mit gun on
0018	480	13772	41	end of tape 41
0019	481	13773	42	start of tape 42
0031	503		42	ITB
0031	504	13796	42	begin ramp up
0117	612	13904	42	full power
0203	720	14012	42	Start of tape 42
0203	721	14013	43	Start of tape 43
0335	960	14253	43	End of tape 43
0336	961	14254	44	Start of tape 44
0506	1200	14492	44	end of tape 44
0507	1201	14493	45	start of tape 45
0544	1293	14585	45	Loss of connection to birds and streamer, end tape 45
0553	1	14607	46	Start of tape 46
0554	2	14608	47	Start of tape 47
0730	241	14847	47	end of tape 47
0731	242	14848	48	start of tape 48
0907	481	15087	48	end of tape 48
0907	482	15088	49	start of tape49
1032	702	15307	49	start of turn to south for next line
1038	714	15320	49	EOL

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	50	51
SP#	15530	15788

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, μΒ				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST03
Sequence	009
Direction	176

Source Parameters			
Total Volume 6600 in3			
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	15		
Source Separation	n/a		
COS to COS			

Recording Parameters			
Record Length	16384ms		
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP	
SP	15530	15788	
Date MM/DD/YY	07/17/12	07/17/12	
Time UTC	1055	1246	
Volume (cu in.)	6600in3	6600in3	
Wind (kts)	16 N	4	
Sea State (m)	2m	1m	
Water Depth (m)	2616m	2567m	

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

Auxiliaries			
Aux. 1-8	Empty		
Aux. 13-16	Empty		
Aux 9 Gun hydrophone	Empty		
Aux 10 Gun hydrophone	Empty		
Aux 11 Gun hydrophone	Empty		
Aux 12 Gun hydrophone	Empty		

General / Line Comments
Bird 18 not updating but appears functional. Bad coil on cable probable cause
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations				
SOL/EOL - Start/End of Line	LGSP - Last Good SP			
FGSP- First Good SP	LCSP - Last Chargable SP			
FCSP - First Chargable SP	LFFSP - Last Full Fold SP			
FOLSP - First Overlap SP	Fa - Feather Angle			
BOT/EOT - Begin/End of Tape	SI - Seismic Interference			
NDR - No Data Recorded	ITB - Imitation Time Break			
NDR - No Data Recorded	ITB - Internal Time Break			
N.T.B.P Not To Be Processed		·		

Time UTC	FILE	SP	Таре	Description
10550	001	15530	50	SOL MGL1212MCST03 6600 in 3Turn noise evident in record
1237	240	15769	50	EOT 50
1237	241	15770	51	SOT 51
1238	242	15771	51	Start of turn to LINE 9
1246	259	15788	51	EOL

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	52	59
SP#	15891	17766

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS09	
Sequence	010	
Direction	82.4	

Source Parameters			
Total Volume	6600 in3		
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	15		
Source Separation	n/a		
COS to COS			

Recording Parameters				
Record Length 16384ms				
Total recording delay	0			
Sample Rate	2ms			
Polarity	N/A			
Low-Cut	2Hz /12DB			
Hi-Cut	103Hz/276 DB			
Tape Format	SEGD rev. 2			

Description	SOL/FQCSP	EOL/LQCSP	
SP	15891	17766	
Date MM/DD/YY	07/17/12	07/18/12	
Time UTC	1300	0015	
Volume (cu in.)	6600in3	6600in3	
Wind (kts)	6 NNW	calm	
Sea State (m)	1m	1m	
Water Depth (m)	2570m	988.5m	

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

Auxiliaries				
Aux. 1-8	Empty			
Aux. 13-16	Empty			
Aux 9 Gun hydrophone	Empty			
Aux 10 Gun hydrophone	Empty			
Aux 11 Gun hydrophone	Empty			
Aux 12 Gun hydrophone	Empty			

General / Line Comments
Bird 18 not updating but appears functional. Bad coil on cable probable cause intermittant status updates.
End of line early due to mammals ahead
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations				
SOL/EOL - Start/End of Line	LGSP - Last Good SP			
FGSP- First Good SP	LCSP - Last Chargable SP			
FCSP - First Chargable SP	LFFSP - Last Full Fold SP			
FOLSP - First Overlap SP	Fa - Feather Angle			
BOT/EOT - Begin/End of Tape	SI - Seismic Interference			
NDR - No Data Recorded	ITB - Imitation Time Break			
NDR - No Data Recorded	ITB - Internal Time Break			
N.T.B.P Not To Be Processed				

Time UTC	FILE	SP	Таре	Description	
1300	001	15891	52	SOL MGL1212MCS09 SEQ010 vol 6600in3 turn noise in record	
1413	197	16087	52	turn noise no longer evident in record	
1429	240	16131	52	tape change 52	
1430	241	16132	53	start of tape 53	
1431	245	16136	53	LGSP full volume shot	
1431	246-247	16137-16138	53	NO FIRE shot	
1432	248	16139	53	40 in 3 mitigation shot	
1433	251	16142	53	LGSP of 40 in 3 prior to shutdown dolphins in safety radious	
1434	252	16143	53	shut down no fires	
1457	305	16195	53	RAMP UP online external triggers	
1535	410	16300	53	rampup complete	
1600	480	16370	53	end of tape 53	
1601	481	16371	54	start of tape 54	
1728	720	16610	54	end of tape 54	
1729	721	16611	55	start of tape 55	
1855	960	16850	55	end of tape 55	
1855	961	16851	56	start of tape 56	
2019	1200	17090	56	end of tape 56	
2020	1201	17091	57	start of tape 57	
2143	1440	17330	57	End of tape 57	
2143	1441	17331	58	Start of tape 58	
2305	1680	17570	58	end of tape 58	
2306	1681	17571	59	start of tape 59	
2359	1834	17724	59	midnight - last shotpoint of the day	
0015	1875	17765	59	Power down to mitigation gun	
0015	1876	17766	59	End of line 9	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL	
Tape #	# 60		
SP#	18994	20127	

Streamer Parameters					
	1	2	3	4	
Length (m)	8000				
Auxiliaries	n/a				
Shotpoint Interval: (m)	50				
Offset CS - CNG (m)	264				
Group Interval: (m)	12.5				
Number of channels	636				
Streamer Depth (m)	9.0				
SOL Cable Noise, µB					
EOL Cable Noise, μΒ					

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS08	
Sequence	011	
Direction	263.4	

Source Parameters		
Total Volume 6600 in 3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters			
Record Length	16384ms		
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	18994	20127
Date MM/DD/YY	07/18/12	07/19/12
Time UTC	2231	0528
Volume (cu in.)	40in3	6560in3
Wind (kts)	7 WNW	12 NNW
Sea State (m)	1m	1-2m
Water Depth (m)	1883.6m	2593.4m

Cable	EOL High Noise Channels (in u-bar)	
1		
2		
3		
4		
	ProMay - OC the above	

Auxiliaries				
Aux. 1-8	Empty			
Aux. 13-16	Empty			
Aux 9 Gun hydrophone	Empty			
Aux 10 Gun hydrophone	Empty			
Aux 11 Gun hydrophone	Empty			
Aux 12 Gun hydrophone	Empty			

General / Line Comments	
SOL - started during ramp up - FSP at 40 in3	
EOL volume 6560 in3	
SOL NOISY CHANNELS	
EOL NOISY CHANNELS	
	<u> </u>

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
2231	3	18994	60	SOL - FSP 18994 - started during ramp up at 40 in3
2311	106	19097	60	Full power - 6600 in3 - ramp up over
2359	240	19231	60	End of 60
2359	241	19232	61	Start of 61
2359	242	19233	61	Last shot of the day
0039	350	19341	61	S2G1 no fire
0042	360	19351	61	S2G1 no fire
0044	365	19356	61	S2G01 DT -5.7ms
0046	371	19362	61	S2G01 DT +3.5ms
0047	374	19365	61	S2G01 no fire
0049	380	19371	61	S2G01 DT +2.1ms
0050	381	19372	61	S2G01 no fire
0051	386	19377	61	S2G01 DT -5.6ms
0052	387	19378	61	S2G01 DT +1.4ms
0052	388	19379	61	S2G05 no fire
0053	389	19380	61	S1G05 DT +8.2ms
0053	389	19380	61	S2G05 DT +7.0ms
0053	390	19381	61	S2G1,S2G3 off, S1G5, S2G5 on - volume 6560 in3
0126	480	19471	61	End of reel 61
0126	481	19472	62	Start of reel 62
0252	720	19711	62	End of reel 62
0252	721	19712	63	Start of reel 63
0421	960	19951	63	End of reel 63
0421	961	19952	64	Start of reel 64
0528	1136	20127	64	EOL volume 6560 in3

Vessel	Marcus G. Langseth	
Client	W. Steven Holbrook / Graham Kent	
Area	Cascadia Seismic Mission	
Job Number	MGL1212	

	SOL	EOL
Tape #	65	66
SP#	20222	20482

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST04
Sequence	012
Direction	358

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length	16384ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	20222	20482
Date MM/DD/YY	07-19-12	7/19/12
Time UTC	0549	0730
Volume (cu in.)	6560in3	6560in3
Wind (kts)	12 NNW	10 n
Sea State (m)	2m	1m
Water Depth (m)	2612m	2623m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments			
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

0549         1         20222         65         SOL volume 6560 in3           0720         240         20461         65         EOT 65           0721         241         20462         66         SOT 66           0730         260         20482         66         EOL	
0720         240         20461         65         EOT 65           0721         241         20462         66         SOT 66	
0721 241 20462 66 SOT 66	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	67	76
SP#	20890	23250

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS06
Sequence	013
Direction	82.4

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

B !! B		
Recordin	ng Parameters	
Record Length	16384ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	20890	23250
Date MM/DD/YY	7/19/12	7/19/12
Time UTC	0744	2152
Volume (cu in.)	6560in3	40in3
Wind (kts)	11 N	14N
Sea State (m)	1m	1m
Water Depth (m)	2619m	97m

	Cable	EOL High Noise Channels (in u-bar)
	1	
	2	
	3	
	4	
•		ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments			
SOL 6560 in 3 volume, EOL 40in 3 volume			
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			
		·	•

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
0744	001	20890	67	SOL MGL1212MCS06 VOL 6560in3 SEQ 013 Turn noise evident in record
0845	175	21070	67	Turn complete noise on cable minimal
0906	240	21129	67	EOT 67
0906	241	21130	68	SOT 68
1034	480	21369	68	EOT 68
1034	481	21370	69	SOT 69
1207	720	21609	69	EOT 69
1207	721	21610	70	SOT 70
1324	925	21814	70	DT 4.3 ms S3G03
1324	926	21815	70	DT -2.8 ms S3G03
1337	960	21859	70	EOT 70
1338	961	21860	71	SOT 71
1504	1200	22089	71	EOT70
1504	1201	22090	72	SOT 71
1629	1440	22329	72	EOT 72
1629	1441	22330	73	EOT 73
1637	1463	22352	73	Power down for fin whale
1730	1592	22481	73	ITB
1730	1593	22482	73	Back to full volume, 6560 cuin
1748	1642	22531	73	ITB
1748	1643	22532	73	Power down for dolphin
1804	1690	22579	73	EOT 73
1804	1691	22580	74	BOT 74
1810	1694	22583	74	ITB
1810	1695	22584	74	Full volume - 6560 in3
1906	1855	22744	74	comm error S4G07
1929	1920	22809	74	EOT 74
1929	1921	22810	75	SOT 75
1932	1932	22821	75	Comm error S4G09
1943	1961	22850	75	DT 12.1 ms S4G09
1943	1962	22851	75	DT 10.2 ms S4G09
1943	1963	22852	75	DT 2.7 ms S4G09
1947	1974	22863	75	Comm error S4G08
2010	2045	22934	75	Comm error S4G08
2011	2049	22938	75	Comm error S4G07
2021	2079	22968	75	Comm error S4G08
2024	2087	22976	75	Comm error S4G09
2026	2093	22982	75	Comm error S4G08
2050	2160	23049	75	EOT 75
2050	2161	23050	76	SOT 76
2058	2185	23074	76	power down to mitigation gun - whales
2058	2186	23075	76	ITB
2112	2225	23114	76	auto fire at S4G05 +6553.5ms
2202	2361	23250	76	EOL MGL1212MCS06 VOL 40 in 3 SEQ 013

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	77	78
SP#	23503	23769

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST05
Sequence	014
Direction	2.77

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length	16384ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP	
SP	23503	23769	
Date MM/DD/YY	7/19/12	7/19/12	
Time UTC	2209	2351	
Volume (cu in.)	40in3	40in3	
Wind (kts)	14N	12 NW	
Sea State (m)	1m	1m	
Water Depth (m)	97.8m	90m	
_			

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments			
SOL mitigation gun only			
EOL mitigation gun only			
EOL NOISY CHANNELS			
		·	

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
2209	1	23503	77	SOL volume 40in3 only
2340	240	23742	77	EOT 77
2340	241	23743	78	SOT 78
2351	267	23769	78	EOL volume 40in3 only
		<u> </u>		
	<u> </u>	<u> </u>		

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	79	89
SP#	23997	26627

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS04
Sequence	015
Direction	263.48

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length	16384ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	23997	
Date MM/DD/YY	07/20/12	07/20/12
Time UTC	00:17	1511
Volume (cu in.)	40in3	6560in3
Wind (kts)	NNW 10	12 W
Sea State (m)	1m	1m
Water Depth (m)	96.4m	2624m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

ProMax - QC the above channels

Auxi	liaries
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments

SOL 40 in3

EOL NOISY CHANNELS

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
0019	1	23997	79	SOL MGL1212MCS04 40in3
0049	90	24086	79	Shutdown - whale
0059	117	24113	79	mit gun on
0059	117	24113	79	S1G3 DT - 9.2 ms
0059	118	24114	79	S1G3 DT - 12.2 ms
0059	119	24115	79	S1G3 DT - 3.3 ms
0147	240	24236	79	End of tape 79
0147	241	24237	80	Start of tape 80
0149	245	24243	80	Start of ramp up
0221	328	24324	80	First good shot at full power at 6560
0225	340	24336	80	S4G08/S4G07 comm error
0232	362	24358	80	S4G07 comm error
0309	480	24477	80	End of tape 80
0309	481	24478	81	Start of tape 81
0318	509	24505	81	S4G07 comm error
0424	721	24716	81	End of tape 81
0424	721	24717	82	Start of tape 82
0430	740	24736	82	SG407 Comm Error
0526	914	24910	82	SG408 Comm Error
0540	960	24956	82	EOT 82
0541	961	24957	83	SOT 83
0551	994	24990	83	Comm Error S4G08
0607	1041	25037	83	Comm Error S4G08
0618	1075	25071	83	Shot Error S3G3 not firing
0619	1076	25072	83	Shot Error S3G3 not firing
0619	1077	25073	83	Shot Error S3G3 not firing
0620	1080	25076	83	S3G3 off, S2G3 on
0627	1104	25100	83	Comm Error S4G08
0638	1139	25135	83	comm error S4G09
0658	1200	25196	83	End of tape 83
0658	1201	25197	84	Start of tape 84
0816	1440	25436	84	EOT 84
0817	1441	25437	85	SOT 85
0938	1680	25676	85	EOT 85
0938	1681	25677	86	SOT 86
1101	1920	25916	86	EOT 86
1101	1921	25917	87	SOT 87
1221	2160	26156	87	EOT 87
1222	2161	26157	88	SOT 88
1347	2400	26396	88	EOT 88
1347	2401	26397	89	SOT 89
1505	2614	26610	89	Start of turn to next transit line
1511	2631	26627	89	EOL

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	90	91
SP#	27021	27283

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST06
Sequence	016
Direction	349

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9
Source Separation	n/a
COS to COS	

Recording Parameters		
Record Length	16384ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	27021	27283
Date MM/DD/YY	07/20/12	07/20/12
Time UTC	1522	1657
Volume (cu in.)	6560in3	6560in3
Wind (kts)	7 W	5 w
Sea State (m)	1m	1m
Water Depth (m)	2614m	2593m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

ProMax - QC the above channels

Auxi	liaries
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

SOL NOISY CHANNELS

EOL NOISY CHANNELS

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description	
1522	001	27021	90	SOL MGL1212MCST06 6560 in 3 turn noise evident in record.	
1616	151	27171	90	LGSP full volum 6560 in3	
1617	152	27172	90	NO FIRE	
1617	153	27173	90	40 in3	
1621	161	27181	90	NO FIRE	
1621	162	27182	90	6200 in3	
1621	163	27183	90	6520 in3	
1622	164	27184	90	6560 in 3 FGSP	
1648	240	27260	90	EOT 90	
1648	241	27261	91	SOT 91	
1657	263	27283	91	EOL	
					•
					-

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	92	100
SP#	27580	29524

Streamer Parameters					
	1	2	3	4	
Length (m)	8000				
Auxiliaries	n/a				
Shotpoint Interval: (m)	50				
Offset CS - CNG (m)	264				
Group Interval: (m)	12.5				
Number of channels	636				
Streamer Depth (m)	9.0				
SOL Cable Noise, µB					
EOL Cable Noise, μΒ					

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS02
Sequence	017
Direction	82.4

Source Parameters			
Total Volume 6600 in 3			
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	9		
Source Separation	n/a		
COS to COS			

Recording Parameters				
Record Length	16384ms			
Total recording delay	0			
Sample Rate	2ms			
Polarity	N/A			
Low-Cut	2Hz /12DB			
Hi-Cut	103Hz/276 DB			
Tape Format	SEGD rev. 2			

Description	SOL/FQCSP	EOL/LQCSP	
SP	27580	29524	
Date MM/DD/YY	07/20/12	07/21/12	
Time UTC	1708	0409	
Volume (cu in.)	6560in3	6560in3	
Wind (kts)	3 NW	5 NE	
Sea State (m)	1m	1m	
Water Depth (m)	2590m	931m	

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay OC the above

Auxiliaries			
Aux. 1-8	Empty		
Aux. 13-16	Empty		
Aux 9 Gun hydrophone	Empty		
Aux 10 Gun hydrophone	Empty		
Aux 11 Gun hydrophone	Empty		
Aux 12 Gun hydrophone	Empty		

General / Line Comments			
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			

Abbreviations			
SOL/EOL - Start/End of Line	LGSP - Last Good SP		
FGSP- First Good SP	LCSP - Last Chargable SP		
FCSP - First Chargable SP	LFFSP - Last Full Fold SP		
FOLSP - First Overlap SP	Fa - Feather Angle		
BOT/EOT - Begin/End of Tape	SI - Seismic Interference		
NDR - No Data Recorded	ITB - Imitation Time Break		
NDR - No Data Recorded	ITB - Internal Time Break		
N.T.B.P Not To Be Processed			

Time UTC	FILE	SP	Таре	Description
1708	001	27580	92	SOL MGL1212MCS02 vol 6560in3 turn noise in record
1808	177	27756	92	Turn noise no longer evident in record
1830	240	27820	93	SOT
1830	241	27821	93	EOT
1933	427	28006	93	Power down to mit gun - whale
1951	480	28059	93	EOT
1951	481	28060	94	SOT
1958	505	28084	94	Full Power
2010	538	28117	94	Comm Error S4G08
2033	608	28187	94	Comm Error S4G08
2049	655	28235	94	Comm Error S4G08
2055	671	28250	94	Power down to mit gun - whale
2111	720	28299	94	EOT
2111	721	28300	95	SOT
2112	724	28303	95	Full Power
2119	746	28326	95	No Fire S4G08
2136	796	28376	95	Comm Error S4G07
2150	837	28416	95	Comm Error S4G07
2159	863	28443	95	Comm Error S4G08
2205	880	28460	95	Comm Error S4G08
2223	935	28515	95	Comm Error S4G08
2225	940	28520	95	Comm Error S4G08
2231	960	28539	95	EOT
2231	961	28540	96	SOT
2250	1014	28593	96	Comm Error S4G07
2255	1023	28603	96	Comm Error S4G08
2258	1038	28618	96	Comm Error S4G08
2339	1160	28739	96	S3G2 DT -2.3 ms
2353	1200	28779	96	EOT
2353	1201	28780	97	SOT
2359	1218	28797	97	End of Day; last shot of the day
0010	1248	28827	97	S3G2 DT -2.3 ms
0116	1440	29019	97	EOT
0116	1441	29020	98	SOT
0240	1680	29259	98	EOT
0240	1681	29260	99	SOT
0314	1784	29363	99	S3G02 Delta timing at -2.4 ms
0400	1920	29500	99	EOT
0400	1921	29501	100	SOT
0409	1945	29524	100	EOL, Line 2, MGL1212MCS02 vol 6560in3

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	101	103
SP#	31278	31923

Streamer Parameters					
	1	2	3	4	
Length (m)	8000				
Auxiliaries	n/a				
Shotpoint Interval: (m)	50				
Offset CS - CNG (m)	264				
Group Interval: (m)	12.5				
Number of channels	636				
Streamer Depth (m)	9.0				
SOL Cable Noise, µB					
EOL Cable Noise, μΒ					

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS03a
Sequence	018
Direction	82.42

Source Parameters		
Total Volume 6600 in 3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length	16384ms	
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	31278	31923
Date MM/DD/YY	7/21/12	07/21/12
Time UTC	0508	0848
Volume (cu in.)	6560in3	6560in3
Wind (kts)	1	1
Sea State (m)	1m	1m
Water Depth (m)	469m	89.9m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
	_	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments	 		
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			

Abbreviations				
SOL/EOL - Start/End of Line	LGSP - Last Good SP			
FGSP- First Good SP	LCSP - Last Chargable SP			
FCSP - First Chargable SP	LFFSP - Last Full Fold SP			
FOLSP - First Overlap SP	Fa - Feather Angle			
BOT/EOT - Begin/End of Tape	SI - Seismic Interference			
NDR - No Data Recorded	ITB - Imitation Time Break			
NDR - No Data Recorded	ITB - Internal Time Break			
N.T.B.P Not To Be Processed				

Time UTC	FILE	SP	Таре	Description
0508	1	31278	101	SOL MGL1212MCS03A 6560in3
0628	240	31517	101	End of tape 101
0628	241	31518	102	Start of tape 102
0650	304	31581	102	turn noise in record due to fishing vessel avoidence
0750	480	31757	102	EOT 102
0750	481	31758	103	SOT 103
0848	646	31926	103	EOL due to off line over 3K from line.
			-	
			-	
			-	
			-	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	104	105
SP#	32006	32341

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

<b>Chief Science Officer</b>	Jay Johnstone		
Science Officer	David Martinson		
<b>Acquisition Leader</b>	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST07
Sequence	019
Direction	75.6

Sour	Source Parameters		
Total Volume	6600 in3		
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	9		
Source Separation	n/a		
COS to COS			

Recording Parameters			
Record Length	16384ms		
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	32006	32341
Date MM/DD/YY	07/21/12	07/21/12
Time UTC	0859	1134
Volume (cu in.)	40in3	40in3
Wind (kts)	calm	calm
Sea State (m)	1m	1m
Water Depth (m)	85m	40m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments			
SOL NOISY CHANNELS			
EOL NOISY CHANNELS			

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description	
0859	001	32006	104	SOL MHGL1212MCST07 seq 019 vol 40 in3	
1021	180	32185	104	LSP before NCC main lock up in Spectra FSP after clearing NCC main lock up. LOST 12 shot points	
1027	181	32198	104	FSP after clearing NCC main lock up. LOST 12 shot points	
1052	240	32256	104	EOT 104	
1052	241	32257	105	SOT 105	
1134	325	32341	105	EOL	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	106	111
SP#	33149	34425

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212NTMCS01	
Sequence	020	
Direction	Variable	

Source Parameters		
Total Volume	6600 in3	
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length 16384ms		
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	33149	34425
Date MM/DD/YY	07/21/12	7/21/12
Time UTC	1257	2142
Volume (cu in.)	6560in3	6560in3in3
Wind (kts)	1 W	1 SW
Sea State (m)	1m	1m
Water Depth (m)	40m	1171m
_		

	Cable	EOL High Noise Channels (in u-bar)
	1	
	2	
	3	
	4	
•		ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments
Bird 11 @12 m depth birds 27, 28, 29@15 m climbing slowly as speed and tension increase at SOL
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

FILE	SP	Tape	Description	
001	33149	106	SOL MGL1212MCSNT SEQ 020 TURN NOISE IN CABLE	
004	33153	106		
151	33299	106		
240	33389	106	EOT 106	
241	33390	107	SOT 107	
307	33455	107	Bird 11 in spec Bird 27 at 14.8 m	
480	33629	107	EOT 107	
481	33630	108	SOT 108	
720	33868	108	EOT 108	
721	33869	109	SOT 109	
886	34032	109	S4G9 comm error	
891	34032	109	S4G9 comm error	
960	34108	109	S4G8 comm error	
960	34108	109	EOT	
961	34109	110	SOT	
1131	34279	110	S4G8 comm error	
1200	34348	110	EOT	
1201	34349	111	SOT	
1277	34425	111	EOL	
				-
	001 004 151 240 241 307 480 481 720 721 886 891 960 960 961 1131 1200 1201	001       33149         004       33153         151       33299         240       33389         241       33390         307       33455         480       33629         481       33630         720       33868         721       33869         886       34032         891       34032         960       34108         961       34109         1131       34279         1200       34348         1201       34349	001         33149         106           004         33153         106           151         33299         106           240         33389         106           241         33390         107           307         33455         107           480         33629         107           481         33630         108           720         33868         108           721         33869         109           886         34032         109           891         34032         109           960         34108         109           961         34108         109           961         34109         110           1131         34279         110           1200         34348         110           1201         34349         111	001         33149         106         SOL MGL1212MCSNT SEQ 020 TURN NOISE IN CABLE           004         33153         106         First full volume shot 6560 in3 after timing guns           151         33299         106         Streamer strtaight reduced turn noise in cable           240         33389         106         EOT 106           241         33390         107         SOT 107           307         33455         107         Bird 11 in spec Bird 27 at 14.8 m           480         33629         107         EOT 107           481         33630         108         SOT 108           720         33868         108         EOT 108           721         33869         109         SOT 109           886         34032         109         S4G9 comm error           891         34032         109         S4G8 comm error           960         34108         109         EOT           961         34109         110         SOT           1131         34279         110         S4G8 comm error           1200         34348         110         EOT           1201         34349         111         SOT

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	112	113
SP#	34607	34928

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, μΒ				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCST08	
Sequence	021	
Direction	248	

Sour	Source Parameters		
Total Volume	6600 in3		
Work Pressure	1950psi +/- 100psi		
Dual Source	no		
Depth	9		
Source Separation	n/a		
COS to COS			

Recording Parameters		
Record Length 16384ms		
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	34607	34928
Date MM/DD/YY	07/21/12	7/22/12
Time UTC	2155	0004
Volume (cu in.)	6560in3	6560in3
Wind (kts)	1 NW	8 SW
Sea State (m)	1m	1m
Water Depth (m)	1228m	1692m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

Seneral / Line Comments				
SOL NOISY CHANNELS				
EOL NOISY CHANNELS				

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
2155	1	34607	112	SOL MCL1212MCST08 volume 6560 in3
2316	194-195		112	ITB
2334	240	34855	112	EOT 112
2335	241	34856	113	SOT 113
2359	302	34917	113	Last shot of the day
0004	313	34928	113	EOL MCL1212MCST08 volume 6560 in3

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	114	121
SP#	35092	36775

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS10
Sequence	022
Direction	175

Source Parameters		
Total Volume 6600 in 3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters		
Record Length 16384ms		
Total recording delay	0	
Sample Rate	2ms	
Polarity	N/A	
Low-Cut	2Hz /12DB	
Hi-Cut	103Hz/276 DB	
Tape Format	SEGD rev. 2	

Description	SOL/FQCSP	EOL/LQCSP
SP	35092	36775
Date MM/DD/YY	7/21/12	7/22/12
Time UTC	1940	1111
Volume (cu in.)	6560in3	6560in3
Wind (kts)	10 SW	8 w
Sea State (m)	1m	1m
Water Depth (m)	1739m	1733m

	Cable	EOL High Noise Channels (in u-bar)
	1	
	2	
	3	
	4	
_		ProMay OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments	,
Bird 27 has possible fishing gear dragging cable to 14.9 meters	
SOL NOISY CHANNELS	
EOL NOISY CHANNELS	

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
0019	1	35092	114	SOL MGL1212MCS10 volume 6560in3
00:38	55	35146	114	Power down for porpoise
0055	103	35194	114	Full Power
0144	240	35331	114	End of tape 114
0145	241	35332	115	Start of tape 115
0227	356	35447	115	delta timing error -2.2 ms S3G02
0248	415	35506	115	delta timing error -2.3 ms S3G02
0312	480	35572	115	EOT 115
312	481	35573	116	SOT 116
0319	500	35591	116	Power down, shut down for marine mammals
0330	527	35618	116	start mitigation gun
0347	566	35657	116	ramp up initiated
0427	673	35764	116	full volume 6560in3
0445	720	35811	116	EOT 116
0446	721	35812	117	SOT 117
0606	926	36017	117	S3G2 DT -2.2 ms
0620	960	36051	117	EOT 117
0620	961	36052	118	SOT 118
0757	1200	36291	118	EOT 118
0757	1201	36292	119	SOT 119
0932	1440	36531	119	EOT 119
0932	1441	36532	120	SOT 120
1109	1680	36771	120	EOT 120
1110	1681	36772	121	SOT 121
1111	1684	36775	121	EOL
+			<u> </u>	
+			<u> </u>	

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	122	126
SP#	40465	41479

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS09A	
Sequence	023	
Direction	82.4	

Source Parameters		
Total Volume 6600 in 3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters			
Record Length 16384ms			
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	40465	41479
Date MM/DD/YY	07/22/12	7/22/12
Time UTC	1525	2148
Volume (cu in.)	6560in3	6560in3
Wind (kts)	6nw	10
Sea State (m)	1m	1m
Water Depth (m)	2268m	1867m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMay - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

Seneral / Line Comments				
SOL NOISY CHANNELS				
EOL NOISY CHANNELS				

Abbreviations			
SOL/EOL - Start/End of Line	LGSP - Last Good SP		
FGSP- First Good SP	LCSP - Last Chargable SP		
FCSP - First Chargable SP	LFFSP - Last Full Fold SP		
FOLSP - First Overlap SP	Fa - Feather Angle		
BOT/EOT - Begin/End of Tape	SI - Seismic Interference		
NDR - No Data Recorded	ITB - Imitation Time Break		
NDR - No Data Recorded	ITB - Internal Time Break		
N.T.B.P Not To Be Processed			

Time UTC	FILE	SP	Таре	Description
1525	001	40465	122	MGL1212MCS09A Seq 023 TURN NOISE EVIDENT IN RECORD
1618	156	40620	122	Shot Error S3G02
1628	180	40644	122	feather < 12 degrees
1651	240	40705	122	EOT 122
1651	241	40706	123	SOT 123
1820	480	40944	123	EOT 123
1820	481	40945	124	SOT 124
1951	720	41184	124	EOT 124
1951	721	41185	125	SOT 125
2125	960	41424	125	EOT 125
2125	961	41425	126	SOT 126
2133	979	41443	126	Starting turn
2148	1015	41479	126	EOL MGL1212MCS09A 6560in3
			1	
			<u> </u>	
			<u> </u>	
		1		

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	127	131
SP#	42244	43268

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

<b>Chief Science Officer</b>	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS09B
Sequence	024
Direction	263.46

Source Parameters		
Total Volume 6600 in 3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters			
Record Length	16384ms		
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	42244	43268
Date MM/DD/YY	7/23/12	07/23/12
Time UTC	0015	0725
Volume (cu in.)	3260in3	3260in3
Wind (kts)	15	17 N
Sea State (m)	1m	1-2m
Water Depth (m)	1585.2m	2289m

	Cable	EOL High Noise Channels (in u-bar)
	1	
	2	
	3	
	4	
•		ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
	_	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments		
Line run 2 x 9m arrays. 3260 in3.		
SOL NOISY CHANNELS		
EOL NOISY CHANNELS		
	 ·	

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
0015	001	42244	127	MGL1212MCS09B Seq 024 3260in3
0043	74	42138	127	Auto Fire at 246.6 ms S3G01
0044	75	42139	127	Auto Fire at 246.6 ms S3G01
0044	76	42140	127	Comm Error S3G10
0054	100	42344	127	Comm Error S3G08
0056	105	42348	127	Comm Error S3G08
0108	131	42375	127	Comm Error S3G06
0156	240	42483	127	End Reel 127
0156	241	42484	128	Start Reel 128
0217	287	42530	128	Comm Error S4G09
0220	296	42539	128	Comm Error S4G10
0228	314	42557	128	Comm Error S4G09
0228	314	42557	128	Comm Error S4G08
0240	342	42585	128	Comm Erorr S4G10
0338	480	42723	128	End of Reel 128
0338	481	42724	129	Start of Reel 129
0454	663	42906	129	Comm Error S4G10
0459	675	42918	129	Comm Error S4G8
0501	680	42923	129	Comm Error S4G8
0502	681	42924	129	Comm Error S4G8
0518	720	42963	129	End of Reel 129
0519	721	42964	130	Start of Reel 130
0653	960	43203	130	EOT 130
0653	961	43204	131	SOT 131
0725	1025	43268	131	EOL

Vessel	Marcus G. Langseth
Client	W. Steven Holbrook / Graham Kent
Area	Cascadia Seismic Mission
Job Number	MGL1212

	SOL	EOL
Tape #	132	135
SP#	45630	46500

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	264			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9.0			
SOL Cable Noise, µB				
EOL Cable Noise, μΒ				

Chief Science Officer	Jay Johnstone		
Science Officer	David Martinson		
Acquisition Leader	David Martinson 12:00-24:00	Bern McKiernan 00:00-12:00	Lisa Hawkins 12:00-24:00
Navigation Leader	Grady Hanley 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1212MCS09C
Sequence	025
Direction	82.4

Source Parameters		
Total Volume 6600 in3		
Work Pressure	1950psi +/- 100psi	
Dual Source	no	
Depth	9	
Source Separation	n/a	
COS to COS		

Recording Parameters			
Record Length	16384ms		
Total recording delay	0		
Sample Rate	2ms		
Polarity	N/A		
Low-Cut	2Hz /12DB		
Hi-Cut	103Hz/276 DB		
Tape Format	SEGD rev. 2		

Description	SOL/FQCSP	EOL/LQCSP
SP	45630	46500
Date MM/DD/YY	07/23/12	7/23/12
Time UTC	1042	1603
Volume (cu in.)	1650in3	3300in3
Wind (kts)	7 N	12 nw
Sea State (m)	1m	1m
Water Depth (m)	2328m	1751m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	
	ProMax - OC the above

Auxiliaries		
Aux. 1-8	Empty	
Aux. 13-16	Empty	
Aux 9 Gun hydrophone	Empty	
Aux 10 Gun hydrophone	Empty	
Aux 11 Gun hydrophone	Empty	
Aux 12 Gun hydrophone	Empty	

General / Line Comments		
SOL only GS1 deployed. VC	L is 1650in3. SP45643set streamer to 15M, SP45648 streamer at 15M. Bird 27@25M, 2	28@18M, 29@16M
SOL NOISY CHANNELS		
SP45844 Gun string 2 in pos	on and firing full volume 3300 in3	
EOL full volume 3300in3		
EOL NOISY CHANNELS		

Abbreviations		
SOL/EOL - Start/End of Line	LGSP - Last Good SP	
FGSP- First Good SP	LCSP - Last Chargable SP	
FCSP - First Chargable SP	LFFSP - Last Full Fold SP	
FOLSP - First Overlap SP	Fa - Feather Angle	
BOT/EOT - Begin/End of Tape	SI - Seismic Interference	
NDR - No Data Recorded	ITB - Imitation Time Break	
NDR - No Data Recorded	ITB - Internal Time Break	
N.T.B.P Not To Be Processed		

Time UTC	FILE	SP	Таре	Description
1042	001	45630	132	SOL MGL1212MCS09C vo 1650 in single gun string @ 15 meters/ streamer @9 meters
				DT errors SP 45630, 45631 45632 enitire array
1044	003	45633	132	FGSP no timing errors
1201	214	45844	132	GS2 in position firing full volum 3300 in3
1209	240	45870	132	EOT 132
1210	241	45871	133	SOT 133
1316	415	46044	133	Moved birds to 18 meters vessel crossing streamer
1318	421	46050	133	moved middle section of streamer to 18 m
1323	434	46063	133	raised front streamer to 15m
1324	436	46065	133	lowered birds 23-29 to 18 m
1326	440	46069	133	birds at depth
1328	448	46077	133	birds 20-29 set to 22 merters
1330			133	vessel crosses canble
1331			133	moved cable to 15 meter
1334	462	46091	133	most birds at correct depth
1340	480	46109	133	EOT 133
1340	481	46110	134	SOT 134
1430	615	46244	134	LSP full volume power down for porpoise
1432	619	46248	134	FSP 40in3
1445	654	46283	134	no fire
1445	655	46284	134	full volme 3300
1508	720	46349	134	EOT 134
1509	721	43350	135	SOT 135
1603	871	46500	135	EOL 3300in3