

Observers Log

Date YYYY/MM/DD: 2009-08-27

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_05
Sequence	001
Direction	185

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	4mS
Cycle (Dist/Time)	Time - 210s

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	OL/Last Shotpoint
Time (UTC)	05:08 2009-08-27	21:15 2009-08-27
Volume (cu in.)	6600	6600
Description	FGSP=1280	LGSP=1022
Weather	Start of Line	End of Line
Wind (kts)	S 30	S 32
Sea State (m)	2	3
Water Depth (m)	2530	2736

General / Line Comments
5:08 SOL= 48:29 37.778N ; 129:12 09.833W
8:46 OBS Crossing W27 48:17.5518, 129:21.9703
9:03 OBS Crossing W26 = 48:13.2033; 129:21.0419
11:31 OBS Crossing W25 = 48:07.9383; 129:21.8108
12:58 OBS Crossing W24
14:24 OBS Crossing W23 = 48:02.3306/ 129:22.6186
15:54 OBS Crossing W22
17:25 OBS Crossing W21
21:15 EOL 47 32' 51.158N, 129 26' 50.379W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-08-27

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_04
Sequence	002
Direction	5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	4mS
Cycle (Dist/Time)	Time - 210s

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
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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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	23:47 2009-08-27	14:13
Volume (cu in.)	4950	6600
Description	FGSP 2017	LGSP 2261
Weather	Start of Line	End of Line
Wind (kts)	s @ 20kt	15
Sea State (m)	3.5m	3
Water Depth (m)	2575m	2525

General / Line Comments
SOL 47deg. 31'51.120N 129deg. 21'18.824W STRING 3 ONBOARD FOR MAINTENANCE VOLUME 4950 in3, STRING 3 DEPLOYED 00:08 NEW VOLUME 6600 in3
OBS crossing S17; SP 2164 @ 08:42:40 UTC
OBS crossing S18; SP 2207 @ 11:19 UTC
End of Line 14:31 SP 2261 Pos 48'26.89639N; 129'13.39863W

Line Status:

Observers Log

Date YYYY/MM/DD: 2009-08-29

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_03
Sequence	004
Direction	186

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 420m

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-28 19:09	2009-08-29 02:37
Volume (cu in.)	6600	4950
Description	FGSP 4264	LGSP 4137
Weather	Start of Line	End of Line
Wind (kts)	SW 11kt	sw 7.5 kt
Sea State (m)	2m	1 m
Water Depth (m)	2409	2472

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00	
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00	
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
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FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
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NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

General / Line Comments
SOL 48 25.72964 N, 128 47.60563 W
SP 4140 STRING 3 DISABLED, BRINGING IN FOR MAINTENANCE
EOL 47 57.08565 N 128 51.81228 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-08-29

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_38
Sequence	005
Direction	5

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	4mS
Cycle (Dist/Time)	Time - 210s

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-29 03:29	2009-08-29 07:22
Volume (cu in.)	4950	3300
Description	FGSP	LGSP
	5140	5208
Weather		
Start of Line		End of Line
Wind (kts)	Calm	5
Sea State (m)	1 m	1
Water Depth (m)	2420	2516

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00	
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00	
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
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FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
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NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

General / Line Comments
 SOL 47 57.79499 N 128 49.36048 W
 MISSED SHOT 5142 DUE TO TROUBLESHOOTING STRING 3
 EOL 48deg 13.13122 N 128deg 47.09378 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-08-29

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_03R
Sequence	006
Direction	186

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-29 0847	2009-08-29 1858
Volume (cu in.)	6600	6600
Description	FGSP	LGSP
	6198	6021
Weather	Start of Line	End of Line
Wind (kts)	5.1	NW 5.1
Sea State (m)	1	1
Water Depth (m)	2503	2680

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00	
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00	
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

General / Line Comments
SOL Lat: 48deg 11.07157 N Lon: 128deg 49.7851 W
EOL LAT 47 30.91399 N, 128 55.52609 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-08-29

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_2
Sequence	007
Direction	5.5

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-29 20:13	2009-08-29 23:55
Volume (cu in.)	6600	6600
Description	FGSP 7018	LGSP 7058
	7018	7058
Weather	Start of Line	End of Line
Wind (kts)	N @ 14.3kt	NW 14.5KT
Sea State (m)	1m	1m
Water Depth (m)	2639m	2636

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00	
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00	
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

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

General / Line Comments
SOL 47 30.06060N 128 49.98284W
SP 7038 MISSED SHOT DUE TO CONFIG RELOAD
SP 7058 SWITCHED TO PRIMARY CIU TO FIX STRING 1 ISSUES
Early EOL due to string 1 failure
EOL 44.27942 N 128 47.96964 W

Line Status: COMPLETE

Observers Log

Date YYYY-MM-DD: 2009-08-30

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_02R
Sequence	008
Direction	5.5

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	15m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-30 04:06	2008-08-30 16:54
Volume (cu in.)	6600	6600
Description	FGSP 8035	LGSP 8259
Time (UTC)		
Volume (cu in.)		
Weather	Start of Line	End of Line
Wind (kts)	NW 14	11.6
Sea State (m)	> 1	1
Water Depth (m)	2631	2446

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00	
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00	
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

General / Line Comments
SOL 47 33.89424 N, 128 49.41016 W
OBS CROSSING SP 8104 OBS-W4
OBS CROSSING SP 8128 OBS-W5
OBS CROSSING SP 8152 OBS-W6
OBS CROSSING SP 8176 OBS-W7
OBS CROSSING SP 8200 OBS-W8
OBS CROSSING SP 8223 OBS-W9
OBS CROSSING SP 8247 OBS-W10
EOL 48 24.32109N, 128 42.16721W

Line Status: COMPLETE

Observers Log

Date YYYY-MM-DD: 2009-08-31

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_07
Sequence	009
Direction	197

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9M
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-31 00:24	2009-08-31 07:38
Volume (cu in.)	6600	6600
Description	FGSP 9163	LGSP 0921
Weather	Start of Line	End of Line
Wind (kts)	14.5	17
Sea State (m)	1	1.5
Water Depth (m)	2496	2599

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton	- 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson	- 12:00-24:00
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

General / Line Comments
SOL 48 14.36029 N, 128 49.47806 W
OBS CROSSING S36 SP9138
OBS CROSSING S35 SP9122
OBS CROSSING S33 SP9089
OBS CROSSING S31 SP9055
OBS CROSSING S30 SP9039
OBS CROSSING S29 SP9022
EOL 47 41.48823 N 129 04.98307 W

Line Status: COMPLETE

Observers Log

Date YYYY-MM-DD: 2009-08-31

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton	- 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson	- 12:00-24:00
Watchstander(s)			

Line	MGL0910_10
Sequence	010
Direction	17

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9M
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-31 0817	2009-08-31 0830
Volume (cu in.)	6600	6600
Description	FGSP 10020	LGSP 10024
Weather	Start of Line	End of Line
Wind (kts)	19	17
Sea State (m)	1.5	1.5
Water Depth (m)	2592	2592

General / Line Comments
SOL 47 42.01840N 129 07.30644W
EOL 47 42.93919N 129 06.84361W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-08-31

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Line	MGL0910_10A
Sequence	011
Direction	17

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9M
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-31 0837	2009-08-31 1521
Volume (cu in.)	6600	6600
Description	FGSP 11026	LGSP 11156
Weather	Start of Line	End of Line
Wind (kts)	17	23.4
Sea State (m)	2M	2.0
Water Depth (m)	2630	2481.7

Tech In Charge	Anthony Johnson		
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00	
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00	
Watchstander(s)			

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

General / Line Comments
SOL 47 43.52480N 129 06.57103W
EOL SP 11156 48 13.51264N 128 52.41878W
DEPTH 2481.7M, HDG 15.4, SOG 4.4kt

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-01

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_16
Sequence	013
Direction	17

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-09-01 01:08	2009-09-01 08:16
Volume (cu in.)	6600	6600
	FGSP = ####	LGSP = ####
	13019	13156
Weather	Start of Line	End of Line
Wind (kts)	20	19.8
Sea State (m)	1	1
Water Depth (m)	2592	2706

General / Line Comments
SOL MGL0910_16 SEQ 13
HDG 13.6, SOG 4.8
MISSED SHOT 13096, DUE TO SPECTRA STARTUP
SHOT 10399 SHOT 30 METERS SOUTH OF EXPECTED SHOT POINT (LABELED AS SP 005105)
OBS crossing S51 07:38 SP 13147
EOL POS 48 14.47967 128 57.06833W

Line Status:

Time UTC	SP	Description
01:11	13020	S1G02 NO FIRE
01:17	13022	S1G10 NO FIRE
01:26	13025	S1G06 AUTO FIRE ERROR
01:47	13032	S1G05 AUTO FIRE ERROR
01:53	13034	S2G05 AUTO FIRE ERROR
01:56	13035	S1G10, S1G05 NO FIRE ERROR
0226	13045	S1G06 Auto Fire Error 6553.5 ms, S1G07 No Fire
0232	13047	S1G06 No Fire
0238	13049	S1G04 Auto Fire 903.4 ms
0300	13056	S1G06 Auto Fire Error 6553.5 ms
0303	13057	S1G08 No Fire, S2G02 Delta Timing Error -2.5 ms
0306	13058	S2G05 Auto Fire 158.9 ms
0309	13059	S1G06 No Fire
0315	13061	S1G01 No Fire
0337	13068	S1G06 AUTO FIRE ERROR 6553.5ms
0346	13071	S1G10 AUTO FIRE
0349	13072	S1G09 NO FIRE
0352	13073	S1G06 AUTO FIRE AT 6553.5ms
0355	13074	S1G08 NO FIRE
0358	13075	S1G01 AUTO FIRE ERROR AT 6553.5ms
0401	13076	S1G02 NO FIRE
0404	13077	S1G10 NO FIRE
0428	13085	S1G06 AUTO FIRE ERROR 6553.5ms
0441	13089	S1G03-S1G10 AUTO FIRE ERROR ALL AT 6553.5ms, S1G01, S1G02 NO FIRE
0447	13091	S1G06 NO FIRE
0526	13104	S1G10,S1G02 NO FIRE
0533	13106	S1G06 AUTO FIRE ERROR 6553.5ms
0536	13107	S1G02 NO FIRE
0539	13108	S1 NO FIRE, YES I MEAN THE WHOLE STRING!
0548	13111	S1G02 NO FIRE
0554	13113	S1G01, S1G02 NO FIRE
0557	13114	S1G02 NO FIRE
0606	13117	S1G01 No Fire
0609	13118	S1G03 No fire
0643	13129	S1G01, S1G06 No Fire
0652	13132	S1G01 No Fire
0704	13136	S1G01 No Fire
0707	13137	S1G01, S1G06, S1G09 AUTO FIRE ERROR 6553.5ms
0717	13040	S1G01 No Fire
0732	13145	S1G06 AUTO FIRE ERROR 6553.5ms
0735	13146	S1G01 No Fire
0738	13147	S1G01 No Fire , S1G06 AUTO FIRE ERROR 6553.5ms
0741	13148	S1G01, S1G02, No Fire; S1G06 AUTO FIRE ERROR 6553.5ms
0748	13150	S1G01 No Fire
0757	13153	S1G04 No Fire

Observers Log

Date YYYY-MM-DD: 2009-09-01

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_23
Sequence	014
Direction	197.6

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	10:41 2009-09-01	17:46 2009-09-01
Volume (cu in.)	3660	6240
	FGSP = 14157	LGSP = 14021
	14157	14021
Weather	Start of Line	End of Line
Wind (kts)	14	6
Sea State (m)	1.5	2
Water Depth (m)	2234	2600.9

General / Line Comments
SOL 48 15.57664N 129 02.47927W GUNS STRING 1 AND 2 SECURE FOR REPAIRS. STRINGS 3 AND 4 PLUS 2SPARES
EOL 47 44.08407N 129 17.29277W ALL GUNS IN PLACE AND OPERATIONAL

Line Status:

Time UTC	SP	Description
1256	14114	S1 - Delta errors associated to initial firing: G3 (-10.2); G4 (-7.0); G5 (-6.4); G7 (-10.0); G8 (-11.9); G9 (4.7); G10 (-9.0) - G2,G6 NO FIRE
1259	14113	S1 - Delta errors (ms): G5 (2.7); G6 (-12.8); G9 (-3.2); G10 (3.7) - NO FIRE (G3,G7,G8)
1302	14112	S1 - Delta errors (ms): G6 (3.2); G8 (2.3)
1306	14111	NO FIRE: S1G05-S1G10
1309	14110	NO FIRE: S1G01
1312	14109	NO FIRE: S1G01 - S1G07
1315	14108	POWER CYCLE; ALL NO FIRE String1
1318	14107	NO FIRE: S1G01 - S1G03
1321	14106	NO FIRE: S1G01 + S1G04-S1G10 ; COM ERROR S1G01+S1G02
1324	14105	NO FIRE: S1 ALL GUNS ; COM ERROR S1G01-S1G08
1328	14104	Switch to secondary COM; ALL NO FIRE String1
1331	14103	ALL NO FIRE String1
1537	14062	S1 - Delta errors associated to initial firing:G2(2.1); G3 (-10.4); G4 (3.6); G8 (-2.6); G9 (3.1); G10 (3.1) - G1,G5,G6 NO FIRE
1540	14061	S1 - Delta errors associated to initial firing: G4 (-3.4);G7(-2.4); G9 (-2.2); G10 (-2.3) - G1,G6 NO FIRE
1543	14060	S1 - Delta errors associated to initial firing: G1(-3.5) - G6,G7 NO FIRE
1546	14059	S1 -G1,G6,G7,G9 NO FIRE
1549	14058	S1-Delta errors (ms): G6(2.9) - G1 NO FIRE
1552	14057	S1G01 NO FIRE,
1555	14056	S1- G1, G3 NO FIRE
1558	14055	S1 - Delta errors(ms): G01(-6.4)
1607	14052	S1- G1, G2 NO FIRE
1610	14051	S1G01 NO FIRE
1614	14050	NO FIRE:S1G01, S1G02
1617	14049	NO FIRE:S1G01, S1G02
1620	14048	NO FIRE: S1G01
1629	14045	NO FIRE:S1G01, S1G03
1632	14044	NO FIRE: S1G01
1635	14043	S3G04 Delta Timing 3.0 ms, S1G01 No Fire, Vol 5130
1638	14042	S3G04 Delta Timing -2.6 ms, S1G01 No Fire, Vol 5130
1641	14041	NO FIRE: S1G01
1644	14040	NO FIRE: S1G01; AUTO FIRE 6553.5MS S1G06
1647	14039	NO FIRE: S1G01
1650	14038	NO FIRE:S1G01, S1G02
1653	14037	NO FIRE:S1G01, S1G05, SIG06
1657	14036	NO FIRE:S1G03, S1G05, SIG06; AUTO FIRE: S1G07-S1G10
1700	14035	NO FIRE:S1G01-S1G05, AUTO FIRE: S1G07-S1G10 ~998.4 ms
1703	14034	NO FIRE:S1G01-S1G03
1709	14032	NO FIRE S1G01,S1G02
1715	14030	NO FIRE S1G01,S1G03
1718	14029	NO FIRE S1G01
1725	14027	S1G06 AUTO FIRE, STRING 2 DELTA ERRORS S2G01-S2G10
1728	14026	S1G01, S1G04 STRING 2 DELTA ERRORS
1731	14025	S2G02 NO FIRE, S1G06 AUTO FIRE 6553.5 ms

1734	14024	NO FIRE S1G01,S1G02
1740	14022	S1G01 NO FIRE, S1G06 AUTO FIRE 6553.5 ms

Observers Log

Date YYYY-MM-DD: 2009-09-01

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_20
Sequence	015
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9M
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2009-08-31 18:26	2009-09-01 01:30
Volume (cu in.)	6600	6420
	FGSP = ####	LGSP = ####
	15019	15156
Weather	Start of Line	End of Line
Wind (kts)	15.4	10.7
Sea State (m)	1	>1
Water Depth (m)	2562.4	2649

General / Line Comments
SOL 47 43.40282N, 129 15.05862W
GUN STRING 1 SPARED S1G01,S1G02,S1G03,S1G06 Provides least failures VOLUME 6470 in3

Line Status: COMPLETE

Time UTC	SP	Description
1912	15034	S1G07 NO FIRE
1934	15041	S1G04 NO FIRE
1949	15046	S1G04, S1G07 NO FIRE
1952	15047	S1G01-S1G06, S1G08-S1G10 ALL AUTO FIRE ERROR AT 6553.5ms
2014	15054	S1G08, S1G09 NO FIRE
2017	15055	S1G05 NO FIRE
2020	15056	S1G04, S1G05 NO FIRE, S1G07-S1G10 AUTO FIRE ERROR AT 6553.5ms
2023	15057	1240.8ms, S1G08 AUTO FIRE AT 1244.1ms, S1G09 AUTO FIRE AT 1236ms, S1G10 AUTO
2029	15059	S1G04 NO FIRE
2032	15060	S1G07,S1G08 NO FIRE
2035	15061	S1G09 NO FIRE
2103	15070	S1G04, S1G05, S1G07-S1G10 All No Fire
2109	15072	S1G04, S1G05 No Fire; S1G07-S1G10 Auto Fire 6553.5 ms
2122	15076	S1G07 No Fire
2156	15087	S1G04, S1G05, S1G07-S1G10 All No Fire
2159	15088	S1G04, S1G05, S1G07, S1G08, S1G10 No Fire; S1G09 Auto Fire 6553.5 ms
2202	15089	S1G04 No Fire
2208	15091	S1G01 Auto Fire 6553.5 ms
2211	15092	S1G04, S1G05, S1G07, S1G08, S1G10 No Fire; S1G09 Auto Fire 6553.5 ms
2214	15093	S1G04, S1G05, S1G07-S1G10 All No Fire
2217	15094	S1G01 Auto Fire 6553.5 ms
2223	15096	S1G04, S1G05, S1G07-S1G10 All No Fire
2232	15099	S1G04, S1G07, S1G08 No Fire
2235	15100	S1G04, S1G05, S1G07-S1G10 All No Fire
2242	15102	S1G04, S1G05 No Fire; S1G07-S1G10 Auto Fire 6553.5 ms
2245	15103	S1G04, S1G05, S1G07-S1G10 All No Fire
2248	15104	S1G09 No Fire
2254	15106	S1 AUTO FIRE
2257	15107	S1 NO FIRE
2300	15108	S1 NO FIRE
2303	15109	S1 NO FIRE
2306	15110	S2G05 DELTA TIMMING -707 ms; S1G08, S1G09 NO FIRE
2310	15111	S1G04 NO FIRE; S2G05 DELTA TIMMING 5.3 ms
2313	15112	S1 NO FIRE
2316	15113	S1 NO FIRE
2320	15114	S1G09 NO FIRE
2323	15115	S1G09, S1G10 NO FIRE
2326	15116	S1 AUTO FIRE
2329	15117	S1 NO FIRE
2333	15118	S1 NO FIRE
2336	15119	S1 NO FIRE
2342	15121	S1 NO FIRE
2345	15122	S1G01, S1G06, S1G09 AUTO FIRE
2351	15124	S1 NO FIRE
2354	15125	S1 AUTO FIRE
0001	15127	S1 NO FIRE
0007	15129	S1G01, S1G05, S1G06, S1G09 AUTO FIRE

0022	15134	S1G04, S1G05 No Fire; S1G07-S1G10 Auto Fire 6553.5 ms
0028	15136	S1G07 No Fire

Observers Log

Date YYYY-MM-DD: 2009-09-01

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_17
Sequence	016
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9M
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	03:53 2009-09-01	11:04 2009-09-02
Volume (cu in.)	6600	6600
	FGSP = 16157	LGSP = 16021
Weather	Start of Line	End of Line
Wind (kts)	5	10
Sea State (m)	1	1
Water Depth (m)	2637	2648.5

General / Line Comments
SOL 48 14.68203 N, 128 57.78635 W
EOL 48 43' 3.534" N, 129 12' 40.096" W

Line Status: LINE COMPLETE

Time UTC	SP	
0356	16156	S2G04,S2G06 NO FIRE
0359	16155	S1G05 AUTOFIRE ERROR
0413	16150	S1G05 AUTOFIRE ERROR
0423	16147	S2G04, NO FIRE
0426	16146	S2G06 AUTOFIRE ERROR
0429	16145	S2G04, NO FIRE
0454	16137	S1G05 AUTOFIRE ERROR
0518	16129	S2G06 AUTOFIRE ERROR
0605	16114	S2G06 AUTOFIRE ERROR
0608	16113	S2G06 AUTOFIRE ERROR
0612	16112	S2G03, NO FIRE
0618	16110	S2G04, NO FIRE
0621	16109	S2G01, NO FIRE
0624	16108	S2G01, NO FIRE
0631	16106	S2G02, S2G01 NO FIRE
0634	16105	S2G04, NO FIRE
0637	16104	S2G04, NO FIRE
0706	16095	S2G07, NO FIRE
0710	16094	S2G02, NO FIRE
0713	16093	S2G04, AUTOFIRE AT 6553.5ms
0726	16089	S2G06, AUTOFIRE AT 6553.5ms
0736	16086	S2G01, NO FIRE
0739	16085	S2G02, NO FIRE
0742	16084	S2G01, S2G02, S2G04,S2G06, S2G07 NO FIRE
0745	16083	S2G01, NO FIRE
0749	16082	S2G04, NO FIRE
0752	16081	S2G02, S2G06 NO FIRE
0755	16080	S2G03, S2G04 NO FIRE
0759	16079	S2G04, NO FIRE
0802	16078	S2G03, NO FIRE
0805	16077	S2G01, NO FIRE
0812	16075	S2G02,S4G01 NO FIRE
0815	16074	S4G01,S4G04 NO FIRE
0818	16073	S2G04,S2G06,S2G07,S2G08,S2G09,S2G10 NO FIRE 5710 in3
0821	16072	NO FIRE:S2G01, S2G02, S2G03,S2G04,S2G06, S2G07 , S2G08, S2G10
0824	16071	S2G07, NO FIRE
0831	16069	NO FIRE : S2G02, S2G03,S2G04,S2G06, S2G07 , S2G08, S2G9, S2G10 ; AUTOFIRE:S2G01(860.7ms), S2G02 (867.5ms), S2G05(853.1ms)
0834	16068	NO FIRE : S2G01, S2G02, S2G03,S2G04,S2G06, S2G07, S2G08, S2G10
0841	16066	NO FIRE:S2G02, S2G03,S2G04
0844	16065	S2G06, NO FIRE
0848	16064	S2G06, AUTOFIRE AT 6553.5ms
0854	16062	S2G06, AUTOFIRE AT 6553.5ms
0857	16061	S2G04, NO FIRE
0907	16058	S2G01,S2G02 NO FIRE
0917	16055	S4G01, NO FIRE
0930	16051	S4G01, NO FIRE

0943	16047	S2G06, AUTOFIRE AT 6553.5ms; S4G01, NO FIRE
0955	16044	NO FIRE, S2G03, S2G04
0959	16042	S2G01, NO FIRE

Observers Log

Date YYYY-MM-DD: 2009-09-02

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_25
Sequence	017
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1223	1934
Volume (cu in.)	6600	6600
	FGSP = 17020	LGSP =17156
Weather	Start of Line	End of Line
Wind (kts)	10	11
Sea State (m)	1	1
Water Depth (m)	2582.5	2030

General / Line Comments
SOL 48 44.44341' N; 129 18.81190' W
EOL 48 15.934 N, 129 03.97819 W

Line Status:

Time UTC	SP	Description
1223	17020	SOL
1239	17025	NO FIRE: S2G01,S2G04,S2G10 (AEW CORRECTED)
1245	17027	NO FIRE: S2G03,S2G04,S2G06,S2G07
1251	17029	NO FIRE: S2G03
1254	17030	NO FIRE: S2G04
1257	17031	NO FIRE: S2G01, S2G04
1303	17033	AUTO FIRE: S2G06 6553.5 ms
1309	17035	NO FIRE: S2G03
1312	17036	NO FIRE: S2G01
1321	17039	NO FIRE: S2G06
1328	17041	NO FIRE: S2G03
1340	17045	NO FIRE: S2G01, S2G04
1353	17049	NO FIRE: S2G07
1428	17060	NO FIRE: S2G02
1431	17061	NO FIRE: S2G03
1451	17067	NO FIRE: S2G07
1454	17068	NO FIRE: S2G02, S2G04
1514	17074	NO FIRE: S2G04
1517	17075	NO FIRE: S2G03
1521	17076	NO FIRE: S2G01, S2G06; AUTO FIRE: S2G03, S2G07-S2G10
1524	17077	NO FIRE: S2G02-S2G04; AUTO FIRE: S2G01, S2G07-S2G10
1527	17078	AUTO FIRE: S2G01
1534	17080	AUTO FIRE: S2G01
1537	17081	NO FIRE: S2G01, S2G02, S2G07; AUTO FIRE: S2G01, S2G07-S2G10
1544	17083	NO FIRE: S2G06; AUTO FIRE: S2G06 6553.5 ms
1547	17084	NO FIRE: S2G01, S2G07
1550	17085	NO FIRE: S2G10
1620	17094	AUTO FIRE: S2G06 6553.5 ms
1623	17095	AUTO FIRE: S2G06 6553.5 ms
1636	17089	NO FIRE: S2G03
1642	17101	NO FIRE: S2G01
1649	17103	NO FIRE: S2G02, S2G03
1722	17113	NO FIRE: S2G07
1735	17117	AUTO FIRE: S2G06 6553.5 ms
1800	17125	NO FIRE S2G04
1815	17130	NO FIRE:S2G04
1818	17131	NO FIRE:S2G09
1821	17132	NO FIRE:S2G01,S2G02
1827	17134	NO FIRE:S2G04
1830	17135	AUTO FIRE:S2G01,S2G02,S2G03,S2G06,S2G07,S2G08,S2G09,S2G10
1836	17137	NO FIRE: S2G03, S2G06, S2G07
1839	17138	NO FIRE: S2G01, S2G04; AUTO FIRE: S2G02, S2G03, S2G05, S2G06, S2G07, S2G08, S2G09, S2G10 6553.5 ms
1845	17140	NO FIRE: S2G04, S2G07
1851	17142	NO FIRE: S2G02
1854	17143	NO FIRE: S2G06
1857	17144	NO FIRE: S2G07

1901	17145	NO FIRE: S2G01
1907	17147	S2G02 NO FIRE
1910	17148	S2G02 NO FIRE

Observers Log

Date YYYY-MM-DD: 2009-09-02

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_22
Sequence	018
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
<i>N.T.B.P. - Not To Be Processed</i>	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2013 2009-09-02	0333 2009-09-03
Volume (cu in.)	6600	5490
	FGSP = 18158	LGSP = 18021
Weather	Start of Line	End of Line
Wind (kts)	20	19
Sea State (m)	1	1
Water Depth (m)	2255	2645

General / Line Comments
SOL POS 48 15.64476N 129 01.59642W
21:18 String #2 disabled; will be pulled in for maintenance; SP18138 NEW VOLUME 5490
22:37 String #2 in position and enabled, new volume 6600, sp 18114
0322 String #2 powered down and brought in for maintenance
0327 Spares enabled to compensate for string #2 maintenance
EOL POS 47 43.92373N, 129 16.53390W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-03

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Anne Wells - 04:00-12:00	

Line	MGL0910_019
Sequence	019
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0442 2009-09-03	1124 2009-09-03
Volume (cu in.)	6600	4950
	FGSP = 19020	LGSP = 19156
Weather	Start of Line	End of Line
Wind (kts)	17	4.9
Sea State (m)	2	1
Water Depth (m)	2644	2676.8

General / Line Comments
SOL POS 47 43.48205 N, 129 14.22674 W
Reduced array volume to 4950in3 for string 3 inspection maintenance at PI request.
EOL POS 48 14.96336N 128 59.36404W

Line Status: Complete, Reduced Volume for String 3 for Inspection Maintenance per PI's Request

Observers Log

Date YYYY-MM-DD: 2009-09-03

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Anne Wells - 04:00-12:00	

Line	MGL0910_24
Sequence	020
Direction	197.6

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	12:23 2009-09-03	19:16 2009-09-03
Volume (cu in.)	5490	6600
	FGSP =20157	LGSP =20021
Weather	Start of Line	End of Line
Wind (kts)	11	25
Sea State (m)	1	1
Water Depth (m)	2057	2391

General / Line Comments
SOL POS 48 15.73445N 129 03.22482W 3 GUN STRINGS, VOL 5490 in3
SP 20150 FULL VOLUME 6600 in3
EOL POS 47 44.24903N, 129 18.07337W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-03

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_21
Sequence	021
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1953 2009-09-03	0241 2009-09-04
Volume (cu in.)	6600	6600
	FGSP = 21020	LGSP = 21156
Weather	Start of Line	End of Line
Wind (kts)	15	28
Sea State (m)	1	2
Water Depth (m)	2625	2526

General / Line Comments
SOL 47.43.68830N 129.15.67589W
EOL 48 15.28696N 129 00.90058W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-04

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_18
Sequence	022
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0324 2009-09-04	1118 2009-09-04
Volume (cu in.)	6600	6600
	FGSP =1	LGSP = ####
	22159	22019
Weather	Start of Line	End of Line
Wind (kts)	35	7.4
Sea State (m)	2	2.3
Water Depth (m)	2709	2725.8

General / Line Comments
SOL 48 15.23050 N, 128 58.42855 W
EOL 47 43.27165N 129 13.44390W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-04

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_15
Sequence	023
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	11:59 09-04-2009	19:11 09-04-2009
Volume (cu in.)	6600	
	FGSP =23019	LGSP = 23156
Weather	Start of Line	End of Line
Wind (kts)	6.9	5.9
Sea State (m)	2.0	1
Water Depth (m)	2327.8	2674

General / Line Comments
SOL 47 42.58009N 129 11.15445W
EOL 48 14.31464N 129 56.28673

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-04

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_12
Sequence	024
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1951 2009-09-05	0321 2009-09-05
Volume (cu in.)	6600	6600
	FGSP = 24158	LGSP = 24021
Weather	Start of Line	End of Line
Wind (kts)	10	7
Sea State (m)	1	2
Water Depth (m)	2492	2581

General / Line Comments
SOL 48 14.02534 N, 128 3.92540 W
2237 2009-09-04 - CROSSING OBS S41, SP 24111
2314 2009-09-04 - CROSSING OBS S40, SP 24100
2348 2009-09-04 - CROSSING OBS S39 SP 24090
0027 2009-09-05 - CROSSING OBS S38 SP 24078
0104 2009-09-05 - CROSSING OBS S37 SP 24066
EOL 47.42.30011 N 129.08.83229 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-05

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Anne Wells - 04:00-12:00	

Line	MGL0910_14
Sequence	026
Direction	197.6

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	DL/Last Shotpoint
Time (UTC)	1304 2009-09-05	2001 2009-09-05
Volume (cu in.)	6600	6600
	FGSP = 26152	LGSP = 2021
Weather	Start of Line	End of Line
Wind (kts)	13.0	22.5
Sea State (m)	2	1
Water Depth (m)	2499.6	2503

General / Line Comments
SOL POS 48 14.11106N, 128 55.53733W
EOL POS 47 42.62117 N, 129 10.35321 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-05

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_11
Sequence	027
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2040 2009-09-05	0341 2009-09-06
Volume (cu in.)	6600	6600
	FGSP = 27019	LGSP = 27156
Weather	Start of Line	End of Line
Wind (kts)	15.4	10
Sea State (m)	1-2	2
Water Depth (m)	2506.2	2486

General / Line Comments
SOL POS 47 41.9293 N 129 08.0732 W
EOL 48 13.66327 N, 128 53.20591 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-06

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Robert Weekly - 00:00-12:00	

Line	MGL0910_08
Sequence	028
Direction	196

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0418 2009-09-06	1133 2009-09-06
Volume (cu in.)	6600	6600
	FGSP = 28159	LGSP = 28021
Weather	Start of Line	End of Line
Wind (kts)	18	8
Sea State (m)	2	3
Water Depth (m)	2492	2595.4

General / Line Comments
SOL 48 13.60003 N, 128 50.70084 W
OBS Crossing S34 (~500m away) SP 28105 at 0715
EOL 47 41.65163 N; 129 05.75872 W

Line Status: LINE COMPLETE

Observers Log

Date YYYY-MM-DD: 2009-09-06

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_26
Sequence	029
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1502 2009-09-06	1759 2009-09-06
Volume (cu in.)	6600	6600
	FGSP = 29056	LGSP = 29111
Weather	Start of Line	End of Line
Wind (kts)	14	19.6
Sea State (m)	3	2
Water Depth (m)	2536.4	2336.6

General / Line Comments
SOL 47 50.58799 N; 129 04.50645 W; SP 29056
EOL 48 03.32088N; 128 58.50726W; 29111

Line Status: Completed

Observers Log

Date YYYY-MM-DD: 2009-09-06

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Ruth Price - 12:00-8:00	

Line	MGL0910_29
Sequence	030
Direction	197.6

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
<i>N.T.B.P. - Not To Be Processed</i>	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	18:40 2009-09-06	21:08 2009-09-06
Volume (cu in.)	6600	6600
	FGSP = 30112	LGSP = 30066
Weather	Start of Line	End of Line
Wind (kts)	11.8	22
Sea State (m)	2	2
Water Depth (m)	2337.9	2434

General / Line Comments
SOL 48 03.84569N, 129 00.82524W, SP 30112
EOL 47 53.18831N, 129 05.80590W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-06

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_32
Sequence	031
Direction	16

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2144 2009-09-06	2359 2009-09-06
Volume (cu in.)	6600	6600
	FGSP = 31065	LGSP = 31111
Weather	Start of Line	End of Line
Wind (kts)	24.6	21.3
Sea State (m)	2	2
Water Depth (m)	2254	2364

General / Line Comments
SOL 47 53.64150 N, 129 08.12435 W
EOL 48.04.29373 N, 129.03.11550 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_35
Sequence	032
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	00:39 2009-09-07	0305 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 32113	LGSP = 32066
Weather	Start of Line	End of Line
Wind (kts)	21.3	23
Sea State (m)	2	2
Water Depth (m)	2522	2507

General / Line Comments
SOL 48 05.03147N, 129 05.23576W
EOL 47 54.16232 N, 129 10.42050 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_31
Sequence	033
Direction	16

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0352 2009-09-07	0632 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 33064	LGSP = 33111
Weather	Start of Line	End of Line
Wind (kts)	26.3	17
Sea State (m)	2	2
Water Depth (m)	2352	2434

General / Line Comments
SOL 47 53.24824 N, 129 07.46417 W
EOL 48 04.13485 N, 129 02.36298 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Robert Weekly - 00:00-12:00	

Line	MGL0910_28
Sequence	034
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0712 2009-9-7	0930 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 34112	LGSP = 34068
Weather	Start of Line	End of Line
Wind (kts)	11.4	19.0
Sea State (m)	1.5	1.5
Water Depth (m)	2250	2399.1

General / Line Comments
SOL 48 03.67892N 129 00.03375W
EOL 47 53.02781 N; 129 05.04564 W

Line Status: LINE COMPLETE

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Robert Weekly - 00:00-12:00	

Line	MGL0910_33
Sequence	035
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	10:17 2009-09-07	12:31 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 34065	LGSP = 35111
Weather	Start of Line	End of Line
Wind (kts)	14.5	18.8
Sea State (m)	1.0	2
Water Depth (m)	2179.2	2478.8

General / Line Comments
SOL 47 53.81740N 129 08.75563W
EOL 48 04.45784N 129 03.09277W

Line Status: Completed

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Robert Weekly - 00:00-08:00	Anne Wells - 04:00-12:00

Line	MGL0910_27
Sequence	036
Direction	197.6

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1333 2009-09-07	1611 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 36114	LGSP = 36067
Weather	Start of Line	End of Line
Wind (kts)	16.4	11.8
Sea State (m)	1.5	2.0
Water Depth (m)	2342.6	2245.6

General / Line Comments
SOL 48 03.97600 N; 128 59.030847 W
EOL 47 53.09460N 129 04.15723W

Line Status: COMPLETED

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_30
Sequence	037
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1657 2009-09-07	1927 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 37065	LGSP = 37111
Weather	Start of Line	End of Line
Wind (kts)	4.9	7
Sea State (m)	2	1
Water Depth (m)	2342.5	2382

General / Line Comments
SOL 47 53.36547N 129 06.81420W
S2G04 SPARED S2G05 ACTIVE, CHECKING IF THIS EFFECTS S2G01,S2G02
EOL 48 03.96955 N, 129 01.57896 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-07

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Ruth Price - 12:00 - 24:00	

Line	MGL0910_34
Sequence	038
Direction	197

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2008 2009-09-07	2224 2009-09-07
Volume (cu in.)	6600	6600
	FGSP = 38112	LGSP = 38066
Weather	Start of Line	End of Line
Wind (kts)	11	10
Sea State (m)	1-2	1
Water Depth (m)	2503	2370

General / Line Comments
SOL 48 04.64014 N, 129 04.58880 W
EOL 47 54.00133N, 129 09.65893W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-08

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_2A
Sequence	039
Direction	

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 420m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0452 2009-09-08	1836
Volume (cu in.)	6600	6600
	FGSP = 39019	LGSP = 39259
Weather	Start of Line	End of Line
Wind (kts)	5	22.8
Sea State (m)	1	1
Water Depth (m)	2635	2446

General / Line Comments
SOL 47.30.28266 N 128.49.89349 W
EOL 48 24.42828N 128 42.17100W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-08

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Robert Weekly - 00:00-12:00	

Line	MGL0910_01
Sequence	040
Direction	186

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 500m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2016 2009-09-08	0909 2009-09-09
Volume (cu in.)	6600	6600
	FGSP = 40220	LGSP = 40023
Weather	Start of Line	End of Line
Wind (kts)	28.2	28.0
Sea State (m)	2	2.5
Water Depth (m)	2415	2677.9

General / Line Comments
SOL 48 23' 36.420 N, 128 36' 38.054 W
EOL 47 30.72145 N, 128 44.46147 W

Line Status: LINE COMPLETE

Time UTC	SP	Description
20:29	40217	S3G04 DELTA TIMING ERROR -2.5ms
2041	40214	S3G04 DELTA TIMING ERROR 2.1 ms, S2G06 AUTO FIRE 6553.5 ms
2057	40210	S2G06 AUTO FIRE 6553.5 ms
2137	40200	S2G06 AUTO FIRE 6553.5 ms
2147	40198	S1G01 NO FIRE
2229	40189	S2G06 AUTO FIRE 6553.5 ms
2252	40184	S2G06 AUTO FIRE 6553.5 ms
2309	40180	S1G05 AUTO FIRE @ 146.8ms
2314	40179	S2G06 AUTO FIRE 6553.5 ms
2323	40177	S1G05 AUTO FIRE @ 143.3ms
2327	40176	S1G01 NO FIRE
2344	40172	S1G05 AUTO FIRE @ 252.3ms
2348	40171	S2G04 DELTA TIMING ERROR 3.2 ms
2352	40170	S1G01 NO FIRE, S2G04, S3G04 DELTA TIMING ERROR -2.6 ms
0006	40167	S2G06 AUTO FIRE 6553.5 ms
0018	40164	S1G01 NO FIRE, S1G05 AUTO FIRE @ 144.5 ms
0030	40162	S1G01 NO FIRE
0040	40160	S2G06 AUTO FIRE 6553.5 ms
0054	40157	S1G05 AUTO FIRE @ 144.4ms
0113	40153	S1G05 AUTO FIRE @ 139.4ms
0126	40150	S1G05 AUTO FIRE @ 141.1ms
0135	40148	S1G05 AUTO FIRE @ 142.7ms
0147	40145	S1G01 NO FIRE, S1G05 AUTO FIRE @ 151.7ms
0206	40140	S1G05 AUTO FIRE @ 142.1ms, S2G06 AUTO FIRE @ 6553.5ms
0215	40138	S1G01 NO FIRE
0222	40136	2.6ms
0230	40134	S3G04 DELTA TIMING @ -2.2ms
0242	40131	S1G01 NO FIRE
0245	40130	S1G01 NO FIRE, S3G04 DELTA TIMING @ 2.2ms
0253	40128	S1G05 AUTO FIRE @149.3ms
0301	40126	S3G05 AUTO FIRE @ 226.1ms
0305	40125	S2G06 AUTO FIRE 6553.5 ms
0326	40119	S1G05 AUTO FIRE @ 150.5 ms
0337	40116	S1G01 NO FIRE, S1G05 AUTO FIRE @ 243.3 ms, S3G04 DELTA TIMING @ -2.2 ms
0340	40115	S2G04 DELTA TIMING ERROR @ 2.7 ms
0343	40114	S1G05 AUTO FIRE @ 998.9 ms
0355	40111	S1G05 AUTO FIRE @ 6553.5 ms
0359	40110	S1G05 AUTO FIRE @ 6553.5 ms
0402	40109	S1G01 NO FIRE
0406	40108	S1G05 AUTO FIRE @ 6553.5 ms
0410	40107	S1G01 NO FIRE
0413	40106	S1G05 AUTO FIRE @ 6553.5 ms
0417	40105	S2G06 AUTO FIRE @ 6553.5 ms
0424	40103	S1G05 AUTO FIRE @ 138.7 ms
0435	40100	S1G01 NO FIRE
0443	40098	S1G05 AUTO FIRE @ 142.2 ms
0447	40097	S1G01 NO FIRE, S1G05 AUTO FIRE @ 141.9 ms, S3G05 AUTO FIRE @ 219.0 ms

0454	40095	S1G05 AUTO FIRE @ 149.4 ms, S2G06 AUTO FIRE @ 6553.5 ms
0458	40094	S1G02 NO FIRE

Observers Log

Date YYYY-MM-DD: 2009-09-09

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)	Robert Weekly - 00:00-12:00	

Line	MGL0910_39
Sequence	041
Direction	244.2

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 420m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0918 2009-09-09	1533 2009-09-09
Volume (cu in.)	6600	6600
	FGSP = 41023	LGSP = 41128
Weather	Start of Line	End of Line
Wind (kts)	26.5	21.7
Sea State (m)	2.5	2.5
Water Depth (m)	2677.3	2747.4

General / Line Comments
SOL 47 30.40945 N, 128 45.22566 W; S1G04 spare - S1G05 active
EOL 47 33.00852N 129 26.88181W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-09

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_5A
Sequence	042
Direction	5.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 420m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1832 2009-09-09	0836
Volume (cu in.)	6600	6600
	FGSP = 42013	LGSP = 42260
Weather	Start of Line	End of Line
Wind (kts)	12	12.2
Sea State (m)	2.5	1.0
Water Depth (m)	2776	2520.7

General / Line Comments
SOL 47 31.44285N 129 27.05246W
SOL S1G04 SET TO SPARE, S1G05 ENABLED TO AVOID AUTO FIRE ERRORS ON G05
EOL 48 25.98683N 129 15.10717W

Line Status:

Time UTC	SP	Description
1832	42013	SOL S3G10 AUTO FIRE 215.9 ms
1835	42014	S2G04 DELTA 2.8 ms
1838	42015	S3G10 AUTO FIRE 610 ms
1841	42016	S2G06 AUTO FIRE 6553.5 ms
1847	42018	S3G10 AUTO FIRE 6553.5 ms
1909	42925	S2G05 AUTO FIRE 6553.5 ms
1916	42027	SIG01 AUTO FIRE @ 118.7ms,S2G06 AUTO FIRE @ 6553.5ms
1922	42030	S2G04 DELTA -2.3 ms
1928	42031	S2G06 AUTO FIRE 6553.5 ms
1938	42034	S1G01 AUTO FIRE 942.0 ms
1954	42039	S2G06 S3G10 AUTO FIRE @ 6553.5ms
1957	42040	S1G01 AUTO FIRE 707.1 ms
2000	42041	S1G01 AUTO FIRE @ 121.9ms, S2G06 AUTO FIRE @ 6553.5ms
2007	42043	S2G06 AUTO FIRE @ 6553.5ms, S3G10 AUTO FIRE @ 256.6ms
2019	42047	S1G01 AUTO FIRE @ 981.8ms
2023	42048	S2G06 AUTO FIRE @ 6553.5 ms
2026	42049	S3G10 AUTO FIRE @ 230.6 ms
2035	42052	S2G04, DELTA TIMING -2.4 ms, S310 AUTO FIRE @ 249.5 ms
2038	42053	S1G01 AUTO FIRE 287.7 ms
2041	42054	S1G01 AUTO FIRE @ 142.6ms
2051	42057	S2G06 AUTO FIRE 6553.5 ms
2058	42059	S1G01 AUTO FIRE @ 142.3 ms
2104	42061	S3G10 AUTO FIRE @ 6553.5 ms
2107	42062	S1G01 AUTO FIRE @ 115.2 ms
2110	42063	S3G10 AUTO FIRE @ 6553.5 ms
2113	42064	S1G01 AUTO FIRE @ 120.2 ms
2117	42065	S1G01 AUTO FIRE @ 116.7 ms, S3G10 AUTO FIRE @ 6553.5 ms
2123	42067	S2G04 DELTA TIMING ERROR @ 2.5 ms
2152	42076	S1G01 AUTO FIRE @ 826.9 ms
2155	42077	S1G01 AUTO FIRE @ 120.8 ms
2208	42081	S1G01 AUTO FIRE @ 1033.0 ms, S3G10 AUTO FIRE @ 6553.5 ms
2215	42083	S1G01 AUTO FIRE @ 1124.3 ms
2218	42084	S1G01 AUTO FIRE @ 1001.8 ms
2225	42086	S1G01 AUTO FIRE @ 951.4 ms
2246	42092	S1G05 AUTO FIRE @ 311.3 ms
2253	42094	S1G01 AUTO FIRE @ 1079.0 ms
2256	42095	S1G05 AUTO FIRE @ 199.4 ms
2300	42096	S1G01 AUTO FIRE @ 782 ms, S2G04 DELTA TIMING ERROR @ 2.1 ms
2303	42097	S1G01 AUTO FIRE @ 777.8 ms, S2G04 DELTA TIMING ERROR @ -2.1 ms
2307	42098	S2G04 DELTA TIMING ERROR @ 2.8 ms
2310	42099	S1G01 AUTO FIRE @ 811.6 ms
2314	42100	S1G01 AUTO FIRE @ 119.8 ms; S1G05 AUTO FIRE @ 191.2 ms
2324	42103	S1G01 AUTO FIRE @ 402.2 ms
2338	42107	S1G01 AUTO FIRE @ 1071.2 ms
2345	42109	S1G01 AUTO FIRE @ 113.0ms; S2G04 DELTA TIMING ERROR @ 2.3 ms
2356	42112	S1G01 AUTO FIRE @ 790.5 ms
0003	42114	S1G01 AUTO FIRE @ 940.7 ms

0010	42116	SIG01 AUTO FIRE @ 1206.1 ms
0017	42118	SIG01 AUTO FIRE @ 873.8 ms

Observers Log

Date YYYY-MM-DD: 2009-09-10

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_06
Sequence	043
Direction	185.6

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 500m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	1036 2009-09-10	2232 2009-09-10
Volume (cu in.)	6600	6600
	FGSP = 43229	LGSP = 43021
Weather	Start of Line	End of Line
Wind (kts)	22.3	19.4
Sea State (m)	0.5	.5
Water Depth (m)	2494	2774

General / Line Comments
SOL 48 29.13105N 129 24.38028W
EOL 47 33.27255N 129 32.45462W

Line Status:

Time UTC	SP	Description
1059	43222	DELTA TIMING S2G04 2.1 ms
1131	43212	AUTO FIRE ERROR SIG01 6553.5 ms
1138	43210	AUTO FIRE ERROR SIG01 978.1 ms; DELTA TIMING S2G04 -2.1 ms
1141	43209	AUTO FIRE ERROR SIG01 6553.5 ms
1154	43205	AUTO FIRE ERROR SIG01 6553.5 ms
1201	43203	DELTA TIMING S2G04 2.1 ms
1207	43201	AUTO FIRE ERROR SIG01 6553.5 ms
1214	43199	DELTA TIMING S2G04 -2.2 ms, S4G02 2.1 ms
1217	43198	AUTO FIRE ERROR SIG01 789.5 ms
1227	43195	AUTO FIRE ERROR SIG01 6553.5 ms
1230	43194	AUTO FIRE ERROR SIG01 6553.5 ms
1236	43192	AUTO FIRE ERROR SIG01 6553.5 ms
1242	43190	AUTO FIRE ERROR SIG01 6553.5 ms
1249	43188	AUTO FIRE ERROR SIG01 6553.5 ms
1252	43187	AUTO FIRE ERROR SIG01 933.6 ms
1256	43186	AUTO FIRE ERROR SIG01 6553.5 ms
1302	43184	AUTO FIRE ERROR SIG01 6553.5 ms; DELTA ERROR S2G04 -2.3 ms
1312	43181	AUTO FIRE ERROR SIG01 686.4 ms
1315	43180	AUTO FIRE ERROR SIG01 6553.5 ms
1319	43179	AUTO FIRE ERROR SIG01 6553.5 ms
1322	43178	AUTO FIRE ERROR SIG01 6553.5 ms
1329	43176	AUTO FIRE ERROR SIG01 6553.5 ms
1332	43175	AUTO FIRE ERROR SIG01 6553.5 ms
1335	43174	AUTO FIRE ERROR SIG01 856.8 ms
1345	43171	AUTO FIRE ERROR SIG01 6553.5 ms
1355	43168	DELTA TIMING S2G04 -2.1 ms
1358	43167	AUTO FIRE ERROR SIG01 955.7 ms
1401	43166	AUTO FIRE ERROR SIG01 6553.5 ms
1404	43165	AUTO FIRE ERROR SIG01 6553.5 ms; DELTA ERROR S2G04 2.5 ms
1407	43164	AUTO FIRE ERROR SIG01 962.6 ms
1414	43162	DELTA ERROR S4G02 2.2 ms
1417	43161	AUTO FIRE ERROR SIG01 6553.5 ms
1424	43159	AUTO FIRE ERROR SIG01 6553.5 ms
1428	43158	AUTO FIRE ERROR SIG01 6553.5 ms
1438	43155	AUTO FIRE ERROR SIG01 6553.5 ms; DELTA TIMING S2G04 -2.1 ms
1444	43153	AUTO FIRE ERROR SIG01 971.5 ms
1448	43152	AUTO FIRE ERROR SIG01 6553.5 ms; DELTA ERROR S2G04 -2.2 ms
1457	43149	AUTO FIRE ERROR SIG01 6553.5 ms
1501	43148	AUTO FIRE ERROR SIG01 6553.5 ms
1504	43147	AUTO FIRE ERROR SIG01 6553.5 ms
1507	43146	AUTO FIRE ERROR SIG01 6553.5 ms
1511	43145	AUTO FIRE ERROR SIG01 6553.5 ms
1514	43144	AUTO FIRE ERROR SIG01 712.5 ms
1524	43141	AUTO FIRE ERROR SIG01 6553.5 ms
1531	43139	AUTO FIRE ERROR SIG01 6553.5 ms
1534	43138	AUTO FIRE ERROR SIG01 6553.5 ms
1537	43137	AUTO FIRE ERROR SIG01 982.8 ms

1541	43136	AUTO FIRE ERROR SIG01 5277.9 ms; DELTA ERROR S4G02 -2.2 ms
1547	43134	AUTO FIRE ERROR SIG01 5277.9 ms; DELTA ERROR S4G02 2.1 ms

Observers Log

YYYY-MM-DD: 2009-09-10

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_40
Sequence	044
Direction	36

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	2314 2009-09-10	0158 2009-09-11
Volume (cu in.)	6600	6600
	FGSP = 44022	LGSP = 44077
Weather	Start of Line	End of Line
Wind (kts)	11.4	6.5
Sea State (m)	0.5	0.5
Water Depth (m)	2774	2574

General / Line Comments
SOL 47 33.22281 N, 129 29.14963 W
EOL 47 44.02572 N, 129 17.52494 W

Line Status:

Observers Log

Date YYYY-MM-DD: 2009-09-11

Vessel	Marcus G. Langseth
Client	Douglas Toomey
Area	Juan De Fuca Endeavor
Job Number	MGL0910

Tech In Charge	Anthony Johnson	
Acquisition Leader	Bern Mckeirnan - 00:00-12:00	Ryan Eaton - 12:00-24:00
Navigation Leader	David Ng-Li - 00:00-12:00	David Martinson - 12:00-24:00
Watchstander(s)		

Line	MGL0910_23R
Sequence	045
Direction	17.5

Auxiliaries	Status
Aux 1-8	Empty
Aux 9 Gun Hydrophone	Empty
Aux 10 Gun Hydrophone	Empty
Aux 11 Gun Hydrophone	Empty
Aux 12 Gun Hydrophone	Empty
Aux 13-16	Empty

Source Parameters	
Total Volume	6600/in3
Work Pressure	2000psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	6m
Delta Error Spec	2mS
Cycle (Dist/Time)	Dist - 450m

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 - Internal Time Break
NDR - No Data Recorded	DNP - Do Not Process
N.T.B.P. - Not To Be Processed	

Description	SOL/First Shotpoint	EOL/Last Shotpoint
Time (UTC)	0202 2009-09-11	1104 2009-09-11
Volume (cu in.)	6600	6600
	FGSP = 45021	LGSP = 45196
Weather	Start of Line	End of Line
Wind (kts)	7.6	5.7
Sea State (m)	0.5	3.0
Water Depth (m)	2587	2269.4

General / Line Comments
SOL 47 44.36533 N, 129 17.21693 W
EOL 48 24.86451N 128 58.01430W

Line Status:

