

Borehole Seismic Survey

Field Report

ZVSP

*Prepared by*

Baker Atlas

*for*

APACHE ENERGY LIMITED

DORY-1

DORY

AUSTRALIA

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## Survey report

Survey date	18-NOV
Job reference	SO#700041
Type of service	ZVSP
Country	AUSTRALIA
Oilfield	DORY
Well location east	148 32' 51.925 E
Well location north	038 35' 19.759 N
Rig name	OCEAN PATRIOT
Rig heading	264 degrees
Datum description	MSL
Seismic datum elevation	at MSL
Well reference level	DF
Reference level elevation	21.5 m above MSL
Water velocity	1500.0 m/s
Total Depth	3780 M (BOTTOM INTERVAL)
Well deviation	STRAIGHT WELL
Casing details	340mm @1534M
Liner details	N/A
Wireline contractor	BAKER ATLAS
Observer	BILLY CHIN/GATOT PAMUNGKAS
Client representative	G. FAWNS
Tool system	ANALOG
Controller type	DAQ
Sample interval	1000 us
Tool system zeroed at	Top Receiver
Gamma tool	GRT3
Gamma tool depth offset	15.8 m
Sinker weight	N/A
Cable adapters	N/A
Additional equipment	N/A

## Receiver report

## Tool 1

Type	ESR
Sensor pack	GIMBAL
Serial number	
Depth offset from zero	0.00 m
Arm	Extended

## Tool 2

Type	ESR
Sensor pack	GIMBAL
Serial number	
Depth offset from zero	15.00 m
Arm	Extended

Sensor polarity is Baker Hughes version 1.1 Jan 07

## Channel report

Channel allocation			Sensor description	Scaling applied
1	Tool 1	VZ	SMC1850-VRT-10HZ	-1.000
2	Tool 1	HX	SMC1850-HOR-10HZ	1.000
3	Tool 1	HY	SMC1850-HOR-10HZ	1.000
4	Tool 2	VZ	SMC1850-VRT-10HZ	-1.000
5	Tool 2	HX	SMC1850-HOR-10HZ	1.000
6	Tool 2	HY	SMC1850-HOR-10HZ	1.000
7	Reference			1.000

## Source 1 report

## MARINE

Observer	Billy Chin/Gatot Pamungkas
Source	2 x G Gun 250cuin
SCX (Easting)	-19.2 m
SCY (Northing)	-65.4 m
Source control system	Hotshot
External delay	0.0 ms
Air supply	Rucker
Airgun pressure	1800 psi
Fire control	RELAY A
Source reference channel	7
Record data length	6000 samples
QC data length	5000 samples
Source reference elevation (SRE)	at MSL
Source depth below SRE	5.0 m
Monitor	MP8D below source
Monitor distance from source	3.0 m
Water depth	518.5 m

## Journal

Date	Time	Record	Src/Set	Stk	MD(m)	Fix	SCX(m)	SCY(m)
18Nov2008	12:30:53	>tool on sea bed, stand by for gun deployment						
18Nov2008	12:41:56	>St by for rig refueling						
18Nov2008	13:16:07	1	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:16:52	2	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:18:50	3	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:19:25	4	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:19:56	5	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:23:43	>un-correlated depth, CS #1						
18Nov2008	14:30:16	6	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:30:57	7	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:32:27	8	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:33:03	9	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:36:04	10	1/1	3	2175.0	0	-19.2	-65.4
18Nov2008	14:36:38	11	1/1	3	2175.0	0	-19.2	-65.4
18Nov2008	14:37:05	12	1/1	3	2175.0	0	-19.2	-65.4
18Nov2008	14:40:02	>depth correlated ~1500M, CS #2 @ 2175M completed						
18Nov2008	15:18:03	>GR correlation completed, depth shift 1.8M						
18Nov2008	15:19:45	13	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:20:15	14	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:21:57	15	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:22:35	16	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:23:25	17	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:24:46	18	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:26:22	19	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:27:15	20	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:28:04	21	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:29:09	22	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:29:43	23	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:59:52	>CS #3 @2985m						
18Nov2008	16:03:45	>GR correlation completed ~3665M, depth shift -0.8						
18Nov2008	16:09:01	>bottom tool held up @ 3773M; first tool station will be 3765M						
18Nov2008	16:11:15	24	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:11:52	25	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:12:23	26	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:15:27	27	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:17:57	28	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:18:55	29	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:19:35	30	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:20:07	31	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:20:51	>noisy & guns out of sync						
18Nov2008	16:28:52	32	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:29:21	33	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:29:45	34	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:30:14	35	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:30:46	36	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:31:20	37	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:32:07	38	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:35:48	39	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:36:13	40	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:36:46	41	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:37:51	42	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:44:31	43	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:45:47	44	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:47:52	45	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:48:52	46	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:49:25	47	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:50:00	48	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:50:40	49	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:51:34	50	1/1	7	3735.0	0	-19.2	-65.4

## Journal

Date	Time	Record	Src/Set	Stk	MD(m)	Fix	SCX(m)	SCY(m)
18Nov2008	16:52:05	51	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:58:55	52	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	16:59:23	53	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:00:06	54	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:00:48	55	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:01:16	56	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:02:01	57	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:03:40	58	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:04:07	59	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:04:34	60	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:10:44	61	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:11:35	62	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:12:25	63	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:13:43	64	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:14:31	65	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:14:58	66	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:15:25	67	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:15:52	68	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:24:33	69	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:26:05	70	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:26:32	71	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:29:16	72	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:30:00	73	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:34:34	74	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:35:31	75	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:36:44	76	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:37:10	77	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:43:00	78	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:43:28	79	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:43:55	80	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:44:22	81	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:49:24	82	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:50:22	83	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:51:09	84	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:51:48	85	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:53:35	86	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:58:31	>Instructed to limit number of shots to 3 good shots only.						
18Nov2008	18:00:39	87	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:03:48	88	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:05:43	89	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:09:10	90	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:10:01	91	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:10:32	92	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:13:32	93	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:13:59	94	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:14:31	95	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:14:56	96	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:16:24	97	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:18:24	>stand by for the whale						
18Nov2008	19:27:11	>Survey abandoned.						

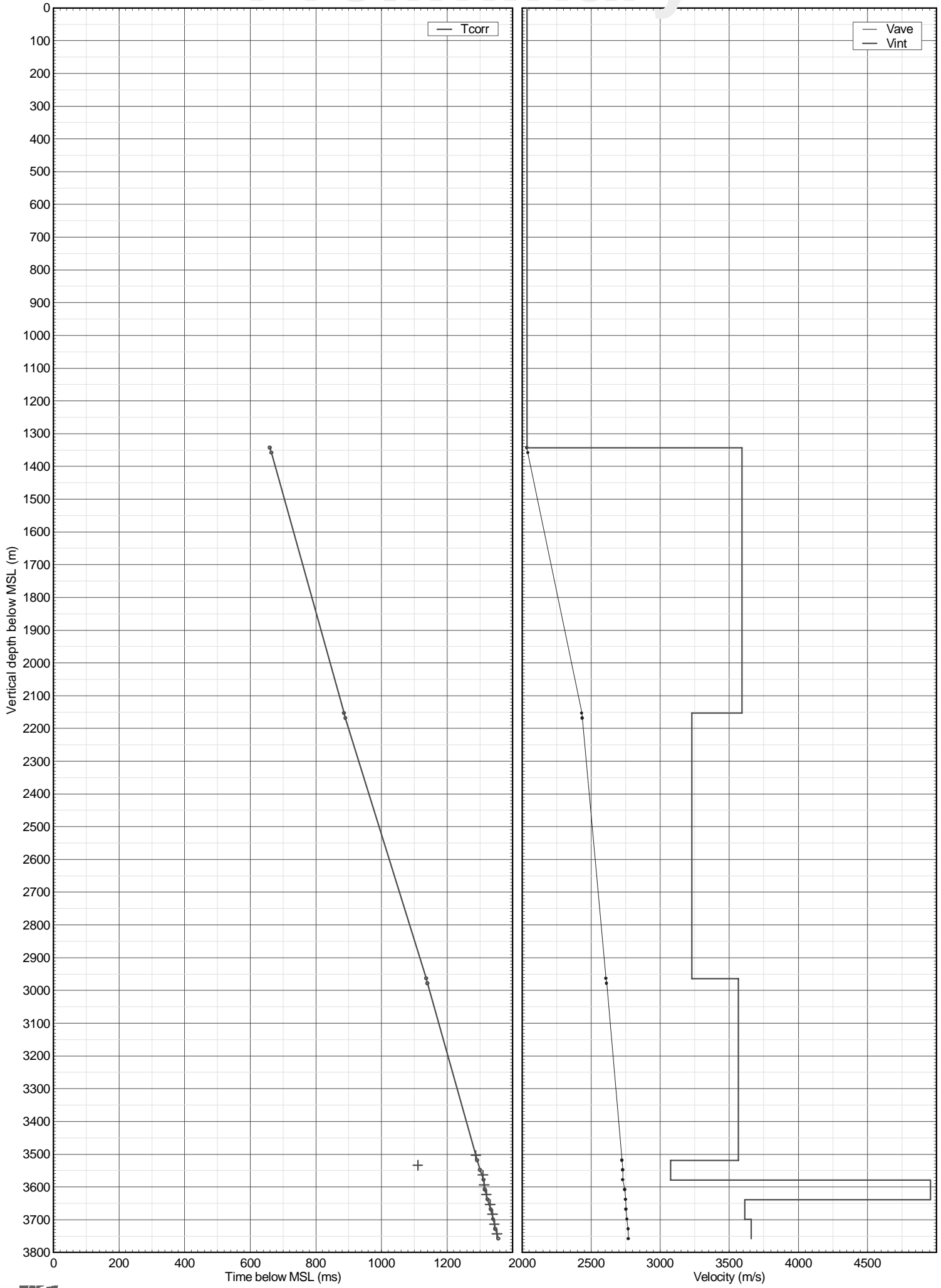
## Field computations

*Seismic datum elevation* : at MSL  
*Well reference elevation (DF)* : 21.5 m above MSL  
*Source reference elevation (SRE)* : at MSL  
*Source depth below SRE* : 5.0 m  
*Source to monitor* : 3.0 m  
*Source offset* : 68.2 m  
*Correction velocity for Ts* : 1500 m/s

*MD* = Measured Depth of receiver below DF (m)  
*TVDSD* = True Vertical Depth of receiver below MSL (m)  
*Tpick* = Time from reference pick to receiver pick (ms)  
*Tt* = Travel time from source to receiver (ms)  
 (*Tpick* + external reference delay(0.0) + source to monitor delay)  
*SGO* = Source to receiver lateral offset (m)  
*Tv* = Vertical time from source to receiver (ms)  
*Ts* = Static time correction from source to MSL (ms)  
*Tcorr* = Corrected vertical time from MSL to receiver (*Tv*+*Ts*) (ms)  
*Vave* = Average velocity from MSL to receiver (m/s)  
*Vint* = Interval velocity (m/s) above TVDSD

<i>MD</i>	<i>TVDSD</i>	<i>Tpick</i>	<i>Tt</i>	<i>SGO</i>	<i>Tv</i>	<i>Ts</i>	<i>Tcorr</i>	<i>Vave</i>	<i>Vint</i>
1365.0	1343.5	655.6	657.6	68.2	656.7	3.3	660.1	2035	2035
1380.0	1358.5	660.7	662.7	68.2	661.9	3.3	665.2	2042	
2175.0	2153.5	880.7	882.7	68.2	882.3	3.3	885.6	2432	3592
2190.0	2168.5	885.4	887.4	68.2	887.0	3.3	890.3	2436	
2985.0	2963.5	1131.4	1133.4	68.2	1133.1	3.3	1136.4	2608	3229
3000.0	2978.5	1135.4	1137.4	68.2	1137.1	3.3	1140.4	2612	
3540.0	3518.5	1287.0	1289.0	68.2	1288.8	3.3	1292.1	2723	3566
3570.0	3548.5	1295.0	1297.0	68.2	1296.8	3.3	1300.1	2729	
3600.0	3578.5	1306.5	1308.5	68.2	1308.3	3.3	1311.6	2728	3076
3630.0	3608.5	1310.6	1312.6	68.2	1312.4	3.3	1315.7	2743	
3660.0	3638.5	1318.6	1320.6	68.2	1320.4	3.3	1323.7	2749	4956
3690.0	3668.5	1327.7	1329.7	68.2	1329.5	3.3	1332.8	2752	
3720.0	3698.5	1335.2	1337.2	68.2	1337.0	3.3	1340.3	2759	3613
3750.0	3728.5	1341.9	1343.9	68.2	1343.7	3.3	1347.0	2768	
3780.0	3758.5	1351.6	1353.6	68.2	1353.4	3.3	1356.7	2770	3658





Stacked data

Measured depth (m)  
1:15000

