

Survey Set-up & Observer's Note

Survey type: Offset VSP survey
Company: CO2CRC
Well: CRC-1
Field: Naylor
Location: Brumby's Lane, Nirrandah
Country: Australia
Run: Suite 2 Run2
Date: 05 Dec 2007

Recorded by: S. Nakanisi / A. Dandi / D. Shin

Borehole Seismic Source Information - Source 2

Engineer: S. Nakanishi / A. Dandi / D. Shin

Well Name: CRC-1

Date: 05-Dec-2007

Rig: Rig-less

Geometrical Coordinates
UTM Coordinates

Longitude: 142 48' 41.44" E
Easting: 657899.1 m E

Latitude: 38 31' 50.06" S
Northing: 5733759.0 m N

Permanent Datum: MSL

Log Measured From: DF

Elev. 51.1

Unit: m

Ground Elev. at Well Head 45.9

SRD (Seismic Reference Datum): MSL

Elev. 0.0

from SLB zero: 51.1

(SRDS)

Source UTM Coordinates Easting: 658172.4 mE Northing: 5734746 mN Ground Elev. at VP : 39.9

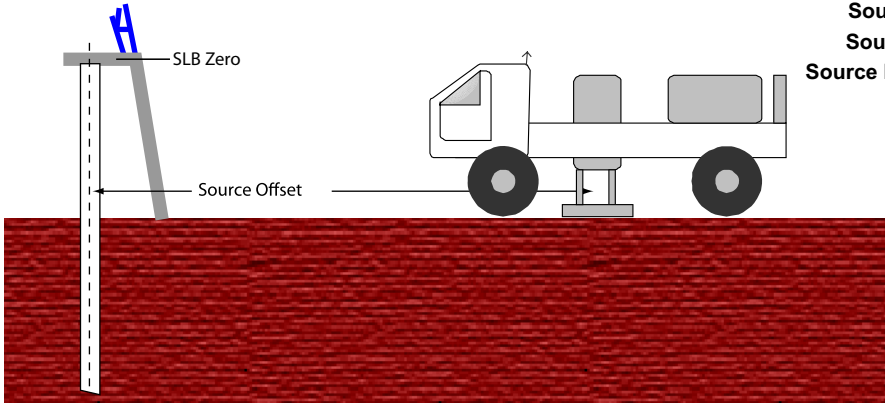
Source Depth from SLB : 11.2 (GDSZ)

Source Depth from SRD : -39.9

Source Depth from GL (WH) : 6.0

Ground Condition: Clay soil
Flat terrain

Ground Water Level from GL : 0.0



Gun Azimuth (Grid North): 15.5 deg (GAZI)

Gun Offset: 1,024.0 (GOFF)

W. Drop: Hurricane Force 9 and 10

Controller -

XMIT: G-ST-10

RECV: G-ST-10

SN: 20778.01

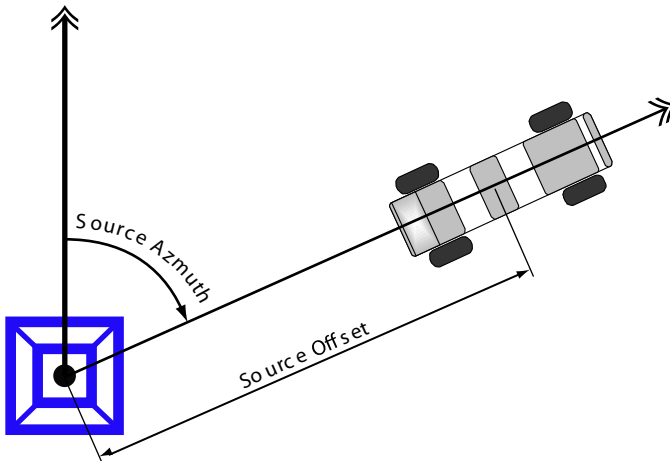
GISCO

GISCO

Impact Energy (Nm) : 4490 / 11500

Operating Weight : 720 / 1425 kg

Total system delay of trigger (ms) : 4



Surface Velocity Survey (Rig Source only)

Tool Measured Depth : _____

Measured Transit Time : _____ ms

Reliable TT

Measured Surface Velocity : **NA**

Provided Surface Velocity by Client : 1,880.0 m/sec

Borehole Seismic Source QC Information

Surface reference channels

WSAM

sn: AB 838

S 1 (WSI -SS2) Trigger Pulse
S 2 (WSI -SS3)
S 3 (WSI -SS4)
S 4 (WSI -SS5)
S 5 (WSI -SS6)
S 6 (WSI -SS7)

SSPS

<input type="checkbox"/>
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<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Surface Listening Time : 1000 msec
Donwhole Listening Time : 3000 msec
TOFS : 0 msec

Other Logs Information

Sonic Log:	Inter val:	from	to	Date:
Density Log:	Inter val:	from	to	Date:

Remarks

HURRICANE Concrete breaker / RockTec < www.rocktec.co.nz >

The Roctec Hurricane has been designed to provide high impact concrete breaking. The impact is used for mobile seismic source in this survey.

Force 10
Impact Energy 11500 Nm

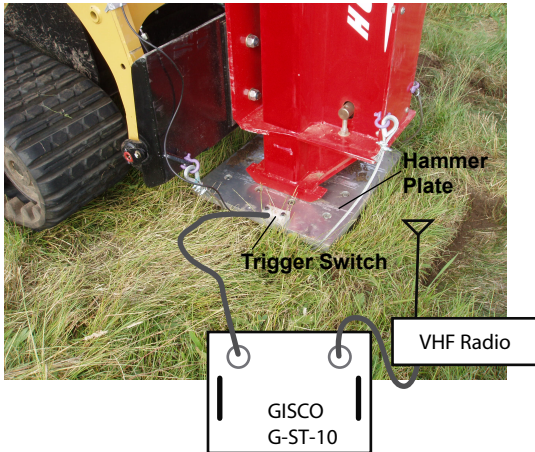


Interface set-up with Weight Drop source (HURRICANE CONCRETE BREAKER)

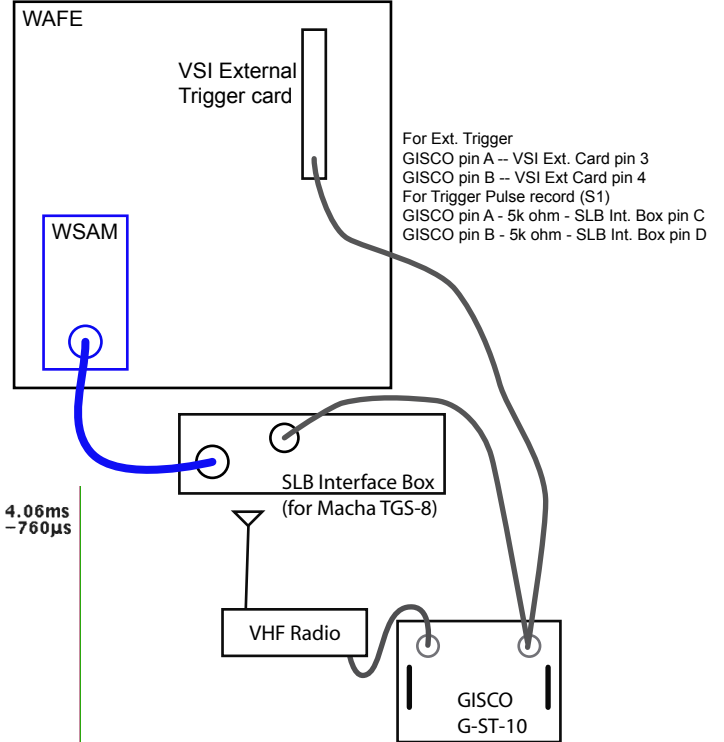
MAXIS Recording system is configured as Slave mode using VSI Trigger Card.
 GISCO Radio Trigger G-ST-10 senses impact of the hammer to the plate and provides closure to MAXIS Recording start.

3D Seismic Recording system by Curtin Uni shares same trigger pulse to achieve simultaneous 3D seismic and 3D VSP survey.

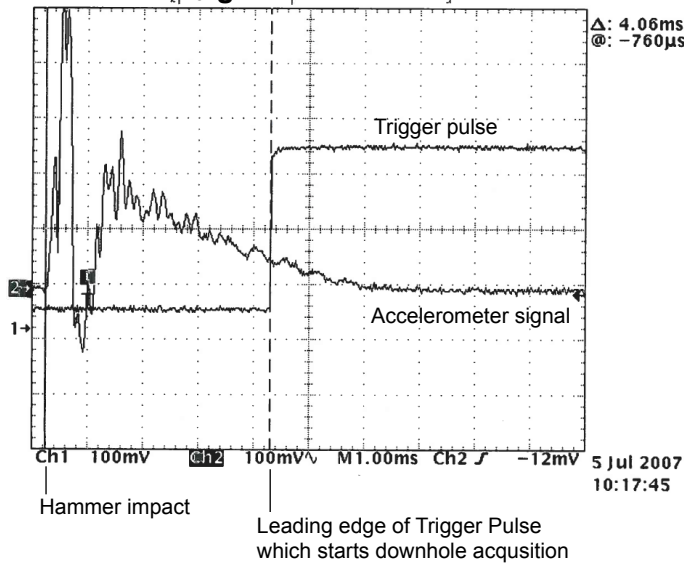
Weight Drop Source



SLB Recording System (MCM)



GISCO Timing



Info at www.giscogeo.com

GISCO Total system delay of trigger: 4 msec
 Jitter variation from trigger to trigger is less than 0.05 msec.

Latency is at least 1 msec at VSI external Trigger (downhole sampling 1 msec).

Surface Reference signal (S1) recorded Trigger pulse.
 First 4 msec of the leading edge of the pulse missed due to system delay.
 No Accelerometer signal is recorded.

Downhole record requires to shift + 4msec to compensate GISCO delay.

Observer's Note (1/6)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
306.0	09:36:08	SHAK	1			Start of Day Test 5-Dec-2007 at 155.67m
306.0	09:36:35	BKGD	2			
306.0	09:37:06	ENLO	3			
306.0	09:37:31	ENHI	4			
306.0	09:37:41	ETHD	5			
306.0	09:37:57	DRNG	6			
306.0	09:38:13	GA02	7			
306.0	09:38:24	GA04	8			
306.0	09:38:35	GA08	9			
306.0	09:38:46	GA16	10			
306.0	09:38:57	GA32	11			
306.0	09:39:14	XTLK	12			
306.0	09:39:36	XTLK	13			
306.0	09:39:57	XTLK	14			
306.0	09:40:18	EIMP	15			
1530.6	10:41:33	SHAK	16			Test at Repeatability Station 5-Dec-2007
1530.6	10:41:56	BKGD	17			
1530.6	10:42:32	ENLO	18			
1530.6	10:42:57	ENHI	19			
1530.6	10:43:06	ETHD	20			
1530.6	10:43:22	DRNG	21			
1530.6	10:43:38	GA02	22			
1530.6	10:43:49	GA04	23			
1530.6	10:44:00	GA08	24			
1530.6	10:44:11	GA16	25			
1530.6	10:44:22	GA32	26			
1530.6	10:44:39	XTLK	27			
1530.6	10:45:01	XTLK	28			
1530.6	10:45:22	XTLK	29			
1530.6	10:45:42	EIMP	30			
1530.6	10:49:59	SHOT	32	2	Offset	SP 1109 Repeatability Test
1530.6	10:51:05	SHOT	33	2	Offset	
1530.6	10:51:20	SHOT	34	2	Offset	
1530.6	10:51:35	SHOT	35	2	Offset	
1530.6	10:51:46	SHOT	36	2	Offset	
2074.9	11:37:07	SHAK	37			SP HRTT #6 Repeatability Test
2074.9	11:38:01	SHOT	38	3	Offset	
2074.9	11:39:00	SHOT	39	3	Offset	
2074.9	11:39:35	SHOT	40	3	Offset	
2074.9	11:41:00	SHOT	41	3	Offset	
2074.9	11:41:40	SHOT	42	3	Offset	
2074.9	11:42:05	SHOT	43	3	Offset	
2074.9	11:43:24	SHOT	44	3	Offset	
2074.9	11:43:40	SHOT	45	3	Offset	
2074.9	11:44:22	SHOT	46	3	Offset	
2074.9	11:47:34	BKGD	47			
2074.9	11:48:05	ENLO	48			
2074.9	11:48:29	ENHI	49			
2074.9	11:48:39	ETHD	50			
2074.9	11:48:55	DRNG	51			
2074.9	11:49:11	GA02	52			
2074.9	11:49:22	GA04	53			
2074.9	11:49:33	GA08	54			
2074.9	11:49:44	GA16	55			
2074.9	11:49:55	GA32	56			
2074.9	11:50:12	XTLK	57			
2074.9	11:50:34	XTLK	58			
2074.9	11:50:55	XTLK	59			
2074.9	11:51:15	EIMP	60			

Observer's Note (2/6)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
2210.9	12:24:31	SHOT	61	4	Offset	
2210.9	12:25:04	SHOT	62	4	Offset	
2210.9	12:25:18	SHOT	63	4	Offset	
2210.9	12:25:40	SHOT	64	4	Offset	
2210.9	12:26:46	SHOT	65	4	Offset	
2210.9	12:28:00	SHOT	66	4	Offset	
2210.9	12:28:47	SHOT	67	4	Offset	
2210.9	12:29:05	SHOT	68	4	Offset	
2210.9	12:29:21	SHOT	69	4	Offset	
2210.9	12:29:43	SHOT	70	4	Offset	
2210.9	12:30:09	SHOT	71	4	Offset	
2210.9	12:30:27	SHOT	72	4	Offset	
2210.9	12:30:47	SHOT	73	4	Offset	
2203.4	12:37:57	SHOT	74	5	Offset	
2203.4	12:38:42	SHOT	75	5	Offset	
2203.4	12:39:11	SHOT	76	5	Offset	
2203.4	12:39:29	SHOT	77	5	Offset	
2203.4	12:39:45	SHOT	78	5	Offset	
2203.4	12:39:58	SHOT	79	5	Offset	
2203.4	12:40:11	SHOT	80	5	Offset	
2203.4	12:40:23	SHOT	81	5	Offset	
2203.4	12:40:37	SHOT	82	5	Offset	
2203.4	12:40:53	SHOT	83	5	Offset	
2203.4	12:41:06	SHOT	84	5	Offset	
2203.4	12:41:22	SHOT	85	5	Offset	
2074.7	12:55:27	SHOT	86	6	Offset	
2074.7	12:55:48	SHOT	87	6	Offset	
2074.7	12:56:17	SHOT	88	6	Offset	
2074.7	12:56:46	SHOT	89	6	Offset	
2074.7	12:57:19	SHOT	90	6	Offset	
2074.7	12:57:35	SHOT	91	6	Offset	
2074.7	12:58:07	SHOT	92	6	Offset	
2074.7	12:58:26	SHOT	93	6	Offset	
2074.7	12:59:04	SHOT	94	6	Offset	
2074.7	12:59:22	SHOT	95	6	Offset	
2074.7	12:59:38	SHOT	96	6	Offset	
2067.4	13:07:42	SHAK	97			
2067.4	13:08:15	SHOT	98	7	Offset	
2067.4	13:08:44	SHOT	99	7	Offset	
2067.4	13:08:58	SHOT	100	7	Offset	
2067.4	13:09:12	SHOT	101	7	Offset	
2067.4	13:09:25	SHOT	102	7	Offset	
2067.4	13:09:36	SHOT	103	7	Offset	
2067.4	13:09:48	SHOT	104	7	Offset	
2067.4	13:10:01	SHOT	105	7	Offset	
2067.4	13:10:14	SHOT	106	7	Offset	
2067.4	13:10:28	SHOT	107	7	Offset	
2067.4	13:10:40	SHOT	108	7	Offset	
1938.9	13:23:28	SHOT	109	8	Offset	
1938.9	13:25:07	SHOT	110	8	Offset	
1938.9	13:25:23	SHOT	111	8	Offset	
1938.9	13:25:35	SHOT	112	8	Offset	
1938.9	13:25:48	SHOT	113	8	Offset	
1938.9	13:26:14	SHOT	114	8	Offset	
1938.9	13:26:27	SHOT	115	8	Offset	
1938.9	13:26:37	SHOT	116	8	Offset	
1938.9	13:26:49	SHOT	117	8	Offset	
1938.9	13:27:01	SHOT	118	8	Offset	
1938.9	13:27:13	SHOT	119	8	Offset	

Observer's Note (3/6)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1938.9	13:27:31	SHOT	120	8	Offset	
1931.2	13:33:23	SHOT	121	9	Offset	
1931.2	13:33:45	SHOT	122	9	Offset	
1931.2	13:33:59	SHOT	123	9	Offset	
1931.2	13:34:12	SHOT	124	9	Offset	
1931.2	13:34:22	SHOT	125	9	Offset	
1931.2	13:34:34	SHOT	126	9	Offset	
1931.2	13:34:46	SHOT	127	9	Offset	
1931.2	13:34:58	SHOT	128	9	Offset	
1931.2	13:35:11	SHOT	129	9	Offset	
1931.2	13:35:41	SHOT	130	9	Offset	
1931.2	13:35:55	SHOT	131	9	Offset	
1802.8	13:45:59	SHOT	132	10	Offset	
1802.8	13:46:30	SHOT	133	10	Offset	
1802.8	13:46:46	SHOT	134	10	Offset	
1802.8	13:47:01	SHOT	135	10	Offset	
1802.8	13:47:18	SHOT	136	10	Offset	
1802.8	13:47:33	SHOT	137	10	Offset	
1802.8	13:47:49	SHOT	138	10	Offset	
1802.8	13:48:04	SHOT	139	10	Offset	
1802.8	13:48:19	SHOT	140	10	Offset	
1802.8	13:48:33	SHOT	141	10	Offset	
1802.8	13:48:50	SHOT	142	10	Offset	
1795.2	13:56:26	SHOT	143	11	Offset	
1795.2	13:57:01	SHOT	144	11	Offset	
1795.2	13:57:17	SHOT	145	11	Offset	
1795.2	13:57:32	SHOT	146	11	Offset	
1795.2	13:57:44	SHOT	147	11	Offset	
1795.2	13:57:56	SHOT	148	11	Offset	
1795.2	13:58:09	SHOT	149	11	Offset	
1795.2	13:58:21	SHOT	150	11	Offset	
1795.2	13:58:33	SHOT	151	11	Offset	
1795.2	13:58:45	SHOT	152	11	Offset	
1795.2	13:58:58	SHOT	153	11	Offset	
1666.7	14:09:22	SHOT	154	12	Offset	
1666.7	14:10:46	SHOT	155	12	Offset	
1666.7	14:11:00	SHOT	156	12	Offset	
1666.7	14:11:11	SHOT	157	12	Offset	
1666.7	14:11:23	SHOT	158	12	Offset	
1666.7	14:11:33	SHOT	159	12	Offset	
1666.7	14:11:44	SHOT	160	12	Offset	
1666.7	14:11:57	SHOT	161	12	Offset	
1666.7	14:12:09	SHOT	162	12	Offset	
1666.7	14:12:45	SHOT	163	12	Offset	
1666.7	14:12:58	SHOT	164	12	Offset	
1530.6	14:26:14	SHOT	165	13	Offset	
1530.6	14:26:53	SHOT	166	13	Offset	
1530.6	14:27:21	SHOT	167	13	Offset	
1530.6	14:27:46	SHOT	168	13	Offset	
1530.6	14:28:16	SHOT	169	13	Offset	
1530.6	14:28:46	SHOT	170	13	Offset	
1530.6	14:29:00	SHOT	171	13	Offset	
1530.6	14:29:13	SHOT	172	13	Offset	
1530.6	14:29:28	SHOT	173	13	Offset	
1530.6	14:29:43	SHOT	174	13	Offset	
1530.6	14:32:32	SHOT	175	13	Offset	
1530.6	14:35:09	SHOT	176	13	Offset	
1394.4	14:47:16	SHOT	177	14	Offset	
1394.4	14:48:49	SHOT	178	14	Offset	

Observer's Note (4/6)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1394.4	14:50:28	SHOT	179	14	Offset	
1394.4	14:52:04	SHOT	180	14	Offset	
1394.4	14:53:03	SHOT	181	14	Offset	
1394.4	14:54:43	SHOT	182	14	Offset	
1394.4	14:56:14	SHOT	183	14	Offset	
1394.4	14:58:01	SHOT	184	14	Offset	
1394.4	14:59:41	SHOT	185	14	Offset	
1394.4	14:59:52	SHOT	186	14	Offset	
1394.4	15:06:39	SHOT	187	14	Offset	
1394.4	15:18:34	SHOT	188	14	Offset	
1394.4	15:19:32	SHOT	189	14	Offset	
1258.4	15:32:44	SHOT	190	15	Offset	
1258.4	15:34:34	SHOT	191	15	Offset	
1258.4	15:36:00	SHOT	192	15	Offset	
1258.4	15:50:46	SHOT	193	15	Offset	
1258.4	15:50:59	SHOT	194	15	Offset	
1258.4	15:51:16	SHOT	195	15	Offset	
1258.4	15:51:33	SHOT	196	15	Offset	
1258.4	15:51:47	SHOT	197	15	Offset	
1258.4	15:51:57	SHOT	198	15	Offset	
1258.4	15:52:06	SHOT	199	15	Offset	
1258.4	15:52:15	SHOT	200	15	Offset	
1530.6	16:57:43	SHAK	201			New Source F10, went back down to station 1380.39m
1530.6	16:58:04	BKGD	202			
1530.6	16:58:35	ENLO	203			
1530.6	16:58:59	ENHI	204			
1530.6	16:59:08	ETHD	205			
1530.6	16:59:25	DRNG	206			
1530.6	16:59:41	GA02	207			
1530.6	16:59:52	GA04	208			
1530.6	17:00:03	GA08	209			
1530.6	17:00:14	GA16	210			
1530.6	17:00:25	GA32	211			
1530.6	17:00:42	XTLK	212			
1530.6	17:01:04	XTLK	213			
1530.6	17:01:25	XTLK	214			
1530.6	17:01:45	EIMP	215			
1530.6	17:32:07	SHOT	216	17	Offset	Source F10 @ SP HRTT #6
1530.6	17:36:21	SHOT	217	17	Offset	
1530.6	17:36:53	SHOT	218	17	Offset	
1530.6	17:37:05	SHOT	219	17	Offset	
1530.6	17:37:19	SHOT	220	17	Offset	
1530.6	17:37:34	SHOT	221	17	Offset	
1530.6	17:37:47	SHOT	222	17	Offset	
1530.6	17:38:00	SHOT	223	17	Offset	
1530.6	17:38:13	SHOT	224	17	Offset	
1530.6	17:38:27	SHOT	225	17	Offset	
1530.6	17:38:44	SHOT	226	17	Offset	
1530.6	17:52:36	SHOT	227	18	Offset	
1530.6	17:54:25	SHOT	229	18	Offset	
1530.6	17:54:48	SHOT	230	18	Offset	
1530.6	17:55:01	SHOT	231	18	Offset	
1530.6	17:55:14	SHOT	232	18	Offset	
1530.6	17:55:27	SHOT	233	18	Offset	
1530.6	17:55:40	SHOT	234	18	Offset	
1530.6	17:55:53	SHOT	235	18	Offset	
1394.5	18:08:29	SHOT	236	19	Offset	
1394.5	18:08:45	SHOT	237	19	Offset	
1394.5	18:08:58	SHOT	238	19	Offset	

Observer's Note (5/6)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1394.5	18:09:13	SHOT	239	19	Offset	
1394.5	18:09:27	SHOT	240	19	Offset	
1394.5	18:09:39	SHOT	241	19	Offset	
1394.5	18:09:52	SHOT	242	19	Offset	
1258.4	18:20:47	SHOT	243	20	Offset	
1258.4	18:21:14	SHOT	244	20	Offset	
1258.4	18:21:28	SHOT	245	20	Offset	
1258.4	18:21:42	SHOT	246	20	Offset	
1258.4	18:21:55	SHOT	247	20	Offset	
1258.4	18:22:11	SHOT	248	20	Offset	
1258.4	18:22:25	SHOT	249	20	Offset	
1258.4	18:22:59	SHOT	250	20	Offset	
1122.2	18:34:28	SHOT	251	21	Offset	
1122.2	18:34:52	SHOT	252	21	Offset	
1122.2	18:35:07	SHOT	253	21	Offset	
1122.2	18:35:21	SHOT	254	21	Offset	
1122.2	18:35:34	SHOT	255	21	Offset	
1122.2	18:35:48	SHOT	256	21	Offset	
1122.2	18:36:00	SHOT	257	21	Offset	
1122.2	18:36:29	SHOT	258	21	Offset	
986.3	18:47:29	SHOT	259	22	Offset	
986.3	18:47:57	SHOT	260	22	Offset	
986.3	18:48:10	SHOT	261	22	Offset	
986.3	18:48:23	SHOT	262	22	Offset	
986.3	18:48:36	SHOT	263	22	Offset	
986.3	18:48:50	SHOT	264	22	Offset	
986.3	18:49:04	SHOT	265	22	Offset	
986.3	18:49:22	SHOT	266	22	Offset	
850.2	19:02:31	SHOT	267	23	Offset	
850.2	19:03:09	SHOT	268	23	Offset	
850.2	19:03:29	SHOT	269	23	Offset	
850.2	19:03:46	SHOT	270	23	Offset	
850.2	19:04:00	SHOT	271	23	Offset	
850.2	19:04:16	SHOT	272	23	Offset	
850.2	19:04:35	SHOT	273	23	Offset	
714.1	19:16:24	SHOT	274	24	Offset	
714.1	19:16:56	SHOT	275	24	Offset	
714.1	19:17:17	SHOT	276	24	Offset	
714.1	19:17:34	SHOT	277	24	Offset	
714.1	19:17:48	SHOT	278	24	Offset	
714.1	19:18:01	SHOT	279	24	Offset	
714.1	19:18:14	SHOT	280	24	Offset	
714.1	19:18:44	SHOT	281	24	Offset	
578.1	19:31:13	SHOT	282	25	Offset	
578.1	19:32:13	SHOT	283	25	Offset	
578.1	19:32:31	SHOT	284	25	Offset	
578.1	19:33:00	SHOT	285	25	Offset	
578.1	19:33:14	SHOT	286	25	Offset	
578.1	19:33:29	SHOT	287	25	Offset	
578.1	19:33:43	SHOT	288	25	Offset	
442.0	19:47:20	SHOT	289	26	Offset	
442.0	19:47:41	SHOT	290	26	Offset	
442.0	19:47:54	SHOT	291	26	Offset	
442.0	19:48:08	SHOT	292	26	Offset	
442.0	19:48:21	SHOT	293	26	Offset	
442.0	19:48:34	SHOT	294	26	Offset	
442.0	19:48:47	SHOT	295	26	Offset	
442.0	19:51:53	ENLO	296			End of Day Test
442.0	19:52:17	ENHI	297			

Observer's Note (6/6)

Well depth[m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
442.0	19:52:27	ETHD	298			
442.0	19:52:43	DRNG	299			
442.0	19:52:59	GA02	300			
442.0	19:53:10	GA04	301			
442.0	19:53:21	GA08	302			
442.0	19:53:32	GA16	303			
442.0	19:53:43	GA32	304			
442.0	19:54:00	XTLK	305			
442.0	19:54:22	XTLK	306			
442.0	19:54:43	XTLK	307			
442.0	19:55:03	EIMP	308			
442.0	19:55:37	DRNG	309			