0015

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Date: 2/27/2006 11:05:37 AM
Subject: Grassy Trail Seismic and Inclinometer Update Feb 24

Attached is our Seismic and Inclinometer monitoring update as of February 24,2006.

As discussed in the attachment, seismic events and accelerations have increased significantly during the past week.

It will be noted that inclinometer 2A shows some apparent deflection in an easterly direction along the axis of the dam. This deflection is uncorrected for errors at this time. All other inclinometer do not show significant movement.

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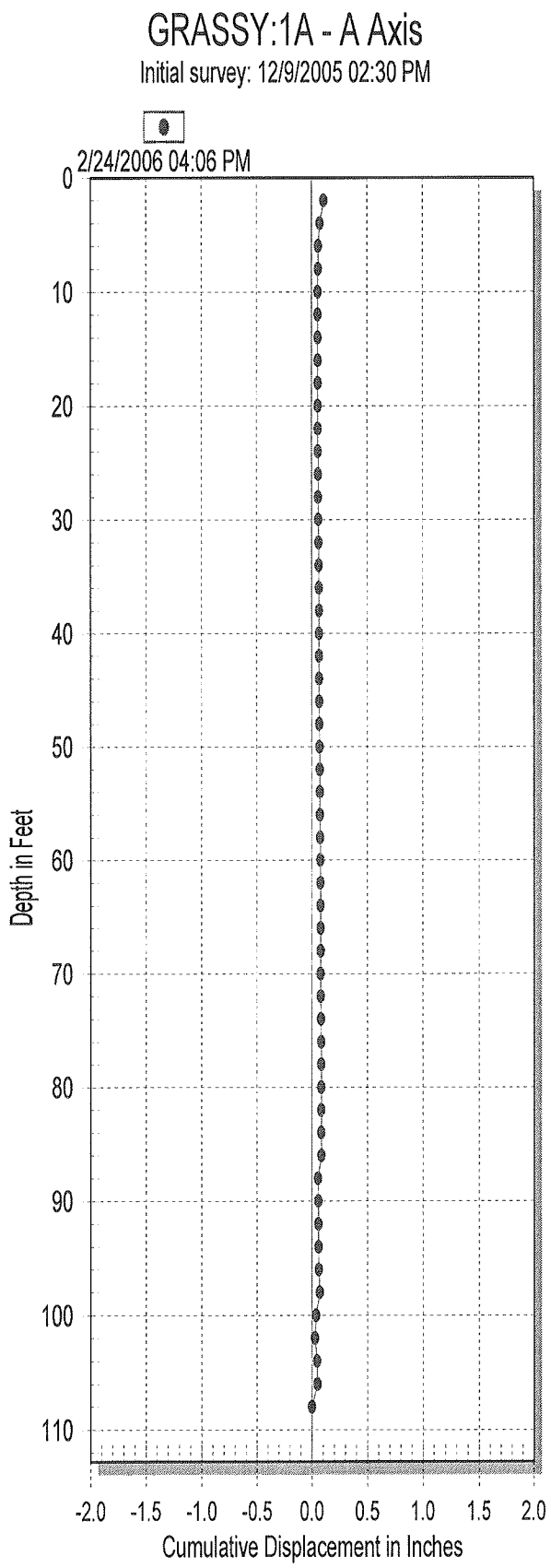
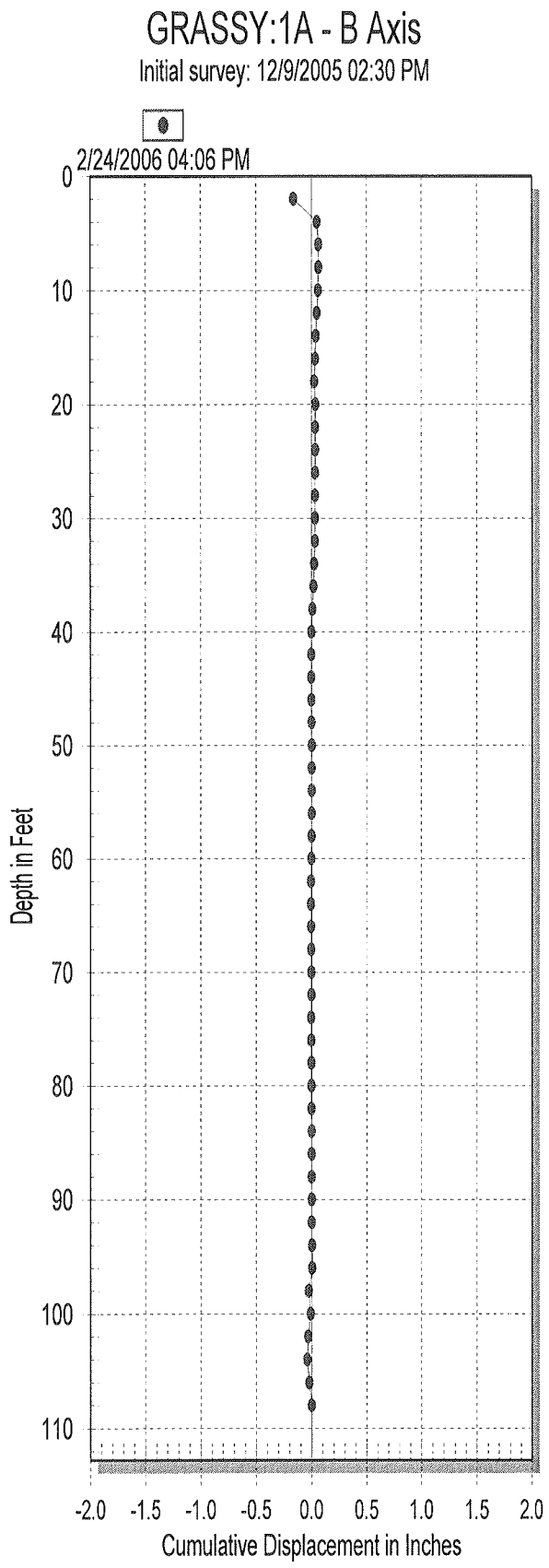
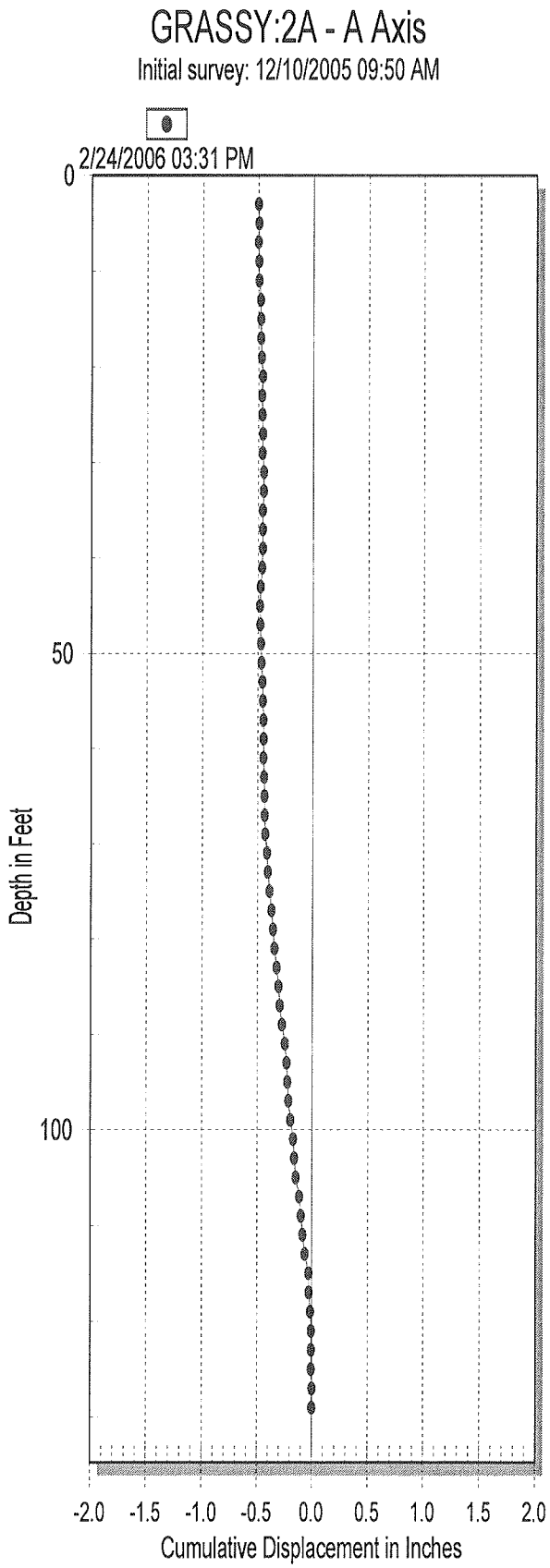
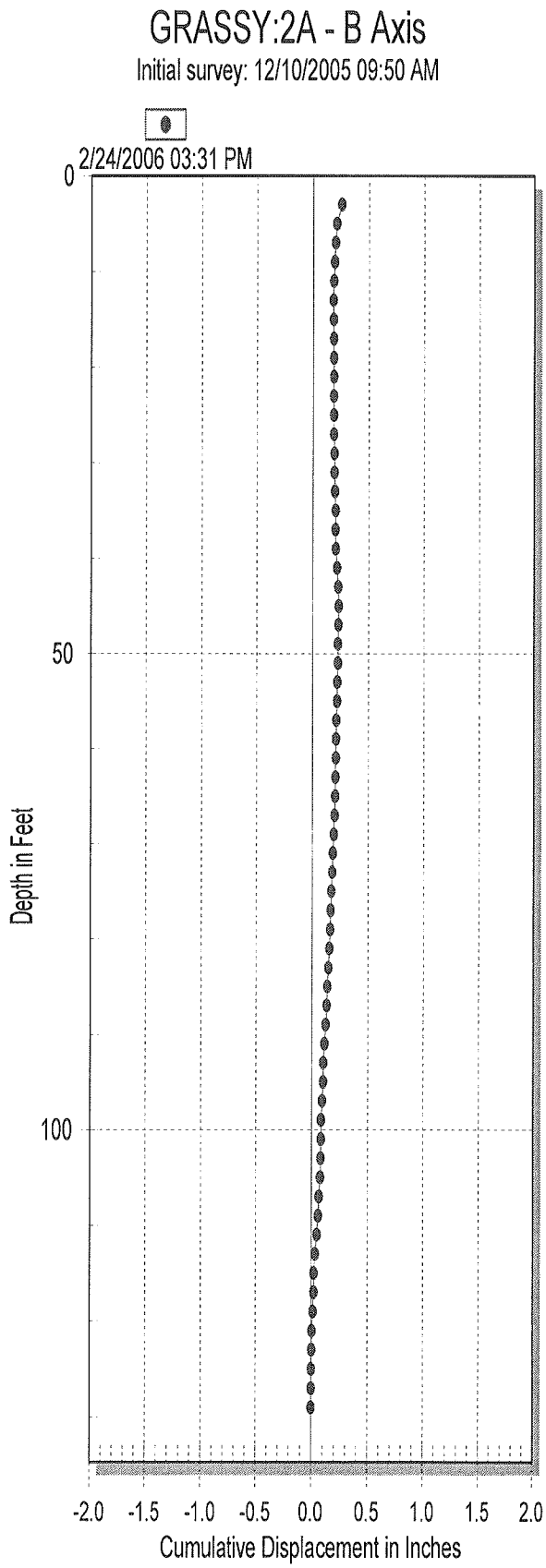
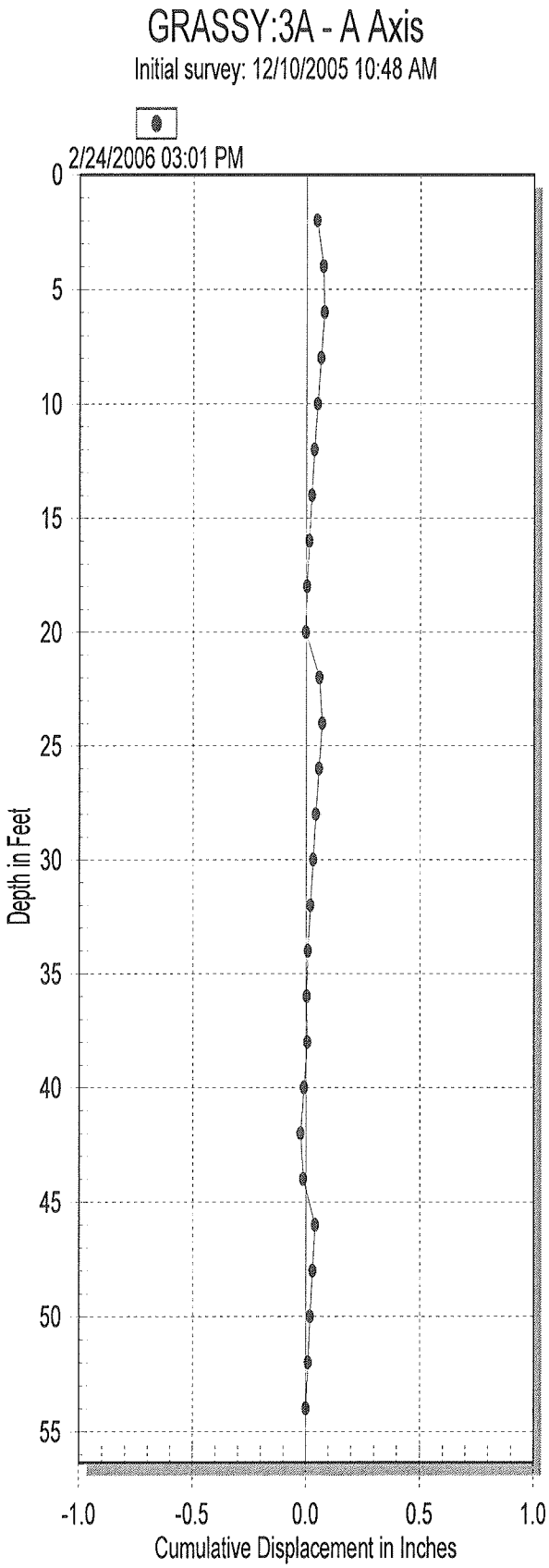

GRASSY:1A - A Axis
Initial survey: 12/9/2005 02:30 PM
2/24/2006 04:06 PM
Depth in Feet
0
10
20
30
40
50
60
70
80
90
100
110
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
Cumulative Displacement in Inches

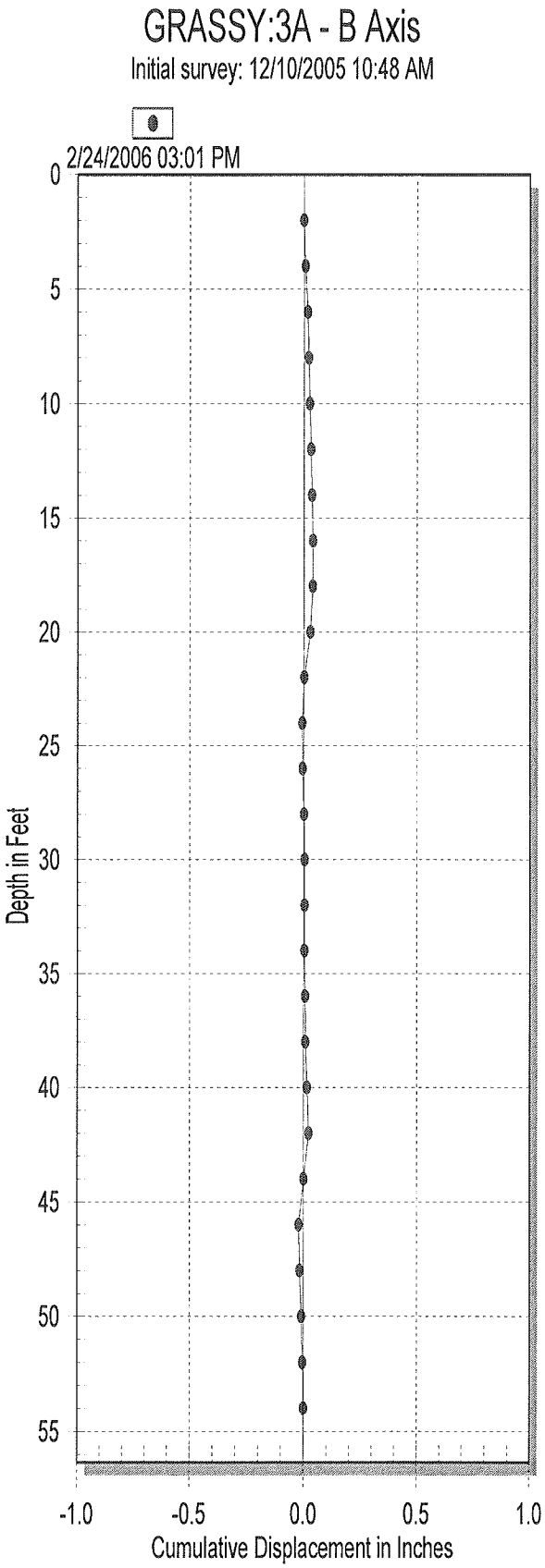

GRASSY:1A - B Axis
Initial survey: 12/9/2005 02:30 PM
2/24/2006 04:06 PM
Depth in Feet
0
10
20
30
40
50
60
70
80
90
100
110
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
Cumulative Displacement in Inches

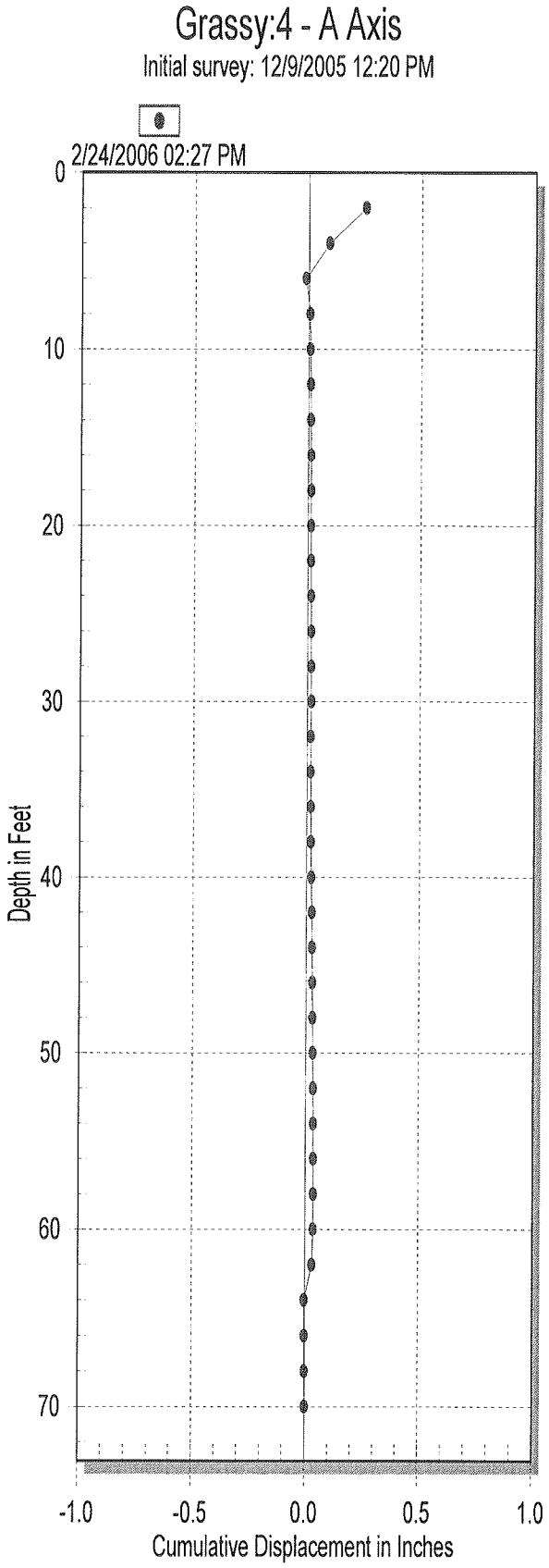
"Uncorrected"






GRASSY:3A - A Axis
Initial survey: 12/10/2005 10:48 AM
2/24/2006 03:01 PM
Depth in Feet
0
5
10
15
20
25
30
35
40
45
50
55
-1.0
-0.5
0.0
0.5
1.0
Cumulative Displacement in Inches


GRASSY:3A - B Axis
Initial survey: 12/10/2005 10:48 AM
2/24/2006 03:01 PM
Depth in Feet
0
5
10
15
20
25
30
35
40
45
50
55
-1.0
-0.5
0.0
0.5
1.0
Cumulative Displacement in Inches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2/24/2006 02:27 PM
Depth in Feet
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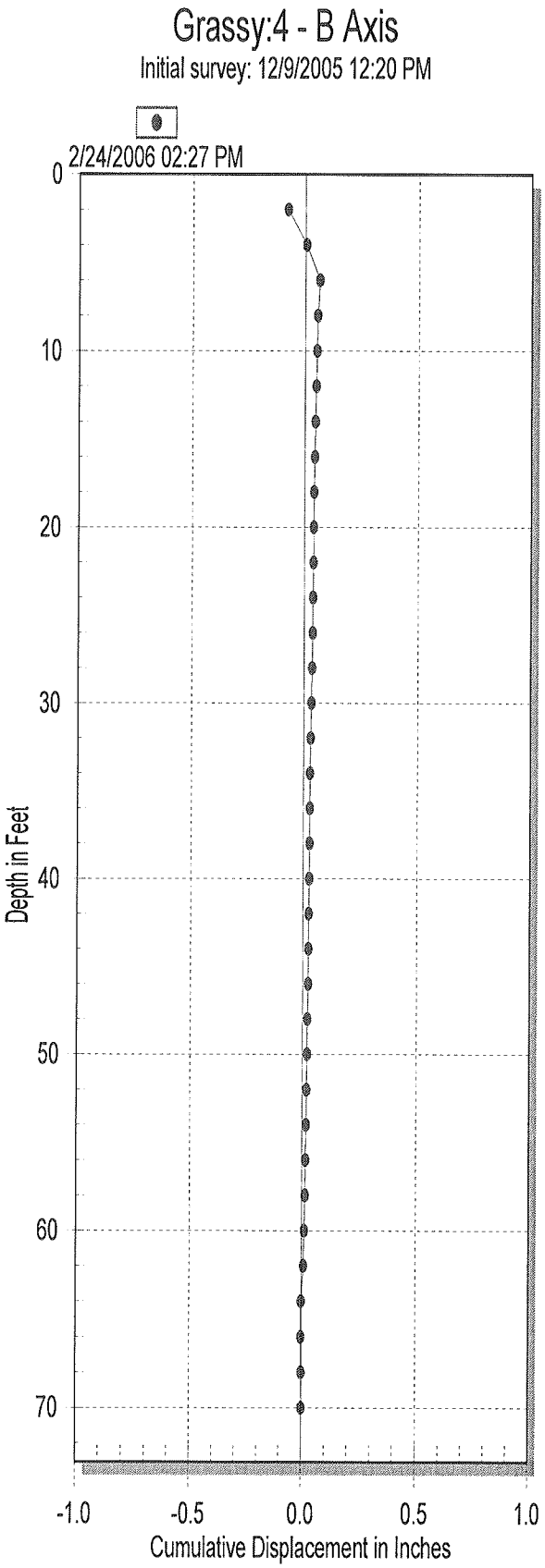
10
20
30
40
50
60
70
-1.0
-0.5
0.0
0.5
1.0
Cumulative Displacement in Inches


Grassy:4 - B Axis
Initial survey: 12/9/2005 12:20 PM
2/24/2006 02:27 PM
Depth in Feet
0
10
20
30
40
50
60
70
-1.0
-0.5
0.0
0.5
1.0
Cumulative Displacement in Inches

For the one-week period between February 17, and February 24, 2006 six earthquakes were recorded near the site by the UUSS. These MIS earthquakes ranged in magnitude from 1.5 to a high of 2.0. All of these events were recorded on both the Dam and Hillside units.

The number of events recorded on the Hillside accelerometer increased significantly during the past week with 36 seismic events recorded while 27 events were recorded during the previous two-weeks (17 days).

The number of events recorded on the Dam also showed a significant increase with 31 events during the past week compared to 24 events during the previous two-weeks (17 days).

As the location of mining moves closer to the dam the PGA values have also shown a significant increase. During the 2.0 magnitude earthquake on February 18, 2006 the Hillside unit recorded a PGA value of **0.091g**. Previously 0.0315g was the highest PGA value recorded. This earthquake also generated a PGA value recorded on the Dam at **0.0365g**. On February 20, 2006 a magnitude 1.6 earthquake generated a PGA of **0.0862g** on the Hillside unit and the highest PGA recorded to date on the Dam at **0.058g**

Grassy Trail Dam, Carbon County, Utah
2006 Hillside unit #9690 Dam #9689
Printed: February 27, 2006 (V 4.37 - 4.37) Event Report: Event List - c:\blast\event

Type	Serial No.	Date/Time	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Trigger	Tran Accel (g)	Vert Accel (g)	Long Accel (g)	Description	Post Event Note first line
LOG	BE9689	Feb 17 /06 11:58:41	***	***	***	***	***	***	***	***	Start Monitoring	Start Monitoring
LOG	BE9690	Feb 17 /06 13:31:06	***	***	***	***	***	***	***	***	Start Monitoring	Start Monitoring
W	BE9689	Feb 18 /06 08:23:31	5.10	2.29	4.51	5.12	Vert	0.0282	0.0232	0.0365	Grassy Trail Dam	Earthquake Mag 2.0
W	BE9690	Feb 18 /06 08:23:31	9.68	4.16	2.71	9.74	Vert	0.0911	0.0447	0.0315	Hillside	EQ Mag 2.0, PGA 0.0911g largest recorded
W	BE9689	Feb 18 /06 14:41:16	0.825	0.635	1.19	1.27	Vert	0.00829	0.00829	0.00994	Grassy Trail Dam	
W	BE9690	Feb 18 /06 14:41:17	1.17	0.492	1.14	1.38	Long	0.00829	0.00829	0.00829	Hillside	
W	BE9689	Feb 18 /06 17:33:57	1.49	1.10	1.17	1.97	Vert	0.00994	0.00829	0.0116	Grassy Trail Dam	Mag 1.6
W	BE9690	Feb 18 /06 17:33:57	1.75	0.746	1.60	2.04	Vert	0.0116	0.0116	0.00994	Hillside	Mag 1.6
W	BE9689	Feb 18 /06 18:56:36	0.635	0.397	0.603	0.937	Tran	0.00829	0.00663	0.00994	Grassy Trail Dam	
W	BE9690	Feb 18 /06 18:56:36	0.508	0.444	0.683	0.741	Long	0.00829	0.00663	0.00829	Hillside	
W	BE9689	Feb 18 /06 20:56:45	0.794	0.460	0.667	1.06	Tran	0.00829	0.00663	0.00829	Grassy Trail Dam	Mag 1.6
W	BE9690	Feb 18 /06 20:56:45	1.11	0.460	0.921	1.17	Tran	0.00829	0.00663	0.00829	Hillside	Mag 1.6
W	BE9689	Feb 19 /06 00:19:31	0.619	0.413	0.571	0.817	Tran	0.00663	0.00663	0.0149	Grassy Trail Dam	
W	BE9690	Feb 19 /06 00:19:31	0.381	0.810	0.333	0.811	Vert	0.00497	0.0133	0.00663	Hillside	
W	BE9690	Feb 19 /06 08:50:27	0.317	0.238	0.603	0.655	Long	0.00663	0.00663	0.00663	Hillside	
W	BE9689	Feb 19 /06 11:21:43	0.651	0.333	0.254	0.689	Tran	0.00663	0.00663	0.0166	Grassy Trail Dam	
W	BE9690	Feb 19 /06 15:12:44	0.317	0.317	0.603	0.617	Long	0.00497	0.00829	0.00663	Hillside	
W	BE9689	Feb 19 /06 17:35:59	0.524	0.381	0.619	0.804	Long	0.00663	0.00663	0.0116	Grassy Trail Dam	
W	BE9690	Feb 19 /06 17:35:59	0.444	0.349	0.667	0.691	Long	0.00663	0.00497	0.00663	Hillside	
W	BE9689	Feb 19 /06 22:15:48	1.41	0.937	0.984	1.72	Vert	0.0116	0.00994	0.0116	Grassy Trail Dam	Mag 1.5
W	BE9690	Feb 19 /06 22:15:48	1.76	0.921	2.05	2.53	Vert	0.0199	0.00994	0.0182	Hillside	Mag 1.5
W	BE9689	Feb 20 /06 00:09:32	0.492	0.286	0.619	0.712	Long	0.00663	0.00663	0.0149	Grassy Trail Dam	
W	BE9690	Feb 20 /06 00:09:32	0.238	0.794	0.270	0.803	Vert	0.00497	0.0133	0.00829	Hillside	
W	BE9690	Feb 20 /06 07:45:29	0.397	0.222	0.667	0.739	Long	0.00663	0.00663	0.00663	Hillside	
W	BE9690	Feb 20 /06 13:05:14	0.429	0.317	0.683	0.790	Long	0.00663	0.00663	0.00663	Hillside	
W	BE9689	Feb 20 /06 16:55:52	5.51	3.02	5.70	5.84	Vert	0.0282	0.0298	0.0580	Grassy Trail Dam	Mag 1.6 EQ PGA 0.058g largest PGA recorded on dam
W	BE9690	Feb 20 /06 16:55:52	6.83	3.16	5.60	7.81	Vert	0.0862	0.0348	0.0464	Hillside	Mag 1.6 0.0862g
W	BE9690	Feb 20 /06 20:30:56	0.508	0.349	0.619	0.659	Long	0.00663	0.00829	0.0116	Hillside	
W	BE9689	Feb 20 /06 21:23:01	0.730	0.492	0.984	1.09	Long	0.00663	0.00829	0.00994	Grassy Trail Dam	
W	BE9690	Feb 20 /06 21:23:01	0.349	1.05	0.460	1.06	Vert	0.00663	0.0149	0.00994	Hillside	
W	BE9689	Feb 21 /06 00:56:17	0.635	0.365	0.429	0.762	Tran	0.00663	0.00663	0.00663	Grassy Trail Dam	
W	BE9690	Feb 21 /06 00:56:17	0.476	0.270	0.762	0.867	Long	0.00663	0.00829	0.00663	Hillside	
W	BE9689	Feb 21 /06 03:14:26	0.683	0.444	0.429	0.761	Tran	0.00663	0.00663	0.00994	Grassy Trail Dam	
W	BE9690	Feb 21 /06 03:14:26	0.508	0.333	0.730	0.890	Long	0.00663	0.00829	0.00663	Hillside	
W	BE9689	Feb 21 /06 09:59:10	0.556	0.397	0.667	0.792	Long	0.00829	0.00663	0.00829	Grassy Trail Dam	
W	BE9690	Feb 21 /06 09:59:10	0.508	0.333	0.762	0.783	Long	0.00663	0.00663	0.00829	Hillside	
W	BE9689	Feb 21 /06 10:07:36	0.762	0.381	0.333	0.802	Tran	0.00829	0.00663	0.0116	Grassy Trail Dam	
W	BE9689	Feb 21 /06 14:24:32	2.05	0.889	0.952	2.33	Long	0.0133	0.0116	0.0133	Grassy Trail Dam	Mag 1.5
W	BE9690	Feb 21 /06 14:24:32	1.78	1.11	1.64	2.07	Vert	0.0133	0.0166	0.0133	Hillside	Mag 1.5
W	BE9689	Feb 21 /06 16:36:34	0.651	0.429	0.270	0.706	Tran	0.00829	0.00663	0.0133	Grassy Trail Dam	
W	BE9690	Feb 21 /06 17:25:37	0.349	0.270	0.651	0.670	Long	0.00497	0.00663	0.00663	Hillside	
W	BE9689	Feb 21 /06 18:02:49	0.698	0.365	0.365	0.749	Tran	0.00663	0.00994	0.00663	Grassy Trail Dam	
W	BE9690	Feb 21 /06 18:02:50	0.698	0.333	0.460	0.759	Tran	0.00829	0.00663	0.00994	Hillside	
W	BE9689	Feb 21 /06 18:57:49	0.889	0.603	0.651	0.983	Vert	0.00829	0.00663	0.00829	Grassy Trail Dam	
W	BE9690	Feb 21 /06 18:57:49	0.635	0.413	0.984	1.17	Long	0.00663	0.00663	0.00829	Hillside	
W	BE9689	Feb 21 /06 19:11:46	0.762	0.476	0.540	0.950	Tran	0.00829	0.00663	0.00663	Grassy Trail Dam	
W	BE9690	Feb 21 /06 19:11:46	0.762	0.381	0.921	1.05	Long	0.00829	0.00829	0.00829	Hillside	
W	BE9690	Feb 21 /06 19:42:00	0.206	0.651	0.238	0.654	Vert	0.00497	0.00994	0.00663	Hillside	
W	BE9689	Feb 21 /06 23:10:00	0.778	0.492	0.540	1.00	Tran	0.00829	0.00663	0.0133	Grassy Trail Dam	
W	BE9690	Feb 21 /06 23:10:00	1.25	0.524	0.921	1.40	Tran	0.00994	0.00663	0.00829	Hillside	
W	BE9689	Feb 21 /06 23:31:27	1.38	0.857	1.70	1.92	Vert	0.0116	0.00994	0.0166	Grassy Trail Dam	
W	BE9690	Feb 21 /06 23:31:27	0.667	2.05	0.651	2.06	Vert	0.00829	0.0298	0.0116	Hillside	
W	BE9689	Feb 22 /06 02:55:00	0.794	0.381	0.349	0.819	Tran	0.00829	0.00663	0.0116	Grassy Trail Dam	
W	BE9689	Feb 22 /06 05:15:48	1.00	0.635	0.587	1.10	Vert	0.00829	0.00663	0.00663	Grassy Trail Dam	
W	BE9690	Feb 22 /06 05:15:48	0.746	0.429	0.968	1.21	Long	0.00829	0.00663	0.00829	Hillside	
W	BE9689	Feb 22 /06 07:16:43	0.651	0.667	0.397	0.844	Tran	0.00994	0.00663	0.0149	Grassy Trail Dam	
W	BE9690	Feb 22 /06 07:16:43	0.794	0.619	1.13	1.14	Vert	0.00829	0.00829	0.00994	Hillside	
W	BE9690	Feb 22 /06 08:39:26	0.381	0.302	0.698	0.717	Long	0.00663	0.00829	0.00829	Hillside	
W	BE9689	Feb 22 /06 14:53:21	1.13	1.05	0.968	1.41	Long	0.0116	0.00994	0.0116	Grassy Trail Dam	
W	BE9690	Feb 22 /06 14:53:21	1.83	1.35	1.83	2.24	Vert	0.0199	0.0149	0.0116	Hillside	
W	BE9689	Feb 22 /06 18:23:54	0.810	0.746	1.32	1.57	Vert	0.00994	0.00829	0.0133	Grassy Trail Dam	
W	BE9690	Feb 22 /06 18:23:54	0.714	0.698	1.30	1.32	Vert	0.00829	0.00829	0.0116	Hillside	
W	BE9689	Feb 22 /06 22:31:50	0.730	0.476	0.333	0.747	Tran	0.00829	0.00663	0.00663	Grassy Trail Dam	
W	BE9689	Feb 23 /06 00:17:23	0.413	0.270	0.603	0.664	Long	0.00663	0.00497	0.0149	Grassy Trail Dam	
W	BE9690	Feb 23 /06 00:17:23	0.222	0.730	0.254	0.735	Vert	0.00663	0.00994	0.00663	Hillside	
W	BE9689	Feb 23 /06 02:19:28	0.873	0.476	0.381	0.930	Tran	0.00663	0.00663	0.00663	Grassy Trail Dam	
W	BE9690	Feb 23 /06 02:19:28	0.603	0.254	0.651	0.866	Long	0.00663	0.00663	0.00994	Hillside	
W	BE9690	Feb 23 /06 09:03:20	0.667	0.333	0.587	0.718	Tran	0.00663	0.00497	0.00663	Hillside	
LOG	BE9689	Feb 24 /06 12:30:03	***	***	***	***	***	***	***	***	Keyboard Stop	No events recorded. (Keyboard Exit)
W	BE9690	Feb 24 /06 13:30:08	0.651	0.270	0.952	1.11	Tran	0.00829	0.00497	0.00829	Hillside	
LOG	BE9690	Feb 24 /06 13:40:20	***	***	***	***	***	***	***	***	Keyboard Stop	No events recorded. (Keyboard Exit)