DOWN
Construction
Preliminary Data
Lake Louisa State Park

Aquifer System Monitor Wells:
Floridan L-0729
Floridan L-0730

SJRWMD Program No. 31-58200

Division of Ground Water Programs,
Department of Resource Management
St. Johns River Water Management District
Palatka, Florida

September 18, 2000

All data, figures, tables and information are provisional and generated for the Division of Ground Water Program's use.

Table of Contents

General Information

Site: Lake Louisa State Park

Service Request: Brian McGurk Division of Ground Water Programs

Purpose: Ground water model data for Division of Needs And Sources

Work:

Monitor Well Construction
Southern Well Services Inc.

Geophysical Logs
SJRWMD
Advanced Borehole Services (ABS)

Video Survey
Florida Department of Transportation (FDOT)
Deep Venture
MV Geophysical Surveys Inc.

Report: Robert Brooks and John Sego

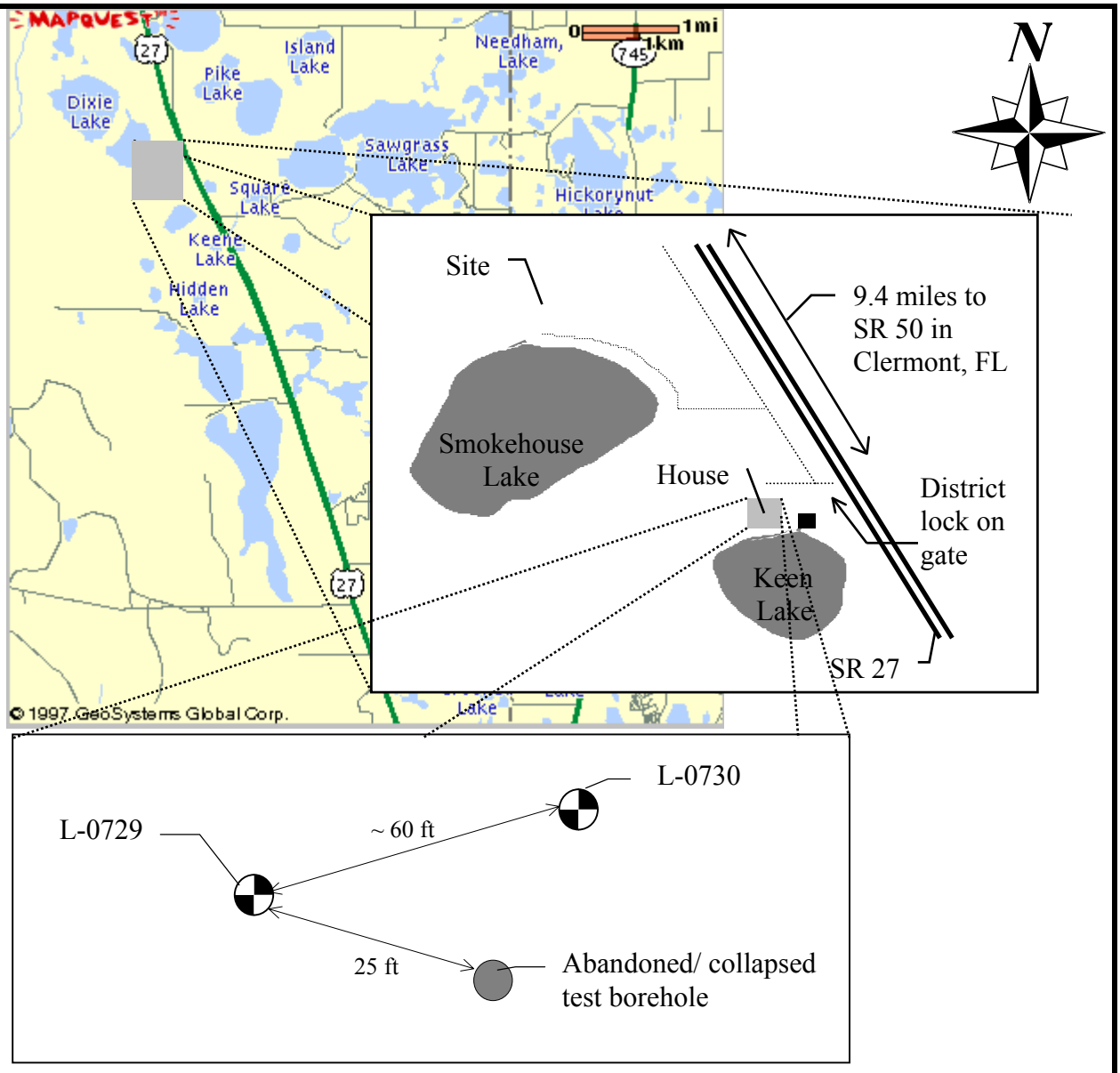
Notes:

1. Testhole collapsed while drilling 8-inch dia. pilot hole. Pit casing (36-inch dia. steel casing) dropped approximately two feet. Testhole back plugged to surface with grout and abandoned.

2. L-0729 and L-0730; pit casing set with bucket auger.

3. L-0729; pneumatic hammer utilized to advance 24-inch dia. casing to 250 ft bls.

4. L-0730; pneumatic hammer utilized to advance 18-inch dia. casing to 350 ft bls.



Not to Scale

Site:	Lake Louisa
GPS Lat/Long:	282520/814340
TRS:	242604
Topo:	Lake Louisa
Site Elevation:	120 ft NGVD
Project No:	31-58200

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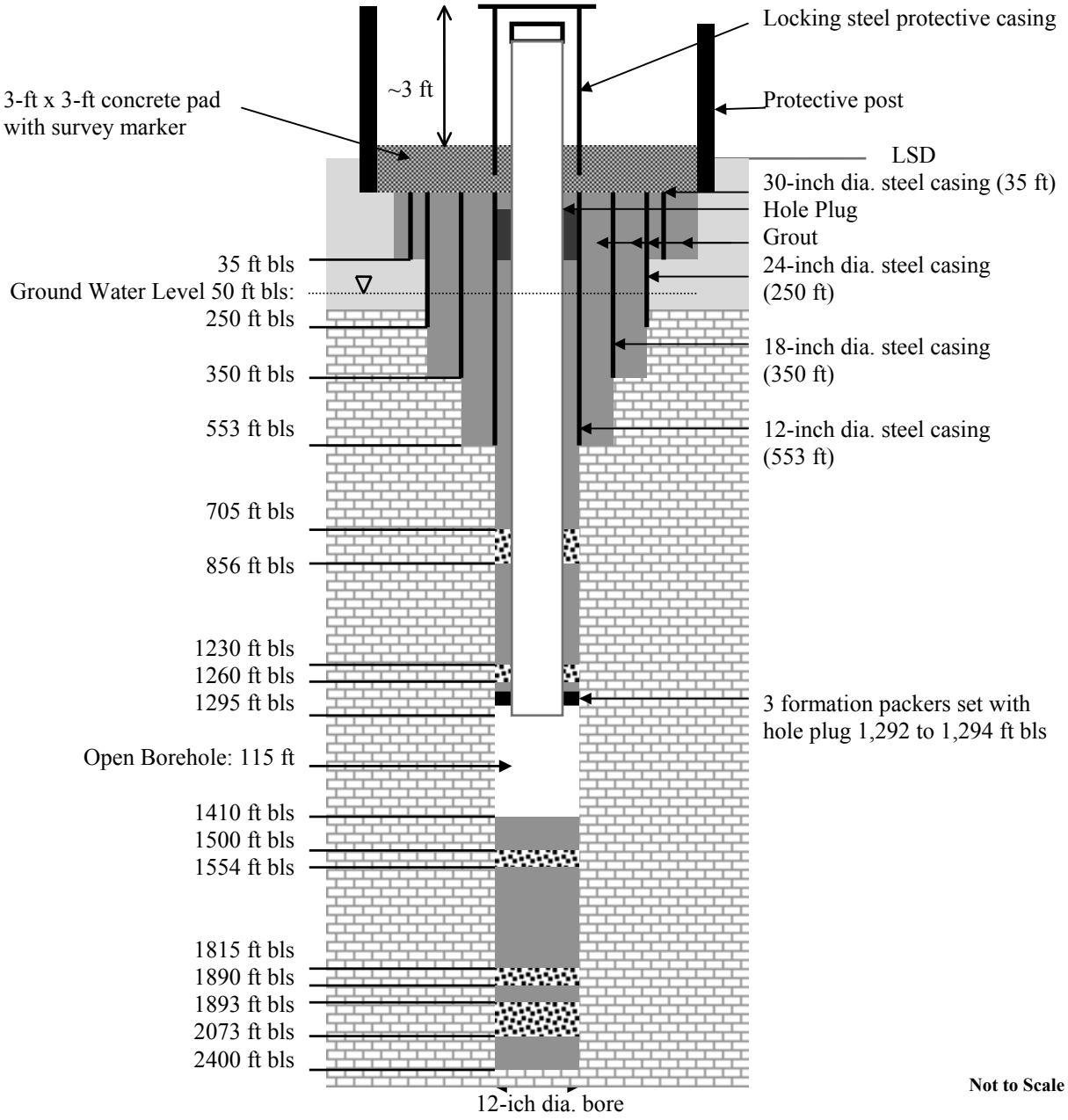
Figure 1. Site Map



Site:	Lake Louisa
Driller:	Southern Well Services, Inc.
Well Completed:	March 8, 2000

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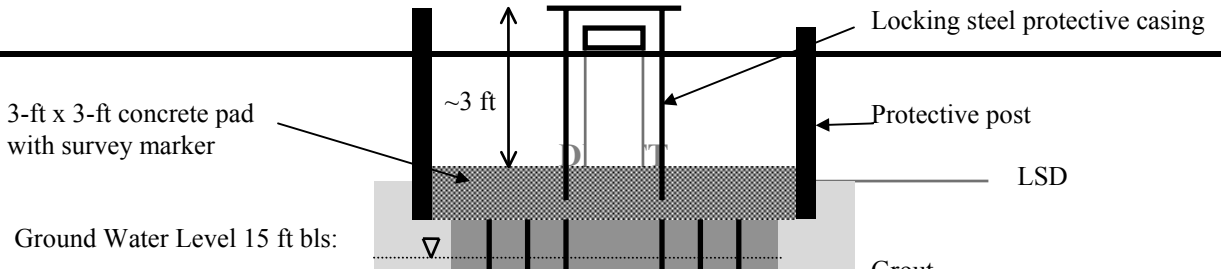
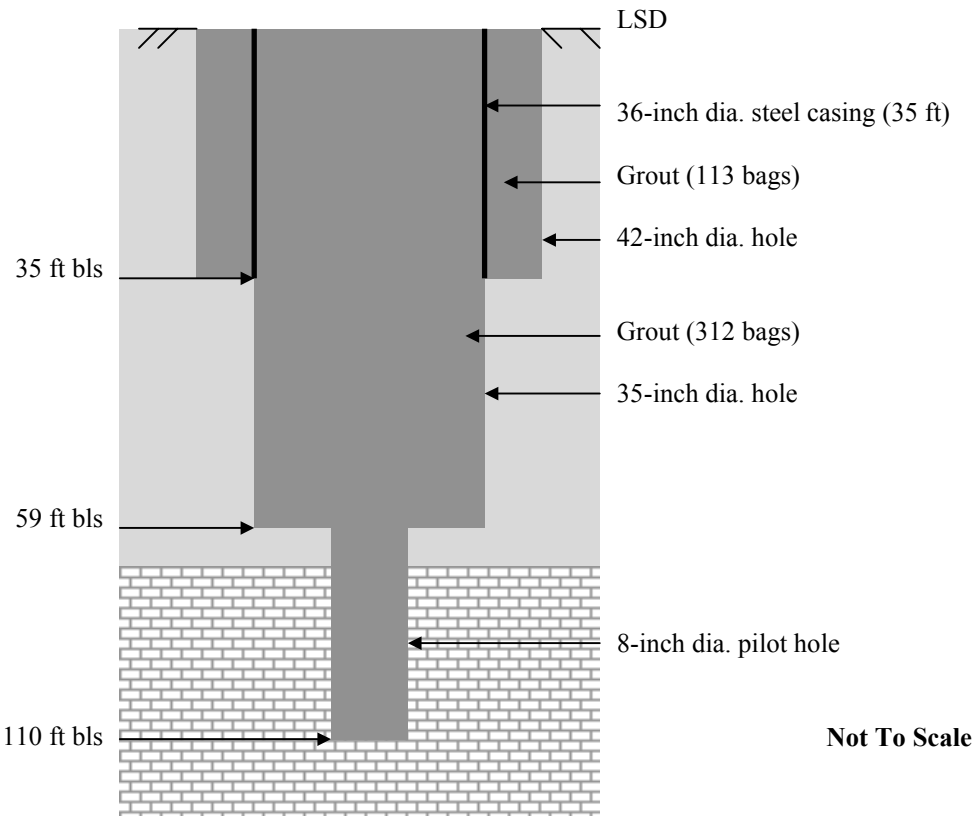
Figure 2. Monitor Well L-0729



Site:	Lake Louisa	**SJRWMD**
Driller:	Southern Well Services, Inc.	**Figure 3. Monitor Well L-0730**
Well Completed:	April 7, 2000	



Testhole collapsed while drilling out 8-inch dia. pilot hole. Pit casing (36-inch dia. steel casing) dropped approximately two feet. Testhole back plugged to surface with grout and abandoned.

Site:	Lake Louisa
Driller:	Southern Well Services, Inc.
Testhole Abandoned:	September 29, 1999

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Figure 4. Testhole

Table 1. **Ground Water Levels** (page 1 of 3)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego **Casing Depth**: Ref Grout Table

Water Levels			Well Borehole Characteristics		
Date/Time (yy:mm:dd/hh:mm)	**Casing (ft bls)**	**Rod (ft bls)**	**Total Depth (ft bls)**	**Open Hole (ft)**	**Drilling Rate (ft/hr)**
991012-1102	10.5	NR	180	41	NA
991013-0800	12.3	NR	215	76	NA
991103-0718	15.2	NR	402	52	NA
991103-1050	16.4	16.5	435	85	NA
991104-0805	15.2	15.2	465	115	NA
991104-1340	16.1	16.0	497	147	NA
991109-1205	14.9	NR	560	210	NA
991130-0700	14.6	NR	615	62	NA
991130-0830	15.9	15.7	646	93	13
991130-1000	16.0	15.9	678	125	13
991130-1314	17.1	15.7	710	157	32
991130-1440	17.1	15.6	743	190	33
991130-1601	16.4	16.5	774	221	44
991130-0700	16.3	16.0	807	254	57
991201-0700	15.1	15.3	835	282	42
991201-0830	16.4	16.8	870	317	35
991201-1022	16.4	15.7	901	348	24
991201-1205	16.6	16.0	930	377	26
991201-1345	16.9	16.2	960	407	15
991201-1627	17.0	17.0	993	440	10
991202-0700	16.1	NR	1010	457	16
991202-0836	16.7	16.5	1026	473	13
991202-1124	17.0	17.2	1056	503	13
991202-1425	16.9	15.3	1086	533	11
991202-1802	17.1	19.1	1120	567	9
991203-0735	16.0	NR	1140	587	NA
991203-0835	16.7	18.9	1150	597	19
991203-1054	18.3	19.0	1182	629	11
991206-0836	20.0	NR	1200	647	9
991206-1050	20.8	21.1	1215	662	9

Table 1. **Ground Water Levels** (page 2 of 3)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego **Casing Depth**: Ref Grout Table

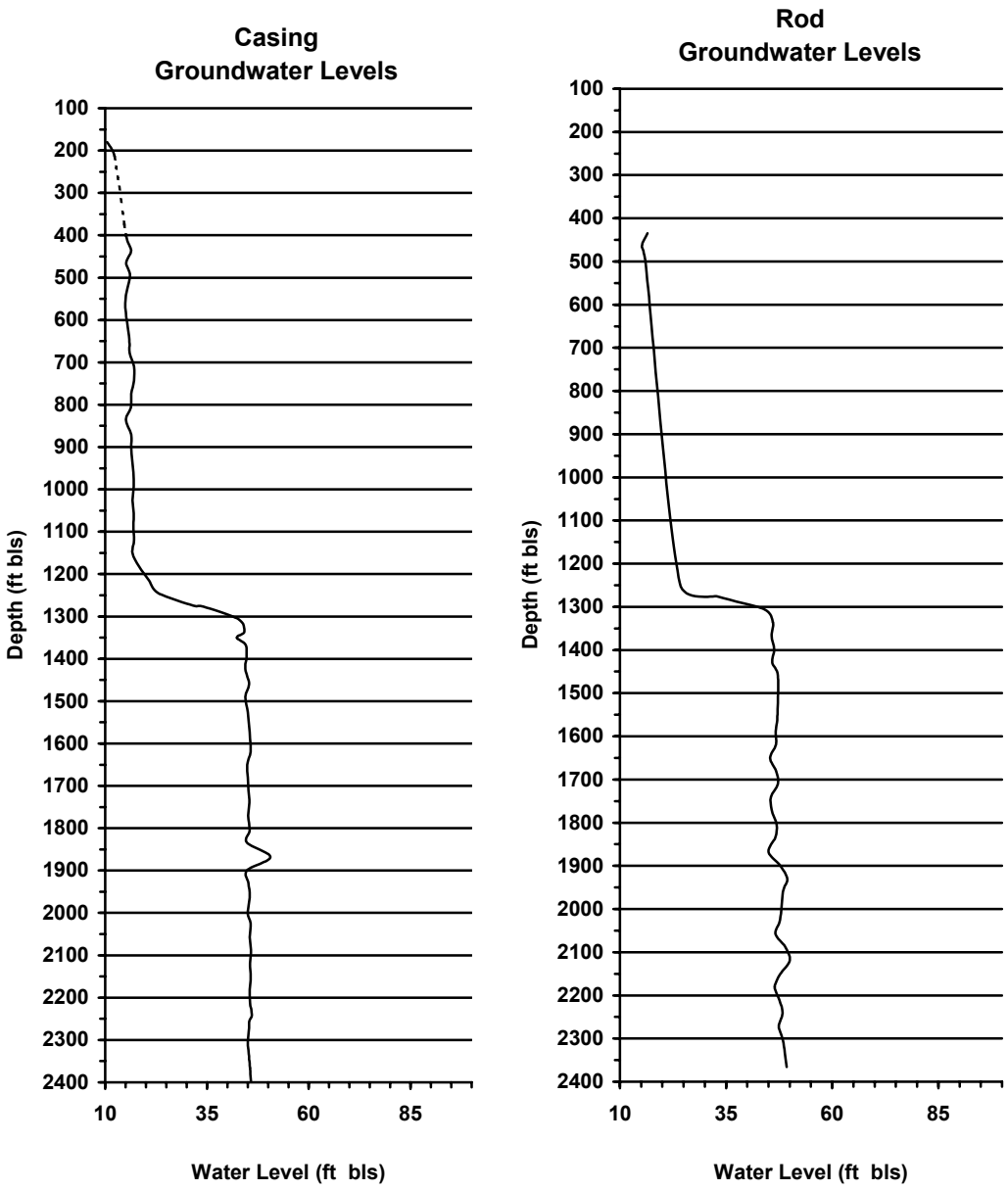
Water Levels			Well Borehole Characteristics		
Date/Time (yy:mm:dd/hh:mm)	Casing (ft bls)	Rod (ft bls)	Total Depth (ft bls)	Open Hole (ft)	Drilling Rate (ft/hr)
991206-1417	23.0	24.1	1245	692	NA
991207-0645	32.0	NR	1275	722	13
991207-0743	33.7	33.0	1276	723	8
991207-1136	42.7	44.0	1306	753	9
991207-1629	44.2	46.0	1336	783	8
991208-0645	42.3	NR	1350	797	8
991208-0858	44.5	45.7	1367	814	9
991208-1245	44.7	46.3	1399	846	10
991209-0645	44.4	NR	1412	859	7
991209-1115	44.5	45.9	1429	876	5
991209-1630	45.3	47.2	1460	907	NR
991213-1000	44.4	NR	1490	937	NR
991214-1418	45.0	NR	1526	973	6
991216-0700	45.3	47.1	1558	1005	4
991216-1350	45.6	46.7	1588	1035	4
991217-0730	45.7	46.8	1619	1066	6
991220-0730	44.9	45.4	1650	1097	10
991220-1400	45.1	46.8	1680	1127	6
991221-0710	45.2	47.2	1710	1157	9
991221-1140	45.4	45.6	1740	1187	8
991221-1530	45.1	45.7	1770	1217	8
991222-1225	45.5	46.9	1805	1252	6
991227-1500	44.8	46.6	1834	1281	NR
991228-0715	50.6	45.0	1868	1315	7
991228-1213	44.8	47.8	1900	1347	7
991229-0615	45.2	49.4	1930	1377	7
991229-1320	45.5	48.4	1960	1407	5
991230-NR	NR	NR	1994	1441	9
991230-NR	NR	NR	2000	1447	NR

Table 1. **Ground Water Levels** (page 3 of 3)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego, R brooks **Casing Depth**: Ref Grout Table

Water Levels			Well Borehole Characteristics		
Date/Time (yy:mm:dd/hh:mm)	**Casing (ft bls)**	**Rod (ft bls)**	**Total Depth (ft bls)**	**Open Hole (ft)**	**Drilling Rate (ft/hr)**
000118/0900	45.0	NR	2000	1447	7
000118/1315	45.7	47.7	2025	1472	6
000119/0715	45.5	46.6	2057	1504	6
000119/1310	45.8	48.9	2087	1534	9
000119/1640	45.6	50.0	2119	1566	8
000120/0700	45.7	47.7	2151	1598	6
000120/1230	45.5	46.5	2181	1628	8
000120/1700	45.6	47.6	2211	1658	9
000121/0730	46.0	48.3	2241	1688	6
000124/1430	45.4	NR	2255	1702	9
000125/0835	45.3	47.4	2272	1719	8
000125/1345	45.0	48.4	2304	1751	8
000126/0700	45.3	NR	2342	1789	7
000126/1120	45.6	49.3	2366	1813	7
000127/0730	45.8	NR	2397	1844	5
000127/NR	NR	NR	2400	1847	2



Site: Lake Louisa

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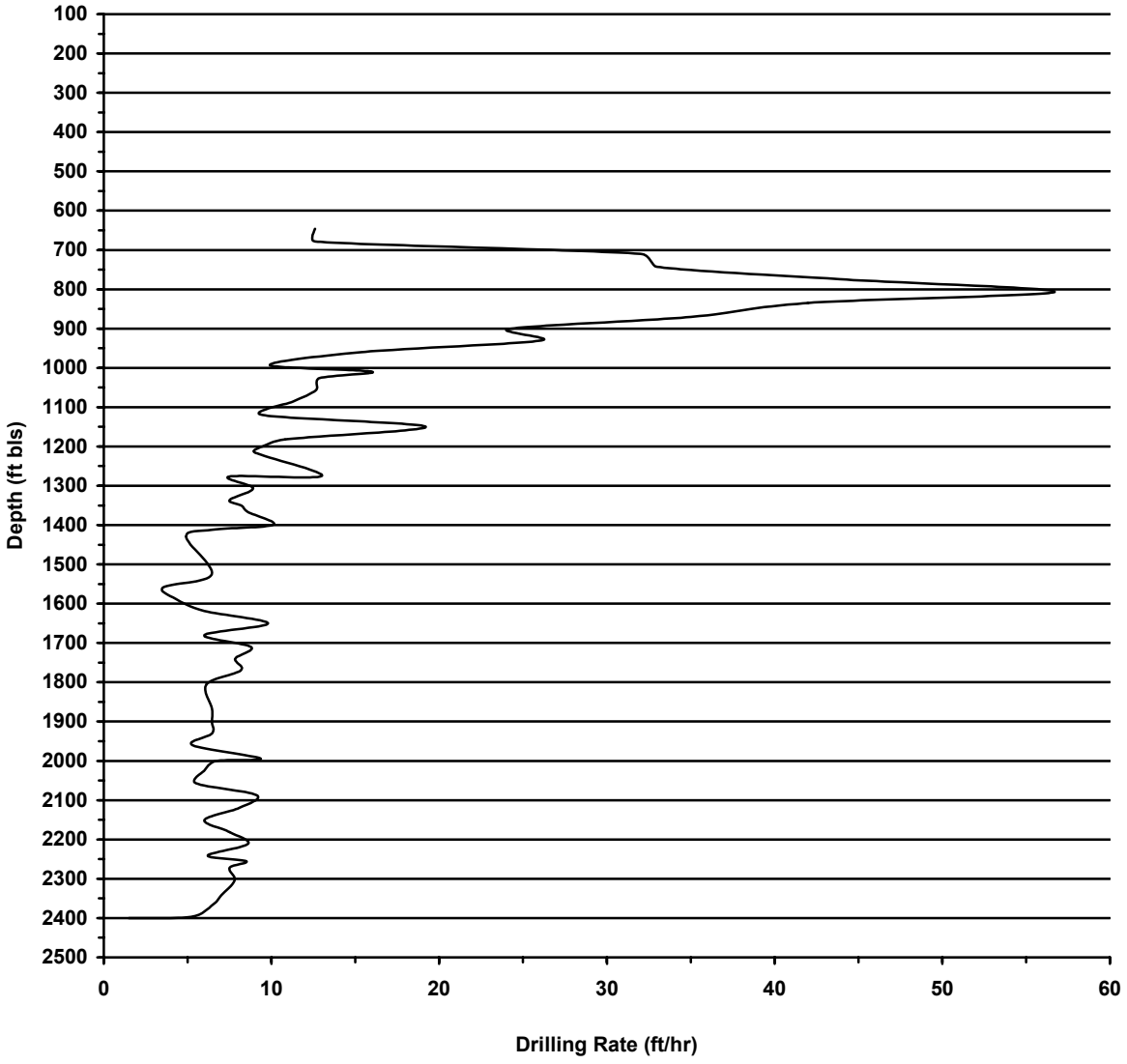
Figure 5. Drilling Ground Water Levels
Floridan Monitor Well L-0729



Site: Lake Louisa	**SJRWMD**
	Figure 6. Drilling Rate Floridan Monitor Well L-0729

Table 2. **Drill Stem Ground Water Quality** (page 1 of 3)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego **Casing Depth**: Ref Grout Table

LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft bls)	Casing Depth (ft bls)	Temp (Deg C)	Cl- (mg/L)	Conductivity (us/cm)
	991012-1842	212	139	28	NR	270
	991012-1903	215	139	24.5	NR	280
✓	991103-1035	435	350	23	3.5	140
	991103-1830	465	350	NR	4.0	140
	991104-1315	497	350	22	4.0	160
	991104-1715	530	350	23	4.0	175
	991104-1700	550	350	24	4.5	190
	991130-NR	615	553	NA	NA	138
	991130-NR	646	553	NA	7.7	236
	991130-NR	678	553	NA	8.8	262
	991130-1305	710	553	23	8.9	267
	991130-1435	743	553	23	8.7	280
	991130-1544	774	553	23	7.7	278
	991130-1700	807	553	23	8.8	275
	991130-1815	835	553	23	8.8	280
	991201-0820	870	553	23	12.0	255
	991201-1005	901	553	23	10.0	280
	991201-1115	930	553	23	9.6	275
	991201-1335	960	553	23	10.0	290
	991201-1615	993	553	23	13.0	298
	991202-0815	1026	553	23	12.0	290
	991202-1115	1056	553	23	12.0	310
	991202-1415	1086	553	23	12.0	312
	991202-1750	1120	553	23	12.0	320
	991203-0830	1150	553	23	12.0	320

Table 2. **Drill Stem Ground Water Quality** (page 2 of 3)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego **Casing Depth**: Ref Grout Table

LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft bls)	Casing Depth (ft bls)	Temp (Deg C)	Cl- (mg/L)	Conductivity (us/cm)
	991203-1050	1182	553	23	11.0	315
	991203-1240	1200	553	23	13.0	330
	991206-1035	1215	553	24	10.3	318
	991206-1432	1245	553	24	10.8	320
	991207-0758	1276	553	24	11.9	289
	991207-1156	1306	553	24	11.4	318
	991207-1654	1336	553	24	10.8	319
	991208-0918	1367	553	24	12.8	318
	991208-1305	1399	553	24	11.7	321
	991209-1040	1429	553	24	11.2	318
	991209-1630	1460	553	24	12.0	320
	991210-1330	1490	553	NR	10.7	340
	991213-1540	1526	553	24	12.0	330
	991216-1340	1558	553	NR	8.0	330
	991216-1320	1588	553	24	11.0	310
	991217-0715	1619	553	NR	7.8	270
	991217-1330	1650	553	24	10.0	318
	991220-1350	1680	553	NR	8.1	320
	991220-1805	1710	553	24	9.0	315
	991221-1120	1740	553	24	6.6	320
	991221-1520	1770	553	24	12.0	315
	991222-1210	1805	553	24	15.0	320
	991227-1500	1834	553	23.2	13.5	310
	991227-1915	1868	553	NR	13.4	312
	991228-1200	1900	553	23.3	13.4	320

Table 2. **Drill Stem Ground Water Quality** (page 3 of 3)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego, R. Brooks **Casing Depth**: Ref Grout Table

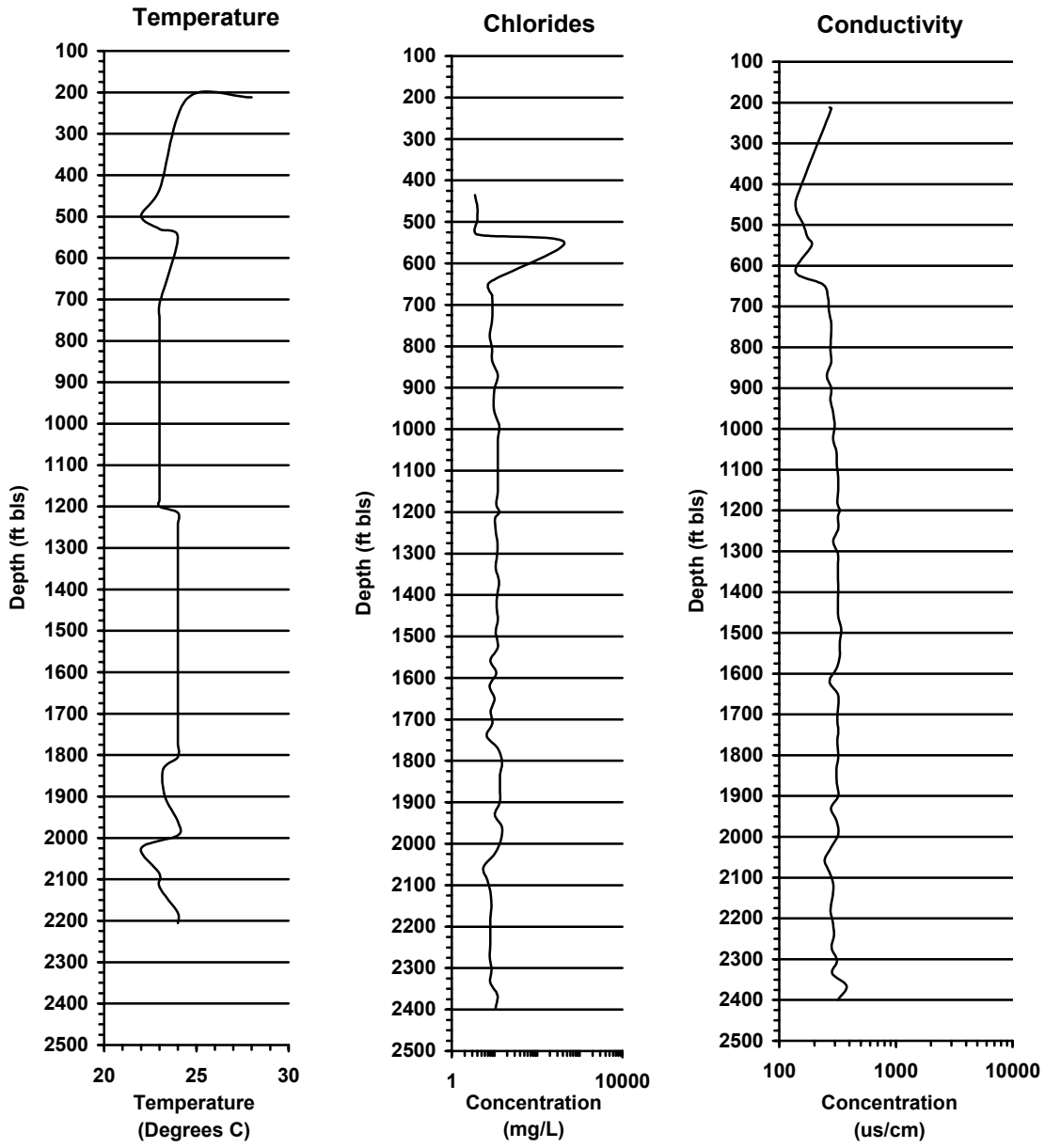
LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft bls)	Casing Depth (ft bls)	Temp (Deg C)	Cl- (mg/L)	Conductivity (us/cm)
	991228-1920	1930	553	NR	10.2	278
	991229-1310	1960	553	24	15.0	310
	991229-1830	1994	553	24	14.0	320
	000118-1315	2025	553	22	10.1	280
	000118-1915	2057	553	NR	5.5	245
	000119-1300	2087	553	23	6.8	270
	000119-1625	2119	553	23	8.1	291
	000119-2100	2151	553	NR	8.5	285
	000120-1240	2181	553	24	8.0	275
	000120-1610	2206	553	24	8.0	286
	000120-2100	2241	553	NR	8.0	295
	000124-1830	2272	553	NR	7.8	281
	000125-1320	2304	553	NR	8.5	313
	000125-1805	2335	553	NR	8.0	285
	000126-1100	2366	553	NR	11.8	378
✓	000127-1200	2400	553	NR	10.6	318

Table 3. **Ground Water Quality**

Site: Lake Louisa **Well Number**: L-0730

Hydrologist: R. Brooks **Casing Depth**: Ref Grout Table

LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft bls)	Casing Depth (ft bls)	Temp (Deg C)	pH	Cl- (mg/L)	Conductivity (us/cm)
✓	000424-1310	465	385	24.8	7.6	6.6	234



Site: Lake Louisa

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Figure 7. Drill Stem Ground Water Quality Floridan Monitor Well L-0729

Table 4. **Downhole Sampler Groundwater Quality**

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego and R. Brooks **Casing Depth**: Ref Grout Table

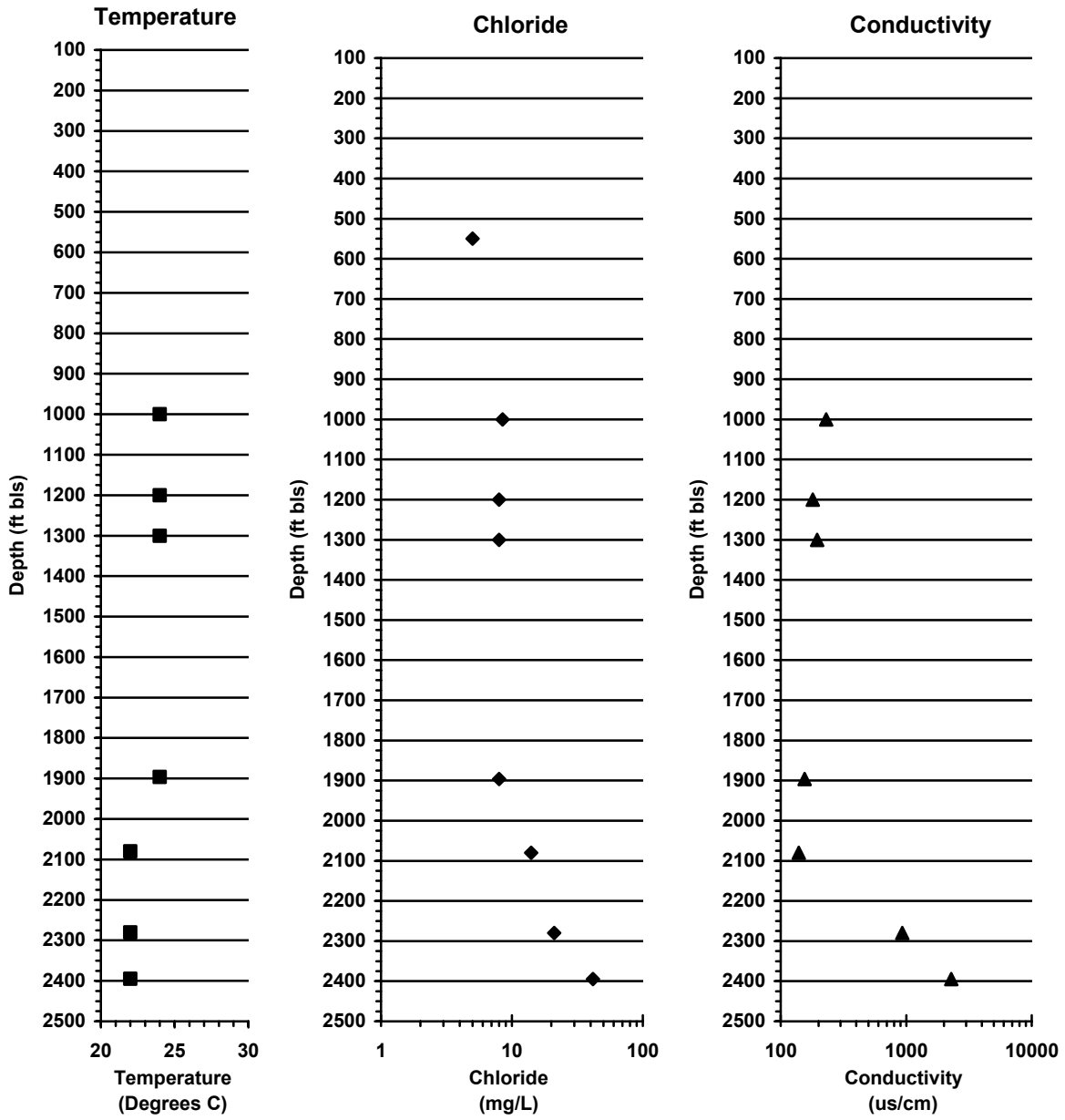
LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft bls)	Casing Depth (ft bls)	Temp (Deg C)	Cl- (mg/L)	Conductivity (us/cm)
	991009-1420	550	350	NR	5.0	240
	000104-1805	1000	553	24	8.5	230
	000104-1830	1200	553	24	8.0	180
	000104-1905	1300	553	24	8.0	195
	000104-1950	1896	553	24	8.0	155
	000131-1940	2395	553	22	41.5	2280
	000131-2025	2280	553	22	21.0	928
	000131-2080	2080	553	22	14.0	139

Table 5. **Straddle Packer Groundwater Quality**

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: R. Brooks

LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft bls)	Temp (Deg C)	Chlorides (mg/L)	Conductivity (us/cm)
✓	000112/1035	1112-1132	24	10.3	342
✓	000112/1857	1399-1419	24	11.0	321
✓	000113/1348	1627-1647	24	10.0	309
✓	000114/1332	1966-1986	22	10.0	316
✓	000210/1302	2350-2370	24	9.6	340
✓	000211/1330	2165-2185	25	10.5	316
✓	000214/1420	2363-2383	24	10.6	314



Site: Lake Louisa

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Figure 8. Downhole Sampler Groundwater Quality Floridan Monitor Well L-0729

Table 6. **Specific Capacity** (page 1 of 2)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego **Casing Depth**: Ref Grout Table

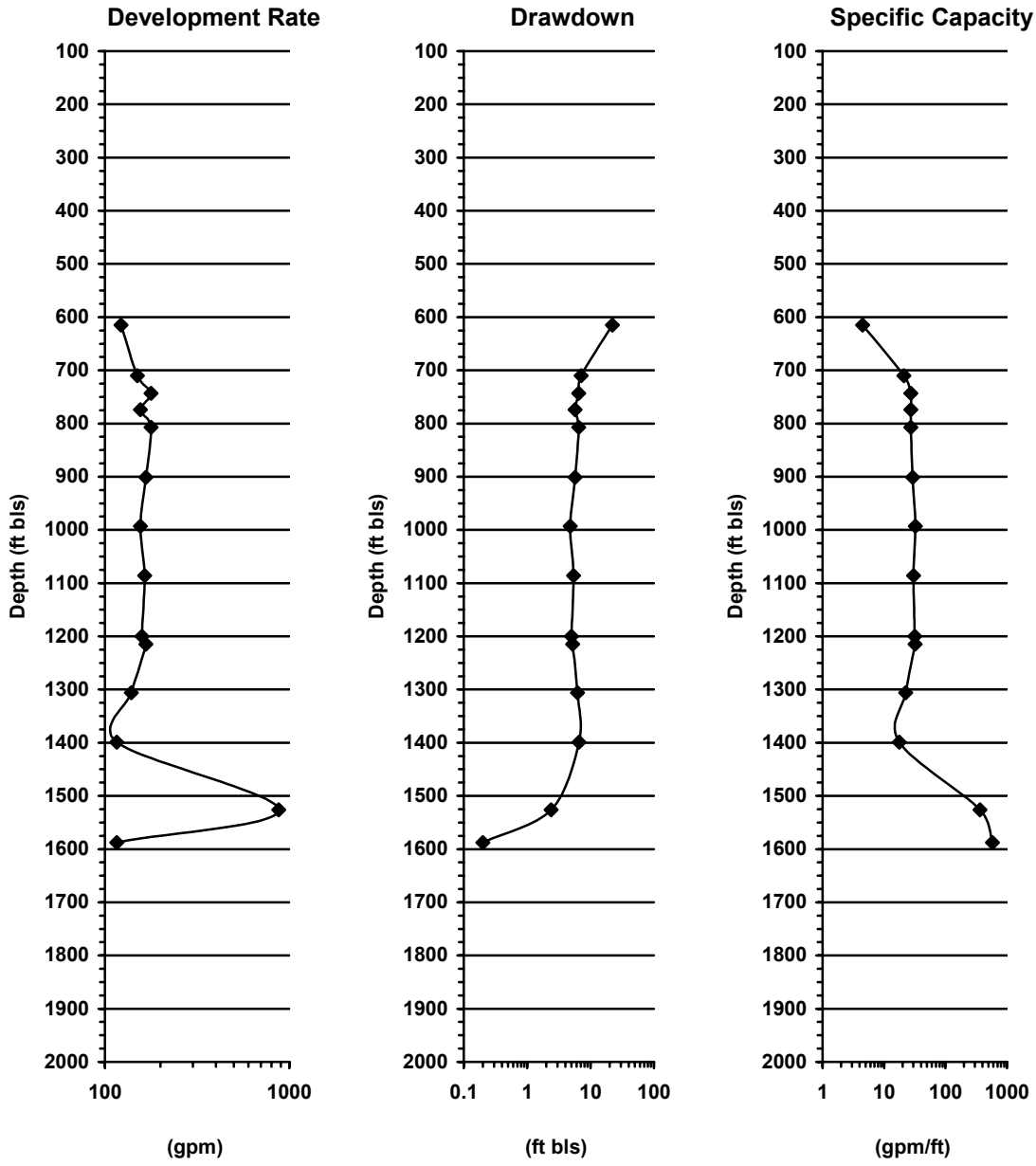
Total Depth (ft bls)	Open Hole (ft)	Development Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft)
180	41	NA	NA	NA
215	76	NA	NA	NA
402	52	NA	NA	NA
435	85	NA	NA	NA
465	115	NA	NA	NA
497	147	NA	NA	NA
560	210	NA	NA	NA
615	62	122	22.2	4.5
646	93	NA	NA	NA
678	125	NA	NA	NA
710	157	150	7.1	21.1
743	190	178	6.5	27.4
774	221	156	5.7	27.3
807	254	178	6.5	27.3
835	282	NA	NA	NA
870	317	NA	NA	NA
901	348	167	5.7	29.3
930	377	NA	NA	NA
960	407	NA	NA	NA
993	440	156	4.8	32.5
1010	457	NA	NA	NA
1026	473	NA	NA	NA
1056	503	NA	NA	NA
1086	533	164	5.4	30.4
1120	567	NA	NA	NA
1140	587	NA	NA	NA
1150	597	NA	NA	NA
1182	629	NA	NA	NA
1200	647	159	5.0	31.9
1215	662	167	5.2	32.1

Table 6. **Specific Capacity** (page 2 of 2)

Site: Lake Louisa **Well Number**: L-0729

Hydrologist: J. Sego **Casing Depth**: Ref Grout Table

Total Depth (ft bls)	Open Hole (ft)	Development Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft)
1245	692	NA	NA	NA
1275	722	NA	NA	NA
1276	723	NA	NA	NA
1306	753	139	6.2	22.4
1336	783	NA	NA	NA
1350	797	NA	NA	NA
1367	814	NA	NA	NA
1399	846	116	6.6	17.7
1412	859	NA	NA	NA
1429	876	NA	NA	NA
1460	907	NA	NA	NA
1490	937	NA	NA	NA
1526	973	875	2.4	364
1558	1005	NA	NA	NA
1588	1035	116	0.2	580
1619	1066	NA	NA	NA
1650	1097	NA	NA	NA
1680	1127	NA	NA	NA
1710	1157	116	0	NR
1740	1187	NA	NA	NA
1770	1217	NA	NA	NA
1805	1252	NA	NA	NA



Site: Lake Louisa

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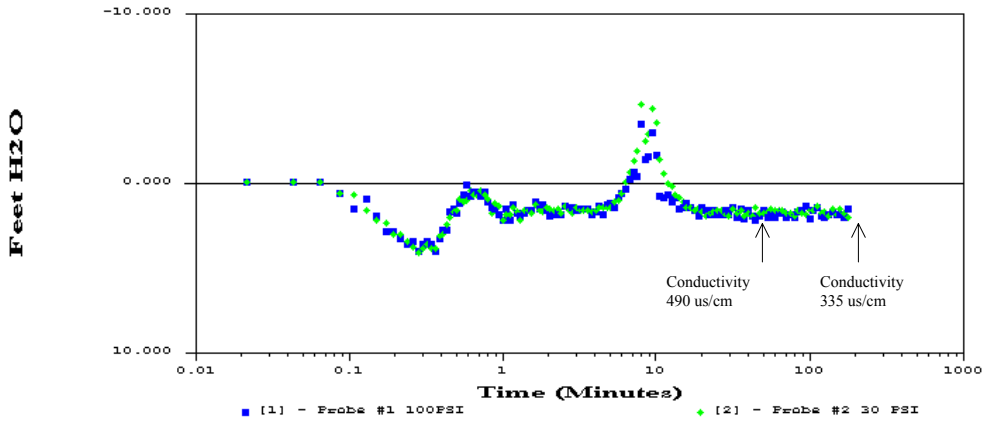
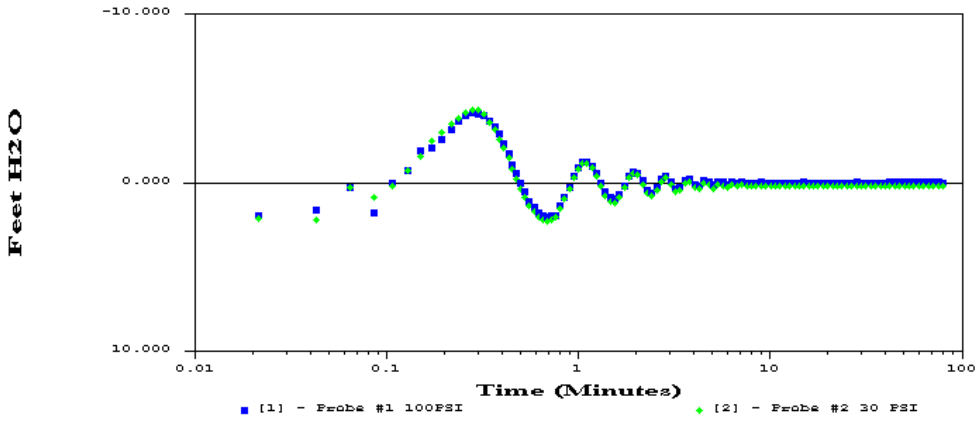
Figure 9. Specific Capacity Floridan Monitor Well L-0729

Drawdown



Recovery



Note: Probe #1 and #2 placed inside drill stem

Site: Lake Louisa
Date: Jan. 12, 2000
Top Packer: 1112 ft bls
Bottom Packer: 1132 ft bls
Pumping Rate: 20 gpm

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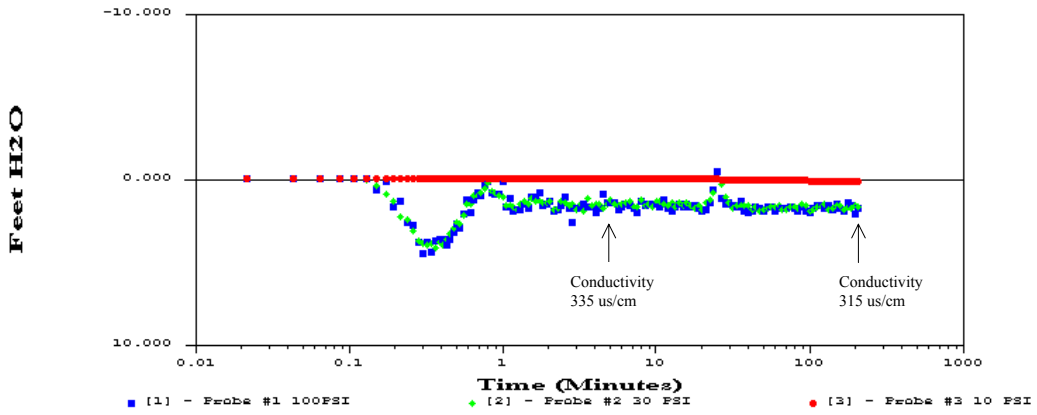
Figure 10. Straddle Packer Test Floridan L-0729

Drawdown



Recovery

Note: Probe #1 and #2 placed inside drill stem
Probe #3 outside of drill stem in 12-in. dia. casing

Site: Lake Louisa
Date: Jan. 12, 2000
Top Packer: 1399 ft bls
Bottom Packer: 1419 ft bls
Pumping Rate: 20 gpm

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Figure 11. Straddle Packer Test Floridan L-0729

Drawdown

No Data; Data Logger Malfunction

Note: Probe #1 and #2 placed inside drill stem
Probe #3 outside of drill stem in 12-in. dia. casing

Site: Lake Louisa
Date: Jan. 13, 2000
Top Packer: 1627 ft bls
Bottom Packer: 1647 ft bls
Pumping Rate: 20 gpm

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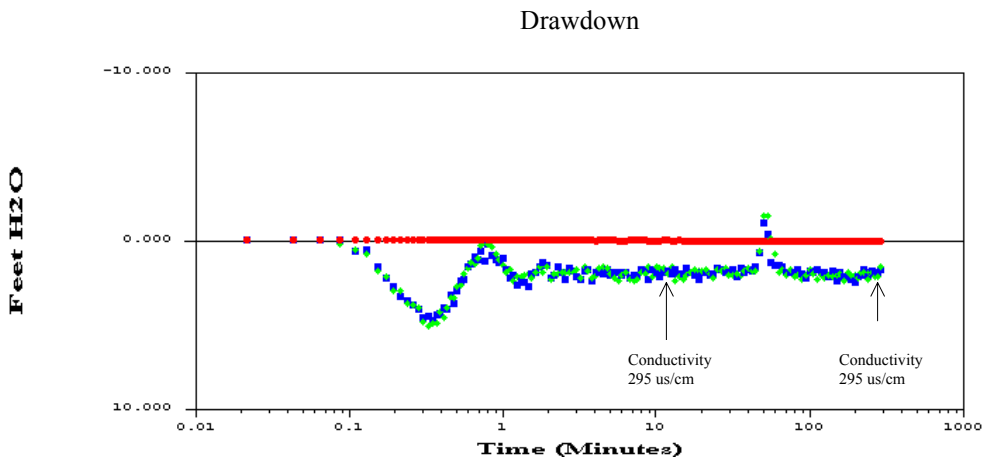
Figure 12. Straddle Packer Test Floridan L-0729



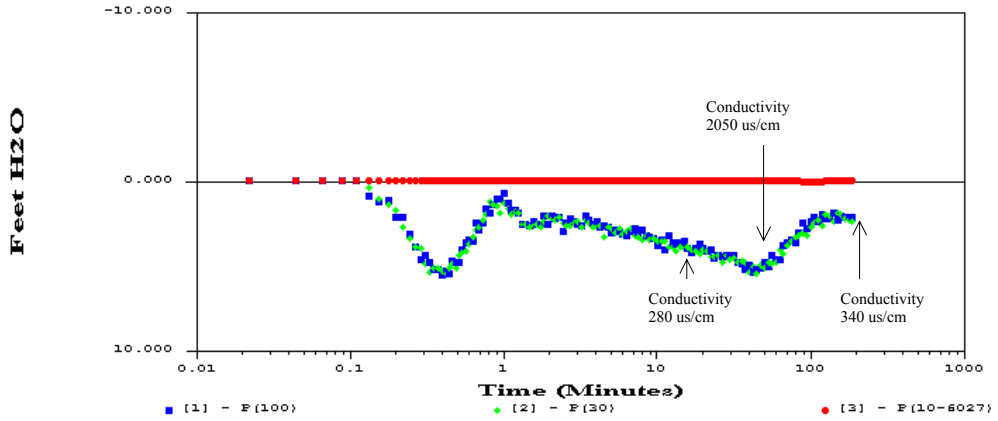
Note: Probe #1 and #2 placed inside drill stem
Probe #3 outside of drill stem in 12-in. dia. casing

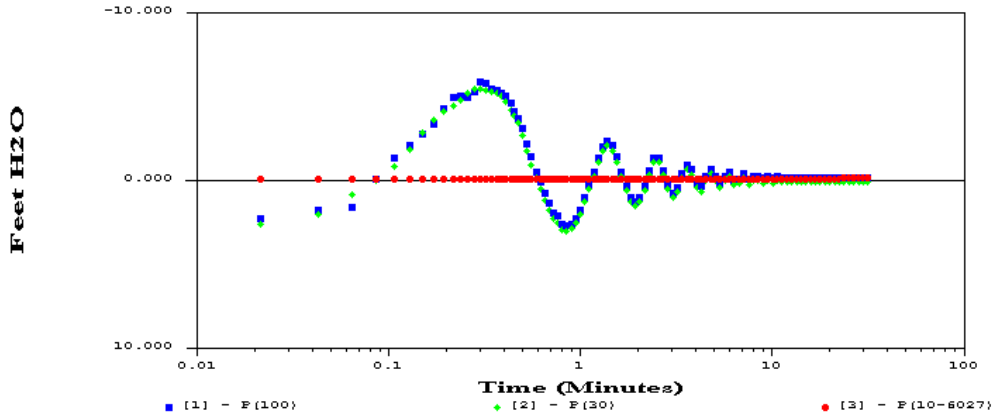
Site: Lake Louisa
Date: Jan. 14, 2000
Top Packer: 1966 ft bls
Bottom Packer: 1986 ft bls
Pumping Rate: 20 gpm

SJRWMD

Figure 13. Straddle Packer Test Floridan L-0729

Drawdown





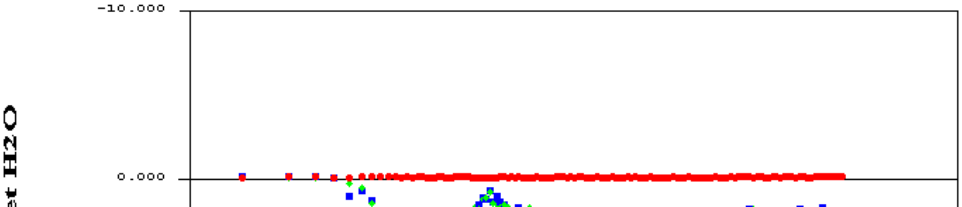
Note: Probe #1 and #2 placed inside drill stem
Probe #3 outside of drill stem in 12-in. dia. casing

Site: Lake Louisa
Date: Feb, 10, 2000
Top Packer: 2350 ft bls
Bottom Packer: 2370 ft bls
Pumping Rate: 20 gpm

SJRWMD

Figure 14. Straddle Packer Test Floridan L-0729

Drawdown

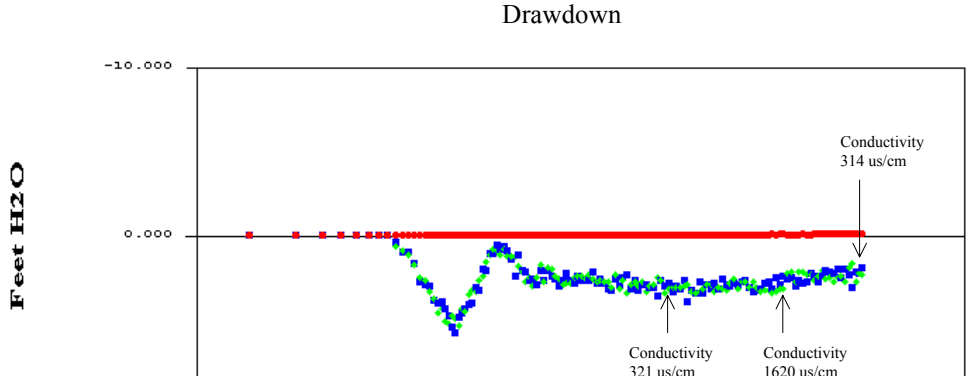


Note: Probe #1 and #2 placed inside drill stem
Probe #3 outside of drill stem in 12-in. dia. casing

Site: Lake Louisa
Date: Feb. 11, 2000
Top Packer: 2165 ft bls
Bottom Packer: 2185 ft bls
Pumping Rate: 20 gpm

SJRWMD

Figure 15. Straddle Packer Test Floridan L-0729



Note: Probe #1 and #2 placed inside drill stem
Probe #3 outside of drill stem in 12-in. dia. casing

Site: Lake Louisa
Date: Feb. 14, 2000
Top Packer: 2363 ft bls
Bottom Packer: 2383 ft bls
Pumping Rate: 20 gpm

SJRWMD

Figure 16. Straddle Packer Test Floridan L-0729

Table 7. **Grout Data** (page 1 of 3)

Site: Lake Louisa **Well ID:** L-0729

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANTITY (yds/bgs)	MATERIAL	COMMENTS
9/24/99	35	40-A	100	Type I Grout	Set pit casing 35 ft bls
10/19/99	230	24-A	100	Type I Grout	Back plug lost circulation zone while driving 24-inch dia steel casing
10/20/99	191	24-A	100	Type I Grout	Back plug lost circulation zone while driving 24-inch dia. steel casing to 250 ft bls
10/21/99	270	24-A	100	Type I Grout	Back plug lost circulation zone
10/22/99	270	24-A	100	Type I Grout	Back plug lost circulation zone
10/28/99	270	24-A	200	Type I Grout	Pressure grout 18-inch dia. steel casing from 350 ft bls
10/29/99	180	24-A	180	Type I Grout	Tremie grout 18-inch dia. steel
10/29/99	350	18-B	0	Type I Grout	Circulation of water inside of casing indicates that bottom seal of 18-inch dia. steel casing was incomplete
11/01/99	70	24-A	60	Type I Grout	Tremie grout 18-inch dia. steel casing to LSD
11/01/99	350	18-B	200	Type I Grout	Pressure grout base of 18-inch dia steel casing
11/01/99	340	18-B	0	Type I Grout	Tag grout inside of casing at 340 ft bls
11/12/99	553	18-A	100 bgs	Type I Grout	Pressure grout 12-inch dia. steel casing
11/15/99	480	18-A	100 bgs	Type I Grout	Grout through tremie pipe
11/16/99	440	18-A	100 bgs	Type I Grout	Grout through tremie pipe
11/16/99	430	18-A	100 bgs	Type I Grout	Grout through tremie pipe
11/17/99	385	18-A	100 bgs	Type I Grout	Grout through tremie pipe
11/18/99	340	18-A	100 bgs	Type I Grout	Grout through tremie pipe

Table 7. **Grout Data** (page 2 of 3)

Site: Lake Louisa **Well ID:** L-0729

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANTITY (yds/bgs)	MATERIAL	COMMENTS
11/18/99	310	18-A	100 bgs	Type I Grout	Grout through tremie pipe
11/19/99	110	18-A	100 bgs	Type I Grout	Grout through tremie pipe
2/16/00	2400	12-A	-	-	Set 6-inch dia SDR 17 PVC casing at 1295 bls; formation packers located at 1294, 1293, and 1292 ft bls
2/16/00	1295	12-A	10 bgs 10 bgs	Hole plug Type I Grout	Hole plug added to formation packers; Grout through tremie pipe
2/17/00 am	1275	12-A	25 bgs	Type I Grout	Grout through tremie pipe
2/17/00 pm	1265	12-A	50 bgs	Type I Grout	Grout through tremie pipe
2/18/00	1260	12-A	3 yds	Gravel	Gravel used to fill voids
2/18/00	1230	12-A	25 bgs	Type I Grout	Grout through tremie pipe
2/22/00	1226	12-A	4 yds	Gravel	Gravel used to fill voids
2/22/00	1177	12-A	25 bgs	Type I Grout	Grout through tremie pipe
2/23/00	1132	12-A	100 bgs	Type I Grout	Grout through tremie pipe
2/23/00	2400	12-B	200 bgs	Type I Grout	Backplug bore
2/24/00	2079	12-B	200 bgs	Type I Grout	Backplug bore
2/24/00	1084	12-A	100 bgs	Type I Grout	Grout through tremie pipe
2/25/00	966	12-A	100 bgs	Type I Grout	Grout through tremie pipe
2/25/00	2073	12-B	12 yds	Gravel	Backplug bore
2/25/00	1893	12-B	25 bgs	Type I Grout	Backplug bore
2/26/00	856	12-A	13 yds	Gravel	Gravel used to fill voids
2/28/00	762	12-A	10 yds	Gravel	Gravel used to fill voids
2/28/00	1892	12-B	200 bgs	Type I Grout	Backplug bore
2/29/00	1890	12-B	4 yds	Gravel	Backplug bore
2/29/00	1815	12-B	25 bgs	Type I Grout	Backplug bore
2/29/00	735	12-A	2 yds	Gravel	Gravel used to fill voids
2/29/00	705	12-A	25 bgs	Type I Grout	Grout through tremie pipe
3/01/00 am	677	12-A	100 bgs	Type I Grout	Grout through tremie pipe
3/01/00 pm	462	12-A	100 bgs	Type I Grout	Grout through tremie pipe; tag much higher than theoretical

Table 7. **Grout Data** (page 3 of 3)

Site: Lake Louisa **Well ID:** L-0729

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANTITY (yds/bgs)	MATERIAL	COMMENTS
3/01/00 am	1748	12-B	100 bgs	Type I Grout	Backplug bore
3/01/00 pm	1659	12-B	100 bgs	Type I Grout	Backplug bore
3/02/00 am	1575	12-B	100 bgs	Type I Grout	Backplug bore
3/02/00 pm	1554	12-B	4 yds	Gravel	Gravel used to fill voids
3/02/00 pm	1500	12-B	25 bgs	Type I Grout	Backplug bore
3/02/00 am	410	12-A	75 bgs	Type I Grout	Grout through tremie pipe
3/02/00 pm	231	12-A	75 bgs	Type I Grout	Grout through tremie pipe
3/03/00	45	12-A	24 bgs	Hole Plug	GWL at 50 ft bls; hole plug used to prevent melting the casing above GWL
3/03/00	1481	12-B	30 bgs	Type I Grout	Backplug bore
3/06/00	1450	12-B	50 bgs	Type I Grout	Backplug bore
3/07/00	1410	12-B	-	-	Final tag on bore

Table 8. **Grout Data**

Site: Lake Louisa **Well ID:** L-0730

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANTITY (yds/bags)	MATERIAL	COMMENTS
3/03/00	35	36-B	170 bags	Type I Grout	Set 35-ft of 24-inch dia. steel casing
3/16/00	184	17-B	100 bags	Type I Grout	Backplug lost circulation zone
3/17/00	165	17-B	-	-	Drill out
3/17/00	250	17-B	100 bags	Type I Grout	Backplug lost circulation zone
3/20/00	220	17-B	-	-	Drill out
3/20/00	280	17-B	100 bags	Type I Grout	Backplug lost circulation zone
3/21/00	265	17-B	-	-	Drill out
3/21/00	311	17-B	100 bags	Type I Grout	Backplug lost circulation zone
3/22/00	280	17-B	-	-	Drill out
3/23/00	345	17-B	200 bags	Type I Grout	Pressure grout 336-ft of 12-inch dia. steel casing
3/24/00	150	17-A	100 bags	Type I Grout	Grout through tremie pipe
3/24/00	NR	24-A	25 bags	Type I Grout	Grout 18-inch dia. steel casing to surface; drove casing with hammer to 120-ft on 3/15/00
3/27/00	150	17-A	2 yds	Pea-gravel	Gravel used to fill voids
3/27/00	130	17-A	25 bags	Type I Grout	Grout through tremie pipe
3/28/00	110	17-A	110 bags	Type I Grout	Grout through tremie pipe
3/29/00	331	17-B	-	-	Drill out
4/05/00	385	12-B	12 bags 10 bags	Hole plug Type I Grout	Set 385-ft of 6-inch dia. PVC casing with 3-baskets attached at 384, 383 and 382-ft bls
4/06/00 am	357	12-A	25 bags	Type I Grout	Grout through tremie pipe
4/06/00 pm	325	12-A	75 bags	Type I Grout	Grout through tremie pipe
4/07/00	168	12-A	110 bags	Type I Grout	Grout through tremie pipe; casing grouted to surface

Lithologic Description (page 1 of 3)

Site: Lake Louisa **Well ID:** L-0729

Samples Described By: J. Sego, R. Brooks (2000-2405 ft)

From (ft)	To (ft)	Lithology
115	140	Limestone, gray, fossiliferous (*lepidocyclina*), phosphatic
140	190	No sample return
190	200	Limestone, tan-gray, fossiliferous (*lepidocyclina, numulites*), phosphatic, and quartz gravel-sand, trace peat
200	205	Dolomite, gray-tan, fossiliferous (*dictyconus*), and limestone, crème colored
205	215	Dolomite, dunn-gray, fossiliferous (*echinoid*), moldic porosity
210	215	Limestone, tan, and sand, gray
215	220	Limestone, tan
220	230	No return
230	270	Limestone, tan and gray
270	340	No return
340	350	Dolomite, brown and gray, hard
350	398	Dolomite, brown, hard
398	400	Dolomite, brown, hard, and limestone, white, inter-bedded
400	410	Dolomite, brown, hard
410	428	Limestone, tan, dolomitic, soft, fossiliferous (*echinoid*)
428	450	Dolomite, brown, hard
450	460	Dolomite, gray, hard
460	468	Dolomite, brown-gray, hard
468	553	Dolomite, brown-gray, moderate induration, pin point porosity
553	680	Limestone, tan, poorly indurated
680	748	Dolomite, tan, indurated, pinpoint porosity, with some laminated dolosilt, trace calcite porphyry, cavernous porosity at 700 ft bls
748	773	Limestone, crème-tan colored, pinpoint porosity; with tan-brown dolomite
773	810	Dolomite, tan to tan-brown, indurated, pinpoint porosity
810	960	Dolomite, tan-brown to gray
960	980	Dolomite, light tan, and limestone, tan, indurated, pinpoint porosity
980	993	Dolomite, brown; with peaty clay and dolomitic limestone, tan-gray
993	1005	Dolomite, brown and peat; with limestone, tan
1005	1026	Dolomite, gold-brown, and calcite, white, fine grained material
1026	1093	Dolomite, brown-tan; with limestone, tan, pinpoint porosity, hard, peat, and calcite and quartz crystals (1 quartz crystal exhibited hexagonal habit and terminated on one end, 5 mm inch diameter), gypsiferous

Lithologic Description (page 2 of 3)

Site: Lake Louisa **Well ID:** L-0729

Samples Described By: J. Sego, R. Brooks (2000-2405 ft)

From (ft)	To (ft)	Lithology
1093	1120	Dolomite, brown, hard, cherty, and limestone, gray, minor pinpoint porosity, moldic infilling with cherty dolomite
1120	1150	Limestone, tan, pinpoint porosity, hard, peat, and calcite and quartz crystals, gypsiferous
1150	1155	Dolomite, tan, very hard, shard-like fragments from drilling, trace peat
1155	1165	Dolomite, tan-gray-white, indurated; with some clay, light gray and trace peat
1165	1192	Dolomite, tan, very hard, pinpoint porosity, trace peat
1192	1200	Dolomite, brown, not and hard as above
1200	1240	Dolomite, tan-brown, pinpoint and moldic porosity
1240	1250	Dolomite, brown, well indurated
1250	1260	Limestone tan-brown, dolomitic; with peat
1260	1290	Dolomite, brown, well indurated
1290	1315	Chert, dark brown; with calcite, white
1315	1350	Dolomite, brown, well indurated
1350	1399	Limestone, tan-brown, ; with calcite, white
1399	1405	Peat, and limestone, tan, fine
1405	1418	Limestone, gray-light tan, very fine
1418	1422	Sand, gray, med-coarse
1422	1460	Limestone, gray
1460	1515	Dolomite, tan-brown; with dolomitic limestone, tan
1515	1523	Dolomite, brown, well indurated-cherty
1523	1610	Dolomite, cherty, dark brown; with calcite, white and clay gray
1610	1635	Limestone, tan-brown, dolomitic
1635	1710	Dolomite, tan-brown; with dolomitic limestone, tan
1710	1770	Limestone, tan-gray, fragmental skeletal matrix; with dolomitic limestone, tan
1770	1780	Limestone, light tan-crème, fragmental matrix
1780	1810	Dolomite, tan-brown, hard, pinpoint porosity, coarse gravel to small cobble sized clasts of dolomite
1810	1830	Dolomite, brown, hard
1830	1837	Limestone, tan, very fine grained clasts
1837	1870	Dolomite, brown, hard

Lithologic Description (page 3 of 3)

Site: Lake Louisa **Well ID:** L-0729

Samples Described By: J. Sego, R. Brooks (2000-2405 ft)

From (ft)	To (ft)	Lithology
1870	1875	Dolomite, light tan, very fine grained
1875	1901	Dolomite, brown, hard
1901	1905	Limestone, dark tan, very fine grained
1905	1980	Dolomite, brown, hard; with some limestone, tan, pinpoint porosity
1980	2000	Limestone and dolomitic limestone, brown-olive green
2000	2010	Limestone, grayish brown, dolomitic, some peat
2010	2030	Dolomite, gray and brown, hard, some peat
2030	2040	Dolomite, grayish brown, hard
2040	2050	Dolomite, grayish brown, hard, peaty
2050	2060	Dolomite, gray and Limestone, brown, dolomitic, some primary porosity; very small alternating beds
2060	2070	Dolomite, light gray, very hard, pebble size cuttings
2070	2080	Dolomite, light gray, hard
2080	2120	Limestone, gray, dolomitic, some primary porosity
2130	2150	Dolomite, dark gray, hard
2150	2180	Limestone, dark gray to light gray, dolomitic
2180	2250	Silt, limestone, dolomitic, gray to dark gray, dolomite, gray, (small layers), minor clay, blue gray
2250	2260	Dolomite, grayish-tan, soft (dolomitic silt)
2260	2270	Dolomite, grayish-white, soft to medium, remnant fossils
2270	2280	Dolomite, tan, soft (dolomitic silt), some planar gypsum crystals
2280	2300	Dolomite, light-gray, soft (dolomitic silt), some gypsum nodules
2300	2310	Limestone, yellowish-gray, very fine, very soft
2310	2368	Dolomite, gray, soft (dolomitic silt), less than 1% gypsum
2368	2369	Dolomite, brown, porous, hard, some chert, ~30 to 40 % gypsum nodules and gypsum paste
2369	2400	Dolomite, gray to brown, some chert, ~40 % gypsum and gypsum paste

Cores

592	595	Limestone, tan, poorly indurated
2400	2405	Dolomite, gray to brown; dolomitic silt and gypsum crystals

Table 9. ***Permeability**

MONITORING WELL		Sample Depth	Moisture Content	Dry Density	Coefficient Of Permeability
Site	ID	(ft, bls)	(%)	(PCF)	(cm/sec)
Lake Louisa	L-0729	2402.5	4.4	145.4	3.0×10^{-8}
Lake Louisa	L-0729	2405	13.7	155.7	8.1×10^{-9}

* Permeability test (ASTM D 5084) performed by Law Engineering and Environmental Services, Inc.

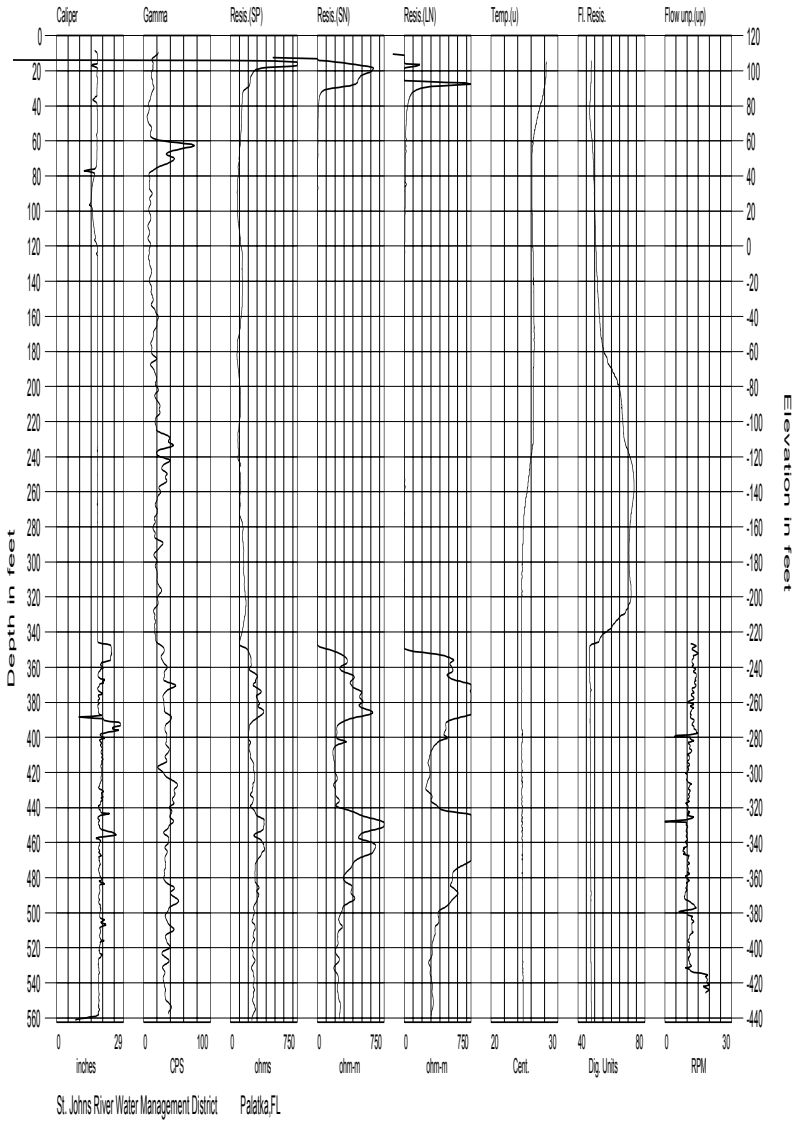
Table 10. **Video Surveys**

Date	Logger	Well Number	Casing/Bore Dia. (inch)	Survey Depth (ft bls)	Depth (ft bls)
11/08/99	FDOT	L-0729	18	550	550
01/04/00	Deep Venture	L-0729	12	1989	2000
01/29/00	MV Geophysical Surveys, Inc.	L-0729	12	2414	2400

Geophysical Logs

Site: Lake Louisa **Well ID:** L-0729

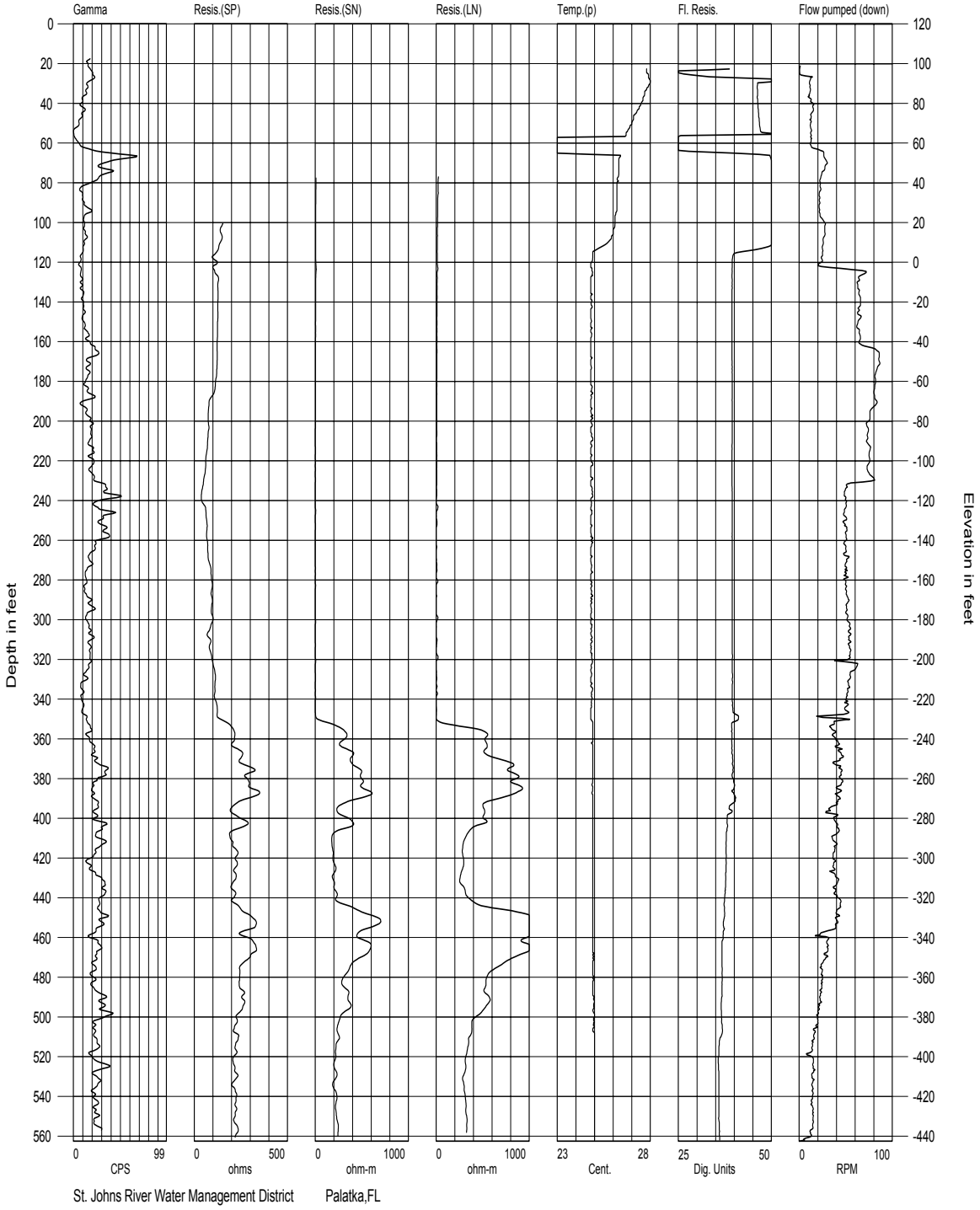
Logger: SJRWMD **Date:** 11/08/99



Geophysical Logs

Site: Lake Louisa **Well ID:** L-0729

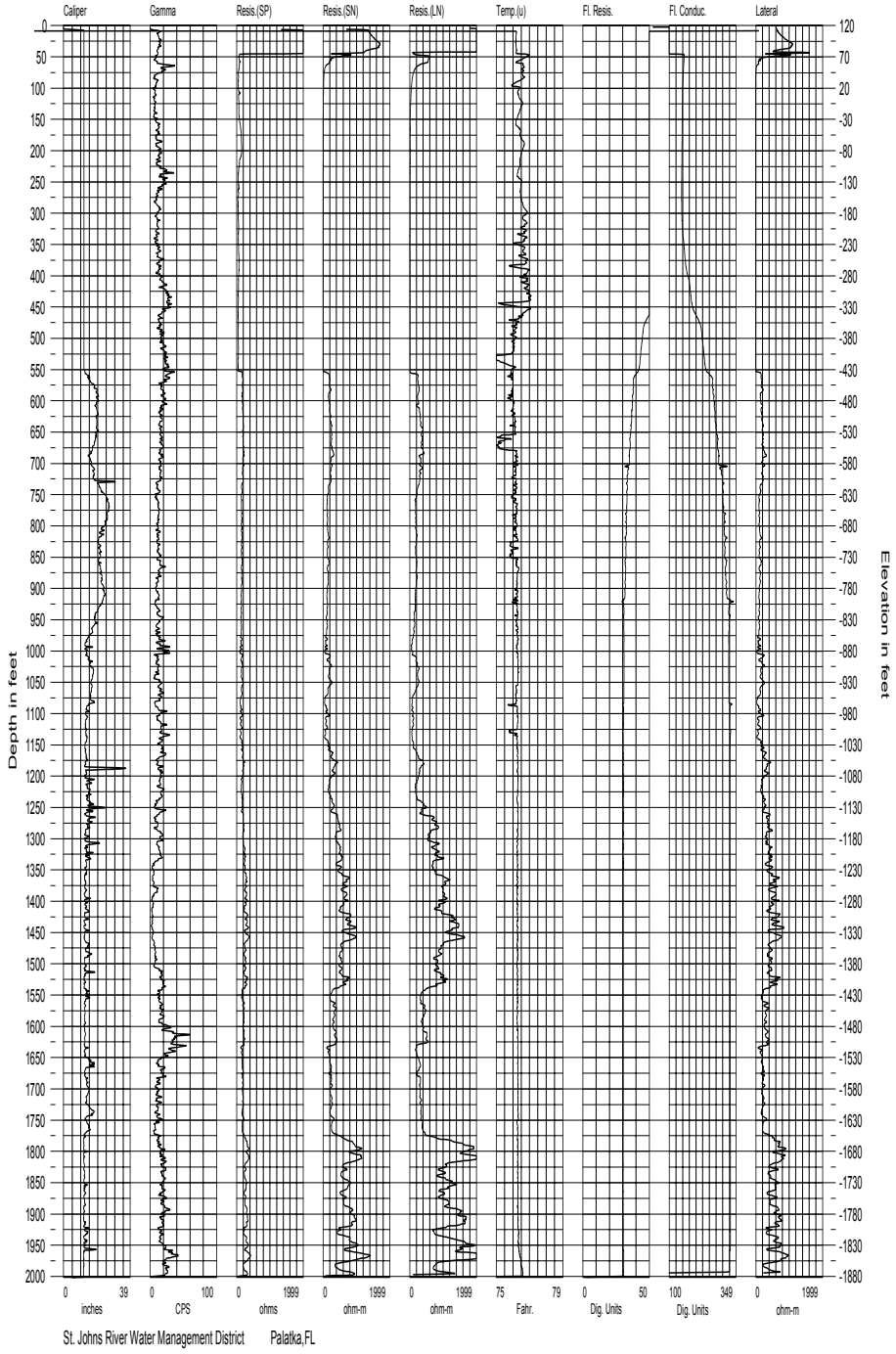
Logger: SJRWMD **Date:** 11/09/99



Geophysical Logs

Site: Lake Louisa **Well ID:** L-0729

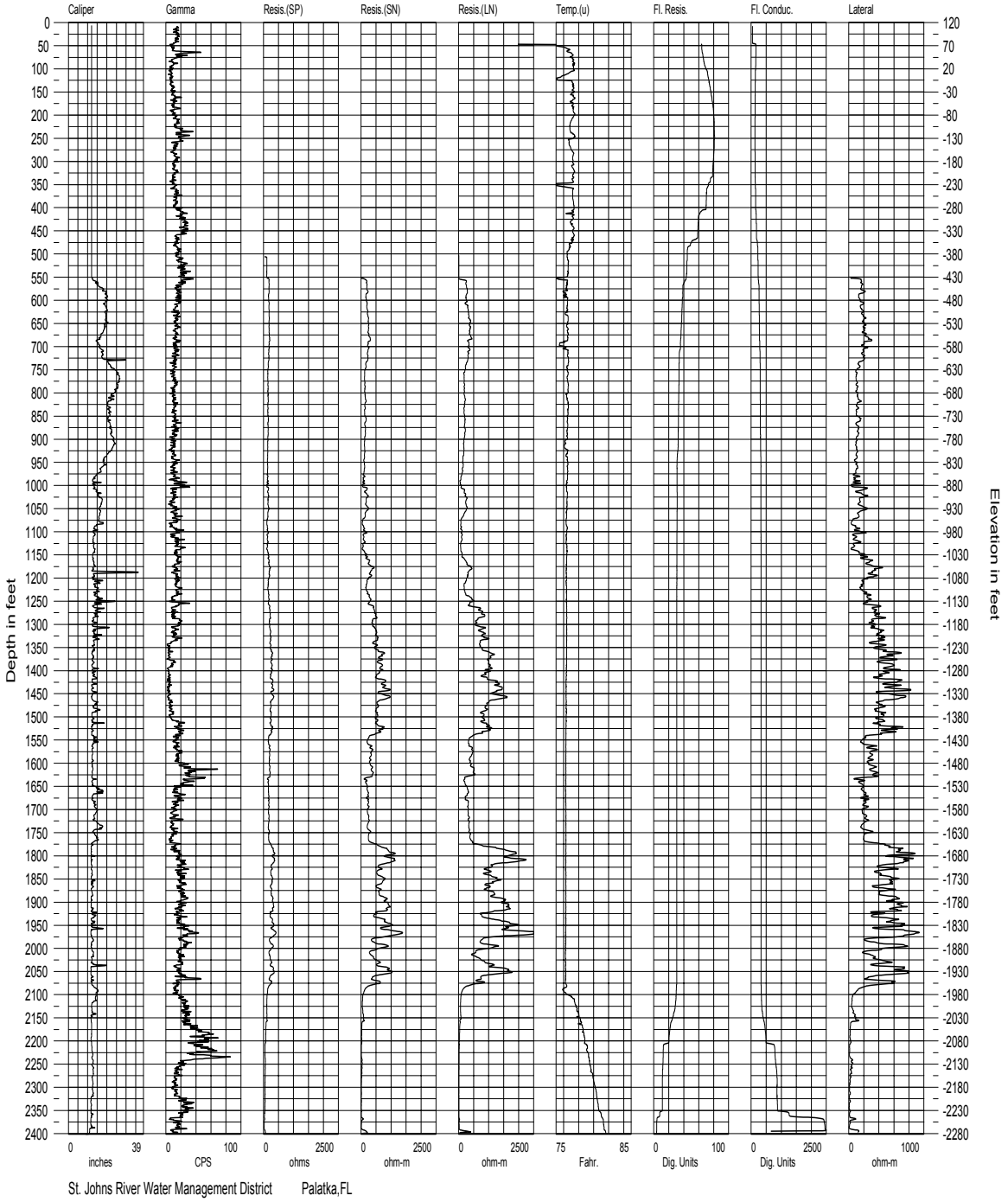
Logger: ABS **Date:** 1/04/00



Geophysical Logs

Site: Lake Louisa **Well ID:** L-0729

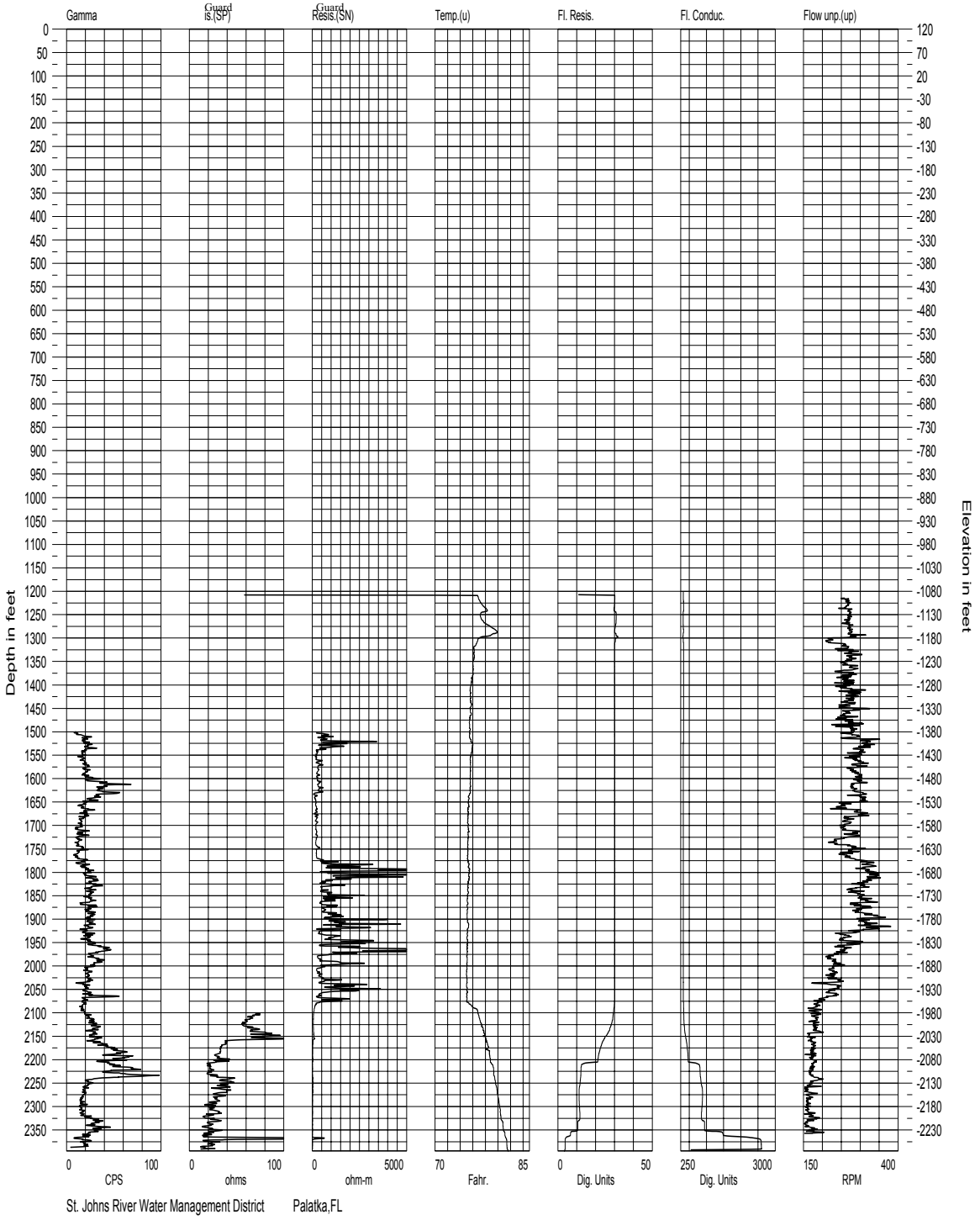
Logger: ABS **Date:** 1/31/00



Geophysical Logs

Site: Lake Louisa **Well ID:** L-0729

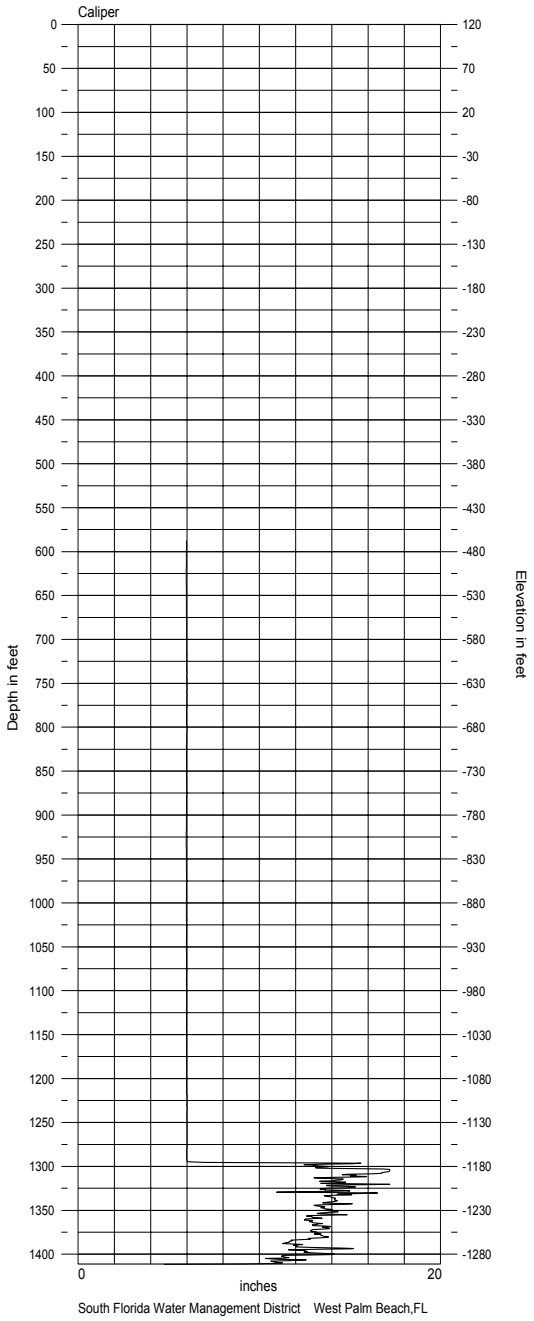
Logger: ABS **Date:** 2/21/00



Geophysical Logs

Site: Lake Louisa **Well ID:** L-0729

Logger: SJRWMD **Date:** 5/23/00



Geophysical Logs

Site: Lake Louisa **Well ID:** L-0730

Logger: SJRWMD **Date:** 5/23/00