

CITY OF PAHOKEE  
INJECTION WELL SYSTEM  
CONSTRUCTION AND TEST DATA



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CONSTRUCTION AND TEST DATA

February 1990

Prepared for:  
City of Pahokee  
P.O. Drawer X  
Pahokee, Florida 33476

Geraghty & Miller, Inc.  
Environmental Services  
11382 Prosperity Farms Road, Suite 125  
Palm Beach Gardens, Florida 33410

31 January 1990  
PF06403

Mr. Alfred Mueller, Jr., P.G., P.E.  
Florida Department of  
Environmental Regulation  
Bureau of Groundwater Protection - UIC  
1900 South Congress, Suite A  
West Palm Beach, Florida 33406

Re: Pahokee Injection Well  
Operational Testing

Dear Mr. Mueller:

As you are aware, several items must be submitted to the TAC for review prior to operational testing approval. These items are listed below along with appropriate comments:

1. **Borehole television survey of final casing**  
A copy of the video survey is enclosed.
2. **Geophysical logs with interpretations**  
Previously submitted.
3. **Certification of mechanical integrity and interpreted test data**  
Previously submitted.
4. **Injection test data and evaluation**  
Information on the test procedure and results and surface pressure data were previously submitted. The downhole pressure and temperature data are presented on the enclosed graph. Upon review of all the injection data, we can conclude that the injection zone has sufficient capacity to accept waste at the proposed rate.
5. **Confining zone data and confirmation of confinement**  
Core data from twelve conventional cores taken in the confining sequence are presented on the enclosed table. Permeability values are extremely low relative to the injection zone.

Of the three straddle-packer tests attempted in the confining sequence, only one test was conducted successfully. The test interval was from 2350 feet to 2370 feet below pad level (PL), and the pumping rate was 60 gpm. A plot of drawdown versus log time is enclosed. Using this plot, the transmissivity is determined to be 1378 gpd/ft. In comparison, the transmissivity for the interval between 1776 feet and 1881 feet PL was calculated to be 78,185 gpd/ft (data previously submitted). As evidenced by the data

gathered, adequate confinement exists between the injection zone and the Floridan aquifer system.

**6. Background water-quality data**

Water analysis reports are enclosed for the following sources:

<u>Source</u>	<u>Pages</u>
Straddle-Packer Test (1776' - 1821' PL)	1
Straddle-Packer Test (1890' - 1935' PL)	1
Injection Zone (3512' PL)	13
Monitor Well Deep Zone (1915' - 2008')	14
Monitor Well Shallow Zone (946' - 1147')	14

**7. Waste stream analysis**

Effluent samples were taken on 1/29/90. Analysis reports will be submitted in approximately three weeks.

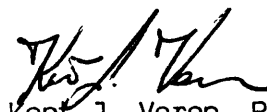
**8. Surface equipment completion certified pursuant to 17-6.080 FAC**

A letter of certification from Russell & Axon is enclosed.

This package should fulfill the required filings for TAC review prior to operational testing approval by the Department. Considering that the owner would like to proceed with operational testing as soon as possible, your prompt response is respectfully requested.

Should you have any questions or comments, please contact me at (407) 694-0300.

Sincerely,  
GERAGHTY & MILLER, INC.

  
Kent J. Veron, P.E.  
Senior Scientist

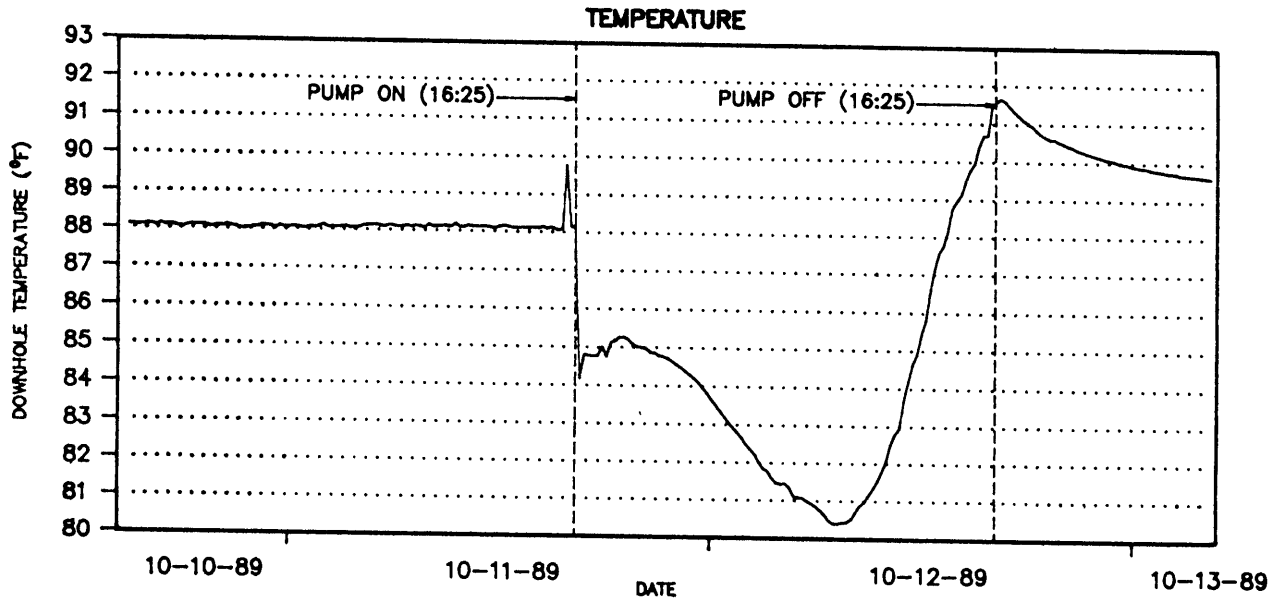
KJV/lt

cc: Pahokee TAC  
Kenneth Schenck - Russell & Axon

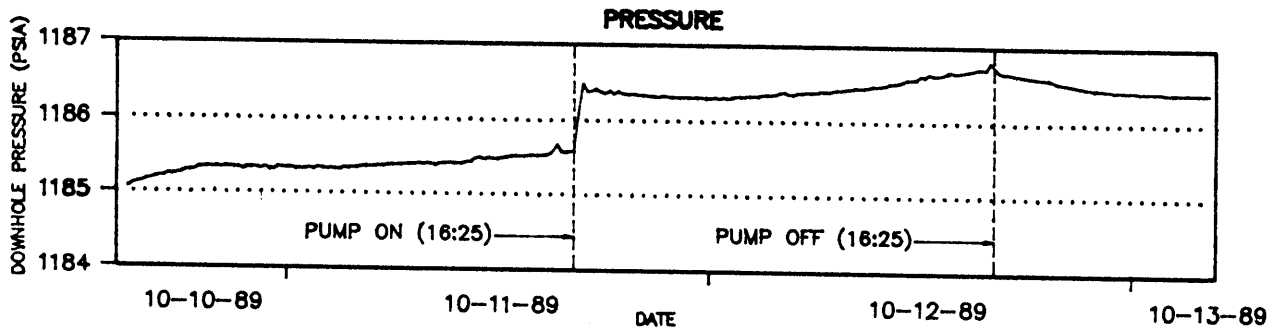
**INJECTION TEST DATA**



COMPILED BY: P. MANER	DATE: JAN 90	SCALE: NONE	PREPARED FOR: RUSSELL & AXON
PREPARED BY: B. OLIVA	FILE NO: PF06403		
PROJECT NO: J. WHEATLEY			



PRE-INJECTION	INJECTION TEST	POST-INJECTION
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SUBJECT: INJECTION TEST DATA

**CORE TEST DATA**



**Professional Service Industries, Inc.**  
Florida Testing Division

RECEIVED

NOV 13 1989

DeSoto & Miller, Inc.

September 26, 1989

Youngquist Brothers  
15000 Pine Ridge Road  
Ft. Myers, FL 33908

Re: Rock Core Testing  
PSI File No.: 381-80059-2

Gentlemen:

As requested, PSI has performed the laboratory tests required on the twelve (12) rock cores delivered to our office. All tests were performed in general accordance with A.S.T.M. and U.S. Corps of Engineering procedures.

The test data has been tabulated for your convenience, and if you should have any questions, please do not hesitate to call.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES

PER FLORIDA STATUTES, CHAP. 471  
Report under responsible charge of  
Daniel A. Ahart, P.E.  
FLORIDA REGIST. NO. 39104  
Original signed, sealed, and on file.



TEST DATA

<u>CORE NO.</u>	<u>HORIZONTAL PERMEABILITY (cm/sec)</u>	<u>VERTICAL PERMEABILITY (cm/sec)</u>	<u>ULTIMATE COMPRESSIVE STRENGTH (PSI)</u>	<u>MODULUS OF ELASTICITY (PSI)</u>	<u>SPECIFIC GRAVITY</u>	<u>POROSITY</u>
2747	5.54 X 10 <sup>-4</sup>	2.42 X 10 <sup>-5</sup>	4210	556,899	2.62	17.4
2637	4.75 X 10 <sup>-5</sup>	1.57 X 10 <sup>-5</sup>	1971	399,185	2.63	35.6
2648	6.20 X 10 <sup>-5</sup>	6.16 X 10 <sup>-6</sup>	1920	323,238	2.64	31.1
2644	1.51 X 10 <sup>-5</sup>	2.17 X 10 <sup>-6</sup>	2374	356,397	2.64	33.3
2603	1.75 X 10 <sup>-4</sup>	1.51 X 10 <sup>-6</sup>	1156	218,849	2.66	15.4
2597	6.75 X 10 <sup>-5</sup>	7.56 X 10 <sup>-7</sup>	1685	220,002	2.64	28.9
2366	2.42 X 10 <sup>-5</sup>	1.45 X 10 <sup>-5</sup>	1710	369,253	2.67	29.3
2414	7.94 X 10 <sup>-6</sup>	3.18 X 10 <sup>-5</sup>	2055	76,035	2.73	33.1
2592	1.19 X 10 <sup>-5</sup>	4.59 X 10 <sup>-5</sup>	4009	538,970	2.64	25.0
2412	2.16 X 10 <sup>-5</sup>	1.28 X 10 <sup>-5</sup>	945	134,417	2.67	26.2
2367	3.31 X 10 <sup>-5</sup>	3.76 X 10 <sup>-5</sup>	1015	157,277	2.63	30.2
2411	5.12 X 10 <sup>-5</sup>	1.03 X 10 <sup>-4</sup>	1744	282,281	2.73	30.3

STRADDLE-PACKER TEST DATA

TIME MINUTES SP-ZONE(DTW),s ANNULUS(DTW), s

Terra8 Data Collection Report

Firmware Version 6.1/87  
 Number of Bytes in Data Dump 8232  
 User Supplied Comment  
 Time Header Block Loaded 09/16 15:41:09.30  
 Time Data File Dumped 09/17 08:08:26.48  
 Remaining Memory 57384  
 Number of Logs 672  
 Type of Data Memory Memory Board  
 Logs/Timestamp 1  
 Power was OK During Data Collection Period

Terra8 Channel Setup:

Number of Declared Analog Channels = 2

Ch#	Description	Units	Delay	M	B
1	0-100 PSI.....	PSI.....	100	20.000	0.000
2	0-50 PSI.....	PSI.....	100	10.000	0.000

Terra8 Channel Setup:

Number of Declared Digital Channels = 0

Ch#	Description	Units	Delay	M	B
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#Initial Scan at 15.00 41.00 90.00  
 #Next Scan at 15.00 41.00 90.00

Time

RUSSELL & AXDN  
 CITY OF PAHOKEE IW-1  
 STRADDLE-PACKER TEST NO. 4  
 STRADDLE-INTERVAL = 2350-2370  
 PUMP-RATE = 60 GPM  
 TEST RUN 9/16/89

TIME	MINUTES	SP-ZONE DTW(TOC) (20' PL)	SP-ZONE DRAWDOWN(s)	ANNULUS DTW (PAD LEVEL)	ANNULUS DRAWDOW
0/16/89					
15:43:55		18.28		1.19	
15:45:38		18.51		1.08	
15:47:22		18.28		1.08	
15:50:27		18.28		1.08	
15:51:57		18.28		0.96	
15:53:49		18.28		1.08	
15:56:23		18.28		1.08	
15:56:25		18.04		1.08	
15:56:26		18.04		1.08	
15:56:27		18.04		1.08	
15:56:29		18.04		1.08	
15:56:30		18.04		1.08	
15:56:31		18.04		1.08	
15:56:33		18.04		0.96	
15:56:34		18.04		0.96	
15:56:35		18.04		1.08	
		PUMP ON			
15:56:36	0.00	18.04	0.00	1.08	0.00
15:56:38	0.02	26.82	8.78	0.96	-0.12
15:56:39	0.05	19.89	1.85	1.08	0.00
15:56:40	0.07	19.66	1.62	0.96	-0.12

15:56:42	0.09	20.82	2.77	1.08	0.00
15:56:43	0.11	22.43	4.39	1.08	0.00
15:56:44	0.13	22.66	4.62	0.96	-0.12

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
15:56:46	0.15	22.90	4.85	1.08	0.00
15:56:47	0.18	24.05	6.01	1.08	0.00
15:56:48	0.20	24.74	6.70	1.08	0.00
15:56:50	0.22	24.97	6.93	1.08	0.00
15:56:51	0.24	25.90	7.85	1.08	0.00
15:56:52	0.26	26.13	8.09	1.08	0.00
15:56:54	0.29	26.59	8.55	1.08	0.00
15:56:55	0.31	26.82	8.78	1.08	0.00
15:56:56	0.33	27.20	9.24	1.08	0.00
15:56:58	0.35	27.75	9.70	1.08	0.00
15:56:59	0.38	27.98	9.93	1.08	0.00
15:57:00	0.40	28.21	10.16	1.08	0.00
15:57:02	0.42	28.44	10.40	1.19	0.12
15:57:03	0.44	28.90	10.86	1.19	0.12
15:57:04	0.46	29.13	11.09	1.19	0.12
15:57:06	0.49	29.36	11.32	1.19	0.12
15:57:07	0.51	29.60	11.55	1.19	0.12
15:57:08	0.53	30.06	12.01	1.19	0.12
15:57:09	0.55	30.29	12.24	1.19	0.12
15:57:11	0.57	30.29	12.24	1.31	0.23
15:57:12	0.59	30.52	12.47	1.19	0.12
15:57:13	0.62	30.75	12.71	1.19	0.12
15:57:15	0.64	30.98	12.94	1.19	0.12
15:57:16	0.66	31.21	13.17	1.19	0.12
15:57:17	0.68	31.44	13.40	1.19	0.12
15:57:19	0.70	31.67	13.63	1.31	0.23
15:57:20	0.73	31.91	13.86	1.19	0.12
15:57:21	0.75	31.67	13.63	1.31	0.23
15:57:23	0.77	31.91	13.86	1.31	0.23
15:57:24	0.79	32.14	14.09	1.31	0.23
15:57:25	0.81	32.37	14.32	1.31	0.23
15:57:27	0.84	32.37	14.32	1.31	0.23
15:57:28	0.86	32.60	14.55	1.19	0.12
15:57:29	0.88	32.83	14.78	1.31	0.23
15:57:31	0.90	32.83	14.78	1.31	0.23
15:57:32	0.92	33.06	15.02	1.19	0.12
15:57:33	0.95	33.06	15.02	1.19	0.12
15:57:34	0.97	33.06	15.02	1.19	0.12
15:57:36	0.99	33.52	15.48	1.19	0.12
15:57:37	1.01	33.52	15.48	1.31	0.23
15:57:39	1.04	33.29	15.25	1.19	0.12
15:57:40	1.06	33.75	15.71	1.31	0.23
15:57:41	1.08	33.75	15.71	1.19	0.12
15:57:43	1.10	33.75	15.71	1.19	0.12
15:57:44	1.12	33.98	15.94	1.19	0.12
15:57:45	1.15	33.98	15.94	1.19	0.12
15:57:46	1.17	33.98	15.94	1.19	0.12
15:57:48	1.19	34.22	16.17	1.19	0.12
15:57:49	1.21	33.98	15.94	1.19	0.12
15:57:50	1.23	34.45	16.40	1.31	0.23
15:57:52	1.25	34.22	16.17	1.19	0.12
15:57:53	1.28	34.45	16.40	1.31	0.23
15:57:54	1.30	34.45	16.40	1.31	0.23
15:57:56	1.32	34.45	16.40	1.31	0.23
15:57:57	1.34	34.45	16.40	1.19	0.12
15:57:58	1.36	34.68	16.63	1.31	0.23
15:58:00	1.39	34.68	16.63	1.19	0.12
15:58:01	1.41	34.68	16.63	1.19	0.12
15:58:02	1.43	34.91	16.86	1.31	0.23
15:58:04	1.45	34.91	16.86	1.31	0.23
15:58:05	1.48	35.14	17.09	1.31	0.23
15:58:06	1.50	34.91	16.86	1.31	0.23
15:58:08	1.52	35.14	17.09	1.31	0.23
15:58:09	1.54	35.14	17.09	1.31	0.23
15:58:10	1.56	35.14	17.09	1.31	0.23
15:58:12	1.59	35.14	17.09	1.31	0.23
15:58:13	1.61	35.14	17.09	1.31	0.23

15:58:14	1.63	35.14	17.89	1.31	0.23
15:58:16	1.63	35.37	17.33	1.31	0.23
15:58:17	1.67	35.14	17.89	1.31	0.23
15:58:18	1.70	35.37	17.33	1.31	0.23
15:58:19	1.72	35.37	17.33	1.31	0.23
15:58:21	1.74	35.37	17.33	1.31	0.23
15:58:22	1.76	35.37	17.33	1.31	0.23
15:58:23	1.78	35.37	17.33	1.31	0.23
15:58:25	1.80	35.60	17.56	1.31	0.23
15:58:26	1.83	35.60	17.56	1.31	0.23
15:58:27	1.85	35.60	17.56	1.31	0.23

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
15:58:29	1.87	35.60	17.56	1.31	0.23
15:58:30	1.89	35.83	17.79	1.31	0.23
15:58:31	1.92	35.60	17.56	1.31	0.23
15:58:33	1.94	35.60	17.56	1.31	0.23
15:58:34	1.96	35.60	17.56	1.31	0.23
15:58:35	1.98	35.60	17.56	1.31	0.23
15:58:37	2.00	35.83	17.79	1.31	0.23
15:58:38	2.03	35.83	17.79	1.31	0.23
15:58:39	2.05	35.83	17.79	1.31	0.23
15:58:41	2.07	35.83	17.79	1.31	0.23
15:58:42	2.09	35.83	17.79	1.31	0.23
15:58:43	2.11	35.83	17.79	1.31	0.23
15:58:45	2.13	35.83	17.79	1.31	0.23
15:58:46	2.16	35.83	17.79	1.31	0.23
15:58:47	2.18	35.83	17.79	1.31	0.23
15:58:49	2.20	36.06	18.02	1.31	0.23
15:58:50	2.23	36.06	18.02	1.31	0.23
15:58:51	2.25	36.06	18.02	1.31	0.23
15:58:53	2.27	36.06	18.02	1.31	0.23
15:58:54	2.29	36.06	18.02	1.31	0.23
15:58:55	2.31	36.06	18.02	1.31	0.23
15:58:57	2.34	36.29	18.25	1.31	0.23
15:58:58	2.36	36.06	18.02	1.31	0.23
15:58:59	2.38	36.06	18.02	1.31	0.23
15:59:01	2.40	36.06	18.02	1.31	0.23
15:59:02	2.43	36.06	18.02	1.31	0.23
15:59:03	2.45	36.06	18.02	1.31	0.23
15:59:05	2.47	36.06	18.02	1.31	0.23
15:59:06	2.49	36.06	18.02	1.31	0.23
15:59:07	2.51	36.06	18.02	1.31	0.23
15:59:09	2.53	36.06	18.02	1.31	0.23
15:59:10	2.56	36.06	18.02	1.31	0.23
15:59:11	2.58	36.06	18.02	1.31	0.23
15:59:13	2.60	36.29	18.25	1.31	0.23
15:59:14	2.62	36.29	18.25	1.31	0.23
15:59:15	2.65	36.06	18.02	1.31	0.23
15:59:16	2.67	36.06	18.02	1.31	0.23
15:59:18	2.69	36.29	18.25	1.31	0.23
15:59:19	2.71	36.29	18.25	1.31	0.23
15:59:20	2.73	36.29	18.25	1.31	0.23
15:59:22	2.75	36.29	18.25	1.31	0.23
15:59:23	2.78	36.29	18.25	1.31	0.23
15:59:24	2.80	36.29	18.25	1.31	0.23
15:59:26	2.82	36.29	18.25	1.31	0.23
15:59:27	2.84	36.29	18.25	1.31	0.23
15:59:28	2.87	36.29	18.25	1.31	0.23
15:59:30	2.89	36.29	18.25	1.31	0.23
15:59:31	2.91	36.53	18.48	1.31	0.23
15:59:32	2.93	36.29	18.25	1.31	0.23
15:59:34	2.95	36.29	18.25	1.31	0.23
15:59:35	2.98	36.29	18.25	1.31	0.23
15:59:36	3.00	36.29	18.25	1.31	0.23
15:59:38	3.02	36.29	18.25	1.31	0.23
15:59:39	3.04	36.29	18.25	1.31	0.23
15:59:40	3.06	36.29	18.25	1.31	0.23
15:59:42	3.09	36.53	18.48	1.31	0.23
15:59:43	3.11	36.53	18.48	1.31	0.23
15:59:44	3.13	36.53	18.48	1.31	0.23
15:59:46	3.15	36.53	18.48	1.31	0.23

15:59:47	3.17	36.29	18.25	1.31	0.23
15:59:48	3.20	36.29	18.25	1.31	0.23
15:59:50	3.22	36.29	18.25	1.31	0.23
15:59:51	3.24	36.29	18.25	1.31	0.23
15:59:52	3.26	36.29	18.25	1.31	0.23
15:59:54	3.28	36.29	18.25	1.31	0.23
15:59:55	3.31	36.53	18.48	1.31	0.23
15:59:56	3.33	36.53	18.48	1.31	0.23
15:59:57	3.35	36.29	18.25	1.31	0.23
15:59:59	3.38	36.53	18.48	1.31	0.23
16:00:00	3.40	36.29	18.25	1.31	0.23
16:00:02	3.42	36.53	18.48	1.31	0.23
16:00:03	3.44	36.29	18.25	1.31	0.23
16:00:04	3.46	36.53	18.48	1.31	0.23
16:00:06	3.48	36.53	18.48	1.31	0.23
16:00:07	3.51	36.53	18.48	1.31	0.23
16:00:08	3.53	36.53	18.48	1.31	0.23
16:00:10	3.55	36.53	18.48	1.31	0.23
16:00:11	3.57	36.53	18.48	1.31	0.23

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
16:00:12	3.60	36.53	18.48	1.31	0.23
16:00:13	3.62	36.53	18.48	1.31	0.23
16:00:15	3.64	36.53	18.48	1.31	0.23
16:00:16	3.66	36.53	18.48	1.31	0.23
16:00:17	3.68	36.53	18.48	1.31	0.23
16:00:19	3.70	36.53	18.48	1.31	0.23
16:00:20	3.73	36.53	18.48	1.31	0.23
16:00:28	3.86	36.76	18.71	1.31	0.23
16:00:34	3.96	36.76	18.71	1.31	0.23
16:00:40	4.06	36.76	18.71	1.31	0.23
16:00:46	4.16	36.76	18.71	1.31	0.23
16:00:52	4.26	36.99	18.94	1.31	0.23
16:00:58	4.36	36.76	18.71	1.31	0.23
16:01:04	4.46	36.76	18.71	1.31	0.23
16:01:10	4.56	36.76	18.71	1.31	0.23
16:01:16	4.66	36.76	18.71	1.31	0.23
16:01:22	4.76	36.76	18.71	1.31	0.23
16:01:28	4.86	36.76	18.71	1.31	0.23
16:01:34	4.96	36.76	18.71	1.31	0.23
16:01:40	5.06	36.99	18.94	1.31	0.23
16:01:46	5.16	36.76	18.71	1.31	0.23
16:01:52	5.26	36.99	18.94	1.31	0.23
16:01:58	5.36	36.76	18.71	1.31	0.23
16:02:04	5.46	36.76	18.71	1.31	0.23
16:02:10	5.56	36.99	18.94	1.31	0.23
16:02:16	5.66	36.99	18.94	1.31	0.23
16:02:22	5.76	36.76	18.71	1.31	0.23
16:02:28	5.86	36.99	18.94	1.31	0.23
16:02:34	5.96	36.99	18.94	1.31	0.23
16:02:40	6.06	36.76	18.71	1.31	0.23
16:02:46	6.16	36.99	18.94	1.31	0.23
16:02:52	6.26	36.99	18.94	1.31	0.23
16:02:58	6.36	36.99	18.94	1.31	0.23
16:03:04	6.46	36.99	18.94	1.31	0.23
16:03:10	6.56	36.99	18.94	1.31	0.23
16:03:16	6.66	36.99	18.94	1.31	0.23
16:03:22	6.76	36.99	18.94	1.31	0.23
16:03:28	6.86	37.22	19.17	1.31	0.23
16:03:34	6.96	36.99	18.94	1.31	0.23
16:03:40	7.06	37.22	19.17	1.31	0.23
16:03:46	7.16	37.22	19.17	1.31	0.23
16:03:52	7.26	37.22	19.17	1.31	0.23
16:03:58	7.36	37.22	19.17	1.31	0.23
16:04:04	7.46	37.22	19.17	1.31	0.23
16:04:10	7.56	37.22	19.17	1.31	0.23
16:04:16	7.66	37.22	19.17	1.31	0.23
16:04:22	7.76	37.45	19.40	1.31	0.23
16:04:28	7.86	37.45	19.40	1.31	0.23
16:04:34	7.96	37.22	19.17	1.31	0.23
16:04:40	8.06	37.45	19.40	1.31	0.23
16:04:46	8.16	37.45	19.40	1.31	0.23

16:04:52	8.26	37.45	19.40	1.31	0.23
16:04:58	8.36	37.45	19.40	1.31	0.23
16:05:04	8.46	37.45	19.40	1.31	0.23
16:05:10	8.56	37.45	19.40	1.31	0.23
16:05:16	8.66	37.45	19.40	1.31	0.23
16:05:22	8.76	37.45	19.40	1.31	0.23
16:05:28	8.86	37.45	19.40	1.31	0.23
16:05:34	8.96	37.45	19.40	1.31	0.23
16:05:40	9.06	37.45	19.40	1.31	0.23
16:05:46	9.16	37.45	19.40	1.31	0.23
16:05:52	9.26	37.45	19.40	1.31	0.23
16:05:58	9.36	37.45	19.40	1.31	0.23
16:06:04	9.46	37.68	19.64	1.31	0.23
16:06:10	9.56	37.45	19.40	1.31	0.23
16:06:16	9.66	37.45	19.40	1.31	0.23
16:06:22	9.76	37.68	19.64	1.31	0.23
16:06:28	9.86	37.45	19.40	1.31	0.23
16:06:34	9.96	37.68	19.64	1.31	0.23
16:06:40	10.06	37.45	19.40	1.31	0.23
16:06:46	10.16	37.68	19.64	1.19	0.12
16:06:52	10.26	37.68	19.64	1.31	0.23
16:06:58	10.36	37.68	19.64	1.31	0.23
16:07:04	10.46	37.68	19.64	1.31	0.23
16:07:10	10.56	37.68	19.64	1.31	0.23
16:07:16	10.66	37.68	19.64	1.31	0.23
16:07:22	10.76	37.45	19.40	1.19	0.12
16:08:22	11.76	37.68	19.64	1.31	0.23

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
16:09:22	12.76	37.68	19.64	1.31	0.23
16:10:22	13.76	37.68	19.64	1.19	0.12
16:11:22	14.76	37.68	19.64	1.31	0.23
16:12:22	15.76	37.68	19.64	1.19	0.12
16:13:22	16.76	37.91	19.87	1.31	0.23
16:14:22	17.76	37.68	19.64	1.31	0.23
16:15:22	18.76	37.91	19.87	1.31	0.23
16:16:22	19.76	37.68	19.64	1.31	0.23
16:17:22	20.76	37.68	19.64	1.31	0.23
16:18:22	21.76	37.91	19.87	1.19	0.12
16:19:22	22.76	37.91	19.87	1.19	0.12
16:20:22	23.76	37.68	19.64	1.19	0.12
16:21:22	24.76	37.91	19.87	1.19	0.12
16:22:22	25.76	37.91	19.87	1.19	0.12
16:23:22	26.76	37.91	19.87	1.19	0.12
16:24:22	27.76	37.91	19.87	1.19	0.12
16:25:22	28.76	37.68	19.64	1.19	0.12
16:26:22	29.76	37.91	19.87	1.19	0.12
16:27:22	30.76	37.91	19.87	1.19	0.12
16:28:22	31.76	37.91	19.87	1.19	0.12
16:29:22	32.76	38.14	20.10	1.19	0.12
16:30:22	33.76	37.91	19.87	1.19	0.12
16:31:22	34.76	37.91	19.87	1.19	0.12
16:32:22	35.76	37.91	19.87	1.19	0.12
16:33:22	36.76	38.14	20.10	1.19	0.12
16:34:22	37.76	37.91	19.87	1.19	0.12
16:35:22	38.76	37.91	19.87	1.19	0.12
16:36:22	39.76	37.91	19.87	1.19	0.12
16:37:22	40.76	38.14	20.10	1.19	0.12
16:38:22	41.76	37.91	19.87	1.19	0.12
16:39:22	42.76	37.91	19.87	1.19	0.12
16:40:22	43.76	37.91	19.87	1.19	0.12
16:41:22	44.76	37.91	19.87	1.19	0.12
16:42:22	45.76	37.91	19.87	1.19	0.12
16:43:22	46.76	38.14	20.10	1.19	0.12
16:44:22	47.76	37.91	19.87	1.19	0.12
16:45:22	48.76	37.91	19.87	1.19	0.12
16:46:22	49.76	38.14	20.10	1.19	0.12
16:47:22	50.76	37.91	19.87	1.19	0.12
16:48:22	51.76	38.14	20.10	1.19	0.12
16:49:22	52.76	37.91	19.87	1.19	0.12
16:50:22	53.76	37.91	19.87	1.19	0.12
16:51:22	54.76	37.91	19.87	1.08	0.00

16:52:22	55.76	38.14	20.10	1.08	0.00
16:53:22	56.76	37.91	19.87	1.19	0.12
16:54:22	57.76	37.91	19.87	1.08	0.00
16:55:22	58.76	37.91	19.87	1.19	0.12
16:56:22	59.76	37.91	19.87	1.08	0.00
16:57:22	60.76	37.91	19.87	1.08	0.00
16:58:22	61.76	37.91	19.87	1.08	0.00
16:59:22	62.76	37.91	19.87	1.08	0.00
17:00:22	63.76	37.68	19.64	1.08	0.00
17:01:22	64.76	37.91	19.87	1.08	0.00
17:02:22	65.76	37.68	19.64	1.08	0.00
17:03:22	66.76	37.91	19.87	1.08	0.00
17:04:22	67.76	37.68	19.64	1.08	0.00
17:05:22	68.76	37.91	19.87	1.08	0.00
17:06:22	69.76	37.91	19.87	1.08	0.00
17:11:22	74.76	37.91	19.87	1.08	0.00
17:16:22	79.76	37.91	19.87	1.08	0.00
17:21:22	84.76	37.68	19.64	0.96	-0.12
17:26:22	89.76	37.68	19.64	0.96	-0.12
17:31:22	94.76	37.68	19.64	0.96	-0.12
17:36:22	99.76	37.68	19.64	0.96	-0.12
17:41:22	104.76	37.91	19.87	0.96	-0.12
17:46:22	109.76	37.68	19.64	0.96	-0.12
17:51:22	114.76	37.68	19.64	0.96	-0.12
17:56:22	119.76	37.91	19.87	0.96	-0.12
18:01:22	124.76	37.68	19.64	0.96	-0.12
18:06:22	129.76	38.37	20.33	0.85	-0.23
18:11:22	134.76	38.37	20.33	0.96	-0.12
18:16:22	139.76	38.14	20.10	0.85	-0.23
18:21:22	144.76	38.14	20.10	0.85	-0.23
18:26:22	149.76	38.14	20.10	0.85	-0.23
18:31:22	154.76	38.37	20.33	0.85	-0.23
18:36:22	159.76	38.14	20.10	0.85	-0.23
18:41:22	164.76	38.14	20.10	0.85	-0.23
18:46:22	169.76	38.14	20.10	0.85	-0.23

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
18:51:22	174.76	38.37	20.33	0.73	-0.35
18:56:22	179.76	38.37	20.33	0.73	-0.35
19:01:22	184.76	38.37	20.33	0.73	-0.35
19:06:22	189.76	38.37	20.33	0.73	-0.35
19:11:22	194.76	38.37	20.33	0.73	-0.35
19:16:22	199.76	38.37	20.33	0.73	-0.35
19:21:22	204.76	38.14	20.10	0.73	-0.35
19:26:22	209.76	38.37	20.33	0.73	-0.35
19:31:22	214.76	38.37	20.33	0.73	-0.35
19:36:22	219.76	38.37	20.33	0.73	-0.35
19:41:22	224.76	38.14	20.10	0.73	-0.35
19:46:22	229.76	38.37	20.33	0.73	-0.35
19:51:22	234.76	38.14	20.10	0.73	-0.35
19:53:36	236.99	38.14	20.10	0.73	-0.35
19:54:47	238.17	37.91	19.87	0.73	-0.35
19:55:59	239.37	38.14	20.10	0.73	-0.35
19:56:23	239.77	38.14	20.10	0.73	-0.35
19:56:24	239.80	38.14	20.10	0.73	-0.35
19:56:26	239.82	37.91	19.87	0.73	-0.35
19:56:27	239.84	37.91	19.87	0.73	-0.35
19:56:28	239.86	37.91	19.87	0.73	-0.35
19:56:30	239.89	37.91	19.87	0.73	-0.35
19:56:31	239.91	37.91	19.87	0.73	-0.35
19:56:32	239.93	37.91	19.87	0.73	-0.35
19:56:33	239.95	37.91	19.87	0.73	-0.35
19:56:35	239.97	37.91	19.87	0.73	-0.35
19:56:36	239.99	37.91	19.87	0.73	-0.35
19:56:37	240.02	35.14	17.09	0.73	-0.35
19:56:39	240.04	35.60	17.36	0.73	-0.35

PUMP OFF

19:56:40	0.00	35.60	17.36	0.73	-0.35
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19:56:41	0.02	34.91	16.86	0.73	-0.35
19:56:43	0.04	33.52	15.48	0.73	-0.35
19:56:44	0.06	32.37	14.32	0.73	-0.35
19:56:45	0.09	31.21	13.17	0.73	-0.35
19:56:46	0.11	30.06	12.01	0.73	-0.35
19:56:48	0.13	28.90	10.86	0.73	-0.35
19:56:49	0.15	27.98	9.93	0.73	-0.35
19:56:50	0.17	26.82	8.78	0.73	-0.35
19:56:52	0.19	25.67	7.62	0.61	-0.46
19:56:53	0.21	24.97	6.93	0.61	-0.46
19:56:54	0.24	23.82	5.78	0.61	-0.46
19:56:55	0.26	23.13	5.08	0.61	-0.46
19:56:57	0.28	22.43	4.39	0.61	-0.46
19:56:58	0.30	21.74	3.70	0.61	-0.46
19:56:59	0.33	21.28	3.23	0.61	-0.46
19:57:01	0.35	20.59	2.54	0.61	-0.46
19:57:02	0.37	20.35	2.31	0.61	-0.46
19:57:03	0.39	19.89	1.85	0.61	-0.46
19:57:05	0.41	19.66	1.62	0.61	-0.46
19:57:06	0.44	19.28	1.16	0.50	-0.58
19:57:07	0.46	18.97	0.92	0.50	-0.58
19:57:09	0.48	18.74	0.69	0.50	-0.58
19:57:10	0.50	18.74	0.69	0.50	-0.58
19:57:11	0.52	18.51	0.46	0.50	-0.58
19:57:13	0.54	18.28	0.23	0.50	-0.58
19:57:14	0.56	18.28	0.23	0.50	-0.58
19:57:15	0.59	18.04	0.00	0.50	-0.58
19:57:17	0.61	18.04	0.00	0.50	-0.58
19:57:18	0.63	17.81	-0.23	0.50	-0.58
19:57:19	0.65	17.81	-0.23	0.38	-0.69
19:57:20	0.68	17.81	-0.23	0.50	-0.58
19:57:22	0.70	17.58	-0.46	0.38	-0.69
19:57:23	0.72	17.58	-0.46	0.38	-0.69
19:57:24	0.74	17.58	-0.46	0.38	-0.69
19:57:26	0.76	17.58	-0.46	0.38	-0.69
19:57:27	0.79	17.58	-0.46	0.38	-0.69
19:57:29	0.81	17.81	-0.23	0.38	-0.69
19:57:30	0.83	17.81	-0.23	0.38	-0.69
19:57:31	0.85	17.81	-0.23	0.38	-0.69
19:57:32	0.88	17.81	-0.23	0.38	-0.69
19:57:34	0.90	17.81	-0.23	0.38	-0.69
19:57:35	0.92	18.04	0.00	0.50	-0.58
19:57:36	0.94	18.04	0.00	0.38	-0.69

TIME	MINUTES	SP-ZONE(DTM),s	ANNULUS(DTM), s		
19:57:38	0.96	18.04	0.00	0.38	-0.69
19:57:39	0.99	18.04	0.00	0.38	-0.69
19:57:40	1.01	18.28	0.23	0.38	-0.69
19:57:42	1.03	18.51	0.46	0.38	-0.69
19:57:43	1.05	18.28	0.23	0.50	-0.58
19:57:44	1.07	18.51	0.46	0.50	-0.58
19:57:46	1.10	18.51	0.46	0.50	-0.58
19:57:47	1.12	18.51	0.46	0.50	-0.58
19:57:48	1.14	18.74	0.69	0.50	-0.58
19:57:50	1.16	18.74	0.69	0.50	-0.58
19:57:51	1.18	18.51	0.46	0.50	-0.58
19:57:52	1.20	18.51	0.46	0.50	-0.58
19:57:53	1.23	18.74	0.69	0.50	-0.58
19:57:55	1.25	18.74	0.69	0.50	-0.58
19:57:56	1.27	18.51	0.46	0.50	-0.58
19:57:57	1.29	18.74	0.69	0.50	-0.58
19:57:59	1.31	18.74	0.69	0.50	-0.58
19:58:00	1.34	18.51	0.46	0.50	-0.58
19:58:01	1.36	18.51	0.46	0.50	-0.58
19:58:03	1.38	18.51	0.46	0.50	-0.58
19:58:04	1.40	18.51	0.46	0.50	-0.58
19:58:05	1.42	18.51	0.46	0.50	-0.58
19:58:07	1.44	18.28	0.23	0.50	-0.58
19:58:08	1.46	18.28	0.23	0.50	-0.58
19:58:09	1.49	18.28	0.23	0.50	-0.58
19:58:11	1.51	18.28	0.23	0.50	-0.58
19:58:12	1.53	18.28	0.23	0.50	-0.58

19:58:13	1.55	18.28	0.23	0.50	-0.58
19:58:15	1.58	18.28	0.23	0.50	-0.58
19:58:16	1.60	18.04	0.00	0.50	-0.58
19:58:17	1.62	18.04	0.00	0.50	-0.58
19:58:19	1.64	18.04	0.00	0.50	-0.58
19:58:20	1.66	18.04	0.00	0.50	-0.58
19:58:21	1.69	18.04	0.00	0.50	-0.58
19:58:22	1.71	18.04	0.00	0.38	-0.69
19:58:24	1.73	18.04	0.00	0.38	-0.69
19:58:25	1.75	18.04	0.00	0.50	-0.58
19:58:26	1.77	18.04	0.00	0.38	-0.69
19:58:28	1.80	18.04	0.00	0.38	-0.69
19:58:29	1.82	18.04	0.00	0.50	-0.58
19:58:30	1.84	18.04	0.00	0.50	-0.58
19:58:32	1.86	18.28	0.23	0.38	-0.69
19:58:33	1.88	18.28	0.23	0.50	-0.58
19:58:34	1.90	18.28	0.23	0.50	-0.58
19:58:36	1.93	18.28	0.23	0.50	-0.58
19:58:37	1.95	18.28	0.23	0.38	-0.69
19:58:38	1.98	18.28	0.23	0.50	-0.58
19:58:40	2.00	18.51	0.46	0.38	-0.69
19:58:41	2.02	18.51	0.46	0.50	-0.58
19:58:42	2.04	18.51	0.46	0.50	-0.58
19:58:44	2.06	18.28	0.23	0.50	-0.58
19:58:45	2.09	18.51	0.46	0.38	-0.69
19:58:46	2.11	18.51	0.46	0.38	-0.69
19:58:48	2.13	18.51	0.46	0.38	-0.69
19:58:49	2.15	18.51	0.46	0.38	-0.69
19:58:50	2.17	18.51	0.46	0.38	-0.69
19:58:52	2.19	18.51	0.46	0.38	-0.69
19:58:53	2.22	18.51	0.46	0.50	-0.58
19:58:54	2.24	18.28	0.23	0.50	-0.58
19:58:56	2.26	18.51	0.46	0.50	-0.58
19:58:57	2.28	18.28	0.23	0.50	-0.58
19:58:58	2.30	18.28	0.23	0.50	-0.58
19:59:00	2.33	18.28	0.23	0.50	-0.58
19:59:01	2.35	18.28	0.23	0.50	-0.58
19:59:02	2.37	18.28	0.23	0.38	-0.69
19:59:04	2.39	18.28	0.23	0.50	-0.58
19:59:05	2.41	18.28	0.23	0.50	-0.58
19:59:06	2.44	18.28	0.23	0.50	-0.58
19:59:08	2.46	18.28	0.23	0.50	-0.58
19:59:09	2.48	18.28	0.23	0.50	-0.58
19:59:10	2.50	18.28	0.23	0.50	-0.58
19:59:12	2.53	18.04	0.00	0.50	-0.58
19:59:13	2.55	18.04	0.00	0.50	-0.58
19:59:14	2.57	18.04	0.00	0.38	-0.69
19:59:15	2.59	18.04	0.00	0.50	-0.58
19:59:17	2.61	18.04	0.00	0.50	-0.58
19:59:18	2.64	18.04	0.00	0.50	-0.58
19:59:19	2.66	18.04	0.00	0.50	-0.58

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
19:59:21	2.68	18.28	0.23	0.50	-0.58
19:59:22	2.70	18.04	0.00	0.50	-0.58
19:59:23	2.72	18.04	0.00	0.38	-0.69
19:59:25	2.75	18.28	0.23	0.50	-0.58
19:59:26	2.77	18.28	0.23	0.38	-0.69
19:59:27	2.79	18.04	0.00	0.38	-0.69
19:59:29	2.81	18.28	0.23	0.50	-0.58
19:59:30	2.83	18.28	0.23	0.38	-0.69
19:59:31	2.86	18.28	0.23	0.38	-0.69
19:59:33	2.88	18.28	0.23	0.38	-0.69
19:59:34	2.90	18.28	0.23	0.50	-0.58
19:59:35	2.92	18.28	0.23	0.50	-0.58
19:59:37	2.95	18.28	0.23	0.38	-0.69
19:59:38	2.97	18.28	0.23	0.38	-0.69
19:59:39	2.99	18.28	0.23	0.50	-0.58
19:59:41	3.01	18.28	0.23	0.38	-0.69
19:59:42	3.04	18.28	0.23	0.38	-0.69
19:59:43	3.06	18.28	0.23	0.38	-0.69
19:59:45	3.08	18.28	0.23	0.50	-0.58

19:59:46	3.10	18.28	0.23	0.38	-0.69
19:59:47	3.12	18.28	0.23	0.38	-0.69
19:59:49	3.15	18.28	0.23	0.38	-0.69
19:59:50	3.17	18.28	0.23	0.38	-0.58
19:59:52	3.19	18.28	0.23	0.38	-0.69
19:59:53	3.21	18.28	0.23	0.38	-0.69
19:59:54	3.24	18.28	0.23	0.38	-0.58
19:59:56	3.26	18.28	0.23	0.38	-0.69
19:59:57	3.28	18.28	0.23	0.38	-0.69
19:59:58	3.30	18.28	0.23	0.38	-0.69
20:00:00	3.33	18.28	0.23	0.50	-0.58
20:00:01	3.35	18.28	0.23	0.50	-0.58
20:00:02	3.37	18.28	0.23	0.38	-0.69
20:00:04	3.40	18.04	0.00	0.50	-0.58
20:00:05	3.42	18.04	0.00	0.50	-0.58
20:00:06	3.44	18.04	0.00	0.50	-0.58
20:00:08	3.46	18.28	0.23	0.50	-0.58
20:00:09	3.48	18.04	0.00	0.50	-0.58
20:00:10	3.50	18.04	0.00	0.38	-0.69
20:00:11	3.53	18.28	0.23	0.38	-0.69
20:00:13	3.55	18.04	0.00	0.50	-0.58
20:00:14	3.57	18.04	0.00	0.38	-0.69
20:00:15	3.59	18.04	0.00	0.50	-0.58
20:00:17	3.61	18.28	0.23	0.38	-0.69
20:00:18	3.64	18.04	0.00	0.50	-0.58
20:00:19	3.66	18.28	0.23	0.50	-0.58
20:00:27	3.79	18.51	0.46	0.38	-0.69
20:00:33	3.89	18.51	0.46	0.38	-0.69
20:00:39	3.99	18.51	0.46	0.38	-0.69
20:00:45	4.09	18.51	0.46	0.38	-0.69
20:00:51	4.19	18.51	0.46	0.38	-0.69
20:00:57	4.29	18.28	0.23	0.50	-0.58
20:01:03	4.39	18.28	0.23	0.38	-0.69
20:01:09	4.49	18.28	0.23	0.38	-0.69
20:01:15	4.59	18.28	0.23	0.38	-0.69
20:01:21	4.69	18.28	0.23	0.50	-0.58
20:01:27	4.79	18.51	0.46	0.38	-0.69
20:01:33	4.89	18.28	0.23	0.38	-0.69
20:01:39	4.99	18.28	0.23	0.38	-0.69
20:01:45	5.09	18.28	0.23	0.38	-0.69
20:01:51	5.19	18.28	0.23	0.38	-0.69
20:01:57	5.29	18.28	0.23	0.50	-0.58
20:02:03	5.39	18.28	0.23	0.50	-0.58
20:02:09	5.49	18.28	0.23	0.50	-0.58
20:02:15	5.59	18.28	0.23	0.38	-0.69
20:02:21	5.69	18.28	0.23	0.50	-0.58
20:02:27	5.79	18.28	0.23	0.38	-0.69
20:02:33	5.89	18.28	0.23	0.38	-0.69
20:02:39	5.99	18.28	0.23	0.50	-0.58
20:02:45	6.09	18.28	0.23	0.50	-0.58
20:02:51	6.19	18.28	0.23	0.38	-0.69
20:02:57	6.29	18.28	0.23	0.50	-0.58
20:03:03	6.39	18.28	0.23	0.38	-0.69
20:03:09	6.49	18.28	0.23	0.50	-0.58
20:03:15	6.59	18.28	0.23	0.50	-0.58
20:03:21	6.69	18.28	0.23	0.38	-0.69
20:03:27	6.79	18.28	0.23	0.38	-0.69
20:03:33	6.89	18.28	0.23	0.38	-0.69
20:03:39	6.99	18.28	0.23	0.38	-0.69

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
20:03:45	7.09	18.28	0.23	0.50	-0.58
20:03:51	7.19	18.28	0.23	0.50	-0.58
20:03:57	7.29	18.28	0.23	0.38	-0.69
20:04:03	7.39	18.28	0.23	0.38	-0.69
20:04:09	7.49	18.28	0.23	0.38	-0.69
20:04:15	7.59	18.28	0.23	0.50	-0.58
20:04:21	7.69	18.28	0.23	0.38	-0.69
20:04:27	7.79	18.04	0.00	0.38	-0.69
20:04:33	7.89	18.04	0.00	0.50	-0.58
20:04:39	7.99	18.28	0.23	0.38	-0.69
20:04:45	8.09	18.28	0.23	0.38	-0.69

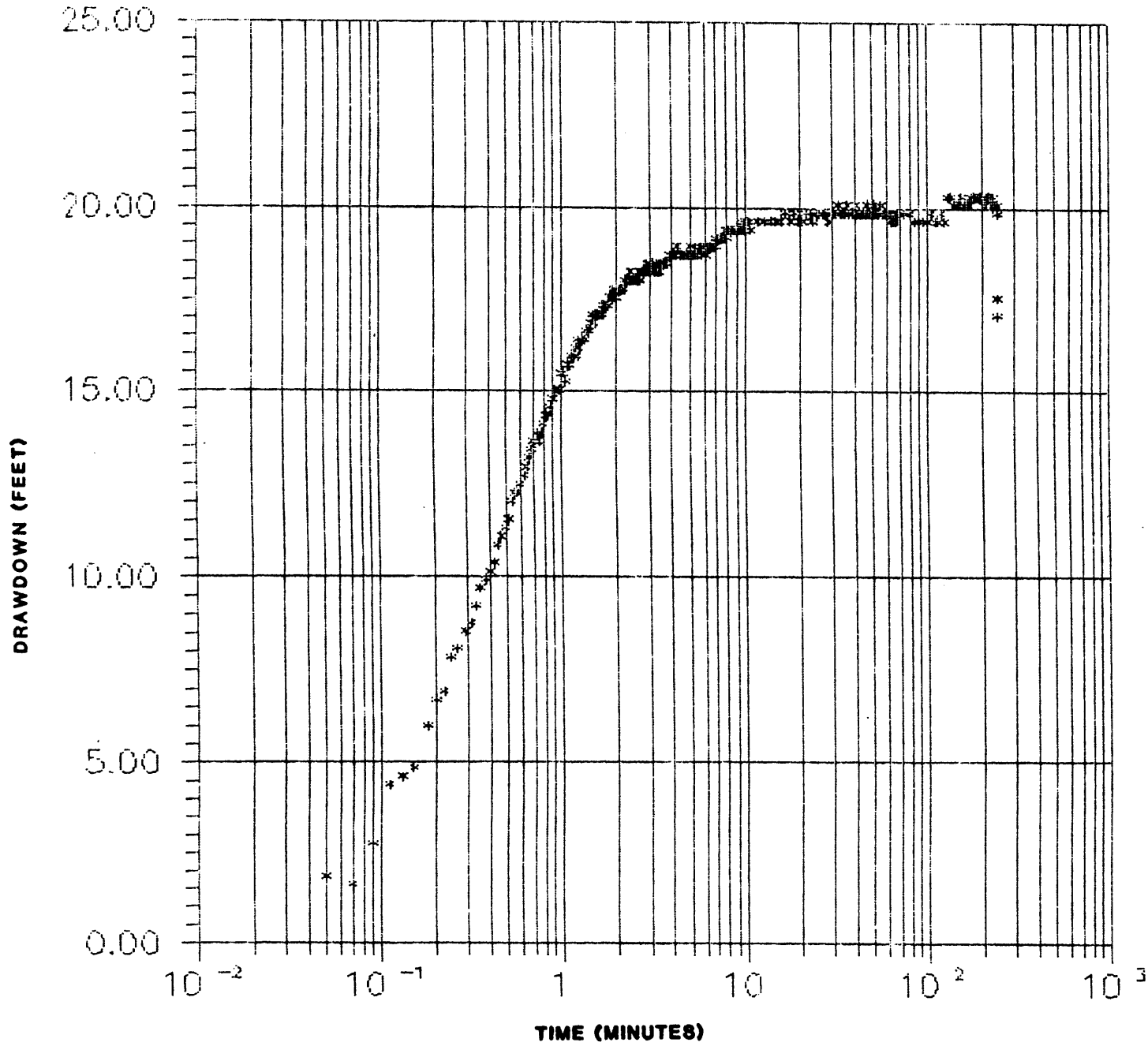
20:04:51	8.19	18.28	0.23	0.38	-0.69
20:04:57	8.29	18.28	0.23	0.38	-0.69
20:05:03	8.39	18.28	0.23	0.38	-0.58
20:05:09	8.49	18.28	0.23	0.38	-0.69
20:05:15	8.59	18.28	0.23	0.38	-0.69
20:05:21	8.69	18.28	0.23	0.38	-0.69
20:05:27	8.79	18.28	0.23	0.38	-0.69
20:05:33	8.89	18.28	0.23	0.38	-0.69
20:05:39	8.99	18.28	0.23	0.50	-0.58
20:05:45	9.09	18.28	0.23	0.50	-0.58
20:05:51	9.19	18.28	0.23	0.38	-0.69
20:05:57	9.29	18.28	0.23	0.50	-0.58
20:06:03	9.39	18.28	0.23	0.38	-0.69
20:06:09	9.49	18.28	0.23	0.38	-0.69
20:06:15	9.59	18.28	0.23	0.38	-0.69
20:06:21	9.69	18.28	0.23	0.50	-0.58
20:06:27	9.79	18.28	0.23	0.38	-0.69
20:06:33	9.89	18.28	0.23	0.50	-0.58
20:06:39	9.99	18.28	0.23	0.50	-0.58
20:06:45	10.09	18.28	0.23	0.38	-0.69
20:06:51	10.19	18.28	0.23	0.38	-0.69
20:06:57	10.29	18.28	0.23	0.38	-0.69
20:07:03	10.39	18.28	0.23	0.50	-0.58
20:07:09	10.49	18.28	0.23	0.38	-0.69
20:07:15	10.59	18.28	0.23	0.38	-0.69
20:07:21	10.69	18.28	0.23	0.38	-0.69
20:08:21	11.69	18.28	0.23	0.38	-0.69
20:09:21	12.69	18.28	0.23	0.38	-0.69
20:10:21	13.69	18.28	0.23	0.38	-0.69
20:11:21	14.69	18.04	0.00	0.38	-0.69
20:12:21	15.69	18.28	0.23	0.50	-0.58
20:13:21	16.69	18.28	0.23	0.38	-0.69
20:14:21	17.68	18.28	0.23	0.38	-0.69
20:15:21	18.68	18.04	0.00	0.38	-0.69
20:16:21	19.68	18.04	0.00	0.38	-0.69
20:17:21	20.68	18.28	0.23	0.50	-0.58
20:18:21	21.68	18.28	0.23	0.38	-0.69
20:19:21	22.68	18.04	0.00	0.50	-0.58
20:20:21	23.68	18.04	0.00	0.38	-0.69
20:21:21	24.68	18.28	0.23	0.38	-0.69
20:22:21	25.68	18.04	0.00	0.50	-0.58
20:23:21	26.68	18.28	0.23	0.38	-0.69
20:24:21	27.68	18.04	0.00	0.50	-0.58
20:25:21	28.68	18.04	0.00	0.38	-0.69
20:26:21	29.68	18.04	0.00	0.38	-0.69
20:27:21	30.68	18.04	0.00	0.38	-0.69
20:28:21	31.68	18.04	0.00	0.38	-0.69
20:29:21	32.68	18.04	0.00	0.38	-0.69
20:30:21	33.68	18.04	0.00	0.38	-0.69
20:31:21	34.68	18.04	0.00	0.50	-0.58
20:32:21	35.68	18.28	0.23	0.38	-0.69
20:33:21	36.68	18.04	0.00	0.38	-0.69
20:34:21	37.68	18.04	0.00	0.38	-0.69
20:35:21	38.68	18.28	0.23	0.38	-0.69
20:36:21	39.68	18.04	0.00	0.38	-0.69
20:37:21	40.68	18.04	0.00	0.38	-0.69
20:38:21	41.68	18.04	0.00	0.38	-0.69
20:39:21	42.68	18.04	0.00	0.50	-0.58
20:40:21	43.68	18.28	0.23	0.38	-0.69
20:41:21	44.68	18.04	0.00	0.38	-0.69
20:42:21	45.68	18.28	0.23	0.38	-0.69
20:43:21	46.68	18.04	0.00	0.38	-0.69
20:44:21	47.68	18.04	0.00	0.38	-0.69
20:45:21	48.68	18.04	0.00	0.38	-0.69
20:46:21	49.68	18.04	0.00	0.38	-0.69
20:47:21	50.68	18.04	0.00	0.50	-0.58
20:48:21	51.68	18.28	0.23	0.38	-0.69

TIME	MINUTES	SP-ZONE(DTW),s	ANNULUS(DTW), s		
20:49:21	52.68	18.04	0.00	0.38	-0.69
20:50:21	53.68	18.04	0.00	0.38	-0.69
20:51:21	54.68	18.04	0.00	0.38	-0.69

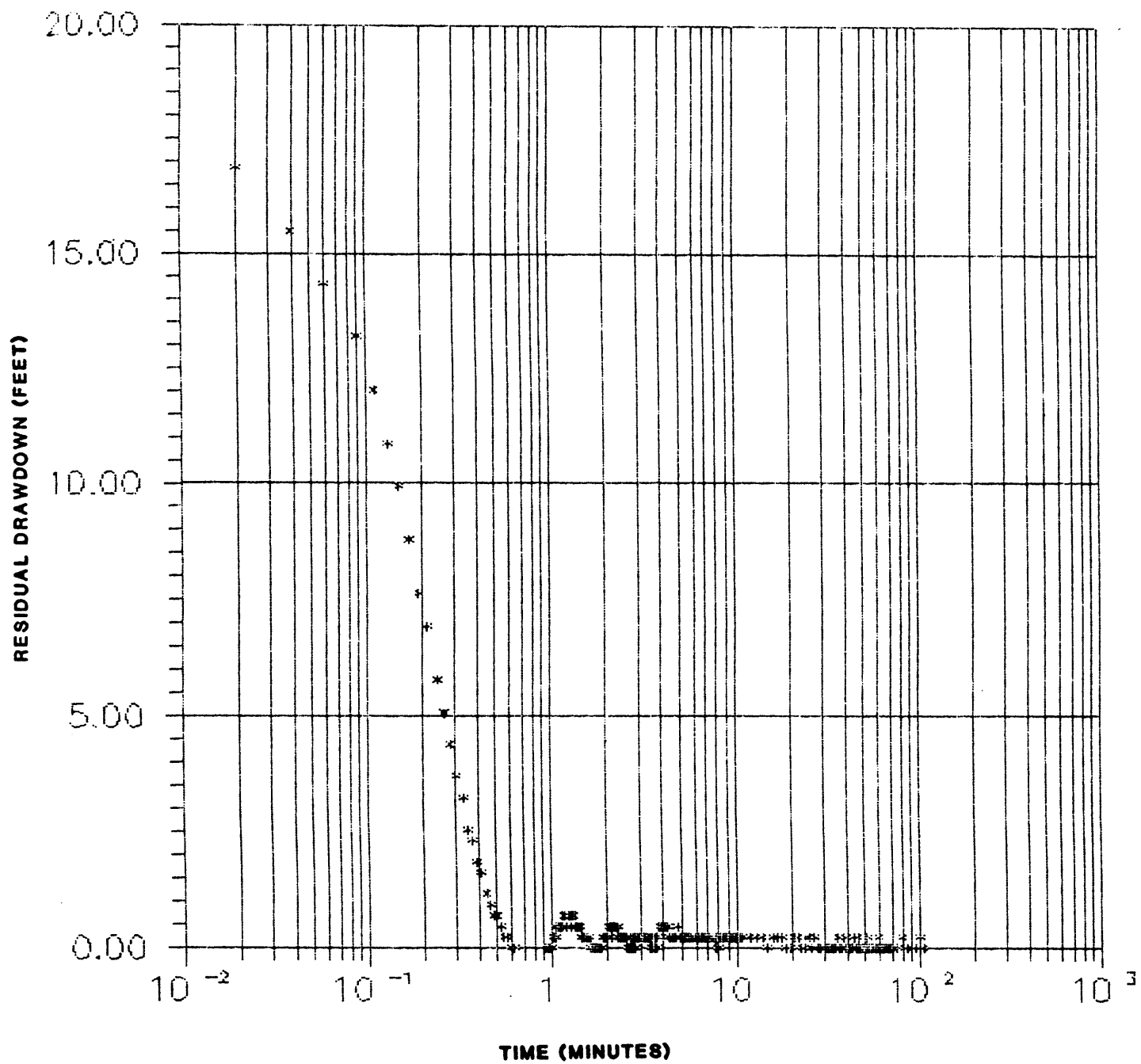
20:53:21	56.68	18.04	0.00	0.38	-0.69
20:54:21	57.68	18.04	0.00	0.38	-0.69
20:55:21	58.68	18.04	0.00	0.38	-0.69
20:56:21	59.68	18.28	0.23	0.38	-0.69
20:57:21	60.68	18.04	0.00	0.38	-0.69
20:58:21	61.68	18.04	0.00	0.38	-0.69
20:59:21	62.68	18.04	0.00	0.38	-0.69
21:00:21	63.68	18.04	0.00	0.38	-0.69
21:01:21	64.68	18.04	0.00	0.38	-0.69
21:02:21	65.68	18.04	0.00	0.38	-0.69
21:03:21	66.68	18.04	0.00	0.38	-0.69
21:04:21	67.68	18.04	0.00	0.38	-0.69
21:05:21	68.68	18.04	0.00	0.38	-0.69
21:06:21	69.68	18.04	0.00	0.58	-0.58
21:11:21	74.68	18.04	0.00	0.38	-0.69
21:16:21	79.68	18.28	0.23	0.38	-0.69
21:21:21	84.68	18.04	0.00	0.38	-0.69
21:26:21	89.68	18.04	0.00	0.38	-0.69
21:31:21	94.68	18.04	0.00	0.38	-0.69
21:36:21	99.68	18.28	0.23		
21:41:21	104.68	18.04	0.00		

END RECOVERY

# DRAWDOWN GRAPH



# RECOVERY GRAPH



**BACKGROUND WATER-QUALITY DATA**



**WATER ANALYSES FROM STRADDLE-PACKER TESTS**



1602 CLARE AVENUE • WEST PALM BEACH, FL 33401 • 407/833-7280

MFORMA

ANALYSIS REPORT

GERAGHTY & MILLER, INC  
2700 PGA BLVD. SUITE 104  
PALM BEACH GARDENS, FL 33410  
40894

CLIENT NAME AND ADDRESS

RECEIVED

NOV 16 1989

Geraghty & Miller, Inc.

06-08-89 CLIENT 06-13-89 1315  
PF0546PA02 - PAHOKEE

SAMPLE NUMBER

DATE TIME COLL RECD

PROJECT NO/LOCATION

IW-1/SP#1 STRADDLE PACKER TEST #1 (1776 - 1821' PAD LEVEL)

PARAMETER	STORET #	DATE BY NBR	RESULTS,mg/L
CONDUCTIVITY umho/cm	00095	06-13 JP 166-55	10,350
CHLORIDE	00940	06-15 BM #1603	4,610
TDS	070304	06-14 CH 43A-48	8,485
SULFATE	000945	06-15 BM #1602	114

DATE 06-15-89

LAB ID 86122,86109, E86048

BY

DIRECTOR

MFORMA

ANALYSIS REPORT

GERAGHTY & MILLER, INC

CLIENT NAME AND ADDRESS

2700 PGA BLVD. SUITE 104

PALM BEACH GARDENS, FL 33410

40895

SAMPLE NUMBER

06-12-89 CLIENT 06-13-89 1315

DATE TIME COLL RECD

PF0546PA02 - PAHOKEE

PROJECT NO/LOCATION

IW-1/SP#2 STRADDLE PACKER TEST #2 (1890 - 1935' PAD LEVEL)

PARAMETER	STORET #	DATE BY NBR	RESULTS, mg/L
CONDUCTIVITY umho/cm	00095	06-13 JP 166-55	18,880
CHLORIDE	00940	06-15 BM #1603	7,693
TDS	070304	06-14 CH 43A-48	16,153
SULFATE	000945	06-15 BM #1602	863

DATE 06-15-89

LAB ID 86122,86109, E86048

BY  
DIRECTOR



**INJECTION ZONE WATER ANALYSIS**

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FLORIDA 33407

42277

SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330

DATE TIME RECEIVED BY

INJECTION WELL - PAHOKEE

LOCATION


TEST AT 3512'

PARAMETER	STORET #	DATE BY NBR	RESULTS, mg/L
ARSENIC	01002	10-11 MD 78-161	<0.005
BARIUM	01007	10-17 MD 78-167	<0.10
CADMIUM	01027	10-19 MD 78-169	0.002
CHROMIUM	01034	10-10 MD 78-160	<0.005
LEAD	01051	10-11 MD 78-162	0.028
MERCURY	71900	10-18 MD 78-168	<0.0002
SELENIUM	01147	10-16 MD 78-165	0.002
SILVER	01077	10-19 MD 78-170	<0.005
SODIUM	00929	11-06 MD 78-197	11600
MAGNESIUM	00927	10-24 MD 78-182	1130

DATE 11-30-89

LAB ID 86122, 86109, E86048

BY



DIRECTOR

ORGANICS ANALYSIS REPORT

YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42277 SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330 DATE TIME COLLECTED BY

INJECTION WELL - PAHOKEE LOCATION

TEST AT 3512'

PARAMETER	STORET #	MCL, mg/L	RESULTS, mg/L
LINDANE	39782	0.004	<0.000005
ENDRIN	39390	0.0002	<0.000005
METHOXYCHLOR	39480	0.1	<0.00005
TOXAPHENE	39400	0.005	<0.0005
2,4-D		0.1	<0.001
2,4,5-TP	39760	0.01	<0.001

DATE 11-30-89 BY *[Signature]* LAB ID 86109,86122

TRIHALOMETHANES THM1.FRM  
 -----  
 YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS  
 -----  
 6100 W. 45TH STREET  
 -----  
 WEST PALM BEACH, FL 33407  
 -----  
 42277 SAMPLE NUMBER  
 -----  
 10-09-89 1215 BM 10-09-89 1330 DATE TIME COLLECTED BY RECD  
 -----  
 INJECTION WELL - PAHOKEE LOCATION  
 -----  
 TEST AT 3512'  
 -----

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BROMODICHLOROMETHANE	32101	*	<2
BROMOFORM	32104	*	<2
CHLOROFORM	32106	*	<2
DIBROMOCHLOROMETHANE	32105	*	<2
TOTAL TRIHALOMETHANES			<2

-----  
 DATE 11-30-89 BY *[Signature]* LAB ID 86109  
 -----

SEC. FRM

SECONDARY

REPORT FORM

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42277

SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330

DATE TIME COLLECTED BY RECD

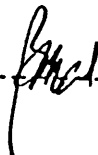
WASTEWATER TREATMENT PLANT PAHOKEE FL LOCATION

TEST AT 3512'

PARAMETER	STORET NO.	DATE BY NBR	RESULT, mg/L
ALKALINITY	00410	10-01 TM 64-233	114
CALCIUM	00916	10-24 MD 78-180	739
CHLORIDE	00940	10-10 BM 62-353	70700
COLOR	00081	10-10 CH 81-74	100
COPPER	01042	10-23 MD 78-175	<0.005
CORROSIVITY		CALCULATED	0.67
FOAMING AGENTS	38260	10-10 TM 64-234	0.715
IRON	01045	10-20 MD 78-173	4.69
MANGANESE	01055	11-02 MD 78-194	0.117
ODOR	00085	10-10 CH 81-74	1
TDS	70304	10-11 CH 81-75	40863
NON-FILTERABLE RESIDUE	00530	10-13 CH 81-75	56
ZINC	01092	10-20 MD 78-174	0.10
BICARBONATE ALKALINITY		CALCULATED	119

DATE 11-30-89

BY



LAB ID 86122, 86109



MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42277

SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION

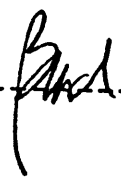
TEST AT 3512'

PARAMETER	STORET #	DATE BY NUMBER	RESULTS
TURBIDITY	00076	10-09 BM TB-71	18.2
BOD (5)	00310	10-10 CH 80-66	2
POTASSIUM	00937	11-06 MD 78-198	391
ANTIMONY	01097	11-03 MD 78-196	0.077
BROMIDE	71870	10-10 BM 62-353	67.8
STRONTIUM	01080	11-07 MD 78-209	10.2
BORON	01022	10-10 BM 62-353	67.8
HYDROGEN SULFIDE	71875	10-09 TM 64-239	0.526
COD	00340	10-23 TM 64-236	2381

DATE 11-30-89

LAB ID 86122,86109, E86048

BY



DIRECTOR

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42277

SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION

TEST AT 3512'

PARAMETER	STORET #	DATE BY NUMBER	RESULTS
SPEC COND, mS	00095	10-09 BM COC	54.3
SPEC GRAVITY	72013		1.025
pH	00400	10-09 BM COC	7.45

RESULTS, ORG/100ML

FECAL COLIFORM, MPN	10-09 BM 77-48	<2
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RESULTS, mg/L

FLUORIDE	00951	10-10 BM 62-354	<0.05
NITRATE-N	00630	10-10 BM	<0.05
TKN	00625	10-17 BM 62-354	1.17
ORTHO-PHOSPHORUS	00671	10-10 BM 62-354	<0.05
t-PHOSPHORUS	00665	10-10 BM 62-354	<0.05
AMMONIA NITROGEN	00610	10-10 BM 62-354	<0.05
SULFATE	00945	11-05 BM 62-354	3410
TOTAL NITROGEN		CALCULATED	1.17

DATE

LAB ID 86122, 86109, E86048

BY

DIRECTOR



PURGEABLE HALOCARBONS M601 METHOD 601  
 -----  
 YOUNGQUIST BROTHERS CLIENTS NAME AND ADDRESS  
 -----

6100 W. 45TH STREET  
 -----  
 WEST PALM BEACH, FL 33407  
 -----

42277 SAMPLE NUMBER  
 -----  
 10-09-89 1215 BM 10-09-89 1330 DATE TIME COLLECTED BY RECD  
 -----

INJECTION WELL - PAHOKEE LOCATION  
 -----  
 TEST AT 3512'  
 -----

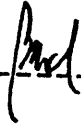
PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BROMODICHLOROMETHANE	32101	*	<2
BROMOFORM	32104	*	<2
BROMOMETHANE	34413		<5
CARBON TETRACHLORIDE	32102	3	<0.3
CHLOROBENZENE	34301		<2
CHLOROETHANE	34311		<5
2-CHLOROETHYLVINYL ETHER	34576		<5
CHLOROFORM	32106	*	<2
CHLOROMETHANE	34418		<5
DIBROMOCHLOROMETHANE	32105	*	<2
1,2-DICHLOROBENZENE	34536		<2
1,3-DICHLOROBENZENE	34566		<2
1,4-DICHLOROBENZENE	34571	75	<2
DICHLORODIFLUOROMETHANE	34668		<5
1,1-DICHLOROETHANE	34496		<2
1,2-DICHLOROETHANE	34531	3	<0.3
1,1-DICHLOROETHENE	34501	7	<2
1,2-DICHLOROETHENE	34546		<2
1,2-DICHLOROPROPANE	34541		<2
cis-1,3-DICHLOROPROPENE	34704		<2
trans-1,3-DICHLOROPROPENE	34699		<2
METHYLENE CHLORIDE	34423		<2
1,1,2,2-TETRACHLOROETHANE	34516		<2
TETRACHLOROETHENE	34475	3	<0.3
1,1,1-TRICHLOROETHANE	34506	200	<2
1,1,2-TRICHLOROETHANE	34511		<2
TRICHLOROETHENE	39180	3	<0.3
TRICHLOROFLUOROMETHANE	34488		<2
VINYL CHLORIDE	39175	1	<0.1

DATE 11-30-89 BY *Burd* LAB ID 86109, E86048  
 -----

PURGEABLE AROMATICS M602 METHOD  
 -----  
 YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS  
 -----  
 6100 W. 45TH STREET  
 -----  
 WEST PALM BEACH, FL 33407  
 -----  
 42277 SAMPLE NUMBER  
 -----  
 10-09-89 1215 BM 10-09-89 1330 DATE TIME COLLECTED BY REC.  
 -----  
 INJECTION WELL - PAHOKEE DESCRIPTION  
 -----  
 TEST AT 3512' LOCATION  
 -----

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BENZENE	34030	1	<0.1
CHLOROBENZENE	34301		<2
1,2-DICHLOROBENZENE	34536		<2
1,3-DICHLOROBENZENE	34566		<2
1,4-DICHLOROBENZENE	34571		<2
ETHYLBENZENE	34371		<0.1
TOLUENE	34010		<0.1
XYLENES	81551		<2

DATE 11-30-89 LAB ID 86122,86109,E86048

BY  DIRECTOR

ANALYSIS REPORT M608.FRM

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42277

SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330

DATE/TIME COLLECTED BY/RECD

INJECTION WELL - PAHOKEE

LOCATION TEST AT 3512'

PARAMETER	STORET NO.	RESULT ug/L
ALDRIN	39330	<0.005
a-BHC	39337	<0.005
b-BHC	39338	<0.005
d-BHC	34259	<0.005
g-BHC (LINDANE)	39340	<0.005
CHLORDANE	39350	<0.05
4,4'-DDD	39310	<0.05
4,4'-DDE	39320	<0.05
4,4'-DDT	39300	<0.05
DIELDRIN	39380	<0.005
ENDOSULFAN I	34361	<0.005
ENDOSULFAN II	34356	<0.005
ENDOSULFAN SO4	34351	<0.05
ENDRIN	39390	<0.005
ENDRIN ALDEHYDE	34366	<0.05
HEPTACHLOR	39410	<0.005
HEPTACHLOR EPOXIDE	39420	<0.005
TOXAPHENE	39400	<0.5

ANALYSIS REPORT M608.FRM

YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42277 SAMPLE NUMBER

10-09-89 1215 BM 10-09-89 1330 DATE/TIME COLLECTED BY/RECD

INJECTION WELL - PAHOKEE LOCATION TEST AT 3512'

PARAMETER	STORET NO.	RESULT, ug/L
PCB A1016	34671	<0.1
PCB A1221	39488	<0.1
PCB A1232	39392	<0.1
PCB A1242	39496	<0.1
PCB A1248	39500	<0.1
PCB A1254	39504	<0.1
PCB A1260	39508	<0.1

FED. REGISTER VOL 44 NO233 DECEMBER 3, 1979

DATE 11-30-89

BY *[Signature]*

LAB ID 86109,86122



Laboratories, Inc.

CLIENT: GEOTECH/EVERGLADES LABS
SAMPLE ID: #42277 / 018-101089
SAMPLED BY: CLIENT
RECEIVED: 10-10-89
ANALYZED: 10-16-89

-CERTIFICATIONS-
EPA NUMBER: # FL095
FLORIDA DRINKING WATER: # 86144
FLORIDA ENVIRONMENTAL: #E86006

EPA METHOD 625
BASE/NEUTRALS AND ACIDS

Table with 4 columns: NUMBER, PARAMETER, CONCENTRATION (ug/l), and LOD (ug/l). Rows list various chemical parameters such as ACENAPHTHENE, ANTHRACENE, ALDRIN, etc., with their respective concentrations (mostly BMDL) and detection limits.

D L = BELOW METHOD DETECTION LIMIT

L O D = LIMIT OF DETECTION

CONTINUED ON NEXT PAGE

EPA METHOD 625  
CONTINUED

NUMBER	PARAMETER	CONCENTRATION (ug/l)	LOD (ug/l)
44-0	FLOURANTHENE	BMDL	2.2
73-7	FLOURENE	BMDL	1.9
44-8	HEPTACHLOR	BMDL	1.9
4-57-3	HEPTACHLOR EPOXIDE	BMDL	2.2
74-1	HEXACHLOROBENZENE	BMDL	1.9
68-3	HEXACHLOROBUTADIENE	BMDL	0.9
72-1	HEXACHLOROETHANE	BMDL	1.6
39-5	INDENO(1,2,3-cd)PYRENE	BMDL	1.9
59-1	ISOPHORONE	BMDL	3.7
20-3	NAPHTHALENE	BMDL	2.2
95-3	NITROBENZENE	BMDL	1.9
64-7	N-NITROSODI-N-PROPYLAMINE	BMDL	1.9
674-11-2	PCB-1016	BMDL	10
04-28-2	PCB-1221	BMDL	10
41-16-5	PCB-1232	BMDL	10
469-21-9	PCB-1242	BMDL	10
72-29-6	PCB-1248	BMDL	10
97-69-1	PCB-1254	BMDL	10
096-82-5	PCB-1260	BMDL	10
01-8	PHENANTHRENE	BMDL	5.4
00-0	PYRENE	BMDL	1.9
01-35-2	TOXAPHENE	BMDL	30
0-82-1	1,2,4-TRICHLOROBENZENE	BMDL	1.9

ACID EXTRACTABLES

50-7	4-CHLORO-3-METHYLPHENOL	BMDL	3.0
57-8	2-CHLOROPHENOL	BMDL	3.3
0-83-2	2,4-DICHLOROPHENOL	BMDL	2.7
5-67-9	2,4-DIMETHYLPHENOL	BMDL	2.7
28-5	2,4-DINITROPHENOL	BMDL	42
4-52-1	2-METHYL-4,6-DINITROPHENOL	BMDL	24
75-5	2-NITROPHENOL	BMDL	3.6
0-02-7	4-NITROPHENOL	BMDL	2.4
86-5	PENTACHLOROPHENOL	BMDL	3.6
8-95-2	PHENOL	BMDL	1.5
06-2	2,4,6-TRICHLOROPHENOL	BMDL	2.7

B M D L = BELOW DETECTION LIMIT


L O D = LIMIT OF DETECTION

CONTINUED ON NEXT PAGE



EPA METHOD 625  
CONTINUED  
-----

<u>SER</u>	<u>PARAMETER</u>	<u>CONCENTRATION</u> (ug/l)	<u>LOD</u> (ug/l)
37-5	BENZIDINE	BMDL	
9-84-6	α-BHC	BMDL	4
-89-8	γ-BHC	BMDL	1.0
-98-8	ENDOSULFAN I	BMDL	5.0
213-65-9	ENDOSULFAN II	BMDL	10
-20-8	ENDRIN	BMDL	10
17-7	HEXACHLOROCYCLOPENTADIENE	BMDL	1.0
15-9	N-NITROSODIMETHYLAMINE	BMDL	10
30-6	N-NITROSODIPHENYLAMINE	BMDL	10
5-01-6	2,3,7,8-TCDD (DIOXIN)	BMDL	1.9
			1.9

  
\_\_\_\_\_  
Albert Castellanos  
Chemist

M D L = BELOW DETECTION LIMIT

L O D = LIMIT OF DETECTION

**DEEP MONITOR ZONE WATER ANALYSIS**

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FLORIDA 33407

42171

SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210

DATE TIME RECEIVED BY

INJECTION WELL - PAHOKEE

LOCATION

DEEP 1915-2008'

PARAMETER	STORET #	DATE BY NBR	RESULTS, mg/L
ARSENIC	01002	10-11 MD 78-161	<0.005
BARIUM	01007	10-17 MD 78-167	0.33
CADMIUM	01027	10-19 MD 78-169	0.001
CHROMIUM	01034	10-09 MD 78-158	<0.005
LEAD	01051	10-11 MD 78-162	0.014
MERCURY	71900	10-18 MD 78-168	<0.0002
SELENIUM	01147	10-16 MD 78-165	<0.001
SILVER	01077	10-19 MD 78-170	<0.005
SODIUM	00929	10-05 MD 78-152	4310
MAGNESIUM	00927	10-24 MD 78-182	585

DATE 11-30-89

LAB ID 86122,86109, E86048

BY

*Bnd*

DIRECTOR

ORGANICS ANALYSIS REPORT

YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42171 SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210 DATE TIME COLLECTED BY

INJECTION WELL - PAHOKEE LOCATION

DEEP 1915 - 2008'

PARAMETER	STORET #	MCL, mg/L	RESULTS, mg/L
LINDANE	39782	0.004	<0.000005
ENDRIN	39390	0.0002	<0.000005
METHOXYCHLOR	39480	0.1	<0.00005
TOXAPHENE	39400	0.005	<0.0005
2,4-D		0.1	<0.001
2,4,5-TP	39760	0.01	<0.001

DATE 11-30-89 BY *[Signature]*

LAB ID 86109,86122

TRIHALOMETHANES

THM1.FRM

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42171

SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210


DATE TIME COLLECTED BY RECD

INJECTION WELL - PAHOKEE

LOCATION

DEEP 1915 - 2008'

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BROMODICHLOROMETHANE	32101	*	<2
BROMOFORM	32104	*	<2
CHLOROFORM	32106	*	<2
DIBROMOCHLOROMETHANE	32105	*	<2
TOTAL TRIHALOMETHANES			<2

DATE 11-30-89 BY 

LAB ID 86109

SEC. FRM

SECONDARY

REPORT FORM

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42171

SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210

DATE TIME COLLECTED BY RECD

INJECTION WELL - PAHOKEE

LOCATION

DEEP 1915 - 2008'

PARAMETER	STORET NO.	DATE BY NBR	RESULT, mg/L
ALKALINITY	00410	10-01 TM 64-233	111
CALCIUM	00916	10-24 MD 78-180	392
CHLORIDE	00940	10-10 BM 62-353	13400
COLOR	00081	09-28 CH 81-71	30
COPPER	01042	10-23 MD 78-175	0.006
CORROSIVITY		CALCULATED	0.32
FOAMING AGENTS	38260	09-28 TM 64-234	0.315
IRON	01045	10-02 MD 78-148	1.38
MANGANESE	01055	10-03 MD 78-150	0.053
ODOR	00085	09-28 CH 81-71	1
TDS	70304	09-28 CH 81-71	19620
NON-FILTERABLE RESIDUE	00530	10-02 CH 81-72	9
ZINC	01092	10-05 MD 78-154	<0.10
BICARBONATE ALKALINITY		CALCULATED	111

DATE 11-30-89

BY 

LAB ID 86122, 86109

## MFORMA

## ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42171

SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION

DEEP 1915 - 2008'

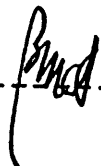
PARAMETER	STORET #	DATE BY NUMBER	RESULTS
TURBIDITY	00076	09-28 BM TB-71	23.0
BOD (5)	00310	09-28 CH 80-63	2
POTASSIUM	00937	10-05 MD 78-153	142
ANTIMONY	01097	11-03 MD 78-196	0.080
BROMIDE	71870	10-10 BM 62-353	29.5
STRONTIUM	01080	11-07 MD 78-209	41.9
BORON	01022	10-10 BM 62-353	0.884
HYDROGEN SULFIDE	00745	09-28 TM 64-233	<0.20
COD	00340	10-17 TM 64-235	2057

DATE 11-30-89

LAB ID 86122,86109, E86048

BY

DIRECTOR



## MFORMA

## ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42171

SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION/DEEP 1915-2008'

PARAMETER	STORET #	DATE BY NUMBER	RESULTS
SPEC COND, mS	00095	09-27 BM COC	25.3
SPEC GRAVITY	72013		1.02
pH	00400	09-27 BM COC	7.35
DO	00299	09-27 BM COC	0.3 mg/L
WATER TEMPERATURE (C)		09-27 BM COC	26.4

## RESULTS, ORG/100ML

FECAL COLIFORM, MPN	09-27 BM 77-45	<2
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## RESULTS, mg/L

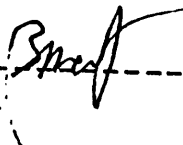
FLUORIDE	00951	09-28 BM #2795	1.85
NITRATE-N	00630	09-28 BM #2795	<0.08
TKN	00625	10-07 BM 62-354	2.55
ORTHO-PHOSPHORUS	00671	09-10 BM 62-352	<0.02
t-PHOSPHORUS	00665	10-15 BM 62-352	0.039
AMMONIA NITROGEN	00610	10-10 BM 62-353	0.851
SULFATE	00945	10-10 BM 62-352	1130
ORGANIC NITROGEN		CALCULATED	1.70

DATE 11-30-89

LAB ID 86122, 86109, E86048

BY

DIRECTOR





PURGEABLE HALOCARBONS M601 METHOD 601

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YOUNGQUIST BROTHERS CLIENTS NAME AND ADDRESS

-----

6100 W. 45TH STREET

-----

WEST PALM BEACH, FL 33407

-----

42171 SAMPLE NUMBER

-----

09-27-89 1810 BM 09-27-89 2210 DATE TIME COLLECTED BY RECD

-----

INJECTION WELL - PAHOKEE LOCATION

-----

DEEP 1915 - 2008'

-----

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BROMODICHLOROMETHANE	32101	*	<2
BROMOFORM	32104	*	<2
BROMOMETHANE	34413		<5
CARBON TETRACHLORIDE	32102	3	<0.3
CHLOROBENZENE	34301		<2
CHLOROETHANE	34311		<5
2-CHLOROETHYLVINYL ETHER	34576		<5
CHLOROFORM	32106	*	<2
CHLOROMETHANE	34418		<5
DIBROMOCHLOROMETHANE	32105	*	<2
1,2-DICHLOROBENZENE	34536		<2
1,3-DICHLOROBENZENE	34566		<2
1,4-DICHLOROBENZENE	34571	75	<2
DICHLORODIFLUOROMETHANE	34668		<5
1,1-DICHLOROETHANE	34496		<2
1,2-DICHLOROETHANE	34531	3	<0.3
1,1-DICHLOROETHENE	34501	7	<2
1,2-DICHLOROETHENE	34546		<2
1,2-DICHLOROPROPANE	34541		<2
cis-1,3-DICHLOROPROPENE	34704		<2
trans-1,3-DICHLOROPROPENE	34699		<2
METHYLENE CHLORIDE	34423		<2
1,1,2,2-TETRACHLOROETHANE	34516		<2
TETRACHLOROETHENE	34475	3	<0.3
1,1,1-TRICHLOROETHANE	34506	200	<2
1,1,2-TRICHLOROETHANE	34511		<2
TRICHLOROETHENE	39180	3	<0.3
TRICHLOROFLUOROMETHANE	34488		<2
VINYL CHLORIDE	39175	1	<0.1

DATE 11-30-89 BY *Bred* LAB ID 86109, E86048

-----

PURGEABLE AROMATICS M602 METHOD

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YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS

-----

6100 W. 45TH STREET

-----

WEST PALM BEACH, FL 33407

-----

42171 SAMPLE NUMBER

-----

09-27-89 1815 BM 09-27-89 2210 DATE TIME COLLECTED BY REC.

-----

INJECTION WELL - PAHOKEE DESCRIPTION

-----


DEEP 1915 - 2008' LOCATION

-----

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BENZENE	34030	1	<0.1
CHLOROBENZENE	34301		<2
1,2-DICHLOROBENZENE	34536		<2
1,3-DICHLOROBENZENE	34566		<2
1,4-DICHLOROBENZENE	34571		<2
ETHYLBENZENE	34371		<0.1
TOLUENE	34010		<0.1
XYLENES	81551		<2

-----

DATE 11-30-89 LAB ID 86122,86109,E86048

BY  -----

DIRECTOR

ANALYSIS REPORT M608.FRM

-----  
 YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS  
 -----  
 6100 W. 45TH STREET  
 -----  
 WEST PALM BEACH, FL 33407  
 -----  
 42171 SAMPLE NUMBER  
 -----  
 09-27-89 1810 BM 09-27-89 2210 DATE/TIME COLLECTED BY/RECD  
 -----  
 INJECTION WELL - AHOKEE LOCATION DEEP 1915 - 2008'  
 -----

PARAMETER	STORET NO.	RESULT ug/L
ALDRIN	39330	<0.005
a-BHC	39337	<0.005
b-BHC	39338	<0.005
d-BHC	34259	<0.005
g-BHC (LINDANE)	39340	<0.005
CHLORDANE	39350	<0.05
4,4'-DDD	39310	<0.05
4,4'-DDE	39320	<0.05
4,4'-DDT	39300	<0.05
DIELDRIN	39380	<0.005
ENDOSULFAN I	34361	<0.005
ENDOSULFAN II	34356	<0.005
ENDOSULFAN SO4	34351	<0.05
ENDRIN	39390	<0.005
ENDRIN ALDEHYDE	34366	<0.05
HEPTACHLOR	39410	<0.005
HEPTACHLOR EPOXIDE	39420	<0.005
TOXAPHENE	39400	<0.5

-----  
 DATE 11-30-89 BY *[Signature]* LAB ID #86122 86109  
 -----  
 E86048

ANALYSIS REPORT M608.FRM

YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407


42171 SAMPLE NUMBER

09-27-89 1810 BM 09-27-89 2210 DATE/TIME COLLECTED BY/RECD

INJECTION WELL - PAHOKEE LOCATION

PARAMETER	STORET NO.	RESULT, ug/L
PCB A1016	34671	<0.1
PCB A1221	39488	<0.1
PCB A1232	39392	<0.1
PCB A1242	39496	<0.1
PCB A1248	39500	<0.1
PCB A1254	39504	<0.1
PCB A1260	39508	<0.1

FED.REGISTER VOL 44 NO233 DECEMBER 3, 1979

DATE 11-30-89 BY  LAB ID 86109,86122

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FLORIDA

42171

SAMPLE NUMBER

09-27089 1810 BM 09-27-89 2210

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION

DEEP 1915 - 2008'

PARAMETER

RESULTS, ug/L

HEXACHLOROBENZENE

<2

HEXACHLOROETHANE

<2

TRICHLOROETHYLENE

<0.3

TETRACHLOROETHYLENE

<0.3

TETRACHLOROMETHANE

<0.3

ETHYLENE DIBROMIDE

<0.003

trans-1,2-DICHLOROETHENE

<2

BROMOMETHANE

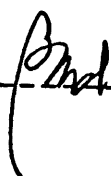
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DATE 11-30-89

LAB ID 86122,86109, E86048

BY

DIRECTOR





Laboratories, Inc.

CLIENT: GEOTECH/EVERGLADES LABS
SAMPLE ID: #42171 / 026-092889
SAMPLED BY: CLIENT
DATE RECEIVED: 09-28-89
DATE ANALYZED: 10-02-89

-CERTIFICATIONS-
EPA NUMBER: # FLO9
FLORIDA DRINKING WATER: # 8614
FLORIDA ENVIRONMENTAL: #E8600

EPA METHOD 625
BASE/NEUTRALS AND ACIDS

Table with 4 columns: CAS NUMBER, PARAMETER, CONCENTRATION (ug/l), and LOD (ug/l). Lists various chemical compounds and their detection limits.

B M D L = BELOW METHOD DETECTION LIMIT L O D = LIMIT OF DETECTION
CONTINUED ON NEXT PAGE

EPA METHOD 625  
CONTINUTED  
-----

AS NUMBER	PARAMETER	CONCENTRATION (ug/l)	LOD (ug/l)
06-44-0	FLOURANTHENE	BMDL	2.2
6-73-7	FLOURENE	BMDL	1.9
76-44-8	HEPTACHLOR	BMDL	1.9
024-57-3	HEPTACHLOR EPOXIDE	BMDL	2.2
18-74-1	HEXACHLOROBENZENE	BMDL	1.9
87-68-3	HEXACHLOROBUTADIENE	BMDL	0.9
7-72-1	HEXACHLOROETHANE	BMDL	1.6
93-39-5	INDENO(1,2,3-cd)PYRENE	BMDL	1.9
78-59-1	ISOPHORONE	BMDL	3.7
91-20-3	NAPHTHALENE	BMDL	2.2
8-95-3	NITROBENZENE	BMDL	1.9
21-64-7	N-NITROSODI-N-PROPYLAMINE	BMDL	1.9
12674-11-2	PCB-1016	BMDL	10
1104-28-2	PCB-1221	BMDL	10
1141-16-5	PCB-1232	BMDL	10
53469-21-9	PCB-1242	BMDL	10
2672-29-6	PCB-1248	BMDL	10
1097-69-1	PCB-1254	BMDL	10
11096-82-5	PCB-1260	BMDL	10
5-01-8	PHENANTHRENE	BMDL	5.4
29-00-0	PYRENE	BMDL	1.9
8001-35-2	TOXAPHENE	BMDL	30
20-82-1	1,2,4-TRIC	BMDL	1.9

BDL

.S

9-50-7	4-CHLORO-3-METHYLPHENOL	BMDL	3.0
5-57-8	2-CHLOROPHENOL	BMDL	3.3
20-83-2	2,4-DICHLOROPHENOL	BMDL	2.7
05-67-9	2,4-DIMETHYLPHENOL	BMDL	2.7
1-28-5	2,4-DINITROPHENOL	BMDL	42
34-52-1	2-METHYL-4,6-DINITROPHENOL	BMDL	24
8-75-5	2-NITROPHENOL	BMDL	3.6
00-02-7	4-NITROPHENOL	BMDL	2.4
7-86-5	PENTACHLOROPHENOL	BMDL	3.6
08-95-2	PHENOL	BMDL	1.5
8-06-2	2,4,6-TRICHLOROPHENOL	BMDL	2.7

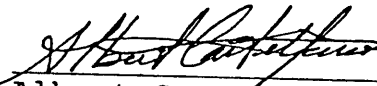
B M D L = BELOW DETECTION LIMIT

L O D = LIMIT OF DETECTION

CONTINUED ON NEXT PAGE

EPA METHOD 625  
CONTINUED  
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<u>AS NUMBER</u>	<u>PARAMETER</u>	<u>CONCENTRATION (ug/l)</u>	<u>LOD (ug/l)</u>
2-87-5	BENZIDINE	BMDL	4
19-84-6	a-BHC	BMDL	1.0
7-89-8	y-BHC	BMDL	5.0
9-98-8	ENDOSULFAN I	BMDL	10
3213-65-9	ENDOSULFAN II	BMDL	10
2-20-8	ENDRIN	BMDL	1.0
1-47-7	HEXACHLOROCYCLOPENTADIENE	BMDL	10
2-75-9	N-NITROSODIMETHYLAMINE	BMDL	10
6-30-6	N-NITROSODIPHENYLAMINE	BMDL	1.9
46-01-6	2,3,7,8-TCDD (DIOXIN)	BMDL	1.9

  
\_\_\_\_\_  
Albert Castellanos  
Chemist

B M D L = BELOW DETECTION LIMIT

L O D = LIMIT OF DETECTION



**SHALLOW MONITOR ZONE WATER ANALYSIS**

RECEIVED

DEC 28 1989

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS *Geraghty & Miller, Inc.*

6100 W. 45TH STREET

WEST PALM BEACH, FLORIDA 33407

42172

SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210

DATE TIME RECEIVED BY

INJECTION WELL - PAHOKEE

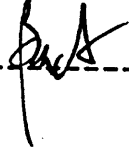
LOCATION

SHALLOW 946 - 1147'

PARAMETER	STORET #	DATE BY NBR	RESULTS, mg/L
ARSENIC	01002	10-11 MD 78-161	<0.005
BARIUM	01007	10-17 MD 78-167	0.13
CADMIUM	01027	10-19 MD 78-169	<0.001
CHROMIUM	01034	10-09 MD 78-158	<0.005
LEAD	01051	10-11 MD 78-162	0.015
MERCURY	71900	10-18 MD 78-168	<0.0002
SELENIUM	01147	10-16 MD 78-165	<0.001
SILVER	01077	10-19 MD 78-170	<0.005
SODIUM	00929	10-05 MD 78-152	1200
MAGNESIUM	00927	10-24 MD 78-182	114

DATE 11-30-89

LAB ID 86122, 86109, E86048

BY  DIRECTOR

ORGANICS ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42172

SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210 DATE TIME COLLECTED BY

INJECTION WELL - PAHOKEE

LOCATION

SHALLOW 946 - 1147'

PARAMETER	STORET #	MCL, mg/L	RESULTS, mg/L
LINDANE	39782	0.004	<0.000005
ENDRIN	39390	0.0002	<0.000005
METHOXYCHLOR	39480	0.1	<0.00005
TOXAPHENE	39400	0.005	<0.0005
2,4-D		0.1	<0.001
2,4,5-TP	39760	0.01	<0.001

DATE 11-30-89

BY *[Signature]*

LAB ID 86109,86122

TRIHALOMETHANES

THM1.FRM

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42172

SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210

DATE TIME COLLECTED BY RECD

INJECTION WELL - PAHOKEE

LOCATION

SHALLOW 946 - 1147

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BROMODICHLOROMETHANE	32101	*	<2
BROMOFORM	32104	*	<2
CHLOROFORM	32106	*	<2
DIBROMOCHLOROMETHANE	32105	*	<2
TOTAL TRIHALOMETHANES			<2

DATE 11-30-89

BY

*[Signature]*

LAB ID 86109

SEC. FRM

SECONDARY

REPORT FORM

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42172

SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210

DATE TIME COLLECTED BY RECD

INJECTION WELL - PAHOKEE

LOCATION

SHALLOW 946 - 1147'

PARAMETER	STORET NO.	DATE BY NBR	RESULT, mg/L
ALKALINITY	00410	10-01 TM 64-233	120
CALCIUM	00916	10-24 MD 78-180	135
CHLORIDE	00940	10-10 BM 62-353	2400
COLOR	00081	10-10 CH 81-74	5
COPPER	01042	10-23 MD 78-175	0.010
CORROSIVITY		CALCULATED	0.57
FOAMING AGENTS	38260	09-28 TM 64-234	0.118
IRON	01045	10-02 MD 78-148	0.090
MANGANESE	01055	10-03 MD 78-150	0.016
ODOR	00085	09-28 CH 81-71	1
TDS	70304	09-28 CH 81-71	4981
NON-FILTERABLE RESIDUE	00530	10-02 CH 81-72	4
ZINC	01092	10-05 MD 78-154	<0.10
BICARBONATE ALKALINITY		CALCULATED	119

DATE 11-30-89

BY *[Signature]*

LAB ID 86122, 86109

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42172

SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION

SHALLOW 946 - 1147'

PARAMETER	STORET #	DATE BY NUMBER	RESULTS
TURBIDITY NTU	00076	09-28 BM TB-71	0.6
BOD (5)	00310	09-28 CH 80-63	4
POTASSIUM	00937	10-05 MD 78-153	31.4
ANTIMONY	01097	11-03 MD 78-196	0.060
BROMIDE	71870	10-10 BM 62-353	3.52
STRONTIUM	01080	11-07 MD 78-209	10.1
BORON	01022	10-10 BM 62-353	0.500
HYDROGEN SULFIDE	71875	09-28 TM 64-233	<0.20
COD	00340	10-17 TM 64-235	323

DATE 11-30-89

LAB ID 86122,86109, E86048

BY

DIRECTOR

MFORMA

ANALYSIS REPORT

YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42172

SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210

DATE TIME COLL RECD

INJECTION WELL - PAHOKEE

LOCATION/SHALLOW 946-1147

PARAMETER	STORET #	DATE BY NUMBER	RESULTS
SPEC COND,mS	00095	09-27 BM COC	7.03
SPEC GRAVITY	72013		1.002
pH	00400	09-27 BM COC	7.95
DO	00299	09-27 COC	0.1 mg/L
WATER TEMPERATURE (C)		09-27 BM COC	26.6

RESULTS,ORG/100ML

FECAL COLIFORM,MPN	09-27 BM 77-45	<2
--------------------	----------------	----

RESULTS,mg/L

FLUORIDE	00951	09-28 BM #2795	3.85
NITRATE-N	00630	09-28 BM #2795	<0.08
TKN	00625	10-07 BM 62-354	1.38
ORTHO-PHOSPHORUS	00671	09-10 BM 62-352	<0.02
t-PHOSPHORUS	00665	10-15 BM 62-352	<0.02
AMMONIA NITROGEN	00610	10-10 BM 62-353	0.744
SULFATE	00945	10-10 BM 62-352	563
ORGANIC NITROGEN		CALCULATED	0.64

DATE 11-30-89

LAB ID 86122,86109, E86048

BY

DIRECTOR



PURGEABLE HALOCARBONS

M601

METHOD 601

YOUNGQUIST BROTHERS

CLIENTS NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

42172

SAMPLE NUMBER

09-27-89 8305 BM 09-27-89 2210

DATE TIME COLLECTED BY RECD

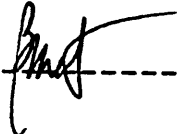
INJECTION WELL - PAHOKEE

LOCATION

SHALLOW 946 - 1147'

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BROMODICHLOROMETHANE	32101	*	<2
BROMOFORM	32104	*	<2
BROMOMETHANE	34413		<5
CARBON TETRACHLORIDE	32102	3	<0.3
CHLOROENZENE	34301		<2
CHLOROETHANE	34311		<5
2-CHLOROETHYLVINYL ETHER	34576		<5
CHLOROFORM	32106	*	<2
CHLOROMETHANE	34418		<5
DIBROMOCHLOROMETHANE	32105	*	<2
1,2-DICHLOROBENZENE	34536		<2
1,3-DICHLOROBENZENE	34566		<2
1,4-DICHLOROBENZENE	34571	75	<2
DICHLORODIFLUOROMETHANE	34668		<5
1,1-DICHLOROETHANE	34496		<2
1,2-DICHLOROETHANE	34531	3	<0.3
1,1-DICHLOROETHENE	34501	7	<2
1,2-DICHLOROETHENE	34546		<2
1,2-DICHLOROPROPANE	34541		<2
cis-1,3-DICHLOROPROPENE	34704		<2
trans-1,3-DICHLOROPROPENE	34699		<2
METHYLENE CHLORIDE	34423		<2
1,1,2,2-TETRACHLOROETHANE	34516		<2
TETRACHLOROETHENE	34475	3	<0.3
1,1,1-TRICHLOROETHANE	34506	200	<2
1,1,2-TRICHLOROETHANE	34511		<2
TRICHLOROETHENE	39180	3	<0.3
TRICHLOROFLUOROMETHANE	34488		<2
VINYL CHLORIDE	39175	1	<0.1

DATE 11-30-89 BY



LAB ID 86109, E86048

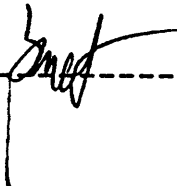


PURGEABLE AROMATICS M602 METHOD  
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YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS  
-----  
6100 W. 45TH STREET  
-----  
WEST PALM BEACH, FL 33407  
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42172 SAMPLE NUMBER  
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09-27-89 1830 BM 09-27-89 2210 DATE TIME COLLECTED BY REC.  
-----  
INJECTION WELL - PAHOKEE DESCRIPTION  
-----  
SHALLOW 946 - 1147' LOCATION  
-----

PARAMETER	STORET NO.	MCL ug/L	RESULT ug/L
BENZENE	34030	1	<0.1
CHLOROBENZENE	34301		<2
1,2-DICHLOROBENZENE	34536		<2
1,3-DICHLOROBENZENE	34566		<2
1,4-DICHLOROBENZENE	34571		<2
ETHYLBENZENE	34371		<0.1
TOLUENE	34010		<0.1
XYLENES	81551		<2

-----  
DATE 11-30-89 LAB ID 86122,86109,E86048  
-----

BY \_\_\_\_\_  
DIRECTOR



ANALYSIS REPORT M608.FRM

-----  
 YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS  
 -----  
 6100 W. 45TH STREET  
 -----  
 WEST PALM BEACH, FL 33407  
 -----  
 42172 SAMPLE NUMBER  
 -----  
 09-27-89 1830 BM 09-27-89 2210 DATE/TIME COLLECTED BY/RECD  
 -----  
 INJECTION WELL - PAHOKEE LOCATION/SHALLOW 946-1147'  
 -----

PARAMETER	STORET NO.	RESULT ug/L
ALDRIN	39330	<0.005
a-BHC	39337	<0.005
b-BHC	39338	<0.005
d-BHC	34259	<0.005
g-BHC (LINDANE)	39340	<0.005
CHLORDANE	39350	<0.05
4,4'-DDD	39310	<0.05
4,4'-DDE	39320	<0.05
4,4'-DDT	39300	<0.05
DIELDRIN	39380	<0.005
ENDOSULFAN I	34361	<0.005
ENDOSULFAN II	34356	<0.005
ENDOSULFAN SO4	34351	<0.05
ENDRIN	39390	<0.005
ENDRIN ALDEHYDE	34366	<0.05
HEPTACHLOR	39410	<0.005
HEPTACHLOR EPOXIDE	39420	<0.005
TOXAPHENE	39400	<0.5

ANALYSIS REPORT M608.FRM

YOUNGQUIST BROTHERS CLIENT NAME AND ADDRESS

6100 W. 45TH STREET

WEST PALM BEACH, FL 33407

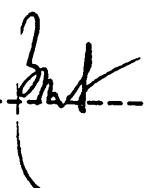
42172 SAMPLE NUMBER

09-27-89 1830 BM 09-27-89 2210 DATE/TIME COLLECTED BY/RECD

INJECTION WELL - PAHOKEE LOCATION/SHALLOW 946-1147'

PARAMETER	STORET NO.	RESULT, ug/L
PCB A1016	34671	<0.1
PCB A1221	39488	<0.1
PCB A1232	39392	<0.1
PCB A1242	39496	<0.1
PCB A1248	39500	<0.1
PCB A1254	39504	<0.1
PCB A1260	39508	<0.1

FED. REGISTER VOL 44 NO233 DECEMBER 3, 1979

DATE 11-30-89 BY 

LAB ID 86109,86122

MFORMA

ANALYSIS REPORT

-----  
YOUNGQUIST BROTHERS

CLIENT NAME AND ADDRESS

-----  
6100 W. 45TH STREET

-----  
WEST PALM BEACH, FLORIDA

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42172

SAMPLE NUMBER

-----  
09-27-89 1830 BM 09-27-89 2210

DATE TIME COLL RECD

-----  
INJECTION WELL - PAHOKEE

LOCATION

-----  
SHALLOW 946 - 1147'

-----  
PARAMETER

RESULTS, ug/L

-----  
HEXACHLOROBENZENE

<2

-----  
HEXACHLOROETHANE

<2

-----  
TRICHLOROETHYLENE

<0.3

-----  
TETRACHLOROETHYLENE

<0.3

-----  
ETHYLENE DIBROMIDE

<0.003

-----  
trans-1,2-DICHLOROETHENE

<2

-----  
BROMOMETHANE

<5

-----  
DATE 11-30-89

LAB ID 86122,86109, E86048

-----  
BY



-----  
DIRECTOR



Laboratories, Inc.

CLIENT: GEOTECH/EVERGLADES LABS
SAMPLE ID: #42172 / 027-092889
SAMPLED BY: CLIENT
DATE RECEIVED: 09-28-89
DATE ANALYZED: 10-02-89

-CERTIFICATIONS-
EPA NUMBER: # FLO9
FLORIDA DRINKING WATER: # 8614
FLORIDA ENVIRONMENTAL: #E8600

EPA METHOD 625
BASE/NEUTRALS AND ACIDS

Table with 4 columns: CLASS NUMBER, PARAMETER, CONCENTRATION (ug/l), and LOD (ug/l). Lists various chemical parameters and their corresponding detection limits.

M D L = BELOW METHOD DETECTION LIMIT L O D = LIMIT OF DETECTION
CONTINUED ON NEXT PAGE

EPA METHOD 625  
CONTINUED

NUMBER	PARAMETER	CONCENTRATION (ug/l)	LOD (ug/l)
5-44-0	FLOURANTHENE	BMDL	2.2
5-73-7	FLOURENE	BMDL	1.9
44-8	HEPTACHLOR	BMDL	1.9
4-57-3	HEPTACHLOR EPOXIDE	BMDL	2.2
18-74-1	HEXACHLOROBENZENE	BMDL	1.9
68-3	HEXACHLOROBUTADIENE	BMDL	0.9
72-1	HEXACHLOROETHANE	BMDL	1.6
93-39-5	INDENO (1,2,3-cd) PYRENE	BMDL	1.9
59-1	ISOPHORONE	BMDL	3.7
20-3	NAPHTHALENE	BMDL	2.2
8-95-3	NITROBENZENE	BMDL	1.9
21-64-7	N-NITROSODI-N-PROPYLAMINE	BMDL	1.9
74-11-2	PCB-1016	BMDL	10
04-28-2	PCB-1221	BMDL	10
141-16-5	PCB-1232	BMDL	10
69-21-9	PCB-1242	BMDL	10
72-29-6	PCB-1248	BMDL	10
097-69-1	PCB-1254	BMDL	10
96-82-5	PCB-1260	BMDL	10
01-8	PHENANTHRENE	BMDL	5.4
9-00-0	PYRENE	BMDL	1.9
01-35-2	TOXAPHENE	BMDL	30
-82-1	1,2,4-TRICHLOROBENZENE	BMDL	1.9

ACID EXTRACTABLES

50-7	4-CHLORO-3-METHYLPHENOL	BMDL	3.0
-57-8	2-CHLOROPHENOL	BMDL	3.3
-83-2	2,4-DICHLOROPHENOL	BMDL	2.7
-67-9	2,4-DIMETHYLPHENOL	BMDL	2.7
-28-5	2,4-DINITROPHENOL	BMDL	42
4-52-1	2-METHYL-4,6-DINITROPHENOL	BMDL	24
75-5	2-NITROPHENOL	BMDL	3.6
-02-7	4-NITROPHENOL	BMDL	2.4
-86-5	PENTACHLOROPHENOL	BMDL	3.6
-95-2	PHENOL	BMDL	1.5
06-2	2,4,6-TRICHLOROPHENOL	BMDL	2.7

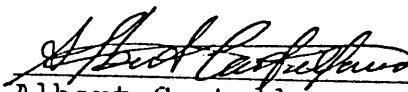
B M D L = BELOW DETECTION LIMIT

L O D = LIMIT OF DETECTION

CONTINUED ON NEXT PAGE

EPA METHOD 625  
CONTINUED  
-----

AS NUMBER	PARAMETER	CONCENTRATION (ug/l)	LOD (ug/l)
2-87-5	BENZIDINE	BMDL	4
1-84-6	α-BHC	BMDL	1.0
89-8	γ-BHC	BMDL	5.0
59-98-8	ENDOSULFAN I	BMDL	10
13-65-9	ENDOSULFAN II	BMDL	10
20-8	ENDRIN	BMDL	1.0
7-47-7	HEXACHLOROCYCLOPENTADIENE	BMDL	10
2-75-9	N-NITROSODIMETHYLAMINE	BMDL	10
30-6	N-NITROSODIPHENYLAMINE	BMDL	1.9
46-01-6	2,3,7,8-TCDD (DIOXIN)	BMDL	1.9

  
\_\_\_\_\_  
Albert Castellanos  
Chemist

B M D L = BELOW DETECTION LIMIT

L O D = LIMIT OF DETECTION

**SURFACE EQUIPMENT LETTER OF CERTIFICATION**



# Russell & Axon, Inc.



Established in 1920

February 7, 1990

State of Florida  
Department of Environmental Regulation  
Southeast Florida District  
1900 South Congress Avenue, Suite A  
West Palm Beach, Florida 33406

Attention: Mr. Al Mueller, P.E.  
Domestic Waste Permitting

Subject: Palm Beach County  
DW - City of Pahokee WWTP  
Deep Well Permit No. UC 50-145482  
WWTP Permit No. DC 50-145481  
EPA Project No. C120494070

Gentlemen:

The purpose of this letter is to certify that the subject project is now complete. All aspects of the Wastewater Treatment Plant Improvements and the Deep Well have been completed and are to the best of my knowledge, in full accordance with the Approved Plans and Specifications and with all Construction Permit Conditions.

If you have any questions or need additional information please contact this office.

Very truly yours,  
RUSSELL & AXON, INC.



Michael C. Brown, P.E.  
Project Manager  
P.E. No. 0021610

cc: BOCA OFFICE