

# WELL COMPLETION REPORT

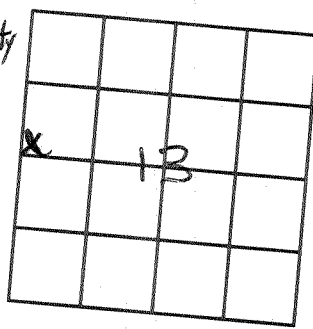
Owner **SFWMD** Address **P.O. Box 24680 West Palm Beach FL 33446**  
 Contractor's Name **HYDROWELL TECHNOLOGY** License No. **2/2/90** City **West Palm Beach** State **FL** Zip **33446**  
 Driver's Name **[Signature]** Registration No. **0-50** Casing Depth **50'-130'** Total Depth **130'** Well # **SLMW20**

FORM 0124 Rev. 4/85

WELL PERMIT NO. \_\_\_\_\_

TYPE OF WORK: Construct  Repair  Abandon   
 USE: Domestic Well  Public  Monitor  Test   
 Irrigation  Fire Well  Other \_\_\_\_\_  
 METHOD: Rotary with MUD  or Air , Cable Tool , Jet   
 Casing Driven , Other \_\_\_\_\_  
 STATIC WATER LEVEL \_\_\_\_\_ Ft. below top of casing  
 PUMPING WATER LEVEL \_\_\_\_\_ Ft. after \_\_\_\_\_ Hrs. at \_\_\_\_\_ GPM  
 PUMP SIZE \_\_\_\_\_ H.P. CAPACITY \_\_\_\_\_ GPM  
 PUMP TYPE \_\_\_\_\_ INTAKE DEPTH \_\_\_\_\_ From top of ground

LOCATION  
 Located Near **Strazulli property**  
 Next to **STL 267**  
 County **ST LUCIE**  
 Section **13** Township **34S** Range **38E**  
 Latitude-Longitude **27° 31' 19" 80° 29' 48"**



LOCATE IN SECTION

Cuttings sent to District?  Yes  No  
 Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
		From	To	
0		0'	3'	Sand
6 5/8" 0		3'	4'	"hard pan"
Neat 2" PVC		4'	12'	sandy clay
CmT Csg		12'	47'	Shell w/ sand lenses
15'	50'			and a few clay beds
		47'	50'	Sandy, clayey limestone
	2" PVC	50'	65'	Alternating Shell, sd + limestone
	3 1/2"	65'	80'	Mud w/ shell + sd.
		60'	80'	Muddy limestone
		60'	85'	Mud w/ shell
	2" PVC	85'	97'	interbedded limestone
Number of bags	Csg	97'	113'	shell and mud.
6		130'	113'	clayey green sandy lime mud.
				geophysical logs

Casing: Black Steel  Galv.  PVC  Fiberglass   
 Screen: Type **PVC** Slot size **.020**  
 Screened from **50'** (ft.) to **60'** (ft.)  
 Type of grout with % additives \_\_\_\_\_  
 Water: Clear  Colored  Sulphur  Salty  Iron   
 Conductivity \_\_\_\_\_ Chlorides \_\_\_\_\_ mg/l

# WELL CUTTINGS PROCESSING FORM

SFWMD ID NO.: \_\_\_\_\_ WELL CONST. PERMIT NO.: \_\_\_\_\_

WELL NAME: SLMW20 GEOPHY. LOG AVAIL.  Yes  No

COUNTY St Lucie SFWMD GEOPHY. # 1110000072

LOCATION: SW 1/4 of NW 1/4 of NW 1/4 of Sec. 13 Twp. 34S Rge. 38E

Latitude 27° 31' 19" Longitude 80° 29' 48"

Planar X 663136 Planar Y 1159191

DRILLER: Hydro wells DATE DRILLED 2/2/90

DEPTH (ft) 130' ELEVATION (NGVD) 24.2 ( ) TOPO  SURVEY

NO. OF SAMPLES \_\_\_\_\_ NO. OF SPLITS 2 DATE SENT \_\_\_\_\_

SENT TO:  BOG ( ) USGS ( ) OTHER \_\_\_\_\_

WATER SAMPLE: CHLORIDES (mg/l) \_\_\_\_\_  
LAB SAMPLE # \_\_\_\_\_

HYDRAULIC DATA AVAILABLE:  
SPECIFIC CAPACITY \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
PUMP TEST \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_

COMPLETION INFO: ( ) PLUGGED ( ) TEST  MONITOR ( ) PRODUCTION

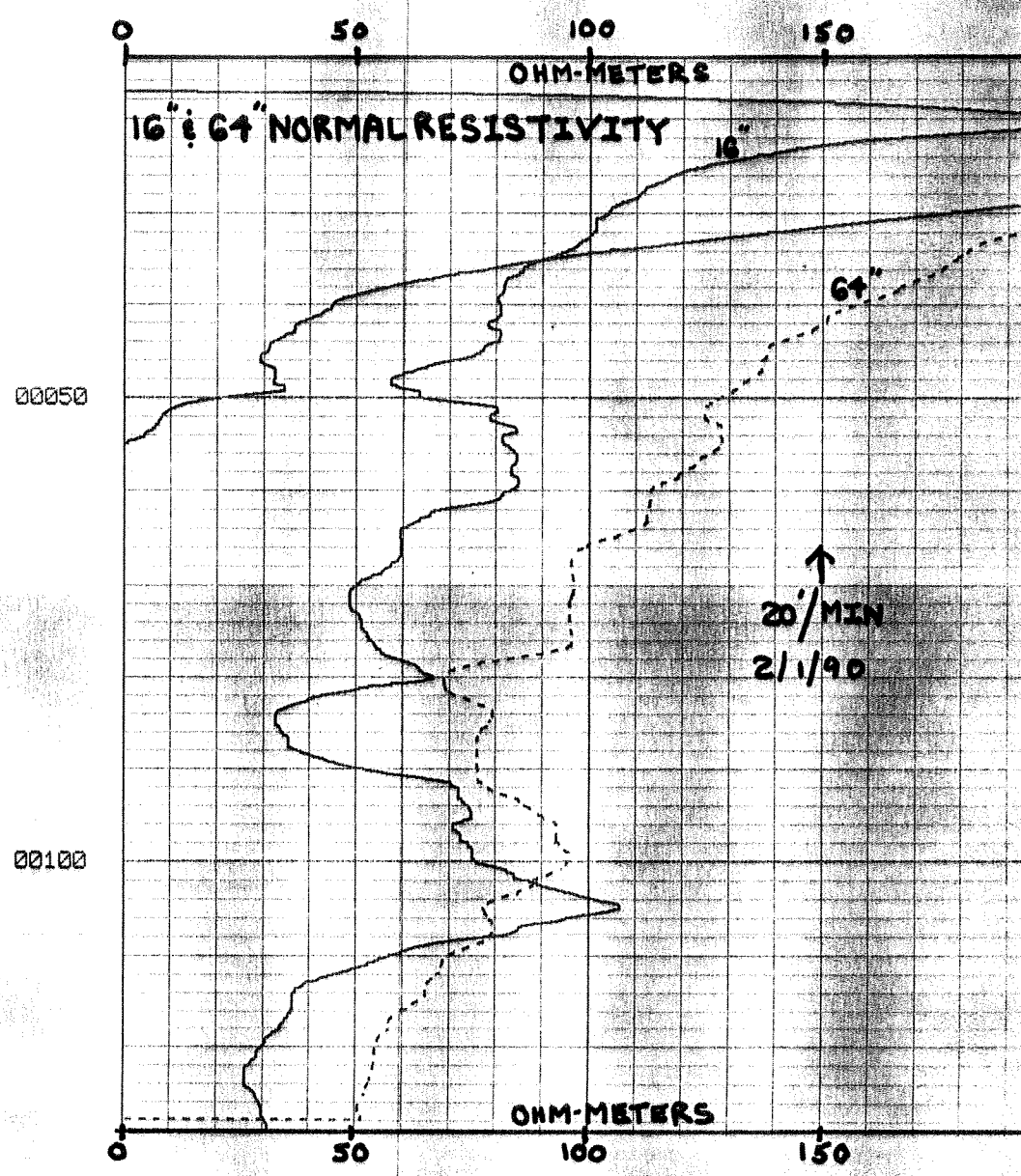
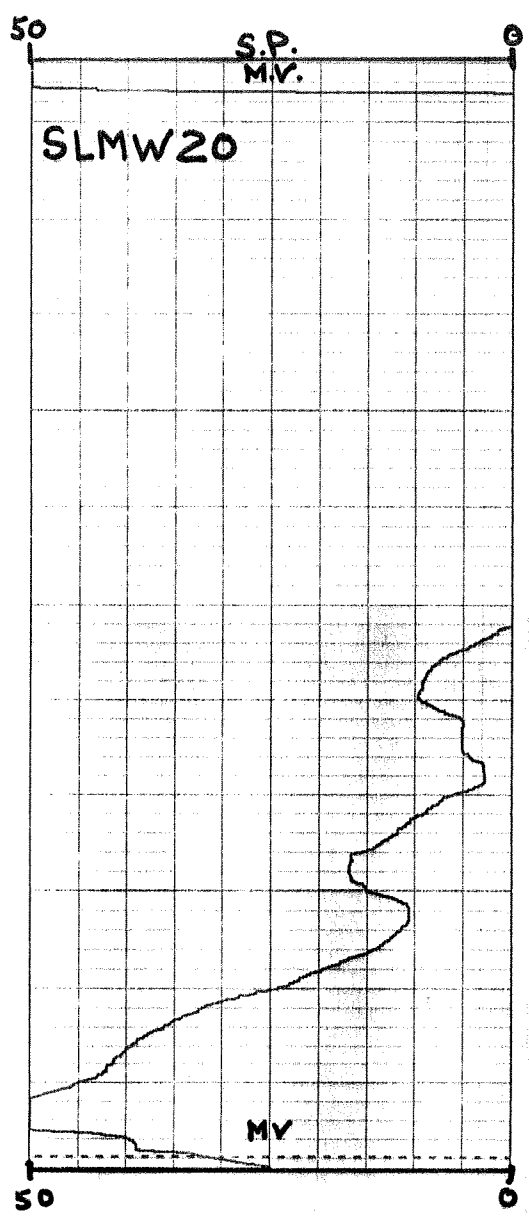
DRILLING METHOD: ( ) CABLE TOOL ( ) JET ( ) AUGER  
 ROTARY:  Mud [ ] Air [ ] Reverse [ ] Dual Wall

CASING: TYPE:  PVC ( ) GALV. ( ) STEEL  
DIAMETER: 2" INTERVAL: 0-50' 60'-130'

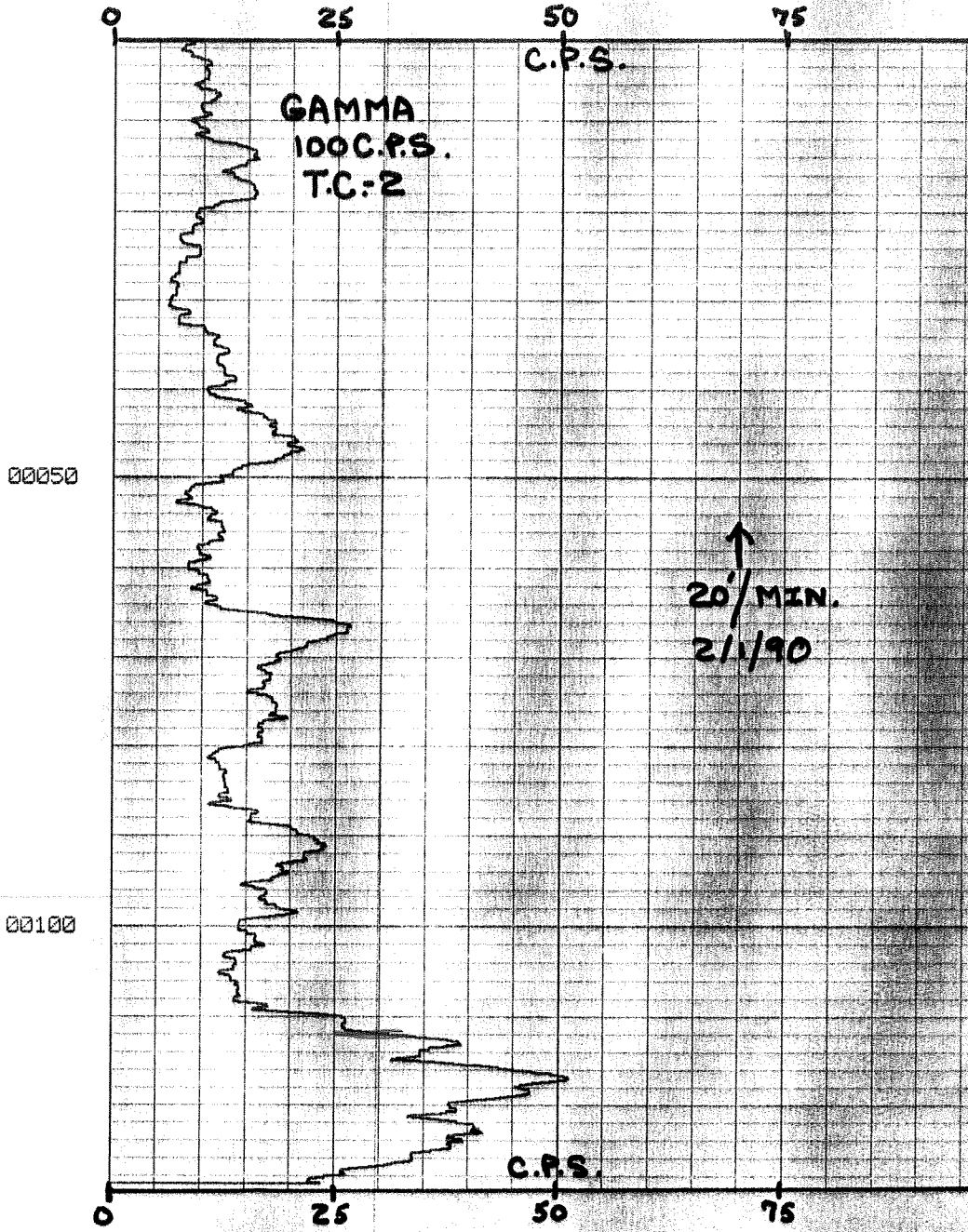
SCREEN: TYPE:  PVC ( ) GALV. ( ) STEEL  
DIAMETER: 2" INTERVAL: 50'-60'

GEOLOGIST DESCRIPTION: ( ) NO  YES \_\_\_\_\_

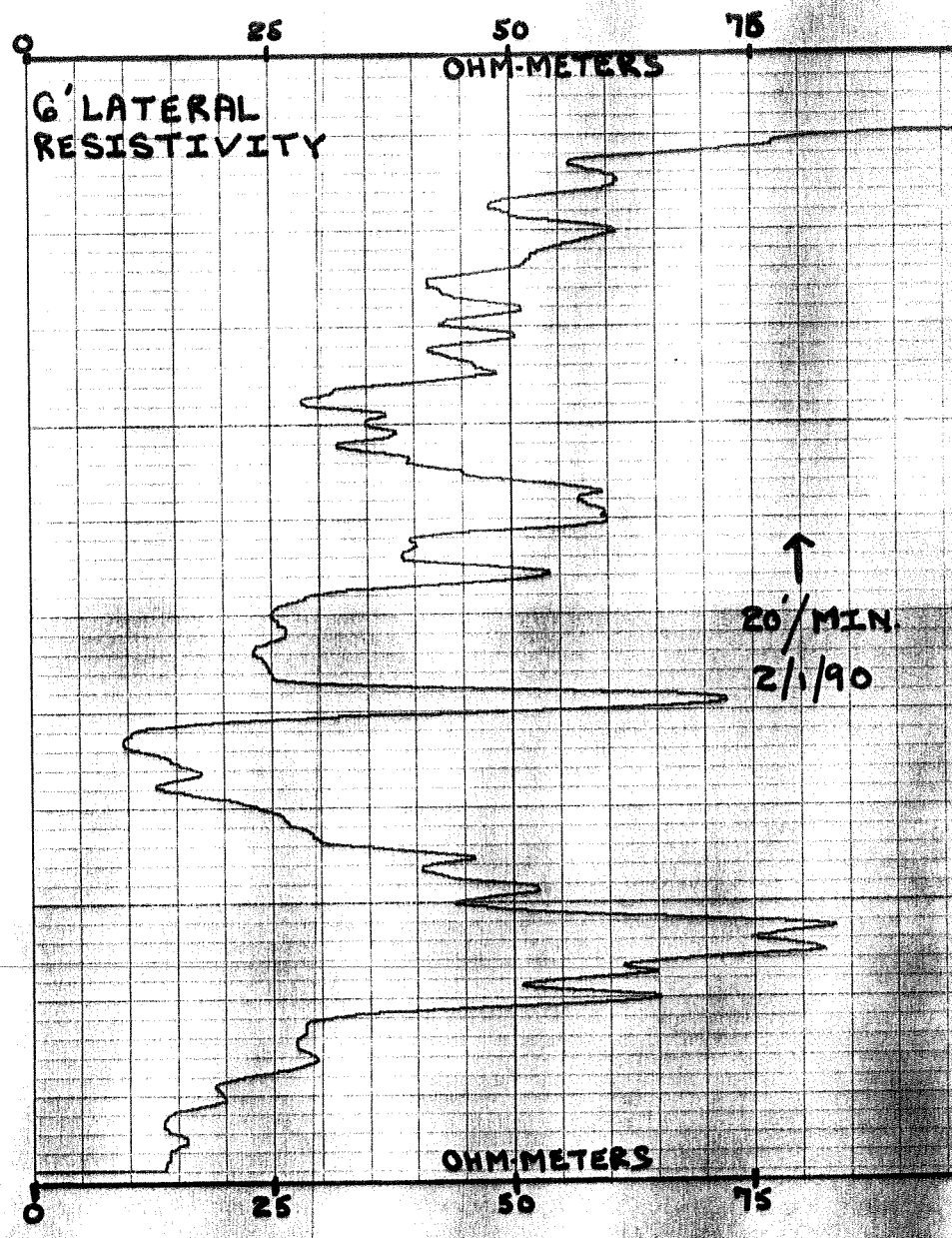
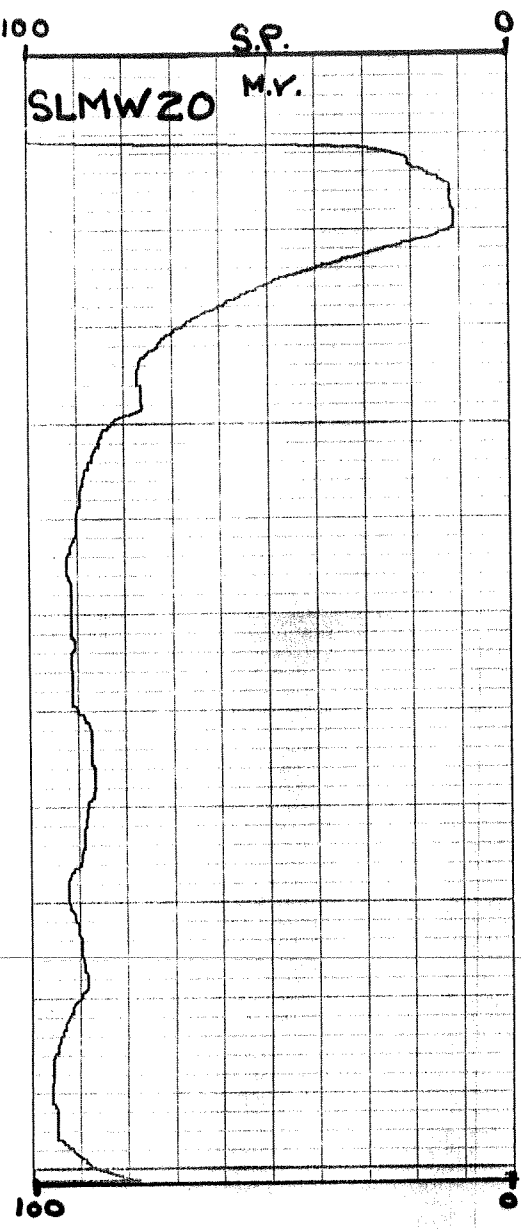
COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



SLMW20

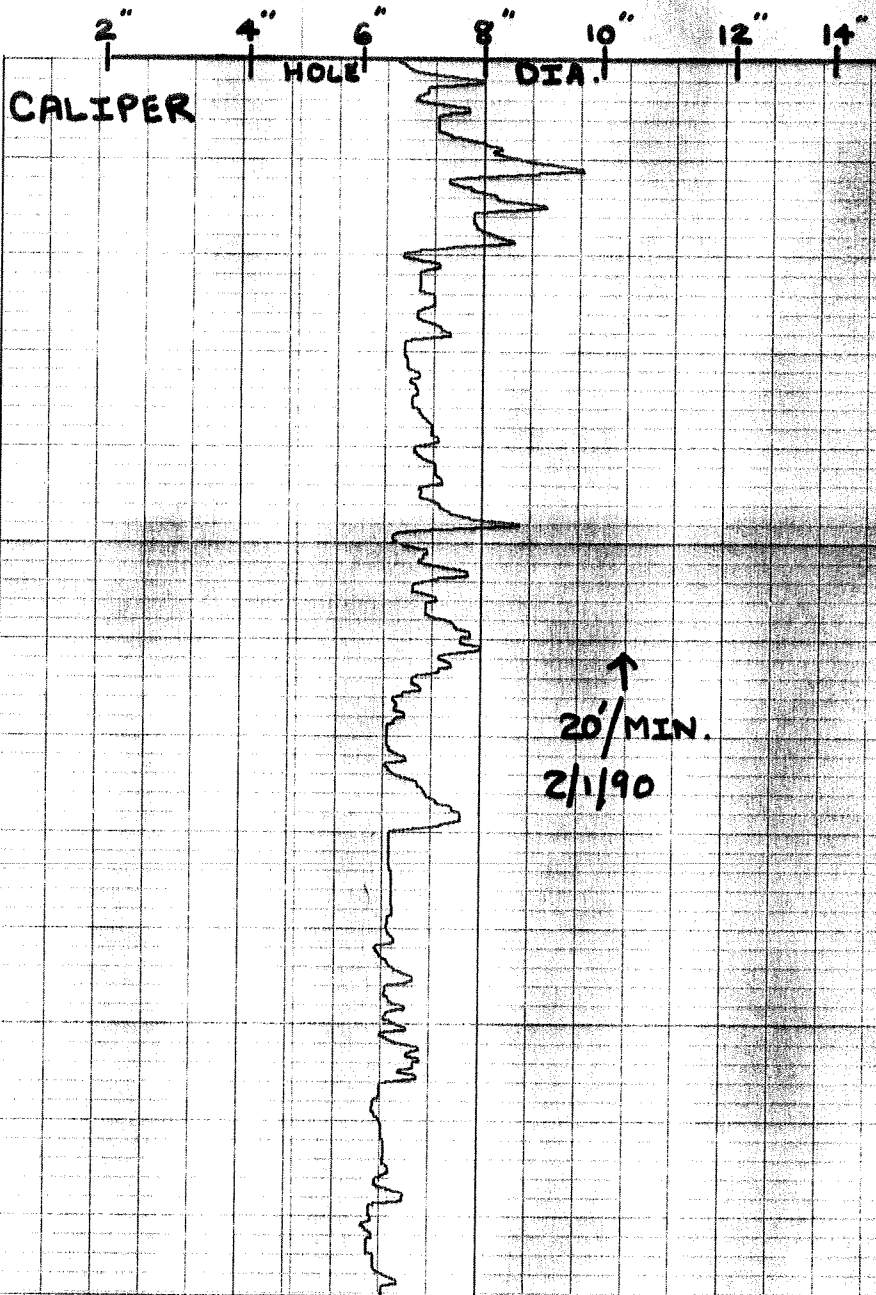






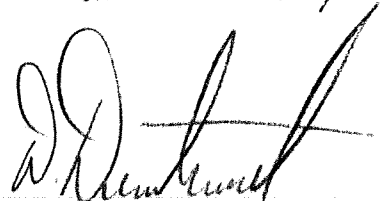
SLMWZO

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Marty

- Time 2/12/90
- 1250 ARRIVED AT Holiday Inn NO SIGN of LYLE OR his RED TOYOTA.
- 1310 "OH WHERE OH WHERE could LYLE BE? "HE'S SUPPOSE TO BE HERE MEETING ME!"
- 1350 FILLIN' Freddy still SITTING.
- 1400 LET my FINGERS do the walking, REACH out and touch DON.
- 1430 LYLE AND I ARRIVE AT the SITE (SLMW20).
- 1450 RAN 120' 3/4" PVC down hole. AIR developed only.
- 1500 checked WATER still somewhat cloudy
- 1525 checked WATER AGAIN improving slowly
- 1614 COLLECTED SAMPLE AND ONWARD to the NEXT SITE
- 1650 ARRIVED AT 2nd SITE (SLMW21)
- 1700 RAN 120' 3/4" PVC PIPE down hole. AIR developed only.
- 1715 ALOT of black dirt down well NO WATER.
- 1720 put about 10 gal of WATER down the well. Had NO EFFECT
- 1725 PVC shot out of well & broke off about 10' of PIPE (not down hole)
- 1735 with short bursts of AIR about 100' down <sup>had</sup> SOME RESPONSE but VERY little.
- 1745 A VERY light mist of WATER coming out still not much RESPONSE
- 1755 SAMPLED WATER not too cloudy but not enough to sample (NO black sand)
- 1807 could not GET a SAMPLE not enough WATER (SORRY DON) WATER not too cloudy
- 1830 back at Holiday Inn UNLOADED EQUIPMENT SAID LATER DAYS to LYLE (cool dude) and heading home.



2 1/4 hrs development  
time



SLMW20

BID FORM  
 CONTRACT NO. C89-0182-R

If this bid is accepted, the undersigned bidder agrees to complete all work under this contract within 160 calendar days from the date established in the "Notice to Proceed with Contract Work".

	QUANTITY	UNIT PRICE	TOTAL
1. Mob. & Demobilization. St. Lucie County	6 (estimated)	Lump sum \$1800	\$1800.00
2. Mob. & Demobilization. Broward County	6 (estimated)	Lump sum	
3. Mob. & Demobilization. Martin County	3 (estimated)	Lump sum	
4. Drill nominal 6" ± Borehole (Per Foot)	3,000'	\$12.75 X 130'	\$1657.50
5. Core 2" Nominal Borehole (Per Foot)	2600'		
6. Splitspoon Sample 2" Nominal Borehole (Per foot)	400'		
7. Furnish/Install Casing, 2" PVC, Schedule 40 (Per Foot)	3,000'	\$150 X 120'	\$180.00
8. Furnish/Install 2" PVC, Schedule 40, .020 Slot Screen (Per Foot)	260'	\$3.00 X 10'	\$30.00
9. Furnish/Install Gravel Pack, 8/20 Gr. Silica (50 lb. bg.)	200 bgs.	\$6.00 X 28(50lb)	\$168.00
10. Furnish/Install Grout Type I Portland (100 lb. bgs.)	600 bgs.	\$8.50 X 6 sacks	\$51.00
11. Standby Time (P/hr.)	50 hrs.	\$65.00 X 2 hrs	\$130.00
12. Well Development (P/hr.)	30 hrs.		
13. Other Work (P/hr.)	20 hrs.		
<b>TOTAL</b>			<b>\$4,016.50</b>

Grand Total Price for Contract \$ \_\_\_\_\_

Written Amount \_\_\_\_\_

## SLMW 20

### \* Mobilization

\* Drill 6" hole to 130'

\* Installed 10' 2" PVC screen 50'-60'

\* 120' 2" PVC csg

\* 14 bags (100lb bags) sand 6/20

\* 6 sacks neat cement

\* 2 hrs 11 minutes standby time (logging)

### \* Demobilization

Well not developed as of 2/2/90

Don Padgett

## ~~SLMW 20~~

Di

SL

## SLMW 21

### \* Mobilization

\* Drill 6" hole 140'

\* Install 10' 2" PVC screen 70'-80'

\* 130' PVC csg.

\* 16 100lb sacks 6/20 sd.

\* 6 sacks neat cement

\* 2 hrs 40 min standby

### \* Demobilization

RIGHT OF ENTRY AGREEMENT/WELL CONSTRUCTION

The SOUTH FLORIDA WATER MANAGEMENT DISTRICT and/or the United States Geological Survey and the agents, employees or assigns of each, (Permittees) are hereby granted the right to enter upon property owned by Strazzulla Brothers Company, Inc. (owner), and described herein, for the following purposes:

1. To construct water well(s) for the purpose of gathering lithologic data.
2. To conduct aquifer performance and step drawdown test(s) to determine water availability.
3. To collect geophysical logs on selected well(s). SEE ATTACHMENT "A"
4. To periodically be allowed access to the well(s) for the purpose of monitoring water levels and/or water quality sampling.

Such equipment as may be needed to accomplish the above purposes may be brought upon, over and across the property, which is described as follows:

SECTION 13  
TOWNSHIP 34 South  
RANGE 38 East

The permittees, and each of them, warrant to the undersigned that upon completion of the above purposes, the property will be left in, or restored to, the same condition as it was when the permittees or their contractor(s) first entered upon the land to begin their work.

The permittees, and each of them, separately and severally, to the extent permitted by law, shall save and hold harmless the undersigned owner from claims for damages or injury caused by the permittees, their agents, servants, employees, or contractors, during the time this permit for access and use is in effect.

Joseph P. Strazzulla  
OWNER

Date: 9/14/89

Executed by owner in presence of:

James A. Pounds  
Tina L. Harper

COUNTERSIGNED BY PERMITTEE(S)

[Signature]  
for SFWMD

Date: 9/25/89

for

Date: \_\_\_\_\_



# South Florida Water Management District

P.O. Box 24680 • 3301 Gun Club Road • West Palm Beach, FL 33416-4680 • (407) 686-8800 • FL WATS 1-800-432-2045

September 11, 1989

Mr. Philip Strazzulla  
Strazzulla Brothers Company, Inc.  
P.O. Box 3152  
Ft. Pierce, Florida 34948

Dear Mr. Strazzulla:

Please consider this letter to be a formal request to allow the South Florida Water Management District to install a water table monitor well on property owned by Strazzulla Brothers Company, Inc. The proposed site is located in Section 13, Township 34 South, Range 38 East, adjacent to the existing USGS monitoring well. The enclosed site map illustrates the location of the proposed site. The information we will gather during the construction and subsequent monitoring of these wells will greatly assist us in our study of the Surficial Aquifer System in St. Lucie County.

I am including a Right of Entry / Well Construction Agreement and a form giving the District permission to run a special type of geophysical well log. The Right of Entry / Well Construction Agreement: 1) allows the District to construct and monitor the wells at the described locations; 2) ensures the property and well site will be restored to the condition they were in immediately prior to the construction of the well; 3) includes a "save and hold harmless" clause to protect the property owner from claims for damages or injuries. The Radioactive Materials Use Form allows the District to run a specialty well logging tool which uses a totally contained, low-level radioactive source to measure porosity of the aquifer sediments. At no time does this source come into contact with any sediment or water. Our geophysical logging team is licensed by the Florida Department of Health and Rehabilitative Services and has logged over 500 wells in the last 15 years without incident.

If you decide to allow the District to construct the monitor well, the attached forms must be signed and returned to me. The forms will be countersigned by the appropriate District representatives and copies will be sent to you for your records.

*Governing Board:*

James F. Garner, Chairman - Fort Myers  
Doran A. Jason, Vice Chairman - Key Biscayne  
J.D. York - Palm City

Arsenio Milian - Miami  
Fritz Stein - Belle Glade  
Mike Stout - Windermere

Ken Adams - West Palm Beach  
Valerie Boyd - Naples  
James E. Nall - Fort Lauderdale

John R. Wodraska, Executive Director  
Tilford C. Creel, Deputy Executive Director

Mr. Philip Strazzulla  
September 11, 1989  
Page 2

I thank you in advance for your assistance with our study. Your support will be especially helpful in providing information necessary to effectively protect and manage the ground water resources of St. Lucie County. You will be provided with copies of any data collected on your property. Please contact Mr. Don Padgett or me if you have any questions or concerns.

Sincerely,



David Butler, P.G.  
Staff Hydrogeologist  
Hydrogeology Division  
Resource Planning Department

DB/hm

Enclosures: Right of Entry / Well Construction Agreement, Site Map



PROJECT St Lucie WELL NO. SLMW20 DATE 2/1/90  
Srazulli Site

TIME

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
0730	Don meets w/ Hydrowell drillers, Skip and David at Holiday Inn. Don briefs drillers on drilling and logging schedule as drillers eat breakfast.
0800	Drillers take water truck to STL 213 to get fresh water. Called Marty Braun for field activities check in
1014	Still trying to fill water truck. Had to disassemble pump fuel line and repair 3" to 2" PVC adapter.
1024	Leaving Holiday Inn with rig and full water truck
1056	Rig mobilized to site. Begin setup.
1134	Mixing bentonite mud. Will be drilling with 5 7/8" tricone roller bit. Grab samples collected with wire strainer and washed before bagging.
1142	Drilling @ 0'
	0'-3' sand
	3'-4' dark brown semi-consolidated sandstone.
	"hardpan"
	4'-6' sandy grey-brown clay
	7'-10' sandy grey clay
	@10' thin shell bed in sandy clay
1147	@12' clayey sand
	@14' Shell bed, light brown
1149	@19' Shell with trace of brown to black sandy clay
1151	@20' Circulating. Driller stops kelly at 20'. Breaking off bit.
1155	Adding 20' DP#1. DS = 47'
1201	@25' fine shell, sand trace of clay.
1203	@27' coarse shell, trace of sandy clay
1204	@30', sand lense
1206	30'-32' shell
	32'-33' sand with shell. From 20'-33' formation

PROJECT St Lucie WELL NO. SLMW20 DATE 2/1/90

(2)

Time	
DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	took a little fluid. Adding water to mud.
1208	33'-35' Coarse shell with sand. Desander on.
	@37' shell and worn rock pebbles, Beach deposit.
1215	@40' coarse shell and sand.
1218	Circulating @40'. Formation took 50 gal. of fluid from 30'-40'.
	Adding 20' DP #2, DS=67'
1224	Adding water to mud.
1225	@42' Shell, sand with trace of clay. NOTE Most sand goes through strainer and is not collected in grab samples.
1227	@45' as above. Mud is pretty thin.
	@47' grey green sandy clay with shell.
1232	Bit chatter @49'
	@49' sandy limestone. Mixing more bentonite mud.
1236	@49.5' as above. hard drilling
1238	@50'. easier drilling. Shelly soft sandy limestone. More shell than limestone
1241	@53' Shell and limestone
1243	@55' as above. Formation took ≈ 25 gallons of fluid from 50'-55'
1245	@57' sandy shell
	@58' hard layer. Formation still taking a little fluid
	@59' Shell sand and limestone. Formation is soft
1257	@60' Adding 20' DP #3, DS=87'
1303	@63' Shell, limestone and sand. Trace of lime mud (grey)
	@65' lime mud with trace of clay and small amount of shell



## SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT St Lucie WELL NO. SLW20 DATE 2/1/90  
3012

TIME

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1311	@ 69' shell and lime mud.
1314	@ 70' as above.
1317	@ 73' limey, clayey mud with trace of shell, some poorly consolidated grey limestone
1319	@ 74' as above with increase in sandy limestone.
1324	@ 76' limey mud with shell. light green color, semi-consolidated, with sandy limestone. Stop drilling to mix mud. 4th bag of "Quick-gel".
1333	@ 78' as above with more shell.
1337	@ 80' granular, grey, muddy, sandy, limestone with shell.
1340	Adding 20' DP #4. DS=107'
1344	@ 80' as above
1351	@ 85' lime mud.
	@ 87' shell interbedded with lime mud.
1402	@ 95' as above
	@ 97' bit chatter; green to grey, muddy, granular limestone with shell, hard, flakey cuttings.
1408	@ 100' Grey green granular limestone with shell and lime mud. Formation still taking fluid, probably in upper shelly intervals
1412	Adding 20' DP #5, DS=127'
1420	@ 102' interbedded limestone, lime mud and shell. some bit chatter.
1426	@ 105' as above
1428	@ 107' as above with white broken shell
1433	@ 110' as above. Pete Dauenhauer and Dave Demonstranti on site for geophysical logging.
	@ 113' beginning to see green muddy sand in cuttings.
1438	@ 115' soft green sandy mud/clay
1440	@ 116' soft clayey sandy mud with trace of limestone.
1442	@ 119' as above
	@ 120' as above. Circulating

PROJECT St Lucie WELL NO. SLMW20 DATE 2/1/90  
3612

TIME

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1447	Adding 20' DP#6; DS=147'
1452	@ 122' as above
1504	TD @ 130' as above. Drillers mixing a pill to keep upper shell beds stable.
1511	Drillers tripping out of hole.
1530	Drillers out of hole. Begin running logs.
1741	Finished logging. Density and Neutron logs not run because we had no signoffs.
1800	Running 70' blank 2" diameter PVC casing into hole.
1820	Running 10' PVC, 2" diameter, .020" slot screen into hole.
1823	Running 50+ ft of 2" diameter PVC casing into well.
1825	At Don's suggestion; Drill crew pumps fresh water into well to get heavy mud out of annulus.
1830	Air bubble comes up annulus. No more drilling mud coming from annulus even though water is still being pumped down the well. Water is going into the formation.
1835	Putting sand down annulus. Filling PVC casing with water to keep it from floating.
1859	Sand going down annulus slowly. no returns from well or annulus. Driller tags sand pack @ 90' with 7 100 lb sack in annulus. Sand suspended in annular mud. Dark.
1925	Putting sack #12 in annulus. Should take 14 sacks to completely cover screen.
1952	14, 100 lb sacks of 6/20 sand in annulus
2000	crew off-site to let gravel pack settle overnight.

Poured total 14, 100 lb sacks of 6/20 sand as gravel pack

PROJECT St Lucie WELL NO. SLMW20 DATE 2/2/90  
36 12

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
0700	Met Hydrowell drillers @ Holiday Inn. Discussed proposed activities. Drillers must get diesel this morning.
0730	Call to Marty for field update. I <del>recommended</del> recommended they spend the day completing and developing SLMW20 rather than start late in the day at Midway Road Church of Christ and leave that site a wreck over the weekend. Will finalize that decision once we tag gravel pack @ SLMW20.
0814	Don at SLMW20 site. Waiting on drillers.
<del>0814</del>	Updating Water Level field notebook.
0850	Drillers from Hydrowell on site
0856	Tagged gravel pack @ 15'
0900	Mixing 2 sacks neat cement. Running 1" dia tremmi pipe to 15'
0930	Cement will not pump down tremmi line.
0935	Run 12' of 2" diameter tremmi pipe down annulus
0938	David Butler (SFWMD) and David Fletcher (Hydrowell) on site. Pumped 2 sacks (18gal) of cement with poor returns and air bubbles in annulus.
0940	Mixing 2 more sacks of cement. Pumped cement down annulus; good cement returns. David Butler and David Fletcher off-site.
1000	Called Marty Braun to notify him we would mobilize to Church site later. Don and Skip off-site to call Hydrowell office.
1050	Don calls Reverend Wharton for permission to mobilize to church site and store rig there for the weekend. Hydrowell office agrees to send someone to develop SLMW20 on Monday while we are drilling Church site (SLMW21).

