TECHNICAL DATA FOR THE

REHABILITATION OF THE DEEP INJECTION AND MONITORING WELLS

AT THE

Stuart Wastewater Treatment Plant

FOR

The City of Stuart, Florida

CH2M HILL

Project No. FC15132.BO

Report: Technical Data for the Rehabilitation of the Deep Injection and Monitoring Wells at the Stuart Wastewater Treatment Plant for the City of Stuart, Florida

Well	Name/Description	Date	Depths	
			Bottom	Top
W-12556	Electric SP, Short Normal, Long Normal	12/03/1981	3305	2000
	Gamma Ray	12/03/1981	3305	2000
	Temperature	12/03/1981	3305	2000
	Caliper	12/03/1981	3305	2000
	Fluid Velocity	12/18/1981	3305	2000
	Temperature	01/24/1982	2680	1800
	Cement Bond, Variable Density	01/29/1982	2654	0000

GEOPHYSICAL WELL SURVEY

Sheet 1 of 1

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CLIENT City of Stuart — Date 12/3/93
Well No. Injection Well — Project No. FC151.01.60

Location: Town Florida — County Martin
Sec 36 Twp 38 Range 41 — Elev. 4 — Ref. ■ GL ☐ KB — m ☐ ft ☐ m ☐ ft

Logged by Sean T. Stanton — Observer Jeff Lemon

Owner City of Stuart
Well Injection Well - Rehabilitation
Driller Layne Atlantic — Date Drilled 1983
Surface Elevation 0 ft — Elev. Measured ■ Estimated ☐ Above MSL
T.D. Logged 3395' — T.D. Driller 3395'
Hole Dia. 35" from 0' to 200'; 15" from 200' to 3395' — Dia. ____ from ____ to ____
Casing 24-16" from 0' to 1800' — Dia. ____ from ____ to ____
Finish ■ Open hole ☐ Screen ☐ Gravel ☐ Other
Water Level ____ ft ☐ Above ■ Below ☐ Flow ____ gpm ☐ Above ■ Below Land Surface
Yield Flow ____ gpm Pump ____ gpm
Drawdown ____ ft after ____ hours pumping ____ gpm
Use ☐ Dom. ☐ Stock ☐ Pb. ☐ Irr. ☐ Ind. ☐ Tr. ☐ Housing or cooling ☐ Drainage ■ Disposal ☐ Obs.

Water Quality:
Temp. ____ °F Sp. Cond. ____ mmhos ____ ppm
Cl ____ ppm SO4 ____ ppm Total Hardness ____ ppm
Color ____ Odor ____ Taste ____

Remarks:

Log Scales

Electric Log
SP 10 millivolts/inch
Res. 10 ohm-meters/inch
Ref. ____ ohms/inch

Gamma Ray Log
G 0 Counts/sec/in
Time Constant 2 sec
Logging speed 20 FPM

Temperature
85 °F to 75 °F
Logging speed 20 FPM

Fluid Resistivity
____ ohm-meters/inch
R ____ °F

Fluid Velocity
____ Counts/min/inch
____ FPM transducer
0 ____ gpm

Caliper
12 inches to 16 inches
Logging speed 20 FPM

Water Samples
Depths sampled ____

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Water Resources Division
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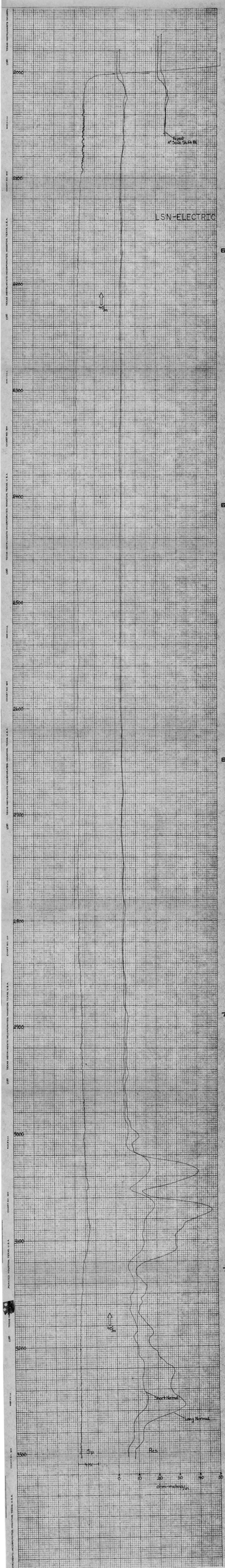
Gainesville, Florida 32602
(904) 377-3442



GEOPHYSICAL WELL SURVEY

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Sheet 2 of 4

CLIENT City of Stuart — Date 12/3/93

Well No. Injection Well — Project No. FC1913.2.00

Location: State Florida — County Martin

NW ¼ SW ¼ SW ¼ Sec 6 T 38 S R 41 E

Logged by Sean T. Stehan — Observer Jeff Lehman

Owner City of Stuart

Well Injection Well - Rehabilitation

Driller Layne Atlantic — Rig Driller 1981

Surface Elevation 0 ft. — Reference Kelly Bushing / Ground Level — Above MSL

T.D. Logged 1305' — T.D. Driller 1305'

Hole Dia. 12" from 0' to 1305' — Dia. ____ from ____ to ____

Casing I.D. 16" from 0' to 1305' — Dia. ____ from ____ to ____

Fluid: Open hole / Screen / Gravel / Other

Water Level ____ ft. Above / Below Land Surface — Measured ____

Yield: Flow ____ gpm Pump ____ gpm

Drawdown ____ ft. after ____ hours pumping ____ gpm

Use: Dom. / Stock / PS / Irrig. / Ind. / Test / Disp. / Observ.

Casing or casing: Seal / Drainage / Overcast

Water Quality:

Temp. ____ °F Sp. Cond. ____ mmhos ____ ppm

Cl ____ ppm SO4 ____ ppm Total Hardness ____ ppm

Color ____ Odor ____ Taste ____

Remarks ____

Electric Log: Caliper / Gamma Ray / Fluid Resistivity / Temperature / Fluid Velocity

Log Scale

Electric Log: SP ____ millivolts/inch; Res. 10 ohm-meters/inch; Res. ____ ohms/inch

Fluid Resistivity: ____ ohm-meters/inch; @ ____ °F

Gamma Ray Log: Time Constant 2 sec; Logging speed 20 FPM

Fluid Velocity: ____ Counts/min/inch; ____ FPM (operational); 0 ____ gpm

Temperature: 55 °F to 75 °F; Logging speed 20 FPM

Caliper: 12 inches to 16 inches; Logging speed 20 FPM

Water Samples: Depths sampled ____

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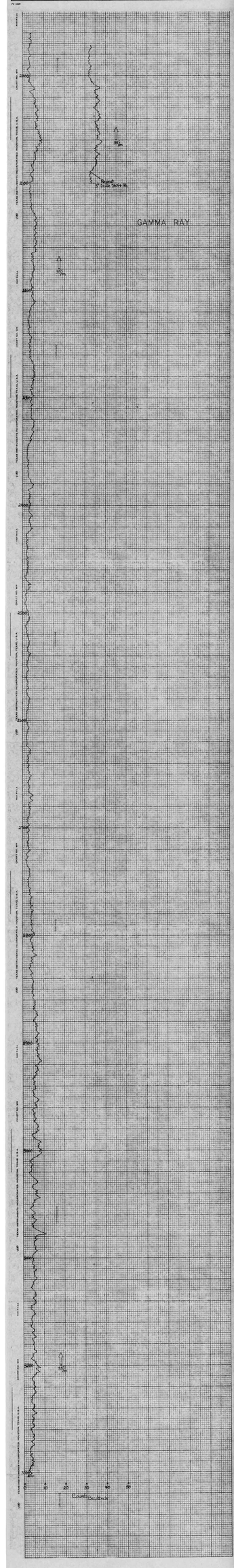

GEOPHYSICAL WELL SURVEY

Sheet 3 of 4

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CLIENT City of Stuart Date 12/3/07

Well No. Injection Well Project No. FC1012.00

Location: State Florida County Martin

NW ¼ SW ¼ SE ¼ Sec. 4 T. 38 S. R. 41 E ☐ W

Logged by Sean T. Seman Observer Jeff Lehman

Owner City of Stuart

Well Injection Well - Rehabilitation

Driller Layne Atlantic Date Drilled 1981

Surface Elevation 0 ft. ☐ Estimated ☐ Measured Above MSL

T.D. Logged 3305' T.D. Driller 3305'

Hole Dia. 18" From 2000' To 3305' Dia. From To

Casing I.D. 16-14" From 0 To 2000' Dia. From To

Finish: ☐ Open hole ☐ Screen ☐ Gravel ☐ Other

Water Level ft. ☐ Above Datum ☐ Below Land Surface

Yield: Flow gpm Pump gpm

Drawdown ft. after hrs. pumping at gpm

Use: ☐ Dom. ☐ Stock ☐ PS ☐ Ind. ☐ Irr. ☐ Test

☐ Heating or cooling ☐ Drainage ☐ Disposal ☐ Obs.

Water Quality:

Temp. °F. Sp. Cond. Iron ppm

Cl ppm. SO2 ppm. Total Hardness ppm

Color Odor Taste

Remarks

Log Scans:

Electric Log: Rx 16 millivolts/inch; Rm 10 ohm-meters/inch; Rmc ohm/inch

Fluid Resistivity: ohm-meters/inch @ °F

Gamma Ray Log: 10 Counts/inch; Time Constant 3 sec; Logging speed 35 FPM

Fluid Velocity: Counts/min/inch; FPM (counts/minute); 0= gpm

Temperature: 65 °F to 75 °F; Logging speed 35 FPM

Caliper: 11 inches to 15 inches; Logging speed 35 FPM

Water Samples:

Depths sampled:

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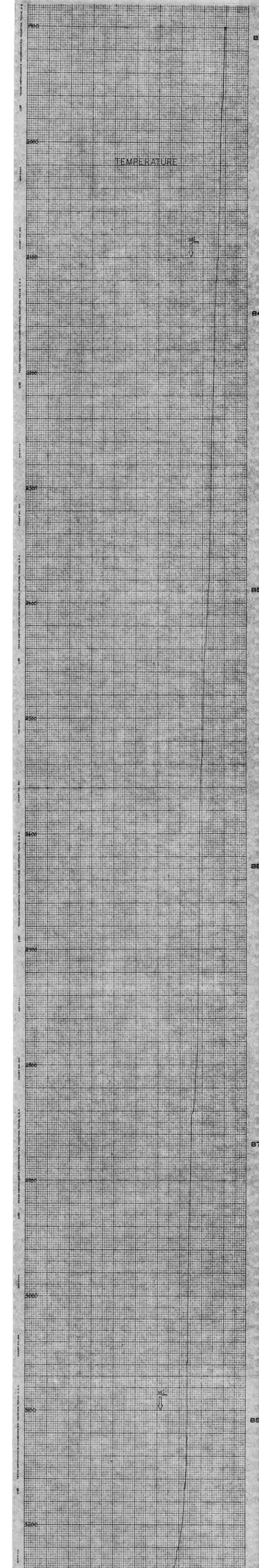

CLIENT City of Stuart Date 12/2/93

Well No. Injection Well Project No. FC3130.00

Location: State Florida County Martin

TR. 38 S. RG. 38 E. Sec. 4 Lat. 26° 12' 0" Long. 80° 15' 0"

Logged by Jess T. Stokes Engineer Jeff Lofman

Owner City of Stuart

Well Injection Well - Rehabilitation

Site Lucie Atlantic Date Drilled 1981

Surface Elevation 0 ft. ☐ Estimated ☐ Measured Above MSL

T.D. Logged 3305' T.D. Driller 3305'

Hole Dia. 15" From 2000' To 3305' Dia. From To

Casing 10-3/4" Wgt. 32 To 1000' Dia. From To

Finish ■ Open hole ☐ Screen ☐ Gravel ☐ Other

Water Level 25 ft. ☐ Below ■ Above ☐ Flowing ☐ Artesian Land Surface

Yield Flow gpm Pump gpm

Drawdown ft. after hrs. pumping gpm

Use ☐ Dom. ☐ Stock ☐ PS ☐ Irrig. ☐ In. ☐ Test ☐ Heating or cooling ☐ Drainage ■ Disposal ☐ Inc.

Water Quality:

Temp °F. Sp. Cond. Top ppm

Cl⁻ ppm. SO4⁻⁻ ppm. Total Hardness ppm

Color Odor Taste

Remarks

Sheet 4 of 6

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Electric
Gamma Ray
Temperature
Caliper
Fluid Resistivity
Fluid Velocity

Log Scale

Electric Log
SP 20 millivolts/inch
Res. 10 ohm-meters/inch
Res. 100 ohms/inch

Fluid Resistivity
100 ohm-meters/inch
0 mv. F

Gamma Ray Log
10 Counts/sec/in

Fluid Velocity
Counts/min/inch

Time Constant 5 sec
Logging speed 20 FPM

FPM (continuous)
0 gpm

Temperature
65 °F to 75 °F
Logging speed 20 FPM

Caliper
12 inches to 20 inches
Logging speed 20 FPM

Water Samples
Depth sampled

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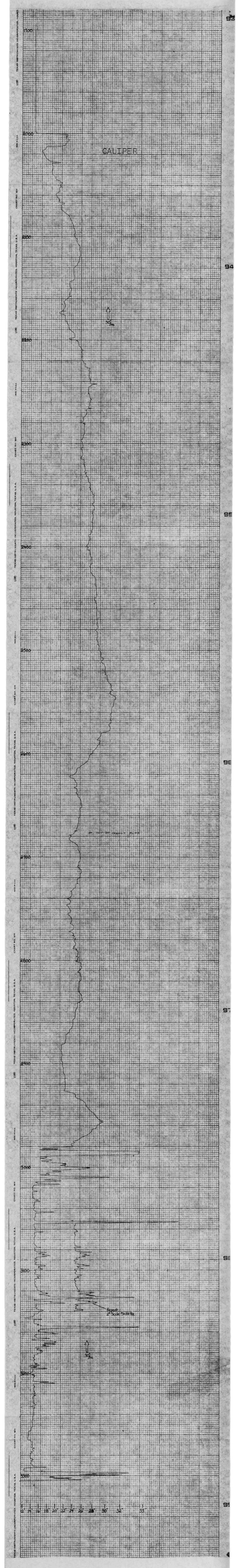
GEOPHYSICAL WELL SURVEY



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GEOPHYSICAL WELL SURVEY

Sheet 1 of 2

CLIENT City of Stuart Date 12/16/97

Well No. Injection Well Project No. FC93132.R0

Location: State Florida County Martin

SW ¼ SW ¼ SW ¼ Sec 4 Twp 38 S Rge 41 E

Logged by Sean T. Stakes Observer Jeff Lenner

Owner City of Stuart

Well Injection Well - Rehabilitation

Driller Layne-Atlantic Date Drilled 1981

Surface Elevation 0 ft. ☐ Estimated ☐ Measured Above MSL

T.D. Logged 3500 T.D. Driller 3505

Hole Dia. 15" From 0 To 2000' Dia. 10" From To

Casing: 1-16"-16" From 0 To 2000' Dia. From To

Finish ■ Open hole ☐ Screen ☐ Gravel ☐ Other

Water Level 0 ft. ☐ Above ☐ Below ■ Above ☐ Below Level Surface

Yield Flow gpm Pump gpm

Drawdown ft. after hours pumping ft. gpm

Use ☐ Dom. ☐ Stock ☐ PS ☐ Irr. ☐ Inc. ☐ Test ☐ Heating or cooling ☐ Drainage ■ Disposal ☐ Obs.

Water Quality:

Temp °F Sp. Cond. from mhos/cm

Cl from 507 mg/L Hardness from Total Hardness mg/L

Color Odor Taste

Remarks: Loss during injection test.

Log Scales

Electric Log
SP mv/div
Res ohm-meters/inch
Res ohm-meters/inch

Gamma Ray Log
counts/inch

Time Curve/per sec
Logging speed FPM

Temperature
75 °F to 85 °F

Logging speed 50 FPM

Fluid Resistivity
ohm-meters/inch
ρ °F

Fluid Velocity
300 counts/inch
30 FPM (continuous)
0 - 1000 gpm

Caliper
inches to inches

Logging speed FPM

Water Samples
Depths sampled

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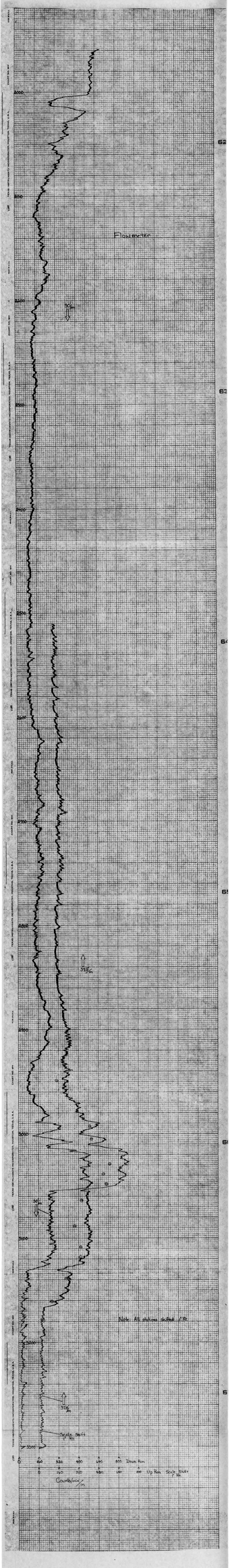
☐ Electric ☐ Caliper
☐ Gamma Ray ☐ Fluid Resistivity
☐ Temperature ■ Fluid Velocity



GEOPHYSICAL WELL SURVEY

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CLIENT City of Stuart	Date 1/24/82
Well No. Injection Well	Project No. FC15132.80

Sheet 1 of 1

☐ Electric ☐ Caliper
☐ Gamma Ray ☐ Fluid Resistivity
■ Temperature ☐ Fluid Velocity

Location: State Florida County Martin
NW ¼ NW ¼ SW ¼ Sec. 4 T. 38 ☐N ☐S R. 41 ■E ☐W

Logged by Sean T. Skehan Observer

Owner: City of Stuart
Well: Injection Well - Rehabilitation
Driller: Layne-Atlantic Date Drilled: 1981
Surface Elevation: 8 ft. ■ Estimated ☐ Measured Above MSL
T.D. Logged 3305 T.D. Driller 3305
Hole Dia. 15" From 2000' To 3305' Dia. From To
Casing I.D. 15-1/4" From 0 To 2000' Dia. From To
Finish: ☐ Open hole ☐ Screen ☐ Gravel ☐ Other
Water Level: ft. ☐ Above ☐ Below Mp. 2' ☐ Above ☐ Below Land Surface
Yield: Flow gpm Pump gpm
Drawdown: ft. after hours pumping @ gpm
Use: ☐ Dom. ☐ Stock ☐ PS ☐ Ind. ☐ Irr. ☐ Test ☐ Heating or cooling ☐ Drainage ■ Disposal ☐ Obs.

Water Quality:
Temp. °F; Sp. Cond. ; Iron ppm
Cl ppm; $SO_4^{=}$ ppm; Total Hardness ppm
Color Odor Taste

Log Scales

Electric Log	Fluid Resistivity
SP millivolts/inch	ohm-meters/inch
Res. ohm-meters/inch	@ °F
Res. ohms/inch	
Gamma Ray Log	**Fluid Velocity**
Counts/sec/in.	Cdsmts/min/inch
Time Constant sec.	FPM (continuous)
Logging speed FPM	Q = gpm
Temperature	**Caliper**
70 °F to 140 °F	inches to inches
Logging speed 30 FPM	Logging speed FPM

Water Samples
Depths sampled:

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Remarks: Calibration temperatures verified with pulse counter. Log run 12 hours after cementing.

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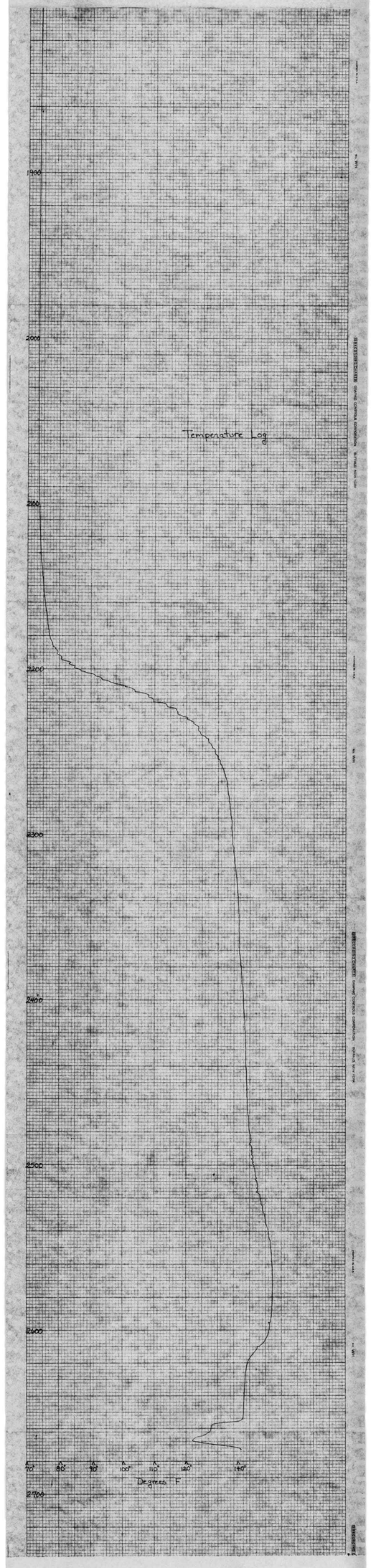

Company	Schlumberger
Well	Texaco Inc. Fee 1
Field	Wildcat
County	Lea
State	New Mexico
Date	1-1-1900
Run No.	1
Depth Driller	12,000
Depth Logger	12,000
Bottom Log Interval	12,000
Top Log Interval	11,900
Casing Driller	13 3/8 @ 1,000
Casing Logger	1,000
Bit Size	17 1/2
Type Fluid in Hole	Brine
Density	10.0
Viscosity	32
Fluid Loss	10.0
Source of Sample	Pit
Rm @ Meas. Temp.	0.08 @ 70
Rmf @ Meas. Temp.	0.06 @ 70
Rmc @ Meas. Temp.	0.12 @ 70
Source Rmf / Rmc	Calc. / Calc.
Rm @ BHT	0.04 @ 200
Time Since Circulation	24 hrs
Max. Rec. Temp.	200
Equipment Location	Hobbs
Recorded By	Jones
Witnessed By	Smith

Run No.	Bit Size	Casing Size	Depth Logged	Time Circ.
1	17 1/2	13 3/8	1,000	24
2	12 1/4	9 5/8	4,000	24
3	8 3/4	7	12,000	24

Equipment	Serial No.
DIL-SFL	1234
BHC-GR	1234
FDC-CNL	1234
Dipmeter	1234
Mud Log	1234
Temperature	1234
Caliper	1234
Gamma Ray	1234
Neutron	1234
Density	1234
Resistivity	1234
Acoustic	1234
Recorder	1234
Recorder	1234
Recorder	1234
Recorder	1234

Equipment	Location
Truck	1234
Truck	1234
Truck	1234
Truck	1234
Truck	1234
Truck	1234
Truck	1234
Truck	1234
Truck	1234
Truck	1234
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