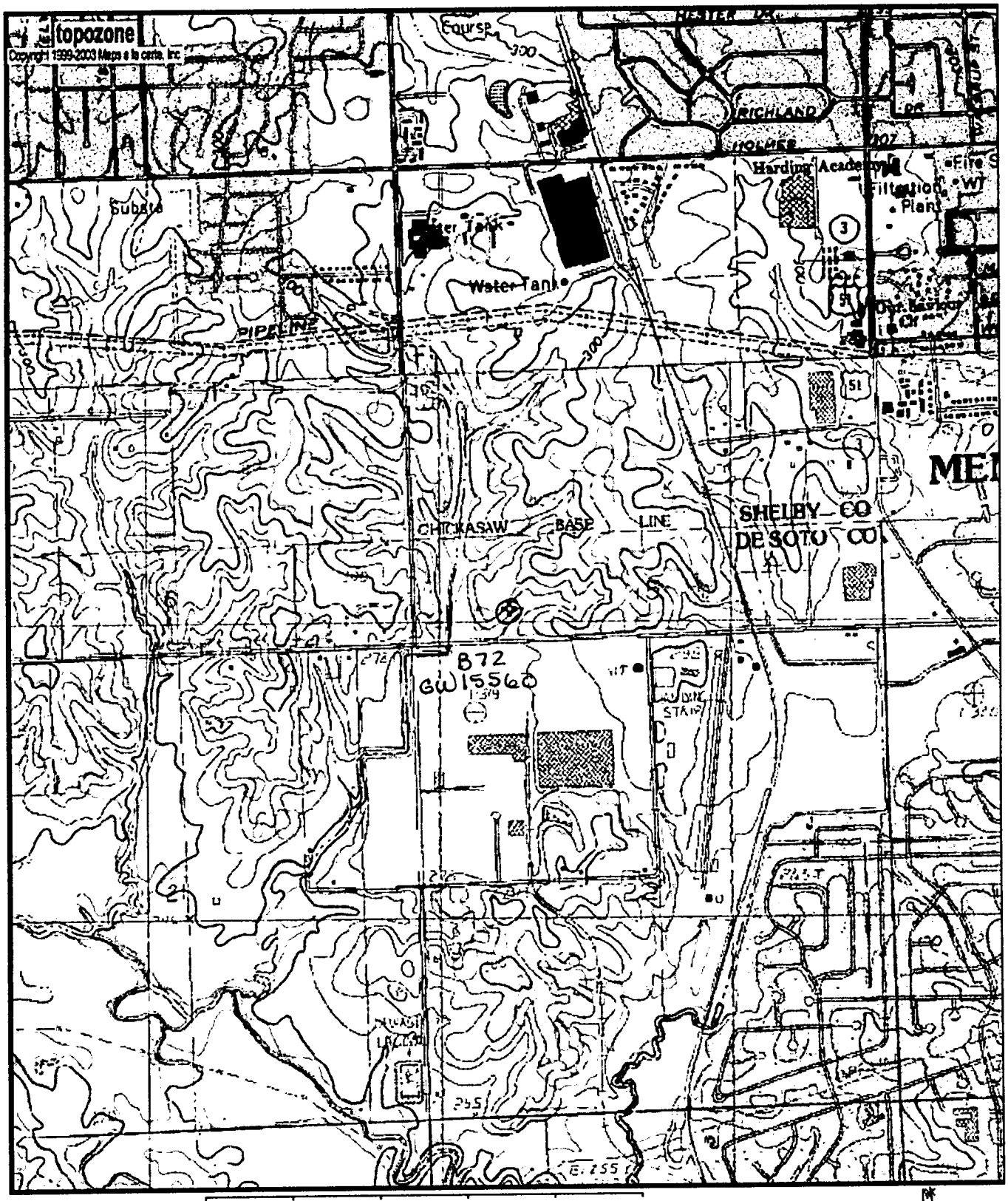
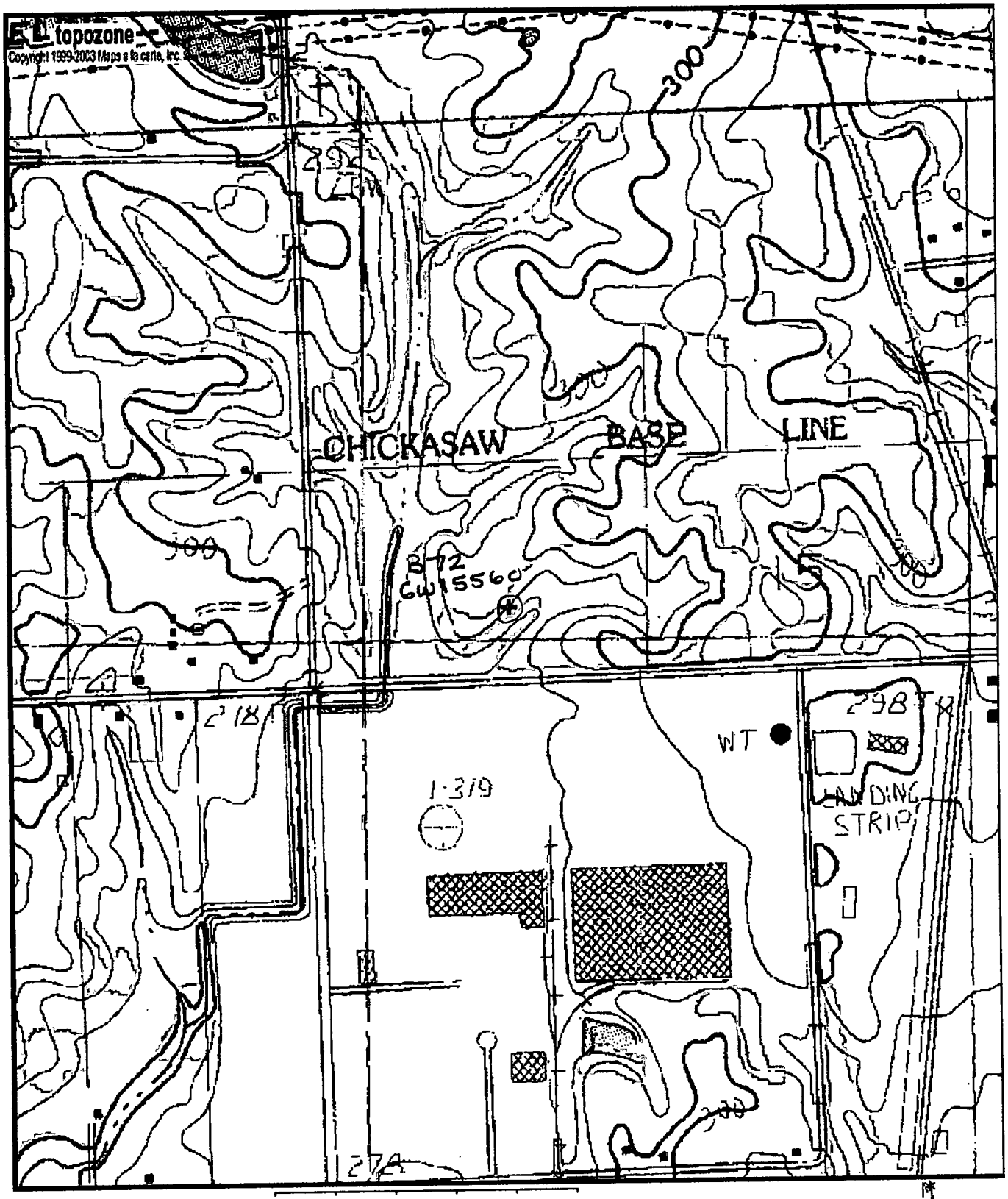



Map center is 34° 59' 35"N, 90° 02' 22"W (WGS84/NAD83)
**Horn Lake** quadrangle - TopoZone Pro elevation display
Projection is UTM Zone 15 NAD83 Datum

M=0.136
G=1.699

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**Horn Lake** quadrangle - TopoZone Pro elevation display
Projection is UTM Zone 15 NAD83 Datum

M=0.136
G=1.699

Elog # 82 B72

Layne Geophysical Services

# GAMMA RAY/SP/ELECTRIC

| | | | | | |
|---|---|---|---|---|---|
| COMPANY | : N.E.P.C.O. | | | OTHER SERVICES: | |
| WELL | : WELL #6 | | | NONE | |
| LOCATION/FIELD | : STATE LINE RD POWER PLANT | | | | |
| COUNTY | : DESOTO | | | | |
| STATE | : MS | | | | |
| SECTION | : | TOWNSHIP | : | RANGE | : |
| DATE | : 11/07/01 | PERMANENT DATUM | : | | |
| DEPTH DRILLER | : 1530 | | | KB | : |
| LOG BOTTOM | : 1516.40 | LOG MEASURED FROM: | | DF | : |
| LOG TOP | : 0.50 | DRL MEASURED FROM: | G.L. | GL | : |
| CASING DIAMETER | : 26 | LOGGING UNIT | : 9819 | | |
| CASING TYPE | : STEEL | FIELD OFFICE | : MEMPHIS | | |
| CASING THICKNESS: | 0 | RECORDED BY | : M. BURGENER | | |
| BIT SIZE | : 9 7/8 | BOREHOLE FLUID | : MUD | FILE | : ORIGINAL |
| MAGNETIC DECL. | : 0 | RM | : 0 | TYPE | : 9041A |
| MATRIX DENSITY | : 2.71 | RM TEMPERATURE | : 0 | | |
| NEUTRON MATRIX | : Dolomite | MATRIX DELTA T | : 54 | | |
| | | | | THRESH: | 4000 |

N 34.99368 W 090.03963

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

## FORMATION LOG OF THE WELL OR TEST HOLE

Drilled For Nepco Finished 01-03 20 02 Test Hole Number____
Location Southaven, MS Sec_____ TS_____ Range_____ Elevation_____
Latitude 34°59'35"N Longitude 90°02'22"W County DeSoto

| Total Depth | Thickness Each Stratum | Formation |
|---|---|---|
| | | |
| 0-21 | 21 | Clay |
| 21-37 | 16 | Sand & Gravel |
| 37-39 | 2 | Yellow Clay |
| 39-63 | 24 | Gray Clay |
| 63-107 | 44 | Hard Clay |
| 107-112 | 5 | Sandy Clay & Sand Streak |
| 112-225 | 113 | Hard Gray Clay |
| 225-282 | 57 | Sand Clay & Sand Streak |
| 282-305 | 23 | Corse Sand & Clay |
| 305-313 | 8 | Sandy Clay |
| 313-356 | 43 | Corse sand & clay ½ x ½ |
| 356-407 | 51 | Hard Fine Sand & Clay Streak |
| 407-469 | 62 | Hard MED/FINE Sand & Clay |
| 469-500 | 31 | Hard Fine Sand & Clay |
| 500-531 | 31 | Hard Fine Sand & White Clay ½ x ½ |
| 531-626 | 95 | Sandy Clay & Sand ½ x ½ |
| 626-721 | 95 | Fine Sand & Clay Streak |
| 721-828 | 107 | Sandy Clay |
| 828-836 | 8 | Hard Sandy Clay |
| 836-846 | 10 | Fine Sand & Clay |
| 846-985 | 139 | Fine Sand & Clay/Lignite Streaks |
| 985-1001 | 16 | Hard Shale |
| 1001-1248 | 247 | Hard Shale & Rock |
| 1248-1311 | 63 | Hard Sandy Shale |
| 1311-1364 | 53 | Hard Sandy |
| 1364-1447 | 83 | Fine Sand & Shale ½ x ½ |
| 1447-1453 | 6 | Hard Sand & Shale |
| 1453-1468 | 15 | Hard Shale |
| 1468-1506 | 38 | Fine Sand & Shale ½ x ½ |
| 982-1064 | 1530 | Hard Sandy Shale |
| 1506-1530 | 24 | Hard Sandy Shale |

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**Static Water Level- 131'**

**Specific Capacity- 17.8 gpF/dd**

**Mud Pit Size** ____ Ft. X ____ Ft. X ____ Ft. Deep
**Type Bit Used to Cut Sand** _____
**Size of Test Hole Through Sand** _____
**Type of Bit Used to Cut Upper Formations** _____
_____ **Size** _____
**Type Mud Pump Used** _____
**Drilling Pressure in Sand** _____
**Type of Mud Used** _____
**Notes:**

### TEST DATA

| | PRELIMINARY TEST | FINAL TEST |
|---|---|---|
| **Static Water Level** | | |
| **Pumped GPM** | | |
| **Pressure Pounds** | | |
| **Draw Down** | | |
| **GPFD** | | |
| **Guaranteed GPM** | | |
| **Guaranteed Pressure** | | |
| **Date of Test** | | |

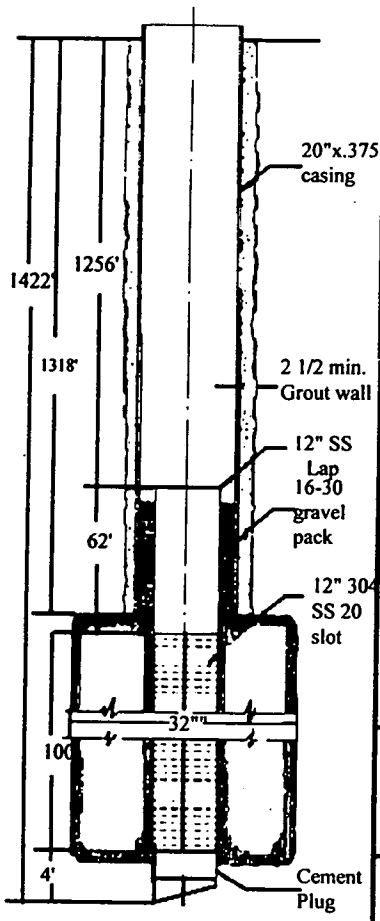
**REMARKS**

Driller **Hathcock & Lloyd**

Field Supt **Ray Smith**

ALL MEASUREMENTS TAKEN FROM (GROUND)

Drawing of the Well




## WELL DATA

Started Well 10-23 20 01 And Completed 01-03 20 02
Total Depth 1422 Elevation _____ Static Water Level 131'
Length Surface Casing 47' Size 26" Thickness .250 wall
Cemented with 30 sacks Cement Type Packer N/A
Length Well Casing 1313' Size 20" Weight .375 wall
Cemented with 1500 sacks Cement N/A Type Packer N/A
Inner Casing Length 62' Size 12" Weight .188 wall
With Fish x Backs Guides Located top/bottom Type Backoff N/A
Lead Seal N/A BackPressure Valve 6" x 4" Guide N/A
Well Strainer Make HOUSTON SS Size 12" Length 100' Opening 20 SLOT
Type Material Stainless With Weld Ring Connections
Size Hole Drilled for Surface Casing 32" With Rock
Size Hole Drilled for Well Casing 25" With Rock Size
Hole Drilled for Strainer 32" With Undereamer
Yards of Gravel Used 22 How Placed GRAVEL LINE
How was well developed Air Development
Notes: USED 16-30 Oglebay-NortonGRAVEL
Rig Used Gardner Denver 2500 Driller LYNWOOD HATHCOCK
–

## PUMP RECORD

Serial Number _____ Make _____ Foundation _____
Length Column _____ Size _____ Type _____ @ _____ Lengths
Bowl Size ___ Type _____ Stages ___ Material Impeller _____
Material Bowl _____ With _____ Ports and _____ Shaft
Suction Size _____ Length _____ Suction Strainer _____
Is Pump Sealed How _____ Where _____ With What _____
Lubricator Type _____ Size _____ Voltage _____
Length of Airline _____ Size _____ Type Material _____
Air Release Valve Type _____ Size _____ Size
Surface Discharge _____ Type _____ Dayton Coupling _____
Pressure Gauge _____ Speed _____
Notes _____
Rig Used to Set Pump _____ Installer _____
Date Pump Installed _____ 20 ____ Date In Operation _____ 20 ____

## MOTOR

Make _____ HP _____ Frame _____
Phase ____ Cycle _____ Volt ____ Speed _____ Model _____
Serial Number _____ Top Bearing _____ Bottom Bearing _____
_____ Ratchet _____ Starter _____ Pressure Switch _____

## GEAR

Make _____ Model _____ HP _____ Serial Number _____
Size Pulley _____ Type Motor Frame _____

## ENGINE

Make _____ Model _____ HP _____ Serial Number _____
Speed _____ Size Pulley _____ Foundation _____
Type Fuel Tank _____ Make Mag _____ No. _____
Make Starter _____ No. _____ Type Fuel _____
Make Flexible Shaft _____ Size _____ Length _____ Belt Length _____

## GENERAL

Purpose for which this water is used _____
Temperature _____ Is Water Clear _____ Capacity _____
Sand _____ Hardness ____ PH ____ Iron ____ NaCl ____
Type Treatment used _____ Is there a derrick over the well _____ Height _____ Type _____ Can a Truck or Rig easily get to the well _____ Pump House _____ Size Hatch _____

CONTRACT NO 57 - 5194

Our Well No. 6 Their Well No. 6 In Test Hole No. _____

Location of the Well Southaven/34° 59' 35N x 90° 02' 22" W

Installed For NEPCO Power Plant

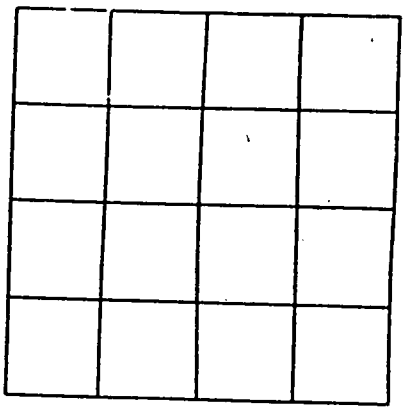
Address City Southaven County DeSoto State MS

Year 2002

If well telescopes please sketch and show depths.

GROUND LEVEL

See attached



SECTION _____

Please indicate well location X.

| Pump Capacity (GPM) | No. of Stages | Setting Depth |
|---|---|---|
| 1200 | 4 | 220 FT. |

PUMP TEST

Well yielded 1204 GPM with a drawdown of 67 ft. after 72 hours of pumping

LOG DATA

TYPE OF LOG RUN (Circle One): No Log Run, Electric, (Gamma Ray) Density, Sonic, Neutron, Other (Describe) SP

Name of Organization Running Log

Layne Central Co.

GEOLOGIC DATA (Office Use Only)

| Surface Elev. | Geologic Unit | Unit Thickness | Depth to Top |
|---|---|---|---|
| Subs. SWL | Date | Analysis | Aquifer Test |

Driller's Remarks

If more than one screen, show location of each on sketch.

**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**
**Office of Land and Water Resources**

P. O. Box 10631
Jackson, MS 39289-0631
**WATER WELL DRILLERS LOG**

| COUNTY WELL LOCATED | |
|---|---|
| DeSoto | |
| WELL NUMBER | CODED |
| 6 | |
| B-72 | |
| DATE WELL COMPLETED | |
| 01-03-02 | |

| PERMIT NUMBER |
|---|
| MS-GW 15560 |
| NAME OF DRILLING FIRM |
| Layne Central Co. |

NAME & MAILING ADDRESS OF LANDOWNER
Southaven Power LLC
9405 Arrowpoint Boulevard
Charlotte NC 28273
Latitude: 34° 59' 35" N
Longitude: 90° 02' 22" W

WELL LOCATION: SEC 15 TOWNSHIP 1 (N) (S) RANGE 8 (E) (W)

DISTANCE 0.05 Miles DIRECTION West of NEAREST TOWN Hwy 515

OTHER LANDMARK

WELL PURPOSE: Home, Irrigation, Municipal, Industrial, Fish Pond, etc.
Industrial Water Supply

**WELL DATA**

| Well Depth | Casing Diameter (In.) | Casing Length (Ft.) |
|---|---|---|
| 1422 | 20" | 1318' |
| **Type of Casing** | **Hole Depth** | **Depth to Static Water Level** |
| A-53 steel | 1422' | 131' |

TYPE OF COMPLETION: (Circle One or More):
(Gravel Packed,) (Underreamed,) Telescoped, Natural Development, Open Hole, Other (Describe) _____

WELL GROUTED TO A DEPTH OF 1318 FEET
Type Grout (circle one): Cement, Bentonite, or Mix

**SCREEN DATA**

| Diameter - Inches | Length - Feet | Slot Size - Inches |
|---|---|---|
| 12" | 100' | .020" |
| **Screen Type** | **Depth to Bottom - Feet** | |
| 304 SS Houston WW | 1418' | |

**PUMP DATA**

PUMP TYPE (Circle One):
Submersible, (Turbine) Jet Flowing Well, Other (Describe) _____

POWER TYPE (Circle One):
(Electric,) Tractor, Diesel, Gasoline, Butane, Other (Describe) _____ H/P _____

| DESCRIPTION OF FORMATIONS ENCOUNTERED | FROM | TO |
|---|---|---|
| See attached | | |

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Top of Lap Pipe or Reduction in Casing
FEET
IF TELESCOPED OR MORE THAN ONE SCREEN: USE BACK PAGE

I certify that the well was drilled, constructed and completed in accordance with all applicable Requirements of the Mississippi Department of Environmental Quality and/or the Mississippi Department of Health regulations and state laws.

Signature of Licensed Driller and License No.

3-5-02
Date

Doyle Goodman

Additional Information Required On Back

MISCELLANEOUS NETWORK DATA 706=QW,WL,WD*

R=114 | T=A | 730#1 — Beg. Year 115= — End Year 116= — 120=A — Agency Source 117= — Freq. 118=

R=121 | T=A | 730#2 — Beg. Year 115= — End Year 116= — Agency Source 117= — Freq. 118=

MISCELLANEOUS REMARKS DATA

R=183 | T=A | 311#1 — Date of Remarks 184= 01-03-2002 — Remarks 185= MS-GW-15559

DISCHARGE DATA

R=146 | T=A | Pump/Flow | 147#1 — Date 148= 01-03-2002 — Type 703= (P) F — Discharge 150= 1204.

Meth.Dis. 152= R — Static Water Level 154= — Source WL 155= — Sp. Capacity 272= — w/a drawdown of 67 ft. after 72 hours of pumping

GEOHYDROLOGIC DATA

R=90 | T=A | 721#1 — Depth Top 91= — Depth Bottom 92= — Unit ID 93= 124WLCXL — 304=P

HYDRAULIC DATA

R=98 | T=A | 790#1 — Unit Tested 100= — 103=

HISTORICAL WATER LEVEL DATA

R=234 | T=A — Date 235# 01-03-2002 — Water Level 237= 131. — 243=L — Source 244= D — Meth.of Meas 239=R — Source Agency 247=MS008

0.05 miles W of Hwy 515

| Total Depth | Thickness Each Stratum | Formation |
|---|---|---|
| | | |
| 0-21 | 21 | Clay |
| 21-37 | 16 | Sand & Gravel |
| 37-39 | 2 | Yellow Clay |
| 39-63 | 24 | Gray Clay |
| 63-107 | 44 | Hard Clay |
| 107-112 | 5 | Sandy Clay & Sand Streak |
| 112-225 | 113 | Hard Gray Clay |
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| 626-721 | 95 | Fine Sand & Clay Streak |
| 721-828 | 107 | Sandy Clay |
| 828-836 | 8 | Hard Sandy Clay |
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| 1468-1506 | 38 | Fine Sand & Shale ½ x ½ |
| 982-1064 | 1530 | Hard Sandy Shale |
| 1506-1530 | 24 | Hard Sandy Shale |

GW15560

Coded by HRW 4/2002
Checked by [illegible] 061702
Entered by HRW 6/2002
Date

U.S. GEOLOGICAL SURVEY
WATER RESCOURCES DIVISION
MISSISSIPPI DISTRICT

E-Log No. 82 Well No. B72
County DESOTO
Agency

293

Horn Lake Quad

WELL RECORD

Agency Code: USGS
Site ID: 1= 345935090022201
Project No.: 5=
Station Name: 12= B072 DESOTO NEPCO
Latitude: 9= 345935
Longitude: 10= 0900222
Lat/Long Ac.: 11= 1
Lat/Long Met.: 35= D
Lat/Long Datum: 36= NAD83
Dist Code: 6= 28
State Code: 7= 28
County Code: 8= 033
S=GPS, F=+5 sec, T=+10 sec, M=+1 min, b=>1 min

Land Net Location: 13= SESWSWSW S15 T01S R08W
Meridian: C=Chickasaw, O=Choctaw, H=Huntsville, S=St.Stephens, W=Washington
Location Map: 14= HORN LAKE
Altitude: 16= 285. (282)
Accuracy: 18= 5
Method Meas.: 17= M (A=Altimeter, L=Surveying, M=TopoMap, b=Unknown)
Altitude Datum: 22= NGVD29
Hydrologic Unit: 20= 08010211
Topo Set.: 19=
Agency Use: 803= AIO
Date Inventoried: 711=
Station Type: 802= Y
Data Type: 804= AIO
Gr.Time: 813= -06
Loc.Time: 814= Y
Web-R: 32=
Reliability: 3= C L M (U)
2= (W) X
Date of Construction: 21= 01-03-2002
Well Use: 23= W
Water Use: 24= N
Primary Aquifer: 714= 124WLCXL
Hole Depth: 27= 1530.
Well Depth: 28= 1418.

CONSTRUCTION DATA
R=58 T=A 723#1
Construction Date: 60= 01-03-2002
Contractor: 63= 064 Name Layne Central
Method: 65= H
Finish: 66= G

CONSTRUCTION CASING DATA
R=76 T=A 725#1 59#1
Top/Casing: 77= 0.
Bottom/Casing: 78= 1318.
Diameter: 79= 20.
R=76 T=A 725#2 59#1
Top/Casing: 77= 1256.
Bottom/Casing: 78= 1318.
Diameter: 79= 12.

CONSTRUCTION OPENINGS DATA
R=82 T=A 726#1 59#1
Top/Depth: 83= 1318.
Bottom/Depth: 84= 1418.
Diameter: 87= 12.
Type: 85= S
Length: 89=
Width: 88= .02.
R=82 T=A 726#2 59#1
Top/Depth: 83=
Bottom/Depth: 84=
Diameter: 67=
Type: 85=
Length: 89=
Width: 88=

CONSTRUCTION LIFT DATA
R=42 T=A 254#1
Lift Type: 43= T
Date: 38= 01-03-2002
Intake: 44= 220
Power: 45= E
H.P.: 46= 1.
Serial No.: 49=

MISCELLANEOUS OWNR DATA
R=158 T=A 718#1
Date of Ownership: 159= 01-03-2002
Owner: Robert D. Pelts
Owner Name: NEPCO-SOUTHAVEN PWR WELL 6

MISCELLANEOUS OTHER ID DATA
R=189 T=A 736#1
E-Log No.: 190= 82.
Assigner: 191= MISS DIST

MISCSELLANEOUS LOGS DATA
R=198 T=A 739#1
Log Type: 199= D
Beg. Depth: 200= 0.
End Depth: 201= 1530.
R=198 T=A 739#2
Log Type: 199= E
Beg. Depth: 200= 0.5
End Depth: 201= 1516.4

← greater than depth of hole; nothing entered for this field