December 2009

Volume 2

Engineering Report on the Construction & Testing of Deep Injection Well IW-1 and Dual Zone Monitoring Well MW-1 J. Robert Dean WTP Florida City, FL

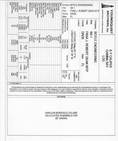
Prepared for:

The Florida Keys Aqueduct Authority

Prepared by:

AECOM

Company	BP EXPLORATION (ALASKA) INC.	Date	12-Jan-2010
Well	15-12A	Time	10:00
Field	PRUDHOE BAY	Depth Reference	KB
Location	NORTH SLOPE, ALASKA	Elevation	0


Tubing Head
Casing Head
Casing Flange
Tubing Spool
Casing Spool
Tubing Hanger
Casing Hanger
Casing Spool
Casing Head
Casing Flange
Tubing Head

Company	BOYLE ENGINEERING		
Well	W-1		
Field	PAA.J. ROBERT DEAN WTP		
County	DADE		
State	FL		
Permanent Datum	Ground Level	Elevation	
Log Measured From	Kelly Bushing		
Drilling Measured From	Kelly Bushing		
Date		Run Number	ONE
Depth-Driller		Depth-Logger	
Depth-Bottom Logged Interval		Top Logged Interval	
Type Fluid in Hole		Salinity, PPM Cl	
Density		Viscosity	
Max. Rec. Temp. °F		Equipment Location	
Recorded By		Witnessed By	

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING SYSTEMS

(CCT CHANGE)
CEMENT
TEMPERATURE TOP
LOG

Company	BOYLE ENGINEERING		
Well	W-1		
Field	PAA.J. ROBERT DEAN WTP		
County	DADE		
State	FL		
Location		Other Services	
Elevation			
API No.		Permanent Location	
		Log Measured From	
		Drilling Measured From	
		Elevation K.B.	
		Elevation D.F.	
		Elevation G.L.	
		Date	
		Run Number	ONE
		Depth-Driller	
		Depth-Logger	
		Bottom Logged Interval	
		Top Logged Interval	
		Type Fluid in Hole	
		Salinity, PPM Cl	
		Density	
		Viscosity	
		Max. Rec. Temp. °F	
		Equipment Location	
		Recorded By	
		Witnessed By	

Run No.	ONE	Date	
Depth-Driller		Schlumberger	
Depth-Logger		Bottom Logged Interval	
Top Log Interval		Type Fluid in Hole	
Salinity, PPM Cl		Density	
Viscosity		Max. Rec. Temp. °F	
Equipment Location		Recorded By	
Witnessed By			

Run No.

Company: BOYLE ENGINEERING
Well: 1
Field: ROBERT DAIN MTN
County:
State:
Date:
Run No.:
Depth Driller:
Depth Logger:
Bottom Log Interval:
Top Log Interval:
Casing Driller:
Casing Logger:
Bit Size:
Type Fluid in Hole:
Dens.:
Visc.:
pH:
Fluid Loss:
Source of Sample:
Rm @ Meas. Temp.:
Rmf @ Meas. Temp.:
Rmc @ Meas. Temp.:
Source: Rmf / Rmc:
Rm @ BHT:
Time Since Circ.:
Max. Rec. Temp.:
Equip. Location:
Recorded By:
Witnessed By:

BOYLE ENGINEERING
ROBERT DAIN MTN
CHEYENNE, WYOMING

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DATUM

YOUNGQUIST BROTHERS, INC.
www.ybi-inc.com

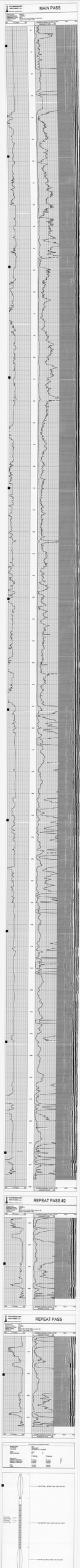
MAIN PASS

Company: BOYLE ENGINEERING
Company Rep.: ROBERT DAIN
Operating Rig: YOUNG #1
Operator: YOUNG DRILLING
Location: SEC 1 - T 20 N - R 73 W
Date: 10-Jul-2008
Time: 10:00 - 12:00 (2:00)
Log Type: 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 -

MAIN PASS

TOURMALINE OIL CORP.
WHITEHORN 11-17
Fort St. John

Logging Company: Schlumberger
Logging Date: 10-Dec-2006
Logging Time: 12:00
Logging Speed: 18 m/min
Depth Reference: Kelly Bushing 1.5 m above ground level
Log Reference: Schlumberger DIL-SDL-DSN-GR-CAL-PEX-AIT-GR-CAL-CBL-VDL-GR-CCL



REPEAT PASS #2

TOURMALINE OIL CORP.
WHITEHORN 11-17
Fort St. John

Logging Company: Schlumberger
Logging Date: 10-Dec-2006
Logging Time: 12:00
Logging Speed: 18 m/min
Depth Reference: Kelly Bushing 1.5 m above ground level
Log Reference: Schlumberger DIL-SDL-DSN-GR-CAL-PEX-AIT-GR-CAL-CBL-VDL-GR-CCL

REPEAT PASS

TOURMALINE OIL CORP.
WHITEHORN 11-17
Fort St. John

Logging Company: Schlumberger
Logging Date: 10-Dec-2006
Logging Time: 12:00
Logging Speed: 18 m/min
Depth Reference: Kelly Bushing 1.5 m above ground level
Log Reference: Schlumberger DIL-SDL-DSN-GR-CAL-PEX-AIT-GR-CAL-CBL-VDL-GR-CCL

Tourmaline Oil Corp.
Whitehorn 11-17
Fort St. John

Tool Type: Cement Bond Log Gamma Ray
Tool Number: 1329.00-1329.00
Date: 10-Dec-2006
Time: 12:00
Log Number: 1

Tool Length	3.70 m	
Tool Weight	227 kg	
Maximum Temperature	125 C	257 F
Maximum Pressure	70 MPa	10,000 PSI
Fluid Density	1.00 g/cm³	8.35 lb/gal
Fluid Type	Water	
Fluid Level	Full	
Max Logging Speed	18 m/min	59 ft/min

Gamma Ray Detector
Length: 0.30 m
Weight: 4 kg
Max. Temp.: 125 C
Max. Pressure: 70 MPa
Cable Head

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING DIVISION

12" FRP TUBING CEMENT TOP TEMPERATURE LOG

Company	BOYLE ENGINEERING
Well	IW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Location	LATITUDE: 25 DEGREES 38' 17" N LONGITUDE: 80 DEGREES 30' 36" W
Permanent Datum	Ground Level
Log Measured From	Pad Level
Drilling Measured From	Pad Level
Date	12/06/08
Run Number	VIDEO
Depth Driller	0 ft
Depth Logger	0 ft
Bottom Logged Interval	0 ft
Top Log Interval	0 ft
Casing Driller	0 ft @ 0 ft
Casing Logger	0 ft
Bit Size	0 in
Type Fluid in the Hole	
Density and Viscosity	
Max. Recorded Temp.	
Estimated Cement Top	
Time Since Circulation	
Time Since Cement Job	
Equipment Number	
Location	
Recorded By	
Witnessed By	

Run	Depth Driller	Depth Logger	Bottom Logged Interval	Top Log Interval	Casing Driller	Casing Logger	Bit Size	Type Fluid in the Hole	Density and Viscosity	Max. Recorded Temp.	Estimated Cement Top	Time Since Circulation	Time Since Cement Job	Equipment Number	Location	Recorded By	Witnessed By
ONE	0 ft	0 ft	0 ft	0 ft	0 ft @ 0 ft	0 ft	0 in										

Print Field Name ====

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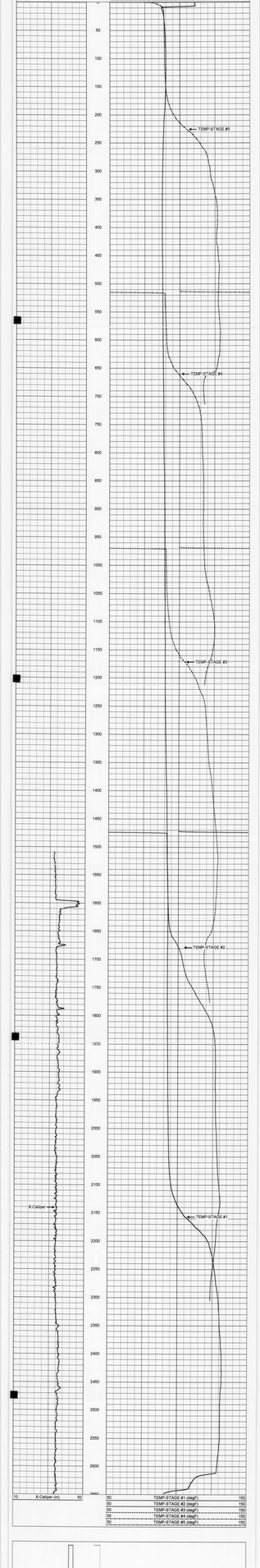
Comments

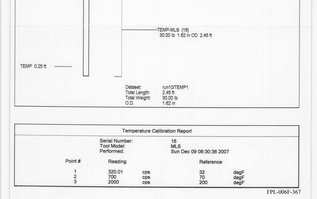
STAGE 1 LOGGED @ 0400 ON 12/08/08
STAGE 2 LOGGED @ 1700 ON 12/08/08
STAGE3 LOGGED @ 0500 ON 12/09/08
STAGE 4 LOGGED @ 1600 ON 12/09/08
STAGE 5 LOGGED @ 0500 ON 12/10/08

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING DIVISION

MERGED CTL

Database File: fichy.db
Dataset Pathname: run10/TEMP1
Presentation Format: ctl_mrg
Dataset Creation: Mon Dec 08 04:02:47 2008 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:600





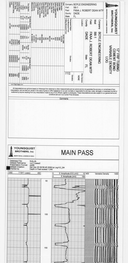
Dataset run10/TEMP1
Total Length: 2.48 ft
Total Weight: 30.00 lb
O.D. 1.62 in

Temperature Calibration Report

Serial Number: 16
Tool Model: MLS
Performed: Sun Dec 09 08:30:38 2007

Point #	Reading		Reference	
1	320.01	cps	32	degF
2	1000	cps	100	degF
3	2000	cps	200	degF

FPL-006F-367


Schlumberger
Well Name: 15/9-F-15 A
Field: Gullfaxe
Location: Norway
Date: 2-Jan-2010
Time: 12:00
Depth Reference: RKB
Elevation: 0 m
Log Interval: 2400 m - 1800 m
Log Speed: 18 m/min
Tool Type: PCG
Tool Number: 1.69 in
Tool Length: 6.7 m
Max. Temp.: 100 °C
Max. Pressure: 1000 bar
Fluid Density: 1.0 g/cm³
Fluid Level: 0 m
Fluid Type: Water
Fluid Salinity: 0 ppm
Pump Rate: 0 l/min
Pump Pressure: 0 bar
Pump Stroke: 0 %
Pump Type: Single
Pump Diameter: 0 in
Pump Efficiency: 0 %
Pump Stroke Length: 0 in
Pump Stroke Rate: 0 spm
Pump Stroke Volume: 0 l/stroke
Pump Stroke Pressure: 0 bar
Pump Stroke Temperature: 0 °C
Pump Stroke Time: 0 s
Pump Stroke Number: 0
Pump Stroke Volume: 0 l

YOUNGQUIST BROTHERS, Inc.
Geophysical Well Logging

Company: BOYLE ENGINEERING
Well: 1
Field: FOAL / ROBERT DEWAYNE
County: ECTOR
State: TX
Other Services: NONE
Permanent Datum: GL
Log Measured From: 0.00 ft. Above Perm. Datum
Drilling Measured From: KB
Elevation: KB: 0.00 ft. DF: 0.00 ft. GL: 0.00 ft.
Date: 12-Feb-2008
Run Number: ONE
Depth Driller: 3200.00 ft.
Depth Logger: 3200.00 ft.
Bottom Logged Interval: 3200.00 ft.
Top Log Interval: 0.00 ft.
Casing Driller Size: 0.00 in @ 0.00 ft.
Casing Logger Size: 0.00 in @ 0.00 ft.
Bit Size: 0.00 in
Type Fluid in Hole: NONE
Density: 0.00 lb/gal
Viscosity: 0.00 cp
Fluid Level: 0.00 ft.
Max Rec. Temp.: 0.00 deg. F
Equipment: 0.00 ft.
Location: 0.00 ft.
Recorded By: JACKSON, JAY
Witnessed By: BOYLE, ROY

FOAL / ROBERT DEWAYNE 1
CASING AND CEMENT LOG

In consideration of the services to be performed by the Company, all of which are subject to its current price schedule, the Company, on behalf of itself and its officers, agents and employees, makes no warranty, express or implied, as to the accuracy of any information furnished by it or its employees, agents or representatives. These data, interpretations or estimates are based in part or wholly on information furnished by others and the Company assumes no responsibility for the accuracy of such information.

COMMENTS

FLUID CONDUCTIVITY
TEMPERATURE

YOUNGQUIST BROTHERS, Inc.

MAIN PASS

Database File: c:\corporate\pascal\ybwfdfg.db
Dataset Pathname: pass1\pass2
Dataset Presentation: Main Pass
Dataset Creation: Thu Feb 12 11:00:40 2008 by Log 6.2_B4
Charted by: Depth only scaled 1000:0

GAMMA RAY (API) 0 — 100 | TEMP (deg F) 100 — 150 | Spontaneous Pot. 0 — 100

X-CALIPER (in) 10 — 20
Y-CALIPER (in) 10 — 20
M-T BATT (v) 10 — 20

Y-Caliper
X-Caliper
M-T Batt

GAMMA RAY (API) 0 — 100 | TEMP (deg F) 100 — 150

YOUNGQUIST BROTHERS, Inc.

MAIN PASS

Database File: c:\corporate\pascal\ybwfdfg.db
Dataset Pathname: pass1\pass2
Dataset Presentation: Main Pass
Dataset Creation: Thu Feb 12 11:00:40 2008 by Log 6.2_B4
Charted by: Depth only scaled 1000:0

GAMMA RAY (API) 0 — 100 | TEMP (deg F) 100 — 150 | Spontaneous Pot. 0 — 100

X-CALIPER (in) 10 — 20
Y-CALIPER (in) 10 — 20
M-T BATT (v) 10 — 20

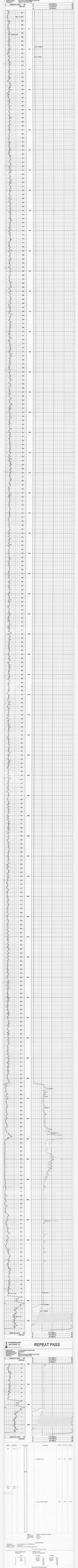
Y-Caliper
X-Caliper
M-T Batt

GAMMA RAY (API) 0 — 100 | TEMP (deg F) 100 — 150

MAIN PASS

STRATIGRAPHY
SPECTROLITHOLOGY

COMPANY	ENERGY XXI (GULF COAST), LLC
WELL	EUGENE ISLAND 330 OCS-G 21907 ST BP1
FIELD	EUGENE ISLAND
COUNTY	OFFSHORE
STATE	OFFSHORE
LOCATION	1 FSL 1 FEL 330 FSL 1 FEL
	EUGENE ISLAND BLOCK 330 OCS-G 21907
	LAT: 27° 19' 0.000" N
	LONG: 91° 29' 0.000" W
API NUMBER	04-017-90000
DATE	2-Jan-2018



REPEAT PASS

STRATIGRAPHY
SPECTROLITHOLOGY

COMPANY	ENERGY XXI (GULF COAST), LLC
WELL	EUGENE ISLAND 330 OCS-G 21907 ST BP1
FIELD	EUGENE ISLAND
COUNTY	OFFSHORE
STATE	OFFSHORE
LOCATION	1 FSL 1 FEL 330 FSL 1 FEL
	EUGENE ISLAND BLOCK 330 OCS-G 21907
	LAT: 27° 19' 0.000" N
	LONG: 91° 29' 0.000" W
API NUMBER	04-017-90000
DATE	2-Jan-2018

Depth	Depth	Lithology	Description	Lith	Grain Size	Sorting
(MD)	(TVD)					
			100.00% CLAY	CLAY	CLAY	SORTED
			100.00% CLAY	CLAY	CLAY	SORTED

Lithology Legend

CLAY	CLAY	SILTSTONE	SILTSTONE
SHALE	SHALE	SANDSTONE	SANDSTONE
LIMESTONE	LIMESTONE	DOLOMITE	DOLOMITE
CHERT	CHERT	COAL	COAL
PYRITE	PYRITE	SALT	SALT
ANHYDRITE	ANHYDRITE	GYPSUM	GYPSUM
CONGLOMERATE	CONGLOMERATE	BRECCIA	BRECCIA
CHALK	CHALK		

Grain Size

CLAY	CLAY	SILT	SILT
VF SAND	VERY FINE SAND	F SAND	FINE SAND
M SAND	MEDIUM SAND	C SAND	COARSE SAND
VC SAND	VERY COARSE SAND	GRAVEL	GRAVEL

Sorting

SORTED	SORTED	MOD SORTED	MODERATELY SORTED
POOR	POORLY SORTED		

Accessories

Glauc	GLAUCONITE	Carb	CARBONACEOUS
Pyr	PYRITE	Sh	SHALE
Lst	LIMESTONE	Dol	DOLOMITE
Chert	CHERT	Cal	CALCITE
Sil	SILICA	Fe	IRON
Bio	BIOTURBATED	Lam	LAMINATED
Xbed	CROSS BEDDED	Frac	FRACTURED
Vug	VUGGY	Frag	FRAGMENTS
Pel	PELLETS	Oo	OOLITES
Bit	BITUMEN	Ptg	PATINA
Ptd	PATTED	Ptl	PARTIAL
Sp	SPARSE	Mod	MODERATE
Abd	ABUNDANT	Dom	DOMINANT

Lithology Transitional

CLAY	CLAY	SILTSTONE	SILTSTONE
SHALE	SHALE	SANDSTONE	SANDSTONE
LIMESTONE	LIMESTONE	DOLOMITE	DOLOMITE
CHERT	CHERT	COAL	COAL
PYRITE	PYRITE	SALT	SALT
ANHYDRITE	ANHYDRITE	GYPSUM	GYPSUM
CONGLOMERATE	CONGLOMERATE	BRECCIA	BRECCIA
CHALK	CHALK		

YOUNGQUIST BROTHERS, INC.
GEOTECHNICAL LOGGING DIVISION

FLUID CONDUCTIVITY TEMPERATURE LOG

Company	BOYLE ENGINEERING
Well	31
Field	FAAA J. ROBERT DEAN WTP
County	DADE
State	FL
Date	
Other Services	
Permanent Datum	GROUND SURFACE
Log Measured From	PAD LEVEL
Drilling Measured From	PAD LEVEL
Elevation	0.00
Elev.: K.B.	
D.F.	
G.L.	
Date	
Run Number	ONE
Depth Driller	50.00
Depth Logger	50.00
Bottom Log Interval	50.00
Top Log Interval	SURFACE
Casing Driller	0.00 @ 0.00
Casing Logger	
Bit Size	0.00
Type Fluid in Hole	CONDITIONED
Dens.	
Visc.	
pH	
Fluid Loss	
Source of Sample	
Rm @ Meas. Temp.	
Rmf @ Meas. Temp.	
Rmc @ Meas. Temp.	
Source: Rmf / Rmc	
Rm @ BHT	
Time Since Circulation	
Time Since Logged	
Max. Rec. Temp.	
Equipment Location	
Recorded By	
Witnessed By	

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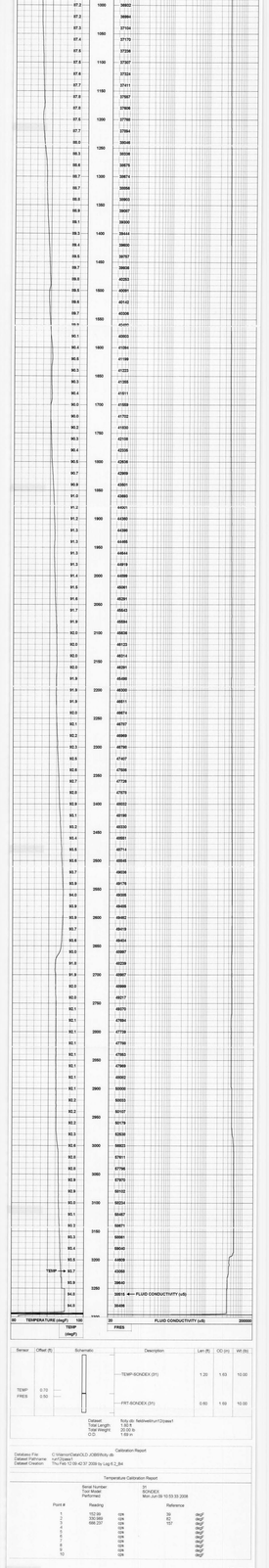
Comments

X-Y CALIPER
GAMMA RAY

YOUNGQUIST BROTHERS, Inc.
GEOTECHNICAL LOGGING DIVISION

STATIC FCT

Database File:	c:\users\dataloid\ydecfltcdly.db
Dataset Name:	STATFCT
Presentation Format:	rhetaps
Dataset Creation:	Thu Feb 12 11:33:30 2009
Charted by:	Depth in Feet scaled 1:600



Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
TEMP	0.70		TEMP-BONDEX (31)	1.20	1.63	10.00
FRES	0.50		FRT-BONDEX (31)	0.60	1.69	10.00

Dataset Total Length: 1.80 ft
Dataset Weight: 20.00 lb
O.D: 1.69 in

Calibration Report

Truly ids: fieldwidth=12/pass1
Ids: 0
Ofs: 0.00 ft
Wt: 1.69 in

Database File: C:\Users\Data\OLD_ICBS\truly.db
Dataset Name: Calibration
Dataset Creation: Thu Feb 12 08:42:57 2009 by Log E_Bar

Temperature Calibration Report

Serial Number:	31
Tool Model:	BONDEX
Performed:	Mon Jun 08 10:03:35 2008

Point #	Reading		Reference	
1	102.89	cps	39	degF
2	330.880	cps	104	degF
3	668.237	cps	157	degF
4	cps		degF
5	cps		degF
6	cps		degF
7	cps		degF
8	cps		degF
9	cps		degF
10	cps		degF

FPL-004F-371

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

X-Y CALIPER GAMMA RAY LOG

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	PAAA J. ROBERT DEAN WTP
County	DADE
State	FL
Company	BOYLE ENGINEERING
Well	DZMW-1
Field	PAAA J. ROBERT DEAN WTP
County	DADE
State	FL

Other Services: GR, CCL, CAL, TEMP, FLOW, CAL, EL

Permanent Datum: GL
Log Measured From: GL 0.0 ft
Drilling Measured From: GL 0.0 ft

Elevation: GL 0.0 ft

LOC: LOC GPS: LAT 25°46'32.7"N LONG 80°28'32.7"W
SEC: TWP: RGE:
API No.:
Other Services: COUNTERS

Date: 20-Dec-2008
Run Number: 1
Depth Driller: 0.0 ft
Depth Logged: 0.0 ft
Bottom Log Interval: 0.0 ft
Top Log Interval: 0.0 ft
Casing Driller: 0.0 ft @ 0.0 ft
Casing Logger: 0.0 ft
Bit Size: 0.0 in
Type Fluid in Hole: DRY
Dens: -
Visc: -
pH: -
Fluid Loss: -
Source of Sample: -
Rm: -
Rm @ Meas Temp: -
Rmf: -
Rmf @ Meas Temp: -
Rmc: -
Rmc @ Meas Temp: -
Source: Rmf: - Rmc: -
Rm @ BHT: -
Time Since Circulation: -
Time Since Stop: -
Max Rec Temp: -
Equipment: -
Location: -
Recorded By: SHAWN
Witnessed By: M. CLARK

Page Header

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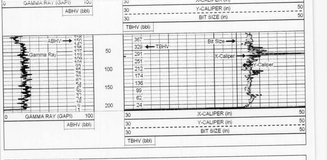
Comments

ANNULAR BOREHOLE VOLUME
CALCULATED IN BARRELS FOR 34" CASING

MAIN PASS

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

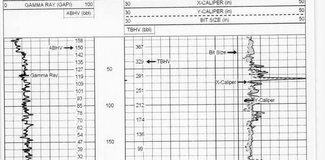
Database File: fdbymx.db
Dataset Pathname: pass2
Presentation Format: gny-ahv
Dataset Creation: Sat Dec 20 08:36:51 2008 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:200



MAIN PASS

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

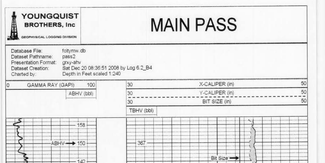
Database File: fdbymx.db
Dataset Pathname: pass2
Presentation Format: gny-ahv
Dataset Creation: Sat Dec 20 08:36:51 2008 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:600



MAIN PASS

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

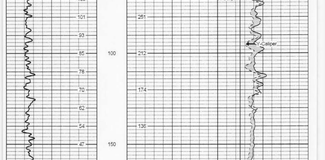
Database File: fdbymx.db
Dataset Pathname: pass3
Presentation Format: gny-ahv
Dataset Creation: Sat Dec 20 08:36:51 2008 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240



REPEAT PASS

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

Database File: fdbymx.db
Dataset Pathname: pass1
Presentation Format: gny-ahv
Dataset Creation: Sat Dec 20 08:24:55 2008 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240



Calibration Report

Database File: fdbymx.db
Dataset Pathname: pass1
Dataset Creation: Sat Dec 20 08:24:55 2008 by Log 6.2_B4

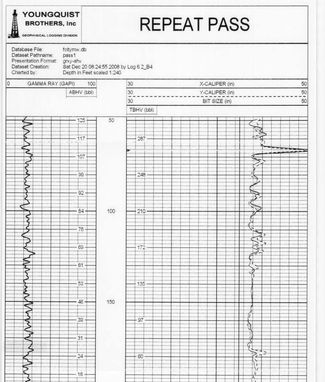
XY Caliper Calibration Report

Serial Number/Model: 08LM-XYCLM
Performed: Sat Dec 20 07:31:21 2008

Ring		X Caliper		Y Caliper	
1	13.4 in	396.867 cps		348.348 cps	
2	26.08 in	592.016 cps		648.75 cps	
3	34.0 in	804.725 cps		779.079 cps	
4	in	cps		cps	
5	in	cps		cps	
6	in	cps		cps	

Gamma Ray Calibration Report

Serial Number:	14	
Tool Model:	GRCH	
Performed:	Wed May 21 13:24:48 2008	
Calibrator Value:	120	(GAPI)
Background Reading:	45.4454	cps
Calibrator Reading:	224.505	cps
Sensitivity:	0.8754	GAPI/cps



Company	BP EXPLORATION (ALASKA) INC.
Well	15-12 B (15-12 BPB1)
Field	PRUDHOE BAY UNIT
County	NORTH SLOPE
State	ALASKA
API Number	50-029-21964-02
Date	04-Nov-2009
Comments	Run 1 - Run 2 - Run 3 - Run 4 - Run 5 - Run 6 - Run 7 - Run 8 - Run 9 - Run 10 - Run 11 - Run 12 - Run 13 - Run

YOUNGQUIST BROTHERS, Inc.

Company	BOYLE ENTERPRISES
Well	BOYLE 1-36
Field	PICKLE WORST DEAD WITP
County	DUVAL
State	FL
Date	
Comments	

Company: BOYLE ENTERPRISES
Well: BOYLE 1-36
Field: PICKLE WORST DEAD WITP
County: DUVAL
State: FL
Date:
Comments:
Depth Reference: KB 12.00 ft
Elevation: KB: 12.00 ft
Log Date: 10/15/2009
Log Time: 10:00
Run Number: 1
Depth Driller: 1600.00 ft
Depth Logger: 1599.00 ft
Bottom Log Interval: 1599.00 ft
Top Log Interval: 0.00 ft
Casing Driller: 0.00 ft @ 0.00 ft
Casing Logger: 0.00 ft @ 0.00 ft
Bit Size: 7.875 in
Drilling Fluid Type: FRESH WATER
Density: 8.34 lb/gal
Viscosity: 28 s/qt
Fluid Level: FULL
Max Temp: 0.00 degC
Equipment: 10101 / 10101
Operating Rig Time: 0.00 h
Recorded By: D. CHAMBERS
Witnessed By: MR. BOYLE

3-X CALIPER GAMMA RAY LOG

Disclaimer

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OTHER SERVICES:

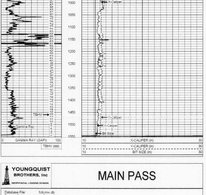
DUAL INDUCTION
BOREHOLE COMPENSATED SONIC
FLUID CONDUCTIVITY / TEMP
FLOWMETER
VIDEO

BOREHOLE VOLUME IN BARRELS

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING SYSTEMS

MAIN PASS

Database File: hydrolog.db
Dataset Pathname: u:\logdata\
Presentation Format: gr\cal
Dataset Creation: Wed Jan 07 15:06:42 2009 by Log E_Z_84
Charlie Kirk
Depth in Feet scaled 1:1200



Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

FLUID CONDUCTIVITY TEMPERATURE LOG

Company	BOYLE ENGINEERING		
Well	DZMW-1		
Field	FKAA J. ROBERT DEAN WTP		
County	DADE	State	FL
Location:	API #:		
	LATITUDE 26 DEGREES 24' 34.31"N		
	LONGITUDE 80 DEGREES 26' 32.27"W		
	SEC TWP RGE	Elevation	
Log Measured From	PAD LEVEL	Elevation	
Drilling Measured From	PAD LEVEL		

Other Services	SEE COMMENTS
Permanent Datum	GL
Elevation	
K.B.	
D.F.	
G.L.	

Date	01-Jan-09		
Run Number	ONE		
Depth Driller	2000		
Depth Logger	2000		
Bottom Logged Interval	2000		
Top Logged Interval	SURFACE		
Casing Driller	20 @ 0		
Casing Logger	20 @ 0		
Bit Size	14.75		
Type Fluid in Hole	WATER		
Density / Viscosity	9.0 / 0		
PH / Fluid Loss	N/A / N/A		
Source of Sample			
Rm @ Measured Temp	0.000 @ 0		
Rmf @ Measured Temp	0.000 @ 0		
Rmc @ Measured Temp	0.000 @ 0		
Source: Rmf / Rmc	M / M		
Rm @ BHT	0.000		
Time Since Circulation	0		
Time Since Stop	0		
Max Recorded Temp	95		
Equipment / Location	5-1 / ENGLEWOOD		
Recorded By	D. BRANDT		
Witnessed By	D. FRIEND		

Run Number	Bottom Log Interval	Top Log Interval	Casing Driller	Casing Logger	Bit Size	Type Fluid in Hole	Density / Viscosity	PH / Fluid Loss	Source of Sample	Rm @ Measured Temp	Rmf @ Measured Temp	Rmc @ Measured Temp	Source: Rmf / Rmc	Rm @ BHT	Time Since Circulation	Time Since Stop	Max Recorded Temp	Equipment / Location	Recorded By	Witnessed By
ONE	2000	SURFACE	20 @ 0	20 @ 0	14.75	WATER	9.0 / 0	N/A / N/A		0.000 @ 0	0.000 @ 0	0.000 @ 0	M / M	0.000	0	0	95	5-1 / ENGLEWOOD	D. BRANDT	D. FRIEND

Run Number	Bottom Log Interval	Top Log Interval
ONE	2000	SURFACE

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<< Fold Here >>

Comments

OTHER SERVICES:

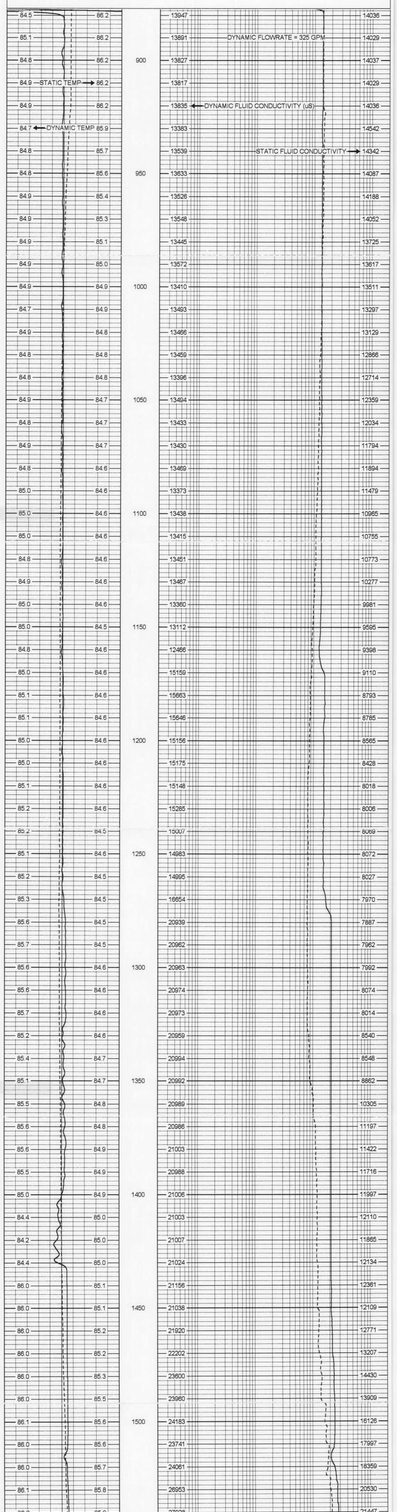
X-Y CALIPER / GAMMA RAY
BOREHOLE COMPENSATED SONIC
FLUID CONDUCTIVITY / TEMP
FLOWMETER
VIDEO

DYNAMIC FLOWRATE = 325 GPM

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

MERGED FCT

Database File:	foltymw.db
Dataset Pathname:	run3/pass11
Presentation Format:	fct_mrg
Dataset Creation:	Wed Jan 07 21:16:23 2009 by Log 6.2_B4
Charted by:	Depth in Feet scaled 1:240



Calibration Report

Database File:	foltymw.db
Dataset Pathname:	run3/pass1
Dataset Creation:	Wed Jan 07 15:38:05 2009 by Log 6.2_B4

Temperature Calibration Report

Serial Number:	31
Tool Model:	SONDEX
Performed:	Wed Jan 06 10:33:33 2006

Point #	Reading		Reference	
1	152.99	cps	39	degF
2	330.989	cps	82	degF
3	668.237	cps	157	degF
4		cps		degF
5		cps		degF
6		cps		degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			TEMP-SONDEX (31)	1.20	1.63	10.00
TEMP	0.70					
FRES	0.50					
			FRT-SONDEX (31)	0.60	1.69	10.00

Dataset:	foltymw.db: field/well/run3/pass1
Total Length:	1.80 ft
Total Weight:	20.00 lb

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Country	
Trail	
Lat	LATITUDE 25.5CDEG13.5" 25.371°N
Long	LONGITUDE 80CDEG 9.5" 80.152°W
Elev	
Perm Datum	GL
Log Measured From	KB
Drilling Measured From	KB
Date	07-Feb-2008
Run	1
Depth Driller	1000
Depth Logger	1000
Bottom Log Interval	1000
Top Log Interval	0
Casing Driller	0
Casing Logger	0
Bit Size	0
Type Fluid in Hole	
Density	
Viscosity	
Fluid Loss	
Source of Sample	
Rm	
Rmf	
Rmc	
Rm @ Meas Temp	
Rmf @ Meas Temp	
Rmc @ Meas Temp	
Source Rmf/Rmc	
Rm @ BHT	
Time Since Circulation	
Time Since Stop	
Max Temp	
Equip. Number	
Location	
Recorded By	
Witnessed By	
Comments	

YOUNGQUIST BROTHERS, Inc. GEOPHYSICAL DIVISION

BOYLE ENGINEERING
FKAA J. ROBERT DEAN WTP
DADE FL

DUAL INDUCTION
LL3 with SP
LOG

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Comments

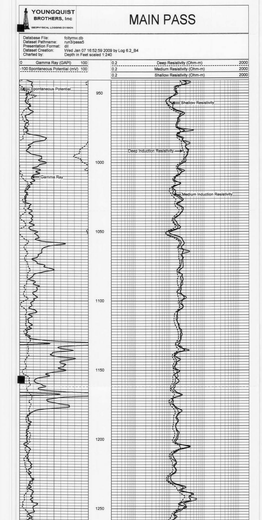
OTHER SERVICES:

X,Y CALIPER / GAMMA RAY
BOREHOLE COMPENSATED SONIC
FLUID CONDUCTIVITY / TEMP
FLOWMETER
VIDEO

YOUNGQUIST BROTHERS, Inc.

MAIN PASS

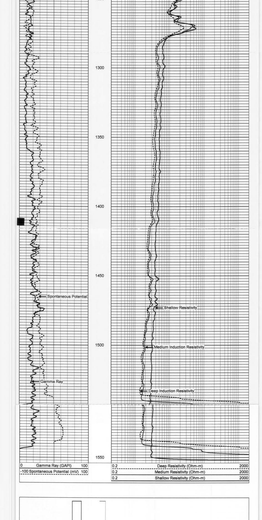
Database File: fkfamw.db
Dataset Pathname: run3/pass8
Presentation Format: dual
Dataset Creation: Wed Jan 07 16:52:59 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:1000



YOUNGQUIST BROTHERS, Inc.

MAIN PASS

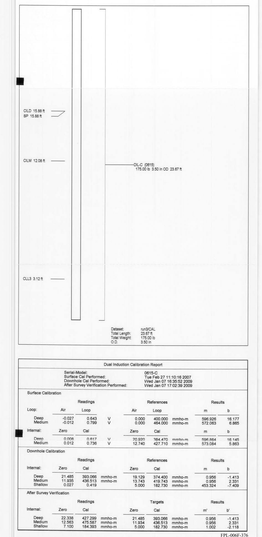
Database File: fkfamw.db
Dataset Pathname: run3/pass8
Presentation Format: dual
Dataset Creation: Wed Jan 07 16:52:59 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:600



YOUNGQUIST BROTHERS, Inc.

MAIN PASS

Database File: fkfamw.db
Dataset Pathname: run3/pass8
Presentation Format: dual
Dataset Creation: Wed Jan 07 16:52:59 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:300



Dual Induction Calibration Report

Serial-Model:
Surface Cal Performed:
Internal Cal Performed:
After Survey Verification Performed:

BF15
Tue Feb 27 11:10:16 2007
Tue Feb 27 11:10:16 2007
Vital Jan 07 17:02:34 2009

Surface Calibration

Loop:	Air	Loop Cal		Air	Loop Reference		Results m	Results b
Deep:	-0.007	0.843	V	0.000	400.000	mmho-m	598.926	16.177
Medium:	-0.012	0.794	V	0.000	484.000	mmho-m	572.083	6.865

Internal Calibration

Internal:	Zero	Cal	Zero	Cal	Results m	Results b
Deep:	0.000	0.843	10.001	564.415	mmho-m	598.994	16.145
Medium:	0.012	0.796	12.740	421.710	mmho-m	573.084	6.863

Downhole Calibration

	Readings Zero	Readings Cal		References Zero	References Cal		Results m	Results b
Deep:	21.495	393.095	mmho-m	19.129	374.400	mmho-m	0.956	-1.413
Medium:	17.937	438.513	mmho-m	13.740	416.740	mmho-m	0.956	-2.320
Shallow:	12.557	5.419		5.000	162.730	mmho-m	453.324	-7.409

After Survey Verification

	Readings Zero	Readings Cal		Targets Zero	Targets Cal		Results m'	Results b'
Deep:	22.358	427.290	mmho-m	21.495	393.095	mmho-m	0.956	-1.413
Medium:	19.292	419.587	mmho-m	17.937	438.513	mmho-m	0.956	2.191
Shallow:	7.105	164.383	mmho-m	5.000	162.730	mmho-m	1.000	2.370

FR-4W4F-17E

YOUNGQUEST BROTHERS, INC.

BORE HOLE COMPENSATED SONIC LOG

5 1/2" X 7 7/8"

Company	YOUNGQUEST BROTHERS, INC.
Well	5 1/2" X 7 7/8"
Field	BORE HOLE COMPENSATED SONIC LOG
County	
State	
Other Services	
Permanent Datum	GL
Log Measured From	KB
Drilling Measured From	KB
Elevation	GL
Date	11-11-2008
Run Number	ONE
Depth Driller	7 7/8"
Depth Logger	7 7/8"
Bottom Logged Interval	7 7/8"
Top Log Interval	0
Casing Driller	5 1/2"
Casing Logger	5 1/2"
Bit Size	7 7/8"
Type Fluid in Hole	WATER
Density / Viscosity	8.4 / 28
PH / Fluid Loss	10 / NA
Source of Sample	PIT
Rm @ Meas. Temp.	0.05 @ 70
Rmf @ Meas. Temp.	0.04 @ 70
Rmc @ Meas. Temp.	0.06 @ 70
Source Rmf / Rmc	MEASURED / CALCULATED
Rm @ BHT	0.03 @ 150
Time Since Circulation	6 HOURS
Time Since Last Log	FIRST LOG
Max. Recorded Temp.	150
Equipment Number	5
Location	
Recorded By	J. CLAYTON
Witnessed By	

THIS INFORMATION IS ACCEPTED AS CORRECT BY THE CUSTOMER AS A BASIS FOR INTERPRETATIONS, DECISIONS AND CALCULATIONS. YOUNGQUEST BROTHERS, INC. WILL NOT BE RESPONSIBLE FOR ANY LOSS, DAMAGE OR EXPENSE INCURRED IN CONNECTION WITH THE USE OF THIS INFORMATION.

Comments

OTHER SERVICES

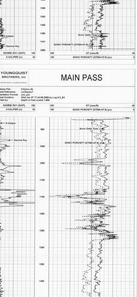
X-Y CALIPER / CAMMA RAY
DIPMETER / CAMMA RAY
FLUID CONDUCTIVITY / TEMP
CAMMA RAY / NEUTRON
VIDEO

YOUNGQUEST BROTHERS, Inc.

MAIN PASS

Company Name: YOUNGQUEST BROTHERS, INC.
Well Name: 5 1/2" X 7 7/8"
Field: BORE HOLE COMPENSATED SONIC LOG
Permanent Datum: GL
Elevation: GL
Log Measured From: KB
Drilling Measured From: KB
Date: 11-11-2008
Run Number: ONE
Depth Driller: 7 7/8"
Depth Logger: 7 7/8"
Bottom Log Interval: 7 7/8"
Top Log Interval: 0
Casing Driller: 5 1/2"
Casing Logger: 5 1/2"
Bit Size: 7 7/8"
Type Fluid in Hole: WATER
Density / Viscosity: 8.4 / 28
PH / Fluid Loss: 10 / NA
Source of Sample: PIT
Rm @ Meas. Temp.: 0.05 @ 70
Rmf @ Meas. Temp.: 0.04 @ 70
Rmc @ Meas. Temp.: 0.06 @ 70
Source Rmf / Rmc: MEASURED / CALCULATED
Rm @ BHT: 0.03 @ 150
Time Since Circulation: 6 HOURS
Time Since Last Log: FIRST LOG
Max. Recorded Temp.: 150
Equipment Number: 5
Location:
Recorded By: J. CLAYTON
Witnessed By:

GAMMA RAY (API) 0 — 100 GAMMA RAY (API)
CALIPER (in) 6 — 16 CALIPER (in)
DT (sec/ft) 140 — 40 DT (sec/ft)
BORE PORSITY (ATTAK-W) (p.u.) 0 — 40 BORE PORSITY (ATTAK-W) (p.u.)



YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

FLOWMETER LOG

Company	BOYLE ENGINEERING	Township	50S
Well	DOWN 1	Range	31E
Field	FKAA J. ROBERT DEAN WTP	State	FL
County	DADE		

API #
LOCATION
LOCATION: 25 DEG. 39 MIN. 35.75" N
LOCATION: 80 DEGREES 8 MIN. 39.32" W

Permanent Datum	PAD LEVEL	Elevation	
Log Measured From	PAD LEVEL	Elevation	
Drilling Measured From	PAD LEVEL	Elevation	

Date	1-8-2009	Other Services	
Run Number	ONE	COMMENTS	
Depth Driller	1550		
Depth Logged	1550		
Top Log Interval	SURFACE		
Bottom Log Interval	1550		
Casing Driller Size @ Depth			
Casing Logged Size @ Depth			
Bit Size			
Type Fluid in Hole	WATER		
Density / Viscosity			
Max. Rec. Temp.			
Estimated Cement Top			
Time Well Ready			
Time Logger On Bottom			
Equipment / Location	4		
Recorded By			
Witnessed By			

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Comments

OTHER SERVICES:

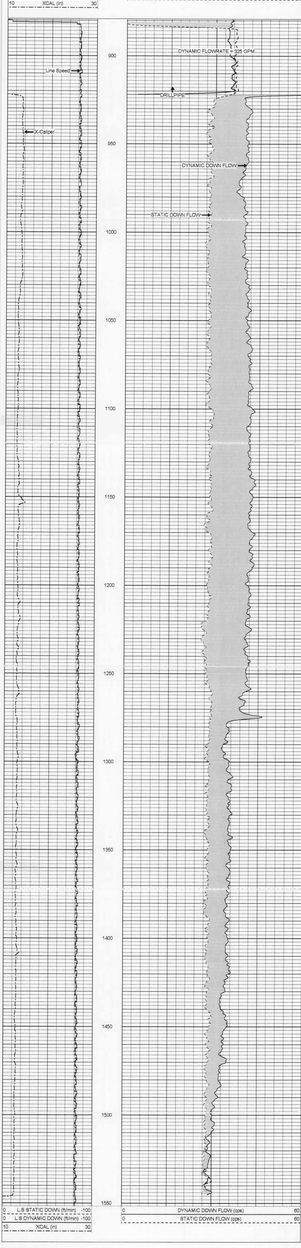
X-Y CALIPER / GAMMA RAY
BOREHOLE COMPENSATED SONIC
DUAL INDUCTION
FLUID CONDUCTIVITY / TEMP
VIDEO

DYNAMIC FLOWRATE = 325 GPM

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

MERGED FLOWMETER

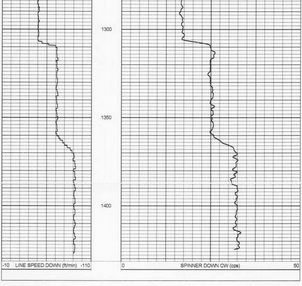
Database File: fcfytme.db
Dataset Pathname: run3\pass10
Presentation Format: fm_dmrg
Dataset Creation: Wed Jan 07 20:39:48 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240



YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

FLOWCALS 50,70,90 FPM

Database File: fcfytme.db
Dataset Pathname: run3\pass9
Presentation Format: flowcals
Dataset Creation: Wed Jan 07 19:51:37 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240



Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			CENT-8FTSB (1_8FTSB)	8.00	1.69	70.00
FLOWP	3.75		FLOW-LARGE (65)	3.13	3.75	20.00
FLOWN	3.75		CENT-SHRT (5_SHRT)	3.25	2.00	30.00

Dataset: fcfytme.db: field\wellrun3\pass10
Total Length: 14.38 ft
Total Weight: 120.00 lb
O.D: 3.75 in

YOUNGQUIST BROTHERS, Inc

Company: BOYLE ENGINEERING
Field: DDMW-1
Well: FAAA J. ROBERT DEAN WTP
Bore: DADE
County: FL
State:
Date: 11/10/2008
Time:
Depth: 1400.00 ft
Comment: BOYLE ENGINEERING
DDMW-1 ROBERT DEAN WTP
DADE
FL
LATITUDE 25°55'20.0 N 25° N
LONGITUDE 80°20'20.0 W 80° W
Operator: RIG 105
Serial Number: 0
Date: 11/10/2008
Time: 11:00:00
Truck: 0
Unit: 0
Depth: 1400.00 ft
Comment: 0

X Y CALIPER
GAMMA RAY
VDL

Gamma Ray (GAPI) 100 | X-Caliper (in) 20 | Y-Caliper (in) 20 | Bit Size (in) 20 | 40

DISTANCE

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CASTRON

ANNULAR BOREHOLE VOLUME CALCULATED
IN BARRELS FOR 4" CASING

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING SYSTEMS

MAIN PASS

Database File: holtzma.db
Dataset Pathname: cal/caliper.1
Presentation Format: gray-gm
Dataset Creation: Wed Jan 21 11:04:20 2009 by Calc-X.2_B4
Charted by: Depth in Feet scaled 1:240

Gamma Ray (GAPI) 100 | X-Caliper (in) 20 | Y-Caliper (in) 20 | Bit Size (in) 20 | 40

ABOV (BB) 1400 | Gamma Ray | Y-Caliper | Bit Size | X-Caliper

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING SYSTEMS

MAIN PASS

Database File: holtzma.db
Dataset Pathname: cal/caliper.1
Presentation Format: gray-gm
Dataset Creation: Wed Jan 21 11:04:20 2009 by Calc-X.2_B4
Charted by: Depth in Feet scaled 1:600

Gamma Ray (GAPI) 100 | X-Caliper (in) 20 | Y-Caliper (in) 20 | Bit Size (in) 20 | 40

ABOV (BB) 1400 | Gamma Ray | Y-Caliper | Bit Size | X-Caliper

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING SYSTEMS

MAIN PASS

Database File: holtzma.db
Dataset Pathname: cal/caliper.1
Presentation Format: gray-gm
Dataset Creation: Wed Jan 21 11:04:20 2009 by Calc-X.2_B4
Charted by: Depth in Feet scaled 1:240

Gamma Ray (GAPI) 100 | X-Caliper (in) 20 | Y-Caliper (in) 20 | Bit Size (in) 20 | 40

ABOV (BB) 1400 | Gamma Ray | Y-Caliper | Bit Size | X-Caliper

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING SYSTEMS

REPEAT PASS

Database File: holtzma.db
Dataset Pathname: cal/caliper.1
Presentation Format: gray-gm
Dataset Creation: Wed Jan 21 11:07:40 2009 by Calc-X.2_B4
Charted by: Depth in Feet scaled 1:240

Gamma Ray (GAPI) 100 | X-Caliper (in) 20 | Y-Caliper (in) 20 | Bit Size (in) 20 | 40

Gamma Ray | Y-Caliper | Bit Size | X-Caliper

XY Caliper Calibration Report

Serial Number/Model: 0/DDM XYCOM
Performed: Thu Jan 22 11:00:02 2009

	Ring	X-Caliper	Y-Caliper
1	10 in	850.890 cps	850.3 cps
2	22.25 in	1777.14 cps	1782.71 cps
3	28.75 in	1465.48 cps	1473.23 cps
Slope	in	cps	cps
Intercept	in	cps	cps

Gamma Ray Calibration Report

Serial Number:	0
Tool Model:	DDM
Performed:	Thu Jan 15 15:56:52 2009
Calibrator Value:	100 GAPI
Background Reading:	19.4CPM cps
Sensitivity:	1.0117 cps/GAPI
Sensitivity:	1.01175 CAPI/cps

GR DEAD

SCAL 1 BLK
VDL 1 BLK

GR-DDM-1 (3)
40.00 to 336.00 (0.2 ft)

XY-CALIPER 22250
37.00 to 336.00 (0.2 ft)

Dataset: holtzma#1
Total Length: 6.00 ft
Total Weight: 0.00 lb
CR: 0.00 ft

FPL-0002-179

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

(14"CASING) CEMENT TOP TEMPERATURE LOG

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE State FL

Location

LATITUDE 25 DEGREES 26' 25.31" N
LONGITUDE 80 DEGREES 30' 29.22" W

Other Services
SEE COMMENTS

Elevation

Permanent Datum	PAD LEVEL	Elevation
Log Measured From	PAD LEVEL	K.B.
Drilling Measured From	PAD LEVEL	D.F.
		G.L.

Company	BOYLE ENGINEERING		
Well	DZMW-1		
Field	FKAA J. ROBERT DEAN WTP		
County	DADE		
State	FL		
Date	25-JAN-2009		
Run Number	FIVE		
Depth Driller	1450'		
Depth Logger	1443'		
Bottom Logged Interval	1443'		
Top Log Interval	CASING		
Open Hole Size	22"		
Type Fluid	WATER		
Density / Viscosity	NA		
Max. Recorded Temp.	NA		
Estimated Cement Top	NA		
Time Well Ready	0730		
Time Logger on Bottom	0900		
Equipment Number	103		
Location	FT. MYERS		
Recorded By	MOREY		
Witnessed By	S. ENGLISH		

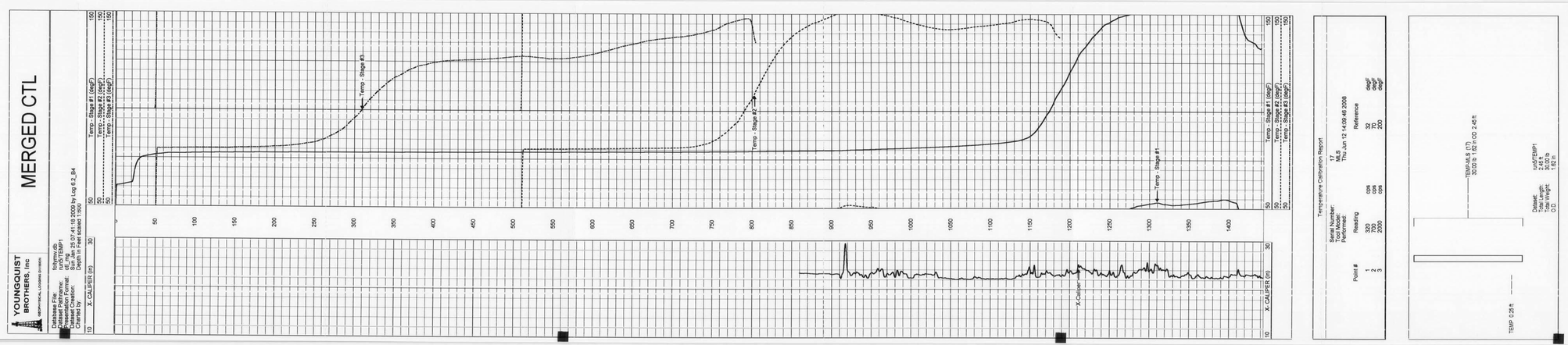
Run Number	Bit	From	To	Run Number	Bit	From	To
	Borehole Record				Borehole Record		
ONE	42.5"	CASING	210'				
TWO	32.5	CASING	910'				
THREE	12.25"	CASING	1550'				
FOUR	22"	CASING	1453'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Casing String	44"	.375" W.T.	SURFACE	38'
Casing String	34"	.375 W.T.	SURFACE	215'
Casing String	24"	.375" W.T.	SURFACE	910'
Casing String	14"	.500" W.T.	SURFACE	1450'

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions as set out in our current Price Schedule.

Comments

STAGE 1 LOGGED @ 0745 ON 01/26/09
STAGE 2 LOGGED @ 2150 ON 01/26/09
STAGE 3 LOGGED @ 0945 ON 01/26/09



Temperature Calibration Report

Serial Number: 17
Tool Model: MLS
Performed: Thu Jun 12 14:09:46 2008

Point #	Reading		Reference	
1	320	cps	32	degF
2	700	cps	70	degF
3	2000	cps	200	degF

TEMP/GAIN (17)
33.00 lb / 5.0 / OD 2.45 ft

Dataset: run4/TEMP1
Tool Length: 2.45 ft
Total Weight: 33.00 lb
O.D. 1.62 in

TEMP: 0.25 ft

FPL-006E-389

Company: BOYLE ENGINEERING
Well: 1-17
Field: DUAL J. ROBERT DEAN W/E
County: DADE
State: FL

Date: 04/08/2009
Time: 08:00
Depth: 1440
Speed: 30 FPM
Gain: 0 DB
Filter: 1000 HZ
Type: 1 ARM
Tool: 1 ARM
Operator: ROBERT

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING SPECIALISTS
LOCATION: CLIBERN ROAD
SANFORD, FLORIDA
COUNTY: SEMINOLE
STATE: FL
ELEVATION: N/A
DATUM: N/A
DATE: 04/08/2009
DRILLER: BORNEMANN
DRILLING METHOD: N/A
LOGGER: ROBERT
LOGGING METHOD: 1 ARM
DATE: 04/08/2009
TOTAL DEPTH: 1440
CASING: 0 - 1440
CASING DIAMETER: 6.625
CASING TYPE: STEEL
CASING WEIGHT: 28
CASING FOOTAGE: 1440
CEMENT: 0
CEMENT TYPE: N/A
CEMENT TOP: N/A
CEMENT BOTTOM: N/A
CEMENT DATE: N/A
CEMENT TEST: N/A
CEMENT BOND: N/A
CEMENT BOND TYPE: N/A
CEMENT BOND TEST: N/A
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CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL DIAMETER: N/A
CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL WEIGHT: N/A
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CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT: N/A
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CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL DIAMETER: N/A
CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL WEIGHT: N/A
CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL CEMENT BOND TOOL FOOTAGE: N/A
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Company	DOYLE ENGINEERING
Well	ROBERT TOBIN #1
Field	
County	
State	
Date	
Run No.	ONE
Depth Driller	
Depth Logger	
Bottom Log Interval	
Top Log Interval	
Casing Driller	
Casing Logger	
Bit Size	
Type Fluid in Hole	
Dens. / Visc.	
pH / Fluid Loss	
Source of Sample	
Rm @ Meas. Temp.	
Rmf @ Meas. Temp.	
Rmc @ Meas. Temp.	
Source: Rmf / Rmc	
Rm @ BHT	
Time Since Circulation	
Time Since Stop Circ.	
Max. Rec. Temp.	
Equip. Location	
Recorded By	
Witnessed By	

YOUNGQUIST BROTHERS, INC.
Geophysical Services

S.T.A.T.E.-F.E.D. GAMMA RAY

THE CONDITIONS OF THE USE OF THIS MATERIAL ARE LIMITED TO THE EXPRESS LICENSE GRANTED BY YOUNGQUIST BROTHERS, INC. IN ACCORDANCE WITH THE PROPOSAL AND CONTRACT, WHICH LIMITS THE USE OF THE MATERIAL TO THE PARTIES TO THE CONTRACT. ANY OTHER USE, REPRODUCTION, DISTRIBUTION OR DISCLOSURE IS PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF YOUNGQUIST BROTHERS, INC.

SIGNAL

OTHER SERVICES
CAL INDUCTION
BOREHOLE COMPENSATED SONIC
FULL WAVE SONIC
FLUID COMPENSATED TEMP
CBL
VDEN
BOREHOLE VOLUME IN BARRELS

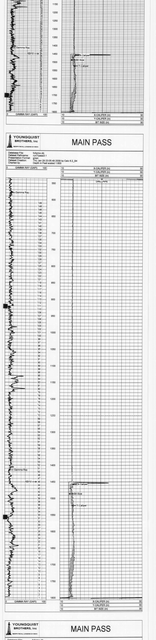
YOUNGQUIST BROTHERS, INC.

MAIN PASS

Company Name	DOYLE ENG.
Well Name	ROBERT TOBIN #1
Field Name	
County	
State	
Permanent Datum	GL Elev. 0.00
Log Measured From	10 Ft. Above Perm. Datum
Drilling Measured From	KB
Gamma Ray Calibration	API Units

Gamma Ray Scale	0.00 API/Div
Gamma Ray Offset	0.00 API
Depth Scale	1 Inch = 100 Feet
Depth Offset	0.00 Feet

GAMMA RAY (API)



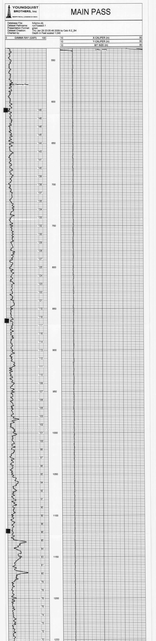
YOUNGQUIST BROTHERS, INC.

MAIN PASS

Company Name	DOYLE ENG.
Well Name	ROBERT TOBIN #1
Field Name	
County	
State	
Permanent Datum	GL Elev. 0.00
Log Measured From	10 Ft. Above Perm. Datum
Drilling Measured From	KB
Gamma Ray Calibration	API Units

Gamma Ray Scale	0.00 API/Div
Gamma Ray Offset	0.00 API
Depth Scale	1 Inch = 100 Feet
Depth Offset	0.00 Feet

GAMMA RAY (API)



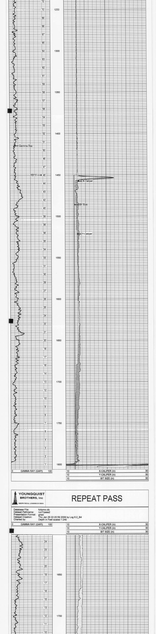
YOUNGQUIST BROTHERS, INC.

MAIN PASS

Company Name	DOYLE ENG.
Well Name	ROBERT TOBIN #1
Field Name	
County	
State	
Permanent Datum	GL Elev. 0.00
Log Measured From	10 Ft. Above Perm. Datum
Drilling Measured From	KB
Gamma Ray Calibration	API Units

Gamma Ray Scale	0.00 API/Div
Gamma Ray Offset	0.00 API
Depth Scale	1 Inch = 100 Feet
Depth Offset	0.00 Feet

GAMMA RAY (API)



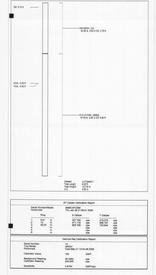
YOUNGQUIST BROTHERS, INC.

REPEAT PASS

Company Name	DOYLE ENG.
Well Name	ROBERT TOBIN #1
Field Name	
County	
State	
Permanent Datum	GL Elev. 0.00
Log Measured From	10 Ft. Above Perm. Datum
Drilling Measured From	KB
Gamma Ray Calibration	API Units

Gamma Ray Scale	0.00 API/Div
Gamma Ray Offset	0.00 API
Depth Scale	1 Inch = 100 Feet
Depth Offset	0.00 Feet

GAMMA RAY (API)



JT Operator Information Report

Operator Name	DOYLE ENG.
Operator Number	000
Operator Address	
Operator Phone	

Bit Size	Casing Size	Casing Weight
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Source Sample Temperature	
Calibration Date	
Calibration Value	0.0 API
Gamma Ray Tool Serial Number	0000
Gamma Ray Tool Type	0000
Operating	LATCH 0000 Hours

JT1 Header Information Report

Company Name	DOYLE ENG.
Well Name	ROBERT TOBIN #1
Field Name	
County	
State	
Permanent Datum	GL Elev. 0.00
Log Measured From	10 Ft. Above Perm. Datum
Drilling Measured From	KB
Gamma Ray Calibration	API Units

Gamma Ray Scale	0.00 API/Div
Gamma Ray Offset	0.00 API
Depth Scale	1 Inch = 100 Feet
Depth Offset	0.00 Feet

JTL 4000 / PC

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING SERVICES

Company	BOYLE ENGINEERING
Well	DZMA-J
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Country	
Latitude	25.505833 DEG 25.21" N
Longitude	80.353333 DEG 20.20" W
Elevation	
Date	04-Jun-2009
Run No.	1
Depth Driller	1800.00
Depth Logger	1800.00
Bottom Log Int.	1800.00
Top Log Int.	0.00
Casing Driller	0.00
Casing Logger	0.00
Bit Size	0.00
Type Fluid	
Density	
Viscosity	
Fluid Level	
Max. Rec. Temp.	
Estimated Temp.	
Equipment	1000
Location	
Recorded By	
Witnessed By	

Company BOYLE ENGINEERING
Well DZMA-J
Field FKAA J. ROBERT DEAN WTP
County DADE
State FL
Country

DIAL INDUCTION LL3 with SP LOG

Gamma

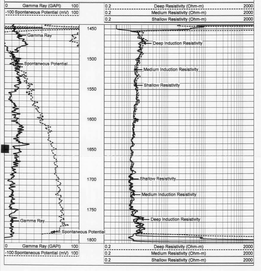
OTHER SERVICES:

X-Y CALIPER / GAMMA RAY
BOREHOLE COMPENSATED SONIC
FLUID CONDUCTIVITY / TEMP
FLOWMETER
VIDEO

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

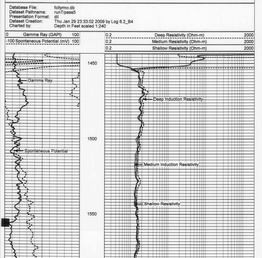
MAIN PASS

Database File: kdtymo.db
Dataset Pathname: ut7.dat
Presentation Format: dl
Dataset Creation: Thu Jan 29 23:33:02 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:600



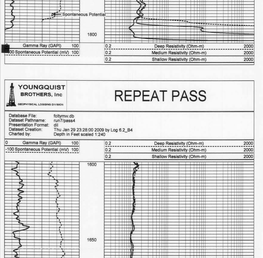
MAIN PASS

Database File: kdtymo.db
Dataset Pathname: ut7.dat
Presentation Format: dl
Dataset Creation: Thu Jan 29 23:33:02 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:600



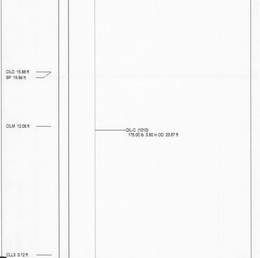
MAIN PASS

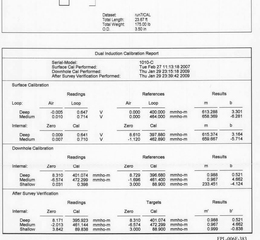
Database File: kdtymo.db
Dataset Pathname: ut7.dat
Presentation Format: dl
Dataset Creation: Thu Jan 29 23:33:02 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:240



REPEAT PASS

Database File: kdtymo.db
Dataset Pathname: ut7.dat
Presentation Format: dl
Dataset Creation: Thu Jan 29 23:26:00 2009 by Log 6.2_84
Charted by: Depth in Feet scaled 1:240





Dual Induction Calibration Report

Serial-Model: 1010-D
Surface Cal Performed: Tue Feb 27 11:13:18 2007
Downhole Cal Performed: Tue Jan 27 11:13:18 2009
After Survey Verification Performed: Thu Jan 29 23:35:42 2009

Surface Calibration

	Readings Air	Readings Loop	References Air	References Loop	Results m	Results b
Loop:						
Deep	-0.005	0.847	0.000	400.000	mmho-m	613.356	3.361
Medium	0.010	0.714	0.000	484.000	mmho-m	658.389	4.391
Internal:	Zero	Cal	Zero	Cal	m	b
Deep	0.000	0.841	0.610	387.880	mmho-m	615.374	3.194
Medium	0.007	0.710	1.120	482.840	mmho-m	656.667	3.714

Downhole Calibration

	Readings Zero	Readings Cal	References Zero	References Cal	Results m	Results b
Deep	0.171	401.074	0.729	398.880	mmho-m	0.988	0.531
Medium	0.310	492.208	0.848	491.400	mmho-m	0.997	4.662
Shallow	0.031	2.586	3.000	99.900	mmho-m	235.451	-4.134

After Survey Verification

	Readings Zero	Readings Cal	Targets Zero	Targets Cal	Results m'	Results b'
Internal:						
Deep	0.171	395.923	0.010	401.074	mmho-m	0.988	0.521
Medium	0.310	492.208	0.000	492.208	mmho-m	0.997	4.662
Shallow	0.842	99.858	0.000	99.900	mmho-m	0.996	-0.836

Company BOYLE ENGINEERING
Well DOBBS 1
Field FAAA J. ROBERT DEAN WTE
County DOE
State UT
Other Services
DUAL INDUCTION
FLUID CONDUCTIVITY / TEMP
CLINOMETER
VIDEO

Elev. K.B. 0
D.F. 0
G.L. 0

Date 07-Jun-2009
Run Number ONE
Depth Driller 1800
Depth Logger 1792
Bottom Log Interval 1790
Top Log Interval 0
Casing Driller 0 @ 0
Casing Logger
Bit Size 7.875
Type Fluid in Hole WATER
Dens. / Visc. 8.4 / 28
pH / Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source: Rmf / Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp. 0 deg. F
Equip. Location
Recorded By
Witnessed By

BOREHOLE COMPENSATED SONIC with TOL
LOG
DOBBS 1 (WATER WELL)
FAAA J. ROBERT DEAN WTE
DOE
UTAH
Other Services
DUAL INDUCTION
FLUID CONDUCTIVITY / TEMP
CLINOMETER
VIDEO

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Comments

OTHER SERVICES:

X-Y CALIPER / GAMMA RAY
DUAL INDUCTION
FLUID CONDUCTIVITY / TEMP
CLINOMETER
VIDEO

MAIN PASS

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING & FIELD

Database File: kdpow.db
Dataset Pathname: KDPOW
Presentation Format: ED_MP
Dataset Creation: Fri Jan 30 15:15:17 2009 by rog 6.2_B4
Charted by: Depth in Feet scaled 1:240

GAMMA RAY (API)	CALIPER (in)	CT (usec/ft)	SONIC PORO(FT) (DT/Dm=47.6) (in)
15	6 CALIPER (in) 30	120	40

Scale 1:240 (Imperial)
Well: (0,0,0,0,DOBBS 1)
Bottom: 1800 Top: 0

Depth | Gamma Ray | Caliper | Sonic Porosity

MAIN PASS

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING & FIELD

Database File: kdpow.db
Dataset Pathname: KDPOW
Presentation Format: ED_MP
Dataset Creation: Fri Jan 30 15:15:17 2009 by rog 6.2_B4
Charted by: Depth in Feet scaled 1:240

GAMMA RAY (API)	CALIPER (in)	CT (usec/ft)	SONIC PORO(FT) (DT/Dm=47.6) (in)
15	6 CALIPER (in) 30	120	40

Scale 1:240 (Imperial)
Well: (0,0,0,0,DOBBS 1)
Bottom: 1800 Top: 0

Depth | Gamma Ray | Caliper | Sonic Porosity

MAIN PASS

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING & FIELD

Database File: kdpow.db
Dataset Pathname: KDPOW
Presentation Format: ED_MP
Dataset Creation: Fri Jan 30 15:15:17 2009 by rog 6.2_B4
Charted by: Depth in Feet scaled 1:240

GAMMA RAY (API)	CALIPER (in)	CT (usec/ft)	SONIC PORO(FT) (DT/Dm=47.6) (in)
15	6 CALIPER (in) 30	120	40

Scale 1:240 (Imperial)
Well: (0,0,0,0,DOBBS 1)
Bottom: 1800 Top: 0

Depth | Gamma Ray | Caliper | Sonic Porosity

MAIN PASS

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING & FIELD

Database File: kdpow.db
Dataset Pathname: KDPOW
Presentation Format: ED_MP
Dataset Creation: Fri Jan 30 15:15:17 2009 by rog 6.2_B4
Charted by: Depth in Feet scaled 1:240

GAMMA RAY (API)	CALIPER (in)	CT (usec/ft)	SONIC PORO(FT) (DT/Dm=47.6) (in)
15	6 CALIPER (in) 30	120	40

Scale 1:240 (Imperial)
Well: (0,0,0,0,DOBBS 1)
Bottom: 1800 Top: 0

Depth | Gamma Ray | Caliper | Sonic Porosity

REPEAT PASS

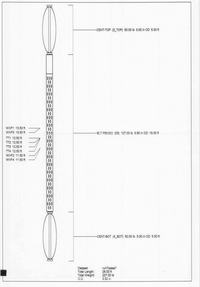
YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING & FIELD

Database File: kdpow.db
Dataset Pathname: KDPOW
Presentation Format: ED_MP
Dataset Creation: Fri Jan 30 15:15:17 2009 by rog 6.2_B4
Charted by: Depth in Feet scaled 1:240

CT (usec/ft)	5 FOOT RECEIVER VDL
40	480

Scale 1:240 (Imperial)
Well: (0,0,0,0,DOBBS 1)
Bottom: 1800 Top: 0

Depth | Sonic Data Time | 5 FOOT RECEIVER VDL



LOG DERIVED TDS

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING & FIELD

Database File: kdpow.db
Dataset Pathname: KDPOW
Presentation Format: ED_LDTDS
Dataset Creation: Fri Jan 30 15:15:24 2009
Charted by: Depth in Feet scaled 1:240

Gamma Ray (API)	TDS (ppm)	CALIPER (in)
15	1000	6

Scale 1:240 (Imperial)
Well: (0,0,0,0,DOBBS 1)
Bottom: 1800 Top: 0

Depth | Gamma Ray | TDS | Caliper

FTL-0840-064

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING DIVISION

FLOWMETER LOG

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Location	LATITUDE 25 19 GREES 28' 25.31" N LONGITUDE 80 DEGREES 30' 29.22" W
Elevation	GL 0 DF 0 KB 0

Date	30-Jun-2009
Run Number	ONE
Depth Driller	1800
Depth Logger	1800
Bottom Logged Interval	1800
Top Logged Interval	0
Casing Driller Size	12.25"
Casing Logger Size	12.25"
Bit Size	12.25"
Type Fluid in Hole	CASING
Dens. / Visc.	0 / 0
PH / Fluid Loss	0 / 0
Source of Sample	CASING
Rm @ Meas. Temp.	0 @ 0
Rmf @ Meas. Temp.	0 @ 0
Rmc @ Meas. Temp.	0 @ 0
Source: Rmf / Rmc	CASING / CASING
Rm @ BHT	0 @ 0
Time Since Circulation	0
Time Since Stop	0
Max. Recorded Temp.	0
Equipment / Location	3 / 0
Recorded By	S. BUCKLEY
Witnessed By	

Run Number	ONE	ONE	ONE
Bottom Driller	1800	1800	1800
Bottom Logger	1800	1800	1800
Bit Size	12.25"	12.25"	12.25"
Type Fluid	CASING	CASING	CASING
Dens. / Visc.	0 / 0	0 / 0	0 / 0
PH / Fluid Loss	0 / 0	0 / 0	0 / 0
Source of Sample	CASING	CASING	CASING
Rm @ Meas. Temp.	0 @ 0	0 @ 0	0 @ 0
Rmf @ Meas. Temp.	0 @ 0	0 @ 0	0 @ 0
Rmc @ Meas. Temp.	0 @ 0	0 @ 0	0 @ 0
Source: Rmf / Rmc	CASING / CASING	CASING / CASING	CASING / CASING
Rm @ BHT	0 @ 0	0 @ 0	0 @ 0
Time Since Circulation	0	0	0
Time Since Stop	0	0	0
Max. Recorded Temp.	0	0	0
Equipment / Location	3 / 0	3 / 0	3 / 0
Recorded By	S. BUCKLEY	S. BUCKLEY	S. BUCKLEY
Witnessed By			

Log Measured From	DF
Drilling Measured From	DF
Elevation	GL 0 DF 0 KB 0

Permanent Datum	GROUND LEVEL	GROUND LEVEL	GROUND LEVEL
Elevation	0	0	0
Log Measured From	DF	DF	DF
Drilling Measured From	DF	DF	DF
Elevation	GL 0 DF 0 KB 0	GL 0 DF 0 KB 0	GL 0 DF 0 KB 0

Other Services: COMMENTS

<<< Fold Here >>>

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Comments

OTHER SERVICES:

X-Y CALIPER / GAMMA RAY
BOREHOLE COMPENSATED SONIC
FLUID CONDUCTIVITY / TEMP
DUAL INDUCTION
VIDEO

DYNAMIC FLOWRATE = 310 GPM

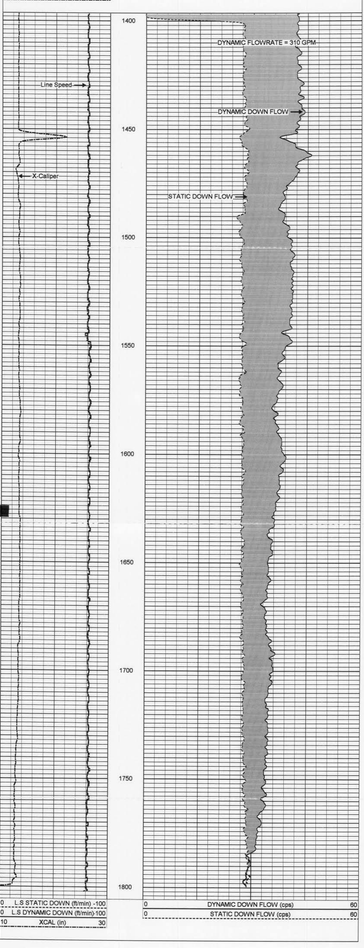
YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

MERGED FLOWMETER

Database File: fcltymw.db
Dataset Pathname: run7/pass10
Presentation Format: fm_dnmg
Dataset Creation: Fri Jan 30 03:00:24 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240

0 L.S STATIC DOWN (ft/min) -100
0 L.S DYNAMIC DOWN (ft/min) 100
10 XCAL (in) 30

0 DYNAMIC DOWN FLOW (cps) 60
0 STATIC DOWN FLOW (cps) 60



0 L.S STATIC DOWN (ft/min) -100
0 L.S DYNAMIC DOWN (ft/min) 100
10 XCAL (in) 30

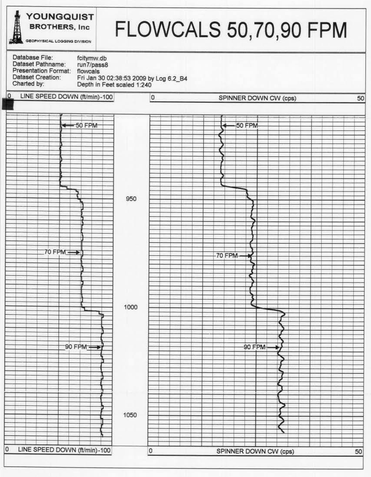
0 DYNAMIC DOWN FLOW (cps) 60
0 STATIC DOWN FLOW (cps) 60

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

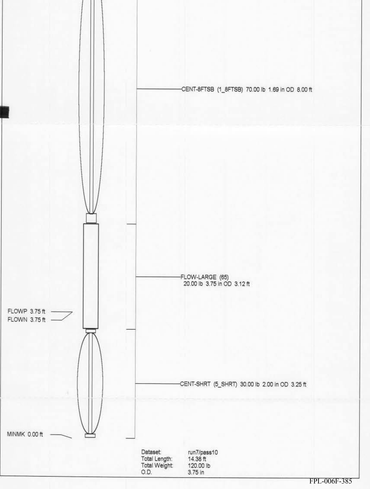
FLOWCALS 50,70,90 FPM

Database File: fcltymw.db
Dataset Pathname: run7/pass8
Presentation Format: flowcals
Dataset Creation: Fri Jan 30 02:38:53 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240

0 LINE SPEED DOWN (ft/min) -100
0 SPINNER DOWN CW (cps) 50



0 LINE SPEED DOWN (ft/min) -100
0 SPINNER DOWN CW (cps) 50



Dataset: run7/pass10
Total Length: 14.36 ft
Total Weight: 120.00 lb
O.D. 3.75 in

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

FLUID CONDUCTIVITY TEMPERATURE LOG

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Location	LATITUDE 26 DEGREES 26' 25.31" N LONGITUDE 80 DEGREES 30' 29.22" W
Other Services	SEE COMMENTS

Run Number	ONE	Elevation	
Date	09-Jun-08	Permanent Datum	PAD LEVEL
Depth Driller	1800'	Log Measured from	PAD LEVEL
Depth Logged Interval	1800'	Drilling Measured from	PAD LEVEL
Top Log Interval	0'	K.B.	
Bottom Log Interval	1800'	D.F.	
Type Fluid	CLEAR WATER	G.L.	
Max. Recorded Temp.	NA		
Estimated Cement Top	NA		
Time Logger on Bottom	2330		
Time Logger on Location	2330		
Recorded By	G. FLUSH		
Witnessed By	FT. MYERS S. KELSH		

Borehole Record			
Number	ONE		
Bit	17.5"	12.25"	8.5"
From	43.5'	219'	1800'
To	219'	1800'	
Size	13.3/8"	9.5/8"	
Weight	54.5#	40#	
Grade	K55	K55	
Connection	BUTT	BUTT	
Surface String	54#	40#	
Production String	54#	40#	
Liner	54#	40#	

Casing Record			
Number	ONE		
Size	13.3/8"	9.5/8"	
From	43.5'	219'	
To	219'	1800'	
Weight	54.5#	40#	
Grade	K55	K55	
Connection	BUTT	BUTT	
Surface String	54#	40#	
Production String	54#	40#	
Liner	54#	40#	

Borehole Record			
Number	ONE		
Bit	12.25"		
From	219'		
To	1800'		
Size	9.5/8"		
Weight	40#		
Grade	K55		
Connection	BUTT		
Surface String	40#		
Production String	40#		
Liner	40#		

Casing Record			
Number	ONE		
Size	9.5/8"		
From	219'		
To	1800'		
Weight	40#		
Grade	K55		
Connection	BUTT		
Surface String	40#		
Production String	40#		
Liner	40#		

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Comments

OTHER SERVICES:

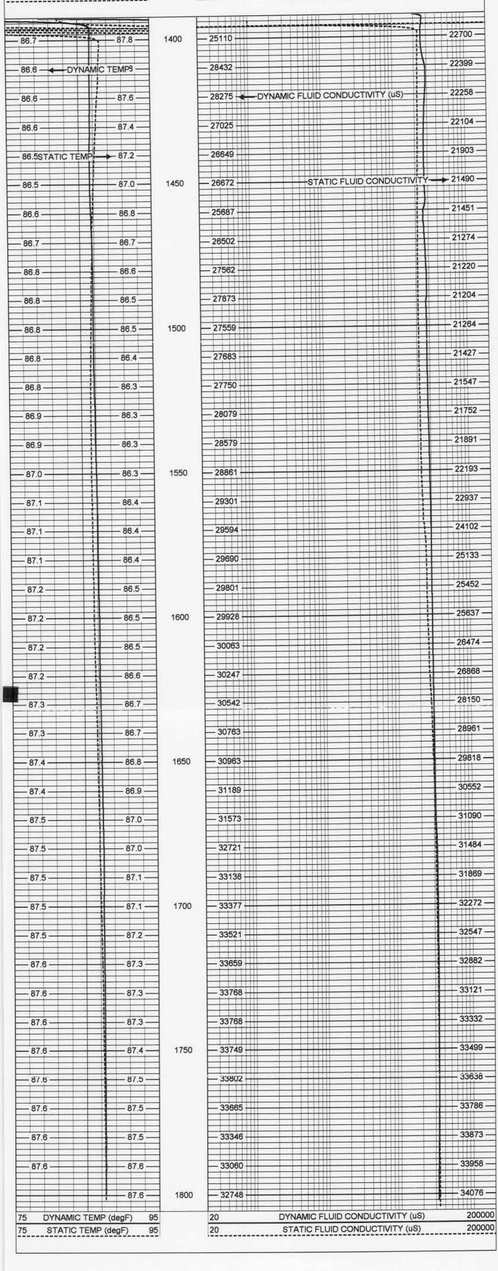
X-Y CALIPER / GAMMA RAY
BOREHOLE COMPENSATED SONIC
FLOWMETER
DUAL INDUCTION
VIDEO

DYNAMIC FLOWRATE = 310 GPM

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

MERGED FCT

Database File: fcitymw.db
Dataset Pathname: run7/pass11
Presentation Format: frt_mg
Dataset Creation: Fri Jan 30 03:40:25 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:240



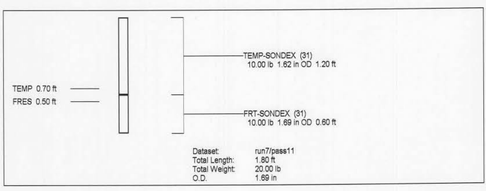
FRT Calibration Report

Serial Number:	31		
Tool Model:	SONDEX		
Performed:	Mon Jun 09 10:53:41 2008		

Point #	Reading		Reference
1	31.165	cps	1000.000
2	167.193	cps	10000.000
3	415.824	cps	25000.000
4	918.476	cps	50000.000
5		cps	
6		cps	

Temperature Calibration Report

Serial Number:	31			
Tool Model:	SONDEX			
Performed:	Mon Jun 09 10:53:33 2008			
Point #	Reading		Reference	
1	152.99	cps	39	degF
2	330.989	cps	82	degF
3	688.237	cps	157	degF



YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

(6.625" FRP CASING) CEMENT TOP TEMPERATURE LOG

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Location	LATITUDE: 25 DEGREES 26' 25.31" N LONGITUDE: 80 DEGREES 30' 29.22" W
Other Services	NONE

Log Measured From		Elevation	
Drilling Measured From		Elevation	
Date	7-FEB-2009		
Run Number	ONE		
Depth Driller	1800'		
Depth Logger	1800'		
Top Log Interval	SURFACE		
Bottom Log Interval	1800'		
Type Fluid	WATER		
Max Recorded Temp	90		
Estimated Cement Top	SURFACE		
Time Well Ready	1000		
Time Logger On Bottom	1030		
Equipment Number	1004		
Location	FT. MYERS		
Recorded By	D. WILES		
Witnessed By	S. CHAPLISH		

Bit Number	8	Drill Collar Length	0	Drill Pipe Length	0
Type	TWO CONE	From	To	Type	
Size	12.25"	0	1800	Size	
Type Fluid	WATER			From	To
Density	8.4				
Viscosity	27				
Fluid Loss					
Source					
Rm					
Rmf					
Rmc					
Rm @ BHT					
Source Rmf					
Source Rmc					
Rm @ MRT					
Max Rec Temp	90				
Equipment	6.625" CASING				
Location	FT. MYERS				
Recorded By	D. WILES				
Witnessed By	S. CHAPLISH				

Run No.	ONE		
Depth Driller	1800'		
Depth Logger	1800'		
Bottom Log Interval	1800'		
Top Log Interval	SURFACE		
Casing Driller	12.25" @ 1800'		
Casing Logger	12.25" @ 1800'		
Bit Size	12.25"		
Type Fluid in Hole	WATER		
Density	8.4		
Viscosity	27		
Max Rec Temp	90		
Estimated Cement Top	SURFACE		
Time Circulation Ended	1000		
Time Logger On Bottom	1030		
Equipment Number	1004		
Location	FT. MYERS		
Recorded By	D. WILES		
Witnessed By	S. CHAPLISH		

Run No.	ONE		
Depth Driller	1800'		
Depth Logger	1800'		
Bottom Log Interval	1800'		
Top Log Interval	SURFACE		
Casing Driller	12.25" @ 1800'		
Casing Logger	12.25" @ 1800'		
Bit Size	12.25"		
Type Fluid in Hole	WATER		
Density	8.4		
Viscosity	27		
Max Rec Temp	90		
Estimated Cement Top	SURFACE		
Time Circulation Ended	1000		
Time Logger On Bottom	1030		
Equipment Number	1004		
Location	FT. MYERS		
Recorded By	D. WILES		
Witnessed By	S. CHAPLISH		

Run No.	ONE		
Depth Driller	1800'		
Depth Logger	1800'		
Bottom Log Interval	1800'		
Top Log Interval	SURFACE		
Casing Driller	12.25" @ 1800'		
Casing Logger	12.25" @ 1800'		
Bit Size	12.25"		
Type Fluid in Hole	WATER		
Density	8.4		
Viscosity	27		
Max Rec Temp	90		
Estimated Cement Top	SURFACE		
Time Circulation Ended	1000		
Time Logger On Bottom	1030		
Equipment Number	1004		
Location	FT. MYERS		
Recorded By	D. WILES		
Witnessed By	S. CHAPLISH		

Run No.	ONE		
Depth Driller	1800'		
Depth Logger	1800'		
Bottom Log Interval	1800'		
Top Log Interval	SURFACE		
Casing Driller	12.25" @ 1800'		
Casing Logger	12.25" @ 1800'		
Bit Size	12.25"		
Type Fluid in Hole	WATER		
Density	8.4		
Viscosity	27		
Max Rec Temp	90		
Estimated Cement Top	SURFACE		
Time Circulation Ended	1000		
Time Logger On Bottom	1030		
Equipment Number	1004		
Location	FT. MYERS		
Recorded By	D. WILES		
Witnessed By	S. CHAPLISH		

Run No.	ONE		
Depth Driller	1800'		
Depth Logger	1800'		
Bottom Log Interval	1800'		
Top Log Interval	SURFACE		
Casing Driller	12.25" @ 1800'		
Casing Logger	12.25" @ 1800'		
Bit Size	12.25"		
Type Fluid in Hole	WATER		
Density	8.4		
Viscosity	27		
Max Rec Temp	90		
Estimated Cement Top	SURFACE		
Time Circulation Ended	1000		
Time Logger On Bottom	1030		
Equipment Number	1004		
Location	FT. MYERS		
Recorded By	D. WILES		
Witnessed By	S. CHAPLISH		

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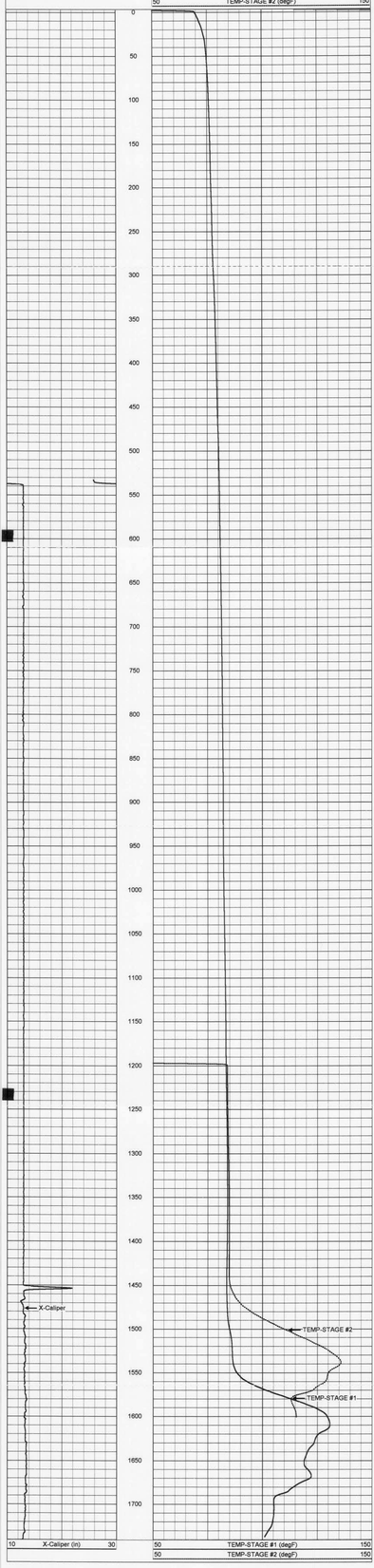
Comments

STAGE 1 LOGGED 7-FEB-2009 @ 1600
STAGE 2 LOGGED 8-FEB-2009 @ 0500

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

MERGED CTL

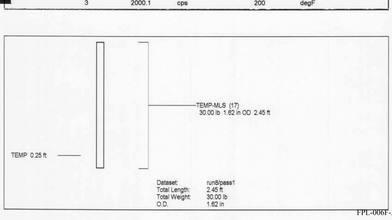
Database File: folymw.db
Dataset Pathname: run8/pass1
Presentation Format: ctl_mg
Dataset Creation: Sat Feb 07 15:51:41 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:600



Temperature Calibration Report

Serial Number: 17
Tool Model: MLS
Performed: Tue Feb 27 11:19:44 2007

Point #	Reading		Reference	
1	321	cps	32	degF
2	700.1	cps	70	degF
3	2000.1	cps	200	degF



Dataset: run8/pass1
Total Length: 2.45 ft
Total Weight: 30.00 lb
O.D. 1.62 in

1	1/2	1	1/2
2	1/2	2	1/2
3	1/2	3	1/2
4	1/2	4	1/2

Company	BOYLE ENGINEERING
Well	DZIMA 1
Field	FAKAA / ROBERT DUNN WTP
County	DADE
State	FL

YOUNGQUIST BROTHERS, Inc.
GEOPHYSICAL LOGGING DIVISION

Company	BOYLE ENGINEERING
Well	DZIMA 1
Field	FAKAA / ROBERT DUNN WTP
County	DADE
State	FL
API #	
Other Services	NONE
Permanent Datum	GROUND LEVEL
Elevation	0 ft
Log Measured From	GROUND LEVEL
Drilling Measured From	GROUND LEVEL
Date	12-Feb-09
Run Number	ONE
Depth Driller	1763 ft
Depth Logger	1763 ft
Bottom Logged Interval	1763 ft
Top Log Interval	0 ft
Casing Driller	0 ft @ 0 ft
Casing Logger	0 ft
Bit Size	0 in
Type Fluid in the Hole	AIR
Density	0 lb/gal
Viscosity	0 s
Fluid Loss	0 cc
Source of Sample	
Rm @ Measured Temp	0 @ 0 F
Rmf @ Measured Temp	0 @ 0 F
Rmc @ Measured Temp	0 @ 0 F
Source Rmf / Rmc	
Rm @ BHT	0 @ 0 F
Max Recorded Temp	0 F
Equipment Number	1
Location	
Recorded By	
Witnessed By	

(6 ARM FIXED-CALIPER) CEMENT BOND VARIABLE DENSITY LOG

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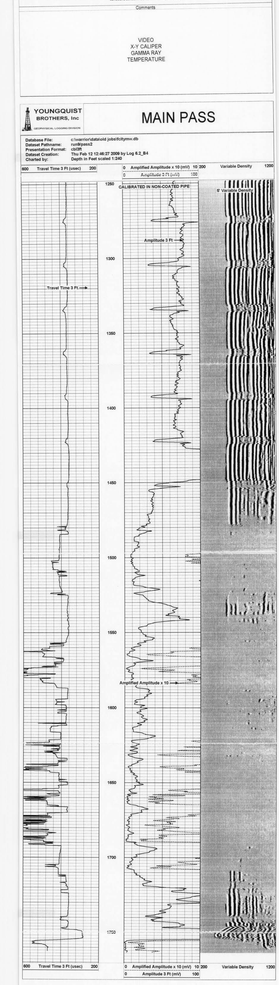
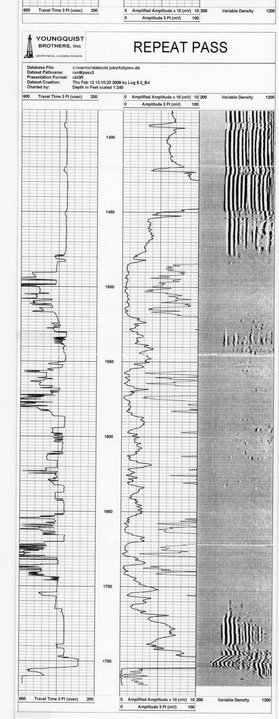
Comments

VIDEO
X-Y CALIPER
GAMMA RAY
TEMPERATURE





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			CENT-8FT88 (1_SFT88)	8.00	1.69	70.00
			SCBL-A (2001)	13.50	2.75	30.00
WVFS1	8.25					
WVFS2	8.25					
WVFS3	8.25					
WVFS4	8.25					
WVFS5	8.25					
WVFS6	8.25					
WVFS7	8.25					
WVFS8	8.25					
TT81	8.25					
WVFSFT	7.75					
WVFCAL	7.75					
TTSFT	7.75					
WVFSP	6.75					
WVFST	6.75					
TTSFT	8.75					
			CENT-SHRT (5_SHRT)	3.25	2.00	30.00

Database File: c:\rasroot\datasist jobs\fcilymn.db
Dataset Pathname: run\dpass1
Dataset Creation: Thu Feb 12 10:10:23 2009 by Log 6.2_B4

Calibration Report
Thu Feb 12 10:10:23 2009 by Log 6.2_B4

Segmented Cement Bond Log Calibration Report

Serial Number:	0001		
Tool Model:	A		
Calibration Casing Diameter:	6.625	in	
Calibration Depth:	1363-983	ft	

Master Calibration, performed Thu Feb 12 12:41:46 2009:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
Z	-0.050	0.233	1.000	64.269	259.721	3.720
Z CAL	-0.011	0.347				
X	-0.011	0.347	1.000	64.269	177.111	2.989
SUM						
B1	0.014	0.792	0.000	100.000	126.220	-10.312
B2	0.140	0.248	0.000	100.000	67.709	-8.425
B3	0.005	1.264	0.000	100.000	79.415	-0.394
B4	0.000	0.000	0.000	100.000	0.000	0.000
B5	0.054	0.395	0.000	100.000	257.464	-0.543
B6	0.056	0.282	0.000	100.000	409.918	-15.507
B7	0.000	0.000	0.000	100.000	1992.165	-0.000
B8	0.166	0.586	0.000	100.000	237.985	-39.551

Internal Reference Calibration, performed Thu Jan 01 00:00:00 1970:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	3.015	1.000	0.000

Air Zero Calibration, performed Sat Dec 20 09:33:01 2008:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
Z	0.000		0.000		0.000	
X	0.000		0.000		0.000	
SUM						
B1	0.000		0.000		0.000	
B2	0.000		0.000		0.000	
B3	0.000		0.000		0.000	
B4	0.000		0.000		0.000	
B5	0.000		0.000		0.000	
B6	0.000		0.000		0.000	
B7	0.000		0.000		0.000	
B8	0.000		0.000		0.000	

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

(6.625" FRP CASING) FLUID CONDUCTIVITY TEMPERATURE LOG

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
Other Services	NONE
Elevation	
Log Measured From	
Permanent Datum	
Drilling Measured From	
Date	
Run Number	
Depth Driller	
Depth Logger	
Bottom Logged Interval	
Top Log Interval	
Casing Driller Size	
Casing Logger Size	
Bit Size	
Type Fluid in Hole	
Density	
Viscosity	
Fluid Level	
Max Recorded Temp	
Estimated Cement Top	
Equipment Number	
Location	
Recorded By	
Witnessed By	

Company	BOYLE ENGINEERING
Well	DZMW-1
Field	FKAA J. ROBERT DEAN WTP
County	DADE
State	FL
API #	
Location	LATITUDE 25 DEGREES 34' 24.1" N, LONGITUDE 80 DEGREES 30' 32.2" W
Permanent Datum	SEC TWP RGE
Log Measured From	PAD LEVEL
Drilling Measured From	PAD LEVEL
Elevation	G.L. D.F. K.B.

Run	Date	Time	Depth Driller	Depth Logger	Bottom Logged Interval	Top Log Interval	Casing Driller Size	Casing Logger Size	Bit Size	Type Fluid in Hole	Density	Viscosity	Max Recorded Temp	Fluid Level	Equipment Number	Location	Recorded By	Witnessed By
1	13-Feb-09	1000	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
2	13-Feb-09	1100	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
3	13-Feb-09	1200	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
4	13-Feb-09	1300	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
5	13-Feb-09	1400	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
6	13-Feb-09	1500	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
7	13-Feb-09	1600	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
8	13-Feb-09	1700	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								
9	13-Feb-09	1800	1200	1200	1200	0	6.625 @ 0		8.5	FILLED								

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not accept in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

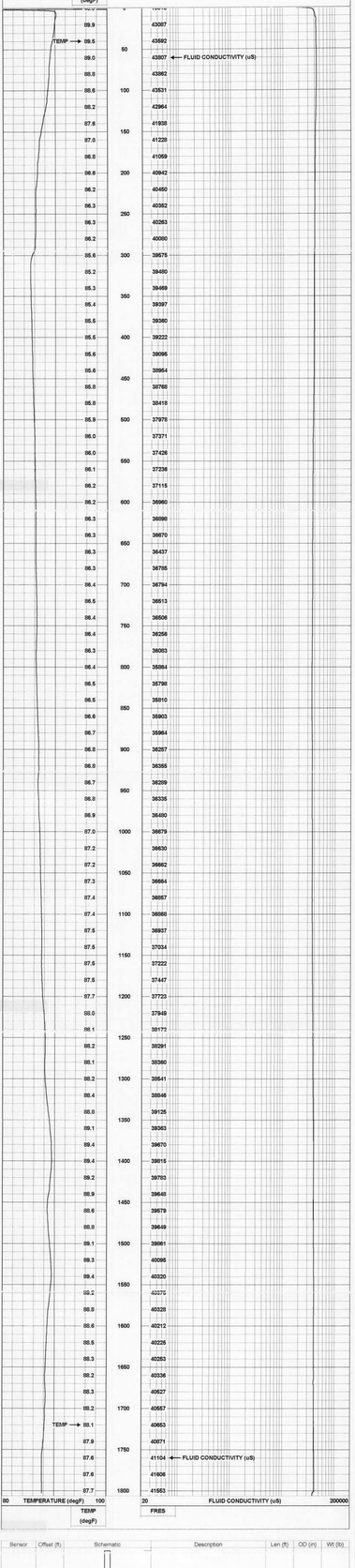
Comments

VIDEO
X-Y CALIPER
GAMMA RAY

YOUNGQUIST BROTHERS, Inc
GEOPHYSICAL LOGGING DIVISION

STATIC FCT/TEMPERATURE

Database File: c:\warrior\data\old jobs\fcltymw.db
Dataset Pathname: run9\pass8
Presentation Format: frttemp
Dataset Creation: Fri Feb 13 13:16:08 2009 by Log 6.2_B4
Charted by: Depth in Feet scaled 1:800



Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
TEMP	0.70		TEMP-SONDEX (31)	1.20	1.63	10.00
FRES	0.50		FRT-SONDEX (31)	0.60	1.69	10.00

Dataset: fcltymw.db: field/well/run9/pass8
Total Length: 1.80 ft
Total Weight: 20.00 lb
O.D. 1.69 in

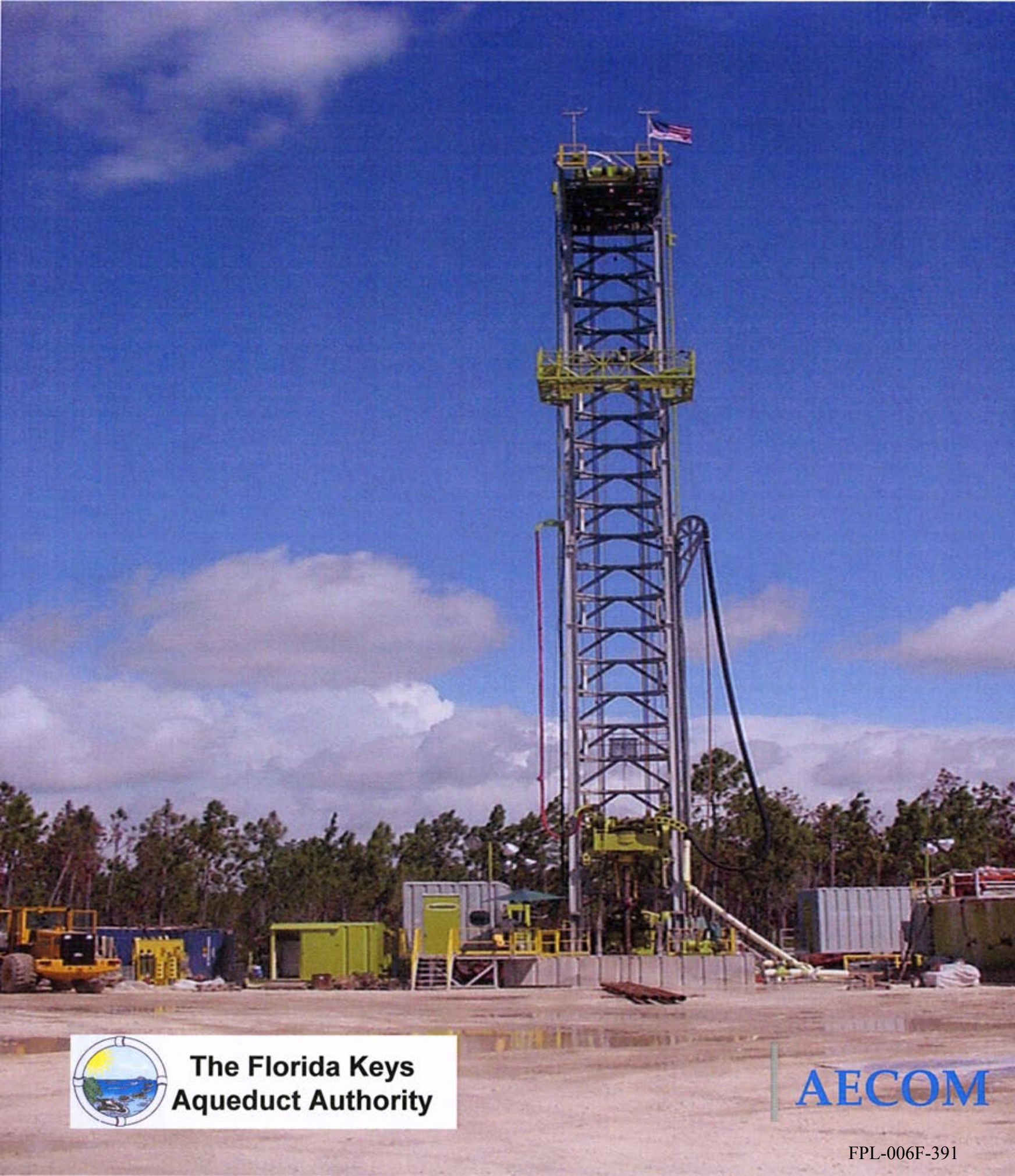
Calibration Report

Database File: C:\Warrior\Data\OLD JOBS\fcltymw.db
Dataset Pathname: run9\pass8
Dataset Creation: Fri Feb 13 13:16:08 2009 by Log 6.2_B4

Temperature Calibration Report

Serial Number 31
Tool Model SONDEX
Performed Mon Jun 09 10:53:33 2008

Point #	Reading		Reference	
1	152.99	cps	30	degF
2	330.989	cps	82	degF
3	668.237	cps	157	degF
4		cps		degF
5		cps		degF
6		cps		degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF



The Florida Keys Aqueduct Authority

AECOM

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