BAKER HUGHES
Baker Atlas

Rt EXPLORER GAMMA RAY LOG CALIPER LOG

FILE NO:	COMPANY	INERGY MIDSTREAM, LLC.	
API NO: 31-097-51496-00-01	WELL	FINGER LAKES 18	
Ver. 3.87	FIELD	US. SALT BRINE FIELD	
	COUNTY	SCHUYLER	STATE NEW YORK
MEASURED DEPTH	LOCATION:		OTHER SERVICES ZDL/CN/CAL/GR SBT/GR
	LAT 42.423106	LONG 76.896697	
PERMANENT DATUM	G.L.	ELEVATION 687 FT	ELEVATIONS: KB -
LOG MEASURED FROM	G.L.	0 FT ABOVE P.D.	DF -
DRILL MEAS. FROM	G.L.		GL 687 FT

DATE	22-SEP-2011	
RUN / TRIP	1	2
SERVICE ORDER	611428	
DEPTH DRILLER	2030 FT	
DEPTH LOGGER	2028 FT	
BOTTOM LOGGED INTERVAL	1997 FT	
TOP LOGGED INTERVAL	0 FT	
CASING DRILLER	10.75 IN	@716 FT
CASING LOGGER	716 FT	
BIT SIZE	8.75 IN	
TYPE OF FLUID IN HOLE	BRINE	
DENSITY / VISCOSITY	-	-
PH / FLUID LOSS	-	-
SOURCE OF SAMPLE	LOGGED	
RM AT MEAS. TEMP.	0.117 OHMM	@77 DEGF
RMF AT MEAS. TEMP.	0.009 OHMM	@77 DEGF
RMC AT MEAS. TEMP.	0.130 OHMM	@77 DEGF
SOURCE OF RMF / RMC	CALCULATED	CALCULATED
RM AT BHT	0.12 OHMM	@75.0 DEGF
TIME SINCE CIRCULATION	NOT AVAILABLE	
MAX. RECORDED TEMP.	75.5 DEGF	
EQUIP. NO. / LOCATION	Z004288	MNT TOP, PA
RECORDED BY	GARCIA, JUAN	
WITNESSED BY	MOON, BARRY	

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

BOREHOLE RECORD

BIT SIZE	FROM	TO
8.75 IN	716 FT	2030 FT

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN	40.5 LB/F	J-55	0 FT	716 FT

REMARKS

RUN 1 TRIP 2 : OPERATION 2: GR-NEU-ZDL-RTEX-DUMMY-DAL

DENSITY POROSITY (PORZ) = 2.71 MATRIX
NEUTRON POROSTY (CNC) = COMPESATED POROZITY NEUTRON POROSITY SALINITY CORRECTED
SALINITY=300,000PPPM
FLUID DENSITY USED TO CORRECT POROSIY FROM DENSITY 8.35 GR/CC3

(CAL)=SINGLE AXIS CALIPER FROM DENSITY TOOL
(CVOL)=ANNULAR CEMENT VOLUME FOR 5.5" CASING
(BVOL)=TOTAL BORHOLE VOLUME

RESISTIVITY CURVES BOREHOLE CORRECTED USING CALIPER
GALVANIC LL7 TOOL RAN WITH STANDOFFS

FLUID LEVEL AT 289FT

RIG: BAKER HUGHES CRANE
CREW: S. HITE/ J. GARCIA /J. SCOTT/ J. LAUB

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	2	TTMA	3980XA	10500992	FREE
1	2	COM REM	3518FB	10162512	FREE
1	2	COM REM/GR	3518EB	10154190	DECENTRALIZED
1	2	CNC	2436XA	10489644	DECENTRALIZED
1	2	MASS ISO	4486XA	11755508	FREE
1	2	ZDL	2223XA	Z402529	PAD PINNED DEVICE
1	2	KNK	3930XA	10407106	FREE
1	2	RTEX	1241XA	11758910	STANDOFF
1	2	DAL ELEC	1630EA	10513039	STANDOFF
1	2	DAL	1630MA	10411460	STANDOFF
1	2	MASS ISO	4486XA	11755504	STAND OFF

MAIN LOG 5"/100FT SCALE

ECLIPS 6.1i Aug 06, 2010 — Thu Sep 22 15:20:41 2011
Updates: 1,38,41

Pcrplt /main/62 — Cplot — Pdf_Cpp /main/16 — Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/INERGY_FINGER_LAKES_18_R1/m970vrtex03.prm
LOGGING MODE: DEPTH — DIRECTION: UP
TOP DEPTH: 617.645 ft — BOTTOM DEPTH: 2036.309 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
GR LOW RES	FILTER (.l)	medium (1)		TOP	BOTTOM
GR MED RES	FILTER ()	medium (1)		''	''
GR HIGH RES	FILTER (.h)	light		''	''
CALIPER	FILTER ()	medium (1)		''	''
	FILTER (.h)	medium (1)		''	''
	FILTER (.l)	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
RTeX	FILTER ()	light (2a)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
BIT SIZE	BIT SIZE	8.750	in	TOP	BOTTOM
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calmu*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mirlc*)	8.750	in	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	TOOL MEASURED		''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	''	''
	MUD SAMPLE RES	0.030	ohm.m	''	''
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	''	''
	at BH REF DEPTH	0.0	ft	''	''
	with TEMP GRADIENT	1.200	0.01 degF/ft	''	''

ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

RTeX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
RTeX ABC BOREHOLE CORRECTION	ABC BOREHOLE CORR	ON		TOP	BOTTOM

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 22 13:56:12 2011	BIT SIZE
F1:CAL	Sep 22 13:56:12 2011	CALIPER
F1:GR	Sep 22 13:56:12 2011	GAMMA RAY
F1:MLR1C	Sep 22 13:56:12 2011	RTEX SHALLOW RESISTIVITY 1, ADAPTIVE BOREHOLE CORRECTION
F1:MLR2C	Sep 22 13:56:12 2011	RTEX SHALLOW RESISTIVITY 2, ADAPTIVE BOREHOLE CORRECTION
F1:MLR3C	Sep 22 13:56:12 2011	RTEX MEDIUM RESISTIVITY 3, ADAPTIVE BOREHOLE CORRECTION
F1:MLR4C	Sep 22 13:56:12 2011	RTEX DEEP RESISTIVITY 4, ADAPTIVE BOREHOLE CORRECTION
F1:TEN	Sep 22 13:56:12 2011	DIFFERENTIAL TENSION

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	50.25	MLR2C	20.00	MLR4C	20.00
CAL	31.25	MLR1C	20.00	MLR3C	20.00	TEN	0.00

Presentation : sys1:/data/INERGY_FINGER_LAKES_18_R1/RTEX_MN.pdf [5"/100' Scale]
Plot Interval : 33.5 - 2035 Feet

Data File 1 : F1 : sys1:/data/INERGY_FINGER_LAKES_18_R1/m970vrtex03.xtf
Created On : Sep 22 13:56:12 2011
Company : INERGY MIDSTREAM, LLC.
Well : FINGER LAKES 18
Field : US. SALT BRINE FIELD
File Interval : 33.5 - 2041 Feet
Oct : m970vrte

REPEAT LOG

ECLIPS 6.1i Aug 06, 2010 — Thu Sep 22 15:21:00 2011
Updates: 1,38,41

Pcrplt /main/62 — Cplot — Pdf_Cpp /main/16 — Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/INERGY_FINGER_LAKES_18_R1/m970vrtex02.prm
LOGGING MODE: DEPTH — DIRECTION: UP
TOP DEPTH: 1704.977 ft — BOTTOM DEPTH: 2048.863 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
GR LOW RES	FILTER (.l)	medium (1)		TOP	BOTTOM
GR MED RES	FILTER ()	medium (1)		''	''
GR HIGH RES	FILTER (.h)	light		''	''
CALIPER	FILTER ()	medium (1)		''	''
	FILTER (.h)	medium (1)		''	''
	FILTER (.l)	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
RTeX	FILTER ()	light (2a)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
BIT SIZE	BIT SIZE	8.750	in	TOP	BOTTOM
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calmu*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mirlc*)	8.750	in	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	TOOL MEASURED		''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	''	''
	MUD SAMPLE RES	0.030	ohm.m	''	''
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	''	''
	at BH REF DEPTH	0.0	ft	''	''
	with TEMP GRADIENT	1.200	0.01 degF/ft	''	''

ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

RTeX PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
RTeX ABC BOREHOLE CORRECTION	ABC BOREHOLE CORR	ON		TOP	BOTTOM

CURVE DESCRIPTION REPORT

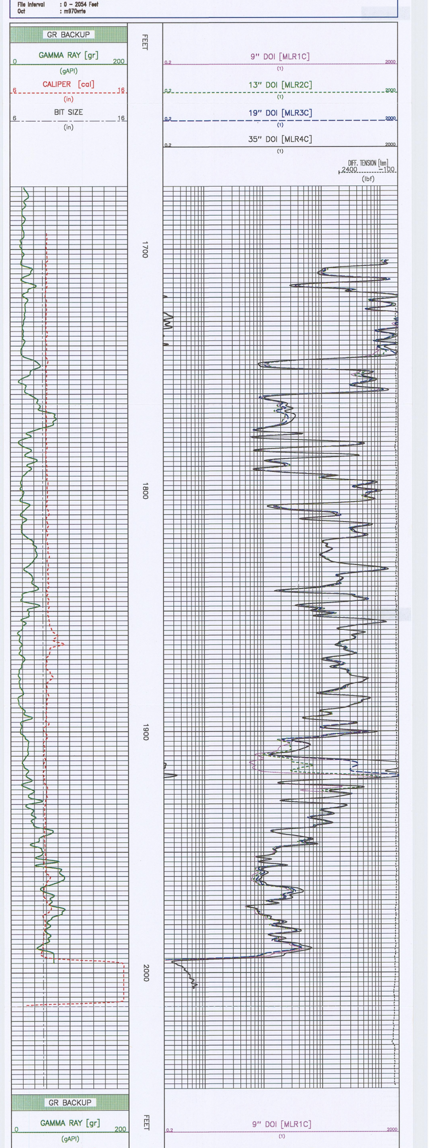
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 22 13:33:59 2011	BIT SIZE
F1:CAL	Sep 22 13:33:59 2011	CALIPER
F1:GR	Sep 22 13:33:59 2011	GAMMA RAY
F1:MLR1C	Sep 22 13:33:59 2011	RTEX SHALLOW RESISTIVITY 1, ADAPTIVE BOREHOLE CORRECTION
F1:MLR2C	Sep 22 13:33:59 2011	RTEX SHALLOW RESISTIVITY 2, ADAPTIVE BOREHOLE CORRECTION
F1:MLR3C	Sep 22 13:33:59 2011	RTEX MEDIUM RESISTIVITY 3, ADAPTIVE BOREHOLE CORRECTION
F1:MLR4C	Sep 22 13:33:59 2011	RTEX DEEP RESISTIVITY 4, ADAPTIVE BOREHOLE CORRECTION
F1:TEN	Sep 22 13:33:59 2011	DIFFERENTIAL TENSION

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	50.25	MLR2C	20.00	MLR4C	20.00
CAL	31.25	MLR1C	20.00	MLR3C	20.00	TEN	0.00

Presentation : sys1:/data/INERGY_FINGER_LAKES_18_R1/RTEX_RPT.pdf [5"/100' Scale]
Plot Interval : 1674.5 - 2048 Feet

Data File 1 : F1 : sys1:/data/INERGY_FINGER_LAKES_18_R1/m970vrtex02.xtf
Created On : Sep 22 13:33:59 2011
Company : INERGY MIDSTREAM, LLC.
Well : FINGER LAKES 18
Field : US. SALT BRINE FIELD
File Interval : 0 - 2054 Feet
Oct : m970vrte



CALIBRATION / VERIFICATION SUMMARY

Source File: /data/INERGY_FINGER_LAKES_18_R1/m970vrtex.tp1

GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10154190 — DATE/TIME PERFORMED: Thu Sep 15 09:40:55 2011
Unit #: 3880TA ML4288 — Jig Series: 4702NK DA-582

Background	Calibrator ON	Jig Value (gAPI)	Mult	Background (gAPI)	Calibrator ON (gAPI)
121.91	810.18	185	0.269 (0.230 – 0.280)	32.77	217.77

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA Z402529 — DATE/TIME PERFORMED: Wed Aug 24 09:03:45 2011
UNIT #: 3880TA ML4288

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	6.000	1304.0		
LARGE RING (Arm)	13.375	3540.0	0.00330	1.69902
PAD CLOSED		1619.2	0.00250	-4.04800

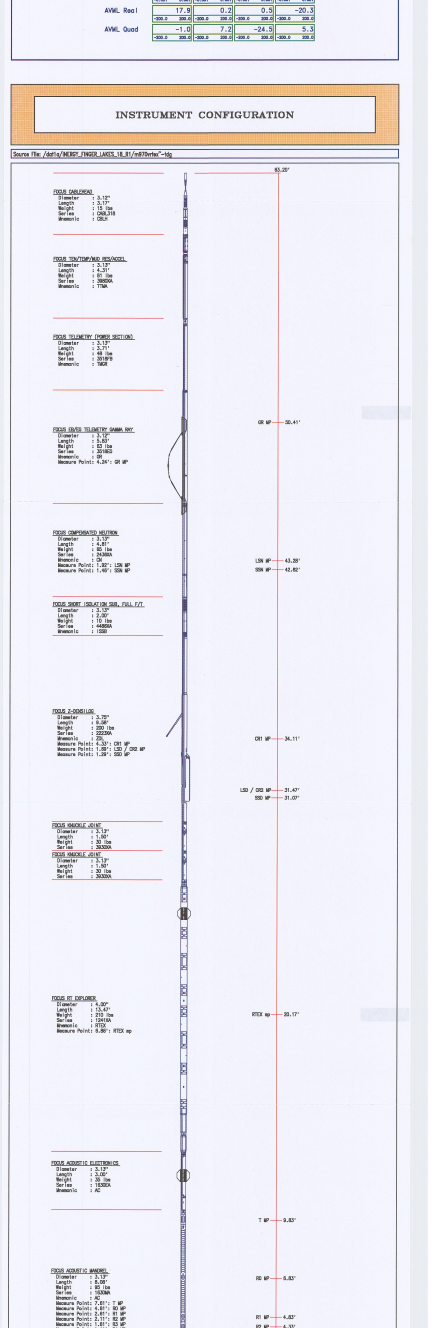
RTEX_RES PRIMARY CALIBRATION SUMMARY

TOOL #: 1241XA 11758910 — DATE/TIME PERFORMED: Wed Sep 21 11:59:53 2011
UNIT #: 3880TA ML4288

CAL FACTORS	F1	F2	F3	F4
MIOL Real	10.95 (10.57 – 11.23)	10.94 (10.57 – 11.23)	10.95 (10.57 – 11.23)	10.95 (10.57 – 11.23)
MIOL Quad	-0.01 (-0.19 – 0.19)	-0.01 (-0.19 – 0.19)	-0.01 (-0.19 – 0.19)	-0.00 (-0.19 – 0.19)
AIOL Real	-1.0 (-200.0 – 200.0)	-3.1 (-200.0 – 200.0)	-25.5 (-200.0 – 200.0)	23.1 (-200.0 – 200.0)
AIOL Quad	-26.8 (-200.0 – 200.0)	-29.4 (-200.0 – 200.0)	-11.2 (-200.0 – 200.0)	-38.2 (-200.0 – 200.0)
MIOM Real	100.4 (97.0 – 103.0)	100.4 (97.0 – 103.0)	100.4 (97.0 – 103.0)	100.4 (97.0 – 103.0)
MIOM Quad	0.245 (-1.750 – 1.750)	0.455 (-1.750 – 1.750)	0.384 (-1.750 – 1.750)	0.047 (-1.750 – 1.750)
AIOM Real	2.3 (-200.0 – 200.0)	-7.5 (-200.0 – 200.0)	-12.1 (-200.0 – 200.0)	4.9 (-200.0 – 200.0)
AIOM Quad	1.5 (-200.0 – 200.0)	31.2 (-200.0 – 200.0)	5.8 (-200.0 – 200.0)	-15.8 (-200.0 – 200.0)
MIOH Real	4000 (3857 – 4095)	3999 (3857 – 4095)	3999 (3857 – 4095)	4000 (3857 – 4095)
MIOH Quad	-9.20 (-69.40 – 69.40)	-16.93 (-69.40 – 69.40)	-14.48 (-69.40 – 69.40)	-4.60 (-69.40 – 69.40)
AIOH Real	-127 (-2000 – 2000)	-35 (-2000 – 2000)	-83 (-2000 – 2000)	-77 (-2000 – 2000)
AIOH Quad	-22 (-2000 – 2000)	183 (-2000 – 2000)	98 (-2000 – 2000)	89 (-2000 – 2000)
MVML Real	1.000 (0.999 – 1.001)	1.000 (0.999 – 1.001)	1.000 (0.999 – 1.001)	1.000 (0.999 – 1.001)
MVML Quad	0.000 (-0.001 – 0.001)	0.000 (-0.001 – 0.001)	0.000 (-0.001 – 0.001)	0.000 (-0.001 – 0.001)
AVML Real	17.9 (-200.0 – 200.0)	0.2 (-200.0 – 200.0)	0.5 (-200.0 – 200.0)	-20.3 (-200.0 – 200.0)
AVML Quad	-1.0 (-200.0 – 200.0)	7.2 (-200.0 – 200.0)	-24.5 (-200.0 – 200.0)	5.3 (-200.0 – 200.0)

INSTRUMENT CONFIGURATION

Source File: /data/INERGY_FINGER_LAKES_18_R1/m970vrtex~-tdg



TOTAL LENGTH: 63.20'
TOTAL WEIGHT: 948 lbs
MAX DIAMETER: 0'4.00"

BAKER HUGHES
Baker Atlas ECLIPS

COMPANY	INERGY MIDSTREAM, LLC.		FILE NO:
WELL	FINGER LAKES 18		
FIELD	US. SALT BRINE FIELD		API NO:
COUNTY	SCHUYLER	STATE NEW YORK	31-097-51496-00-01
LOCATION:		ELEVATIONS: KB - DF - GL 687 FT	MEASURED DEPTH
LAT 42.423106	LONG 76.896697	DATE 22-SEP-2011	