Century WIRELINE SERVICES

DIPMETER ANALYSIS

DHGH-14-21

COMPANY	ATRUM COAL		
WELL	DHGH-14-21		
FIELD	GROUNDHOG		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LSD	GROUNDHOG		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM GL		ELEVATION DF	N/A
DRL MEASURED FROM GL		ELEVATION GL	N/A
DATE	06/25/14	RIG NUMBER	2
DEPTH DRILLER	109.42	LOGGER TD	108.90
BIT SIZE	98.4	ARRIVAL TIME	10:00
LOG TOP	0.00	DEPARTURE TIME :	
LOG BOTTOM	108.00	CIRC STOPPED	N/A
CASING LOGGER	4.38		
CASING DRILLER	4.57		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	N/A		
RECORDED BY	D. SINKWICH		
REMARKS 1	VERTICAL		
REMARKS 2	:		

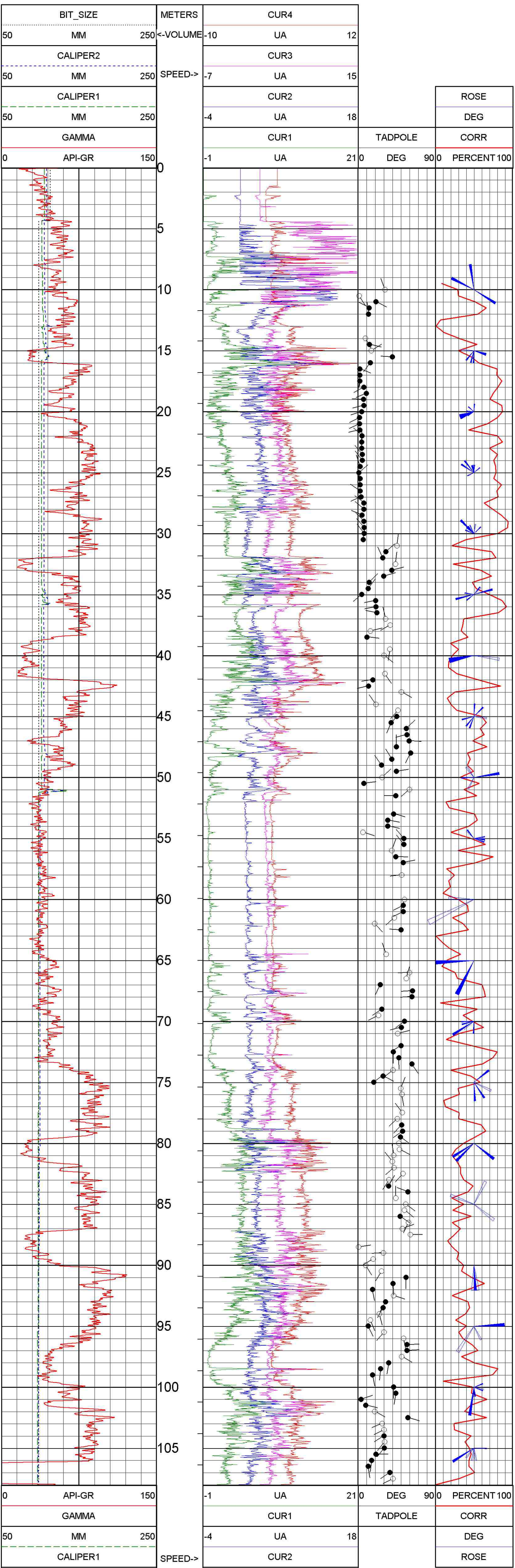
OTHER SERVICES:
NEUTP
SONIC
DEN

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

FORMATION DIP 1:200 DHGH-14-21 06/25/14

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 19.5	ELECT. CUTOFF : 75000	BIT SIZE : 98.4
PRESENTATION NAME/DATE = Atrum_9411_(200 scale).0 06/12/2014		VERSION = 3.64LG



50 MM 250		-7 UA 15
CALIPER2	<-VOLUME	CUR3
50 MM 250		-10 UA 12
BIT_SIZE	METERS	CUR4

▲ FORMATION DIP 1:200 DHGH-14-21 06/25/14 ▲

LOG PARAMETERS

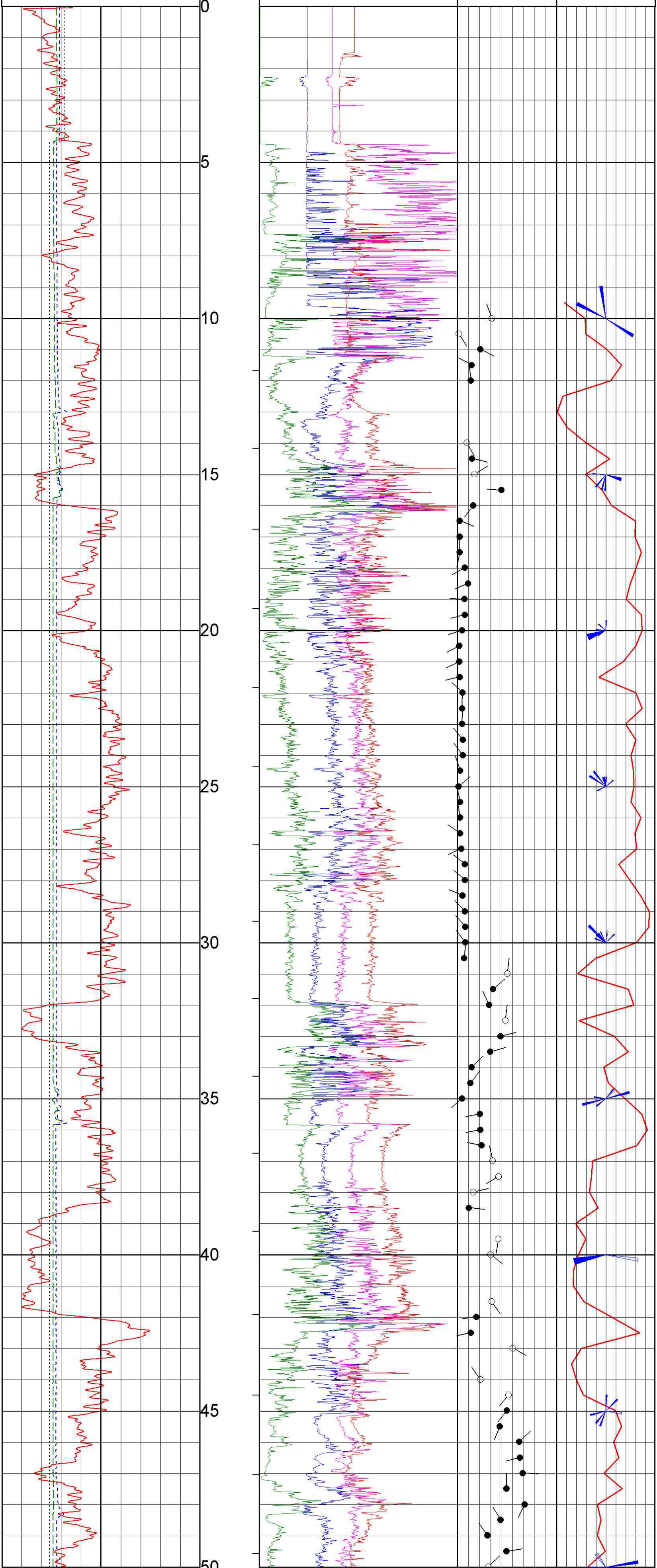
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 19.5 ELECT. CUTOFF : 75000 BIT SIZE : 98.4
PRESENTATION NAME/DATE = Atrum_9411_(200 scale).0 06/12/2014 VERSION = 3.64LG

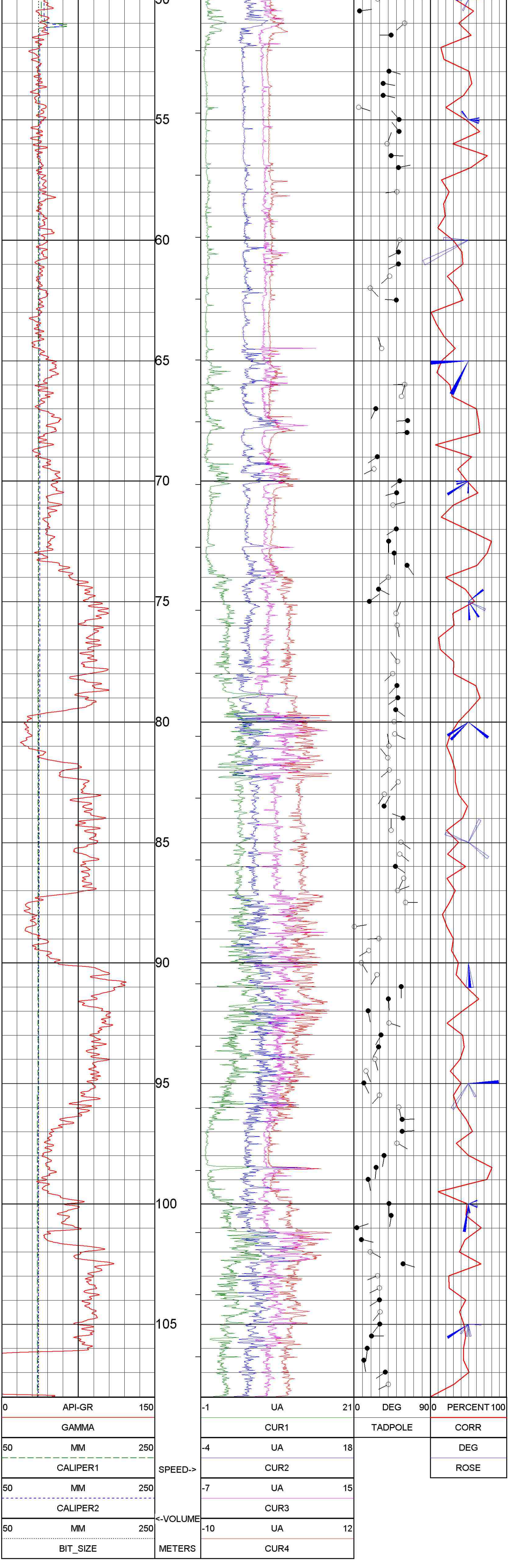
▼ FORMATION DIP 1:100 DHGH-14-21 06/25/14 ▼

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 19.5 ELECT. CUTOFF : 75000 BIT SIZE : 98.4
PRESENTATION NAME/DATE = Atrum_9411_(100 scale).0 06/12/2014 VERSION = 3.64LG

BIT_SIZE	METERS	CUR4		
50 MM 250	<-VOLUME	-10 UA 12		
CALIPER2		CUR3		
50 MM 250	SPEED->	-7 UA 15		
CALIPER1		CUR2		ROSE
50 MM 250		-4 UA 18		DEG
GAMMA		CUR1	TADPOLE	CORR
0 API-GR 150		-1 UA 21	0 DEG 90	0 PERCENT 100





FORMATION DIP 1:100 DHGH-14-21 06/25/14

LOG PARAMETERS

MATRIX DENSITY : 2.65
NEUTRON MATRIX : SANDSTONE
MATRIX DELTA T : 177
MAGNETIC DECL : 19.5
ELECT. CUTOFF : 75000
BIT SIZE : 98.4
PRESENTATION NAME/DATE = Atrum_9411_(100 scale).0 06/12/2014
VERSION = 3.64LG

```
    TOOL CALIBRATION  DHGH-14-21 06/25/14 11:58
    TOOL  9411A     TM VERSION 6
    SERIAL NUMBER    4504
      DATE      TIME               SENSOR      STANDARD                  RESPONSE
1     Sep04,13  18:17:51           GAMMA      0.100   [API-GR ]        0.000   [CPS]
      Sep04,13  18:17:51           GAMMA    545.000   [API-GR ]      519.000   [CPS]
2     May04,10  14:04:32           VOLTAGE   50.000   [MV     ]      400.000   [CPS]
      May04,10  14:04:32           VOLTAG   280.000   [MV     ]     1900.000   [CPS]
3     Jan13,14  09:54:46           CUR1       5.580   [UA     ]     8180.000   [CPS]
      Jan13,14  09:54:46           CUR1      13.250   [UA     ]    22864.000   [CPS]
4     Jan13,14  09:54:56           CUR2       5.580   [UA     ]     9045.000   [CPS]
      Jan13,14  09:54:56           CUR2      13.250   [UA     ]    22151.000   [CPS]
5     Jan13,14  09:55:08           CUR3       5.580   [UA     ]     8711.000   [CPS]
      Jan13,14  09:55:08           CUR3      13.250   [UA     ]    21601.000   [CPS]
6     Jan13,14  09:55:14           CUR4       5.580   [UA     ]     8241.000   [CPS]
      Jan13,14  09:55:14           CUR4      13.250   [UA     ]    23064.000   [CPS]
7     Dec07,13  21:40:24           CALIPER  100.000   [INCH   ]     5085.000   [CPS]
      Dec07,13  21:40:24           CALIPER  152.000   [INCH   ]     6983.000   [CPS]
8     Dec07,13  21:40:54           CALIPER  100.000   [INCH   ]     3877.000   [CPS]
      Dec07,13  21:40:54           CALIPER  152.000   [INCH   ]     5952.000   [CPS]
```