

GFZ-OSG - Logging Report
JDP – Lake Junin DP - Chinchaycocha
22-JUL - 18-AUG-2015

Statistics	
Arrival & stand-by:	24-JUL-2015
Rig-up:	02-AUG-2015, 08:00-09:00 = 1 h
Logging from/to:	02-AUG-2015, 09:00-17:40 = 8.5 h 05-AUG-2015, 06:00-19:00 = 13 h 07-AUG-2015, 08:00-19:00 = 11 h 12-AUG-2015, 07:00-11:00 = 4 h 14/15-AUG-2015, 15:30-01:00 = 9.5 h
Logging time:	46 h
Rig-down:	15-AUG-2015, 00:45-01:00 = 0.25 h
Return trip:	16-AUG – 18-AUG-2015
Total time:	84 h (shift-time on the barge)
GFZ participants:	Marco Groh, Jochem Kück, Simona Pierdominici, Martin Töpfer
Project responsables:	Don Rodbell & Mark Abbott
Cable type /Owner:	3/16" 4-conductor Rochester/OSG, crossover GO4-GO7
Winch type /Owner:	MW600/GFZ
Geobase:	5.86
Power supply:	generator
Remarks:	only upper sheave, no bottom sheave

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JDP – Lake Junin DP - Chinchaycocha
02-AUG-2015

Site Parameters	
Well:	JDP-1A
Location:	Lake Junin, Junin, Peru
Geographic Coordinates:	-11.0365 S, -76.1104 W
Depth reference driller:	top of drill head
Depth reference logger:	top of drill head
Elevation depth reference above lake:	2.20 m
Elevation of ground above sea level:	4100 m
Water depth:	8.2 m

Well Parameters (driller depth)			
Max. depth driller: 112.48 m			
<i>Casing/Liner/ OH</i>	<i>ID</i>	<i>Top/m</i>	<i>Bottom/m</i>
Casing		0	17.4
OH	PQ = 122.6 mm	17.4	112.48
Drilling method in open hole:		Tungsten core bit (OD = 138 mm)//HPC	
Type of fluid in hole:		lake water, density = 1 g/cm ³	
Remarks:	Responsible on-site Steve Cole (DES) BHA = core barrel = 4.48 m, Initial PQ pipe length in hole = 105 m, borehole was conditioned w/ bentonite mud before logging		

Logging Program JDP Lake Junin Hole 1A				
Sonde	Parameters	Log Range [m]	Date in AUG 2015	Remarks
TS1-SGR	total GR, U, K, Th	17-105	02	logged inside PQ pipe
TS1-MS	total GR, U, K, Th, magn. susceptibility, TEMP	17-105	02	logged in two sections: 105-61 m & 61-17 m
TS1-BS	total GR, waveforms, Vp	17-103	02	logged in two sections: 105-61 m & 61-17 m

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JDP – Lake Junin DP - Chinchaycocha
05-AUG-2015

Site Parameters	
Well:	JDP-1C
Location:	Lake Junin, Junin, Peru
Geographic Coordinates:	-11.03507 S, -76.11080 W
Depth reference driller:	top of drill head
Depth reference logger:	top of drill head
Elevation depth reference above lake:	2.20 m
Elevation of ground above sea level:	4100 m
Water depth:	8.2 m

Well Parameters (driller depth)			
Max. depth driller: 105.48 m			
<i>Casing/Liner/ OH</i>	<i>ID</i>	<i>Top/m</i>	<i>Bottom/m</i>
Casing		0	19.6
OH	PQ = 122.6 mm	19.6	105.48
Drilling method in open hole:	Tungsten core bit (OD = 138 mm)/HPC		
Type of fluid in hole:	lake water, density = 1 g/cm ³		
Remarks:	responsible on-site: Don Rodbell & Mark Abbott (PIs) BHA = core barrel = 4.48 m, Initial PQ pipe length in hole = 6 m, CS @ 19.6 m borehole was NOT conditioned w/ bentonite mud before logging		

Logging Program JDP Lake Junin Hole 1C				
Sonde	Parameters	Log Range [m]	Date in AUG 2015	Remarks
TS1-SGR-MS	total GR, U, K, Th, magn. susceptibility, TEMP	19.6-60	05	CS @ 19.6 m, OH log, upper section, hole was blocked @ 60m
TS1-BS	total GR, waveforms, Vp	19.6-60	05	CS @ 19.6 m, OH log
TS1-DIP	total GR, CAL1+2, DEVI, AZIM, mag. field, el.resistivity	19.6-60	05	CS @ 19.6 m, OH log
				ream hole
TS1-MS	magn. susceptibility, TEMP	50-70	05	CS @ 62 m, OH log, hole was blocked @ 70m
				ream hole
TS1-SGR	total GR, U, K, Th	60-97	05	CH log inside PQ pipe
TS1-MS	magn. susceptibility, TEMP	74-97	05	CS @ 74 m, OH log, hole was blocked @ 97m
TS1-MS	magn. susceptibility, TEMP	14-30	05	CS @ ?? m, OH log, uppermost section

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JDP – Lake Junin DP - Chinchaycocha
07-AUG-2015

Site Parameters	
Well:	JDP-1D
Location:	Lake Junin, Junin, Peru
Geographic Coordinates:	-11.03507 S, -76.11083 W
Depth reference driller:	top of drill head
Depth reference logger:	top of drill head
Elevation depth reference above lake:	2.20 m
Elevation of ground above sea level:	4100 m
Water depth:	8.2 m

Well Parameters (driller depth)			
Max. depth driller: 107.35 m			
<i>Casing/Liner/OH</i>	<i>ID</i>	<i>Top/m</i>	<i>Bottom/m</i>
Casing		0	23.2
OH	PQ = 122.6 mm	23.2	107.35
Drilling method in open hole:	Tungsten core bit (OD = 138 mm)//HPC		
Type of fluid in hole:	lake water, density = 1 g/cm ³		
Remarks:	Responsible in the shift: nobody BHA = core barrel = 4.48 m, initial PQ pipe length in hole = 50 m, CS @ 23.2 m borehole was conditioned w/ bentonite mud before logging		

Logging Program JDP Lake Junin				
Sonde	Parameters	Log Range [m]	Date in AUG 2015	Remarks
TS1-SGR-MS	total GR, U, K, Th, magn. susceptibility, TEMP	50-105	07	PQ bit @ 50 m, OH log, blocked @ 60m
TS1-BS	total GR, waveforms, Vp	55-104	07	PQ bit @ 50 m, OH log, blocked @ 60m
TS1-DIP	total GR, CAL1+2, DEVI, AZIM, magn. field, elec. resistivity	55-104	07	PQ bit @ 50 m, OH log, blocked @ 60m
TS1-SGR	total GR, U, K, Th	8-36	07	CS @ 23.2 m, OH+ CH log, blocked @ 36 m
TS1-BS	total GR, waveforms, Vp	24-36	07	CS bit @ 23.2 m, OH+ CH log, blocked @ 36 m
TS1-SGR	total GR, U, K, Th	24-70	07	PQ bit @ ?? m, CH log inside PQ pipe
TS1-MS	total GR, U, K, Th, magn. sus., TEMP	43-72	07	OH log, PQ bit @ ?? m, hole blocked @ ?? m,
TS1-MS	total GR, U, K, Th, magn. sus., TEMP	37-50	07	OH log, PQ bit @ ?? m, hole blocked @ ?? m,

GFZ-OSG - Logging Report
JDP – Lake Junin DP - Chinchaycocha
12-AUG-2015

Site Parameters	
Well:	JDP-2A
Location:	Lake Junin, Junin, Peru
Geographic Coordinates:	-11.03507 S, -76.11083 W
Depth reference driller:	top of drill head
Depth reference logger:	top of drill head
Elevation depth reference above lake:	2.2 m
Elevation of ground above sea level:	4100 m
Water depth:	3.9 m

Well Parameters (driller depth)			
Max. depth driller: 31.9 m			
<i>Casing/Liner/OH</i>	<i>ID</i>	<i>Top/m</i>	<i>Bottom/m</i>
Casing		0	11.6
OH	PQ = 122.6 mm	11.6	31.9
Drilling method in open hole:	Tungsten core bit (OD = 138 mm)/HPC		
Type of fluid in hole:	lake water, density = 1 g/cm ³		
Remarks:	Responsible in the shift: Steve Cole BHA = core barrel = 4.48 m, casing pipe = 5.8 m		

Logging Program JDP Lake Junin				
Sonde	Parameters	Log Range [m]	Date in AUG 2015	Remarks
TS1-SGR	total GR, U, K, Th	2.5-22.4	12	PQ bit @ bottom, CH log inside PQ pipe
TS1-MS	total GR, U, K, Th, magn. sus., TEMP	5.8-22.4	12	OH log, CS @ 5.8 m, hole blocked @ 22.4 m
TS1-DIP	total GR, CAL1+2, DEVI, AZIM, magn. field, elec. resistivity	11.6-22.4	12	OH log, CS @ 11.6 m, hole blocked @ 22.4 m

GFZ-OSG - Logging Report
JDP – Lake Junin DP - Chinchaycocha
14/15-AUG-2015

Site Parameters	
Well:	JDP-3B
Location:	Lake Junin, Junin, Peru
Geographic Coordinates:	-11.03... S, -76.11... W
Depth reference driller:	top of drill head
Depth reference logger:	top of drill head
Elevation depth reference above lake:	2.20 m
Elevation of ground above sea level:	4100 m
Water depth:	5.9 m

Well Parameters (driller depth)			
Max. depth driller: 58.5 m			
<i>Casing/Liner/OH</i>	<i>ID</i>	<i>Top/m</i>	<i>Bottom/m</i>
Casing		0	13.3
OH	PQ = 122.6 mm	13.3	58.5
Drilling method in open hole:	Tungsten core bit (OD = 138 mm)/HPC		
Type of fluid in hole:	lake water, density = 1 g/cm ³		
Remarks:	Responsible in the shift: Steve Cole, Jess BHA = core barrel = 4.48 m		

Logging Program JDP Lake Junin				
Sonde	Parameters	Log Range [m]	Date in AUG 2015	Remarks
TS1-SGR	total GR, U, K, Th	5 - 58	14	CS @ 13.3 m, CH log, PQ pipe @ bottom
TS1-SGR-MS	total GR, U, K, Th, magn. susceptibility, TEMP	5 - 55	14	CS @ 13.3 m, OH logs
TS1-DIP	total GR, CAL1+2, DEVI, AZIM, magn. field, elec. resistivity	13.3 - 55	14/15	CS @ 13.3 m, OH logs, arms closed
TS1-BS	total GR, waveforms, Vp	11.3 - 55	14/15	CS @ 13.3 m, OH logs