START DATE: 23.06.2011 END DATE: 03.07.2011								ING DIAMETER (M): 146-127-108	ВС	REH	HOL	Ε	No	. BH-SB1-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB 50 M DRILLING CONTRACTOR: GeoEng. DRILLER: DJ. Chokheli							DRII	LING DIAMETER (M): 152-93	Coordi X(m): 3 Y(m): 4 Z(m):	38T 286 167110		.94		
	SA	AMPLE	CORE RE	ECO\	/ERY		٦					Sta	ındar	d Penetration Test
<b>D</b>	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF S	ΓRΑΤΑ	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
.0	2.0							Moist, brown, stiff, intermediatel sandy CLAY with plant roots, wi rounded gravel content (TOPSC Moist, brown, stiff, intermediately silty CLAY with a little rounded g content	th a little PIL) plastic					0 10 20 30 40
3.0 4.0		D	1 3.0-3.3											
.0		D	2 5.7-6.0											
.0		D	3 8.0-8.4					Saturated, grayish-brownish, de rounded GRAVEL with silty sar with rounded cobbles inclusion	ıd matrix,					
0.0 1.0 2.0 3.0		D D	4 11.7-12.0 5 12.5-12.8											
4.0 5.0		D.	6 14.8-15.0	5										

GEOENGINEERING	Project Name:  Geotechnical Investigation for New Kutaisi Bypass-Samtredia Road Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia	Contract No. GC 1128  PAGE 1 / 2
SPT not performed TCR - total core recovery SCR - solid core recovery	GROUND WATER INFLOW LEVEL (m) - 4.3 GROUND WATER STANDING LEVEL (m) - 4.3	Logged by: Sh. Lomidze

START DATE: 23.06.2011 END DATE: 03.07.2011	CASING DIAMETER (M): 146-127-108	BOREHOLE No. BH-SB1-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB 50 M DRILLING CONTRACTOR: GeoEng. DRILLER: DJ. Chokheli	DRILLING DIAMETER (M): 152-93	Coordinates: X(m): 38T 286400.94 Y(m): 4671103.29 Z(m): 26.46

DRIL	DRILLING CONTRACTOR: GeoEng. DRILLER: DJ. Chokheli						Y(m): 467 Z(m): 26.								
	SA	AMPLE	CORE RE	ECOV	'ERY	ERY 5						Sta	ndar	d Penetration Test	
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
SPT 1	ARKS: not perfi- total c- solid c	ormed ore rec			G	RO	JND /	Saturated, grayish-brownish, den rounded GRAVEL with silty sand with rounded cobbles inclusions  NATER STANDING LEVEL (m) - 4.  Project Name:	· 4.3					by: Sh. Lomidze	
GE	OEN	GIN	EERIN	IG	Ro	ad S	ection	al Investigation for New Kutaisi Bypass-S of the Preparation of Detail Design and C of Zestafoni-Kutaisi-Samtredia Road Sec E-60 Highway in Georgia	onstruction	ction			PAGE 2 / 2		

START DATE: 02.07.2011 END DATE: 08.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB1-2
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 286297.13 Y(m): 4671083.37 Z(m): 23.98

DRIL	DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri						ng. DRILLING DIAMETER (M): 152-92 X(m): 38 Y(m): 46 Z(m): 23							
	SA	AMPLE/	CORE RI	ECOV	ÆRY	RY 7						Sta	ındar	rd Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
	2.0	D	1 0.4-2.0					Moist, brown, stiff, intermediately sandy CLAY with plant roots and little rounded gravel content (TOF Saturated, grayish-brownish, dens GRAVEL with silty sand matrix, wit cobbles inclusions	with a PSOIL) e, rounded		35	38	40	9 10 20 30 40 50
5.0		D	$\frac{2}{4.0-5.0}$ $\frac{3}{7.0-8.0}$											
9.0		D -	4 10.0-11.0					Saturated, grayish-brownish, very rounded GRAVEL with silty sand with rounded cobbles inclusions			26	27	35	
13.0		р -	5 13.0-14.0											
SPT 1	ARKS: not performation of the contract of the	ormed ore rec			G	ROL	JND \	VATER INFLOW LEVEL AT (m) - 24 VATER STANDING LEVEL (m) - 24 vater observed from 28.0 m depth				Lo	gged	l by: N. Duluzauri
GE	OEN	GINE	EERIN	IG	Ro	ad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-S of the Preparation of Detail Design and C of Zestafoni-Kutaisi-Samtredia Road Sec E-60 Highway in Georgia	onstruction					ect No.GC-1128

START DATE: 02.07.2011 END DATE: 08.07.2011							CASING DIAMETER (M): 146-108 BOREHOLE No. B				BH-SB1-2			
DRIL DRIL	LING E	QUIPI ONTR	: Dry rotar MENT: Y RACTOR: zauri	ГБ-50	0		DR	ILLING DIAMETER (M): 152-92		8T 28 67108	T 286297.13 71083.37			
	SA	MPLE/	CORE RE	COV	ERY		ا ا					Sta	ndar	rd Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
15.0 16.0 17.0 17.0 18.0 19.0 20.0 21.0 21.0 23.0 24.0	24.2	ם ם	6 16.0-17.0 7 19.0-20.0					Saturated, grayish-brownish, very rounded GRAVEL with silty sand r with rounded cobbles inclusions			39	<u>50</u> 6sm	-	D 10 20 30 40 50
25.0	28.0	ט ט	24.2-24.5 9 25.2-25.4 10 27.0-27.3					Moist, bluish-graish, stiff, intermed plastic silty CLAY with a little round gravel content and with organic co	led		8	10	15	
29.0		D	11 29.0-30.0					Saturated, grayish-brownish, very rounded GRAVEL with silty sand r with rounded cobbles inclusions						
SPT n	ARKS: not performation of total contraction of the	ore rec			G	ROL	JND \	NATER INFLOW LEVEL AT (m) - NATER STANDING LEVEL (m) - 28 water observed from 28.0 m depth				Lo	gged	l by: N. Duluzauri
GE	OEN	GINE	EERIN	G	Ro	oad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-Si of the Preparation of Detail Design and Co of Zestafoni-Kutaisi-Samtredia Road Sect E-60 Highway in Georgia	onstruction					ect No.GC-1128

Annex 6, Page 33/65

START DATE: 02.07.2011 END DATE: 08.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB1-2
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: УГБ-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 286297.13 Y(m): 4671083.37 Z(m): 23.98

DRIL	DRILLER: M. Duluzauri Z(m):						(m): 2	23.98							
	SA	AMPLE	CORE R	RECOVERY							Standard Penetration Test				
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRA	ATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
SPT 1 TCR	ARKS: not perfort total c	ore rec			l G	ROU	JND \	Saturated, grayish-brownish, very der rounded GRAVEL with silty sand mat with rounded cobbles inclusions  WATER INFLOW LEVEL AT (m) - 1.0 WATER STANDING LEVEL (m) - 28.0 water observed from 28.0 m depth	trix,		30			by: N. Duluzauri	
GE	OEN	GINE	EERIN	1G	Ro	oad S	ection	al Investigation for New Kutaisi Bypass-Samtı of the Preparation of Detail Design and Const of Zestafoni-Kutaisi-Samtredia Road Section E-60 Highway in Georgia	truction						

DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT :UGB -50M DRILLING CONTRACTOR :GeoEng. DRILLER :V .Chigogidze  Coordinates: X(m): 38T 286199.21 Y(m): 4671069.13 Z(m): 23.13	START DATE: 20.06.2011 END DATE: 05.07.2011	CASING DIAMETER (M): 146-127	BOREHOLE No. BH-SB1-3
	DRILLING EQUIPMENT :UGB -50M DRILLING CONTRACTOR :GeoEng.		X(m): 38T 286199.21 Y(m): 4671069.13

DRIL	DRILLING CONTRACTOR :GeoEng. DRILLER :V .Chigogidze																	
		SAMPLE	CORE RE	ECOV	COVERY			ERY ♂						Standard Penetration Test				
Depth, m	Depth of base of layer, m	TYPE	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm <sup>2</sup> (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows				
0.0	0.4		CBR 0.4-2.0					Moist, brown, stiff, intermediately sandy CLAY with plant roots, with rounded gravel content (TOPSOI	n a little					0 10 20 30 40 50				
3.0		disturbed	2 2.0-2.4					Ceturated gravial brown dance		21	29	37						
5.0		disturbed	3 5.0-5.5					Saturated, grayish brown, dense rounded GRAVEL with silty sand with rounded cobbles inclusions	d matrix,	31	50/ 12cm							
7.0 - 8.0 - 9.0	9.3	disturbed	4 6.7-7.0							27	34	53						
11.0	9.8	disturbed •	5 11.7-12.0					Saturated, grayish, silty SAND wincounded gravel content  Saturated, grayish brown, very drounded GRAVEL with silty sand with rounded cobbles inclusions	ense,	24	33	50/ 9cm						
14.0 - 15.0	I A D.V.	disturbed	6 14.5-14.9			2011		TER INFO OWN IF VELAT (cr.) (III avel 4.0)	0)	28 19 33								
SPT :	- total	rformed core red core red				ROUND WATER INFLOW LEVEL AT (m) - (I-Level-1.02) I-Level-23.3- ARTESIAN WATER)				Lo	gged	l by: S	Sh. Lomidze					
GE	OEN	NGINE	EERIN	G	Roa	ad Se	ction c	Project Name: I Investigation for New Kutaisi Bypass-Se If the Preparation of Detail Design and Co If Zestafoni-Kutaisi-Samtredia Road Secti E-60 Highway in Georgia	nstruction									

START DATE: 20.06.2011 END DATE: 05.07.2011	CASING DIAMETER (M): 146-127	BOREHOLE No. BH-SB1-3
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT :UGB -50M DRILLING CONTRACTOR :GeoEng. DRILLER :V .Chigogidze	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 286199.21 Y(m): 4671069.13 Z(m): 23.13

DRILLING CONTRACTOR: GeoEng. DRILLER: V. Chigogidze							g.   Y(II): 467 Z(m): 23.				13			
	5	SAMPLE	CORE RE	ECOV	'ERY		7					Sta	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF S	TRATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
15.0 16.0 17.0 18.0 19.0 20.0 21.0 22.0 23.0	23.3	dlsturbed	7 16.3-16.9 8 17.7-18.0					Saturated, grayish brown, very rounded GRAVEL with silty sa with rounded cobbles inclusion	nd matrix,	38	50/ 13cm 50/ 7cm			0 10 20 30 40 50
24.0 - 25.0 - 26.0 - 27.0 - 28.0	28.7	disturbed	10 24.15-24.45					Moist, graysh blue, stiff, interme plastic silty CLAY with a little rou gravel content	diately unded	8	11 10 50/ 6cm	13		
29.0	30.0							Saturated, grayish brown, very rounded GRAVEL with silty sar with rounded cobbles inclusion	nd matrix,					
SPT TCR	REMARKS: GRC (II-L) SPT not performed TCR - total core recovery SCR - solid core recovery					GROUND WATER INFLOW LEVEL AT (m) - (I-Level-1.02) (II-Level-23.3- ARTESIAN WATER)				Logged by: Sh. Lomidze				
	Geo							Project Name: al Investigation for New Kutaisi Bypass- of the Broggration of Detail Design and				Con	tract	No.GC-1128
GE	GEOENGINEERING							of the Preparation of Detail Design and of Zestafoni-Kutaisi-Samtredia Road Se E-60 Highway in Georgia			PAGE 2 /2			

START DATE: 06.05.2011 END DATE: 16.05.2011	CASING DIAMETER (M): 146-127	BOREHOLE No. BH-SB1-4
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT :UGB-50 DRILLING CONTRACTOR :GeoEng. DRILLER :G. Lomidze	DRILLING DIAMETER (M): 152-92	Coordinates: X(3): 38T 286098.05 Y(3): 4671062.06 Z(m): 22.58

	SA	MPLE/	CORE RE	ECO\	/ERY		ا ا				Sta	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
0.0	0.1	disturbed.	CBR					Moist, brown, stiff, intermediately plastic sandy CLAY with plant roots and with a little rounded gravel content (TOPSOIL)					0 10 20 30 40 50 60
2.0			0.1-2.0							14	17	24	
4.0		disturbed.	$\frac{1}{4.0-4.3}$					Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions		11	18	31	
5.0	6.4	disturbed.	2 5.7-6.0							20	37 <u>50</u>	<u>50</u> 9	
7.0		disturbed.	3 6.5-7.0							24	11		
9.0		disturbed.	4 9.3-9.8					Saturated, grayish-brownish, very dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions		16	44	<u>50</u> 9	
11.0		disturbed.	5 11.5-12.0							21	40	50 12	
13.0	12.8 13.5	disturbed.	6 12.8-13.0 7 13.1-13.3					Moist, graish-bluish, stiff, intermediately plastic CLAY with a little rounded gravel content	2.3	24	37	<u>50</u> 8	
14.0		disturbed.	8 14.7-15.0					Saturated, grayish-brownish, very dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions			50 12cr		
REM. SPT n TCR	ARKS: ot perfo total cosolid c	ore rec						ATER INFLOW LEVEL AT (m) - (I-Level-0.10) ARTESIAN WATER)	Logged by: D. Sirbiladze				
GEOENGINEERING  GEOENGINEERING  Geotechnical Investigation for Road Section of the Preparation Supervision of Zestafoni-Kuta			Project Name: al Investigation for New Kutaisi Bypass-Samtredia of the Preparation of Detail Design and Construction of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia				ontra 'AGE	ct No.GC-1128					

START DATE: 06.05.2011 END DATE : 16.05.2011	CASING DIAMETER (M): 146-127	BOREHOLE No. BH-SB1-4
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT :UGB-50 DRILLING CONTRACTOR :GeoEng. DRILLER :G. Lomidze	DRILLING DIAMETER (M): 152-92	Coordinates: X( $\theta$ ): 38T 286098.05 Y( $\theta$ ): 4671062.06 Z(m): 22.58

	1							'					
		MPLE/	CORE RE	COV	'ERY		30L				Sta	ındar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
15.0 16.0 17.0 17.0 18.0 19.0 	21.3	disturbed.	9 17.6-18.0 10 19.0-19.3					Saturated, grayish-brownish, very dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions		29	50 11 50 11		
22.0	22.2	disturbed.	11 21.7-22.0 12 22.6-22.8					Very moist, gray, dens, silty SAND with a little rounded gravel content  Saturated, grayish-brownish, very dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions	2.1	39 9	41 11	25 13	
24.0	26.2	Undisturbed Undisturbed	13 24.1-24.3 14 25.3-25.6					Moist, graish-bluish, stiff, intermediately plastic CLAY with a little rounded gravel content		12	22		
27.0	30.0	Distarbed	15 27.5-28.0 16 29.0-29.5					Saturated, grayish-brownish, very dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions		38	<u>50</u> 12		
REMA SPT n TCR -	REMARKS: GF					GROUND WATER INFLOW LEVEL AT (m) - (I-Level-0.10) (II-Level-26.2- ARTESIAN WATER)				Log	gged	by: D. Sirbiladze	
CECENCINEEDING					Project Name: Geotechnical Investigation for New Kutaisi Bypass-Samtredia				Contract No.GC-1128				
GEOENGINEERING							of the Preparation of Detail Design and Construction of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia			F	AGE	2 /2	

START DATE: 06.06.2011 END DATE: 19.06.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB1-5
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB50 DRILLING CONTRACTOR: GeoEng. DRILLER: V .Chigogidze	DRILLING DIAMETER (M): 152-92	Coordinates: X(a): 38T 286011.95 Y(a): 4671043.91 Z(a): 22.69

DRILLING CONTRACTOR: GeoEng. DRILLER: V .Chigogidze								Y(θ): Z(θ):			91			
	SA	AMPLE	/CORE RE	ECOV	ERY		)L					Sta	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kalam²	(pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
0.0	0.3	U	$\frac{1}{0.4\text{-}0.6}$					Moist, brown, stiff, intermediately plastic sandy CLAY with plant roots and with a little rounded gravel content (TOPSOIL)						0 10 20 30 40 50
2.0		D	$\frac{2}{1.0-2.0}$					Moist, brown, stiff, intermediately plastic silty CLAY with a little rounded gravel content	,		10	15	16	
3.0		D	$\frac{3}{4.0-5.0}$					Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions			13	18	20	
6.0	6.0	D	4 6.0-6.5								22	44	<u>50</u> 6cm	
- 7.0 - 8.0 - 9.0								Saturated, grayish-brownish, very dense	1		28	<u>50</u> 14cm		
-10.0 		D	5 11.3-11.7					rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions			27	<u>50</u> 9cm		
13.0	13.8	D D	6 13.5-13.8 7 14.5-14.8					Very moist, brown, firm, low plastic sand clayey SILT with a little rounded gravel content	у		32	<u>50</u> 7cm		
REMA SPT n TCR -	REMARKS: SPT not performed GRC					VATER INFLOW LEVEL AT (m) - 0.15 VATER STANDING LEVEL (m) - 0.10		L		Log		by: D. Sirbiladze		
GE	GEOFNGINFFRING Road			ad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-Samtredia of the Preparation of Detail Design and Construct	on			С	ontra	ct No.GC-1128		
GEOENGINEERING				s	Superv	vision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia		e	PAGE 1 /2					

START DATE: 06.06.2011 END DATE: 19.06.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB1-5
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB50 DRILLING CONTRACTOR: GeoEng. DRILLER: V .Chigogidze	DRILLING DIAMETER (M): 152-92	Coordinates: X(∂): 38T 286011.95 Y(∂): 4671043.91 Z(∂): 22.69

DRILLER: V .Chigogidze		Z(θ): 22.69					
SAMPLE/CORE RECOVE	RY J				Star	ndar	d Penetration Test
Depth of U-Depth of San	SCR % RQD % LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
D 8 16.0-17.0	GROUND \	Saturated, grayish-brownish, very dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions  WATER INFLOW LEVEL AT (m) - 0.15  WATER STANDING LEVEL (m) - 0.10  Project Name: al Investigation for New Kutaisi Bypass-Samtredia		39		gged	by: D. Sirbiladze
GEOENGINEERING	Road Section	of the Preparation of Detail Design and Construction of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia		PAGE 2 /2			

START DATE: 16.06.2011 END DATE: 24.06.2011							CAS	ING DIAMETER (M): 146	ВОР	REH	IOL	E.	No	. BH-SB1-6
DRIL DRIL	LING E	QUIPI ONTF	Dry rotar MENT: U ACTOR zauri	GB5	Ō		DRII	LING DIAMETER (M): 152	Coordina X(m):285 Y(m): 46 Z(m): 23	5901. 7103				
	SA	AMPLE	CORE RE	ECOV	ÆRY							Sta	ındar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
	0.3 1.5 2.0	D D	$\frac{1}{0.3-1.0} \frac{2}{1.0-1.3}$					Moist, brown, stiff, intermediately sandy CLAY with plant roots and little rounded gravel content (TOF Moist, brown, stiff, intermediately pla CLAY with a little rounded gravel cor Very moist, gray, firm, low plastic sa clayey SILT CLAY with a little rounded content	with a PSOIL) stic silty ntent		14	21	24	0 10 20 30 40 50
4.0		D	3 3.5-4.0					Saturated, grayish-brownish, dens rounded GRAVEL with silty sand r	e, natrix,		19	17	20	
6.0		D	4 6.0-6.5					with rounded cobbles inclusions			22	25	23	
9.0	8.0	D	5 8.5-9.0								36	32	37	
11.0		D ·	6 10.5-11.0	•				Saturated, grayish-brownish, very rounded GRAVEL with silty sand r with rounded cobbles inclusions			29	30	35	
13.0		D ·	7 13.0-14.0	•							35	39	42	
TCP total core recovery GRO					G	ROL	JND \	NATER INFLOW LEVEL AT (m) - NATER STANDING LEVEL (m) - 27 water observed from 27.5 m depth				Lo	gged	l by: N. Duluzauri
GEOFNGINFFRING Road					Ro	oad Se	ection	Project Name: Geotechnical Investigation for New Kutaisi Bypass-Samtredia oad Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia						ect No.GC-1128

START DATE: 16.06.2011 END DATE: 24.06.2011	CASING DIAMETER (M): 146	BOREHOLE No. BH-SB1-6
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152	Coordinates: X(m):285901.48 Y(m): 4671031.10 Z(m): 23.17

DRILLER: M. Duluzauri		Z(m): 23.17	
SAMPLE/CORE RECOVE	RY 5	Stand	dard Penetration Test
Depth, m Depth of base of layer, m TYPE: U - undisturbed D - Disturbed Sample No Sample section TCR %	RQD % RQD % DESCRIPTION  DESCRIPTION	PP kg/cm² (pocket Penetrometer) 0-15cm 15-30cm	SPT N-blows
	Saturated, grayish-brown rounded GRAVEL with swith rounded cobbles in the cobbles	ilty sand matrix,	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Moist, gray, stiff, interme CLAY with little rounded (with organic content)	gravel content	12
28.0  28.7  29.0  30.0  REMARKS: SPT not performed TCR - total core recovery	Saturated, grayish-brown rounded GRAVEL with s with rounded cobbles incomplete a little rounded grayel complete GROUND WATER INFLOW LEVEL GROUND WATER STANDING LEVEL	ilty sand matrix, clusions  e, silty SAND with ntent  AT (m) - 1.2 cl. (m) - 27.5	ged by: N. Duluzauri
SCR - solid core recovery  GEOENGINEERING	Pressured water observed from 27.5  Project Name: Geotechnical Investigation for New Kutai Road Section of the Preparation of Detail Di Supervision of Zestafoni-Kutaisi-Samtredi E-60 Highway in Georg	si Bypass-Samtredia Cor esign and Construction a Road Section of the	ntract No.GC-1128 AGE 2 / 3

Annex 6, Page 42/65

START DATE: 16.06.2011 END DATE: 24.06.2011	CAS	CASING DIAMETER (M): 146			REHOLE No. BH-SB1-6			
DRILLING METHOD: Dry rotary (single DRILLING EQUIPMENT: UGB50 DRILLING CONTRACTOR: GeoEr DRILLER: M. Duluzauri	DRI	ILLING DIAMETER (M): 152	Coordinat X(m):2859 Y(m): 467 Z(m): 23.	5901.48 671031.10				
SAMPLE/CORE RECOVER	KA [				Standa	rd Penetration Test		
Depth of U-Depth of Sar	SCR % RQD % LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	(pocket Penetrometer) 0-15cm	15-30cm 30-45cm	SPT N-blows		
30.0  -31.0  -32.0  -33.0  -34.0  -35.0  -35.0  -36.0  -37.0  -38.0  -40.0  -41.0  -42.0  -44.0  -45.0  REMARKS:		Saturated, grayish, dense, silty SA a little rounded gravel content	ND with					
SPT not performed TCR - total core recovery SCR - solid core recovery	GROUND '	OUND WATER INFLOW LEVEL AT (m) - 1.2 OUND WATER STANDING LEVEL (m) - 27.5 sured water observed from 27.5 m depth			Logged by: N. Duluzauri			
GEOENGINEERING	Road Section	Project Name: ical Investigation for New Kutaisi Bypass-S. n of the Preparation of Detail Design and Co n of Zestafoni-Kutaisi-Samtredia Road Sect E-60 Highway in Georgia	onstruction –			act No.GC-1128 E 3 / 3		

	START DATE: 20.06.2011 END DATE: 20.06.2011						CASING DIAMETER (M): 127					REHOLE No. BH-SE-12				
DRIL DRIL	LING E	QUIPN ONTR	Dry rotar MENT: B ACTOR ashvili	GM1			DRILLING DIAMETER (M): 132; 112					5234.32 70975.68				
	SA	AMPLE/	CORE RE	ECOV	/ERY		٦						Sta	ındar	rd Penetration Test	
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	'RAT/	A	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
0.0	0.3							Moist, Brownish-graysh, angular GRAVEL sand matrix-FILL	with silt	ty					0 10 20 30 40 50	
		D	$\frac{1}{0.4-2.0}$ $\frac{2}{2.0-2.3}$					Molst, brown, stiff, intermediately plas CLAY with a little rounded gravel con		у						
3.0	2.5	D	3 4.0-4.3 4 5.7-6.0					Saturated, grayish-brownish, dens rounded GRAVEL with silty sand r with rounded cobbles inclusions		,						
SPT r TCR SCR	REMARKS: SPT not performed						JND '		8 amtred						by: S. Lomidze	
GE	GEOENGINEERING  Geotechnical Investigation for New Kutaisi Bypass-Samtredia Road Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia  CONTRACT NO. GC-1126  PAGE 1 / 1															

START DATE: 02.08.2011 END DATE: 05.08.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB6-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 285234.59 Y(m): 4670978.53 Z(m): 25.28

DR	RILLING ( RILLER: N	CONTR	RACTOR zauri												
	s	AMPLE.	CORE R	ECOV	ÆRY		7.					Sta	ındar	rd Penetration Test	
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
11 11 12 13 14 15 15 RE SPT	0 0.3 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ormed	1 0.0-2.0 2 7.0-8.0			GROU- BROU-		Moist, grayish-brownish, angular GRAVEL sand matrix (MADE GROUND)  Moist, brown, stiff, intermediately plastic si with a little rounded gravel content  Saturated, grayish-brownish, very dense, r GRAVEL with silty sand matrix, with round cobbles inclusions  WATER INFLOW LEVEL AT (m) - 2.	rounded ed		25	38	50 8sm	b 10 20 30 40 50	
	R - solid			IG	Ro	ad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-S of the Preparation of Detail Design and C of Zestafoni-Kutaisi-Samtredia Road Sect E-60 Highway in Georgia	onstruction					act No.GC-1128 E 1 / 3	

START DATE: 02.08.2011 END DATE: 05.08.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB6-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 285234.59 Y(m): 4670978.53 Z(m): 25.28

DRIL		ONTR	ACTOR zauri									72978.53 5.28				
	SA	MPLE/	CORE R	ECOVI	ERY		٦						Sta	ındar	d Penetration Test	
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION O	F ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
15.016.017.018.019.020.021.022.023.024.025.026.0	26.0	D	4 25.0-26.0 5			T. DOWN DAWN DAWN SDAWN DAWN DAWN DAWN DAWN DAWN DAWN DAWN		Saturated, grayish-brownish, ver GRAVEL with silty sand matrix, v cobbles inclusions	y dense, r	ounded ed		36	50			
	ARKS:	U U U	26.0-26.2 6 27.1-27.2 7 28.7-28.3 8 29.7-29.9		GR	:OUI	ND V	Moist, gray-bluish, stiff, intermedi CLAY with a little rounded gravel	content	2.5		6	10sm	7		
TCR -	total co	ore rec	recovery GRC recovery				GROUND WATER STANDING LEVEL (m) - 2.5					Logged by: N. Duluzauri				
GE	GEOFNGINFERING Road Se				d Sec	ction	Project Name: al Investigation for New Kutaisi E of the Preparation of Detail Desig	in and Co	nstruction					act No.GC-1128		
					Su	pervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia			PAGE 2 / 3							

		· · · · · · · · · · · · · · · · · · ·
START DATE: 02.08.2011 END DATE: 05.08.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB6-1
DRILLING METHOD: Dry rotary (singl DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: Geob DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 285234.59 Y(m): 4670978.53 Z(m): 25.28
SAMPLE/CORE RECOVE	Y 7	Standard Penetration Test

DRIL		ONTR	RACTOR:	TOR: GeoEng.									70978.53 .28			
	SA	AMPLE	CORE RE	COV	'ERY		J.					Sta	ndar	rd Penetration Test		
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm <sup>2</sup> (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows		
30.0	31.0	U	9 30.5-30.7				8	Moist, gray-bluish, stiff, intermediately pla CLAY with a little rounded gravel content	stic silty					0 10 20 30 40 50		
SPT n	31.0  ARKS: ot perfectotal c		10 32.0-34.0					Saturated, grayish-brownish, very dense, GRAVEL with silty sand matrix, with roun cobbles inclusions  VATER INFLOW LEVEL AT (m) - VATER STANDING LEVEL (m) - 2	- <b>2.</b> 5		34	40 Lo		by: N. Duluzauri		
SCR -	solid c	ore rec	covery									C	ontra	act No.GC-1128		
GE	OEN	GIN	EERIN	NG Road Sec			Geotechnical Investigation for New Kutaisi Bypass-Samtredia Road Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia			7	PAGE 3 / 3					

	START DATE: 07.07.2011 END DATE: 07.07.2011						CASING DIAMETER (M): 146					REHOLE No. BH-SE-12-1				
DRIL DRIL	LING E	QUIPI ONTR	Dry rotar MENT: U ACTOR: shvili	GB 5	50 M		DRILLING DIAMETER (M): 152 X(m): 38T					Г 284802.60 70960.51				
	SA	MPLE/	CORE RE	ECOV	'ERY		OL				Standard Penetration Test					
aleò@deO	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows		
	1.9	D	CBR 0.0-1.8					Moist, brown, stiff, intermediatel sandy CLAY with plant roots, wi rounded gravel content (TOPSC Moist, brown, stiff, intermediate silty CLAY with a little rounded content	th a little OIL) ly plastic					0		
-3.0 -4.0 -5.0	6.0	D	CBR 4.0-5.0					Saturated, grayish-brownish, ver rounded GRAVEL with silty sand with rounded cobbles inclusions	y dense, matrix,							
7.0		D	CBR 5.0-6.0													
SPT n TCR -	ARKS: ot perfo	ore rec				GROUND WATER INFLOW LEVEL AT (m) - 2.3 GROUND WATER STANDING LEVEL (m) - 2.3					Logged by: Sh. Lomidze					
GE	GEOFNGINFERING Road S					ad Se	Project Name: otechnical Investigation for New Kutaisi Bypass-Samtredia I Section of the Preparation of Detail Design and Construction pervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia			,	Contract No.GC 1128  PAGE 1 / 1					

START DATE: 14.07.2011 END DATE: 19.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB3-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: УГБ-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 284470.59 Y(m): 4670953.80 Z(m): 27.04

	LING ( LER: N		RACTOR zauri	: Ged	Eng.	g. Y(m): 4670953.80 Z(m): 27.04									
	Si	AMPLE	/CORE RI	ECOV	'ERY		7.					Sta	ndar	d Penetration Test	
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STE	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
	2.2	D	1 0.4-2.0					Moist, brown, stiff, intermediately psandy CLAY with plant roots and valittle rounded gravel content (TOP)  Moist, brown, stiff, intermediately plastic sill with a little rounded gravel content  Saturated, grayish, silty SAND with a little rounded gravel content and with thin clay lanses	with a SOIL) ty CLAY		3	3	4	10   20   30   40   50   10   10   10   10   10   10   1	
5.0	5.0	D	$\frac{2}{4.0-5.0}$ $\frac{3}{7.0-8.0}$								18	27	30		
	ARKS:		4 12.0-14.0			¢POI	さるとうころうとうころうとう	Saturated, grayish-brownish, dense, rounder with silty sand matrix, with rounded cobbles	inclusions						
TCR	not perf - total c - solid c	ore rec			G	ROU	JND \	WATER INFLOW LEVEL AT (m) - 2.9 WATER STANDING LEVEL (m) - 2.9  Project Name:	)					l by: N. Duluzauri	
GE	OEN	GINE	EERIN	IG	G Road Sec			Project Name: Geotechnical Investigation for New Kutaisi Bypass-Samtredia Road Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia			PAGE 1 / 3				

START DATE: 14.07.2011 END DATE: 19.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB3-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 284470.59 Y(m): 4670953.80 Z(m): 27.04

DRIL	LER: M	l. Dulu	zauri			Z(m): 2			7.04	.04				
	SA	MPLE	CORE RE	ECOV	ERY		ا ا				Sta	ındar	d Penetration Test	
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kg/cm <sup>2</sup> (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows	
15.0  16.0	15.9							Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions  Saturated, grayish, silty SAND with a little rounded gravel content					0 10 20 30 40 50	
17.0 18.0 19.0 20.0 21.0 21.0 22.0 23.0 23.0	25.2	D	5 17.0-18.0 6 22.0-23.0					Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions		35	40	<u>50</u> 5sm		
26.0 - 27.0 - 28.0 - 29.0 - 30.0	ARKS:	U U	7 27.0-27.2 8 28.3-28.5 9 29.0-29.2					Moist, gray, stiff, intermediately plastic silty CLAY with a little rounded gravel content		15	15	18		
SPT n	ot perfo total co solid c	ore rec						WATER INFLOW LEVEL AT (m) - 2.9 WATER STANDING LEVEL (m) - 2.9			Lo	gged	l by: N. Duluzauri	
			EERIN	IG	Roa	ad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-Samtredia of the Preparation of Detail Design and Construction of Zestafoni-Kutaisi-Samtredia Road Section of the					act No.GC-1128	
								E-60 Highway in Georgia	PAGE 2 / 3					

START DATE: 14.07.2011 END DATE: 19.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SB3-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 284470.59 Y(m): 4670953.80 Z(m): 27.04

DRIL	LER: N	l. Dulu	zauri					Z(m	n): 27	.04				
	SA	MPLE	CORE R	ECOV	ERY		OL.					Sta	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRAT	ТА	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
30.0	31.2	U	10 30.0-30.2	5				Moist, gray, stiff, intermediately plastic silty CLAY a little rounded gravel content	/ with					0 10 20 30 40 50
	35.0	D	11 33.0-34.0					Saturated, grayish, silty SAND with a little rounde gravel content and with thin clay lenses	ed					
36.0 -37.0 -38.0 -39.0 -40.0														
41.0 - 42.0 - 43.0 - 44.0 - 45.0														
SPT 1 TCR	ARKS: not performation of total controls of the control o	ore rec			G	ROL ROL	ND \	VATER INFLOW LEVEL AT (m) - 2.9 VATER STANDING LEVEL (m) - 2.9				Log	gged	by: N. Duluzauri
Geotechnical Inv.			Project Name:  I Investigation for New Kutaisi Bypass-Samtredia If the Preparation of Detail Design and Construction If Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia  Contract No.G		ect No.GC-1128									

START DATE: 20.06.2011 END DATE: 20.06.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-14
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: BGM1 DRILLING CONTRACTOR: GeoEng. DRILLER: A. Bagiashvili	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 284145.79 Y(m): 4670927.95 Z(m): 20.65

DRII		CONTR	RACTOR ashvili		Eng.				7092					
	Si	AMPLE/	CORE RE	ECOV	ERY		٦					Sta	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF ST	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
	2.3 3.0 3.4	D D	$ \frac{1}{1.2 - 2.3} $ $ \frac{2}{2.7 - 3.0} $ $ \frac{3}{3.2 - 3.4} $ $ \frac{4}{5.8 - 6.0} $					Moist, brown, stiff, intermediately sandy CLAY with plant roots and little rounded gravel content (TOF)  Saturated from 0.8m, grayish, silty with a little rounded gravel content rounded GRAVEL with sandy clay with rounded cobbles inclusions  Saturated, grayish, silty SAND with rounded gravel content.  Saturated, grayish-brownish, dense rounded GRAVEL with silty sand with rounded cobbles inclusions.	e, matrix, h a little					
SPT r	ARKS: not perfo - total co - solid co	ore reco						NATER INFLOW LEVEL AT (m) - NATER STANDING LEVEL (m) - 0.				Log	gged	by: S. Lomidze
			EERIN	IG	Ro	oad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-Si of the Preparation of Detail Design and Co of Zestafoni-Kutaisi-Samtredia Road Sect E-60 Highway in Georgia	onstruction			Cı		PAGE 1 / 1

START DATE: 04.07.2011 END DATE: 04.07.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-15
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB-50 DRILLING CONTRACTOR: GeoEng. DRILLER: J. Chokheli	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 283994.18 Y(m): 4670943.63 Z(m): 20.46

SAMPLE/CORE RECOVERY    Wisk   Depth of	-blows
DESCRIPTION OF STRATA  Samble Notation  On the description of the desc	30 40 50
Moist, brown, stiff, intermediately plastic sandy CLAY with plant roots, with a little rounded gravel content	30 40 50
[TOPSOIL]	<del></del>
Saturated, grayish, luuse, silty-clayey SAND with a little rounded gravel content	
Saturated, bluish-graish, rounded GRAVEL with intermediately plastic sandy day matrix, with rounded cobbles inclusions and with organic content  Saturated, bluish-graish, rounded GRAVEL with intermediately plastic sandy day matrix, with rounded cobbles inclusions and with organic content  6.0  6.4	
Saturated, brownish, medium dans, silty SAND with a little rounded gravel content	
REMARKS: SPT not performed TCR - total core recovery GROUND WATER INFLOW LEVEL AT (m) - 2.4 Logged by: N. Duluza	auri
SCR - solid core recovery	
GEOENGINEERING  Geotechnical Investigation for New Kutaisi Bypass-Samtredia Road Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia  Contract No.GC-112  PAGE 1 / 2	<b>'</b> δ

START DATE: 04.07.2011 END DATE: 04.07.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-15
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: UGB-50 DRILLING CONTRACTOR: GeoEng. DRILLER: J. Chokheli	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 283994.18 Y(m): 4670943.63 Z(m): 20.46

Age   Section   Section	DRILLER: J. Chokheli	Z(m): 20.46				
SPT N-blows	SAMPLE/CORE RECOV	:RY d	Jo		Sta	andard Penetration Test
				PP kg/cm² (pocket Penetrometer)	0-15cm 15-30cm	
			Saturated, brownish, medium dans, silty SAND with a little rounded gravel content			
SPT not performed TCR - total core recovery SCR - solid core recovery	SPT not performed TCR - total core recovery				Lo	ogged by: N. Duluzauri
Project Name:  Geotechnical Investigation for New Kutaisi Bypass-Samtredia Road Section of the Preparation of Detail Design and Construction Supervision of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia  Contract No.GC-1128  PAGE 2 / 2		Road Section	hnical Investigation for New Kutaisi Bypass-Samtredia tion of the Preparation of Detail Design and Construction sion of Zestafoni-Kutaisi-Samtredia Road Section of the			

START DATE: 22.07.2011 END DATE: 24.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SI2-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 283704.10 Y(m): 4670949.02 Z(m): 22.77

DRILLING CONTRACTOR: Geol DRILLER: M. Duluzauri	Eng.	Y(m): Z(m):	467094 22.77	19.02			
SAMPLE/CORE RECOVE	ERY 占				Sta	ındard f	Penetration Test
Depth of base of layer, m  TYPE: U-undisturbed D-Disturbed Sample No Sample section TCR %	SCR % RQD % LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kg/cm² (nocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
		Moist, brown, stiff, intermediately plastic sandy CLA with plant roots and with a little rounded gravel content (TOPSOIL)  Moist, grayish-brownish, angular GRAVEL with silty sand matrix (MADE GROUND)  Moist, brown, stiff, intermediately plastic silty CLAY or a little rounded gravel content  Very moist, brown, firm, low plastic sandy clayey SII with a little rounded gravel content  Moist, grayish brown, stiff, intermediately plastic silty CLAY with a little rounded gravel content  Saturated, grayish-brownish, dense, rounded GRAV with silty sand matrix, with rounded cobbles inclusion and with silty clay leanses	rith	15	28		
REMARKS: SPT not performed TCR - total core recovery SCR - solid core recovery	GROUND V	VATER INFLOW LEVEL AT (m) - 3.2 VATER STANDING LEVEL (m) - 3.2			Lo		y: S. Lomidze
GEOENGINEERING	Road Section of	Project Name: Il Investigation for New Kutaisi Bypass-Samtredia of the Preparation of Detail Design and Construct of Zestafoni-Kutaisi-Samtredia Road Section of th E-60 Highway in Georgia	on —			ontract PAGE 1	No.GC-1128

START DATE: 22.07.2011 END DATE: 24.07.2011	CASING DIAMETER (M): 146-108	BOREHOLE No. BH-SI2-1
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: YF5-50 DRILLING CONTRACTOR: GeoEng. DRILLER: M. Duluzauri	DRILLING DIAMETER (M): 152-92	Coordinates: X(m): 38T 283704.10 Y(m): 4670949.02 Z(m): 22.77

DRILLING CONTRACTOR: G DRILLER: M. Duluzauri	eoEng.			(m): 46 (m): 22		0949.02 77			
SAMPLE/CORE REC	OVERY	٦					Standa	rd Penetration Test	
Depth, m Depth of base of layer, m TYPE: U-undisturbed D-Disturbed D-Disturbed Sample Section	SCR %	LITHOLOGIC SYMBOL	DESCRIPTION OF STRA	.TA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm 30-45cm	SPT N-blows	
15.0			Saturated, grayish-brownish, dense, rounded GR/with silty sand matrix, with rounded cobbles inclus and with silty clay leanses  Saturated, grayish, silty SAND with a little rounder vel content  Saturated, grayish-brownish, dense, rounded GR, with silty sand matrix, with rounded cobbles inclus and with silty clay leanses  WATER INFLOW LEVEL AT (m) - 3.2  WATER STANDING LEVEL (m) - 3.2	ed gra-			Logge	d by: S. Lomidze	
SCR - solid core recovery  GEOENGINEERING	Road Se	ection	Project Name: al Investigation for New Kutaisi Bypass-Samtre of the Preparation of Detail Design and Constru of Zestafoni-Kutaisi-Samtredia Road Section o E-60 Highway in Georgia	ruction		Logged by: S. Lomidze  Contract No.GC-1128  PAGE 2 / 2			

START DATE: 21.06.2011 END DATE: 21.06.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-16
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: BGM1 DRILLING CONTRACTOR: GeoEng. DRILLER: A. Bagiashvili	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 283403.71 Y(m): 4670925.58 Z(m): 22.38

DRI		ONTR	MENT: B RACTOR: ashvili				DRII		X(m): 38 Y(m): 46 Z(m): 22	7092				
	SA	AMPLE/	CORE RE	ECOV	'ERY		٦					Sta	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STR	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
	0.5	D D	$ \frac{1}{0.5-2.0} \\ \frac{2}{2} \\ \overline{1.5-1.7} $ $ \frac{3}{3.1-3.3} $ $ \frac{4}{5.8-6.0} $					Moist, brown, stiff, intermediately pandy CLAY with plant roots and volittle rounded gravel content (TOPS)  Saturated from 1.4m, grayish, silty with a little rounded gravel content with a little rounded gravel content of the saturated, grayish-brownish, dense rounded GRAVEL with silty sand mowith rounded cobbles inclusions	with a SOIL)  SAND					
SPT t	ARKS: not perfo - total co - solid co	ore reco			G	ROL	JND \	VATER INFLOW LEVEL AT (m) - 1 VATER STANDING LEVEL (m) - 1.4  Project Name:						by: S. Lomidze
G	EOEN	GINE	EERIN	IG	Ro	oad Se	ection	al Investigation for New Kutaisi Bypass-Sar of the Preparation of Detail Design and Con of Zestafoni-Kutaisi-Samtredia Road Sectio E-60 Highway in Georgia	nstruction		Contract No.GC-1128  PAGE 1 / 1			

START DATE: 21.06.2011 END DATE: 21.06.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-17
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: BGM1 DRILLING CONTRACTOR: GeoEng. DRILLER: A. Bagiashvili	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 282938.39 Y(m): 4670827.10 Z(m): 24.84

		CONTRACTOR: GeoEng. A. Bagiashvili  CONTRACTOR: GeoEng. CONTRACTOR												
	SA	AMPLE/	CORE RE	ECOV	'ERY		). J.					Star	ndar	d Penetration Test
Depth, m	Depth of base of layer, m	TYPE: U - undisturbed D - Disturbed	Sample No Sample section	TCR %	SCR %	RQD %	LITHOLOGIC SYMBOL	DESCRIPTION OF STR	RATA	PP kg/cm² (pocket Penetrometer)	0-15cm	15-30cm	30-45cm	SPT N-blows
0.0	0.8							Moist, brown, stiff, intermediately pla sandy CLAY with plant roots and wi little rounded gravel content (TOPS)	ith a					0 10 20 30 40 50
2.0		D D	$\frac{1}{0.8-2.0}$ $\frac{2}{2.3-2.5}$					Saturated from 1.2m, grayish, silty S with a little rounded gravel content	SAND					
3.0 	3.0	D	3 3.3-3.5					Saturated, grayish-brownish, dense rounded GRAVEL with silty sand ma with rounded cobbles inclusions						
SPT 1 TCR	ARKS: not perfo - total c - solid c	ore rec						VATER INFLOW LEVEL AT (m) - 1				Log	gged	by: S. Lomidze
			EERIN	IG	Ro	oad Se	ection	Project Name: al Investigation for New Kutaisi Bypass-Sar of the Preparation of Detail Design and Con of Zestafoni-Kutaisi-Samtredia Road Sectio E-60 Highway in Georgia	nstruction					ct No.GC-1128

START DATE: 22.06.2011 END DATE: 22.06.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-18				
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: BGM1 DRILLING CONTRACTOR: GeoEng. DRILLER: A. Bagiashvili	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 282420.59 Y(m): 4670608.29 Z(m): 20.76				

DRILLING CONTRACTOR: GeoE DRILLER: A. Bagiashvili	ng.		Y(m): 4670608.29 Z(m): 20.76					
SAMPLE/CORE RECOVE	RY J			S	tandar	d Penetration Test		
Depth, m  Depth of base of layer, m  TYPE: U-undisturbed D-Disturbed Sample No Sample section  TCR %	SCR% RQD% LITHOLOGIC SYMBOL	DESCRIPTION OF STRATA	PP kg/cm² (pocket Penetrometer)	0-15cm 15-30cm	30-45cm	SPT N-blows		
0.0		Moist, brown, stiff, intermediately plastic sandy CLAY with plant roots and with a little rounded gravel content (TOPSOIL)				0 10 20 30 40 50		
D 100 10.4-2.0		Very moist, brown, firm, low plastic sandy clayey SILT with a little rounded gravel content						
$\begin{bmatrix} 2.1 \\ 2.5 \end{bmatrix}$ D $\begin{bmatrix} 2 \\ 2.3-2.5 \end{bmatrix}$		Saturated, grayish, silty SAND with a little rounded gravel content						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions						
D 4.0 D 4.5	0 0	Saturated, grayish, silty SAND with a little rounded gravel content						
Temarks:		Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions	T					
SPT not performed TCR - total core recovery SCR - solid core recovery		WATER INFLOW LEVEL AT (m) - 1.2 WATER STANDING LEVEL (m) - 1.2		Logged by: S. Lomidze				
GEOENGINEERING	Road Section	Project Name: ical Investigation for New Kutaisi Bypass-Samtredia n of the Preparation of Detail Design and Construction n of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia				act No.GC-1128		

START DATE: 22.06.2011 END DATE: 22.06.2011	CASING DIAMETER (M): 127	BOREHOLE No. BH-SE-18
DRILLING METHOD: Dry rotary (single-tube) DRILLING EQUIPMENT: BGM1 DRILLING CONTRACTOR: GeoEng. DRILLER: A. Bagiashvili	DRILLING DIAMETER (M): 132; 112	Coordinates: X(m): 38T 282420.59 Y(m): 4670608.29 Z(m): 20.76

DRILLER: A. Bagiashvili	Z(m): 20.76						
SAMPLE/CORE RECOVE	RY d			Standard Penetration Test			
Depth of U-Depth of San	SCR% RQD% LITHOLOGIC SYMBOL		PP kg/cm <sup>2</sup> (pocket Penetrometer)	0-15cm 15-30cm			
		Saturated, grayish-brownish, dense, rounded GRAVEL with silty sand matrix, with rounded cobbles inclusions					
REMARKS: SPT not performed TCR - total core recovery		WATER INFLOW LEVEL AT (m) - 1.2 WATER STANDING LEVEL (m) - 1.2		Lo	ogged by: S. Lomidze		
GEOENGINEERING	Road Section	Project Name: ical Investigation for New Kutaisi Bypass-Samtredia n of the Preparation of Detail Design and Construction n of Zestafoni-Kutaisi-Samtredia Road Section of the E-60 Highway in Georgia		Contract No.GC-1128  PAGE 2 / 2			