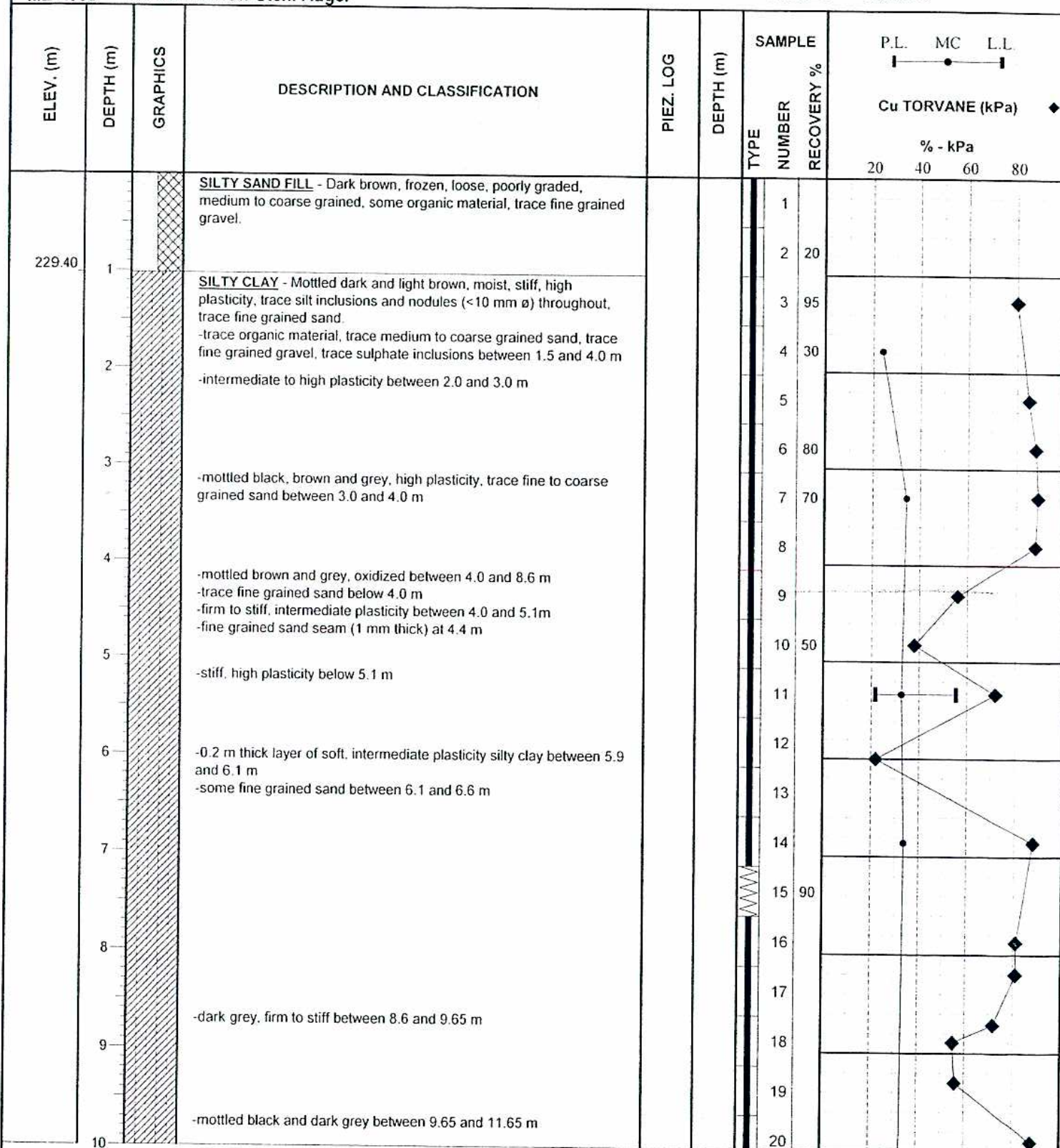


CLIENT CITY OF WINNIPEG, WATER AND WASTE DEPARTMENT
PROJECT RUE LA VERENDRYE OUTFALL STABILITY ASSESSMENT
SITE RED RIVER AT RUE LA VERENDRYE, WINNIPEG
LOCATION Top of Bank, See Figure 1
DRILLING METHOD 180 mm Hollow Stem Auger

JOB NO. 99-107-01
GROUND ELEV. 230.42 m, Geodetic
TOP OF PVC ELEV. -
WATER ELEV. 216.55 m (See Note 1)
DATE DRILLED 25/01/99



SAMPLE TYPE [X] SPLIT SPOON [Z] SHELBY [I] SPLIT BARREL SAMPLER [L] AUGER GRAB

CONTRACTOR Paddock Drilling Ltd. INSPECTOR A. PROSKIN APPROVED *Rke* DATE 09/02/99

ELEV. (m)	DEPTH (m)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	PIEZ. LOG	DEPTH (m)	SAMPLE TYPE	NUMBER	RECOVERY	P.L.	MC	L.L.	Cu TORVANE (kPa) ◆
									(%)- kPa			
			- Grain Size Distribution: 0.2% sand, 53.9% silt, 45.9% clay at 10.4 m				21					
	11						22					>90
	12		-grey below 11.65 m				23					>90
	13		-possible slickenside at 12.65 m				24					>90
	14		-grey silty sand seam (5 mm thick), fine grained, wet, loose at 13.05 m -firm to stiff, trace grey silt inclusions (2 cm ø), trace coarse grained, subangular gravel below 13.2 m				25					
	15		-tan silty sand seam (1 mm thick), moist, fine grained, trace medium to coarse grained at 14.58 m SILT TILL - Tan, moist, firm, trace clay non to low plasticity, trace well graded sand, trace fine grained gravel. AUGER REFUSAL ON SUSPECTED BOULDER AT 15.11 m				26					>90
215.69							27					
215.31							28					
	16		Notes: 1. Water level measured at end of drilling and may not be static. 2. Hole backfilled with bentonite from 15.11 to 14.8 m, with auger cuttings from 14.8 to 0.3 m depth, and with bentonite from 0.3 depth to ground surface.				29					
	17						30					
	18											
	19											
	20											
	21											

SAMPLE TYPE SPLIT SPOON SHIELBY SPLIT BARREL SAMPLER AUGER GRAB

CONTRACTOR Paddock Drilling Ltd. INSPECTOR A. PROSKIN

APPROVED *RK* DATE 09/02/99

CLIENT CITY OF WINNIPEG, WATER AND WASTE DEPARTMENT
PROJECT RUE LA VERENDRYE OUTFALL STABILITY ASSESSMENT
SITE RED RIVER AT RUE LA VERENDRYE, WINNIPEG
LOCATION Lower Bank, See Figure 1
DRILLING METHOD 205 mm Hollow Stem Auger

JOB NO. 99-107-01
GROUND ELEV. 223.30 m, Geodetic
TOP OF PVC ELEV.
WATER ELEV. 215.27 m (See Note 1)
DATE DRILLED 02/02/98

ELEV. (m)	DEPTH (m)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	PIEZ. LOG	DEPTH (m)	TYPE	SAMPLE NUMBER	RECOVERY %	P.L. MC L.L.			Cu TORVANE (kPa) ◆
									% - kPa			
									20	40	60	80
222.79			SILT - Light grey, frozen, trace medium grained sand.				1	25				
	1		SILTY CLAY - Grey, moist, soft, intermediate plasticity, some silt, some well graded sand, trace fine grained, subangular gravel, frozen to 1.0 m depth. -poor sample recovery from 0.5 to 3.0 m depth -intermediate to high plasticity between 1.0 and 5.6 m -trace roots between 1.0 and 1.5 m -mottled brown and grey, trace fine to medium grained sand between 1.5 and 2.55 m -firm, trace fine grained, subangular gravel between 2.0 and 3.55 m -grey below 2.55 m				2	15				
	2						3	30				
	3						4	25				
	4						5	40				
	5						6	40				
	6						7	90				
	7						8	100				
	8						9	100				
	9						10	80				
	10						11	100				
	11						12	100				
216.80							13	90				
	7		CLAYEY SILT TILL - Light grey, moist, soft, low plasticity, some clay, some well graded sand and gravel. -no sample recovery between 6.6 and 7.62 m -75 mm ø rounded gravel blocking end of barrel, recovered 75 mm of till sample between 7.11 and 7.62 m									
215.68												
215.43												
	8		SILTY CLAY - Grey, moist, stiff, intermediate to high plasticity, some silt, trace fine to coarse grained sand. SILT TILL - Light grey to tan, dry to moist, dense, non plastic, some well graded sand, trace well graded, subangular to subrounded gravel. -harder drilling below 8.03 m AUGER REFUSAL ON SUSPECTED BOULDER AT 8.33 m				14	100				
214.97							15	100				
	9		Notes: 1. Water level measured at end of drilling and may not be static. 2. Hole backfilled with 1 bag of bentonite to seal clay / till interface, and with auger cuttings to ground surface. 3. Test hole moved 1.4 m South and 0.6 m West from original location after auger refusal on boulder at 1.5 m depth.									

SAMPLE TYPE SPLIT SPOON SHELBY SPLIT BARREL SAMPLER AUGER GRAB

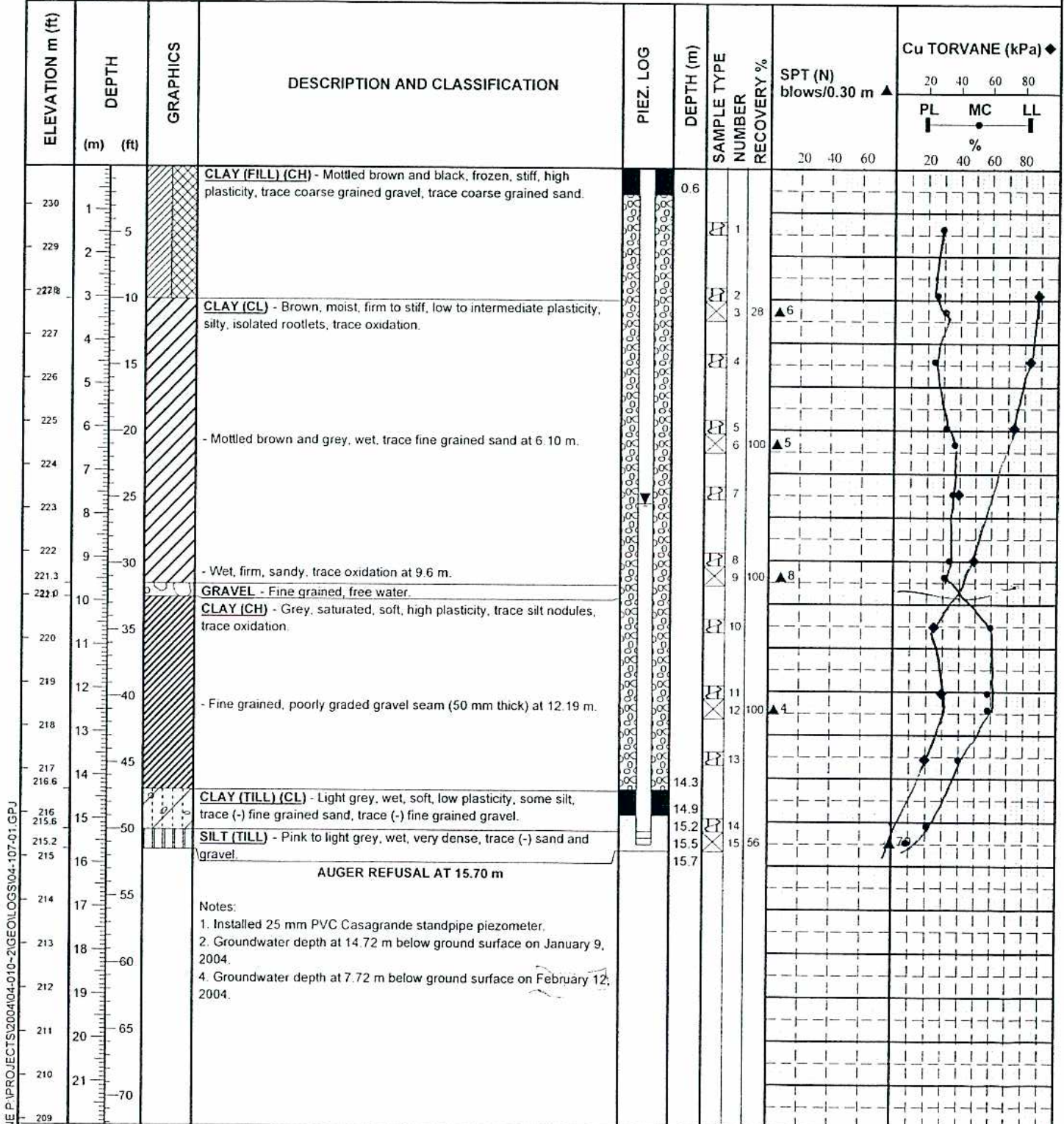
CONTRACTOR Paddock Drilling Ltd. INSPECTOR C.W. CARROLL

APPROVED *RK* DATE 09/02/99

CLIENT CITY OF WINNIPEG
PROJECT SEWER OUTFALL UPGRADING
SITE LA VERENDRYE

JOB NO. 04-107-01
GROUND ELEV. 230.88 m
WATER ELEV. 223.16 m (12 Feb 04)
DATE DRILLED 09 Jan 04
UTM N 5528505.8
 E 634507.9

LOCATION
DRILLING METHOD 125 mm ø Solid Stem Auger, Track Mounted



SPT & TORVANE P:\PROJECTS\2004\04-010-2\GEOLOGS\04-107-01.GPJ

SAMPLE TYPE Auger Grab Split Spoon

CONTRACTOR Paddock Drilling Ltd. INSPECTOR D. ANDERSON

APPROVED *RK* DATE 24-06-04