# **TEST PIT NO. TP17-01**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		ST			5	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		무	%	% RE		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529506</u> Northing: <u>5513640</u>
(m)		GRAPH	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	
0.0		HY			UE	FR	ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
	PEAT: Black sand PEAT, trace silt, saturated (frost to 0.3 m), very loose to loose										
	very loose to loose	<u>\\/</u>									Groundwater seepage at 0.3 m below ground surface
		1, 11									
1.0		<u>\\/</u> // \\/									
1.2 —		14		GS1 GS2	1 2						
	SAND: Blackish grey SAND, some silt, wet, compact			002	4				<b>}</b>		
1.7 —					4						
	SAND: Grey SAND, some gravel, trace silt, occasional cobbles,										
2.0	compact			GS3	4 4						
2.2 —	Test pit terminated upon refusal at 2.2 m below ground surface on BEDROCK.										Test pit open and dry upon completion of excavating
3.0											
4.0											
5.0											
6.0											
7.0											
8.0											

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

## **TEST PIT NO. TP17-03**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00 DATE COMPLETED: Jan 26, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529730</u> Northing: <u>5512790</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sand TOPSOIL, occasional rootlets, organics Bedrock outcrop 20 m north runs east to west 0.3 SAND: Brown SAND, trace to some silt, moist, loose 1 3 4 GS1 8 1.0 1.0 SILTY CLAY: Brown SILTY CLAY, trace sand, APL 17 GS2 17 5 5 2.0 6 10 2.4 GS3 22 SILTY CLAY: Red SILTY CLAY interbedded with clayey silt, trace Test pit caving at surface to 2.4 m below ground surface upon completion of excavating sand, APL, firm 3.0 3.4 GS4 19 CLAYEY SILT: Light brown to brown CLAYEY SILT, trace sand, DTPL, firm 4.0 4.4 SILT AND CLAY: Grey SILT AND CLAY, trace sand, WTPL, soft 5.0 GS5 22 5.6 Test pit terminated at 5.6 m below ground surface in SILT AND CLAY. 6.0 7.0

## **TEST PIT NO. TP17-04**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529740</u> Northing: <u>5512545</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W PEAT: Black sand PEAT with moss cover, wet 0.2 SAND: Dark brown SAND, some silt, occasional rootlets, moist, GS1 firm 0.6 SILTY CLAY: Brown SILTY CLAY, trace sand, APL, soft to firm 1.0 GS2 28 PP = 1.0 kg/cm<sup>2</sup> (Cu = 48 kPa) 2.0 <u>AL GS3:</u> Liquid Limit: 33% Plastic Limit: 18% Plasticity Index: 15% 3.0 3.0 SILTY CLAY: Red SILTY CLAY interbedded every 10 mm with grey GS3 35 clayey silt varves (5 mm thick), trace sand, APL to WTPL AL GS4: Liquid Limit: 27% Plastic Limit: 20% Plasticity Index: 7% 4.0 4.0 GS4 27 CLAYEY SILT: Grey CLAYEY SILT, trace sand, WTPL, soft GSA GS4: Gravel: 0% Sand: 0% Silt: 76% Clay: 24% 5.0 5.9 Test pit open and dry upon completion of excavating 6.0 Test pit terminated at 5.9 m below ground surface in CLAYEY SILT. 7.0

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

# **TEST PIT NO. TP17-05**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### CLI

## TES

CLII	ENT:	TREASURY METALS INC.	-							_	COMPLET	ED: Jan 27, 2017
TES	T PIT	TYPE: OPEN HOLE EXCAVATION								SUPE	RVISOR:	AJB
GRO	DUND	ELEVATION: NOT DETERMINED								REVIE	- EWER: AY	,
			ST			S	Sampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
	EPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529467</u> Northing: <u>5512422</u> -
0.0						L E	R	ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
		<b>PEAT:</b> Black sand PEAT with moss cover, trace silt, trace clay, saturated			GS1	1 3 4	17			•	•	
1.0	0.6 —	SILTY SAND: Brown SILTY SAND, trace clay, moist, compact			GS2	5 7	23			•		
	1.2 — 1.3 —	SAND: Brown SAND, some gravel, trace silt, trace clay, saturated			GS3		14				•	Test pit open upon completion, minor pooling of water at bottom of test pit
		Test pit terminated upon refusal at 1.3 m below ground surface on BEDROCK.										
2.0												
3.0												
4.0												
5.0												
6.0												
7.0												

# **TEST PIT NO. TP17-06**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: <u>161-15856-00</u> DATE COMPLETED: Jan 27, 2017

### CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION

# SUPERVISOR: AJB REVIEWER: AY

GROUND ELEVATION: NOT DETERMINED

		STR/				SAMPLI			CONE PENETRATION	WATER CONTENT 9	4 UTM CO-ORDINATES 4 UTM Zone: <u>15</u> NAD: <u>83</u> 529339
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	YT	DPT \	% W.	RECO	σ	"DPT" VALUE 5 10 15	10 20 30	Northing: <u>5512402</u>
		APHY		TYPE	DPT VALUE	% WATER	% RECOVERY	PID	SHEAR STRENGTH		REMARKS
0.0	TOPSOIL: Greyish brown sand TOPSOIL, occasional rootlets,	<u>7/1</u> /		GS1	1	14			•	•	
0.2	moist (frost to 0.3 m) SAND:	]			2 7						
	Brown SAND, trace silt, moist, compact to dense				12						
1.0					14				Ī		
				GS2		21					
	- Light brown, some silt			GS3		22				•	
2.0					10 6						
					10						
3.0											
3.6 —				GS4		19					
	SILTY SAND: Grey SILTY SAND, trace clay, wet										
4.0											
4.2 —	SILT AND CLAY: Grey SILT AND CLAY, trace sand, WTPL, soft										Test pit caving at surface to 4.2 m below ground surface upon completion of excavating
5.0											
				GS5		41					
6.0 6.0 -	Test pit terminated at 6.0 m below ground surface on in										Test pit dry upon completion of
	SILT AND CLAY.										excavating
7.0											
8.0											
0.0		1	1								1

## **TEST PIT NO. TP17-07A**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529138</u> Northing: <u>5512488</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE , WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W 0.0 TOPSOIL: Black silty sand TOPSOIL, moss, moist 0.2 SAND: Brown SAND, some gravel, some cobbles and boulders, trace silt, moist GS1 15 0.7 . Test pit terminated upon refusal at 0.7 m below ground surface on BEDROCK. 1.0 2.0 3.0 4.0 5.0 6.0 7.0

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

# **TEST PIT NO. TP17-07B**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### DATE COMPLETED: Jan 24, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

## REVIEWER: AY

		Ŋ			5	SAMPLI	E		CONE PENETRATION	\\/A	TER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		D	<u>_</u>	% R		"DPT" VALUE	CONT	TENT %	UTM Zone: NAD: Easting: Northing:
(m)	STRATIGRAPHIC DESCRIPTION	IGRAF	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15		20 30	Northing:
0.0				m		TER	/ERY		SHEAR STRENGTH	⊢ W <sub>P</sub>		REMARKS
	TOPSOIL: Dark brown sand TOPSOIL, trace silt, moss, organics,			GS1	2	17			•			
	moist	<u>// \///</u>		031	4	17						
0.6 —	SILTY SAND				20							
0.7 —	SILTY SAND: Brown SILTY SAND, moist Test pit terminated upon refusal at 0.7 m below ground	<u> </u>		GS2								Test pit open and dry upon completion of excavating
	surface on BEDROCK.											
3.0												
4.0												
5.0												
6.0												
7.0												
8.0												

# **TEST PIT NO. TP17-08**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### DATE COMPLETED: Jan 23, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

## REVIEWER: AY

M Zone: <u>15</u> NAD: <u>83</u> sting: <u>529029</u> rthing: <u>5512380</u> REMARKS
REMARKS
ndwater seepage at 0.8 m ground surface 2.0 kg/cm² (Cu = 96 kPa)
bit caved from surface to 2.5 ow ground surface upon letion of excavating.
erron of excavating.

# **TEST PIT NO. TP17-09**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

SUPERVISOR: AJB

### GROUND ELEVATION: NOT DETERMINED

**REVIEWER:** AY

		N,			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		및	%	% RI		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528969</u> Northing: <u>5512576</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAP	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Norumig. <u>0012010</u>
0.0					LUE	ER	ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
	TOPSOIL: Black sand TOPSOIL with moss cover, trace silt,	<u>, , ,</u> ,		GS1	0	22			•	•	
0.3 —	organics, saturated SAND:				2 2						
	Dark brown SAND, some silt, wet			GS2	4				<b>\</b>		Test pit caved from surface to 0.9
0.9 —					5				<b>†</b>		Test pit caved from surface to 0.9 m below ground surface upon completion of excavating.
1.0	CLAYEY SILT: Mottled light brown, brown CLAYEY SILT, trace sand, APL, firm			GS3							Groundwater seepage at 0.9 m below ground surface
	,				3						
					7						
					11				<b>`</b> •		
2.0					6						
					4				•		
					4 7						
					9				•		
3.0 3.0	SILTY SAND:			GS4							
3.3 —	Light brown SILTY SAND, trace clay, moist to wet										
0.0	Test pit terminated upon refusal at 3.3 m below ground surface on BEDROCK.										
4.0											
5.0											
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-10**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528411</u> Northing: <u>5512784</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID 1 \_ REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, GS1 35 organics, saturated 0.4 SAND: GS2 27 Dark brown SAND, some silt, saturated 0.7 SILTY CLAY: GS3 34 Greyish brown SILTY CLAY, trace sand, WTPL, soft 1.0 2.0 3.0 4.0 4.0 SILTY CLAY: Red SILTY CLAY interbedded with grey clayey silt, trace GS4 36 sand, APL, soft 4.4 CLAY AND SILT: Grey CLAY AND SILT, trace sand, APL to WTPL, soft 5.0 GS5 30 6.0 6.0 Test pit terminated at 6.0 m below ground surface in CLAY AND SILT. 7.0

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

## **TEST PIT NO. TP17-11**

PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

# PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

### REVIEWER: AY

SUPERVISOR: AJB

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528471</u> Northing: <u>5512635</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W 0.0 TOPSOIL: Black sandy silt TOPSOIL with moss cover, organics, 0 saturated GS1 0 65 U 0 0.5 SAND: Dark brown SAND, some silt, trace clay, saturated GS2 0 38 0 8.0 SILT: 4 Brown SILT, some sand, trace clay, moist 1.0 GS3 21 GSA GS3: Gravel: 0% Sand: 14% Silt: 72% Clay: 14% 1 2 5 5 8 Test pit caving at 1.8 m below ground surface upon completion of excavating. 2.0 3.0 3.0 SILTY CLAY: Red SILTY CLAY interbedded every 10 mm with grey GS4 33 clayey silt (10 mm thick), trace sand, APL, firm <u>AL GS4:</u> Liquid Limit: 41% Plastic Limit: 19% Plasticity Index: 22% 4.0 4.2 AL GS5: Liquid Limit: 27% Plastic Limit: 22% Plasticity Index: 5% CLAYEY SILT: Grey CLAYEY SILT, trace sand, APL to WTPL, stiff GS5 31 <u>GSA GS5:</u> Gravel: 0% Sand: 0% Silt: 73% Clay: 27% 5.0 6.0 6.2 Test pit terminated at 6.2 m below ground surface in CLAYEY SILT. 7.0

# **TEST PIT NO. TP17-12**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		S			S	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528596</u> Northing: <u>5512615</u>
0.0					Ū	R	ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
	TOPSOIL: Black sandy silt TOPSOIL, organics, occasional rootlets, saturated	<u>17</u> . <u>17</u> . <u>1</u> <u>17</u> . <u>1</u> ,1, <u>11</u> . <u>1</u> ,2		GS1							
0.5 —	SAND: Brown SAND, some silt, wet - Greyish brown			GS2	0	24				•	
				GS3	2 4 4	12					
					5 2 3				, ,		
2.0	CLAYEY SILT: Grey CLAYEY SILT interbedded every 3 mm with light brown silty clay (1 mm thick), trace sand, DTPL, firm			GS4	1 2 2	29					
4.0	SILTY CLAY:			GS5		66					
	Red SILTY CLAY interbedded with clayey silt, trace sand, DTPL, stiff										
5.0 5.0	CLAY AND SILT: Grey CLAY AND SILT, trace sand, WTPL, soft										
6.0	Test pit terminated at 6.1 m below ground surface in			GS6		35				•	
	CLAY AND SILT.										
7.0											
8.0											

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

## **TEST PIT NO. TP17-13**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### DATE COMPLETED: Jan 21, 2017

### TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

## REVIEWER: AY

SUPERVISOR: AJB

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528761</u> Northing: <u>5512454</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sandy silt TOPSOIL, with moss cover, trace clay, 0.2 organics, saturated CLAYEY SILT: Brown CLAYEY SILT, some sand, WTPL, very soft GS1 21 PP = 0.0 kg/cm<sup>2</sup> (Cu = 0 kPa) 0.8 SILTY CLAY: Brown SILTY CLAY, trace sand, APL, soft to firm 1.0 Test pit caving at 1.2 m below ground surface upon completion of excavating. GS2 31 PP = 1.0 kg/cm<sup>2</sup> (Cu = 48 kPa) 1.6 SILTY CLAY: Red SILTY CLAY interbedded with grey clayey silt, trace Groundwater seepage at 1.6 m below ground surface GS3 42 1.8 sand, DTPL, firm PP = 1.5 kg/cm<sup>2</sup> (Cu = 72 kPa) 2.0 SILT AND CLAY: Greyish brown SILT AND CLAY, some sand, DTPL to APL, firm 3.0 4.0 4.0 GS4 31 SANDY SILT: Grey SANDY SILT, trace clay, wet, dilatant 4.9 GS5 29 Test pit terminated upon refusal at 4.9 m below ground 5.0 surface on BEDROCK. 6.0 7.0

# **TEST PIT NO. TP17-14A**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

DEPTH (m)     STRATIGRAPHIC DESCRIPTION     Image: Constraint of the status of	AD: <u>83</u>
O.0     III     K     STRENGTH     Wp     WL       IDPSOIL: Black sandy silt TOPSOIL, trace clay, organics, most     Image: Strength and Strength	)
O.0     III     K     STRENGTH     Wp     WL       IDPSOIL: Black sandy silt TOPSOIL, trace clay, organics, most     Image: Strength and Strength	~
0.2       Descu: Black andy silt TOPSOL, trace clay, organics, moss, moist         Test pit terminated upon refusal at 0.2 m below ground surface on BEDROCK.	3
Image:	
30	
4.0	
6.0	
7.0	
	I
8.0	

## **TEST PIT NO. TP17-14B**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

# REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: NAD: CONTENT % % Easting: Northing: "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE , WATER PID \_ REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sandy silt TOPSOIL, trace clay, organics, moist Excavated alternative test pit 8.0 m north to confirm bedrock depth GS1 0.2 SILTY SAND: Black SILTY SAND, trace clay, wet 1.0 1.0 Test pit terminated upon refusal at 1.0 m below ground surface on BEDROCK. Test pit open upon completion of excavating 2.0 3.0 4.0 5.0 6.0 7.0

# **TEST PIT NO. TP17-15**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		S			S	ampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		D	%	% RI		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528664</u> Northing: <u>5512190</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	1014mig. <u>0012100</u>
0.0		YHY		п	LUE	.ER	ΈRΥ		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2	TOPSOIL: Black clayey silt TOPSOIL, some sand, organics, frost	<u>717</u> 7		GS1		38				•	
0.2	to 0.3 m SILTY CLAY:										
	Brown SILTY CLAY, trace sand, APL, firm										
											PP = 1.5 kg/cm <sup>2</sup> (Cu = 72 kPa)
1.0				GS2		30				لمر ا	
1.2	SILTY SAND:			GS3		21					<u>AL GS2:</u> Liquid Limit: 28% Plastic Limit: 21% Plasticity Index: 7%
1.4	Brown SILTY SAND, trace clay, dilatant, wet <u>SANDY SILT:</u>			GS4		28					
1.7 —	Brown SANDY SILT, some clay, moist Test pit terminated upon refusal at 1.7m below ground										Test pit open and dry upon completion of excavating
2.0	surface on BEDROCK.										completion of excavating
3.0											
4.0											
5.0											
6.0											
7.0											
8.0											
0.0	1							1			

# SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 20, 2017

## **TEST PIT NO. TP17-16**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00 DATE COMPLETED: Jan 20, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528551</u> Northing: <u>5512076</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sandy silt TOPSOIL, organics, (frost to 0.3 m) GS1 32 e 0.2 SAND: Brown SAND, some silt, moist GS2 15 0.5 CLAYEY SILT: Brown CLAYEY SILT, trace sand, APL, firm GS3 20 PP = 1.5 kg/cm<sup>2</sup> (Cu = 72 kPa) 1.0 Groundwater seepage at 1.8 m below ground surface 1.9 SILTY CLAY: Red SILTY CLAY interbedded every 20 mm with clayey 2.0 silt varves (10 mm thick), DTPL to APL, stiff Test pit caving at 2.6 m below ground surface upon completion of excavating. 3.0 GS4 54 GS5 32 3.8 CLAYEY SILT: 4.0 Brown CLAYEY SILT interbedded every 12 mm with clay varves (5 mm thick), DTPL to APL, stiff 4.9 CLAYEY SILT: 5.0 Grey CLAY SILT, trace sand, APL to WTPL, soft 6.0 6.0 GS6 Test pit terminated at 6.0 m below ground surface in CLAYEY SILT. 7.0

## **TEST PIT NO. TP17-17**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528415</u> Northing: <u>5511884</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 10 20 30 5 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH WP W 0.0 TOPSOIL: Black clayey silt TOPSOIL, organics, trace sand, (frost GS1 51 to 0.6 m) Ľ 0.5 CLAYEY SILT: Brown CLAYEY SILT, trace sand, APL, firm GS2 30 PP = 1.0 kg/cm<sup>2</sup> (Cu = 48 kPa) 1.0 1.0 CLAYEY SILT: Light brown CLAYEY SILT interbedded every 2 mm with GS3 30 silty clay varves (2 mm thick), DTPL, stiff PP = 3.0 kg/cm<sup>2</sup> (Cu = 144 kPa) 2.0 3.0 Groundwater seepage at 3.8 m below ground surface 4.0 4.3 GS4 SILTY CLAY: Red SILTY CLAY interbedded with grey clayey silt PP = 2.0 kg/cm<sup>2</sup> (Cu = 96 kPa) varves, trace sand, APL, firm GS5 30 4.8 CLAYEY SILT: Grey CLAYEY SILT, trace sand, dilatant, wet, loose 5.0 5.6 Test pit terminated at 5.6 m below ground surface in CLAYEY SILT. 6.0 7.0

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 20, 2017

## **TEST PIT NO. TP17-18**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528202</u> Northing: <u>5511812</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID 1 REMARKS SHEAR STRENGTH W<sub>P</sub> W SAND: GS1 Brown SAND, some clay, occasional rootlets, moist 0.2 CLAY AND SILT: Brown CLAY AND SILT, trace sand, APL, firm PP = 3.0 kg/cm<sup>2</sup> (Cu = 144 kPa) AL GS2: Liquid Limit: 39% Plastic Limit: 22% 1.0 Plasticity Index: 17% GS2 GSA GS2: Gravel: 0% Sand: 1% Silt: 53% Clay: 46% 2.0 2.7 GS3 SILTY CLAY: Reddish brown SILTY CLAY with grey clayey silt varves 3.0 (10 mm thick) APL, stiff 4.0 4.4 SILTY CLAY: Brown SILTY CLAY, trace sand, APL to WTPL, firm to soft 5.0 GS4 32 PP = 1.0 kg/cm<sup>2</sup> (Cu = 48 kPa) Groundwater seepage at 5.4 m below ground surface 5.4 SILT: AL GS4: Liquid Limit: 29% Plastic Limit: 20% Plasticity Index: 9% Grey CLAYEY SILT to SILT, some clay, trace sand, wet, loose, dilatant 6.0 GS5 6.1 Test pit open upon completion of Test pit terminated at 6.1 m below ground surface in excavating. SILT. 7.0

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

# **TEST PIT NO. TP17-19**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION

DATE COMPLETED: Jan 19, 2017

PROJECT NO.: 161-15856-00

SUPERVISOR: AJB

### GROUND ELEVATION: NOT DETERMINED

REVIEWER:	AY
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		S			S	AMPLE	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		P	%	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528116</u> Northing: <u>5511695</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAP	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	
0.0				Ш	L U E	ĒR	ΈRΥ		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.1	Black sandy clay TOPSOIL, some silt, some organics, occasional rootlets, DTPL (frost to 0.6 m)			GS1		39				1	
	SILTY CLAY: Brown SILTY CLAY, APL, stiff										
1.0				GS2	5 5	29			•	f	PP = 2.5 kg/cm <sup>2</sup> (Cu = 120 kPa)
					7 7						
2.0											
				GS3		24					
	- DTPL										
3.0											
3.4	CLAYEY SILT:     Brown CLAYEY SILT, some sand, occasional cobbles     and boulders			GS4		7				•	Test pit open and dry upon completion of excavating.
4.0	Test pit terminated upon refusal at 3.6 m below ground surface on BEDROCK.										completion of excavating.
5.0											
6.0											
7.0											
8.0											

# **TEST PIT NO. TP17-20**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

					<u>,</u> c	AMPLI	E		0	CONE				UTM CO-ORDINATES
		STRATIGRAPHY										ATER	%	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528257</u>
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	ATIG	MONITOR DETAILS	_	DPT	% V	% RECOVERY			" VALUE 10 15	10	20 30	,	Northing: <u>5511600</u>
		RAPH	DEMALO	TYPE	DPT VALUE	% WATER	OVE	PID						551415140
0.0					Ē	R	RY		SH STRI	HEAR ENGTH	W <sub>P</sub>	,	WL	REMARKS
	TOPSOIL: Black clay and silt TOPSOIL, some organics, occasional	<u></u>		GS1		24								
	rootlets, (frost to 0.8 m)													
0.8 —	SILTY CLAY:	White												
	Brown SILTY CLAY interbedded every 5 mm with grey clayey silt (2 mm thick), trace sand, DTPL, very stiff													
				GS2										PP = 4.0 kg/cm <sup>2</sup> (Cu = 192 kPa)
2.0														
2.7 —	SILTY CLAY:													
3.0	Red SILTY CLAY with sandy silt varves (5 mm thick), trace sand, APL, stiff			GS3		36							+	
4.0														
4.2 —	SILT AND CLAY:													
	Grey SILT AND CLAY, trace sand, APL to WTPL, soft													
5.0														
	- Grey, WTPL													
				GS4		38							•	
6.0														
				GS5										
6.5 —	Test pit terminated at 6.5 m below ground surface in SILT AND CLAY.	<u>erren</u>												Test pit open and dry upon completion of excavating.
	GILTAND GLAT.													
7.0														
8.0								I						

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 20, 2017

# **TEST PIT NO. TP17-21**

#### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

## DATE COMPLETED: Jan 20, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

## REVIEWER: AY

		S			S	ampli	E		C PENE	ONE TRATION	WA	ATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		P	%	% RE		"DPT'	VALUE	CON	TENT 9	Easting: <u>528141</u> Northing: 5511434
(m)		GRAPH	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	<u>_</u>	10 15	10 I	20 30	_
0.0		→			ŪE	R	RY		SH STRE	EAR NGTH	W <sub>P</sub>	v	
	ORGANICS: Black ORGANICS, trace silty clay, wet (Frost to 0.2 m)												
				GS1		76							
0.8	CLAYEY SILT: Brown CLAYEY SILT, some sand, APL, soft												
				GS2		24						•	
2.0													
													Test pit caving at 2.0 m below ground surface upon completion of excavating.
3.0													
3.0 3.0	SILT AND CLAY: Mottled grey, brown SILT AND CLAY, trace sand, APL,			GS3		37							
	firm			000		0.							GSA GS3: Gravel: 0% Sand: 1%
													Silt: 45% Clay: 55%
4.0													
5.0 4.9	CLAY AND SILT:												
5.0	Grey CLAY AND SILT, trace sand, WTPL, very soft												
													<u>AL GS4:</u> Liquid Limit: 47%
5.6	Test pit terminated at 5.6 m below ground surface in			GS4		38							Plastic Limit: 22% Plasticity Index: 25%
	CLAY AND SILT.												Test pit dry upon completion of excavating
6.0													
7.0													
8.0												<u> </u>	

# **TEST PIT NO. TP17-22**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### DATE COMPLETED: Jan 19, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

### REVIEWER: AY

		S			S	AMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		무	%	% RE		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527766</u> Northing: <u>5511367</u>
(m)	STRATIGRAFHIC DESCRIPTION	GRAP	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	
0.0					UE	ER	ERY		SHEAR STRENGTH	H H W <sub>P</sub> W <sub>L</sub>	REMARKS
0.1	TOPSOIL: Black sandy clay TOPSOIL, some silt, some organics,			GS1							
	occasional rootlets, DTPL CLAY AND SILT:			GS2		21				•	PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
	Brown to mottled brown - grey CLAY AND SILT, trace to some fine sand, occasional rootlets, DTPL to APL, firm										<u>AL GS2:</u> Liquid Limit: 41% Plastic Limit: 21%
					5						Plasticity Index: 20% <u>GSA GS2</u> : Gravel: 0% Sand: 3%
1.0					5				I I		Silt: 52%
					7 7						Clay: 45%
2.0											
3.0											
											Groundwater seepage at 3.2 m below ground surface upon
											below ground surface upon completion of excavating.
	- Grey, interbedded with red clay										
4.0				GS3							
4.1	SILTY CLAY: Grey SILTY CLAY, WTPL, very soft										
	Grey SILTT CLAT, WIFE, Very Soit										
5.0 5.0											
5.0	Test pit terminated at 5.0 m below ground surface in SILTY CLAY.			GS4							Test pit terminated at 5.0 m due to max equipment reach. Test pit open upon completion of
											excavating.
6.0											
7.0											
8.0											

# **TEST PIT NO. TP17-23**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		ST			S	AMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		P	%	% RI		"DPT" VALUE		UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527740</u> Northing: <u>5511496</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAP	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	
0.0		ΎΗ			L L L L L	.ER	ΈRΥ		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
	SILTY CLAY: Grey SILTY CLAY, trace fine sand, some organics,			GS1		10					
0.3 —	occasional rootlets, DTPL (frost to 0.6 m) SILTY CLAY:			GS1		18				I	
	Mottled grey, brown SILTY CLAY, trace fine sand, DTPL to APL, stiff			GS2		21				•	PP = 3.0 kg/cm <sup>2</sup> (Cu = 144 kPa)
1.0											
				GS3		34				•	PP = 2.5 kg/cm <sup>2</sup> (Cu = 120 kPa)
											<u>AL GS3:</u> Liquid Limit: 35% Plastic Limit: 23%
											Plasticity Index: 21%
2.0											
3.0				GS4		25					
3.2 —	CLAYEY SILT:										
3.4	Brown CLAYEY SILT, some sand, some gravel, occasional cobbles and boulders, moist										Test pit open and dry upon completion of excavating.
	Test pit terminated upon refusal at 3.4 m below ground surface on BEDROCK.										Bedrock appears weathered
4.0											
5.0											
6.0											
7.0											
7.0											
8.0											

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

# **TEST PIT NO. TP17-24**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: <u>161-15856-00</u> DATE COMPLETED: Jan 18, 2017

### CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION

# SUPERVISOR: AJB

GROUND ELEVATION: NOT DETERMINED

REVIEWER: AY

			S			S	AMPLE	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEF	PTH		STRATIGRAPHY	MONITOR		D	. 9	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527474</u> Northing: <u>5511534</u>
	m)	STRATIGRAPHIC DESCRIPTION	IGRA	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	Northing: <u>5511534</u>
			PHY		щ	ALUE	TER	VER	0	SHEAR STRENGTH		REMARKS
0.0	0.1 -	TOPSOIL:	iddid					<u> </u>		STRENGTH	W <sub>P</sub> W <sub>L</sub>	
		SILTY CLAY: Brown to grey SILTY CLAY, some sand, APL, stiff			GS1		27				•	
												Groundwater seepage at 0.4 m below ground surface
1.0												
					GS2		34					
					002		04					PP = 3.0 kg/cm <sup>2</sup> (Cu = 144 kPa)
2.0		- DTPL										
		52										
3.0												
	3.4	SAND: Brown SAND, some clay, occasional gravel, cobbles			GS3		32					
3	5.0	and boulders, wet Test pit terminated upon refusal at 3.6 m below ground			633		32				•	Test pit open and dry upon completion of excavating.
4.0		surface on BEDROCK.										
5.0												
6.0												
7.0												
8.0												

# **TEST PIT NO. TP17-25**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### DATE COMPLETED: Jan 19, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

## REVIEWER: AY

		S			S	ample	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		рł	%	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527403</u> Northing: <u>5511388</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	
0.0		ΥH		т	TUE	ĒR	'ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.1	TOPSOIL: Black silty clay TOPSOIL, organics, DTPL										
	SILTY CLAY: Red SILTY CLAY, some organics, occasional rootlets,			GS1		62					PP = 0.5 kg/cm <sup>2</sup> (Cu = 24 kPa)
0.6	APL, very soft SILTY CLAY:										
	Grey SILTY CLAY, trace sand, APL, soft										
1.0											
2.0 2.0	CLAYEY SILT:			GS2		33				•	PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
	Brown CLAYEY SILT, some sand, DTPL, firm-stiff										Excavation walls starting to shear at approximately 2.0 m
3.0											
				GS3		31				•	
4.0											
4.2											
4.4	CLAYEY SILT: Brown CLAYEY SILT, some gravel, trace silt,			GS4		13				•	Groundwater seepage at 4.2 m below ground surface
	occasional cobbles and boulders, firm-stiff Test pit terminated upon refusal at 4.4 m below ground surface on BEDROCK.										
5.0											
6.0											
7.0											
8.0											

# **TEST PIT NO. TP17-26**

#### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

# PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER:** AY

		N,			S	SAMPLE	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		⊵	%	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527261</u> Northing: <u>5511538</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Norunng. <u>3311330</u>
0.0		YHY		т	Г U E	ĒR	'ERY		SHEAR STRENGTH	H WP WL	REMARKS
0.1	TOPSOIL: Black silty clay TOPSOIL, organics, DTPL			GS1	6	12			•		
0.3 —	SILTY CLAY: Brown SILTY CLAY, some sand, occasional rootlets			001	4	12					
	SILTY CLAY: Brown SILTY CLAY, some to trace sand, APL, stiff			GS2	7 7	27				<b>Y</b>	PP = 2.5 kg/cm <sup>2</sup> (Cu = 120 kPa)
					14						
1.0											
				GS3		34					PP = 3.0 kg/cm <sup>2</sup> (Cu = 144 kPa)
2.0											
				GS4		40					
3.0	- Grey clay interbedded with red clay varves (5 mm thick)			004		40					
	- Grey										
4.0											
											PP = 2.5 kg/cm <sup>2</sup> (Cu = 120 kPa)
4.9	Tet all the size of all the second sectors in										Test pit open upon completion of
5.0	Test pit terminated at 4.9 m below ground surface in CLAY.										Test pit open upon completion of excavating; Groundwater seepage at 4.9 m below ground surface
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-27**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527245</u> Northing: <u>5511644</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID 1 \_ REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black silty clay TOPSOIL, organics, DTPL 11 01 GS2 14 SAND: Brown SAND, moist 0.3 SILTY CLAY: Grey SILTY CLAY, some sand, DTPL, very stiff to hard GS3 16 1.0 PP = 4.5 kg/cm<sup>2</sup> (Cu = 216 kPa) - APL 2.0 GS1 8 32 GS4 2.8 SAND: 3.0 Brown SAND, some gravel, some cobbles and GS5 10 boulders, moist 3.1 Test pit open and dry upon completion of excavating. Test pit terminated upon refusal at 3.1 m below ground surface on BEDROCK. 4.0 5.0 6.0 7.0

# **TEST PIT NO. TP17-28**

### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

### DATE COMPLETED: Jan 19, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

## REVIEWER: AY

			Ŋ			S	AMPLE	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPT (m)	н	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527101</u> Northing: <u>5511892</u>
			Ϋ́́Υ		ш	LUE	Ę	ERY		SHEAR STRENGTH	⊢−−−− W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0	_	TOPSOIL:									VVP VVL	
0.3		CLAYEY SAND: Grey CLAYEY SAND, occasional rootlets, DTPL (frost			GS1		27				<b>/</b>	
0.5		to 0.6 m)										
0.6	_	SILTY SANDY CLAY: Grey SILTY SANDY CLAY, DTPL			GS2		16					<u>GSA GS2:</u> Gravel: 0% Sand: 28%
	ľ	SILT AND SAND:										Silt: 23%
1.0		Brown SILT AND SAND, trace clay, wet, compact										Clay: 49%
						1				•		GSA GS3:
					GS3	5	18				•	Gravel: 0% Sand: 46%
1.5		Test pit terminated upon refusal at 1.5 m below ground				9				•		Clay: 3% Bedrock sloping south to porth
		surface on BEDROCK.				10				•		bedrock depths varied from 1.4 to 1.5 m, bedrock appears weathered
												GSA GS3; Gravel: 0% Sand: 46% Sitt: 52% Clay: 3% Bedrock sloping south to north, bedrock deptins varied from 1.4 to 1.5 m, bedrock appears weathered Test pit open upon completion of excavating: Groundwater seepage at 1.5 m below ground surface
2.0												at 1.5 m below ground surface
3.0												
4.0												
5.0												
0.0												
6.0												
7.0												
8.0												

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# **TEST PIT NO. TP17-29**

#### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

### CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION

# SUPERVISOR: AJB

### GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

			S			S	ampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
	EPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	4M %	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20 30	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527119</u> Northing: <u>5512123</u>
0.0					щ	ALUE	WATER	VERY	D	SHEAR STRENGTH	H W <sub>P</sub> W <sub>L</sub>	REMARKS
	0.3 —	TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, saturated	<u>x, 17. 7</u> 17. 71 15		GS1		45					Groundwater seepage at 0.3 m below ground surface PP = 0.0 kg/cm <sup>2</sup> (Cu = 0 kPa)
	0.6	SILTY CLAY: Brown SILTY CLAY, some sand, WTPL, very soft			GS2		19					PP = 0.0 kg/cm <sup>2</sup> (Cu = 0 kPa) <u>ALGS2:</u> Liquid Limit: 27% Plastic Limit: 15%
1.0		SANDY CLAYEY SILT: Brown SANDY CLAYEY SILT, APL to WTPL, soft										Plasticity Index: 12% <u>GSA GS2:</u> Gravel: 0% Sand: 26%
					GS3		34					Silt: 43% Clay: 31%
		- Greyish brown										PP = 0.5 kg/cm <sup>2</sup> (Cu = 24 kPa)
2.0												
3.0												Test pit caving at surface to 3.0 m below ground surface upon completion of excavating
4.0	4.0 —	SILTY CLAY: Red SILTY CLAY with clayey silt varves, trace sand,										
		APL, firm			GS4		49					
5.0	5.0 —	SILT AND CLAY: Grey SILT AND CLAY, trace sand, APL to DTPL, firm										
	5.3 —	Test pit terminated at 5.3 m below ground surface in SILT AND CLAY.	999999		GS5		29				•	
6.0												
7.0												
8.0												

# **TEST PIT NO. TP17-30**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

### **REVIEWER:** AY

-													
			ST			S	SAMPL			CONE PENETRATION	WAT		UTM CO-ORDINATES
	EPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20		UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527391</u> Northing: <u>5512137</u>
0.0					PE	ALUE	ATER	OVERY		SHEAR STRENGTH	H W <sub>P</sub>	WL.	REMARKS
	0.2 —	TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, organics, occasional rootlets											
		CLAY AND SILT: Brownish grey CLAY AND SILT, some sand, APL, firm			GS1								PP = 1.0 kg/cm <sup>2</sup> (Cu = 48 kPa)
1.0	1.0	SANDY SILT: Brown SANDY SILT, some clay, WTPL, dilatant			GS2								
	1.6 —	SAND: Brown SAND, some gravel, trace silt, trace clay, saturated			GS3								
2.0													
	2.5 —	Test pit terminated upon refusal at 2.5 m below ground											Test pit open and dry upon completion of excavating
3.0		surface on BEDROCK.											completion or excavating
4.0													
5.0													
6.0													
7.0													

Е

# **TEST PIT NO. TP17-31**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		S			5	ampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% W#	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20 30	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527666</u> Northing: <u>5512113</u>
0.0				PE	ALUE	WATER	VERY	D	SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2	TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, organics (frost to 0.4 m) CLAY AND SILT: Brown CLAY AND SILT, some sand, APL, firm-stiff SILTY CLAY:			GS1 GS2	4 7 13						PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa) PP = 2.5 kg/cm <sup>2</sup> (Cu = 120 kPa)
	Red SILTY CLAY with grey clayey silt varves (5 mm thick), trace sand, APL, stiff				14 15 13 5						PP = 1.5 kg/cm <sup>2</sup> (Cu = 72 kPa) <u>AL GS3:</u>
2.0	CLAYEY SILT: Brown CLAYEY SILT, trace sand, APL, firm			GS3	13 8 10 11 10	34				•	AL GS3: Liquid Limit: 28% Plastic Limit: 19% Plasticity Index: 9% <u>GSA GS3:</u> GraveI: 0% Sand: 1% Silt: 63% Clay: 36%
2.2	CLAY AND SILT: Mottled light brown, brown CLAY AND SILT, APL to DTPL, stiff			GS4	8 9 12	37				•	AL GS4: Liquid Limit: 34% Plastic Limit: 21% Plasticity Index: 13%
3.0											GSA GS4: Gravel: 0% Sand: 0% Silt: 63% Clay: 37%
4.0 4.3	SANDY SILT: Brown SANDY SILT, some clay, trace gravel, rock fragments, WTPL			GS5							Test pit open upon completion of excavating
5.0	Test pit terminated upon refusal at 4.4 m below ground surface on BEDROCK.										
6.0											
7.0											
8.0											

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

## **TEST PIT NO. TP17-32**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## **REVIEWER: AY**

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527574</u> Northing: <u>5512346</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID \_ \_ REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Grey sandy silt TOPSOIL, organics, frozen 0.2 GS1 SANDY SILT: Greyish brown SANDY SILT, trace clay, DTPL GS2 0.9 2 SAND: 1.0 GS3 Brown SAND, trace silt, moist 5 1.2 GS4 SILTY SAND: Brown SILTY SAND, some clay, moist 5 14 10 2.0 2.4 Test pit open and dry upon completion of excavating. Test pit terminated upon refusal at 2.4 m below ground surface on BEDROCK. 3.0 4.0 5.0 6.0 7.0

# SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 22, 2017

# **TEST PIT NO. TP17-33**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

SUPERVISOR: AJB

### GROUND ELEVATION: NOT DETERMINED

**REVIEWER:** AY

		S			S	SAMPLE	Ξ		CONE PENETRATIC	N	WA	TFR	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT V	% WATER	% RECC	P	"DPT" VAL	JE		ENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527965</u> Northing: <u>5512344</u>
0.0				ΡĒ	DPT VALUE	ATER	RECOVERY	PID	SHEAR STRENGTH		H W <sub>P</sub>	WL	REMARKS
0.2 —	TOPSOIL: Black sand TOPSOIL with moss cover, organics, wet	<u>717</u> 7			0								
	SAND: Dark brown to brown SAND, some to trace silt, moist to saturated			GS1 GS2	0 0 2				• •				
0.8	CLAY AND SILT: Brown CLAY AND SILT, trace sand, APL, firm			GS3	2 1 4 2								PP = 1.0 kg/cm <sup>2</sup> (Cu = 48 kPa)
2.0					5 2 6 10								
	SILT AND CLAY: Mottled greyish brown, brown SILT AND CLAY, trace sand, DTPL, stiff												
3.0				GS4 GS5									
	SILTY CLAY: Red SILTY CLAY with grey clayey silt varves (5 mm thick), trace sand, APL, firm			000									
4.0 4.0	CLAY AND SILT: Grey CLAY AND SILT, trace sand, APL, soft												
5.0													
5.4	Test pit terminated at 5.4 m below ground surface in CLAY AND SILT.			GS6		28						•	AL GS6: Liquid Limit: 29% Plastic Limit: 17% Plasticity Index: 12%
6.0													
7.0													
8.0													

## **TEST PIT NO. TP17-34**

### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

# TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

### **REVIEWER: AY**

SUPERVISOR: AJB

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528232</u> Northing: <u>5512321</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, GS1 0.2 organics, occasional rootlets SAND: Dark brown SAND, some to trace silt, moist GS2 - Brown, saturated GS3 1.0 1.0 CLAY AND SILT: Brown CLAY AND SILT, trace sand, APL, firm <u>AL GS4:</u> Liquid Limit: 31% Plastic Limit: 20% Plasticity Index: 11% GS4 31 GSA GS4: Gravel: 0% Sand: 1% Silt: 57% Clay: 42% 2.0 GS5 2.9 SILT AND CLAY: Mottled greyish brown, brown SILT AND CLAY, DTPL, 3.0 stiff 4.0 4.1 GS6 SILTY CLAY: Red SILTY CLAY with grey clayey silt varves (5 mm thick), trace sand, APL, firm 5.0 51 CLAY AND SILT: Grey CLAY AND SILT, APL to WTPL, soft 6.0 6.0 GS7 Test pit terminated at 6.0 m below ground surface in Test pit open and dry upon completion of excavating. CLAY AND SILT. 7.0

# **TEST PIT NO. TP17-35**

#### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

	DELEVATION. NOT DETERMINED								_ ``			. <u>A</u>	
		ST			S	SAMPLI	E		CONE PENETRA	TION	WA	TER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	DPT" VA		CONTI 10 24	ENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528211</u> Northing: <u>5512488</u>
0.0		YHY		m		FER	/ERY		SHEAR	гн	⊢−−− W <sub>P</sub>		REMARKS
0.0	TOPSOIL: Black sand TOPSOIL with moss cover, organics, wet	<u></u>											
0.2	SAND: Dark brown SAND, some to trace silt, moist				2				•				
	- Brown, saturated				3 5								
					5								Groundwater seepage at 0.7 m below ground surface
1.0					7								
1.2	CLAY AND SILT: Brown CLAY AND SILT, trace sand, WTPL, soft to firm			GS1									PP = 0.5 kg/cm <sup>2</sup> (Cu = 24 kPa)
					2				<b> </b>				Groundwater seepage at 1.5 m below ground surface
					3 4								
2.0					3 6 9								
					8								
					10								
3.0													
				000									<u>GSA GS2:</u> Gravel: 0% Sand: 0%
	- Greyish brown			GS2									Sand: 0% Silt: 58% Clay: 42%
4.0 4.0	SILTY CLAY:			GS3		50							<u>AL GS3:</u> Liquid Limit: 43% Plastic Limit: 17%
	Red SILTY CLAY interbedded with grey clayey silt, trace sand, APL, firm												Plastic Limit: 17% Plasticity Index: 26%
5.0													
5.2	CLAY AND SILT: Grey CLAY AND SILT, trace sand, APL to WTPL, soft			GS4									
<u>6.0</u> 6.1													
	Test pit terminated at 6.1 m below ground surface in CLAY AND SILT.												
7.0													
8.0													

SUPERVISOR: AJB **REVIEWER:** AY

## **TEST PIT NO. TP17-36**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 22, 2017

		RS			5	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		D	¢	% R		DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527856</u> Northing: <u>5512640</u>
(m)	STRATIGRAPHIC DESCRIPTION	IGRA	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	Northing: <u>5512640</u>
		PHY		m		TER	VERY		I I SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0							`		STRENGT	VV <sub>P</sub> VV <sub>L</sub>	
0.2	SAND:			GS1		28				T	
0.4	Brownish grey SAND, trace silt, fozen SILTY SAND:										
	Brown SILTY SAND, trace clay, wet										
1.0						05					
1.2 —				GS2		25					
	SAND: Brown SAND, some silt, saturated										Test pit caving at 1.2 m below ground surface upon completion of excavating.
											onder dang.
				GS3		25				•	
2.0	SILTY SAND: Brown SILTY SAND, trace clay, wet										
2.3 —				GS4		93					
2.5	Test pit terminated upon refusal at 2.3 m below ground surface on BEDROCK.			034		93					
3.0											
4.0											
6.0											
7.0											
8.0											
8.0	l	1		I	L			I			

## **TEST PIT NO. TP17-37**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		Ŋ			5	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		D	<b>`</b> 0	% R		DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528329</u> Northing: <u>5512594</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Northing. <u>5512594</u>
		YHY		m		TER	/ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0	TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay,	<u></u>									
	organics, wet	<u>x 17</u> x 17 x 17 <u>17</u> x 17									
0.5	SANDY SILT:			GS1		22					
	Dark brown to brown SANDY SILT, trace to some clay, wet			001		22				Ţ	
1.0 1.0				GS3		24					
	CLAYEY SILT: Brown CLAYEY SILT, trace sand, DTPL, firm										
				GS2		27				∳	PP = 1.5 kg/cm <sup>2</sup> (Cu = 72 kPa)
2.0											
	- APL										
3.0											
3.4	Test pit terminated upon refusal at 3.4 m below ground			GS4		26				•	Test pit open and dry upon completion of excavating.
	surface on BEDROCK.										completion of excavating.
4.0											
4.0											
5.0											
6.0											
7.0											
8.0											

# SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

## **NSD**

### **TEST PIT NO. TP17-38**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

### TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528313</u> Northing: <u>5512677</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID 1 \_ REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, GS1 24 0.2 organics, saturated SAND: Brown SAND, some silt, wet 1 1 1 1.0 GS2 26 1 1 1.2 GS3 30 Groundwater seepage at 1.2 m below ground surface SILTY CLAY: 1 Brown SILTY CLAY, some sand, APL, soft 2.0 2.5 GS4 58 SILTY CLAY: Red SILTY CLAY interbedded with grey clayey silt (varying thicknesses), trace sand, APL, soft 3.0 GS5 28 3.1 SILTY CLAY: Brown SILTY CLAY, trace sand, APL, soft 4.0 4.0 GS6 31 SILT AND CLAY: Grey SILT AND CLAY, WTPL, soft 5.0 6.0 6.2 Test pit terminated at 6.2 m below ground surface in SILT AND CLAY. 7.0

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

## **TEST PIT NO. TP17-39**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		S			S	AMPLE	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		P	%	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527987</u> Northing: <u>5512805</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	Northing. <u>3312003</u>
0.0		YHY		п	L L L L L	ĒR	ΈRΥ		SHEAR STRENGTH	H W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2	TOPSOIL: Grey sand TOPSOIL, organics, trace silt (frost to 0.1 m)	<u>×17</u> ×		GS1		11					
0.2	SILTY SAND: Brown SILTY SAND, trace clay, moist			001	1 4						
				GS2	4	6			•	•	
					4 4						<u>GSA GS2:</u> Gravel: 0% Sand: 71%
	- Greyish brown				7						Silt: 23% Clay: 6%
					5 9						
					9				•		
2.0				GS3		18				-	
2.3 —	Test sit to mission of the state of 0.0 mission of the state										Test nit open and doutings
	Test pit terminated upon refusal at 2.3 m below ground surface on BEDROCK.										Test pit open and dry upon completion of excavating.
3.0											
4.0											
5.0											
6.0											
7.0											
8.0											

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 22, 2017

## **TEST PIT NO. TP17-40**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 23, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		S			S	ampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		몃	%	% RE		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527711</u> Northing: <u>5512496</u>
(m)	STRATIGRAFHIC DESCRIPTION	GRAP	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	
0.0		ΥH			LUE	ĒR	ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2 —	TOPSOIL: Black sand TOPSOIL, some silt, organics (frost to 0.2	<u></u>									
	m) <u>SAND:</u>			GS1	1				•		
0.5	Brown SAND, trace silt, moist CLAYEY SILT:				2 3						
	Greyish brown CLAYEY SILT, trace sand, DTPL, soft-firm				5						
1.0					8 8				ļ		
				GS2	5						PP = 1.0 kg/cm <sup>2</sup> (Cu = 48 kPa)
1.5	SANDY SILT:			GS3	9 11						Groundwater seepage at 1.5 m below ground surface
	Greyish brown SANDY SILT, trace clay, moist				17				•		below ground surface
2.0											
2.3 —											
2.5 —	SAND: Brown SAND, trace silt, moist			GS4							Test pit open upon completion of
	Test pit terminated upon refusal at 2.5 m below ground surface on BEDROCK.										excavating
4.0											
5.0											
6.0											
7.0											
8.0	1	1						I			1

## **TEST PIT NO. TP17-41**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 23, 2017

			Ś	0 SAMPLE				CONE PENETRATION	WATE	D	UTM CO-ORDINATES		
DEP (m)	PTH 1)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20	IT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527417</u> Northing: <u>5512270</u>
0.0					PE	ALUE	ATER	IVERY	D	SHEAR STRENGTH	W <sub>P</sub>	 WL	REMARKS
0.2	2	TOPSOIL: Black silty sand TOPSOIL, organics, frozen	<u>717</u>										
	.2	SILTY SAND: Greyish brown SILTY SAND, trace clay, moist			GS1								
1.0	.8 —	CLAYEY SILT: Brown CLAYEY SILT, trace to some gravel, trace			GS2								Pooling of water at bottom of excavation to 0.95 m below ground
1.1	.1 —	sand,wet to saturated Test pit terminated upon refusal at 1.1 m below ground surface on BEDROCK.	2288		GS3		29					•	surface <u>AL GS3:</u> Liquid Limit: 31% Plastic Limit: 21% Plasticity Index: 10%
													excavation to 0.95 m below ground surface L_GS3: Liquid Limit: 31% Plastic Limit: 21% Plasticity Index: 10% GSA GS3: Gravet: 0% Sand: 1% Sitt: 66% Clay: 33%
2.0													Test pit open upon completion of excavating
3.0													
4.0													
5.0													
6.0													
7.0													
8.0													

## **TEST PIT NO. TP17-42**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 23, 2017

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		N		SAMPLE CO PENETF				CONE PENETRATION	WA	TER	UTM CO-ORDINATES	
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		DP	%	% RE		DPT" VALUE	CONT	ENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527274</u> Northing: <u>5512199</u>
(m)		GRAPH	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID		10 :	20 30	
					Ē	R	RY		SHEAR STRENGTH	W <sub>P</sub>	WL	REMARKS
0.2 —	TOPSOIL: Black sandy silt TOPSOIL with moss cover, trace clay, organics (frost to 0.4 m)											
	CLAY AND SILT: Brownish grey CLAY AND SILT, some sand, APL, firm											
				GS1								PP = 1.5 kg/cm <sup>2</sup> (Cu = 72 kPa)
1.0												
1.1 —	SANDY SILT: Brown SANDY SILT, some clay, WTPL, dilatant											
1.6 —				GS2								
	SAND: Brown SAND, some gravel, trace silt, trace clay, saturated											
2.0												Test pit caving at 2.0 m below ground surface upon completion of excavating
2.3 —	Test pit terminated upon refusal at 2.3 m below ground			GS3								Pooling of groundwater at bottom
	surface on BEDROCK.											of test pit
3.0												
4.0												
5.0												
6.0												
7.0												
8.0											$\square$	

## **TEST PIT NO. TP17-43**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### D

## DATE COMPLETED: Jan 17, 2017 SUPERVISOR: AJB

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		ST			5	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		몃	%	% RI		"DPT" VALUE	WATER CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>526948</u> Northing: <u>5512025</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Northing. <u>5512625</u>
0.0		YH		т	LUE	'ER	'ERY		SHEAR STRENGTH	⊢−−−− W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0	TOPSOIL: Black TOPSOIL, some sand, trace clay (frost to 0.6 m)			GS1		34					
	SILTY CLAY: Grey SILTY CLAY, DTPL to APL, stiff			GS2		19				€	
											PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
					2				•		
1.0					6 7						
					8				<b>H</b>		
					8 21				21-		
				GS3		30					
2.0											
2.2 —											
	SAND: Brown SAND, trace clay, saturated										Test pit caving at 2.2 m below ground surface upon completion of excavating.
2.6	Test pit terminated upon refusal at 2.6 m below ground			GS4		15				•	
	surface on BEDROCK.										Groundwater seepage at 2.6 m below ground surface
3.0											
4.0											
5.0											
6.0											
7.0											
8.0											

### **TEST PIT NO. TP17-44**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

#### REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

GILOUIUD	LLLVAIION.	NOT DETERMINED								_	REV				
			ST			S	ampli	E		C PENE	ONE TRATION		WAT	TER	UTM CO-ORDINATES
DEPTH (m)	STRATIG	RAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID		" VALUE 10 15	E C	ONTE	ENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527147</u> Northing: <u>5511752</u>
0.0					PE	ALUE	ATER	IVERY		SH STRI	IEAR ENGTH	L N	V <sub>P</sub>	WL	REMARKS
0.3 —	TOPSOIL: Black TOPSOIL, rootlets	some sand, organics, occasional	<u></u>		GS1										
	Test pit terminated surface on BEDRO	upon refusal at 0.3 m below ground CK.													Test pit open and dry upon completion of excavation; Bedrock slopes south to north
1.0															
2.0															
2.0															
3.0															
4.0															
5.0															
6.0															
8.0															

## **TEST PIT NO. TP17-45**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

### REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 18, 2017

GROUND ELEVATION: NOT DETERMINED

[													
		STR			5	SAMPLI			CO PENETF	NE RATION		ATER TENT %	UTM CO-ORDINATES UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527000</u>
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	_	DPT	% V	% RECOVERY		"DPT" \ 5 10			20 30	Easting: <u>527000</u> Northing: <u>5511844</u>
		RAPH	DEMALO	TYPE	DPT VALUE	% WATER	OVE	PID					
0.0		~			Ē	ע	RY		SHE/ STREN	AR IGTH	W <sub>P</sub>	WL	REMARKS
0.1	TOPSOIL: Black TOPSOIL, organics (frost to 0.6 m)			GS1									
0.3	SILTY CLAY: Grey SILTY CLAY, some sand, occasional rootlets			GS2									
	CLAYEY SILT: Grey CLAYEY SILT, DTPL to APL, stiff												
													PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
1.0													PP = 2.5 kg/cm <sup>2</sup> (Cu = 120 kPa)
				GS3		30						•	<u>AL GS3:</u> Liquid Limit: 25% Plastic Limit: 20%
													Plasticity Index: 5%
													GSA GS3: Gravel: 0% Sand: 0%
													Silt: 63% Clay: 37%
2.0 2.0 —	SAND: Brown SAND, trace alow esturated		1										Test nit caved at 2.0 m below
	Brown SAND, trace clay, saturated			GS4									Test pit caved at 2.0 m below ground surface upon completion of excavating: Significant groundwater seepage at 2.0 m below ground surface. 0.6 m pooled water at bottom of test pit
													groundwater seepage at 2.0 m below ground surface. 0.6 m pooled water at bottom of test pit
3.0													
3.8 —													
4.0	Test pit terminated upon refusal at 3.8 m below ground surface on BEDROCK.												
5.0													
6.0													
7.0													
8.0													

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## **TEST PIT NO. TP17-46**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 18, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		N,			S	ampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		P	%	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527308</u> Northing: <u>5511441</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	Norumig. <u>3311441</u>
0.0		YHY		m	LUE	TER	/ERY		SHEAR STRENGTH	⊢−−−− W <sub>P</sub> W <sub>L</sub>	REMARKS
	TOPSOIL: Black silty clay TOPSOIL, organics, DTPL	<u></u>									
				GS1		45					
0.9	CLAYEY SILT:			GS2		17				•	Groundwater seepage at 0.9 m and 3.8 m below ground surface
	Brown CLAYEY SILT, some sand, APL, stiff			002		17					3.8 m below ground surface PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
1.8	SILTY CLAY:										
2.0	Grey SILTY CLAY, trace sand, APL to WTPL, very stiff			GS3		33				•	PP = 3.5 kg/cm <sup>2</sup> (Cu = 168 kPa)
3.0											
4.0	- Grey clay with red clay varves (up to 25 mm thick)			GS4		65					
4.0											
4.8	Test pit terminated at 4.8 m below ground surface in	2222									Test pit open upon completion of excavating.
5.0	SILTÝ CLAY.										excavating.
6.0											
7.0											
8.0		1	I	I							

## **TEST PIT NO. TP17-47**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		Ŋ			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		DP-	%	% RE		DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527548</u> Northing: <u>5511337</u>
(11)		RAPH	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	┝━┸┰╼┸╼┲┸╼╸		
0.0					Ē	ر ر	٩Y		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	
0.1	TOPSOIL/peat: Black silty clay TOPSOIL/peat, some sand, organics, occasional rootlets, APL			GS1		23				•	
	SILTY CLAY: Brown SILTY CLAY, some sand, APL, soft										
				GS2							PP = 1.0 kg/cm <sup>2</sup> (Cu = 48 kPa)
1.0 1.0											
1.3 -	SILTY CLAY: Red SILTY CLAY with grey clayey silt varves (5 mm thick), APL, stiff			GS3							
1.3 —	SILTY CLAY: Grey SILTY CLAY, DTPL, very stiff			683							PP = 3.0 kg/cm <sup>2</sup> (Cu = 144 kPa)
2.0											
4.0											
4.6 —	CLAYEY SILT: Grey CLAYEY SILT, trace sand, DTPL, soft			GS4							
5.0											
5.5											
	Test pit terminated at 5.5 m below ground surface in CLAYEY SILT.										Test pit open and dry upon completion of excavating.
6.0											
8.0											

### **TEST PIT NO. TP17-48**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 19, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## SUPERVISOR: AJB REVIEWER: AY

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>527676</u> Northing: <u>5511351</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 10 20 30 5 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W 0.0 SILTY CLAY: Grey SILTY CLAY, some sand, organics, occasional GS1 24  $PP = 0.5 \text{ kg/cm}^2$  (Cu = 24 kPa) rootlets, APL, very soft 0.6 SILTY CLAY: Grey SILTY CLAY, trace sand, APL, firm to stiff 3 1.0 5 5 GS2 7 22 PP = 2.0 kg/cm<sup>2</sup> (Cu = 96 kPa) 6 1 2.0 7 6 22 CLAY AND SILT: Brown CLAY AND SILT, DTPL, stiff GS3 4 24 7 9 3.0 3.0 SAND: Brown SAND, some silty clay, occasional cobble, moist 3.5 GS4 24 Test pit open and very little water at bottom of test pit Test pit terminated upon refusal at 3.5 m below ground surface on BEDROCK 4.0 5.0 6.0 7.0

## **TEST PIT NO. TP17-49**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

#### DATE COMPLETED: Jan 19, 2017

PROJECT NO.: 161-15856-00

SUPERVISOR: AJB

#### GROUND ELEVATION: NOT DETERMINED

REVIEWER: AY

		S			S	AMPLE	Ξ		C PENE	ONE TRATION	,	WATE	R	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	-1	DPT	% W	% REC	_	"DPT	VALUE	co	0NTEN	IT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528015</u> Northing: <u>5511493</u>
0.0		RAPHY	-	TYPE	DPT VALUE	% WATER	RECOVERY	PID	SH	IEAR ENGTH		 >	  WL	REMARKS
	SANDY CLAY: Brown SANDY CLAY, organics, WTPL			GS1		42								
0.4	SILTY CLAY: Brown SILTY CLAY, some sand, WTPL, very soft													Significant groundwater seepage at 0.4 m below ground surface
1.0														
				GS2		40								
2.0														
	CLAYEY SILT: Grey CLAYEY SILT, trace sand, APL, firm			GS3		41								PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
2.9 —														
3.0	SILTY CLAY: Dark grey SILTY CLAY, trace sand, APL, firm													
4.0														
				GS4		44								
5.0 5.0	Test pit terminated at 5.0 m below ground surface in SILTY CLAY.													Test pit open and water at bottom of test pit
6.0														
7.0														
8.0														

7.0

## **TEST PIT NO. TP17-50**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 20, 2017

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CLIENT: TREASURY METALS INC.

TES	T PIT	TYPE: OPEN HOLE EXCAVATION								SUPE	RVISOR:	AJB
GRC	DUND	ELEVATION: NOT DETERMINED								REVI	EWER: AY	
			N			5	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
	EPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528299</u> Northing: <u>5511732</u>
0.0			YHe		т		TER	/ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0	0.2 —	TOPSOIL: Brown clayey silt TOPSOIL, occasional rootlets (frost to 0.8m)			GS1		61					
		CLAYEY SILT: Brown CLAYEY SILT, trace sand, APL, very soft										
1.0												
	1.4 —				GS2							PP = 0 kg/cm <sup>2</sup> (Cu = 0 kPa) PP = 2.0 kg/cm <sup>2</sup> (Cu = 96 kPa)
		SILTY CLAY: Brown SILTY CLAY, trace sand, APL, firm to stiff			GS3		42					Groundwater seepage at 1.5 m below ground surface
2.0												below ground surrace
3.0												
	3.2 —	SILTY CLAY: Mottled brown, grey SILTY CLAY, trace sand, APL to WTPL, firm			GS4		41					
		VV I F L, III II										
4.0												
5.0	5.0 —	CLAYEY SILT:										
		Grey CLAYEY SILT, trace clay, WTPL, soft			GS5		31					
					655		31					
6.0												
	6.4	Test pit terminated at 6.4 m below ground surface in CLAYEY SILT.										

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## **TEST PIT NO. TP17-51**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		S			S	ample	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528475</u> Northing: <u>5511968</u>
0.0		РНҮ		ų	ALUE	TER	VERY	D	I I SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
	TOPSOIL: Brown clayey silt TOPSOIL, some sand, organics (frost to 0.4m)	<u></u>		GS1		16				•	
0.4	CLAYEY SILT: Brown CLAYEY SILT, trace sand, APL, soft-firm										
1.0	- very stiff			GS2		28					PP = 1.0 kg/cm <sup>2</sup> (Cu = 48 kPa) <u>AL GS3:</u>
				GS3		33					AL GS3; Liquid Limit: 31% Plastic Limit: 21% Plasticity Index: 10% GSA GS3;
											<u>GSA GS3:</u> Gravel: 0% Sand: 0% Silt: 68% Clay: 32% PP = 3.0 kg/cm <sup>2</sup> (Cu = 144 kPa)
2.0											
3.0	SILTY CLAY:										
	Brown SILTY CLAY, some sand, occasional cobbles and boulders, APL, firm										
4.0 4.0	Tel a la construction de la constru			GS4		33				•	Test sit open and douteen
	Test pit terminated upon refusal at 4.0 m below ground surface on BEDROCK.										Test pit open and dry upon completion of excavating. Bedrock appears weathered
5.0											
6.0											
7.0											
8.0											

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 20, 2017

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### **TEST PIT NO. TP17-52**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00 DATE COMPLETED: Jan 20, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### **REVIEWER: AY**

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528748</u> Northing: <u>5512066</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W 0.0 TOPSOIL: Brown sand TOPSOIL, some silty clay, organics, GS1 36 occasional rootlets (frost to 0.8 m) 0.3 SAND: Brown SAND, some clayey silt, moist GS2 31 0.7 SILTY CLAY: Brown SILTY CLAY, APL, soft to firm 1.0 GS3 36 PP = 1.0 kg/cm<sup>2</sup> (Cu = 48 kPa) PP = 2.5 kg/cm<sup>2</sup> (Cu = 120 kPa) <u>AL GS4:</u> Liquid Limit: 41% Plastic Limit: 19% Plasticity Index: 22% 22 GS4 - Becoming stiff GSA GS4: Gravel: 0% Sand: 0% Silt: 36% Clay: 64% 2.0 3.0 4.0 GS5 43 4.2 Groundwater seepage at 4.2 m below ground surface SILTY CLAY: Red SILTY CLAY interbedded with clayey silt (varying thicknesses), trace sand, APL 4.9 GS6 37 SILTY CLAY: 5.0 Grey SILTY CLAY, trace sand, WTPL, soft 5.9 6.0 Test pit terminated at 5.9 m below ground surface in SILTY CLAY. 7.0

### **TEST PIT NO. TP17-53**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528768</u> Northing: <u>5512214</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Blackish brown sand TOPSOIL, some clayey silt, GS1 21 organics, occasional rootlets, moist 0.4 CLAYEY SILT: GS2 25 PP = 1.0 kg/cm<sup>2</sup> (Cu = 48 kPa) Brown CLAYEY SILT, some sand, APL, soft-firm 0.6 SILTY CLAY: GS3 23 PP = 1.5 kg/cm<sup>2</sup> (Cu = 72 kPa) Red SILTY CLAY interbedded every 10 mm with grey clayey silt (5 mm thick), trace sand, APL, firm 0.9 1.0 GS4 35 CLAY AND SILT: PP = 1.5 kg/cm<sup>2</sup> (Cu = 72 kPa) Brown CLAY AND SILT, trace sand, APL, firm-stiff Groundwater seepage at 1.7 m below ground surface 2.0 3.0 3.6 SANDY SILT: Brown SANDY SILT, some clay, moist, compact 4.0 GS5 30 Test pit open upon completion of excavating. 4.6 Test pit terminated upon refusal at 4.6 m below ground surface on BEDROCK 5.0 6.0 7.0

### **TEST PIT NO. TP17-54**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 21, 2017

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

SUPERVISOR: AJB

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528668</u> Northing: <u>5512537</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID 1 \_ REMARKS SHEAR STRENGTH W<sub>P</sub> W 0.0 TOPSOIL: Reddish brown sand TOPSOIL, organics GS1 18 0 0.3 1 SAND: Reddish brown SAND, some silt, wet, loose to compact 1 GS2 21 GSA GS2: Gravel: 0% Sand: 36% Silt: 41% Clay: 24% 1 7 2 4 1.0 Test pit caved from surface to 4.0 m below ground surface 4 4 4 4 4 2.0 Ì 3 2.9 SILT: Grey SILT, some sand, trace clay, dilatant, wet 3.0 GS3 19 GSA GS3: Gravel: 0% Sand: 14% Silt: 81% Clay: 5% 4.0 5.0 5.9 Groundwater seepage at 5.9 m below ground surface 6.0 SILT: GS4 39 Grey CLAYEY SILT TO SILT, some clay, trace sand, 6.1 wet, dilatant Test pit terminated at 6.1 m below ground surface in SILT. 7.0

## **TEST PIT NO. TP17-55**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

		Ŋ			S	SAMPL	E		C PENE	ONE TRATION	w	/ATEI	R	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT'	VALUE	CO	NTEN 20	т %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528879</u> Northing: <u>5513541</u>
0.0				PE	ALUE	ATER	WERY	D	SH	EAR NGTH	H W <sub>P</sub>		WL	REMARKS
	TOPSOIL: Black sandy silt TOPSOIL with moss cover, organics, saturated, loose	<u>1/</u>		GS1										
0.4	SILTY SAND: Dark grey SILTY SAND, wet, loose to compact			GS2	2 2 3 4									
<u>1.0</u> 1.0 <u> </u>	CLAYEY SILT: Grey CLAYEY SILT, trace sand, APL, firm to stiff			GS3	4 3 7 4 6 3 4 5 5									Groundwater seepage at 1.1 m below ground surface
3.0														
	Test pit terminated at 5.4 m below ground surface in CLAYEY SILT.													Excavation terminated at 5.4 m due to equipment reach and poor ground conditions
8.0														

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## **TEST PIT NO. TP17-56**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

## SUPERVISOR: AJB

GROUND ELEVATION: NOT DETERMINED

REVIEWER: AY

		S			5	Sampli	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20 30	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528874</u> Northing: <u>5513349</u>
0.0		νрнү		Ē	ALUE	NTER	VERY		SHEAR STRENGTH	H WP WL	REMARKS
0.3	TOPSOIL: Brown sand TOPSOIL, some silt, occasional rootlets, organics (frost to 0.4 m)	<u>, , ,</u> ,		GS1							
0.0	SAND: Brown SAND, trace silt, moist, loose to compact				2				•		
				GS2	4 5						
1.0	CLAYEY SILT:			GS3	8 13						
	Brown CLAYEY SILT, trace sand, DTPL, very stiff										
					5 10						
2.0					20 30				30		
				GS4	8 10	22			•	•	<u>GSA GS4:</u> Gravel: 0% Sand: 1%
					10				•		Sand: 1% Silt: 85% Clay: 14%
3.0	- Grey, APL										
3.3 —	SAND:										Test pit caved from 3.2 m to 4.8 m below ground surface
	Grey SAND, some silt, moist										
4.0											
				GS5							<u>GSA GS5:</u> Gravel: 0%
4.8	Test pit terminated upon refusal at 4.8 m below ground surface on BEDROCK.										Sand: 23% Silt: 40% Clay: 37%
5.0											
6.0											
7.0											
8.0											

## vsp

## **TEST PIT NO. TP17-57**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### **REVIEWER: AY**

SAMPLE UTM CO-ORDINATES CONE PENETRATION STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528856</u> Northing: <u>5513210</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID 1 -REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Greyish brown sand TOPSOIL, occasional rootlets, 11 01 GS1 moist (frost to 0.3 m) SAND: Brown SAND, some silt, wet 0.7 CLAY AND SILT: Brown CLAY AND SILT, some sand, APL, firm 0.9 1.0 SILTY CLAY: Brown SILTY CLAY, some sand, APL, soft 2.0 2.0 Test pit open and dry upon completion of excavating Test pit terminated upon refusal at 2.0 m below ground surface on BEDROCK. 3.0 4.0 5.0 6.0 7.0

# SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

## **TEST PIT NO. TP17-58**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: <u>161-15856-00</u> DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		S			S	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		DP	%	% RE		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528878</u> Northing: <u>5513071</u>
(m)		GRAPH	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	
0.0					Ē	R	ËRY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2	TOPSOIL: Black silty sand TOPSOIL, organics, moss, wet	<u></u>		GS1	3	54					
	SAND: Brown SAND, trace silt, wet, compact				5						
				GS2	9 5	39				· · · ·	
0.8	SILTY SAND:				6				•		Groundwater seepage at 0.8 m below ground surface
1.0	Grey SILTY SAND, trace to some clay, moist, compact to dense			GS3		19				<b>Ý</b>	
					5 8						
					13 18						
					5						
2.0					7				•		
					10 8						Test pit caving at surface to 2.4 m below ground surface upon completion of excavating
2.4 —	CLAYEY SILT: Grey CLAYEY SILT, trace sand, APL, firm			GS4		32					AL GS4: Liquid Limit: 28%
											Plastic Limit: 19% Plasticity Index: 9%
3.0											<u>GSA GS4:</u> Gravel: 0% Sand: 1%
											Silt: 72% Clay: 27%
3.4 —	SILTY SAND: Grey SILTY SAND, trace clay, wet										
	Grey GILTT SAIND, trace diay, wet			GS5		19				f	
4.0											
4.6 —	SAND: Grey SAND, some silt to silty, some gravel, occasional										Pooling of groundwater at bottom
4.8	Cobbles and boulders, wet Test pit terminated upon refusal at 4.8 m below ground	<u> </u>		GS6		18				•	of test pit
	surface in BEDROCK.										
6.0											
0.0											
7.0											
8.0											

### **TEST PIT NO. TP17-59**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 27, 2017

### TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### **REVIEWER:** AY

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528870</u> Northing: <u>5512873</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 5 10 15 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W PEAT: Black sand PEAT with moss cover, occasional rootlets, frozen, moist (frost to 0.3 m) 0.3 Groundwater seepage at 0.3 m below ground surface; pooling of SAND: Dark brown SAND, trace to some silt, wet water at bottom of test pit GS1 24 1.0 1.1 SILTY SAND TO SANDY SILT: Grey SILTY SAND TO SANDY SILT, trace clay, wet GSA GS2: Gravel: 0% Sand: 71% Silt: 24% GS2 19 Clay: 5% GSA GS3: Gravel: 0% Sand: 31% Silt: 67% 2.0 GS3 23 Clay: 2% Test pit caving at surface to 2.8 m below ground surface upon completion of excavating <u>AL GS4:</u> Liquid Limit: 28% 2.8 GS4 30 SILTY CLAY: 3.0 Red SILTY CLAY with grey clayey silt varves, trace Liquid Limit: 28% Plastic Limit: 15% Plasticity Index: 13% <u>AL GS5:</u> Liquid Limit: 21% Plastic Limit: 15% Plasticity Index: 6% <u>GSA GS5:</u> GraveI: 0% Sand: 15% Sati: 52% sand, APL, stiff GS5 3.1 20 CLAYEY SILT: Grey CLAYEY SILT, some sand, WTPL, soft Silt: 62% Clay: 24% 4.0 5.0 5.6 Test pit terminated at 5.6 m due to Test pit terminated at 5.6 m below ground surface in CLAYEY SILT. test pit walls being unstable 6.0 7.0

## **TEST PIT NO. TP17-60**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 24, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		S			S	ample	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR			%	% R		DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528930</u> Northing: <u>5512686</u>
(m)	STRATIGRAPHIC DESCRIPTION	IGRA	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Northing: <u>5512686</u>
		РНҮ		m		TER	VERY		SHEAR STRENGTH		REMARKS
0.0	TOPSOIL:	<u></u>					`		STRENGTH	W <sub>P</sub> W <sub>L</sub>	
0.3	Black sandy silt TOPSOIL with moss cover, organics, saturated	<u>x, 17</u> - 7 17 - 71 - 7		GS1	0	54					
	SILT: Dark brown SILT, trace clay, trace sand, wet, loose to				1 2						
	compact - Grey				7				<b>`</b> •		
1.0	- 0109				7				•		
				GS4	4						<u>GSA GS4:</u> Gravel: 0% Sand: 7%
					4 3				Į		Sand: 7% Silt: 86% Clay: 7%
					4				•		
				GS3	4						
2.0 1.9	SANDY SILT:				1 2						
	Grey SANDY SILT, trace clay, wet, dilatant, loose to compact				9						
					8				•		
				GS2							
3.0											Test pit caving at surface to 3.0 m below ground surface upon completion of excavating
											completion of excavating
4.0 4.0											
4.0	SILTY CLAY: Red SILTY CLAY with grey clayey silt varves, trace										
	sand										
5.0											
				GS5							
5.8	Test pit terminated at 5.8 m below ground surface in	CARARA I									
6.0	SILTY CLAY.										
7.0											
8.0											

## vsp

## **TEST PIT NO. TP17-61**

#### PAGE 1 of 1

## PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

#### REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 27, 2017

GROUND	ELEVATION: NOT DETERMINED									REVI	EW	ER:	AY	
		Ŋ			5	SAMPL	E		PENE	ONE TRATION		WATE	P	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT' 5	VALUE	_ co	0 20	IT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529621</u> Northing: <u>5512495</u>
0.0	PEAT:				Ē	~	~		STRE	EAR NGTH	Ŵ	-	WL	
	PEAL Black sand PEAT with moss cover, frozen			GS1										Test pit location was moved 23 m south or proposed location due to rock outcrop
0.3	SILTY SAND: Brown SILTY SAND, some clay, frozen													
0.6	Test pit terminated upon refusal at 0.6 m below ground surface on BEDROCK.		-	GS2										Test pit open and dry upon completion of excavating
1.0														
2.0														
4.0														
5.0														
6.0														
7.0														
8.0														

## **TEST PIT NO. TP17-63**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

### REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

#### GROUND ELEVATION: NOT DETERMINED

					ç	SAMPLI	F			CONE					UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR						"DP	CONE NETRATI	UE	CO	VATE NTEN	Т%	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529710</u> Northing: <u>5513600</u>
(m)	STRATIGRAPHIC DESCRIPTION	IGRAF	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5	10	15 I	10 I	20	30	Northing: <u>5513600</u>
0.0				П	LUE	Ŗ	ΈRΥ		ST	SHEAR RENGTI	4	⊢ W <sub>P</sub>		WL	REMARKS
0.2	TOPSOIL: Black sand TOPSOIL with moss cover, occasional rootlets, organics			GS1 GS2											Moved 5 m north east, bedrock at 0.3 m below ground surface
0.6 —	SAND: Blackish grey SAND, trace silt, occasional rootlets, moist			GS3											
	SAND: Reddish brown SAND, moist														Test pit open and dry upon completion of excavating.
	Test pit terminated upon refusal at 0.6 m below ground surface on BEDROCK.														
2.0															
3.0															
4.0															
5.0															
6.0															
7.0															
8.0															

## **TEST PIT NO. TP17-64**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		Ŋ			S	SAMPLI	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		⊵	%	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529337</u> Northing: <u>5513639</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	Noruning. <u>5513639</u>
0.0		YHY			Г С П	ĒR	'ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2	TOPSOIL: Brown sand TOPSOIL with moss cover, trace silt,	<u>\</u> _\		GS1	1	19			•		
0.2	occasional rootlets, organics CLAYEY SILT:				2 2						
	Light brown CLAYEY SILT, some sand, moist to wet, loose to compact			GS2	4	2				•	
					4				•		
1.0											
					2						
					3 4				Į		
2.0					7 13						
				GS3		18					GSA GS3:
				000		10					GSA GS3: Gravel: 0% Sand: 20% Silt: 59%
3.0											Clay: 21% Test pit caved from surface to 3.0 m below ground surface
											m below ground surface
4.0											
4.1	Test pit terminated at 4.1 m below ground surface in CLAYEY SILT.										Excavation terminated at 4.1 m due to test pit wall instability
5.0											
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-65**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: <u>161-15856-00</u> DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

## SUPERVISOR: AJB REVIEWER: AY

GROUND ELEVATION: NOT DETERMINED

		STRA				SAMPLI				WATER CONTENT %	<u>UTM CO-ORDINATES</u> UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529163</u> Northing: <u>5513628</u>
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% W/	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20 30	Northing: <u>5513628</u>
		ΛРНY		PE	ALUE	WATER	OVERY	∣ె	SHEAR STRENGTH	—————————————————————————————————————	REMARKS
0.0	TOPSOIL: Dark brown sand TOPSOIL, occasional rootlets,	<u>×1 1/</u> . 1		GS1	1	52			•		
	organics, moist, loose SAND: Brown SAND, some silt, moist, loose to compact	J			2 4						
	brown OAND, some sin, moist, loose to compact			GS2	4 8	40				,	•
1.0											Groundwater seenage at 1.0 m
					2						Groundwater seepage at 1.0 m below ground surface
1.6 —				GS3	5	22					
	SILT: Grey SILT, trace sand, trace clay, wet, compact				4				Í		<u>GSA GS3:</u> Gravel: 0% Sand: 8% Silt: 88%
											Clay: 3%
3.0 3.0 —	SILTY SAND:										
	Grey SILTY SAND, wet			GS4		18				-	
4.0											
4.5 —											
4.5	Test pit terminated at 4.5 m below ground surface in SILTY SAND.										Excavation terminated at 4.5 m due to test pit wall instability
5.0											
6.0											
8.0											

### **TEST PIT NO. TP17-66**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### SUPERVISOR: AJB REVIEWER: AY

SAMPLE CONE PENETRATION UTM CO-ORDINATES STRATIGRAPHY WATER UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529261</u> Northing: <u>5513434</u> CONTENT % % "DPT" VALUE DEPTH MONITOR DPT VALUE RECOVERY % STRATIGRAPHIC DESCRIPTION 10 15 5 10 20 30 (m) DETAILS TYPE WATER PID REMARKS SHEAR STRENGTH W<sub>P</sub> W TOPSOIL: Black sand TOPSOIL with moss cover, organics, GS1 42 2 • 0.2 saturated, loose 4 SAND AND SILT: 3 Brown SAND AND SILT, trace clay, moist, compact 3 4 1.0 GS2 84 GSA GS2: Gravel: 0% Sand: 46% Silt: 50% Clay: 4% 10 20 22 22 1.9 GS3 18 30 30 SILTY SAND: 2.0 Brown SILTY SAND, trace clay, moist, compact to dense 3.0 Excavator had difficulty sampling GS4 3.6 GS4 14 GSA GS4: Gravel: 0% Sand: 11% Silt: 86% SILT: Grey SILT, some sand, trace clay, DTPL, hard 4.0 Clay: 4% 4.8 CLAYEY SILT: Grey CLAYEY SILT, trace sand, WTPL, soft to firm 5.0 GS5 22 5.9 Test pit open and dry upon completion of excavating. 6.0 Test pit terminated at 5.9 m below ground surface in CLAYEY SILT. 7.0

## **TEST PIT NO. TP17-67**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: <u>161-15856-00</u> DATE COMPLETED: Jan 26, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

		Ŋ			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		Ū	.0	% R		DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529478</u>
(m)	STRATIGRAPHIC DESCRIPTION	IGRA	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Northing: <u>5513425</u>
		PHY		Ē	ALUE	TER	VER'		SHEAR STRENGTH	L	REMARKS
0.0	PEAT:	<u>\</u>					~		STRENGTH	W <sub>P</sub> W <sub>L</sub>	
0.2 -	Black sand PEAT with moss cover, occasional rootlets, frozen, moist (frost to 0.3 m)			GS1	1 2	22					
0.4 -	SAND: Brown SAND, trace silt, moist, loose			GS2	4	19				I	
	SANDY SILT:			0.02	16	19					
	Brown SANDY SILT, trace clay, moist, compact			GS3	7	27			<b>F</b>	•	
1.0											
1.4 -	SILTY CLAY:										Test pit caving at surface to 1.4 m below ground surface upon completion of excavating
1.7 -	Red SILTY CLAY with grey clayey silt varves, trace sand, APL, firm			GS4 GS5	9	33 81				•	completion of excavating
	SILTY SAND: Brown SILTY SAND, trace clay, moist, dense				9						
2.0					14 17						
					17						
3.0											
0.0											
4.0											
4.5 -	CLAY AND SILT:										
	Grey CLAY AND SILT, trace sand, WTPL										
5.0				GS6		26					
5.5 -	Test pit terminated at 5.5 m below ground surface in CLAY AND SILT.										Test pit dry upon completion of excavating
6.0											
7.0											
7.0											
8.0											
0.0			!								

## **TEST PIT NO. TP17-68**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 27, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		S			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529096</u> Northing: <u>5513197</u>
0.0		PHY		m	ALUE	TER	VERY	0	SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
	PEAT: Black sand PEAT with moss cover, saturated	<u> </u>									
0.4 —	CLAYEY SILT: Brown CLAYEY SILT, some sand, moist, compact				4				•		Groundwater seepage at 0.4 m below ground surface
1.0				GS1	4 10 7	24					GSA GS1: Gravel: 0% Sand: 13% Silt: 58% Clay: 29%
1.6 —	SILTY SAND: Mottled brown, grey SILTY SAND, trace clay, moist,			GS2		25				•	<u>GSA GS2:</u> Gravel: 0% Sand: 70% Silt: 28%
2.0	compact to dense				5 6 10						Silt 28% Clay: 2%
2.4 —	SILTY CLAY: Grey SILTY CLAY, trace sand, APL, stiff	-		GS3	14	18					
3.0											
4.0											Test pit caved at 4.0 m below ground surface upon completion of excavating
5.0											
55 -											
6.0	SAND: Grey SAND, trace silt, wet										
6.1 —	Test pit terminated at 6.1 m below ground surface in SAND.			GS4		22				•	
7.0											
8.0											

## **TEST PIT NO. TP17-69**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 27, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

### REVIEWER: AY

		S			S	SAMPLE	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR		무	%	% RE		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529355</u> Northing: <u>5513205</u>
(m)		GRAP	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	· · · · · · · · · · · · · · · · · · ·
0.0					UE	ER	ERY		SHEAR STRENGTH	H H W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2 —	TOPSOIL: Greyish black sand TOPSOIL with moss cover, moist	<u>7/1</u> 7		GS1	3	30			•	•	Moved test pit locations 108 m south east of proposed location
	SAND: Brown SAND, trace silt, moist, compact to dense				5 7						(swamp)
				GS2	12	27				+	
1.0					16						
	- Some silt, saturated			GS3							Groundwater seepage at 1.2 m below ground surface
				GS4	4	21			•		
2.0	- Wet				5 4						
					16						
					20						
3.0											
3.2 —	SILT: Grey SILT with dark grey silty clay varves (3 mm thick),			GS5		20				•	<u>GSA GS5:</u> Gravel: 0% Sand: 1%
	trace sand, APL, stiff										Silt: 84% Clay: 15%
4.0											
5.0											
											GSA GS6
6.0 6.0	Test pit terminated at 6.0 m below ground surface in			GS6							<u>GSA GS6:</u> Gravel: 0% Sand: 1% Silt: 84%
	SILT.										Clay: 15% Test pit open and dry upon completion of excavating
7.0											
8.0											

## **TEST PIT NO. TP17-70**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 26, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		S			5	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		⊵	%	% R		DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529545</u> Northing: <u>5513201</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	RECOVERY	PID	5 10 15	10 20 30	Northing. <u>3513201</u>
		ΥHe		m		TER	/ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0	PEAT: Black PEAT with moss cover, fine to medium sand, wet	<u></u> _									
0.2 —	SAND: Dark brown SAND, trace silt, trace peat, wet, loose to			GS1	1				•		
	compact			001	3				•		
0.8	SILTY SAND:				5 7						
1.0	Grey SILTY SAND, trace clay, moist, compact				12						
				GS2							004.002
											<u>GSA GS2:</u> Gravel: 0% Sand: 77%
2.0					4 3						Silt: 21% Clay: 2%
2.1 —	CLAYEY SILT:			GS3	3				Į		Test pit caving at surface to 2.1 m below ground surface upon completion of excavating
	Grey CLAYEY SILT, some sand, DTPL to APL, firm				6				•		completion of excavating
3.0											
3.2 —	SANDY SILT: Grey SANDY SILT, trace clay, moist										
				GS4							
4.0											
5.0											
5.5	Test pit terminated at 5.5 m below ground surface in SANDY SILT.										Test pit dry upon completion of excavating
6.0											
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-71**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

<b></b>														
		ST				SAMPLI	E		PEN	CONE ETRATION		/ATE		UTM CO-ORDINATES
DEDTU		STRATIGRAPHY				_	% F		"DPT	" VALU		NTEN	IT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529185</u> Northing: <u>5513042</u>
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	- G	MONITOR DETAILS	-	) PT	%	REC			10 15	10	20		Northing: <u>5513042</u>
		AP		TYPE	DPT VALUE	% WATER	% RECOVERY	PID						
0.0		≺			Ē	뜄	RY		SI STR	HEAR ENGTH	W <sub>P</sub>		WL	REMARKS
0.0	TOPSOIL:	7 <u>1</u> 1												
	Dark brown sand TOPSOIL with moss cover, some silt, organics, moist	<u></u>		GS1										
0.4 —	SAND:			001										
	Brown SAND, some silt, moist													
1.0														
1.0				GS2										
12														Test pit caving at surface to 1.3 m below ground surface upon completion of excavating
1.3 —	CLAY AND SILT: Grey CLAY AND SILT, trace sand, APL, firm													AL GS3:
	Giey CLAT AND SILT, trace sand, AFL, IIIII			GS3		35								AL GS3: Liquid Limit: 30% Plastic Limit: 17%
														Plasticity Index: 13% <u>GSA GS3:</u> Gravel: 0%
2.0														Gravel: 0% Sand: 10% Silt: 53%
2.0														Sift: 53% Clay: 38% PP = 1.0 kg/cm <sup>2</sup> (Cu = 48 kPa)
														11 - 1.0 kg/011 (OU - 40 krd)
3.0														
3.6 —														
	SILTY SAND: Grey SILTY SAND, trace clay, moist		]											
	,,,, ,,, ,,, ,, ,,, ,, ,,,,, ,,,, ,,,, ,, ,, .			GS4										
4.0														
4.5 —	CLAYEY SILT:													
	Grey CLAYEY SILT, some sand, DTPL to APL, firm													
5.0														
5.0														
			1											
				GS5										
5.7 —	Test pit terminated at 5.7 m below ground surface in		1											
6.0	CLAYEY SILT.													
0.0														
7.0														
7.0														
8.0		1	I					1						

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

## **TEST PIT NO. TP17-72**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

## REVIEWER: AY

SUPERVISOR: AJB

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 27, 2017

		S			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		D	.0	% R		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529366</u> Northing: <u>5513054</u>
(m)	STRATIGRAPHIC DESCRIPTION	IGRA	DETAILS	TYPE	PT V	% WATER	ECO	PID	5 10 15	10 20 30	Northing: <u>5513054</u>
		PHY		м	DPT VALUE	TER	% RECOVERY		SHEAR STRENGTH		REMARKS
0.0	PEAT:	<u>\\/</u> \					,		STRENGTH	W <sub>P</sub> W <sub>L</sub>	Cedar swamp
	Black PEAT with moss cover, some sand, saturated	1/ 1/									
0.6	SAND: Dark brown SAND, some silt, some organics, moist										
1.0											
2.0											
2.3 —	SAND AND SILT:										
	Grey SAND AND SILT, trace clay, moist										
3.0											
3.4 —	CLAY AND SILT:										
	Grey CLAY AND SILT, trace sand, APL										
4.0											
5.0 5.0	Test pit terminated at 5.0 m below ground surface in										Groundwater pooling at bottom of test pit
	CLAY AND SILT.										
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-73**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 26, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

### REVIEWER: AY

		N,			S	SAMPLI	Ξ		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529517</u> Northing: <u>5513050</u>
0.0				PE	ALUE	ATER	IVERY	D	SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.2	TOPSOIL: Black sand TOPSOIL with moss cover, occasional rootlets, frozen, moist (frost to 0.3 m) SAND:				1						
0.8	Brown SAND, trace silt, moist, loose to compact			GS1	2 2	14				Ŧ	
1.0	SILTY SAND: Brown SILTY SAND, trace clay, wet, compact to dense				7 8						654 652
				GS2	4	17				•	<u>GSA GS2:</u> Gravel: 0% Sand: 64% Silt: 34% Clay: 2%
2.0					9 9 13						
					10						
2.5	CLAYEY SILT: Grey CLAYEY SILT, some sand, DTPL, firm			GS3		37				•	
3.0	<u>SILTY CLAY:</u> Red SILTY CLAY with grey clayey silt varves, trace sand, DTPL, firm			GS4		48					<u>AL GS4:</u> Liquid Limit: 24% Plastic Limit: 16%
3.3 —	CLAYEY SILT: Grey CLAYEY SILT, trace sand, WTPL, soft to firm										Plasticity Index: 8%
4.0											
											<u>AL GS5;</u> Liquid Limit: 31% Plastic Limit: 22% Plasticity Index: 9%
5.0				GS5		34				•	<u>GSA GS5:</u> Gravel: 0% Sand: 1%
											Silt: 75% Clay: 24%
6.0	Test pit terminated at 5.7 m below ground surface in CLAYEY SILT.										Test pit open and dry upon completion of excavating
7.0											
8.0											

## **TEST PIT NO. TP17-74**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 24, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### **REVIEWER:** AY

		Ŋ			5	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		⊵	%	% R		"DPT" VALUE	CONTENT	WITM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529169</u> Northing: <u>5512844</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAF	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	
0.0		YHY				Ŗ	ERY		SHEAR STRENGTH	W <sub>P</sub> V	H REMARKS
0.1	TOPSOIL: Black sand TOPSOIL with moss cover, some silt,			GS1							
0.3 —	organics, moist (frost to 0.2 m) SANDY SILT:			001	5 5						
	Brown SANDY SILT, some clay, moist, compact SILTY SAND:				3						
	Grey SILTY SAND, trace clay, rust color streaks, moist, compact				6 7				I		
1.0				GS2							
1.2 —	Test pit terminated upon refusal at 1.2 m below ground surface on BEDROCK.	- <u>1</u> - 1									Test pit open and dry upon completion of excavating.
2.0											
4.0											
5.0											
6.0											
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-75**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

#### PROJECT NO.: 161-15856-00

#### [

## DATE COMPLETED: Jan 26, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### REVIEWER: AY

		S			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR		P	%	% RI		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529411</u> Northing: <u>5512834</u>
(m)	STRATIGRAPHIC DESCRIPTION	GRAP	DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	5 10 15	10 20 30	Northing. <u>0012001</u>
0.0		ΥH				ĒR	ERY		SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.1	TOPSOIL: Black sand TOPSOIL with moss cover, occasional	<u></u>									
	rootlets, moist (frost to 0.2 m) SAND:				2				•		
	Brown SAND, trace to some silt, moist, compact to dense			GS1	2 3	19				•	
	- Some silt, wet to saturated				17 17						
				GS2		21					
				0.02		21					Groundwater seepage at 1.2 m below ground surface
					8						
					10						
2.0					8				•		
2.4											
	SILTY SAND: Grey SILTY SAND, wet										
											Test pit caving at surface to 3.5 m below ground surface upon completion of excavating
											completion of excavating
4.0											
5.0				GS3		18				•	
5.2 —	Test pit terminated at 5.2 m below ground surface in SILTY SAND.										
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-76**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

## PROJECT NO.: <u>161-15856-00</u> DATE COMPLETED: Jan 26, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### REVIEWER: AY

		S			S	SAMPLI	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	-	DPT	۷ %	% REC	_	DPT" VALUE 5 10 15	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529388</u> Northing: <u>5512665</u>
		RAPHY		TYPE	DPT VALUE	% WATER	% RECOVERY	PID	SHEAR STRENGTH	W <sub>P</sub> W <sub>L</sub>	REMARKS
0.0	TOPSOIL: Dark brown sand TOPSOIL with moss cover, some	<u></u>		GS1	0	29				•••	
0.2	organics, occasional rootlets, moist				3						
	Brown SAND, moist, compact to dense				4 7						
					10						
1.0 1.0	SAND AND SILT:			GS2		18				-	
	Grey SAND AND SILT, trace clay, moist, compact to dense				3						
				GS3	5	45			•		
					4 9						
					12				•		
											Test nit caving at surface to 3.0 m
											Test pit caving at surface to 3.0 m below ground surface upon completion of excavating
4.0											
4.2 —	CLAY AND SILT:										
	Grey CLAY AND SILT, trace sand, WTPL, soft										
5.0											
5.2 —				GS4							
0.2	Test pit terminated at 5.2 m below ground surface in CLAY AND SILT.			004							Test pit dry upon completion of excavating
6.0											
8.0											

## **TEST PIT NO. TP17-77**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

#### TEST PIT TYPE: OPEN HOLE EXCAVATION

## SUPERVISOR: AJB

GROUND ELEVATION: NOT DETERMINED

REVIEWER: AY

						SAMPLI	-		CONE			
		STRATIGRAPHY					- %		CONE PENETRATION		ATER FENT %	UTM CO-ORDINATES UTM Zone: <u>15</u> NAD: <u>83</u>
DEPTH	STRATIGRAPHIC DESCRIPTION	ATIO	MONITOR		무	%	% RE		"DPT" VALUE			UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529209</u> Northing: <u>5512679</u>
(m)		<b>BRA</b>	DETAILS	TYPE	T <	% WATER	ico/	PID	5 10 15	10	20 30	
		γHc		m	DPT VALUE	TER	RECOVERY		SHEAR STRENGTH	<u> </u>		REMARKS
0.0	TOPSOIL:	<u>\</u>							STRENGTH	W <sub>P</sub>	WL	
0.3 —	Greyish black sand TOPSOIL with moss cover, some silt, moist, loose	<u>×1/</u> ×		GS1	1				•			
	SAND:	1			2							
	Brown SAND, some silt, moist, loose to compact				3							
					9				•			
1.0				GS2								
				002								
					5							
					10							Groundwater seepage at 1.6 m below ground surface
1.6 —	CLAYEY SILT:			GS3	7	23			•		•	
	Grey CLAYEY SILT, trace sand, DTPL, firm				10 5				🛃			<u>AL GS3:</u> Liquid Limit: 26% Plastic Limit: 18%
2.0					6							Plasticity Index: 8%
					5				•			
2.4 —	CLAYEY SILT:			GS4	7							
	Grey CLAYEY SILT with dark grey silty clay (2 to 5 mm thick) varves, trace sand, DTPL to APL, stiff			034								
3.0 3.0	SAND:	AN A										
	Brown SAND some gravel trace silt trace clay											One whether a strength of the theory of
3.3 —	occasional cobbles/ boulders, wet	<u> </u>		GS5								Groundwater pooling at bottom of test pit
	Test pit terminated upon refusal at 3.3 m below ground surface on BEDROCK.											
4.0												
5.0												
6.0												
7.0												
8.0				I				I				

## **TEST PIT NO. TP17-78**

#### PAGE 1 of 1

### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

### PROJECT NO.: 161-15856-00

#### DATE COMPLETED: Jan 27, 2017

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

CLIENT: TREASURY METALS INC.

#### **REVIEWER:** AY

		N,			5	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH		STRATIGRAPHY	MONITOR				R %		"DPT" VALUE	CONTENT %	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>529295</u> Northing: <u>5512318</u>
(m)	STRATIGRAPHIC DESCRIPTION	'IGRA	MONITOR DETAILS	TYPE	)PT V	% WATER	RECO	PID	5 10 15	10 20 30	Northing: <u>5512318</u>
		VPHY		PE	DPT VALUE	TER	% RECOVERY	D	SHEAR STRENGTH	i	REMARKS
0.0	TOPSOIL:	<u>\ 1</u> /. \					~		STRENGTH	W <sub>P</sub> W <sub>L</sub>	
0.2 —	Black sand TOPSOIL with moss cover, trace clay, moist, loose				1						
	SAND: Brown SAND, trace silt, moist, loose to compact				5						
	· · · · · · · · · · · · · · · · · · ·				9						
					10				Ī		
1.0				GS1		28				1	
	- Light brown, some silt, wet										
				GS2		23				<b> </b>   <b>     </b>	Groundwater seepage at 1.4 m below ground surface
					5						
2.0					9						
					20				$  \rangle$		
					16						
3.0 3.0	SILTY SAND:			GS3		19				•	
	Grey SILTY SAND, wet to saturated										
											Test pit caving at surface to 4.0 m below ground surface upon completion of excavating
											completion of excavating
5.0											
5.2	CLAY AND SILT:										I inable to retrieve viable sample of
5.2	Grey CLAY AND SILT, trace sand	l									Unable to retrieve viable sample of CLAY AND SILT.
	Test pit terminated at 5.2 m below ground surface in CLAY AND SILT.										
6.0											
7.0											
8.0											

## **TEST PIT NO. TP17-79**

#### PAGE 1 of 1

#### PROJECT NAME: TSF PREFEASIBILTY DESIGN - SI DEVELOPMENT

PROJECT NO.: 161-15856-00

DATE COMPLETED: Jan 24, 2017

#### CLIENT: TREASURY METALS INC.

## TEST PIT TYPE: OPEN HOLE EXCAVATION GROUND ELEVATION: NOT DETERMINED

### **REVIEWER:** AY

		Ŋ			5	SAMPL	E		CONE PENETRATION	WATER	UTM CO-ORDINATES
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	STRATIGRAPHY	MONITOR DETAILS	TYPE	DPT VALUE	% WATER	% RECOVERY	PID	"DPT" VALUE 5 10 15	10 20 30	UTM Zone: <u>15</u> NAD: <u>83</u> Easting: <u>528900</u> Northing: <u>5512448</u>
0.0		РНҮ		т		TER	VERY	0	SHEAR STRENGTH	H WP WL	REMARKS
0.3	TOPSOIL: Black sandy silt TOPSOIL with moss cover, organics SAND:	<u></u>		GS1	woн	28		_		•	Test pit caving at surface to 2.4 m below ground surface upon completion of excavating
	Brown SAND, some silt, wet, loose to compact				woн woн			+			
				GS2	3 4 3	21			<b>}</b>	•	
1.2	SAND: Greyish brown SAND, some silt, saturated, loose to compact			GS3	2 8 5	28					
2.0					1						<u>AL GS4:</u> Liquid Limit: 32% Plastic Limit: 18%
2.4 —				GS4	2 3	36					Plastic Limit: 18% Plasticity Index: 14% <u>GSA GS4:</u> Gravel: 0%
	CLAY AND SILT: Grey CLAY AND SILT with dark grey silty clay varves (3 mm thick), trace sand, APL, firm				9						Grave: 0% Sand: 4% Silt: 58% Clay: 38% Groundwater seepage at 2.4 m below ground surface
3.0											below ground surface
4.0											
5.0											
<u>6.0</u> 5.9 —	Test pit terminated at 5.9 m below ground surface in CLAY AND SILT.										
7.0											
8.0											