Technical Summary

November 2023

Pit Name: Turcotte

Provincial Pit Number: 0384

Location: The pit is located approximately 4km northeast of Pritchard via Hwy 1 (TransCanada Highway) then south via Stoney Flats Road, turning south onto Gravel Pit Road. (Figure 1).

Legal Land Description: The pit is legally described as That Part of the Southeast ¼ of Section 20, Township 20, Range 13, W6M, KDYD, except Block A. The pit is covered by a Crown Land Act Section 16 Map Reserve No. 0255072 in the name of the Ministry of Transportation and Infrastructure. The Map Reserve is 54 hectares, more or less. The geographical coordinates are Universal Transverse Mercator Grid Zone 11, 304300 Easting, 5620800 Northing. The layout of the Map Reserve boundary is shown in the pit plan (Figure 2).

Subsurface Investigation: Subsurface investigations at Turcotte Pit were carried out in September 2023 and August 2012 by the Ministry of Transportation & Infrastructure.

In 2023 eleven (11) test pits were excavated to depths ranging from 1.0m to 5.5m and in 2012, nineteen (19) test pits were excavated to depths ranging from 3.2m to 4.2m. During the test pitting, subsurface soil and groundwater conditions were logged and representative samples of the granular materials were collected for laboratory testing and future reference. Laboratory testing was carried out on nine (9) and twelve (12) of these samples at WSP laboratories to assess the gradation and durability characteristics. The tests completed were wet sieve analysis, micro-deval, sand equivalent, relative density, and absorption.

Based on the results of the 2023 and 2012 investigations, a suitable granular area for mining has been defined (Figure 3). The detailed results of the subsurface testing are provided in the Test Pit Summaries and test pit locations are shown on the Pit Development Plan (Figure 3).

Material Gradation: Table 1 shows the gradation as a percentage by weight of the fines (silts and clays), sand and gravel components as well as the Unified Soil Classification (USC [included after test pit summary]) for the samples tested from 2023 and 2012.

Table 1: Pit Run Gradation

Test Pit	Depth (m)	Fines (%)* <0.075mm	Sand (%)* 0.075-4.75mm	Gravel (%)* 4.75-75mm	USC
2023					
23-01	0-4.8	10.7	61.9	27.4	SWSM
23-02	0.3-5	1.8	55.3	42.8	SP
23-03	0.5-3	2	59.1	38.9	SP
23-04	0.4-4.4	3.2	56.7	40.1	SP
23-05	1.8-5.5	1.8	55.1	43.1	SP
23-06	1.3-4.5	2.7	65.6	31.7	SP
23-07	0.5-5.3	0.7	59.1	40.2	SP
23-08	1-4.3	18	38.2	43.8	GM1
23-10	0-1	22.1	22.7	55.2	GM2
Average		7	52.6	40.4	SPSM
2012					
12-01	0.2-4.1	3	47	50	GP
12-04	1-4	3	67	30	SP
12-06	2.2-4	1	60	39	SP
12-09	0.4-2	5	43	52	GPGM
12-11	0.3-2.1	4	38	58	GP
12-14	2-3.6	2	56	42	SP
12-15	2.2-3.6	1	61	38	SP
12-17	0.3-4	2	54	44	SP
12-19	0.2-3.6	3	58	39	SP
Average		2.6	53.8	43.6	SP

Oversize Field Estimates: Table 2 shows the estimated percent of oversize rock as noted in the field during exploration.

Table 2: Oversize Field Estimates

2023

Classification:	Average (%)	Range (%)
Boulders (>375mm)	0.6	0-2
Cobbles (150-375mm)	1.8	1-3
Cobbles (75-150mm)	4	2-8

Maximum rock size observed was 500mm.

2012

Classification:	Average (%)	Range (%)
Boulders (>375mm)	<1	0-2
Cobbles (150-375mm)	3	0-8
Cobbles (75-150mm)	4	1-10

Maximum rock size observed was 700mm.

Material Durability: Table 3 shows the results of the durability tests as well as the specifications as required in the Standard Specifications for Highway Construction.

Table 3: Durability Test Results

Test Pit	Sand Equivalent	Micro Deval	Absorption		Relative Density	
		C/F	Coarse	Fine	Coarse	Fine
2023						
TP23-02		13.1 Coarse only				
TP23-05	77					
TP23-06			1.63	1.04	2.576	2.666
2012						
TP12-04		12.3/11				
TP12-09		12.8/15				
TP12-14		13.9/12.6				
TP12-17		11/14.3				
BC MoTI Specifications						
Sand Equivalent	≥40 for Base Course and fine aggregates for Asphalt Mix Aggregates ≥20 for Surfacing, Sub-Base and Bridge End Fill aggregates					
Micro Deval	≤30% for Sub-Base and Bridge End Fill aggregates ≤25% for Surfacing & Base Course Aggregates ≤18% for Class 1 Pavement asphalt mix aggregates ≤20% for Class 2 Pavement asphalt mix aggregates					
Absorption	<2.0% for coarse paving aggregates ≤1.0% for coarse and ≤1.5% for fine Graded Aggregate Seal Coat aggregates					
Relative Density	~2.65 for all aggregate products					

Material Suitability: Based on the 2023 investigation results, the material in the proposed suitability area is judged to be suitable for the following purposes:

Table 4: Suitability

	Pit Run	Crush
Turcotte Suitability area	Bridge End Fill* SGSB HFSA Winter Abrasive *with sand rejection	25-50mm WGB* Coarse & Medium Asphalt Mix Aggregates GAS* *with sand rejection

The samples tested meet the gradation (with some sand bleeding required), sand equivalent, and micro-deval specifications for Base Course, SGSB, Bridge End Fill and Coarse/Fine Asphalt Mix Aggregate. Based on the absorption results the samples meet the specification for coarse paving aggregate and fine Graded Aggregate Seals; however, did not meet the specifications for coarse Graded Aggregate Seals. With additional processing, such as crushing the oversize rocks (>75 mm diameter) with the gravel, absorption values may improve. Should the quality improve, the material may then be suitable for other aggregate products.

Sulphate and Chloride Testing: Sulphate and Chloride testing was conducted in October 2023 by CARO Analytical Services with the results coming back as having a low/moderate (S3) degree of exposure.

General Parameters	Result	RL (%)
Sulfate, Water-Soluble	<0.050	0.050
Chloride, Water-Soluble	<0.002	0.002

Volume Estimates: Table 6 shows the volume estimates that can be expected for topsoil, overburden and gravel from the proposed suitability area. This is based on the measured depths encountered during the subsurface investigation. The potential volumes of granular material were calculated by averaging the total thickness of granular material encountered in test pits and multiplying by the estimated surface area. Because the pit area has different ownership (some Section 16 Crown Land, some leased private property), the suitability has been divided as any material mined from the leased area is subject to fees.

Table 6: Volume Estimates

Section 16 Area

Suitability Area ~ha.	Topsoil	Asphalt	Granular Material
Average Layer Thickness (m)	0.0	0.5	4.0
Volume (m^3)	0	4,350	34,800

Leased Pit Area

Suitability Area ~ha.	Topsoil	Asphalt	Granular Material
Average Layer Thickness (m)	0.0	0.5	4.0
Volume (m^3)	0	4,350	34,800

Pit Development Notes

- All development must be carried out in accordance with the Health, Safety, and Reclamation Code for Mines in British Columbia, BC Ministry of Energy and Mines (2022, or later edition), the Standard Specifications for Highway Construction, BC Ministry of Transportation and Infrastructure (2020, or later edition) and the Aggregate Operators Best Management Practices Handbook for BC.

- All trees, vegetation, and overburden are to be removed within 2m of the top of the pit faces. Topsoil, overburden, and aggregate cannot be removed within five meters of the reserve boundary.

- Turcotte Pit has been previously mined so that 6.8ha has been developed and mined of an MoTI-leased private property. Substantial mining can take place within the Ministry-held Crown Land tenure (as indicated in the suitability areas) but any mining taking place within the leased area, while allowed, will need to have a survey of the pit done prior to mining in order to properly calculate gravel usage fees.

- The crusher is recommended to be located on lower bench as identified on the Pit Development Plan (between TPs 23-03 and 23-05), with mining proceeding in an eastern and southeastern direction.

- Processed aggregate may be stockpiled to the north or west of the production site, where space permits as indicated on the Pit Development Plan. There is limited stockpile space on the pit floor.

- No dumping of debris or petroleum products will be permitted, and the site must be left in a clean and safe condition.

- It will be necessary to utilize a primary crusher capable of reducing material as large as 375x450mm.

- The contractor is recommended to crush and blend the existing stockpiles to produce the road building materials (including any oversize rock on the pit faces).

- The contractor must not mine the gravel berm, as marked/noted in the field, at the south end of the pit. This is not in the MoTI tenure or lease boundaries.

- To avoid an excessively high pit face, a bulldozer will be required to push material to the production area while mining.

- At the completion of the pit development operations, but prior to the depletion of the pit, the sides of the pit faces, waste piles, and overburden stockpiles must be trimmed to a 1.5H:1V slope. Active pit faces must be reshaped with native granular materials.

- Upon depletion of the pit, all disturbed areas are to be reclaimed. The minimum reclamation procedure should include re-sloping of the pit faces and waste piles to a 2H:1V slope, contouring the area for appropriate drainage, spreading of overburden followed by topsoil, and seeding.

- Should any of the above conditions conflict with the Health, Safety, and Reclamation Code for Mines in British Columbia, then the Code will prevail.

Closure

The findings of this report and the soil conditions noted above are inferred from the extrapolation of limited surface and subsurface data collected during the site investigation. It should be noted that different and possibly poorer soil conditions may exist between the test pit locations and volume estimates may vary from those reported in this report.

Prepared by:

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Reviewed by:

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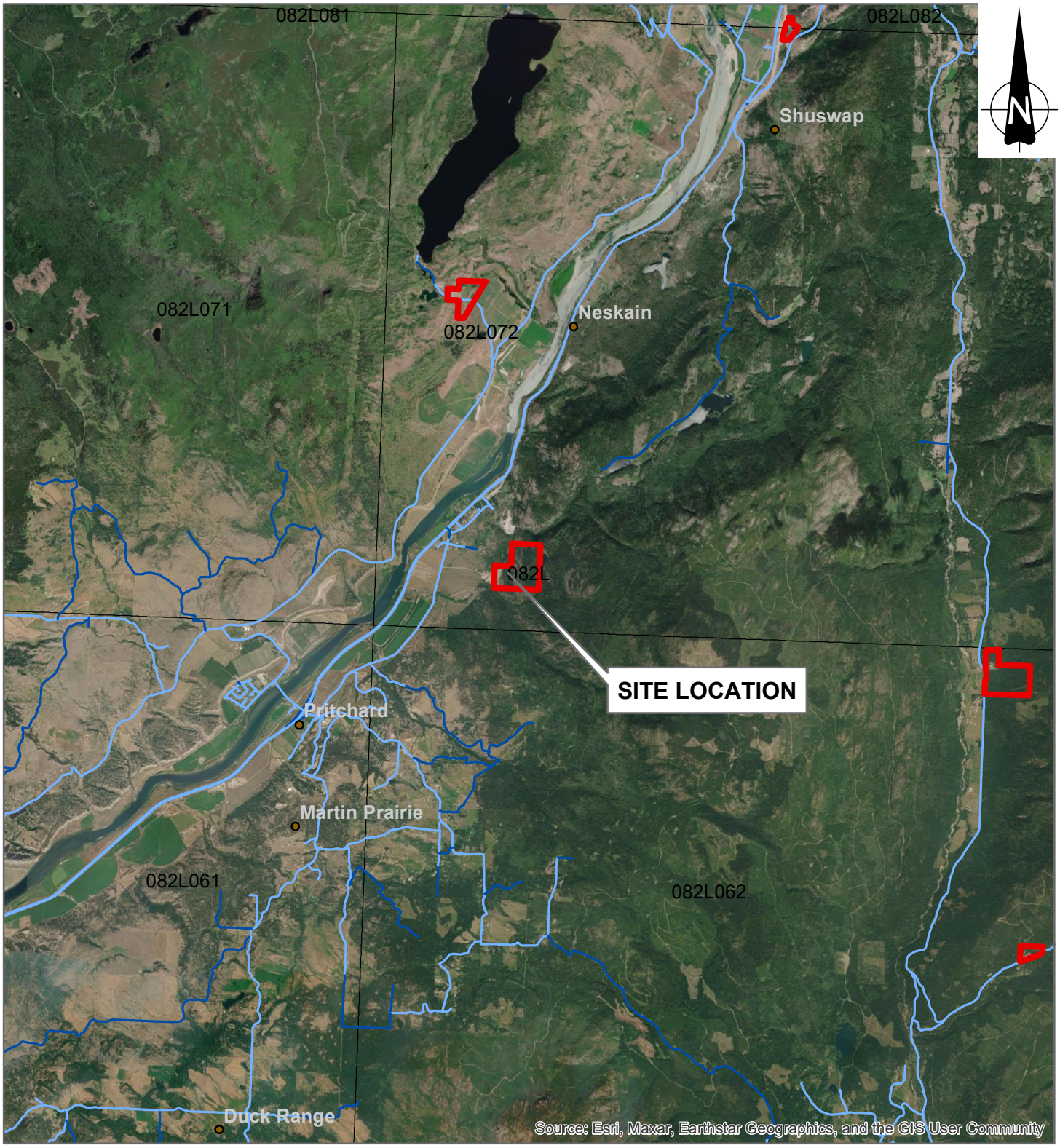
Enclosures

Figures:
- Figure 1 - Location Plan
- Figure 2 - Legal Plan
- Figure 3 - Development Plan

Test Pit Logs (2023 and 2012)
Wet Sieve Analysis Chart (2023 and 2012)
Aggregate Gradation Charts (2023 and 2012)
USC Legend
Photos

Figures



0 0.5 1 2 3 4
Kilometers
Scale 1:100,000

Ministry of Transportation and Infrastructure
Geotechnical and Materials Branch

LOCATION PLAN (2023)

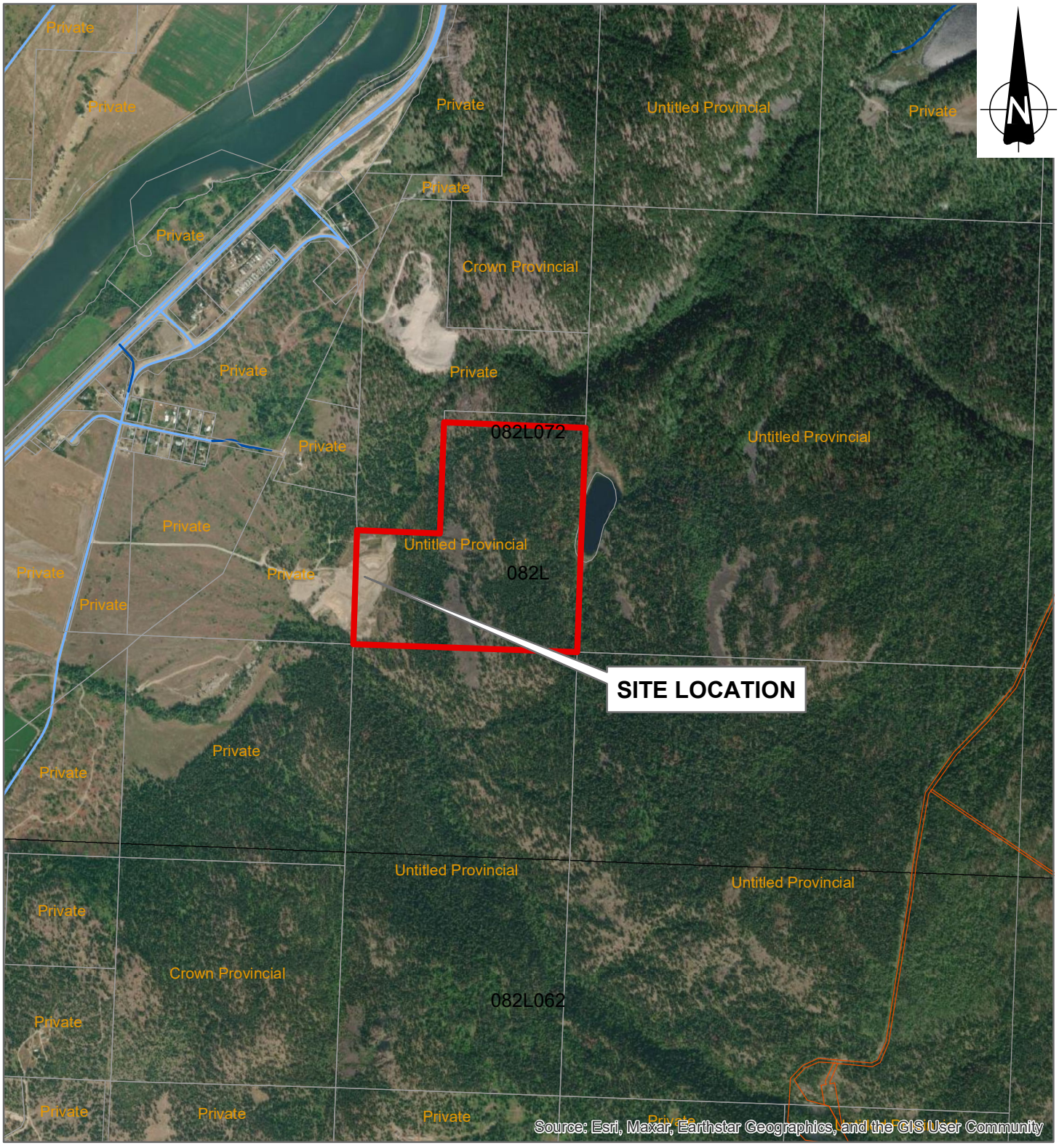
TURCOTTE PIT #0384

SA 13 - OKANAGAN SHUSWAP DISTRICT

DRAWN BY: SKINNIBU	PROJECTION: NAD 1983 UTM Zone 11N		SCALE: As Shown
CHECKED BY: A.Mitchell	DATUM: NAD 1983 UTM Zone 11N		DATE: 2023-09-13
FileName: GISTemplate_Gravel_Provincial_2023-03-16	Geotech Project No:	Reg: 2	Drawing No: **FIGURE 1**

Document Path: Q:\GEOTECHNICAL\S.RUIZ_DESIGN\Reference\Gravel\GISTemplate_Gravel_Provincial_2023-03-16.mxd

This drawing was originally produced in colour.



0 0.125 0.25 0.5 0.75 1 Kilometers

Scale 1:20,000

Ministry of Transportation and Infrastructure
Geotechnical and Materials Branch

LEGAL PLAN (2023)

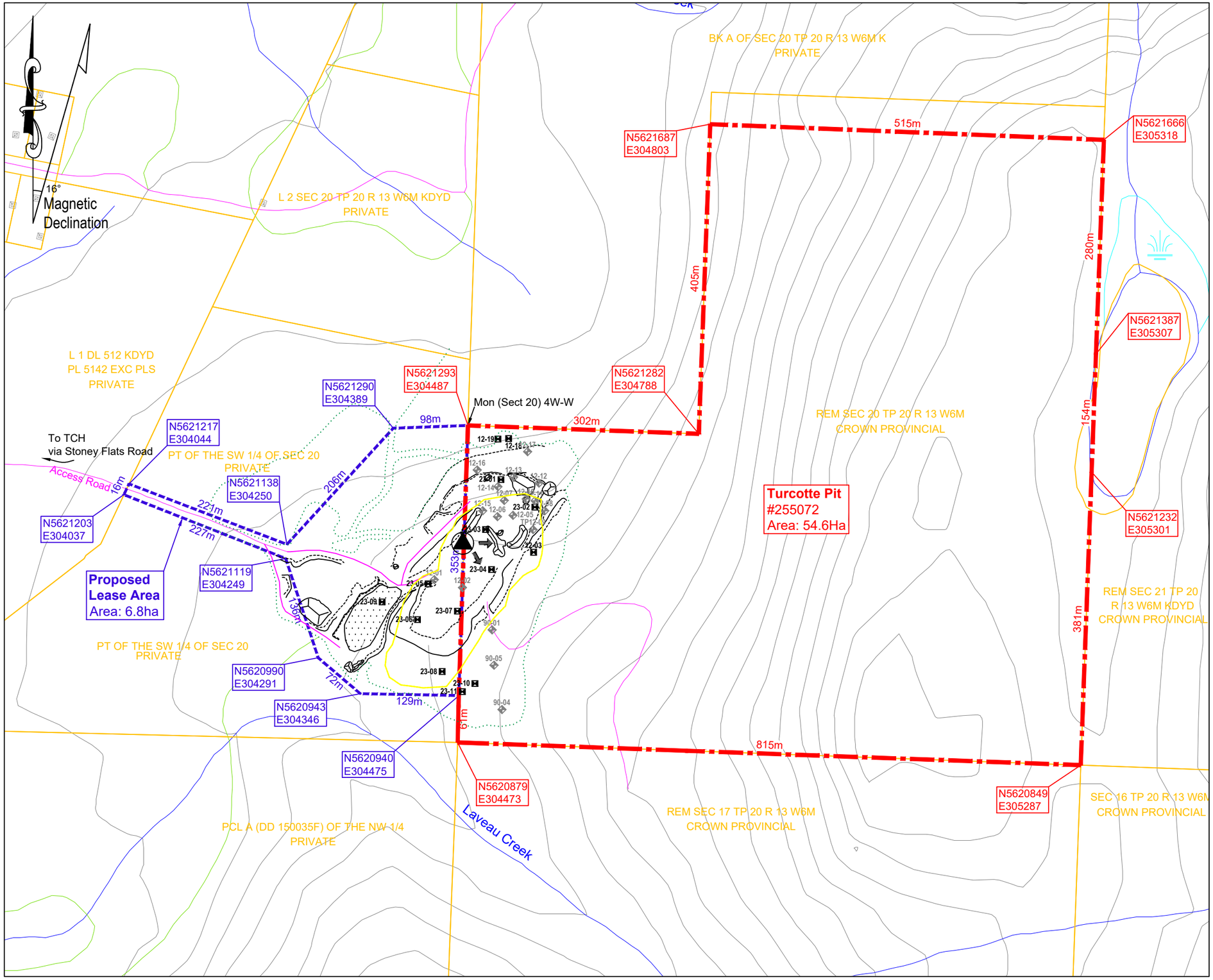
TURCOTTE PIT #0384

SA 13 - OKANAGAN SHUSWAP DISTRICT

DRAWN BY: SKINNIBU	PROJECTION: NAD 1983 UTM Zone 11N		SCALE: As Shown
CHECKED BY: A.Mitchell	DATUM: NAD 1983 UTM Zone 11N		DATE: 2023-09-13
FileName: GISTemplate_Gravel_Provincial_2023-03-16	Geotech Project No:	Reg: 2	Drawing No: **FIGURE 2**

Document Path: Q:\GEOTECHNICAL\S.RUIZ_DESIGN\Reference\Gravel\GISTemplate_Gravel_Provincial_2023-03-16.mxd

This drawing was originally produced in colour.



PIT DEVELOPMENT LEGEND

- NATURAL EMBANKMENT
- PIT FACE
- TEST PIT
- TEST HOLE
- TEST PIT (DEPLETED)
- ROAD
- CREEK
- TRAIL
- CADASTRE
- TANTALIS
- GRAVEL RESERVE BOUNDARY
- PROPOSED GRAVEL RESERVE BOUNDARY
- TREELINE
- CONTOURS
- BUILDING (symbolic)
- IRON PIN
- SWAMP
- EXISTING STOCKPILE
- PROPOSED STOCKPILE
- CRUSHER LOCATION
- NO DISTURBANCE
- MINING SUITABILITY AREA

TRIM NOTE:

1. Contour Interval 20 metres
2. Base Map derived from Trim Map 82L072

LEGAL NOTE:

District Lot Lines are derived from digital Crown Cadastral reference mapping supplied by CROWN LAND REGISTRY,Victoria

DRAWING NOTES:

1. Some testpits and/or testholes may not be representative of current conditions due to development and excavation done after testing was conducted.
2. Some extraction may have occurred since the last GPS survey of the pit was undertaken, therefore pit faces and stockpiles may not be representative of current conditions.

MINING NOTES:

1. All development must be carried out in accordance with the Health, Safety and Reclamation Code for Mines in British Columbia, BC Ministry of Energy and Mines (2022 or later edition), the Standard Specifications for Highway Construction, BC Ministry of Transportation and Infrastructure
2. All trees, vegetation and overburden are to be removed within 2m of the top of the pit faces. Topsoil, overburden and aggregate cannot be removed within five meters of the reserve boundary.
3. A survey of the pit must be done prior to the start of mining and after the completion of mining and submitted to the Aggregate Resource Manager. Drone survey is acceptable.
4. The contractor must ensure that all materials passing through 375mm x 450mm slotted openings shall be used in the production of crushed aggregates.
5. The contractor must not mine the gravel berm as marked/noted in the field, at the south end of the pit. It is outside MoTI lease/tenure.
6. To avoid an excessively high pit face, a bulldozer will be required to push material to the production area while mining.
7. At the completion of the pit operations, the contractor will trim all working faces and stockpiles 1.5H to 1V slope. Working faces must be reshaped with native granular materials. All other permanent slopes must be re-sloped to no steeper than 2H:1V.
8. No dumping of debris or petroleum products is permitted. The pit must be left in a clean and safe condition upon contractor completing operations and vacating the pit.

0m 50 100 150 200

1 : 5000

Ministry of Transportation and Infrastructure
South Coast Region
Geotechnical and Materials Branch

PIT DEVELOPMENT PLAN
TURCOTTE PIT #0384
SA13 - OKANAGAN-SHUSWAP DISTRICT

DRAWN BY: S.Ruiz	PROJECTION: UTM Zone 11	SCALE: AS SHOWN
CHECKED BY: A.Mitchell	DATUM: NAD83	DATE: 15 Nov 2023
FILE NAME: F3P_0384_2023.dwg	REG. 2	DRAWING NUMBER: FIGURE 3

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Test Pit Summaries

2023

AGGREGATE LOG

PROJECT: Turcotte
PIT #: 384
DISTRICT: Okanagan Shuswap
SAMPLED BY: Samantha Kinniburgh
METHOD: Excavator
DATE: Sept 28 2023

TEST PIT NO.	DEPTH FROM	DEPTH TO	SAMPLE BAG NO.	SOILS CLASS	ESTIMATED GRADATION G	S	F	ESTIMATED ROCK 75mm MAX SIZE	75mm - 150mm	150mm 375mm	>375mm	SAND TYPE F M C	REMARKS / Lab Sieve
23-01	0	4.8	23-01	SP	33	60	7	290	2	1	0	M	Seems like packed fill, tree debris at
				SM1	27.4	61.9	10.7						3m
													SM1 - G27.4/S61.9/F10.7
23-02	0	0.3		Floor									
	0.3	5	23-02	GP	55	43	2	350	3	2	0	M	Much better than TP 23-01, less fill,
				SP	42.8	55.3	1.8						no sloughing, sandy with OS,
													consistent
													SP - G42.8/S55.3/F1.8
23-03	0	0.5		Floor									
	0.5	3	23-03	SP	42	56	2	330	4	2	0	M	Sloughing here below 0.5m, some OS
	3	4.8		SP									very sandy
				SP	38.9	59.1	2						SP - G 38.9/S 59.1/F 2
23-04	0	0.4		Floor									Large OS here, sloughing badly
	0.4	4.4	23-04	SP	47	50	3	500	3	2	1	M	below the floor, hitting GP below 4m
				SP	40.1	56.7	3.2						SP - G 40.1/ S 56.7/ F 3.2
23-05	0	1.1		Floor									Lots of OS here, a whole layer below the floor (buried?) then SP
	1.1	1.8		OS									
	1.8	5.5	23-05	SP	45	52	3	380	7	3	2	M	SP - G 43.1/ S 55.1/ F 1.8
				SP	43.1	55.1	1.8						
23-06	0	1.3		Floor									After 1m, gets to native material,
	1.3	4.5	23-06	SP	35	62	3	420	3	1	1	M	much sandier, sloughing from top
				SP	31.7	65.6	2.7						SP - G 31.7/ S 65.6/ F 2.7
23-07	0	0.5											
	0.5	5.3	23-07	SP	32	65	3	360	3	1	0	M	Consistent, more rock at bottom
				SP	40.2	59.1	0.7						of hole
													SP - G 40.2/ S 59.1/ F 0.7
23-08	0	1		SP									
	1	4.3	23-08	SP	39	58	3	300	8	3	0	M	TP dug on the W slope, sandier
				GM1	43.8	38.2	18						on SW end of hole, rocky to NE
													GM1 - G 43.8/ S 38.2/ F 18

AGGREGATE LOG

PROJECT: Turcotte
PIT #: 384
DISTRICT: Okanagan Shuswap
SAMPLED BY: Samantha Kinniburgh
METHOD: Excavator
DATE: Sept 28 2023

TEST PIT NO.	DEPTH		SAMPLE BAG NO.	SOILS CLASS	ESTIMATED GRADATION			ESTIMATED ROCK 75mm				SAND TYPE	REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm - 150mm	150mm 375mm	>375mm	F M C	Lab Sieve
23-09	0	0.5		Floor									
	0.5	1.1		2nd Floor									Layers upon layers of previous
	1.1	1.8		3rd Floor									pit floors, reject and buried OS
	1.8	2	NS	Asphalt									No real native material until bottom of
	2	4		Buried rock									TP
	4	5.2		SP				380	5	2	2	M-F	See photos
23-10	0	1	23-10	ML									
								150	2	1	0	M-F	Clay, could be runoff from
				GM2	55.2	22.7	22.1						upslope? Excavator couldn't break through
													GM - G 55.2/ S 22.7/ F22.1
23-11	0	3.7	NS	ML									Some rock, straight compacted
													clays. See photos.

2012

1 OF 1

AGGREGATE LOG

PROJECT:			Turcotte Pit						**SAMPLED BY:**				WSR
	PIT #:		384							**METHOD:**			Excavator
DISTRICT:			**Okanagan Shuswap**							**DATE:**			Aug 4 2012 AND Jan 1990
TH / TP	**DEPTH**		**SAMPLE**	**SOILS CLASS**	**ESTIMAT**			**ESTIMAT**				**SAND TYPE**	**REMARKS**
	FROM	**TO**	**BAG No.**		**G**	**S**	**F**	MAX SIZE	75mm - 150mm	150mm - 375mm	375mm	**F M C**	
TP 12-01	0.0	0.2		Asphalt									
	0.2	1.6	320	GP	68	30	2	250	8	4	0	M	
	1.6	2.1		SP	40	58	2						COMBINED SAMPLE
	2.1	4.1		GP	70	28	2	250	6	3	0	M	
				GP	50	47	3						LAB TESTED
TP 12-02	0.0	3.0		GP	65	33	2	300	7	5	0	M	
	3.0	3.6		GP	52	46	2	250	5	3	0	M	
	3.6	4.1		SP	46	52	2	200	2	1	0		
TP 12-03	0.0	1.0		OB									
	1.0	2.0		SP	40	56	4	200	3	1	0		
	2.0	2.6		GP	50	46	4	700	2	3	1		
	2.6	4.2		SP	18	78	4	200					
TP 12-04	0.0	0.4		OB									
	4.0	1.0		SP	20	76	4	250	1	0	0		COMBINED SAMPLE
	1.0	4.0	318	SP	40	56	4		4	0	0		
				SP	30	67	3						LAB TESTED
TP 12-05	0.0	0.4		OB									
	0.4	2.0		GP	70	26	4	300	10	6	0		
	2.0	4.2		SP/SM	41	54	5	100	0	0	0		
TP 12-06	0.0	0.4		OB									
	0.4	2.2		GP	65	31	4	300	6	4	0	M-F	
	2.2	4.0	317	GP	56	42	2	250	4	2	0		
				SP	39	60	1						LAB TESTED
TP 12-07	0.0	0.4		OB									
	0.4	1.6		GP`	56	40	4	250	3	4	0		
	1.6	4.0		SP	38	58	4	300	2	2	0		
TP 12-08	0.0	0.4		OB									
	0.4	2.0		GP	62	34	4	300	6	8	0		
	2.0	4.0		GP	56	40	4		2	1	0		

TP 12-09	0.0	0.4		OB									
	0.4	2.0	316	GP/GM	76	18	6	375	7	5	1	F	
	2.0	3.2		GP/GM	70	25	5						
				GP/GM	52	43	5						LAB TESTED
TP 12-10	0.0	0.3		OB									
	0.3	2.2		GP/GM	74	21	5	500	7	6	2	C	
	2.2	4.0		SP	43	54	3	200	0	0	0	M	
TP 12-11	0.0	0.3		OB									
	0.3	2.1	315	GP	76	20	4	300	7	3	0	F	COMBINED SAMPLE
	2.1	4.0		SP	19	78	3						
				GP	58	38	4						LAB TESTED
TP 12-12	0.0	0.2		OB									
	0.2	1.0		SP	42	54	4	400	2	1	0		
	1.0	2.6		GP	62	34	4						
	2.6	4.2		GP	56	42	2						
TP 12-13	0.0	0.1		OB									
	0.1	1.0		GP	62	34	4	250	4	3	0	F	
	1.0	2.2		SP	45	53	2	250	4	2	0		
	2.2	4.0		GP	66	32	2	150	2	1	0		
TP 12-14	0.0	0.2		OB									
	0.2	2.0		GP	70	37	1	200	5	2	0	M	
	2.0	3.6	314	GP	53	46	1	200	4	2	0	F	
				SP	42	56	2						LAB TESTED
TP 12-15	0.0	0.2		OB									
	0.2	2.2		GP`	62	35	3	250	2	1	1	M	
	2.2	3.6	311	SP	41	57	2	150	1	0	0	F	
				SP	38	61	1						LAB TESTED
TP 12-16	0.0	0.2		OB									
	0.2	2.6		GP	68	28	4	250	4	2	0		
	2.6	?		GP	56	40	4		2	1	0		
TP 12-17	0.0	0.3		OB									
	0.3	4.0	312	GP	65	33	2	300	6	4	0	M-F	
				SP	44	54	2						LAB TESTED
TP 12-18	0.0	0.2		OB									
	0.2	2.0		GP`	71	25	4	300	3	5	0	M	
	1.6	3.2		SP	52	46	2	375	6	8	1		
TP 12-19	0.0	0.2		OB									
	0.2	3.6	313	GP	52	45	2						
				SP	39	58	3						LAB TESTED
TP 90-01	0.0	1.2		ML		40	60						
	1.2	6.0	X845	GP-GM	58	37	5	750	10	10	2	F	LAB TESTED

Wet Sieve Analysis

2023

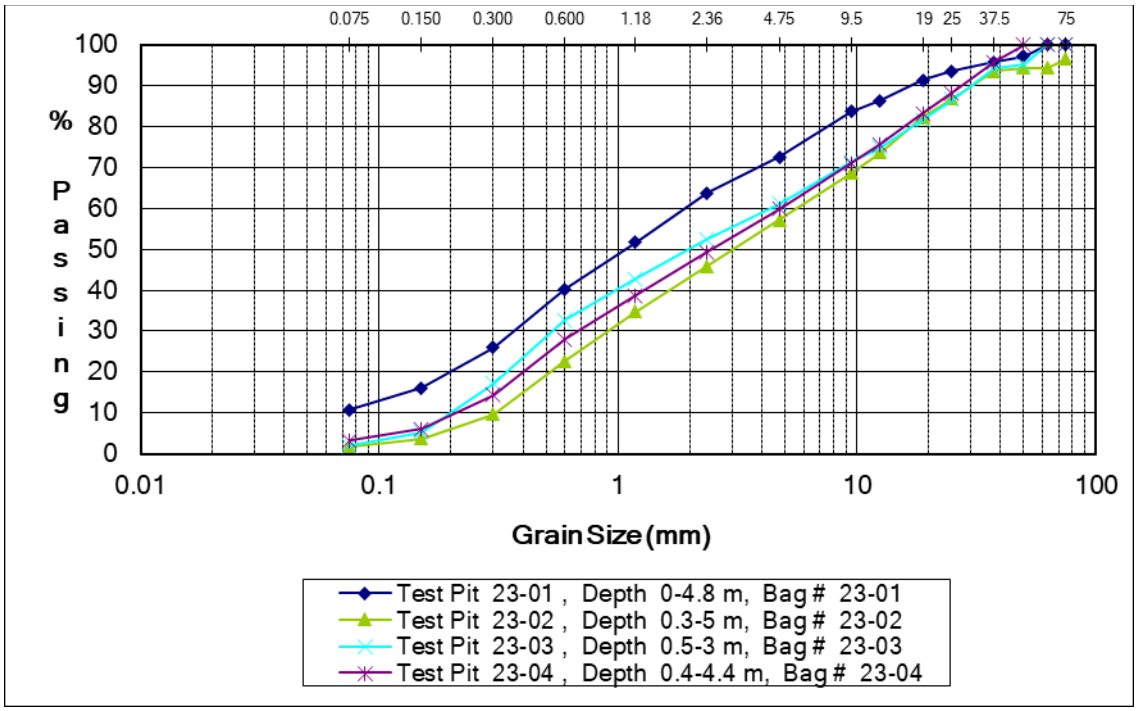
PROJECT REPORT OF SIEVE ANALYSIS SUMMARIES									PERCENT PASSING								
Project:		0							Project No.:			86004					
Sample Source:		Turcotte Pit							Client:			MoTI					
Material:		PIT RUN							Date:			Sept 28 2023					
Sample Information			Percent Passing														
Test Pit	Depth (m)	Bag #	Pit Run Sieve Sizes (mm)														
			75	63	50	37.5	25	19	12.5	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.075
23-01	0-4.8	23-01	100.0	100.0	97.2	95.8	93.6	91.4	86.4	83.7	72.6	63.7	51.7	40.3	26.0	16.1	10.7
23-02	0.3-5	23-02	96.6	94.3	94.3	93.5	86.8	82.2	73.6	68.6	57.2	45.9	34.7	22.6	9.7	3.7	1.8
23-03	0.5-3	23-03	100.0	100.0	95.2	94.2	86.5	81.7	74.9	71.3	61.1	52.5	42.7	32.7	17.1	5.3	2.0
23-04	0.4-4.4	23-04	100.0	100.0	100.0	95.8	88.2	83.2	75.7	71.0	59.9	49.3	38.6	28.0	14.4	6.0	3.2
23-05	1.8-5.5	23-05	100.0	100.0	98.5	92.2	84.3	80.9	73.7	69.0	56.9	46.9	35.6	24.1	9.8	3.4	1.8
23-06	1.3-4.5	23-06	100.0	100.0	98.3	95.1	92.2	87.7	82.3	78.3	68.3	55.7	46.0	35.1	18.4	6.2	2.7
23-07	0.5-5.3	23-07	100.0	100.0	97.5	88.9	83.7	80.2	74.0	69.8	59.8	50.1	37.8	24.3	8.6	1.9	0.7
23-08	1-4.3	23-08	100.0	100.0	100.0	93.7	87.9	83.0	73.9	68.8	56.2	50.5	43.8	36.6	28.1	22.7	18.0
23-10	0-1	23-10	100.0	95.2	87.1	83.0	79.8	73.9	64.4	58.4	44.8	42.7	40.1	37.4	33.5	28.1	22.1

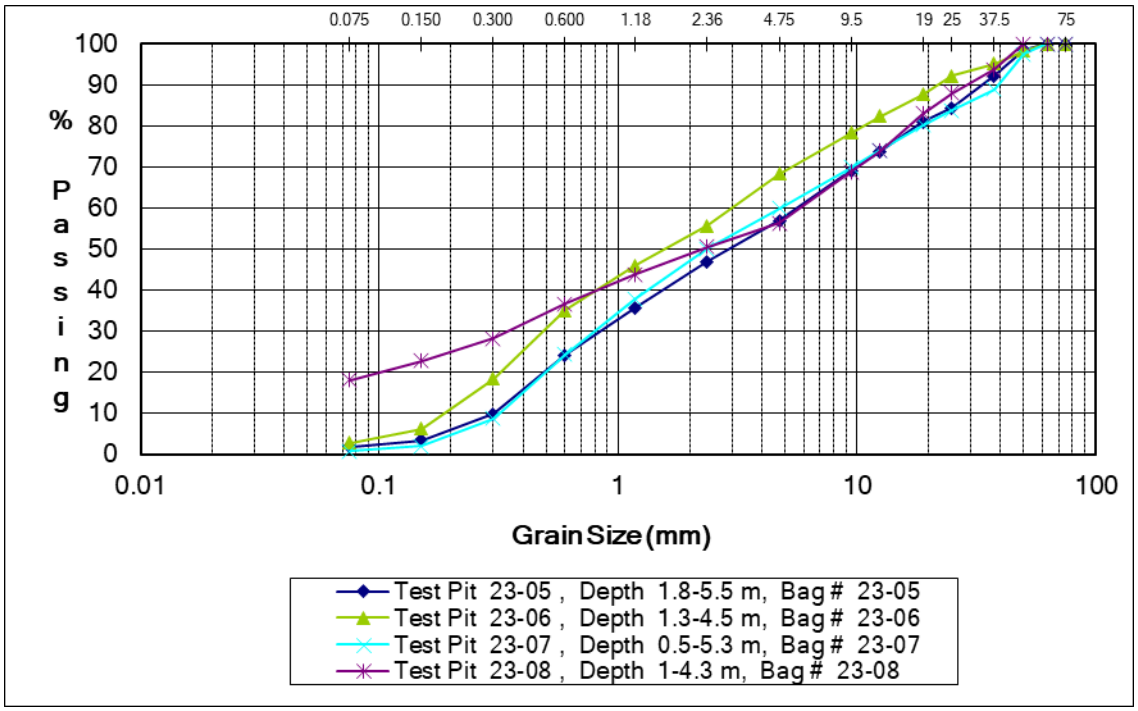
2012

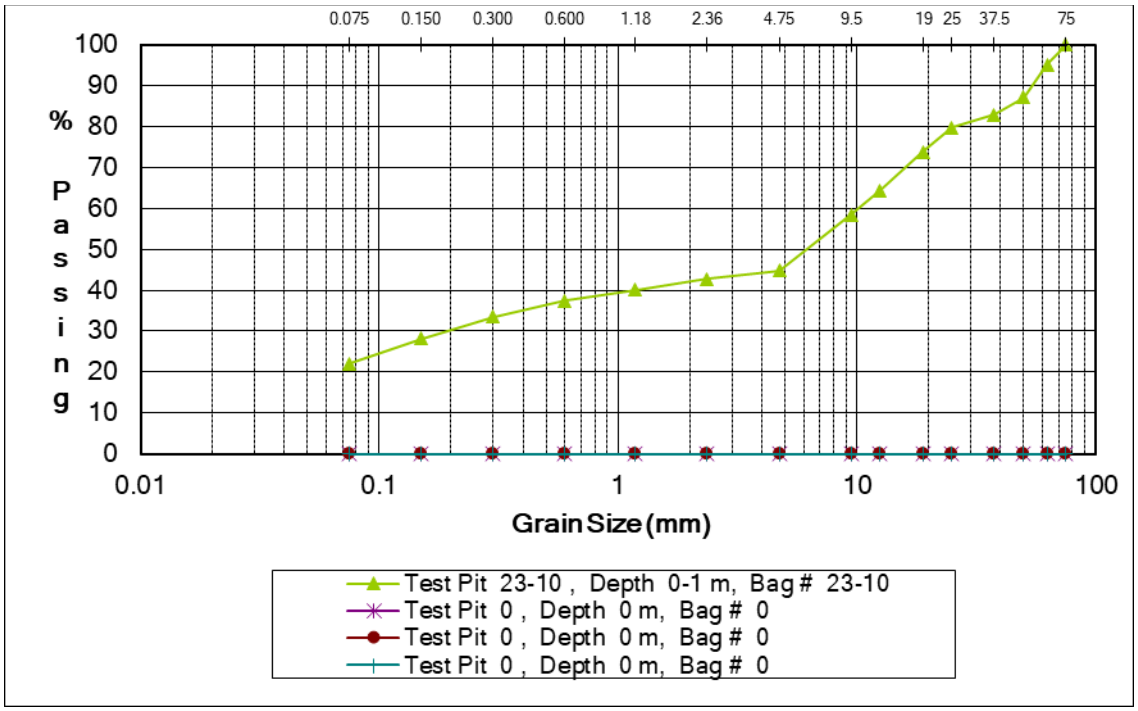
PROJECT REPORT OF SIEVE ANALYSIS SUMMARIES								PERCENT PASSING								
Project:		0						Project No.:			0					
Sample Source:		Turcotte Pit No. 0384						Client:			0					
Material:		PIT RUN						Date:			2012-08-04					
Sample Information			Percent Passing													
Test Pit	Depth (m)	Bag #	Pit Run Sieve Sizes (mm)													
			75	50	37.5	25	19	12.5	9.5	4.75	2.36	1.18	0.6	0.3	0.15	0.075
TP 12-01-320			97.5	83.3	79.7	71.9	67.6	61.6	58.3	50.1	42.5	35.1	26.9	14.2	5.5	2.9
TP 12-04-318			100.0	99.1	96.2	89.2	86.9	80.2	77.2	69.6	60.0	49.3	37.7	21.8	8.7	3.3
TP 12-06-317			100.0	91.3	89.4	81.8	78.8	74.1	70.2	62.1	51.9	39.3	25.2	10.3	3.4	1.4
TP 12-09-316			100.0	93.8	85.6	76.7	71.1	62.9	57.7	47.5	37.0	27.3	19.1	11.7	7.1	4.6
TP 12-11-315			100.0	86.2	76.1	69.7	64.1	56.0	52.1	42.1	33.8	26.1	18.8	11.1	6.7	4.2
TP 12-14-314			100.0	92.8	87.3	81.2	77.4	73.0	69.2	58.4	46.1	32.0	19.1	8.6	3.8	2.2
TP 12-15-311			100.0	94.2	88.6	83.3	78.8	72.2	69.2	61.8	53.4	42.2	28.0	10.8	2.9	1.0
TP 12-17-312			100.0	93.0	84.1	77.5	75.2	67.3	65.0	55.6	45.2	32.2	19.6	8.8	3.7	2.0
TP 12-19-313			100.0	94.1	92.3	88.8	85.8	79.5	75.7	61.4	44.9	27.9	15.5	7.5	4.0	2.5

Aggregate Gradation Charts

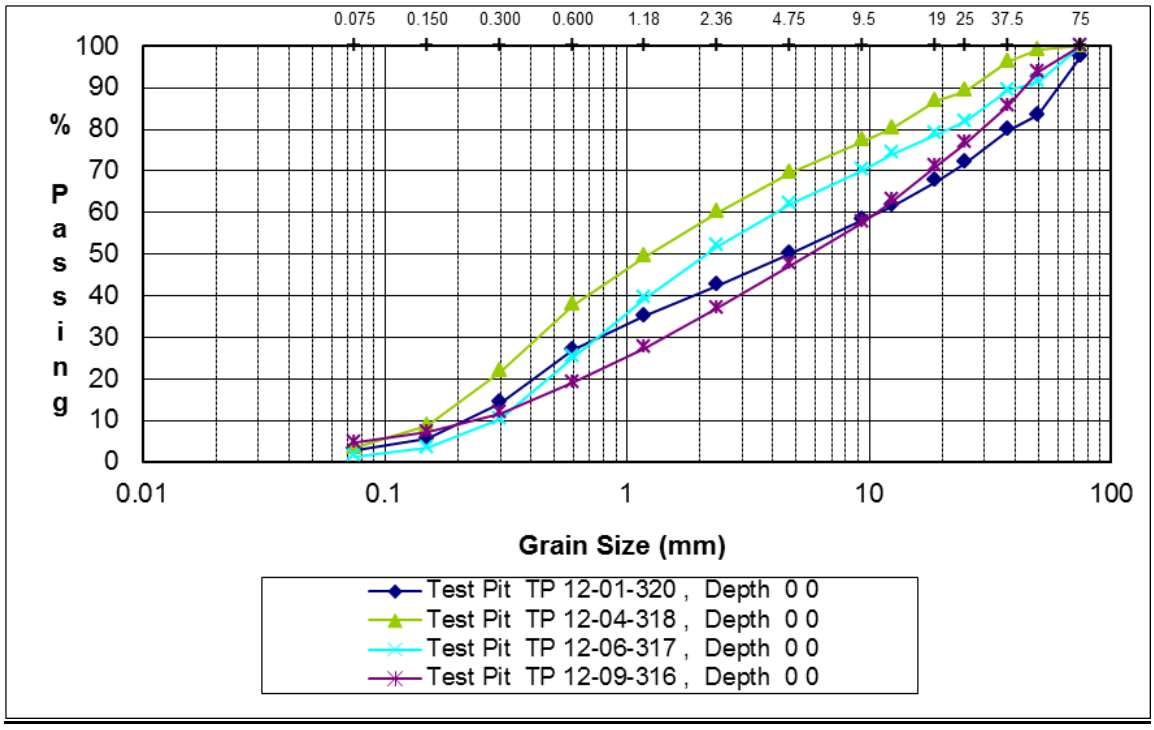
2023

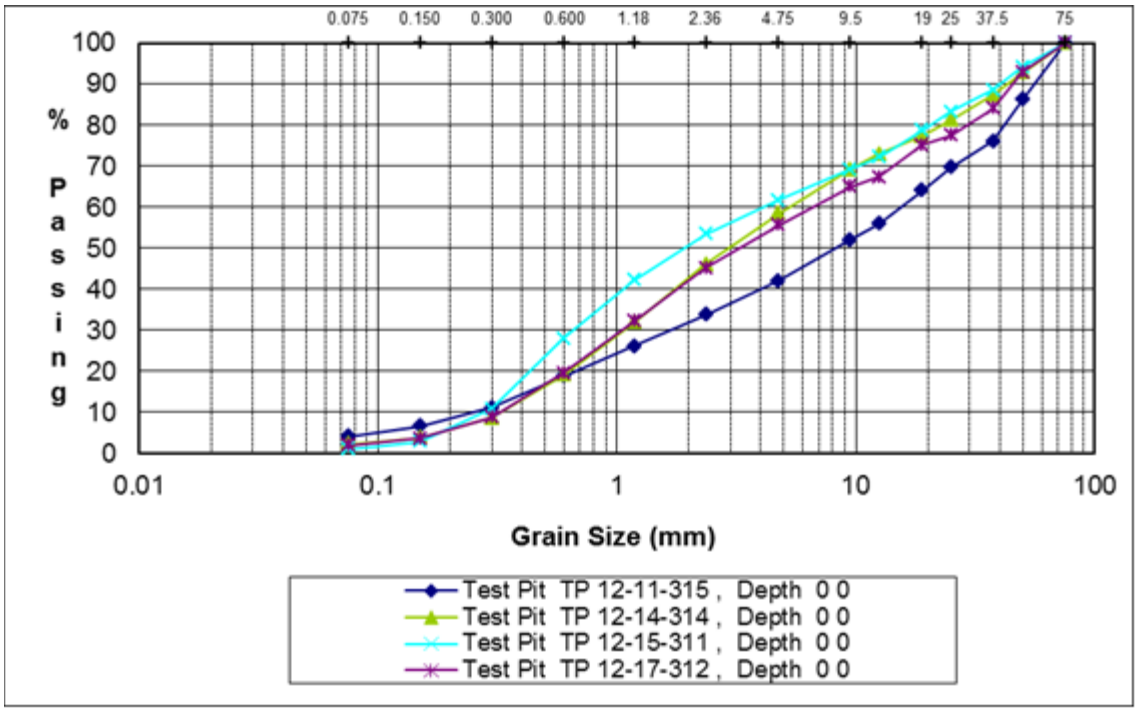


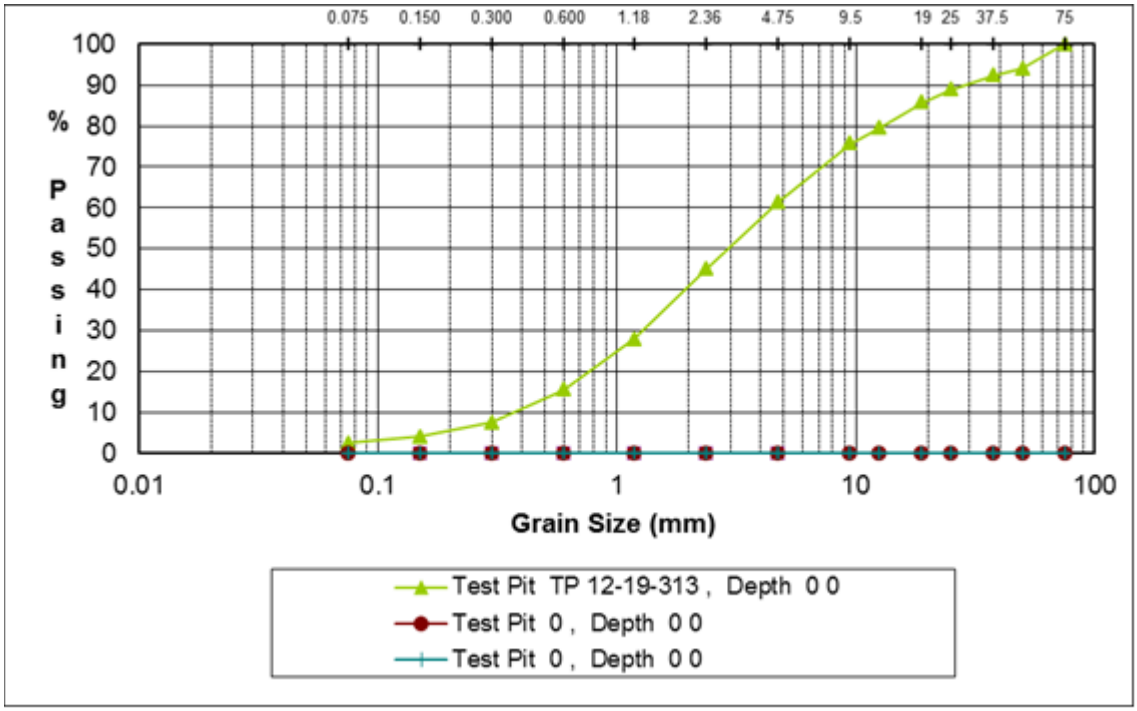



0.075 0.150 0.300 0.600 1.18 2.36 4.75 9.5 19 25 37.5 75
100 90 80 70 60 50 40 30 20 10 0
% Passing
0.01 0.1 1 10 100
Grain Size (mm)
Test Pit 23-10 , Depth 0-1 m, Bag # 23-10
Test Pit 0 , Depth 0 m, Bag # 0
Test Pit 0 , Depth 0 m, Bag # 0
Test Pit 0 , Depth 0 m, Bag # 0

2012


0.075 0.150 0.300 0.600 1.18 2.36 4.75 9.5 19 25 37.5 75
100 90 80 70 60 50 40 30 20 10 0
% Passing
0.01 0.1 1 10 100
Grain Size (mm)
Test Pit TP 12-01-320 , Depth 0 0
Test Pit TP 12-04-318 , Depth 0 0
Test Pit TP 12-06-317 , Depth 0 0
Test Pit TP 12-09-316 , Depth 0 0


0.075 0.150 0.300 0.600 1.18 2.36 4.75 9.5 19 25 37.5 75
100 90 80 70 60 50 40 30 20 10 0
% Passing
0.01 0.1 1 10 100
Grain Size (mm)
Test Pit TP 12-11-315 , Depth 0 0
Test Pit TP 12-14-314 , Depth 0 0
Test Pit TP 12-15-311 , Depth 0 0
Test Pit TP 12-17-312 , Depth 0 0


0.075 0.150 0.300 0.600 1.18 2.36 4.75 9.5 19 25 37.5 75
100 90 80 70 60 50 40 30 20 10 0
% Passing
0.01 0.1 1 10 100
Grain Size (mm)
Test Pit TP 12-19-313 , Depth 0 0
Test Pit 0 , Depth 0 0
Test Pit 0 , Depth 0 0

USC Legend

MATERIALS CLASSIFICATION LEGEND

MAJOR DIVISIONS		SYMBOL	SOIL TYPE
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	WELL GRADED GRAVELS OR GRAVEL–SAND MIXTURES, < 5% FINES
		GP	POORLY–GRADED GRAVELS OR GRAVEL–SAND MIXTURES, < 5% FINES
		GM*	SILTY GRAVELS, GRAVEL–SAND–SILT MIXTURES
		GC*	CLAYEY GRAVELS, GRAVEL–SAND–CLAY MIXTURES
	SAND AND SANDY SOILS	SW	WELL–GRADED SANDS OR GRAVELLY SANDS, < 5% FINES
		SP	POORLY–GRADED SANDS OR GRAVELLY SANDS, < 5% FINES
		SM*	SILTY SANDS SAND–SILT MIXTURES
		SC*	CLAYEY SANDS SAND–CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS w_L <50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		OL	ORGANIC SILTS AND ORGANIC SILT–CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS w_L >50	MH	INORGANIC SILTS, MICACEOUS OR DIATOM–ACEOUS FINE SANDY OR SILTY SOILS, PLASTIC SILTS
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
ORGANIC SOILS		Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS
TOPSOIL		TS	TOPSOIL WITH ROOTS, ETC.
COBBLES		SB	ROCK FRAGMENTS AND COBBLES, PARTICLE SIZE 75mm TO 300mm
LARGE BOULDERS		LB	BOULDERS, PARTICLE SIZE OVER 300mm
BEDROCK		BR	BEDROCK

FOR SOILS HAVING 5 – 12% PASSING .075 SIEVE, USE DUAL SYMBOL

*GM1; GC1; SM1; SC1; 12 – 20%
GM2; GC2; SM2; SC2; 20 – 30%
GM3; GC3; SM3; SC3; 30 – 40%
GM4; GC4; SM4; SC4; 40 – 50%

} PASSING .075mm SIEVE

REV. 90–04–26

PROVINCE of BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
Geotechnical & Materials Engineering

UNIFIED SOIL CLASSIFICATION LEGEND

Drawn: LU	Date: JULY'97	Scale:
File No.:		ACAD File: ACADSTDS C:\ACADSTDS\SOIL-APP

Photos

Looking north over Crown-tenured suitability area, September 2023.

Looking south at suitability area, and crusher setup area in foreground, September 2023.

Northwest view of lower suitability (Section 16 to right and leased to left in photo) area and proposed crusher set up location, August 2023.

West view into leased area of pit with potential stockpile location in background where truck is parked, September 2023.

TP 23-03 Spoil pile, September 2023.

TP 23-05, September 2023.

TP 23-07, September 2023.

TP 12-06, August 2012.

TP 12-09 Spoil Pile, August 2012.