TESTING REPORT

for

Swan Hills #3
DRS780140
E06-067-09-W5M
W05-067-09-W5M

June 25, 2024

Holsted Aggregates Ltd.
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Alberta
Transportation and Economic Corridors

PIT/SITE INSPECTION REPORT

LOCATION:	E06-067-09-W5M W05-067-09-W5M	PIT NAME: Swan Hills #3	DRS: 780140
DATE:	June 20, 2024	INSPECTION BY:	Dean Holsted

All inspections to be entered into AIS.
For items that require attention, describe action taken or recommended in right column OR INDICATE THAT the condition is adequate or not applicable. Additional room available at bottom of form.
Submit photos and plan to identify deficiencies.

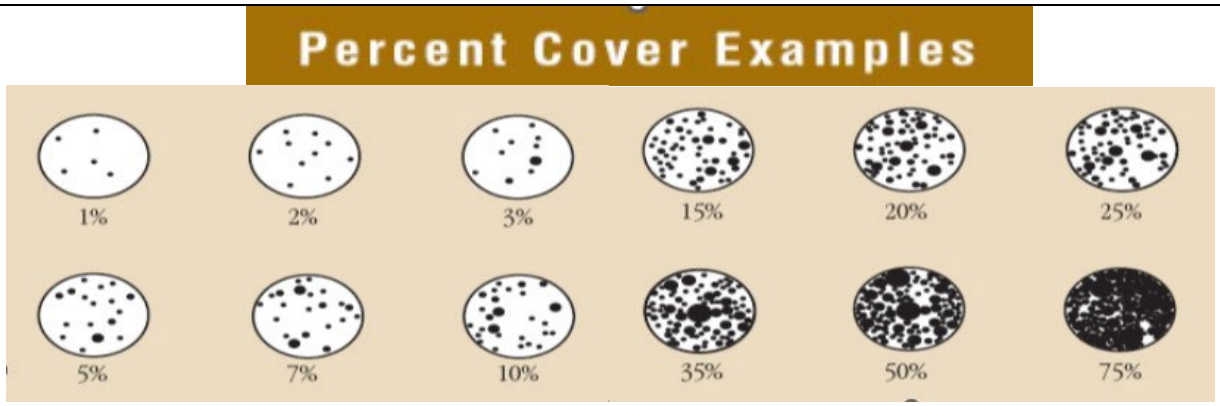
CATEGORY	RECOMMENDED ACTION
SAFETY AND SECURITY	
SIGNING:	
• ACCESS	Attention required - No signage into this DRS exists
• PIT FACES	Not applicable - Undeveloped location
• BOUNDARY	Attention required - No signage into this DRS exists
• STOCKPILES	Not applicable - Undeveloped location
FENCING	Not applicable - Undeveloped location
GATES	No gate exists onsite
CONDITION OF PIT/SITE	
SLOPES of ACTIVE PIT FACES (2h:1v or flatter)	Not applicable - Undeveloped location
SLOPES @ WATERBODIES flat along wetland	Adequate - Water bodies limited to wetlands located beyond the future development area
WEEDS	Adequate - No weeds were identified during the 2024 testing project
EROSION AND SEDIMENT CONTROL	Adequate - No erosion was present at the time of inspection
SITE DRAINAGE / PONDING	Adequate - This undeveloped location does not have drainage issues or evidence of pooling water
BUFFERS- undisturbed/stripped	Adequate - 2024 testing adhered to a 30m buffer from the high-pressure gas line located within MSL1452. Future development will adhere to a 5.0 m buffer
AGGREGATE AVAILABILITY	Attention required - Undeveloped aggregate identified during 2024 testing was a mixture of clay gravel and sandy/silty clay gravel
BRUSH/TIMBER	Attention required - Two area have been previously logged (Aggregate area **A** and **B**). Aggregate area **C** will require logging or de-brushing prior to further development
COMPLIANCE WITH ENVIRONMENTAL (CRP/COP) REQUIREMENTS	Attention required - A CORP is required prior to development
STOCKPILES	
TOPSOIL/SUBSOIL/OVERBURDEN (locations and stability)	Not applicable - No piles identified
REJECT FINES	Not applicable - No piles identified
CRUSHED COARSE STOCKPILES (Visual Verification Of AIS inventory)	Not applicable - No piles identified
DEBRIS	
CONSTRUCTION REFUSE-NONE	Not applicable - No piles identified
ASPHALTIC MATERIALS (reject ACP, asbc, old pavement chunks)	Not applicable - No piles identified
HOUSEHOLD REFUSE	Attention required - Minor dumping of household material is occurring within this boundary area
SPILLS (diesel or asphaltic oil, etc).	Not applicable - No spills or contaminates identified
OTHER(FILL IN)	

Additional Recommendations/Action taken:

-This disposition is located along the north side of HWY 33 approx. 5.2 km north of the town limits of Swan Hills, AB. Directions: Travel north along HWY 33 for 4.9 km, and northwest along DRS050035 for 0.3 km.
-This area features two generally level man-made open meadows that have been used previously as a temporary logging lay down yard. Broken, piled, and decomposing rig matts exist as a result of this activity.
-Stripping was hauled to & stockpiled on the northern open meadow in 2006 as part of a HWY slide project.
-Minor prospecting occurred in 2003 and evidence of old (now shallow) open test holes exists within the treed areas of L.S. 9_NE06-067-09-W5M. Avoidance lines and cutlines from this activity were fully overgrown and no longer traversable. 2024 testing confirmed and increased clay aggregate depths by 2.5 m(+).
-A steep and stable natural ridge slops down 30-40 m (north half) and 12 m (south half) following the agg. edge. The adjacent private gravel pit has approximate 10 m gravel faces.
-2024 testing confirmed the following averages: 2.6 m overburden (TS, Sb, SC), 3.4 m (394,366 m^3) dry (factored -10% processing) aggregate (CG, SCG, & SiCG). A trickle of inconsequential groundwater was identified within the profile of two test holes.
-Minor amounts of garbage dumping is occurring onsite (scrap metals & household) being shot at.

Testing Field Observations

Forested Land

Vegetation Coverage	
Woody stem cover (stem count % per $10m^2$) Min. target Goal ≥25% OR [5 stem count] Herbaceous species coverage min. target Goal ≥25% Bare areas exceeding 10 x 10m Areas of poor vegetation growth exceeding 20 x 20m	-Dense stem count within undeveloped treed and overgrown cutline areas +95% -Herbaceous species meets or exceeds a density of +25% -50% stem count within open areas & dense grass coverage (65%) -Bare or poor growth areas were limited to former logging trails
Vegetation Type	
Vegetation identified across previously disturbed or reclaimed areas	-2024 testing identified Lodgepole Pine, White Spruce, Black Spruce, and minor amounts of Willow, Trembling Aspen, and Balsam Poplar. -Open meadows contained Wheatgrass, Fescue, Timothy, Horsetail, Wild Rose, Snowberry, Yarrow, Fireweed, and Goldenrod. -Wetlands exist within the northeast corner of the DRS. These areas harbor semi aquatic vegetation including Cattails, Sedges, Marsh Reed Grass, and Creeping Spikerush.
Weed Identification	
 -No noxious weeds were identified onsite.	
Topsoil Presence, Rating, Classification	
Percentage of topsoil coverage across the distubed area as compared with adjacent undisturbed areas.	-Topsoil/subsoil across the open meadows were previously disturbed, inconsistent and generally did not exceed 0.1 m in depth -Combined topsoil/subsoil across treed areas varied between 0.1 - 0.25 m in depth
Previous Ground Disturbance Surface Charcteristics	
Surface stones: No stones – Excessive stones Soil texture: Clay, loam, silt, sand, other Surface Drainage: Dry – moist – wet Moisture Re-Infiltration (Quick - mod. - poor) Compaction: Friable – extremely hard Presence of LFH (Litter, Fermented, Hunus)	-Numerous stones (1 - 8 m apart) -Sandy Clay -Dry & moderate draining soil across ridges -Wet & poor draining soil across low-lying -Moderate natural ground compaction -LFH material throughout
Topography	
Drainage and ponding features onsite compared to offiste Macro/meso-contour features onsite compared to offsite.	-No ponding exists within the aggregate area -Areas slopes down and away from aggregate perimeter -Minor undulation across aggregate area -Area is undeveloped and matches the surrounding landscape

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PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024	INSPECTION BY	Dean Holsted

Photo 1

This aerial photo is facing south the southern open meadow recently used as a temporary logging laydown yard.

An adjacent private gravel pit (SML890105 - T&L Aggregates) is located along the photo top. This pit has several gravel faces approximately 10 m in height.

This open meadow has broken rig matts piled in various locations across it.

Photo 2

This aerial photo is facing northwest.

The northern open meadow can be viewed along the photo bottom.

Treed aggregate area C (L.S. 9_NE06-067-09-W5M is located across the top half of this photo.

The vegetation has a high density, and old trails are extremely overgrown with willows. Prospecting followed the path of least resistance.

Photo 3

This aerial photo is facing north overlooking an example of the surrounding low-lying areas around this DRS.

The top half of this photo contains MSL1452 and the northeastern most portion of DRS780140.

A 40 m [3:1] natural ridge exists beneath the coniferous vegetation across photo bottom. This drop calculation was estimated through Lidar mapping.

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PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area A**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 4

Sample spill pile of TH#110

Aggregate field notes:
23% = 80-100 mm
12% = 15-300 mm
0% = +300 mm
Top size = 270 mm

Tape measure set to 0.5 m.

The aggregate is encased and coated in clay and sandy clay with a high plasticity.

Photo 5

Test hole profile of TH#117

Contents:

0.16	T
0.12	Sb
2.2	SC
3.8	CG

An aggregate sample of this test hole was collected.

Test hole profiles slumped regularly during excavation.

Photo 6

Spill pile of TH#125

Aggregate field notes:
25% = 80-100 mm
15% = 15-300 mm
1% = +300 mm
Top size = 300 mm

An aggregate sample of this test hole was collected.

The sandy clay aggregate contained ironstone, and broken quartz material.

The sandy clay is highly plastic and sticky.

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PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area A**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 7

Sample spill pile of TH#131

Aggregate field notes:
25% = 80-100 mm
15% = 15-300 mm
0% = +300 mm
Top size = 280 mm

Tape measure set to 0.5 m.

The aggregate is encased and coated in clay and sandy clay with a high degree of plasticity.

Photo 8

Test hole profile of TH#134

Contents:

0.07	T
0.1	Sb
2.4	STR(C)
3.0	SiCG

Clay material was collected from a hillside slump along HWY 33 and dumped/spread across the open meadows of L.S. 12_NW05-067-09-W5M. Branches and processed wood were identified within this overburden profile.
(STR) OB is as deep as 3.9 m in several areas.

Photo 9

Spill pile of TH#144

Aggregate field notes:
22% = 80-100 mm
10% = 15-300 mm
0% = +300 mm
Top size = 270 mm

An aggregate sample of this test hole was collected.

Red arrows identify examples of the wood debris encountered within the overburden profile.

Alberta Transportation and Economic Corridors

PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area B**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 10

Sample spill pile of TH#100

Aggregate field notes:
23% = 80-100 mm
12% = 15-300 mm
0% = +300 mm
Top size = 250 mm

Tape measure set to 0.5 m.

Aggregate area **B** located along the southern boundary contains the poorest material with the highest ratio of clay-gravel.

Photo 11

Test hole profile of TH#134

Contents:

3.0	SC
0.7	SCG
0.1	WSCG
2.6	SCG

An aggregate sample of this test hole was collected.

This test hole was located along a reclaimed logging trail and did not have topsoil or subsoil across its surface.

A trickle of water was identified at mid-depth of this profile.

Photo 12

Sample spill pile of TH#108

Aggregate field notes:
20% = 80-100 mm
15% = 15-300 mm
5% = +300 mm
Top size = 300 mm

An aggregate sample of this test hole was collected.

Tape measure set to 0.5 m.

Shovelling the aggregate material was exceptionally difficult due to the high plasticity of the material.

Alberta Transportation and Economic Corridors

PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area B**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 13

Test hole profile of TH#114

Contents:

0.15	T
0.07	Sb
2.5	C
3.8	CG

An aggregate sample of this test hole was collected.

This test hole is located along the edge of the southern open meadow.

Photo 14

Spill pile of TH#116

The aggregate across aggregate area **B** remained a consistent clay aggregate with minor colour changes throughout.

Photo 15

Backfilled and reclaimed TH#113

This photo is overlooking the typical conditions of each backfilled test hole within the open meadow areas.

Care was taken at each test hole to backfill each hole in reverse order, periodically pack down the backfilled material, and spread topsoil/subsoil/vegetation across the disturbed area.

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PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area C**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 16

Spill pile of TH#122

Aggregate field notes:
23% = 80-100 mm
15% = 15-300 mm
0% = +300 mm
Top size = 275 mm

An aggregate sample of this test hole was collected.

Aggregate area **C** located across L.S. 9_NE06-067-09-W5M. This area is covered in dense pine.

Photo 17

Test hole profile of TH#127

Contents:

0.08	T
0.07	Sb
1.1	SC
4.7	SCG

The aggregate across this deposit transitioned between clay gravel and sandy clay gravel (photo #17).

The presence of sand within the clay gravel was identified visually however handling the agg. confirmed a high degree of plasticity confirming clay.

Photo 18

Spill pile of TH#136

Aggregate field notes:
25% = 80-100 mm
12% = 15-300 mm
0% = +300 mm
Top size = 280 mm

An aggregate sample of this test hole was collected.

Alberta Transportation and Economic Corridors

PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area C**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 19

Test hole profile of TH#141

Contents:

0.1	T
0.07	Sb
2.5	SC
3.2	CG

An aggregate sample of this test hole was collected.

This test hols is located approximately 15 m east of the edge of the 30 m [4:1] natural slope ridge from the deposit area.

Photo 20

Test hole profile of TH#147

Contents:

0.15	T
0.1	Sb
2.2	SC
3.4	SCG

The aggregate across this deposit transitioned between clay gravel and sandy clay gravel (compare photo #19's CG and photo #20's SCG).

Photo 21

Spill pile of TH#150

Aggregate field notes:

25% = 80-100 mm
17% = 15-300 mm
2% = +300 mm
Top size = 310 mm

An aggregate sample of this test hole was collected.

Alberta Transportation and Economic Corridors

PIT/SITE PHOTOS

LOCATION	E06-067-09-W5M W05-067-09-W5M	**Aggregate Area C**	PIT NAME	**Swam Hills #3** **DRS780140**
DATE	June 2024		INSPECTION BY	Dean Holsted

Photo 22

This photo is overlooking an example of a reclaimed avoidance trail created during 2024 testing activities.

The primary tree species onsite is Lodgepole Pine, White Spruce, and Black Spruce.

The tree density across L.S. 9_NE06-067-09-W5M was very dense and historic avoidance lines were no longer useful for equipment travel.

Photo 23

This photo is overlooking an example of a reclaimed avoidance trail created during 2024 testing activities.

Care was taken to break apart vegetation into 1.0 - 1.5 m pieces and pushed flat to the ground.

The path of least resistance was taken by equipment resulting in winding trails with frequent dead ends.

Photo 24

This picture is overlooking an example of a backfilled test hole from within the treed areas of L.S. 9_NE06-067-09-W5M.

Each test hole required special considerations to spill pile location and size to ensure its contents did not spill into the surrounding trees.

Alberta Transportation

PIT PLAN

E 06
W ¼ SEC. 05 TP. 67 RGE. 9 W. 5 M.

SWAN HILLS #3 PIT.

LEGEND:

OP	OPEN PIT	SP	STOCKPILE
A	AGGREGATE AREA	CSP	CRUSH STOCKPILE
D	DEPLETED AREA	A.T. RES. BDY.	BOUNDARY OF RESERVATION AREA
STR.	STRIPPING	A.T. AGR. BDY.	BOUNDARY OF AGREEMENT AREA
T	TOPSOIL	HWY R/W	HIGHWAY RIGHT OF WAY
GF	GRAVEL FACE	- X -	FENCE LINE
SF	SAND FACE		MUSKEG
B	BOULDER PILE	R	REJECT FINES
O	OVERBURDEN PILE	N or NF	NATURAL FINES PILE

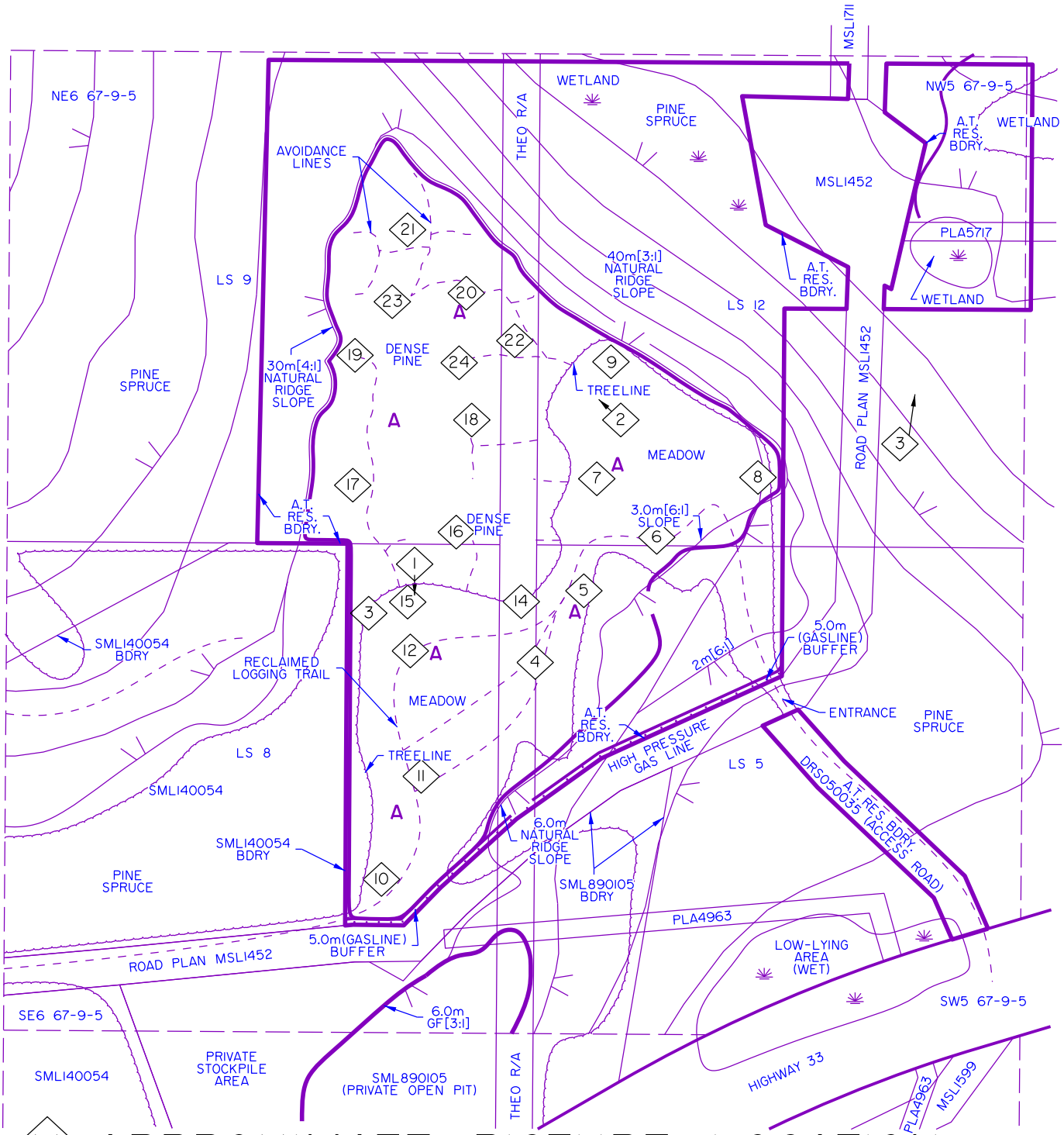
AMENDMENTS:

DATE(MMM/DD/YY)	NAME	AMENDMENTS
FEB / 07 / 06	JKP	ADD ACP SP TO PMIPL
JUN / 20 / 24	HOLSTED AGG	DRAWN

N

SCALE:

0 m 50 m 100 m 150 m 200 m 250 m 300 m



X APPROXIMATE PICTURE LOCATION

Alberta Transportation

AGGREGATES TESTING PLAN

E / W 06 ¼ SEC. 05 TP. 67 RGE. 9 W. 5 M.

SWAN HILLS #3 PIT.

TESTED BY PERRAS MANAGEMENT DATE: MAR, 20 03

& HOLSTED AGGREGATES DATE: JUN, 20 24

AMENDMENTS:

DATE(MMM/DD/YY)	NAME	AMENDMENTS
FEB / 07 / 06	JKP	ADD ACP SP TO PMIPL
JUN / 20 / 24	HOLSTED AGG	DRAWN

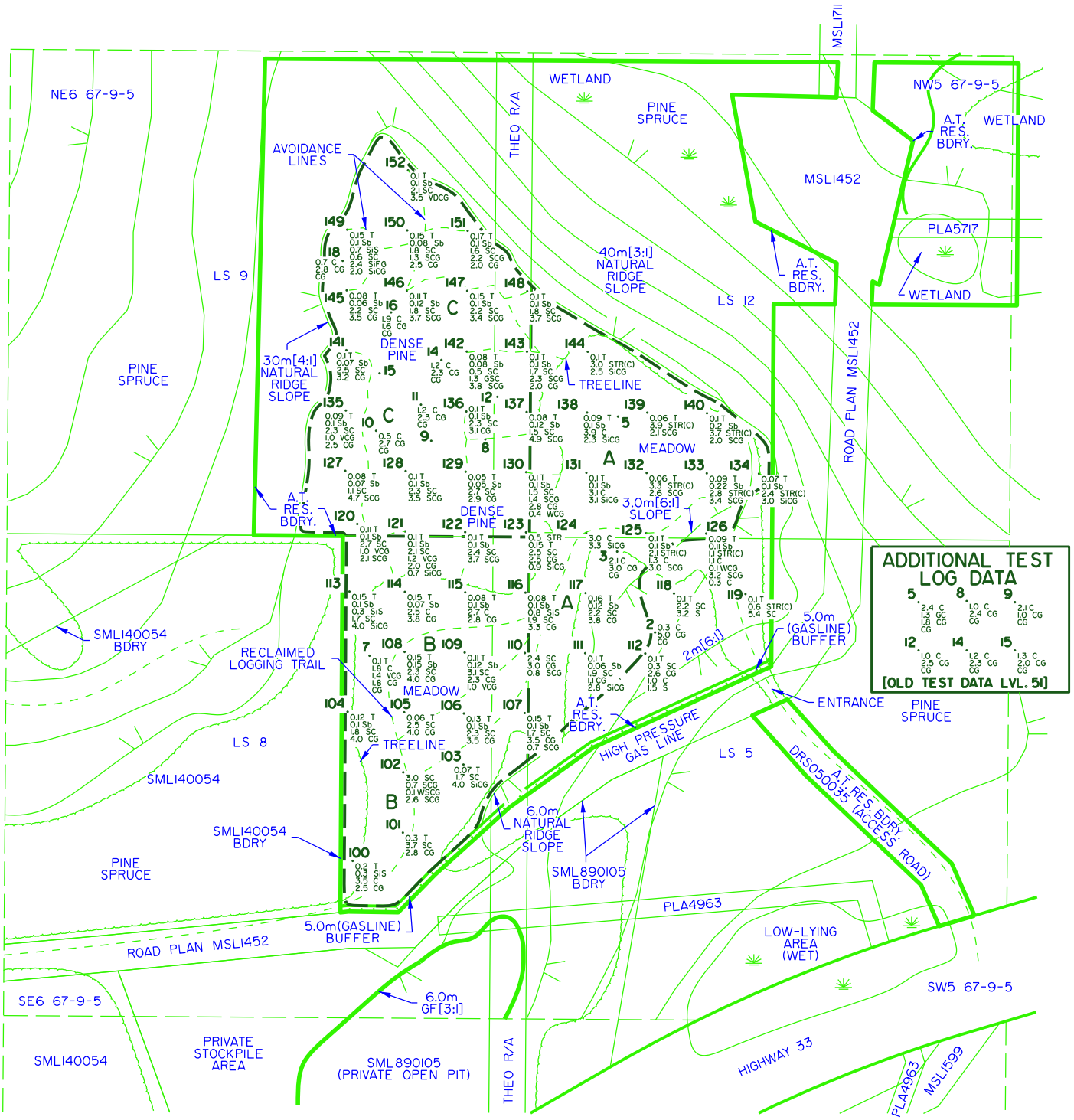
LEGEND:

F	FINE	Ss	SANDSTONE	-x-	FENCE	AT RES BDY	BOUNDARY OF RESERVATION AREA
Co	COARSE	Sh	SHALE		MUSKEG	AT AGR BDY	BOUNDARY OF AGREEMENT AREA
D	DIRTY	BR	BEDROCK	SP	STOCKPILE		
T	ORGANIC TOPSOIL	B	BOULDERS	CSP	CRUSHED STOCKPILE	HWY R/W	HIGHWAY RIGHT OF WAY
C	CLAY	L	LAYER			CULT	CULTIVATED AREA
SI	SILT	W	WATER LEVEL AT TIME OF TESTING	STR	STRIPPING	GF	GRAVEL FACE
S	SAND			DH	DEAD HAUL	SF	SAND FACE
G	GRAVEL	•	TEST HOLE	OP	OPEN PIT	N or NF	NATURAL FINES PILE
Pg	PEA GRAVEL	♣	2 X 2 or TREE TAG	DEP	DEPLETED		
V	VERY i.e.(VSG- VERY SANDY GRAVEL)			R	REJECT FINES		

TOPOGRAPHICAL FEATURES INDICATED IN WORDS

N

SCALE: 0 m 50 m 100 m 150 m 200 m 250 m 300 m



PIT LOCATION

E/W	1/4 SECTION		TOWNSHIP		RANGE			MERIDIAN
E		6		67		9		5
W		5		67		9	W	5

PIT NAME: Swan Hills #3

TESTED BY: Holsted Aggregates Ltd. **DATE** JUNE **20** 24

CALCULATED BY: Holsted Aggregates Ltd. **DATE** JUNE **20** 24

GRAVEL TESTING

QUANTITY CALCULATIONS

DRY

AVG. OVERBURDEN 2.6 m(0.1m) **AVG. AGGREGATE** 3.4 m(0.1m)

AREA	LENGTH(m) (USE FORMULA)		WIDTH(m) (USE FORMULA)		SQ. METRES		DEPTH(0.1m)		CUBIC METERS
A		x		x	41,740	x	2.9	=	118,959
B		x		x	40,049	x	3.5	=	141,373
C		x		x	48,660	x	3.7	=	177,852
D		x		x		x		=	
E		x		x		x		=	
F		x		x		x		=	
G		x		x		x		=	
H		x		x		x		=	
I		x		x		x		=	
J		x		x		x		=	
K		x		x		x		=	
L		x		x		x		=	
M		x		x		x		=	
N		x		x		x		=	
O		x		x		x		=	
P		x		x		x		=	
Q		x		x		x		=	
R		x		x		x		=	
S		x		x		x		=	
T		x		x		x		=	
U		x		x		x		=	
V		x		x		x		=	
W		x		x		x		=	
X		x		x		x		=	
Y		x		x		x		=	
Z		x		x		x		=	

TOTAL CUBIC METRES	438,184
LESS 10%	43,818
ESTIMATED QUANTITY AVAILABLE CUBIC METRES	**394,366**
	X 1.632
ESTIMATED QUANTITY AVAILABLE - TONNES	**643,605**

Alberta Transportation

PIT PLAN

E / W ¼ SEC. 05 TP. 67 RGE. 9 W. 5 M. (06)

SWAN HILLS #3 PIT.

LEGEND:

OP	OPEN PIT	SP	STOCKPILE
A	AGGREGATE AREA	CSP	CRUSH STOCKPILE
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