

BERKO SERVICES LTD  
**FIELD TEST REPORT**

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for  
**1029440 ALBERTA LTD.**



**DRILL TESTING**

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**SE 25-33-05 W5M**

Consultant - Bernie Kolkman

6/20/2018

June 20<sup>th</sup> 2018

**1029440 Alberta Ltd.**  
**c/o 514-42 Avenue**  
**Calgary Alberta T2G 1Y6**

**RE: GRAVEL TESTING @ SE 25-33-05-5**

Attn: Joe Klassen

BERKO Services Ltd. undertook drill testing at the noted location to determine the extent, depth and quality of gravel present. Prior to drilling AB 1<sup>st</sup> Call was contacted to locate underground facilities and infrastructure. Responses were received from NAL Resources (NAL) and Foothills Gas. Abacus Data arranged for location and staking of the NAL pipelines, all staking was removed following completion of the project. Details re: easements and current ownership relating to the pipelines are detailed on the Land Titles included in the report.

The lands are located upland and east of the Red Deer River within a geological area conducive to the presence of gravel. A 6.8 ha (16.4 ac) residential acreage is present on the west side of the ¼ section. A single well site and 4 pipelines are present on the land.

Testing was undertaken with a 6 inch Flight Auger Drill at 18 Test Hole (TH) locations to depths of 10.5 m (35 ft.) from surface. All test holes were drilled to the silt clay or blue shale bedrock layers. The recoverable gravel ranges in thickness from 3.3 m (11 ft.) to 8.4 m (27 ft.); average thickness of the gravel seam is 7.8 m (25 ft.). Overburden (OB) consists of 8-20 cm (3-8") of silt loam topsoil (TS) and 0.8m (3 ft.) to 3.9 m (13 ft.) of silt, averaging 1.2 m (4 ft.) across the entire deposit. The gravel ends when the land drops in elevation toward the north.

Tested quantities are calculated by dividing the test plan into a number of "calculation areas" in this instance "A" thru "H". The areas are measured in m<sup>2</sup> and multiplied by the average depth in meters of the test holes drilled within the calculation area, to arrive at a volume in cubic meters (m<sup>3</sup>). To compensate for operating and processing losses a 10% reduction is applied and the remaining volume is multiplied by an industry standard conversion factor of 1.632t/m<sup>3</sup> to arrive at a quantity in metric tonnes (t.) In this instance the total tested volume of recoverable gravel is **2.25 mil m<sup>3</sup>** or **3.30 mil t.** The calculation areas are marked "A" through "E" on the test plan.

The volume calculations take into consideration a 30m non-disturbance buffer applied adjacent to the well site and the pipelines. The 30m buffer is a recommended setback that can be negotiated with the pipeline owners when excavation reaches the buffer zone(s). As such the recoverable volumes will be increased. The Aggregate Test Plan & Quantity Calculation Sheet is included in the Report.

The test holes were photographed however considering a Flight Auger Drill is not effective in returning representative material, samples were not recovered. Considering the general



characteristics of gravel in the area and our visual field inspection, it is anticipated the material will be suitable for a broad range of applications. A photo document is included in the report.

No Groundwater g/w was encountered however the silt/clay bottom at TH 016 did exhibit wet characteristics at a depth 10.0 m below surface elevation. It is anticipated the g/w is present immediately above the bedrock elevation, as such no impacts resulting from pit development are anticipated.

The Present Value (PV) of undeveloped Pit Run gravel is determined by applying a formula based on the total volume(s) present, a current market driven pit run “Royalty” price for the in place gravel, the expected lifespan of the pit in years and an annual value percentage discount applied to the projected annual volumes to be removed in future years. No discount is applied in years 1 to 5, the cumulative discount comes into effect the 6th year of operation and continues until such time the pit is depleted. The sum of the reducing monetary values provides the total PV of the gravel deposit in its undeveloped and natural state. Variables affecting the PV are;

1. Royalty Price, in this instance \$2.50/t, the value for gravel sold from the adjacent lands in 2016.
2. The number of years the pit is in operation, in this instance 30 years.
3. The discount percentages used in the “declining” value calculation, in this instance 3%.

The PV Calculation for the gravel on the noted land is **\$5,505,702.00** for the 3.30 mil t calculated to be present. This figure is the value of the gravel alone and does not include the residual value of the land once the gravel is removed. A summary of the PV Calculation is included in the report.

Yours truly,

Bernie Kolkman President



**LIST OF ATTACHMENTS**

GENERAL LOCATION PLAN ..... 1 Page

SATELLITE PIT PLAN ..... 1 Page

AGGREGATE TEST PLAN ..... 1 Page

QUANTITIY CALCULATIONS ..... 1 Page

RESENT VALUE CALCULATION ..... 1 Page

PHOTO DOCUMENT ..... 2 Pages

LAND TITLES ..... 5 Pages

TEST  
SITE

RANGE ROAD 50

HWY 27 TO OLD



SUNDRE

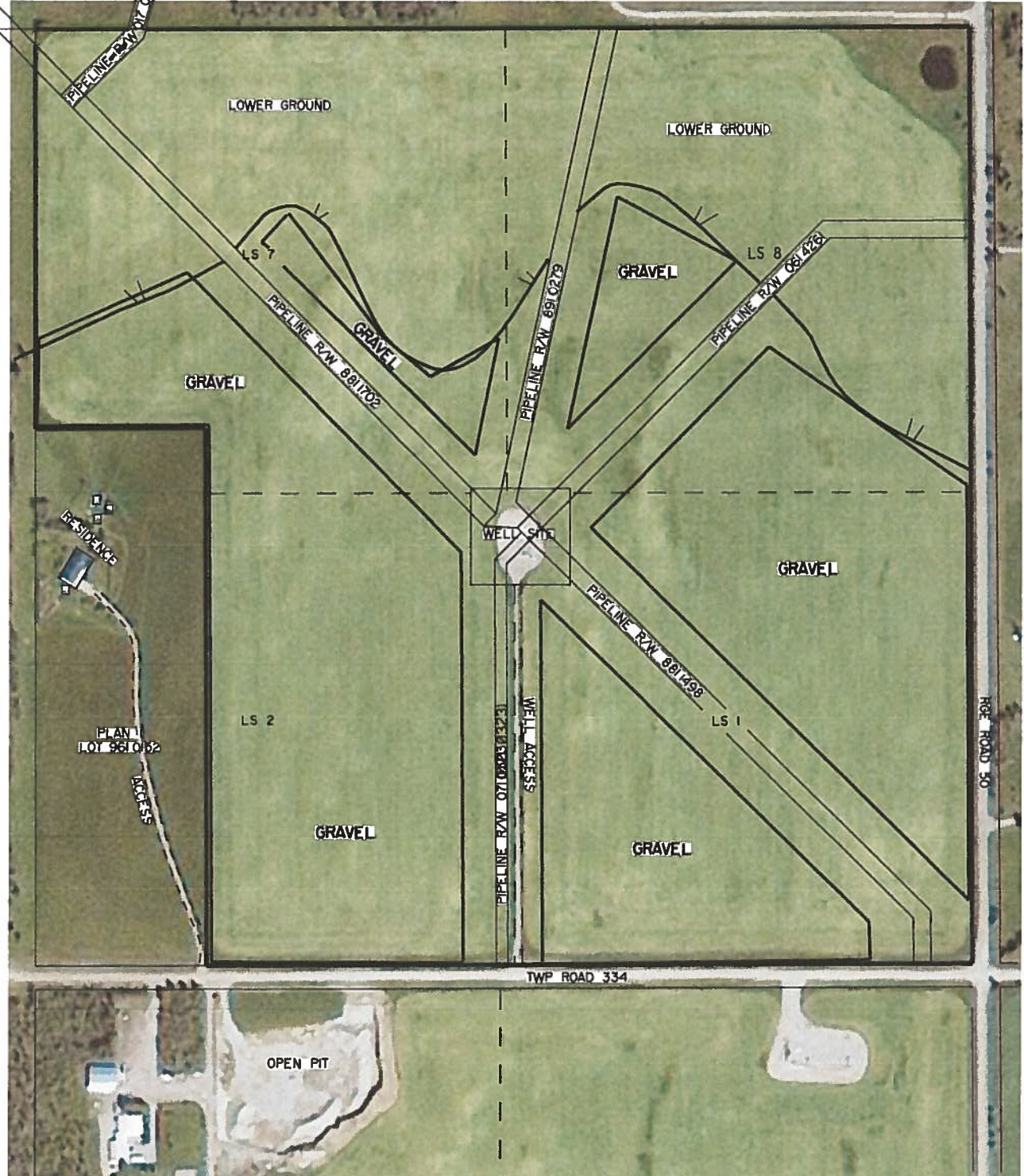
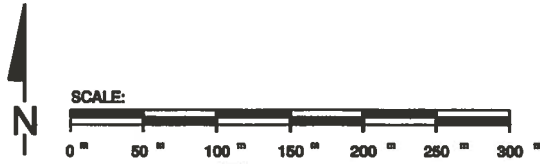
# BERKO SERVICES LTD.

# PIT PLAN

SE ¼ SEC. 25 TP. 033 RGE. 05 W. 5 M.  
LEUSSINK NORTH PIT.

AMENDMENTS:

DATE(MM/DD/YY)	NAME	AMENDMENTS



**BERKO  
SERVICES LTD.**

**AGGREGATES TESTING PLAN**

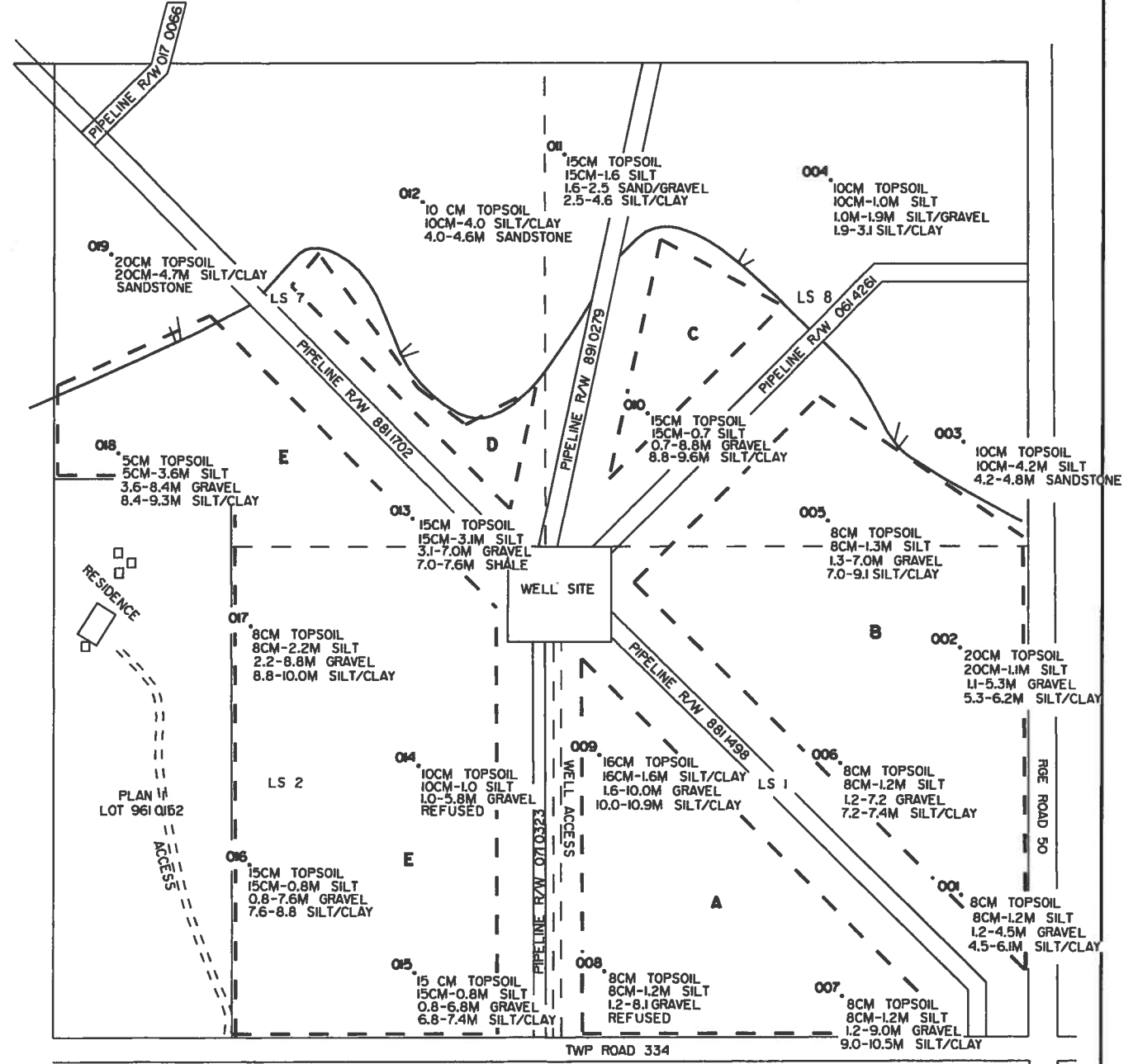
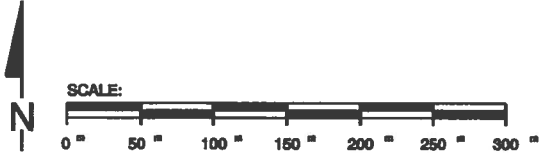
SE ¼ SEC. 25 TP. 033 RGE. 05 W. 5 M.

**LEUSSINK NORTH** PIT.

TESTED BY **BERKO SERVICES** DATE: JUN, 20 18

**AMENDMENTS:**

DATE(MM/DD/YY)	NAME	AMENDMENTS



# GRAVEL TESTING

## QUANTITY CALCULATIONS GRAVEL

SE SECTION 25 TOWNSHIP 33 RANGE 5 W 5 MERIDIAN

PIT NAME: LEUSSINK

TESTED BY: BERKO SERVICES DATE JUNE 20 18

CALCULATED BY: BERKO SERVICES JUNE 20 18

AVG. OVERBURDEN 1.2

AVG. AGGREGATE 7.8

AREA	LENGTH(m)		WIDTH(m)		SQ. METRES		DEPTH(0.1m)	=	CUBIC METERS
A		x		x	49,000	x	7.8	=	382,200
B		x		x	79,600	x	13.0	=	1,034,800
C		x		x	11,700	x	8.1	=	94,770
D		x		x	7,900	x	4.3	=	33,970
E		x		x	116,900	x	6.0	=	701,400
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 2,247,140

MINUS 10% 224,714

CUBIC METERS 2,022,426

X 1.632 t/m3

ESTIMATED QUANTITY AVAILABLE - TONNES 3,300,599



PRESENT VALUE ASSESSMENT - LEUSSINK PIT						
Present In-Situ Value @ \$2.50/t						
3.30 Mil Tonnes discounted @ 3% annually over 30 Years						
Consumption t/yr			i = %	n = no.of yrs	3% int	Present Worth
	\$/t	\$/yr	1+ i	n	(1+ i) <sup>n</sup>	\$/yr/(1+i) <sup>n</sup>
110,000	2.50	275,000	1.00	1	1.0000	275,000
110,000	2.50	275,000	1.00	2	1.0000	275,000
110,000	2.50	275,000	1.00	3	1.0000	275,000
110,000	2.50	275,000	1.00	4	1.0000	275,000
110,000	2.50	275,000	1.00	5	1.0000	275,000
110,000	2.50	275,000	1.03	6	1.1941	230,308
110,000	2.50	275,000	1.03	7	1.2299	223,600
110,000	2.50	275,000	1.03	8	1.2668	217,088
110,000	2.50	275,000	1.03	9	1.3048	210,765
110,000	2.50	275,000	1.03	10	1.3439	204,626
110,000	2.50	275,000	1.03	11	1.3842	198,666
110,000	2.50	275,000	1.03	12	1.4258	192,879
110,000	2.50	275,000	1.03	13	1.4685	187,262
110,000	2.50	275,000	1.03	14	1.5126	181,807
110,000	2.50	275,000	1.03	15	1.5580	176,512
110,000	2.50	275,000	1.03	16	1.6047	171,371
110,000	2.50	275,000	1.03	17	1.6528	166,380
110,000	2.50	275,000	1.03	18	1.7024	161,534
110,000	2.50	275,000	1.03	19	1.7535	156,829
110,000	2.50	275,000	1.03	20	1.8061	152,261
110,000	2.50	275,000	1.03	21	1.8603	147,826
110,000	2.50	275,000	1.03	22	1.9161	143,520
110,000	2.50	275,000	1.03	23	1.9736	139,340
110,000	2.50	275,000	1.03	24	2.0328	135,282
110,000	2.50	275,000	1.03	25	2.0938	131,342
110,000	2.50	275,000	1.03	26	2.1566	127,516
110,000	2.50	275,000	1.03	27	2.2213	123,802
110,000	2.50	275,000	1.03	28	2.2879	120,196
110,000	2.50	275,000	1.03	29	2.3566	116,695
110,000	2.50	275,000	1.03	30	2.4273	113,296
3,300,000		8,250,000				\$ 5,505,702

## TEST HOLE PHOTO DOCUMENT

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LOCATION: SE 25-33-05 W5M

PIT NAME: LEUSSINK

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DATE: June 20<sup>th</sup> 2018

TAKEN BY: BERKO Services Ltd.

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**TH 001**

Gravel from 1.2 – 4.5 m



**TH 005**

Gravel from 1.2 – 6.9 m



**TH 007**

Gravel from 1.9 – 9.0 m



**TH 010**

Gravel from 0.7 – 8.8 m



**TH 015**

Gravel from 0.6 – 6.8 m



**TH 017**

Gravel from 2.2 – 8.8 m