

# **Aggregate Resource Inventory in the Local Government District of Stuartburn**

by G.L.D. Matile

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**Manitoba  
Energy and Mines**  
Mines Branch





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Aggregate Report AR94-3

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by G.L.D. Matile  
Winnipeg, 1994

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Energy and Mines

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## MAP

Map AR94-3: Aggregate Resources in the Local Government District of Stuartburn . . .	(in pocket)
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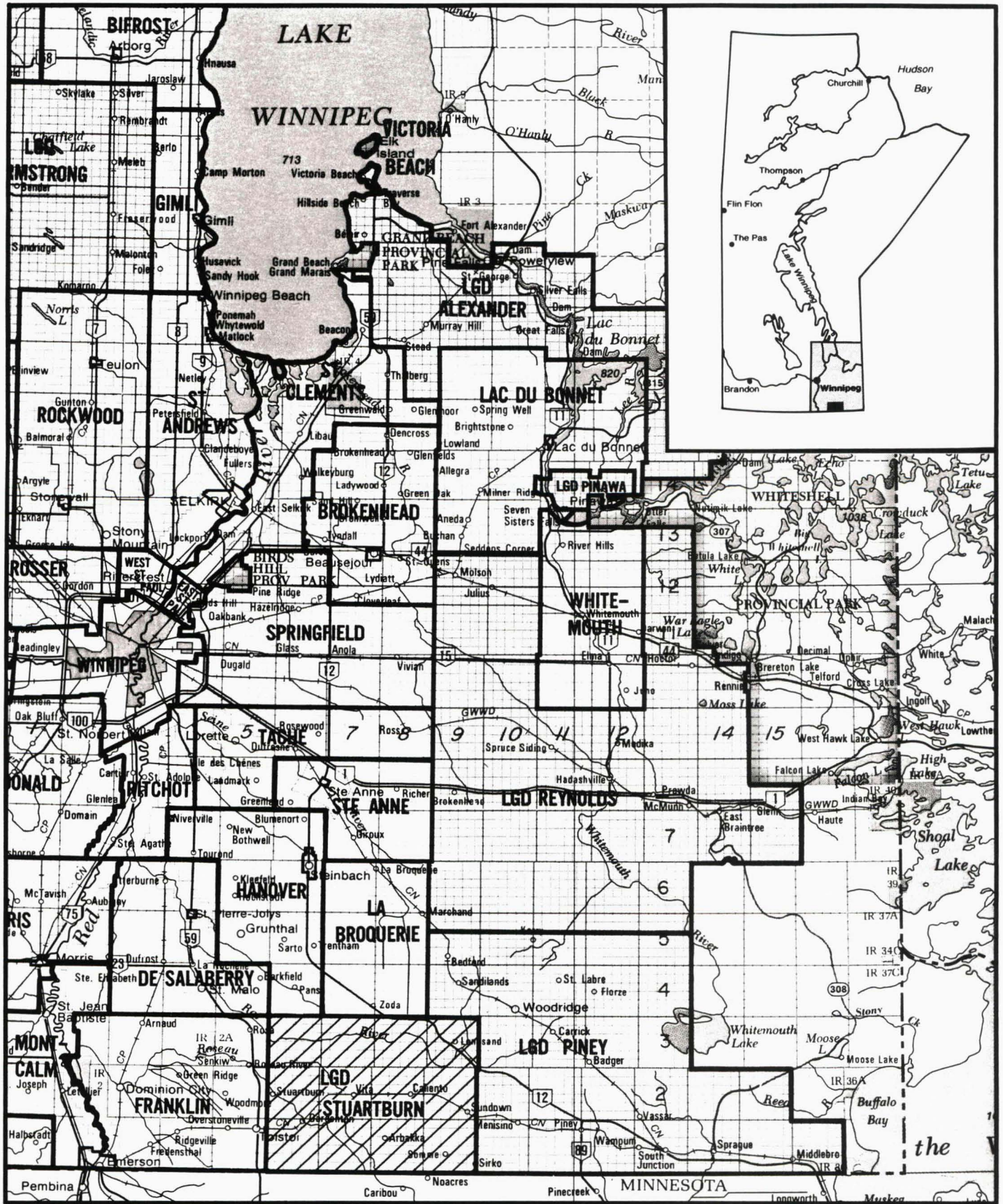


Figure 1: Location map.



## INTRODUCTION

### OBJECTIVES

An aggregate inventory was carried out in the Local Government District of Stuartburn during the summers of 1988 to 1991. The objectives were to delineate sand and gravel deposits at a scale of 1:50 000 and to estimate the quantity and quality of material in each deposit. The aggregate inventory would then provide a database for land-use planning and potential resource users.

### LOCATION AND ACCESS

The Local Government District of Stuartburn is located 84 km southeast of Winnipeg via P.T.H. 59 and P.R. 201 (Fig. 1). It comprises 12 townships (1120 km<sup>2</sup>), including townships 1-3, ranges 6-9E. The area is included in NTS areas 62H/1, 62H/2, 62H/7 and 62H/8.

A network of provincial trunk highways, provincial roads and section roads provide access to most areas. P.R. 201, 209 and 302 provides good access between all major centres, including Gardenton, Stuartburn and Vita. P.T.H. 12 crosses diagonally through the northeastern corner of the area near the town of Zhoda. Section roads provide access to much of the area; however, many would require upgrading to accommodate truck traffic transporting aggregate. Large swamps in the area, the Rat River Swamp and the Caliento Bog, are mostly inaccessible.

### PHYSIOGRAPHY

The L.G.D. of Stuartburn is located within the south-east lake terrace plain. This is an area of gently rolling topography with surface materials composed predominantly of glacial till and glaciofluvial sand. The sand is commonly littered with boulders. Beach ridges from glacial Lake Agassiz, up to 5 m high, trend northeast across the area.

The depth to bedrock increases from approximately 80 m along the western edge of the area to nearly 120 m in the east (Manitoba Energy and Mines, 1990).

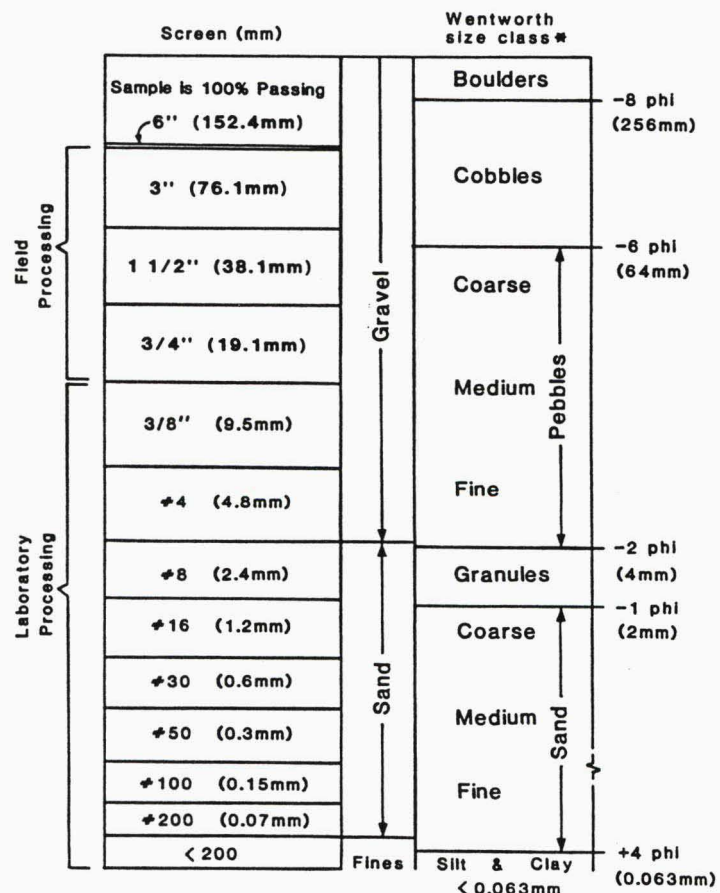
The area is within the Roseau River and Rat River watersheds, which are part of the Red River drainage basin. Drainage is westward along the Rat River and northward along the Roseau River to the south. A system of drainage ditches, including the Gardenton Floodway and the Vita Drain, carries spring runoff and storm water to the Roseau River.

### METHODOLOGY

Potential aggregate deposits were delineated on 1:50 000 scale airphotos, incorporating the following data: interpretation of black and white aerial photographs at scales of 1:50 000 and 1:15 840; pit inventory files from the Manitoba Department of Highways and Transportation; and soil maps (Smith and Ehrlich, 1964, Ehrlich *et al.*, 1976).

Field investigation was conducted over several summers, concluding in 1991. All existing exposures, including gravel pits and road cuts, were visited and samples were collected from deposits considered to have economic value. Sites interpreted to have unproven aggregate potential were tested with a backhoe in the latter portion of the field season. In addition, several sites in the municipality were visited and sampled prior to 1988 to satisfy land-use planning requirements; these data are included in Appendix I.

Gravel samples were processed in two stages<sup>1</sup>. In the first stage, which was conducted at the sampling sites, the material retained on 76 mm (3 inches), 38 mm (1 1/2 inches) and 19 mm (3/4 inches) screens was weighed and a representative sample ( $\approx 1$  kg) of the material that passed the 19 mm screen was collected. In the second stage, the minus 19 mm material was screened through 11 sieves, each separately weighed (Fig. 2), and a percentage retained was calculated for each size fraction.



\* modified from Folk, 1974

Figure 2: Grain size analysis and classification.

<sup>1</sup> The maximum grain size sampled was 152 mm (6 inches).



This two-stage procedure was developed to overcome sampling deficiencies in sediments with an abundance of material coarser than 19 mm, ensuring that there was sufficient material in the coarser size fractions to maintain the samples' statistical validity (American Society for Testing and Materials, 1987, see specification **ASTM D75-82**). This procedure made it feasible to take samples in excess of 150 kg where necessary.

During the field processing of the gravel sample, a petrographic analysis of the 19-38 mm pebble fraction was carried out to determine the materials' suitability for aggregate. The pebbles were divided into 25 rock types and four quality classifications, from which percentages of good, fair, poor and deleterious pebbles were determined. Shale, which is a deleterious constituent of many sand and gravel deposits in agro-Manitoba, was calculated as a weight percentage. A summary of these results is presented in Appendix I.

Field data and aggregate deposit boundaries were plotted on 1:50 000 scale airphotos, and these were used to produce the final map (Map AR94-3, *in pocket*).

## PREVIOUS WORK

Much of the L.G.D. of Stuartburn had been mapped prior to this study and, where possible, this information has been integrated into this study. Smith and Ehrlich (1964) and Ehrlich *et al.* (1976) mapped the surface deposits as part of a regional soil survey covering much of southeastern Manitoba. Many deposits and pits have been tested by the Materials and Research Branch of the Manitoba Department of Highways and Transportation. Preliminary studies by Ringrose *et al.* (1977a, 1977b) covered the entire area at a scale of 1:50 000. The area of township 3, range 9E was included in an aggregate industry study that examined supply and demand of various qualities of aggregate within the Winnipeg market area (Underwood McLellan and Associates, 1976).

## ACKNOWLEDGEMENTS

Ed Kostyniuk and Carole Tetreault provided able field assistance. Genevieve Corbil drafted the map under the supervision of Ed Truman.

## BEDROCK GEOLOGY

The Amaranth Formation subcrops in most of the area. This sedimentary sequence comprises an east-west trending outlier of Jurassic rocks known as the *Dominion City Channel*, which infills a channel cut into Ordovician rocks of the Winnipeg and Red River formations. The Amaranth Formation is composed of red argillaceous siltstone and sandstone overlain by evaporites (gypsum and anhydrite) (Manitoba Energy and Mines, 1990).

Ordovician rocks of the Red River Formation, predominantly composed of mottled dolomitic limestone commonly

known as *Tyndall stone*, subcrop in the southern 20% of the L.G.D. of Stuartburn. The underlying Ordovician Winnipeg Formation is composed predominantly of quartzose sandstone and shale.

Precambrian rocks unconformably underlie the Paleozoic strata and subcrop in the extreme northeastern corner of the area and directly south of Caliento. These predominantly mafic metavolcanic rocks are part of the Wabigoon Domain within the Superior Structural Province (Manitoba Energy and Mines, 1990).

## LATE WISCONSINAN HISTORY

Two major glacial ice lobes, the Rainy and Red River lobes, affected southeastern Manitoba during the Late Wisconsinan. These ice lobes deposited unsorted debris generally at the base of the ice (*till*) and sorted debris along meltwater channels within the ice or near the ice margin (*glaciofluvial sand and gravel*). The glaciofluvial sand and gravel is the major source of aggregate in southeastern Manitoba (see Map AR94-3).

The Rainy lobe advanced from the northeast to an unknown point in southern Manitoba and deposited the Senkiw till, in which the pebble size fraction is predominantly composed of Precambrian clasts, and its eastern equivalent, the Whiteshell till. The Rainy lobe advanced at least as far as

the town of Senkiw, where the Senkiw till is exposed in sections along the Roseau River (Teller and Fenton, 1980).

During its retreat the Rainy lobe stabilized in the vicinity of the Bedford Hills, where it was met by the advancing Red River lobe, which had advanced from the northwest and deposited carbonate-rich till. Between these two ice sheets the Bedford Hills interlobate moraine was built by glacial meltwater that flowed southward into a predecessor of glacial Lake Agassiz (Teller and Fenton, 1980). Multiple advances of the Red River lobe are recorded in the Roseau River sections as described by Fenton (1974).

About 13 000 years ago, during the retreat of these two ice lobes, numerous ice marginal lakes merged to form

Lake Agassiz. In the deep water of the lake, clay was deposited, while along the shore, beach ridges composed of sand and gravel were being built. These beach ridges are also an important source of aggregate in southeastern Manitoba (see Map AR94-3).

The history of Lake Agassiz is complex due to ice advances into the lake and numerous inlets and outlets that controlled the lake level. Each lake level is recorded by a developed shoreline, commonly defined by beach ridges, although many have been destroyed by subsequent events in

the lake. Drumlinoid ridges, straight glacial ridges commonly composed of sand and gravel, attest to a late glacial advance of the Red River lobe into Lake Agassiz. The Bedford Hills moraine was almost entirely surrounded by glacial ice at that time, but not overridden (Matile, 1991). Shortly after the retreat of this ice, the Bedford Hills would have become an island within Lake Agassiz. Drainage of Lake Agassiz from southeastern Manitoba occurred around 8500 years BP.

## AGGREGATE RESOURCES

Aggregate reserves have been calculated on a per-quarter-section basis, taking into account proven depths and the amount of depletion and sterilization. Sample and deposit quality were established using the guidelines set out in Figure 3.

Deposit reserves, exposure information and gravel sample data including grain size distribution and petrographic analysis are found in Appendix I. This information correlates to the aggregate map by deposit number, exposure number, and legal description. The lithology of the

gravel fraction of aggregate samples in the area is approximately 70% carbonate (Paleozoic) clasts and 30% crystalline (Precambrian) clasts. Shale and other deleterious lithologies are rare.

Mining activity within the L.G.D. of Stuartburn is very limited, partially due to the lack of high quality reserves in the area and partially due to the large distance to major aggregate markets. Several small pits produce aggregate on an intermittent basis for local consumption.

	Criteria	HIGH	MEDIUM	LOW
AGGREGATE QUALITY	Stone %	>30	15-30	0-15
	Sand %	0-35	35-70	>70
	Mud %	0-7	7-17	>17
	Shale %	0-5	5-12	>12
	Other Deleterious	low	medium	high
	Thickness	>5 m	2-5 m	0-2 m
	Uniformity	high	medium	low
DEPOSIT DEVELOPMENT POTENTIAL	Aggregate Quality	high	medium	low
	Crushable	abundant	moderate	minor
	Overburden	<2 m	2-4 m	>4 m
	Binder	yes	minor	none
	Water Table	>5 m	2-5 m	0-2 m
	Geological Potential	good	moderate	low
	Verification	proven	limited	untested
	Local Access	0-1 km	1-5 km	>5 km
	Quarrying Status	active	intermittent	inactive
	Transportation Diff.	high	medium	low
	Planning Constraints	none	conditional	sterilized
	Speciality Material	yes		no
	Aggregate Substitute	none	marginal	proximal

Figure 3: Aggregate quality and development potential guidelines. **Note:** These guidelines are an attempt to classify deposits in a broad spectrum of areas throughout Manitoba. Importance of individual criteria varies greatly depending on availability of aggregate within each region.



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**APPENDIX I**  
**DEPOSIT RESERVES AND EXPOSURE INFORMATION(INCLUDES GRAIN SIZE DISTRIBUTION AND**  
**PETROGRAPHIC ANALYSIS OF GRAVEL SAMPLES)**

**DEPOSIT # 001101 (EXTENDS INTO L.G.D. OF PINEY)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-01-001-09E	70	7500	PRIVATE/PRIVATE	
SE-12-001-09E	0	230000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		237500		

**EXPOSURE INFORMATION**

EXPOSURE #: LM345 (SE-12-001-09E)	VISITED: 9007
EXPOSURE TYPE: DITCH OR ROAD CUT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.7 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 1.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

**SIEVE ANALYSIS**

		PERCENT PASSING												OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200		
LM345 A (SE-12-001-06E)		100	100	99	96	70	35	17	7	3	1	1		SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM345 A	30	65	4	0	0	

**DEPOSIT # 001102**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-12-001-09E	0	15000	PRIVATE/PRIVATE	
SE-12-001-09E	0	40500	PRIVATE/PRIVATE	
DEPOSIT RESERVES		55500		

**DEPOSIT # 001103 (POCKETS OF GOOD GRAVEL)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-11-001-09E	30	31500	CROWN(PROVINCIAL)/CROWN	
NW-11-001-09E	0	0		
SE-11-001-09E	0	0	PRIVATE/PRIVATE	
NE-12-001-09E	0	0		
NW-12-001-09E	0	87500		
SE-12-001-09E	0	0		
SW-12-001-09E	0	0		
SW-13-001-09E	0	0		
SE-14-001-09E	30	0		
DEPOSIT RESERVES		119000		

**EXPOSURE INFORMATION**

EXPOSURE #: G 545 (NW-12-001-09E)

EXPOSURE TYPE: DUGOUT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 3.0 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 8808

LAND USE: GARBAGE DUMP-AUTHORIZED,ACTIVE

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: MED. SAND, SURFACE BOULDERS

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 3.0 M.

EXPOSURE #: GM454 (NE-11-001-09E)

EXPOSURE TYPE: DITCH OR ROAD CUT

ECONOMIC THICKNESS: 1.5 METRES

SECTION: A

SECTION HEIGHT: 1.5 M.

HEIGHT SAMPLED: 1.5 M.

MATERIAL AT BASE: SAND AND GRAVEL

NO CHANNEL SAMPLE TAKEN

VISITED: 8107

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY

ESTIMATED STONE CONTENT: MEDIUM

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE#: LM539 (NE-11-001-09E)

EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.3 METRES

SECTION: A

SECTION HEIGHT: 3.6 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 9108

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM HIGH

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL, OCCASIONAL  
COBBLES AND BOULDERS

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.2 M.



EXPOSURE #: LM540 (NE-11-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.3 METRES  
SECTION: A

SECTION HEIGHT: 2.7 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL, OCCASIONAL  
COBBLES AND BOULDERS

DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM541 (NW-12-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.4 METRES  
SECTION: A  
SECTION HEIGHT: 2.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM542 (NW-12-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 3.3 METRES  
SECTION: A  
SECTION HEIGHT: 3.5 M.  
HEIGHT SAMPLED: 3.3 M.  
MATERIAL AT BASE: SAND AND GRAVEL

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 2.7 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM543 (NW-12-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.0 METRES  
SECTION: A  
SECTION HEIGHT: 3.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: FINE SAND, SILTY LAYERS  
DEPTH TO WATER TABLE: 3.0 M.  
OVERBURDEN THICKNESS: 3.5 M.

EXPOSURE #: LM544 (NW-12-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 3.8 METRES  
SECTION: A  
SECTION HEIGHT: 4.0 M.  
HEIGHT SAMPLED: 3.8 M.  
MATERIAL AT BASE: SAND AND GRAVEL

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
DEPTH TO WATER TABLE: 3.5 M.  
OVERBURDEN THICKNESS: 0.2 M.



EXPOSURE #: LM545 (NW-12-001-09E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.6 METRES  
 SECTION: A  
 SECTION HEIGHT: 3.5 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
 LAND USE: FOREST NATURAL  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: MEDIUM  
 MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
 DEPTH TO WATER TABLE: 3.0 M.  
 OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM546 (NW-12-001-09E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.6 METRES  
 SECTION: A  
 SECTION HEIGHT: 3.5 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
 LAND USE: FOREST NATURAL  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: MEDIUM  
 MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCCASIONAL COBBLES BOULDERS  
 DEPTH TO WATER TABLE:  
 OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM547 (NW-12-001-09E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.0 METRES  
 SECTION: A  
 SECTION HEIGHT: 3.0 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
 LAND USE: FOREST NATURAL  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: LOW  
 MATERIAL DESCRIPTION: SAND W/COBBLE + BOULDER LAYER AT 0.4m.  
 DEPTH TO WATER TABLE:  
 OVERBURDEN THICKNESS: 3.0 M.

#### SIEVE ANALYSIS

##### PERCENT PASSING

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
LM542 A (NW-12-001-09E)	100	100	97	90	77	59	42	26	11	4	1	SPARSE
LM544 A (NW-12-001-09E)	98	93	87	74	61	48	33	19	7	3	2	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM542 A	91	8	1	0	0	
LM544 A	65	35	0	0	0	

**DEPOSIT # 001104 (SHARP RIDGE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
SE-10-001-09E	30	70000	PRIVATE/PRIVATE	
SW-10-001-09E	20	112000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		182000		

**EXPOSURE INFORMATION**

EXPOSURE#: LM344 (SE-10-001-09E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 2.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 3.5 M. DEPTH TO WATER TABLE: 3.5 M.  
HEIGHT SAMPLED: 3.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

**SIEVE ANALYSIS**

	PERCENT PASSING												OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200		
LM344 A (SE-10-001-09E)	100	98	89	83	70	55	45	38	25	2	1		SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM344 A	49	49	1	0	0	

**DEPOSIT # 001105 (POOR QUALITY MATERIAL)**  
(NO ECONOMIC AGGREGATE RESERVES)
**EXPOSURE INFORMATION**

EXPOSURE #: LM342 (SE-05-001-09E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ECONOMIC THICKNESS: 1.5 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 1.7 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 1.5 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

**SIEVE ANALYSIS**

	PERCENT PASSING											OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM342 A (SE-05-001-09E)	100	100	97	86	66	45	24	13	10	7	5	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM342 A	70	29	1	0	0	

**DEPOSIT # 001106A (SUBTLE RIDGE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-08-001-09E	10	410400	PRIVATE/PRIVATE	
NE-09-001-09E	40	60300	PRIVATE/PRIVATE	
NW-09-001-09E	20	436800	PRIVATE/PRIVATE	
NE-16-001-09E	0	19500	PRIVATE/PRIVATE	
SE-16-001-09E	30	208950	PRIVATE/PRIVATE	
SW-16-001-09E	80	18300	CROWN(MUNICIPAL)/CROWN	
SE-17-001-09E	0	109500	PRIVATE/PRIVATE	
DEPOSIT RESERVES		1263750		

**EXPOSURE INFORMATION**

EXPOSURE #: LM534 (SE-17-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108

LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 1.3 METRES  
SECTION: A

ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCCASIONAL  
COBBLES AND BOULDER

SECTION HEIGHT: 2.7 M.

DEPTH TO WATER TABLE: 1.5 M.

HEIGHT SAMPLED: 0.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: TILL

NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM535 (NE-08-001-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108

LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL

ECONOMIC THICKNESS: 1.9 METRES  
SECTION: A

ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY COARSE PEBBLE GRAVEL OCC.  
COBBLE

SECTION HEIGHT: 2.7 M.

DEPTH TO WATER TABLE: 1.5 M.

HEIGHT SAMPLED: 1.9 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAND

SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS



EXPOSURE #: LM536 (NW-09-001-09E) VISITED: 9108  
 EXPOSURE TYPE: BACKHOE TEST PIT LAND USE: FOREST NATURAL  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 1.6 METRES ESTIMATED STONE CONTENT: MEDIUM HIGH  
 SECTION: A MATERIAL DESCRIPTION: SANDY COBBLY COARSE PEBBLE GRAVEL  
 SECTION HEIGHT: 3.6 M. DEPTH TO WATER TABLE: 1.6 M.  
 HEIGHT SAMPLED: 1.6 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM537 (NW-09-001-09E) VISITED: 9108  
 EXPOSURE TYPE: BACKHOE TEST PIT LAND USE: FOREST NATURAL  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 1.3 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
 SECTION HEIGHT: 2.5 M. DEPTH TO WATER TABLE: 1.2 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM538 (NE-09-001-09E) VISITED: 9108  
 EXPOSURE TYPE: BACKHOE TEST PIT LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 1.7 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL W/ SAND LAYERS  
 SECTION HEIGHT: 2.6 M. DEPTH TO WATER TABLE: 1.8 M.  
 HEIGHT SAMPLED: 1.7 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

#### SIEVE ANALYSIS

	PERCENT PASSING											OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM535 A (NE-08-001-09E)	99	90	78	67	58	49	37	20	7	3	2	SPARSE
LM536 A (NW-09-001-09E)	100	94	79	71	61	54	47	30	9	2	1	SPARSE
LM538 A (NE-09-001-09E)	100	96	87	79	70	61	53	40	12	2	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	%	%	%	%	% SHALE (BY WEIGHT)	COMMENTS
	GOOD	FAIR	POOR	DELETERIOUS		
LM535 A	86	12	1	0	0	SHELL FRAGMENTS
LM536 A	91	9	0	0	0	
LM538 A	80	18	2	0	0	

**DEPOSIT # 001106B (SUBTLE RIDGE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-08-001-09E	0	29000	PRIVATE/PRIVATE	
NW-08-001-09E	0	144000	PRIVATE/PRIVATE	
SW-08-001-09E	0	50000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		223000		

**DEPOSIT # 001106C**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-06-001-09E	0	27000	PRIVATE/PRIVATE	
NE-07-001-09E	50	36500	PRIVATE/PRIVATE	
SE-07-001-09E	30	179900	PRIVATE/PRIVATE	
NW-08-001-09E	0	38000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		281400		

**EXPOSURE INFORMATION**

EXPOSURE #: LM346 (NE-07-001-09E)

VISITED: 9007

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 0.8 METRES

ESTIMATED STONE CONTENT: MEDIUM LOW

SECTION: A

MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL

SECTION HEIGHT: 1.0 M.

DEPTH TO WATER TABLE: 1.0 M.

HEIGHT SAMPLED: 0.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAME AS IN PIT WALL

NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM531 (SE-07-001-09E)

VISITED: 9108

EXPOSURE TYPE: BACKHOE TEST PIT

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 2.4 METRES

ESTIMATED STONE CONTENT: MEDIUM

SECTION: A

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE

SECTION HEIGHT: 2.8 M.

DEPTH TO WATER TABLE: 1.5 M.

HEIGHT SAMPLED: 2.4 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM532 (SE-07-001-09E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108  
 LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: MEDIUM  
 MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
 DEPTH TO WATER TABLE: 1.5 M.  
 OVERBURDEN THICKNESS: 0.2 M.

ECONOMIC THICKNESS: 1.0 METRES  
 SECTION: A  
 SECTION HEIGHT: 3.5 M.  
 HEIGHT SAMPLED: 1.0 M.  
 MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM533 (NE-07-001-09E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108  
 LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ESTIMATED STONE CONTENT: MEDIUM  
 MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
 DEPTH TO WATER TABLE: 1.5 M.  
 OVERBURDEN THICKNESS: 0.2 M.

ECONOMIC THICKNESS: 1.1 METRES  
 SECTION: A  
 SECTION HEIGHT: 3.5 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

**SIEVE ANALYSIS**

	PERCENT PASSING											OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM531 A (SE-07-001-09E)	100	96	83	72	57	41	26	16	8	4	2	SPARSE
LM532 A (SE-07-001-09E)	100	94	84	79	72	64	53	37	10	8	4	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM531 A	97	1	1	0	0	
LM532 A	84	16	0	0	0	

**DEPOSIT # 001107**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
SW-16-001-08E	60	35200	PRIVATE/PRIVATE	
SE-17-001-08E	20	3200	PRIVATE/PRIVATE	
DEPOSIT RESERVES		38400		



**EXPOSURE INFORMATION**

EXPOSURE#: LM337 (SW-16-001-08E) VISITED: 9006  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 2.5 METRES ESTIMATED STONE CONTENT: MEDIUM HIGH  
 SECTION: A MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL  
 SECTION HEIGHT: 3.0 M. DEPTH TO WATER TABLE: 2.5 M.  
 HEIGHT SAMPLED: 2.0 M. OVERBURDEN THICKNESS: 0.3 M.  
 MATERIAL AT BASE: SAND  
 SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

**SIEVE ANALYSIS**

	PERCENT PASSING											OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM337 A (SW-16-001-08E)	98	92	83	74	64	54	43	30	10	4	2	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM337 A	61	37	2	0	0	

**DEPOSIT # 001108 (VERY ACTIVE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-06-001-06E	90	12600	PRIVATE/PRIVATE	
NW-06-001-06E	60	133200	PRIVATE/PRIVATE	
SW-06-001-06E	70	131400	PRIVATE/PRIVATE	
DEPOSIT RESERVES		277200		

**EXPOSURE INFORMATION**

EXPOSURE #: LM300 (SW-06-001-06E) VISITED: 9006  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: ACTIVE PIT  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 4.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 5.0 M. DEPTH TO WATER TABLE: M.  
 HEIGHT SAMPLED: 5.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE:  
 SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

SECTION: B MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 5.0 M. DEPTH TO WATER TABLE: 5.0 M.  
 HEIGHT SAMPLED: 5.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE:  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM301 (SW-06-001-06E) VISITED: 9006  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: AGRICULTURE,HAYING  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 4.8 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
 SECTION HEIGHT: 5.0 M. DEPTH TO WATER TABLE:  
 HEIGHT SAMPLED: 5.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM302 (NW-06-001-06E) VISITED: 9006  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 3.0 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 3.0 M. DEPTH TO WATER TABLE: 3.0 M.  
 HEIGHT SAMPLED: 3.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

#### SIEVE ANALYSIS

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM300	A (SW-06-001-06E)	100	97	90	80	71	57	44	29	8	2	1	SPARSE
LM301	A (SW-06-001-06E)	100	99	97	96	84	67	45	26	6	1	1	SPARSE
LM301	B (SW-06-001-06E)	100	100	100	99	92	79	43	17	4	1	1	SPARSE
LM302	A (NW-06-001-06E)	100	100	99	99	98	97	94	60	12	2	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	%	%	%	%	% SHALE (BY WEIGHT)	COMMENTS
	GOOD	FAIR	POOR	DELETERIOUS		
LM300 A	53	45	2	0	0	
LM301 A	44	55	1	0	0	
LM301 B	72	28	0	0	0	
LM302 A	76	16	8	0	0	



**DEPOSIT # 001109**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-06-001-06E	90	6200	PRIVATE/PRIVATE	
NE-07-001-06E	40	32400	PRIVATE/PRIVATE	
SE-07-001-06E	70	61800	PRIVATE/PRIVATE	
NW-08-001-06E	0	112000	PRIVATE/PRIVATE	
SW-08-001-06E	0	28000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		240400		

**EXPOSURE INFORMATION**

EXPOSURE #: GM444 (SE-07-001-06E)

VISITED: 8107

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: FOREST NATURAL

SURROUNDING LAND USE:

ECONOMIC THICKNESS: 3.0 METRES

ESTIMATED STONE CONTENT: MEDIUM LOW

SECTION: A

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

SECTION HEIGHT: 4.0 M.

DEPTH TO WATER TABLE: 5.0 M.

HEIGHT SAMPLED: 4.0 M.

OVERBURDEN THICKNESS:

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS**

EXPOSURE #: LM305 (NE-06-001-06E)

VISITED: 9006

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: PIT-TEMPORARY USE

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 3.0 METRES

ESTIMATED STONE CONTENT: MEDIUM LOW

SECTION: A

MATERIAL DESCRIPTION: SAND WITH PEBBLE AND GRAVEL  
LAYERS

SECTION HEIGHT: 3.0 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 2.0 M.

OVERBURDEN THICKNESS: 0.0 M.

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM306 (SE-07-001-06E)

VISITED: 9006

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 3.0 METRES

ESTIMATED STONE CONTENT: MEDIUM LOW

SECTION: A

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL (VERY  
SANDY)

SECTION HEIGHT: 3.5 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 0.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM307 (SE-07-001-06E) VISITED: 9006  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 3.0 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL (VERY SANDY)  
 SECTION HEIGHT: 3.0 M. DEPTH TO WATER TABLE:  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM308 (NE-07-001-06E) VISITED: 9006  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 3.0 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 3.5 M. DEPTH TO WATER TABLE: 3.5 M.  
 HEIGHT SAMPLED: 2.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

#### SIEVE ANALYSIS

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
GM444	A (SE-07-001-06E)	100	94	90	84	73	64	53	32	12	2	1	SPARSE
LM305	A (NE-06-001-06E)	100	99	96	93	87	81	74	56	23	1	1	SPARSE
LM308	A (NE-07-001-06E)	100	97	92	88	82	72	56	27	6	1	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM305 A	71	29	1	0	0	
LM308 A	41	59	0	0	0	

#### DEPOSIT # 001110

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
SE-07-001-06E	80	7600	PRIVATE/PRIVATE	
SW-07-001-06E	80	7600	PRIVATE/PRIVATE	
DEPOSIT RESERVES		15200		

**EXPOSURE INFORMATION**

EXPOSURE#: LM303 (SW-07-001-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 1.5 METRES  
SECTION: A  
SECTION HEIGHT: 1.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE:  
NO CHANNEL SAMPLE TAKEN

VISITED: 9006  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM304 (SE-07-001-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 2.5 METRES  
SECTION: A  
SECTION HEIGHT: 3.0 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE:  
NO CHANNEL SAMPLE TAKEN

VISITED: 9006  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 2.5 M.  
OVERBURDEN THICKNESS: 0.2 M.

**DEPOSIT # 001111 (GLACIOFLUVIAL RIDGE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
SW-27-001-06E	0	43500	PRIVATE/PRIVATE	
DEPOSIT RESERVES		43500		

**DEPOSIT # 001112**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-36-001-06E	20	67200	PRIVATE/PRIVATE	
SE-36-001-06E	99	380	PRIVATE/PRIVATE	
NW-31-001-07E	40	18000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		85580		



## EXPOSURE INFORMATION

EXPOSURE #: GM064 (SE-36-001-06E) VISITED: 7808  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: ACTIVE PIT  
SURROUNDING LAND USE :  
ECONOMIC THICKNESS: 3.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 4.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 3.8 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS**

EXPOSURE #: LM328 (NE-36-001-06E) VISITED: 9006  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ECONOMIC THICKNESS: 1.5 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 1.0 M. OVERBURDEN THICKNESS: 0.3 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM329 (NW-31-001-07E) VISITED: 9006  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ECONOMIC THICKNESS: 1.0 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 1.5 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 1.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM332 (SE-36-001-06E) VISITED: 9006  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ECONOMIC THICKNESS: 2.0 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 2.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

## SIEVE ANALYSIS

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
GM064	A (SE-36-001-06E)	100	100	98	91	80	73	60	42	18	6	3	SPARSE
LM328	A (NE-36-001-06E)	100	100	99	93	80	74	68	57	21	2	1	SPARSE
LM329	A (NW-31-001-07E)	100	100	99	97	91	79	61	46	18	2	1	SPARSE
LM332	A (SE-36-001-06E)	100	100	97	84	70	58	47	33	10	1	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM328 A	66	34	0	0	0	
LM329 A	73	27	0	0	0	
LM332 A	50	50	0	0	0	

**DEPOSIT # 001113**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-31-001-07E	20	73600	PRIVATE/PRIVATE	
	DEPOSIT RESERVES	73600		

**EXPOSURE INFORMATION**

EXPOSURE #: LM330 (NW-31-001-07E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE#: LM331 (NW-31-001-07E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	

**DEPOSIT # 001114**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-31-001-07E	0	58000	CROWN(PROVINCIAL)/CROWN	
SW-05-002-07E	20	91200	PRIVATE/PRIVATE	
SE-06-002-07E	50	111000	PRIVATE/PRIVATE	
	DEPOSIT RESERVES	260200		

## EXPOSURE INFORMATION

EXPOSURE#: GM065 (SW-05-002-07E)	VISITED: 7808
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: AGRICULTURE,HAYING
	SURROUNDING LAND USE :
ECONOMIC THICKNESS: 2.8 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 3.0 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 1.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
<b>SEE SIEVE ANALYSIS</b>	
EXPOSURE #: GM453 (SE-06-002-07E)	VISITED: 8107
EXPOSURE TYPE: DITCH OR ROAD CUT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE :
ECONOMIC THICKNESS: 2.5 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANY COARSE PEBBLE GRAVEL
SECTION HEIGHT: 2.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 2.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND AND GRAVEL	
<b>SEE SIEVE ANALYSIS</b>	
EXPOSURE #: LM333 (SE-06-002-07E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: BUILDING SITE(PERMANENT)
ECONOMIC THICKNESS: 2.5 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 3.0 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 2.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	
EXPOSURE #: LM334 (SE-06-002-07E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 2.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 2.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 2.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	
EXPOSURE #: LM335 (SW-05-002-07E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-TEMPORARY USE
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 2.0 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 4.0 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	



EXPOSURE #: LM336 (SW-05-002-07E)  
 EXPOSURE TYPE: DITCH OR ROAD CUT

VISITED: 9006  
 LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ESTIMATED STONE CONTENT: MEDIUM  
 MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
 DEPTH TO WATER TABLE:  
 OVERBURDEN THICKNESS: 0.3 M.

ECONOMIC THICKNESS: 2.0 METRES

SECTION: A

SECTION HEIGHT: 2.5 M.

HEIGHT SAMPLED: 1.5 M.

MATERIAL AT BASE: SAND

SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

## SIEVE ANALYSIS

### PERCENT PASSING

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
GM065 A (SW-05-002-07E)	100	100	93	62	53	44	37	34	30	7	2	SPARSE
GM453 A (SE-06-002-07E)	100	88	78	69	57	48	38	29	19	11	3	SPARSE
LM333 A (SE-06-002-07E)	100	99	93	84	74	64	52	37	9	3	1	SPARSE
LM334 A (SE-06-002-07E)	100	100	99	90	71	52	29	11	4	3	2	SPARSE
LM336 A (SW-05-002-07E)	100	100	97	89	81	68	59	51	31	8	7	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

## PETROGRAPHIC ANALYSIS

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM333 A	67	29	5	0	0	
LM334 A	75	24	1	0	0	
LM336 A	69	29	1	0	0	

## DEPOSIT # 001115 (SAND & GRAVEL BLANKET)

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-35-001-06E	30	200550	PRIVATE/PRIVATE	
SE-35-001-06E	80	3300	PRIVATE/PRIVATE	
NW-36-001-06E	0	9000	PRIVATE/PRIVATE	
SW-36-001-06E	60	17400	PRIVATE/PRIVATE	
DEPOSIT RESERVES		230250		

## EXPOSURE INFORMATION

EXPOSURE #: GM063 (NE-35-001-06E) VISITED: 7808  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE :  
ECONOMIC THICKNESS: 1.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 1.8 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS**

EXPOSURE #: LM325 (NE-35-001-06E) VISITED: 9006  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: ACTIVE PIT  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ECONOMIC THICKNESS: 2.0 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.5 M. DEPTH TO WATER TABLE: 2.5 M.  
HEIGHT SAMPLED: 2.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

SECTION: B MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.5 M. DEPTH TO WATER TABLE: 2.5 M.  
HEIGHT SAMPLED: 2.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM326 (NE-35-001-06E) VISITED: 9006  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ECONOMIC THICKNESS: 2.0 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE: 2.5 M.  
HEIGHT SAMPLED: 2.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM327 (SW-36-001-06E) VISITED: 9006  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 2.0 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE: M.  
HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN



EXPOSURE #: LM518 (NE-35-001-06E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108  
 LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ESTIMATED STONE CONTENT: MEDIUM LOW  
 MATERIAL DESCRIPTION: SAND AND SANDY PEBBLE GRAVEL  
 DEPTH TO WATER TABLE: 1.3 M.  
 OVERBURDEN THICKNESS: 0.5 M.

ECONOMIC THICKNESS: 1.0 METRES  
 SECTION: A  
 SECTION HEIGHT: 2.5 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: TILL  
 NO CHANNEL SAMPLE TAKEN

#### SIEVE ANALYSIS

#### PERCENT PASSING

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
GM063 A (NE-35-001-06E)	100	100	95	83	76	70	64	44	31	12	2	ABUNDANT
LM325 A (NE-35-001-06E)	100	100	95	82	71	59	46	30	13	5	2	MODERATE
LM325 B (NE-35-001-06E)	100	99	91	75	64	49	34	23	14	6	3	MODERATE
LM326 A (NE-35-001-06E)	100	100	95	86	72	56	43	31	11	4	1	MODERATE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM325 A	81	17	2	0	0	
LM325 B	89	6	4	1	0	
LM326 A	92	7	1	0	0	

#### DEPOSIT #001116

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-36-001-09E	0	8000	PRIVATE/PRIVATE	
NW-01-002-09E	30	10500	PRIVATE/PRIVATE	
SE-01-002-09E	0	65000	PRIVATE/PRIVATE	
SW-01-002-09E	0	4000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		87500		

#### DEPOSIT #001117

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-01-002-09E	80	14200	PRIVATE/PRIVATE	
DEPOSIT RESERVES		14200		

**EXPOSURE INFORMATION**

EXPOSURE #: LM365 (NE-01-002-09E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: ACTIVE PIT  
 SURROUNDING LAND USE: AGRICULTURE, HAYING  
 ECONOMIC THICKNESS: 1.5 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 1.7 M. DEPTH TO WATER TABLE: 2.0 M.  
 HEIGHT SAMPLED: 1.5 M. OVERBURDEN THICKNESS: 0.2 M  
 MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

SECTION: B MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 1.7 M. DEPTH TO WATER TABLE: 2.0 M.  
 HEIGHT SAMPLED: 1.5 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

**SIEVE ANALYSIS**

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM365	A (NE-01-002-09E)	100	97	88	76	65	54	40	20	10	4	2	SPARSE
LM365	B (NE-01-002-09E)	100	97	89	84	74	63	50	27	10	3	2	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM365 A	51	47	2	0	0	
LM365 B	88	9	3	0	0	

**DEPOSIT # 001118**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-02-002-09E	50	59500	PRIVATE/PRIVATE	
SE-11-002-09E	90	2700	PRIVATE/PRIVATE	
DEPOSIT RESERVES		62200		

**EXPOSURE INFORMATION**

EXPOSURE #: GM506 (NE-02-002-09E) VISITED: 8208  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-TEMPORARY USE  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 1.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE: 2.5 M.  
 HEIGHT SAMPLED: 1.8 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAME AS IN PIT WALL  
 SEE SIEVE ANALYSIS

EXPOSURE#: LM366 (NE-02-002-09E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-TEMPORARY USE  
 SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 ECONOMIC THICKNESS: 1.3 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OVER PEA GRAVEL  
 SECTION HEIGHT: 1.5 M. DEPTH TO WATER TABLE:  
 HEIGHT SAMPLED: 1.3 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

EXPOSURE #: LM367 (SE-11-002-09E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 ECONOMIC THICKNESS: 0.8 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 1.0 M. DEPTH TO WATER TABLE: 1.0 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

**SIEVE ANALYSIS****PERCENT PASSING**

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
GM506 A (NE-02-002-09E)	100	84	71	61	52	40	25	14	7	3	2	SPARSE
LM366 A (NE-02-002-09E)	100	98	91	86	69	51	37	30	12	2	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM366 A	54	43	4	0	0	



**DEPOSIT # 001119**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-01-002-09E	99	340	PRIVATE/PRIVATE	
NW-12-002-09E	0	84000	PRIVATE/PRIVATE	
SW-12-002-09E	20	6400	PRIVATE/PRIVATE	
DEPOSIT RESERVES		90740		

**EXPOSURE INFORMATION**

EXPOSURE #: LM364 (NW-01-002-09E)

VISITED: 9007

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: BUILDING SITE(PERMANENT)

ECONOMIC THICKNESS: 1.5 METRES

ESTIMATED STONE CONTENT: MEDIUM LOW

SECTION: A

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

SECTION HEIGHT: 1.7 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 0.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE:

NO CHANNEL SAMPLE TAKEN

**DEPOSIT # 001120A (VERY SANDY)**

(NO ECONOMIC AGGREGATE RESERVES PROVEN)

**EXPOSURE INFORMATION**

EXPOSURE #: G 997 (SW-01-003-09E)

VISITED: 9108

EXPOSURE TYPE: BACKHOE TEST PIT

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 0.0 METRES

ESTIMATED STONE CONTENT: LOW

SECTION: A

MATERIAL DESCRIPTION: MED. SAND WITH MINOR PEBBLE  
HORIZONS

SECTION HEIGHT: 2.5 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 0.0 M.

OVERBURDEN THICKNESS: 2.5 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

EXPOSURE #: G 998 (NE-23-002-09E)

VISITED: 9108

EXPOSURE TYPE: BACKHOE TEST PIT

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 0.0 METRES

ESTIMATED STONE CONTENT: LOW

SECTION: A

MATERIAL DESCRIPTION: MED. SAND WITH MINOR PEBBLE  
HORIZONS

SECTION HEIGHT: 3.0 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 0.0 M.

OVERBURDEN THICKNESS: 3.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

EXPOSURE #: GM463 (SW-12-002-09E)  
EXPOSURE TYPE: DITCH OR ROAD CUT

VISITED: 8108  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

ECONOMIC THICKNESS: 2.5 METRES  
SECTION: A  
SECTION HEIGHT: 2.5 M.  
HEIGHT SAMPLED: 2.3 M.  
MATERIAL AT BASE: SAND AND GRAVEL  
SEE SIEVE ANALYSIS

SIEVE ANALYSIS

	PERCENT PASSING										
	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZE
GM463 A (SW 13 002 09E)	100	93	83	73	65	55	43	23	4	2	MODERATE
(NOTE: THIS SAMPLE IS 100% PASSING 3 INCHES)											

DEPOSIT # 001120B (VERY SANDY)  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

DEPOSIT # 001121A (POSSIBLE SAND AND GRAVEL POCKETS (NE25-2-9)  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

DEPOSIT # 001121B (POSSIBLE SAND AND GRAVEL POCKETS)  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

DEPOSIT # 001122

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-14-002-08E	40	63900	PRIVATE/PRIVATE	
NW-14-002-08E	20	130800	PRIVATE/PRIVATE	
SW-14-002-08E	0	226500	PRIVATE/PRIVATE	
SW-23-002-08E	80	31500	PRIVATE/PRIVATE	
DEPOSIT RESERVES		452700		

## EXPOSURE INFORMATION

EXPOSURE #: LM377 (SE-23-002-08E) VISITED: 9007  
EXPOSURE TYPE: DITCH OR ROAD CUT LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 1.6 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 1.8 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 1.6 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM378 (SE-23-002-08E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 1.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND AND GRAVEL  
NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM379 (SE-23-002-08E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 1.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND AND GRAVEL  
NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM380 (SE-23-002-08E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 1.8 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND AND GRAVEL  
NO CHANNEL SAMPLE TAKEN

## SIEVE ANALYSIS

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM377	A (SE-23-002-08E)	100	94	75	62	53	46	37	26	9	3	2	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)



**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM377 A	32	64	5	0	0	

**DEPOSIT # 001123**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-23-002-08E	0	301500	PRIVATE/PRIVATE	
SE-23-002-08E	0	9000	PRIVATE/PRIVATE	
NW-24-002-08E	20	90000	PRIVATE/PRIVATE	
SW-24-002-08E	0	31500	PRIVATE/PRIVATE	
NW-25-002-08E	0	321000	PRIVATE/PRIVATE	
SW-25-002-08E	0	22500	PRIVATE/PRIVATE	
NE-26-002-08E	5	65550	PRIVATE/PRIVATE	
SE-26-002-08E	10	333450	PRIVATE/PRIVATE	
SW-36-002-08E	0	16500	PRIVATE/PRIVATE	
DEPOSIT RESERVES		1191000		

**EXPOSURE INFORMATION**

EXPOSURE #: GM436 (SE-26-002-08E)

VISITED: 8107

EXPOSURE TYPE: BULLDOZER TEST PIT

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE:

ECONOMIC THICKNESS: 1.0 METRES

ESTIMATED STONE CONTENT: MEDIUM HIGH

SECTION: A

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

SECTION HEIGHT: 1.0 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 0.8 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAME AS IN PIT WALL

**SEE SIEVE ANALYSIS**

EXPOSURE #: LM373 (SE-26-002-08E)

VISITED: 9007

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: ACTIVE PIT

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 1.3 METRES

ESTIMATED STONE CONTENT: MEDIUM

SECTION: A

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

SECTION HEIGHT: 1.5 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 1.3 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM374 (NE-26-002-08E) VISITED: 9007  
 EXPOSURE TYPE: BULLDOZER TEST PIT LAND USE: AGRICULTURE,HAYING  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 0.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 0.7 M. DEPTH TO WATER TABLE:  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAME AS IN PIT WALL  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM555 (NW-25-002-08E) VISITED: 9108  
 EXPOSURE TYPE: BACKHOE TEST PIT LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 1.2 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
 SECTION HEIGHT: 3.6 M. DEPTH TO WATER TABLE:  
 HEIGHT SAMPLED: 1.2 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

#### SIEVE ANALYSIS

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
GM436	A (SE-26-002-08E)	100	96	76	62	48	37	30	24	13	2	1	SPARSE
LM373	A (SE-26-002-08E)	100	97	90	81	69	60	51	39	21	2	1	SPARSE
LM555	A (NW-25-002-08E)	100	99	94	91	86	82	76	59	14	1	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM373 A	90	8	2	0	0	
LM555 A	74	26	0	0	0	

#### DEPOSIT # 001124

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-13-002-07E	40	1200	PRIVATE/PRIVATE	
SE-13-002-07E	60	88000	PRIVATE/PRIVATE	
NW-18-002-08E	0	46000	PRIVATE/PRIVATE	
SW-18-002-08E	30	146300	PRIVATE/PRIVATE	
DEPOSIT RESERVES		281500		



## EXPOSURE INFORMATION

EXPOSURE #: GM467 (SE-13-002-07E) VISITED: 8108  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: ACTIVE PIT  
SURROUNDING LAND USE:  
ECONOMIC THICKNESS: 3.0 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY COBBLY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 5.0 M. DEPTH TO WATER TABLE: 3.5 M.  
HEIGHT SAMPLED: 3.3 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SILT  
**SEE SIEVE ANALYSIS**

EXPOSURE NUMBER #: LM349 (SE-13-002-07E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 4.0 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: COBBLY COARSE PEBBLE GRAVEL  
SECTION HEIGHT: 4.5 M. DEPTH TO WATER TABLE: 4.2 M.  
HEIGHT SAMPLED: 2.5 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

SECTION: B MATERIAL DESCRIPTION: PEBBLY SAND  
SECTION HEIGHT: 4.5 M. DEPTH TO WATER TABLE: 4.0 M.  
HEIGHT SAMPLED: 1.5 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

SECTION: C MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 3.0 M. DEPTH TO WATER TABLE: 3.0 M.  
HEIGHT SAMPLED: 2.5 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE#: LM350 (SE-13-002-07E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 4.0 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: COARSE GRAVEL TO SAND  
SECTION HEIGHT: 4.5 M. DEPTH TO WATER TABLE: 4.0 M.  
HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

EXPOSURE#: LM351 (SE-13-002-07E) VISITED: 9007  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-TEMPORARY USE  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 1.5 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
SECTION: A MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
SECTION HEIGHT: 1.7 M. DEPTH TO WATER TABLE:  
HEIGHT SAMPLED: 1.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM352 (SW-18-002-08E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 2.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OVER FINE SAND
SECTION HEIGHT: 2.5 M.	DEPTH TO WATER TABLE: 2.5 M.
HEIGHT SAMPLED: 1.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE#: LM523 (SE-13-002-07E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.4 METRES	ESTIMATED STONE CONTENT: HIGH
SECTION: A	MATERIAL DESCRIPTION: BOULDERS/COBBLES INFILLED WITH SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 2.7 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.1 M.
MATERIAL AT BASE: SILT	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM524 (SE-13-002-07E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.9 METRES	ESTIMATED STONE CONTENT: HIGH
SECTION: A	MATERIAL DESCRIPTION: BOULDERS/COBBLES INFILLED WITH SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 2.7 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.1 M.
MATERIAL AT BASE: SILT	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM525 (SE-13-002-07E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: HIGH
SECTION: A	MATERIAL DESCRIPTION: BOULDERS/COBBLES INFILLED WITH SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 2.7 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.1 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM526 (SW-18-002-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: SAND W/ SANDY COBBLY PEBBLE  
GRAVEL LAYERS  
DEPTH TO WATER TABLE: M.  
OVERBURDEN THICKNESS: 0.5 M.

ECONOMIC THICKNESS: 0.0 METRES  
SECTION: A  
SECTION HEIGHT: 2.7 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM527 (SW-18-002-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY COARSE PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 2.0 M.  
OVERBURDEN THICKNESS: 0.5 M.

ECONOMIC THICKNESS: 0.7 METRES  
SECTION: A  
SECTION HEIGHT: 3.0 M.  
HEIGHT SAMPLED: 0.2 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

#### SIEVE ANALYSIS

#### PERCENT PASSING

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
GM467 A (SE-13-002-07E)	1--	95	86	77	68	57	42	26	18	13	12	MODERATE
LM349 A (SE-13-002-07E)	100	96	91	83	74	61	37	15	6	3	2	ABUNDANT
LM349 B (SE-13-002-07E)	100	100	99	99	97	95	91	69	24	5	2	ABUNDANT
LM349 C (SE-13-002-07E)	100	99	94	90	83	74	60	36	12	4	2	ABUNDANT
LM351 A (SE-13-002-07E)	98	93	86	78	63	42	27	20	12	8	6	ABUNDANT
LM352 A (SW-18-002-08E)	96	87	74	67	54	43	33	27	23	19	14	ABUNDANT

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### PETROGRAPHIC ANALYSIS

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM349 A	60	38	2	0	0	
LM349 B	95	5	0	0	0	
LM349 C	15	83	2	0	0	
LM351 A	36	64	0	0	0	
LM352 A	58	39	2	0	0	



**DEPOSIT # 001125**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
SE-13-002-07E	20	8000	PRIVATE/PRIVATE	
SW-13-002-07E	30	14700	PRIVATE/PRIVATE	
DEPOSIT RESERVES		22700		

**EXPOSURE INFORMATION**

EXPOSURE #: LM511 (SW-13-002-07E) VISITED: 9107  
EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: GARBAGE DUMP-AUTHORIZED,ACTIVE  
SURROUNDING LAND USE: FOREST NATURAL  
ECONOMIC THICKNESS: 1.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
SECTION HEIGHT: 2.0 M. DEPTH TO WATER TABLE: 1.5 M.  
HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
MATERIAL AT BASE: SAND AND GRAVEL  
NO CHANNEL SAMPLE TAKEN

**DEPOSIT # 001126 (GLACIOFLUVIAL-HIGH WATER TABLE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-33-002-06E	0	50000	CROWN(MUNICIPAL)/CROWN	
DEPOSIT RESERVES		50000		

**DEPOSIT # 001127 (GLACIOFLUVIAL)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-33-002-06E	0	13000	PRIVATE/PRIVATE	
SW-04-003-06E	0	57000	CROWN(MUNICIPAL)/CROWN	
SE-05-003-06E	30	26600	CROWN(MUNICIPAL)/CROWN	
DEPOSIT RESERVES		96600		

**EXPOSURE INFORMATION**

EXPOSURE #: LM074 (SE-05-003-06E)  
 EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 8809

LAND USE: AGRICULTURE,HAYING

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM HIGH

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.4 M.

ECONOMIC THICKNESS: 1.4 METRES

SECTION: A

SECTION HEIGHT: 1.8 M.

HEIGHT SAMPLED: 1.4 M.

MATERIAL AT BASE:

SEE SIEVE ANALYSIS

EXPOSURE #: LM411 (SE-05-003-06E)

VISITED: 9007

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: ACTIVE PIT

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE

DEPTH TO WATER TABLE: 1.4 M.

OVERBURDEN THICKNESS: 0.2 M.

ECONOMIC THICKNESS: 1.0 METRES

SECTION: A

SECTION HEIGHT: 1.2 M.

HEIGHT SAMPLED: 1.0 M.

MATERIAL AT BASE: TILL

SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

SECTION: B

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE

SECTION HEIGHT: 1.2 M.

DEPTH TO WATER TABLE: 1.4 M.

HEIGHT SAMPLED: 1.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: TILL

SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

**SIEVE ANALYSIS****PERCENT PASSING**

		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
LM074	A (SE-05-003-06E)	100	95	86	79	64	52	32	18	11	4	2	SPARSE
LM411	A (SE-05-003-06E)	100	92	82	71	60	45	28	17	9	5	3	SPARSE
LM411	B (SE-05-003-06E)	100	91	81	73	63	49	32	22	12	5	3	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM411 A	72	28	0	0	0	
LM411 B	88	13	0	0	0	

**DEPOSIT # 001128 (GLACIOFLUVIAL RIDGE)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-05-003-06E	0	66000	PRIVATE/PRIVATE	
	DEPOSIT RESERVES	66000		

## EXPOSURE INFORMATION

EXPOSURE #: LM065 (NW-05-003-06E)

EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 1.6 METRES  
SECTION: A

SECTION HEIGHT: 2.7 M.

HEIGHT SAMPLED: 1.6 M.

MATERIAL AT BASE: TILL

**SEE SIEVE ANALYSIS**

VISITED: 8809

LAND USE: FOREST NATURAL

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL SOME  
COBBLE

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM066 (NW-05-003-06E)

EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 1.3 METRES  
SECTION: A

SECTION HEIGHT: 2.8 M.

HEIGHT SAMPLED: 1.3 M.

MATERIAL AT BASE: TILL

**SEE SIEVE ANALYSIS**

VISITED: 8809

LAND USE: FOREST NATURAL

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.3 M.

EXPOSURE #: LM067 (NW-05-003-06E)

EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 2.0 METRES  
SECTION: A

SECTION HEIGHT: 3.3 M.

HEIGHT SAMPLED: 2.0 M.

MATERIAL AT BASE: TILL

**SEE SIEVE ANALYSIS**

VISITED: 8809

LAND USE: FOREST NATURAL

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM HIGH

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.4 M.

EXPOSURE #: LM068 (NW-05-003-06E)

EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 1.1 METRES  
SECTION: A

SECTION HEIGHT: 2.4 M.

HEIGHT SAMPLED: 1.1 M.

MATERIAL AT BASE: TILL

**SEE SIEVE ANALYSIS**

VISITED: 8809

LAND USE: FOREST NATURAL

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM HIGH

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.1 M.

EXPOSURE #: LM069 (NW-05-003-06E)

EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 3.5 METRES  
SECTION: A

SECTION HEIGHT: 3.9 M.

HEIGHT SAMPLED: 3.5 M.

MATERIAL AT BASE: CLAY

**SEE SIEVE ANALYSIS**

VISITED: 8809

LAND USE: FOREST NATURAL

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: MEDIUM HIGH

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

DEPTH TO WATER TABLE: 3.6 M.

OVERBURDEN THICKNESS: 0.4 M.



EXPOSURE #: M070 (NW-05-003-06E)  
 EXPOSURE TYPE: BACKHOE TEST PIT  
 ECONOMIC THICKNESS: 2.1 METRES  
 SECTION: A  
 SECTION HEIGHT: 2.4 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: CLAY  
 NO CHANNEL SAMPLE TAKEN

VISITED: 8809  
 LAND USE: FOREST NATURAL  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: MEDIUM HIGH  
 MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL  
 DEPTH TO WATER TABLE: M.  
 OVERBURDEN THICKNESS: 0.3 M.

#### SIEVE ANALYSIS

		PERCENT PASSING											OVERSIZED (PLUS 6")
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM065	A (NW-05-003-06E)	100	96	83	76	65	49	26	16	13	8	5	SPARSE
LM066	A (NW-05-003-06E)	100	99	90	84	70	52	26	18	16	9	4	SPARSE
LM067	A (NW-05-003-06E)	100	87	73	60	51	43	30	17	7	2	1	SPARSE
LM068	A (NW-05-003-06E)	100	89	79	63	54	45	32	20	12	5	2	SPARSE
LM069	A (NW-05-003-06E)	100	89	76	69	55	40	20	10	6	3	2	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

#### DEPOSIT # 001129

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-06-003-06E	40	13800	PRIVATE/PRIVATE	
	DEPOSIT RESERVES	13800		

#### EXPOSURE INFORMATION

EXPOSURE #: LM398 (NW-06-003-06E)  
 EXPOSURE TYPE: SAND AND GRAVEL PIT  
 ECONOMIC THICKNESS: 0.9 METRES  
 SECTION: A  
 SECTION HEIGHT: 1.1 M.  
 HEIGHT SAMPLED: 0.0 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
 LAND USE: PIT-TEMPORARY USE  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ESTIMATED STONE CONTENT: MEDIUM LOW  
 MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
 DEPTH TO WATER TABLE: 1.1 M.  
 OVERBURDEN THICKNESS: 0.2 M.

#### DEPOSIT # 001130

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-06-003-06E	30	11900	PRIVATE/PRIVATE	
	DEPOSIT RESERVES	11900		

**EXPOSURE INFORMATION**

EXPOSURE #: LM397 (NW-06-003-06E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-TEMPORARY USE  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 1.3 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 1.5 M. DEPTH TO WATER TABLE: 1.8 M.  
 HEIGHT SAMPLED: 1.3 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

**SIEVE ANALYSIS**

	PERCENT PASSING											OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
LM397 A (NW-06-003-06E)	100	100	97	90	84	80	75	56	20	3	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM397 A	45	55	1	0	0	

**DEPOSIT # 001131A (CAMPBELL SPIT-VERY SANDY)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-27-003-09E	0	13500	CROWN(PROVINCIAL)/CROWN	
NE-28-003-09E	0	33500	CROWN(PROVINCIAL)/CROWN	
NE-32-003-09E	0	28000	CROWN(PROVINCIAL)/CROWN	
NE-33-003-09E	10	246600	CROWN(PROVINCIAL)/CROWN	
NW-33-003-09E	0	285500	CROWN(PROVINCIAL)/CROWN	
SE-33-003-09E	0	283500	CROWN(PROVINCIAL)/CROWN	
SW-33-003-09E	0	61500	CROWN(PROVINCIAL)/CROWN	
NW-34-003-09E	0	92000	CROWN(PROVINCIAL)/CROWN	
DEPOSIT RESERVES		1044100		

**EXPOSURE INFORMATION**

EXPOSURE #: GM462 (NW-33-003-09E)  
 EXPOSURE TYPE: DITCH OR ROAD CUT  
  
 ECONOMIC THICKNESS: 3.0 METRES  
 SECTION: A  
 SECTION HEIGHT: 3.0 M.  
 HEIGHT SAMPLED: 3.0 M.  
 MATERIAL AT BASE: PEBBLY SAND  
 SEE SIEVE ANALYSIS

VISITED: 8108  
 LAND USE :ROADWAY  
 SURROUNDING LAND USE:FOREST NATURAL  
 ESTIMATED STONE CONTENT: LOW  
 MATERIAL DESCRIPTION: PEBBLY SAND  
 DEPTH TO WATER TABLE:  
 OVERBURDEN THICKNESS: 0.0 M.

EXPOSURE #: LM358 (NE-33-003-09E)  
 EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
 ECONOMIC THICKNESS: 5.0 METRES  
 SECTION: A  
 SECTION HEIGHT: 5.0 M.  
 HEIGHT SAMPLED: 2.5 M.  
 MATERIAL AT BASE: SAND

VISITED: 9007  
 LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: LOW  
 MATERIAL DESCRIPTION: PEBBLY SAND  
 DEPTH TO WATER TABLE: 5.0 M.  
 OVERBURDEN THICKNESS: 0.2 M.

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM359 (NE-33-003-09E)  
 EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
 ECONOMIC THICKNESS: 4.0 METRES  
 SECTION: A  
 SECTION HEIGHT: 4.0 M.  
 HEIGHT SAMPLED: 2.5 M.  
 MATERIAL AT BASE: SAND

VISITED: 9007  
 LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: FOREST NATURAL  
 ESTIMATED STONE CONTENT: LOW  
 MATERIAL DESCRIPTION: PEBBLY SAND  
 DEPTH TO WATER TABLE: M.  
 OVERBURDEN THICKNESS: 0.2 M.

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS****SIEVE ANALYSIS**

	PERCENT PASSING											OVERSIZED (PLUS 6")
	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
GM462 A (NW-33-003-09E)	100	100	100	96	92	89	71	37	13	1	1	SPARSE
LM358 A (NE-33-003-09E)	100	100	99	99	99	98	98	97	91	13	4	SPARSE
LM359 A (NE-33-003-09E)	100	100	100	100	100	99	97	90	47	3	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	%	%	%	%	% SHALE (BY WEIGHT)	COMMENTS
	GOOD	FAIR	POOR	DELETERIOUS		
LM358 A	59	35	6	0	0	
LM359 A	75	25	0	0	0	



**DEPOSIT # 001131B (CAMPBELL SPIT-VERY SANDY)**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-21-003-09E	0	25000	CROWN(PROVINCIAL)/CROWN	
NW-28-003-09E	0	270000	CROWN(PROVINCIAL)/CROWN	
SE-28-003-09E	0	139000	CROWN(PROVINCIAL)/CROWN	
SW-28-003-09E	0	64000	CROWN(PROVINCIAL)/CROWN	
NE-29-003-09E	0	55500	CROWN(PROVINCIAL)/CROWN	
NE-32-003-09E	10	146700	CROWN(PROVINCIAL)/CROWN	
NW-32-003-09E	0	37500	CROWN(PROVINCIAL)/CROWN	
SE-32-003-09E	0	228000	CROWN(PROVINCIAL)/CROWN	
SW-32-003-09E	0	3000	CROWN(PROVINCIAL)/CROWN	
SW-33-003-09E	0	109000	CROWN(PROVINCIAL)/CROWN	
DEPOSIT RESERVES		1077700		

**EXPOSURE INFORMATION**

EXPOSURE #: LM357 (NE-32-003-09E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 2.5 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: REVEGETATED

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: PEBBLY SAND

DEPTH TO WATER TABLE: 2.5 M.

OVERBURDEN THICKNESS: 0.3 M.

**DEPOSIT # 001132**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-08-003-09E	0	5000	CROWN(PROVINCIAL)/CROWN	
NW-09-003-09E	0	17000	CROWN(PROVINCIAL)/CROWN	
NW-16-003-09E	20	2400	CROWN(PROVINCIAL)/CROWN	
SW-16-003-09E	20	96400	CROWN(PROVINCIAL)/CROWN	
NE-17-003-09E	20	160000	CROWN(PROVINCIAL)/CROWN	
NW-17-003-09E	20	4000	CROWN(PROVINCIAL)/CROWN	
SE-17-003-09E	20	98800	CROWN(PROVINCIAL)/CROWN	
NE-20-003-09E	20	1600	CROWN(PROVINCIAL)/CROWN	
NW-20-003-09E	20	58800	PRIVATE/PRIVATE	
SE-20-003-09E	20	48400	PRIVATE/PRIVATE	
SW-20-003-09E	20	45200	PRIVATE/PRIVATE	
NW-29-003-09E	20	10000	CROWN(PROVINCIAL)/CROWN	
SW-29-003-09E	20	67600	CROWN(PROVINCIAL)/CROWN	
NE-31-003-09E	20	78800	PRIVATE/PRIVATE	
NW-31-003-09E	20	10000	CROWN(PROVINCIAL)/CROWN	
SE-31-003-09E	20	76800	PRIVATE/PRIVATE	
DEPOSIT RESERVES		780800		

**EXPOSURE INFORMATION**

EXPOSURE #: GM461 (SE-31-003-09E)

VISITED: 8108

EXPOSURE TYPE: DITCH OR ROAD CUT

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY

ECONOMIC THICKNESS: 1.0 METRES

ESTIMATED STONE CONTENT: MEDIUM

SECTION: A

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

SECTION HEIGHT: 1.0 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 1.0 M.

OVERBURDEN THICKNESS: 0.0 M.

MATERIAL AT BASE: SAND AND GRAVEL

SEE SIEVE ANALYSIS

EXPOSURE #: LM362 (SE-17-003-09E)

VISITED: 9007

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: FOREST NATURAL

ECONOMIC THICKNESS: 2.0 METRES

ESTIMATED STONE CONTENT: MEDIUM LOW

SECTION: A

MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL

SECTION HEIGHT: 2.2 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 2.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAND

SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

EXPOSURE#: LM363 (SE-17-003-09E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 1.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 1.7 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 1.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE #: LM549 (NE-17-003-09E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 3.3 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL W/ SD. LAYERS
SECTION HEIGHT: 3.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 3.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE #: LM550 (NE-17-003-09E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 3.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL WITH SAND LAYERS
SECTION HEIGHT: 3.7 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 3.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE #: LM551 (SW-20-003-09E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: SAND W/MINOR PEBBLE LAYERS
SECTION HEIGHT: 2.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 2.5 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	



**SIEVE ANALYSIS**

		PERCENT PASSING										OVERSIZED (PLUS 6")	
		3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	
GM461	A (SE-31-003-09E)	100	100	89	60	43	33	23	16	8	2	1	SPARSE
LM362	A (SE-17-003-09E)	100	96	89	84	70	54	38	25	15	2	1	SPARSE
LM363	A (SE-17-003-09E)	100	99	91	76	57	44	36	30	19	2	1	SPARSE
LM549	A (NE-17-003-09E)	100	99	97	93	83	67	36	21	11	2	1	SPARSE
LM550	A (NE-17-003-09E)	100	99	94	84	78	71	50	39	16	2	1	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM362 A	65	33	2	0	0	
LM363 A	84	15	2	0	0	
LM549 A	63	37	0	0	0	
LM550 A	73	27	1	0	0	

**DEPOSIT # 001133** (VERY SANDY)  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

**DEPOSIT # 001134** (VERY SANDY)  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

**DEPOSIT # 001135** (VERY SANDY)  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

**DEPOSIT # 001136** (VERY SANDY)  
  
(NO ECONOMIC AGGREGATE RESERVES PROVEN)

**EXPOSURE INFORMATION**

EXPOSURE #: LM017 (NE-34-003-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: MED. SAND  
DEPTH TO WATER TABLE: 2.0 M.  
OVERBURDEN THICKNESS: 2.7 M.

ECONOMIC THICKNESS: 0.0 METRES  
SECTION: A  
SECTION HEIGHT: 2.7 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

**DEPOSIT # 001137**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NW-34-003-08E	0	31000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		31000		

**DEPOSIT # 001138**

LOCATION	PERCENT DEPLETED OR STERILIZED	REMAINING RESERVES (m <sup>3</sup> )	OWNER (SURFACE/GRAVEL)	OWNER2 (SURFACE/GRAVEL)
NE-32-003-08E	10	11250	PRIVATE/PRIVATE	
NW-33-003-08E	0	3000	PRIVATE/PRIVATE	
DEPOSIT RESERVES		14250		

**EXPOSURE INFORMATION**

EXPOSURE #: LM361 (NE-32-003-08E)

VISITED: 9007

EXPOSURE TYPE: SAND AND GRAVEL PIT

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: AGRICULTURE,HAYING

ECONOMIC THICKNESS: 1.2 METRES

ESTIMATED STONE CONTENT: LOW

SECTION: A

MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL (VERY SANDY)

SECTION HEIGHT: 1.5 M.

DEPTH TO WATER TABLE:

HEIGHT SAMPLED: 1.0 M.

OVERBURDEN THICKNESS: 0.2 M.

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS****SIEVE ANALYSIS****PERCENT PASSING**

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
LM361 A (NE-32-003-08E)	100	100	99	99	97	95	92	77	41	13	5	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

**PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM361 A	72	24	3	0	0	

## EXPOSURE INFORMATION (FOR EXPOSURES NOT LOCATED IN A DEPOSIT)

EXPOSURE #: GM033 (SW-32-003-07E)	VISITED: 7808
EXPOSURE TYPE: HAND DUG HOLE	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE:
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SAND OVER SANDY COARSE PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: TILL	
SEE SIEVE ANALYSIS	
EXPOSURE #: GM445 (NW-23-001-06E)	VISITED: 8107
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.8 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 0.8 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: GM446 (NE-13-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE:
ECONOMIC THICKNESS: 2.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY BOULDERY FINE PEBBLE GRAVEL
SECTION HEIGHT: 2.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 2.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND AND GRAVEL	
SEE SIEVE ANALYSIS	
EXPOSURE #: GM452 (SW-01-002-06E)	VISITED: 9006
EXPOSURE TYPE: DITCH OR ROAD CUT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE:
ECONOMIC THICKNESS: 1.0 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY COARSE PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 1.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND AND GRAVEL	
SEE SIEVE ANALYSIS	



EXPOSURE #: GM505 (NW-23-002-07E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 0.4 METRES  
SECTION: A  
SECTION HEIGHT: 0.5 M.  
HEIGHT SAMPLED: 0.5 M.  
MATERIAL AT BASE: SAND  
**SEE SIEVE ANALYSIS**

VISITED: 8208  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 0.5 M.  
OVERBURDEN THICKNESS: 0.1 M.

EXPOSURE #: LM063 (SW-08-003-06E)  
EXPOSURE TYPE: BACKHOE TEST PIT  
  
ECONOMIC THICKNESS: 0.9 METRES  
SECTION: A  
SECTION HEIGHT: 1.8 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 8809  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.3 M.

EXPOSURE #: LM064 (NW-05-003-06E)  
EXPOSURE TYPE: BACKHOE TEST PIT  
  
ECONOMIC THICKNESS: 0.9 METRES  
SECTION: A  
SECTION HEIGHT: 1.6 M.  
HEIGHT SAMPLED: 0.9 M.  
MATERIAL AT BASE: TILL  
**SEE SIEVE ANALYSIS**

VISITED: 8809  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM071 (NW-05-003-06E)  
EXPOSURE TYPE: BACKHOE TEST PIT  
  
ECONOMIC THICKNESS: 1.6 METRES  
SECTION: A  
SECTION HEIGHT: 1.8 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE:  
NO CHANNEL SAMPLE TAKEN

VISITED: 8809  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM072 (NW-05-003-06E)  
EXPOSURE TYPE: BACKHOE TEST PIT  
  
ECONOMIC THICKNESS: 0.7 METRES  
SECTION: A  
SECTION HEIGHT: 0.9 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE:  
NO CHANNEL SAMPLE TAKEN

VISITED: 8809  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM073 (NE-05-003-06E)  
EXPOSURE TYPE: BACKHOE TEST PIT  
  
ECONOMIC THICKNESS: 1.1 METRES  
SECTION: A  
SECTION HEIGHT: 1.3 M.  
HEIGHT SAMPLED: 1.1 M.  
MATERIAL AT BASE: TILL  
**SEE SIEVE ANALYSIS**

VISITED: 8809  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM177 (NW-23-002-07E)  
EXPOSURE TYPE: BULLDOZER TEST PIT  
  
ECONOMIC THICKNESS: 0.8 METRES  
SECTION: A  
SECTION HEIGHT: 1.0 M.  
HEIGHT SAMPLED: 0.8 M.  
MATERIAL AT BASE: TILL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 8906  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM HIGH  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC. COBBLE  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM178 (NW-23-002-07E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 0.8 METRES  
SECTION: A  
SECTION HEIGHT: 1.0 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 8906  
LAND USE: PIT-TEMPORARY USE  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE#: LM179 (NW-23-002-07E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 1.5 METRES  
SECTION: A  
SECTION HEIGHT: 1.5 M.  
HEIGHT SAMPLED: 1.5 M.  
MATERIAL AT BASE: TILL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 8906  
LAND USE: ACTIVE PIT  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM180 (NE-23-002-07E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 1.5 METRES  
SECTION: A  
SECTION HEIGHT: 1.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 8906  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.2 M.



EXPOSURE #: LM181 (NW-23-002-07E)	VISITED: 8906
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.5 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM309 (NW-08-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL MOSTLY SAND
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 1.0 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM310 (NE-13-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 1.3 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLY GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE: 1.5 M.
HEIGHT SAMPLED: 1.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE #: LM311 (NW-23-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.8 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 0.8 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE #: LM312 (SE-03-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 0.4 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
NO CHANNEL SAMPLE TAKEN	



EXPOSURE #: LM313 (NW-15-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 0.7 M.
HEIGHT SAMPLED: 0.8 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	
EXPOSURE#: LM314 (SW-22-001-06E)	VISITED: 9006
EXPOSURE TYPE: BULLDOZER TEST PIT	LAND USE: FOREST NATURAL
	SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: PEBBLY SAND (SILTY)
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 0.3 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM315 (NW-29-001-06E)	VISITED: 9006
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: MINOR COARSE GRAVEL OVER SAND
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 0.5 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 1.0 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM316 (NW-29-001-06E)	VISITED: 9006
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: MINOR COARSE GRAVEL OVER SAND
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 0.3 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 1.0 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM317 (NE-29-001-06E)	VISITED: 9006
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: MINOR COARSE GRAVEL OVER SAND
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 1.0 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM318 (SW-33-001-06E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 1.0 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 9006

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: MINOR COARSE GRAVEL OVER SAND

DEPTH TO WATER TABLE: 0.5 M.

OVERBURDEN THICKNESS: 1.0 M.

EXPOSURE#: LM319 (NW-28-001-06E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 1.0 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 9006

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: MINOR COARSE GRAVEL OVER SAND

DEPTH TO WATER TABLE: 0.5 M.

OVERBURDEN THICKNESS: 1.0 M.

EXPOSURE #: LM320 (SE-33-001-06E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 1.0 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: TILL

NO CHANNEL SAMPLE TAKEN

VISITED: 9006

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: SILT TILL

DEPTH TO WATER TABLE: 1.0 M.

OVERBURDEN THICKNESS: 1.0 M.

EXPOSURE #: LM321 (SW-34-001-06E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 0.7 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE:

NO CHANNEL SAMPLE TAKEN

VISITED: 9006

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: COARSE LAG OVER SAND

DEPTH TO WATER TABLE: 1.0 M.

OVERBURDEN THICKNESS: 0.7 M.

EXPOSURE #: LM322 (NW-26-001-06E)

EXPOSURE TYPE: SAND AND GRAVEL PIT

ECONOMIC THICKNESS: 1.0 METRES

SECTION: A

SECTION HEIGHT: 1.5 M.

HEIGHT SAMPLED: 1.5 M.

MATERIAL AT BASE: SAME AS IN PIT WALL

SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS

VISITED: 9006

LAND USE: ACTIVE PIT

SURROUNDING LAND USE: AGRICULTURE,HAYING

ESTIMATED STONE CONTENT: MEDIUM

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

DEPTH TO WATER TABLE: 1.2 M.

OVERBURDEN THICKNESS: 0.2 M.



EXPOSURE #: LM323 (NW-26-001-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.7 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 0.7 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	
EXPOSURE #: LM324 (SE-03-002-06E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: SILT TILL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE: M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 1.5 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM338 (SE-31-001-08E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: PREDOMINANTLY SILT TILL
SECTION HEIGHT: 4.0 M.	DEPTH TO WATER TABLE: 1.5 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 4.0 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM339 (SE-09-001-08E)	VISITED: 9006
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: WILDLIFE HABITAT-NATURAL, UNATTENDED
ECONOMIC THICKNESS: 0.6 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE: 0.8 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM340 (NE-12-001-08E)	VISITED: 9007
EXPOSURE TYPE: DUGOUT	LAND USE: AGRICULTURE,HAYING
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.7 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE: 0.9 M.
HEIGHT SAMPLED: 0.7 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	



EXPOSURE #: LM341 (SW-07-001-09E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 1.3 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE: 1.5 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM343 (SW-04-001-09E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.8 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.8 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS	
EXPOSURE#: LM347 (SW-28-001-08E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL WITH BOULDERS
SECTION HEIGHT: 0.7 M.	DEPTH TO WATER TABLE: 0.7 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAME AS IN PIT WALL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM348 (SW-29-001-08E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 0.7 M.	DEPTH TO WATER TABLE: 0.7 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM353 (NE-13-002-07E)	VISITED: 9007
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: SILT TILL
SECTION HEIGHT: 0.7 M.	DEPTH TO WATER TABLE: 0.7 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.7 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM354 (NW-17-002-08E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 0.5 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: TILL

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: SAND

DEPTH TO WATER TABLE: 0.5 M.

OVERBURDEN THICKNESS: 0.5 M.

EXPOSURE #: LM355 (NW-17-002-08E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 1.2 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: TILL

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: SILT TILL

DEPTH TO WATER TABLE: 1.2 M.

OVERBURDEN THICKNESS: 1.2 M.

EXPOSURE #: LM356 (SE-09-003-08E)

EXPOSURE TYPE: SAND AND GRAVEL PIT

ECONOMIC THICKNESS: 0.5 METRES

SECTION: A

SECTION HEIGHT: 0.7 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: TILL

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: AGRICULTURE,HAYING

ESTIMATED STONE CONTENT: MEDIUM LOW

MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL

DEPTH TO WATER TABLE: 0.7 M.

OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM360 (NE-34-003-08E)

EXPOSURE TYPE: DITCH OR ROAD CUT

ECONOMIC THICKNESS: 2.0 METRES

SECTION: A

SECTION HEIGHT: 2.5 M.

HEIGHT SAMPLED: 2.0 M.

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9007

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: AGRICULTURE,HAYING

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: PEBBLY SAND

DEPTH TO WATER TABLE:

OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM368 (SW-11-002-09E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.5 METRES

SECTION: A

SECTION HEIGHT: 0.7 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: HIGHWAY,ROADWAY,RAILWAY

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: PEBBLY SAND

DEPTH TO WATER TABLE: 0.7 M.

OVERBURDEN THICKNESS: 0.2 M.



EXPOSURE #: LM369 (NW-15-002-08E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 0.7 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAND

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: SAND

DEPTH TO WATER TABLE: 0.7 M.

OVERBURDEN THICKNESS: 0.7 M.

EXPOSURE #: LM370 (NE-17-002-08E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.0 METRES

SECTION: A

SECTION HEIGHT: 1.0 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: TILL

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: AGRICULTURE,HAYING

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: SILT TILL (SOFT)

DEPTH TO WATER TABLE: 0.8 M.

OVERBURDEN THICKNESS: 1.0 M.

EXPOSURE #: LM371 (NW-16-002-08E)

EXPOSURE TYPE: BORROW PIT

ECONOMIC THICKNESS: 0.5 METRES

SECTION: A

SECTION HEIGHT: 0.7 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE: SAME AS IN PIT WALL

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: HIGHWAY,ROADWAY,RAILWAY

SURROUNDING LAND USE: FOREST NATURAL

ESTIMATED STONE CONTENT: LOW

MATERIAL DESCRIPTION: PEBBLY COBBLY SAND

DEPTH TO WATER TABLE: 0.5 M.

OVERBURDEN THICKNESS: 0.7 M.

EXPOSURE #: LM372 (SW-23-002-08E)

EXPOSURE TYPE: SAND AND GRAVEL PIT

ECONOMIC THICKNESS: 1.5 METRES

SECTION: A

SECTION HEIGHT: 1.7 M.

HEIGHT SAMPLED: 1.5 M.

MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9007

LAND USE: PIT-TEMPORARY USE

SURROUNDING LAND USE: AGRICULTURE,HAYING

ESTIMATED STONE CONTENT: MEDIUM LOW

MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL

DEPTH TO WATER TABLE: 2.0 M.

OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM375 (SW-36-002-08E)

EXPOSURE TYPE: SAND AND GRAVEL PIT

ECONOMIC THICKNESS: 0.6 METRES

SECTION: A

SECTION HEIGHT: 0.8 M.

HEIGHT SAMPLED: 0.0 M.

MATERIAL AT BASE:

NO CHANNEL SAMPLE TAKEN

VISITED: 9007

LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)

SURROUNDING LAND USE: AGRICULTURE,HAYING

ESTIMATED STONE CONTENT: MEDIUM

MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL

DEPTH TO WATER TABLE: 0.8 M.

OVERBURDEN THICKNESS: 0.2 M.



EXPOSURE #: LM376 (SW-36-002-08E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 1.3 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL OCC.  
 COBBLES  
 SECTION HEIGHT: 1.5 M. DEPTH TO WATER TABLE: 1.5 M.  
 HEIGHT SAMPLED: 1.3 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAME AS IN PIT WALL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM381 (SE-11-002-08E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 0.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 0.7 M. DEPTH TO WATER TABLE: 0.8 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND AND GRAVEL  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM382 (NE-02-002-08E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 0.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 0.7 M. DEPTH TO WATER TABLE: 0.7 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND AND GRAVEL  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM383 (NW-32-002-08E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 0.5 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: PEBBLE SAND  
 SECTION HEIGHT: 0.7 M. DEPTH TO WATER TABLE: 0.7 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAME AS IN PIT WALL  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM384 (NE-24-002-07E) VISITED: 9007  
 EXPOSURE TYPE: BORROW PIT LAND USE: HIGHWAY,ROADWAY,RAILWAY  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 0.4 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: PEBBLY SAND OVER SAND  
 SECTION HEIGHT: 0.9 M. DEPTH TO WATER TABLE: 1.0 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE#: LM385 (NW-30-002-08E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.6 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL WITH SAND LAYERS
SECTION HEIGHT: 2.3 M.	DEPTH TO WATER TABLE: 2.3 M.
HEIGHT SAMPLED: 1.5 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	

EXPOSURE #: LM386 (NE-30-002-08E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.2 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 1.5 M.	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND AND GRAVEL	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM387 (NE-30-002-08E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.4 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
SECTION HEIGHT: 0.6 M.	DEPTH TO WATER TABLE: 0.6 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND AND GRAVEL	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM388 (NE-12-003-07E)	VISITED: 9007
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: SILT TILL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 1.0 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	

EXPOSURE #: LM389 (SE-24-003-07E)	VISITED: 9007
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 0.0 METRES	ESTIMATED STONE CONTENT: LOW
SECTION: A	MATERIAL DESCRIPTION: SAND
SECTION HEIGHT: 0.3 M.	DEPTH TO WATER TABLE: 0.3 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	



EXPOSURE #: LM390 (SW-27-002-07E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 0.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 0.7 M. DEPTH TO WATER TABLE: 0.7 M.  
 HEIGHT SAMPLED: 0.5 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: SAND AND GRAVEL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM391 (NE-23-002-07E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: FOREST NATURAL  
 ECONOMIC THICKNESS: 0.4 METRES ESTIMATED STONE CONTENT: MEDIUM LOW  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 1.0 M. DEPTH TO WATER TABLE: 0.7 M.  
 HEIGHT SAMPLED: 1.0 M. OVERBURDEN THICKNESS: 0.3 M.  
 MATERIAL AT BASE: SAND AND GRAVEL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

SECTION: B MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 1.0 M. DEPTH TO WATER TABLE: 0.7 M.  
 HEIGHT SAMPLED: 1.0 M. OVERBURDEN THICKNESS: 0.3 M.  
 MATERIAL AT BASE: SAND AND GRAVEL  
**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM392 (NW-23-002-07E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 0.5 METRES ESTIMATED STONE CONTENT: MEDIUM  
 SECTION: A MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
 SECTION HEIGHT: 0.7 M. DEPTH TO WATER TABLE: 0.7 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: TILL  
 NO CHANNEL SAMPLE TAKEN

EXPOSURE #: LM393 (NW-10-002-07E) VISITED: 9007  
 EXPOSURE TYPE: SAND AND GRAVEL PIT LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
 SURROUNDING LAND USE: AGRICULTURE,HAYING  
 ECONOMIC THICKNESS: 0.3 METRES ESTIMATED STONE CONTENT: LOW  
 SECTION: A MATERIAL DESCRIPTION: MINOR SAND GRAVEL  
 SECTION HEIGHT: 0.5 M. DEPTH TO WATER TABLE: 0.5 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: TILL  
 NO CHANNEL SAMPLE TAKEN

SECTION: B MATERIAL DESCRIPTION: SILT TILL  
 SECTION HEIGHT: 0.5 M. DEPTH TO WATER TABLE: 0.5 M.  
 HEIGHT SAMPLED: 0.0 M. OVERBURDEN THICKNESS: 0.2 M.  
 MATERIAL AT BASE: TILL  
 NO CHANNEL SAMPLE TAKEN



EXPOSURE #: LM394 (NE-01-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 0.5 METRES  
SECTION: A  
SECTION HEIGHT: 0.7 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 0.9 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM395 (SE-12-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 0.5 METRES  
SECTION: A  
SECTION HEIGHT: 0.9 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 0.9 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM396 (NW-15-002-08E)  
EXPOSURE TYPE: BORROW PIT  
  
ECONOMIC THICKNESS: 0.0 METRES  
SECTION: A  
SECTION HEIGHT: 0.7 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: SAND  
DEPTH TO WATER TABLE: 0.7 M.  
OVERBURDEN THICKNESS: 0.7 M.

EXPOSURE #: LM399 (SE-03-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 1.0 METRES  
SECTION: A  
SECTION HEIGHT: 1.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: PEBBLY COBBLY SAND  
DEPTH TO WATER TABLE: M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM400 (SE-03-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 1.0 METRES  
SECTION: A  
SECTION HEIGHT: 1.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: PEBBLY COBBLY SAND  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM401 (NW-03-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 3.0 METRES  
SECTION: A  
SECTION HEIGHT: 3.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: PEBBLY COBBLY SAND  
DEPTH TO WATER TABLE: 3.5 M.  
OVERBURDEN THICKNESS: 0.3 M.

EXPOSURE #: LM402 (SW-03-002-06E)  
EXPOSURE TYPE: DITCH OR ROAD CUT  
  
ECONOMIC THICKNESS: 1.0 METRES  
SECTION: A  
SECTION HEIGHT: 3.0 M.  
HEIGHT SAMPLED: 1.0 M.  
MATERIAL AT BASE: SAND

VISITED: 9007  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 3.0 M.  
OVERBURDEN THICKNESS: 0.5 M.

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM403 (SE-04-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 1.0 METRES  
SECTION: A  
SECTION HEIGHT: 1.3 M.  
HEIGHT SAMPLED: 0.3 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: PEBBLY SAND  
DEPTH TO WATER TABLE: 3.0 M.  
OVERBURDEN THICKNESS: 0.3 M.

EXPOSURE #: LM404 (SW-03-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 0.8 METRES  
SECTION: A  
SECTION HEIGHT: 1.0 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM405 (SE-04-002-06E)  
EXPOSURE TYPE: SAND AND GRAVEL PIT  
  
ECONOMIC THICKNESS: 0.5 METRES  
SECTION: A  
SECTION HEIGHT: 1.5 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9007  
LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.5 M.



EXPOSURE #: LM406 (SW-10-002-06E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
ECONOMIC THICKNESS: 0.4 METRES	SURROUNDING LAND USE: FOREST NATURAL
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION HEIGHT: 0.6 M.	MATERIAL DESCRIPTION: PEBBLY COBBLY SAND
HEIGHT SAMPLED: 0.0 M.	DEPTH TO WATER TABLE: M.
MATERIAL AT BASE: SAND	OVERBURDEN THICKNESS: 0.2 M.
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM407 (NW-18-002-06E)	VISITED: 9007
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.0 METRES	SURROUNDING LAND USE: AGRICULTURE,HAYING
SECTION: A	ESTIMATED STONE CONTENT: LOW
SECTION HEIGHT: 1.0 M.	MATERIAL DESCRIPTION: SILT TILL
HEIGHT SAMPLED: 0.0 M.	DEPTH TO WATER TABLE: 1.0 M.
MATERIAL AT BASE: TILL	OVERBURDEN THICKNESS: 1.0 M.
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM408 (NE-17-002-06E)	VISITED: 9007
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.0 METRES	SURROUNDING LAND USE: FOREST NATURAL
SECTION: A	ESTIMATED STONE CONTENT: LOW
SECTION HEIGHT: 0.5 M.	MATERIAL DESCRIPTION: SILT TILL
HEIGHT SAMPLED: 0.0 M.	DEPTH TO WATER TABLE: 0.5 M.
MATERIAL AT BASE: TILL	OVERBURDEN THICKNESS: 0.5 M.
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM409 (NE-16-002-06E)	VISITED: 9007
EXPOSURE TYPE: BORROW PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.0 METRES	SURROUNDING LAND USE: FOREST NATURAL
SECTION: A	ESTIMATED STONE CONTENT: LOW
SECTION HEIGHT: 0.7 M.	MATERIAL DESCRIPTION: MINOR GRAVEL OVER SAND
HEIGHT SAMPLED: 0.0 M.	DEPTH TO WATER TABLE: 0.7 M.
MATERIAL AT BASE: TILL	OVERBURDEN THICKNESS: 0.7 M.
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM410 (NW-21-002-06E)	VISITED: 9007
EXPOSURE TYPE: DITCH OR ROAD CUT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.9 METRES	SURROUNDING LAND USE: AGRICULTURE,HAYING
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION HEIGHT: 1.1 M.	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL OCC. COBBLE
HEIGHT SAMPLED: 0.9 M.	DEPTH TO WATER TABLE:
MATERIAL AT BASE: TILL	OVERBURDEN THICKNESS: 0.2 M.
SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS	



EXPOSURE #: LM412 (SE-29-003-06E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.0 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL
SECTION HEIGHT:	DEPTH TO WATER TABLE:
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.3 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM413 (SE-29-003-06E)	VISITED: 9007
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 1.0 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL
SECTION HEIGHT: 0.5 M.	DEPTH TO WATER TABLE: 0.5 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM509 (NE-29-002-08E)	VISITED: 9107
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: AGRICULTURE,HAYING
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 0.5 M.	DEPTH TO WATER TABLE: 0.2 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: SAND	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM510 (NW-30-002-08E)	VISITED: 9107
EXPOSURE TYPE: SAND AND GRAVEL PIT	LAND USE: PIT-NOT IN USE(COMMONLY REVEGETATED)
	SURROUNDING LAND USE: PASTURE,GRAZING
ECONOMIC THICKNESS: 0.5 METRES	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION: A	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
SECTION HEIGHT: 1.0 M.	DEPTH TO WATER TABLE: 0.6 M.
HEIGHT SAMPLED: 0.0 M.	OVERBURDEN THICKNESS: 0.2 M.
MATERIAL AT BASE: TILL	
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM512 (NW-20-003-06E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
	SURROUNDING LAND USE: FOREST NATURAL
ECONOMIC THICKNESS: 1.3 METRES	ESTIMATED STONE CONTENT: MEDIUM
SECTION: A	MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL
SECTION HEIGHT: 2.7 M.	DEPTH TO WATER TABLE: 1.0 M.
HEIGHT SAMPLED: 1.3 M.	OVERBURDEN THICKNESS: 0.5 M.
MATERIAL AT BASE: TILL	
SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS	

EXPOSURE #: LM515 (SW-06-001-06E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 1.9 METRES	SURROUNDING LAND USE: AGRICULTURE,HAYING
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION HEIGHT: 2.5 M.	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL
HEIGHT SAMPLED: 1.9 M.	DEPTH TO WATER TABLE:
MATERIAL AT BASE: SAND	OVERBURDEN THICKNESS: 0.2 M.
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	
EXPOSURE #: LM516 (NW-06-001-06E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.9 METRES	SURROUNDING LAND USE: BUILDING SITE(PERMANENT)
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION HEIGHT: 2.1 M.	MATERIAL DESCRIPTION: SANDY FINE PEBBLE GRAVEL VERY SANDY
HEIGHT SAMPLED: 0.0 M.	DEPTH TO WATER TABLE: 1.5 M.
MATERIAL AT BASE: SAND	OVERBURDEN THICKNESS: 0.2 M.
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM517 (NW-35-001-06E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.8 METRES	SURROUNDING LAND USE: AGRICULTURE,HAYING
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION HEIGHT: 2.6 M.	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
HEIGHT SAMPLED: 0.0 M.	DEPTH TO WATER TABLE: M.
MATERIAL AT BASE: SAND	OVERBURDEN THICKNESS: 0.3 M.
NO CHANNEL SAMPLE TAKEN	
EXPOSURE #: LM519 (NE-28-001-07E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.9 METRES	SURROUNDING LAND USE: AGRICULTURE,HAYING
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM HIGH
SECTION HEIGHT: 2.5 M.	MATERIAL DESCRIPTION: SANDY COBBLY PEBBLE GRAVEL
HEIGHT SAMPLED: 0.9 M.	DEPTH TO WATER TABLE: 1.5 M.
MATERIAL AT BASE: SAND	OVERBURDEN THICKNESS: 0.2 M.
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	
EXPOSURE #: LM520 (SW-27-002-07E)	VISITED: 9108
EXPOSURE TYPE: BACKHOE TEST PIT	LAND USE: HIGHWAY,ROADWAY,RAILWAY
ECONOMIC THICKNESS: 0.7 METRES	SURROUNDING LAND USE: AGRICULTURE,HAYING
SECTION: A	ESTIMATED STONE CONTENT: MEDIUM LOW
SECTION HEIGHT: 2.7 M.	MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL
HEIGHT SAMPLED: 0.7 M.	DEPTH TO WATER TABLE: 1.2 M.
MATERIAL AT BASE: CLAY	OVERBURDEN THICKNESS: 0.2 M.
<b>SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS</b>	



EXPOSURE #: LM521 (SE-27-002-07E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.2 METRES  
SECTION: A  
SECTION HEIGHT: 1.0 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: CLAY  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE:  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY COARSE PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE#: LM522 (NW-23-002-07E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.6 METRES  
SECTION: A  
SECTION HEIGHT: 1.8 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL W/ SAND LAYERS  
DEPTH TO WATER TABLE: 1.0 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM528 (SW-05-002-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.9 METRES  
SECTION: A  
SECTION HEIGHT: 2.4 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: FOREST NATURAL  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM HIGH  
MATERIAL DESCRIPTION: SANDY BOULDERY COBBLY PEBBLE GRAVEL  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM529 (NE-11-001-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.9 METRES  
SECTION: A  
SECTION HEIGHT: 2.8 M.  
HEIGHT SAMPLED: 0.9 M.  
MATERIAL AT BASE: TILL

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.1 M.

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

EXPOSURE #: LM530 (SW-01-001-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 2.0 METRES  
SECTION: A  
SECTION HEIGHT: 2.8 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: AGRICULTURE,HAYING  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: SAND W/MINOR PEBBLY PEA-GRAVEL LAYERS  
DEPTH TO WATER TABLE:  
OVERBURDEN THICKNESS: 0.1 M.



EXPOSURE #: LM552 (NW-03-002-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 2.0 METRES  
SECTION: A  
SECTION HEIGHT: 2.4 M.  
HEIGHT SAMPLED: 1.5 M.  
MATERIAL AT BASE: SAND

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: MEDIUM LOW  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL, VERY SANDY  
DEPTH TO WATER TABLE: 1.3 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM553 (SW-03-002-09E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 2.0 METRES  
SECTION: A  
SECTION HEIGHT: 2.0 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: SAND  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: FOREST NATURAL  
ESTIMATED STONE CONTENT: LOW  
MATERIAL DESCRIPTION: MED. TO COARSE SAND, PEBBLY AT TOP  
DEPTH TO WATER TABLE: 1.4 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM554 (NW-10-002-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 2.6 METRES  
SECTION: A  
SECTION HEIGHT: 3.0 M.  
HEIGHT SAMPLED: 2.0 M.  
MATERIAL AT BASE: TILL

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY COBBLY COARSE PEBBLE  
GRAVEL OVER MED. COARSE SAND  
DEPTH TO WATER TABLE: 1.5 M.  
OVERBURDEN THICKNESS: 0.2 M.

EXPOSURE #: LM556 (SE-31-002-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 1.6 METRES  
SECTION: A  
SECTION HEIGHT: 2.5 M.  
HEIGHT SAMPLED: 1.6 M.  
MATERIAL AT BASE: SILT

**SEE SIEVE ANALYSIS AND PETROGRAPHIC ANALYSIS**

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: 1.6 M.  
OVERBURDEN THICKNESS: 0.3 M.

EXPOSURE #: LM557 (SW-05-003-08E)  
EXPOSURE TYPE: BACKHOE TEST PIT

ECONOMIC THICKNESS: 0.8 METRES  
SECTION: A  
SECTION HEIGHT: 2.2 M.  
HEIGHT SAMPLED: 0.0 M.  
MATERIAL AT BASE: TILL  
NO CHANNEL SAMPLE TAKEN

VISITED: 9108  
LAND USE: HIGHWAY,ROADWAY,RAILWAY  
SURROUNDING LAND USE: AGRICULTURE,HAYING  
ESTIMATED STONE CONTENT: MEDIUM  
MATERIAL DESCRIPTION: SANDY PEBBLE GRAVEL  
DEPTH TO WATER TABLE: M.  
OVERBURDEN THICKNESS: 0.2 M.

# SIEVE ANALYSIS

## PERCENT PASSING

	3.0	1.5	3/4	3/8	#4	#8	#16	#30	#50	#100	#200	OVERSIZED (PLUS 6")
GM033 A (SW-32-003-07E)		95	80	62	56	53	46	39	34	29	13	SPARSE
GM446 A (NE-13-001-06E)		100	97	91	77	62	44	20	9	5	4	SPARSE
GM452 A (SW-01-002-06E)		90	79	71	61	52	41	24	13	5	3	SPARSE
GM505 A (NW-23-002-07E)		100	89	81	73	64	51	35	22	10	1	SPARSE
LM064 A (NW-05-003-06E)	100	99	86	79	67	53	31	24	21	17	11	SPARSE
LM073 A (NE-05-003-06E)	100	99	93	85	72	54	35	27	17	7	3	SPARSE
LM177 A (NW-23-002-07E)	100	95	83	71	60	49	37	26	17	11	5	SPARSE
LM179 A (NW-23-002-07E)	100	100	97	88	81	66	46	27	12	5	2	MODERATE
LM310 A (NE-13-001-06E)	100	100	97	96	88	74	50	19	6	3	2	MODERATE
LM311 A (NW-23-001-06E)	100	100	90	78	64	48	35	25	13	5	3	MODERATE
LM313 A (NW-15-001-06E)	100	92	81	66	58	51	42	32	19	6	4	SPARSE
LM322 A (NW-26-001-06E)	100	95	88	79	72	63	50	38	20	5	2	SPARSE
LM323 A (NW-26-001-06E)	98	95	92	88	83	78	71	58	25	7	4	SPARSE
LM340 A (NE-12-001-08E)	100	100	96	88	67	45	27	17	15	13	9	SPARSE
LM343 A (SW-04-001-09E)	100	100	97	85	75	68	61	55	42	8	2	SPARSE
LM360 A (NE-34-003-08E)	100	100	96	88	80	74	67	58	35	5	1	SPARSE
LM372 A (SW-23-002-08E)	100	100	93	81	72	66	60	52	29	5	2	SPARSE
LM376 A (SW-36-002-08E)	100	92	79	69	59	47	33	23	14	5	2	SPARSE
LM385 A (NW-30-002-08E)	100	96	89	83	76	68	61	50	24	7	2	SPARSE
LM390 A (SW-27-002-07E)	100	100	98	95	85	70	51	41	32	18	5	SPARSE
LM391 A (NE-23-002-07E)	100	98	91	77	68	61	53	44	30	13	6	MODERATE
LM391 B (NE-23-002-07E)	100	97	86	78	68	55	40	25	12	4	0	MODERATE
LM402 A (SW-03-002-06E)	100	99	90	80	70	60	51	41	24	7	2	MODERATE
LM410 A (NW-21-002-06E)	100	98	93	84	71	56	42	28	13	5	3	SPARSE
LM512 A (NW-20-003-06E)	99	90	79	64	54	46	38	29	19	11	4	SPARSE
LM515 A (SW-06-001-06E)	100	99	94	80	58	44	33	24	7	3	2	SPARSE
LM519 A (NE-28-001-07E)	100	84	73	61	52	45	35	24	15	7	5	SPARSE
LM520 A (SW-27-002-07E)	100	100	99	94	86	75	61	36	20	7	2	SPARSE
LM529 A (NE-11-001-08E)	100	98	91	81	70	63	56	31	5	3	1	SPARSE
LM552 A (NW-03-002-09E)	100	98	93	87	81	72	60	43	19	4	2	SPARSE
LM554 A (NW-10-002-08E)	100	96	90	83	73	61	47	34	19	8	2	MODERATE
LM556 A (SE-31-002-08E)	100	98	90	77	62	46	31	24	15	7	3	SPARSE

(NOTE: ALL SAMPLES ARE 100% PASSING 6 INCHES)

# **PETROGRAPHIC ANALYSIS**

SAMPLE	% GOOD	% FAIR	% POOR	% DELETERIOUS	% SHALE (BY WEIGHT)	COMMENTS
LM177 A	73	26	1	0	0	
LM179 A	88	11	1	0	0	
LM310 A	58	40	2	0	0	
LM311 A	94	5	1	0	0	
LM313 A	89	11	0	0	0	
LM322 A	89	9	1	0	0	
LM323 A	96	4	0	0	0	
LM340 A	84	16	0	0	0	
LM343 A	55	42	4	0	0	
LM360 A	83	16	1	0	0	
LM372 A	83	17	1	0	0	
LM376 A	59	39	2	0	0	
LM385 A	40	60	0	0	0	
LM390 A	89	9	1	0	0	
LM391 A	90	9	1	0	0	
LM391 B	85	14	1	0	0	
LM402 A	75	24	1	0	0	
LM410 A	88	11	1	0	0	
LM512 A	93	7	0	0	0	
LM515 A	64	36	0	0	0	
LM519 A	83	17	1	0	0	
LM520 A	52	48	0	0	0	
LM552 A	90	9	1	0	0	
LM554 A	93	6	1	0	0	
LM556 A	83	17	0	0	0	
LM529 A	93	7	0	0	0	