

"Rite in the Rain"
ALL-WEATHER WRITING PAPER



LEVEL

All-Weather Notebook
No. 311

PIN-3	2006
Landfill Monitoring	
Geotechnical Inspection	
DEW Line Site	

4 5/8" x 7" - 48 Numbered Pages

"Rite in the Rain"
ALL-WEATHER WRITING PAPER



Name Jim Theriault

Gartner Lee Limited

Address 300 Town Centre Boulevard
Markham, ON

Phone 905. 477.8400 ext 431

Project PIN-3 Landfill Monitoring
DEW Line Site

60725

Clear Vinyl Protective Slipcovers (Item No. 30) are available for this style of notebook.
Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation.

CONTENTS

PAGE	REFERENCE	DATE
2	Intro / Background	2006/08/16
3	Main Landfill Visual Inspection	" "
8	South Beach Landfill - Visual Insp.	" "
12	Non Haz Waste Landfill - Visual Insp.	2006/08/16
15	Tier II Landfill - Visual Inspection	2006/08/17
20	NWS Landfill - Visual Insp.	" "
23	North Landfill Main Landfill - Retaking Photos (Fog)	2006/08/17
27	Coordinates BHTs & MWs	2006/08/13
28	NHW Landfill - Photos MWs	2006/08/13

TNGen - Thumbnail generator

Aug 16/2006 Partly cloudy 10°C

Arrived on site Tuesday Aug 15 at about 4:30pm (1st of 2 plane loads)

Jim Theriault - here for geotech inspection of landfill

Dennis Lu - here for monitoring and soil sampling

3 additional crew/support

Ed (bear lookout) plus Dennis &

Escort and D.C. Haz. Material Broker arrived on first flight and left on the second flight @ 8:15pm

Set up camp near the radar belts along the NW corner of the site

The geotech inspection will include

- Main Landfill
- NEWS Landfill
- South Landfill - West
- South Landfill - East
- North Landfill
- D.C. Tier II Soil Disposal Facility
- Non Hazardous Waste Landfill

Fog has rolled in just as I was about to start inspection 9:30am → I will walk around the landfill and get acquainted with it for a while in hopes the fog lifts a bit

Started inspection in the SE corner @ the access road

- walked counter-clockwise around crest perimeter of landfill

- no signs of cracking or problematic settlement

- the general surface cap is gently undulating as expected from the initial fill placement

- the side slopes also gently undulate with horizontal track marks from the original heavy equipment fill placement

- the horizontal tracks help minimize the potential for concentrated flow down the slopes

- walked c.c. around the toe of the landfill

→ no indications of slope movement or seepage

10:45am fog beginning to lift → will commence photo documentation

60725

Aug 16

Main landfill - Photo Record

ML-1 @ 407983 / 7597587 looking N
img-0016 along eastern edge of lf → no
problem w fog skip panorama for now

ML-2 @ 408002 / 7597620 looking N
img-0017 taken from mid slope

ML-3st @ 408012 / 7597652 looking N
taken from toe of slope 2 shot panoramic
(only 1 shot)

ML-4 408000 / 7597652 looking N
from crest @ E side landfill (panoramic not
Sta 19 and Sta 20 Sta 20 is the shot is really good)

ML-5st Panoramic from 407978 / 7597714
looking W → E sign on VT-1
Sta 21 - Sta 25 4 photos → pretty foggy ^{crappy}

ML-6st 2 shots 407984 / 7597733 looking N
to NE corner of landfill standing mid slope
Sta-0025 & Sta-0026
↑ best

Aug 16 / 2006

ML-7 407971 / 7597762 looking 300°
slope stable but rutted → fog worsening
img-0027

ML-8 407959 / 7597768 near crest
img-0028 minor rutting from original fill placement
→ no apparent degradation / not problematic

ML-9st Panoramic of landfill looking S
407947 / 7597770 5 photos L to R
Sta-0029 to Sta-0033 Sta-0030 is best for ML-9

ML-10 407932 / 7597789 looking 120°
img-0034 from NW corner of landfill road for scale

ML-11 407955 / 7597779 looking 300°
img-0035 viewed from mid slope

ML-12st 407920 / 7597793 2 photos looking 220°
Sta-0036 & Sta-0037 NW corner of landfill mid-slope

Break for lunch
- photographed some Muskrats & flora

6 60725

ML-13 407881/7597767 (MLW-6)

img-0047 looking S slope in good shape, no problematic
erosion → vegetation & marshy area
appears at toe → but no signs of
sagging
img-0048
duplicate/deleted

ML-14 407863/7597724 looking E

img-0049 slope in good shape viewed from toe area
standing on organic

ML-15 407899/7597729 looking 120°

img-0050 from crest (hanger in background)
→ sign near rut

ML-16 407935/7597694 looking E

img-0051 towards minor rut in slope - not problem but
monitor to ensure doesn't degrade

ML-17 407945/7597693 looking south
from crest

sta-0052
& sta-0053

Aug 16/2006 7

st
ML-18 407894/7597643 looking S
2 photos

sta-0054
& sta-0055

ML-19^s 407890/7597603 looking E
from near bottom slope

sta-0056
sta-0057

ML-20 panoramic 6 shots left to right
Tyr of landfill looking N
towards 2 theri-ators 407974/7597610

sta-0058
to sta-0063

FOG LIFTING

ML-21 407969/7597626 looking N towards

img-0064 area of possible settlement
- middle of last spot @ 407962/7597617

Finished inspection - moving to South Beach

Photo of an old muskox img-0065

Moving on to South Beach

South Beach - East Side

SBE-1st Panoramic 408840/7596434

looking N 6 Photos L to R
sta-0066 to sta-0071

SBE-2 0408842/7596429 looking E
img-0072 Wet spot @ toe

SBE-3st 0408873/7596432 looking N
along eastern toe
sta-0073
& sta-0074

SBE-4 Close-up of rust staining NE corner
img-0075 @ 408883/7596478

SBE-5 408882/7596474 Looking NW
img-0076 along toe

SBE-6 408865/7596493 looking W
img-0077

SBE-7st 408827/7596515 looking SW 2 photos
sta-0078
& sta-0079

SBE-8 408305/7596499 looking S
img-0080 Note granular displacing soft material

Aug 16

SBE-9 Possible seepage from toe ~~with~~ middle west side
img-0081 408799/7596473
already tag orange on nail 12978

also seepage at 408803/7596463

SBE-10st 408802/7596471 looking S
sta-0082
& sta-0083 Note displaced part

SBE-11^{SW} Wet spot along toe 408819/7596454
img-0084 looking 230°
SBE-12 - adjacent displaced part (10m N)
img-0085 Semipoint looking 260°

* SBE-13 looking 115° 408798/7596450
NO PHOTO over seepage? NO PHOTO

now SBE-13
SBE-13st Seepage from SE corner of landfill
408852/7596432
sta-0086 & sta-0087

END OF SOUTH BEACH EAST
LANDFILL

10 60725

South Beach ~~West~~ Landfill

s - small (underscored)
l - large s in filename

SBW-s-1ST 408712/7596427 looking N
to smaller south landfill sta-0089
img-0090

SBW-s-2 408716/7596441 looking 310°
img-0091

SBW-s-3 408729/7596465 looking W
img-0092

No signs of seepage or moisture

SBW-s-4 408690/7596464 look S
img-0093

SBW-1ST 408651/7596500 looking E
Note ponded water along N and SBE in background
img-0094 3 shot panoramic
to img-0096

SBW-2 408723/7596464 SE corner looking N
note area of staining and possible seepage
img-0097 tag 12954 (took photo) in seepage stain
SBW-2a img-0098

SBW-3 408729/7596482 looking N
Note depression and ponded water
img-0099

Aug 16/2006 11

SBW-4ST 408723/7596492 looking E
sta-0100 ponded water
sta-0101

SBW-5 408736/7596496 looking N
img-0102 Seepage (v minor) along toe

SBW-6ST 408737/7596509 looking W
sta-0103 water ponded water along toe (can't tell if seeping)
sta-0104

SBW-7 408716/7596512 looking WNW
img-105 Close up of ponded water and tire ruts

SBW-8 408708/7596521 looking SW
img-106

SBW-9 wet spot at toe of landfill (cleanup)
img-0107 408665/7596508

SBW-10 408667/7596511 looking SSW
img-0108 Ponded water / seepage?

SBW-11 408668/7596497 looking SE
sta-0109 towards SBW-5 from NW corner
sta-0110

Aug 16/2006

SBW-12 408677/7596464 looking E
img-0111

DONE Spn

6:40 p.m.

NON HAZARDOUS WASTE LANDFILL

NHWL-1 Panoramic Looking 220°
img-0112 408885 7597653 (North slope)
img-0113 - looks good

NHWL-2 408867/7597632 looking W
img-0114 Viewed from mid-slope

NHWL-3 408773/7597638 looking E
towards PCB containers viewed from near toe
img-0115 of NW corner

NHWL-4 408775/7597631 looking E
img-0116 from crest of corner

5 photos st.
NHWL-5 from NW corner
img-0117 408783/7597625
to
img-0121

Aug 16/2006 13

2 photos st.
NHWL-6 408771 7597634 looking S
no cracking on crest, looks good slope
img-0122 - toe appears damp but intermingled w
img-0123 organics

2 photos st.
NHWL-7 408771 7597598 looking S
img-0124 mid-slope
img-0125

NHWL-8 403759 7597574 looking N
to solar ball along western toe of dam
img-0126 outside toe appears darker and damp w
increased organic content → no seepage observed

NHWL-9 403762 7597559 looking E
img-0128 along toe → note darker more organic rich
soil adjacent to toe → no seepage

NHWL-10 408778/7597566 looking E from
img-0129 crest

NHWL-11 408814/7597569 looking E
from mid-slope to SE corner
img-0131

3 shot panoramic
 NHWL-12 408862/7597571
 looking NW from SE corner

sta-0132

to sta-0134

end of inspection for the day - East
 slope in complete shadow - take photos
 in the morning

Photos 135 to 138 Old radar balls viewed from camp

Sunny 6°C 8am

Aug 17th

Back @ NHWL

NHWL-13 408872/7597561 looking N
 from SE corner (Dennis for scale)

img-0139

NHWL-14 408864/7597572 looking
 N

img-0140

NHWL-15 408868/7597600 looking N
 to camp

img-0141

NHWL-16 408872/7597615 organics
 along toe NE edge of landfill between
 slope and road -> dump but no noticeable
 seepage baseball cap for scale

img-0142

Aug 17/2006 15

8:30am TIER II Site

- starting in gravel walk over
- slopes have been tracted perpendicular to
 crest -> increasing potential for channelized flow
- no obvious erosion, but numerous deep track
 marks
- surface is rough and undulating
- some deep ruts along crest - SW corner
 and near VT-7
- > ruts make it difficult to observe changes
- noticeable depression along crest just East of VT-6
 -> appears related to repeated traffic

T2-1 409614/7597447 looking 230°
 to NE corner panoramic East N slopes
 sta-0143 to sta-0146 L to R

T2-2 SW corner crest 409476/7597353
 Area of depression - no signs of recent
 movement -> construction remnant?

(img-0148 deleted)

T2-3 409478/7597351 looking East
 to VT-7

img-0149

T2-4 Rattings @ VT-7 409503/7597350

img-0150

Aug 17

T2-5 409511/7597351 looking E
img-0151 along crest

T2-6 409539/7597351 looking E
img-0152 along crest

T2-7 409571/7597349 looking N
img-0153 from SE corner along crest

T2-8 409567/7597371 looking N
img-0154 along crest

T2-9 409574/7597390 looking S
img-0155 area of rutting (not nec. problematic)

T2-10 409572/7597407 looking W
img-0156 along crest to VT
- depression adjacent to

T2-11 409548/7597402 looking 60° ish
img-0157 depression near VT-6 on north face

photo deleted

Aug 17

T2-12 409543/7597413 looking W
img-0159 to VT-5 - depression on north
slope adjacent to VT-5

T2-13 409521/7597410 looking W
img-0160 - depression adjacent to VT-5

T2-14 409472/7597403 looking S
img-0161 along crest from NW corner

T2-15 409477/7597385 looking S to
img-0162 SW corner

T2-16 Panoramic 409481/7597353 looking
sta-0163 NE 4 shots
to sta-0166

T2-17 SW corner toe 409441/7597324
img-0167 looking ENE entire S slope

T2-18 409453/7597333 looking E along toe
img-0168 ground piled heavily and matted w. organic along
toe but no signs of seepage

T2-19ST 409514/7597327 looking E
sta-0169
sta-0170

60725

Aug 17/2006

T2-20 409528/7597337 looking S
from mid slope → trenched - dry
img-0171 MW-11 in background

T2-21st 409571/7597344 looking WSW
sta-0172 - south slope of landfill view of
sta-0173 from SE corner near crest

T2-22st 409590/7597324 looking NNE
entire eastern slope
sta-0174
sta-0175

T2-23 409539/7597323 looking W
along toe/organic interface south toe
img-0176

T2-24 409570/7597430 looking W
img-0177 along toe of north slope

T2-25 409520/7597430 looking W
img-0178 - north slope toe

T2-26 409456/7597444 looks S
entire west slope view from NW of landfill
img-0179

T2-27 409452/7597368 looking S
img-0180 to SW corner from toe slope

T2-28 409445/7597366 looking SSW
img-0181 ponded water adjacent to western toe

T2-29st Five photo panorama W to S (R to L)
sta-0183 409559 7597404 (NE corner)
sta-0187

DONE - back to camp and on to
NWS landfill

11:45am arrive NWS landfill - taking
a quick inventory area perimeter prior to
starting photographs

- There are 3 separate areas which I will refer to as East (main), Centre (mid sized) and west (smallest)
- this is a former burn pit and relatively low consequence facility

* MAIN LANDFILL VIEWED FROM NWS
407893/7598009

Aug 17/2006

There is little demarcation between
NWS-East and Central - gravel has
been pushed almost uniformly across

NWS-E-1 408061/7597975 looking N
along east side
img-0189

NWS-E-2st Viewed from East
sta-0190 408109/7597976 looking WNW
sta-0191 - gravel and ^{dredging} pond in foreground not part

NWS-E-3 408022/7598022 looking W
north toe of landfill
img-0192

NWS-E 4 407989/7598039 looking 230
toe of landfill blends into additional
gravel → NWS-Central adjacent
img-0193

NWS-E 5 407926/7597960 looking 30°
img-0194 standing on road looking forwards
ponded water between east and central

NWS-E 6 Close-up of ponded water - garbage
bags visible 407937/7597984
img-0195

60725

Aug 17/2006 21

NWS-E-7 407926/7597945 looking E
- ~~Edifice~~^{Dennis} in nook to show that it goes
back to the south
img-0196

NWS-C-1 East side toe (barely discernable)
viewed from NE corner looking N
img-0197 407929/7597985

* weather turning - cloudy & fog

NWS-C-2 Toe of north end looking W
img-0198 407936/7598011

There is gravel all around - difficult to
tell landfill core from adjacent ground

NWS-C-3 Western toe slope - looking S
img-0199 407890/7598046

NWS-C-4 Southern toe - looking E from SW
img-0200 407883/7597984

* SW corner encroaching on some organic/
peat → no noticeable seepage

Aug 17/2006

NWS-C is essentially 2 level w
additional gravel piled up along N
from NW corner to SE corner

NWS-C-S 3 shot panoramic R to L
img-0201 trying to show difference in elevation
407887/7597994 looking NE

Moving to West Landfill

NWS-W-1 407882/7598026
sta-0202 Looking N to area of veg and rock
sta-0203 between the landfill areas
sta-0204 - toe of slope indiscernable except for colour

NWS-W-2 407880/7598056 looking N
img-0205 toe barely discernable, no seepage into veg

NWS-V-3st 407854/7598111 looking 130
img-0206 standing on organics looking on to landfill
cap - no sign of seepage, lots of
rotting

Surface is eroding - cannot determine
settlement

Aug 17/2006

NWS-W-4 407856/7598090 looking 225°
- landfill adjacent to much gravel

- colour primary indicator for toe slope
sta-0207 * img-0209 view of cap looking
sta-0208

NWS-W-5 407826/7598065 look S
to SW corner (on organics)
img-0210

NWS-W-6 407880/7598046 looking S
img-0211 - closeup of disturbed veg, no sign seepage

NWS-W-7 407833/7598043 looking E
img-0212 to SE corner toe of organic, no seep

On To The North Landfill 4pm
- There are 3 - biggest is also westerly (W)
middle will be central (C) third is
most easterly (E)

Starting with big one - no settlement or seepage
img-0213 View Dennis K. on the North landfill - landfill
exploring in ATV

North-W-1 408487/7598691 looking 150°
viewed from NW corner

toe barely visible
img-0214

24 60725

Aug 17

North W-2 408493/7598671 V 55°
img-0215 toe on additional rock

North-W-3 408565/7598717 V 320°
Viewed from SE corner - toe on rock

img-0216

North-W-4st 408589/7598719
sta-0217 Viewed from North-C 2 photos
sta-0218

North-W-5 408547/7598739
looking SW along toe
img-0219

North-C-1st 408560/7598734 Looking 115°
sta-0220 two areas of veg adjacent to west toe
sta-0221 no indications of seepage
North-E in distance

North-C-2 408606/7598746 View 200°
img-0222 Looking at North slope (toe into rock)

North-C-3st 2 shots 4086223/7598702
sta-0223 Looking NW from near North-E
sta-0224 * North-W in background

60725

Aug 17²⁵

North-E-1st 408611/7598685 Looking NE
sta-0225
sta-0226

North E-2 408644/7598691 Looking N
img-0227 toe into rocky organic - no seepage

North-E-3 408654/7598718 Looking W
along northern toe North-C in background
img-0228

DONE

Retaking some photos @ MAIN LANDFILL

ML- 407930/7597729 looking 180°
img-0229

ML- 407949/7597618 looking 300°
rotting in foreground right side
img-0230 photo

Inuit hunting crew - bloody shore

4 shots

ML

#PANORAMIC to low spot
407898 / 7597759 looking 100°sta-0232
stb-0233
stc-0234
std-0235

ML

sta-0236407963 / 7597761 looking 300°
from NE corner NOT PANORAMIC

ML

st 3 shots

407937 / 7597773 looking 160°
from north central slopesta-0237
stb-0238
stc-0239

60725

Aug 18/2006 27

Coordinates of MWs and BMs

MW6	407854	7597733	MAIN
MW7	407916	7597685	LF
MW8	407870	7597608	
MW5	408044	7597696	

BM ⁰⁰¹	408052	7597630	SE ML
BM ⁰⁰²	407962	7597910	N ML
BM ⁰⁰³	408898	7597620	NE NHWL
BM ⁰⁰⁴	409228	7597456	W of Tier II
BM ⁰⁰⁵	409577	7597449	NE corner Tier II

MW9	409525	7597447	Tier II
MW10	409453	7597320	
MW11	409521	7597310	
MW12	409600	7597317	

BM [?] 006	408677	7598015	NW of everything
---------------------	--------	---------	------------------

60725

Friday Aug 18

3°C Overcast/foggy

Checking last few instruments

NHW Landfill → Coordinates of Monitoring Wells

2 Photos MW-13

408882 / 7597599

East of NHW L

MW-16

408801 / 7597557

S of NHW L

MW 15

408760 / 7597592

W of NHW L

MW-14

408808 / 7597653

N of NHW L