
**Mont-Joli Airport, Quebec
Former Building H-3, Former Coal Depot and Former Landfill
Amendment to the Remediation Plan**



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[original signed by]

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WORK TEAM

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LIST OF ABBREVIATIONS

AQVE	Association québécoise de vérification environnementale [Quebec association of environmental verification]
CEA	Certified Environmental Auditor (AQVE)
CEAEQ	Centre d'expertise en analyse environnementale du Québec [Quebec centre of expertise in environmental analysis]
CESA	Certified Environmental Site Assessor (AQVE)
DFO	Fisheries and Oceans Canada
ELS	Engineered landfill site
Entraco	Groupe-conseil Entraco Inc.
Expert	Member of the list of experts of the CEAEQ (MDDEP)
LPRR	<i>Land Protection and Rehabilitation Regulation</i> (c. Q-2, r. 18.1.01)
MAH	Monocyclic aromatic hydrocarbon
MDDEP Policy	MDDEP Soil Protection and Contaminated Sites Rehabilitation Policy
MDDEP	Ministère du Développement durable, de l'Environnement et des Parcs du Québec [Quebec department of sustainable development, environment and parks]
PAH	Polycyclic aromatic hydrocarbon
Plan	Mont-Joli Airport Remediation Plan (Entraco, March 2011 – P0922)
PWGSC	Public Works and Government Services Canada
REIMR	<i>Regulation Respecting the Landfilling and Incineration of Residual Materials</i> (c. Q-2, r. 6.02)
RIARMJ	Régie intermunicipale de l'aéroport régional de Mont-Joli [Mont-Joli Regional Airport Intermunicipal Management Board]
RMD	<i>Regulation Respecting Hazardous Materials</i> (c. Q-2, r. 32)
RRBCS	<i>Regulation Respecting the Burial of Contaminated Soils</i> (c. Q-2, r. 6.01)
TC	Transport Canada

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1. INTRODUCTION

1.1 BACKGROUND

Ownership of the Mont-Joli Airport was transferred, several years ago, to the of the Régie intermunicipale de l'aéroport de Mont-Joli (RIARMJ), which then sold certain surplus land parcels to the Municipality of Mont-Joli. Since a change of land use is planned for these parcels, which were used for an activity (NAICS Code 488119: Other Airport Operations) listed in Schedule III to Quebec's *Land Protection and Rehabilitation Regulation* (LPRR), a characterization and remediation process was triggered pursuant to division IV.2.1 of Quebec's *Environment Quality Act* (EQA).

As part of this process, the following two characterization studies were carried out and certified by LVM for the City of Mont-Joli:

- LVM-Technisol Inc., November 2009. *Propriété industrielle vacante – 875, boulevard Jacques-Cartier, Mont-Joli (Québec) – Évaluation environnementale de site phase I*. (Ref.: 073-P016127-0153-EN-0001-00); this study examined lots 4 015 682, 4 015 683 and 4 746 164 and part of lot 4 746 167.
- LVM, January 2012. *Ville de Mont-Joli – Propriété industrielle – Lots 4 395 754, 4 746 165, 4 746 166 et partie du lot 4 746 167, Mont-Joli – Évaluation environnementale de site phase I et caractérisation environnementale de site phases II et III*. (Ref.: 073-PO38375-0150-EN-0001-00)

The land examined in these two studies consists of the following lots (Land Register of Quebec):

- 4 395 754 (property of Entreprises Claveau ltée)
- 4 015 682 (property of the RCM of Métis)
- 4 015 683 (property of the Régie intermunicipale de traitement des matières résiduelles de la Gaspésie)
- 4 746 164, 4 746 165, 4 746 166, and part of 4 746 167 (property of the City of Mont-Joli)

Following the first study, Groupe-conseil Entraco Inc. (Entraco) was commissioned by Transport Canada (TC) to prepare a remediation plan (the Plan) for the following three sectors:

- Former building H-3
- Former coal depot
- Former landfill

Since only the former building H-3 sector was located within the area targeted by the first certified characterization study, MDDEP approved only that sector in the remediation plan and postponed analyzing the other two sectors for approval until after the certification of the second characterization study. Since the latter study identified seven other sectors that were

contaminated (soil concentrations above the values set out in Schedule II of the LPRR, i.e. level C of the MDDEP Soil Protection and Contaminated Sites Rehabilitation Policy) or that contained residual materials, it was agreed with MDDEP that the seven sectors should be added to the Plan.

This document is an amendment to the Plan and is a follow-up to a second certified characterization study by LVM. The only sectors which will that require future approval by MDDEP are the two sectors from the initial Plan and the seven new sectors discussed in this amendment to the Plan.

This amendment takes into account the requirements set out in division IV.2.1 of Quebec's *Environment Quality Act* (L.R.Q., c. Q-2) as well as the Manuel de l'expert (Expert Manual) on land protection and remediation (2008-05-01) and directives for experts, produced by the Centre d'expertise en analyse environnementale du Québec (CEAEQ). The applicable MDDEP guides, including characterization and sampling guides as well as residual materials management directives, were also taken into consideration.

1.2 LIMITATION CLAUSES

The comments set out in this report are based solely on information provided by persons interviewed or contacted and the analysis of available documents (see Appendix 1 for detailed limitation clauses).

1.3 CONFIDENTIALITY

All Entraco employees involved in this study were informed of their obligation to treat as confidential all information related to this mandate.

2. LOCATION AND DESCRIPTION OF SECTORS TO BE REMEDIATED

The locations of the sectors and zones to be remediated are illustrated in figures 2.1 to 2.6 (see Appendix 2) and described in detail in Table 2.1. In its most recent certified characterization study,⁽¹⁾ LVM identified seven sectors where action is required owing to the presence of contaminated soil (concentrations exceeding the values set out in Schedule III to the LPRR, i.e. the C criteria of the MDDEP Policy) or residual materials. The sectors are as follows:

- former landfill (presence of contaminated soil and residual materials)
- former septic tanks (presence of contaminated soil and residual materials)
- ditch (presence of contaminated sediment)
- former railway track (presence of residual materials)
- former garages (presence of residual materials)
- former boiler room (presence of residual materials)
- former asphalt plant (presence of residual materials)

The land covered by the Plan is located within the boundaries of lot 4 746 167 in the Land Register of Quebec; the boundaries of this lot are indicated in Figure 2.1. This land, which is owned by the City of Mont-Joli, has no civic address; it was formerly located at 875 Route de l'Aéroport, Mont-Joli, Quebec, G5H 4A4. The address of the City is 40 Hôtel-de-Ville Avenue, Mont-Joli, Quebec, G5H 1W8.

Since the publication of the initial Plan (March 2011), the numbering of the lots has changed. Lot 4 395 755 (as a result of cadastral reforms to part of lot 706-1) was subdivided into four lots, namely lots 4 746 164, 4 746 165, 4 746 166 and 4 746 167.

⁽¹⁾ LVM, January 2012. *Ville de Mont-Joli – Propriété industrielle – Lots 4 395 754, 4 746 165, 4 746 166 et partie du lot 4 746 167, Mont-Joli – Évaluation environnementale de site phase I et caractérisation environnementale de site phases II et III.* (Ref.: 073-PO38375-0150-EN-0001-00)

Table 2.1 Characteristics of the sectors and zones to be remediated

Sector	Zone	Environmental Issues	Area (m ²)	MTM Coordinates NAD83, Zone 6	NAD83 Geographic Coordinates	Lot Number (Land Register of Quebec)	Municipal Zoning
Former landfill	PE-33-11, PE-47-11, PE-48-11, PE-50-11 and PE-51-11	Soil contaminated by metals or PH C ₁₀ - C ₅₀ (C-D range)	1800	N 5385846 E 253470	N 48,6090410513 W 68,1961399234	4 746 167	208 (ILD): Heavy Industry - Commerce and Industry
	PE-34-11	Residual materials: metal, cement concrete, tile, ash	215				
Septic Tanks	PE-62-11	Soil contaminated by metals (C-D range)	100	N 5385387 E 252938	N 48,6048694941 W 68,203297048	4 746 167	208 (ILD): Heavy Industry - Commerce and Industry
	PE-63-11	Soil contaminated by PH C ₁₀ -C ₅₀ (C-D range)	55				
	PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11	Residual materials: clean cement concrete (<C) Residual materials: oil-stained cement concrete	n/a n/a				
	PE-62-11, PE-64-11 and PE-89-11	Residual materials: slag	600				
	PE-37-11 and PE-88-11	Residual materials: creosoted wood	n/a				
Ditch	FOSSÉ-1-11	Contaminated sediment	200	N 5385400 E 252926	N 48,6049854074 W 68,20346139	4 746 167	208 (ILD): Heavy Industry - Commerce and Industry
Former railway track	PE-CF-04-11 to PE-CF-09-11	Residual materials: slag	1180	N 5385117 E 253379	N 48,6024777835 W 68,1972837153	4 746 167	205 (ILD): Heavy Industry - Commerce and Industry
Former garages	PE-21-11	Residual materials: slag and coal	332	N 5385251 E 253260	N 48,6036730468 W 68,1989138917	4 746 167	205 (ILD): Heavy Industry - Commerce and Industry
	PE-39-11	Residual materials: asphalt in place	475				
Former boiler room	PE-84-11 and PE-85-11	Residual materials: slag	715	N 5385281 E 253247	N 48,6039417629 W 68,1990938894	4 746 167	208 (ILD): Heavy Industry - Commerce and Industry
Former asphalt plant	PE-25-11	Residual materials: asphalt in place	350	N 5386029 E 253521	N 48,6106909244 W 68,1954709123	4 746 167	204 (EXI): Industrial Expansion - Recreation and Agriculture

3. ENVIRONMENTAL ISSUES, REMEDIATION OBJECTIVES AND SUMMARY OF ACTIVITIES

The following aspects are addressed for each of the seven sectors to be remediated (see Figure 2.1 in Appendix 2):

- environmental concerns, meaning issues related to the presence of contaminants at levels exceeding the regulatory limit values for the planned use of the site or issues related to the presence of residual materials;
- the remediation objective according to the planned use of the site and the municipal zoning; and
- a brief description of the remediation work.

3.1 FORMER BUILDING H-3 SECTOR

3.1.1 Environmental issue

The LVM study (January 2012) revealed the presence of contaminated soil (see Figure 2.2) with concentrations exceeding level C for metals in excavations PE-33-11, PE-47-11, PE-48-11, PE-50-11 and PE-51-11 and for PH C₁₀-C₅₀ in excavation PE-51-11. The analytical results showed metal and/or PAH and/or PH C₁₀-C₅₀ concentrations in the A-C range in soundings PE-30-11, PE-33-11, PE-34-11, PE-47-11, PE-48-11, PE-50-11 and PE-51-11. The MAH and VOC concentrations are below the B criteria.

Residual materials (more than 50% of the materials in place) were observed in excavation PE-34-11; they primarily consist of metal, cement concrete, tile and ash.

In two previous studies (LVM 2009 and Entraco 2009), contaminated soil and residual materials were also identified in an adjacent sector located several tens of metres to the east. This sector, also called the former landfill sector, was included in the initial Plan and is therefore not part of this amendment.

3.1.2 Remediation objective

Given the planned land use (commercial-industrial), the remediation objective for the contaminated soil is to attain the level C of the MDDEP Policy, i.e. the values set out in Schedule II to the LPRR.

The remediation objective for residual material is to remove the matrix with a residual material content above 50% (metal, cement concrete, tile, ash).

3.1.3 Brief description of the remedial activities

The contaminated soil (above of the MDDEP soil criteria, level C) in zones PE-33-11, PE-47-11, PE-48-11, PE-50-11 and PE-51-11 will be excavated and disposed of in a facility authorized by MDDEP. If applicable, the contaminated soil will be sent to an authorized treatment site instead of an authorized landfill site. Residual materials will also be excavated and disposed of at an authorized site.

Table 3.1 Characteristics of the zones to be remediated in the former landfill sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
PE-33-11	Soil contaminated by metals (C-D range): zinc	325.0	0.3 to 1.1	0.80	260.0	Excavation and disposal
PE-47-11	Soil contaminated by metals (C-D range): cadmium, zinc	375.0	0.6 to 1.2	0.60	225.0	Excavation and disposal
PE-48-11	Soil contaminated by metals (C-D range): cadmium, copper, manganese, lead, zinc	310.0	0.2 to 1.8	1.60	496.0	Excavation and disposal
PE-50-11	Soil contaminated by metals (C-D range; duplicates >D): cadmium, copper, lead, zinc	450.0	0.25 to 2.0	1.75	787.5	Excavation and disposal
PE-51-11	Soil contaminated by metals (C-D range): cadmium, copper, lead, zinc	340.0	0.4 to 1.5	1.10	374.0	Excavation and disposal
PE-51-11	Soil contaminated by PH C ₁₀ -C ₅₀ (C-D range)	340.0	1.5 to 2.5	1.00	340.0	Excavation and disposal (treatment)
Subtotal		1800⁽¹⁾			2482.5	
Residual materials						
PE-34-11	Metal, cement concrete, tile, ash	215.0	0.3 to 1.2	0.90	193.5	Excavation and disposal
Subtotal		215.0			193.5	

(1) Total surface area of the five zones (the area of zone PE-51-11 is counted only once).

3.2 FORMER SEPTICTANK SECTOR

3.2.1 Environmental issues

The LVM study (January 2012) revealed the presence of contaminated soil (see Figure 2.3) with concentrations exceeding level C for metals in excavation PE-62-11 and for PH C₁₀-C₅₀ in excavation PE-63-11. The analytical results showed metal and/or PAH and/or PH C₁₀-C₅₀ and/or MAH in the A-C range in excavations PE-37-11, PE-38-11, PE-58-11, PE-59-11, PE-61-11, PE-63-11 and PE-64-11.

Residual materials were observed in the following soundings:

- PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11: clean cement concrete (<C) or oil-stained concrete
- PE-62-11, PE-64-11 and PE-89-11: slag
- PE-37-11 and PE-88-11: creosoted wood

3.2.2 Remediation objective

Given the planned land use (commercial), the remediation objective for contaminated soil is to attain level C of the MDDEP Policy, i.e. the limit values set out in Schedule II to the LPRR.

The remediation objective for residual materials is to remove the matrix with a residual material content above 50% (concrete, creosoted wood and slag).

3.2.3 Brief description of the work

The plan is to excavate the contaminated soil (above of the MDDEP soil criteria, level C) in zones PE-62-11 and PE-63-11 and to dispose of them at a site authorized by MDDEP. If applicable, the contaminated soil will be sent to an authorized treatment site instead of an authorized landfill site. Residual materials will also be excavated or removed and disposed of at an authorized facility.

Table 3.2 Characteristics of the zones to be remediated in the septic tank sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
PE-62-11	Soil contaminated by metals (C-D range): arsenic	100	3.2 to 3.4	0.20	20.0	Excavation and disposal
PE-63-11	Soil contaminated by PH C ₁₀ -C ₅₀ (C-D range)	55	2.0 to 3.2	1.20	66.0	Excavation and disposal (treatment)
Subtotal		155.0			86.0	
Residual materials						
PE-37-11 to PE-89-11 ⁽¹⁾	Clean cement concrete	n/a	n/a	n/a	158.0	Excavation, crushing and reuse as fill material
PE-37-11 to PE-89-11 ⁽¹⁾	Oil-stained cement concrete	n/a	n/a	n/a	158.0	Excavation and disposal
PE-62-11, PE-64-11 and PE-89-11	Slag	600.0	n/a	n/a	925.0	Excavation and disposal
PE-37-11 and PE-88-11	Creosoted wood	n/a	n/a	n/a	45.0	Excavation and disposal
Subtotal		n/a			1286.0	

(1) PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11.

3.3 DITCH SECTOR

3.3.1 Environmental issues

The LVM study (January 2012) yielded the following observations (see Figure 2.3):

- PAH concentrations exceeding Environment Canada's and MDDEP's FEL (frequent effect level) (Class 3) from the *Criteria for the Assessment of Sediment Quality in Quebec* as well as above the limit values set out in Schedule I to the RRBCS (D criteria)
- PH C₁₀-C₅₀ concentrations below level A of the MDDEP Policy

Only one sample was collected from the ditch and analyzed. To determine the boundaries of the contaminated zone, a complementary characterization will have to be carried out before the remediation work.

The nature of the contaminated matrix present in the ditch (i.e. whether it is sediment or soil) could not be clearly and unequivocally determined in the certified LVM study (January 2012). To solve this problem, on February 17, 2012, TC requested advice from the experts of EC and Fisheries and Oceans Canada (DFO). Because DFO stated that the ditch was not fish habitat, EC strongly recommended using the MDDEP Policy criteria to remediate the ditch instead of the sediment criteria. In a written communication (March 21, 2012), MDDEP stated that it was of the same opinion, provided that it was established that there was no risk of contaminated sediment migrating towards a fish habitat or to a site with a more sensitive land use designation.

3.3.2 Remediation objectives

Given the planned land use (commercial and/or industrial), and once the affected materials have been excavated, the remediation objective is to attain level C of the MDDEP Policy, i.e. the limit values set out in Schedule II to the LPRR.

This approach will ensure that the contaminated matrix is removed and that the materials left in place meet the applicable soil criteria.

3.3.3 Brief description of the work

The horizon of the contaminated matrix (following a complementary characterization), that is, the surface materials to a depth of 30 cm across the entire width of the ditch, will be excavated and to disposed at an authorized site.

Table 3.3 Characteristics of the zones to be remediated in the ditch sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
FOSSÉ-1-11	Materials contaminated by PAHs (>D)	200 ⁽¹⁾	0.0 to 0.3	0.30	60.0	Complementary characterization, excavation and disposal (treatment)
Subtotal		200.0			60.0	
Residual materials						
	No residual materials					
Subtotal		0.0			0.0	

(1) Approximate area; the exact area will be determined during the complementary characterization.

3.4 FORMER RAILWAY TRACK SECTOR

3.4.1 Environmental issues

The LVM study (January 2012) revealed that soil concentrations (see Figure 2.4) were below the C criteria for metals, PAHs and sulphur. The analytical results showed metal and/or PAH concentrations in the A-B range in excavations PE-CF-08-11 and PE-CF-11-11.

Residual materials consisting of slag were observed at the surface in excavations PE-CF-04-11 to PE-CF-09-11 to a depth of 30 to 45 cm. Part of this sector is located in a potential wetland.

3.4.2 Remediation objective

Given the planned land use (commercial and/or industrial), no contaminated soil remediation activities are planned.

The remedial objective for the residual material is to remove the matrix with a residual material content (slag) above 50%.

3.4.3 Brief description of the work

The residual materials will be excavated and disposed of at an authorized site.

Since the work will be carried out in a potential wetland, an assessment of this environment is underway. Once the results of this study are available, they will be incorporated into this amendment in the form of an addendum. This information will be used to determine the work approach and, if necessary, the compensation measures to be applied.

Table 3.4 Characteristics of the zones to be remediated in the former railway track sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
	No contaminated soil (concentrations < C)					
Subtotal		0.0			0.0	
Residual materials						
PE-CF-04-11	Slag	200.0	0.0 to 0.3	0.30	60.0	Excavation and disposal
PE-CF-05-11	Slag	200.0	0.0 to 0.3	0.30	60.0	Excavation and disposal
PE-CF-06-11	Slag	190.0	0.0 to 0.3	0.30	57.0	Excavation and disposal
PE-CF-07-11	Slag	195.0	0.0 to 0.3	0.30	58.5	Excavation and disposal
PE-CF-08-11	Slag	200.0	0.0 to 0.3	0.30	60.0	Excavation and disposal
PE-CF-09-11	Slag	195.0	0.0 to 0.45	0.45	87.8	Excavation and disposal
Subtotal		1180.0			383.3	

3.5 FORMER GARAGE SECTOR

3.5.1 Environmental issues

The LVM study (January 2012) revealed that soil concentrations (see Figure 2.5) are below the C criteria for metals, PAHs and PH C₁₀-C₅₀. However, sulphur concentrations exceed level C in sample PE-40-11-2. Based on the results of the Entraco study (2009), in which acid-generating potential (acidogenic potential) tests demonstrated negative potential, LVM applied this result to sample PE-40-11-2. Soil management for sulphur is therefore not subject to the application of the MDDEP Management Grid for Excavated Contaminated Soils. Other analytical results showed metal concentrations in the A-B range in excavation PE-23-11 and metal and/or PAH concentrations in the B-C range in excavation PE-22-11, PE-23-11, PE-40-11 and PE-41-11.

Residual materials consisting of slag and coal were observed at the surface in excavation PE-21-11; a layer of asphalt approximately 10 cm thick is present near the surface in excavation PE-39-11.

3.5.2 Remediation objective

Given the planned land use (commercial and/or industrial), no contaminated soil remediation activities are planned.

The remedial objective for the residual materials is to remove the matrix with a residual material content (slag, coal and asphalt) above 50%.

3.5.3 Brief description of the work

The residual materials will be excavated and disposed of at an authorized site.

Table 3.5 Characteristics of the zones to be remediated in the former garage sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
	No contaminated soil (concentrations < C)					
Subtotal		0.0			0.0	
Residual materials						
PE-21-11	Slag and coal	332.0	0.0 to 0.4	0.40	132.8	Excavation and disposal
PE-39-11	Asphalt in place	475.0	0.15 to 0.25	0.10	47.5	Excavation and disposal
Subtotal		807.0			180.3	

3.6 FORMER BOILER ROOM SECTOR

3.6.1 Environmental issues

The LVM study (January 2012) revealed that soil concentrations (see Figure 2.5) are below the C criteria for metals and PH C₁₀-C₅₀. The analytical results showed metal and PH C₁₀-C₅₀ concentrations in the B-C range in excavations PE-79-11, PE-84-11 and PE-85-11.

Residual materials consisting of slag were observed at the surface in excavations PE-84-11 and PE-85-11.

3.6.2 Remediation objective

Given the planned land use (commercial and/or industrial), no contaminated soil remediation activities are planned.

The remedial objective for the residual materials is to remove the matrix with a residual material content (slag) above 50%.

3.6.3 Brief description of the work

The residual materials will be excavated and disposed of at an authorized site.

Table 3.6 Characteristics of the zones to be remediated in the former boiler room sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
	No contaminated soil (concentrations < C)					
Subtotal		0.0			0.0	
Residual materials						
PE-84-11	Slag	305.0	0.1 to 0.2	0.10	30.5	Excavation and disposal
PE-85-11	Slag	410.0	0.09 to 0.3	0.21	86.1	Excavation and disposal
Subtotal		715.0			116.6	

3.7 FORMER ASPHALT PLANT SECTOR

3.7.1 Environmental issues

The LVM study (January 2012) revealed that soil concentrations (see Figure 2.6) are below level B for PAHs. The analytical results showed PAH concentrations in the A-B range in sample PE-29-11-3.

Residual materials consisting of asphalt were observed near the surface of excavation PE-25-11.

3.7.2 Remediation objective

According to the land use grid for the City of Mont-Joli's zoning by-law, the former asphalt plant sector is located in the northwest end of zone 204 EXI, which is an industrial expansion zone where the permitted uses include recreation (nature observation and interpretation) and agriculture (cultivation of land and plants). No agricultural or recreational activities are carried out in this sector of zone 204 EXI. The zones adjacent to the sector in question are heavy industry (208 ILD and 209 ILD). Given the most prominent permitted land use for the sector (recreational), no contaminated soil remediation activities are planned.

The objective for the residual material is to remove the matrix with a residual material content (asphalt) above 50%.

3.7.3 Brief description of the work

The residual materials will be excavated and disposed of in an authorized site.

Table 3.7 Characteristics of the zones to be remediated in the former asphalt plant sector

Zone	Issues	Area (m ²)	Variation in Thickness (m)	Thickness (m)	Volume (m ³)	Selected Action
Contaminated soil						
	No contaminated soil (concentrations < B)					
Subtotal		0.0			0.0	
Residual materials						
PE-25-11	Asphalt in place	350.0	0.15 to 0.30	0.15	52.5	Excavation and disposal
Subtotal		350.0			52.5	

4. REMEDIATION ACTIVITIES

4.1 EXCAVATION AND STORAGE

4.1.1 Former landfill sector

In the former landfill sector (see Figure 2.2), i.e. in zones PE-33-11, PE-47-11, PE-48-11, PE-50-11 and PE-51-11, contaminated soil (exceeding the MDDEP soil criteria, level C) will be excavated as well as the residual materials (metal, cement concrete, tile, ash) in zone PE-34-11. The excavated soil and residual materials will be disposed of at a site authorized by MDDEP (if applicable, the contaminated soil will be sent to an authorized treatment site instead of an authorized landfill site). The remediation work will include, but not be limited to, the following activities:

- Excavate the surface soil until the horizon of contaminated soil or hazardous materials is reached (more than 50% of the matrix) and temporarily store it in piles (within the boundaries of the site targeted by the amendment to the Plan); characterize it to determine the appropriate management method (see section 4.3); the clean soil should be stored on a polyethylene tarp and covered with another of the same kind.
- Excavate the contaminated soil to the depths indicated in Table 14 of the January 2012 LVM study (see Appendix 3).
- Excavate the residual materials to the depths indicated in Table 15 of the January 2012 LVM study (see Appendix 3). The residual materials must be excavated after the contaminated soil has been removed and quality control sampling has been performed on the walls and bottoms of the excavation. As the materials are being excavated, verify the percentage of residual materials in the soil from the walls and bottom to determine whether the excavation should continue or cease.
- Perform quality control sampling on the remaining soil (see section 4.4).
- Following the quality control, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed the level C, continue to excavate the soil and verify the quality of the remaining soil until the criteria has been met.
- Manage the impacted soil in accordance with the *Interim Management Grid for Excavated Contaminated Soils* of the MDDEP Policy (see section 5.1).
- Manage the residual materials in accordance with the applicable regulations (see section 5.2).
- Once the remediation objectives have been achieved, backfill the excavation with the original material (surface soil, provided that the soil quality is adequate—see section 5.3) and/or with clean borrow material; compact this material in approximately 30-cm layers.

4.1.2 Septic Tank sector (former septic tanks)

In the tank sector (see Figure 2.3), that is the areas represented by excavations PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11, contaminated soil (above the MDDEP soil criteria, level C) and residual materials (concrete, creosoted wood and slag) will be excavated and disposed of at a site authorized by MDDEP (if applicable, the contaminated soil will be sent to an authorized treatment site instead of an authorized landfill site).

The remediation work will include, but not be limited to, the following activities:

- Remediation of the ditch (see section 4.1.3) before beginning work in this sector; this will ensure that the ditch has time to dry out and will eliminate the risk of water infiltrating from the ditch into the excavations.
- Excavate the surface soil until the horizon of contaminated soil or hazardous materials (more than 50% of the matrix) is reached and temporarily store it in piles (within the boundaries of the site targeted by the amendment to the Plan). Characterize the soil to determine the appropriate management method (see section 4.3). The clean soil should be stored on a polyethylene tarp and covered with another of the same kind. For the former septic tanks, if the materials are muddy or too wet to place in piles, temporarily store the materials on a drying bed or in a dewatering basin. Collect the water from the basin and manage it in accordance with section 5.4.
- In zones PE-62-11 and PE-63-11, excavate the contaminated soil to the depths indicated in Table 14 of the January 2012 LVM study (see Appendix 3); the west and north boundaries of these two zones, respectively, are represented by the concrete walls of the former septic tanks.
- Excavate the residual materials to the depths indicated in Table 15 of the January 2012 LVM study (see Appendix 3), applying the following measures:
 - Where applicable, excavate the residual materials after the contaminated soil has been removed and the quality control sampling has been performed on the walls and bottoms of the excavations.
 - As the uncontaminated surface soil and contaminated soil is being excavated, remove the creosoted wood and place it in an impermeable container; cover the container with a waterproof tarp to prevent water infiltration.
 - Demolish the concrete structures (tanks) and place them in piles. Store the oil-stained structures separately and safely and characterize them in accordance with the MDDEP's *Lignes directrices relatives à la gestion de béton, de brique et d'asphalte issus des travaux de construction et de démolition et des résidus du secteur de la pierre de taille* (Guidelines for managing concrete, brick and asphalt from construction and demolition work and waste from the cut stone sector).
 - As the materials are being excavated, verify the percentage of residual materials in the soil from the walls and bottoms to determine whether the excavation should continue or cease.
- Perform quality control sampling on the remaining soil (see section 4.4).

- Following the quality control sampling, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed level C, continue the excavation, verifying the quality of the remaining soil, until the criteria are met.
- Manage the impacted soil in accordance with the *Interim Management Grid for Excavated Contaminated Soils* of the MDDEP Policy (see section 5.1).
- Manage the residual materials in accordance with the applicable regulations (see section 5.2).
- Once the remediation objectives have been achieved, backfill the excavation with the original material (surface soil, provided that the soil quality is adequate—see section 5.3) and/or with clean crushed concrete (concentrations below the C criteria) and/or with clean borrow material. Compact this material in approximately 30-cm layers.
- The concrete may be crushed on site before being used to backfill the excavation or before being disposed of at an authorized site.

4.1.3 Ditch sector

In the ditch sector (see Figure 2.3), i.e. in zone FOSSÉ-1-11, the contaminated materials (above the MDDEP soil criteria, level C) will be excavated and disposed of at a site authorized by MDDEP (if applicable, the contaminated soil will be sent to an authorized treatment site instead of an authorized landfill site). The remediation work will include, but not be limited to, the following activities:

- To determine the extent of the contamination, conduct a complementary characterization of the bottom of the ditch, i.e. upstream and downstream of excavation FOSSÉ-1-11.
- Before beginning the work, dry out the ditch by installing a cofferdam upstream of the zone to be remediated. The water which accumulates upstream of the cofferdam must be pumped downstream of the zone being remediated. This area must also be delimited by a sediment barrier made from hay bales.
- Considering the results of this characterization and the LVM characterization (January 2012), excavate the contaminated materials to the depths indicated in Table 14 of the January 2012 LVM study (see Appendix 3) and, if applicable, to the depths obtained during complementary characterization.
- Perform quality control sampling on the bottom of the ditch (see section 4.4); no sampling of the sides is recommended.
- Following the quality control sampling, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed level C, continue the excavation, verifying the quality of the remaining soil, until the criteria are met.
- Manage the excavated materials in accordance with the *Interim Management Grid for Excavated Contaminated Soils* of the MDDEP Policy (see section 5.1).
- Once the remediation objectives have been achieved, backfill the bottom of the ditch with MG-20 granular material to limit the suspension and downstream transport of sediment.

4.1.4 Former railway track sector

In the former railway track sector (see Figure 2.4), i.e. in the zones represented by excavations PE-CF-04-11 to PE-CF-09-11, the residual materials (slag) will be excavated and to disposed of at a site authorized by MDDEP.

The remediation work will have to include, but not be limited to, the following activities:

- Before work begins, the environment around the area to be remediated must be characterized to determine whether it is a wetland and whether specific measures apply to the planned activities. The results of this study will be submitted to MDDEP in the form of an addendum to this amendment to the Plan.
- After obtaining a tree removal permit (or a certificate of authorization, if necessary), clear the vegetation (trees and shrubs) within an area of approximately 250 m² (south of station PE-CF-07-11) and remove the wood residues in accordance with the applicable guidelines.
- Excavate the residual materials to the depths indicated in Table 15 of the January 2012 LVM study (see Appendix 3). As the materials are being excavated, verify the percentage of residual materials in the soil from the walls and bottom to determine whether excavation should continue or cease.
- Perform quality control sampling on the remaining soil (see section 4.4).
- Following the quality control sampling, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed level C, continue the excavation, verifying the quality of the remaining soil, until the criteria are met.
- Manage the residual materials in accordance with the applicable regulations (see section 5.2).
- Once the remediation objectives have been achieved, no backfilling of the sector is planned; natural regrowth of the vegetation is preferred.

4.1.5 Former garage sector

In the former garage sector (see Figure 2.5), i.e. in the zones represented by excavations PE-21-11 and PE-39-11, the residual materials (slag and coal in the first zone and asphalt in the second) will be excavated and to dispose of at a site authorized by MDDEP.

The remediation work will have to include, but not be limited to, the following activities:

- In zone PE-39-11, excavate the surface soil until the horizon of hazardous materials (more than 50% of the matrix) is reached and temporarily store it in piles (within the boundaries of the site targeted by this amendment to the Plan). Characterize the soil to determine the appropriate management method (see section 4.3); the clean soil should be stored on a polyethylene tarp and covered with another of the same kind. In zone PE-21-11, the residual materials are present at the surface.
- Excavate the residual materials to the depths indicated in Table 15 of the January 2012 LVM study (see Appendix 3). As the materials are being excavated, verify the

percentage of residual materials in the soil from the walls and bottom to determine whether excavation should continue or cease.

- Perform quality control sampling on the soil in place (see section 4.4).
- Following the quality control sampling, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed level C, continue the excavation, verifying the quality of the remaining soil, until the criteria are met.
- Manage the residual materials in accordance with the applicable regulations (see section 5.2).
- Once the remediation objectives are achieved, backfill the excavation with the original material (surface soil, provided that the soil quality is adequate—see section 5.3) and/or with clean borrow material; compact this material in approximately 30-cm layers.

4.1.6 Former boiler room sector

In the former boiler room sector (see Figure 2.5), i.e. in the zones represented by excavations PE-84-11 and PE-85-11, excavate the residual materials (slag) and to dispose them at a site authorized by MDDEP.

The remediation work will have to include, but not be limited to, the following activities:

- Excavate the surface soil until the horizon of hazardous materials (more than 50% of the matrix) is reached and temporarily store it in piles (within the boundaries of the site targeted by the amendment to the Plan); Characterize the soil to determine the appropriate management method (see section 4.3); the clean soil should be stored on a polyethylene tarp and covered with another of the same kind.
- Excavate the residual materials to the depths indicated in Table 15 of the January 2012 LVM study (see Appendix 3). As the materials are being excavated, verify the percentage of residual materials in the soil from the walls and bottom to determine whether excavation should continue or cease.
- Perform quality control sampling on the soil in place (see section 4.4).
- Following the quality control sampling, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed level C, continue the excavation, verifying the quality of the remaining soil, until the criteria are met.
- Manage the residual materials in accordance with the applicable regulations (see section 5.2).
- Once the remediation objectives have been achieved, backfill the excavation with the original material (surface soil, provided that the soil quality is adequate—see section 5.3) and/or with clean borrow material; compact this material in approximately 30-cm layers.

4.1.7 Former asphalt plant sector

In the former asphalt plant sector (see Figure 2.6), i.e. in the zone represented by excavations PE-25-11, excavate the residual materials (asphalt) and to dispose them at a site authorized by MDDEP.

The remediation work will have to include, but not be limited to, the following activities:

- Excavate the surface soil until the horizon of residual materials (more than 50% of the matrix) is reached and temporarily store it in piles (within the boundaries of the site targeted by the amendment to the Plan). Characterize it to determine the appropriate management method (see section 4.3); the clean soil should be stored on a polyethylene tarp and covered with another of the same kind.
- Excavate the residual materials to the depths indicated in Table 15 of the January 2012 LVM study (see Appendix 3). As the materials are being excavated, verify the percentage of residual materials in the soil from the walls and bottom to determine whether excavation should continue or cease.
- Perform quality control sampling on the remaining soil (see section 4.4).
- Following the quality control sampling, if the concentrations in samples taken from the sides and/or bottoms of the excavations exceed the MDDEP B criteria, continue the excavation, verifying the quality of the remaining soil, until the criteria are met.
- Manage the residual materials in accordance with the applicable regulations (see section 5.2).
- Once the remediation objectives are achieved, backfill the excavation with the original material (surface soil, provided that the soil quality is adequate—see section 5.3) and/or with clean borrow material; compact this material in approximately 30-cm layers.

4.2 MEASURES TO CONTROL THE SPREAD OF CONTAMINATED SOIL

To prevent the spread of contaminated soil, within and beyond the site boundaries, during the remediation activities (including soil excavation, truck loading and transportation of contaminated soil), the following conditions will be applied:

- The contaminated soil must be transported in a closed container or dump truck with a tarp completely covering the top of the truck bed and load.
- If the moisture levels in the materials to be transported are high, the container or truck bed must be impermeable.
- When loading the trucks, take special care in operating the excavator to minimize the loss of materials around and over the sides of the trucks.
- Before leaving, the trucks will be inspected and cleaned if necessary. At the end of the work, the excavator will be inspected and cleaned as well as the work areas. Soil collected during the clean-up will be managed using the same method as the contaminated soil.

- The soil piles must be placed on an impermeable membrane and covered with an impermeable membrane that is adequately weighed down to prevent water from percolating through and contaminating the underlying soil.
- The site being remediated will be accessed from the airport road and Perreault Street, approximately 500 m to the southeast. This is the route taken regularly by the users of the Écocentre and the residual material transfer centre. These roads are paved or surfaced with a mixture of milled asphalt and sand.
- If applicable, the speed limit on unpaved roads will be 10 km/h. The unpaved roads will be sprayed with water as a dust control measure.

4.3 SOIL PILE CHARACTERIZATION

The sampling of the soil piles must comply with the requirements of the *Sampling Guide for Environmental Analysis, Booklet 5 – Soil Sampling*. For information purposes, and taking into account the characteristics of the zones to be remediated shown in figures 2.2 to 2.6, the components of the soil pile characterization program are indicated in Table 4.1. The selected parameters are those for which the applicable MDDEP criteria were exceeded in previous studies. This program will have to be adapted to the work as it is performed, as in the event of additional excavations were necessary.

4.4 EXCAVATION QUALITY CONTROL

The walls and bottoms of all excavations will be characterized, regardless of whether contaminated soil or residual materials are being excavated. The sampling methods must comply with the requirements of the *Site Characterization Guide* and the *CEAEQ Sampling Guide for Environmental Analysis (Booklet 1 – General and Booklet 5 – Soil Sampling)*.

Following the quality control sampling, if the concentrations in samples taken from the walls and/or bottoms of the excavations exceed the applicable MDDEP soil criteria (level B or C, depending on the sector being remediated), further excavation and verification of soil quality must be conducted until the applicable criteria are met.

For information purposes, and taking into account the characteristics of the zones to be remediated shown in figures 2.2 to 2.6, the components of the quality control program are presented in tables 4.2 and 4.3. The selected parameters are those for which the applicable MDDEP soil criteria were exceeded in previous studies. This program will have to be adapted to the work as it is performed, in the event that additional excavations were necessary.

4.5 WATER RECOVERY

If necessary, water which infiltrates into the excavations and water from the drying bed/dewatering basin (former septic tank sector) will be pumped and recovered (for example,

by a specialized company using a vacuum truck). The recovered water will be analyzed to determine the management options (see section 5.4).

Table 4.1 Soil pile characterization program

Sector	Zone ⁽¹⁾	Issues	Estimated Volume (m ³)	Number of samples	Parameters			
					Metals ⁽²⁾	C ₁₀ -C ₅₀ ⁽³⁾	MAHs ⁽⁴⁾	PAHs ⁽⁵⁾
Former landfill	PE-33-11, PE-34-11, PE-47-11, PE-48-11, PE-50-11 and PE-51-11	Prior excavation of surface soil - underlying contaminated soil and residual materials - in this sector, maximum concentrations for metals, C ₁₀ -C ₅₀ and PAH in the C-D range	697.5	9	9	9		9
Septic Tanks	PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11	Prior excavation of surface soil - underlying contaminated soil and residual materials - in this sector, maximum concentrations for metals and C ₁₀ -C ₅₀ in the C-D range; PAH concentrations in the B-C range	868.0	11	11	11		11
Ditch	FOSSÉ-1-11	No prior excavation of surface soil - contaminated materials at the surface (bottom of the ditch)	-	-				
Former railway track	PE-CF-04-11 to PE-CF-09-11	No prior excavation of surface soil - residual materials at the surface	-	-				
Former garages	PE-21-11 and PE-39-11	Prior excavation of surface soil - underlying residual materials - in this sector, maximum metal and PAH concentrations in the B-C range	71.3	3	3			3
Former boiler room	PE-84-11 and PE-85-11	Prior excavation of surface soil - underlying residual materials - in this sector, maximum metal and C ₁₀ -C ₅₀ concentrations in the B-C range	67.4	3	3	3		
Former asphalt plant	PE-25-11	Prior excavation of surface soil - underlying residual materials - in this sector, maximum PAH concentrations in the A-B range	52.5	2				2
TOTAL			1756.7	28	26	23	0	25

NOTES

- (1) The locations of the zones are shown in figures 2.2 to 2.6.
(2) Metals: Arsenic, cadmium, chromium, copper, tin, manganese, nickel, lead, zinc.
(3) C₁₀-C₅₀: Petroleum hydrocarbons C₁₀-C₅₀.
(4) MAH: Monocyclic aromatic hydrocarbons.
(5) PAH: Polycyclic aromatic hydrocarbons.

Table 4.2 Quality control program for excavations related to contaminated soil

Sector	Zone ⁽¹⁾	Area of Zone (m ²)	Affected Horizon (m)	Issues	Quantity of Samples to be Collected		Quantity of Samples to be Analyzed and Parameters			
					Walls	Bottom (0-30 cm)	Metals ⁽²⁾	C ₁₀ -C ₅₀ ⁽³⁾	MAHs ⁽⁴⁾	PAHs ⁽⁵⁾
Former landfill	PE-33-11	325	0.3 to 1.1	Zinc	3	1	4			
	PE-47-11	375	0.6 to 1.2	Cadmium, zinc	4	1	5			
	PE-48-11	310	0.2 to 1.8	Cadmium, copper, manganese, lead, zinc	5	1	6			
	PE-50-11	450	0.25 to 2.0	Cadmium, copper, lead, zinc	9	1	10			
	PE-51-11	340	0.4 to 1.5	Cadmium, copper, lead, zinc	7	0	7	7		
	PE-51-11	340	1.5 to 2.5	PH C ₁₀ -C ₅₀	5	0 ⁽⁶⁾	5	5		
Septic Tanks	PE-62-11	100	3.2 to 3.4	Arsenic	4	1	5	5		
	PE-63-11	55	2.0 to 3.2	PH C ₁₀ -C ₅₀	8	1	9	9		
Ditch	FOSSÉ-1-11	200	0.0 to 0.3	PAHs	0	4				4
TOTAL ⁽⁷⁾					45	10	51	26	0	4

NOTES

- (1) The locations of the zones are shown in figures 2.2 to 2.6.
- (2) Metals: Arsenic, cadmium, chromium, copper, tin, manganese, nickel, lead, zinc.
- (3) C₁₀-C₅₀: Petroleum hydrocarbons C₁₀-C₅₀.
- (4) MAHs: Monocyclic aromatic hydrocarbons.
- (5) PAHs: Polycyclic aromatic hydrocarbons.
- (6) Excavation ended at the bedrock.
- (7) Does not include field duplicates (minimum of 10%).

Table 4.3 Quality control program for excavations related to residual materials

Sector	Zone ⁽¹⁾	Area of Zone (m ²)	Affected Horizon (m)	Issues	Quantity of Samples to be Collected		Quantity of Samples to be Analyzed and Parameters			
					Walls	Bottom	Metals ⁽²⁾	C ₁₀ -C ₅₀ ⁽³⁾	MAHs ⁽⁴⁾	PAHs ⁽⁵⁾
Former landfill	PE-34-11	215.0	0.3 to 1.2	Metal, cement concrete, tile, ash	2	1	3	3		3
Septic Tanks	PE-37-11, PE-38-11, PE-61-11, PE-63-11, and PE-88-11		0.8 to 3.5	Cement concrete (with or without oil stains)	20	6	26	26		26
	PE-37-11 and PE-88-11		0.8 to 3.2	Creosoted wood						
	PE-62-11	125.0	2.0 to 3.2	Slag						
	PE-64-11	275.0	1.2 to 3.0	Slag						
	PE-89-11	200.0	1.5 to 2.8	Slag						
Former railway track	PE-CF-04-11	200.0	0.0 to 0.3	Slag	3	1	4			
	PE-CF-05-11	200.0	0.0 to 0.3	Slag	2	1	3			
	PE-CF-06-11	190.0	0.0 to 0.3	Slag	2	1	3			
	PE-CF-07-11	195.0	0.0 to 0.3	Slag expected	2	1	3			
	PE-CF-08-11	200.0	0.0 to 0.3	Slag	2	1	3			
	PE-CF-09-11	195.0	0.0 to 0.45	Slag	3	1	4			
Former garages	PE-21-11	332.0	0.0 to 0.4	Slag and coal	4	1	5			5
	PE-39-11	475.0	0.15 to 0.25	Asphalt in place	4	1	5			5
Former boiler room	PE-84-11	305.0	0.1 to 0.2	Slag	4	1	5	5		
	PE-85-11	410.0	0.09 to 0.3	Slag	4	1	5	5		
Former asphalt plant	PE-25-11	350.0	0.15 to 0.30	Asphalt in place	4	1				5
TOTAL ⁽⁶⁾					34	11	40	10	0	15

NOTES

- (1) The locations of the zones are shown in figures 2.2 to 2.6.
- (2) Metals: Arsenic, cadmium, chromium, copper, tin, manganese, nickel, lead, zinc.
- (3) C₁₀-C₅₀: Petroleum hydrocarbons C₁₀-C₅₀.
- (4) MAH: Monocyclic aromatic hydrocarbons.
- (5) PAH: Polycyclic aromatic hydrocarbons.
- (6) Does not include field duplicates (minimum of 10%).

4.6 FIELD QUALITY CONTROL AND ASSURANCE PROGRAM

During sampling activities (walls, and bottoms of excavations and soil piles), the instruments used must be cleaned in accordance with the requirements of the *Site Characterization Guide* and the *Sampling Guide for Environmental Analysis (Booklet 1 – General and Booklet 5 – Soil Sampling)*.

Field duplicates must be collected to represent a minimum of 10% of the total number of samples collected for each parameter analysed. However, a minimum of one duplicate per batch of samples intended for analysis must be respected regardless of the total number of samples collected in a sampling campaign. The parameters analyzed must be the same as those selected for the original samples.

4.7 ACCREDITED LABORATORY

All chemical analyses identified in the Plan, i.e. the initial Plan and this amendment, must be conducted by a laboratory accredited by the CEAEQ. The analyses will therefore be performed by one of the following laboratories:

- AGAT Laboratoires
- Biolab
- Exova Canada Inc.
- Maxxam Analytics

Once a laboratory has been selected to perform the analyses, TC will send MDDEP a notice specifying the name of the laboratory.

5. MANAGEMENT OF SOIL, RESIDUAL MATERIALS AND BACKFILL

5.1 SOIL MANAGEMENT

Soil excavated as part of the remediation work must be managed in accordance with the *Interim Management Grid for Excavated Contaminated Soils* of the MDDEP Policy. The management procedures to be applied in each zone are described in detail in Table 5.1. The off-site destinations of the soil must be sites authorized by MDDEP (if applicable, the contaminated soil will be sent to an authorized treatment site instead of an authorized landfill site). Once a contractor has been selected to perform the remediation work, TC will send MDDEP a notice specifying the destinations proposed by the Contractor.

5.2 RESIDUAL MATERIAL MANAGEMENT

The following residual materials were observed in the sectors to be remediated:

- former landfill (zone PE-34-11): metal, cement concrete, tile, ash
- septic tanks:
 - zones PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11: cement concrete (with or without oil stains); oil-stained concrete may qualify as a hazardous material
 - zones PE-62-11, PE-64-11 and PE-89-11: slag
 - zones PE-37-11 and PE-88-11: creosoted wood
- ditch: no hazardous materials
- former railway track (zones PE-CF-04-11 to PE-CF-09-11): slag
- former garages:
 - zone PE-21-11: slag and coal
 - zone PE-39-11: asphalt
- former boiler room (zones PE-84-11 and PE-85-11): slag
- former asphalt plant (zone PE-25-11): asphalt

The management procedures to be applied in each zone are described in detail in 5.1. If the oil-stained concrete is a hazardous material within the context of the *Regulation Respecting Hazardous Materials* (based on results of a leaching test), it will have to be transported in accordance with the federal *Transportation of Dangerous Goods Regulations*.

The off-site destinations of the hazardous materials must be sites authorized by MDDEP. Once a contractor has been selected to perform the remediation work, TC will send MDDEP a notice specifying the destinations proposed by the Contractor.

5.3 FILL MATERIAL MANAGEMENT

The material to be used to backfill the excavations must be material excavated at the site (surface material, i.e. material overlying a contaminated horizon) or crushed clean concrete (in both cases, with concentrations below the MDDEP C criteria) and/or borrow material from known external sources (soil quality below the MDDEP A criteria). The origin and quantity of the fill material are specified in Table 5.1.

Once a contractor has been selected to perform the remediation work, TC will send a notice to the MDDEP specifying the source(s) proposed by the Contractor.

5.4 WATER MANAGEMENT

During the remediation activities, the water that is recovered (e.g. by a specialized company using a vacuum truck) will be analyzed to identify management options. If the water does not meet the standards for sewer disposal, it will be collected and treated by a specialized firm.

Once the contractor has been selected to perform the remediation work, TC will send a notice to the MDDEP specifying the specialized company proposed by the Contractor.

Table 5.1 Soil, residual material and fill material management procedures

Sector	Zone ⁽¹⁾	Description of Materials	Soil Management			Residual Materials Management			Source of Backfill Material	
			Estimated Volume (m ³)	To Be Characterized	Recommended Destination	Estimated Volume (m ³)	To Be Characterized	Recommended Destination	Estimated Volume (m ³)	Source
Former landfill	PE-33-11, PE-47-11, PE-48-11 and PE-51-11	Soil contaminated by metals (C-D range)	1355	No	Contaminated soil landfill site (e.g. Horizon Environnement)	n/a	n/a	n/a	1355	Excavated surface soil (if <C) or recognized borrow pit
	PE-50-11	Soil contaminated by metals (C-D range; duplicates >D)	787.5	No	Contaminated soil landfill site (e.g. Horizon Environnement)	n/a	n/a	n/a	787.5	Excavated surface soil (if <C) or recognized borrow pit
	PE-51-11	Soil contaminated by PH C ₁₀ -C ₅₀ (C-D range)	340	No	Authorized contaminated soil treatment facility (e.g. Newalta, Recy-Chem or BSL)	n/a	n/a	n/a	340	Excavated surface soil (if <C) or recognized borrow pit
	PE-34-11	Metal, cement concrete, tile, ash	n/a	n/a	n/a	193.5	No	Engineered landfill site	193.5	Excavated surface soil (if <C) or recognized borrow pit
Septic Tanks	PE-62-11	Soil contaminated by metals (C-D range)	20	No	Contaminated soil landfill site (e.g. Horizon Environnement)	n/a	n/a	n/a	20	Excavated surface soil (if <C) or recognized borrow pit
	PE-63-11	Soil contaminated by PH C ₁₀ -C ₅₀ (C-D range)	66	No	Authorized contaminated soil treatment facility (e.g. Newalta, Recy-Chem or BSL)	n/a	n/a	n/a	66	Excavated surface soil (if <C) or recognized borrow pit
	PE-37-11, PE-38-11, PE-61-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 and PE-89-11	Clean cement concrete (<C)	n/a	n/a	n/a	158	No	Crushing and reuse on-site	0	Crushed concrete
		Oil-stained cement concrete	n/a	n/a	n/a	158	Yes	If contaminated (>C and <30,000 ppm): engineered landfill site	158	Excavated surface soil (if <C) or recognized borrow pit
			n/a	n/a	n/a		Yes	If residual hazardous materials (> or = 30,000 ppm): Newalta		
	PE-62-11, PE-64-11 and PE-89-11	Slag	n/a	n/a	n/a	925	No	Engineered landfill site	925	Excavated surface soil (if <C) or recognized borrow pit
PE-37-11 and PE-88-11	Creosoted wood	n/a	n/a	n/a	45	No	Energy conversion or engineered landfill site	45	Excavated surface soil (if <C) or recognized borrow pit	
Ditch	FOSSÉ-1-11	Contaminated sediment (>D)	60	Yes	Authorized contaminated soil treatment facility (e.g. Newalta, Recy-Chem or BSL)	n/a	n/a	n/a	60	Recognized borrow pit
Former railway track	PE-CF-04-11 to PE-CF-09-11	Slag	n/a	n/a	n/a	383.3	No	Engineered landfill site	0	No backfill
Former garages	PE-21-11	Slag and coal	n/a	n/a	n/a	132.8	No	Engineered landfill site	132.8	Recognized borrow pit
	PE-39-11	Asphalt in place	n/a	n/a	n/a	47.5	No	Recycled aggregate producer	47.5	Excavated surface soil (if <C) or recognized borrow pit
Former boiler room	PE-84-11 and PE-85-11	Slag	n/a	n/a	n/a	116.6	No	Engineered landfill site	116.6	Excavated surface soil (if <C) or recognized borrow pit
Former asphalt plant	PE-25-11	Asphalt in place	n/a	n/a	n/a	52.5	No	Recycled aggregate producer	52.5	Excavated surface soil (if <C) or recognized borrow pit
Total (m ³)			2628.5			2212.2			4299.4	

NOTE:

(1) The locations of the zones are shown in figures 2.2 to 2.6.

n/a Not applicable

6. GROUNDWATER QUALITY MONITORING PROGRAM

6.1 GROUNDWATER CHARACTERIZATION

The characterization of the groundwater in the area covered by the Plan, more specifically in the contaminated sectors, will include the following elements (see Figure 6.1 in Appendix 2):

- Installation of three new monitoring wells (PO-2011-01 to PO-2011-03)⁽¹⁾ in the northern portion of the plume. The final placement of these wells will be determined in the field following the identification and inspection of the existing wells. Before the wells are installed, their placement will have to be approved by TC.
- Groundwater sampling in accordance with the recommendations of the *Site Characterization Guide* and the *CEAEQ Sampling Guide for Environmental Analysis (Booklet 1 – General and Booklet 3 – Groundwater Sampling)*. The wells to be sampled are as follows:
 - three new wells to be installed: PO-2011-01 to PO-2011-03⁽¹⁾
 - thirteen wells identified in the initial Plan (Entraco – P0922, March 2011) and in the Answers to the MDDEP Request for Additional Information (Entraco – P0939, October 21, 2011): F-11, F-12, F-13, F-14, F-15, F-16, F-18, F-26-2000, F-27-2000, F-28-2000, F-29-2000, PO-3 and PO-4
 - three wells installed by LVM in 2011: PO-A2-11, PO-H1-11 and PO-F1-11

If one of the wells to be characterized is destroyed during the remediation work, it must be replaced by another well (existing or new). For all wells, parameters to be analyzed include: metals, petroleum hydrocarbons C₁₀-C₅₀, MAHs and PAHs. As recommended in the certified characterization study, the monitoring program will run for a period of two years, with two sampling campaigns per year (spring and fall).

6.2 FIELD QUALITY CONTROL AND ASSURANCE PROGRAM

For the purposes of quality control and assurance of the analytical program, field duplicates must be collected to represent a minimum of 10% of the total number of samples collected for each parameter analyzed. However, a minimum of one duplicate per batch of samples sent for analysis must be respected regardless of the total number of samples collected in a sampling campaign. The parameters analyzed must be the same as those selected for the original samples. All chemical analyses must be performed by a laboratory accredited by the CEAEQ. The analyses will therefore be performed by one of the following accredited laboratories:

- AGAT Laboratoires
- Biolab

⁽¹⁾ The identification numbers of the wells may change to reflect the year in which they are built, e.g. PO-2012-01 instead of PO-2011-01 if built in 2012.

- Exova Canada Inc.
- Maxxam Analytics

Once a laboratory has been selected to perform the analyses, TC will send a notice to the MDDEP specifying the name of the laboratory.

7. WORK SCHEDULE

The remediation work will begin in the fall of 2012. The start and end dates have not yet been determined. For administrative and financial reasons, TC is required to split the remedial work into two phases as follows:

1. In the fall of 2012, remediate the former landfill, former septic tanks, ditch, former mechanical garage, former boiler room and former asphalt plant sectors.
2. In 2013, remediate the former coal depot and former railway track sectors.

The remedial work will cover the seven sectors described in this amendment to the Plan as well as two non-remediated sectors described in the initial Plan.

The remediation work will be conducted by a private contractor following a tendering process to be launched by Public Works and Government Services Canada (PWGSC). Environmental monitoring of the work will be carried out by a private consultant selected by PWGSC.

In accordance with section 31.48 of the EQA, as soon as the work made necessary by the implementation of the amendment to the approved Plan have been completed, a remediation report accompanied by a certificate of an expert referred to in section 31.65 of the EQA will be submitted to MDDEP, stating that the work was conducted in accordance with the requirements of the amendment to the Plan.

Appendix 1

Limitation clauses

LIMITATION CLAUSES

This remediation plan, prepared by Entraco, is based solely on the available data, visual observations and relevant information provided by representatives of Transport Canada and Public Works and Government Services Canada. The data in this plan are not scientific certainties, but rather probabilities based on professional judgment. The data interpretations, comments and recommendations in this remediation plan are based, to the best of our knowledge, on the regulations in force and on the applicable policies, codes, guides or other documents.

The descriptive data and observations on the site characteristics relate to the conditions observed during the preparation of this plan and therefore do not take into account site conditions or changes that could not have been observed or assessed. The recommendations, based on the available information, were developed by qualified professionals according to a recognized methodology. Entraco reserves the right to amend any recommendation that was based on information provided by a third party or client that is discovered to be incorrect or to have been incorrectly presented or if additional information that was not initially disclosed becomes available. Entraco accepts no responsibility for any deficiency, erroneous statement or inaccuracy contained in this remediation plan that is the result of erroneous statements, omissions or false statements made by personnel or other entities that provided information to Entraco during its preparation of this study.

Entraco prepared this remediation plan for use by Transport Canada and Public Works and Government Services Canada. Any use of this remediation plan by a third party, as well as any decision based on this remediation plan, is the sole responsibility of that third party. Entraco cannot be held responsible for any potential damages, losses, claims or damages suffered by a third party that directly or indirectly result from the use of this remediation plan or a decision made or based on this remediation plan.

Appendix 2

Figures

Légende

- - - Limite du site à l'étude (partie de l'ancien lot 706-1)
- - - Limite du site à l'étude de l'EES phase 1 réalisé en 2009 par LVM (partie de l'ancien lot 706-1)
- Fossé de drainage
- Zone estimée des sols contaminés (>C)
- Zone estimée des matières résiduelles
- Zone estimée des sédiments (fossé)

NOTE :

1. Les limites des zones estimées de sols contaminés ou de matières résiduelles ont été tirées de l'étude de LVM (janvier 2012) et ont été modifiées pour faciliter les travaux d'excavation.

SOURCE (fond de plan) :
 LVM, janvier 2012
 (073-P038375-0150-EN-0001-00.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-



Dossier / File:

Aéroport de Mont-Joli
 Lot 4 746 167
 Modification au plan de réhabilitation

Dessin / Drawing:

Figure 2.1
 Localisation des secteurs d'intervention
 et des limites de lots

Conçu par / Designed by: N.L. Date: 2012-02-20

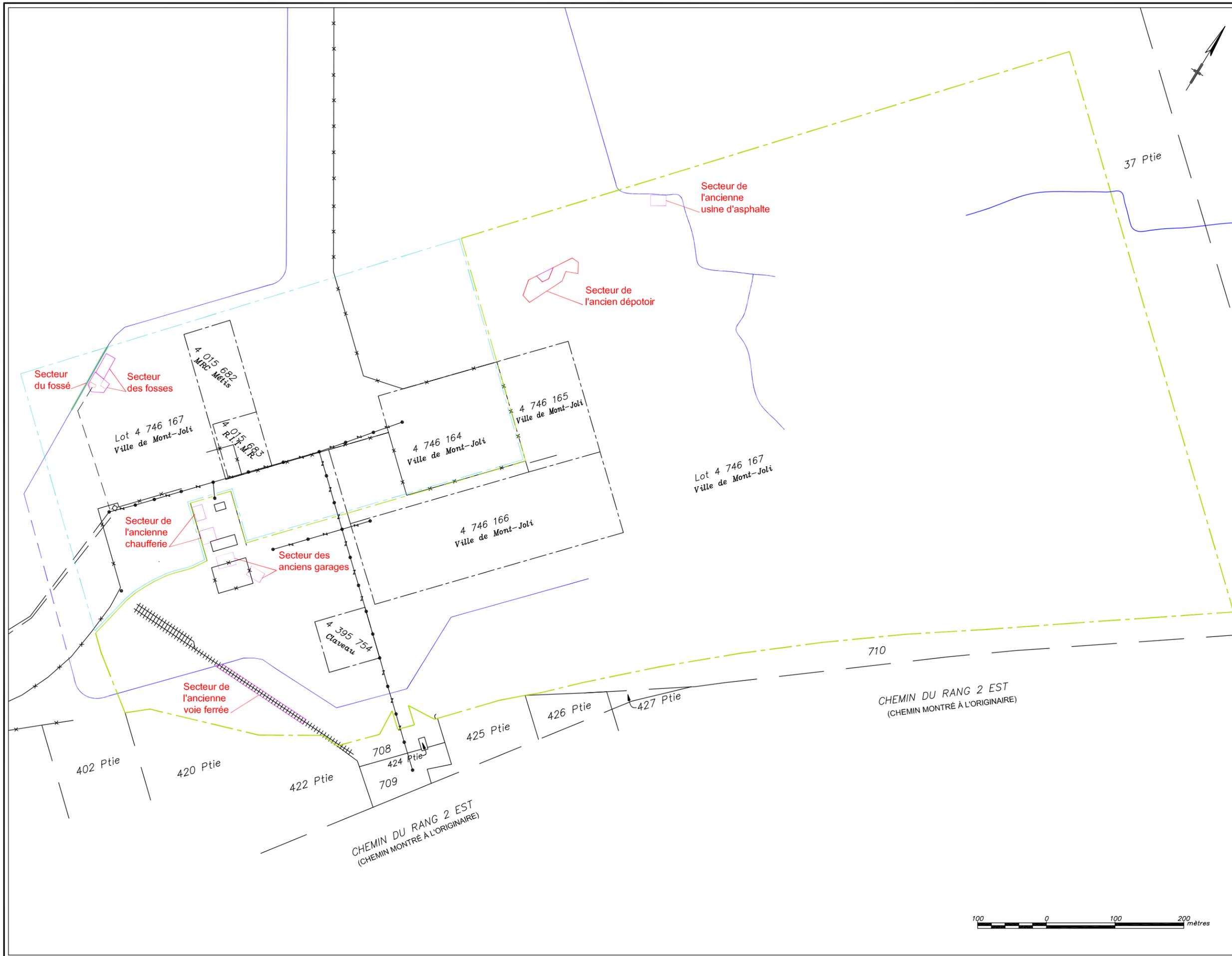
Dessiné par / Drawn by: L.T./N.L. Date: 2012-02-22

Vérifié par / Verified by: N.L. Date: 2012-03-30

Approuvé par / Approved by: Date:

No. dossier / File no.: P0942 Échelle / Scale: Graphique

No. dessin / Drawing no.: Feuille / Sheet:



Légende

-  Tranchée d'exploration (LVM 2011)
-  Puits d'observation (LVM 2011)
-  Zone estimée des sols contaminés (>C)
-  Zone estimée des matières résiduelles

NOTE :

1. Les limites des zones estimées de sols contaminés ou de matières résiduelles ont été tirées de l'étude de LVM (janvier 2012) et ont été modifiées pour faciliter les travaux d'excavation.
2. Les zones 3.1 à 3.3 (Ancien dépotoir) sont traitées dans le plan de réhabilitation initial (Entraco, mars 2011 - P0922)

SOURCE (fond de plan) :
 LVM, janvier 2012
 (073-P038375-0150-EN-0001-00.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-



Dossier / File:

Aéroport de Mont-Joli
 Lot 4 746 167
 Modification au plan de réhabilitation

Dessin / Drawing:

Figure 2.2
 Localisation des zones d'intervention -
 Secteur de l'ancien dépotoir

Conçu par / Designed by: N.L. Date: 2012-02-20

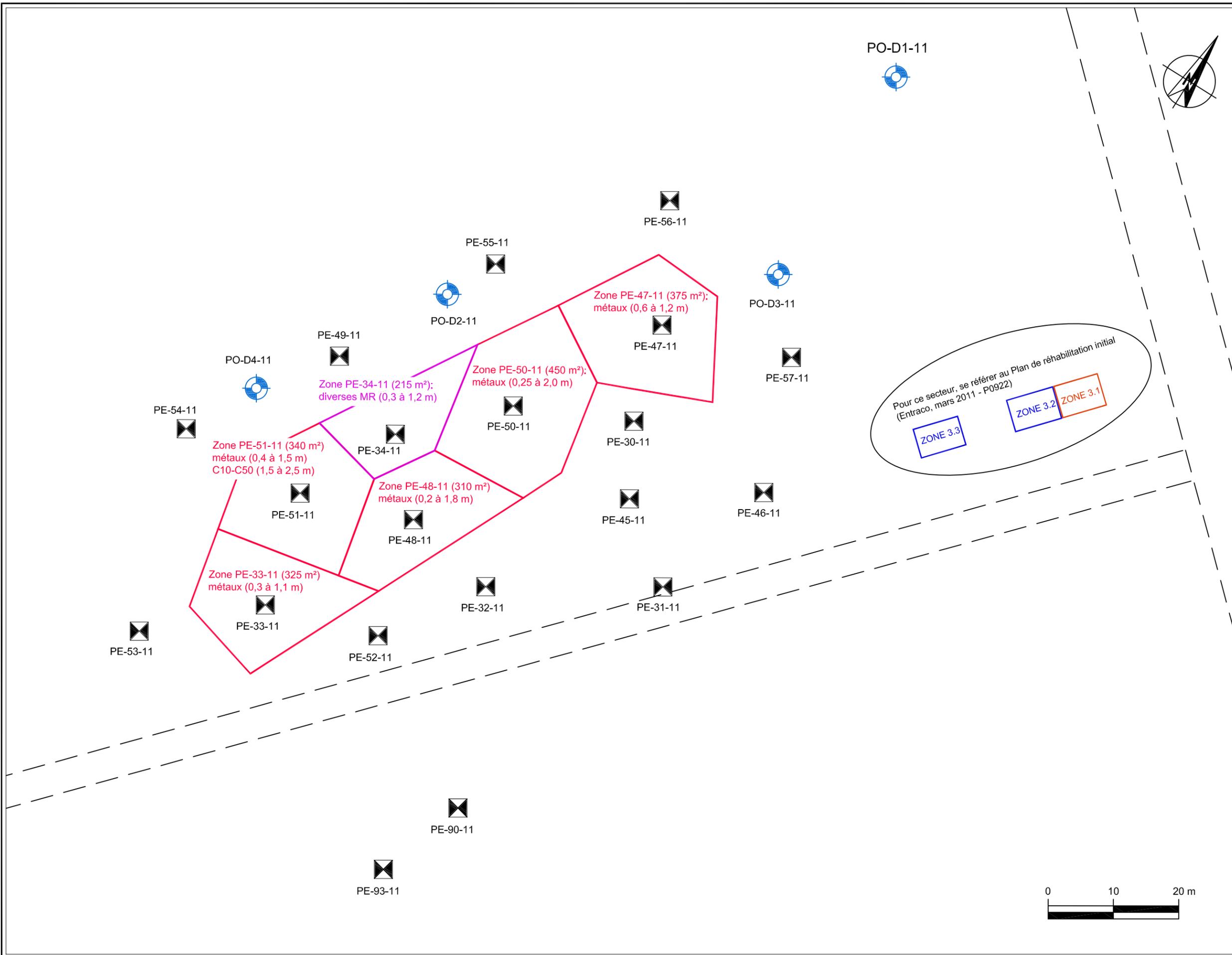
Dessiné par / Drawn by: L.T./N.L. Date: 2012-02-22

Vérifié par / Verified by: N.L. Date: 2012-03-30

Approuvé par / Approved by: Date:

No. dossier / File no.: P0942 Echelle / Scale: Graphique

No. dessin / Drawing no.: Feuille / Sheet:



Légende

-  Fossé de drainage
-  Tranchée d'exploration (LVM 2011)
-  Puits d'observation (LVM 2011)
-  Zone estimée des sols contaminés (>C)
-  Zone estimée des matières résiduelles
-  Zone estimée des sédiments (fossé)

NOTE :

1. Les limites des zones estimées de sols contaminés, de matières résiduelles ou de sédiments (fossé) ont été tirées de l'étude de LVM (janvier 2012) et peuvent avoir été modifiées pour faciliter les travaux d'excavation.
2. Les superficies des zones PE-62-11 (100 m²) et PE-63-11 (55 m²) ont été modifiées pour tenir compte des fosses en béton ; dans l'étude de LVM (janvier 2012), elles étaient respectivement de 120 m² et 119 m².

SOURCE (fond de plan) :
 LVM, janvier 2012
 (073-P038375-0150-EN-0001-00.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-



Dossier / File:
 Aéroport de Mont-Joli
 Lot 4 746 167
 Modification au plan de réhabilitation

Dessin / Drawing:
 Figure 2.3
 Localisation des zones d'intervention -
 Secteur des fosses

Conçu par / Designed by:	Date
N.L.	2012-02-20
Dessiné par / Drawn by:	Date
L.T./N.L.	2012-02-22
Vérifié par / Verified by:	Date
N.L.	2012-03-30
Approuvé par / Approved by:	Date

No. dossier / File no.:	Echelle / Scale:
P0942	Graphique
No. dessin / Drawing no.:	Feuille / Sheet:



Limite de propriété

Limite approximative des fosses
(tireté noir)

Zone PE-37-11 et PE-61-11 (490 m²):
bois créosoté et béton (0,8 à 3,5 m)

Béton à 2,7 m ;
bois créosoté (0,8 à 2,7 m)

Béton à 1,4 et 3,5 m ;
sédiments dans la fosse

Béton à 1,0 m

Scories imbibées d'huile
(1,2 à 3,0 m)

Béton à 3,5 m ;
bois créosoté (1,5 à 2,8 m)

Zone PE-63-11 (55 m²)
C10-C50 (2,0 à 3,2 m)

Béton à 3,2 m ;
sédiments à partir de 2 m

Scories imbibées d'huile
(2,0 à 3,2 m)

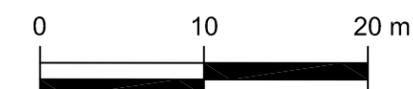
Zone PE-62-11 (100 m²):
métaux (3,2 à 3,4 m)

Zone PE-38-11, PE-62-11, PE-63-11, PE-64-11, PE-88-11 et PE-89-11 (600 m²):
scories, bois créosoté et béton (1,2 à 3,5 m)

Scories (1,8 à 3,2 m)

Zone FOSSÉ-1-11 (200 m²):
HAP (0,0 à 0,3 m) ;
superficie à confirmer

Fossé



Légende

-  Fossé de drainage
-  Tranchée d'exploration (LVM 2011)
-  Puits d'observation (LVM 2011)
-  Zone estimée des sols contaminés (>C)
-  Zone estimée des matières résiduelles

NOTE :

1. Les limites des zones estimées de sols contaminés, de matières résiduelles ou de sédiments (fossé) ont été tirées de l'étude de LVM (janvier 2012) et peuvent avoir été modifiées pour faciliter les travaux d'excavation.
2. Les zones 2.1 à 2.4 (Ancien dépôt de charbon) sont traitées dans le plan de réhabilitation initial (Entraco, mars 2011 - P0922).

SOURCE (fond de plan) :
 LVM, janvier 2012
 (073-P038375-0150-EN-0001-00.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-



Dossier / File:

Aéroport de Mont-Joli
 Lot 4 746 167
 Modification au plan de réhabilitation

Dessin / Drawing:

Figure 2.4
 Localisation des zones d'intervention -
 Ancienne voie ferrée

Conçu par / Designed by: N.L. Date: 2012-02-20

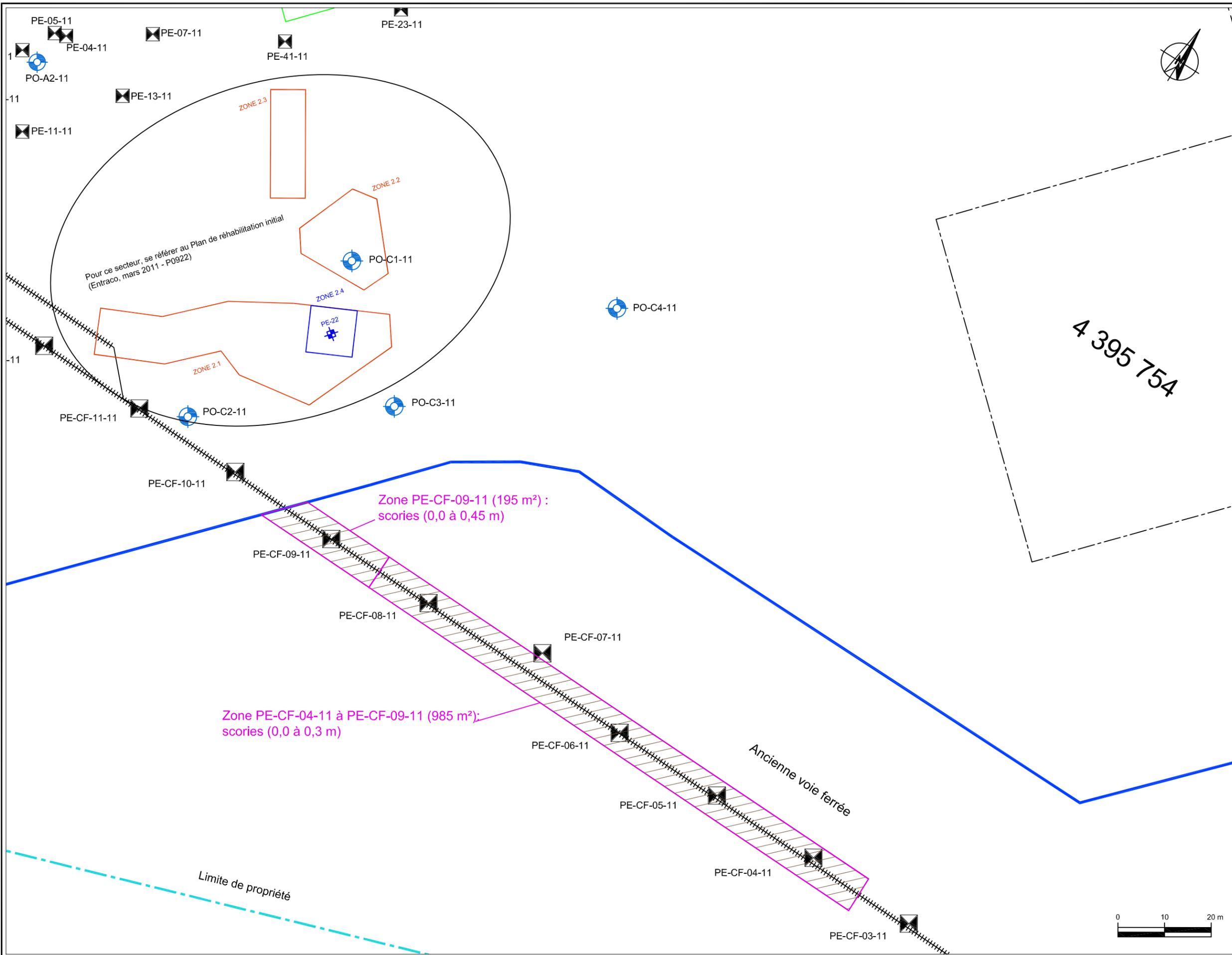
Dessiné par / Drawn by: L.T./N.L. Date: 2012-02-22

Vérifié par / Verified by: N.L. Date: 2012-03-30

Approuvé par / Approved by: Date:

No. dossier / File no.: P0942 Échelle / Scale: Graphique

No. dessin / Drawing no.: Feuille / Sheet:



Légende

-  Tranchée d'exploration (LVM 2011)
-  Puits d'observation (LVM 2011)
-  Zone estimée des sols contaminés (>C)
-  Zone estimée des matières résiduelles

NOTE :

- Les limites des zones estimées de sols contaminés, de matières résiduelles ou de sédiments (fossé) ont été tirées de l'étude de LVM (janvier 2012) et peuvent avoir été modifiées pour faciliter les travaux d'excavation.

SOURCE (fond de plan) :
 LVM, janvier 2012
 (073-P038375-0150-EN-0001-00.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-



Dossier / File:
 Aéroport de Mont-Joli
 Lot 4 746 167
 Modification au plan de réhabilitation

Dessin / Drawing:
 Figure 2.5
 Localisation des zones d'intervention -
 Ancienne chaufferie et anciens garages

Conçu par / Designed by: N.L. Date: 2012-02-20

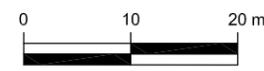
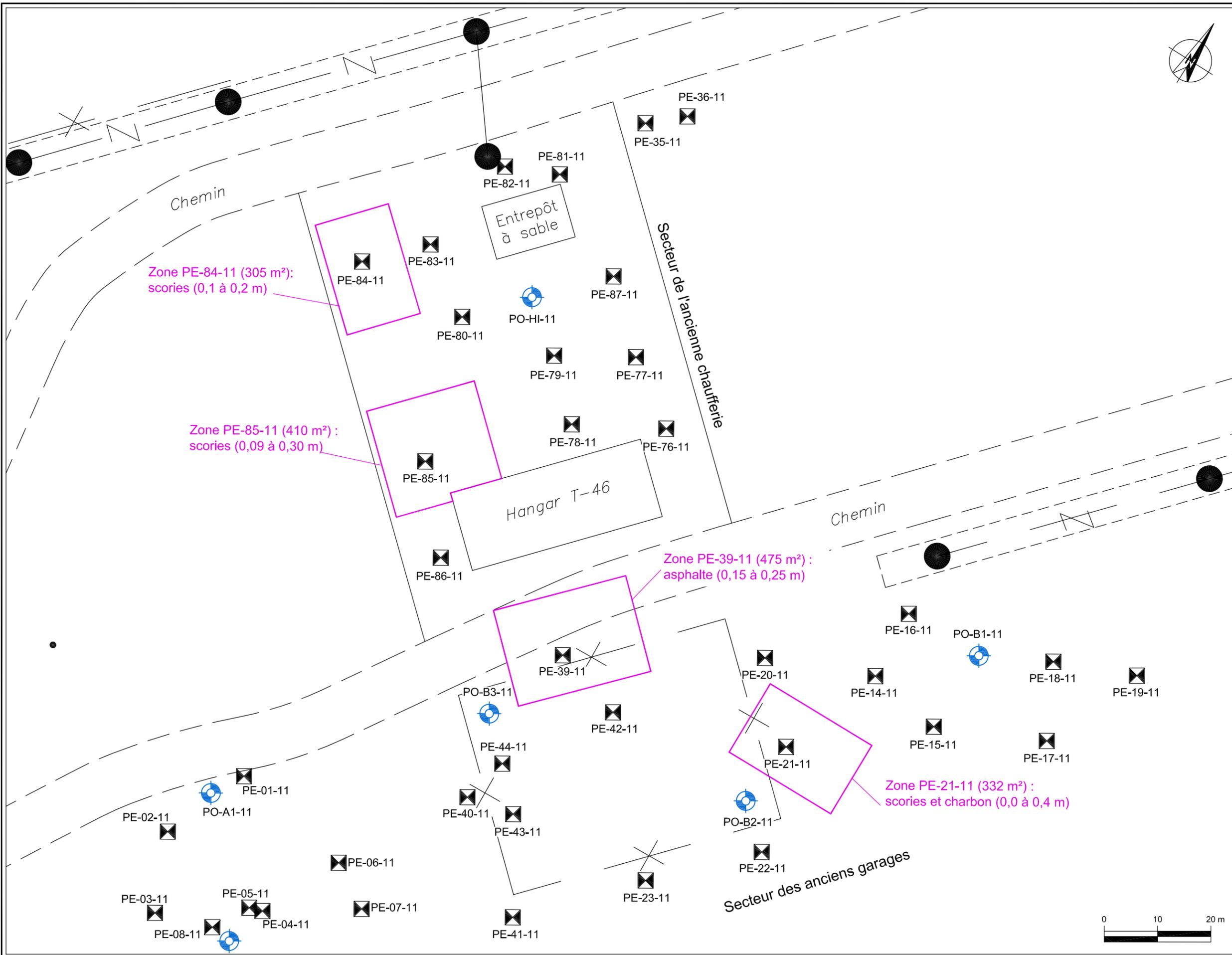
Dessiné par / Drawn by: L.T./N.L. Date: 2012-02-22

Vérifié par / Verified by: N.L. Date: 2012-03-30

Approuvé par / Approved by: Date:

No. dossier / File no.: P0942 Échelle / Scale: Graphique

No. dessin / Drawing no.: Feuille / Sheet:



Légende

-  Fossé de drainage
-  Tranchée d'exploration (LVM 2011)
-  Puits d'observation (LVM 2011)
-  Zone estimée des sols contaminés (>C)
-  Zone estimée des matières résiduelles

NOTE :

- Les limites des zones estimées de sols contaminés, de matières résiduelles ou de sédiments (fossé) ont été tirées de l'étude de LVM (janvier 2012) et peuvent avoir été modifiées pour faciliter les travaux d'excavation.

SOURCE (fond de plan) :
LVM, janvier 2012
(073-P038375-0150-EN-0001-00.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-



Dossier / File:
Aéroport de Mont-Joli
Lot 4 746 167
Modification au plan de réhabilitation

Dessin / Drawing:
Figure 2.6
Localisation de la zone d'intervention -
Ancienne usine d'asphalte

Conçu par / Designed by: N.L. Date: 2012-02-20

Dessiné par / Drawn by: L.T./N.L. Date: 2012-02-22

Vérifié par / Verified by: N.L. Date: 2012-03-30

Approuvé par / Approved by: Date:

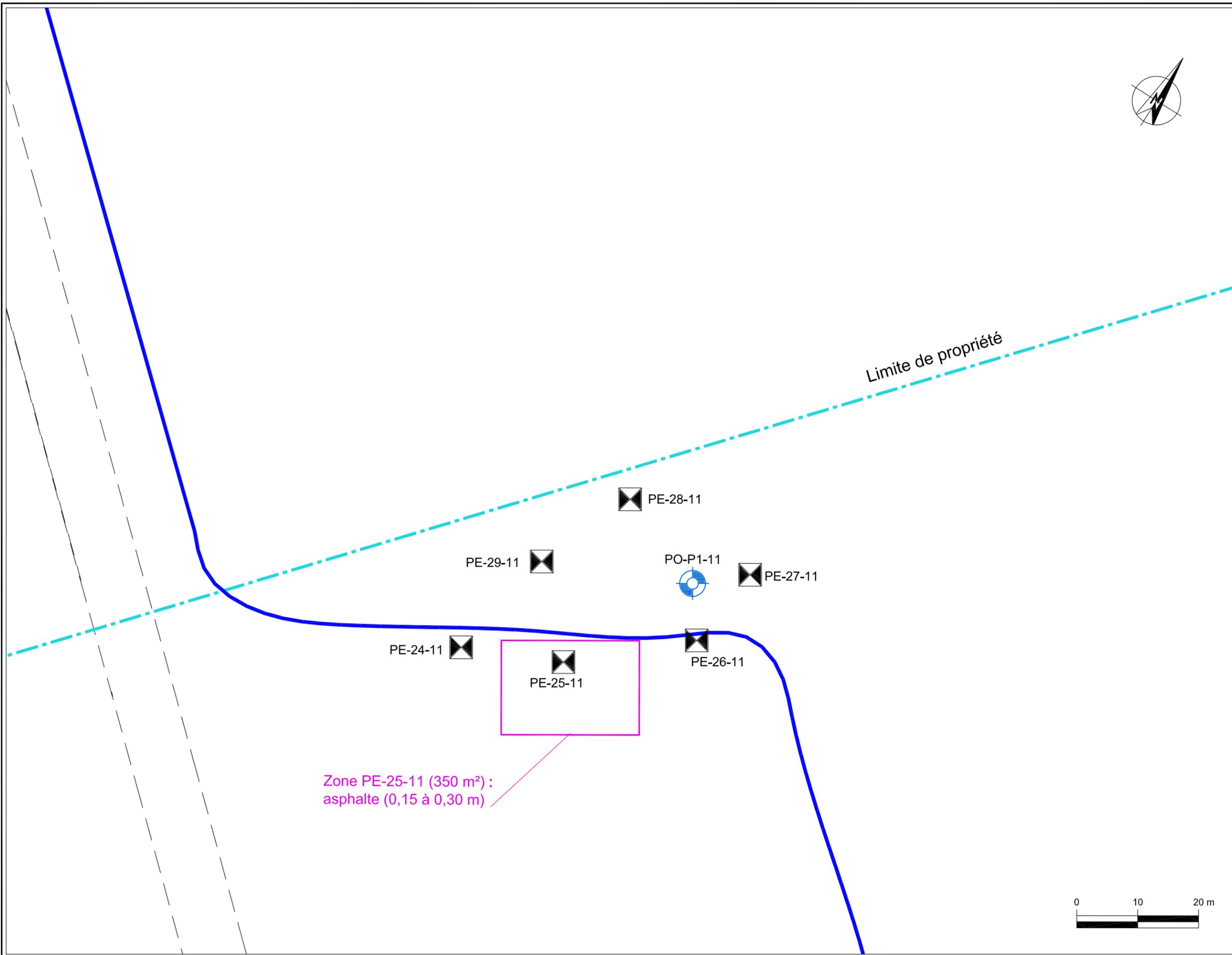
No. dossier / File no.: P0942 Échelle / Scale: Graphique

No. dessin / Drawing no.: Feuille / Sheet:



Limite de propriété

Zone PE-25-11 (350 m²) :
asphalte (0,15 à 0,30 m)



Légende

- Limite du site à l'étude (partie de l'ancien lot 706-1)
- Limite du site à l'étude de l'EES phase 1 réalisé en 2009 par LVM (partie de l'ancien lot 706-1)
- Fossé de drainage
-  Puits d'observation (LVM 2011)
-  Puits d'observation (LVM 2011) proposé pour le suivi de la qualité
-  Puits d'observation antérieur (divers consultants en environnement)
-  Puits d'observation à construire proposé par Entraco en 2011 pour le suivi de la qualité
-  Étendue présumée de l'eau contaminée (LVM, janvier 2012)
-  Étendue présumée de l'eau contaminée (LVM, 18 février 2010 - addenda)

NOTE :

- Les limites des zones estimées d'eau souterraine contaminée ont été tirées des études de LVM (février 2010 et janvier 2012).

SOURCE (fond de plan) :

LVM, janvier 2012 (073-P038375-0150-EN-0001-00.dwg)
 LVM, février 2011 (073-P038375-0140-F002-01_révisé.dwg)

Rév.	Description	Par/By	Date
-	-	-	-
-	-	-	-

Dossier / File:

Aéroport de Mont-Joli
 Lot 4 746 167
 Modification au plan de réhabilitation

Dessin / Drawing:

Figure 6.1
 Localisation des puits d'observation et des limites des zones contaminées d'eau souterraine

Conçu par / Designed by: N.L. Date: 2012-02-20

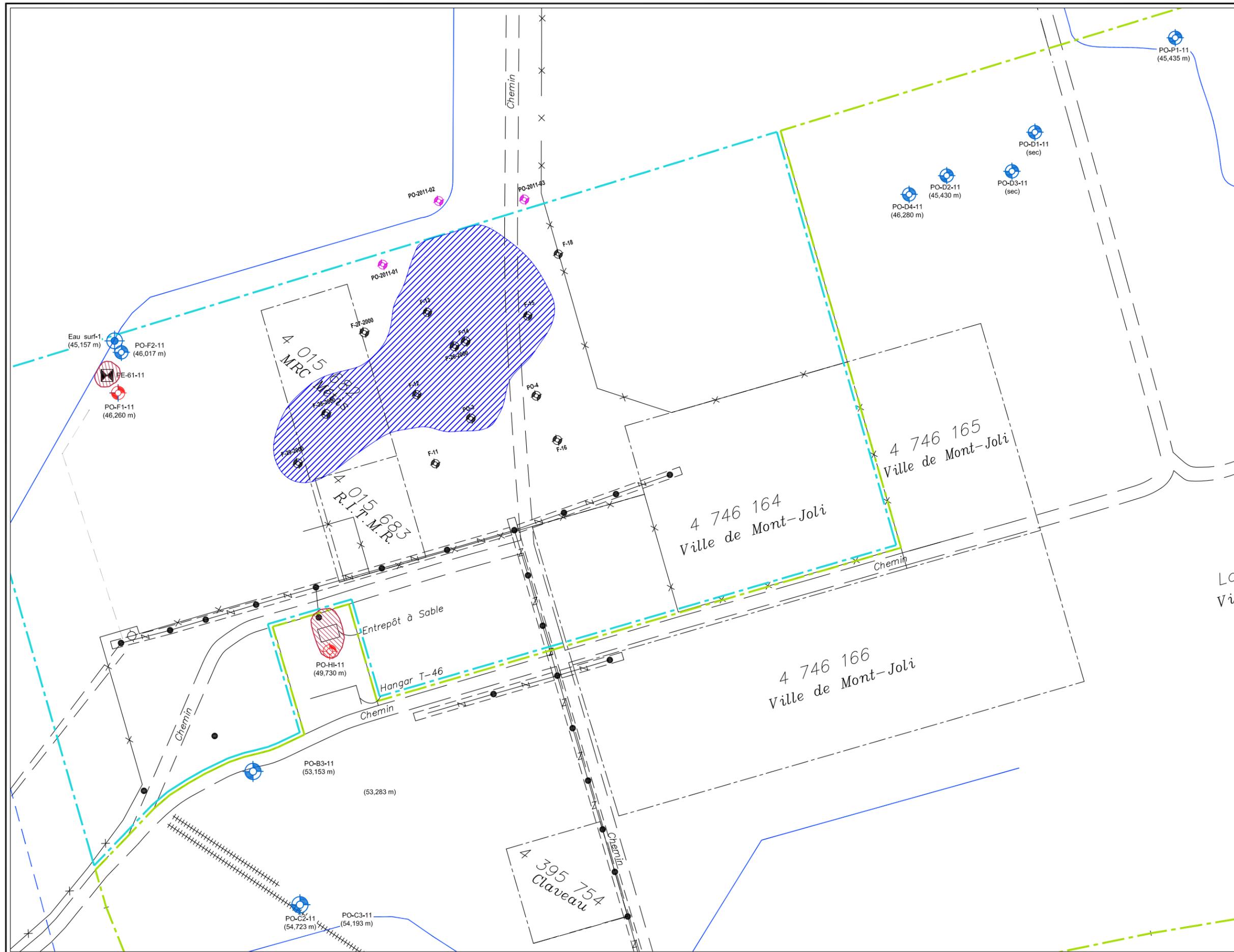
Dessiné par / Drawn by: L.T./N.L. Date: 2012-03-06

Vérifié par / Verified by: N.L. Date: 2012-03-30

Approuvé par / Approved by: Date:

No. dossier / File no.: P0942 Échelle / Scale: Graphique

No. dessin / Drawing no.: Feuille / Sheet:



Appendix 3

Tables 14 and 15 taken from the LVM characterization study (January 2012)



Tableau 14 : Sommaire des volumes de sols et sédiments non conformes
 Site: Ancien terrain de l'aéroport de Mont-Joli

No. Projet: P038375-0150

Secteur	Sondage	Échantillon	Paramètres excédant les critères ⁽¹⁾ / normes applicables ⁽²⁾	Profondeur de l'échantillon (m)		Profondeur estimée (m)		Épaisseur estimée (m)	Aire (m ²)	Volume estimé de sols affectés (m ³ en place)		Volume estimé de sols non-affectés sus-jacents aux sols affectés (m ³ en place)
				de	à	de	à			>C	>RESC	
Plan de réhabilitation - Entraco 2011												
Charbon	---	---	Arsenic	---	---	---	---	---	---	65,0	---	0,0
Ancien Dépotoir	---	---	Métaux	---	---	---	---	---	---	93,0	---	22,5
Hangar H3 (Zone 1.1)	---	---	BTEX et HAP	---	---	---	---	---	---	42,0	---	800,0
Hangar H3 (Zone 1.2)	---	---	HAP	---	---	---	---	---	---	18,0	---	0,0
Étude de caractérisation - LVM 2011												
Ancien dépotoir	PE-33-11	2	Zinc	0,30	1,10	0,30	1,10	0,8	325,0	260,0	---	97,5
Ancien dépotoir	PE-47-11	2	Cadmium, Zinc	0,60	1,20	0,60	1,20	0,6	375,0	225,0	---	225,0
Ancien dépotoir	PE-48-11	3	Cadmium, Cuivre, Manganèse, Plomb, Zinc	0,70	1,80	0,20	1,80	1,6	310,0	496,0	---	62,0
Ancien dépotoir	PE-50-11	2	Cadmium, Cuivre, Plomb, Zinc	0,25	0,75	0,25	2,00	1,8	450,0	---	787,5	112,5
Ancien dépotoir	PE-51-11	3	Cadmium, Cuivre, Plomb, Zinc	1,00	1,50	0,40	1,50	1,1	340,0	374,0	---	136,0
Ancien dépotoir	PE-51-11	5	HP C ₁₀ -C ₅₀	2,00	2,50	1,50	2,50	1,0	340,0	340,0	---	N/A
Fosses	PE-62-11	4	Arsenic	3,20	3,40	3,20	3,40	0,2	120,0	24,0	---	N/A
Fosses	PE-63-10	2	HP C ₁₀ -C ₄₉	2,00	3,00	2,00	3,20	1,2	119,0	142,8	---	238,0
Fossé	FOSSÉ-1-11	FOSSÉ-1-11	HAP	0,00	0,15	0,00	0,30	0,3	200,0	---	60,0	0,0
TOTAL LVM 2011 :										1 862	848	871

(1) Réfère aux critères génériques de la *Politique de protection des sols et de réhabilitation des terrains contaminés* du MDDEP
 (2) Réfère au *Règlement sur la protection et la réhabilitation des terrains* du Gouvernement du Québec



Tableau 15 : Sommaire des volumes de matières résiduelles
Site: Ancien terrain de l'aéroport de Mont-Joli

No. Projet: P038375-0150

Secteur	Sondage	Échantillon	type de matières résiduelles	Profondeur de l'échantillon (m)		Profondeur estimée (m)		Épaisseur estimée (m)	Aire (m ²)	Volume estimé de matières résiduelles (m ³ en place)		Volume estimé de sols non-affectés sus-jacents aux matières résiduelles (m ³ en place)
				de	à	de	à			Matières résiduelles non dangereuses	Matières résiduelles dangereuses	
Plan de réhabilitation - Entraco 2011												
Charbon	—	—	Charbon	—	—	—	—	—	—	260,0	—	N/D
Ancien Dépotoir	—	—	Métal, bois, verre	—	—	—	—	—	—	7,0	—	14,0
Hangar H3	—	—	Béton de ciment	—	—	—	—	—	—	10,0	—	0,0
Étude de caractérisation - LVM 2011												
Ancienne voie ferrée	PE-CF-04-11	1	scories	0,00	0,30	0,00	0,30	0,3	200,0	60,0	—	0
Ancienne voie ferrée	PE-CF-05-11	1	scories	0,00	0,30	0,00	0,30	0,3	200,0	60,0	—	0
Ancienne voie ferrée	PE-CF-06-11	1	Scories	0,00	0,30	0,00	0,30	0,3	190,0	57,0	—	0
Ancienne voie ferrée	PE-CF-07-11	—	Scories anticipées	—	—	—	—	0,3	195,0	58,5	—	0
Ancienne voie ferrée	PE-CF-08-11	1	Scories	0,00	0,30	0,00	0,30	0,3	200,0	60,0	—	0
Ancienne voie ferrée	PE-CF-09-11	1	Scories	0,00	0,45	0,00	0,45	0,5	195,0	87,8	—	0
Anciens garages	PE-21-11	1	Scories et charbon	0,00	0,40	0,00	0,40	0,4	332,0	132,8	—	0
Anciens garages	PE-39-11	1B	Asphalte en place	0,15	0,25	0,15	0,25	0,1	475,0	47,5	—	71,3
Ancienne usine d'asphalte	PE-25-11	B	Asphalte en place	0,15	0,30	0,15	0,30	0,2	350,0	52,5	—	52,5
Ancien dépotoir	PE-34-11	2A et 2B	Métal, béton de ciment, tuile, cendre	0,30	1,20	0,30	1,20	0,9	215,0	193,5	—	64,5
Fosses	PE-61-11, PE-62-11, PE-64-11, PE-88-11 et PE-89-11	N/A	Béton de ciment	N/A	N/A	N/A	N/A	N/A	N/A	158,0	—	630,0
Fosses	PE-37-11 et PE-88-11	N/A	Béton de ciment taché d'huile	N/A	N/A	N/A	N/A	N/A	N/A	—	158,0	N/A
Fosses	PE-62-11	3	Scories	2,00	3,20	2,00	3,20	1,2	125,0	150,0	—	N/A
Fosses	PE-64-11	3	Scories	1,20	3,00	1,20	3,00	1,8	275,0	495,0	—	N/A
Fosses	PE-89-11	1	Scories	1,80	3,20	1,80	3,20	1,4	200,0	280,0	—	N/A
Ancienne chaufferie	PE-84-11	1	Scories	0,10	0,20	0,10	0,20	0,1	305,0	30,5	—	30,5
Ancienne chaufferie	PE-85-11	1	Scories	0,09	0,30	0,09	0,30	0,2	410,0	86,1	—	36,9

TOTAL LVM 2011 :	2 054	158	886
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(1)

Réfère aux critères génériques de la *Politique de protection des sols et de réhabilitation des terrains contaminés* du MDDEP

(2)

Réfère au *Règlement sur la protection et la réhabilitation des terrains* du Gouvernement du Québec

