

## **APPENDIX B**

### **REGISTRATION OF ENVIRONMENTAL LIABILITIES**

**SPONSORED CONCESSION OF PUBLIC SERVICES OF EXPANSION, OPERATION, MAINTENANCE AND MAKING OF INVESTMENTS NECESSARY FOR EXPLORATION OF THE ROAD SYSTEM CALLED THE RODOANEL NORTE LOT**

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## 1. GENERAL PRESENTATION

The Rodoanel Mário Covas endeavor – Northern Section was the subject of an ENVIRONMENTAL IMPACT STUDY AND ENVIRONMENT IMPACT REPORT (EIA-RIMA), in order to obtain a prior environmental license.

In the environmental licensing process, several mitigating and compensatory measures were proposed which, after analysis by CETESB, were established as conditions for environmental licenses. These measures were grouped into environmental programs, which came to compose the BASIC ENVIRONMENTAL PLAN (BEP) of the enterprise, which must be observed by the CONCESSIONAIRE.

This Appendix details the socio-environmental constraints resulting from the environmental licensing in the previous period of works.

ANNEX 24 presents the reports that document the situation for completion of the works and recovery of liabilities that will not be subject to intervention during the execution of the IMPLEMENTATION WORKS.

The CONCESSIONAIRE will be responsible for structuring the Environmental and Social Management System - ESMS, as established in the environmental licensing and consolidated in the BASIC ENVIRONMENTAL PLAN (BEP), contemplating the requirements of the PERFORMANCE STANDARDS, with the objective of creating internal structures of responsibility for environmental control of the works and the enterprise, which are compatible with the environmental, social and work safety requirements.

With a view to complying with environmental programs, the CONCESSIONAIRE shall establish and maintain, within its organization, internal structures of responsibility for the control of socio-environmental management, health and safety, instituting self-monitoring routines and a system for the management of non-conformities.

The CONCESSIONAIRE will be responsible for complying with all responsibilities related to the Environment, related to the IMPLEMENTATION WORKS.

All environmental conditions previously assumed and pending full compliance will be the exclusive responsibility of the CONCESSIONAIRE. Conditions that have already been fully or partially met are included in the compliance report presented by the GRANTING AUTHORITY.

In the execution of the works, the CONCESSIONAIRE will be responsible for all contractors and subcontractors and will be charged for compliance with labor, environmental legislation and, under the terms set forth in the AGREEMENT and ANNEXES, especially ANNEXES 6 and 18, of the PERFORMANCE PARAMETERS.

Compliance with all Environmental Recovery Commitment Terms (ERCT) referring to the RODOANEL NORTE project will be the responsibility of the CONCESSIONAIRE.

## 2. ENVIRONMENTAL LICENSES

The implementation works of RODOANEL NORTE already have the necessary environmental licenses to start the interventions, with the EIA/RIMA study analyzed by CETESB in the SMA Process No 208/2010, which resulted in the issuance of the Licenses presented in **Table 01** below:

**TABLE 01 - ENVIRONMENTAL LICENSES**

Type	Number	Technical Opinion	Issuance
Preliminary License (PL)	2009	PT No. 018/11/IE	07/12/2011
Installation License (LI) - Priority 1	2167	PT No. 060/13/IE	02/04/2013
Installation License (IL) - Priority 1 rectification	2167	PT No. 0110/13/IE	03/20/2013
Installation License (LI) - Priority 2 and 3	2209	PT No. 301/13/IE	06/28/2013

Due to the need for suppression of native vegetation and intervention in AREA OF PERMANENT PRESERVATION (APP) for the implementation of the enterprise, including the support areas, Authorizations for Suppression of Vegetation and Intervention in APP (ASV) were requested, which generated the Terms Commitment to Environmental Recovery (TCER). The list of TCER's that will be assumed by the CONCESSIONAIRE is shown in **Table 02**, below:

**TABLE 02 - ENVIRONMENTAL RECOVERY COMMITMENT TERM DENOMINATION**

Table 02 - Environmental Recovery Commitment Term Denomination	Authorization No.	TCER No.
Priority 1	8,589/2013	8,524/2013
Priorities 2 and 3	69,334/2013	69,332/13
Peccicacco 1	81.198/2013	81,194/13
Peccicacco 1 Enlargement	117,236/2016	117,154/16
Peccicacco 2	55.016/2013	54,855/13
AE-Peccicacco	75,054/2015	75,053/15
Retention Basin	1,430/2016	1,414/2016
Tunnel 101 Substation	36,288/2017	36,272/17
Retaining wall - stake 1,250	59,265/2017	59,198/17
Regularization of vegetation suppression at the end of tunnel 101	106,949/2017	106,801/17
DME Badra	51,947/2013	51,904/13
Support Site Lot 2	90,538/2013	90,533/13
Tunnel 202 East End	93,722/2013	93,720/13
Tunnel 202 West End	93,618/2013	93,617/13
Re-aludation of the cut 203	2,299/2016	2,293/16
Tunnel 301 West End	137,916/2013	137,911/13
Project Adjustment at the West End of Tunnel 301	67,590/2015	67,583/15
Containment in Armed Land OAE 301	13,709/2017	13,704/17
DME CDR - Três Marias Area 1	69,446/2013	69,348/13
DME CDR - Três Marias	54,660/2014	54,658/14
DME CRD Três Marias Area 2	115,578/2014	115,575/14

<b>Table 02 - Environmental Recovery Commitment Term Denomination</b>	<b>Authorization No.</b>	<b>TCER No.</b>
ACCA - Santa Maria	94,057/2016	94,033/16
Layout Adjustment piles 4170+50m to 4500	23,103/2014	23,098/14
Project adjustment piles 4,380 to 4,415	44,221/2016	43,670/16
Furnas Transmission Line - Alateamento	19,184/2014	19,156/14
AE-Rasa	75,056/2015	75,055/15
AE-Protendit	91,523/2015	91,513/15
OAE 406 beam patio	102,798/2015	102,794/15
4500 Stake - Benjamin Harris Hunnicutt Avenue	30,772/2014	30,755/15
Regularization of the Site of Lot 04	23,537/2016	23,536/16
OAE 455		93,570/16
Access to Sezefredo Fagundes avenue	7,491/2017	7,488/17
Runoff channel - Stake 4,079+10	21,485/2017	21,483/17
Project adjustment for the implementation of drainage in lots 04 and 06	105,831/2017	105,829/17
Regularization of vegetation suppression at the ends of tunnels 401 and 501	112,810/2017	112,684/17
Regularization of native vegetation suppression in APP - between stakes 4,445 and 4,470	112,660/2017	112,447/17
DME Master	134,660/2013	134,658/13
DME Minor	5,893/2014	5,883/14
Tunnel 501 East End	69,096/2013	69,088/13
Tunnel Power Cabin 501	120,252/2013	120,228/13
DME TAG Canceled	71,969/2014	71,865/14
Access Train Stakes 5,230 to 5,235	58,896/2015	58,893/15
Reconstruction of the West End of Tunnel 501	64,708/2015	64,687/15
Temporary relocation of EDP Bandeirantes transmission towers	67,557/2015	77,493/16
Relocation of access to Parque Primavera stake 5,265 to 5,295	117,360/2016	117,349/16
Regularization of the Site of Lot 05	23,430/2016	23,405/2016
Layout Adjustment between Stakes 12,653 to 12,868 + 6.5 - Lot 06	99,924/2013	99,918/13
DME Felício	76,618/2013	76,615/13
DME Small Bar	92,753/2015	92,667/15
OAE 603 Area Crossing	128,347/2013	128,346/13
Weighing Scale piles 6,286 to 6,319	94,128/2016	94,105/16
Condomínio Bosque São João	77,169/2015	77,160
DME Felício Enlargement	78,116/2017	78,114/2017
Relocation of access to Amarilis street	9,121/2017	9,088/17
Implementation of surface drainage at the height of the pile 6,176	112,790/2017	112,788/17
Access to the remaining areas of Lot 01 and 06	44,238/2018	44,235/18
Project Adjustment Part I	12,017/2014	10,871/14
Project Adjustment Part II	28,766/2014	28,759/14

<b>Table 02 - Environmental Recovery Commitment Term Denomination</b>	<b>Authorization No.</b>	<b>TCER No.</b>
Project Adjustment Part III	31,554/2014	31,524/14
Project Adjustment Part IV	71,566/2014	71,565/14
Synergy Excerpt	55,835/2016	55,806/16
Complementary Section of Synergy of Lot 06	116,303/2017	116,260/17
Retention Basin OAE 108 - Lot 01	Awaiting Issuance;	Awaiting Issuance;

For the resumption of the RODOANEL NORTE implementation services, the CONCESSIONAIRE will be responsible for transferring the ownership of all licenses, authorizations and terms of commitment, subject to the terms of the AGREEMENT and ANNEXES. The CONCESSIONAIRE will also be responsible for obtaining all environmental licenses, authorizations, ASV's, grants, etc. complementary projects, which may prove necessary for the execution and/or resumption of the work, according to the original executive projects (or alternatives already approved or alternatives to be approved by ARTESP), as well as the construction sites, industrial units and other support areas necessary for the completion of the project.

### **3. CONSTRUCTION STAGE ENVIRONMENTAL PROGRAMS (BEP - BASIC ENVIRONMENT PLAN)**

A BASIC ENVIRONMENTAL PLAN - BEP was developed by the GRANTING AUTHORITY, aiming to meet all the requirements established in the Environmental Licenses (LP and LI's) during the CONSTRUCTION PERIOD, to ensure compliance with all the measures necessary for the implementation and execution of the works.

All costs arising from the continuity of implementation of the BASIC ENVIRONMENTAL PLAN will be the responsibility of the CONCESSIONAIRE.

The CONCESSIONAIRE shall follow the BASIC ENVIRONMENTAL PLAN prepared by the GRANTING AUTHORITY, as detailed below. Any alteration or presentation of an alternative BASIC ENVIRONMENT PLAN must be justified and submitted, at your own risk, to CETESB's approval.

Additionally, the CONCESSIONAIRE will be responsible for implementing the Social and Environmental Management Plan (SEMP) in accordance with the provisions of the FINAL INSPECTION REPORT, containing the risk and impact mitigation actions eventually identified in the Study of Identification and Assessment of Social and Environmental Risks and Impacts (ESIA), according to the scope defined in ANNEX 18, in order to complement the BASIC ENVIRONMENTAL PLAN. These documents will be incorporated into the Environmental and Social Management System (ESMS), disciplined in ANNEX 06, which must be prepared and implemented by the CONCESSIONAIRE as a condition for completing the PRE-CONSTRUCTION PERIOD.

#### **3.1. BEP Programs**



Below is a brief description of the Programs contained in the BASIC ENVIRONMENTAL PLAN-BEP, which should be interpreted considering the current proposal for the Sponsored Concession of RODOANEL NORTE:

P1.01 - Institutional structuring program for the socio-environmental management of the RODOANEL NORTE

P1.02 - Detailing of the engineering project to meet environmental conditions

P1.02.1 - Contaminated Area Management Subprogram

P1.03 - Complementary environmental licensing program for works

P1.04 - Program for the incorporation of environmental conditions in the public notices for contracting works

P1.05 - Prior social communication program

P2.01 - Construction continuous environmental planning program

P2.01.1 - Labor mobilization subprogram

P2.02 - Environmental adequacy program for construction procedures

P2.02.1 - Erosive and silting process control subprogram

P2.02.2 - Subprogram for traffic control in the works

P2.03 - Program for the operationalization of environmental management systems by the contractors

P2.03.1 - Professional training sub-program

P2.04 - Environmental construction supervision and monitoring program

P2.04.1 - Subprogram for monitoring the quality of surface waters

P2.04.2 - Groundwater monitoring subprogram

P2.04.3 - Subprogram for monitoring particulate matter in critical receivers

P2.04.4 - Noise monitoring subprogram on work fronts and critical receivers

P2.04.5 - Vibration monitoring subprogram

P2.04.6 - Subprogram for minimizing interference in relationships and flow between neighborhoods

P2.04.7 - Subprogram for solid waste management (SSWM)

P2.05 - Work safety and occupational health program in construction

P2.06 - Environmental emergency response program during construction

P2.07 - Environmental planning and control program for deactivation and/or temporary interruption of work fronts

P2.08 - Expropriation and compensation program, conducted by the GRANTING AUTHORITY

P2.08.1 - Subprogram for monitoring mining activities

P2.09 - Social compensation and involuntary resettlement program

P2.10 - Program for prospecting, archaeological rescue and provision of archaeological, historical and cultural heritage

P2.11 - Compliance with the Environmental Recovery Commitment Terms - ERCT

P2.11.1 - Subprogram for the execution of compensatory plantations and other forest restoration practices

P2.11.2 - Subprogram to support forest restoration projects

P2.11.3 - Subprogram for the expansion of protected areas

P2.12 - Social communication program during construction

P2.13 - Support program for protected areas

P2.14 - Flora and fauna conservation program

P2.14.1 - Flora rescue program during construction

P2.14.2 - Program for scaring away and rescuing fauna during construction

P2.14.3 - Subprogram for monitoring domestic animals during construction

P2.14.4 - Fauna crossings planning and monitoring subprogram

P2.15 - Program of relations with municipal governments during construction

P2.16 - Forest and fauna monitoring in areas adjacent to the Parque Estadual da Cantareira - PEC

P2.16.1 - Forest monitoring subprogram in areas adjacent to the Parque Estadual da Cantareira - PEC



P2.16.2 - Forest and fauna monitoring in areas adjacent to the Parque Estadual da Cantareira - PEC

P2.17 – Monitoring program aimed at populations of howler monkeys (*Alouatta Clamitans*) in the area of Fazenda Santa Maria.

### 3.2. Environmental Control Instructions - ECI's

The CONCESSIONAIRE is responsible for carrying out the work in accordance with the Environmental Control Instructions (ECI's) applicable to any and all work fronts, as well as to the entire support area. The ECIs are detailed in Program P2.02 - Environmental Adequacy of Construction Procedures.

### 3.3. Management of Environmental Risks and Emergencies

The CONCESSIONAIRE shall prepare and implement an Environmental Risk Management Plan. It must carry out a Preliminary Risk Analysis - PRA for all activities planned during the execution of the works.

The CONCESSIONAIRE must be prepared to effectively respond to environmental emergencies that arise during the CONSTRUCTION PERIOD. To do so, it must comply with Program P2.06 - Response to Environmental Emergencies During Construction.

The CONCESSIONAIRE must prepare, review, implement, fund and operationalize Emergency Action Plans (EAP's), covering all accidental hypotheses that may occur as a result of the contracted services. The general elements of the Emergency Action Plan for each accidental hypothesis are contained in the annexes of the P2.06 Program - Response to Environmental Emergencies During Construction.

### 3.4. Flora and Fauna Conservation Program

The CONCESSIONAIRE shall comply with the Flora and Fauna Conservation Program (P2.14) in order to mitigate the negative environmental impacts on the flora to be suppressed and the fauna affected with the implementation of the enterprise, considering all subprograms.

Within the scope of the Flora Rescue Subprogram during the CONSTRUCTION PERIOD, the CONCESSIONAIRE, if necessary, will implement and maintain a "waiting nursery" to attend to the rescue, relocation and monitoring of rescued flora, with the function of temporarily housing the individuals of different species rescued as a result of the plant suppression of the work. The species to be rescued must be especially those that are vulnerable, rare or endangered. It must guarantee the maintenance of the rescued individuals alive until the moment of final destination, when the relocation is carried out.

The CONCESSIONAIRE shall carry out the rescue and relocation of individuals saved in the suppression of vegetation, following the guidelines of Subprogram P2.14.1. To this end, the CONCESSIONAIRE must provide the amount of skilled and sufficient labor to carry out the rescue and relocation of individuals rescued during plant suppression, as well as provide the necessary inputs for the rescue, relocation and monitoring of individuals relocated.

The organic layer of soil and litter (top soil) must be removed in areas of suppression of vegetation, at a depth of 10 cm to 50 cm from the surface (horizons O and A), and stored in a storage container until it has a specific location to be retrieved or forwarded directly to a final destination. The material can be used in forest restoration projects or donated for the same purpose, transporting the organic layer of soil and litter (top soil) to the final destination.

Within the scope of the Fauna Rescue Subprogram during the CONSTRUCTION PERIOD, the CONCESSIONAIRE will be responsible for maintaining a veterinarian, who will be responsible for the rescue and reception of the animals. It will also have to build and maintain two "Screening Rooms", one for the care of wild animals rescued during the works and the other for the Care of Domestic Animals, which must be at least 75m apart to avoid the transmission of diseases, as well as equip it with all the necessary materials and equipment.

Within the scope of the subprogram for planning and monitoring fauna crossings, as well as the implementation of the guidance fences included in the Works budget will be the entire responsibility of the CONCESSIONAIRE. If there is a need to implement new fauna passages and guidance fences, the CONCESSIONAIRE shall perform them at its own expense.

Within the scope of the Domestic Animal Monitoring Subprogram during the CONSTRUCTION PERIOD, in addition to the screening room, the necessary labor must be provided to adopt all measures to control domestic fauna in the construction areas, to be coordinated by vet.

The CONCESSIONAIRE shall provide the necessary amount of labor, duly trained and qualified, providing a vehicle for the transport of the team, equipment and individuals rescued throughout the work.

### 3.5. Implementation of fauna overpasses in the Parque Estadual da Cantareira (PEC)

Regarding the Fauna Crossings Planning and Monitoring subprogram, 14 fauna passages are planned to be implemented along the roads that cross the Parque Estadual da Cantareira. These crossings were conceived with the aim of mitigating the barrier impact created by the implementation of the highway, in order to facilitate the movement of fauna within the park with greater safety.

The installation of fauna overpasses was determined by IBAMA and Fundação Florestal in the environmental licensing process.

The CONCESSIONAIRE shall design and build the fauna overpasses at 14 specific points located along the Santa Inês and Roseira Roads included in the PEC. The location of these passages is detailed in **Table 03** below.

**TABLE 03 - GEOGRAPHIC COORDINATES OF PRE-SELECTED POINTS FOR INSTALLATION OF FAUNA OVERWAYS (UTM COORDINATES, ALEGRE STREAM)**

POINT	COORDINATES	
	X	Y
1	331040	7406693
2	330978	7406916
3	331200	7407081
4	331282	7407746

5	333036	7410296
6	333119	7410190
7	334206	7409758
8	334264	7409551
9	334274	7409353
10	334299	7409184
11	334507	7408749
12	334525	7408618
13	334499	7408423
14	334567	7408052

### 3.6. Shutdown, Deactivation and/or Temporary Interruption

In the event of need, for justified reasons of force majeure, any stoppage, deactivation and/or temporary interruption of work fronts, the procedures provided for in the Environmental Control Instructions (ECIs) that are part of the Environmental Adequacy Program for Construction Procedures must be observed (P2.02), as well as complying with all the measures established in the P2.07 Program - Environmental Planning and Control of Deactivation and/or Temporary Interruption of Work Fronts, in order to guarantee the preservation of partially performed services and prevent socio-environmental damage during the period of stoppage.

### 3.7. Environmental Supervision Procedures

To ensure the correct implementation of the framework of environmental measures and programs foreseen during the CONSTRUCTION PERIOD of the RODOANEL NORTE, the CONCESSIONAIRE must have an internal structure for environmental management and supervision, and may rely on specialized companies.

ARTESP will act as the coordination forum for all environmental and social aspects related to the works.

The environmental supervision will act in order to verify the full compliance with all the Environmental Control Instructions of the Works that are part of P2.02 - Environmental Adaptation Program of Constructive Procedures and in the production of documentary evidence of the fact. The basic methodology and organizational structure to meet these objectives are detailed in Program P2.04 – Environmental Construction Supervision and Monitoring Program, which applies to all works, including support areas, relocations of local roads, temporary deviations, service paths, relocation of interferences, accommodations or dormitories, among other facilities and places necessary for the execution of the works.

The supervision will carry out systematic inspections in the management system, in the service locations and other locations used by the CONCESSIONAIRE in order to detect any discrepancies in the application of the requirements established in the contract and in the environmental programs.

Problems detected by environmental supervision will give rise to Corrective Action Recommendations (CARs) or, in the most severe cases, to Notifications of Non-Conformity (NNCs). These documents will give rise to the elaboration, by the CONCESSIONAIRE, of Corrective Action Plans (CAPs), with deadlines for compliance pre-established by the environmental supervision.

The CONCESSIONAIRE must allow free access to the supervisory team, unions of the category and public inspection bodies, for inspections and inspections at the work or service site, as well as in the documents and records contained in the implemented management system.

In cases of non-conformities found in inspections, supervisions and audits, a notification will be issued which will be processed in the manner regulated by the AGREEMENT and by ANNEX 11.

As proof of the corrective actions taken in order to comply with notifications of non-compliance, the CONCESSIONAIRE must present a document informing the appropriate service, with a description of the action taken, photographic record, the actions planned to avoid recurrence, among others.

### **3.8. Internal Inspections (Work Safety)**

The CONCESSIONAIRE is responsible for carrying out inspections and routine evaluation of the equipment and services performed in order to detect deviations which, in turn, will indicate the necessary measures to control and reduce the observed risks.

When starting any service, prior inspections must be carried out to verify the conditions of the work environment and planning of preventive and control measures.

Inspections must be carried out continuously on the work fronts to verify compliance with the provisions of the enterprise's Social and Environmental Programs, Regulatory Norms and environmental and labor legislation.

For detected non-conformities, a report must be opened for treatment and an action plan to monitor its management. Inspection reports must be made available for consultation by ARTESP, and a schedule for handling non-conformities must be attached to the report.

The activities carried out by subcontracted companies must be supervised by the CONCESSIONAIRE's team with the same rigor as the activities performed by its direct staff.

### 3.9. Environmental Monitoring

In compliance with the Construction Environmental Supervision and Monitoring Program, the CONCESSIONAIRE is responsible for carrying out the monitoring provided for in the BEP, continuing the monitoring already carried out, of which the following should be highlighted:

- i. Surface Water Quality Monitoring;
- ii. Noise Monitoring at Work Fronts and Critical Receivers;
- iii. Forest Monitoring in Adjacent Areas;
- iv. Monitoring of Wild Fauna in Adjacent Areas, including monitoring directed towards Populations of Howler Monkeys (*Alouatta clamitans*) in the Fazenda Santa Maria Area.

## 4. ENVIRONMENTAL AND SOCIAL WORKS MANAGEMENT PLAN

The CONCESSIONAIRE, before the start of the works, will be obliged to submit to ARTESP an Environmental and Social Management Plan for Works containing the details of all management, supervision and monitoring activities, in line with the applicable requirements of the PERFORMANCE PARAMETERS.

A detailed report of the referred management, supervision and monitoring activities shall be submitted monthly to ARTESP.

All costs related to the implementation of the aforementioned Environmental and Social Management Plan for the Works are the responsibility of the CONCESSIONAIRE.

## 5. COMPLIANCE WITH LICENSING CONDITIONS AND INSTITUTIONAL COMMITMENTS

The CONCESSIONAIRE will be responsible for complying with all the terms previously entered into necessary to obtain the Licenses already obtained, regardless of the current situation of implementation/performance of these. Any new term necessary together with the institutions will also be the full responsibility of the CONCESSIONAIRE.

Among the obligations provided for in the environmental licensing, the following should be highlighted:

### 5.1. Preparation of the Geoparque Ciclo do Ouro Study Plan

The route selected for the Northern Section of Rodoanel crosses the Geoparque Ciclo do Ouro region and, in accordance with what is recommended in the environmental licensing process, through Technical Requirement No. 64 of the Previous Environment License of the Northern Section Rodoanel, the CONCESSIONAIRE shall "*Present the Geoparque Ciclo do Ouro Study Plan, containing a detailed diagnosis of the features and geosites associated with it, especially those relating to archaeological, historical and cultural aspects, approved by the Secretary of the Environment, of the City of Guarulhos, in compliance with Opinion No. 001 /2011/RODOANEL*".

## 5.2. Support Program for the Parques Bordas da Cantareira (SVMA)

During the environmental licensing process, it was established that the project would provide support for the implementation of the Parques Bordas da Cantareira project.

The execution of this action must be carried out by the CONCESSIONAIRE.

## 6. ENVIRONMENTAL LIABILITIES OF WORKS

In the construction works of the North Section Rodoanel there are environmental liabilities that must be identified and recovered by the CONCESSIONAIRE. The complete survey of existing environmental liabilities must be carried out pursuant to ANNEX 18, and the CONCESSIONAIRE is responsible for recovering them, pursuant to ANNEX 18, through ECONOMIC-FINANCIAL REBALANCE in relation to liabilities that have not been identified in the ANNEXES and APPENDICES, but that have been identified in the INSPECTION REPORT.

Among the main environmental liabilities already identified, the following should be highlighted:

### 6.1. DME Felício recovery

DME Felício, located at Estrada da Parteira, 200 - Guarulhos, was licensed according to CETESB Process No. 198/2013, Authorization No. 76.618/2013, later expanded according to Authorization No. 78.116/2017, as an area for the deposit of surplus material for the works. During the operation of the area, a geotechnical accident occurred, which caused the rupture of the dike and the slipping of material onto the neighboring property.

Regardless of the judicial and administrative proceedings, which are the responsibility of the GRANTING AUTHORITY, the CONCESSIONAIRE will be responsible for carrying out the recovery actions in the area.

### 6.2. Recovery and closure of support areas (Construction sites, AEs, DMEs and service paths)

Within the scope of the works on the Northern Section of the Rodoanel, several support areas were used, such as construction sites, surplus material deposits (SMD), loan areas (AE), in addition to the use of public roads as service paths, whose recovery was committed and is pending.

The recovery and closure actions of these areas will be the responsibility of the CONCESSIONAIRE.

### 6.3. Recovery of areas under the OAEs

It is planned to carry out services for the recovery of areas under the OAEs - special works of art on the Northern Section of the Rodoanel, which were built in the first phase of the works and which did not receive reconfiguration services, such as removal of service paths and of eventual debris, reconfiguration of the topography and the implementation of vegetal cover, through hydroseeding or planting of grass in plates.



These procedures seek to avoid erosion and promote the vegetation covering of the areas. The recovery and connection between the significant forest fragments intercepted by the route must be carried out, especially the section of Fazenda Santa Maria.

The recovery actions will be the responsibility of the CONCESSIONAIRE.

#### **6.4. Recovery of the service path in the Parque Estadual da Cantareira – PEC (SABESP Club)**

For the works on Lot 3 of the Rodoanel, it was necessary to use an existing internal road in the Parque Estadual da Cantareira – PEC, authorized according to Technical Information PEC nº 06/2013. Initially, it was planned to recover and remove this path at the end of the works.

It so happens that Fundação Florestal is interested in keeping the service path as it is, as it is interested in using it for monitoring, easy access in case of fire and other demands of park management. In view of this, a meeting was held on 10/09/2018 between Fundação Florestal, DERSA, Environmental Supervision and Works Supervision, where it was agreed to maintain the service path, subject to the implementation of two new gates (according to the DERSA PP-DE standard project -L03/011), one at each end of the path; installation around 100 meters of wire (according to the PPEG-DE-L03/002\_B project) where the smooth wire must be replaced by barbed wire and install 2 signposts, informing the access restriction and that the area belongs to the PEC, according to layout to be provided by FF.

In compliance with the requested guidelines, Fundação Floresta will issue a document stating that the Technical Information PEC No 06/2013 has been complied with.

The actions provided for in this agreement must be performed by the CONCESSIONAIRE.

#### **6.5. Survey and recovery of other liabilities**

In general, the occurrences verified inside the RIGHT-OF-WAY, such as, for example, erosion processes, signs of instability in cut and fill slopes, obstruction of drainage devices, lack of maintenance of the vegetation covering, among others, cannot be separated and characterized as environmental liabilities, since they are an integral part of the completion of the works that are the object of the CONSTRUCTION PERIOD. These liabilities must be eliminated until the conclusion of the IMPLEMENTATION WORKS (which may extend to the beginning of the operation) as an integral part of the construction activities to be performed by the CONCESSIONAIRE. Therefore, these situations were considered as part of the works, and their elimination a direct and inevitable consequence of the very completion of the IMPLEMENTATION WORKS.




In any case, the CONCESSIONAIRE, as soon as it takes over the administration of the ROAD SYSTEM, must carry out a detailed survey of all environmental liabilities of the RODOANEL NORTE, such as erosion, subsidence, landslides, silting, drainage problems, irregular occupations in the right-of-way, TCRA'S or similar, environmental licensing processes or highway construction works, not yet completed (totally or partially), pursuant to ANNEX 18. The maximum period for recovery and/or fulfillment of liabilities is the period for completion of the IMPLEMENTATION WORKS and start of operation of the ROAD SYSTEM.

All responsibility related to the mitigation of environmental liabilities previously identified in ANNEX 24, in this APPENDIX and/or generated during the implementation of the works will be of the CONCESSIONAIRE, which must carry out all necessary recoveries at its own expense.





**Table 04** shows the situations raised in ANNEX 24, which are considered environmental liabilities.



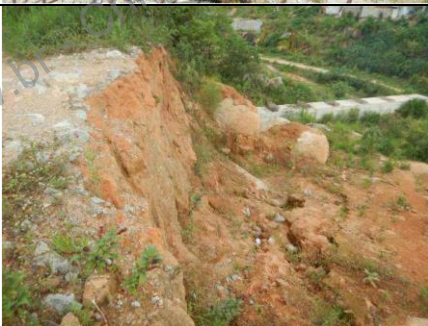
**Table 04 - Environmental Liabilities Identified by IPT and CETESB**

Code	Location	Photo	Description	Quantity	Capex (R\$)
R200-E250	Stake 250-Branch 200		Irregular waste disposal	Area with waste = 530 m <sup>2</sup> Volume = 210 m <sup>3</sup>	18,900.00
E1170	stake 1170 Vila Santo Antônio São Paulo		Irregular disposal of waste in the construction area	Area with waste = 40 m <sup>2</sup> Volume = 16 m <sup>3</sup>	1.440,00
E1182	Stake 1182 Close to R. Jardim do Éden Parque Taipas São Paulo		Downstream watercourse silting caused by soil entrainment from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Area with waste = 80 m <sup>2</sup> Volume = 32 m <sup>3</sup>	800.00

**Table 04 - Environmental Liabilities Identified by IPT and CETESB**

Code	Location	Photo	Description	Quantity	Capex (R\$)
E1188	Stake 1188 close access to the Taipas district		Irregular waste disposal	Area with waste = 300 m <sup>2</sup> Volume = 120 m <sup>3</sup>	10.800,00
E1190	Stake 1190 Travessa Cândido Nazaré		Irregular waste disposal	Area with waste = 200 m <sup>2</sup> Volume = 80 m <sup>3</sup>	7,200.00

**Table 04 - Environmental Liabilities Identified by IPT and CETESB**




Code	Location	Photo	Description	Quantity	Capex (R\$)
E1198	Stake 1190 Side watercourse to Travessa de Davi		Downstream watercourse silting caused by soil entrainment from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Silted area = 160 m <sup>2</sup> Volume = 48 m <sup>3</sup>	1,200.00
E1275	Stake 1275 Watercourse downstream of OAE-109 – near Hugo Ítalo Merigo Street - São Paulo		Downstream watercourse silting caused by soil entrainment from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Silted area = 200 m <sup>2</sup> Volume = 60 m <sup>3</sup>	1,500.00
E1315	Stake 1315 Vista Alegre stream near Jardim Damascene São Paulo		Sedimentation in the Vista Alegre stream caused by soil carryover from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Silted area = 500 m <sup>2</sup> Volume = 150 m <sup>3</sup>	3,750.00



**Table 04 - Environmental Liabilities Identified by IPT and CETESB**

Code	Location	Photo	Description	Quantity	Capex (R\$)
E2165	Stake 2165 Bispo Stream downstream of the OAE-203 – parallel to the Sede - São Paulo		Sedimentation in the Vista Alegre stream caused by soil carryover from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Silted area = 300 m <sup>2</sup> Volume = 30 m <sup>3</sup>	2,750.00
R440- E3030	Stake 3030 of branch 449 Trevo Fernão Dias		Irregular waste disposal	Area with waste = 600 m <sup>2</sup> Volume = 240 m <sup>3</sup>	21,600.00
E4417	Stake 4417 Next to Viela Gregório - Guarulhos		Irregular waste disposal	Area with waste = 1,100 m <sup>2</sup> Volume = 550 m <sup>3</sup>	49.500,00

**Table 04 - Environmental Liabilities Identified by IPT and CETESB**

Code	Location	Photo	Description	Quantity	Capex (R\$)
E5370	Stake 5370 Saboó Road - Jardim São João - Guarulhos		Irregular waste disposal	Area with waste = 250 m <sup>2</sup> Volume = 100 m <sup>3</sup>	9.000,00
E6005	Stake 6005 Watercourse near the Bananal road - Guarulhos		Downstream watercourse silting caused by soil entrainment from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Silted area = 300 m <sup>2</sup> Volume = 90 m <sup>3</sup>	2.250,00
E6080	Stake 6080 Tributary of Ribeirão Tanque Grande - Vila Rica - Guarulhos		Sedimentation in the Vista Alegre stream caused by soil carryover from the erosion of the Rodoanel slope, resulting from the absence or insufficiency of provisional drainage measures	Silted area = 1500 m <sup>2</sup> Volume = 450 m <sup>3</sup>	11,250.00