

**Skhodnya GRAND Ltd.**  
**Tea & Coffee Packaging Plant**  
**EHS Due Diligence**

**DRAFT REPORT**

October 2008

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# 1. Summary and Findings

## Introduction

WS Atkins was commissioned by EBRD to undertake a Health, Safety and Environmental audit of Skhodnya Grand Ltd tea and coffee packing facility, located near Moscow, Russian Federation (further referred to as Skhodnya Grand). The audit was conducted in September 2008.

The principal objectives of the audit were to provide an overview of the Health & Safety and Environmental performance of the company. The facility review involved discussions with senior and technical management, a walk through of the facility and a review of relevant documentation provided by the Grand company. These review did not involve any intrusive sampling or analysis.

## Corporate issues and management systems

The company does not maintain any certified management system, such as ISO 9001, 14001, 22000 (food safety) or OHSAS management systems, although initial training and several procedures which are included in the scope of HACCP were introduced. Implementation of Environmental and Work Safety Management Systems is recommended, although not very popular in Russian Federation.

The Grand company has dedicated persons responsible for environmental and health & safety issues. This is supplemented by a small laboratory performing operational product quality monitoring. No environmental or OHS measurements are conducted by the company; all the environmental emissions and occupational exposure levels are monitored by external companies.

The company prepares reports for the Authorities in the form required by Russian law. This also includes reporting related to fees paid. No voluntary environmental reporting, available to the public takes place.

Implementation of Environmental Management System (like ISO 14001 based) and Safety Management System (like OHSAS based) are recommended. Certification by independent international organisation should be taken into account.

## Site Sensitivities

The main site is located in central part of Skhodnya town. It adjoins other industrial developments from the west and east, residential areas from the north and a railway line to the south. The closest residential areas are located about 50m N from the sites' fence. River Skhodnya is found approximately 200m north-east from the site. We have received information that there should be a 50 m sanitary "protection zone" established around the facility (or emitters) but it is reportedly fully enclosed within the company premises.

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There are no ecologically protected areas such as Ramsar sites in close vicinity of the Skhodnya Grand facility – the closest Ramsar area is Oka and Pra Rivers floodplains, found app. 200 km east south-east from Skhodnya.

According to the information received during the audit, the historic activities at the site had limited potential for ground and groundwater contamination. This was confirmed by Grand by limited soil contamination assessment conducted during overtaking of the site in 1999. However WS Atkins considers that the investigation was too limited and does not fully confirm that the site is free from contamination, thus, it is our opinion, that this issue should be further investigated for verification of the previous findings. Site sensitivity for migration of contaminants can be assessed as low, due to the geological structure of the ground.

### **Compliance with relevant environmental regulations**

Based on information obtained during discussions with the site management and documents presented during the audit, in our opinion there are currently no major non-compliance issues which would be associated with significant financial implications.

The company possesses all the required permits and prepares reports for the Authorities in the form required by Russian regulations. This also includes reporting related to fees paid. No voluntary environmental reporting, available to the public takes place, although Skhodnya Grand operations' environmental impact is generally perceived as low.

Given current Russian legislation, it is our opinion that there are no major risks associated with the company's assets and operations, which could have significant financial, legal or reputation implications.

There are no European Union regulations applicable directly to Schodnya Grand plant, as the production profile and volume do not classify the plant as an IPPC installation. The only applicable requirements apply to Health and Safety management at the site and general good practice recommendations and Environmental, Health, and Safety guidelines for Food and Beverage Processing issued by International Finance Corporation in April 2007. It is our considered that the company is in general compliance with all the applicable requirements, although some minor issues will need improvement to demonstrate full compliance.

### **Environmental issues**

Overall level of environmental risks associated with the company is judged to be low. The general technical level and standard of housekeeping at the sites is good, however some areas need improvement.

According to the verbal information from site representatives, there are no liabilities resulting from Russian regulations for environment protection (unpaid fees etc.), GOST standards for products and technical regulations. Company's staff has good knowledge of relevant Russian legislation and posses necessary documents and certificates for products.

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There are some instances of emission parameters breaches (air emission from boilers, quality parameters of wastewater and stormwater), which are ignored by the Company, as currently they are not associated with any significant environmental impact or financial risks. It should be stressed that this approach is unofficially approved by local authorities, as no improvement programmes have been imposed on Skhodnya Grand. It is considered that some minor investments in stormwater treatment might be required and some operational practices will need to be improved to achieve full compliance with permits conditions.

The major source of air emission at the site is the local heating plant used for heat and steam production. No major issues relating to emission from this installation are expected as it comprises three small gas-fired boilers only. Although recent monitoring indicated elevated concentrations of nitrogen oxides and carbon monoxide (comparing to permitted levels), it is viewed that simple adjustment of the boilers would allow reducing the emission parameters to comply with the permit conditions

Water and wastewater management appears to be adequate, and no major issues are expected in the future. The potential issue of concern is the quality of wastewater discharged to municipal sewerage system. Recent monitoring conducted by the Municipal Water and Wastewater company ("Skhodnya Vodocanal") indicated exceedance of allowed ammonia nitrogen, phosphates and Strontium concentrations. No further actions have been taken by the sewerage operator, thus Skhodnya Grand did not identify the origins of the exceedances. It is our considered opinion that the monitoring conducted by an independent, certified laboratory would not confirm the results presented by "Vodocanal", especially for Strontium concentration, which presence in wastewater could not be explained. Thus further investigation is recommended to assess the potential risk and resolve the issue (if confirmed).

It is our opinion that the only currently required investment would be installation of stormwater pre-treatment unit, as the quality of stormwater does not comply with discharge permit conditions. Concentrations of suspended solids and hydrocarbons exceed the very restrictive standard imposed in the permit. Installation of a sedimentation tank coupled with hydrocarbons separator will most probably be required in the short term (1-2 years). Cost of this installation is roughly estimated at 30-50 K Euro.

Waste management practices observed at the site appeared to be appropriate for the types of waste generated, separate collection and storage containers were provided where necessary. Waste documentation (contracts, certificates, waste transfer records) presented by the site management fully complied with Russian legislative requirements.

The risk associated with ground contamination at the site is judged to be low. The current Skhodnya Grand activities, as well as operations conducted at the site in the past had limited potential for significant soil contamination. As part of prudent ownership it might be recommended to conduct a limited intrusive soil investigation for verification purposes.

Limited volumes of Asbestos Containing Materials were identified at the site (mainly in insulation materials, but other uses are not excluded, e.g. asbestos-cement pipes). An asbestos survey is recommended to confirm and record the presence of ACMs.

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At the time of the site visit the company did not hold an inventory of PCB containing equipment. Based on information about types of capacitors used at the site, it should be assumed that they contain PCBs, however it was not possible to verify if the transformers were PCB-free. PCB issues should be further investigated.

No significant volumes of freons (Ozone Depleting Substances) used by the Company have been identified as no air conditioning or cooling systems were installed.

### **Occupational health and safety issues**

In general health and safety management at the site appears to be adequate, no significant issues of concern were reported by the company representative or observed during the site inspection. The only noteworthy deficiencies noted during the tour were general lack of emergency marks and signs and blocked access to fire – fighting equipment in some warehouses.

The documentation held by the company fully complies with the requirements of Russian regulations. The company developed occupational risk assessment for all the workplaces and conducts periodic monitoring of occupational exposure levels. Training provided to the employees proves to be effective, as no accidents have been reported since 2001. It should be noted that Russian Federation regulations do not require the company to register accidents which are not associated with sick leave or compensations paid. Thus no minor accidents and nearly-miss occurrences are reported in the register held by the company. This attitude should be changed to demonstrate full commitment of the company to H&S issues.

No significant investment plans for health and safety issues are envisaged. The company prepared H&S improvement programme, which included several organisational, technical, sanitary and prophylactic means. The main points of the plan include maintenance of equipment and modernisation/redecoration of the production halls (over 240 K Euro in total); obligatory insurance of the employees (24 K €), and compensations for heavy and hazardous work conditions (this applies to forklift operators working outside the buildings – due to low temperatures in winter and electric welders – for elevated concentration of ozone at the workplace (costs slightly over 20K €). Total costs foreseen for the entire 2007-2012 period were at the level of 320 K €.

No claims regarding compensations for accidents or occupational diseases were reported.

### **Investment plans**

No detailed data concerning planned investments details, decisive for the assessment of environmental impact, were available during the site visit. WS Atkins was informed that the investment programme will include installation of additional packaging machines and potential construction of a new warehouse.

The Project in early stage, i.e. its more concept than matured Development Plan and no technical details are known. No EIA studies or feasibility studies have been developed up to date. It is anticipated that the newly applied technologies will comply

with Russian and international environmental and occupational health and safety standards

Construction of the new warehouse will necessitate demolition of the old buildings at the site. Demolition works will be associated with temporal environmental nuisance, however detailed analysis should be conducted at the planning and designing stage of investment. It should be also noted that during demolition, the company should provide adequate H&S supervision over the contractors' operations, as the workers might be exposed to hazardous materials such as asbestos.

## 2. Legal Compliance

A summary of the current legal requirements for the site is presented below.

The following requirements were identified for the site:

Legislation / Regulation	Requirement	Permit Required	Permit Validity	Level of Compliance
Federal Central Region of Technological and Ecological Control Office in Moscow, permit no 2372 dated 06.05.2008.	Emission of pollutants to atmosphere	Yes	31.10.2011	Validity can be prolonged on the request of Grand
Ministry of Natural Resources of Russian Federation (MSK09199WE of 12.02.2002).	Special licence for use of underground water resource	Yes	01.01.2011	Validity can be prolonged on the request of Grand
State Sanitary Epidemiological Service – Main State Sanitary Doctor Decision No 50.76.2.M.000065.08.01 of 06.08.2001.	Conformation that groundwater well operates in line with legal regulations of Russian Federation	Yes	-	
Federal Central Region of Technological and Ecological Control Office in Moscow. No 18/v-07-15665/08 of 28.04.2008	Special licence for storm water discharge to Skhodnya river basin	Yes	09.06.2009	Limits are issued on annual basis and valid for a calendar year period. Exceedance of quality parameters reported.
Federal Central Region of Technological and Ecological Control Office in Moscow, permit No 18/0-06-18895/08 of 09.06.2008	Limits for solid waste generation	Yes	09.06.2009	Limits are issued on annual basis and valid for a calendar year period

As the Skhodnya Grand operations are not directly covered by EU regulations, it is viewed that only general Health and Safety requirements are applicable to the company. In our opinion, the company fulfils the requirements of the applicable H&S regulations, albeit some procedures should be improved to achieve full compliance with the standards. This applies mostly to reporting procedures, as they are different for Russian Federation and EU. The exposure levels for noise, vibration, concentrations of chemicals, Electro Magnetic Radiation, lighting (based on results of work place attestation conducted in 2007 and 2008) are within the Russian Federation and European standards.

### 3. Environmental Action Plan

No	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros) <sup>1</sup>	To be completed by the End of Year	Comments
<b>General environmental management issues</b>						
1	Implementation of ISO 14001, OHSAS 18001 and ISO 22000 (or HACCP) management systems.	Improved Management of environmental H&S and product issues at the plant	Best Practice	25.000	2009-2010	
2	Ground investigation to confirm lack of soil contamination	Potential long term liability	Best Practice	15.000	2009	
<b>Environmental issues</b>						
3	Establish direct protection zone around the groundwater well used by the plant (15m radius)	Non-compliance with respect to Water Act	Direct requirement of Russian legislation	Administrative costs	2008 - 2009	potential need for re-location of the well, (high investment cost) -protection zone may extend outside the Grand property
4	Installation of sedimentation tank and hydrocarbon separator for stormwater pre-treatment. Tests of stormwater quality.	Potential issues with respect to Water Permit	requirement of Russian legislation	20.000-40.000	2009-2010	
5	Identification of sources of exceeded: ammonia nitrogen, phosphates and especially Strontium in wastewater discharged to municipal wastewater network. If the results of independent analysis confirm the presence of contaminants, there are several actions which should be undertaken by the company: <ul style="list-style-type: none"> <li>- monitoring of wastewater network for leakages/sediments accumulation;</li> <li>- development of an action programme to reduce discharges;</li> <li>- potential need to consider installation of a pre-treatment facility</li> </ul>	Potential issues with respect to the contract, increased fees for the discharge	Contract conditions	1000 or 20-50 K if concentrations are confirmed	2008-2009	It is recommended to verify the analysis results, as in our opinion there is no reasonable justification for the exceedance of allowed concentrations.

<sup>1</sup> The costs are given for guidance only and indicate the possible magnitude of expenditure, however, actual costs can be calculated at the design stage which will take account of prior detailed studies (i.e. environmental assessments, field studies, envisaged changes of production, changes of law, innovation in technology etc.).

No	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros) <sup>1</sup>	To be completed by the End of Year	Comments
6	Conduct periodic monitoring and maintenance of the boilers to avoid exceeding of allowed parameters according to air emission permit	Potential exceedance of Emission Permit conditions	requirement of Russian legislation	Operational cost	On-going	Exceedance of NOx emission identified in 2008 and CO in 2007 indicate that the boilers require frequent adjustment.
7	Undertake asbestos review and prepare asbestos management plan. This should identify all ACMs at the site in whatever form and detail plans for minimising risk of exposure, safe removal and safe disposal.	Threat to human health and the environment.	Best Practice	5.000 – 10.000	2010	
8	Undertake PCBs review and identify all the PCBs containing equipment for future reference. Ensure proper disposal of obsolete equipment (mostly capacitors).	Threat to human health and the environment.	Best Practice	3.000-5.000	2010	
<b>Health and safety issues</b>						
9	Implement H&S improvement programme prepared by the company	Improved H&S status	Russian H&S regulations, best practice	320.000	2012	
10	Devise and implement an emergency response plan to include evacuation plans, route signage and staff training	Improved emergency response planning	Russian H&S regulations, best practice	Admin costs	2009	
11	Improve health and safety marking. Signs to comply with EU standards 92/58/EEC.	Improved management of health and safety issues and reduced accident rates.	Best Practice	5.000-15.000	2010	
12	Improvement of internal roads signs.	reduced risk of collisions	Best Practice	5.000 - 10.000	2010	
13	Implement detailed reporting of all accidents including near misses. This should include the analysis of accident circumstances like hour of work, availability of protective measures, analysis of reasons etc.	Need to avoid regulatory problems. Provision of realistic data for improvement planning.	Best Practice	Admin costs	Dec 2009	
14	Provision of adequate number of properly stocked first aid kits; subsequent monitoring of first aids kits to maintain adequate stock of equipment	improved H&S management	Best Practice	Admin costs	2009	
<b>Proposed development programme</b>						
15	Prepare inventory of the existing buildings, which are not used at present and decide about their future and develop a programme for their demolition or use.	In case of demolition – area for new development will be available	Good practice,	Operational cost	2008-2009	

No	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros) <sup>1</sup>	To be completed by the End of Year	Comments
16	<p>All new installations, extensions and infrastructure are to be structured to meet Russian law and IFC EHS Guidelines. This should include:</p> <ul style="list-style-type: none"> <li>➤ minimisation of water and energy use,</li> <li>➤ identification of emission sources and minimisation of all emissions</li> <li>➤ optimisation of heat transfer between various technological units;</li> <li>➤ implementation of energy efficiency measures</li> <li>➤ best practice OHS management of demolition and construction activities (including of contractors and sub-contractors)</li> <li>➤ Worker exposure limits for noise, dust, substances hazardous to health, and vibration</li> </ul>	<p>To ensure that new project minimises environmental impact. It should be ensured at all design stages that the new process complies with Russian legislation and IFC guidelines.</p>	<p><b>Best Practice</b></p>	<p><b>External experts support 5.000</b></p>	<p><b>2008-2012</b></p>	
17	<p>Conduct risk assessment for all new working places and obtain "certificates"; prepare safe working instructions</p>	<p>To reduce occupational risk</p>	<p><b>Best Practice</b></p>	<p><b>operational cost</b></p>	<p><b>2009</b></p>	
18	<p>Require companies who undertake outsourced production on behalf of Grand to comply at a minimum with Russian Federation environmental, OHS and labour standards</p>	<p>To reduce EHS and labour risks in supply chain</p>	<p><b>Best practice</b></p>	<p><b>Admin costs</b></p>	<p><b>2009</b></p>	

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## Appendix A. Audit Protocol

### Terms of Reference

- A.1 The main objectives of the environmental, health and safety due diligence audit (DDA) were to:
- ◆ Identify any environmental/health and safety liability issues, and any environmental and worker health and safety risks associated with past and current operation of the plant, particularly issues related to accident prevention, dangerous working conditions, air pollution and soil/ground water contamination.
  - ◆ Review any existing environmental, health and safety information on the plant undertaken for the Company, and identify and assess the conformity with relevant Russian and EU requirements for environment, health and safety.
  - ◆ Perform an environmental analysis to describe the planned upgrades, their environmental, health and safety impacts and their ability to conform to existing and pending Russian and EU requirements for environment, health and safety.
  - ◆ Prepare an Environmental Action Plan (EAP) to address any non-compliance with existing and pending Russian and EU requirements for environment, health and safety.
- A.2 The findings of the audit are documented in this report and recommendations are given in the EAP, including need for improvement of management, technical issues and requirement for further investigations.

### Audit Methodology

- A.3 The review focussed on current and future activities of Skhodnya Grand tea and coffee packing Plant in Skhodnya town, Russian Federation.
- A.4 When undertaking the audit, the key risk indicators that were considered included:
- ◆ Past and current potentially polluting activities, including the scale, extent and duration of activities;
  - ◆ Past and current use of substances with the potential to cause harm to human health and the environment;
  - ◆ Proximity of human receptors, for example, residential areas;
  - ◆ Nature of the surrounding land-use, with respect to the impact the facility could have had/could have in terms of human health, crops, domestic animals, etc.;
  - ◆ Groundwater vulnerability. This relates to the potential for pollution of the soil and thus groundwater beneath the facility.
  - ◆ Proximity of surface water courses;

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- ◆ Use of proximal water courses, for example, for potable supply, irrigation, watering farm animals;
  - ◆ Quality of surface water courses;
  - ◆ Proximity of ecological receptors which could be impacted by contamination migrating from the facility;
  - ◆ Past and current environmental non-compliance with national legislation and current EU directives, standards and regulation;
  - ◆ Past and recent pollution events;
  - ◆ Perceived risk of future environmental non-compliance (includes national and EU directives, standards and legislation);
  - ◆ Perceived risk of future occurrence of pollution events:
  - ◆ Health and safety incidents and accidents; and
  - ◆ Health and safety claims made against the company.

A.5 The review of the facility involved discussions with senior and technical management, a walk through of the facility and a review of any relevant documentation made available to us. These reviews are intended as top level reviews and did not involve great detail. Additionally the reviews did not involve any intrusive sampling or analysis.

A.6 The reviews addressed the following:

- ◆ Background and history of the site;
- ◆ Broad review of current process technologies and operating practices;
- ◆ Impact of EU driven legislation such as IPPC, Seveso, VOC, EU ETS etc.
- ◆ Review of environmental management practices;
- ◆ Existing water discharges and air emissions;
- ◆ Solid waste management and identification of significant waste streams;
- ◆ Description of waste, chemicals, fuel, and other storage areas;
- ◆ Occupational health and safety issues;
- ◆ Emergency response;
- ◆ Public interaction, including historical responsiveness to public comments, complaints and questions;
- ◆ Identification of any potential liabilities which may affect the Company e.g. soil and ground water contamination as a consequence of past and present operations, presence of PCBs in oil filled transformers, etc.;
- ◆ Proximity to environmentally sensitive areas on which the facility might impact.

### **Audit Programme**

A.7 The audit was undertaken between 29<sup>th</sup> of September – 1<sup>st</sup> of October 2008.

### **Audit Team**

A.8 The audit team consisted of the following Atkins Staff:

- 
- ◆ Piotr Syrczyński: Project Director. Technical review of deliverables
  - ◆ Józef Jabłoński: Lead Auditor of Grand facility.
  - ◆ Andrzej Andrusiewicz: Team Auditor of Grand facility.

### **Interviews**

A.9 The following persons were interviewed during the site visit:

- ◆ Borisov Alexander – General Director
- ◆ Vialov Aleksey – Managing Director,
- ◆ Marc Fornenkov – Chief Power Engineer
- ◆ Krasnova Galina – Product quality manager
- ◆ Zarubina Alexandra – Environment, Health and Work Safety manager
- ◆ Vladimirova Valentina – Manager of Human Resources Department

## Appendix B. Company Information

### Corporate Activities, Facilities and Assets

- B.1 Skhodnya Grand belongs to Grand group, which includes four tea and coffee packaging facilities in Moscow, Moscow Region and Irkutsk. Grand has direct trade relations with the largest producers of tea and coffee in Sri Lanka, India, China, Kenya, Germany, Spain, Brazil, Ecuador and Columbia.
- B.2 Production of the Skhodnya Grand company involves: packing tea imported from India and Sri Lanka into teabags and packets, packing of imported natural and instant coffee; storage and distribution of these products.

### Site Location

- B.3 Geographical coordinates of the Skhodnya Grand plant are 55°56'57.26"N and 37°18'22.92"E
- B.4 The site is located at Zheleznodorozhnaya street 8 in Skhodnya town, Khimki administrative district, Moscow province, central part of Russian Federation.

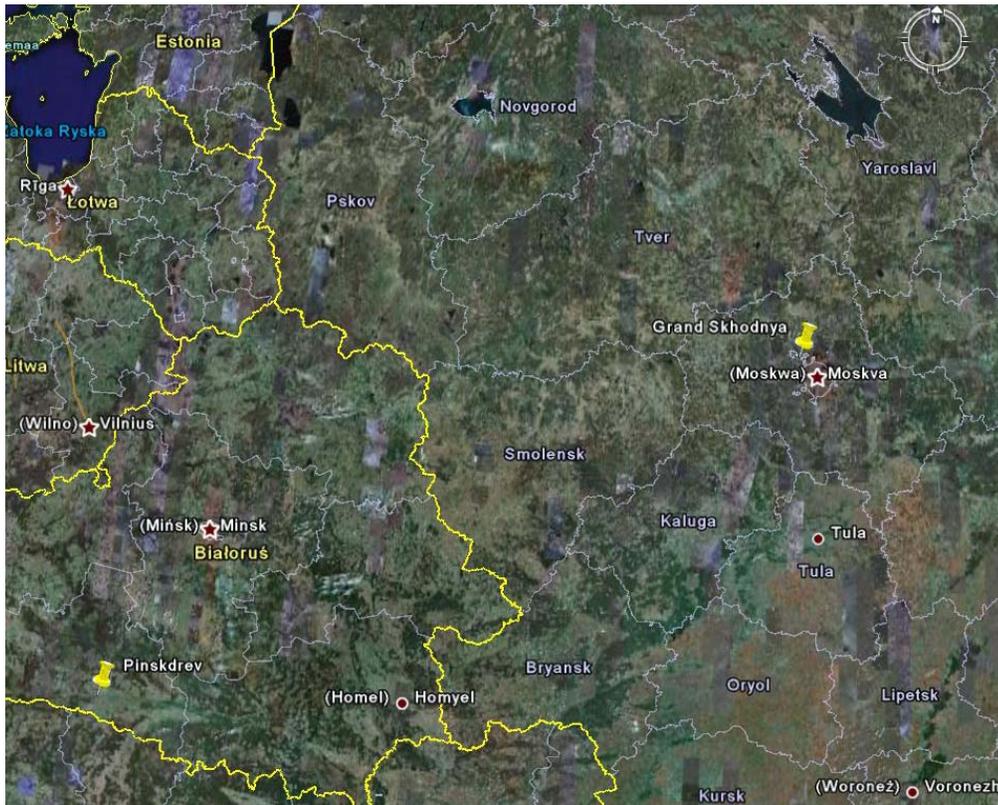


Fig. 1. Location of Skhodnya in Russian Federation

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- B.5 Skhodnya has an estimated population of approximately 20 000 residents. History of Skhodnya begins in 40-es of XIX century. Civic rights Skhodnya has obtained in 1961.
- B.6 The economy of the town today is reliant on the furniture production, glass industry, construction services and different size of local trade companies.
- B.7 There are two academies in Skhodnya area: Russian International Academy of Tourism and Khimki filial of Consumption Cooperation University.

### **Neighbourhood**

- B.8 Surrounding of the site is:
- ◆ From the South – the railway and then residential houses with gardens – low intensity residential area. The railway neighbouring Company site to the South is a line from Moscow to Sankt Petersburg, heavy duty one.
  - ◆ From the East the Company neighbours with fuel station and residential houses with gardens.
  - ◆ North part of the site neighbours gardens with houses and sportive stadium.
  - ◆ From the West Company neighbours with bakery site, and at some distance – residential houses with gardens and the Skhodnya railway station.
  - ◆ The closest houses are located in a distance of about 50 m.
- B.9 The residential areas are found relatively close to the site – just opposite side of the streets. There is an information on 50 m sanitary protection zone established around company emitter – natural gas fired heating plant, but no official documents proving this fact. This zone is reportedly fully enclosed in the industrial area, thus it has never been formally created.
- B.10 Proximity of residential houses could suggest risk of noise and odour nuisances. There is no data on noise and its propagation (measurements have been never done, however in our opinion, the risk of elevated levels of noise in the neighbourhood is limited due to the company location and neighbourhood). Reportedly there are no complains on nuisances caused by the Company.
- B.11 Reportedly there are no sensitive public areas within potential impact zone or generally in surrounding of the site.



**Fig. 2. Site neighbourhood, Grand facility marked red.**

### Site Facilities

B.12 Figure 3 below shows the site layout with numbers of the buildings/structures at the site:

- 1 and 2. "Old" transformer station with electrical switchboard
4. container storage
5. Security building
6. Tea bags production
7. Office building
8. mechanical workshop and fire brigade depot
9. heating pumps and generator
10. electrical workshop, telephone switchboard
11. compressor room
12. Kruger JV facility
13. boiler house
14. supplementary workshops and warehouses (
15. hot water tank
- 16.1. manual tea packaging
- 16.2. storage of materials
- 16.3. coffee storage

- 16.4. coffee packaging
- 17. groundwater well
- 18. "new" transformer station
- 19. abandoned pumping station for fire fighting systems (to be demolished)
- New warehouse (located south from the building No 19)

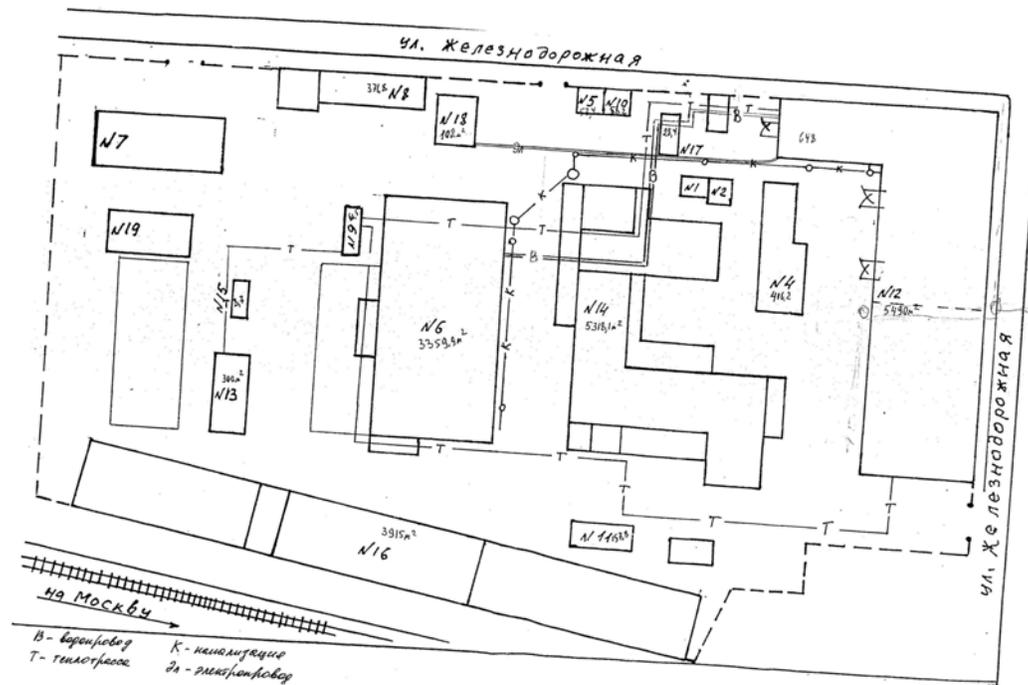


Fig. 3. Site layout.

### General Housekeeping

- B.13 Operations are carried out in several production halls located around the site (both production and auxiliary departments). Housekeeping and hygiene standards in the different units were generally good. Significant improvement was observed at new production lines. It is particularly related to some recently redecorated storage buildings.
- B.14 No major accidental releases of polluting materials, internally or externally, were reported and none were observed during the site inspection.

### Building Condition

- B.15 The production units are located in large halls constructed in 1920-ies. Some of the buildings have not been refurbished since that time and require demolition or substantial modernisation.
- B.16 Some existing buildings are not in use and are kept at the conditions as have been bought. No information on detailed plans related to their further use or demolition was available.
- B.17 The production and storage areas appear to be in good condition.

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### Current Site Operations

- B.18 The facility is packing tea and coffee imported mainly from India and Sri Lanka. Products are imported in bulk containers and packed at the site into small different sizes of packages. Tea mainly in sachets packed in small boxes (10, 25 and more sachets in box). Coffee – natural and instant is packed into different size small boxes, vacuum including. Packed products are distributed to the large selling organisation (supermarkets). Transport of the products is provided by the clients.
- B.19 Skhodnya Grand Ltd is listed as a one of five Russian largest companies in tea and coffee market. Company provides market with more than 150 differently named products – the best types of Indian and Ceylon tea – in sachets, granulated and in leafs, instant, ground and whole coffee as well as cacao and instant drinks (supplied by Joint Venture company with Kruger).
- B.20 Monthly production of the Skhodnya Grand facility is about 1000 t of product – tea and coffee (12 000 t/year). This constitutes of about 600 t/m tea and 400 t/m – coffee. About 30 % of tea is distributed in teabags. Instant coffee constitutes approximately 90 % of production.

### Site History

- B.21 The history of Grand Company:
- 1995 - The package of tea under trademark «GRAND» was launched.
  - 1998 - The first deliveries of instant coffee were made.
  - 1998 - Own tea and coffee packing manufacture started working in Mitino and Mozhaik.
  - 1999 - The first consignment of Indian rice was sold.
  - 2000 - The own tea factory began working in Skhodnya (Moscow region).
  - 2001 - New brands of instant coffee "Grand Classic", "Grand Premium", "Grand Extra" were launched. The product range was extended by new kinds of tea under trade mark "Grand Tiger" and "Sandal".
  - 2002 - New equipment for packing of tea bags was installed.
  - 2004 - The joint venture "Grand Kruger" began producing instant tea and coffee mix
  - 2005 - Grand was awarded the prestigious title of "Superbrand" by the International Board of experts.
  - 2006 - New brands: soluble freeze -dried coffee "Gold Grand", "Grand Cocoa", "Grand 3 in 1 Irish Cream coffee", "Grand 3 in 1" (flavoured coffee with the selection of caramel, nutmeg, brandy and amaretto flavours) were launched.
  - 2008 - The Colombian coffee «Grand PRADO» was launched
- B.22 Skhodnya Grand Ltd was created in the second half of 1999 and operates on a 4,52 ha site which was previously operated by upholstered furniture production company. All buildings have been bought from the previous owner which operated at the site from the end of 20-th up to end of 90-th of the last century.

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- B.23 According to information obtained during the audit, upholstered furniture production company produced different types of the furniture using semi-manufactured articles and no environmentally sensitive operations (like wood painting/lacquering or materials dying) were conducted at the site.
- B.24 Since its overtaking, the basic site layout and infrastructure have remained unchanged. There have been a number of site improvements, however majority of them were the installation/improvement of technological lines inside existing buildings. The only significant change in the site layout is a new warehouse constructed in 2007 in the area of former fire-fighting water tanks.

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## Appendix C. Environmental, Health and Safety Management

### Introduction

- C.1 Skhodnya Grand is a limited liability Company under Russian Federation laws, owned by Mr. Alexander Borisov.

### Organisation, Structure and Resource

- C.2 At present Skhodnya Grand Ltd operates as an individual site with all EHS roles and responsibilities dedicated at site level.
- C.3 Skhodnya Grand Ltd has dedicated environmental, health and safety specialist responsible for the management of environmental, health and work safety issues (subordinated to Chief Engineer).
- C.4 For the product quality control Company organised a small laboratory which employs 3 persons and is supervised by product quality manager.

### Management Systems and Reporting

- C.5 No formal management system has been established in Skhodnya Grand plant; however a number of instructions compliant with HACCP have been implemented. We were informed that implementation of ISO 9001 and HACCP systems is viewed as a future potential, as some of the corporate clients (like Auchan) have requested their suppliers to present relevant certificates.
- C.6 No formal reporting on environmental or health and safety performance is undertaken. No EHS information is available at company web site in the internet. It is recommended to start EHS reporting on annual basis to improve communication with external parties related to current performance and future developments. This should also ensure a transparency of environmental and OHS issues. The reports should be publicly available including internet.

### Environmental programmes

- C.7 We were informed that there were no environmental programmes prepared for the facility, as the operations conducted at the site do not require any major improvements. Thus the site management does not consider the environmental issues as a priority.
- C.8 There are some minor refurbishment/maintenance works planned that will have medium to long term environmental influence (e.g. improving internal

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roads' surface will result in longer exploitation of fork-lifts' tires and batteries, thus will decrease the volume of waste generated).

### **Environmental inspections**

- C.9 Skhodnya Grand is controlled by State Environmental Authority or/and State Sanitary Inspection once per year at average. Recent control took place in March 2008. The control protocol contained mostly general description of the site and included recommendations regarding lack of proper waste documentation (statistic data on waste generated, utilised, handed over to other organisations and deposited at municipal landfill).
- C.10 The implementation of these notes will be verified during the next review.

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## Appendix D. Local Environment

### Local Physical Geography

- D.1 Skhodnya Grand is located in Skhodnya town, Khimki administrative district, at the distance of about 25 km to the North-West from Moscow, Russian Federation capital City.

### Geology and Groundwater

- D.2 The description of the local geology is based on profile of the borehole used for extraction of the water from appr. 85-80 m level. Upper 4 m thick layer is formed from brown plastic clay, under which 11 m layer of sand exist. Below five thin (2 to 3 m thick – totally 11 m) layers of clay and sand exist under which there is 14 m thick layer of sand. Below this thick sand layer there is a thick layer (26 m) of boulder clay with phosphate rock inclusions. Ground water can be found there – static underground water level is at the depth of 56,5 m. Under builder clay layer are limestone layers with marl and dolomite inclusions which contain the main aquifer used for water abstraction by the company.
- D.3 Deep water, used for drinking as well as other purposes is taken from the main, deeper aquifer.
- D.4 Given the limited data, the assessment of the sensitivity of the site can only be approximate. The geological conditions of the site does not exclude ability for migration of any contaminants along the subsurface water flow, however main water aquifer seems to be insulated with thick layer of builder clay. Therefore the sensitivity of the site can be assessed as low. The risk for the shallow water layer is significantly higher as under upper thin clay layer lies a sand were potential migration velocity is high.

### Air Quality

- D.5 There is no heavy industry in the Skhodnya micro-region. Gas in almost the only source of energy and heat generation so the potential air pollution is not high. In past the area was mainly used as a recreational area for Moscow inhabitants.
- D.6 No monitoring data on environmental quality was available for the site or for Skhodnya town.

### Surface Water

- D.7 The closest water body is a Skhodnya river found approximately 200 m north-east from the site. Skhodnya river is a tributary of Moscow river. Skhodnya

river is used as a receiver of untreated storm water as well as treated wastewater from municipal WWTS. The distance from Skhodnya town to estuary is over 20 km. The River is potentially sensitive receptor of storm and waste water and is of some local ecological importance.

D.8 No data on water courses quality were made available.

### Protected Habitats

D.9 According to verbal information obtained from the company representative, there are no nature protection areas or reserves in the vicinity of the plant. No information of potential impact could be found in EIA studies.

D.10 Summary of sensitive receptors in the vicinity of the plant is presented below.

**Table D.2 - Potential Sensitive Receptors**

Receptor	Potential Sensitivity
Groundwater	Ground conditions are not well described although migration of contaminants appears to be unlikely (4 m thick layer of clays).
Sensitive, Specially Protected Areas (Ecological)	No information available for the area.
Humans	Residential areas are located in direct proximity to the site (across the Zeleznodaroznaya st.) app. 30 m from the plant boundary.
Surface Water	No significant water courses are impacted. Storm water from the Skhodnya Grand should be treated before discharge to Skhodnya river.
Other	None identified

### Local Communities and Stakeholders

D.11 The town Skhodnya has a population of around 20 thousands and has several industrial plants from which the furniture industry is a leading sector. Also glass industry plays important role in the region. Skhodnya Grand Ltd belongs to the five largest business companies in the Skhodnya region. There are some cultural and social organizations, which are more or less linked with the industrial companies (similar like Trade Unions) but no environmental NGOs were found.

### Sanitary protection zone

D.12 Skhodnya Grand has no officially established sanitary protection zone. In the Environmental Impact Study prepared in 2000, there is information that the site should have a sanitary zone with diameter of 50 m from the air emission

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sources and there is information that the pollution concentrations behind site borders are not exceeding allowed concentrations. However no official document establishing this protection zone has been presented and it is our opinion that there is no need to have the SPZ be established officially.

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## Appendix E. Environmental Issues

### Previous investigations and reports

- E.1 The company presented Environmental Impact Study prepared in 2000 which proved limited impact of the site operations on local environment. The study was prepared by “Kanon” Ltd. as a part of change of use application.
- E.2 At the time of the site overtaking by Grand, limited soil contamination investigations have been performed. Results of these investigations indicated that no contamination is present at the site.
- E.3 No other previous environmental reports were made available.

### Water Resources and Consumption

- E.4 The company uses water from municipal network. In addition company has its own deep well which is also used for potable water supply.
- E.5 Skhodnya Grand Ltd has undersigned contract No 21c of 01.01.2008 with Vodokanal Khimki for drinking water supply valid for one year with notation that this contract is automatically prolonged if non of involved party will not inform other on its dissolving one month before date expiring.
- E.6 Maximum contracted drinking water intake from Vodokanal Khimki network is 129,6 m<sup>3</sup>/d or 47300 m<sup>3</sup>/year.
- E.7 Internal water supply network has two connection points to municipal water supply network – one close to the administration building and second close to coffee packing building (both from Zheleznodorozhnaya street).
- E.8 As an additional source of drinking water supply company uses own deep well (depth of 150 m), located at the site, which operates usually in case if the pressure in municipal network drops below 2,5 atmosphere.
- E.9 Company has obtained permission issued by Ministry of Natural Resources of Russian Federation for underground drinking water intake (MSK09199WE of 12.02.2002) valid till 01.01.2011. Allowed under ground water intake is 24,6 thousand m<sup>3</sup>/year (67 m<sup>3</sup>/d). Validity of this permission can be prolonged on request of user. One of condition is that under ground water level can not drop below 80,5 m i. e. not more then 10,5 m below present level.
- E.10 Company has obtained Decision No 50.76.2.M.000065.08.01 of 06.08.2001 issued by State Sanitary Epidemiological Service – Main State Sanitary Doctor proving that this well operates in line with legal regulations of Russian Federation.

- E.11 Water consumption in last two years was at the level of:
- ◆ in 2007 – 20 476 m<sup>3</sup> (4 439m<sup>3</sup> from Vodokanal and 16 037 m<sup>3</sup> from own well)
  - ◆ 8 months of 2008 – 17 878 m<sup>3</sup> (8 406 m<sup>3</sup> from Vodokanal and 9 472 m<sup>3</sup> from own well).
- E.12 Water is generally used as potable water for Company staff, for cleaning equipment and floors, for sanitary needs and for heating station (hot water and steam production).
- E.13 There are no specific requirements for make-up water for production processes except of softening of water for heating purposes.
- E.14 The analysis of the water quality from Vodokanal network as for 17 April 2008 is presented in the table below.

Parameter	Unit	RF limits for potable water	Measured results
Smell		2	0
Taste		2	0
Colour		20	14
Transparency		1,5	0,87
pH		6 - 8	6,8
Oxygen demand	mg/l	5	0,96
Hardness total		7	5,4
Dry residue	mg/l	1000	320
Phenols	mg/l	0,25	0,0005
Oil products	mg/l	0,1	0,01
SAP (surfactants)	mg/l	0,5	0,01
Iron	mg/l	0,3	0,3

- E.15 The analysis of the water quality from deep well as for June 25-th 2008 is presented in the Table below.

Parameter	Unit	RF limits for potable water	Measured results
pH	-	6 - 9	7,4
Oxygen demand	mg/l	5	0,85.0
Ammonia	mg/l	12	0,23
NO2	mg/l	3	0.003
NO3	mg/l	45	5,1
Dry residue	mg/l	1000	575
Chlorides	mg/l	350	68,7
Sulphates	mg/l	500	82,1
Fe	mg/l	0,3	0,64
Cu	mg/l	1	0,003
Oil products	mg/l	0,1	0,006
As	mg/l	0,05	0.006
Phenol	mg/l	0,25	0,0005
SAP (surfactants)	mg/l	0,5	0039

Parameter	Unit	RF limits for potable water	Measured results
Ba	mg/l	0,1	0,045
B	mg/l	0,5	0,07
Mn	mg/l	0,1	0,021
Li	mg/l	0,03	0,009
Sr	mg/l	7	0,85
F	mg/l	1,5	0,23
Cd	mg/l	0,01	0,0001
Colour		200	5
Smell		2	0
Hardness total		7	9,85
Turbidity		1,5	0,77
Taste		2	0

### Storm Water Drainage

- E.16 Storm water from the site is collected by storm water system – composed of pipes and surface flow along asphalted internal roads and directed to open ditch passing along the street outside of site. Storm water is discharged to Skhodnya river, tributary of Moscow river. At the site there are a few inlets – none of them is equipped with sedimentation pit and oil separator. The quality of storm water discharged cannot be fully controlled.
- E.17 The main source of the storm water contamination is transport equipment used for bulk materials income and packed goods outcome. Trucks are not washed at the site.
- E.18 Skhodnya Grand has obtained permit no 18/w-07-15665/08 of 28.04.2008 valid for one year for discharge of storm water to Skhodnya river basin. This permit indicates volume of allowed discharge of storm water as 30,94 m<sup>3</sup>/h (26 763 m<sup>3</sup>/y) as well as allowed concentrations and volume of pollutants: suspended solids: concentration – 9,75 mg/l; volume – 0,314 t/y, hydrocarbons: concentration – 0,05 mg/l; volume 0,0013 t/y, BOD<sub>5</sub> – 2 mg/l
- E.19 Pollutants concentration in storm water is controlled at least twice a year by Municipal Centre of Laboratory Analysis and Monitoring in Khimki. Measurements made in March and September 2008 showed essential exceeding of allowed concentrations of suspended solids, oil products and BOD<sub>5</sub>: in March - 31 mg/l; 0,72 mg/l; 3,2 mg/l; in September – 34,2 mg/l; 0,54 mg/l; BOD<sub>5</sub>, 3,1 mg/l respectively.
- E.20 Having in mind the substantial exceeding of pollutants concentrations in storm water, Grand was recommended to install storm water treatment equipment. Installation of sedimentation tank and oil separators should be considered in

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the short to medium term (1-3 years). Based on current Company management declaration, Grand does not have plans of such investment.

### **Raw Material Storage and Handling**

- E.21 Main raw materials – tea and coffee are delivered to the site by railway and trucks. Tea in wooden boxes covered with plastics, cloth bags with plastic inside cover or paper bags; Coffee in metallic cans packed in carton boxes.
- E.22 Transport of materials and products from and to the railway cars is conducted using electric forklifts.
- E.23 Bulk tea and coffee are stored in separate stores. Other materials like semi-products, sugar, packaging materials etc are transported to the site and stored in bags and packets. The containers are stored usually in production departments where they are used.
- E.24 Oil and some chemicals are used in very small amounts and are stored in separate places in canisters or other small containers.
- E.25 Ready products are transported in boxes and containers by trucks to the distances up to 1000 – 1200 km and by railway to more distant places.

### **Releases to Air**

- E.26 Eleven potential sources of air pollution emission were analysed by Prima Service Ltd (2006) in the process of Air Study (Inventory) – air emission standards elaboration. According to this Study the main emission source from company's installations is boiler house - 1 stack 30 m high – emission of NO<sub>2</sub>, NO, CO, benzo(a)pyrene. Remaining sources are related to tea and coffee storage and packaging shops and could influence occupational environment only.
- E.27 The company operates the boiler house consisting of three boilers producing hot steam and fired with natural gas. The boilers including burners have been modernised recently (2006) and are in very good technical condition.
- E.28 The Company has closed agreement with the Municipal Centre of Laboratory Analysis and Monitoring in Khimki for sampling and laboratory analyses of boiler house pollutants emission twice a year. The program covers measurements of:
  - ◆ NO<sub>2</sub>
  - ◆ CO
  - ◆ NO

E.29 Air permit was issued by the Federal Central Region of Technological and Ecological Control Office in Moscow, permit no 2372 dated 06.05.2008. The permit expires on 31.10.2011.

E.30 According to the above permit, the Company is allowed to emit below listed pollutants in the period 2008 – 2011.

No	Parameter	Pollutant Category	Allowed emission					
			g/s	t/y	year			
					2008	2009	2010	2011
1.	Dust	0	0,0148	0,0658	0,0658	0,0658	0,0658	0,0658
2.	Abrasive dust	0	0,0001	0,0008	0,0008	0,0008	0,0008	0,0008
3.	MnO	3	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002
4.	Soot	3	0,0013	0,0013	0,0013	0,0013	0,0013	0,0013
5.	FeO	3	0,0027	0,0233	0,0233	0,0233	0,0233	0,0233
6.	Tea dust	-	0,0005	0,0038	0,0038	0,0038	0,0038	0,0038
7.	Grain dust	3	0,0768	0,3412	0,3412	0,3412	0,3412	0,3412
8.	Benzopirene	1	0,8*10-7	0,5*10-7	0,5*10-7	0,5*10-7	0,5*10-7	0,5*10-7
9.	Paper dust	0	0,0002	0,0007	0,0007	0,0007	0,0007	0,0007
10.	Non organic dust	0	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005
11.	CrO	1	0,00003	0,00001	0,0005	0,0005	0,0005	0,0005
12.	NO2	2	0,1333	1,8019	1,8019	1,8019	1,8019	1,8019
13.	Kerosene	0	0,0013	0,0086	0,0086	0,0086	0,0086	0,0086
14.	CO	4	0,2352	2,9163	2,9163	2,9163	2,9163	2,9163
15.	Hydrogen fluoride	3	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003
16.	Alkali	4	0,0006	0,0026	0,0026	0,0026	0,0026	0,0026
17.	Petrol	4	0,0036	0,0038	0,0038	0,0038	0,0038	0,0038
18.	NO	3	0,0203	0,2925	0,2925	0,2925	0,2925	0,2925
19.	Sulphur trioxide	3	0,0006	0,0007	0,0007	0,0007	0,0007	0,0007
20.	Sodium carbonate	3	0,00004	0,00004	0,00004	0,00004	0,00004	0,00004

E.31 Sampling and analysis made by Municipal Centre of Laboratory Analysis and Monitoring in Khimki in March and September 2008 have given results showed in the table below;

Parameter	concentration measured in March 2008	concentration measured in September 2007	Allowed	
			Concentration	Discharge
			mg/m <sup>3</sup>	T/y
NO2	23,0	28,6	25	1,7998
CO	26,0	50,8	40	2,8771
NO	4,0	4,5	5	0,2925

E.32 No other parameters were tested for, as these were not required by the authorities.

### Energy Resources and Consumption

E.33 Natural gas and electricity is supplied by the local supply companies. The consumptions in 2007 and 9 months of 2008 were as follows:

	2007	I-IX 2008	
◆ electricity –	2 576	1 980	thousands kWh
◆ natural gas –	922	655	thousands m <sup>3</sup>

### Greenhouse Gas Management

- E.34 The company generates CO<sub>2</sub> by burning fuels: natural gas is used as the only fuel for boilers.
- E.35 No specific management system is applied to monitor greenhouse gases emissions.
- E.36 No CO<sub>2</sub> emission reporting is in place.
- E.37 Rough calculation of CO<sub>2</sub> emissions generated from natural gas combustion is presented below.

Year	2007
Gas combustion, m <sup>3</sup>	922 355
Calorific value [MJ/m <sup>3</sup> ]	36.
Emission factor [tons/TJ]	56,1 (IPCC)
<b>Emission of CO<sub>2</sub> [tons CO<sub>2</sub>/year]</b>	<b>1 863</b>

- E.38 Based on our calculation, the emission of CO<sub>2</sub> from the installation is less than 50000 tons/annum (class A acc. to EU monitoring requirements – small source).

### Sanitary Waste Water Releases

- E.39 There are two main sources of wastewater releases in Skhodnya Grand and all the wastewater is discharged to municipal system:
- ◆ cleaning of processing equipment and floors in production areas
  - ◆ sanitary waste water from the buildings
- E.40 Skhodnya Grand Ltd has a contract No 21c of 01.01.2008 with Vodokanal Khimki for sanitary wastewater discharge to municipal wastewater network valid for one year with notation that this contract is automatically prolonged if none of the parties informs the other on its cancellation. The notice period is one month. Municipal wastewater system transports wastewater to Municipal Waste Water Treatment Plant located in Khimki town.
- E.41 Total amount of waste water discharged to external sewerage in recent years is as follows:
- ◆ 2007 – 13 657 m<sup>3</sup>
  - ◆ 8 months of 2008 – 11 610 m<sup>3</sup>

E.42 The conditions of waste water discharge are described in Contract with Vodokanal of 01.01.2008 and are shown in the table below:

No	Parameter	Unit	Allowed concentration
1.	Suspended solids	mg/l	500
2.	Ash contents	%	30
3.	BOD total	mg/l	500
4.	COD	mg/l	300
5.	pH		6,5 – 8,5
6.	Temperature	°C	< 40
7.	Colour limit		1:16
8.	Dry residue from this: chlorides sulphides	mg/l	2000 350 500
9.	Cr 3+	mg/l	1
10.	Cr 6+	mg/l	0,1
11.	Cu	mg/l	0,5
12.	Fe	mg/l	3
13.	Zn	mg/l	2
14.	Ni	mg/l	0,5
15.	Cd	mg/l	0,01
16.	Co	mg/l	0,3
17.	Pb	mg/l	0,1
18.	As	mg/l	0,05
19.	Hg	mg/l	0,005
20.	Formaldehyde	mg/l	0,55
21.	Sr	mg/l	2
22.	Mo	m/l	0,5
23.	Al	mg/l	1
24.	V	mg/l	1,2
25.	Sn	mg/l	4
26.	Cyanides	mg/l	0,1
27.	Fluorides	mg/l	1,5
28.	Ag	mg/l	0,05
29.	Ti	mg/l	1,85
30.	Mn	mg/l	2
31.	Ba	mg/l	4
32.	Oil products	mg/l	4
33.	Styrene	mg/l	1
34.	Phenols	mg/l	0,01
35.	Ethylene (di)chloride	mg/l	0,0
36.	Dichloromethane	mg/l	0,0
37.	SAP	mg/l	2,5
38.	Fats	mg/l	0,0

E.43 The results of recent analysis (November 2007) of waste water compared with the limits included in the previous contract (valid in 2007) are presented in the Table below (samples were taken at the site from the chamber close to the site fence).

No	Parameter	Unit	Concentrations	
			Allowed*	Measured
1.	Ammonia nitrogen	mg/l	20	26,8
2.	Ion nitrates		45	0,4
3.	Chlorides	mg/l	350	174
4.	COD	mg/l	800	326,8
5.	pH		6,5 – 8,5	7,8
6.	Suspended solids	mg/l	500	190
7.	Dissolved O2	mg/l	> 4	2,8
8.	BOD <sub>5</sub>	mg/l	500	132
9.	Fe	mg/l	3	3,26
10.	Cr 6+	mg/l	0.1	< 0,005
11.	Cr 3+	mg/l	1	0,002
12.	Cu	mg/l	0,5	0,02
13.	Pb	mg/l	0,1	0,007
14.	Ni	mg/l	0,5	0,004
15.	Zn	mg/l	2,0	0,24
16.	Sr	mg/l	2,0	2,8
17.	Cd	mg/l	0,01	< 0,0001
18.	Oil products	mg/l	4,0	2,6
19.	Fats	mg/l	20	14,1
20.	Sulphates	mg/l	500	56,1
21.	SAP	mg/l	2,5	1,46
22.	Dry residue	mg/l	2000	855
23.	Fluorides	mg/l	1,5	2,39
24.	Formaldehyde	mg/l	0,55	0,00
25.	Phosphates	mg/l	1,14	1,91
26.	Phenols	mg/l	0,01	0,009

- E.44 The results indicated general compliance with respect to the requirements, however three parameters are exceeded: ammonia nitrogen, phosphates and Strontium. It is recommended to verify the analysis results, as in our opinion there is no reasonable justification for the exceedance of allowed concentrations. In case, the results of independent analysis confirm the exceedance, further actions should be taken to identify the source and investigate the possibility to minimise or eliminate the discharge.
- E.45 Plant's wastewater network is made of cast iron and partly steel. Its technical condition can be evaluated as good. Some chambers need small repairing work. However if the results of wastewater analysis confirm exceedance of contract conditions, review of technical condition of the networks (like canal TV – CCTV) is recommended to identify potential leakage.

### Solid Waste Management and Disposal

- E.46 The company has an approved waste disposal limits permit issued by the Federal Central Region of Technological and Ecological Control Office in Moscow. The permit is valid till 09.06.2009. The list includes 9 types of waste of I to VI classes of hazard. Allowed limits of waste generated, transferred to

other specialised organisation for utilisation, deposited at the landfill and temporary stored at the site are given in the table below:

No	Name of waste and code	Class of hazard	Generation limit t/y	Transferred to others t/y	Deposited t/y	Temporary stored at the site t/y
1.	Luminescent lamps 3533010013011	1	0,256	0,256	-	0,256
2.	Municipal waste 9120040001004	4	49,304	-	49,304	1,2
3.	Waste paper 1871040001005	5	15,784	15,784	-	0,2
4.	Used batteries 9211010113012	2	0,1	0,1	-	0,1
5.	Propylene waste 5710300201995	5	4,572	4,572	-	0,2
6.	Cloth waste 5810110801995	5	25,4	25,4	-	0,2
7.	Oiled cloth 5490270101033	3	0,012	0,012	-	0,012
8.	Wooden waste 1711050213005	5	85,344	85,344	-	0,5
9.	Metal scrap 3513010001995	5	0,2	0,2	-	0,2
Total			180,974	131,67	49,304	2,868

- E.47 Hazardous waste is generally transferred to subcontracting waste companies (Start Eko Ltd, Ekotrom RB Ltd) accepting Skhodnya Grand waste on the basis of contracts signed on annuals basis. This includes the hazardous waste of class I like mercury lamps and used batteries as well as of class II like used oils.
- E.48 The storage of waste was observed to be adequate, as only minor volumes of hazardous waste are stored. The storage facilities included:
- E.49 Waste oils – stored in 200 l drums in roofed and hardsurfaced store;
- E.50 Lead batteries – several items stored in a special container in separate room in garage for electric forklifts;
- E.51 Mercury containing lamps and bulbs – in containers provided by the contractors in dedicated room.
- E.52 The company presented also the list of contracts for waste disposal with contracting companies for each type of generated waste ((Ritm Ltd, Ekobridge Ltd,). All contractors are obliged to collect and utilise waste on his own responsibilities and cost.
- E.53 Solid waste is generally temporarily stored at the site in containers inside the production buildings. There are separate containers provided for paper and

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plastics, packaging materials, tea and coffee. The containers for municipal-type waste were observed also outside the buildings. The municipal waste is transported to Skhodnya municipal waste landfill. Hazardous waste are not allowed to be disposed there.

- E.54 According to information obtained from Skhodnya Grand management, the company does not own and have never operated any solid waste landfill at its territory or outside.

**Hazardous materials: asbestos, PCBs, freons etc.**

- E.55 During the site visit we have not observed noteworthy volumes of asbestos containing materials (ACM), however it was suspected to be present in some insulation materials for heating pipes.
- E.56 Thus an asbestos review is recommended. The programme of safe removal of ACM should be developed based on the results of the review. The dismantling of ACM should be performed by specialized companies (trained staff equipped with proper PPE). ACM should be finally safely landfilled.
- E.57 There are two transformer stations at the site, equipped with two transformers each. It was our understanding that the transformers are owned and maintained by Grand, although the energy supplier has access to the stations. The presence of PCBs in transformer oils should be confirmed by analysis. According to available literature, in former Soviet Union, PCB was used in transformers only in few factories. PCB was known as Sovtol or Sovol.
- E.58 The company uses also a battery of capacitors for compensation of passive power. It consists of 13 units of KC2-038 type, which are known to contain PCBs insulation. Thus a programme for replacement of capacitors, with PCB-free units should be developed and implemented.
- E.59 No hazardous chemicals are reported to be used on site in bulk volumes, thus the risk of significant environmental impact of these materials is negligible.

*Noise*

- E.60 Environmental noise is not seen as an important issue at the facility. No environmental noise measurements were made available. The closest residential area is located about 100 m from the plant. The impact of the plant on closest residential areas is not substantial, no local residents complaints were reported by now. Except of transportation means no significant noise sources were observed on site, however there are several cooling aggregates, pump stations boiler house etc. .

E.61 There is no record of complaints or enforcement action due to environmental noise generated at the plant.

*Land Contamination*

E.62 There is limited risk of substantial soil and groundwater contamination at the site, as current operations conducted at the site do not involve use of significant volumes of hazardous materials.

E.63 The risk of historic contaminations is also limited, as the company has conducted in 2000 a baseline intrusive soil investigation, which did not indicate any contamination (although it was our impression that the scope of investigation was too narrow (3 samples analysed for 5 basic heavy metals) to identify the potential pollution).

E.64 In our opinion it would be valuable for verification purposes to conduct the baseline study with a wider scope of laboratory analysis. As a minimum, the analysis should include hydrocarbons, solvents, formaldehyde, a wide range of heavy metals (including Strontium) in the areas of mechanical workshop, parking area for transportation, old forging shop, and compressor room.

**Transportation**

E.65 The company has totally four cars: two buses for Employees transportation – one GAZ 3307 type, produced in 1993 and one ATS - 3240 type, produced in 2003, one delivery van GAZ 2705 type, produced in 2000 and one truck ZIL – 130 type, produced in 1979. Bulk materials are delivered to the site mainly by rail and ready products are transported to clients by train or trucks owned or hired by them.

E.66 The company has also a few passenger cars for the top management staff. There is a small parking area for some passenger cars owned by company's staff, who are coming to work by their cars.

**Environmental fees and fines**

E.67 Skhodnya Grand pays for drinking water supply, wastewater discharge to municipal wastewater network, solid waste disposal, air pollutants emission, gas supply. All payments in 2007 and first eight months of 2008 are shown in the table below.

Item	Description	Years			
		2007		I – VIII 2008	
		Rubbles	EURO	Rubbles	EURO
1.	Drinking water supply	242 393	7 000	434 313	12 400
2.	Wastewater discharge	504 771	14 400	480 857	13 750
3.	Storm water discharge	5 741	160	4 426*	130
4.	Solid waste disposal	225 754	6 450	354 408	10 100

Item	Description	Years			
		2007		I – VIII 2008	
		Rubbles	EURO	Rubbles	EURO
5.	Air emission	352	10	215*	6
6.	Gas supply	2 578 749	73 700	1 500 522	42 900

\*for 6 months of 2008

E.68 According to verbal information received from the Company representatives no fines have been levied on Skhodnya Grand in last years.

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## Appendix F. Occupational Health and Safety Issues and Industrial Risk

### H&S Management organisation

- F.1 The company has a dedicated occupational health and safety manager responsible for operational H&S issues. The scope of responsibilities include provision of initial and periodic H&S training, supervision of initial and periodic health examinations, contracting monitoring of occupational exposure levels and preparation of H&S improvement programmes.

### Accidents

- F.2 No accidents were reported in presented documents for last few years. It should be noted that in line with Russian Federations regulations no minor accidents (not associated with sick-leave or compensations paid) need to be reported, thus this issue should be considered as a voluntary, internal reporting aimed at improving H&S management. Verbal information from the Company H&S manager indicates that there was one accident in 2001, when a worker fell and broke his leg.

### Improvement programme

- F.3 No significant investment plans for health and safety issues are envisaged. The company prepared H&S improvement programme, which included several organisational, technical, sanitary and prophylactic means. The main points of the plan include maintenance of equipment and modernisation/redecoration of the production halls (over 240 K Euro in total); obligatory insurance of the employees (24 K €), and compensations for heavy and hazardous work conditions (this applies to forklift operators working outside the buildings – due to low temperatures in winter and electric welders – for elevated concentration of ozone at the workplace (costs slightly over 20K €). Total costs foreseen for the entire 2007-2012 period were at the level of 320 K €.

### Access to first aid

- F.4 First Aid kits are available to workers and located in supervisors' offices in production departments. First Aid kits are often not marked and their content is not listed. This will require verification and improvement.
- F.5 The site has a first aid medical centre where a full day service is provided by a nurse. The Company conducts periodic medical tests of the employees (service provided by local public medical service).

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### Risk Assessment

- F.6 In line with Russian regulations, the company developed the attestation analysis (risk assessment) for all the workplaces.
- F.7 The company has a program of tests of occupational exposure levels and conditions for the workplaces. The tests are performed in line with the requirements of sanitary regulations. The summary of results conducted in 2007 is presented below.
- ◆ Dust – no exceedance
  - ◆ Noise – no exceedance
  - ◆ Hazardous substances – elevated ozone concentrations - 2 workers exposed (electric welding)
  - ◆ Microclimate – too low humidity (2 office workplaces),
  - ◆ Lighting – 24 workplaces, where lighting intensity was below the standard
  - ◆ EMR – no exceedance,
  - ◆ Magnetic fields – no exceedance,
- F.8 It is our opinion that the worker exposure to hazardous working conditions (like dust, noise and vibration, chemicals, etc.) is limited and no major improvements are required – the actions planned by the company in their improvement programme should be sufficient to achieve full compliance with both Russian Federation and EU exposure limit values regulations and standards.

### Medical tests and occupational diseases

- F.9 The workers of Skhodnya Grand undergo initial medical tests before start of work and then periodically once per year or biannually (as required by Russian regulations). The scope and frequency of test depends on hazardous and burdensome conditions at specific working places. The tests are documented in individual records of each worker.
- F.10 No occupational diseases were reported by now. It is general opinion that there is no risk that such occupational diseases appear in the future.
- F.11 In Russia the potential costs of compensations related to occupational diseases are fully covered by the State from health insurance fund, so the risk of significant financial losses by the company is low.
- F.12 No cases of claims, law suits were reported.

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### **Personal Protective Equipment (PPE)**

- F.13 The company assign PPE to workers according to the results of work-places attestation. No specific document describing the system of PPC assignment was presented.
- F.14 Based on observations made during the site visit, workers in production departments are enforced to use proper personal protective equipment (PPE), and are dressed in special work clothes to maintain high hygienic standards. The training on use of PPE is provided as part of H&S training provided for each workplace.

### **Work organisation**

- F.15 Production departments are generally not equipped in work safety signs and marks. Internal transportation paths are not marked on the floors. Also evacuations signs were not noted. Grand declared that this issue will be resolved as part of improvement programme for 2007-2012.
- F.16 There are no road signs or road markings on internal roads what may be a cause of collisions, especially in areas of buildings development.

### **Training programmes**

- F.17 Operational instructions are available at working places and cover conditions of normal and abnormal operation. The instructions include the rules of work safety.
- F.18 The trainings related to operation at particular workplaces are led by masters for both new workers and periodically for regular staff. Topics of training, trained persons and trainers' names are kept in training records which are kept by the H&S manager.
- F.19 The start-up of new installations must be connected with the development of proper safe operating and OHS instructions.

### **Emergency procedures**

- F.20 The company has the fire safety and fire fighting instructions. Fire fighting measures were observed to be distributed on site (fire extinguishers, hydrants with hoses, sand boxes etc.), in some storage buildings access to the hydrant boxes was partly blocked. Most of fire equipment is of old type and might potentially need upgrading – subject to the review; storage places were marked in red. Moreover fire exit signage is lacking and no evacuation plans were seen during the site inspection.

F.21 The company has an internal fire brigade, who is periodically trained. It cooperates and practice with municipal fire brigade. However no information on evacuation drills was provided.

### Social Issues

F.22 As for the date of the audit, social structure of the staff is as follow:

- ◆ Total number of Employees 511 – 212 men and 299 women
- ◆ From total:
  - ◆ 64 with age 18 – 25 years and 1 – 2 years prof. experience
  - ◆ 155 with age 26 – 40 years and 1 – 6 years prof. experience
  - ◆ 201 with age 41 – 55 years and 1 – 6 years prof. experience
  - ◆ 91 with age over 55 years and 3 – 8 years prof. experience

F.23 Employee fluctuation for the years 2005 – 2007 is shown in the table below:

No	Description	2005	2006	2007
1.	Average number of Employees	610	573	503
2.	Disciplinary dismissal	none	none	1
3.	Dismissed (including retired)	347	282	282
4.	Staff reduction action	none	none	none
5.	Newly employed staff	363	251	231
6.	Average number of women	348	309	277
7.	Number of sickness dismissal	none	none	none

F.24 It is expected that in the 2008 – 2012 period about 12 % of present number of employees will retire.

F.25 Average monthly salaries of different staff grades are as follows:

- ◆ Engineer 30 000 – 32 000 Roubles
- ◆ Foreman 23 000 – 28 000 Roubles
- ◆ Technician 14 000 – 17 000 Roubles
- ◆ Worker 10 000 – 17 000 Roubles
- ◆ Administration staff 15 000 – 20 000 Roubles
- ◆ Charwoman 8 000 – 12 000 Roubles

F.26 Employees work in three, 8 hours each or two 12 hours each shifts. It is practised that some employees work in over time. In such situation, in line with Russian Federation regulations, they receive compensations of additional 50% of hourly payment for the first two hours and 100 % for each hour over 10.

F.27 Skhodnya Grand staff has an access to proper social facilities like dressing rooms, lavatories, canteen etc.

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- F.28 Transport to the plant located very close to the railway station is provided by train. Some Employees are coming every day even from the distance of up to 70 km.
- F.29 Daily medical care is provided by internal Medical Room where a nurse can provide necessary service in case of necessity. The nurse is an employee of Municipal Medical Centre delegated to the site in line with a contract. Medical room operates 8 hours a day. Nurse is able to provide first aid in case of accidents or sudden sicknesses.
- F.30 Company has created a social fund from which employees can be financially supported in case of being in difficult economic situation. Except of medical service and social fund no other social support for employees is provided.
- F.31 The Company has implemented internal regulation of employees promotion. According to verbal information, employees are promoted every 3 to 5 years at the same position (as an average).
- F.32 Average professional experience of Company staff is about 3 years and in administration sector – about 6 years.
- F.33 The company does not possess any recreational, sport or leisure centres or provide accommodation for Employees.
- F.34 No Trade Unions or other employees' organisations are present in the Company.
- F.35 No conflicts of any kind between management and employees have been reported.
- F.36 Skhodnya Grand is important player on local labour market. According to received information, the Company is one of two existing industrial sites in the micro-region. Plant is continuously modernised by installation of new, more efficient packing equipment. In Skhodnya micro-region there are many small, private organisations employing a few persons but they do not play essential role on local labour market.
- F.37 Khimki Region counts 180 000 inhabitants. Density of population is 1513 person/km<sup>2</sup>. Average salary is 16 700 Roubles (app. 500 Euro).
- F.38 From nationality and religious point of view, Khimki region is rather homogeneous – more then 95 % are Russians Orthodox.

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## Appendix G. Environmental Review of Planned Investment

### Introduction

- G.1 This section is provided to assesses the proposed modernisation of Skhodnya Grand facility for capacity growth and compliance with local and international standards. Our assessment is based mainly on verbal communication and interview with Mr Alexander Borisov.
- G.2 The data concerning technological details decisive for the assessment of environmental impact and H&S issues are not available at this stage; no EIA studies or feasibility studies have been developed up to date.

### Project overview

- G.3 The main idea of the planned investment is installation of modern, more efficient packing equipment and increasing the storage capacity of the Skhodnya Grand facility. It is expected that this will allow increasing production output without employment reduction. The concept shows that no major environmental or H&S issues will be associated with the development plan implementation. The general goal of the investment programme is doubling production volume and change of production profile.
- G.4 The Project is in early stage, i.e. its more concept than matured Development Plan and no technical details are known. It is anticipated that the newly applied technologies will comply with Russian and international environmental and occupational health and safety standards; however lack of any technical data does not allow for a detailed assessment.

### BAT compliance overview

- G.5 In general, the operations conducted by Skhodnya Grand company are not included in the recommendations of Best Available Technique reference document (BREF) for Food, Drink and Milk Industries (revision August 2006).
- G.6 The International Financial Corporation (IFC) guidelines for Food and Beverage Processing sector are also irrelevant to the Skhodnya Grand, as the guidelines are applicable to different production profiles. Nevertheless, the permits and contracts held by the company are in some cases more restrictive e.g. for wastewater parameters and for air emissions than the guideline values included in the above mentioned document.

### Environmental emissions and potential impacts

- G.7 Construction of the new warehouse will necessitate demolition of the old buildings at the site. Demolition works will be associated with temporal environmental nuisance (generation of waste, noise emission, increased traffic, etc.)
- G.8 Modernisation of the plant equipment will not have any influence on the environmental conditions of the site.
- G.9 Increase of production will be associated with intensification of truck transportation. This will increase fugitive air emission as well as different kinds of solid waste generation – mainly paper and plastics used for bulk raw material packing.
- G.10 The major air emission source of the facility – heating plant is not planned to be changed.
- G.11 Potable water consumption as well as wastewater generation is not expected to change significantly.
- G.12 Storm water discharged from the plant requires treatment regardless of the new investments. This issue should be treated as the priority and the design should take into account potentially increased storm water runoff volume associated with construction of new storage areas.
- G.13 The Project should not interfere with local environment as in general its implementation will result in reduced environmental emissions. Also consumptions should remain on the same or similar level:

**Table G.2. Environmental Impacts of the planned investments**

Emissions/impacts	Planned
Air emission from heating station	No major change expected
Air emission from transportation	Production increase will increase number of trucks used for product transportation. This could increase fugitive air emission from transportation.
Waste water	No major change expected
Storm water	No major change expected
Energy consumption	No major change expected
Gas consumption	No major change expected

### Health and Safety issues

- G.14 The development of the production areas will not influence significantly the H&S conditions at the site, however the procedure for workplaces “certification” in line with Russian Federation regulations should be followed.

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- G.15 Construction of the new warehouse will necessitate demolition of the old buildings at the site. Demolition works should be conducted by a specialised company and Schodnya Grand should provide adequate H&S supervision over the contractors' operations, as the workers might be exposed to hazardous materials such as asbestos.

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