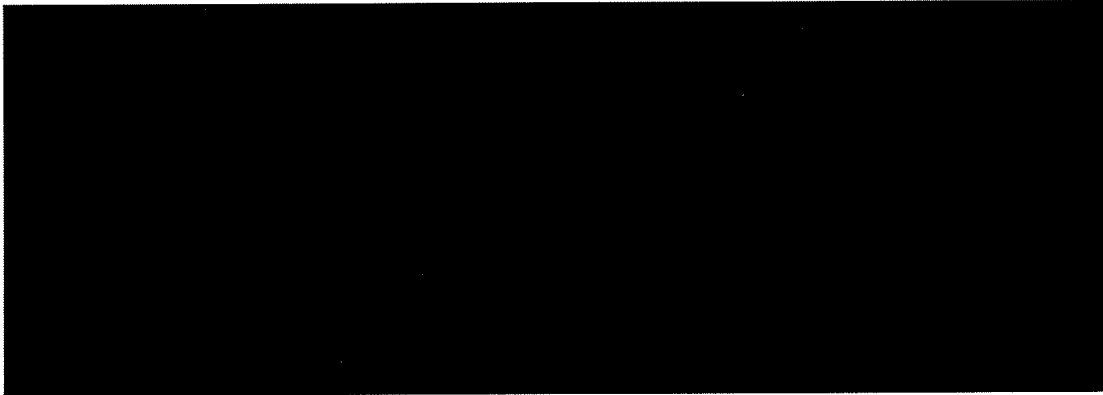


**Authorisation of the Environmental Impact
Assessment of the export project**

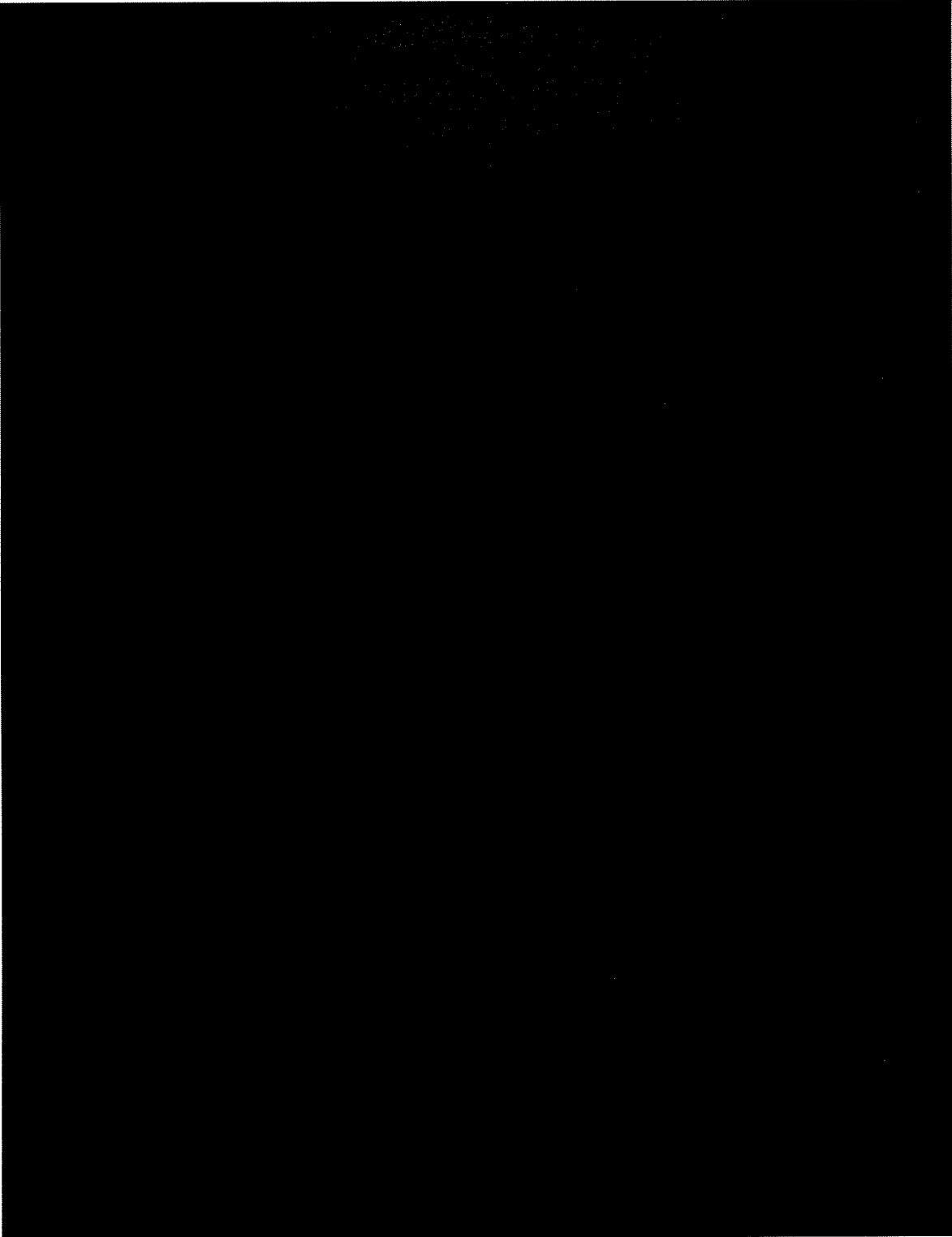


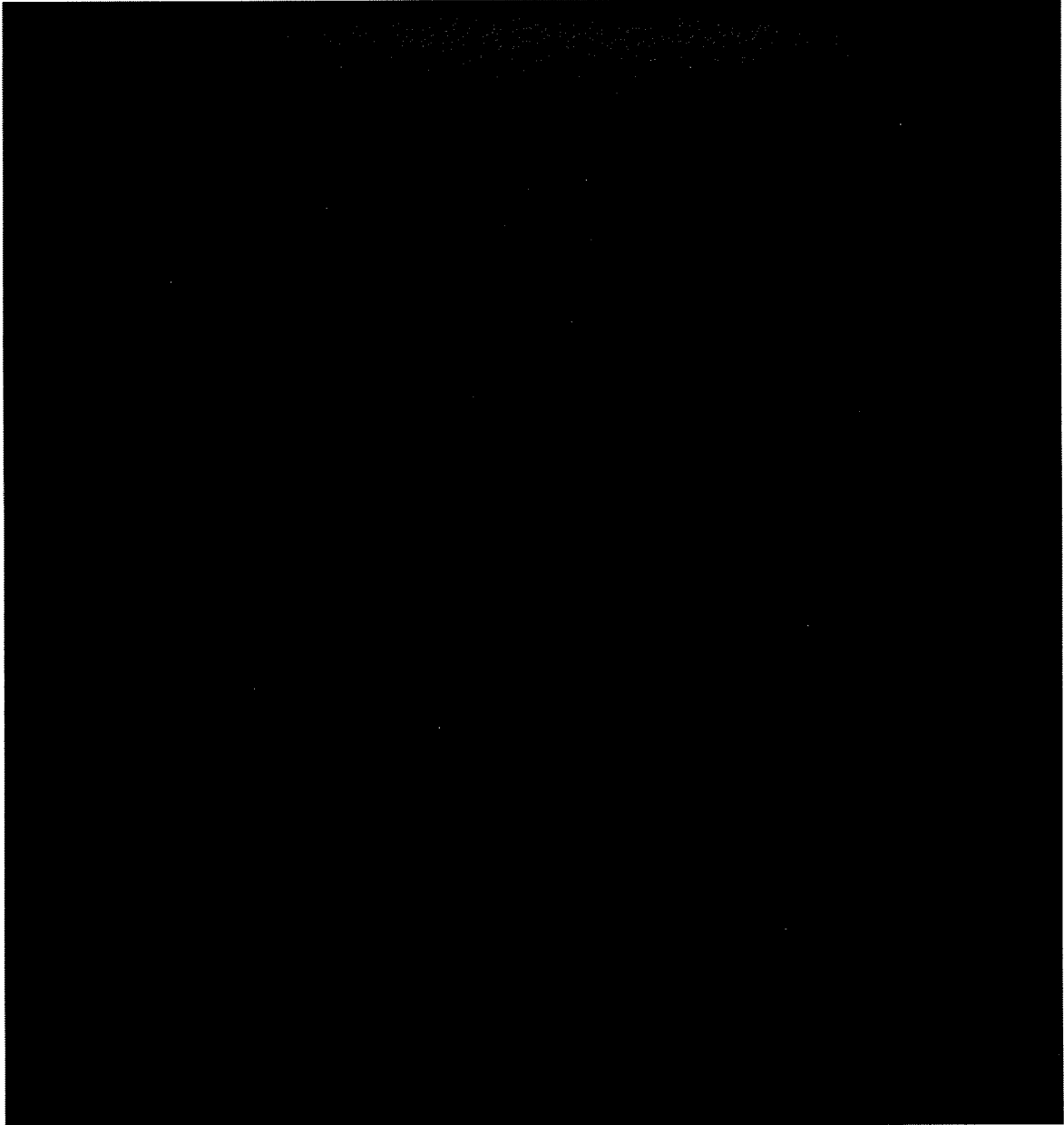
CONTENT:

<u>1. BACKGROUND DOCUMENTS FOR THE PREPARATION OF AUTHORISATION OF THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE EXPORT PROJECT</u>	<u>3</u>
1.1 THE LEGISLATIVE FRAMEWORK	3
<u>2. BASIC CHARACTERISTICS OF THE EXPORT PROJECT</u>	<u>5</u>
2.1 DESCRIPTION OF THE PROJECT	7
2.2 MAIN OBJECTIVES OF THE PROJECT	10
<u>3. DATA ON INPUTS AND OUTPUTS FROM THE ENVIRONMENTAL POINT OF VIEW</u>	<u>12</u>
3.1 INPUTS	12
3.2 OUTPUTS	12
<u>4. DATA ON THE CONDITION OF THE ENVIRONMENT IN THE TERRITORY WHERE THE EXPORT PROJECT WILL BE IMPLEMENTED</u>	<u>15</u>
<u>5. COMPREHENSIVE CHARACTERISTICS AND EVALUATION OF EFFECTS OF THE EXPORT PROJECT ON THE POPULATION AND ON THE ENVIRONMENT</u>	<u>19</u>
5.1 THE EXPECTED SIGNIFICANT ENVIRONMENTAL IMPACTS	19
5.2 COMPARISON OF SOLUTION	21
<u>6. SUMMARY EVALUATION OF COMPLIANCE WITH THE RULES UNDER CONSIDERATION EXPORTS FOR ENVIRONMENTAL PROTECTION</u>	<u>22</u>
6.1 COMPARISON OF CHOSEN TECHNOLOGIES WITH BEST AVAILABLE TECHNIQUES BAT	22
<u>7. UNIQUE FINAL EVALUATION OF THE ACCEPTABILITY OR UNACCEPTABILITY OF THE IMPACT OF THE PROJECT ON THE ENVIRONMENT</u>	<u>23</u>
7.1 MITIGATION MEASURES DURING OPERATION OF THE PROJECT	23
7.2 GENERAL CONCLUSIONS	25
<u>8. MATERIALS, WHICH ARE USED IN THE REPORT</u>	<u>27</u>
8.1 SITE PICTURES (PRESENT STATE, BEFORE PROJECT REALISATION)	28
<u>9. AUTHORS OF AUTHORISATION OF THE ENVIRONMENTAL IMPACT ASSESSMENT OF THE EXPORT PROJECT</u>	<u>30</u>

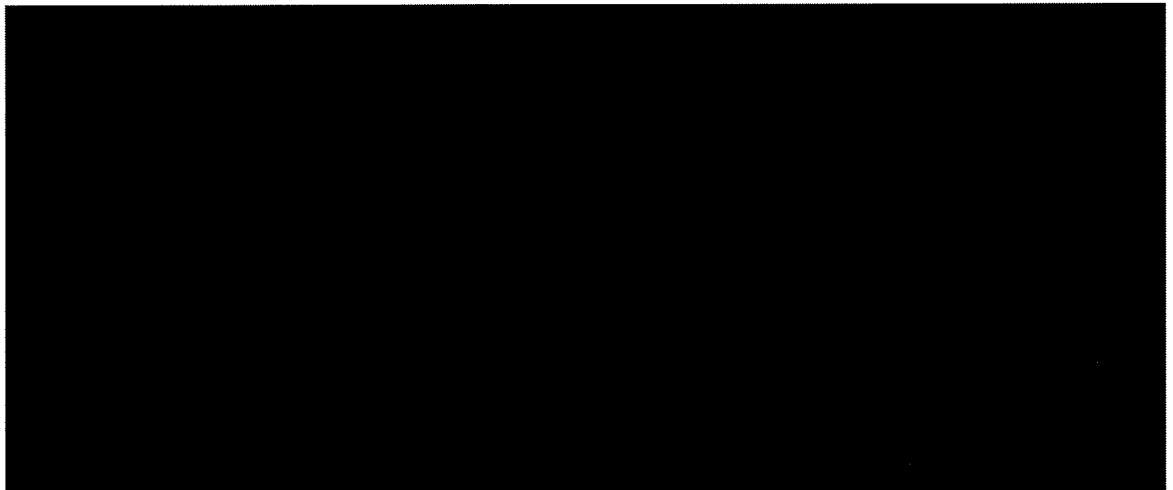
1. Background documents for the preparation of authorisation of the environmental impact assessment of the export project

1.1 The legislative framework





INTERNAL REFERENCE DOCUMENTS OF AZOMURES



2. Basic characteristics of the export project

Project Title:

[REDACTED]

Main activity profile:

[REDACTED]

Project Location (State):

Romania

Information on the project proprietor:

S. C. AZOMURES S. A.

The general contractor:

CHEMOPROJECT NITROGEN a.s.

Author of EIA for analyzed objective:

Capacity:

[REDACTED]

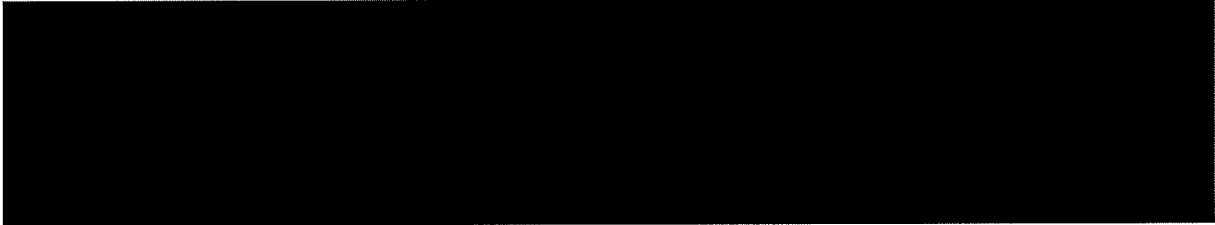
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[REDACTED]

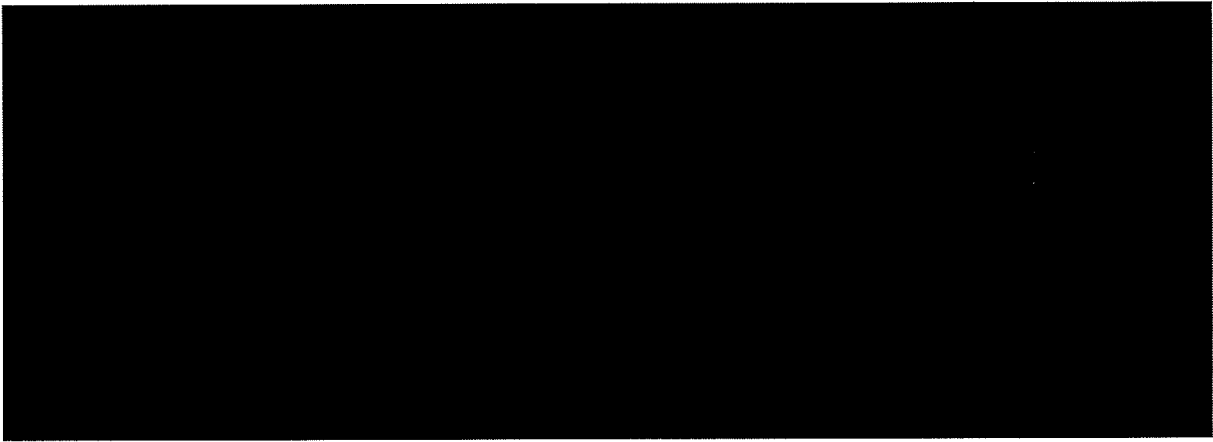
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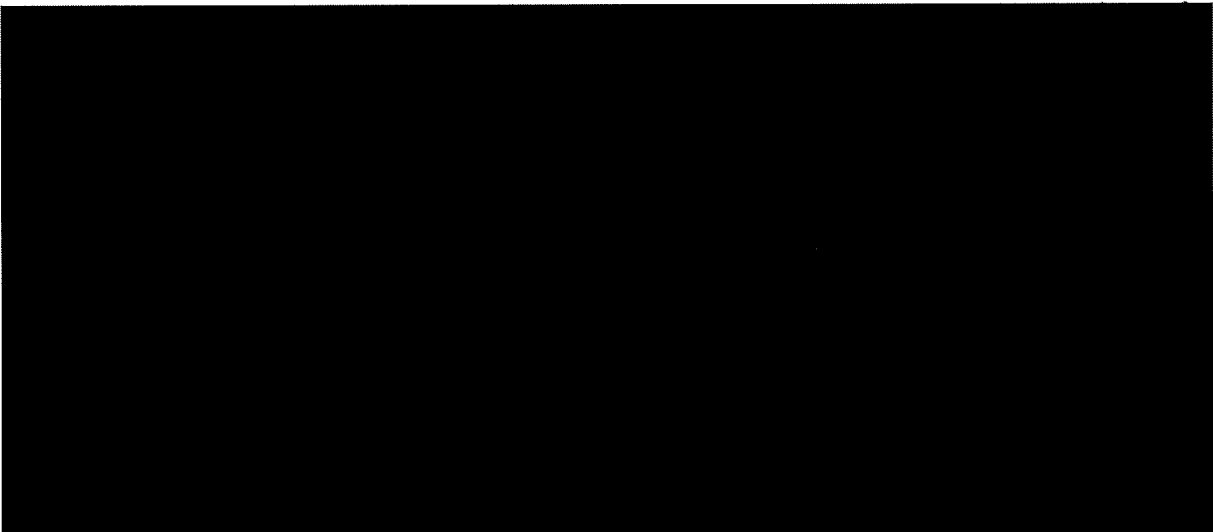
Object US 01



Object UF 01



Object US 02



2.1 Description of the project

The Project comprises of the following units:

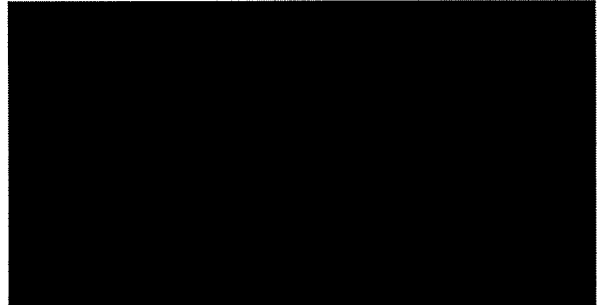
Urea solution plant:

- US 01
- US 02
- US 03
- US 04
- US 05
- US 06
- US 07

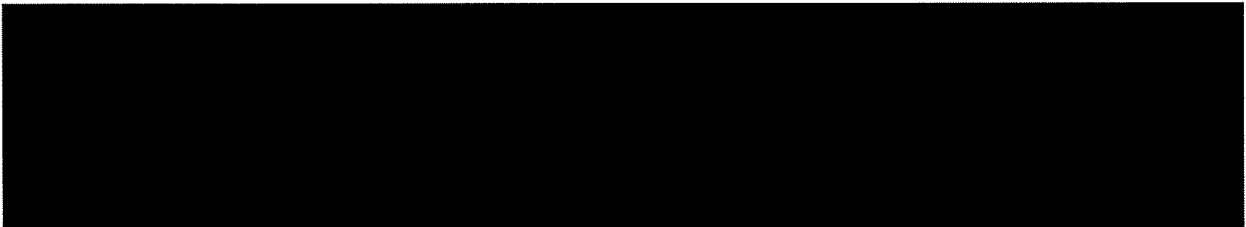


Urea finishing section:

- UF 01
- UF 02
- UF 03
- UF 04
- UF 05
- UF 06
- UF 07



US 01 [Redacted]



US 02 [Redacted]





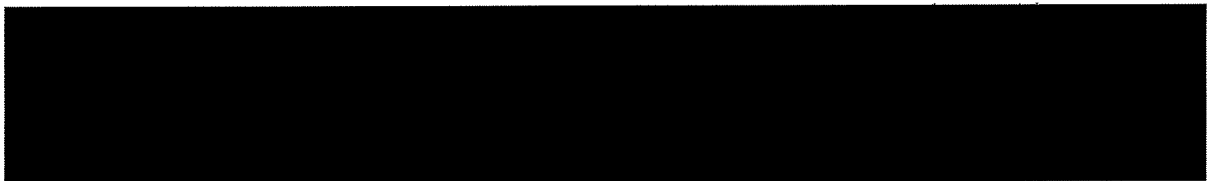
Figure No. 1 US 02



US 03



US 04



US 05



S 06



[Redacted]

US 07 [Redacted]

[Redacted]

[Redacted]

UF 01 [Redacted]

[Redacted]

Figure No. 2. [Redacted]

[Redacted]

UF 02 [Redacted]

[Redacted]

[REDACTED]	[REDACTED]
------------	------------

[REDACTED]

[REDACTED]

UF 05 [REDACTED]

[REDACTED]

UF 06 [REDACTED]

[REDACTED]

UF 07 [REDACTED]

[REDACTED]

[REDACTED]

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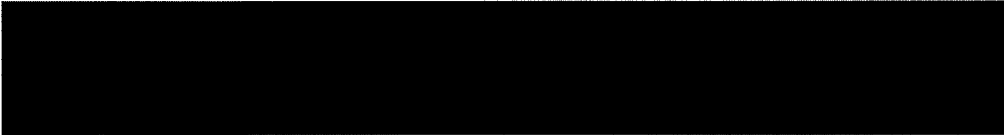
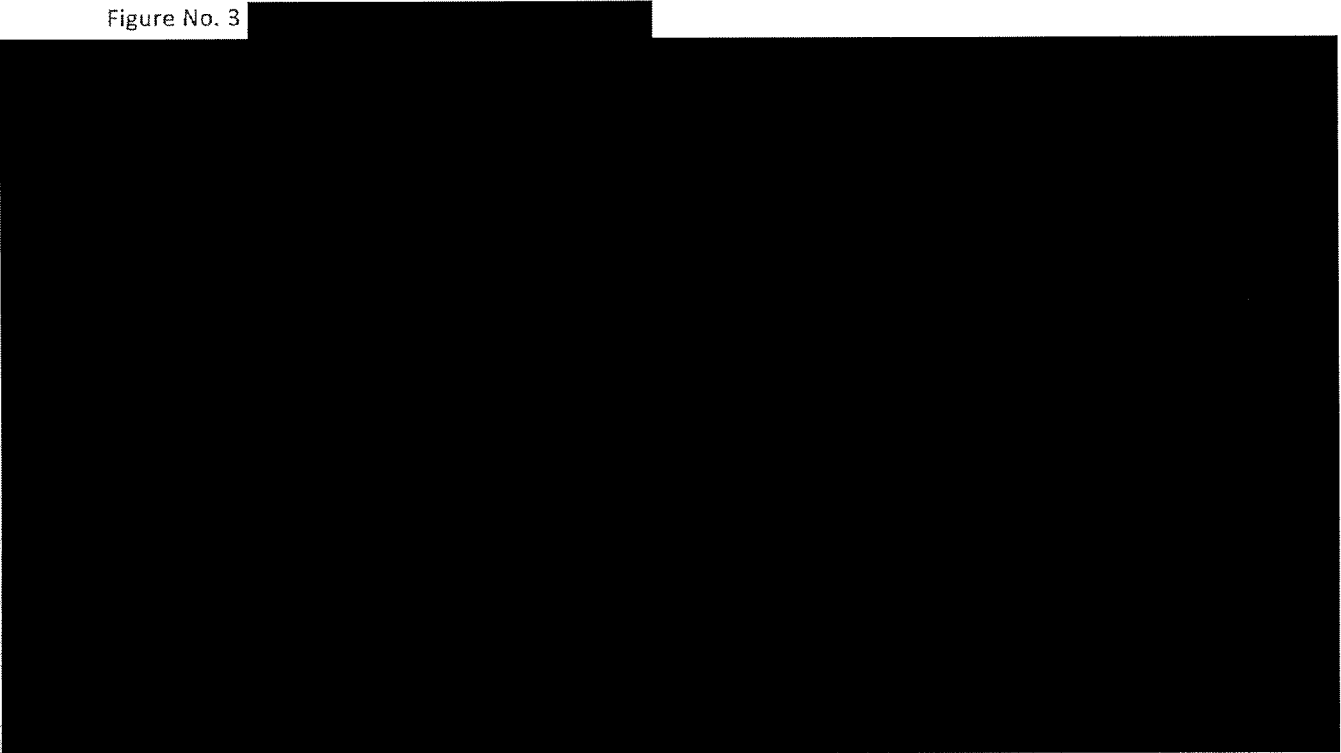
Expected duration of execution:



Duration of the function:



Figure No. 3



3. Data on inputs and outputs from the environmental point of view

3.1 Inputs

Water

Drinking water is supplied from the city's drinking water network, through a [Redacted] mm connection pipe to the drinking water main in Gh. Doja Street and a [Redacted] mm connection pipe to the drinking water main in Libertaii Street, according to public connection and drinking water supply public service contract no. [Redacted]

Technological water is supplied from the main surface source, from the Mures River, through catchment dam no, 2, managed by the Mures Basinal Administration.

Fire extinguishing water is supplied from the same surface source as the technological water.



Soil

There is no additional needs on soil occupy. The project is located in AZOMURES S.A. industrial platform is in the western extremity of Tg. Mures municipality's industrial area, at about 4 km from the city's centre, on 300 Gh. Doja Street, Mures County. Geographical coordinates: 24,506413 N longitude, 46,515375 E latitude.

Due to the fact that the company is located in an industrial area, there are no protected areas from the soil or geology point of view or sensitive areas.

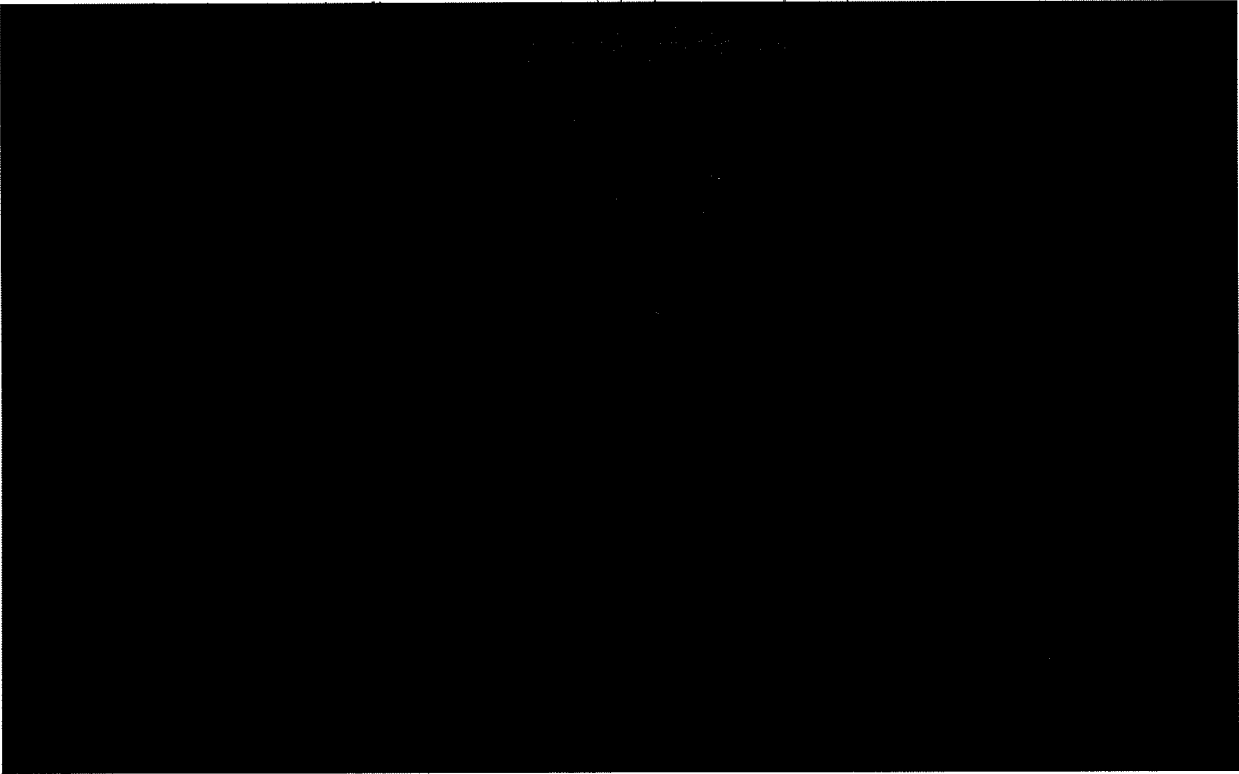
3.2 Outputs

Air

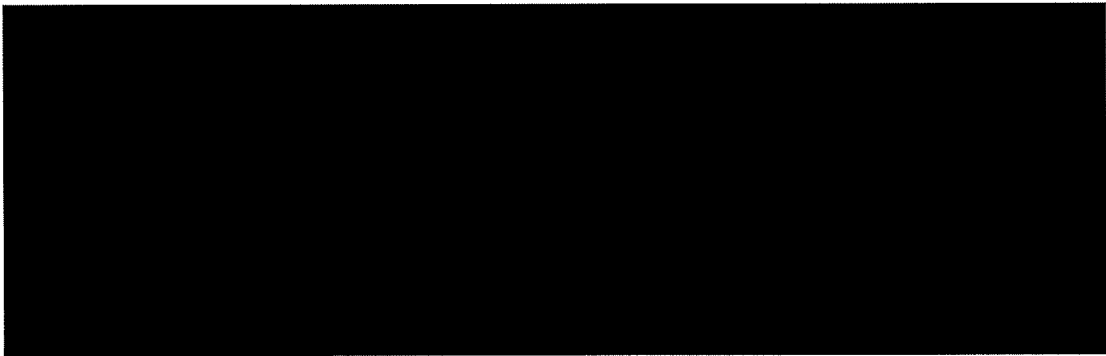
During the construction and instalment works, emissions in atmosphere can be generated by exhaust gases of the machines and equipment specific for the execution period, and by the dust from the surfaces on which they move.

The emissions generated are reduced in quantity due to the reduced number of machines and to the fact that not much manoeuvring is necessary, consequently there will only be an insignificant impact, in the immediate surroundings of the plant. Small quantities of gases will be generated from the oxyacetylene and / or electric welding.

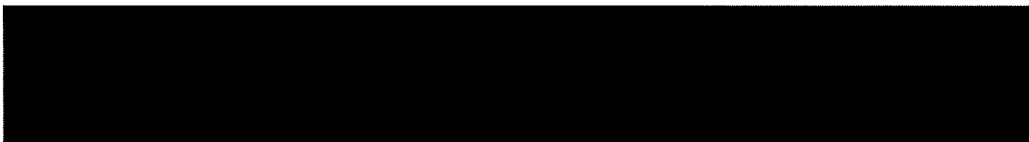
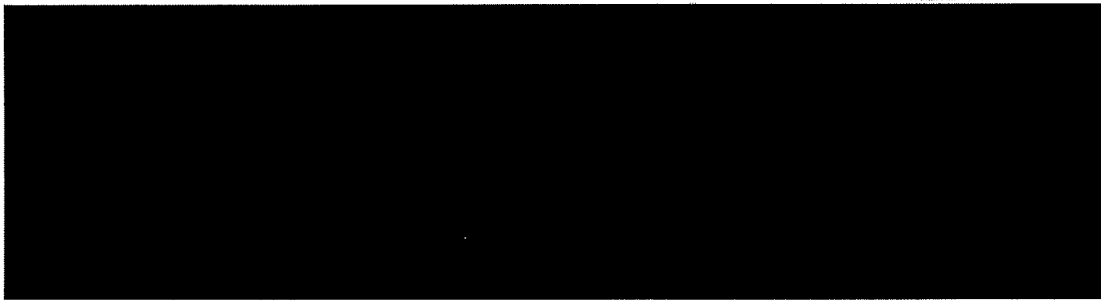




Present situation



After revamping

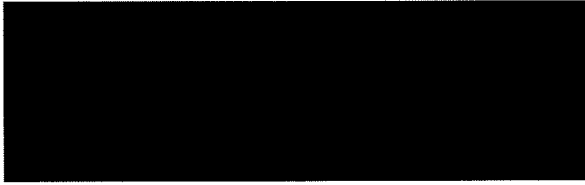




Noise

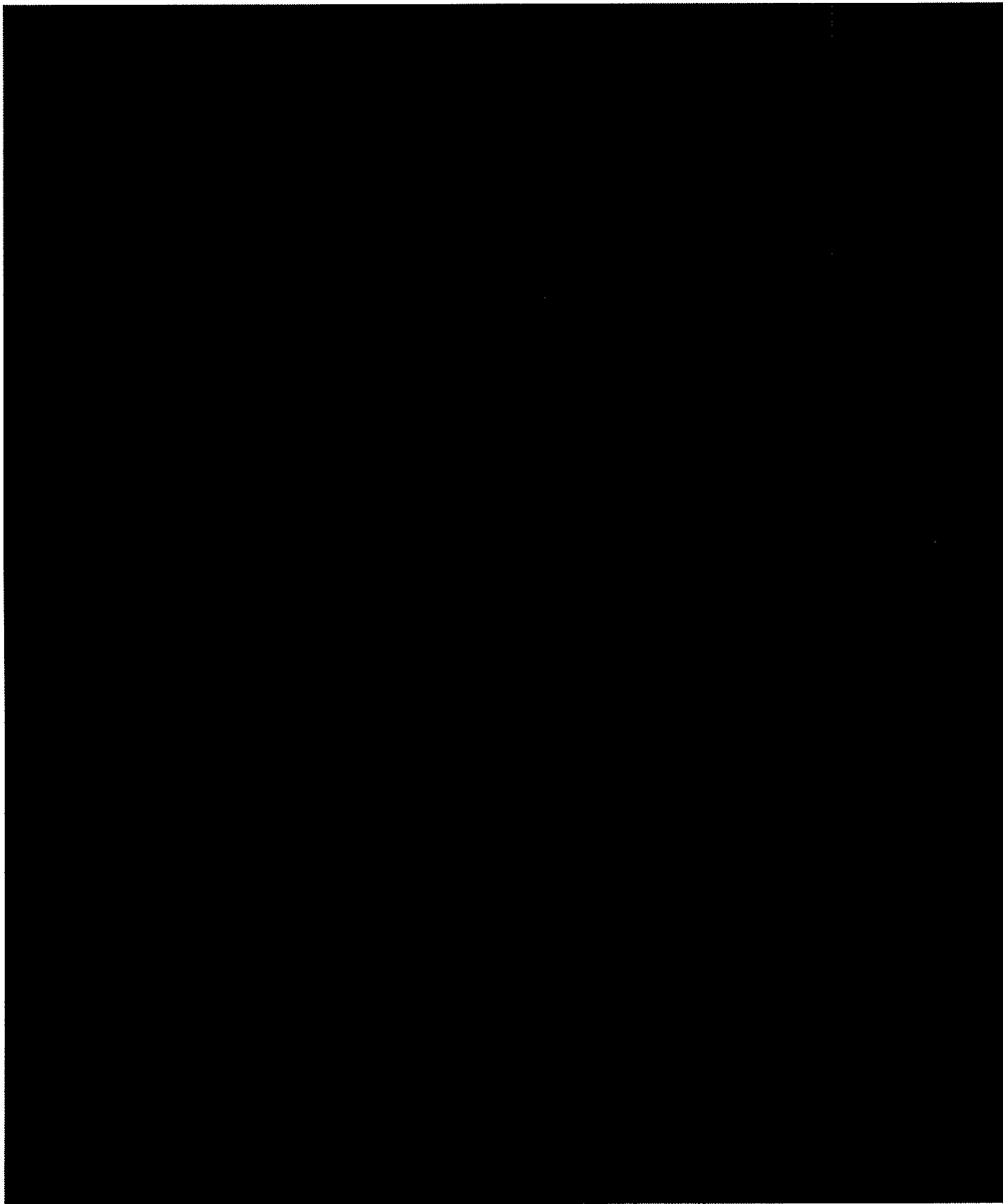
For the execution of the various categories of works, the specific machines and equipment used during execution may represent a possible source of noise and vibrations.

Noise level associated to the various equipment used are:



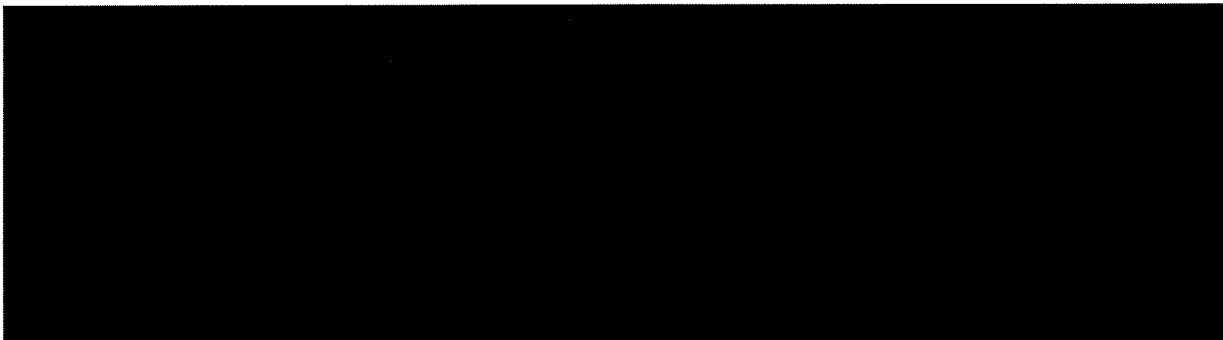
Waste

Estimated amounts of waste during construction phase:



The estimated quantities of waste generated in the operation phase are:





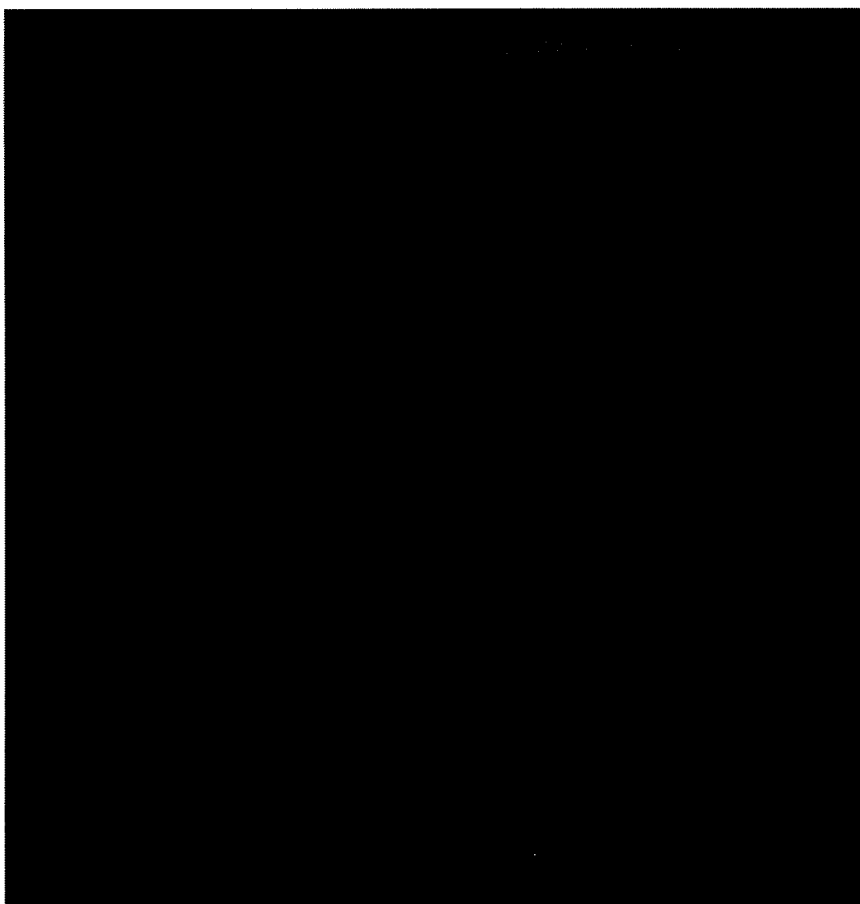
Transport or modification existing roads

Carriageways will be created for the two buildings, which will be connected to the roads on the premises.

4. Data on the condition of the environment in the territory where the export project will be implemented

Social, economic and cultural aspects of the area

From the social point of view the area which can be defined as potentially affected by project realisation and project operation is about 30-40 km around Tirgu-Mures. In the context of potentially affected regions next municipality are situated over there.



Air

AZOMURES surrounding localities potentially affected by pollution:



The cumulated effects due to the other surrounding plants are studied for pollutants with similar effects and the stationary emissions with ammonia and urea dust content are shown in the table below:

Objective / Plant	Measurement point	Emission source code	Parameter determined	Output Nm ³ /h	Functioning hours	Emissions yearly average 2013 mg/Nm ³	Pollutant quantity kg/year
Ammonia / Ammonia III	Stripping column process condensate						
Ammonia / Ammonia IV	Stripping column process condensate						
Nitric Acid / Nitric Acid II	Residual gas exhaust nozzle						
Nitric Acid / Nitric Acid III	Residual gas exhaust nozzle						
Nitric Acid / Nitric Acid IV	Residual gas exhaust nozzle						
Ammonium Nitrate / Ammonium Nitrate I+II	Granulation towers (10 stacks)						
Ammonium Nitrate / Ammonium Nitrate I+II	Gas evacuation after the scrubber						
Ammonium Nitrate / Ammonium Nitrate III	Granulation tower						
Ammonium Nitrate / Ammonium Nitrate	Fluid bed evacuation						



Objective / Plant	Measurement point	Emission source code	Parameter determined	Output Nm ³ /h	Functioning hours	Emissions yearly average 2013 mg/Nm ³	Pollutant quantity kg/year
Nitrate III							
Liquid fertilizers – UAN	UAN + Urea vessel						
Urea / Revamped Urea	Exhaust stack from acid wash scrubber – 1 stack						
NPK / Production hall	Granulation tower – joint stack for gases from F and NOx gas washing (1309), NH3 gas washing (1310), vessel aspiration (V1320)						
NPK / Production hall	CaCO3 filter aspiration						
NPK / Production hall	Granulation tower – evacuation (10 fans) 1A-10A						
NPK / phospho-ammonia water concentration plant	BO4 evacuation in atmosphere						
Melamine / Ejector	PE2 urea melt concentration phase ejector						

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Fauna and Flora

The project is located in an industrial area, no other lands, greens areas, animal species or habitats are affected. The functioning of the [REDACTED] after revamping will lead to the significant reduction of the impact on fauna and flora in the areas neighbouring AZOMURES. According to the assessments regarding the impact on fauna and flora, it is estimated that it will be insignificant during the construction stage, and much diminished in the operational stage compared to the present situation and on the long term.

Forests and landscape

The industrial platform is located in the western part of Tg.Mures municipality's industrial area, at about 4 km away from the center of the city. The location of the plant is neighbored by the industrial area on AZOMURES premises. The production unit will be consistent with the general image of the area and will not modify the general landscape character.

5. Comprehensive characteristics and evaluation of effects of the export project on the population and on the environment

5.1 The expected significant environmental impacts

Air Quality

Significant reduction of impact about [REDACTED] reduction of the NH₃ quantity and [REDACTED] reduction of the urea dust quantity in the gases evacuated from the stack of the finishing section.

Significant reduction of impact, reduction of emission concentration: [REDACTED]

Noise and vibration

For the execution of the various categories of works, the specific machines and equipment used during execution may represent a possible source of noise and vibrations. Another potential source of noise during the execution of the investment is represented by the mechanical machines transporting the materials necessary for execution of the works. All equipment used during execution will comply with the level of acoustic power imposed by GD 1756/2006 regarding the limitation of noise emissions levels in the environment produced by equipment intended for use outside buildings.

The urea solution production process has local insignificant sources of noise. The main sources of noise during operation will be the transfer pumps. The urea solution plant will replace certain equipment in the existing plant with more performant ones, so any noise level, combined with the existing sources, will not increase.

Water Quality

The technological water necessary on site is ensured from the surface intake, from Mures River, through catchment dam no, 2, managed by the Mures Basinal Administration.

The necessary amount of technological water for the urea solution plant, including the quantity estimated for the new production capacities, has been authorized according to Water Management Permit [REDACTED].

From the execution phase of the project, no technological water will result, consequently no impact on water quality is prognosed.

The probability of occurrence of a quantifiable or significant impact on water quality during the construction phase is very reduced, considering the type of activities.

The wastewaters resulted from the construction activities will generate a direct insignificant impact, in the case of domestic wastewaters, which will be discharged in the municipal sewerage network. It is estimated that the project's impact on water quality will be insignificant and short term for the construction phase.

[REDACTED]

For the operating phase, one of the project's objective is the revamping of the wastewater treatment plant in view of treating the wastewater flows resulted after revamping, and compliance of the ammonia and urea concentrations of the purified process condensate with the admitted limits, according to the Integrated Environmental Permit and BREF-BAT documentation.

After project implementation, the same types of wastewaters will result. These will be treated on site, in a new treatment plant.

Soil

During implementation of the project

- Uncontrolled storage of waste;
- Accidental leaks of petrol products from the activity of the machines and vehicles;
- Modifications of drainage conditions due to excavation works;
- Erosion processes of the stripped soil.

During exploitation

- Pollutant emissions from the finishing section;
- Negative modification of soil and subsoil elements caused by accidental leaks / spilling of raw materials or auxiliary materials during transport and manipulation;
- Negative modification of soil and subsoil elements caused by exfiltrations of tanks and sewerage networks;
- Uncontrolled storage and elimination of waste and hazardous substances;

Socio-economic aspects

- Creating new workplaces during the construction phase;
- Increasing investments in Tg. Mures municipality;
- Increasing the quality of life of the employees by giving them the possibility to operate modern equipment and machines;
- The significant improvement of the quality of life of the sensitive receptors, the inhabitants of Tg. Mures municipality and neighbouring communes by reducing the ammonia and dust emissions resulting in the present production process, following the completion of the integrated project Urea Plant Revamping, which includes the production unit and the urea solution plant.

All these aspects will contribute to the economic growth of the area.

Cultural aspect

Considering the specific character of the works, as well as their location within the municipality's perimeter, we cannot discuss about any impact on cultural or ethnic conditions, or on the areas cultural patrimony.

[REDACTED]

5.2 Comparison of solution

In order to assessment the environmental impact of the investment [REDACTED] location on Azomures SA Tirgu Mures premises, the "0" (non – action) alternative was considered, for the situation without project implementation, and the alternative with the implementation of the project (active variant) for increasing capacity and compliance to environmental requirements.

For the identification of significant impacts all activities affected by project implementation were considers, as well as environmental receptors and potential interactions between components and activities.

From the assessment of impact, as a comparison between the present situation (non – action variant) and after the implementation of the [REDACTED] (active variant), on the location and within the S.C. AZOMURES S.A. industrial platform, the following are obvious:

- Impact on surface waters is significantly reduced compared to the present situation, and cumulated impact on waters is a positive;
- Impact on soil and ground waters is maintained to the present level;
- Impact on atmospheric air after commissioning is significantly reduced compared to the present situation, and basically modifies the present impact, bringing a visible positive impact.

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6. Summary evaluation of compliance with the rules under consideration exports for environmental protection

The available project documentation and impact assessment of the construction and operation on the environment [REDACTED] in the village Mures, Republic of Romania at this stage of development very reliable. The negative impacts do not exceed the limits set by laws and regulations.

Based on the available data the export project corresponds to the relevant Romanian and European limits and the key parameters are compatible with the standards of the World Bank.

6.1 Comparison of chosen technologies with Best Available Techniques BAT Reference Document on Best Available Techniques for the Manufacture of Large Volume Inorganic Chemicals, Ammonia, Acids and Fertilizers, 2007" (EC-BAT 2007).

According to EC-BAT 2007, the basic objectives of revamping a conventional plant with stripping technology are:

- Increase of production capacity;
- Decrease of the raw material specific consumption;
- Reduction of pollution;
- Reduction of maintenance costs;

According to EC-BAT 2007, the basic principle of revamping implies combining condensation and synthesis in one equipment, a principle applied also to this project, in the following configuration:

- Stripper + combined equipment (condenser/synthesis pre-reactor) + synthesis reactor.

In the case of this project, the combined equipment is the pool condenser.

- The recycling technology applied and the proposed plant and equipment, as well as the process parameters are compliant with BAT/BREF provisions;
- The specific raw material consumptions, per ton of produced urea, are compliant with BAT/BREF provisions;
- The wastewater emissions resulted from process condensate and draining will comply to BAT/BREF conditions;
- The air emissions resulted from the Urea Solution Plant are collected and sent for purification and ammonia recovery in the wash scrubber system in the new Finishing Section. Purification of the gases discharged from the Finishing Section will be compliant, both from the qualitative and quantitative point of view, with BAT/BREF requirements.

7. Unique final evaluation of the acceptability or unacceptability of the impact of the project on the environment

7.1 Mitigation measures during operation of the project

Air Quality (reduction air pollution)

During the implementation of the investment no decontamination equipment or additional protective measures are necessary.

During operation phase

For the minimization of pollutant emissions in the atmosphere and compliance to the limits foreseen by the legislation in force, the following mitigation measures have been established:

- [Redacted], with a system of significantly higher efficiency, based on the fluid bed granulation technology;
- increasing environmental performances by reducing dust and ammonia emissions which result in the current granulation process;
- recovering the ammonia from the flows with ammonia content sent from the [Redacted] [Redacted], by washing them in the scrubber of the [Redacted];
- maintaining the gas decontamination systems in optimum parameters;
- compliance with the daily technical inspection procedures, the regular technical inspections procedures;
- continuous compliance and monitoring of operating parameters;
- continuous monitoring of ammonia and urea dust emissions at the gas evacuation stack of the [Redacted];
- installing a modern central command and control system, with the integration of the existing equipment;
- conducting the technological processes from [Redacted], a project connected to the revamping projects of the [Redacted], implemented in parallel;
- updating all existing electrical and measurement and control equipment which are reused and replacing those which are technically obsolete.

Water Quality

In order to prevent any impact on water quality, the following measures will be taken:

- ensuring the proper functioning of the separative collection system of the various wastewater categories;
- full compliance with the treatment technology, according to the operation manual;

[Redacted]

- monitoring of the end quality parameters of the treated waters, with the standard frequency and methods imposed by regulatory documents;
- maintaining in good conditions the soil waterproofing arrangements (concrete platforms, concrete access roads).

Soil (reduction of damage and contamination of the soil)

No.	Pollution source	Prevention and mitigation measures
Construction phase		
1	Uncontrolled storage of waste	<p>Adequate management of waste at the work point</p> <ul style="list-style-type: none"> - Training of personnel regarding the selective collecting of waste - Selective collection of construction waste and handing over to authorized operators in view of recovery / elimination, - Installation of ecologic trash cans for the selective collection of domestic waste, handing over the recyclable part to an authorized operator in view of reuse and the biodegradable part to the sanitation services operator.
2	Accidental leakage of petrol products from machine and vehicle activity	<p>In order to prevent soil and subsoil contamination with petrol products or oils discharged in case of accidental spills, a platform was arranged on site, for the parking of vehicles / machines, absorbent materials are available (sand, turf, etc.), and special equipment is used for urgent intervention in case of accidental leaks of petrol products and / or used oils.</p>
3	Temporary occupation of the soil with construction materials and / or excavated materials	<p>Construction materials will be stored in special established and arranged areas for a short period of time, and the excavated material will be used as filling or will be handed over to an authorized operator for elimination and reuse</p> <ul style="list-style-type: none"> - Excavation works will be executed according to the project and legislation in force, considering the hydrogeological structure of the area; - No excavation works will be executed in extreme meteorological conditions (rain, storm, etc).
4	Modifications of drainage conditions due to excavation works	<p>Stripping works will be executed during a short period of time, on a reduced area, and will observe the legislation in force and the project.</p>
5	Erosion process of stripped soil	<p>In order to prevent atmospheric pollutant from sedimenting, with negative influences on the soil and subsoil, the following measures were considered:</p> <ul style="list-style-type: none"> - Introducing a technology with increased performance, based on fluid bed granulation - Reduction of emissions in air by washing the dust in the wash scrubbers
Operation phase		
1	Pollutant emissions in the atmosphere resulted from the [redacted] with [redacted] negative influence on soil	

7.2 General conclusions

Most of the effects incurred due to the implementation of this project are significantly positive. Revamping of the Urea Plant will reduce, to a significant extent, the current sources of pollution and will allow using safer technological procedures and processes, which will take place in strictly controlled regime.

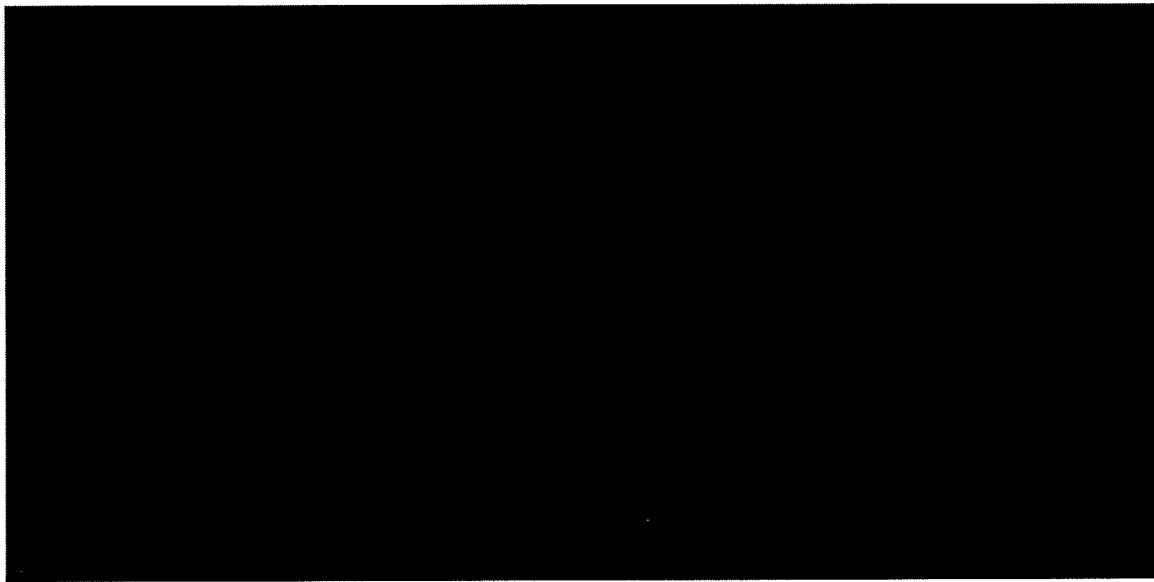
The [Redacted] will lead to increased safety for the operating personnel and for the environment, by reducing significantly the ammonia and dust emissions in the air from the surrounding areas, and thus for the inhabitants of Tg. Mures municipality and adjacent communes.

Components of the Environment	Suitable	Not Suitable	Not evaluated	Notes
Effects on the population, including socio-economic impacts				
Impacts on air and climate				
Impacts on noise situation				
Impacts on surface and groundwater				
Impacts on soil				
Influences on the geological environment and natural resources				
Impacts on fauna, flora and ecosystems				
Impacts on landscape				
Impacts on tangible assets and cultural heritage				
overall assessment				

[REDACTED]

[REDACTED]

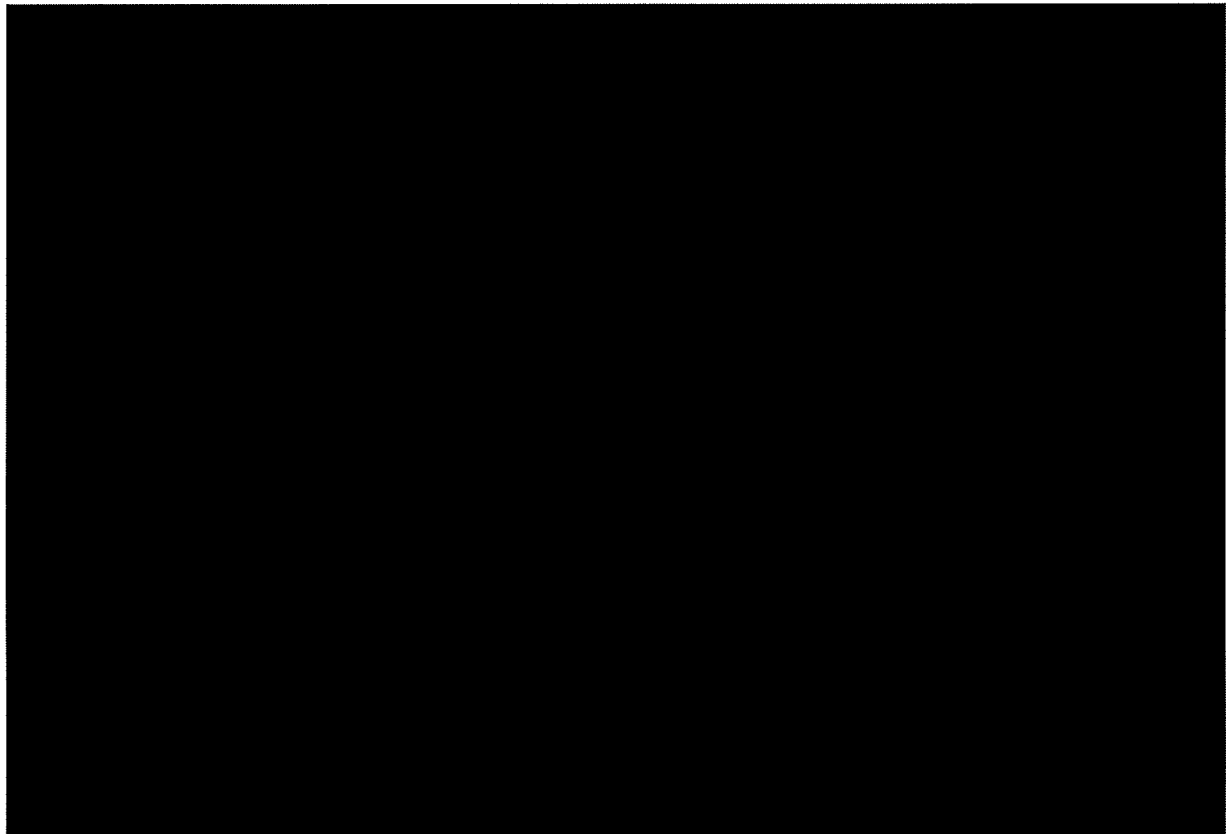
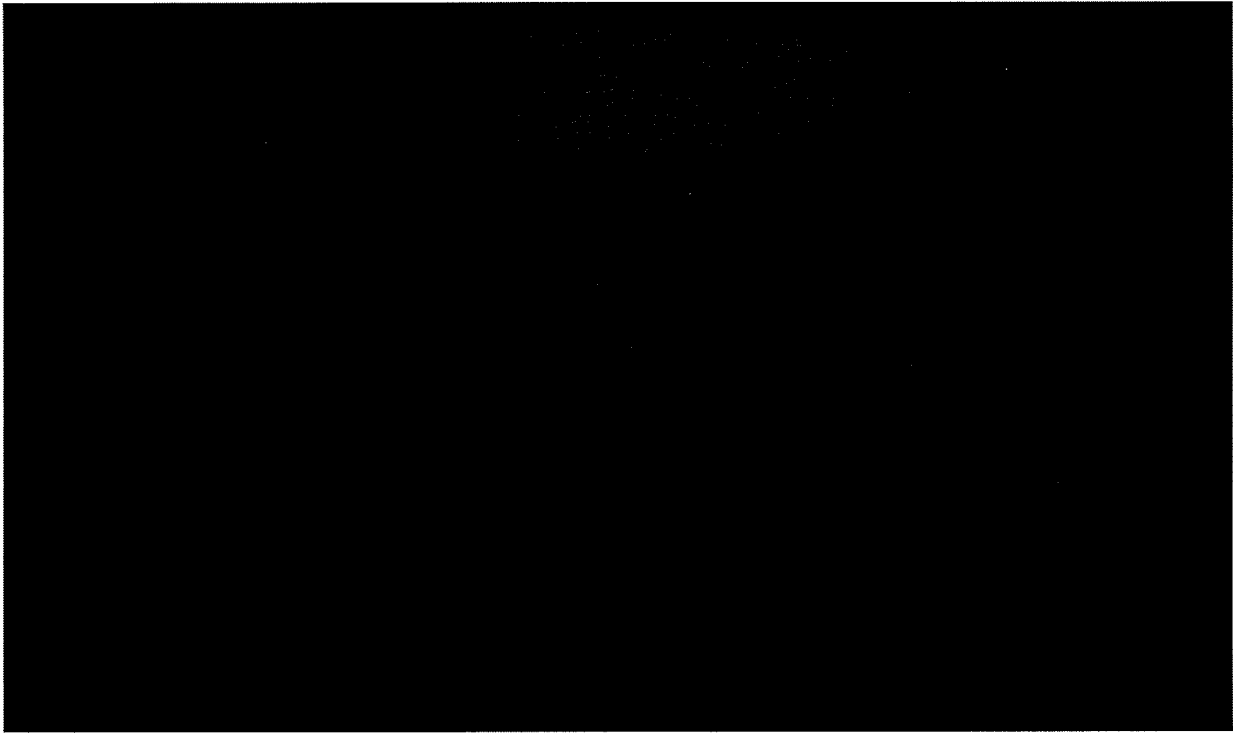
8. Materials, which are used in the report

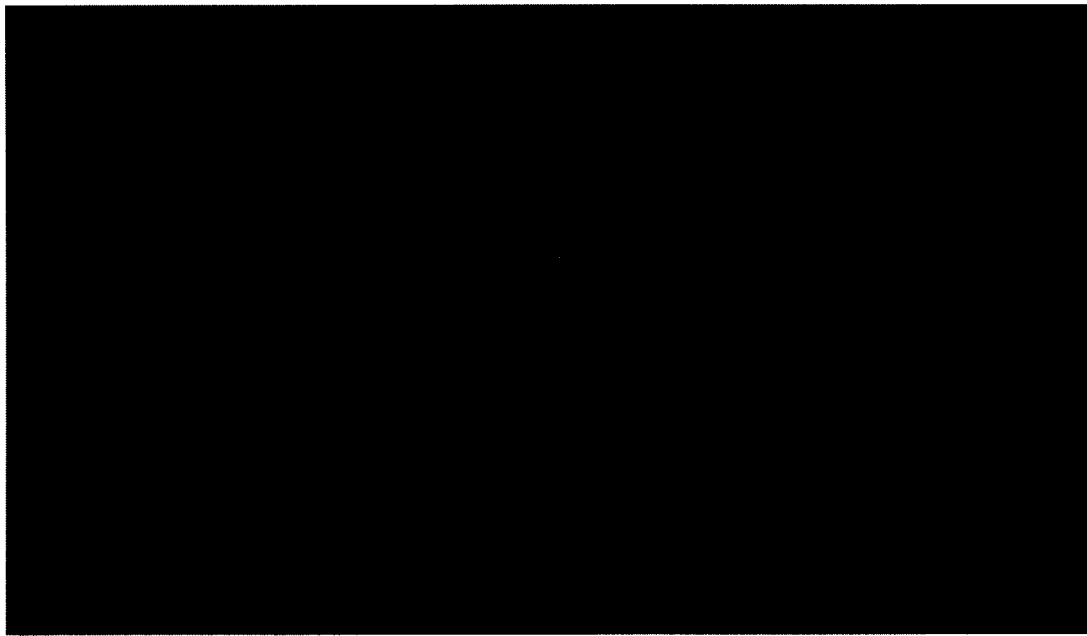


Internal reference documents of AZOMURES

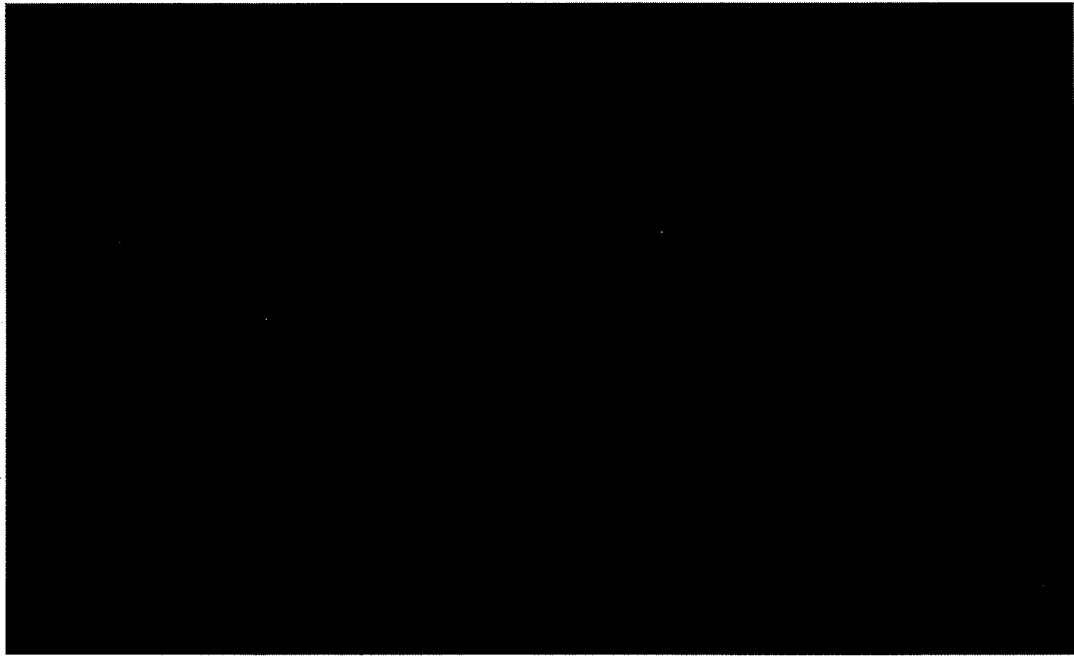


8.1 Site Pictures (present state, before project realisation)





Existing Urea Plant



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9. Authors of Authorisation of the environmental impact assessment of the export project

[Redacted]

[Redacted]

Date of the realization of the authorisation of the environmental impact assessment of the export project:

[Redacted]

Signature of relevant person responsible for Authorisation of the environmental impact assessment of the export project:

[Redacted]

[Redacted]