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ISO 9001 Q-229

Document No.: 96-40/20

WASTE ASSESSMENT

for the company

JP VOKA SNAGA d.o.o.

Waste number

19 12 12

Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

LF-B

Novo mesto, March 2020

Title: Waste assessment on behalf of JP VOKA SNAGA d.o.o., for waste no. 19 12 12 – LF B

Contractor: National Laboratory of Health, Environment and Food
Environment and Health Centre
Novo mesto Environment and Health Department
Water, Soil and Waste Section
Dalmatinova 2, 8000 Novo mesto, Slovenia

Contracting authority: JP VOKA SNAGA d.o.o.
Vodovodna cesta 90
SI-1000 Ljubljana

Date of contract: -

Purchase order no.: -

Declaration:

During the assessment of the waste, all the available data were used and considered, particularly those relating to the source of the waste (for the waste that resulted from a repeated and determinable production process, the deviations of the parameter values were also evaluated for the waste that resulted from normal changes in the waste creation process). In the process of waste investigation there were no available data from which it could be inferred that other substances had been mixed in with the waste and in doing so had affected the properties of the waste.

Inspection and sampling: Robert Novak, BSc in Biochemistry

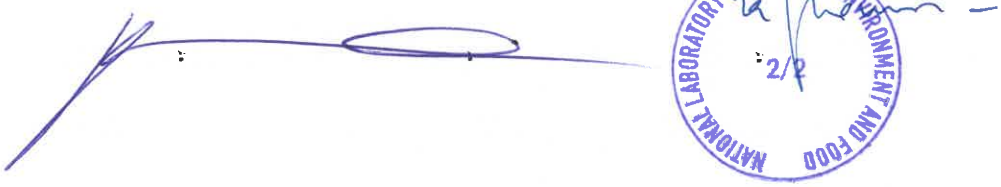
Inspection and sampling date: 06.02.2020

Assessment: Robert Novak, BSc in Biochemistry

Date of the assessment: 11.03.2020

Head of Task
Robert Novak, BSc in Biochemistry

Head of Environment and Health Department
Dušan Harlander, MD, MSc Epidemiology



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1. Introduction

On the basis of the order from JP VOKA SNAGA d.o.o., we carried out a confirmation of the waste number with an analysis pursuant to the Regulation of wastes (Official Journal of the RS, No. 37/15, 69/15). For the purposes of confirming the waste number, we performed the research on hazardous properties in the waste from HP 1 to HP 15.

2. Sampling method

The waste was sampled in accordance with SIST EN 14899:2006. A record of the sampling is contained in the Annex.

3. Data on the waste holder, type and source of the waste

3.1 Waste holder: JP VOKA SNAGA d.o.o.
Address: Vodovodna 90
Post code: SI-1000 Ljubljana
Registration No.: 5046688000

3.2 Waste number: **19 12 12**

Waste name: **Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11**

3.3 Description of waste:

The waste is various colour with a week smell of waste plastic and cleaning agents, heterogeneous – different particle size (0 – 200 mm), lightly wet and with bulk density 120 kg/m^3.

Dry matter content is 71,4 % the rest is water. There is no reason to expect other volatiles in waste than water. Waste consists of app. 70 % plastic particles, foils or plastic foam, 20 % of paper and wood particles and app. 10 % of other impurity (fibers, baby dipers,...).

Picture 1: Photography of waste

3.4 Address of the facility that represents the source or location of the waste:

Generator: JP VOKA SNAGA d.o.o. - RCERO Barje
Address: Barje
Post code: SI-1000 Ljubljana

3.5 Description of the waste:

The combustible waste with code number 19 12 12 is produced as combustible product in two categories as LF-A and LF-B regarding their caloric value in the process of mechanical treatment (D9 procedure) of the mixed household waste (MHW) with code number 20 03 01 in RCERO Ljubljana MBO installation.

MHW is collected and treated in RCERO Ljubljana according to the pre-treatment and treatment of non-hazardous waste according to procedures D8 and D9. MHW is delivered by the waste collection trucks to the deep bunker. Two bridge cranes with motor grab serve the two feeding hoppers for the mechanical pre-treatment lines. The feeding hoppers are heavy duty moving floors dosing the primary shredders. MHW is dosed to one universal primary shredder.

The shredded MHW is then passing a drum screen where is separated by the sieve in three sizes:

- fine fraction (approx. <70 ... 80 mm)

  Parts under 40 mm from fine fraction are conveyed to the following preparation for the fermentation. The oversize fraction with approx. 40 mm to 70 ...80 mm is passing an eddy current separator but no further treatment. It is filled directly to a flat bunker as LF-B.

- medium fraction (70 ...80 mm to approx. 250mm)

  From the medium sized fraction the ferrous and non-ferrous metals are taken out. The rest material goes back into the deep bunker at the front-end of the plant. From here it can be fed to the Sorting Plant, starting with the Ballistic Separator

- oversize fraction (approx. >250mm)

  The oversize material approx. >250 mm is conveyed to the Bulky Waste (BW) reception area, from where it can fed to the BW shredder, a rotor cutter. From here it can be fed to the Sorting Plant, starting with the Ballistic Separator.

The Sorting Line consisting of automatic and manual sorting steps is used for the screened material. The further process starts with the ballistic separator which is separating mainly 3D from 2D material and fine particles. The fines are added to the LF-B.

The 3D fraction from the ballistic separator is separated in a NIR sorting line. Starting with a NIR for all type of plastics what is negative goes to LF-B, a following NIR machine takes out HDPE and the PET. The rests from 3D is used for LF-B.

2D material goes thru the manual sorting cabin where is taken out LDPE, HDPE, paper, PET and tetrapak. Unsorted material goes to the windsifter where the heavy material is taken to LF-B, the light material goes to LF-A. All above streams of sorted LF-B goes onshredding.

The loading of combustible waste types (LF-A & LF-B) is done by wheel loaders directly to the trucks, or; alternatively both materials may be compacted to round bales wrapped with plastic film (1,6m diameter - 1,6m^3 per bale) by means of the stand-by round baling machine.

3.5.1 Annual quantity of waste: 41,980 tonnes
3.5.2. Quantity of waste analysed: 150 m^3
3.5.2 Sample code:
Field code: R8
Laboratory No. 2020/11877

4. Waste properties

4.1 State of the waste and other special properties:

4.1.1 State of the waste at 20°C:

[ ] liquid	[ ] homogeneous	[ ] powder-like	[X] dry
[ ] dense liquid/paste-like	[X] non-homogeneous	[X] grained/bulky	[X] moist
[ ] sludgy	[ ] dispersion	[ ] in a lump	[ ] hygroscopic
[X] solid	[ ] emulsion	[ ] wrapped	

4.1.2 Special properties:

[ ] poisonous	[ ] harmful to the environment	[ ] corrosive (acidic or alkaline)
[ ] harmful to health	[ ] irritant	[ ] infectious

4.2 Colour: **various**

4.3 Smell: [ ] strong [X] faint [ ] none
[X] odour: waste plastic and waste

4.4. Reactivity:

[ ] inert	[ ] highly flammable	[ ] chemically unstable
[ ] reacts with air	[ ] accelerates combustion	[ ] biodegradable
[ ] reacts with water	[X] combustible	[ ] gas forming
[ ] it reacts with acid/lye	[ ] incombustible	[ ] danger of explosion

4.5 Water solubility:

[ ] highly soluble	[ ] partially soluble
[X] slightly soluble	[ ] insoluble

4.6 Safety precautions:

4.6.1 Handling in temporary storage:

Technical-safety precautions: Store indoors.
Personal protective equipment: Personal means of protection (clothing, gloves, footwear),
Fire and explosion safety: Waste is combustible but is not spontaneously flammable.
Protection against water pollution: Prevent contact with water or remove the material in case of wastage.

4.6.2 Protection against accidents and fires:

Measures in the event of Waste should be collected into the container using the appropriate

wastage:	tools.
Appropriate extinguishing agent:	All extinguishing agents are suitable.
Extinguishing agents that must not be used:	/
Useful binder:	/

4.7 Physical properties:

Density or bulk density at room temperature:	190	kg/m^3
Range of particle/piece size:	**from 0 to 200 mm**	mm

4.8 Description of the preliminary processing of waste or the justification for the omission of preliminary waste processing: Waste treatment procedure described under Item 3.5

4.9 Restricted waste combinations: The waste is not hazardous.

5. Grounds for the determination of a waste number

The waste is classified into groups according to the list of waste as defined in Article 4 of the Regulation on waste Official Journal RS No. 37/15, 69/15.

Individual waste, given the nature of the occurrence be classified in the group and sub-group of waste with the waste list, as provided in Article 4 of the Regulation on waste Official Journal RS No. 37/15, 69/15, so that the waste is assigned with number of waste. If the waste under Article 5 of the Regulation on waste Official Journal RS No. 37/15, 69/15 be classified as hazardous or non-hazardous waste, it should be classified as hazardous waste unless the data on the composition of the waste and the concentration of hazardous substances or on the basis of its analysis shown to have none of the hazardous properties. Waste not showing dangerous properties as the composition does not contain any hazardous substances. The study of the hazardous properties is attached to this assessment.

According to the source and composition, the waste in question has been classified based on the classification list contained in the Regulation of wastes, Official Journal of the RS No. 37/15, 69/15, into waste group:

19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use
19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, palletising) not otherwise specified
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

6. Annex

1. Report on the study of hazardous waste properties
2. Test reports 2020/11877
3. Sampling record SKOb 18-02-13 dated 06 Februar 2020

7. List of literature used

1. Regulation of wastes (Official Journal of the RS, No. 37/15, 69/15)

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SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Annex to the waste assessment No.: 96-40/20 Date: 11.03.2020

Report on the study of hazardous waste properties

The report on the study of hazardous waste properties was carried out on the basis of:

- obtained documentation and ☒ Yes ☐ No
- test results ☒ Yes ☐ No
  - Documents lab. no.: **2020/11877**

HP 1 – Explosive **Contains a dangerous property HP 1** ☐ Yes ☒ No

Waste which is capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic waste, explosive organic peroxide waste and explosive self-reactive waste is included.

Table 1: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 1:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Determined in waste
Unst. Expl.	H 200	☐ Yes
Expl. 1.1	H 201	☐ Yes
Expl. 1.2	H 202	☐ Yes
Expl. 1.3	H 203	☐ Yes
Expl. 1.4	H 204	☐ Yes
Self-react. A	H 240	☐ Yes
Org. Perox. A		☐ Yes
Self-react. B	H 241	☐ Yes
Org. Perox. B		☐ Yes

When a waste contains one or more substances classified by one of the hazard class and category codes and hazard statement codes shown in Table 1, the waste shall be assessed for HP 1, where appropriate and proportionate, according to test methods. If the presence of a substance, a mixture or an article indicates that the waste is explosive, it shall be classified as hazardous by HP 1.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 1. Waste does not contain hazardous propertie of HP 1.

HP 2 – Oxidising **Contains a dangerous property HP 2** ☐ Yes ☒ No

Waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials.

Table 2: Hazard Class and Category Code(s) and Hazard statement Code(s) for the classification of wastes as hazardous by HP 2:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Determined in waste
Ox. Gas 1	H 270	☐ Yes
Ox. Liq. 1	H 271	☐ Yes

Hazard Class and Category Code(s)	Hazard statement Code(s)	Determined in waste
Ox. Sol. 1		☐ Yes
Ox. Liq. 2, Ox. Liq. 3	H 272	☐ Yes
Ox. Sol. 2, Ox. Sol. 3		☐ Yes

When a waste contains one or more substances classified by one of the hazard class and category codes and hazard statement codes shown in Table 2, the waste shall be assessed for HP 2, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that the waste is oxidising, it shall be classified as hazardous by HP 2.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 2. Waste does not contain hazardous properties of HP 2.

HP 3 – Flammable **Contains a dangerous property HP 3** ☐ Yes ☒ No

- flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C ☐ Yes
- flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air ☐ Yes
- flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction ☐ Yes
- flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa ☐ Yes
- water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities ☐ Yes
- other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste. ☐ Yes

Table 3: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 3:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Determined in waste
Flam. Gas 1	H220	☐ Yes
Flam. Gas 2	H221	☐ Yes
Aerosol 1	H222	☐ Yes
Aerosol 2	H223	☐ Yes
Flam. Liq. 1	H224	☐ Yes
Flam. Liq. 2	H225	☐ Yes
Flam. Liq. 3	H226	☐ Yes
Flam. Sol. 1	H228	☐ Yes
Flam. Sol. 2		☐ Yes
Self-react. CD	H242	☐ Yes
Self-react. EF		☐ Yes
Org. Perox. CD		☐ Yes
Org. Perox. EF		☐ Yes
Pyr. Liq. 1	H250	☐ Yes
Pir. Sol. 1		☐ Yes
Self-heat. 1	H251	☐ Yes
Self-heat. 2	H252	☐ Yes

Hazard Class and Category Code(s)	Hazard statement Code(s)	Determined in waste
Water-react. 1	H260	☐ Yes
Water-react. 2	H261	☐ Yes
Water-react. 3		☐ Yes

When a waste contains one or more substances classified by one of the following hazard class and category codes and hazard statement codes shown in Table 3, the waste shall be assessed, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that the waste is flammable, it shall be classified as hazardous by HP 3.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 3. Waste does not contain hazardous properties of HP 3.

HP 4 – Irritant - skin irritation and eye damage **Contains a dangerous property HP 4** ☐ Yes ☒ No

Waste which on application can cause skin irritation or damage to the eye.

The cut-off value for consideration in an assessment for Skin corr. 1A (H314), Skin irrit. 2 (H315), Eye dam. 1 (H318) and Eye irrit. 2 (H319) is 1 %.	☐ Exceeding
If the sum of the concentrations of all substances classified as Skin corr. 1A (H314) exceeds or equals 1 %, the waste shall be classified as hazardous according to HP 4.	☐ Exceeding
If the sum of the concentrations of all substances classified as H318 exceeds or equals 10 %, the waste shall be classified as hazardous according to HP 4.	☐ Exceeding
If the sum of the concentrations of all substances classified H315 and H319 exceeds or equals 20 %, the waste shall be classified as hazardous according to HP 4.	☐ Exceeding

Note: Wastes containing substances classified as H314 (Skin corr.1A, 1B or 1C) in amounts greater than or equal to 5 % will be classified as hazardous by HP 8. HP 4 will not apply if the waste is classified as HP 8.

When a waste contains one or more substances in concentrations above the cut-off value, that are classified by one of the following hazard class and category codes and hazard statement codes and one or more of the following concentration limits is exceeded or equalled, the waste shall be classified as hazardous by HP 4.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard. Also no limit is exceeded. Waste does not contain hazardous properties of HP 4.

HP 5 – Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

Contains a dangerous property HP 5 ☐ Yes ☒ No

Waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.

Table 4: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 5:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Determined in waste
STOT SE 1	H370	☐ Yes
STOT SE 2	H371	☐ Yes
STOT SE 3	H335	☐ Yes
SOTT RE 1	H372	☐ Yes
STOT RE 2	H373	☐ Yes
Asp. Tox. 1	H304	☐ Yes

When a waste contains one or more substances classified by one or more of the following hazard class and category codes and hazard statement codes shown in Table 4, and one or more of the concentration limits in Table 4 is exceeded or equalled, the waste shall be classified as hazardous according to HP 5. When substances classified as STOT are present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 5.

When a waste contains one or more substances classified as Asp. Tox. 1 and the sum of those substances exceeds or equals the concentration limit, the waste shall be classified as hazardous by HP 5 only where the overall kinematic viscosity (at 40 °C) does not exceed 20.5 mm2/s (for fluids).

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 4. Waste does not contain hazardous properties of HP 5.

HP 6 – Acute toxicity **Contains a dangerous property HP 6** ☐ Yes ☒ No

Waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.

The following cut-off values shall apply for consideration in an assessment:

- For Acute Tox. 1, 2 or 3 (H300, H310, H330, H301, H311, H331): 0.1 %
- For Acute Tox. 4 (H302, H312, H332): 1 %

Table 5: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 6:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Concentration limit	Determined in waste
Acute Tox. 1 (Oral)	H300	0,1 %	☐ Yes
Acute Tox. 2 (Oral)	H300	0,25 %	☐ Yes
Acute Tox. 3 (Oral)	H301	5 %	☐ Yes
Acute Tox. 4 (Oral)	H302	25 %	☐ Yes
Acute Tox. 1 (Dermal)	H310	0,25 %	☐ Yes
Acute Tox. 2 (Dermal)	H310	2,5 %	☐ Yes
Acute Tox. 3 (Dermal)	H311	15 %	☐ Yes
Acute Tox. 4 (Dermal)	H312	55 %	☐ Yes
Acute Tox. 1 (Inhal.)	H330	0,1 %	☐ Yes
Acute Tox. 2 (Inhal.)	H330	0,5 %	☐ Yes
Acute Tox. 3 (Inhal.)	H331	3,5 %	☐ Yes
Acute Tox. 4 (Inhal.)	H332	22,5 %	☐ Yes

If the sum of the concentrations of all substances contained in a waste, classified with an acute toxic hazard class and category code and hazard statement code given in Table 5, exceeds or equals the threshold given in that table, the waste shall be classified as hazardous by HP 6. When more than one substance classified as acute toxic is present in a waste, the sum of the concentrations is required only for substances within the same hazard category.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 5. Waste does not contain hazardous properties of HP 6.

HP 7 – Carcinogenic **Contains a dangerous property HP 7** ☐ Yes ☒ No

Waste which induces cancer or increases its incidence.

Table 6: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 7:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Concentration limit	Determined in waste
Carc. 1A	H350	0,1 %	☐ Yes
Carc. 1B			☐ Yes
Carc. 2	H351	1,0 %	☐ Yes

When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 6, the waste shall be classified as hazardous by HP 7. When more than one substance classified as carcinogenic is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 7.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 6 and also exceeding concentration limit. Waste does not contain hazardous properties of HP 7.

HP 8 – Corrosive **Contains a dangerous property HP 8** ☐ Yes ☒ No

Waste which on application can cause skin corrosion.

When a waste contains one or more substances classified as Skin corr.1A, 1B or 1C (H314) and the sum of their concentrations exceeds or equals 5 %, the waste shall be classified as hazardous by HP 8.

The cut-off value for consideration in an assessment for Skin corr. 1A, 1B, 1C (H314) is 1.0 %.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard and also exceeding concentration limit. Waste does not contain hazardous properties of HP 8.

HP 9 – Infectious **Contains a dangerous property HP 9** ☐ Yes ☒ No

Waste containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms.

Table 7: Parameters, analyzed for HP 9 determination:

Parameter	Unit	Limit value	Results
Thermo tolerant campylobacters	in 25 g	does not contain	-
Salmonella	in 25 g	does not contain	-
Shigellae	in 25 g	does not contain	-
Pathogenic Yersinia	in 25 g	does not contain	-

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that are listed in table 7. Waste does not contain hazardous properties of HP 9.

HP 10 – Toxic for reproduction **Contains a dangerous property HP 10** ☐ **Yes** ☒ **No**

Waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring.

Table 8: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 10:

Hazard Class and Category Code(s)	Hazard statement Code(s)	Concentration limit	Determined in waste
Repr. 1A	H360	0,3 %	☐ Yes
Repr. 1B			☐ Yes
Repr. 2	H361	3,0 %	☐ Yes

When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 8, the waste shall be classified hazardous according to HP 10. When more than one substance classified as toxic for reproduction is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 10.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 8 and also exceeding concentration limit. Waste does not contain hazardous properties of HP 10.

HP 11 – Mutagenic **Contains a dangerous property HP 11** ☐ **Yes** ☒ **No**

Waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell.

Table 9: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the

corresponding concentration limits for the classification of wastes as hazardous by HP 11

Hazard Class and Category Code(s)	Hazard statement Code(s)	Concentration limit	Determined in waste
Muta. 1A	H340	0,1 %	☐ Yes
Muta. 1B			☐ Yes
Muta. 2	H341	1,0 %	☐ Yes

When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 9, the waste shall be classified as hazardous according to HP 11. When more than one substance classified as mutagenic is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 11.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table 9 and also exceeding concentration limit. Waste does not contain hazardous properties of HP 11.

HP 12 – Release of an acute toxic gas: **Contains a dangerous property HP 12** ☐ **Yes** ☒ **No**

Waste which releases acute toxic gases (Acute Tox. 1, 2 or 3) in contact with water or an acid.

When a waste contains a substance assigned to one of the following supplemental hazards EUH029, EUH031 and EUH032, it shall be classified as hazardous by HP 12 according to test methods or guidelines.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class EUH029, EUH031 or EUH032. Waste does not contain hazardous properties of HP 12.

HP 13 –Sensitising **Contains a dangerous property HP 13** ☐ **Yes** ☒ **No**

Waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.

When a waste contains a substance classified as sensitising and is assigned to one of the hazard statement codes H317 or H334 and one individual substance equals or exceeds the concentration limit of 10 %, the waste shall be classified as hazardous by HP 13.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class H317 or H334 and also exceeding concentration limit of 10% for one substance. Waste does not contain hazardous properties of HP 13.

HP 14 – Ecotoxic **Contains a dangerous property HP 14** ☐ Yes ☒ No

Waste which presents or may present immediate or delayed risks for one or more sectors of the environment.

Waste which fulfils any of the following conditions shall be classified as hazardous by HP 14:

- Waste which contains a substance classified as ozone depleting assigned the hazard statement code H420 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council (*) and the concentration of such a substance equals or exceeds the concentration limit of 0,1 %.

  [c(H420) ≥ 0,1 %]

- Waste which contains one or more substances classified as aquatic acute assigned the hazard statement code H400 in accordance with Regulation (EC) No 1272/2008 and the sum of the concentrations of those substances equals or exceeds the concentration limit of 25 %. A cut-off value of 0,1 % shall apply to such substances.

  [Σ c (H400) ≥ 25 %]

- Waste which contains one or more substances classified as aquatic chronic 1, 2 or 3 assigned to the hazard statement code(s) H410, H411 or H412 in accordance with Regulation (EC) No 1272/2008, and the sum of the concentrations of all substances classified as aquatic chronic 1 (H410) multiplied by 100 added to the sum of the concentrations of all substances classified as aquatic chronic 2 (H411) multiplied by 10 added to the sum of the concentrations of all substances classified as aquatic chronic 3 (H412) equals or exceeds the concentration limit of 25 %. A cut-off value of 0,1 % applies to substances classified as H410 and a cut-off value of 1 % applies to substances classified as H411 or H412.

  [100 × Σc (H410) + 10 × Σc (H411) + Σc (H412) ≥ 25 %]

- Waste which contains one or more substances classified as aquatic chronic 1, 2, 3 or 4 assigned the hazard statement code(s) H410, H411, H412 or H413 in accordance with Regulation (EC) No 1272/2008, and the sum of the concentrations of all substances classified as aquatic chronic equals or exceeds the concentration limit of 25 %. A cut-off value of 0,1 % applies to substances classified as H410 and a cut-off value of 1 % applies to substances classified as H411, H412 or H413.

  [Σ c H410 + Σ c H411 + Σ c H412 + Σ c H413 ≥ 25 %]

  Where: Σ = sum and c = concentrations of the substances.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class H4xx and also exceeding upper limits. Waste does not contain hazardous properties of HP 14.

HP 15 – Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste **Contains a dangerous property HP 15** ☐ Yes ☒ No

Table 10: Hazard statements and supplemental hazards for waste constituents for the classification of wastes as

hazardous by HP 15:

Hazard Statement(s)/Supplemental Hazard(s)		Determined in waste
May mass explode in fire	H205	☐ Yes
Explosive when dry	EUH001	☐ Yes
May form explosive peroxides	EUH019	☐ Yes
Risk of explosion if heated under confinement	EUH044	☐ Yes

When a waste contains one or more substances assigned to one of the hazard statements or supplemental hazards shown in Table 10, the waste shall be classified as hazardous by HP 15, unless the waste is in such a form that it will not under any circumstance exhibit explosive or potentially explosive properties.

Findings:

According to the technologies of waste formation, inspection of incoming materials, composition of the waste and the analyses of the examined waste, we note that this waste does not contain any of the substances that could be classified by one of the marks of the hazard class and the codes for the hazard shown in Table. Waste does not contain hazardous properties of HP 15.

S T A T E M E N T

Based on the research of hazardous properties carried out and in accordance with Regulation of wastes, Official Journal of the RS, No. 37/2015, 69/2015, we have established that the waste in question is classified as non-hazardous waste with the classification number 19 12 12. The waste does not contain hazardous properties.

Prepared by: **Robert Novak**, univ.dipl.biokem.

List of literature used:

- Regulation of wastes, Official Journal of the RS, No. 37/2015, 69/2015
- Council Directive (EU) No. 1357/2014, 18.12.2014
- Directive 2008/98/EC of the European Parliament and of the Council,
- Regulation(EC) No. 1272/2008 of the European Parliament and of the European Council,
- http://echa.europa.eu/

NATIONAL LABORATORY OF HEALTH, ENVIRONMENT AND FOOD

Task report

JP VOKA Snaga d.o.o. - Pogodba odpadki 2018-2019

Evidence code:	2172-18/46000-20/11877
Customer:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O. VODOVODNA CESTA 90 1000 Ljubljana
Request:	Plan vzorčenja, OBR-IV-NLZOH-COZ-OD20, 30.08.2019
Contractor:	Department for Environment and Health Novo mesto Department for Chemical Analysis of Food, Water and Other Environmental Samples Novo mesto Department for Chemical Analysis of Food, Water and Other Environmental Samples Kranj
Head of task:	Robert Novak, univ.dipl.biokem.
Novo mesto,	10.03.2020

Head of task:

Robert Novak, univ.dipl.biokem.

Electronically signed Robert Novak, univ.dipl.biokem. at 10.03.2020 12:14:13

Department for Environment and Health Novo mesto
Head of branch:

Dušan Harlander, dr.med.,spec.epidemiolog

The time of the certified signature of deputy and information about the certificate are shown at the top of the first page of the document.

Sample information

Sample:	JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample number:	20/11877
Purpose:	Waste assessment
Customer:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Sample taken by:	Robert Novak, NLZOH OOZ Novo mesto
Time of sampling:	06.02.2020 13:30
Place of sampling:	JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample received by:	Robert Novak
Place and time of receiving:	Novo mesto, 06.02.2020 17:11

Report annexes:
Testing report with evidence code 2172-18/46000-20/11877-T
Report of chemical analyses with evidence code 1072-18/46000-20/11877-K

NATIONAL LABORATORY OF
HEALTH, ENVIRONMENT AND FOOD
CENTRE FOR ENVIRONMENT AND HEALTH

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Evidence code:2172-18/46000-20/11877-T

Testing report

Sample:	JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample number:	20/11877
Purpose:	Waste assessment
Title:	JP VOKA Snaga d.o.o. - Pogodba odpadki 2018-2019
Head of task:	Robert Novak, univ.dipl.biokem.
Customer:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request:	Plan vzorčenja, OBR-IV-NLZOH-COZ-OD20, 30.08.2019
Sampling plan:	DN 98161, 06.02.2020
Place of sampling:	JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Methodology of sampling:	SIST EN 14899:2006
Sample status:	The sample complies with criteria for the reception

Sampling		***Sample receiving***		**Issue date:**	05.03.2020
Date and hour:	06.02.2020 13:30	**Date and hour:**	06.02.2020 17:11		
Taken by:	Robert Novak, NLZOH OOZ Novo mesto	**Received by:**	Robert Novak		

Head of branch:
Dušan Harlander, dr.med.,spec.epidemiolog

Electronically signed by deputy mag. Majda Ivanušič, univ.dipl.kem. at 10.03.2020 13:22:12

NATIONAL LABORATORY OF
HEALTH, ENVIRONMENT AND FOOD
CENTRE FOR CHEMICAL ANALYSIS OF FOOD,
WATER AND OTHER ENVIRONMENTAL SAMPLES

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Results marked with # or non-accredited relate to not-accredited activity

Evidence code: 1072-18/46000-20/11877-K

Report of chemical analyses

Sample: JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample number: 20/11877
Purpose: Waste assessment
Title: JP VOKA Snaga d.o.o. - Pogodba odpadki 2018-2019
Head of task: Robert Novak, univ.dipl.biokem.
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request: Plan vzorčenja, OBR-IV-NLZOH-COZ-OD20, 30.08.2019
Place of sampling: JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample status: The sample complies with criteria for the reception

Sampling
Date and hour: 06.02.2020 13:30
Taken by: Robert Novak, NLZOH OOZ Novo mesto

Sample receiving
Date and hour: 06.02.2020 17:11
Received by: Robert Novak

Issue date: 06.03.2020

Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Unit	Expressed as/on	Method Place of execution	Start/End
Waste analysis					
Antimony	20	mg/kg s.s.	Sb	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Arsenic	<1.0	mg/kg s.s.	As	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Copper	49	mg/kg s.s.	Cu	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Barium	81	mg/kg s.s.	Ba	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Boron	<120	mg/kg s.s.	B	ISO 17294-2:2016(E), NM	14.02.20 14.02.20
Zinc	98	mg/kg s.s.	Zn	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Cadmium	<0.3	mg/kg s.s.	Cd	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Cobalt	3.6	mg/kg s.s.	Co	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Chromium	82	mg/kg s.s.	Cr	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Manganese	97	mg/kg s.s.	Mn	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Molybdenum	2.8	mg/kg s.s.	Mo	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Nickel	10	mg/kg s.s.	Ni	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Selenium	<0.20	mg/kg s.s.	Se	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Lead	16	mg/kg s.s.	Pb	ISO 17294-2:2016(E), NM	12.02.20 14.02.20

Evidence code: 1072-18/46000-20/11877-K

Analytic results

Results marked with # refer to **not accredited** activity

Parameter	Result Note		Unit	Expressed as/on	Method Place of execution	Start/End
Thallium	<0.16		mg/kg s.s.	Tl	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Vanadium	<3.9		mg/kg s.s.	V	ISO 17294-2:2016(E), NM	12.02.20 14.02.20
Mercury	0.22		mg/kg s.s.	Hg	SIST EN ISO 12846:2012, modifikacija v točki 5, brez poglavja 7, NM	18.02.20 18.02.20
Naphthalene	0.42		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Acenaphthylene	0.05		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Acenaphtene	<0.1		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Fluorene	0.12		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Phenanthrene	0.66		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Anthracene	0.08		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Fluoranthene	0.45		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Pyrene	0.43		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Benzo(b)fluoranthene	<0.15		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Benzo(a)anthracene	0.12		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Benzo(k)fluoranthene	<0.15		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Chrysene	0.15		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Benzo(a)pyrene	<0.09		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Benzo(ghi)perylene	<0.09		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Dibenzo(a,h)anthracene	<0.09		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Indeno(1,2,3-cd)pyrene	<0.15		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Polycyclic aromatic hydrocarbons (sum)	2.5		mg/kg s.s.		ISO 18287:2006, NM	12.02.20 18.02.20
Phenol index	5.5	#	mg/kg s.s.		ND-IV-NLZOH-OKA-NM-M79 0/1, izdaja 1, NM	11.02.20 12.02.20
Ash	15.3	#	%DW		SIST-TS CEN/TS 15403:2007, NM	13.02.20 14.02.20
Gross calorific value	17778		kJ/kg s.s.		SIST-TS CEN/TS 16023:2014, KR	20.02.20 24.02.20
Net calorific value	16520		kJ/kg s.s.		SIST-TS CEN/TS 16023:2014, KR	20.02.20 24.02.20
Chlorine	0.21		%DW		SIST EN 15408:2011, KR	20.02.20 24.02.20

Evidence code: 1072-18/46000-20/11877-K

Analytic results

Results marked with # refer to **not accredited** activity

Parameter	Result Note		Unit	Expressed as/on	Method Place of execution	Start/End
Sulfur	0.81		%DW		SIST EN 15408:2011, KR	20.02.20 24.02.20
Fluorine	<0.01		%DW		SIST EN 15408:2011, KR	20.02.20 24.02.20
Bromine	<0.01	#	%DW		SIST EN 15408:2011, KR	20.02.20 21.02.20
Dry matter	71.4		%		SIST EN 14346: 2007, NM	10.02.20 10.02.20
Priprava vzorca						
Laboratory compacted density	120.0		g/L		ND-IV-NLZOH-OKA NM OM103 (SIST EN 15002, SIST EN 16179), NM	07.02.20 07.02.20

Locations of analyses:
NM - OKA Novo mesto, Dalmatinova ulica 3, Novo mesto
KR - OKA Kranj, Gosposvetska ulica 12, Kranj

Measurement uncertainty data are available on the request of the client.

Electronically confirmed by:
mag. Andreja Dremelj, univ.dipl.kem.
OKA Kranj

Head of branch:
Maja Križan, univ.dipl.kemik

Electronically signed Maja Križan, univ.dipl.kemik at 06.03.2020 09:52:20

NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO

CENTER ZA OKOLJE IN ZDRAVJE

ZAPISNIK O VZORČENJU ODPADKOV (v skladu s: SIST EN 14899)

KOPIJA

Številka vzorca: 20/11877

Zapisnik o vzorčenju se navezuje na načrt vzorčenja odpadkov oznaka: ____________________

Organizacijska enota vzorčevalca: OOZ Novo mesto

OSNOVNI PODATKI

Številka naloge:	46000
Oznaka vzorca:	JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Številka vzorca:	20/11877
Datum vzorčenja:	06.02.2020 čas: 13 30
Vzorčevalec, podpis:	R. Novak
Prisotne osebe, podpis:	

SPLOŠNE INFORMACIJE

Naročnik:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O.
Številka naročila:	pogodba
Povzročitelj odpadka:	RCERO Barje
Lokacija vzorčenja:	JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Podlokacija vzorčenja:	

PODATKI O ODPADKU

Številka odpadka: 19 12 12

Vrsta odpadka: LFB

Opis vzorca:

Barva:
Vonj: ☐ močan [x] šibak ☐ brez vonj po: odpadkih / ostankih
Velikost zrn: 0-20 ☐ Enotna velikost [x] Različna velikost

☐ tekoče	☐ homogeno	☐ praškasto	[x] suho
☐ gosto tekoče/pastozno	[x] nehomogeno	[x] zrnato/kosovno	[x] vlažno
☐ muljasto	☐ disperzija	☐ v bloku	☐ higroskopično
[x] trdno	☐ emulzija	☐ embalirano	

Dodaten opis: Odpadek je zelo heterogen z večjimi kosi (0-200mm) Ocena sestava 70% plastike, pene, folije, 20% les, papir, 10% ostalo (plenice, tekstil, ...)

Območje velikosti zrn oz. kosov: 0-200

Gostota oz. nasipna teža: /

Količina odpadka za vzorčenja:

Geometrijska podobnost odpadka: [x] stožec (V=1/3.πr².v) ☐ valj (V=πr².v) ☐ pol valja (V=πr².v/2) ☐ kvader (V=a.b.c)

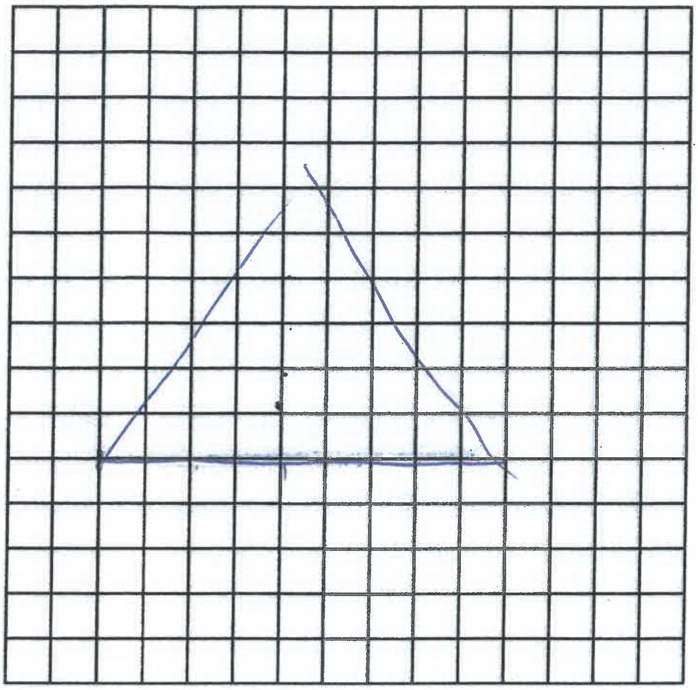
drugo: cca 150 kg

ZAPISNIK O VZORČENJU ODPADKOV
(v skladu s: SIST EN 14899)

Številka vzorca: 20/11877

SHEMA VZORČENJA: Oznaka merilca razdalje: 1 kvadrat 1 m

Tloris:



Stranski ris:

METODOLOGIJA VZORČENJA:

Dostopnost: je dostopen

Opis tehnike odvzema: s pomočjo inox zajemalke in naključno izvedeno delom vzorca iz različnih točk

Vzorčevalna oprema: inox žlica + nakladalni

Število inkrementov: 12

Količina posameznega inkrementa: 1L

NACIONALNI LABORATORIJ ZA ZDRAVJE, OKOLJE IN HRANO

CENTER ZA OKOLJE IN ZDRAVJE

ZAPISNIK O VZORČENJU ODPADKOV (v skladu s: SIST EN 14899)

Številka vzorca: 20/11877

VREMENSKI POGOJI

Temperatura zraka: / °C Merilnik ID: /

Vreme: ☒ sončno ☐ oblačno ☐ deževno ☐ sneg

Ostalo: /

Zahteve po terenskih meritvah: /

Način priprave pod-vzorca: /

EMBALAŽA, KONZERVIRANJE, SKLADIŠČENJE, TRANSPORT

Embalaža: PP vreča

Konzerviranje: Hlajenje

Shranjevanje: Hlajenje

Transport: - " -

$T_{zač.}$ = 2,3 °C $T_{min/max}$ = 2,9 °C $T_{konč.}$ = 3,6 °C ID opreme: 60063

ODSTOPANJE OD NAČRTA VZORČENJA: ☐ Da ☒ Ne

Opis odstopanja: /