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Document number: 6-5E/22

WASTE ASSESSMENT

for the company

JP VOKA SNAGA d.o.o.

Waste classification number

19 06 04

Digestate from anaerobic treatment of municipal waste

Novo mesto, January 2022

Oddelek za podzemne in površinske vode, odpadke in tla
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Title:	Waste assessment for the company JP VOKA SNAGA d.o.o., Waste classification number 19 06 04 -Digestate from anaerobic treatment of municipal waste
Contractor:	National Laboratory of Health, Environment and Food Environment and Health Centre Department of Groundwater and Surface Water, Waste and Soil Dalmatinova ulica 2 8000 Novo mesto
Contracting authority:	JP VOKA SNAGA d.o.o. Vodovodna cesta 90 SI-1000 Ljubljana
Date of order:	5.11.2021
Contract number:	VKS-34/21

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:	Gregor Špringar, chemistry technician Sebastijan Lamut, MSc. in Ecology and Biodiversity
Inspection and sampling date:	10.11.2021
Assessment:	Sebastijan Lamut, MSc. in Ecology and Biodiversity
Date of the assessment:	31.01.2022

Head of Task
Sebastijan Lamut, MSc. in Ecology and Biodiversity

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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 classification number with an analysis pursuant to the Regulation of wastes (Official Gazette of the RS, No. 37/15, 69/15 and 129/20). For the purpose of confirming the classification 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. Description of sampling is in annex Task report of this assessment. With accordance to the local legislation, this assessment uses results of analyses made in the last three years due to unchanged technological and similar waste composition.

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

3.1 Waste holder: JP VOKA SNAGA d.o.o.
Address: Vodovodna cesta 90
Post code: SI-1000 Ljubljana
Registration number: 5046688000

3.2 Waste classification number: 19 06 04

Waste name: **Digestate from anaerobic treatment of municipal waste**

3.3 Description of waste:

The waste is deep brown coloured with variously coloured impurities. It emits a weak smell of digested, decaying organic matter. Majority of its particles are sized from 0 – 90 mm and are not completely dry, due to formation of the waste.

Measured dry matter is 49,9 %, while the rest is mainly water – other volatile matter is not expected, because the digestate is being air-blown during stabilization. The majority of the waste is organic, while some of its parts are inorganic (tin, glass, plastic…) and function as matrix in the process. Gross calorific value is 6,5 MJ/kg.

Due to unchanged technological process and comparable waste composition, waste was assessed on the basis of existing analyses, not older than three years. Picture of waste is in annex - Task report.

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

Generator: RCERO Barje
Address: Cesta dveh cesarjev 101
Post code: SI-1000 Ljubljana

3.5 Description of the waste:

Digestate 19 06 04 is generated during process of mechanical biological treatment of mixed household waste in RCERO Ljubljana.

Collected MHW (EWC 20 03 01) is delivered by the waste collection trucks to the deep bunker with approximately 5000 m³ of volume. MHW is dosed to one universal primary shredder with two bridge cranes with motor grabber. The shredded MHW then passes a drum screen where it is sieved on three fractions:

- fine fraction (≈<70 - 80 mm)
- medium fraction (≈ 70 - 80 mm - <250mm)
- oversize fraction (≈>250mm)

Organically rich fine fraction from the MHW is conveyed to a magnet separator which collects magnetic metals form the mixture. Next step is a star screen, which divides incoming material on two fractions. The screened material smaller than 40 mm is prepared for fermentation, larger fraction sized 40 to 70 or 80 mm is passing an eddy current separator. Around 66 % of this fraction is transferred to SRF B flat bunker without further treatment, the rest is added to stabilate for further processing. The organically rich fraction passes through an impact separator which separates heavier and inert particles from lighter material. Heavier fraction with inert materials is considered to be deposited on a landfill, while lighter fraction is transferred to the intermediate storage buffer prior to anaerobic treatment in reactors.

Ingoing material is transported to horizontal plug flow reactors type TF2200 where it undergoes dry mesophilic anaerobic digestion (at around 37 °C). Anaerobic digester is equipped with a spiral feeding conveyor. The digesters are fed in parallel with biodegradable organically rich waste from the intermediate storage buffer. Retention time (SRT) of anaerobic digesters is roughly 25 days. After the process, the material vacuumed out into dewatering unit where it is dewatered with screw press until it contains at least 35 % of dry matter.

3 different dewatered sludge cakes (from screw press, vibrating screen, and decanter) fall into a collection conveyor underneath and are mixed together with moistened finer fraction (≈ 40 - <70 - 80 mm). The mix is then transported with conveyor belts or front loaders into stabilization boxes, which are filled to a maximum of 1,1 m in height. After 7 days of stabilization the material is taken out by a wheel loader and transported into another box for further 14 day processing, which ends the stabilization of this waste.

The clients company guarantees, that it has not changed the described process since the last assessment.

3.5.1 Annual quantity of waste: 14,000 tonnes

3.5.2. Quantity of waste analysed: 16 m^3

3.5.2 Sample code:

Field code: SL 102

Laboratory No.: 2021/111885

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		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: **brown-black**

4.3 Smell:

	strong	X	faint		none
X	odor: digestate				

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 not spontaneously flammable

Protection against water pollution: Prevent contact with water

4.6.2 Protection against accidents and fires:

Measures in the event of wastage:	Waste should be collected into the container using the appropriate 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:	/	kg/m^3
Range of particle/piece size:	from 0 to 90 mm	mm

4.8 Description of the preliminary processing of waste or the justification for the omission of preliminary waste processing: Waste is treated

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 classification number

The waste is classified into groups according to the classification list of waste as defined in Article 4 of the Regulation on waste Official Gazette RS No. 37/15, 69/15 and 129/20.

Individual waste, given the nature of the occurrence be classified in the group and sub-group of waste with the waste classification list, as provided in Article 4 of the Regulation on waste Official Gazette RS No. 37/15, 69/15 and 129/20, so that the waste is assigned with classification number of waste. If the waste under Article 5 of the Regulation on waste Official Gazette RS No. 37/15, 69/15 and 129/20 can 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 results of its analysis show, it has none of the hazardous properties. Waste does not show 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 Gazette of the RS No. 37/15, 69/15 and 129/20 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 06 Wastes from anaerobic treatment of waste

19 06 04 Digestate from anaerobic treatment of municipal waste

6. Annex

1. Report on the study of hazardous waste properties
2. Analysis report for sample 2021/111885

7. List of literature used

1. Regulation of wastes (Official Gazette of the RS, No. 37/15, 69/15 and 129/20)
2. Rules on the preparation of waste assessment before disposal and assessment of hazardous waste before incineration and on the performance of control chemical analysis of waste (Official Gazette of the RS, No. 58/16)

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SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Annex 1 to the waste assessment number: 6-5E/22 Date: 31.01.2022

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 ☒ Yes ☐ No
- test results ☒ Yes ☐ No
  - Documents lab. no.: **2021/111885**

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 properties of HP 1.

HP 2 – Oxidizing **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 oxidizing, 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 equaled, 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 equaled, 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, which 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 –Sensitizing **Contains a dangerous property HP 13** ☐ **Yes** ☒ **No**

Waste which contains one or more substances known to cause sensitizing 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 Gazette of the RS, No. 37/2015, 69/2015 and 129/2020, we have established that the waste in question is classified as non-hazardous waste with the classification number 19 06 04. The waste does not contain hazardous properties.

Prepared by: **Sebastijan Lamut**, Msc. in Ecology and Biodiversity

List of literature used:

- Regulation of wastes, Official Gazette of the RS, No. 37/2015, 69/2015 and 129/2020
- 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

ODP - JP VOKA Snaga d.o.o. - Razpis odpadki 2020-2021

Evidence code:	2830-20/46000-21/111885
Customer:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O. VODOVODNA CESTA 90 1000 Ljubljana
Request:	PG VKS-34/20 (N 4500243927), PG-2172-20/48000-20/30517 , 02.06.2020
Contractor:	Oddelek za podzemne in površinske vode, odpadke in tla 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:	Sebastijan Lamut, mag.ekol.biod.
Maribor,	31.01.2022

Head of task:

Sebastijan Lamut, mag.ekol.biod.

Electronically signed Sebastijan Lamut, mag.ekol.biod. at 31.01.2022 07:43:27

Oddelek za podzemne in površinske vode, odpadke in tla
Head of branch:

Jerneja Jeršin, univ. dipl. inž. kem. tehnol.

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 06 04 (SL 102)
Sample number:	21/111885
Purpose:	
Customer:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Sample taken by:	Sebastijan Lamut, NLZOH OPPVOT
Time of sampling:	10.11.2021 08:00
Place of sampling:	JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 06 04
Sample received by:	Sebastijan Lamut
Place and time of receiving:	Novo mesto, 10.11.2021 11:53

Report annexes:
Testing report with evidence code 2830-20/46000-21/111885-T
Report of chemical analyses with evidence code 1072-20/46000-21/111885-K

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

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17025
LP-014

Evidence code:2830-20/46000-21/111885-T

Testing report

Sample:	JP VOKA SNAGA d.o.o. - 19 06 04 (SL 102)
Matrix:	Waste (eluates)
Sample number:	21/111885
Title:	ODP - JP VOKA Snaga d.o.o. - Razpis odpadki 2020-2021
Head of task:	Sebastijan Lamut, mag.ekol.biod.
Customer:	JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request:	PG VKS-34/20 (N 4500243927), PG-2172-20/48000-20/30517 , 02.06.2020
Sampling plan:	DN 161074, 10.11.2021
Place of sampling:	JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 06 04
Methodology of sampling:	SIST EN 14899:2006
Sample status:	The sample complies with criteria for the reception

Sampling

Date and hour: 10.11.2021 08:00

Taken by: Sebastijan Lamut, NLZOH OPPVOT

Sample receiving

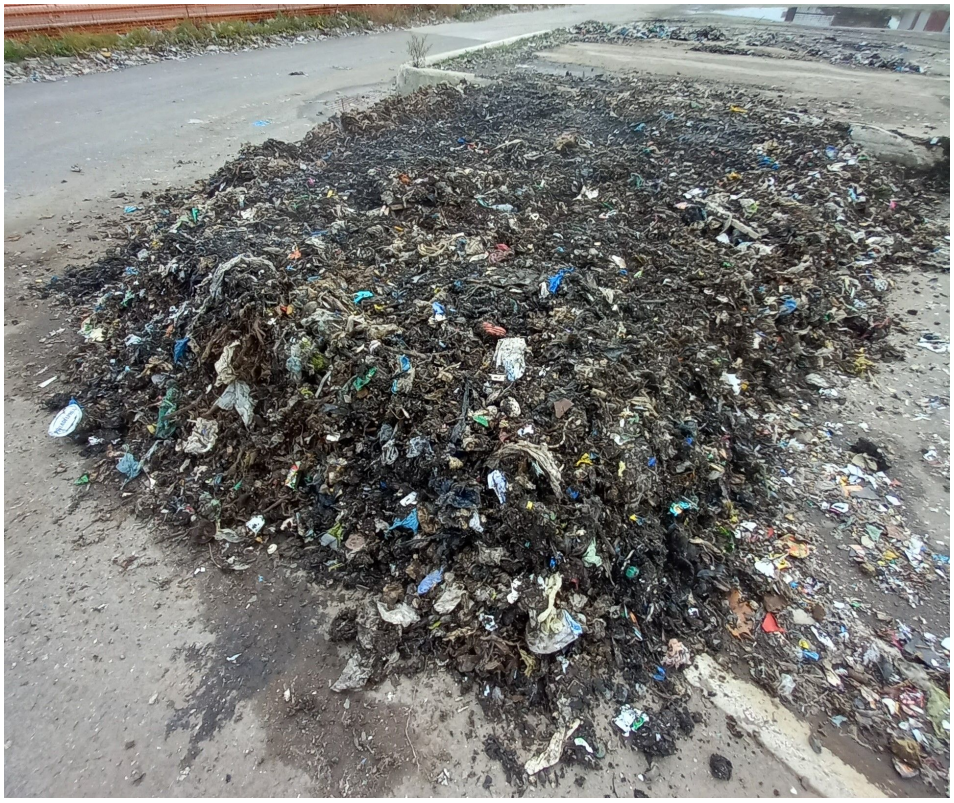
Date and hour: 10.11.2021 11:53

Received by: Sebastijan Lamut

Issue date: 07.01.2022

Picture or scheme of the location of sampling:

JP VOKA SNAGA d.o.o. - 19 06 04



Evidence code:2830-20/46000-21/111885-T

Head of branch:
Jerneja Jeršin, univ. dipl. inž. kem. tehnol.

Electronically signed by deputy Sebastijan Lamut, mag.ekol.biod. at 31.01.2022 07:44:53

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: 1072-20/46000-21/111885-K

Report of chemical analyses

Sample: JP VOKA SNAGA d.o.o. - 19 06 04 (SL 102)
Matrix: Waste (eluates)
Sample number: 21/111885
Title: ODP - JP VOKA Snaga d.o.o. - Razpis odpadki 2020-2021
Head of task: Sebastijan Lamut, mag.ekol.biod.
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request: PG VKS-34/20 (N 4500243927), PG-2172-20/48000-20/30517 , 02.06.2020
Place of sampling: JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 06 04
Sample status: The sample complies with criteria for the reception

Sampling
Date and hour: 10.11.2021 08:00
Taken by: Sebastijan Lamut, NLZOH OPPVOT

Sample receiving
Date and hour: 10.11.2021 11:53
Received by: Sebastijan Lamut

Issue date: 27.01.2022

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	15		mg/kg s.s.	Sb	ISO 17294-2, modified, NM	22.11.21 22.11.21
Arsenic	6.5		mg/kg s.s.	As	ISO 17294-2, modified, NM	22.11.21 22.11.21
Copper	250		mg/kg s.s.	Cu	ISO 17294-2, modified, NM	22.11.21 22.11.21
Barium	2700	#*	mg/kg s.s.	Ba	ISO 17294-2, modified, NM	22.11.21 22.11.21
Beryllium	0.66		mg/kg s.s.	Be	ISO 17294-2, modified, NM	22.11.21 22.11.21
Boron	140		mg/kg s.s.	B	ISO 17294-2, modified, NM	22.11.21 22.11.21
Zinc	780		mg/kg s.s.	Zn	ISO 17294-2, modified, NM	22.11.21 22.11.21
Cadmium	8.9		mg/kg s.s.	Cd	ISO 17294-2, modified, NM	22.11.21 22.11.21
Cobalt	13		mg/kg s.s.	Co	ISO 17294-2, modified, NM	22.11.21 22.11.21
Chromium	220		mg/kg s.s.	Cr	ISO 17294-2, modified, NM	22.11.21 22.11.21
Manganese	700		mg/kg s.s.	Mn	ISO 17294-2, modified, NM	22.11.21 22.11.21
Molybdenum	7.6		mg/kg s.s.	Mo	ISO 17294-2, modified, NM	22.11.21 22.11.21
Nickel	67		mg/kg s.s.	Ni	ISO 17294-2, modified, NM	22.11.21 22.11.21
Selenium	0.62		mg/kg s.s.	Se	ISO 17294-2, modified, NM	22.11.21 22.11.21

Evidence code: 1072-20/46000-21/111885-K

Analytic results

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

Parameter	Result Note		Unit	Expressed as/on	Method Place of execution	Start/End
Lead	1600	#*	mg/kg s.s.	Pb	ISO 17294-2, modified, NM	22.11.21 22.11.21
Thallium	<0.16		mg/kg s.s.	Tl	ISO 17294-2, modified, NM	22.11.21 22.11.21
Tellurium	<0.16		mg/kg s.s.	Te	ISO 17294-2, modified, NM	22.11.21 22.11.21
Vanadium	17		mg/kg s.s.	V	ISO 17294-2, modified, NM	22.11.21 22.11.21
Mercury	0.39		mg/kg s.s.	Hg	SIST EN ISO 12846, modification in point 5, without chapter 7, NM	17.11.21 17.11.21
Ash	63.8	#	%DW		SIST-TS CEN/TS 15403:2007, NM	17.11.21 18.11.21
Gross calorific value	6533		kJ/kg s.s.		SIST-TS CEN/TS 16023:2014, KR	18.11.21 19.11.21
Net calorific value	5945		kJ/kg s.s.		SIST-TS CEN/TS 16023:2014, KR	18.11.21 19.11.21
Nitrogen	592		mg/kg s.s.		SIST EN 15408:2011, KR	18.11.21 19.11.21
Chlorine	0.62		%DW		SIST EN 15408:2011, KR	18.11.21 19.11.21
Sulfur	0.30		%DW		SIST EN 15408:2011, KR	18.11.21 19.11.21
Fluorine	<0.01		%DW		SIST EN 15408:2011, KR	18.11.21 18.11.21
Hydrogen	2.70		%DW		SIST EN 15407:2011 modificirana, KR	19.11.21 19.11.21
Dry matter	49.9		%		SIST EN 15934:2012 - metoda A, NM	11.11.21 11.11.21

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.
*The result is outside the range of accredited method.

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 27.01.2022 06:45:26