



NATIONAL LABORATORY OF
HEALTH, ENVIRONMENT AND FOOD

WASTE CHARACTERISTICS REPORT

CLIENT:

JP VOKA SNAGA d.o.o.

EUROPEAN WASTE CODE: 19 06 04

WASTE:

Digestate from anaerobic treatment of municipal waste

Task title: WASTE CHARACTERISTICS REPORT FOT CLIENT JP VOKA SNAGA D.O.O., EUROPEAN WASTE CODE: 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
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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 we could confirm that other substances were mixed in with the waste and in doing so, had affected the properties of the waste. Report is valid only for the sampled amount of waste.*

Client: JP VOKA SNAGA D.O.O.
VODOVODNA CESTA 90
1000 LJUBLJANA

Order number: VKS-58/22

Date of order: 11.7.2022

Report number: 2830-21/92553-24/15160-24/36ODP

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Report made by: Sebastijan LAMUT, MSc. in Ecology and Biodiversity
Waste and soil unit with laboratory

1 Introduction

Based on the client JP VOKA SNAGA d.o.o. order for confirmation of EWC and assessment of waste hazardous properties, we sampled, analyzed and prepared the report, according to Decree on waste (Official Gazette of the RS No.77/22 and 113/23).

2 Sampling method

The waste was sampled in accordance with SIST EN 14899:2006. Description of sampling is in annex of this report.

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

3.1 Waste holder: JP VOKA SNAGA d.o.o.

Address: Vodovodna ulica 90
Postal code: 1000 Ljubljana
Registration number: 5046688000
Business activity code: E36.000 - Collection, purification and distribution of water

3.2 European waste code: 19 06 04

Waste name: Digestate from anaerobic treatment of municipal waste

According to Article 5 of Decree on waste (Official Gazette of the RS No.77/22 and 113/23), EWC is determined by the owner of the waste.

3.3 Waste description:

The waste is deep brown colored with variously colored impurities. It is solid, moist, non-homogenous and emits a strong smell of mixed municipal waste. Its particles vary in size (from 2-100 mm). Measured dry matter is 52,8 %, the digestate is being air-blown during stabilization. The majority of the waste is organic, other inorganic parts represent minor mass fractions, with smaller parts of the waste acting as a matrix in the stabilization process (<10% foil particles, traces of solid plastic, metal and glass particles). Its gross calorific value is 7,7 MJ/kg of dry matter. Picture of the sampled waste is in annexed report.

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

Generator: JP VOKA SNAGA d.o.o.
Address: Cesta dveh cesarjev 101
Postal code: 1000 Ljubljana

3.5 Waste formation description:

Digestate 19 06 04 is generated during the process of mechanical biological treatment of municipal solid waste in RCERO Ljubljana.

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

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

Organically rich fine fraction from the MSW is conveyed through magnetic separator to a star screen, which divides incoming material into two fractions. The screened material smaller than 40 mm is prepared for fermentation, larger fraction sized approximately 40 to 70-80 mm passes through an eddy current separator directly into SRF B flat storage bunker, one third of this material is then added to stabilize for further processing.

The organically rich fraction then 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.

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

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 ($\approx 40 < 70-80$ mm). The mixture is then transported with conveyor belts or front loaders into stabilization boxes, which are loaded with digestate to a maximum of 1,1 m in height. After 7 days of stabilization the material is transported into another box for further 14 day processing, which concludes the final step of stabilization. The process, in which the analyzed waste is being generated, has not changed since the last report.

3.5.1 Annual quantity of waste: /

3.5.2 Quantity of waste analyzed: 135 m³

3.5.3 Sample code:

Field code: /

Laboratory code: 24/15160

4 Waste properties

4.1 State of the waste and other special properties

4.1.1 State of the waste at 20 °C

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> liquid | <input type="checkbox"/> homogenous | <input type="checkbox"/> powder-like | <input type="checkbox"/> dry |
| <input type="checkbox"/> dense liquid/paste-like | <input checked="" type="checkbox"/> non-homogenous | <input checked="" type="checkbox"/> granulated/bulky | <input checked="" type="checkbox"/> moist |
| <input type="checkbox"/> sludgy | <input type="checkbox"/> dispersion | <input type="checkbox"/> in a lump | <input type="checkbox"/> hygroscopic |
| <input checked="" type="checkbox"/> solid | <input type="checkbox"/> emulsion | <input type="checkbox"/> packaged | |

4.1.2 Hazardous properties of the waste (HP1–HP15)*: ☐ YES ☒ NO

* Properties that make the waste classified as hazardous waste (in accordance with the waste regulation).

- | | | | |
|------------------------------|------------------------------|-------------------------------|-------------------------------|
| <input type="checkbox"/> HP1 | <input type="checkbox"/> HP5 | <input type="checkbox"/> HP9 | <input type="checkbox"/> HP13 |
| <input type="checkbox"/> HP2 | <input type="checkbox"/> HP6 | <input type="checkbox"/> HP10 | <input type="checkbox"/> HP14 |
| <input type="checkbox"/> HP3 | <input type="checkbox"/> HP7 | <input type="checkbox"/> HP11 | <input type="checkbox"/> HP15 |
| <input type="checkbox"/> HP4 | <input type="checkbox"/> HP8 | <input type="checkbox"/> HP12 | |

4.2 Color: Dark brown with variously colored impurities

4.3 Smell: ☒ strong ☐ weak ☐ without ☒ odor: Municipal solid waste

4.4 Reactivity:

- | | | |
|---|--|---|
| <input type="checkbox"/> inert | <input type="checkbox"/> reacts with acids/lye | <input type="checkbox"/> noncombustible |
| <input type="checkbox"/> reacts with oxygen | <input type="checkbox"/> accelerates burning | <input type="checkbox"/> biodegradable |
| <input type="checkbox"/> reacts with water | <input type="checkbox"/> gas-forming | <input checked="" type="checkbox"/> combustible |

4.5 Solubility in water or other solvents: ☒ YES ☐ NO

Justification: Waste is poorly soluble in water or other solvents.

4.6 Physical properties

Density at room temperature: kg/m³

Range of particle/piece size: 2-100 mm

4.7 Safety measures:

4.7.1 Storage handling:

Technical-safety precautions: **Store dry, protected from precipitation in closed container.**

Personal protective equipment: **Protective clothing, footwear and gloves.**

Fire and explosion safety: **Waste is combustible, but not spontaneously flammable.**

Protection against water pollution: **Waste is poorly soluble in water. Avoid all contact with waterbodies and remove all pollution in case of unwanted exposure of waste. Inform all competent institutions about the contamination.**

4.7.2 Protection against accidents and fires:

Measures in the event of wastage: **Waste should be collected using the appropriate tools.**

Appropriate extinguishing agent: **All extinguishing agents are suitable.**

Extinguishing agents that must not be used: **All extinguishing agents are suitable.**

Useful binder:

4.7.3 Additional safety precautions:

No additional precautions are needed for waste with EWC 19 06 04.

5 Explanation of determination of EWC into which the waste is classified

The waste is classified into groups according to the classification list of waste as defined in Article 4 of Decree on waste (Official Gazette of the RS No.77/22 and 113/23).

Depending on the type of generation, each individual waste must be classified into a group and a subgroup of waste from the list of waste, which is specified in Article 4 of Decree on waste (Official Gazette of the RS No.77/22 and 113/23), by assigning it a waste number. Based on the waste generation technology and the conducted research on hazardous properties (the report is an attached to this file), we conclude that the waste does not exhibit hazardous properties, as the sample did not contain hazardous substances or hazardous pathogens.

According to the source and composition of the sampled waste, it has been classified 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:

- Report on the study of hazardous waste properties
- Task report 24/15160

END OF REPORT



ANNEX 1: Report on the study of hazardous waste properties, according to criteria from Article 5 of Decree on waste (Official Gazette of the RS No.77/22 and 113/23).

Note: Hazard class and hazard category symbols and symbols for hazard statements for waste components for the classification of waste used in Annex III of Directive 2008/98/EC are summarized according to Regulation (EC) No. 1272/2008 of the European Parliament and the Council of 16 December 2008 on the classification, labelling and packaging of substances and mixtures, on the amendment and repeal of Directives 67/548/EEC and 1999/45/EC and the amendment of Regulation (EC) no. 1907/2006 (OJ L No. 353, 31/12/2008, p. 1), last amended by Commission Delegated Regulation (EU) 2021/1962 of 12 August 2021, amending Annex VI to Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (OJ L No. 400, 12 November 2021, p. 16), (hereinafter: Regulation (EC) No. 1272/2008).

Property: **HP1 »Explosive«**

Has HP 1 ☐ Yes ☒ No

Description: 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.

Determination: 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.

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 statements Code(s)
Unst. Expl.	H 200
Ekspl. 1.1	H 201
Ekspl. 1.2	H 202
Ekspl. 1.3	H 203
Ekspl. 1.4	H 204
Self-react. A	H 240
Org. Perox. A	
Self-react. B	H 241
Org. Perox. B	

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 1. **The waste does not exhibit hazardous property HP1.**



Property: HP2 »Oxidizing«

Has HP 2

☐ Yes ☒ No

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

Determination: 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.

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 statements Code(s)
Ox. Gas 1	H 270
Ox. Liq. 1	H 271
Ox. Sol. 1	
Ox. Liq. 2, Ox. Liq. 3	H 272
Ox. Sol. 2 Ox. Sol 3	

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 2. **The waste does not exhibit hazardous property HP2.**

Property: HP3 »Flammable«

Has HP 3

☐ Yes ☒ No

Description:

- 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;
- 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;
- Flammable solid waste – solid waste which is readily combustible or may cause or contribute to fire through friction;
- Flammable gaseous waste – gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
- Water reactive waste – waste which, in contact with water, emits flammable gases in dangerous quantities;
- Other flammable waste – flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.

Determination: 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.



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 statements Code(s)
Flam. Gas 1	H220
Flam. Gas 2	H221
Aerosol 1	H222
Aerosol 2	H223
Flam. Liq. 1	H224
Flam. Liq. 2	H225
Flam. Liq. 3	H226
Flam. Sol.1	H228
Flam. Sol.2	
Self-react CD	H242
Self-react EF	
Org. Perox. 1 CD	
Org. Perox. 1 EF	
Pyr. Liq. 1	H250
Pyr. Sol. 1	
Self-heat. 1	H251
Self-heat. 2	H252
Water-react. 1	H 260
Water-react. 2	H 261
Water-react. 3	

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 3. **The waste does not exhibit hazardous property HP3.**

Property: HP4 »Irritant – skin irritation and eye damage«

Has HP 4 ☐ Yes ☒ No

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

Determination: 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.

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 %

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.

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.

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.

Note that 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.



Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class and category symbols and symbols for hazard sentences, or would exceed the limit value. **The waste does not exhibit hazardous property HP4.**

Property: HP5 »Specific Target Organ Toxicity (STOT) / Aspiration Toxicity«

Has HP 5 ☐ Yes ☒ No

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

Determination: 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.

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 statements Code(s)	Concentration limit
STOT SE 1	H370	1 %
STOT SE 2	H371	10 %
STOT SE 3	H335	20 %
STOT RE 1	H372	1 %
STOT RE 2	H373	10 %
Asp. Tox. 1	H304	10 %

Observations:

Based on the review of the waste generation technology, the review of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 4 and at the same time exceed the given limit value. **The waste does not exhibit hazardous property HP5.**

Property: HP6 »Acute Toxicity«

Has HP 6 ☐ Yes ☒ No

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



Determination: 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.

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 statements Code(s)	Concentration limit
Acute Tox.1 (Oral)	H300	0,1 %
Acute Tox. 2 (Oral)		0,25 %
Acute Tox. 3 (Oral)	H301	5 %
Acute Tox 4 (Oral)	H302	25 %
Acute Tox.1 (Dermal)	H310	0,25 %
Acute Tox.2 (Dermal)		2,5 %
Acute Tox. 3 (Dermal)	H311	15 %
Acute Tox 4 (Dermal)	H312	55 %
Acute Tox 1 (Inhal.)	H330	0,1 %
Acute Tox.2 (Inhal.)	H330	0,5 %
Acute Tox. 3 (Inhal.)	H331	3,5 %
Acute Tox. 4 (Inhal.)	H332	22,5 %

Observations:

Based on the review of the waste generation technology, the review of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 5 and at the same time exceed the given limit value. **The waste does not exhibit hazardous property HP6.**

Property: **HP7 – Carcinogenic**

Has HP 7

☐ Yes ☒ No

Description: Waste, which induces cancer or increases its incidence.

Determination: 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.

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 statements Code(s)	Concentration limit
Carc. 1A	H350	0,1 %
Carc. 1B		
Carc. 2	H351	1,0 %

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 6 and at the same time exceed the given limit value. **The waste does not exhibit hazardous property HP7.**

Property: HP8 »Corrosive«

Has HP 8

☐ Yes ☒ No

Description: Waste, which on application can cause skin corrosion.

Determination: 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 %.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the above-mentioned hazard class labels and labels for hazard statements and at the same time exceed the given limit value. **The waste does not exhibit hazardous property HP8.**

Property: HP9 »Infectious«

Has HP 9

☐ Yes ☒ No

Description: Waste containing viable microorganisms or their toxins, which are known or reliably believed to cause disease in man or other living organisms

Waste has HP9 if it contains:

- microorganisms dangerous to human health or
- infectious material of animal origin.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could attribute HP 9 to the waste. **The waste does not exhibit hazardous property HP9.**



Property: HP10 »Toxic for reproduction«

Has HP 10

☐ Yes ☒ No

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

Determination: 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 7, 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.

Table 7: 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 statements Code(s)	Concentration limit
Repr. 1A	H360	0,3 %
Repr. 1B		
Repr. 2	H361	3,0 %

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the labels for hazard statements and the labels for additional hazard statements shown in Table 7 and at the same time exceeded the limit value. **The waste does not exhibit hazardous property HP10.**

Property: HP11 »Mutagenic«

Has HP 11

☐ Yes ☒ No

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

Determination: 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 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.

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 11:

Hazard Class and Category Code(s)	Hazard statements Code(s)	Concentration limit
Muta. 1A	H340	0,1 %
Muta. 1B		
Muta. 2	H341	1,0 %



Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the labels for hazard statements and the labels for additional hazard statements shown in Table 8 and at the same time exceeded the limit value. **The waste does not exhibit hazardous property HP11.**

Property: HP12 »Release of an acute toxic gas« **Has HP 12** ☐ Yes ☒ No

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

Determination: 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.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances to which one of the supplemental hazards EUH029, EUH031 or EUH032 would be assigned, **The waste does not exhibit hazardous property HP12.**

Property: HP13 »Sensitising« **Has HP 13** ☐ Yes ☒ No

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

Determination: 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.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the H317 or H334 hazard statements and at the same time exceed the concentration limit of 10% for individual substance. **The waste does not exhibit hazardous property HP13.**

Property: HP14 »Ecotoxic« **Has HP 14** ☐ Yes ☒ No

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

Determination: 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 and the concentration of such a substance equals or exceeds the concentration limit of 0,1 %.

- $[c(H420) \geq 0,1 \text{ \%}]$;
 - 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.
 - $[\Sigma c(H400) \geq 25 \text{ \%}]$;
 - 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.
 - $[100 \times \Sigma c(H410) + 10 \times \Sigma c(H411) + \Sigma c(H412) \geq 25 \text{ \%}]$;
 - 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.
 - $[\Sigma c(H410) + \Sigma c(H411) + \Sigma c(H412) + \Sigma c(H413) \geq 25 \text{ \%}]$
- Where: Σ = sum and c = concentrations of the substances.

Observations:

Based on a review of the technology of waste generation, review of incoming raw materials, composition of waste and review of the results of the performed analyses, we conclude that the waste in question does not contain any of the substances that meet and exceed the above-mentioned criteria. **The waste does not exhibit hazardous property HP14.**

Property: HP15 »Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste«

Has HP 15 ☐ Yes ☒ No

Determination: When a waste contains one or more substances assigned to one of the hazard statements or supplemental hazards shown in Table 9, 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.

Table 9: Hazard statements and supplemental hazards for waste constituents for the classification of wastes as hazardous by HP 15:

Hazard Statement(s)/Supplemental Hazard(s)	
May mass explode in fire	H205
Explosive when dry	EUH001
May form explosive peroxides	EUH019



Risk of explosion if heated under confinement	EUH044
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Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the labels for hazard statements and labels for additional hazard statements shown in Table 9. **The waste does not exhibit hazardous property HP15.**

Conclusion on the hazardous properties of the waste (the waste belongs to hazardous or non-hazardous waste due to the following identified hazardous properties):

Based on the conducted survey of hazardous properties in accordance with Article 5 of Decree on waste (Official Gazette of the RS No.77/22 and 113/23), we conclude that the waste in question does not exhibit any hazardous properties HP1-HP15.

According to Article 5 of Decree on waste (Official Gazette of the RS No.77/22 and 113/23) the sampled waste can be classified 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



Task report

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

Task report 2830-21/92553-24/15160/1 completely replaces Task report 2830-21/92553-24/15160, dated 7. 03. 2024.

New task report was issued in english language.

Evidence code: 2830-21/92553-24/15160/1

Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O.
VODOVODNA CESTA 90
1000 Ljubljana

Request: Sporazum VKS-58/22, 22.06.2022

Contractor: Department for Groundwater and Surface Water, Waste and Soil
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, 27.03.2024

Department for Groundwater and Surface Water,
Waste and Soil
Head of task:

Sebastijan Lamut, mag. ekol. biod.

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.

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Document authenticity check on: <http://www.nlzoh.si/istovetnost>.



Sample information

Sample: JP VOKA SNAGA d.o.o. - 19 06 04
Sample number: 24/15160
Purpose: EOT - Waste Sampling and Investigations
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA
CESTA 90, 1000 Ljubljana
Sample taken by: Gregor Špringar, NLZOH OPPVOT
Time of sampling: 19.02.2024 10:30
Place of sampling: JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 06 04
Sample received by: Vesna Rožič
Place and time of receiving: Maribor, 19.02.2024 15:05

Report annexes:

Testing report with evidence code 2830-21/92553-24/15160-T/1
Report of chemical analyses with evidence code 1072-21/92553-24/15160-K



Testing report

Testing report 2830-21/92553-24/15160-T/1 completely replaces Testing report 2830-21/92553-24/15160-T, dated 7. 03. 2024.

New task report was issued in english language.

Sample: JP VOKA SNAGA d.o.o. - 19 06 04
Matrix: Waste (eluates)
Sample number: 24/15160
Purpose: EOT - Waste Sampling and Investigations
Title: ODP - JP VOKA SNAGA d.o.o. - 19 06 04
Head of task: Sebastijan Lamut, mag. ekol. biod.
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request: Sporazum VKS-58/22, 22.06.2022
Subject of sampling: Is defined in sampling description.
Sampling plan: DN 206790, 19.02.2024
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	Sample receiving	Issue date:	27.03.2024
Date and hour:	19.02.2024 10:30	Date and hour:	19.02.2024 15:05
Taken by:	Gregor Špringar, NLZOH OPPVOT	Received by:	Vesna Rožič
Picture or scheme of the location of sampling:			



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



Sampling description

Waste sampling was carried out according to SIST EN 14899:2006.

The subject of sampling was a pile of treated waste with waste number 19 06 04, and an estimated volume of 135 cubic meters. It was located within dedicated temporary storage space in the waste processing building in the regional waste management center RCERO Ljubljana (see image of the collection site).

At this location, a representative sample consisting of 27 increments, with 0.3 l volume each, was taken using a shovel (OPR-OPPVOT-EOT-NM-808) and an INOX sampling shovel (OPR-OPPVOT-EOT-NM-140). In accordance with the above-mentioned standard, increments were taken at different places and depths of the pile. The sample was homogenized, quartered and filled into appropriate packaging. It was kept in a cool and dark place until it was accepted for analysis.

Head of task:
Sebastijan Lamut, mag. ekol. biod.

Electronically signed by deputy Sebastijan Lamut, mag. ekol. biod. at 27.03.2024
14:36:44

Results refer only to the sampled sample. The test report shall not be reproduced except in full without written approval of the department. It should not be used for advertising purposes. The sample was kept in accordance to the requirements until testing. All additional information on testing is available at the department.



Evidence code: 1072-21/92553-24/15160-K

Report of chemical analyses

Sample: JP VOKA SNAGA d.o.o. - 19 06 04
Matrix: Waste (eluates)
Sample number: 24/15160
Purpose: EOT - Waste Sampling and Investigations
Title: ODP - JP VOKA SNAGA d.o.o. - 19 06 04
Head of task: Sebastijan Lamut, mag. ekol. biod.
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request: /
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 **Sample receiving** **Issue date:** 27.03.2024
Date and hour: 19.02.2024 10:30 **Date and hour:** 19.02.2024 15:05
Taken by: Gregor Špringar, NLZOH OPPVOT **Received by:** Vesna Rožič

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	5.0	mg/kg s.s.	Sb	ISO 17294-2, modified, NM	04.03.24 04.03.24
Arsenic	3.9	mg/kg s.s.	As	ISO 17294-2, modified, NM	04.03.24 04.03.24
Copper	230	mg/kg s.s.	Cu	ISO 17294-2, modified, NM	04.03.24 04.03.24
Barium	470	mg/kg s.s.	Ba	ISO 17294-2, modified, NM	04.03.24 04.03.24
Beryllium	0.67	mg/kg s.s.	Be	ISO 17294-2, modified, NM	04.03.24 04.03.24
Boron	140	mg/kg s.s.	B	ISO 17294-2, modified, NM	04.03.24 04.03.24
Zinc	390	mg/kg s.s.	Zn	ISO 17294-2, modified, NM	04.03.24 04.03.24
Cadmium	1.3	mg/kg s.s.	Cd	ISO 17294-2, modified, NM	04.03.24 04.03.24
Cobalt	8.3	mg/kg s.s.	Co	ISO 17294-2, modified, NM	04.03.24 04.03.24
Chromium	96	mg/kg s.s.	Cr	ISO 17294-2, modified, NM	04.03.24 04.03.24
Manganese	750	mg/kg s.s.	Mn	ISO 17294-2, modified, NM	04.03.24 04.03.24
Molybdenum	5.4	mg/kg s.s.	Mo	ISO 17294-2, modified, NM	04.03.24 04.03.24
Nickel	45	mg/kg s.s.	Ni	ISO 17294-2, modified, NM	04.03.24 04.03.24
Selenium	2.7	mg/kg s.s.	Se	ISO 17294-2, modified, NM	04.03.24 04.03.24



Analytic results

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

Parameter	Result Note	Unit	Expressed as/on	Method Place of execution	Start/End
Lead	110	mg/kg s.s.	Pb	ISO 17294-2, modified, NM	04.03.24 04.03.24
Thallium	0.18	mg/kg s.s.	Tl	ISO 17294-2, modified, NM	04.03.24 04.03.24
Tellurium	<0.16	mg/kg s.s.	Te	ISO 17294-2, modified, NM	04.03.24 04.03.24
Vanadium	23	mg/kg s.s.	V	ISO 17294-2, modified, NM	04.03.24 04.03.24
Mercury	0.98	mg/kg s.s.	Hg	SIST EN ISO 12846, modification in point 5, without chapter 7, NM	06.03.24 06.03.24
Ash	64.8	#	%DW	SIST EN ISO 21656:2021, NM	22.02.24 23.02.24
Net calorific value	7162			SIST-TS CEN/TS 16023:2014, KR	28.02.24 04.03.24
Gross calorific value	7755			SIST-TS CEN/TS 16023:2014, KR	28.02.24 04.03.24
Nitrogen	3227			SIST EN 15408:2011, KR	28.02.24 04.03.24
Hydrogen	2.72			SIST EN ISO 21663:2021, KR	28.02.24 28.02.24
Dry matter	52.8			SIST EN 15934:2012 - method A, NM	20.02.24 20.02.24
Dray matter from 40 °C to 105 °C	94.9			SIST EN 15934:2012 - method A, NM	22.02.24 22.02.24
Chlorine	0.35			SIST EN 15408:2011, KR	28.02.24 04.03.24
Sulfur	0.28			SIST EN 15408:2011, KR	28.02.24 04.03.24
Fluorine	0.0083			SIST EN 15408:2011, KR	28.02.24 04.03.24

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:

Jernejka Franko, univ.dipl.inž.kem.inž.

Electronically signed by deputy Maja Križan, univ.dipl.kemik at 27.03.2024 12:56:53

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