

## Ängens waste water treatment plant; Summary of the scope and conditions of the permit

- The Land and Environment Court's judgment in case M 2301-19, 2020-06-12
- The Land and Environment Court of Appeal in case M 8146-20, 2022-02-18

### THE MATTER

Application for a permit for discharge of wastewater from Ängen's wastewater treatment plant and piping in water in Lidköping municipality

Code: 90.10 B, 90.161 B, 40.70 C

---

### JUDGMENT

The Land and Environment Court, which assesses that the environmental impact assessment allows the environmental impact statement to be completed, Lidköping Municipality issues a permit in accordance with the Environmental Code (1998: 808) to

- I. Construction and operation of waste water treatment plants for the treatment of waste water with a maximum average weekly load during the calendar year of not more than 70 000 population equivalents (p.e.) where a p.e. corresponds to 70 g BOD7 / d<sup>1</sup>. Without extending what is stated above, the permit allows the load to amount to a maximum of 3,150 kg BOD7 / d, corresponding to 45,000 pe, as an annual average value. (*The Land and Environment Court of Appeal 2022-02-18*)

### Footnote 1

Maximum average weekly load refers to load under normal load conditions for the system.

II. Construction of pipes, etc. and a discharge point for treated wastewater may take place as follows.

- a. new discharge point north of Ågårdsbron and laying of a pipe in Lidan (river) necessary for this purpose (*The Land and Environment Court of Appeal 2022-02-18*)
- b. an artificial brook (stream) on part of the section from the waste water treatment plant to the discharge point in Lidan

***Reasons for judgment p. 45*** “*The Land and Environmental Court of Appeal considers that the municipality, through the application documents and supplementary reports received, has shown that Ängsbäcken (artificial brook/stream) does not require further precautionary measures or permit restrictions. The length of the brook is covered by the general condition and is reported in the application documents. No further specification of the route is therefore necessary. ”*

- c. lay pipelines for incoming wastewater to the treatment plant, approximately 1.5 km, in Lidan (river) with associated ground work to connect the pipes to land with the restrictions that follow from the conditions below.

III. Treatment in a biogas plant of the sludge that arises at the plant and of a maximum of 20,000 tonnes of external organic non-hazardous waste per year.

IV. Installation of one or more gas turbines with a total installed capacity of not more than 1 MW.

V. The activities under this permit must have been started no later than 7 years after this judgment has become legally binding, otherwise the permit expires. (*The Land and Environment Court of Appeal 2022-02-18, com. the permit is legally binding from 2022-03-18*)

- VI. The supervisory authority (*EPHC Environmental and Building Committee Lidköping*) must be notified no later than three weeks before the start of operations.
- VII. The Court determines the time within which actions in water must be carried out, to 7 years from the time the judgment has become legally binding. (*The Land and Environment Court of Appeal 2022-02-18*)
- VIII. The Court determines the time within which claims due to unforeseen damage to actions in water may be made, to 5 years from the work has been completed.
- IX. The Court decides that this permit may be used without prejudice to the fact that the judgment has not become legally binding.
- X. The Land and Environment Court sets the review fee, which has already been paid, at SEK 70,000.
- XI. The municipality of Lidköping shall pay the County Administrative Board of Västra Götaland compensation for legal costs of SEK 32,000, plus interest in accordance with law.

**The following final conditions shall apply to the permit.**

1. Subject to other conditions, the activities shall be conducted in main accordance with what the municipality has stated or undertaken in the case in the application documents and otherwise.

*Reasons for judgment p. 45: “The municipality has undertaken to use technology for purification of micro-pollutants incl. pharmaceuticals residues, which will also reduce infectious agents, upon approval of its first request for a new discharge point in Lidån. “*

*Reasons for judgment pp. 46-47 “The municipality has requested that the condition (condition 8) be repealed because advanced purification of infectious substances and micro-contaminants including purification (pharmaceutical purification) should not be prescribed as a requirement.*

*However, the municipality has undertaken to install this treatment, without it being prescribed in a condition. The Swedish Environmental Protection Agency has assessed that one voluntary introduction of pharmaceutical treatment should normally give rise to a permit application, but there is reason to wait with the final design of suitable conditions. According to the agency, it is covered by the permit application and the general condition. The County Administrative Board has also been in favor of the municipality's ambition to introduce special treatment for the separation of pharmaceutical residues from the wastewater.*

*It is common ground that pharmaceutical cleaning technology is not regularly applied in Swedish wastewater treatment plants. However, the techniques for advanced purification of drainage from pharmaceutical residues are available. Although, despite the fact that the need is not closer to clarified voluntarily, the need to install technology for the purification of micro-pollution including pharmaceutical residues, and indicated that this should be done in connection with the plant being built on the emission point north of the Ågårdsbron is allowed. The Land and Environmental Court of Appeal therefore considers that the pharmaceutical treatment does not need to be regulated in a condition. However, the Land and Environmental Court of Appeal reminds that the purification is covered by the permit application and the general condition, conditions 1, under the conditions that the municipality has undertaken to install it. This means that Conditions 8 should be repealed in accordance with the municipality's claim. However, the investigation assignments U 1-U 4 for the advanced purification should remain to clarify the needs and opportunities to follow up and possibly decide on a technology or emission terms.*

*The application (dated 2019-05-29) also shows that the municipality is*

*committed that the biogas plant should be provided with collection of biogas from post-digestors to minimize emissions of methane.*

*Construction measures and works in water*

2. Work in water must be carried out so that turbidity is minimized and damage to natural and cultural environments worthy of protection and port operations is avoided.
3. *Repealed (The Land and Environment Court of Appeal 2022-02-18)*  
***Reasons for the judgment p. 45*** *“With regard to the risk of inconveniences associated with overflow in pumping stations and on pipeline networks, the municipality has reported an almost non-existent risk of disturbing overflows compared with current conditions with more frequent overflows from the pipeline network to Lidan. The information has not been questioned and may be accepted. The issue of flooding is also covered by the general conditions of the permit, see condition 1 in the Land and Environmental Court's judgment. Condition 3 should therefore be repealed. ”*
4. The work, execution and location of new underground pipelines, pumping stations and discharge devices as well as protective measures against disturbances and damage to the environment, organisms worthy of protection and cultural environmental values caused by the work shall be planned in consultation with the Environment and Building Committee and the County Administrative Board.
5. The municipality shall, as a basis for condition 2 in good time, at least 6 weeks before the work begins, submit a plan for these to the county

administrative board. (*The Land and Environment Court of Appeal 2022-02-18*)

6. Work in water in Lidan may not take place during the period 1 December to 15 June. (*Correction The Land and Environment Court 2020-07-08*)
7. Logging of trees and bushes caused by this permit may not be carried out between 1 March and 31 July.

*Discharges to water from the operation of treatment plants and pipelines, etc.*

8. *Repealed (The Land and Environment Court of Appeal 2022-02-18), see below about the commitment to install pharmaceutical treatment*
9. The levels of pollutants in the total wastewater discharge from the treatment plant, ie. treated, partially treated and untreated wastewater, during a running-in phase of 12 months from the start of operation as average values during the periods specified in the table may not exceed the following values. The time for start-up must be reported to the supervisory authority. (*The Land and Environment Court of Appeal 2022-02-18*)

<b>Parameter</b>	<b>Content (mg/l)</b>	<b>Period</b>
BOD <sub>7</sub>	10	Mean value for the first 12 months after start-up
Total phosphorus (tot-P)	0,3	Mean value for the first 12 months after start-up
Total nitrogen (tot-N)	15	Mean value for the first 12 months after start-up

10. The levels of pollutants in the total wastewater discharge from the treatment plant, ie. treated, partially treated and untreated wastewater, after 12 months of operation as average values during the periods specified in the table may not exceed the following values. (The Land and Environment Court of Appeal 2022-02-18)

<b>Parameter</b>	<b>Content (mg/l)</b>	<b>Period</b>
BOD <sub>7</sub>	6	Mean value for last past 12 calendar months
Total phosphorus (tot-P)	0,2	Mean value for last past 12 calendar months
Total nitrogen (tot-N)	8	Mean value for last past 12 calendar months

11. The wastewater treatment plant, including the pipe network and pumping stations with overflow devices, must be operated continuously so that the highest possible treatment effect is achieved with technically and economically reasonable efforts.
12. In the event of malfunctions and maintenance work that may cause increased impact to the environment, the necessary measures must be taken without delay to limit them. The measures shall be taken in consultation with the supervisory authority.
13. The wastewater pipeline network shall be continuously inspected, maintained and remedied in order to limit the leakage of water and prevent the discharge of untreated or insufficiently treated wastewater.

14. An action program for the pipeline network shall be submitted to the supervisory authority no later than one year after the treatment plant is put into operation and thereafter revised at least every five years unless the supervisory authority decides otherwise. The action program shall contain proposals for measures to limit the discharge of untreated or insufficiently treated wastewater from pipelines, pumping stations and from the treatment plant, and to limit the leakage of irrelevant water into the pipes. In addition to measures, the plan must describe costs, priorities and schedule for each measure.

### Chemicals

15. The introduction of new or amendment of process chemicals may only be made after the admission of the supervisory authority.
16. All management of chemicals and other things that contain hazardous substances should be done so that emissions to land, air or water are counteracted. Chemical products and hazardous waste must be kept well notice and in such a way that the contamination of land, water and air is not at risk.
17. Liquid chemical products and hazardous waste must be kept embedded on a substance resistant and dense surface. The embankment should at least correspond to the largest container volume plus 10% of the sum of the other container volume. The storage must be kept so that there is no risk of mutually reactive compounds being mixed. When storing outdoors, protection should be against power and the embedded area should be protected against precipitation.

Otherwise

18. The biogas plant shall be provided with gas collection, from the post-digestors, to minimize emissions of methane and smelling gases.
19. The activity must be conducted so that odours and other inconveniences are prevented or limited. If inconvenience arises in the surroundings as a result of the activity, the operator shall take measures to limit the inconvenience.
20. The operator shall continuously work to ensure that chemicals are not supplied to the wastewater in such amount or of such nature that the plant's function is reduced or specific inconveniences arise in the environment and the recipient or so that it affects the sludge quality.
21. The treatment plant's buildings and technical equipment must be designed so that it can handle a downpour corresponding to at least one 100-year rain without significant disturbances.
22. Energy management must be in accordance with an energy plan to be reported to the supervisory authority. *(The Land and Environment Court of Appeal 2022-02-18)*
23. The municipality shall notify the supervisory authority without delay when to terminate the entire or part of the business or on other ground work that may include contaminated areas. The municipality shall then in consultation with the supervisory authority examine whether the land in the areas affected by the change is polluted.
24. *Repealed (The Land and Environment Court of Appeal 2022-02-18)*

25. A current control program for the activity that includes control of the scope of the business, conditions, regulations and the impact of the business on the environment shall exist and be followed. A proposal for control programs shall be submitted to the supervisory authority for approval no later than 3 months before the treatment plant is planned to be put into operation, unless the supervisory authority allows otherwise.  
*(The Land and Environment Court of Appeal 2022-02-18)*

### **Delegation**

The Land and Environment Court transfers with reference to. Chapter 22, 3 §, the Environmental Code for the supervisory authority (the Environment and Building Committee and the County Administrative Board, respectively) to settle conditions for

- D 1. Location and construction of new pipelines and pumping stations as well as discharge devices, including protective measures associated with the work, due to condition 4, (consultation with the county administrative board).

***Reason for judgment 2. 45*** *"The new pumping stations and lines are covered by the permit. The supervisory authority thus has the right to transparency and control over the location and the protective measures concerning these. This is only briefly reported in the application documents. Delegation D 1 must therefore remain. "*

- D 2. Measures to limit overflows from plants and pipe networks and leakage to the pipe network, due to the action program in accordance with condition 14.

- D 3. Design and dimensioning requirements for biogas plants with post-digester chambers as well as operation and maintenance routines for the same in order to avoid inconveniences from methane emissions and odours and to optimize resource management.
- D 4. Precautions and restrictions in connection with the reception of substrates for biological treatment in the biogas plant other than those included in the application.
- D 5. Discharge to water from overflow points on the pipe network.
- D 6. Control of the scope of the activity according to the permit restriction and of emissions and environmental impact from the activity. (The Land and Environment Court of Appeal 2022-02-18)

**The permit shall be supplemented by the following provisional regulation:**

- P 1. The content of ammonium nitrogen (NH<sub>4</sub>-N) in the total wastewater discharge from the treatment plant, ie. treated, partially treated and untreated waste water must not exceed the following values:

During a tuning phase of 12 months from start of operation

- 3 mg / l as a mean value for the first 12 months after start of operation  
and mean value for the months June to September

After 12 months of operation

1.5 mg / l as an average for the last 12 calendar months, 0.3 mg / l as an average for the months June to September.

*(The Land and Environment Court of Appeal 2022-02-18)*

**Postponed matters**

With the reference to 22 kap. 27 § first section of the Environmental Code postpones the determination of final conditions for discharges to water of micro-pollutants (pharmaceutical residues, biocides, flame retardants, etc.), recovery of phosphorus from sludge and reject water and for discharges of ammonium nitrogen (NH<sub>4</sub>-N) in the total wastewater discharge. The municipality is required to carry out the following investigations, etc. during the probationary period.

- U 1. Identify appropriate parameters, analytical methods for monitoring or regulating the release of infectious agents, pharmaceutical residues, biocides and other micro-contaminants relevant to selected purification techniques.
- U 2. Clarify purification effects for the above-mentioned substance groups under different possible operating scenarios for the plant.
- U 3. Clarify resource consumption (including chemicals and energy) for the treatment and the environmental impact associated with it.
- U 4. Clarify the effects of the purification of the above groups of substances on the purification result of oxygen-consuming substances, nutrients and ammonium as well as the properties of the purified wastewater with regard to bio-accumulability, degradability and toxicity (acute and chronic).

***Reasons for judgment pp. 47-48:*** *The municipality assesses that the plant will probably be able to contain even stricter emission levels regarding ammonium nitrogen than what is demanded in the case and stated that*

*within the framework of the requested investigation assignment U 6 it will develop a comprehensive sampling program to be able, in an optimal way, to follow up any impact on the waterbody Lidan – Lovene to Lidköping. In addition, the latest classification in WISS (Water Information System Sweden) for ammonia in Lidan – Lovene to Lidköping has been assessed as not completely reliable, and that the current assessment basis is relatively old. All in all, this means that the effects of the operation are difficult to assess in terms of ammonium nitrogen emissions, which is why there is reason to postpone the determination of the limit values for ammonium nitrogen in accordance with the municipality's requirements.”*

- U 5. Investigate the capacity to extract nutrients from sludge and reject water and identify suitable parameters for follow-up and possible condition regulation of the recycling.
  
- U 6. Evaluate the emissions of ammonium nitrogen (NH<sub>4</sub>-N) in the total wastewater discharge from the treatment plant, ie. treated, partially treated and untreated wastewater. The investigation shall also identify the occasions when outgoing levels of ammonium nitrogen risk affecting the ammonia content in the recipient and what operational optimization measures need to be taken to keep ammonium nitrogen emissions at a level acceptable to the recipient. Furthermore, Ängsbäcken's ammonium-reducing effect will be investigated. (The Land and Environment Court of Appeal 2022-02-18)

The investigations as above shall be carried out in consultation with the supervisory authority. (The Land and Environment Court of Appeal 2022-02-18)

When reporting costs for investigated and proposed measures, the calculation of investment and operating costs must be clearly reported.

The results of the investigations shall contain technical descriptions of implemented measures, environmental and cost effects as well as proposals for possible further measures with schedules and proposals for final conditions. A report must be submitted to the court as soon as a reliable document can be produced, however no later than 3 years from the day the treatment plant is put into operation with regard to U 5 and U 6 and 5 years from the day the treatment plant is put into operation with regard to U 1 – U 4 . (*The Land and Environment Court of Appeal 2022-02-18*)

**Reasons for judgment p.49** *“With regard to the time for reporting the probationary period investigations, the Supreme Land and Environmental Court sees no reason to state the time from when the facility part for pharmaceutical treatment is put into operation in the manner requested by the municipality. As the municipality now receives a permit for the discharge point north of Ågådsbron, the municipality has undertaken to install such treatment. The reporting period must therefore be calculated from the day the treatment plant is put into operation. ”*