



Anthony Kerr
Senior Review Engineer
Engineering Section
Water Quality Control Division
Colorado Department of Public Health & Environment

Subject: Site Location Application - Request for Information
Jellystone Park at Larkspur, WWTP Expansion
Colorado Discharge Permit System (CDPS) No. COX631080
Douglas County
ES Project No. ES.23.SA.08073

Integrated Water Services (IWS) is transmitting this letter in response to your letter dated December 28, 2023. For clarity, your original comments are reiterated in *italics* and our response follows each comment.

1. In accordance with Section 22.3(1)(b) of Regulation 22, while evaluating the suitability of a proposed site location for a domestic wastewater treatment works, the Division shall determine that the proposed domestic wastewater treatment works will be managed to minimize the potential adverse impact on water quality and in accordance with the applicable water quality planning targets. The System received a Compliance Advisory – Reported Effluent Violation letter dated November 17, 2023 indicating significant noncompliance with effluent permit limits for total inorganic nitrogen, total phosphorus, and total dissolved solids. The process design report evaluates the updated facility effluent for total inorganic nitrogen and total phosphorus, but does not appear to indicate upgrades associated with, or the design effluent concentration for total dissolved solids. Please provide a discussion and associated documentation identifying treatment upgrades or other measures necessary to meet the effluent limit for total dissolved solids.

Response: The WWTP was built to blend lower total dissolved solids (TDS) water from on-site wells with wastewater effluent. This system is automated using automated valves and an algorithm programmed into the SCADA system. The previous violations were a result of erroneous sampling locations and/or short-term issues with the program. The WWTP does not require modification to meet the permit limits on TDS, as the existing system has been verified to be operational and correct and the proper sampling procedures have been reviewed with the facility operators.

2. In accordance with Section 22.7(1)(c)(iii) of Regulation 22, the engineering report must include an analysis of the loading, capacity and performance of the existing treatment works. As further defined in Section 22.7(1)(c)(iii) of the Implementation Policy for Regulation 22, a loading analysis includes a causal analysis for any discharge limit exceedances. The process design report indicates that the purpose for treatment upgrades is to accommodate site conditions and operational data developed over the life of the facility to date (i.e. waste loading to the plant), but does not elaborate on how the site conditions and operational data caused effluent violations. Based on a review of Discharge Monitoring Reports (DMR), there have been several violations of effluent limits in the past three (3) years that occurred in almost each month of the year. Please provide a discussion of potential causes for permit effluent violations and include corrective measures implemented to achieve permit compliance.



Response: A causal analysis was completed by sampling the influent wastewater in August, 2021 and a report completed by HydroScience (January 7, 2022). The report and sampling determined that the original raw wastewater loads that Plummer used for design did not represent the actual occupancy of the Jellystone RV units. The report generally found the following as examples:

- The original raw loading rates did not account for a higher quantity of RV tank drains on weekends with very concentrated loadings. For example, the ammonia was designed at 45 mg/L whereas the sampling in 2021 showed an ammonia of 117 mg/L, which is 160% higher than the design value. The tank volume provided is not sufficient for these loads. A sample event report from Sunday August 15, 2021 is provided in Attachment A.
- The original alkalinity was assumed to be 45 mg/L as CaCO3, whereas the 2021 sampling found an alkalinity of 562 mg/L as CaCO3
- The violations of the effluent are not constrained to a particular season or month but related to the occupancy rate and amount of RVs which dump their waste tanks— which is primarily on weekends.
- 3. In accordance with Section 22.7(1)(c)(iv) of Regulation 22, the engineering report shall address an analysis of alternatives meant to treat the additional loading including any consolidation alternatives recommended in the approved regional water quality management plan. The System's March 10, 2022 response letter to a Compliance Advisory Reported Effluent Violation indicates a parallel effort to improving the existing plant involves evaluating consolidating with Perry Park Water and Sewer District. The process design report does not appear to address treatment technology alternatives or whether consolidation is a feasible option. Please provide a discussion regarding alternative treatment analysis evaluated and the feasibility of consolidating with Perry Park Water and Sewer District.

Response: Emerson Prosser and Brad Pinover, both of Sun Communities, met with Perry Fark Water and Sewer District on February 16, 2022 to explore the feasibility of connecting with the Perry Park system. It was determined at this meeting that it was not economically feasible to pursue this connect further and a decision was made to pursue the upgrades to meet permit limits as determined in the HydroScience report (January, 2022).

4. In accordance with Section 22.7(2) of Regulation 22, the applicant is responsible for submitting the application and engineering report for the increase in the design capacity of the domestic wastewater treatment works to all appropriate local governments, 208 designated planning and management agencies, and state agencies for review and comment prior to submission to the Division. The process design report does not appear to include documentation that the application to increase capacity was submitted to Douglas County Public Health Department or the Chatfield Watershed Authority. Please provide documentation that the process design report is submitted to all appropriate local governments, 208 designated planning and management agencies, and state agencies for review, including but not limited to Douglas County Health Department and the Chatfield Watershed Authority, and provide any received comments and associated resolutions.



Response: The site application for the subject property was submitted to both Douglas County Health Department (DCHD) and the Chatfield Watershed Authority. Attached to this letter are the transmittals to each agency, which were emailed to the CDPHE. Also attached to this letter are copies of email transmittals from CDPHE and both Agencies acknowledging receipt of the transmittal letters and application. As of the date of this letter, no comments have been received from Chatfield Watershed Authority and DCHD responded with no comments. These letters emails are provided in Attachment B.

Jeff Snyder, PE

Karla Kinser, PE

Attachments:

A: Sample event report from August 2021

B: Transmittal Letters and Email Acknowledgements

CC:

Caitlin Gappa, Douglass County Health Department
Diane Kietly, Chatfield Watershed Authority
Todd Brunetti, Integrated Water Services
Judah Tessler, Integrated Water Services
Will Parker, Semocor, Inc
Scott Borgeson, Atwell Group
Douglas Pakkala, Atwell Group
Curtis Lam, Hydroscience
Emerson Prosser, Sun Communities
Brad Pinover, Sun Communities
Nick DiBella, Sun Communities
Derek Wilson, Sun Communities
Jennifer (Hardwick) Andrews, Sun Communities



TASK NO: 210816067

Report To: Will Parker Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Bill To: Accounts Payable

Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Task No.: 210816067

Client PO: Jellystone of Larkspur Client Project: Jellystone of Larkspur Date Received: 8/16/21 Date Reported: 8/24/21

Matrix: Wastewater

Customer Sample ID Jellystone of Larkspur Influent Composite

Sample Date/Time: 8/15/21 3:00 PM

Lab Number: 210816067-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Ammonia Nitrogen	169.69 mg/L	SM 4500-NH3-G	0.03 mg/L	8/20/21	MBN
Biochemical Oxygen Demand	558 mg/L	SM 5210-B	2 mg/L	8/21/21	ISG
Chloride	16.04 mg/L	EPA 300.0	0.01 mg/L	8/17/21	MAT
Nitrate Nitrogen	< 0.05 mg/L	EPA 300.0	0.05 mg/L	8/17/21	MAT
Nitrate/ Nitrite Nitrogen	79.29 mg/L	Calculation	0.05 mg/L	8/17/21	MAT
Nitrite Nitrogen	79.29 mg/L	EPA 300.0	0.03 mg/L	8/17/21	MAT
Phosphorus - Total	21.69 mg/L	EPA 365.1	0.05 mg/L	8/19/21	MBN
Sulfate	55.19 mg/L	EPA 300.0	0.01 mg/L	8/17/21	MAT
Total Alkalinity	685.8 mg/L as CaCO3	SM 2320-B	4.0 mg/L as CaCO3	8/18/21	DPL
Total Dissolved Solids	876 mg/L	SM 2540-C	5 mg/L	8/23/21	ISG
Total Inorganic Nitrogen	248.98 mg/L	Calculation	0.05 mg/L	8/24/21	LJG
Total Kjeldahl Nitrogen	263.6 mg/L	SM 4500-Norg-B	0.1 mg/L	8/20/21	MBN
Total Suspended Solids	291 mg/L	SM 2540-D	5 mg/L	8/17/21	ISG

Abbreviations/ References:

ML = Minimum Level = LRL = RL mg/L = Milligrams Per Liter or PPM ug/L = Micrograms Per Liter or PPB mpn/100 mls = Most Probable Number Index/ 100 mls Date Analyzed = Date Test Completed



TASK NO: 210816067

Report To: Will Parker Company: Semocor Inc.

3995 South Castlewood Canyon Castle Rock CO 80104

Company: Semocor Inc.

Bill To: Accounts Payable

3995 South Castlewood Canyon

Castle Rock CO 80104

Task No.: 210816067

Client PO: Jellystone of Larkspur Client Project: Jellystone of Larkspur

Date Received: 8/16/21 Date Reported: 8/24/21

Matrix: Wastewater

Customer Sample ID Jellystone of Larkspur Effluent 001A (Before) Composite

Sample Date/Time: 8/15/21 3:00 PM **Lab Number:** 210816067-02

Test	Result	Method	ML	Date Analyzed	Analyzed By
Ammonia Nitrogen	57.83 mg/L	SM 4500-NH3-G	0.03 mg/L	8/20/21	MBN
Biochemical Oxygen Demand	6 mg/L	SM 5210-B	2 mg/L	8/21/21	ISG
Chloride	163.64 mg/L	EPA 300.0	0.01 mg/L	8/17/21	MAT
Nitrate Nitrogen	< 0.05 mg/L	EPA 300.0	0.05 mg/L	8/17/21	MAT
Nitrate/ Nitrite Nitrogen	< 0.05 mg/L	Calculation	0.05 mg/L	8/17/21	MAT
Nitrite Nitrogen	< 0.03 mg/L	EPA 300.0	0.03 mg/L	8/17/21	MAT
Phosphorus - Total	4.83 mg/L	EPA 365.1	0.05 mg/L	8/19/21	MBN
Sulfate	54.00 mg/L	EPA 300.0	0.01 mg/L	8/17/21	MAT
Total Alkalinity	344.8 mg/L as CaCO3	SM 2320-B	4.0 mg/L as CaCO3	8/18/21	DPL
Total Dissolved Solids	588 mg/L	SM 2540-C	5 mg/L	8/23/21	ISG
Total Inorganic Nitrogen	57.83 mg/L	Calculation	0.05 mg/L	8/24/21	LJG
Total Kjeldahl Nitrogen	58.5 mg/L	SM 4500-Norg-B	0.1 mg/L	8/20/21	MBN
Total Suspended Solids	< 5 mg/L	SM 2540-D	5 mg/L	8/17/21	ISG

Abbreviations/ References:

ML = Minimum Level = LRL = RL
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed



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Report To: Will Parker Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Bill To: Accounts Payable

Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Task No.: 210816067

Client PO: Jellystone of Larkspur Client Project: Jellystone of Larkspur Date Received: 8/16/21 Date Reported: 8/24/21

Matrix: Wastewater

Customer Sample ID Jellystone of Larkspur Effluent 002A (After) Composite

Sample Date/Time: 8/15/21 3:00 PM Lab Number: 210816067-03

Test	Result	Method	ML	Date Analyzed	Analyzed By
Ammonia Nitrogen	24.05 mg/L	SM 4500-NH3-G	0.03 mg/L	8/20/21	MBN
Biochemical Oxygen Demand	< 2 mg/L	SM 5210-B	2 mg/L	8/21/21	ISG
Chloride	54.36 mg/L	EPA 300.0	0.01 mg/L	8/17/21	MAT
Nitrate Nitrogen	0.09 mg/L	EPA 300.0	0.05 mg/L	8/17/21	MAT
Nitrate/ Nitrite Nitrogen	0.09 mg/L	Calculation	0.05 mg/L	8/17/21	MAT
Nitrite Nitrogen	< 0.03 mg/L	EPA 300.0	0.03 mg/L	8/17/21	MAT
Phosphorus - Total	2.37 mg/L	EPA 365.1	0.05 mg/L	8/19/21	MBN
Sulfate	28.30 mg/L	EPA 300.0	0.01 mg/L	8/17/21	MAT
Total Alkalinity	152.4 mg/L as CaCO3	SM 2320-B	4.0 mg/L as CaCO3	8/18/21	DPL
Total Dissolved Solids	299 mg/L	SM 2540-C	5 mg/L	8/23/21	ISG
Total Inorganic Nitrogen	24.14 mg/L	Calculation	0.05 mg/L	8/24/21	LJG
Total Kjeldahl Nitrogen	26.0 mg/L	SM 4500-Norg-B	0.1 mg/L	8/20/21	MBN
Total Suspended Solids	< 5 mg/L	SM 2540-D	5 mg/L	8/17/21	ISG

Abbreviations/ References:

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Report To: Will Parker Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Bill To: Accounts Payable

Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Task No.: 210816067

Client PO: Jellystone of Larkspur Client Project: Jellystone of Larkspur Date Received: 8/16/21 Date Reported: 8/24/21

Matrix: Wastewater

Customer Sample ID Jellystone of Larkspur MBR #1

Sample Date/Time: 8/15/21 3:00 PM Lab Number: 210816067-04

Test	Result	Method	ML	Date Analyzed	Analyzed By
Total Suspended Solids	14700 mg/L	SM 2540 D/E	5 mg/l	8/20/21	ISG
Volatile Suspended Solids	76.46 %	SM 2540 D/E	0.01 %	8/20/21	ISG

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TASK NO: 210816067

Report To: Will Parker Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Bill To: Accounts Payable

Company: Semocor Inc.

3995 South Castlewood Canyon

Castle Rock CO 80104

Task No.: 210816067

Client PO: Jellystone of Larkspur Client Project: Jellystone of Larkspur Date Received: 8/16/21 Date Reported: 8/24/21

Matrix: Wastewater

Customer Sample ID Jellystone of Larkspur MBR #2

Sample Date/Time: 8/15/21 3:00 PM

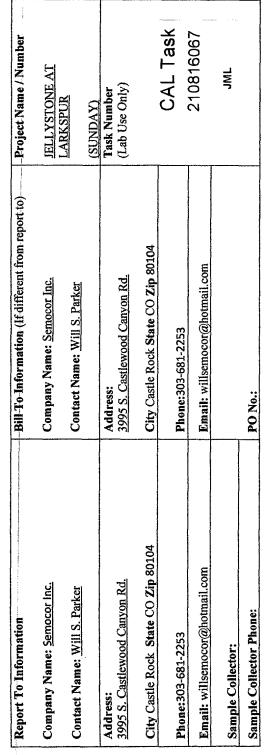
Lab Number: 210816067-05

Test	Result	Method	ML	Date Analyzed	Analyzed By
Total Suspended Solids	14980 mg/L	SM 2540 D/E	5 mg/l	8/20/21	ISG
Volatile Suspended Solids	76.23 %	SM 2540 D/E	0.01 %	8/20/21	ISG

Abbreviations/ References:

ML = Minimum Level = LRL = RL mg/L = Milligrams Per Liter or PPM ug/L = Micrograms Per Liter or PPB mpn/100 mls = Most Probable Number Index/ 100 mls Date Analyzed = Date Test Completed

Chain of Custody Form





Commerce City Lab 10411 Heinz Way Commerce City CO 80640

Lakewood Service Center 12860 W. Cedar Dr, 100A Lakewood CO 80228

Phone: 303-659-2313

www.coloradolab.com

i ests Requested	OT (Check One Only) Composite ALKALINITY T. COLIFORM (MPN) T. CHLORIDE T. SULPATE TAULYSS TOLIFORM (MPN) TKN								Seals Present Yes □ No □	6.By Bate/Time: Received By: Bate/Time: 2.00
	Sample Matrix (Select One Only) Waste Water Soil Drinking Water Ground Water Sludge Sludge Surface Water Orl Contained Date Time Sample ID	Sygal 8-3 INFLUENT	SISU 8-3 EFFLUENT 001A (BEFORE) 3 \[\Brightarrow \equiv \frac{1}{2} \]	8/5/21 6-3 EFFLUENT #2 002A (AFTER)	8/5(21) 9-3 MBR#1	8/15/11 9-3 MBR#2 1			Instructions: C/S lafo:	Relinquished By Date/Time: Regived By: Pate/Time: Relinquished



Transmittal Letter

December 22, 2023

To: Chatfield Watershed Authority

Attn: Permit Reviewer

RE: Jellystone Park at Larkspur Wastewater Treatment Facilities Upgrade Permit Application

From: Jeff Snyder, PE - Integrated Water Services

As required by Section 22.10 (1) Please find attached a copy of the site location application for the above referenced project.

Jeff Snyder, PE



Transmittal Letter

December 22, 2023

To: Douglas County Health Dept

Attn: Caitlin Gappa, Assistant Director for Environmental Health

RE: Jellystone Park at Larkspur Wastewater Treatment Facilities Upgrade Permit Application

From: Jeff Snyder, PE - Integrated Water Services

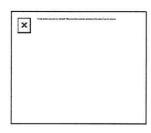
As required by Section 22.10 (1) Please find attached a copy of the site location application for the above referenced project.

Jeff Snyder, PE

Jeffrey Snyder

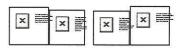
From:	Colorado Watershed Assembly < Diane@coloradowater.org >
Sent:	Tuesday, January 2, 2024 1:13 PM
To:	Jeffrey Snyder
Cc:	alan.leak@respec.com
Subject:	Re: FW: Sun Jellystone at Larkspur WWTF Site Application
You don't often get email from dian	e@coloradowater.org. <u>Learn why this is important</u>
Received; thank you, Jeff.	
Happy New Year! Diane	
On Tue, Jan 2, 2024 at 12:30 PM	Jeffrey Snyder < jsnyder@integratedwaterservices.com > wrote:
Diane and Alan,	
I sent these documents to Casey	y before the Holiday and want to make sure that they have been received.
Please find attached copy of per Plant.	rmit sent to CDPHE for upgrades to the Jellystone at Larkspur Wastewater Treatment
From: Jeffrey Snyder Sent: Friday, December 22, 2023 To: 'casey@coloradowater.org' Cc: Karla Kinser < karla@kinserm Brunetti < tbrunetti@integrated Subject: Sun Jellystone at Larksp	< <u>casey@coloradowater.org</u> > nemsolutions.com>; Edward Gelsone < <u>egelsone@integratedwaterservices.com</u> >; Todd waterservices.com>
Please find attached copy of per Plant.	mit sent to CDPHE for upgrades to the Jellystone at Larkspur Wastewater Treatment
Regards,	





Diane Kielty

Colorado Watershed Assembly Program Manager 303-916-4645 https://www.coloradowater.org/



Jeffrey Snyder

From:

Caitlin Gappa <cgappa@douglas.co.us>

Sent:

Tuesday, January 2, 2024 3:46 PM

To:

Jeffrey Snyder

Subject:

RE: Jellystone at Larkspur Wastewater Treatment Plant Permit Application 1 of 2

You don't often get email from cgappa@douglas.co.us. Learn why this is important

Great! Received!

From: Jeffrey Snyder < jsnyder@integratedwaterservices.com>

Sent: Tuesday, January 2, 2024 3:45 PM
To: Caitlin Gappa <cgappa@douglas.co.us>

Subject: RE: Jellystone at Larkspur Wastewater Treatment Plant Permit Application 1 of 2

Thank you,

Here is 2 of 2. Drawings only.



From: Caitlin Gappa < cgappa@douglas.co.us > Sent: Tuesday, January 2, 2024 3:21 PM

To: Jeffrey Snyder < isnyder@integratedwaterservices.com>

Subject: RE: Jellystone at Larkspur Wastewater Treatment Plant Permit Application 1 of 2

Received! Thank you!

From: Jeffrey Snyder < isnyder@integratedwaterservices.com>

Sent: Tuesday, January 2, 2024 3:19 PM
To: Caitlin Gappa < cgappa@douglas.co.us>

Subject: RE: Jellystone at Larkspur Wastewater Treatment Plant Permit Application 1 of 2

Thank you,

I'm re-sending it in two emails, here is 1 of 2. I removed the drawings from this one and will send them separately.



Jeffrey Snyder

From:

Sent: To: Cc:	Wednesday, January 3, 2024 8:57 AM Kerr - CDPHE, Anthony Jeffrey Snyder
Subject:	RE: Request for Information - Jellystone Park at Larkspur - WWTP Expansion
You don't often get email from	m cgappa@douglas.co.us. <u>Learn why this is important</u>
Thanks Anthony.	
DCHD has no comments reg	garding the Expansion Site Application for Jellystone Park at Larkspur.
Thank you,	
Caitlin	
Sent: Tuesday, January 2, 20 To: Caitlin Gappa <cgappa@< td=""><td></td></cgappa@<>	
	me and I'll let our administrator know when they are complete.
Anthony Kerr, P.E. Senior Review Engineer Engineering Section	
	oom 232 Grand Junction, CO 81501 www.colorado.gov/pacific/cdphe
Pronouns: him, he, his	
On Tue, Jan 2, 2024 at 3:35	PM Caitlin Gappa < <u>cgappa@douglas.co.us</u> > wrote:
Hi Anthony!	
	at start to the New Year! I am working on the local review of this, what all do you need from eed to submit comments to WQEngReview?
Thanks!	

Caitlin Gappa <cgappa@douglas.co.us>

Caitlin Gappa

From: WQEngReview - CDPHE, CDPHE < cdphe.wqengreview@state.co.us>

Sent: Thursday, December 28, 2023 3:08 PM

To: bthelen@suncommunities.com

Cc: CDPHE WQEngReview - CDPHE < cdphe.wqengreview@state.co.us>; Anthony Kerr - CDPHE

<anthony.kerr@state.co.us>; Emily Wong - CDPHE <emily.wong@state.co.us>; Mandy Mercer - CDPHE

<mandy.mercer@state.co.us>; Caitlin Gappa <cgappa@douglas.co.us>; jsnyder@integratedwaterservices.com;

<u>karla@kinsermemsolutions.com</u>; <u>alan.leak@respec.com</u>; <u>diane@coloradowater.org</u> **Subject:** Request for Information - Jellystone Park at Larkspur - WWTP Expansion

Please see attached for your electronic copy of the above-referenced document. Please contact the signer of the document regarding any question of issues with the content of the letter. If there are any issues with opening the attachment, please do not hesitate to contact me.

* The attached document is CDPHE official correspondence to you in electronic format. You will not be receiving a hard copy of his document.

** The Engineering Section is interested in gaining feedback about your experience during the engineering review process. We would appreciate your time to complete a Quality-of-Service Survey regarding your experience during the engineering review process leading up to the issuance of this decision letter. The Engineering Section will use your responses and comments to identify strengths, target areas of improvement, and evaluate process improvements to better serve your needs. Please take a moment to fill out our survey at the following website:

http://fs8.formsite.com/cohealth/form627710151/index.html

James Alcorn
Program Assistant
Engineering Section

M 303.692.3539 | F 303.782.0390 4300 Cherry Creek Drive South, Denver, CO 80246 jamesa.alcorn@state.co.us | www.colorado.gov/pacific/cdphe

24-hr Environmental Release/Incident Report Line: 1-877-518-5608