



PHONE (850) 425-6654 FAX (850) 425-6694 WEB WWW.RADEYLAW.COM
MAIL POST OFFICE BOX 10967 | TALLAHASSEE, FL 32302 OFFICE 301 SOUTH BRONOUGH ST. | STE. 200 | TALLAHASSEE, FL 32301

e-Mail: tcrabb@radeylaw.com

January 7, 2022

VIA Electronic Filing to the Office of Commission Clerk

Attn: Melinda Watts, Engineering Specialist
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 20210093-WS - Application for transfer of water and wastewater systems of Aquarina Utilities, Inc., Water Certificate No. 517-W, and Wastewater Certificate No. 450-S to CSWR-Florida Utility Operating Company, LLC, in Brevard County.

Dear Ms. Watts:

CSWR-Florida Utility Operating Company, LLC (“CSWR” or “the Company”) submits the following responses to Staff’s December 20, 2021 Second Data Request.

1. Please refer to Exhibit N, page 2 of 3, of the Utility’s application.

a. The Utility states that anticipated improvements in compliance with regulatory mandates would include necessary upgrades to the wastewater aeration system, clarifier and filtration system to comply with the operating permit. However, on pages 2 and 3 of Exhibit G of the Utility’s application, the Florida Department of Environmental Protection’s (DEP) previous three compliance evaluation inspections found the Utility to be in-compliance with DEP rules and regulations. Please explain how these upgrades would improve compliance with regulatory mandates when the Utility is currently in-compliance with DEP rules and regulations.

CSWR RESPONSE: Please see PDF pages 17 through 21 of the attached Aquarina Utilities, Inc. Wastewater Treatment System Assessment Engineering Memorandum prepared by Woodard & Curran, for recommended improvements to the Aquarina wastewater system. A redacted copy of the Memorandum is filed with this letter in the public docket. An unredacted and highlighted version of the Memorandum will be separately filed with the Clerk along with a request for confidential classification.



b. The Utility states that the reverse osmosis system used by Aquarina Utilities, Inc. (Aquarina) has a high operational cost. Please describe CSWR's alternative system, provide the cost to purchase and install the alternative system (including costs associated with DEP permitting), provide the monthly operational costs of each system, and compare the effectiveness of CSWR's alternative system to Aquarina's reverse osmosis system.

CSWR RESPONSE: During site visits, the current owner relayed to CSWR-FL that the reverse osmosis system was originally installed due to a desire to have the highest level of water treatment, not out of necessity due to poor ground water quality. The Company plans to perform raw water testing upon acquisition and make a decision at that point on whether the reverse osmosis system is necessary to meet water quality standards. If the Company's analysis shows that the reverse osmosis system requires a significant investment to repair and/or maintain and is unnecessary to meet quality standards, the plan would be to take the system offline to reduce operational expenses. In addition, the backwash from the reverse osmosis system is currently being discharged to the WWTF which will cause additional monitoring and expense for the operation of the wastewater system. At this time, no cost estimates have been completed.

c. The Utility states that it will assess the compliance history of the water system to identify improvements to achieve regulatory compliance and bring the system into a maintainable condition. Based on the DEP sanitary surveys and primary/secondary water quality test results, it appears that the Aquarina water treatment system is both compliant and maintainable. Given this, please explain how "remote monitoring," valued in Exhibit G, page 4 of 4, of the Utility's application at \$15,000 per unit with 3 units needed, will add sufficient value to maintaining a compliant system to justify the cost.

CSWR RESPONSE: A remote monitoring system with flow metering will be installed at the plant and lift station to quantitatively evaluate flows and I&I in the systems. This will allow a determination if further collection system analysis and repair are needed to reduce the I&I. Live data from the remote monitoring system will also drastically improve operational awareness, allowing operators to respond to some abnormal conditions at the plant or lift station immediately before they can cause damage to equipment, or cause backups or overflows which can cause costly environmental damage or damage to customers' homes. An early response by operators to even one or two of these events can often prevent damage that would exceed the cost of the system and prevent inconvenience of backups or outages to customers.

2. Please refer to Exhibit G of the Utility's application.

a. On page 2 of 4 of Exhibit G, it states that the estimated daily flow, based on the number of connections, is approximately 85,000 gallons per day (GPD). However, it appears from the Discharge Monitoring Reports submitted to the DEP by Aquarina for the 12-month period of



October 2020 to September 2021, that the actual average daily flow is much less at approximately 56,000 GPD. Please provide the calculations for CSWR's estimated daily flow, and explain why CSWR's daily flows differ from those in the Utility's Discharge Monitoring Reports.

CSWR RESPONSE: Aquarina's discharge flow reported on DMRs is based upon a calculation of the pump design flow multiplied by run time of four separate pumps. The estimated discharge flow CSWR provided is roughly based upon the 10-state standard and DEP guidelines of 100 gpd per person and 2.5 persons per home for 250 gpd per home. CSWR will install, upon acquisition, a flow meter on the effluent in order to directly measure actual flow for design purposes if and as necessary.

b. Please provide the in-depth memoranda prepared by a third-party engineering contractor for the wastewater and water systems referenced on pages 3 and 4, respectively, of Exhibit G.

CSWR RESPONSE: Redacted copies of the Aquarina Utilities, Inc. Wastewater Treatment System Assessment Engineering Memorandum and the Aquarina Utilities, Inc. Water System Assessment Engineering Memorandum, both prepared by Woodard & Curran, are filed with this letter in the public docket. Unredacted and highlighted versions of the memoranda will be separately filed with the Clerk along with a request for confidential classification.

Thank you for the opportunity to submit additional information in support of the application. Please feel free to contact our office at your convenience with any additional questions or concerns.

Sincerely,

/s/ Thomas A. Crabb

Thomas A. Crabb
Attorney for Buyer CSWR-FL

cc: Stephanie Morse, Esq., Office of Public Counsel (morse.stephanie@leg.state.fl.us)
Martin Friedman, Esq. (mfriedman@deanmead.com)



**AQUARINA
UTILITIES, INC.
WASTEWATER
TREATMENT
SYSTEM
ASSESSMENT**

**ENGINEERING
MEMORANDUM**

210 S. Florida Avenue, Suite 220
Lakeland, FL 33801
800.426.4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0233748.02
Central States Water
Resources
July 2021

TABLE OF CONTENTS

SECTION	PAGE NO.
EXECUTIVE SUMMARY	ES-1
1. INTRODUCTION	1-1
1.1 General System Information	1-1
2. WASTEWATER TREATMENT FACILITY	2-1
2.1 Facility Description	2-1
2.1.1 Facility Type	2-1
2.1.2 Approximate Age of Facility and Source Used to Age Facility	2-1
2.1.3 Structural Condition of Tankage and Equipment	2-1
2.2 Treatment Process	2-1
2.2.1 Description of Treatment Process Utilized	2-1
2.2.2 Description of Process Flow	2-1
2.2.3 Effectiveness of Treatment Process at Time of Site Visit	2-6
2.2.4 Analysis of Sludge Buildup	2-7
2.2.5 Outfall Location and Distance from Facility	2-7
2.3 Permit Information	2-8
2.3.1 Permit Status	2-8
2.3.2 Permitted Flow vs. Actual/Estimated Flow	2-8
2.3.3 Brief Compliance Review Narrative	2-8
2.3.3.1 NOVs	2-9
2.3.3.2 DMR Data and Exceedances	2-9
2.3.3.3 ECHO Non-Compliance Status, Etc.	2-11
2.3.3.4 Any Other Relevant Sources	2-11
2.3.4 Copy of Effluent Limits from Permit	2-11
2.3.5 Requirements Regarding Facility Capacity/Expansions	2-12
2.4 Recommended Repairs and Improvements Summary	2-12
2.4.1 Triage Repairs	2-12
2.4.1.1 Measures to Return Plant to Operations	2-13
2.4.1.2 Electrical Items	2-14
2.4.1.3 Resolve Safety Hazards	2-15
2.4.1.4 Additional Equipment or Processes	2-16
3. WASTEWATER COLLECTION SYSTEM	3-1
3.1 Collection System Description	3-1
3.1.1 Description of Type, Material, Size, Footages, Age, Etc.	3-1
3.1.2 General Flow Description	3-1
3.1.3 Triage Repairs	3-1
3.1.3.1 Necessary Measures for Normal Operating Conditions	3-2
3.1.3.2 Resolve Safety Hazards	3-2
4. CAPITAL ESTIMATE	4-1
4.1 Triage Repairs	4-1
4.2 Improvements and Other Repairs	4-1

TABLES

Table 1-1:	Aquarina Wastewater Treatment Plant Information
Table 2-1:	2019-2021 Monthly DMR Data
Table 2-2:	Quarterly DMR Data
Table 2-3:	Aquarina WWTP Permitted Effluent Limits
Table 3-1:	Table of Pump Stations (if applicable)
Table 4-1:	General Plant Triage Repairs
Table 4-2:	Water Treatment and Pumping Triage Repairs
Table 4-5:	Additional Improvements

FIGURES

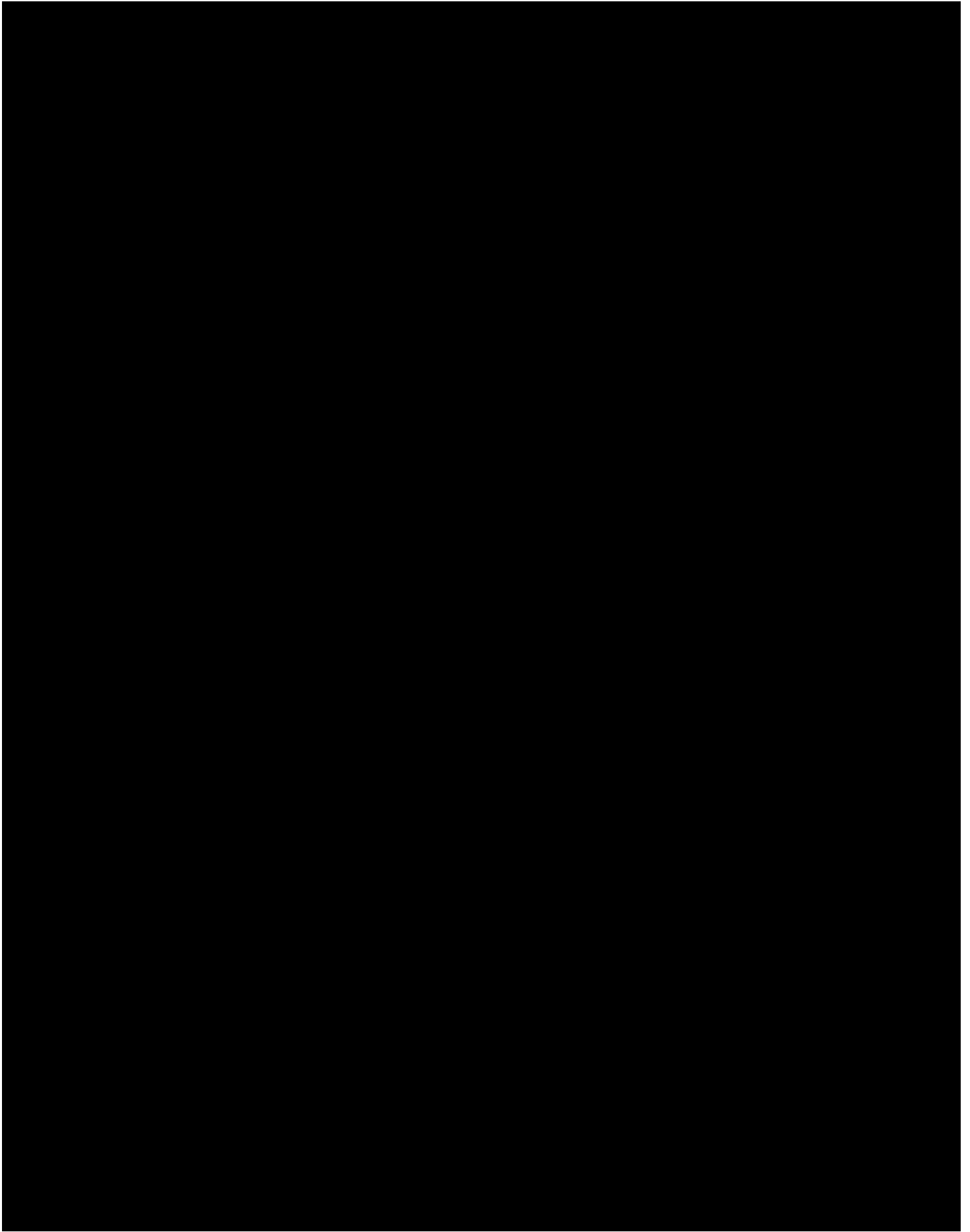
Figure 2-1:	Headworks Influent Screen
Figure 2-2:	Extended Aeration Basin
Figure 2-3:	Aeration Basin Blowers
Figure 2-4:	RAS/WAS Pumps
Figure 2-5:	Center Clarifier
Figure 2-6:	Sludge Holding Tank
Figure 2-7:	Sand Filters
Figure 2-8:	Hypochlorite Disinfection
Figure 2-9:	Drainfields
Figure 2-10:	Onsite Pump Station and Temporary Pump
Figure 2-11:	Clarifier Weir and Launder
Figure 2-12:	Clarifier Launder Cover Example
Figure 3-1:	Pump Station Safety Grating Example

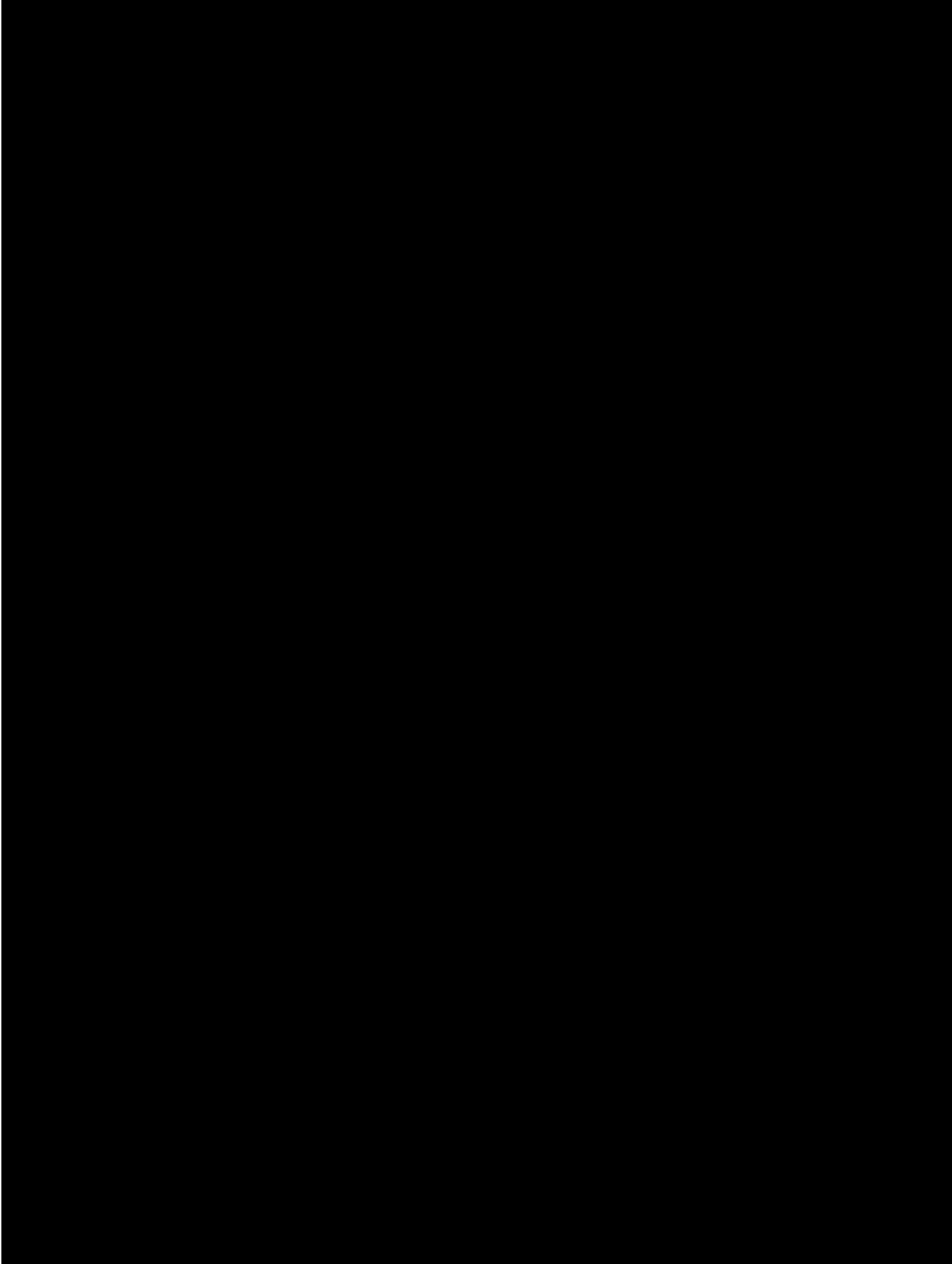
APPENDICES

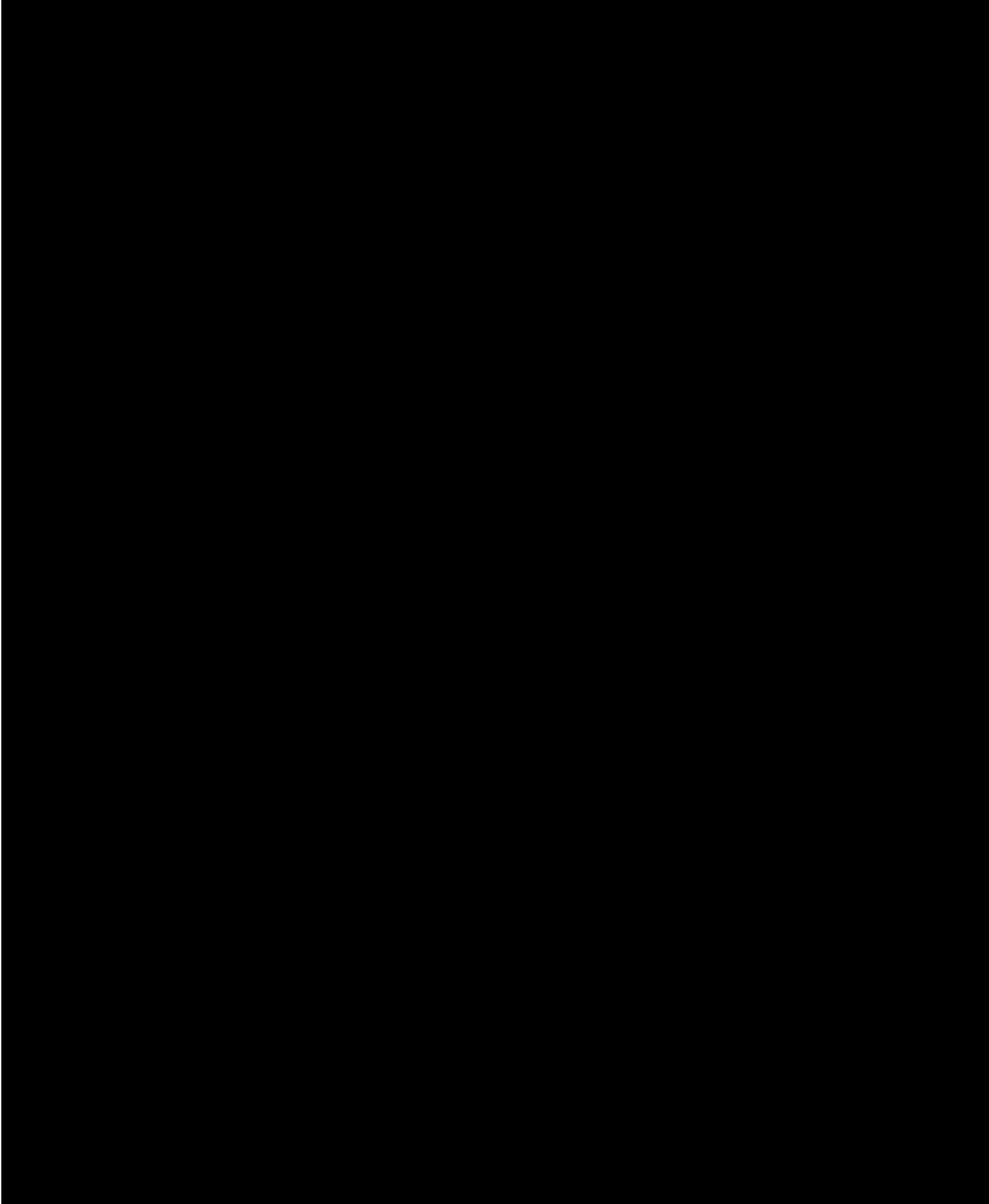
Appendix A:	Process Flow Diagram
Appendix B:	FDEP Operating Permit
Appendix C:	FDEP Inspection Report
Appendix D:	Vendor Quotes
Appendix E:	Collection System Maps
Appendix F:	March 2021 Services Sold Report
Appendix G:	Influent Pump Station Details

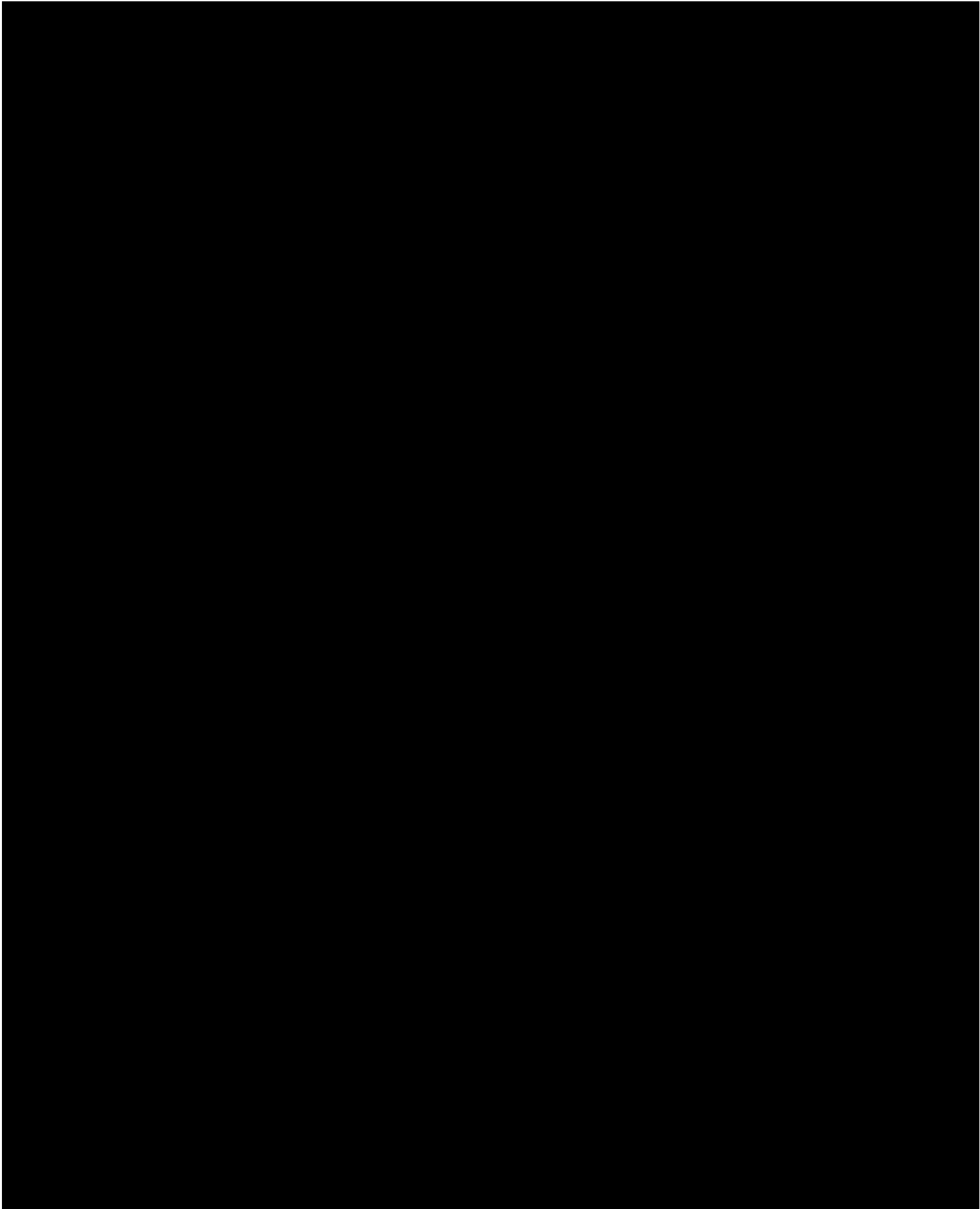
EXECUTIVE SUMMARY

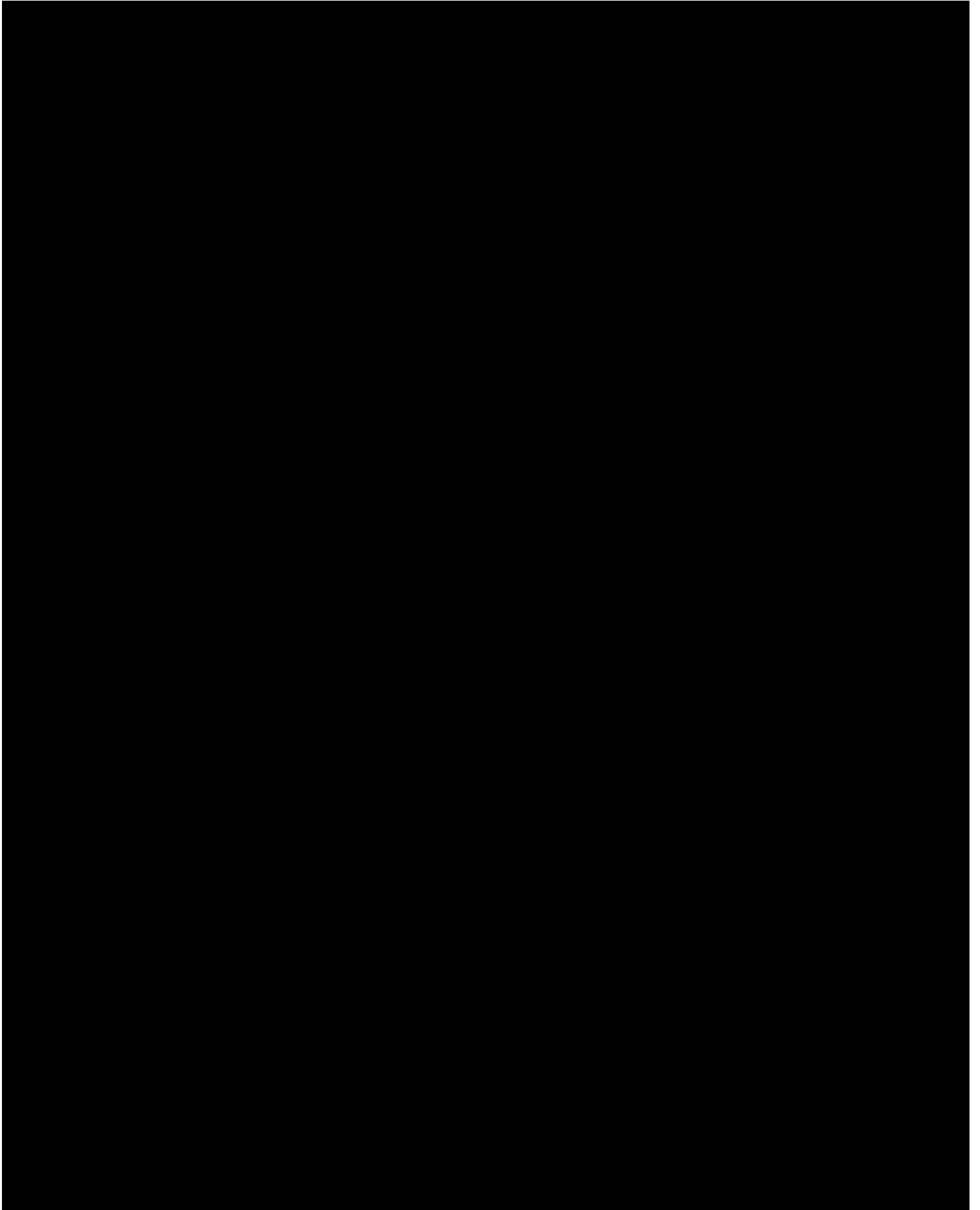
An engineering evaluation for the Aquarina Utilities Wastewater Treatment Plant in Melbourne Beach, FL was conducted by Woodard & Curran to provide feedback and guidance to Central States Water Resources on regulatory compliance, permitting, technical items and recommendations for repair or improvements. The evaluation herein is based on a site visit conducted on March 10, 2021, reports submitted by the utility to the Florida Department of Environmental Protection, and technical documents provided by Aquarina Utilities.

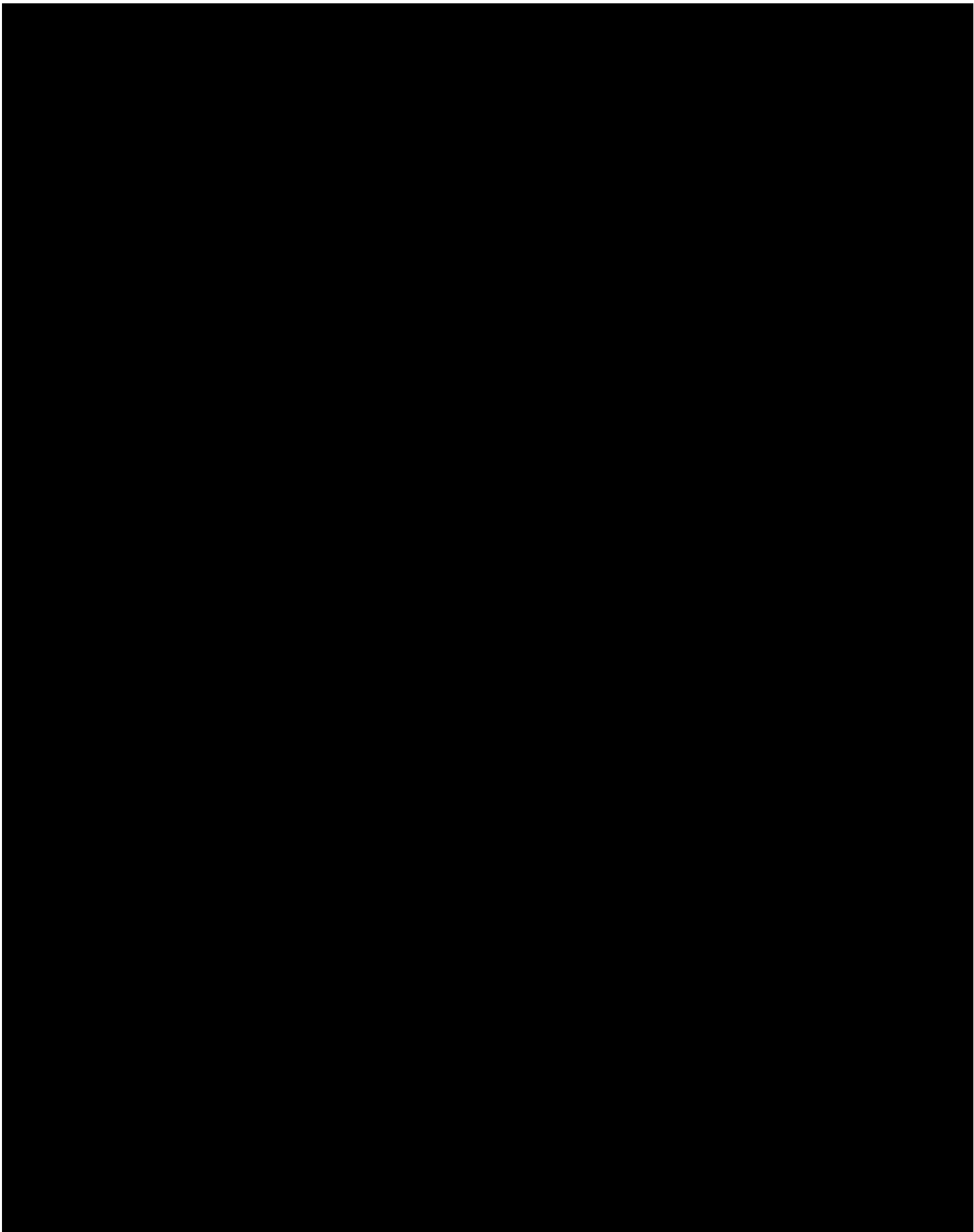


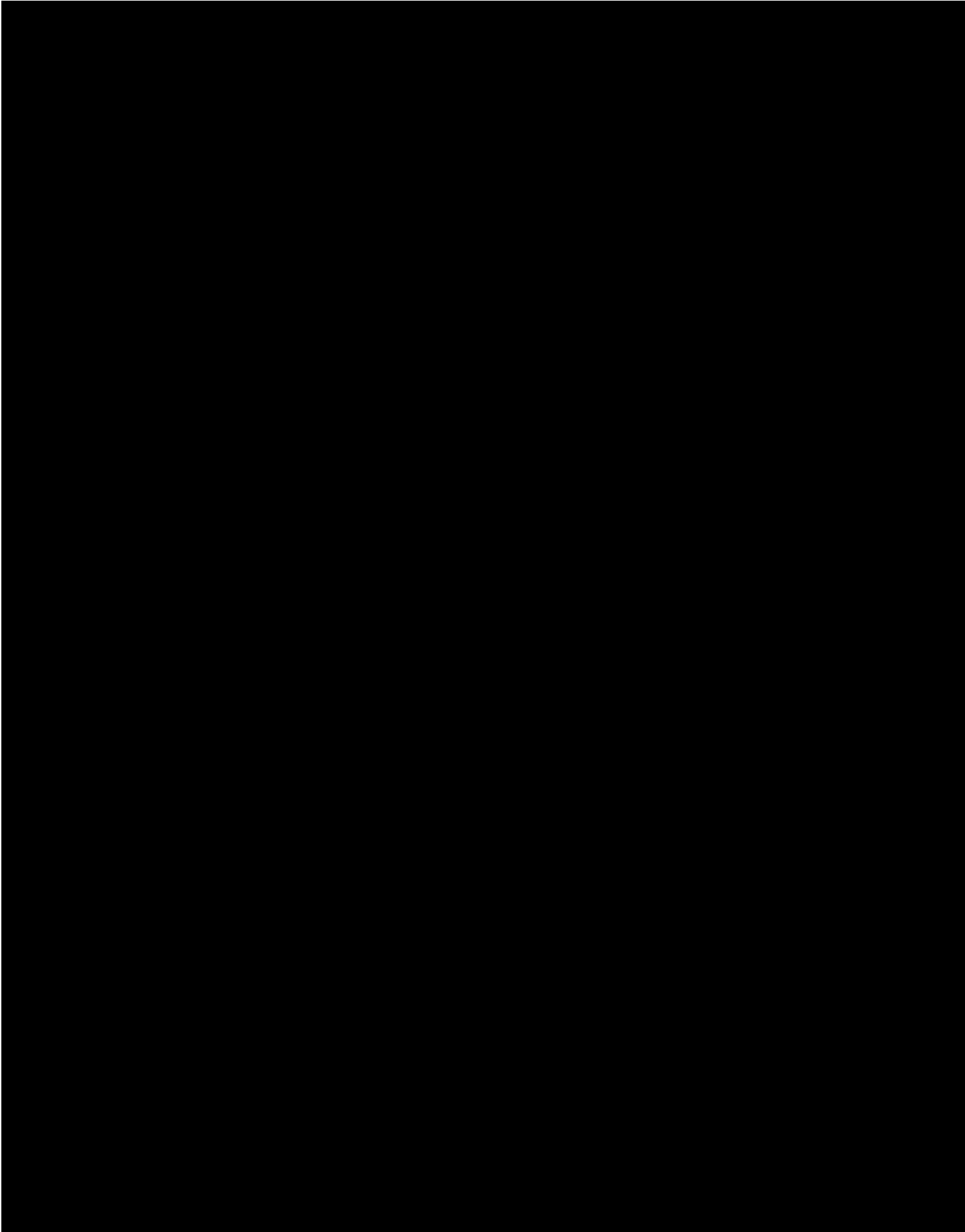


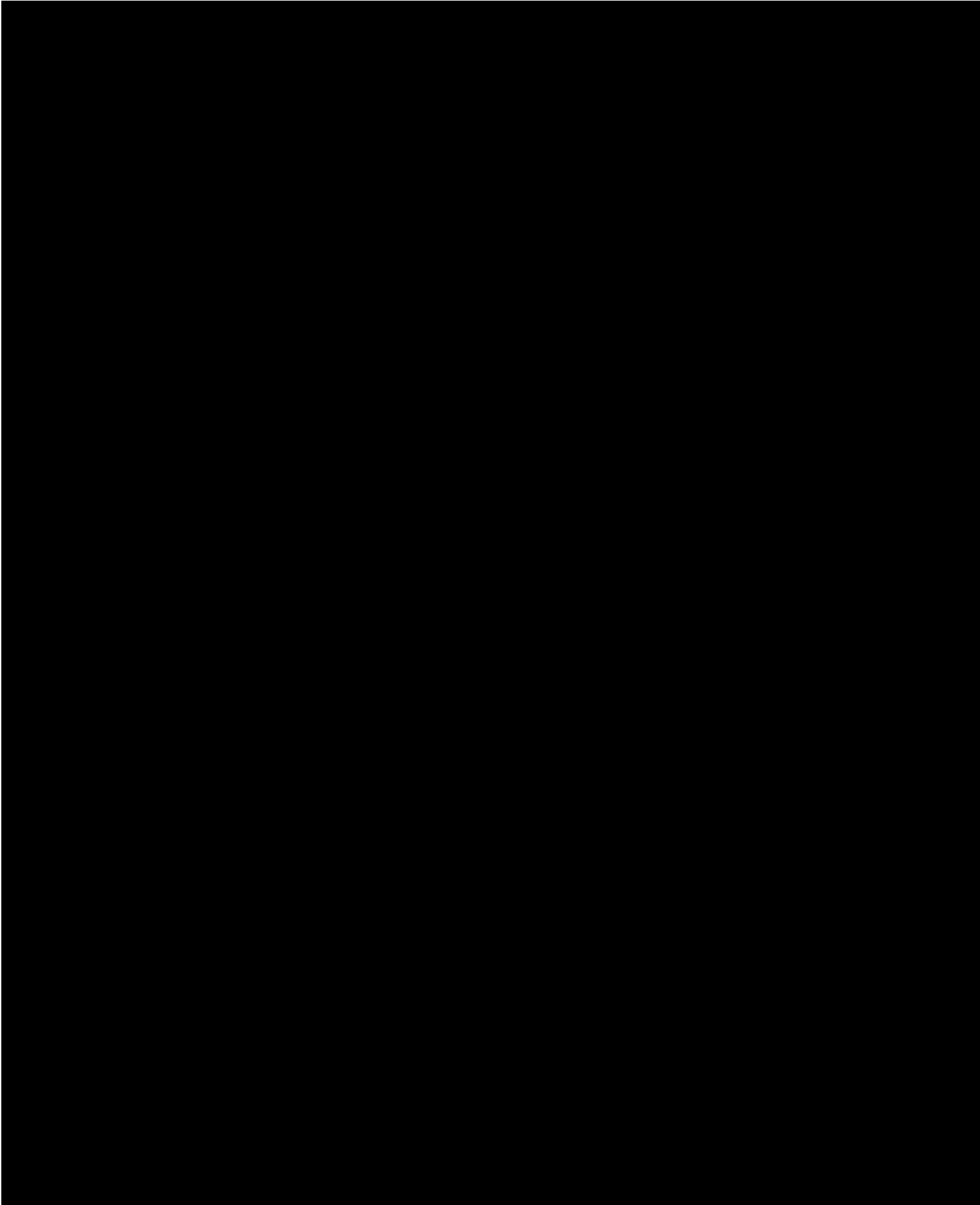


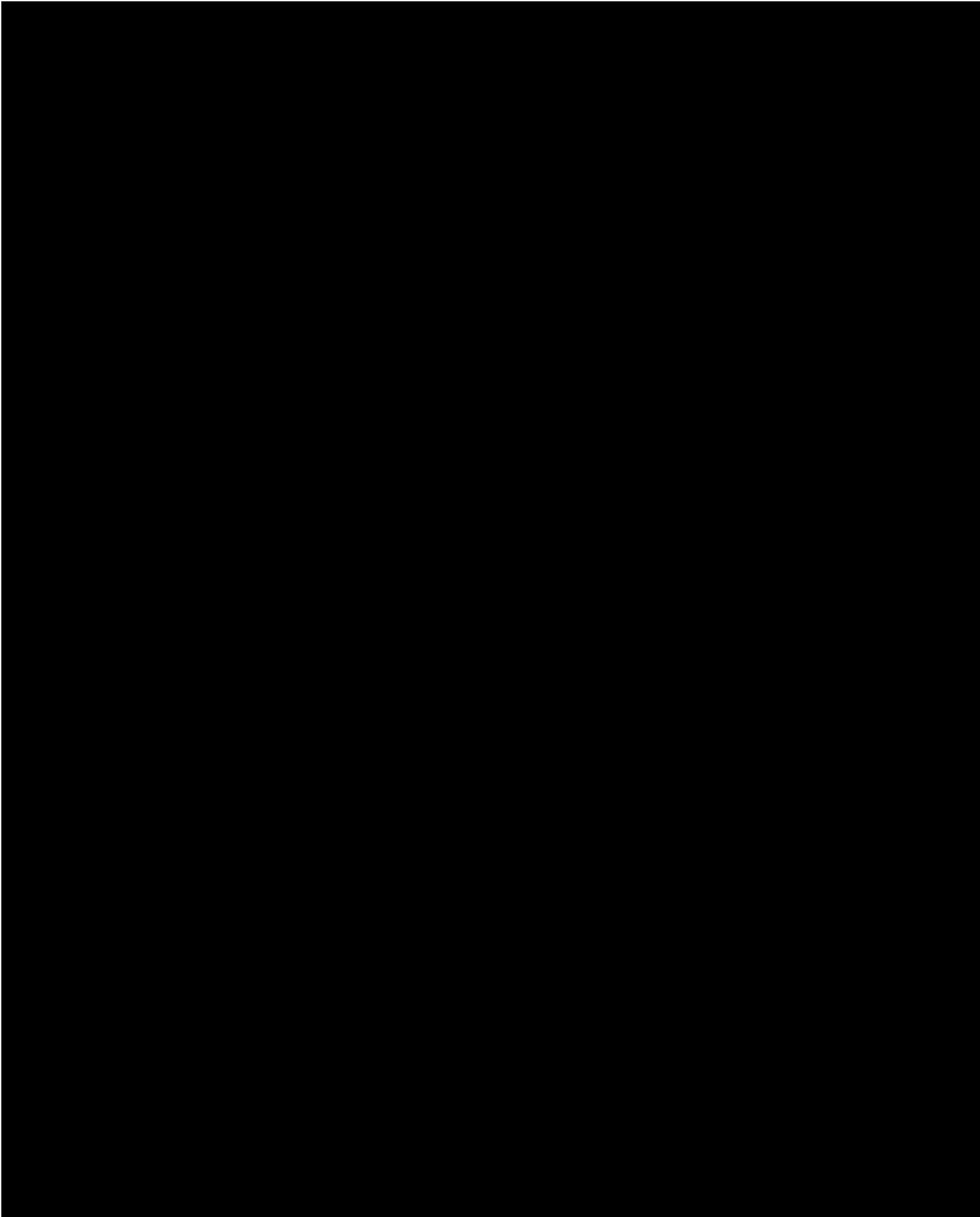


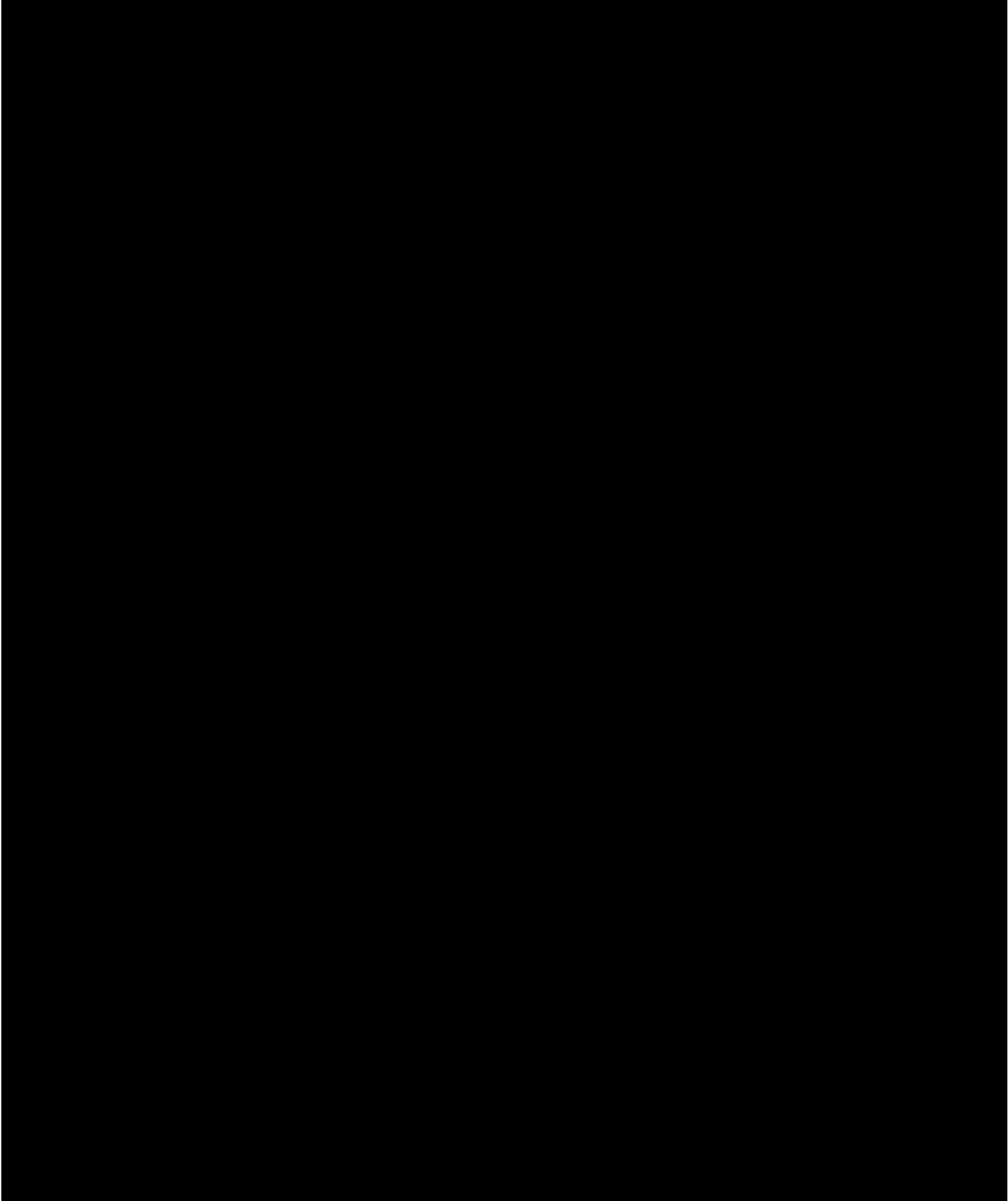


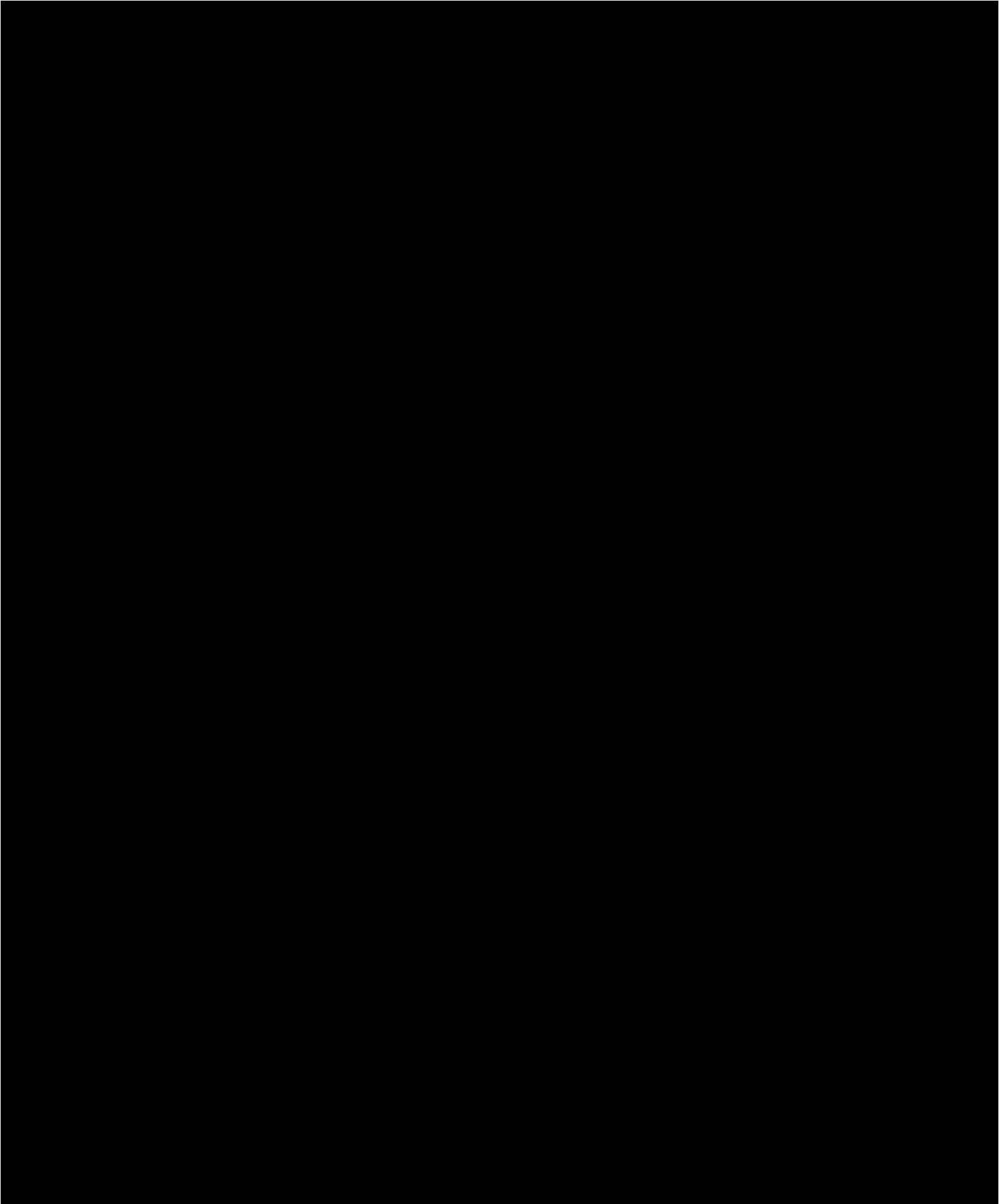


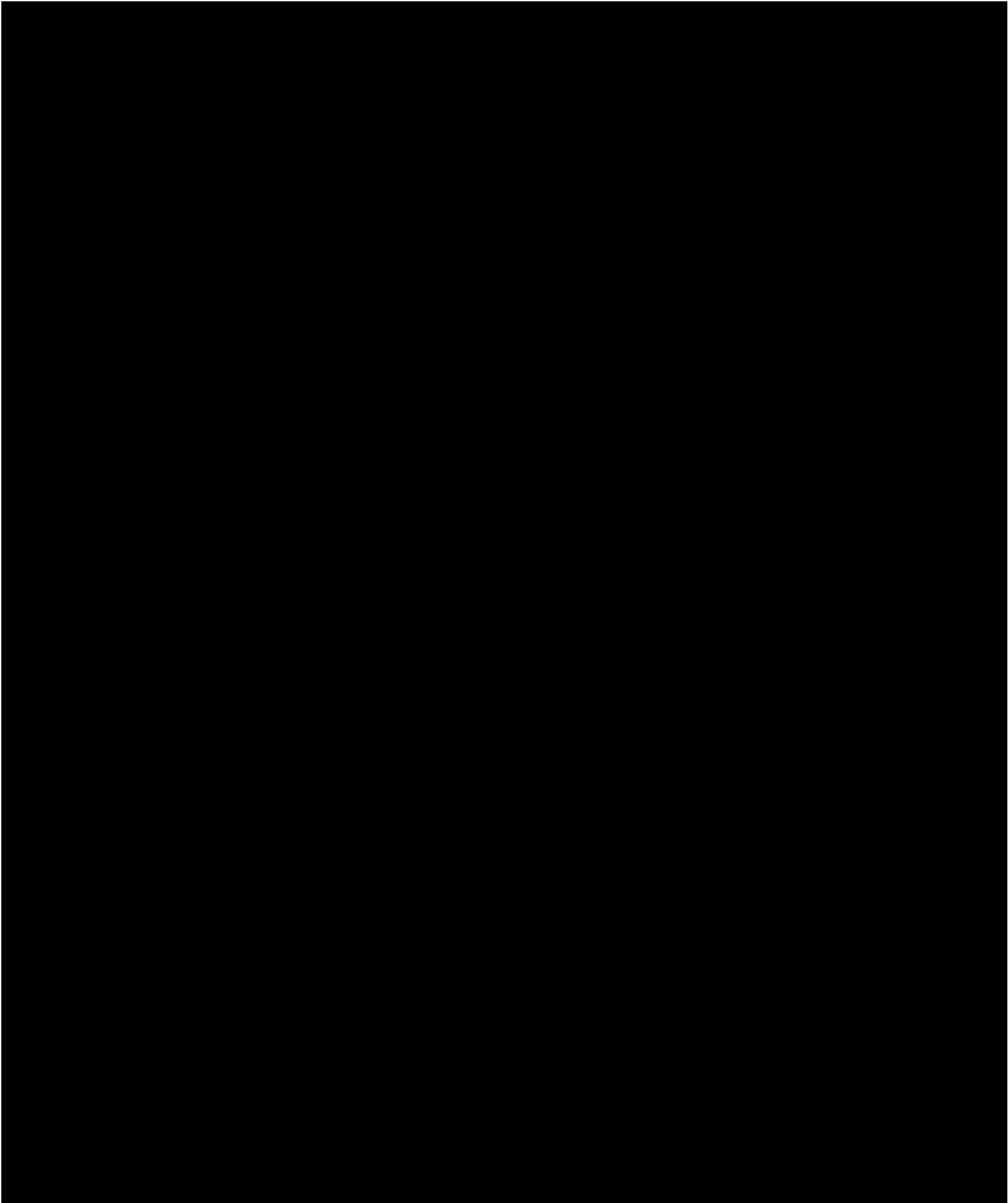


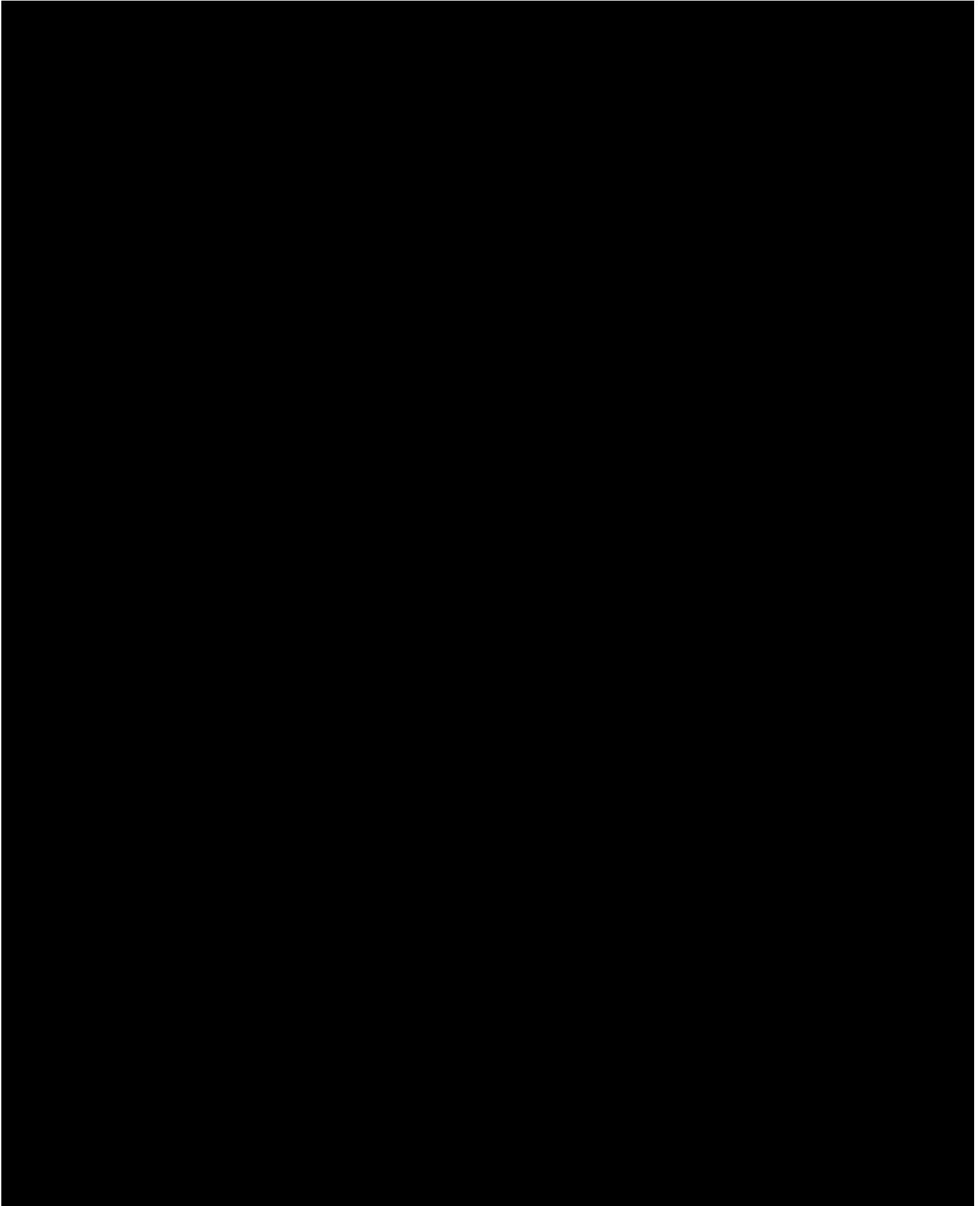


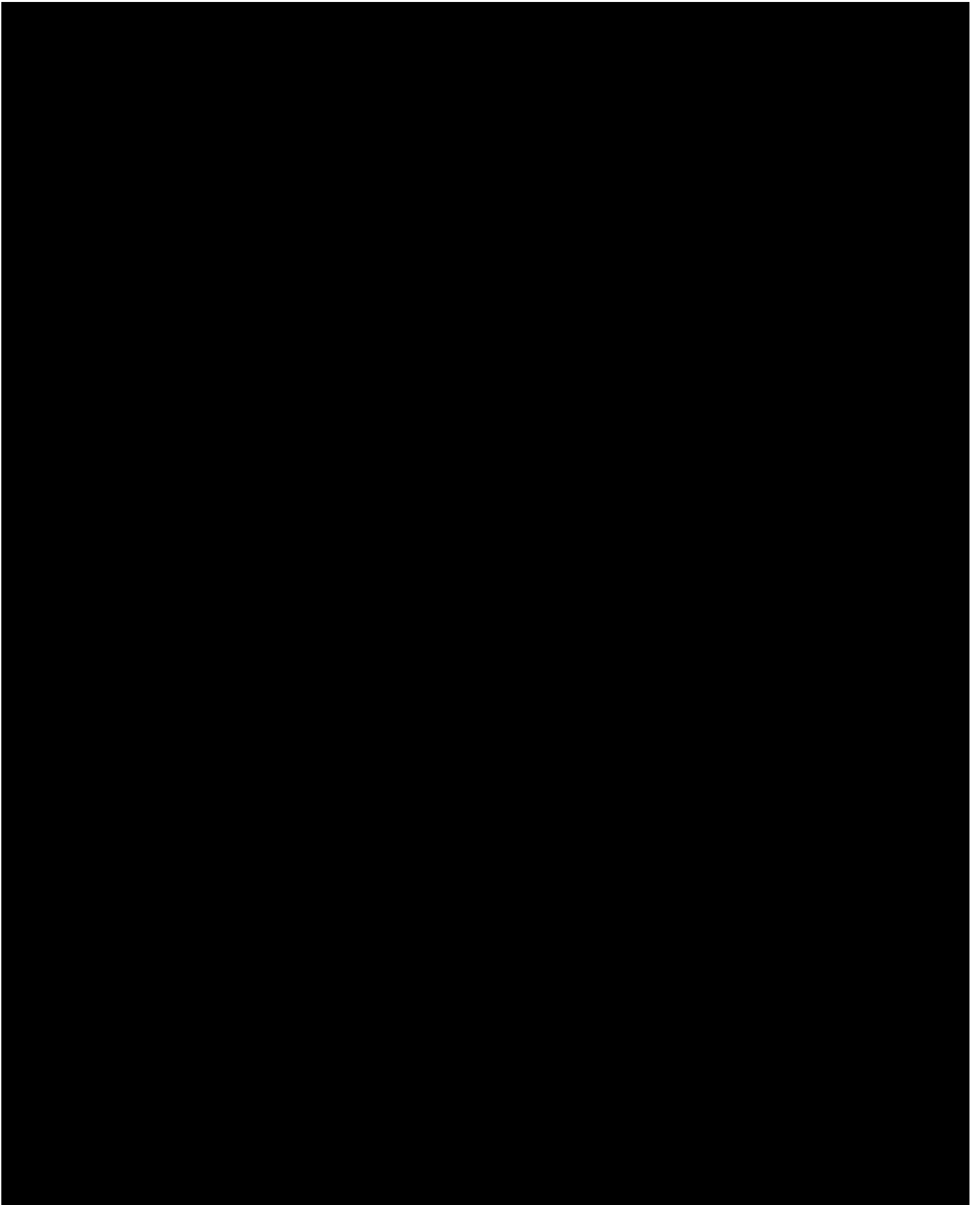


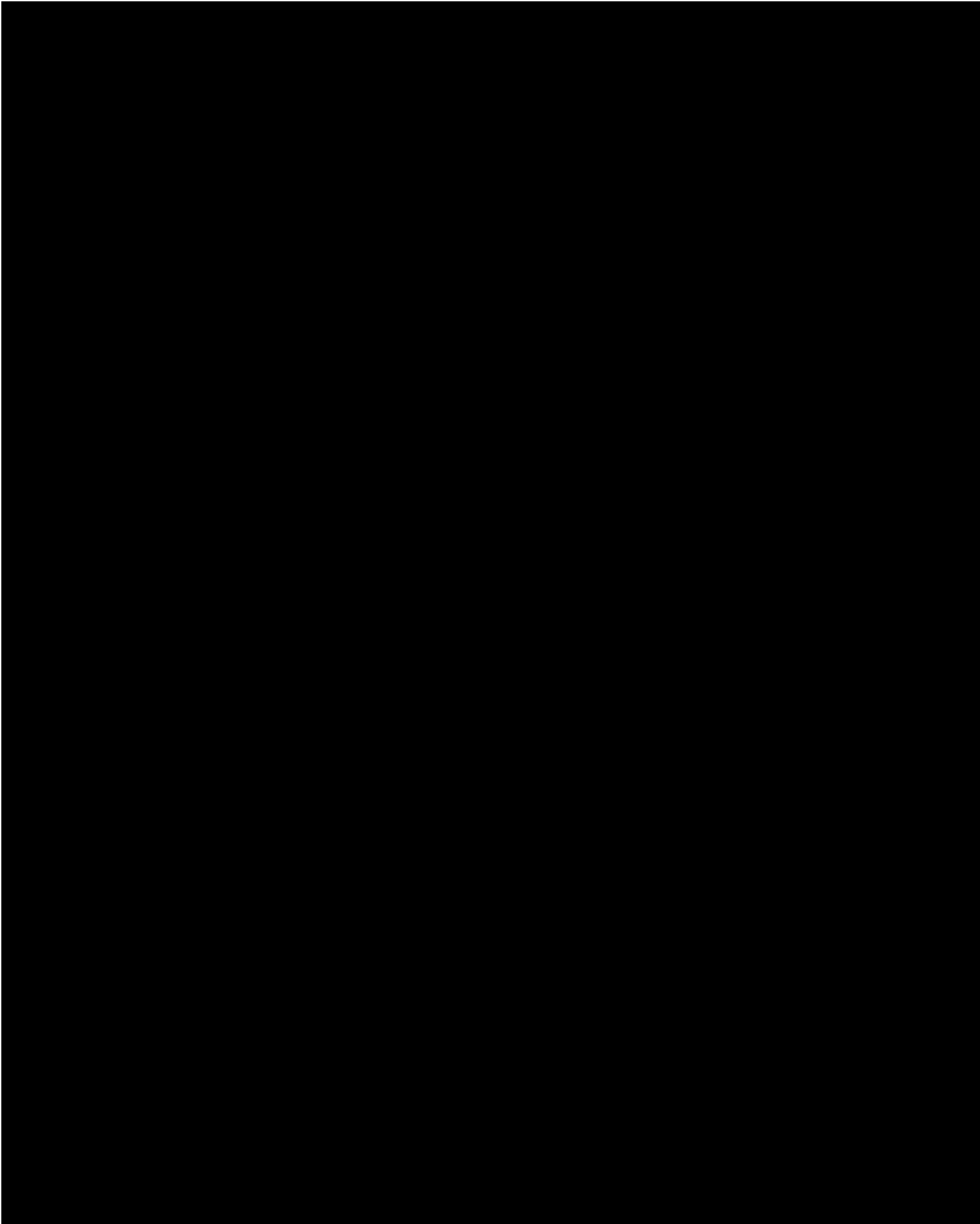


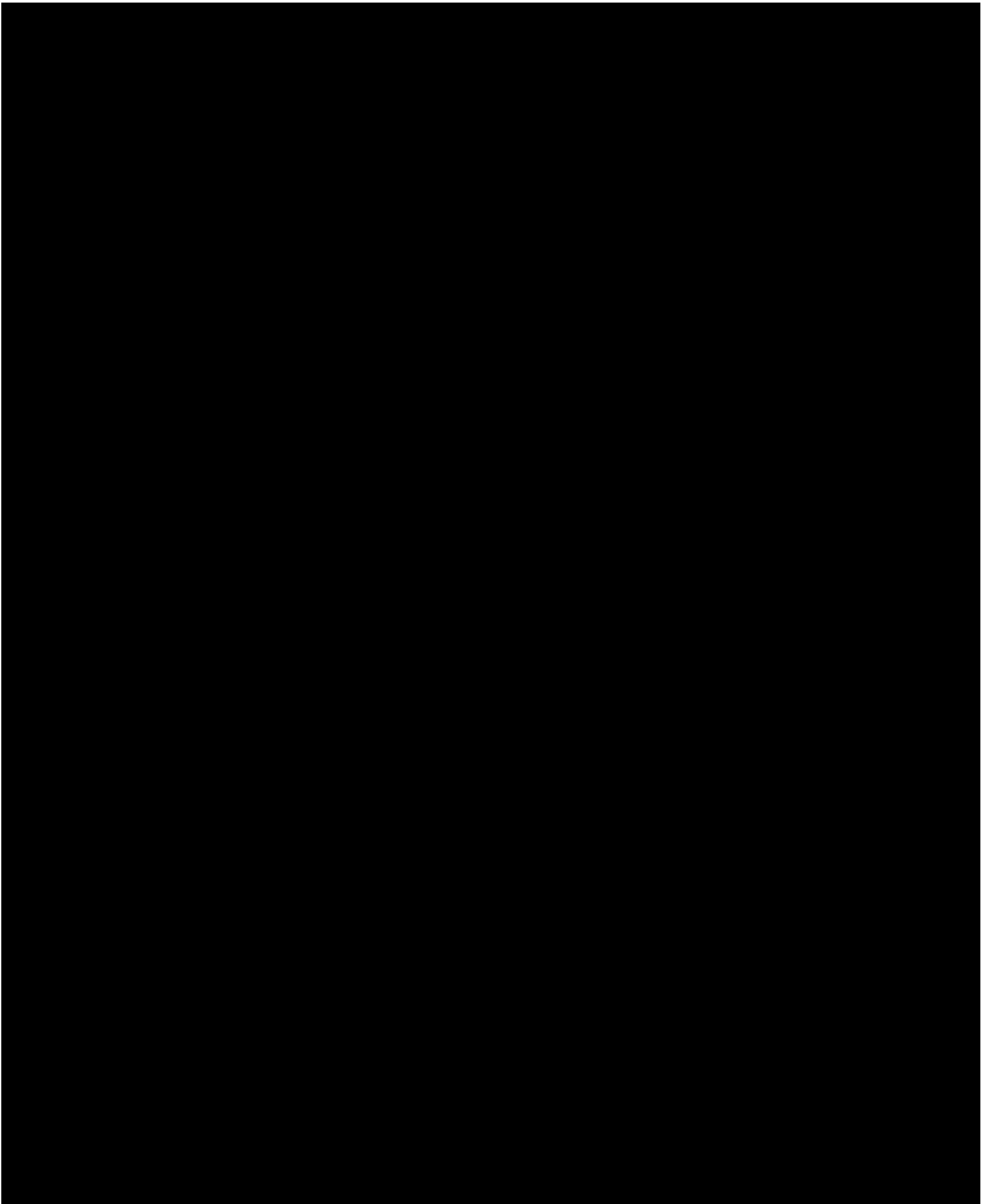


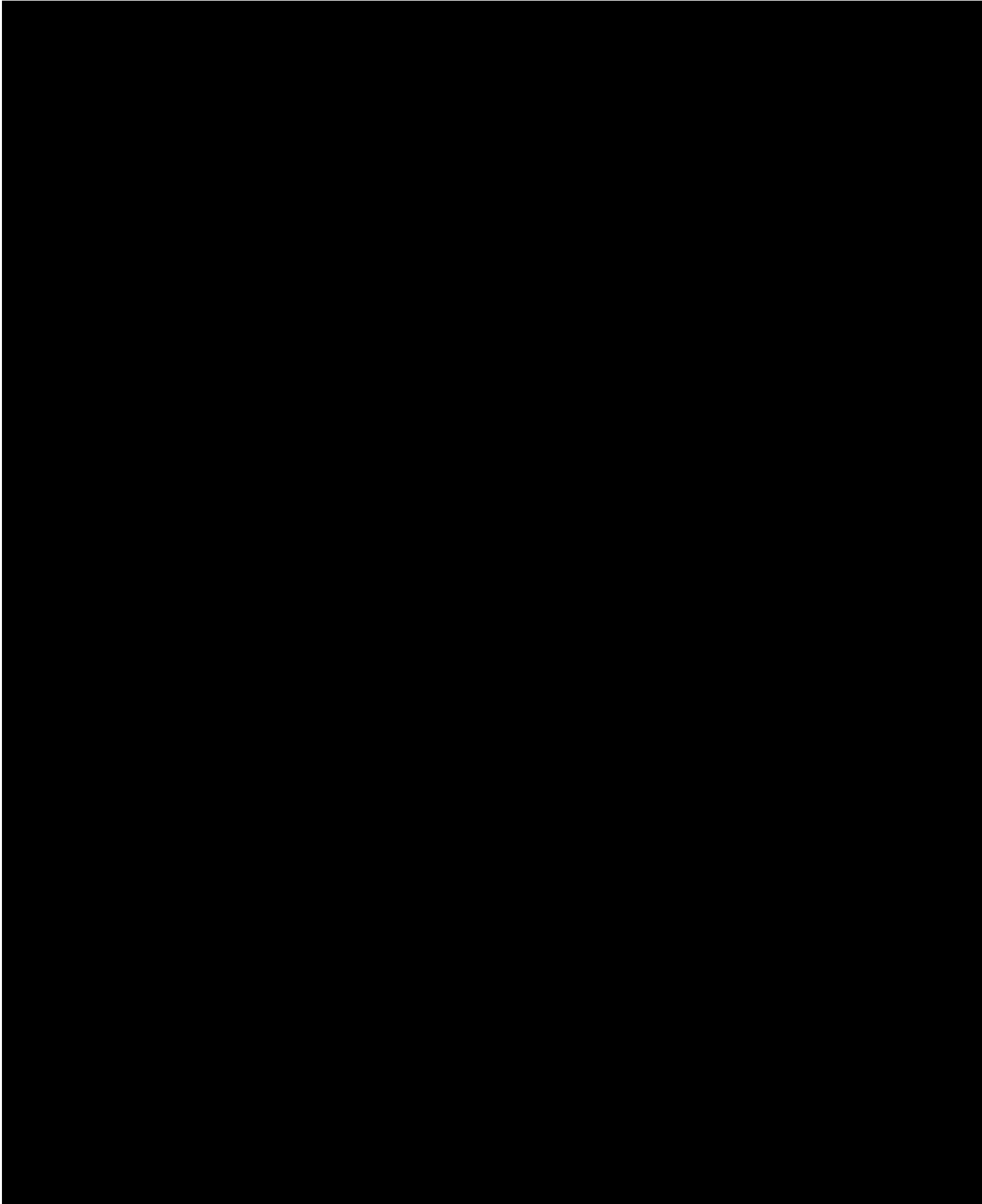


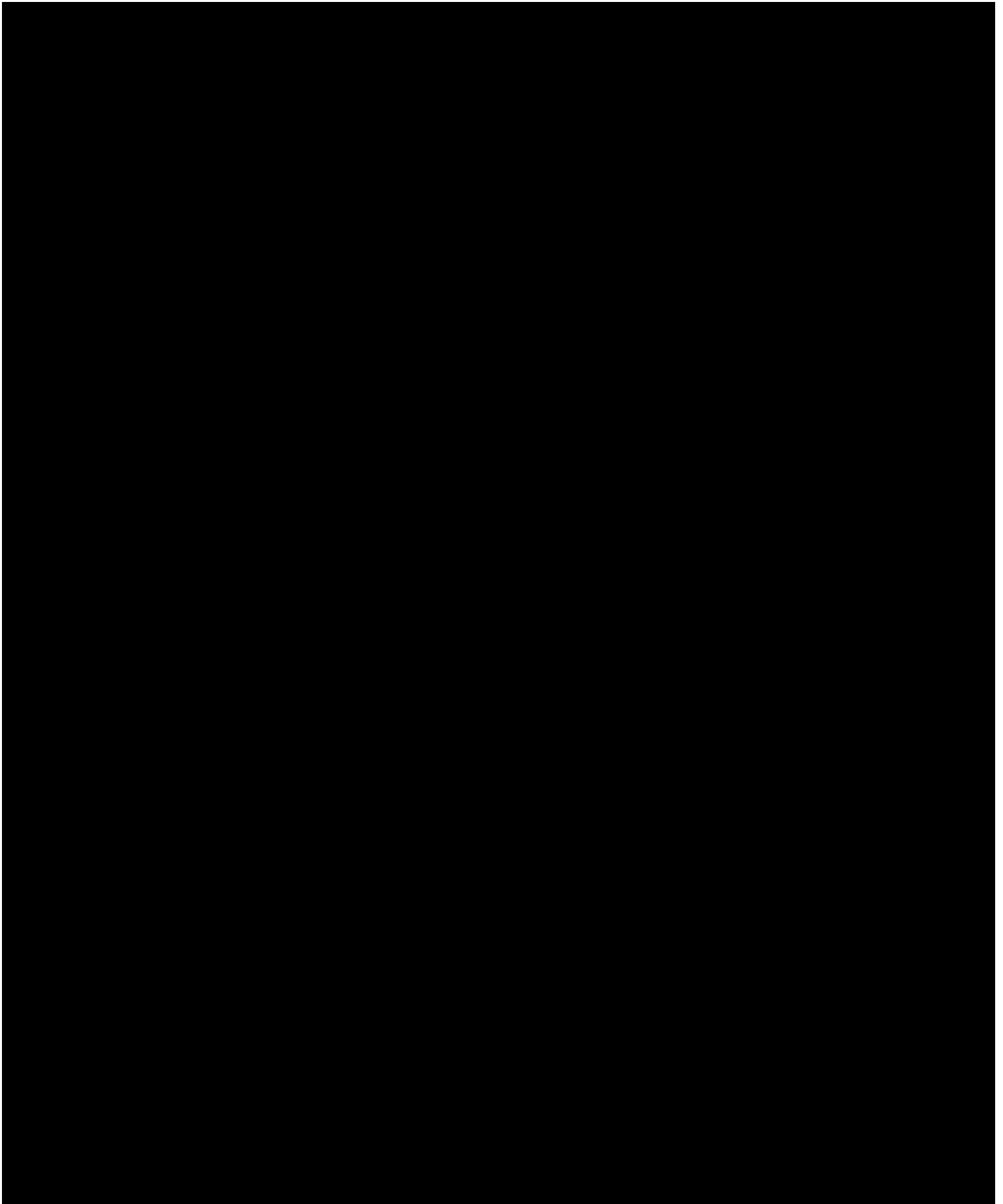


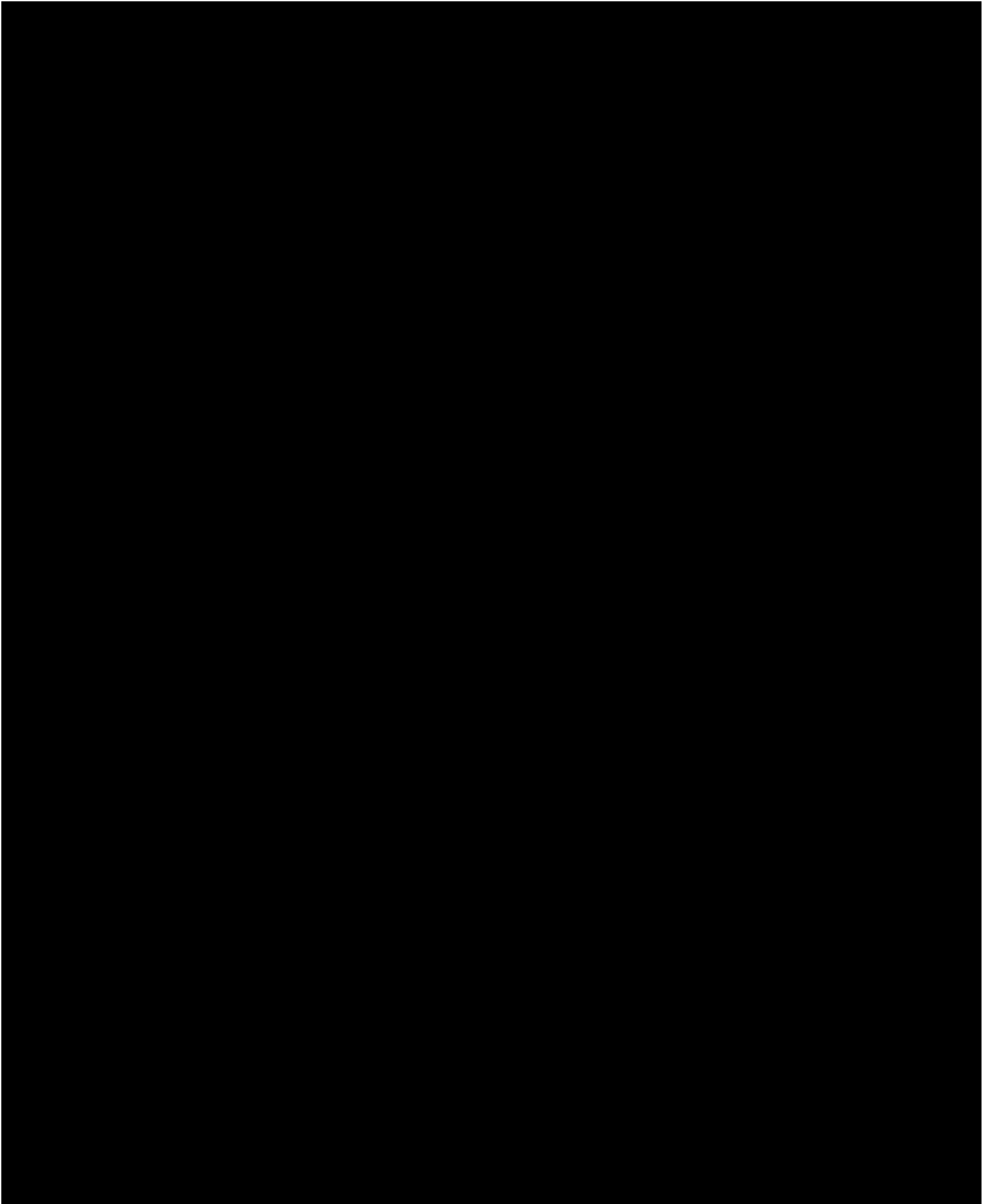


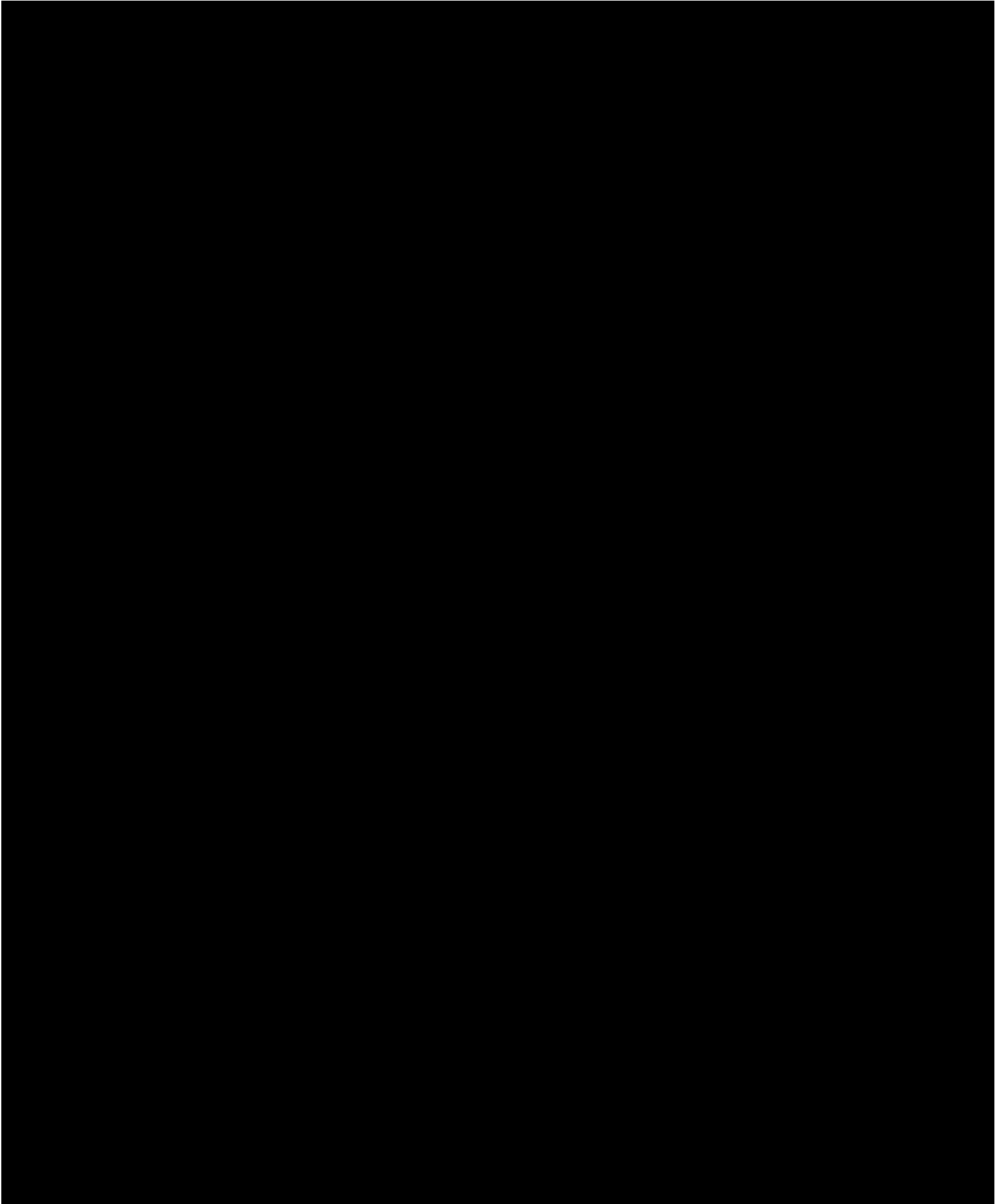




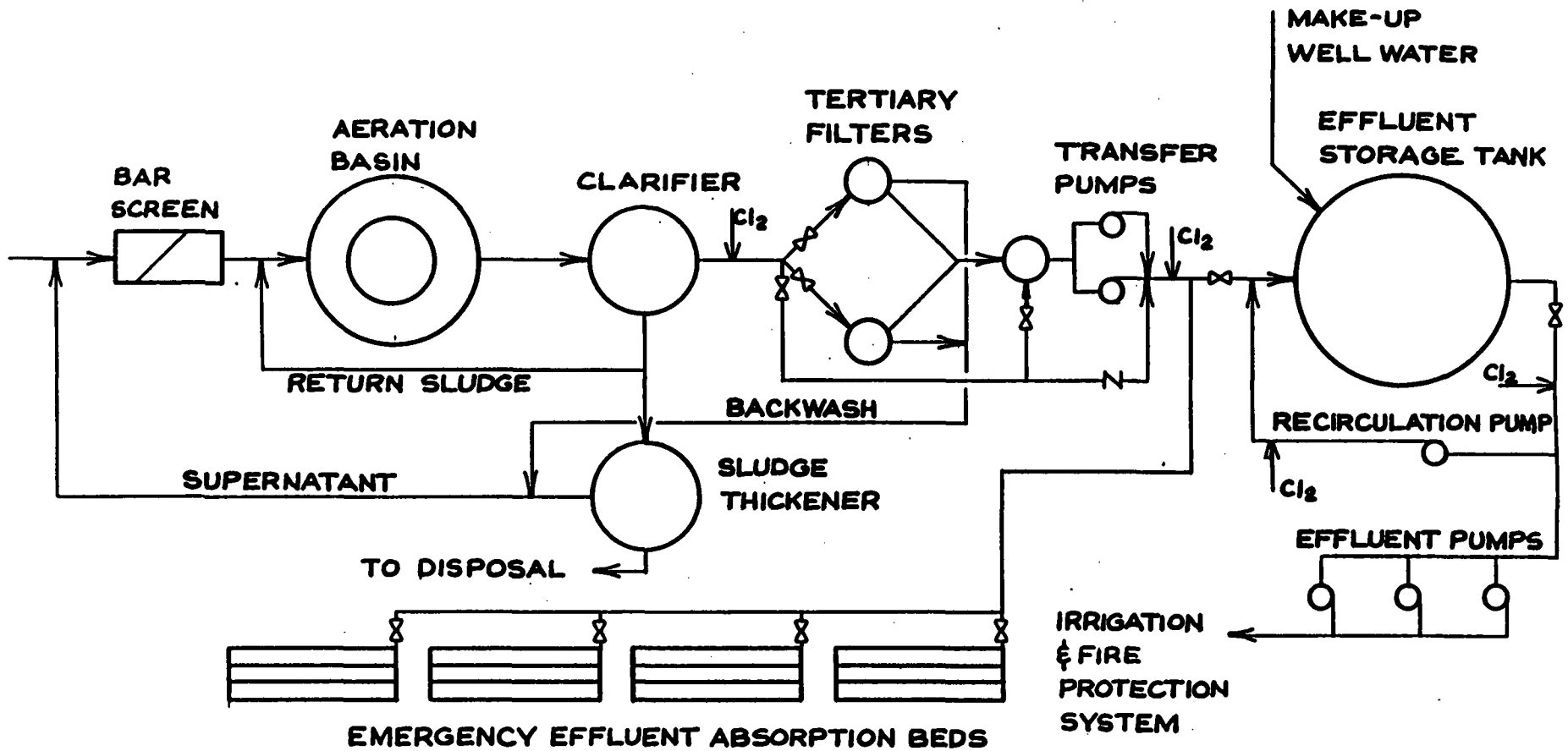








APPENDIX A: PROCESS FLOW DIAGRAM



Post, Buckley, Schuh & Jernigan, Inc.
CONSULTING ENGINEERS and PLANNERS

**AQUARINA BEACH
WASTEWATER TREATMENT PLANT
SCHEMATIC**

APPENDIX B: FDEP OPERATING PERMIT



Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

NOTICE OF PERMIT ISSUANCE

Burge Kevin, President
Aquarina Utilities, Inc.
1726 NE Darlich Avenue
Jensen Beach, FL 34057
AquarinaUtilities@bellsouth.net

Brevard County - DW
Aquarina Utilities WWTF

NOTICE OF PERMIT ISSUANCE

Enclosed is Permit Number FLA010352 to operate the Aquarina Utilities WWTF, issued under Chapter 403, Florida Statutes.

Monitoring requirements under this permit are effective May 1, 2018. Until such time, the permittee shall continue to monitor and report in accordance with previously effective permit requirements.

The Department's proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, within fourteen days of receipt of notice. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Under Rule 62-110.106(4), Florida Administrative Code, a person may request an extension of the time for filing a petition for an administrative hearing. The request must be filed (received by the Clerk) in the Office of General Counsel before the end of the time period for filing a petition for an administrative hearing.

Petitions by the applicant or any of the persons listed below must be filed within fourteen days of receipt of this written notice. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), Florida Statutes, must be filed within fourteen days of publication of the notice or within fourteen days of receipt of the written notice, whichever occurs first. Section 120.60(3), Florida Statutes, however, also allows that any person who has asked the Department in writing for notice of agency action may file a petition within fourteen days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition or request for an extension of time within fourteen days of receipt of notice shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, Florida Statutes. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information, as indicated in Rule 28-106.201, Florida Administrative Code:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the determination;
- (c) A statement of when and how the petitioner received notice of the Department's decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the Department's proposed action;
- (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the Department's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's proposed action.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573, Florida Statutes, is not available for this proceeding.

This permit action is final and effective on the date filed with the Clerk of the Department unless a

petition (or request for an extension of time) is filed in accordance with the above. Upon the timely filing of a petition (or request for an extension of time), this permit will not be effective until further order of the Department.

Any party to the permit has the right to seek judicial review of the permit action under Section 120.68, Florida Statutes, by the filing of a notice of appeal under Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when this permit action is filed with the Clerk of the Department.

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Wanda Parker-Garvin
Environmental Manager
Permitting and Waste Cleanup Program - Wastewater

WPG/ee

Enclosures: Permit, DMR and SOB


CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document and all attachments were sent on the filing date below to the following listed persons:

David Smicherko, DEP, david.smicherko@dep.state.fl.us
Mary Ann Kraus, DEP, mary.kraus@dep.state.fl.us
Shabbir Rizvi, DEP, shabbir.rizvi@dep.state.fl.us
Gene Elliott, DEP, gene.elliott@dep.state.fl.us
Mark Cadenhead, P.E., Cadenhead Environmental Engineering Services, Inc.,
mark_cadenhead@bellsouth.net
Reggie Phillips, DEP, reggie.phillips@dep.state.fl.us

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.



Clerk

February 1, 2018
Date



Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

STATE OF FLORIDA DOMESTIC WASTEWATER FACILITY PERMIT

PERMITTEE:
Aquarina Utilities, Inc.

RESPONSIBLE OFFICIAL:
Burge Kevin, President
1726 NE Darlich Avenue
Jensen Beach, Florida 34957
(772) 405-8090

PERMIT NUMBER: FLA010352
FILE NUMBER: FLA010352-006-DW3P
EFFECTIVE DATE: **March 24, 2018**
EXPIRATION DATE: **March 23, 2023**

FACILITY:

Aquarina Utilities WWTF
235 Hammock Shore Drive
Melbourne Beach, FL 32951-3941
Brevard County
Latitude: 27°55' 14.6139" N Longitude: 80°29' 24.3537" W

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and applicable rules of the Florida Administrative Code (F.A.C.). This permit does not constitute authorization to discharge wastewater other than as expressly stated in this permit. The above-named permittee is hereby authorized to operate the facilities in accordance with the documents attached hereto and specifically described as follows:

WASTEWATER TREATMENT:

An existing 0.099 million gallon per day(MGD) annual average daily flow (AADF) permitted capacity extended aeration domestic wastewater treatment plant consisting of influent screening, aeration, secondary clarification, filtration, hypochlorite chlorination, and aerobic digestion of biosolids.

REUSE OR DISPOSAL:

Land Application R-001: An existing 0.099 MGD annual average daily flow permitted capacity absorption field system. R-001 is a reuse system which consists of two (2) drainfields with a total wetted area of 0.114 acres (0.057 acres each). System R-001 is located approximately at latitude 27°55' 16" N, longitude 80°29' 24" W.

IN ACCORDANCE WITH: The limitations, monitoring requirements, and other conditions set forth in this cover sheet and Part I through Part IX on pages 1 through 16 of this permit.

PERMITTEE: Aquarina Utilities, Inc.
 FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
 EXPIRATION DATE: March 23, 2023

I. RECLAIMED WATER AND EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Reuse and Land Application Systems

1. During the period beginning on the effective date and lasting through the expiration date of this permit, the permittee is authorized to direct reclaimed water to Reuse System R-001. Such reclaimed water shall be limited and monitored by the permittee as specified below and reported in accordance with Permit Condition I.B.7.:

Parameter	Units	Max/Min	Reclaimed Water Limitations		Monitoring Requirements			Notes
			Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	
Flow (Drainfield)	MGD	Max Max	0.099 Report	Annual Average Monthly Average	5 Days/Week	Calculated	FLW-3	See I.A.3
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	20.0 30.0 45.0 60.0	Annual Average Monthly Average Weekly Average Single Sample	Monthly	Grab	EFA-1	
Solids, Total Suspended	mg/L	Max	10.0	Single Sample	Monthly	Grab	EFA-1	
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Monthly Geometric Mean Annual Average Single Sample	Monthly	Grab	EFA-1	See I.A.4
pH	s.u.	Min Max	6.0 8.5	Single Sample Single Sample	5 Days/Week	Grab	EFA-1	
Chlorine, Total Residual (For Disinfection)	mg/L	Min	0.5	Single Sample	5 Days/Week	Grab	EFA-1	See I.A.5
Nitrogen, Nitrate, Total (as N)	mg/L	Max	12.0	Single Sample	Monthly	Grab	EFA-1	
Nitrogen, Total	mg/L	Max	Report	Single Sample	Monthly	Grab	EFA-1	
Phosphorus, Total (as P)	mg/L	Max	Report	Single Sample	Monthly	Grab	EFA-1	
Chloride (as Cl)	mg/L	Max	Report	Single Sample	Quarterly	Grab	EFA-1	See I.A.6
Sodium, Total Recoverable	mg/L	Max	Report	Single Sample	Quarterly	Grab	EFA-1	See I.A.6

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

2. Reclaimed water samples shall be taken at the monitoring site locations listed in Permit Condition I.A.1. and as described below:

Monitoring Site Number	Description of Monitoring Site
FLW-3	Total to Drainfield (FLW-1 plus FLW-2)
EFA-1	Chlorine contact chamber effluent.

3. A meter shall be utilized to measure flow and calibrated at least once every 12 months. *[62-600.200(25)]*
4. The effluent limitation for the monthly geometric mean for fecal coliform is only applicable if 10 or more values are reported. If fewer than 10 values are reported, the monthly geometric mean shall be calculated and reported on the Discharge Monitoring Report to be used to calculate the annual average. *[62-600.440(5)(b)]*
5. Total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow. *[62-610.510][62-600.440(5)(c) and (6)(b)]*
6. The permittee may request the that monitoring for this parameter be eliminated after eight (8) valid sampling events showing that the reclaimed water meets the Maximum Contaminant Levels (MCLs). *[62-4.070] [BPJ]*

PERMITTEE: Aquarina Utilities, Inc.
 FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
 EXPIRATION DATE: March 23, 2023

B. Other Limitations and Monitoring and Reporting Requirements

1. During the period beginning on the effective date and lasting through the expiration date of this permit, the treatment facility shall be limited and monitored by the permittee as specified below and reported in accordance with condition I.B.7.:

Parameter	Units	Max/Min	Limitations		Monitoring Requirements			Notes
			Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	
Flow (Total through facility)	MGD	Max Max Max	0.099 Report Report	Annual Average Monthly Average Quarterly Average	5 Days/Week	Calculated	FLW-3	See I.B.4
Flow (Demineralization Concentrate)	MGD	Max Max	Report Report	Annual Average Monthly Average	5 Days/Week	Meter	FLW-2	See I.B.4
Flow (Wastewater Influent)	MGD	Max Max	Report Report	Annual Average Monthly Average	5 Days/Week	Meter	FLW-1	See I.B.4
Percent Capacity, (TMADF/Permitted Capacity) x 100	percent	Max	Report	Monthly Average	Monthly	Calculated	CAL-1	
BOD, Carbonaceous 5 day, 20C (Influent)	mg/L	Max	Report	Single Sample	Monthly	Grab	INF-1	See I.B.3
Solids, Total Suspended (Influent)	mg/L	Max	Report	Single Sample	Monthly	Grab	INF-1	See I.B.3

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

2. Samples shall be taken at the monitoring site locations listed in Permit Condition I.B.1. and as described below:

Monitoring Site Number	Description of Monitoring Site
FLW-3	Total flow through plant, sum of FLW-1 and FLW-2.
FLW-2	Elapsed time meters on RO reject pump station.
FLW-1	Elapsed time meters on influent lift station pumps.
CAL-1	Calculated using FLW-3
INF-1	Raw influent at the influent bar screen.

3. Influent samples shall be collected so that they do not contain digester supernatant or return activated sludge, or any other plant process recycled waters. [62-600.660(4)(a)]
4. A meter shall be utilized to measure flow and calibrated at least once every 12 months. [62-600.200(25)]
5. The sample collection, analytical test methods, and method detection limits (MDLs) applicable to this permit shall be conducted using a sufficiently sensitive method to ensure compliance with applicable water quality standards and effluent limitations and shall be in accordance with Rule 62-4.246, Chapters 62-160 and 62-600, F.A.C., and 40 CFR 136, as appropriate. The list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantitation limits), which is titled "FAC 62-4 MDL/PQL Table (April 26, 2006)" is available at <http://www.dep.state.fl.us/labs/library/index.htm>. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. Any method included in the list may be used for reporting as long as it meets the following requirements:
- a. The laboratory's reported MDL and PQL values for the particular method must be equal or less than the corresponding method values specified in the Department's approved MDL and PQL list;
 - b. The laboratory reported MDL for the specific parameter is less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. Parameters that are listed as "report only" in the permit shall use methods that provide an MDL, which is equal to or less than the applicable water quality criteria stated in 62-302, F.A.C.; and
 - c. If the MDLs for all methods available in the approved list are above the stated permit limit or applicable water quality criteria for that parameter, then the method with the lowest stated MDL shall be used.

When the analytical results are below method detection or practical quantitation limits, the permittee shall report the actual laboratory MDL and/or PQL values for the analyses that were performed following the instructions on the applicable discharge monitoring report.

Where necessary, the permittee may request approval of alternate methods or for alternative MDLs or PQLs for any approved analytical method. Approval of alternate laboratory MDLs or PQLs are not necessary if the laboratory reported MDLs and PQLs are less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. Approval of an analytical method not included in the above-referenced list is not necessary if the analytical method is approved in accordance with 40 CFR 136 or deemed acceptable by the Department. [62-4.246, 62-160]

6. The permittee shall provide safe access points for obtaining representative samples which are required by this permit. [62-600.650(2)]
7. **Monitoring requirements under this permit are effective on May 1, 2018.** Until such time, the permittee shall continue to monitor and report in accordance with previously effective permit requirements. During the period of operation authorized by this permit, the permittee shall complete and submit to the Department Discharge Monitoring Reports (DMRs) in accordance with the frequencies specified by the REPORT type (i.e. monthly, quarterly, semiannual, annual, etc.) indicated on the DMR forms attached to this permit. Unless specified otherwise in this permit, monitoring results for each monitoring period shall be submitted in accordance with the associated DMR due dates below. DMRs shall be submitted for each required monitoring period including periods of no discharge.

PERMITTEE: Aquarina Utilities, Inc.
 FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
 EXPIRATION DATE: March 23, 2023

REPORT Type on DMR	Monitoring Period	Submit by
Monthly	first day of month - last day of month	28 th day of following month
Quarterly	January 1 - March 31 April 1 - June 30 July 1 - September 30 October 1 - December 31	April 28 July 28 October 28 January 28
Semiannual	January 1 - June 30 July 1 - December 31	July 28 January 28
Annual	January 1 - December 31	January 28

The permittee may submit either paper or electronic DMR forms. If submitting electronic DMR forms, the permittee shall use the electronic DMR system approved by the Department (EzDMR) and shall electronically submit the completed DMR forms using the DEP Business Portal at <http://www.fldepportal.com/go/>. Reports shall be submitted to the Department by the twenty-eighth (28th) of the month following the month of operation. Data submitted in electronic format is equivalent to data submitted on signed and certified paper DMR forms.

If submitting paper DMR forms, the permittee shall make copies of the attached DMR forms, without altering the original format or content unless approved by the Department, and shall mail the completed DMR forms to the Department's Central District Office at the address specified in Permit Condition I.B.8. by the twenty-eighth (28th) of the month following the month of operation.

[62-620.610(18)][62-600.680(1)]

- Unless specified otherwise in this permit, all reports and other information required by this permit, including 24-hour notifications, shall be submitted to or reported to, as appropriate, the Department's Central District Office at the address specified below:

Electronic submittal is preferred, by sending to DEP_CD@dep.state.fl.us.

Florida Department of Environmental Protection
 Central District
 3319 Maguire Blvd, Suite 232
 Orlando, Florida 32803-3767

Phone Number - (407)897-4100
 FAX Number - (850)412-0467
 (All FAX copies and e-mails shall be followed by original copies.)
 [62-620.305]

- All reports and other information shall be signed in accordance with the requirements of Rule 62-620.305, F.A.C. [62-620.305]

II. BIOSOLIDS MANAGEMENT REQUIREMENTS

A. Basic Requirements

- Biosolids generated by this facility may be transferred to BCUD/South Beaches WRF or disposed of in a Class I solid waste landfill. Transferring biosolids to an alternative biosolids treatment facility does not require a permit modification. However, use of an alternative biosolids treatment facility requires submittal of a copy of the agreement pursuant to Rule 62-640.880(1)(c), F.A.C., along with a written notification to the Department at least 30 days before transport of the biosolids. [62-620.320(6), 62-640.880(1)]
- The permittee shall monitor and keep records of the quantities of biosolids generated, received from source facilities, treated, distributed and marketed, land applied, used as a biofuel or for bioenergy, transferred to another facility, or landfilled. These records shall be kept for a minimum of five years. [62-640.650(4)(a)]
- Biosolids quantities shall be monitored by the permittee as specified below. Results shall be reported on the permittee's Discharge Monitoring Report for Monitoring Group RMP-Q in accordance with Condition I.B.7.

PERMITTEE: Aquarina Utilities, Inc.
 FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
 EXPIRATION DATE: March 23, 2023

Parameter	Units	Max/Min	Biosolids Limitations		Monitoring Requirements		
			Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number
Biosolids Quantity (Transferred)	dry tons	Max	Report	Monthly Total	Monthly	Calculated	RMP-1
Biosolids Quantity (Landfilled)	dry tons	Max	Report	Monthly Total	Monthly	Calculated	RMP-1

[62-640.650(5)(a)1]

4. Biosolids quantities shall be calculated as listed in Permit Condition II.3 and as described below:

Monitoring Site Number	Description of Monitoring Site Calculations
RMP-1	Calculated (based on volume and estimated percent solids).

5. The treatment, management, transportation, use, land application, or disposal of biosolids shall not cause a violation of the odor prohibition in subsection 62-296.320(2), F.A.C. [62-640.400(6)]
6. Storage of biosolids or other solids at this facility shall be in accordance with the Facility Biosolids Storage Plan. [62-640.300(4)]
7. Biosolids shall not be spilled from or tracked off the treatment facility site by the hauling vehicle. [62-640.400(9)]

B. Disposal

8. Disposal of biosolids, septage, and "other solids" in a solid waste disposal facility, or disposal by placement on land for purposes other than soil conditioning or fertilization, such as at a monofill, surface impoundment, waste pile, or dedicated site, shall be in accordance with Chapter 62-701, F.A.C. [62-640.100(6)(b) & (c)]

C. Transfer

9. The permittee shall not be held responsible for treatment and management violations that occur after its biosolids have been accepted by a permitted biosolids treatment facility with which the source facility has an agreement in accordance with subsection 62-640.880(1)(c), F.A.C., for further treatment, management, or disposal. [62-640.880(1)(b)]
10. The permittee shall keep hauling records to track the transport of biosolids between the facilities. The hauling records shall contain the following information:

Source Facility	Biosolids Treatment Facility or Treatment Facility
1. Date and time shipped	1. Date and time received
2. Amount of biosolids shipped	2. Amount of biosolids received
3. Degree of treatment (if applicable)	3. Name and ID number of source facility
4. Name and ID Number of treatment facility	4. Signature of hauler
5. Signature of responsible party at source facility	5. Signature of responsible party at treatment facility
6. Signature of hauler and name of hauling firm	

A copy of the source facility hauling records for each shipment shall be provided upon delivery of the biosolids to the biosolids treatment facility or treatment facility. The treatment facility permittee shall report to the Department within 24 hours of discovery any discrepancy in the quantity of biosolids leaving the source facility and arriving at the biosolids treatment facility or treatment facility.

[62-640.880(4)]

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

D. Receipt

11. If the permittee intends to accept biosolids from other facilities, a permit revision is required pursuant to paragraph 62-640.880(2)(d), F.A.C. [62-640.880(2)(d)]

III. GROUND WATER REQUIREMENTS

1. Chloride and sodium have been added to the list of parameters that are to be monitored for reclaimed water in Section I.A.1. The permittee will submit a report after eight (8) valid quarterly sampling events, which will include a data and trending analysis of the parameters nitrate, chloride, and sodium in the reclaimed water. Upon review of the report, a GWMP may be needed.

IV. ADDITIONAL REUSE AND LAND APPLICATION REQUIREMENTS

A. Part IV Absorption Field System(s)

1. Advisory signs shall be posted around the site boundaries to designate the nature of the project area. [62-610.518]
2. The permittee may allow public access to the absorption field sites. [62-610.518]
3. The absorption field shall be operated to preclude saturated conditions from developing at the ground surface. [62-610.500(2)]
4. The maximum annual average loading rate to the absorption fields shall be limited to 31.7 inches per day (as applied to the entire bottom area of the absorption field trenches or spreading areas). [62-610.523(3)]
5. The drainfields normally shall be loaded for 7 days and shall be rested for 7 days. Absorption fields shall be allowed to dry during the resting portion of the cycle. [62-610.523(4)]
6. Routine aquatic weed control and regular maintenance of storage pond embankments and access areas are required. [62-610.414 and 62-610.514]
7. Overflows from absorption fields or from emergency discharge facilities on storage ponds shall be reported as abnormal events in accordance with Permit Condition IX.20. [62-610.800(9)]

V. OPERATION AND MAINTENANCE REQUIREMENTS

A. Staffing Requirements

1. During the period of operation authorized by this permit, the wastewater facilities shall be operated under the supervision of one or more operators certified in accordance with Chapter 62-602, F.A.C. In accordance with Chapter 62-699, F.A.C., this facility is a Category III, Class C facility and, at a minimum, operators with appropriate certification must be on the site as follows:

A Class C or higher operator 1/2 hour/day for 5 days/week and one visit each weekend. The lead/chief operator must be a Class C operator, or higher.

2. An operator meeting the lead/chief operator class for the plant shall be available during all periods of plant operation. "Available" means able to be contacted as needed to initiate the appropriate action in a timely manner. [62-699.311(1)]

B. Capacity Analysis Report and Operation and Maintenance Performance Report Requirements

1. The application to renew this permit shall include an updated capacity analysis report prepared in accordance with Rule 62-600.405, F.A.C. [62-600.405(5)]

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

2. The application to renew this permit shall include a detailed operation and maintenance performance report prepared in accordance with Rule 62-600.735, F.A.C. [62-600.735(1)]

C. Recordkeeping Requirements

1. The permittee shall maintain the following records and make them available for inspection on the site of the permitted facility.
 - a. Records of all compliance monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, including, if applicable, a copy of the laboratory certification showing the certification number of the laboratory, for at least three years from the date the sample or measurement was taken;
 - b. Copies of all reports required by the permit for at least three years from the date the report was prepared;
 - c. Records of all data, including reports and documents, used to complete the application for the permit for at least three years from the date the application was filed;
 - d. Monitoring information, including a copy of the laboratory certification showing the laboratory certification number, related to the residuals use and disposal activities for the time period set forth in Chapter 62-640, F.A.C., for at least three years from the date of sampling or measurement;
 - e. A copy of the current permit;
 - f. A copy of the current operation and maintenance manual as required by Chapter 62-600, F.A.C.;
 - g. A copy of any required record drawings;
 - h. Copies of the licenses of the current certified operators;
 - i. Copies of the logs and schedules showing plant operations and equipment maintenance for three years from the date of the logs or schedules. The logs shall, at a minimum, include identification of the plant; the signature and license number of the operator(s) and the signature of the person(s) making any entries; date and time in and out; specific operation and maintenance activities, including any preventive maintenance or repairs made or requested; results of tests performed and samples taken, unless documented on a laboratory sheet; and notation of any notification or reporting completed in accordance with Rule 62-602.650(3), F.A.C. The logs shall be maintained on-site in a location accessible to 24-hour inspection, protected from weather damage, and current to the last operation and maintenance performed; and
 - j. Records of biosolids quantities, treatment, monitoring, and hauling for at least five years.

[62-620.350, 62-602.650, 62-640.650(4)]

VI. SCHEDULES

1. The following improvement actions shall be completed according to the schedule shown, unless approval to extend the completion date is requested, and given, in writing:

Improvement Action	Anticipated Final Completion Date
Implement corrective actions as stated in the Operation and Maintenance Performance Report (OMPR) with designated action due dates.	07/01/2018

[62-620.320(6)]

2. The permittee is not authorized to discharge to waters of the state after the expiration date of this permit, unless:
 - a. The permittee has applied for renewal of this permit at least 180 days before the expiration date of this permit using the appropriate forms listed in Rule 62-620.910, F.A.C., and in the manner established in the Department of Environmental Protection Guide to Permitting Wastewater Facilities or Activities Under Chapter 62-620, F.A.C., including submittal of the appropriate processing fee set forth in Rule 62-4.050, F.A.C.; or

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

- b. The permittee has made complete the application for renewal of this permit before the permit expiration date.

[62-620.335(1) - (4)]

VII. INDUSTRIAL PRETREATMENT PROGRAM REQUIREMENTS

1. This facility is not required to have a pretreatment program at this time. *[62-625.500]*

VIII. OTHER SPECIFIC CONDITIONS

1. The permittee shall comply with all conditions and requirements for reuse contained in their consumptive use permit issued by the Water Management District, if such requirements are consistent with Department rules. *[62-610.800(10)]*
2. In the event that the treatment facilities or equipment no longer function as intended, are no longer safe in terms of public health and safety, or odor, noise, aerosol drift, or lighting adversely affects neighboring developed areas at the levels prohibited by Rule 62-600.400(2)(a), F.A.C., corrective action (which may include additional maintenance or modifications of the permitted facilities) shall be taken by the permittee. Other corrective action may be required to ensure compliance with rules of the Department. Additionally, the treatment, management, use or land application of residuals shall not cause a violation of the odor prohibition in Rule 62-296.320(2), F.A.C. *[62-600.410(5) and 62-640.400(6)]*
3. The deliberate introduction of stormwater in any amount into collection/transmission systems designed solely for the introduction (and conveyance) of domestic/industrial wastewater; or the deliberate introduction of stormwater into collection/transmission systems designed for the introduction or conveyance of combinations of storm and domestic/industrial wastewater in amounts which may reduce the efficiency of pollutant removal by the treatment plant is prohibited, except as provided by Rule 62-610.472, F.A.C. *[62-604.130(3)]*
4. Collection/transmission system overflows shall be reported to the Department in accordance with Permit Condition IX. 20. *[62-604.550] [62-620.610(20)]*
5. The operating authority of a collection/transmission system and the permittee of a treatment plant are prohibited from accepting connections of wastewater discharges which have not received necessary pretreatment or which contain materials or pollutants (other than normal domestic wastewater constituents):
 - a. Which may cause fire or explosion hazards; or
 - b. Which may cause excessive corrosion or other deterioration of wastewater facilities due to chemical action or pH levels; or
 - c. Which are solid or viscous and obstruct flow or otherwise interfere with wastewater facility operations or treatment; or
 - d. Which result in the wastewater temperature at the introduction of the treatment plant exceeding 40°C or otherwise inhibiting treatment; or
 - e. Which result in the presence of toxic gases, vapors, or fumes that may cause worker health and safety problems.

[62-604.130(5)]

6. The treatment facility, storage ponds for Part II systems, rapid infiltration basins, and/or infiltration trenches shall be enclosed with a fence or otherwise provided with features to discourage the entry of animals and unauthorized persons. *[62-610.518(1) and 62-600.400(2)(b)]*
7. Screenings and grit removed from the wastewater facilities shall be collected in suitable containers and hauled to a Department approved Class I landfill or to a landfill approved by the Department for receipt/disposal of screenings and grit. *[62-701.300(1)(a)]*

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

8. Where required by Chapter 471 or Chapter 492, F.S., applicable portions of reports that must be submitted under this permit shall be signed and sealed by a professional engineer or a professional geologist, as appropriate. *[62-620.310(4)]*
9. The permittee shall provide verbal notice to the Department's Central District Office as soon as practical after discovery of a sinkhole or other karst feature within an area for the management or application of wastewater, wastewater residuals (sludges), or reclaimed water. The permittee shall immediately implement measures appropriate to control the entry of contaminants, and shall detail these measures to the Department's Central District Office in a written report within 7 days of the sinkhole discovery. *[62-620.320(6)]*
10. The permittee shall provide notice to the Department of the following:
 - a. Any new introduction of pollutants into the facility from an industrial discharger which would be subject to Chapter 403, F.S., and the requirements of Chapter 62-620, F.A.C., if it were directly discharging those pollutants; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that facility by a source which was identified in the permit application and known to be discharging at the time the permit was issued.Notice shall include information on the quality and quantity of effluent introduced into the facility and any anticipated impact of the change on the quantity or quality of effluent or reclaimed water to be discharged from the facility.

[62-620.625(2)]

IX. GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are binding and enforceable pursuant to Chapter 403, Florida Statutes. Any permit noncompliance constitutes a violation of Chapter 403, Florida Statutes, and is grounds for enforcement action, permit termination, permit revocation and reissuance, or permit revision. *[62-620.610(1)]*
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviations from the approved drawings, exhibits, specifications, or conditions of this permit constitutes grounds for revocation and enforcement action by the Department. *[62-620.610(2)]*
3. As provided in subsection 403.087(7), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor authorize any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit or authorization that may be required for other aspects of the total project which are not addressed in this permit. *[62-620.610(3)]*
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title. *[62-620.610(4)]*
5. This permit does not relieve the permittee from liability and penalties for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted source; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. The permittee shall take all reasonable steps to minimize or prevent any discharge, reuse of reclaimed water, or residuals use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. *[62-620.610(5)]*

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

6. If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee shall apply for and obtain a new permit. *[62-620.610(6)]*
7. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control, and related appurtenances, that are installed and used by the permittee to achieve compliance with the conditions of this permit. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to maintain or achieve compliance with the conditions of the permit. *[62-620.610(7)]*
8. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. *[62-620.610(8)]*
9. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, including an authorized representative of the Department and authorized EPA personnel, when applicable, upon presentation of credentials or other documents as may be required by law, and at reasonable times, depending upon the nature of the concern being investigated, to:
 - a. Enter upon the permittee's premises where a regulated facility, system, or activity is located or conducted, or where records shall be kept under the conditions of this permit;
 - b. Have access to and copy any records that shall be kept under the conditions of this permit;
 - c. Inspect the facilities, equipment, practices, or operations regulated or required under this permit; and
 - d. Sample or monitor any substances or parameters at any location necessary to assure compliance with this permit or Department rules.

[62-620.610(9)]
10. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data, and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except as such use is proscribed by Section 403.111, F.S., or Rule 62-620.302, F.A.C. Such evidence shall only be used to the extent that it is consistent with the Florida Rules of Civil Procedure and applicable evidentiary rules. *[62-620.610(10)]*
11. When requested by the Department, the permittee shall within a reasonable time provide any information required by law which is needed to determine whether there is cause for revising, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also provide to the Department upon request copies of records required by this permit to be kept. If the permittee becomes aware of relevant facts that were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be promptly submitted or corrections promptly reported to the Department. *[62-620.610(11)]*
12. Unless specifically stated otherwise in Department rules, the permittee, in accepting this permit, agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. A reasonable time for compliance with a new or amended surface water quality standard, other than those standards addressed in Rule 62-302.500, F.A.C., shall include a reasonable time to obtain or be denied a mixing zone for the new or amended standard. *[62-620.610(12)]*
13. The permittee, in accepting this permit, agrees to pay the applicable regulatory program and surveillance fee in accordance with Rule 62-4.052, F.A.C. *[62-620.610(13)]*
14. This permit is transferable only upon Department approval in accordance with Rule 62-620.340, F.A.C. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department. *[62-620.610(14)]*

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

15. The permittee shall give the Department written notice at least 60 days before inactivation or abandonment of a wastewater facility or activity and shall specify what steps will be taken to safeguard public health and safety during and following inactivation or abandonment. *[62-620.610(15)]*
16. The permittee shall apply for a revision to the Department permit in accordance with Rules 62-620.300, F.A.C., and the Department of Environmental Protection Guide to Permitting Wastewater Facilities or Activities Under Chapter 62-620, F.A.C., at least 90 days before construction of any planned substantial modifications to the permitted facility is to commence or with Rule 62-620.325(2), F.A.C., for minor modifications to the permitted facility. A revised permit shall be obtained before construction begins except as provided in Rule 62-620.300, F.A.C. *[62-620.610(16)]*
17. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The permittee shall be responsible for any and all damages which may result from the changes and may be subject to enforcement action by the Department for penalties or revocation of this permit. The notice shall include the following information:
 - a. A description of the anticipated noncompliance;
 - b. The period of the anticipated noncompliance, including dates and times; and
 - c. Steps being taken to prevent future occurrence of the noncompliance.

[62-620.610(17)]

18. Sampling and monitoring data shall be collected and analyzed in accordance with Rule 62-4.246 and Chapters 62-160, 62-600, and 62-610, F.A.C., and 40 CFR 136, as appropriate.
 - a. Monitoring results shall be reported at the intervals specified elsewhere in this permit and shall be reported on a Discharge Monitoring Report (DMR), DEP Form 62-620.910(10), or as specified elsewhere in the permit.
 - b. If the permittee monitors any contaminant more frequently than required by the permit, using Department approved test procedures, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
 - c. Calculations for all limitations which require averaging of measurements shall use an arithmetic mean unless otherwise specified in this permit.
 - d. Except as specifically provided in Rule 62-160.300, F.A.C., any laboratory test required by this permit shall be performed by a laboratory that has been certified by the Department of Health Environmental Laboratory Certification Program (DOH ELCP). Such certification shall be for the matrix, test method and analyte(s) being measured to comply with this permit. For domestic wastewater facilities, testing for parameters listed in Rule 62-160.300(4), F.A.C., shall be conducted under the direction of a certified operator.
 - e. Field activities including on-site tests and sample collection shall follow the applicable standard operating procedures described in DEP-SOP-001/01 adopted by reference in Chapter 62-160, F.A.C.
 - f. Alternate field procedures and laboratory methods may be used where they have been approved in accordance with Rules 62-160.220, and 62-160.330, F.A.C.

[62-620.610(18)]

19. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule detailed elsewhere in this permit shall be submitted no later than 14 days following each schedule date. *[62-620.610(19)]*
20. The permittee shall report to the Department's Central District Office any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain: a description of the noncompliance and its cause; the period of noncompliance including exact dates and time, and if the

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

- a. The following shall be included as information which must be reported within 24 hours under this condition:
 - (1) Any unanticipated bypass which causes any reclaimed water or effluent to exceed any permit limitation or results in an unpermitted discharge,
 - (2) Any upset which causes any reclaimed water or the effluent to exceed any limitation in the permit,
 - (3) Violation of a maximum daily discharge limitation for any of the pollutants specifically listed in the permit for such notice, and
 - (4) Any unauthorized discharge to surface or ground waters.
- b. Oral reports as required by this subsection shall be provided as follows:
 - (1) For unauthorized releases or spills of treated or untreated wastewater reported pursuant to subparagraph (a)4. that are in excess of 1,000 gallons per incident, or where information indicates that public health or the environment will be endangered, oral reports shall be provided to the STATE WATCH OFFICE TOLL FREE NUMBER (800) 320-0519, as soon as practical, but no later than 24 hours from the time the permittee becomes aware of the discharge. The permittee, to the extent known, shall provide the following information to the State Watch Office:
 - (a) Name, address, and telephone number of person reporting;
 - (b) Name, address, and telephone number of permittee or responsible person for the discharge;
 - (c) Date and time of the discharge and status of discharge (ongoing or ceased);
 - (d) Characteristics of the wastewater spilled or released (untreated or treated, industrial or domestic wastewater);
 - (e) Estimated amount of the discharge;
 - (f) Location or address of the discharge;
 - (g) Source and cause of the discharge;
 - (h) Whether the discharge was contained on-site, and cleanup actions taken to date;
 - (i) Description of area affected by the discharge, including name of water body affected, if any; and
 - (j) Other persons or agencies contacted.
 - (2) Oral reports, not otherwise required to be provided pursuant to subparagraph b.1 above, shall be provided to the Department's Central District Office within 24 hours from the time the permittee becomes aware of the circumstances.
- c. If the oral report has been received within 24 hours, the noncompliance has been corrected, and the noncompliance did not endanger health or the environment, the Department's Central District Office shall waive the written report.

[62-620.610(20)]

21. The permittee shall report all instances of noncompliance not reported under Permit Conditions IX.17., IX.18., or IX.19. of this permit at the time monitoring reports are submitted. This report shall contain the same information required by Permit Condition IX.20. of this permit. *[62-620.610(21)]*

22. Bypass Provisions.

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment works.
- b. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless the permittee affirmatively demonstrates that:
 - (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and
 - (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (3) The permittee submitted notices as required under Permit Condition IX.22.c. of this permit.
- c. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least 10 days before the date of the bypass. The permittee shall submit notice of an

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

unanticipated bypass within 24 hours of learning about the bypass as required in Permit Condition IX.20. of this permit. A notice shall include a description of the bypass and its cause; the period of the bypass, including exact dates and times; if the bypass has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass.

- d. The Department shall approve an anticipated bypass, after considering its adverse effect, if the permittee demonstrates that it will meet the three conditions listed in Permit Condition IX.22.b.(1) through (3) of this permit.
- e. A permittee may allow any bypass to occur which does not cause reclaimed water or effluent limitations to be exceeded if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Permit Condition IX.22.b. through d. of this permit.

[62-620.610(22)]

23. Upset Provisions.

- a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee.
 - (1) An upset does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, careless or improper operation.
 - (2) An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of upset provisions of Rule 62-620.610, F.A.C., are met.
- b. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in Permit Condition IX.20. of this permit; and
 - (4) The permittee complied with any remedial measures required under Permit Condition IX.5. of this permit.
- c. In any enforcement proceeding, the burden of proof for establishing the occurrence of an upset rests with the permittee.

PERMITTEE: Aquarina Utilities, Inc.
FACILITY: Aquarina Utilities WWTF

PERMIT NUMBER: FLA010352
EXPIRATION DATE: March 23, 2023

- d. Before an enforcement proceeding is instituted, no representation made during the Department review of a claim that noncompliance was caused by an upset is final agency action subject to judicial review.
[62-620.610(23)]

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION



Wanda Parker-Garvin
Environmental Manager

PERMIT ISSUANCE DATE:
February 1, 2018

Attachment(s):
Discharge Monitoring Report

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed submit this report to: Department of Environmental Protection, 3319 Maguire Blvd, Suite 232, Orlando, FL 32803-3767

PERMITTEE NAME:	Aquarina Utilities, Inc.	PERMIT NUMBER:	FLA010352-006-DW3P	DMR Effective Date:	May 1, 2018
MAILING ADDRESS:	1726 NE Darlich Avenue Jensen Beach, Florida 34957-	LIMIT:	Final	REPORT FREQUENCY:	Monthly
FACILITY:	Aquarina Utilities WWTF	CLASS SIZE:	N/A	PROGRAM:	Domestic
LOCATION:	235 Hammock Shore Drive Melbourne Beach, FL 32951-3941	MONITORING GROUP NUMBER:	R-001		
COUNTY:	Brevard	MONITORING GROUP DESCRIPTION:	Drainfields, including Influent		
OFFICE:	Central District	RE-SUBMITTED DMR:	<input type="checkbox"/>		
		NO DISCHARGE FROM SITE:	<input type="checkbox"/>		
		MONITORING PERIOD	From: _____ To: _____		

Parameter		Quantity or Loading	Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
Flow (Drainfield)	Sample Measurement									
PARM Code 50050 Y Mon. Site No. FLW-3	Permit Requirement	0.099 (An. Avg.)	MGD						5 Days/Week	Calculated
Flow (Drainfield)	Sample Measurement									
PARM Code 50050 3 Mon. Site No. FLW-1	Permit Requirement	Report (Mo. Avg.)	MGD						5 Days/Week	Meter
BOD, Carbonaceous 5 day, 20C	Sample Measurement									
PARM Code 80082 Y Mon. Site No. EFA-1	Permit Requirement			20.0 (An. Avg.)			mg/L		Monthly	Grab
BOD, Carbonaceous 5 day, 20C	Sample Measurement									
PARM Code 80082 A Mon. Site No. EFA-1	Permit Requirement			60.0 (Max.)	45.0 (Max.Wk.Avg.)	30.0 (Mo. Avg.)	mg/L		Monthly	Grab
Solids, Total Suspended	Sample Measurement									
PARM Code 00530 A Mon. Site No. EFA-1	Permit Requirement					10.0 (Max.)	mg/L		Monthly	Grab
Coliform, Fecal	Sample Measurement									
PARM Code 74055 Y Mon. Site No. EFA-1	Permit Requirement			200 (An. Avg.)			#/100mL		Monthly	Grab

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (mm/dd/yyyy)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

DISCHARGE MONITORING REPORT - PART A (Continued)

FACILITY: Aquarina Utilities WWTF

MONITORING GROUP NUMBER: R-001

PERMIT NUMBER: FLA010352-006-DW3P

MONITORING PERIOD From: _____ To: _____

Parameter		Quantity or Loading		Units	Quality or Concentration		Units	No. Ex.	Frequency of Analysis	Sample Type
Coliform, Fecal	Sample Measurement									
PARM Code 74055 A Mon. Site No. EFA-1	Permit Requirement				200 (Mo.Geo.Mn.)	800 (Max.)	#/100mL		Monthly	Grab
pH	Sample Measurement									
PARM Code 00400 A Mon. Site No. EFA-1	Permit Requirement				6.0 (Min.)	8.5 (Max.)	s.u.		5 Days/Week	Grab
Chlorine, Total Residual (For Disinfection)	Sample Measurement									
PARM Code 50060 A Mon. Site No. EFA-1	Permit Requirement				0.5 (Min.)		mg/L		5 Days/Week	Grab
Nitrogen, Nitrate, Total (as N)	Sample Measurement									
PARM Code 00620 A Mon. Site No. EFA-1	Permit Requirement					12.0 (Max.)	mg/L		Monthly	Grab
Nitrogen, Total	Sample Measurement									
PARM Code 00600 A Mon. Site No. EFA-1	Permit Requirement					Report (Max.)	mg/L		Monthly	Grab
Phosphorus, Total (as P)	Sample Measurement									
PARM Code 00665 A Mon. Site No. EFA-1	Permit Requirement					Report (Max.)	mg/L		Monthly	Grab
Flow (Total through facility)	Sample Measurement									
PARM Code 50050 P Mon. Site No. FLW-3	Permit Requirement		0.099 (An.Avg.)	MGD					5 Days/Week	Calculated
Flow (Total through facility)	Sample Measurement									
PARM Code 50050 Q Mon. Site No. FLW-3	Permit Requirement	Report (Qt.Avg.)	Report (Mo.Avg.)	MGD					5 Days/Week	Calculated
Flow (Demineralization Concentrate)	Sample Measurement									
PARM Code 50050 R Mon. Site No. FLW-2	Permit Requirement		Report (An.Avg.)	MGD					5 Days/Week	Meter
Flow (Demineralization Concentrate)	Sample Measurement									
PARM Code 50050 S Mon. Site No. FLW-2	Permit Requirement		Report (Mo.Avg.)	MGD					5 Days/Week	Meter

DISCHARGE MONITORING REPORT - PART A (Continued)

FACILITY: Aquarina Utilities WWTF

MONITORING GROUP NUMBER: R-001

PERMIT NUMBER: FLA010352-006-DW3P

MONITORING PERIOD From:

To:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
Flow (at lift station)	Sample Measurement										
PARM Code 50050 T Mon. Site No. FLW-1	Permit Requirement		Report (An.Avg.)	MGD						5 Days/Week	Meter
Flow (at lift station)	Sample Measurement										
PARM Code 50050 U Mon. Site No. FLW-1	Permit Requirement		Report (Mo.Avg.)	MGD						5 Days/Week	Meter
Percent Capacity, (TMADF/Permitted Capacity) x 100	Sample Measurement										
PARM Code 00180 P Mon. Site No. CAL-1	Permit Requirement					Report (Mo.Avg.)	percent			Monthly	Calculated
BOD, Carbonaceous 5 day, 20C (Influent)	Sample Measurement										
PARM Code 80082 G Mon. Site No. INF-1	Permit Requirement					Report (Max.)	mg/L			Monthly	Grab
Solids, Total Suspended (Influent)	Sample Measurement										
PARM Code 00530 G Mon. Site No. INF-1	Permit Requirement					Report (Max.)	mg/L			Monthly	Grab
	Sample Measurement										
	Permit Requirement										
	Sample Measurement										
	Permit Requirement										
	Sample Measurement										
	Permit Requirement										
	Sample Measurement										
	Permit Requirement										
	Sample Measurement										
	Permit Requirement										

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed submit this report to: Department of Environmental Protection, 3319 Maguire Blvd, Suite 232, Orlando, FL 32803-3767

PERMITTEE NAME:	Aquarina Utilities, Inc.	PERMIT NUMBER:	FLA010352-006-DW3P
MAILING ADDRESS:	1726 NE Darlich Avenue Jensen Beach, Florida 34957-	LIMIT:	Final
		CLASS SIZE:	N/A
FACILITY:	Aquarina Utilities WWTF	MONITORING GROUP NUMBER:	R-001
LOCATION:	235 Hammock Shore Drive Melbourne Beach, FL 32951-3941	MONITORING GROUP DESCRIPTION:	Drainfields, including Influent
		RE-SUBMITTED DMR:	<input type="checkbox"/>
		NO DISCHARGE FROM SITE:	<input type="checkbox"/>
COUNTY:	Brevard	MONITORING PERIOD	From: _____ To: _____
OFFICE:	Central District		

Parameter		Quantity or Loading	Units	Quality or Concentration	Units	No. Ex.	Frequency of Analysis	Sample Type
Chloride (as Cl)	Sample Measurement							
PARM Code 00940 A Mon. Site No. EFA-1	Permit Requirement			Report (Max.)	mg/L		Quarterly	Grab
Sodium, Total Recoverable	Sample Measurement							
PARM Code 00923 A Mon. Site No. EFA-1	Permit Requirement			Report (Max.)	mg/L		Quarterly	Grab
	Sample Measurement							
	Permit Requirement							
	Sample Measurement							
	Permit Requirement							
	Sample Measurement							
	Permit Requirement							
	Sample Measurement							
	Permit Requirement							

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (mm/dd/yyyy)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed submit this report to: Department of Environmental Protection, 3319 Maguire Blvd, Suite 232, Orlando, FL 32803-3767

PERMITTEE NAME:	Aquarina Utilities, Inc.	PERMIT NUMBER:	FLA010352-006-DW3P
MAILING ADDRESS:	1726 NE Darlich Avenue Jensen Beach, Florida 34957-	LIMIT:	Final
		CLASS SIZE:	N/A
FACILITY:	Aquarina Utilities WWTF	MONITORING GROUP NUMBER:	RMP-Q
LOCATION:	235 Hammock Shore Drive Melbourne Beach, FL 32951-3941	MONITORING GROUP DESCRIPTION:	Biosolids Quantity
		RE-SUBMITTED DMR:	<input type="checkbox"/>
		NO DISCHARGE FROM SITE:	<input type="checkbox"/>
COUNTY:	Brevard	MONITORING PERIOD	From: _____ To: _____
OFFICE:	Central District		

Parameter		Quantity or Loading	Units	Quality or Concentration	Units	No. Ex.	Frequency of Analysis	Sample Type
Biosolids Quantity (Transferred)	Sample Measurement							
PARM Code B0007 + Mon. Site No. RMP-1	Permit Requirement	Report (Mo. Total)	dry tons				Monthly	Calculated
Biosolids Quantity (Landfilled)	Sample Measurement							
PARM Code B0008 + Mon. Site No. RMP-1	Permit Requirement	Report (Mo. Total)	dry tons				Monthly	Calculated
	Sample Measurement							
	Permit Requirement							
	Sample Measurement							
	Permit Requirement							
	Sample Measurement							
	Permit Requirement							
	Sample Measurement							
	Permit Requirement							

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (mm/dd/yyyy)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

DAILY SAMPLE RESULTS - PART B

Permit Number:
Monitoring Period

FLA010352-006-DW3P
From: _____ To: _____

Facility: Aquarina Beach WWTF

Code	BOD, Carbonaceous 5 day, 20C mg/L	Chlorine, Total Residual (For Disinfection) mg/L	Coliform, Fecal #/100mL	Nitrogen, Nitrate, Total (as N) mg/L	Nitrogen, Total mg/L	Phosphorus, Total (as P) mg/L	Solids, Total Suspended mg/L	pH s.u.	Flow (at lift station) MGD	Flow (Demineralization Concentr) MGD	BOD, Carbonaceous 5 day, 20C (Influent) mg/L
Mon. Site	80082 EFA-1	50060 EFA-1	74055 EFA-1	00620 EFA-1	00600 EFA-1	00665 EFA-1	00530 EFA-1	00400 EFA-1	50050 FLW-1	50050 FLW-2	80082 INF-1
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
Total											
Mo. Avg.											

PLANT STAFFING:

Day Shift Operator Class: _____ Certificate No: _____ Name: _____

Evening Shift Operator Class: _____ Certificate No: _____ Name: _____

Night Shift Operator Class: _____ Certificate No: _____ Name: _____

Lead Operator Class: _____ Certificate No: _____ Name: _____

DAILY SAMPLE RESULTS - PART B

Permit Number:
Monitoring Period

FLA010352-006-DW3P

From: _____ To: _____

Facility: Aquarina Beach WWTF

Solids, Total Suspended (Influent) mg/L											
Code	00530										
Mon. Site	INF-1										
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
Total											
Mo. Avg.											

PLANT STAFFING:

Day Shift Operator Class: _____ Certificate No: _____ Name: _____

Evening Shift Operator Class: _____ Certificate No: _____ Name: _____

Night Shift Operator Class: _____ Certificate No: _____ Name: _____

Lead Operator Class: _____ Certificate No: _____ Name: _____

INSTRUCTIONS FOR COMPLETING THE WASTEWATER DISCHARGE MONITORING REPORT

Read these instructions before completing the DMR. Hard copies and/or electronic copies of the required parts of the DMR were provided with the permit. All required information shall be completed in full and typed or printed in ink. A signed, original DMR shall be mailed to the address printed on the DMR by the 28th of the month following the monitoring period. Facilities who submit their DMR(s) electronically through eDMR do not need to submit a hardcopy DMR. The DMR shall not be submitted before the end of the monitoring period.

The DMR consists of three parts--A, B, and D--all of which may or may not be applicable to every facility. Facilities may have one or more Part A's for reporting effluent or reclaimed water data. All domestic wastewater facilities will have a Part B for reporting daily sample results. Part D is used for reporting ground water monitoring well data.

When results are not available, the following codes should be used on parts A and D of the DMR and an explanation provided where appropriate. Note: Codes used on Part B for raw data are different.

CODE	DESCRIPTION/INSTRUCTIONS
ANC	Analysis not conducted.
DRY	Dry Well
FLD	Flood disaster.
IFS	Insufficient flow for sampling.
LS	Lost sample.
MNR	Monitoring not required this period.

CODE	DESCRIPTION/INSTRUCTIONS
NOD	No discharge from/to site.
OPS	Operations were shutdown so no sample could be taken.
OTH	Other. Please enter an explanation of why monitoring data were not available.
SEF	Sampling equipment failure.

When reporting analytical results that fall below a laboratory's reported method detection limits or practical quantification limits, the following instructions should be used, unless indicated otherwise in the permit or on the DMR:

1. Results greater than or equal to the PQL shall be reported as the measured quantity.
2. Results less than the PQL and greater than or equal to the MDL shall be reported as the laboratory's MDL value. These values shall be deemed equal to the MDL when necessary to calculate an average for that parameter and when determining compliance with permit limits.
3. Results less than the MDL shall be reported by entering a less than sign (" $<$ ") followed by the laboratory's MDL value, e.g. <0.001 . A value of one-half the MDL or one-half the effluent limit, whichever is lower, shall be used for that sample when necessary to calculate an average for that parameter. Values less than the MDL are considered to demonstrate compliance with an effluent limitation.

PART A -DISCHARGE MONITORING REPORT (DMR)

Part A of the DMR is comprised of one or more sections, each having its own header information. Facility information is preprinted in the header as well as the monitoring group number, whether the limits and monitoring requirements are interim or final, and the required submittal frequency (e.g. monthly, annually, quarterly, etc.). Submit Part A based on the required reporting frequency in the header and the instructions shown in the permit. The following should be completed by the permittee or authorized representative:

Resubmitted DMR: Check this box if this DMR is being re-submitted because there was information missing from or information that needed correction on a previously submitted DMR. The information that is being revised should be clearly noted on the re-submitted DMR (e.g. highlight, circle, etc.)

No Discharge From Site: Check this box if no discharge occurs and, as a result, there are no data or codes to be entered for all of the parameters on the DMR for the entire monitoring group number; however, if the monitoring group includes other monitoring locations (e.g., influent sampling), the "NOD" code should be used to individually denote those parameters for which there was no discharge.

Monitoring Period: Enter the month, day, and year for the first and last day of the monitoring period (i.e. the month, the quarter, the year, etc.) during which the data on this report were collected and analyzed.

Sample Measurement: Before filling in sample measurements in the table, check to see that the data collected correspond to the limit indicated on the DMR (i.e. interim or final) and that the data correspond to the monitoring group number in the header. Enter the data or calculated results for each parameter on this row in the non-shaded area above the limit. Be sure the result being entered corresponds to the appropriate statistical base code (e.g. annual average, monthly average, single sample maximum, etc.) and units. Data qualifier codes are not to be reported on Part A.

No. Ex.: Enter the number of sample measurements during the monitoring period that exceeded the permit limit for each parameter in the non-shaded area. If none, enter zero.

Frequency of Analysis: The shaded areas in this column contain the minimum number of times the measurement is required to be made according to the permit. Enter the actual number of times the measurement was made in the space above the shaded area.

Sample Type: The shaded areas in this column contain the type of sample (e.g. grab, composite, continuous) required by the permit. Enter the actual sample type that was taken in the space above the shaded area.

Signature: This report must be signed in accordance with Rule 62-620.305, F.A.C. Type or print the name and title of the signing official. Include the telephone number where the official may be reached in the event there are questions concerning this report. Enter the date when the report is signed.

Comment and Explanation of Any Violations: Use this area to explain any exceedances, any upset or by-pass events, or other items which require explanation. If more space is needed, reference all attachments in this area.

PART B - DAILY SAMPLE RESULTS

Monitoring Period: Enter the month, day, and year for the first and last day of the monitoring period (i.e. the month, the quarter, the year, etc.) during which the data on this report were collected and analyzed.

Daily Monitoring Results: Transfer all analytical data from your facility's laboratory or a contract laboratory's data sheets for all day(s) that samples were collected. Record the data in the units indicated. Table 1 in Chapter 62-160, F.A.C., contains a complete list of all the data qualifier codes that your laboratory may use when reporting analytical results. However, when transferring numerical results onto Part B of the DMR, only the following data qualifier codes should be used and an explanation provided where appropriate.

CODE	DESCRIPTION/INSTRUCTIONS
<	The compound was analyzed for but not detected.
A	Value reported is the mean (average) of two or more determinations.
J	Estimated value, value not accurate.
Q	Sample held beyond the actual holding time.
Y	Laboratory analysis was from an unpreserved or improperly preserved sample.

To calculate the monthly average, add each reported value to get a total. For flow, divide this total by the number of days in the month. For all other parameters, divide the total by the number of observations.

Plant Staffing: List the name, certificate number, and class of all state certified operators operating the facility during the monitoring period. Use additional sheets as necessary.

PART D - GROUND WATER MONITORING REPORT

Monitoring Period: Enter the month, day, and year for the first and last day of the monitoring period (i.e. the month, the quarter, the year, etc.) during which the data on this report were collected and analyzed.

Date Sample Obtained: Enter the date the sample was taken. Also, check whether or not the well was purged before sampling.

Time Sample Obtained: Enter the time the sample was taken.

Sample Measurement: Record the results of the analysis. If the result was below the minimum detection limit, indicate that. Data qualifier codes are not to be reported on Part D.

Detection Limits: Record the detection limits of the analytical methods used.

Analysis Method: Indicate the analytical method used. Record the method number from Chapter 62-160 or Chapter 62-601, F.A.C., or from other sources.

Sampling Equipment Used: Indicate the procedure used to collect the sample (e.g. airlift, bucket/bailer, centrifugal pump, etc.)

Samples Filtered: Indicate whether the sample obtained was filtered by laboratory (L), filtered in field (F), or unfiltered (N).

Signature: This report must be signed in accordance with Rule 62-620.305, F.A.C. Type or print the name and title of the signing official. Include the telephone number where the official may be reached in the event there are questions concerning this report. Enter the date when the report is signed.

Comments and Explanation: Use this space to make any comments on or explanations of results that are unexpected. If more space is needed, reference all attachments in this area.

SPECIAL INSTRUCTIONS FOR LIMITED WET WEATHER DISCHARGES

Flow (Limited Wet Weather Discharge): Enter the measured average flow rate during the period of discharge or divide gallons discharged by duration of discharge (converted into days). Record in million gallons per day (MGD).

Flow (Upstream): Enter the average flow rate in the receiving stream upstream from the point of discharge for the period of discharge. The average flow rate can be calculated based on two measurements; one made at the start and one made at the end of the discharge period. Measurements are to be made at the upstream gauging station described in the permit.

Actual Stream Dilution Ratio: To calculate the Actual Stream Dilution Ratio, divide the average upstream flow rate by the average discharge flow rate. Enter the Actual Stream Dilution Ratio accurate to the nearest 0.1.

No. of Days the SDF > Stream Dilution Ratio: For each day of discharge, compare the minimum Stream Dilution Factor (SDF) from the permit to the calculated Stream Dilution Ratio. On Part B of the DMR, enter an asterisk (*) if the SDF is greater than the Stream Dilution Ratio on any day of discharge. On Part A of the DMR, add up the days with an "*" and record the total number of days the Stream Dilution Factor was greater than the Stream Dilution Ratio.

CBOD₅: Enter the average CBOD₅ of the reclaimed water discharged during the period shown in duration of discharge.

TKN: Enter the average TKN of the reclaimed water discharged during the period shown in duration of discharge.

Actual Rainfall: Enter the actual rainfall for each day on Part B. Enter the actual cumulative rainfall to date for this calendar year and the actual total monthly rainfall on Part A. The cumulative rainfall to date for this calendar year is the total amount of rain, in inches, that has been recorded since January 1 of the current year through the month for which this DMR contains data.

Rainfall During Average Rainfall Year: On Part A, enter the total monthly rainfall during the average rainfall year and the cumulative rainfall for the average rainfall year. The cumulative rainfall for the average rainfall year is the amount of rain, in inches, which fell during the average rainfall year from January through the month for which this DMR contains data.

No. of Days LWWD Activated During Calendar Year: Enter the cumulative number of days that the limited wet weather discharge was activated since January 1 of the current year.

Reason for Discharge: Attach to the DMR a brief explanation of the factors contributing to the need to activate the limited wet weather discharge.

**STATEMENT OF BASIS
FOR
STATE OF FLORIDA DOMESTIC WASTEWATER FACILITY PERMIT**

PERMIT NUMBER: FLA010352-006
FACILITY NAME: Aquarina Beach WWTF
FACILITY LOCATION: 235 Hammock Shore Drive
Melbourne Beach, FL 32951-3941
Brevard County
NAME OF PERMITTEE: Aquarina Utilities, Inc.
PERMIT WRITER: E. Elliott, Engineer IV

1. SUMMARY OF APPLICATION

a. Chronology of Application

Application Number: FLA010352-006-DW3P
Application Submittal Date: January 16, 2018

b. Type of Facility

Domestic Wastewater Treatment Plant

Ownership Type: Private

SIC Code: 4952

c. Facility Capacity

Existing Permitted Capacity:	0.099 mgd Annual Average Daily Flow
Proposed Increase in Permitted Capacity:	0 mgd Annual Average Daily Flow
Proposed Total Permitted Capacity:	0.099 mgd Annual Average Daily Flow

d. Description of Wastewater Treatment

An existing 0.099 mgd annual average daily flow (AADF) permitted capacity extended aeration domestic wastewater treatment plant consisting of influent screening, aeration, secondary clarification, filtration, chlorination, and aerobic digestion of biosolids.

e. Description of Effluent Disposal and Land Application Sites

An existing 0.099 MGD annual average daily flow permitted capacity absorption field system. R-001 is a reuse system which consists of two (2) drainfields with 0.057 acres size each.

2. SUMMARY OF SURFACE WATER DISCHARGE

This facility does not discharge to surface waters.

3. BASIS FOR PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

This facility is authorized to direct reclaimed water to Reuse System R-001, an absorption field system, based on the following:

Parameter	Units	Max/Min	Limit	Statistical Basis	Rationale
Flow (Drainfield)	MGD	Max	0.099	Annual Average	62-600.700(2)(b) & 62-610.810(5) FAC
		Max	Report	Monthly Average	62-600.700(2)(b) & 62-610.810(5) FAC
BOD, Carbonaceous 5 day, 20C	mg/L	Max	20.0	Annual Average	62-610.510 & 62-600.740(1)(b)1.a. FAC
		Max	30.0	Monthly Average	62-600.740(1)(b)1.b. FAC
		Max	45.0	Weekly Average	62-600.740(1)(b)1.c. FAC
		Max	60.0	Single Sample	62-600.740(1)(b)1.d. FAC
Solids, Total Suspended	mg/L	Max	10.0	Single Sample	62-610.510(2) FAC
Coliform, Fecal	#/100mL	Max	200	Monthly Geometric Mean	62-600.440(4)(c)2. FAC
		Max	200	Annual Average	62-610.510 & 62-600.440(4)(c)1. FAC
		Max	800	Single Sample	62-600.440(4)(c)4. FAC
pH	s.u.	Min	6.0	Single Sample	62-600.445 FAC
		Max	8.5	Single Sample	62-600.445 FAC
Chlorine, Total Residual (For Disinfection)	mg/L	Min	0.5	Single Sample	62-610.510 & 62-600.440(5)(c) FAC
Nitrogen, Nitrate, Total (as N)	mg/L	Max	12.0	Single Sample	62-610.510(1) FAC
Nitrogen, Total	mg/L	Max	Report	Single Sample	62-600.650(3) FAC.
Phosphorus, Total (as P)	mg/L	Max	Report	Single Sample	62-600.650(3) FAC.
Chloride (as Cl)*	mg/L	Max	Report	Single Sample	62-4.070 FAC and BPJ
Sodium, Total Recoverable*	mg/L	Max	Report	Single Sample	62-4.070 FAC and BPJ

* Sampling has been added to evaluate the potential impact of the Demineralization concentrate on the land application system and the groundwater.

Other Limitations and Monitoring Requirements:

Parameter	Units	Max/Min	Limit	Statistical Basis	Rationale
Flow (Total through facility)	MGD	Max	0.099	Annual Average	62-600.700(2)(b) FAC
		Max	Report	Monthly Average	62-600.700(2)(b) FAC
		Max	Report	Quarterly Average	62-600.700(2)(b) FAC
Flow (Wastewater Influent)	MGD	Max	Report	Annual Average	62-600.700(2)(b) FAC
		Max	Report	Monthly Average	62-600.700(2)(b) FAC
Flow (Demineralization Concentrate)	MGD	Max	Report	Annual Average	62-600.700(2)(b) FAC
		Max	Report	Monthly Average	62-600.700(2)(b) FAC
Percent Capacity, (TMADF/Permitted Capacity) x 100	percent	Max	Report	Monthly Average	62-600.405(4) FAC

Parameter	Units	Max/Min	Limit	Statistical Basis	Rationale
BOD, Carbonaceous 5 day, 20C (Influent)	mg/L	Max	Report	Single Sample	62-600.660(1) FAC
Solids, Total Suspended (Influent)	mg/L	Max	Report	Single Sample	62-600.660(1) FAC
Monitoring Frequencies and Sample Types	-	-	-	All Parameters	62-600 FAC & 62-699 FAC and/or BPJ of permit writer
Sampling Locations	-	-	-	All Parameters	62-600, 62-610.412, 62-610.463(1), 62-610.568, 62-610.613 FAC and/or BPJ of permit writer

4. DISCUSSION OF CHANGES TO PERMIT LIMITATIONS

The current wastewater permit for this facility FLA010352-006-DW3P expires on March 23, 2023. Adding the sampling of Sodium and Chlorides on a quarterly basis due to inclusion of Concentrate by product water from the potable system and the high loading rate to the reuse system. This was accepted as an alternative to a groundwater monitoring plan but may be revisited in the future.

Historical – Department records show the approved flow was limited to 0.050 MGD at one time due to the construction of only one drainfield cell. Prior to the 002-permit cycle that second cell was completed, and the permit issued with a permitted capacity of 0.099 MGD. The loading rate (over 31 inches/day) is very high, by current Rule 62-610 FAC standards, but this rate is grandfathered, predating the rule. The loading rate will be subject to reconsideration is the facility make any significant changes to the plant, the land application system, or in the event of non-compliance associated with the system.

5. BIOSOLIDS MANAGEMENT REQUIREMENTS

Biosolids generated by this facility may be transferred to BCUD/South Beaches WRF or disposed of in a Class I solid waste landfill.

See the table below for the rationale for the biosolids quantities monitoring requirements.

Parameter	Units	Max/Min	Limit	Statistical Basis	Rationale
Biosolids Quantity (Transferred)	dry tons	Max	Report	Monthly Total	62-640.650(5)(a)1. FAC
Biosolids Quantity (Landfilled)	dry tons	Max	Report	Monthly Total	62-640.650(5)(a)1. FAC
Monitoring Frequency	All Parameters				62-640.650(5)(a) FAC

6. GROUND WATER MONITORING REQUIREMENTS

Since the facility is under 100,000 gpd, a Groundwater Monitoring Plan (GWMP) may not be necessary at this time. The hydraulic loading rate for the absorption fields is permitted at 31.7 inches per day in Section IV.A.4., although according to Rule 62-610.523(3), the rate should not exceed 9 inches per day.

According to Rule 62-610.500(2), the absorption fields shall be operated to preclude saturated conditions from developing at the ground surface

In the permit application, it was stated that the gate to the absorption fields needed to be fixed, so the operator can access the area for inspection. At the time of the site visit, the fields were flooded due to heavy rains. It was also noted that the fields are wetted for 30 days and dried for 30 days. Section IV.A.5 of the permit states that the two absorption fields normally shall be loaded for 7 days and shall be rested for 7 days. Absorption fields shall be allowed to dry during the resting portion of the cycle. (62-610.523(4))

For the current permit, chlorides and sodium have been added to the list of parameters that are to be monitored in the reclaimed water and are included Section I.A.1. The permittee will submit a report after eight (8) valid quarterly sampling events, which will include a data and trending analysis of nitrates, chlorides, and sodium in the reclaimed water. Upon review of the report, a GWMP may be needed.

7. PERMIT SCHEDULES

The following improvement actions shall be completed according to the schedule shown, unless approval to extend the completion date is requested in writing:

Improvement Action	Anticipated Final Completion Date
Implement corrective actions as stated in the Operation and Maintenance Performance Report (OMPR) with designated action due dates.	07/01/2018

8. INDUSTRIAL PRETREATMENT REQUIREMENTS

At this time, the facility is not required to develop an approved industrial pretreatment program. However, the Department reserves the right to require an approved program if future conditions warrant.

9. ADMINISTRATIVE ORDERS (AO) AND CONSENT ORDERS (CO)

This permit is not accompanied by an AO and the permittee has not entered into a CO with the Department.

10. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

No variances were requested for this facility.

11. THE ADMINISTRATIVE RECORD

The administrative record including application, draft permit, fact sheet, public notice (after release), comments received and additional information is available for public inspection during normal business hours at the location specified in item 13. Copies will be provided at a minimal charge per page.

12. PROPOSED SCHEDULE FOR PERMIT ISSUANCE

Notice of Permit Issuance January 30, 2018

13. DEPARTMENT CONTACT

Additional information concerning the permit and proposed schedule for permit issuance may be obtained during normal business hours from:

Gene Elliott, Engineer IV
Gene.elliott@dep.state.fl.us
 3319 Maguire Blvd, Suite 232
 Orlando, FL 32803-3767

Telephone No.: 407-897-4151

APPENDIX C: FDEP INSPECTION REPORT



FLORIDA DEPARTMENT OF Environmental Protection

CENTRAL DISTRICT OFFICE
3319 MAGUIRE BLVD., SUITE 232
ORLANDO, FLORIDA 32803

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

February 20, 2020

Kevin Burge, Director
Aquarina Utilities, Inc.
1726 Darlich Avenue
Jensen Beach, FL 34957
aquarinautilities@bellsouth.net

Re: Aquarina Utilities WWTF
DW Facility ID #FLA010352
Brevard County

Dear Mr. Burge:

Department personnel conducted an inspection of the above-referenced facility on November 1, 2019. Based on the information provided during and following the inspection, the facility was determined to be in compliance with the Department's rules and regulations. A copy of the inspection report is attached for your records.

The Department appreciates your efforts to maintain this facility in compliance with state and federal rules. Should you have any questions or comments, please contact Manuel F. Cardona at 407-897-4134 or via e-mail at Manuel.Cardona@FloridaDEP.gov.

Sincerely,

David Smicherko

David Smicherko, Manager
Central District
Florida Department of Environmental Protection

Enclosure: Inspection Report

cc: David Smicherko, Manuel Cardona, Central District

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WASTEWATER COMPLIANCE INSPECTION REPORT

Facility Name and Physical Address Aquarina Utilities WWTF 235 Aquarina Boulevard Melbourne Beach, FL 32941	WAFR ID FLA010352	County Brevard	Entry Date 11/1/2019	Entry Time 11:41 AM
	Facility Phone # 772-708-7946		Exit Date 11/1/2019	Exit Time 12:37 PM

LAT	27	°	55	'	14.61	"
LONG	80	°	29	'	24.35	"

Name(s) of Field Representatives(s) and Title Ron Chupka, WWTP Operator <small>Click or tap here to enter text.</small>	Operator Certification # C-9376 <small>Click or tap here to enter text.</small>	Email N/A <small>Click or tap here to enter text.</small>	Phone 772-708-7946 <small>Click or tap here to enter text.</small>
--	--	--	---

Name & Address of Permittee / Designated Rep. Kevin Burge Aquarina Utilities, Inc. 1726 Northeast Darlich Avenue Jensen Beach, FL 34957	Title Director	Email aquarinautilities@bellsouth.net	Phone 772-708-8090
--	--------------------------	---	------------------------------

Inspection Type	C	E	I	Samples Taken(Y/N): N	Sample ID#: N/A	Samples Split (Y/N): N/A
------------------------	---	---	---	------------------------------	------------------------	---------------------------------



Domestic **Industrial**

FACILITY COMPLIANCE AREAS EVALUATED

IC = In Compliance; MC = Minor Out of Compliance; NC = Out of Compliance; SC = Significant out of Compliance; NA = Not Applicable; NE = Not Evaluated
Significant Non-Compliance Criteria Should be Reviewed when Out of Compliance Ratings Are Given in Areas Marked by a "♦"

	PERMITS/ORDERS		SELF MONITORING PROGRAM		FACILITY OPERATIONS		EFFLUENT/DISPOSAL
IC	1. ♦ Permit	IC	3. Laboratory	IC	6. Facility Site Review	IC	9. ♦ Effluent Quality
IC	2. ♦ Compliance Schedules	IC	4. Sampling	IC	7. Flow Measurement	IC	10. ♦ Effluent Disposal
		IC	5. ♦ Records & Reports	IC	8. ♦ Operation & Maintenance	IC	11. Biosolids
						NA	12. ♦ Groundwater
NA	14. Other					IC	13. ♦ SSO Survey

Facility and/or Order Compliance Status:	<input checked="" type="checkbox"/> In-Compliance	<input type="checkbox"/> Out-Of -Compliance	<input type="checkbox"/> Significant-Out-Of-Compliance
---	---	---	--

Recommended Actions: In-Compliance Letter		
Name(s) and Signature(s) of Inspector(s) Manuel F. Cardona  <small>Click here to enter text</small>	District Office/Phone Number CD/407-897-4134	Date 2/10/2020
Name and Signature of Reviewer David Smicherko 	District Office/Phone Number CD/407-897-4169	Date 2/20/2020

Single Event Violations (*SNC SEVs)

Check for Yes	Evaluation Area	Description	Finding Description	Finding ID
<input type="checkbox"/>	Permit	Effluent Violations - Unapproved Bypass	Wastewater was diverted from a portion of the treatment process without department approval.	UNBY
<input type="checkbox"/>	*Permit	Permit Violations - Discharge Without a Valid Permit	The facility was operating without a permit or with an expired permit.	UPHI
<input type="checkbox"/>	Permit	Permit Violations - Failure to Submit Timely Permit Renewal Application	The permittee failed to submit an application to renew the existing permit at least 180 days prior to expiration.	PFSA
<input type="checkbox"/>	Laboratory	Management Practice Violations - Laboratory Not Certified	The laboratory was not certified by the Florida Department of Health and therefore is not certified to meet NELAC standards.	LNCE
<input type="checkbox"/>	Sampling	Monitoring Violations - Analysis not Conducted	The facility failed to collect and/or analyze samples as required by permit or enforcement action.	ANCV
<input type="checkbox"/>	Sampling	Monitoring Violations - Failure to Monitor for Toxicity Requirements	The facility failed to collect and/or analyze routine or follow-up toxicity samples.	FTOX
<input type="checkbox"/>	Records and Reports	Management Practice Violations - Failure to Develop Adequate SPCC Plan	The facility failed to develop or maintain their Spill Prevention Control and Countermeasures (SPCC) plan.	FSPC
<input type="checkbox"/>	Records and Reports	Management Practice Violations - Failure to Maintain Records	The facility failed to maintain records for the required retention period.	FMRR
<input type="checkbox"/>	Records and Reports	Reporting Violations - Failure to Notify	The permittee failed to notify the department of any event or activity that requires notification as required by permit or rule.	RSWP
<input type="checkbox"/>	Records and Reports	Reporting Violations - Failure to Submit DMRs	The permittee failed to submit any DMR required by rule, permit, or enforcement action in a timely manner.	FDMR
<input type="checkbox"/>	Records and Reports	Reporting Violations - Failure to submit required report (non-DMR, non-pretreatment)	The facility failed to submit any report required by rule, permit, enforcement action or inspection activity except for DMRs.	FRPT
<input type="checkbox"/>	Facility Site Review	Management Practice Violations - Improper Land Application (non-503, non-CAFO)	The land application system was not being maintained.	LASN
<input type="checkbox"/>	Flow Measurement	Monitoring Violations - No Flow Measurement Device	The facility failed to install a flow measurement device, an approved flow measurement device, or a working flow measurement device.	NOFL
<input type="checkbox"/>	Operation and Maintenance	Management Practice Violations - Improper Operation and Maintenance	The facility failed to follow their operation and maintenance plan/manual or their Biosolids Nutrient Management Plan.	IONM
<input type="checkbox"/>	Operation and Maintenance	Management Practice Violations - Inflow/Infiltration (I/I)	The facility had an inflow and infiltration problem causing collection system issues and/or operational issues.	ININ
<input type="checkbox"/>	Operation and Maintenance	Management Practice Violations - No Licensed/Certified Operator	The facility was being operated without a certified operator or by an operator that is not licensed for the size of plant.	ONCO
<input type="checkbox"/>	*Effluent Quality	Effluent Violations - Failed Toxicity Test	Persistent acute toxicity has been documented through follow-up tests.	EATX
<input type="checkbox"/>	*Effluent Quality	Effluent Violations - Failed Toxicity Test	Persistent chronic toxicity has been documented through follow-up tests.	ECTX
<input type="checkbox"/>	*Effluent Quality	Effluent Violations - Failed Toxicity Test	Persistent acute or chronic toxicity has been documented in the effluent through the use of routine and follow-up tests.	ETOX
<input type="checkbox"/>	Effluent Quality	Effluent Violations - Narrative Effluent Violation	The facility violated a permit or enforcement narrative effluent limit.	XNEV
<input type="checkbox"/>	*Effluent Quality	Effluent Violations - Reported Fish Kill	The facility had a discharge of wastewater that resulted in a fish kill.	XFSH
<input type="checkbox"/>	Sanitary Sewer Overflow Survey	WW SSO - Discharge to Waters	A sewage spill from any components of a collection/transmission system or from a treatment plant reached surface waters including stormwater conveyance system or drainage ditch.	SSO1
<input type="checkbox"/>	Sanitary Sewer Overflow Survey	WW SSO - Failure to Maintain Records or Meet Record Keeping Requirements	The facility failed to keep routine documentation and reporting records of spills, and/or operation and maintenance activities on the collection/transmission system.	SSO2
<input type="checkbox"/>	Sanitary Sewer Overflow Survey	WW SSO - Failure to monitor	The facility failed to collect and/or analyze bacteriological samples for sewage spills that reached surface waters.	SSO3
<input type="checkbox"/>	Sanitary Sewer Overflow Survey	WW SSO - Failure to report violation that may endanger public health 122.41(1)(7)	The facility failed to report a sewage spill within 24 hours of discovery.	SSO4
<input type="checkbox"/>	Sanitary Sewer Overflow Survey	WW SSO - Improper Operation and Maintenance	The facility failed to perform routine preventative maintenance to keep the collection/transmission system in good working order.	SSO5
<input type="checkbox"/>	Sanitary Sewer Overflow Survey	WW SSO - Overflow to Dry Land	A sewage spill from any part of a collection/transmission system or treatment plant that did not make it to surface waters, i.e., stormwater collection system, drainage ditch, stream, pond, or lake.	SSO6

Facility Treatment Summary: An existing 0.099 mgd annual average daily flow (AADF) permitted capacity extended aeration domestic wastewater treatment plant consisting of influent screening, aeration, secondary clarification, filtration, chlorination, and aerobic digestion of biosolids. Effluent disposal consists of a two drainfield adsorption field system.

1. Permit: In-Compliance

Current Permit available on-site?	Yes
Date Permit issued	3/24/18
Date Permit Expires	3/23/23
Permit Renewal Application due by	9/25/22
Administrative or Judicial Orders?	N/A

2. Compliance Schedules: In-Compliance

Compliance Schedule in Permit met?	Yes
Compliance Schedules in Order are being met?	Not Applicable

2.1 Observation: Corrective actions stated in the Operation and Maintenance Report have been completed.

3. Laboratory: In-Compliance

Contract Lab Name and Certification #	Pace Analytical Laboratories
Facility DOH Certification #	E86240

3.1 Observation: Current lab certification was onsite.

4. Sampling: In-Compliance

Sampling conducted during inspection?	No
Sampling observed during inspection?	No
Sampling conducted at locations identified by the permit?	Yes
Safe access to sampling locations?	Yes

5. Records and Reports: In-Compliance

Documents/Records reviewed	Timeframe
Discharge Monitoring Reports (DMRs)	From 11/01/19 to 10/31/19

5.1 Observation:

- Minor reporting issues (transcription) were noted. This was discussed during the inspection.
- A copy of the operations and maintenance manual was onsite.
- Copies of operator certifications are onsite and are current.
- A bound and numbered logbook was onsite. Operator staffing is in accordance with the permit.

6. Facility Site Review: In-Compliance

6.1 Observation:

- *General* - The facility grounds are properly secured.
- *Headworks*- The headworks contains a barscreen which is raked daily and dropped into a disposal shoot to a dumpster. The contents are taken to the landfill.
- *Aeration Basin* - The facility contains one circular ring aeration basin around the clarifier. There are three enclosed blowers. The contents in the aeration chambers were brown in color and appeared to be adequately mixed. Some duckweed growth was observed. No excessive noise or odor was noted.
- *Clarifier* – The facility contains one circular clarifier with a functional rake arm. The weirs appeared level. Some duckweed growth was noted.
- Chlorine tabs are used in the weirs.
- *Disinfection* – Two chambers. The facility converted to sodium hypochlorite per the permit renewal. The chlorine contact chamber is covered.
- *Filtration*- The facility has two sand filters which continually backwash. The covers on both filters have been replaced since the last inspection.
- *Digester* - The digester had room and was free from excessive odors. No vectors were present.

7. Flow Measurement: In-Compliance

Flow meter present and location as per permit?	Yes
Easy access to flow meter?	Yes
Date of last flow meter calibration	12/13/18

7.2 Observation: The facility has also provided a calibration report for 2019.

8. Operation and Maintenance: In-Compliance

Facility being operated as per permit?	Yes
--	-----

8.1 Observation: The facility appears to be run and maintained in accordance with the permit.

9. Effluent Quality: In-Compliance

DMRs review period	From 11/01/18 to 10/31/19
Any exceedances?	No

10. Effluent Disposal: In-Compliance

Facility discharging?	Yes
Discharge location(s) as per permit?	Yes

10.1 Observation: Drain fields vegetation is maintained. No effluent ponding was noted. Drain fields are rotated every two weeks.

11. Biosolids: In-Compliance

11.1 Observation: The facility has not hauled biosolids within the last five years, therefore no hauling records are available onsite. Operator stated that in the event of future hauling, the biosolids will be sent to BCUD South Beaches in accordance with the permitted agreement.

12. Groundwater Quality: Not Applicable

13. SSO Survey: In-Compliance

13.1 Observation: No unauthorized discharges were reported between 11/1/18 and 10/31/19.

14. Other: Not Applicable

APPENDIX D: VENDOR QUOTES



R.C. Beach & Assoc. Inc.

Pumping & Process Equipment

April 16, 2021

Mr. Hunter Johnson, E.I.
Woodard & Curran
201 S. Florida Ave. Suite 200
Lakeland, Florida 33801

Subject: Aquarena WWTP Plant Improvements
Re: Budget Estimate Cornell Pumps

Dear Mr. Johnson,

We are pleased to offer the following Cornell budget estimate for your consideration.

RETURN ACTIVATED SLUDGE PUMPS NO's 1 & 2.

Two (2) Cornell Model 4NNT –F16 horizontal mounted pump of cast iron construction to replace current serial number 149710. Pump operating at 1180 RPM and driven by a 3 HP 1200 RPM 3 phase 60 hertz 460 volt motor with premium, efficiency, corrosive duty, inverter duty, 1.15 SF, class F insulation, and TEFC enclosure.

Equipment as above complete with 420 SS HT shaft sleeve, mechanical cyclo-seal (no seal piping required), clean out port, 125 LB FF Flanged suction and 125 LB FF flanged discharge, and all mounted on a common bed plate, coupling and hinged OSHA guard. Pump to be factory performance tested and hydrostatic tested.

Price Net FOB factory is: \$24,170.00 each or \$48,340.00 for lot of Two (2) pumps and motors as above described.

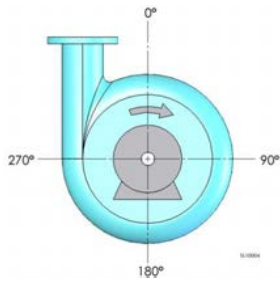
Suction and discharge gages if required add to above price total with diaphragm isolator, snubber and pet cock are: \$720.00 each or \$2,880.00 for lot of Four (4) total gauges both suction and discharge.

If required add to above 316 stainless steel L type anchor bolts with nuts, washers and lock washer, no sleeves are included is \$609.00 for lot of eight (8) assemblies.

No taxes, lubricants or installations or spare parts are included.

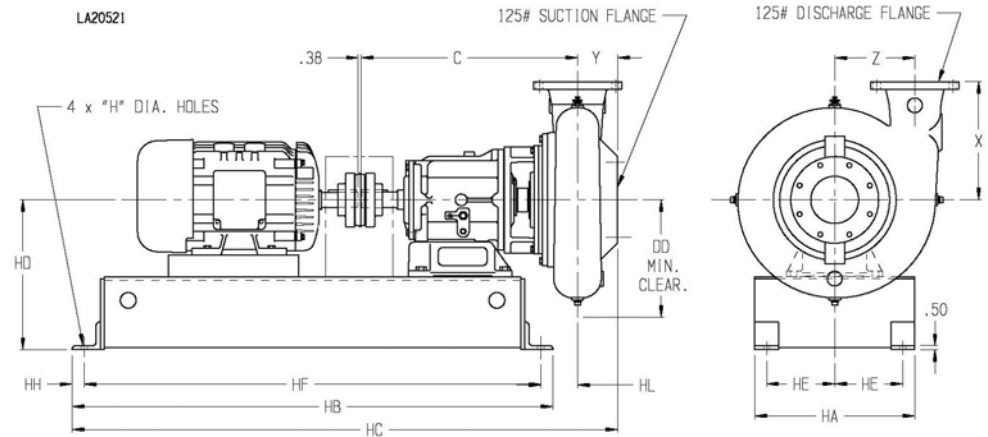
Two (2) YEAR WARRANTY APPLIES TO THESE PUMPS.

Delivery of this equipment is 18 to 20 weeks and subject to change based on factory production schedules at time of approved order entry. No Florida sales or use taxes included should they apply. Standard terms and

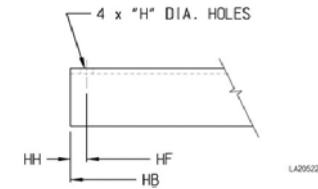


NOTES:

Discharge positions are viewed from the drive end.
 Standard increments of discharge position are shown
 in the chart below (DISCH INCR). Consult factory for
 other discharge positions.



- NOTES:**
1. Dimension include motors with "T" or "TS" shafts.
 2. This page does not apply if space coupling is used.
 3. Flange connection dimension can vary $\pm .12$ inch.
 4. Do not use for construction unless certified.



Base variation for 256T motor frame and smaller

PUMP DIMENSIONS														
MODEL	FRAME	CONNECTION		DISCH. INCR.	C	DD	X	Y	Z	MOTOR FRAME	H	HC	HD	HL
		DISCH.	SUCT.											
4NNT	F16	4	4	45°	27.12	9.12	9.25	4.25	6.25	213T/256T	0.75	57.51	13.5	7.26
										284T/286T	0.75	67.51	19	4.76
4NHTA 4414T	F16	4	4	45°	26.5	11.31	11	4.75	9.25	213T/256T	0.75	57.36	13.5	6.61
										284T/326T	0.75	67.36	19	4.11
										364T/365T	0.75	70.36	19	4.11
4514T	F16	4	5	45°	26.5	11.31	11	4.75	9.25	213T/256T	0.75	57.36	13.5	6.61
										284T/326T	0.75	67.36	19	4.11
										364T/365T	0.75	70.36	19	4.11
6NNT 6NNTL	F16	6	6	45°	27.41	11.62	11.75	4.75	8.38	213T/256T	0.75	58.29	13.5	7.54
										284T/326T	0.75	68.29	19	5.04
										364T/365T	0.75	71.29	19	5.04
										254T/256T	0.75	58.08	13.5	6.08
6NHTA 6NHT 6NHHT	F16	6	6	45°	26.97	13.75	15	5	10	284T/326T	0.75	68.08	19	4.58
										364T/365T	0.75	71.08	19	4.58
										404T/405T	0.75	76.08	19.5	4.58

BASE - F16 FRAME						
MOTOR FRAME	HA	HB	HE	HF	HH	BASE PRT. NO.
213T/215T	15	47	6.12	45	1	B4082
254T/256T	15	47	6.12	45	1	B5144
284T/286T	20	60	8.5	57	1.5	B4084
324T/326T	20	60	8.5	57	1.5	B4085
364T/365T	20	63	8.5	60	1.5	B5145
404T/405T	24	68	10.5	65	1.5	B5146



CORNELL PUMP COMPANY

SOLIDS HANDLING F16 HORIZONTAL FRAME MOUNTED PUMPS
 AND BASE WITH CYCLOSEAL AND TANGENTIAL VOLUTE

DIM2050



Aftermarket - Quotation

1401 W. Cypress Creek Road - Suite 100, Fort Lauderdale, FL 33309
 1- 888 PARKSON
 562 Bunker Court, Vernon Hills, IL 60061
 1-800-249-2140

*** The Quotation is submitted pursuant to Parkson Corporation's Aftermarket Terms and Conditions, which are attached hereto**

Quote Name	Aquarina Development - DSF-687 DSF Inspection	Created Date	4/14/2021
		Expiration Date	5/14/2021
Quote Number	00029094		
Prepared By	Edna Sugden	Contact Name	Hunter Johnson
Phone	847-837-4938	Phone	(863) 400-5691
Email	esugden@parkson.com	Email	hrjohnson@woodardcurran.com
Fax	954-252-3775		
Bill To Name	Melbourne FL	Ship To Name	Melbourne FL
Project #	DSF-687	Payment Terms	Net 30
Freight	Prepay and Add	FOB:	Shipping Point

Item Number	Product	Line Item Description	Quantity	Sales Price	Total Price
0900001-	x- Field Service	One Technician onsite for one day to inspect DynaSand Unit Serial Number DSF-687 for rebuild feasibility.	1.00	\$600.00	\$600.00

Line Items	1	Subtotal	\$600.00
		Total Price	\$600.00

Please complete information below:

BILL TO Name: _____	SHIP TO Name: _____
Address: _____	Address: _____
City, State, Zip: _____	City, State, Zip: _____
PO #: _____	SHIP TO Attn of: _____
Bill to - Email: _____	Phone: _____

All amounts expressed in US Dollars

Quote Acceptance Information

Signature _____
 Name _____
 Title _____
 Date _____



DYNASAND® CONTINUOUS BACKWASH SAND FILTER

**Preliminary BUDGET Sizing
Aquarina -Melbourne, FL**

APPLICATION : Tertiary Filtration

DESIGN DATA

Design: **300 gpm = 0.43 mgd**

	pH	Temp deg C	land Grea mg/L	Peak TSS mg/L	TP mg/L	TN mg/L	NO-x-N mg/L
Influent	7	25					
Effluent							

* - All effluent limits may require chemical addition (by others)

RECOMMENDATIONS:

2 DynaSand Model DSF38 SBTF Package units

Filtration Area per unit: **38** ft²
Loading Rate: Design: **3.947** gpm/ft², all units in service

Total filtration area: **76**

Filtration depth: **40** in.
Sand required per unit: **9**
Design headloss across filter: **36** in. WC
Total air consumption: **5.2** scfm

Total sand requirement: **18** tons
Typical headloss across filter: **18 to 24** inches
Recommended Compressor Package: **Rotary Screw**
Compressor Type: **Duplex**
Package #: **CW-5-DD**
Motor horsepower: **5** hp
Dryer Type: **Desiccant**
Dryer Dew Point: **-40** deg F
Qty: **1**

Total reject flow per unit: **7.0** to **14.0** gpm continuous (on average)

Package filter dimensions: **7.0** ft Dia **15.4** ft Height

MATERIALS

Tank: **304SS**
Feed Assembly: **304L SS**
Hardware: **304SS**
Reject compartment: **FRP**
Airlift pump: **PVC**

SCOPE

All filter internals, filter media
FRP NEMA 4X Air Control Panel.
Local headloss gauge, low level float switch
Access Ladder & Platform
Compressor package supplied by Parkson.
Start-up visit including travel & living expenses.

BUDGET PRICING

\$257,000 USD, FOB factory - Equipment & sand freight allowed, taxes extra.

SHIPMENT

Submittals 5 weeks after receipt of written purchase order.
Shipment 13 weeks after receipt of approved drawings or submittal waiver.

* -

Quotation

NUMBER: B01501663 Rev 1

DATE: April 7, 2021

TO: Aquarina
235 Aquarina Boulevard
Melbourne Beach, FL 32951
Kevin Burge (Owner)
Phone: 772-708-7946

REF.: Project Name:
Aquarina
Project Location: Melbourne
Beach, FL
Reconditioning of Project DSF-687

Parkson Corporation proposes the reconditioning of one (1) existing DynaSand® Continuous Backwash Sand Filter and is pleased to provide this *Rebuild/Retrofit Quotation* for the following:

ITEM 1 DYNASAND® CONTINUOUS BACKWASH SAND FILTERS

Existing Units: Two (only reconditioning one unit)
Model: **DSF-38 SBBF FRP Tank Unit**

ITEM 2 DYNASAND® REPLACEMENT PARTS

2.A Equipment Description:

1. One (1) 316 SS Airlift
2. One (1) Carbon Steel platform and handrail
3. One (1) new NEMA 4X air control panel in FRP construction to control both existing filters.
4. Ten (10) tons of .9 mm Filter Media delivered in 3,000 pound – 4,000 pound SuperSacks or via pneumatic truck



ITEM 3 PARKSON SERVICE

DSF CLEANING – (labor) scope of supply:

- Removal of all necessary platforms (as required).
- Removal of sand/media from the tank being worked on to storage bags
- Drain fluid (water) from the tank.
- Inspect and clean plenum area..
- Fill tank with clean Plant effluent.
- Install new sand.
- Re-installation of new platform and handrails (as required).
- Install new airlift.
- Wash filtered media overnight with clean Plant effluent.
- Open feed inlet for the tank (being worked on).

BUDGET PRICE:

Budget price **\$66,510.00 USD (PER UNIT)**
F.O.B. Shipping Point, freight included, taxes excluded.

VALIDITY:

Purchase Price is valid for thirty (30) calendar days from Quotation date, for shipment of Equipment within the timetable stated below.

PAYMENT TERMS:

80% net 30 days upon shipment of parts to site, 20% upon rebuild completion, not to exceed 90 days after shipment of parts should rebuild be delayed by other than Parkson.

OPTIONS:

10 tons of 0.9 mm filter media delivered by pneumatic truck..... **DEDUCT \$600.00 USD**

SERVICES

Drawings and Installation, Operation and Maintenance (IO&M) Manuals:

- Approval Drawings: waived
- Certified Drawings: One (1) electronic included
- IO&M Manuals: One (1) electronic included

Additional manuals are available for \$75 USD at time of order.

Parkson Installation and Start-Up Assistance:

Parkson will furnish certified personnel to provide installation of certain components (as noted below), start-up, and operator training. Services of a locally licensed electrician will be required. Dates of service to be scheduled upon Buyer’s written request.

- **INSTALLATION (by Parkson):**
 - Replace existing Air Lifts with new Air Lifts and new air hoses
 - Replace sand



Mechanical Warranty:

As defined in Section XVI on the attached Standard Conditions of Sale, Parkson offers a one (1) year mechanical warranty for all new parts installed on the DynaSand on-site certified rebuild.

TIMETABLE GUIDELINE:

Shipment Phase: Components shipped within 6-8 weeks following receipt of Purchase Order in Parkson's office.

Installation Phase: Dates of service to be scheduled upon Buyer's written request. Typically requiring a 2-3 week advance notice of desired on site dates. Installation work will be completed within 2-4 weeks from commencement.

Dates are subject to confirmation upon receipt of written Purchase Order.

TERMS AND CONDITIONS:

This Quotation is governed by and subject to Parkson's Standard Conditions of Sale, which are incorporated by reference and accessible at: <http://www.parkson.com/files/documents/AFM-terms.pdf>.

PATENTS:

The Equipment and/or process quoted herein may operate under one or more U.S. patents. The Purchase Price includes a one-time royalty payment (if any), which provides the Buyer with immunity to operate the Equipment specified in the Quotation under any applicable patents.

CLARIFICATIONS AND EXCEPTIONS:

Parkson is not in receipt of any plans and specifications. The equipment quoted above is based upon Parkson's current standards and may or may not comply with any specification that may exist. Parkson reserves the right to revise this quotation upon receipt of any plans and specifications.

BUYER/OWNER RESPONSIBILITY:

- Upon disassembly/reconditioning on site if any unforeseen parts or structural repairs are required, Parkson Corporation will notify the customer prior to commencement of any repairs beyond original quoted scope. The costs for these items will be added to the scope of work.
- Care and storage of rebuild components upon receipt at customer site.
- Dumpster for all old parts
- Disposal of sand.
- Services of a locally licensed electrician (see below)
- Cable trays if required
- Any other auxiliary equipment or service not detailed above.
- **LOCALLY LICENSED ELECTRICAL TECHNICIAN RESPONSIBILITY:**
 - a. All electrical connection and interconnecting wiring.
 - b. Changes to control panel.



Please return one signed copy of this Quotation, or your Purchase Order, to Parkson Corporation at the address below. Refer to this Quotation, date, and related correspondence.

Issued By: Marty Unger

Accepted By: (Herein called the Buyer)

PARKSON CORPORATION
1401 West Cypress Creek Road
Fort Lauderdale, FL 33309-1969

Name: Marty Unger
Title: Regional Sales Manager
Phone: 954-383-1757
Fax: 817-599-9725
E-Mail: munger@parkson.com
Date: April 7, 2021

Name
Title:
Date:

Enclosures: Standard Conditions of Sale, Quotation Addendum

Local Rep: Barry Gregoire
The Mack Company
Mail: P.O. Box 3040
Ponte Vedra, FL 32004-3040
Phone: 904-553-1539
Fax: 904-212-0802
Cell Phone: 925-989-6041
Fax: 925-947-6784
Email: bgregoire@mackcompany-fl.com

cc: Naim Mohhamed, Marty Unger, Barry Gregoire, Ryan Brice
DSF

NOZZLE SCHEDULE				
LTR	SIZE INCHES	FACE	SERVICE	REMARKS
A	8	RF	INLET	FEED
B	8	RF	OUTLET	FILTRATE
C	3	RF	OUTLET	REJECT
D	1	NPT	INSIDE DRAIN	VALVE
E	3	NPT	VENT	PIPE
F	1/4	NPT	CUSTOMER AIR	

NOTES:

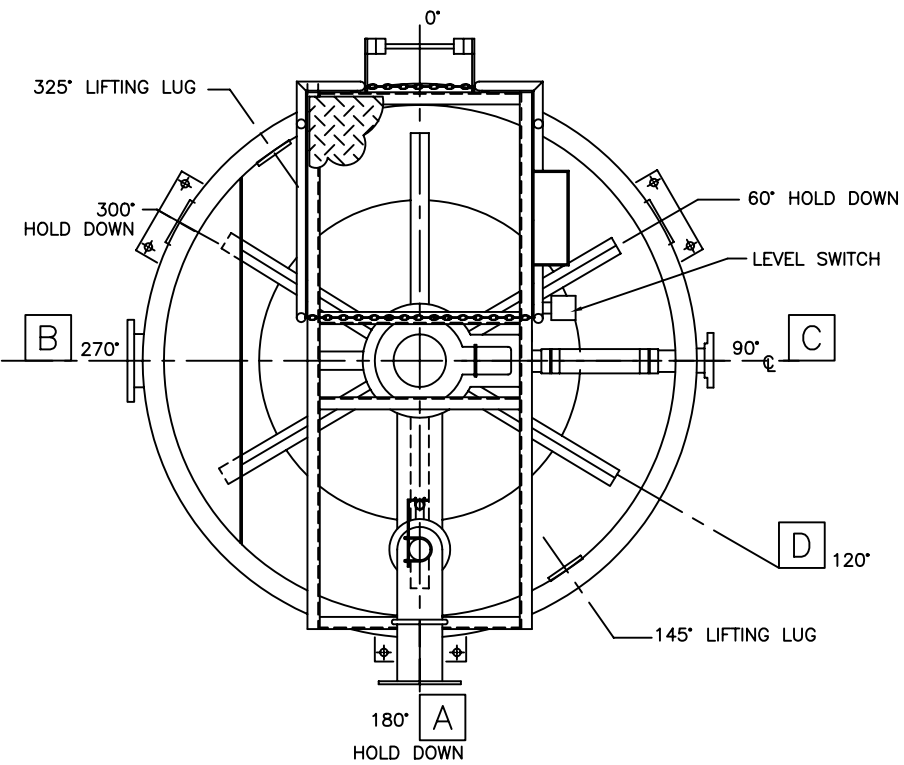
- THIS DRAWING TO BE USED FOR GENERAL INFORMATION ONLY. NOT FOR CONSTRUCTION.
- MATERIAL OF CONSTRUCTION:**
TANK : 11 GA., 304 S.S.
AIRLIFT: PVC
- WEIGHTS**
TANK EMPTY: 3,800#
TANK W/WET SAND: 26,300#
TANK W/SAND & WATER: 40,900#
- 9 TONS SILICA SAND REQUIRED.

SPECIAL NOTES

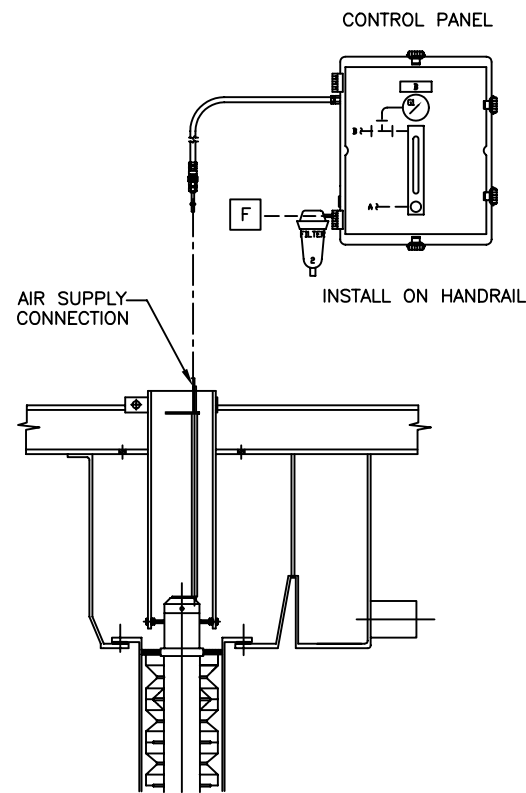
- THE SUPPORTING CONCRETE PAD MUST BE LEVEL.
- APPLY (1 IN.) MIN. GROUT UNDER EACH BASE PLATE AND UNDER THE CONE AT CENTER.
- SEE INSTALLATION INSTRUCTIONS BEFORE SETTING GROUT.
- CUSTOMER ANCHOR BOLT PROJECTION TO INCLUDE GROUT, BASE PLATE (1 1/4 IN.) THICK, PLUS WASHER AND NUT.

**LOADING CONDITIONS
STATIC LOADING**

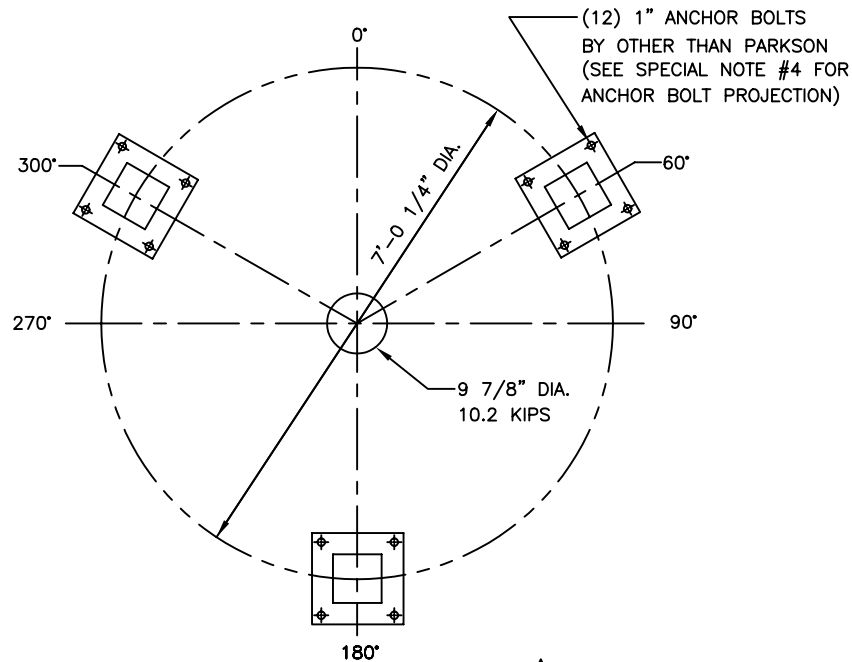
FILTER FULL OF WATER AND SAND:
LOAD UNDER EACH BASE PLATE IS APPROX. 10.2 KIPS
LOAD UNDER CONE AT CENTER IS APPROX. 10.2 KIPS
SEISMIC FORCES FROM ZONE 4 MAY CREATE AN OVERTURNING MOMENT OF 63.1 FT.-KIPS AT THE BASE OF THE UNIT. THE LOADS ACTING ON EACH ANCHOR BOLT WILL THEN BE -800# IN TENSION AND 1900# IN SHEAR.



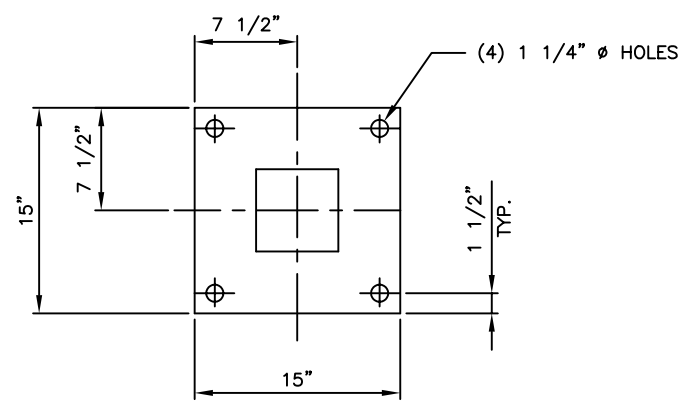
PLAN VIEW



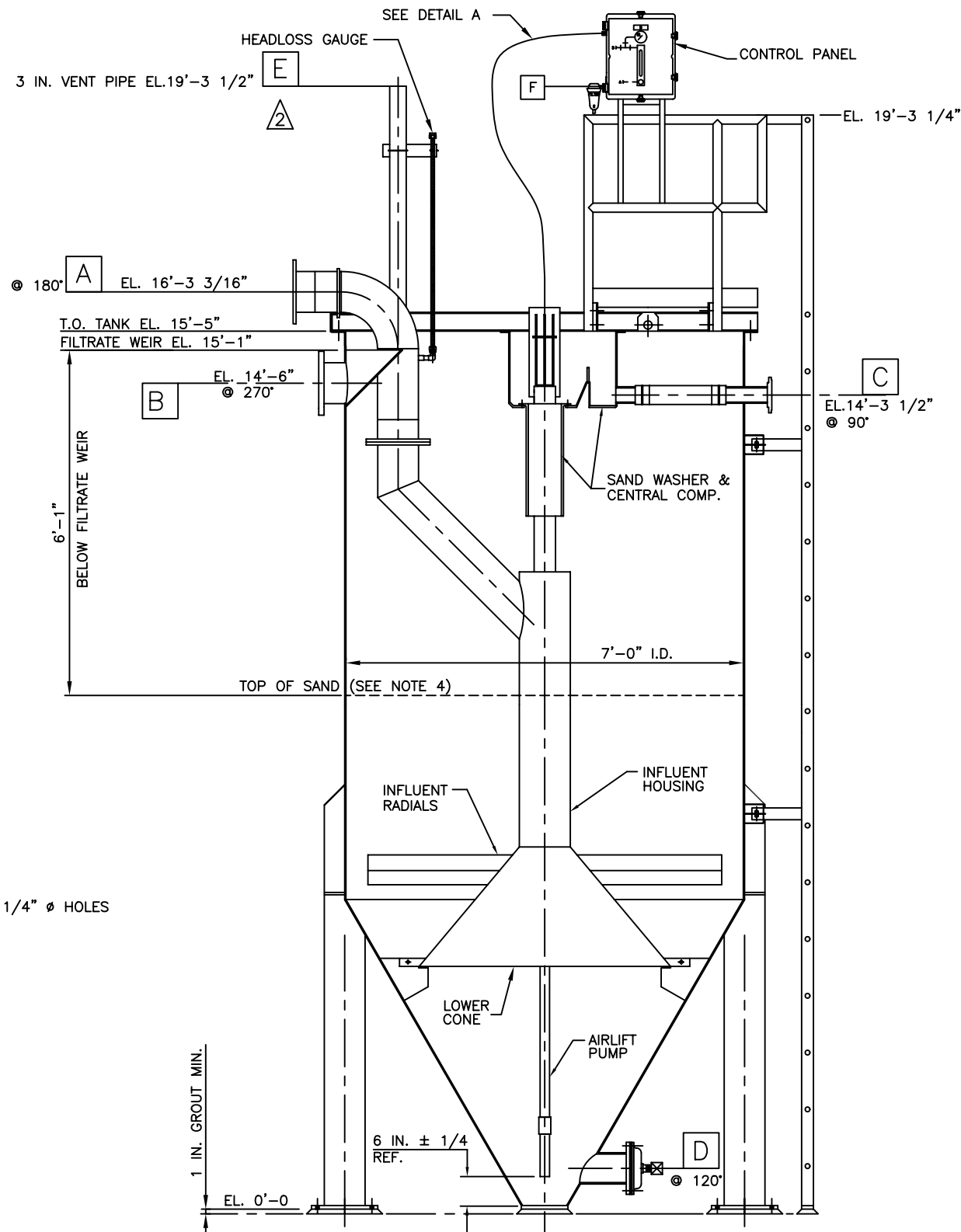
**DETAIL A
INST. PANEL TO AIRLIFT CONN.
SCHEMATIC**



LOADING DIAGRAM



BASE PLATE DETAIL



**SECTIONAL ELEVATION
SEE PLAN FOR TRUE ORIENTATION**

PARKSON CORPORATION
DynaSand® Filter

**DSF 38FT2 SBTF SS
SALES DRAWING**

UNLESS OTHERWISE SPECIFIED	SIGNATURES	DATE
DIMENSIONS ARE IN FEET AND INCHES TOLERANCE: ±	DRAWN: F. J. CAMARGO	11-2-98
	CHECKED: P. TATASCIORE	10-2-98
	APPROVED: P. TATASCIORE	10-2-98
DATE: 7-15-04	BY: F. CAMARGO	CHECKED: F. CAMARGO
APPROVED: F. J. CAMARGO	DESCRIPTION	

ELEVATION OF NOZZLE "E" WAS 18'-1"
MODIFIED BASE PLATE AS SHOWN
CHANGED MATERIAL OF AIRLIFT PUMP TO PVC

THE OWNER, PROJECT ENGINEER, AND ALL OTHERS INVOLVED WITH THE PROJECT DESIGN MUST IMPLEMENT AND FOLLOW ALL SAFETY STANDARDS REQUIRED BY LOCAL, STATE AND FEDERAL LAWS WHEN INCORPORATING PARKSON CORPORATION EQUIPMENT INTO THE OVERALL PROJECT DESIGN. PARKSON CORPORATION WILL NOT BE RESPONSIBLE FOR LOCATION AND/OR PLACEMENT OF EQUIPMENT IN THE PLANT DESIGN, NOR IS PARKSON RESPONSIBLE FOR PLANT SAFETY DESIGN AND FOR THE FAILURE TO FOLLOW APPROPRIATE SAFETY PRECAUTIONS IN THE OPERATION AND MAINTENANCE OF PARKSON CORPORATION EQUIPMENT.

REVISION:	2
DRAWING FILE NUMBER:	003759-01
SHEET NUMBER:	1 OF 1
PROJECT NUMBER:	
PROJECT NAME:	

Aquarina Utilities WWTF
Convert Disinfection for Gas Chlorination to Sodium Hypochlorite Solution

Design Capacity: 0.30 mgd (300,000 gpd) AADF
Permitted Capacity: 0.099 mgd (99,000 gpd) AADF (limited by discharge to drainfield)

Maximum MADF: 0.0630 mgd AADF
Maximum Daily Flow: 0.1380 mgd (one of high reject days was 0.2030 mgd but not normal operation).

Max Day Flow/MADF max = $0.1380/0.0630 = 2.2$ (Maximum Day Factor)

At permitted flow:

Max Day Flow: $2.2 \times 99,000 \text{ gpd} = 217,800 \text{ gpd}$.
Peak Hour Flow (assumed: no Surge Tank): $3.5 \times \text{AADF} = 3.5 \times 99,000 = 346,500 \text{ gpd}$.

At permitted capacity: $99,000 \text{ gpd}/1440 \text{ min/day} = 68.75 \text{ gpm}$.
Max Day Flow: $217,800 \text{ gpd}/1440 \text{ min/day} = 151.25 \text{ gpm}$.
Peak Hourly Flow: $346,500 \text{ gpd}/1440 \text{ min/day} = 240.63 \text{ gpm}$.

Sodium Hypochlorite (NaClO information):

12.5% Concentration of solution
1.20 Specific Gravity (NaClO)
10.00 grams/Liter (1% solution of NaClO)
Therefore: 125.00 grams/Liter NaClO in 12.5% solution
1.04 lbs/gal water equivalent.
1.25 lbs/gal Sodium Hypochlorite solution at 12.5%.

Calculate Chlorine Feed Rate Needed @:

Assumed Peak: $0.3465 \text{ mgd} \times 8.34 \text{ lbs/gal} = 2.9$
For 2 mg/L: 5.80 lb Cl₂/day
For 4 mg/L: 11.6 lb Cl₂/day

Assumed Maximum Flow: $0.2178 \text{ mgd} \times 8.34 \text{ lbs/gals} = 1.82$
For 2 mg/L: 3.64 lb Cl₂/day
For 4 mg/L: 7.28 lb Cl₂/day

Calculate the Amount of CL₂ Provided by 12.5 % solution:

At Peak Flow: For 2 mg/L: $(5.20 \text{ lb CL}_2/\text{day})/(1.25 \text{ lb/gal}) = 4.16 \text{ gal/day}$ of 12.5 % solution.
For 4 mg/L: $(11.6 \text{ lb CL}_2/\text{day})/(1.25 \text{ lb/gal}) = 9.28 \text{ gal/day}$ of 12.5% solution.

At Maximum Day Flow: 2 mg/L: $(3.64/1.25) = 2.91 \text{ gal/day}$ of 12.5% solution.
4 mg/L: $(7.28/1.25) = 5.82 \text{ gal/day}$ of 12.5% solution.

Calculate the minimum/maximum hourly pump feeding rate of a 12.5% solution: 24 hour of operation considered/assumed:

At Peak of 346,500 gallons/day:

For 2 mg/L: $4.16/24 = 0.17$ gal/hr.

For 4 mg/L: $9.28/24 = 0.39$ gal/hr.

At Maximum Day Flow of 217,800 gallons/day:

For 2 mg/L: $2.91/24 = 0.12$ gal/hr.

For 4 mg/L: $5.82/24 = 0.24$ gal/hr.

Calculate Minimum Required CL2 Storage Volume needed at AADF and Max. Day Flow:

AADF permitted: 0.099 mgd x 8.34 lb/gal = 0.83

For 2 mg/L: 1.66 lbs/day CL2 solution.

For 4 mg/L: 3.32 lbs/day CL2 solution.

Using 12.5% solution @ AADF permitted:

For 2 mg/L: $(1.66/1.25) = 1.33$ gal/day.

For 4 mg/L: $(3.32/1.25) = 2.66$ gal/day.

For Maximum Day Flow: 0.2178 mgd x 8.34 lb/gal = 1.82

For 2 mg/L: 3.64 lbs/day CL2 solution.

For 4 mg/L: 7.28 lbs/day CL2 solution.

Using 12.5% solution @ Max. Day Flow:

For 2 mg/L: $3.64/1.25 = 2.91$ lbs/day CL2 solution.

For 4 mg/L: $7.28/1.25 = 5.82$ lbs/day CL2 solution.

Calculate 15 and 30-day Storage Requirement based on AADF permitted flow and Maximum Day Flow using only 4 mg/L:

15-day storage: AADF: $(2.66$ gal/day) x 15 days = 40 gallons used.

Max. Day: $(5.82$ x 15) = 87.3 gallons used.

30-day storage: AADF: $(2.66$ x 30 days) = 80 gallons used.

Max Day: $(5.82$ x 30) = 175 gallons used.

Proposed is 150-gallon storage with dual metering pumps (Pulsatron); 100% containment or more; and the solution will be under a shaded covering to prevent exposure to direct sunlight and dissipation of CL2. The stored volume could be reduced if usage is lower than anticipated and there are any difficulties with declining strength of the solution.

150 gallons of solution will provide from 25 (max day flow) to 56 days (AADF permitted flow) of storage.

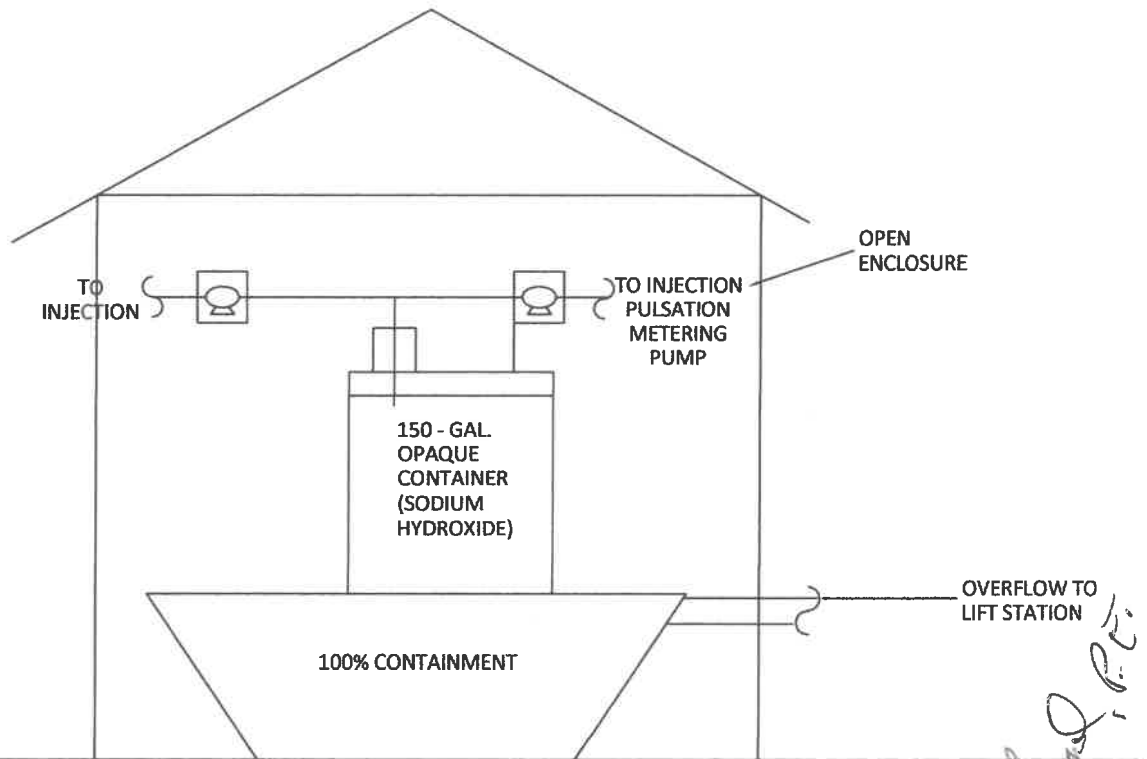
Note: Current Maximum AADF is 0.063 mgd. $(0.063$ mgd x 8.34 lbs/gal) = 0.53 .

For 4 mg/L: 0.53 x 4 mg/L = 2.12 lbs/day.

Using 12.5 % solution: For 4 mg/L: $2.12/1.25 = 1.70$ gal/day.

Calculated required storage; 30-days of use maximum: $(1.70$ gal/day) x 30 = 50 gals.

Handwritten signature: Raymond Cadenhead, PE
Handwritten number: #499499
Handwritten date: 1/13/18



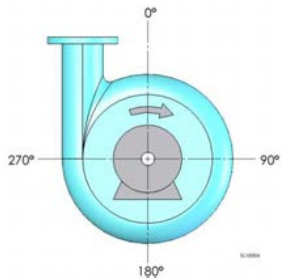
Jim Mark Cadwellhead, P.E.
 #49449
 1/13/18

CADENHEAD ENVIRONMENTAL ENGINEERING SERVICES INC.

DATE: 11/19/17
 SCALE: NONE
 REV.

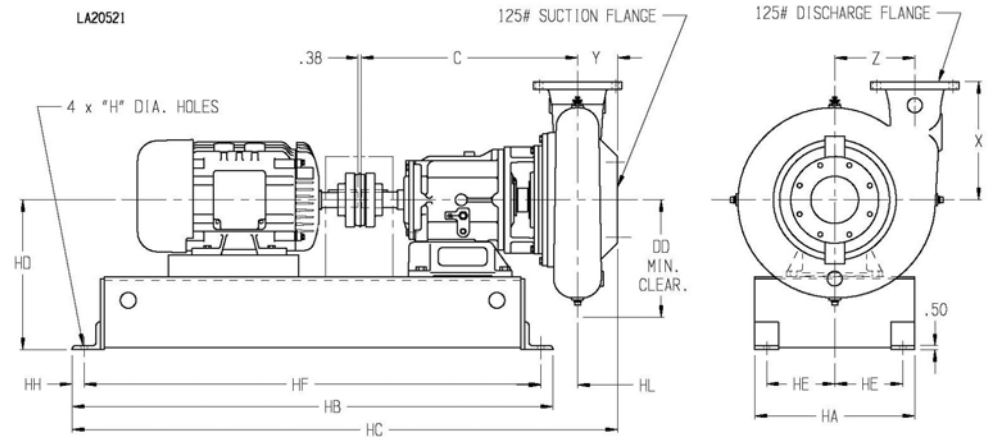
AQUARINA UTILITIES
 WWTF (FLA010352)

DRAWN BY: T.C.
 DRAWING NO. 003
 SODIUM HYDROXIDE CONTAINMENT AREA

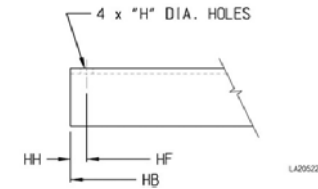


NOTES:

Discharge positions are viewed from the drive end.
 Standard increments of discharge position are shown in the chart below (DISCH INCR). Consult factory for other discharge positions.



- NOTES:**
1. Dimension include motors with "T" or "TS" shafts.
 2. This page does not apply if space coupling is used.
 3. Flange connection dimension can vary ± 3 mm.
 4. Do not use for construction unless certified.



Base variation for 256T motor frame and smaller

PUMP DIMENSIONS														
MODEL	FRAME	CONNECTION		DISCH. INCR.	C	DD	X	Y	Z	MOTOR FRAME	H	HC	HD	HL
		DISCH.	SUCT.											
4NNT	F16	4	4	45°	689	232	235	108	159	213T/256T	19	1461	343	184
										284T/286T	19	1715	483	121
4NHTA 4414T	F16	4	4	45°	673	287	279	121	235	213T/256T	19	1457	343	168
										284T/326T	19	1711	483	104
										364T/365T	19	1787	483	104
4514T	F16	4	5	45°	673	287	279	121	235	213T/256T	19	1457	343	168
										284T/326T	19	1711	483	104
										364T/365T	19	1787	483	104
6NNT 6NNTL	F16	6	6	45°	696	295	298	121	213	213T/256T	19	1481	343	192
										284T/326T	19	1735	483	128
										364T/365T	19	1811	483	128
6NHTA 6NHT 6NHHT	F16	6	6	45°	685	349	381	127	254	254T/256T	19	1475	343	154
										284T/326T	19	1729	483	116
										364T/365T	19	1805	483	116
										404T/405T	19	1932	495	116

BASE - F16 FRAME						
MOTOR FRAME	HA	HB	HE	HF	HH	BASE PRT. NO.
213T/215T	381	1194	155	1143	25	B4082
254T/256T	381	1194	155	1143	25	B5144
284T/286T	508	1524	216	1448	38	B4084
324T/326T	508	1524	216	1448	38	B4085
364T/365T	508	1600	216	1524	38	B5145
404T/405T	610	1727	267	1651	38	B5146



CORNELL PUMP COMPANY

SOLIDS HANDLING F16 HORIZONTAL FRAME MOUNTED PUMPS
 AND BASE WITH CYCLOSEAL AND TANGENTIAL VOLUTE

DIM2050-M

Pump Data Sheet - Cornell

Company: Aquarena RAS Pump Station
 Name: Woodard & Curran Engineers
 Date: 04/16/2021



Pump:		
Size:	4NNT	<u>Dimensions:</u>
Type:	Encl Solids Handling	Suction:
Synch Speed:	1200 rpm	Discharge:
Dia:	10.09 in	
Curve:	4NNT12	

Fluid:		
Name:	Water	
SG:	1	Vapor Pressure:
Density:	62.4 lb/ft ³	Atm Pressure:
Viscosity:	1.1 cP	Margin Ratio:
Temperature:	60 °F	1

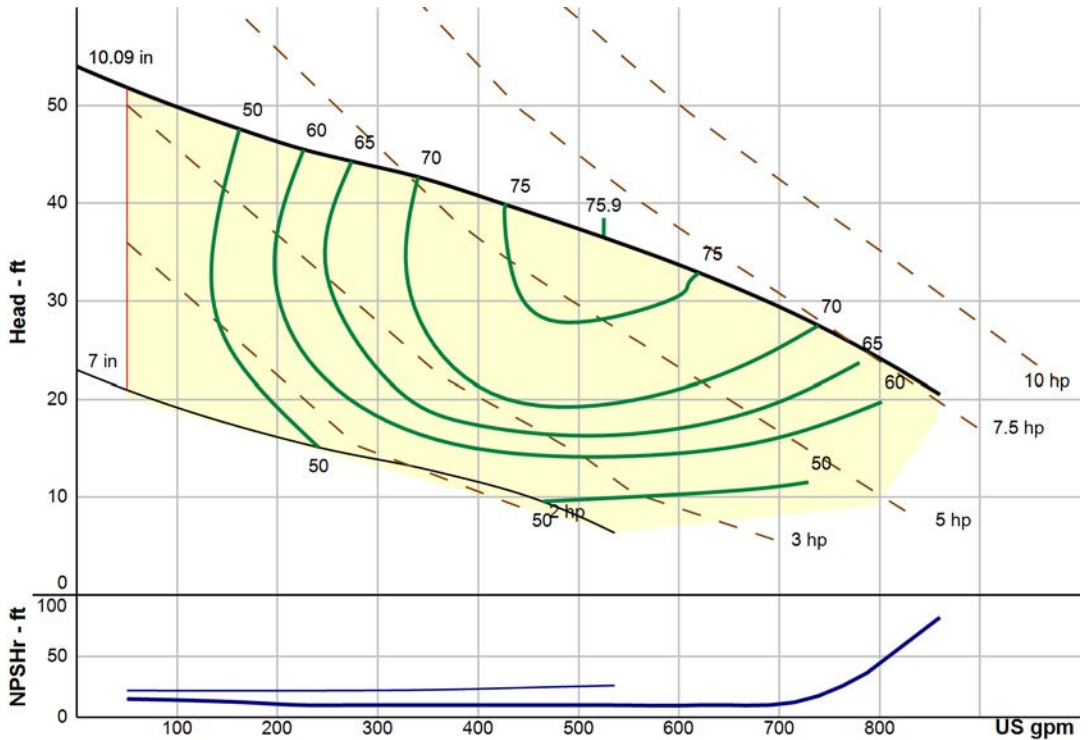
Search Criteria:			
Flow:	---	Near Miss:	---
Head:	---	Static Head:	0 ft

Pump Limits:		
Temperature:	250 °F	Sphere Size:
Wkg Pressure:	150 psi g	3 in

Motor:			
Standard:	NEMA	Size:	10 hp
Enclosure:	TEFC	Speed:	1200 rpm
Frame:	256T		
Sizing Criteria:	Max Power on Design Curve		

Pump Selection Warnings:
 None

--- Duty Point ---	
Flow:	525 US gpm
Head:	36.5 ft
Eff:	76%
Power:	6.38 hp
NPSHr:	10 ft
Speed:	1155 rpm
--- Design Curve ---	
Shutoff Head:	54 ft
Shutoff dP:	23.4 psi
Min Flow:	50 US gpm
BEP:	75.9% @ 525 US gpm
NOL Power:	7.61 hp @ 860 US gpm
--- Max Curve ---	
Max Power:	7.61 hp @ 860 US gpm



Min flow line represents the absolute lowest flow pump can operate. Consult with factory if operating below 50% of BEP flow

Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
826	1155	22.5	62	7.53	63.7
688	1155	29.8	72	7.13	14.3
550	1155	35.6	76	6.5	10
413	1155	40.3	74	5.66	10
275	1155	44.3	65	4.72	10

conditions apply payment is net thirty days after invoice based on accepted credit approval. This proposal is valid for 45 days from above date. Standard manufacture warranties apply to this equipment.

Once again thank you for the opportunity to offer Cornell Pump equipment for your consideration.

Very truly yours,
William R. Beach
R. C. Beach & Assoc., Inc.
Representing
Cornell

Ron Aceto-Cornell
Rick Reiber-RCB

A photograph of an industrial facility, likely a wastewater treatment plant. A woman wearing a yellow hard hat, safety glasses, and a dark business suit stands on a metal walkway on the left, holding a clipboard and looking towards the camera. The background shows large blue industrial tanks with various pipes, valves, and electrical equipment. A white line-art diagram is overlaid on the right side of the tanks, showing a cross-section of the internal structure with an arrow pointing to the right.

SOUTH BEACHES WWTF MELBOURNE BEACH FL

Preliminary Proposal for Design,
Supply and Inspection of the
Wastewater Treatment System
Upgraded with

infini-D
ZERO-DOWNTIME
CLOTH DISK FILTER

April 30th, 2021

technologies for cleaner water

323 N. Spokane St. Suite 200 • Post Falls ID • 83854
888-710-2583 • www.nexom.com

Project Overview

Nexom is pleased to propose an infini- D™ Zero-Downtime Disk Filter system for South Beaches WWTF in Melbourne Beach, Florida. The proposed system is designed for continuous discharge and would consist of the following processes and technologies:

- infini-D™ Zero-Downtime Cloth Disk Filter system for Total Suspended Solids (TSS) polishing.



System Design Parameters

Preliminary design loads, flow, and effluent objectives are presented in the following table:

	Units	Filter Influent	Filter Effluent
Design Flow (ADF)	MGD	0.1	
Peak Day Flow (PDF)	MGD	0.3	
Peak Hour Flow (PHF)	MGD	0.3	
TSS	mg/L	< 20	< 5
Turbidity	NTU	< 10	< 2

Disk filter parameters are presented in the following table:

Configuration	Units	Design Parameter
Filter model		2-30
Filter headloss	in	24
Total number of filters		1
¹ Configuration, duty + standby		1x100% + 0
Area per filter	ft ²	60
Hydraulic loading	gpm/ft ²	< 3.6
Surface solids loading rate (SSLR)	lb/ft ² d	< 0.9


1. A standby filter is quoted as an option.



Treatment Processes

infini-D™ Zero-Downtime Cloth Disk Filter

The infini-D™ Cloth Disk Filter successfully reduces TSS and filterable contaminants in a small footprint with a low lifecycle cost. Pile cloth disk filters can be installed into purpose-built or existing steel or concrete tanks offering high effluent quality from easy-to-maintain disks.

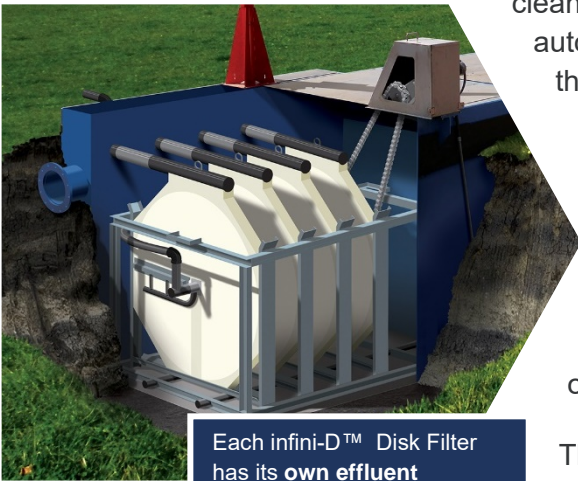


The infini-D™ Disk Filter utilizes an outside-in flow pattern and a stationary disk to minimize the mechanical requirements of the system.

As the water passes from the tank through the cloth filter, it enters the core of each disk module. The water exits each disk through an effluent port located on top of the disk. All the effluents are then collected in the discharge launderer. By having a separate effluent port for each disk, each disk effluent may be isolated and can be individually monitored, maintained, and/or replaced. Filtration can continue as normal with one or more disks isolated. Removal of a disk and replacement of the cloth media can be accomplished in less than 1 hour, minimizing downtime. All disks must be in place to allow backwashing.

Operating Narrative

During the normal filtration process, all filter disks are stationary. As the solids accumulate on the outer surface of the cloth media, a thin filter cake forms, raising headloss through the media. Tank level gradually increases to a set point elevation in the tank for backwash initiation.



Each infini-D™ Disk Filter has its **own effluent discharge pipe** to allow the operator to monitor effluent quality produced by individual cartridges. Cartridges can be removed, inspected and replaced without stopping filtration.

The backwash cleaning system energizes in a set sequence of cleaning operations. Electronically controlled backwash valves are automated to direct suction from a sequence of disks, minimizing the peak backwash flow and required power consumption. Influent will continue to be processed during the backwash cleaning cycle, allowing for continuous uninterrupted filtration. The vacuum head rotates across the disk surface driven by a chain, sprocket, and a locally mounted gear motor. The cleaning cycle is also set to run on a timed basis.

The backwash cleaning cycle is controlled by a PLC-based operation system furnished with the filter equipment.

The filter basin includes an overflow weir. A high-level switch is positioned to provide an alarm at or near overflow conditions.

All components of the system are constructed from corrosion-resistant materials that have been designed for continuous operation. The polyester microfiber filter cloth is removable and replaceable in the field.

The Infini-D Disk Filter is designed for modular expansion as treatment conditions require. The compact filter unit has minimal external support and piping requirements. Additional filter racks can be installed into the same tank without major modifications to the tank, and without interfering with the existing equipment. This means minimal down time during expansion. Backwash pumps can be shared between existing and expansion filter modules, reducing capital costs.



Operation & Maintenance

The anticipated operation and maintenance costs for the infini-D™ Disk Filter system are presented in the following table:

Annual Average Conditions	Quantity	Motor Power		Monthly Cost	Unit Cost	Annual Cost*
		bhp	kW			
Duty backwash pumps	1	2	1.5	\$1	-	\$10
Duty vacuum arm	1	1	0.7	\$0	-	\$5
Media elements	2	-	-	-	\$1,200	\$343
Swivel joints	1	-	-	-	\$3,500	\$500
Total O&M						\$857

* Electrical Rate (estimated by Nexom): **0.08** \$/kW-h

The anticipated average duty run times for backwash motors are:

Idle time (min):	120
Cycle length (min):	1
Duty factor:	~ 1%
Backwash:	< 1%

The disk filter system will require one operator for approximately 15 minutes per day for routine inspection & maintenance.



Budgetary Capital Cost

Included in the wastewater treatment system capital cost are:

GENERAL

- Nexom system process design, CAD drawings and specifications, and O&M manuals
- Equipment inspection, start-up, commissioning, and training
 - Two (2) trips including up to six (6) days onsite.

EQUIPMENT SCOPE

- One (1) infini-D™ cloth disk filter unit, model 2-30
 - Two (2) model 30 disks
 - Two (2) cloth media elements
 - Stainless frame and center tube assemblies
 - Backwash arm assemblies, including vacuum heads and drive motor
 - Sludge removal system
 - Integrated stainless steel filter tanks
- One (1) backwash pump
- One (1) control panel with Allen Bradley PLC, HMI, VFDs and starters
- One (1) lot of instrumentation
 - One (1) level transmitter
 - Two (2) level switches.

TWO-YEAR SPARES

- Two (2) Cloth media elements.

Budgetary Cost for the Equipment Scope:

\$ 166,500 USD
Ex Works

The quote being provided will be in effect only for a period of 60 days. Should the company be awarded a purchase order during that 60-day period, it is understood that shipment of the product will be allowed within a period of 180 days from the date of the purchase order. Should the goods not be required to be delivered until after that time horizon, the company reserves the right to adjust pricing to reflect inflationary changes incurred and expected until the shipment date is reached.

Items Specifically Not Included:

- Material offloading and on-site storage
- Civil works including electrical hookup or electrical work
- Installation, interconnecting process piping, valves wiring/control wiring of all supplied components and equipment
- Maintenance crane.

Shipping FOB Jobsite

\$ 7,850 USD

Actual freight at time of order will be billed at cost +10%.

Optional Equipment Scope:

- One (1) duty standby model 2-30 filter
- One (1) backwash pump
- One (1) control panel with Allen Bradley PLC, HMI, VFDs and starters
- One (1) lot of instrumentation
- One (1) access stairs, platform, railing and kickplates
- One (1) filter cover for exclusion of light and debris.

Duty Standby Filter \$ 153,400 USD
Platform and Covers \$ 12,500 USD



Questions or Comments?

Any questions or comments can be directed to:



Nexom

Info@nexom.com

888-710-2583

323 N. Spokane St. Suite 200, Post Falls ID 83854

www.nexom.com



Documentation

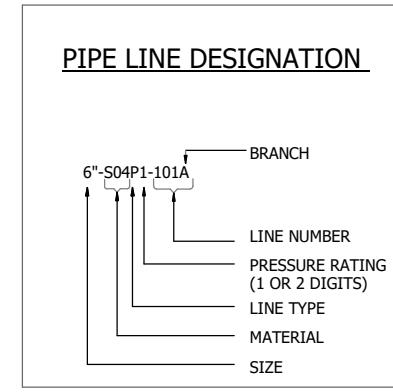
- Infini-D P&ID
- Infini-D GA Drawing
- Brochures

PIPING SYMBOLS

	PRIMARY PROCESS FLOW PATH
	SECONDARY FLOW PATH
	HEAT TRACE
	INSULATED PIPELINE
	INFLUENT
	EFFLUENT
	REJECT
	SYSTEM EXTENTS

INSTRUMENT LINE SYMBOLS

	PNEUMATIC SIGNAL
	CONTROL LOGIC
	ELECTRIC SIGNAL
	UNDEFINED SIGNAL
	INTERNAL SYSTEM LINK SOFTWARE OR DATA
	CAPILLARY TUBE



VALVE ACTUATOR SYMBOLS

(NO SYMBOL) = MANUAL FOR ON/OFF SERVICE	T HANDWHEEL (MANUAL OVERRIDE)	 ELECTRIC
 SOLENOID (WITHOUT)	 DIAPHRAGM AIR TO AIR (WITHOUT)	 DIAPHRAGM & SPRING TO OPEN (WITHOUT)
 SOLENOID (WITH) =MANUAL OVERRIDE	 DIAPHRAGM AIR TO AIR (WITH)=POSITIONER	 DIAPHRAGM & SPRING TO CLOSE (WITH)=POSITIONER
 DOUBLE-ACTING CYLINDER (WITHOUT)	 CYLINDER & SPRING TO OPEN	
 DOUBLE-ACTING CYLINDER (WITH)=POSITIONER	 CYLINDER & SPRING TO CLOSE	

SYMBOLS FOR VALVE ACTION IN THE EVENT OF ACTUATOR POWER FAILURE

FO = FAIL OPEN
 FC = FAIL CLOSED
 FL = FAIL LOCKED
 FI = FAIL INDETERMINATE (LAST POSITION)
 F = USED WITH 3 WAY & 4 WAY VALVE- ARROWS SHOW PATHS OPEN TO FLOW ON POWER FAILURE.

SYMBOL LOCATED BY VALVE- USED ONLY WHERE NECESSARY TO INCREASE UNDERSTANDING OF THE SYSTEM.

MATERIAL DESIGNATION

BRZ - BRASS/BRONZE
 CIR - CAST IRON
 CST - CARBON STEEL
 CPR - COPPER
 FRP - FIBERGLASS
 GCS - GALVANIZED CARBON STEEL
 LCS - LINED CARBON STEEL
 TEF - TEFLON
 PU - POLYURETHANE
 PET - POLYETHYLENE
 POP - POLYPROPYLENE
 PVC - POLYVINYL CHLORIDE
 RUB - RUBBER
 S04 - 304 STAINLESS STEEL
 S4L - 304L STAINLESS STEEL
 S16 - 316 STAINLESS STEEL
 S6L - 316L STAINLESS STEEL
 VIT - VITON
 CVC - CHLORINATED POLYVINYL CHLORIDE

SYMBOLS FOR SELF-ACTUATED REGULATORS

DIFFERENTIAL PRESSURE REDUCING REGULATOR - SHOWN WITH INTERNAL AND EXTERNAL PRESSURE TAPS.		

HEAT EXCHANGER SYMBOLS

PRIME MOVERS FOR MOTOR DRIVEN EQUIPMENT

 ELECTRIC MOTOR	 PNEUMATIC ROTARY MOTOR
--------------------	----------------------------

MOTOR DRIVEN EQUIPMENT

TYPE

D = DUCT P = PIPE
 H = HOSE T = TUBE

GENERAL NOTES:

1. FOR INSTRUMENTATION SYMBOLS AND LIST OF RELAY FUNCTIONS SEE NEXOM DRAWING NO. PID-B.
 THIS DRAWING IS PROVIDED FOR INFORMATION ONLY.

PIPING ACCESSORIES & DETAILS

VALVE SYMBOLS

TANK AND ACCESSORIES



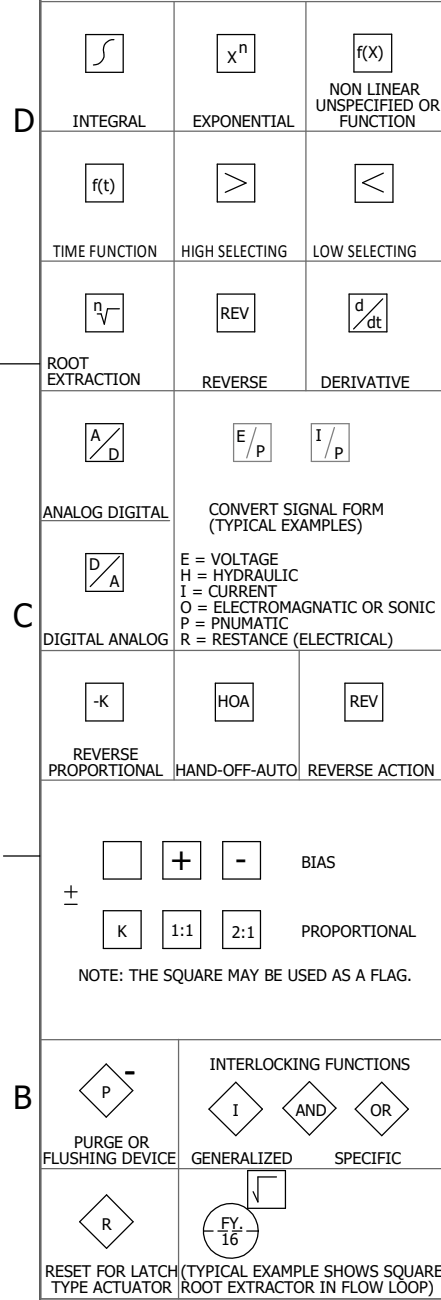
UNLESS OTHERWISE SPECIFIED

FRACTIONAL	± 1/16"
ONE DECIMAL	± .125"
TWO DECIMAL	± .0625"
ANGULAR	± 2.0°

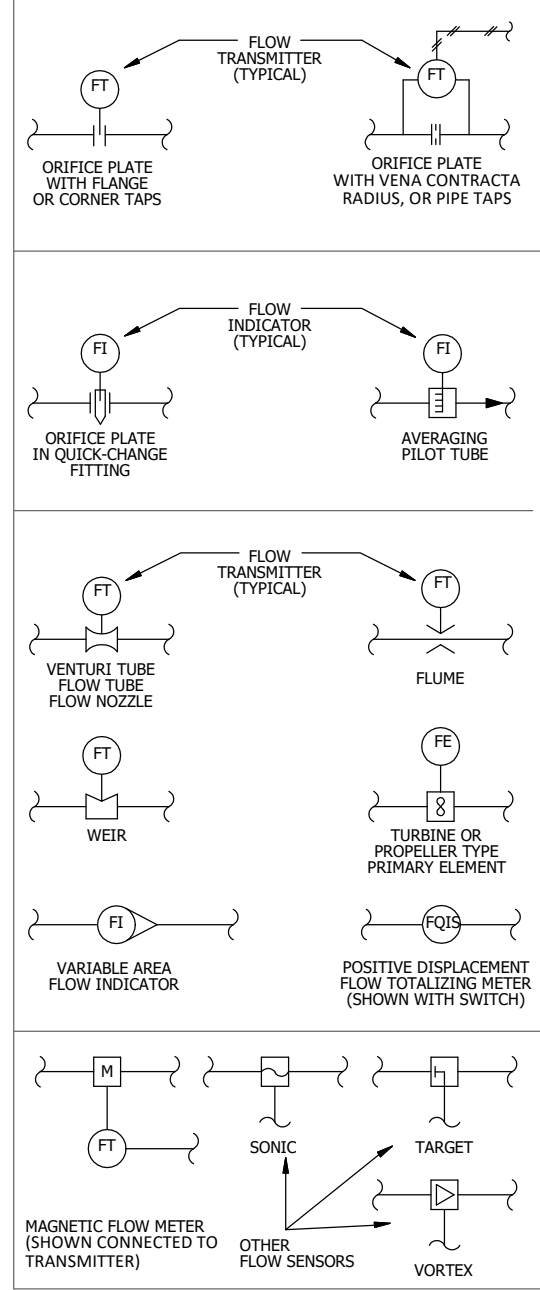
LOCATION: Custom Sales	SCALE 1:5	
DESCRIPTION: Piping & Instrumentation Diagram		
NUMBER:	REV. 0	PAGE 1/3

TEMPLATE LAST MODIFIED: 08.05.19

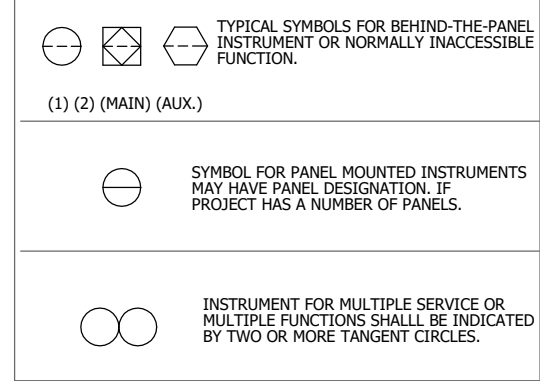
MISCELLANEOUS SYMBOLS



SYMBOLS FOR FLOW MEASUREMENT



SYMBOLS FOR LOGIC CONTROL



INSTRUMENT SYMBOLS

	PRIMARY CONTROL PANEL NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY PANEL OR RACK NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS			
SHARED DISPLAY SHARED CONTROL			
COMPUTER FUNCTION INCLUDING DISTRIB. CNTL. SYS.			
PROGRAMMABLE LOGIC CONTROLLER FUNCTION			

INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER	SUCCEEDING LETTERS	
	MEASURE OR INIATING VARIABLE	MODIFIER
A = ANALYSIS		
B = BURNER, COMBUSTION		
C = USER'S CHOICE		
D = USER'S CHOICE	DIFFERENTIAL	
E = VOLTAGE		
F = FLOW RATE	RATIO (FRACTION)	
G = USER'S CHOICE		
H = HAND		
I = CURRENT (ELECTRICAL)		
J = POWER	SCAN	
K = TIME, TIME SCHEDULE	TIME RATE OF CHANGE	
L = LEVEL		
M = USER'S CHOICE	MOMENTARY	
N = USER'S CHOICE		
O = USER'S CHOICE		
P = PRESSURE, VACUUM		
Q = QUANTITY	INTERGRATE, TOTALIZE	
R = RADIATION		
S = SPEED, FREQUENCY	SAFETY	
T = TEMPERATURE		
U = MULTIVARIABLE		
V = VIBRATION, MECH. ANALYSIS		
W = WEIGHT, FORCE		
X = UNCLASSIFIED	X AXIS	
Y = EVENT, STATE OR PRESENCE	Y AXIS	
Z = POSITION, DIMENSION	Z AXIS	

LETTER	SUCCEEDING LETTERS		
	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ALARM		
B	USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C		CONTROL	
D			
E	SENSOR (PRIMARY ELEMENT)		
F			
G	GLASS, VIEWING DEVICE		
H			HIGH
I	INDICATE		
J			
K		CONTROL STATION	
L	LIGHT		
M			MIDDLE, INTERMEDIATE
N	USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	ORIFICE, RESTRICTION		
P	POINT (TEST) CONNECTION		
Q			
R	RECORD		
S		SWITCH	
T		TRANSMIT	
U	MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V		VALVE, DAMPER, LOUVER	
W	WELL		
X	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y		RELAY, COMPUTE, CONVERT	
Z		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTES:

- ANY FIRST LETTER COMBINED WITH MODIFIER REPRESENTS A NEW AND SEPARATE MEASURED VARIABLE. EXAMPLES: PD = DIFFERENTIAL PRESSURE FQ = TOTALIZED OR INTEGRATED FLOW. EXCEPTION IS THE MODIFIER "J" FOR MULTIPOINT SCANNING.
- FOR ANALYSIS NOT IDENTIFIED BY A SPECIFIC LETTER IN THE TABLE, USE THE LETTER "A" NEAR THE INSTRUMENT SYMBOL, SPECIFY THE NATURE OF THE ANALYSIS. EXAMPLE: PH
- MEANING OF A "USER CHOICE" LETTER SHALL BE CONSISTENT THROUGHOUT A PROJECT AND SHALL BE SPECIFIED IN THE DRAWING LEGEND.
- UNCLASSIFIED LETTERS MAY HAVE A FEW DIFFERENT MEANINGS ON A PROJECT, THE MEANING SHALL BE SPECIFIED NEAR EACH INSTRUMENT SYMBOL USING THE UNCLASSIFIED LETTER.
- THE MODIFIER "SCAN" APPLIES TO MULTIPOINT PRINTING INSTRUMENTS, SUCH AS CJS (MULTIPOINT CONDUCTIVITY RECORDER WITH ALARM SWITCHES).

GENERAL NOTES:

- FOR MECHANICAL SYMBOLS AND ADDITIONAL NOTES, SEE NEXOM DRAWING NO. PID-A. THIS DRAWING IS PROVIDED FOR INFORMATION ONLY.



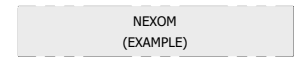
UNLESS OTHERWISE SPECIFIED

TOLERANCES:

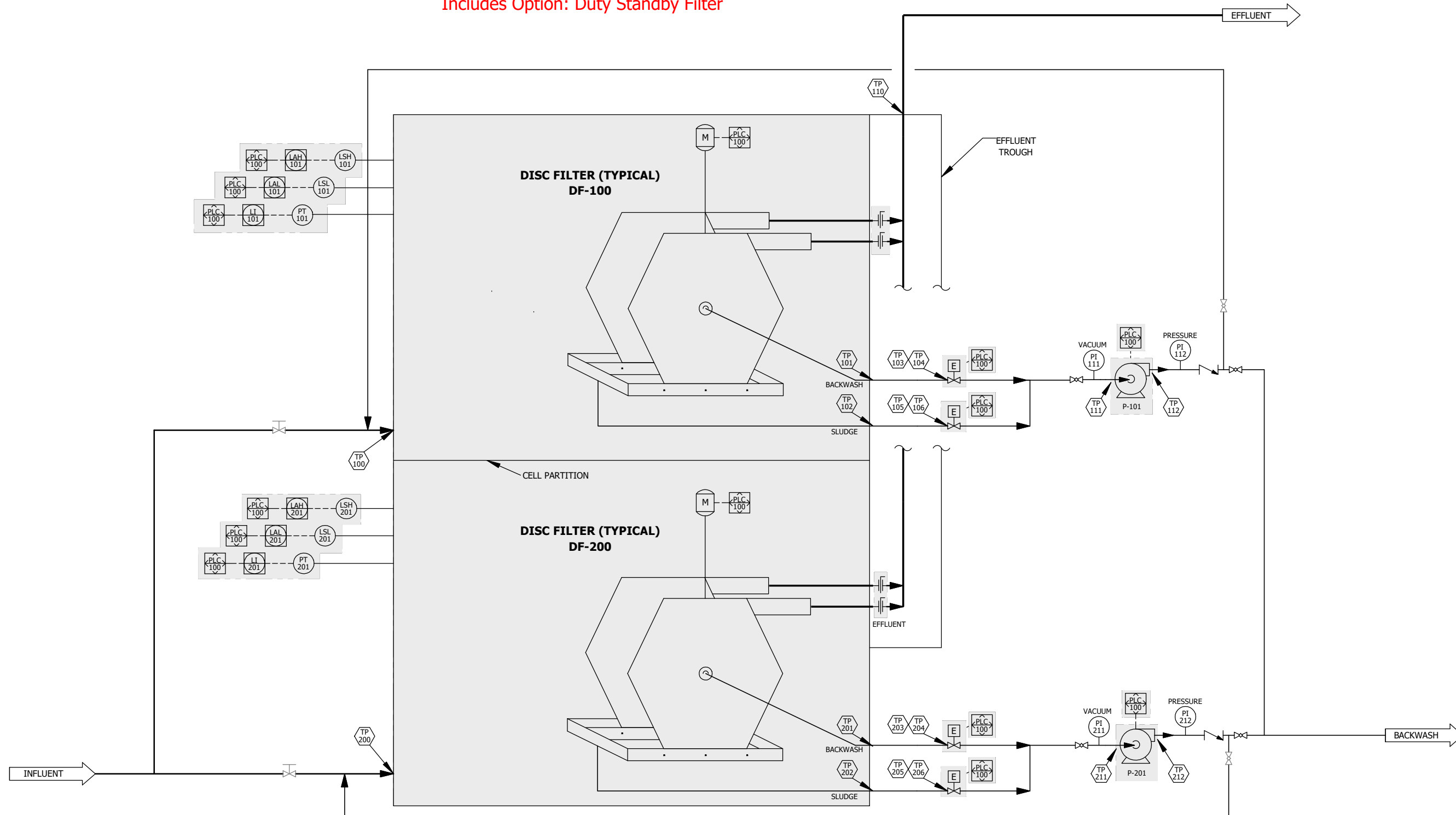
FRACTIONAL	± 1/16"
ONE DECIMAL	± .125"
TWO DECIMAL	± .0625"
ANGULAR	± 2.0°

LOCATION: Custom Sales	SCALE 1:5
DESCRIPTION: Piping & Instrumentation Diagram	
NUMBER:	REV. 0
	PAGE 2/3

NOTES:
1. SHADED AREAS ARE IN NEXOM'S SCOPE OF SUPPLY



Includes Option: Duty Standby Filter



TERMINAL POINT TABLE	
TP-100	8" ANSI FF
TP-200	8" ANSI FF
TP-101	4" ANSI FF
TP-201	4" ANSI FF
TP-102	4" ANSI FF
TP-202	4" ANSI FF
TP-103	3" SKT/NPT
TP-203	3" SKT/NPT
TP-104	3" SKT/NPT
TP-204	3" SKT/NPT
TP-105	3" SKT/NPT
TP-205	3" SKT/NPT
TP-106	3" SKT/NPT
TP-206	3" SKT/NPT
TP-110	12" ANSI FF
TP-111	2" FNPT
TP-112	2" FNPT
TP-211	2" FNPT
TP-212	2" FNPT



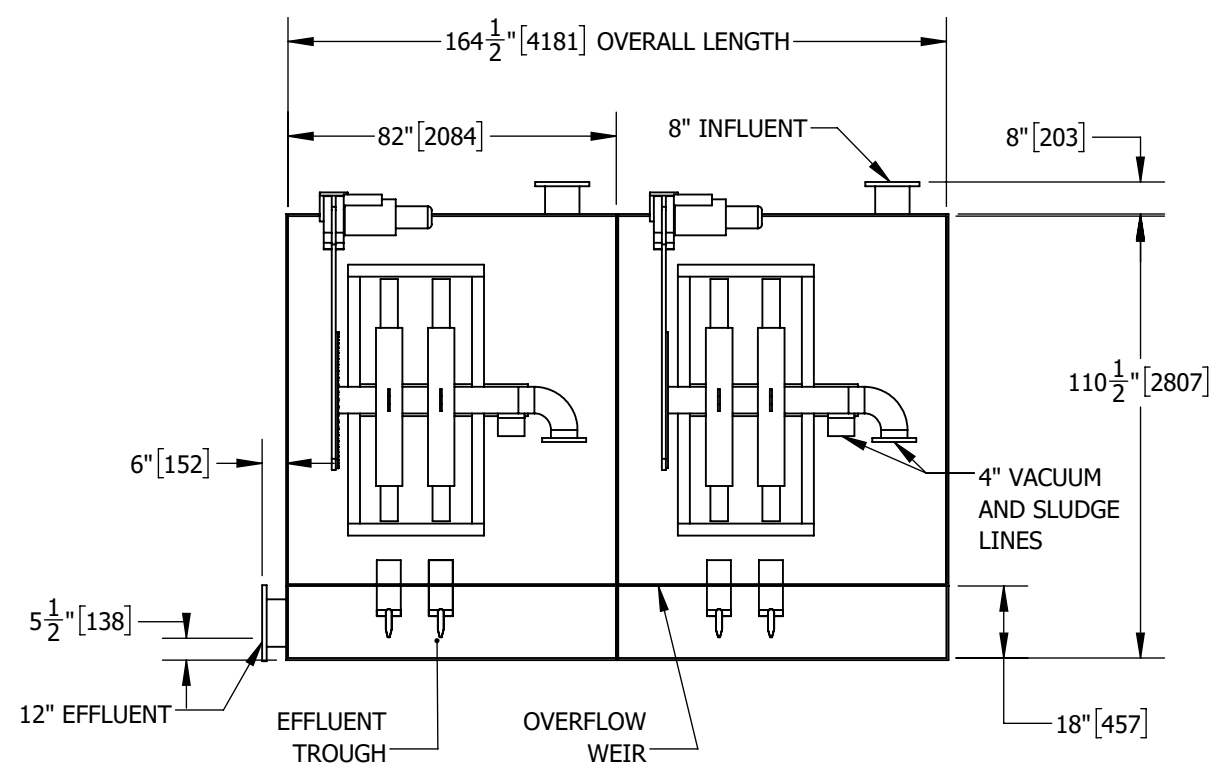
NEXOM CONFIDENTIALITY
ALL INFORMATION CONTAINED ON THIS DOCUMENT IS THE PROPERTY OF NEXOM, INC. (AND/OR ITS AFFILIATES). THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO NEXOM AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY SUBMITTED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED, OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF NEXOM. NEXOM ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN FOR ANOTHER PROJECT, OR IN A MANNER THAT DOES NOT RELATE TO THE FITNESS OR PURPOSE OF THIS DOCUMENT. IN NO EVENT SHALL THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF NEXOM. ALL PATENT RIGHTS ARE RESERVED. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ± 1/16"
ONE DECIMAL ± .125"
TWO DECIMAL ± .0625"
ANGULAR ± 2.0°
THIRD ANGLE PROJECTION

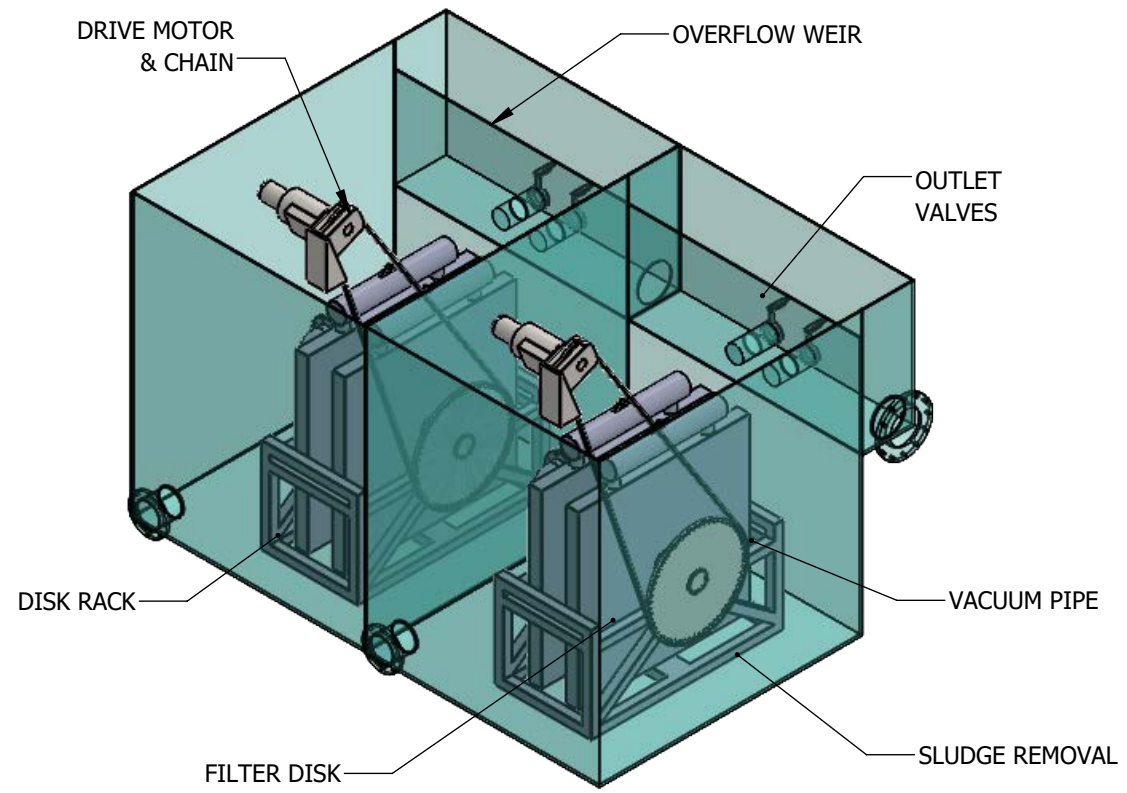
LOCATION: Custom Sales		SCALE 1:5	
DESCRIPTION: Piping & Instrumentation Diagram			
AUTH.	LPope, 1/21/21	CHKD.	-,-
NUMBER:		REV. 0	PAGE 3/3

TEMPLATE LAST MODIFIED: 08.05.19

D

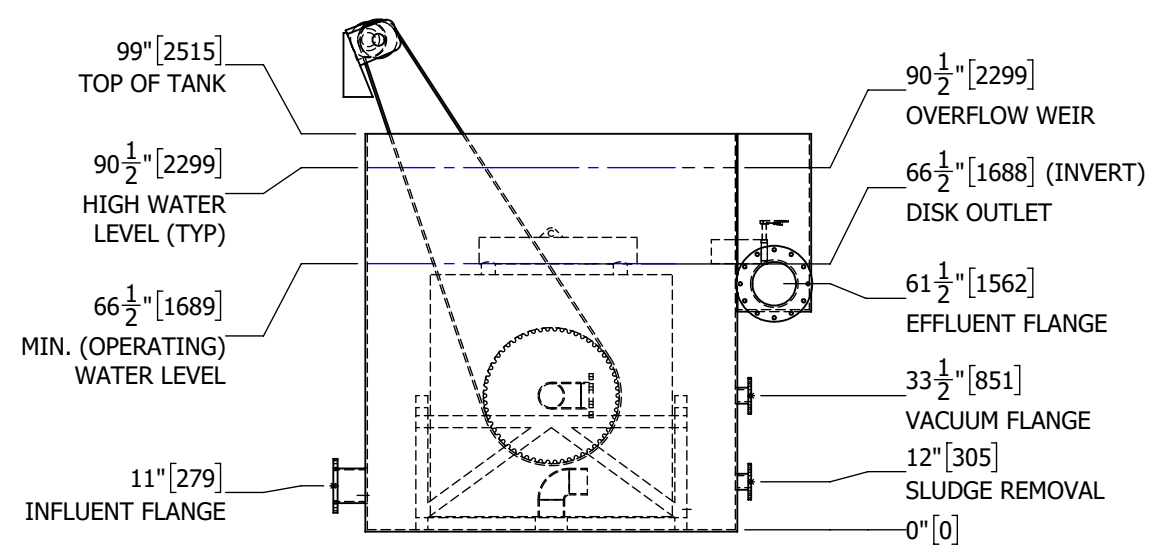
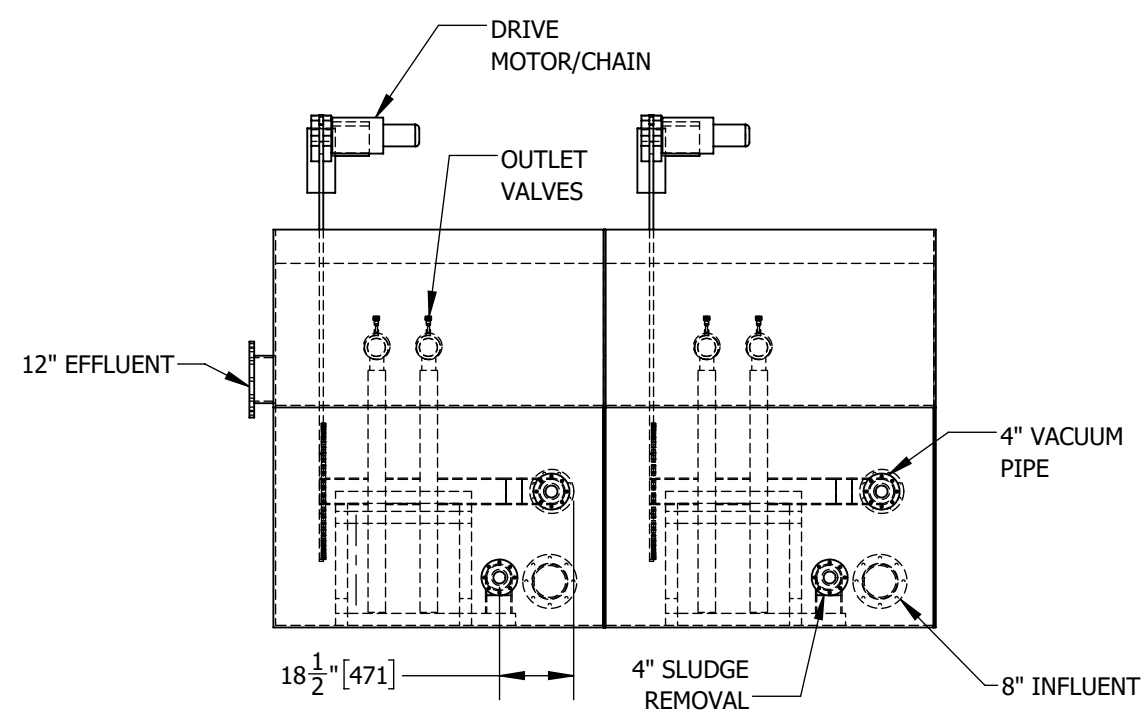


Includes Option: Duty Standby Filter



- NOTES:
- THIS DRAWING IS FOR GENERAL ARRANGEMENT ONLY.
 - FLANGES ARE PRELIMINARY. LOCATION CHANGES MUST BE APPROVED BY NEXOM ENGINEERING.
 - TIE DOWNS AND LIFTING LUGS NOT SHOWN.
 - FILTER ACCESS NOT SHOWN.
 - INDIVIDUAL DISK DRY WEIGHT = 360 LBS.
 - OVERALL DRY WEIGHT = 3,400 LBS
 - OVERALL OPERATING WEIGHT = 52,700 LBS.
 - OVERHEAD LIFTING REQUIRED FOR REMOVAL AND MAINTENANCE OF FILTER DISKS.
 - MINIMUM HEIGHT REQUIRED ABOVE TANK = 72 INCHES
 - MATERIALS OF CONSTRUCTION:
 - TANK - CARBON STEEL (COATED) - STAINLESS STEEL OPTIONAL
 - RACK/DISKS - STAINLESS STEEL

B



A



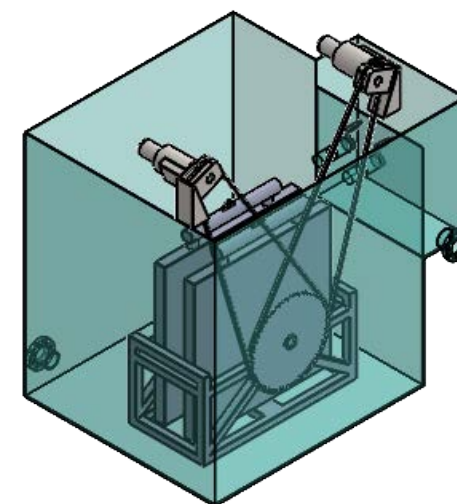
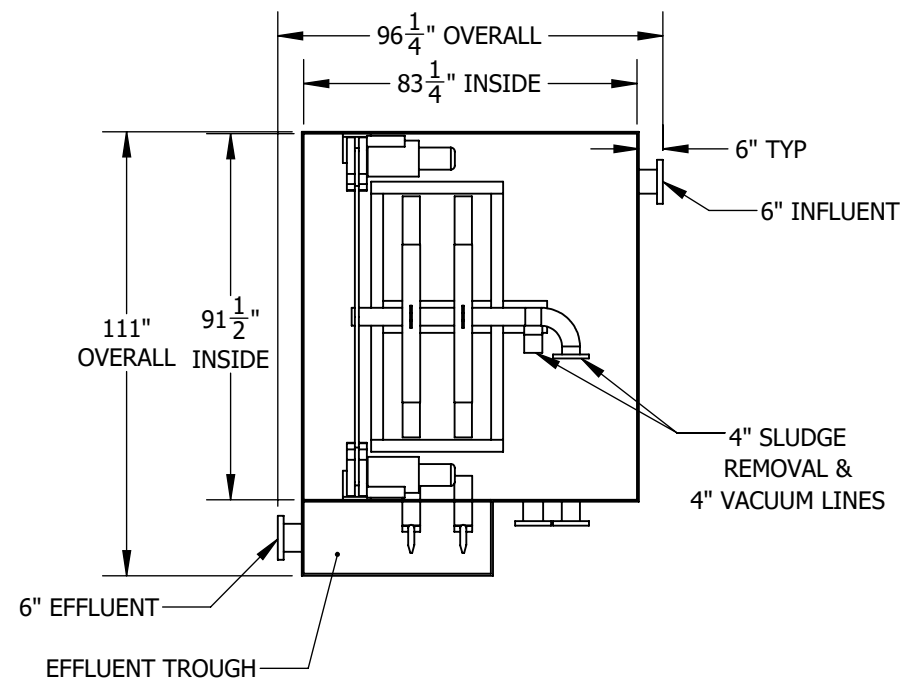
NEXOM CONFIDENTIALITY
 ALL INFORMATION CONTAINED ON THIS DOCUMENT IS THE PROPERTY OF NEXOM, INC. (AND/OR ITS AFFILIATES). THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO NEXOM AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY SUBMITTED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED, OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF NEXOM. NEXOM ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN FOR ANOTHER PROJECT, OR IN A MANNER THAT DOES NOT RELATE TO THE FITNESS OR PURPOSE OF THIS DOCUMENT. IN NO EVENT SHALL THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF NEXOM. ALL PATENT RIGHTS ARE RESERVED. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL ± 1/16"
 ONE DECIMAL ± .125"
 TWO DECIMAL ± .0625"
 ANGULAR ± 2.0°
 THIRD ANGLE PROJECTION

LOCATION: Custom Sales		SCALE 1:48	
DESCRIPTION: Custom General Arrangement Drawing			
AUTH.	LPope, 1/21/21	CHKD.	KJennings,
NUMBER:		REV. 0	PAGE 1/1

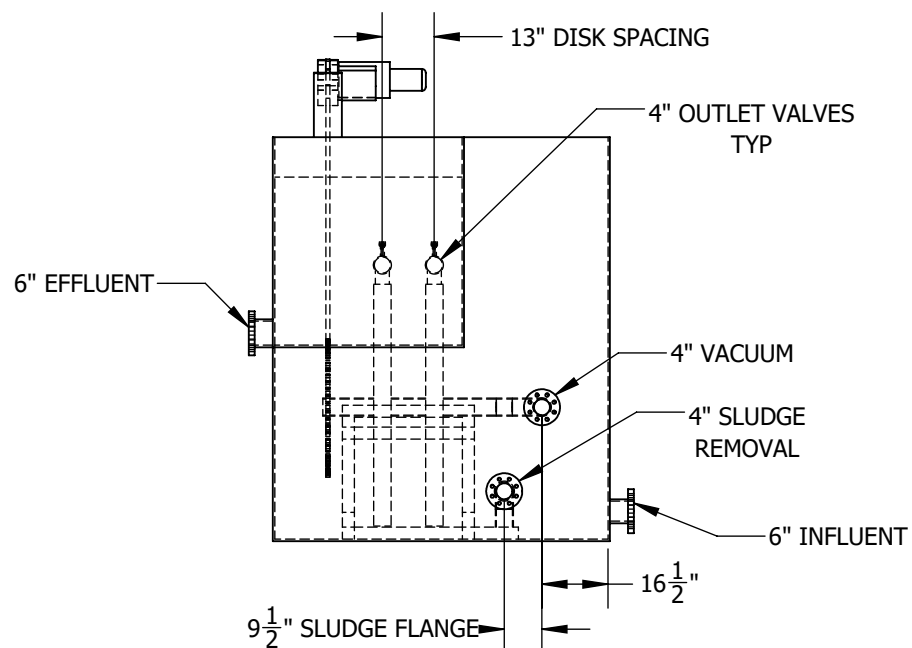
NOTES:

1. THIS DRAWING IS FOR GENERAL ARRANGEMENT ONLY.
2. FLANGES ARE PRELIMINARY. LOCATION CHANGES MUST BE APPROVED BY NEXOM ENGINEERING.
3. TIE DOWNS AND LIFTING LUGS NOT SHOWN.
4. FILTER ACCESS NOT SHOWN.
5. ESTIMATED WEIGHTS:
 - INDIVIDUAL DISK WEIGHT = 400 LBS
 - OVERALL DRY WEIGHT = 7,000 LBS
 - OVERALL OPERATING WEIGHT = 32,000 LBS
6. OVERHEAD LIFTING REQUIRED FOR REMOVAL AND MAINTENANCE OF FILTER DISKS.
 - MINIMUM HEIGHT REQUIRED ABOVE TANK = 108"
7. MATERIALS OF CONSTRUCTION:
 - TANK - CARBON STEEL (COATED) - STAINLESS STEEL OPTIONAL
 - RACK/DISKS - STAINLESS STEEL

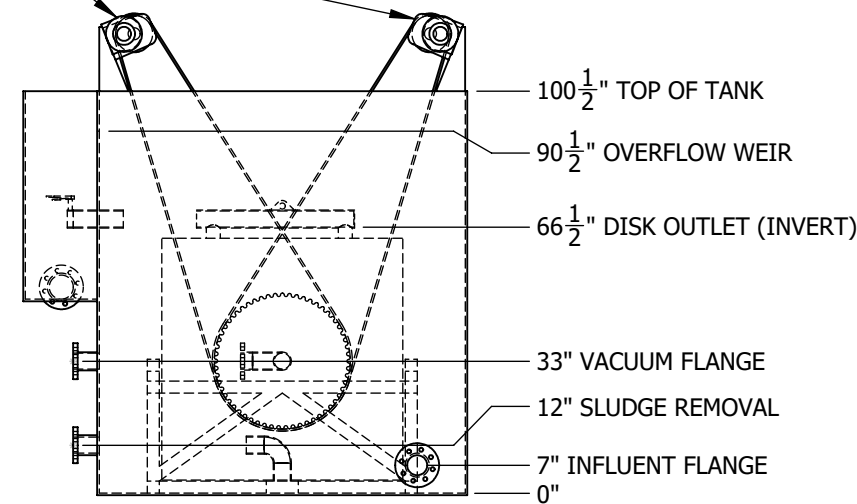


ISOMETRIC VIEW
SCALE 1:60

Single Tank Only



DRIVE
MOTOR/CHAIN
(CAN BE PLACED AT EITHER POSITION)



REVISIONS			
REV.	DESCRIPTION	ENGINEER	DATE
01	INITIAL RELEASE	MS	2021-03-11

NEXOM CONFIDENTIALITY
 ALL INFORMATION CONTAINED ON THIS DOCUMENT IS THE PROPERTY OF NEXOM, INC. (AND/OR ITS AFFILIATES). THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO NEXOM AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY SUBMITTED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED, OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF NEXOM. NEXOM ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN FOR ANOTHER PROJECT, OR IN A MANNER THAT DOES NOT RELATE TO THE FITNESS OR PURPOSE OF THIS DOCUMENT. IN NO EVENT SHALL THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF NEXOM. ALL PATENT RIGHTS ARE RESERVED. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL ± 1/16"
 ONE DECIMAL ± .125"
 TWO DECIMAL ± .0625"
 ANGULAR ± 2.0°
 THIRD ANGLE PROJECTION

LOCATION: Sales		SCALE 1:48	
DESCRIPTION: General Arrangement Drawing, 2-30T			
AUTH.	MS, 2021-03-11	CHKD.	N/A, 2021-03-11
NUMBER: 2-30T		REV. 01	PAGE 1/2



Criteria	infini-D™	
Effluent Quality		
Turbidity	<2 NTU	●
Total Suspended Solids (TSS)	<5 mg/L	●
Advantages		
Remove phosphorus as well as solids		●
Title 22-approved filter cloth		●
Maintain individual disks while filter is online		●
Inspect performance of individual disks		●
Applications		
Phosphorus removal		●
Approved water reuse		●
TSS reduction		●
Tertiary filtration		●
Post-lagoon filtration		●
CSO treatment		●

Problem

Your plant needs to meet reuse requirements and/or phosphorus limits. You want a proven solution that will meet your requirements without a substantial increase in footprint or O&M, and the idea of overpurchasing equipment to accommodate maintenance downtime doesn't sit well with you either.

The Nexom Answer

The **infini-D™ Zero-Downtime Cloth Disk Filter** removes TSS, is approved for Title-22 reuse, and can be configured to remove phosphorus, all in the simplest O&M filter available. Here's why:

- **Removes TSS** to <5 mg/L
- **Removes phosphorus**, meeting limits as low as 0.3 mg/L
- **Easy and cost-effective to operate:** Individual disks' effluent can be isolated, evaluated and, if necessary, disks can be maintained while filter remains online.
- **Uses pile cloth** that filters without the risk of long-term fouling.

How infini-D™ works

In the **infini-D cloth disk filter**, water enters the tank and passes through the cloth filter media, on the outside of which solids collect. The disks don't rotate: to eliminate rotating seals and effluent contamination in the case of a seal failure, only the vacuum head rotates around the disk during the automatic backwash cycle.

Designed to be better

The **infini-D cloth filter** uses individual effluent ports for each disk to enable operators to monitor individual disks' operation and isolate performance metrics. If a disk cloth needs to be replaced, these effluent ports enable each disk cartridge to be removed without stopping filtration.



technologies for cleaner water

5 Burks Way · Winnipeg MB · R2J 3R8
888-426-8180 • www.nexom.com

infini-D helps Camp Verde keep ball diamonds green through water reuse

Located 90 miles north of Phoenix in arid Arizona, Camp Verde was exploring plans in 2017 for a new outdoor sports complex including six baseball fields. The town's engineers decided on irrigation using reuse wastewater, which would mean the 24-hour average turbidity criterion of <2 NTUs and must not exceed 5 NTUs at any time. After exploring various options, they chose Nexom's infini-D™ Cloth Disk Filter for tertiary treatment for achieving a Class A+ target.

Construction started in October 2018. Engineers and staff at the WWTP in Camp Verde did most of the installation work, with guidance and input from the operations team at Nexom. The Infini-D system was commissioned in July 2019. Since then, they have successfully treated their wastewater to a Class A+ level, enabling them to begin irrigating the nearby baseball fields as planned.

Sundridge meet Phosphorus limit with post-lagoon infini-D filter

The infini-D cloth disk filter is also the signature component in the system which Nexom designed to meet Sundridge, Ontario's low Phosphorus limits.

Targeting an effluent phosphorus level of 0.27 mg/L, the engineers chose to place the disk filters after the lagoons and the SAGR, so the majority of the phosphate flocs could settle out well in advance, improving the phosphorus-removal performance and further saving operating costs on the disk filters.

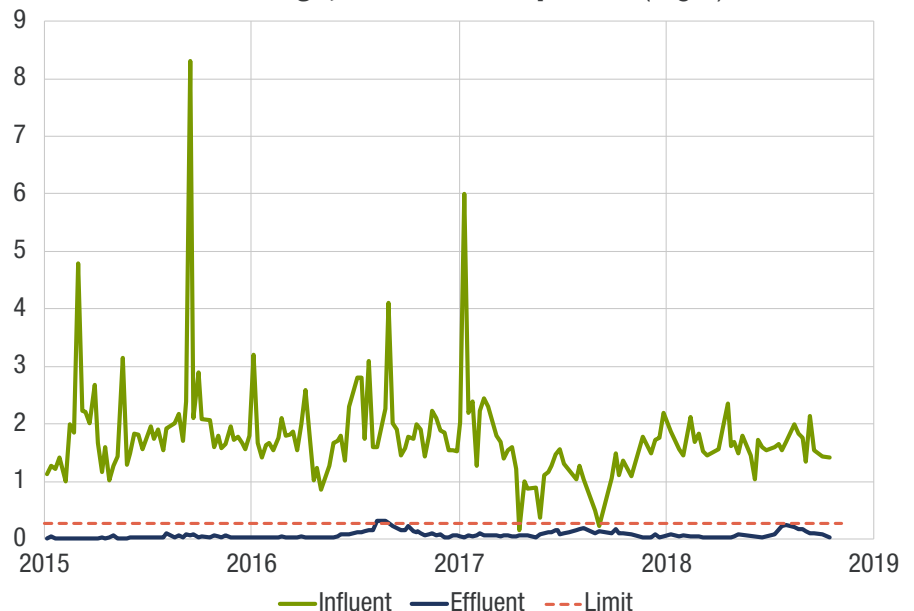
With over three years of data under its belt, the Sundridge plant has seen influent phosphorus as high as 8.3 mg/L, but has demonstrated consistent compliance with its effluent results, with an average effluent phosphorus of 0.07 mg/L (anything below 0.03 mg/L registered as undetectable on the test).

Nexom knows filtration

The Nexom team has been pushing the bounds of filtration for over decade, covering hundreds of projects across the U.S and Canada. Our engineers are the leading experts in a range of technologies and pioneered Blue PRO reactive filtration.

Nexom brings this experience and the patented processes it has developed to the world of disk filters with infini-D. With dozens of sites across North America already using the technology, infini-D is the go-to technology for TSS and phosphorus removal as well as meeting reuse requirements!

Sundridge, ON Total Phosphorus (mg/L)



UPGRADING WITH INFINI-D IS EASY AND EFFECTIVE

1

We walk you through exactly what project details we need. Call 888-426-8180 or email info@nexom.com.

2

We supply design-ready drawings, proprietary technologies, and responsive support.

3

You never worry about your TSS, Turbidity, or Phosphorus levels again.

APPENDIX E: COLLECTION SYSTEM MAPS

APPENDIX F: MARCH 2021 SERVICES SOLD REPORT

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77
 CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	RESIDENTIAL						
	5/8 X 3/4 W						
	Totals:		301	742961	\$12,864.75	\$0.00	\$12,864.75
	RESIDENTIAL						
	5/8&3/4 SEW RES						
	Totals:		301	742961	\$13,441.85	\$0.00	\$13,441.85
	FLAT RATE SEWER						
	SEWER						
	Totals:		24	0	\$1,091.90	\$0.00	\$1,091.90
	IRRIGATION						
	5/8 X 3/4 NP						
	Totals:		87	1570422	\$3,473.66	\$0.00	\$3,473.66
	MISC WATER						
	5/8 X 3/4 W						
	Totals:		11	32369	\$520.68	\$0.00	\$520.68
	MISC WATER						
	5/8 X 3/4 SEW GS						

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77

CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	Totals:		8	27386	\$449.29	\$0.00	\$449.29
	MISC WATER 1 SEW GS						
	Totals:		4	23144	\$475.91	\$0.00	\$475.91
	MISC WATER 1W						
	Totals:		4	23144	\$421.22	\$0.00	\$421.22
	IRRIGATION 3 NP						
	Totals:		3	852993	\$1,953.62	\$0.00	\$1,953.62
	IRRIGATION 2 NP						
	Totals:		26	2383478	\$6,155.46	\$0.00	\$6,155.46
	IRRIGATION 4 NP						
	Totals:		2	503464	\$1,369.23	\$0.00	\$1,369.23

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77
 CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	MISC WATER 2 SEW GS						
	Totals:		2	7456	\$532.79	\$0.00	\$532.79
	MISC WATER 2 W						
	Totals:		2	7456	\$428.45	\$0.00	\$428.45
	RESIDENTIAL LATE_FEE						
	Totals:		14	0	\$98.00	\$0.00	\$98.00
	FLAT RATE SEWER LATE_FEE						
	Totals:		2	0	\$14.00	\$0.00	\$14.00
	COMMERCIAL 1W						
	Totals:		1	9809	\$138.69	\$0.00	\$138.69
	COMMERCIAL						

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77
 CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	1 SEW GS						
	Totals:		1	9809	\$150.07	\$0.00	\$150.07
	RESIDENTIAL NORMRECCHARGEREG						
	Totals:		7	0	\$266.00	\$0.00	\$266.00
	COMMERCIAL 5/8 X 3/4 W						
	Totals:		5	1583	\$113.94	\$0.00	\$113.94
	COMMERCIAL LATE_FEE						
	Totals:		1	0	\$7.00	\$0.00	\$7.00
	RESIDENTIAL ADJUSTMENT						
	Totals:		1	0	\$-7.00	\$0.00	\$-7.00
	MULTI-FAMILY 2 W						

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77

CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	Totals:		5	357263	\$3,881.69	\$0.00	\$3,881.69
	MULTI-FAMILY 2 SEW GS						
	Totals:		5	357263	\$3,949.54	\$0.00	\$3,949.54
	RESIDENTIAL 1SEW RES						
	Totals:		1	734	\$34.43	\$0.00	\$34.43
	RESIDENTIAL 1W						
	Totals:		1	734	\$63.37	\$0.00	\$63.37
	FLAT RATE SEWER NORMRECCHARGEREG						
	Totals:		1	0	\$38.00	\$0.00	\$38.00
	MULTI-FAMILY 3 W						
	Totals:		1	24445	\$569.44	\$0.00	\$569.44

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77

CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	MULTI-FAMILY 3 SEW GS		-----	-----	-----	-----	-----
	Totals:		1	24445	\$664.13	\$0.00	\$664.13
	IRRIGATION NORMRECCHARGEREG		-----	-----	-----	-----	-----
	Totals:		1	0	\$38.00	\$0.00	\$38.00
	MULTI-FAMILY LATE_FEE		-----	-----	-----	-----	-----
	Totals:		4	0	\$28.00	\$0.00	\$28.00
	IRRIGATION LATE_FEE		-----	-----	-----	-----	-----
	Totals:		2	0	\$14.00	\$0.00	\$14.00
	MISC WATER LATE_FEE		-----	-----	-----	-----	-----
	Totals:		3	0	\$21.00	\$0.00	\$21.00
	RESIDENTIAL SEWERADJ						

SERVICES SOLD

AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77
 CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	Totals:		1	0	\$-33.45	\$0.00	\$-33.45
	RESIDENTIAL WATERADJ						
	Totals:		1	0	\$-79.95	\$0.00	\$-79.95
	IRRIGATION ADJUSTMENT						
	Totals:		1	0	\$-7.00	\$0.00	\$-7.00
	IRRIGATION MISC_CREDIT						
	Totals:		1	0	\$-51.59	\$0.00	\$-51.59
	RESIDENTIAL MISC_DEBIT						
	Totals:		2	0	\$175.26	\$0.00	\$175.26
	IRRIGATION & NP						
	Totals:		1	522228	\$1,858.14	\$0.00	\$1,858.14

SERVICES SOLD

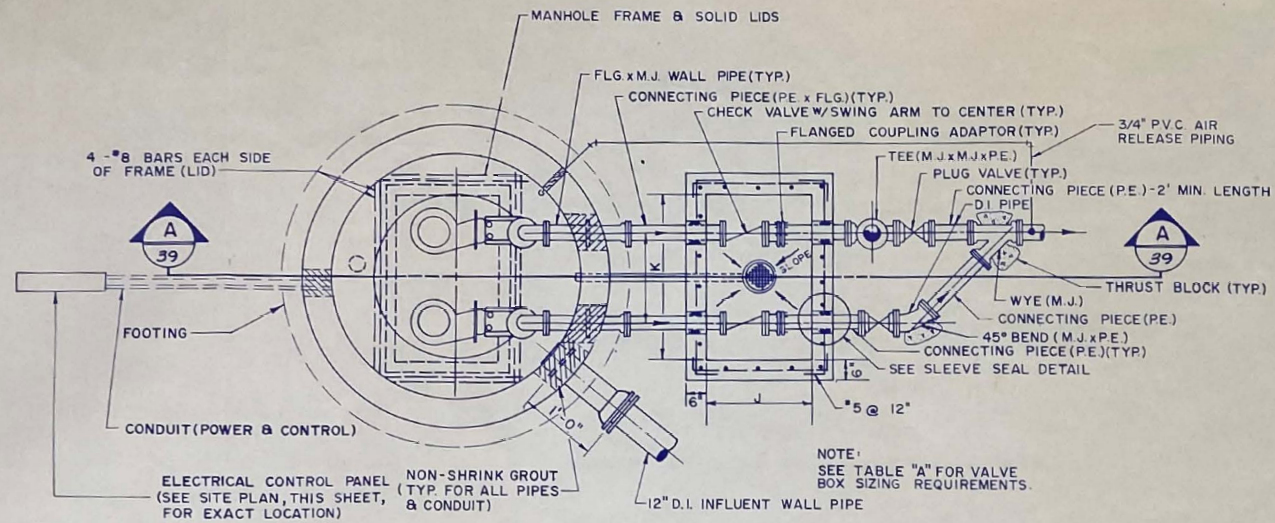
AQUARINA UTILITIES INC.

DATE: 03/29/2021 AUTHOR: AQUAH77

CRITERIA: 02/08/2021 - 03/10/2021

Acct#	Name	Service Location	Count	Usage	Fee	Tax	Total
	IRRIGATION WATERADJ						
	Totals:		3	0	\$-113.33	\$0.00	\$-113.33
	RESIDENTIAL MISC_CREDIT						
	Totals:		1	0	\$-123.67	\$0.00	\$-123.67
	Grand Totals		450	7032349	\$54,885.52	\$0.00	\$54,885.52
	Grand Total Sewer Usage		323	1193198			

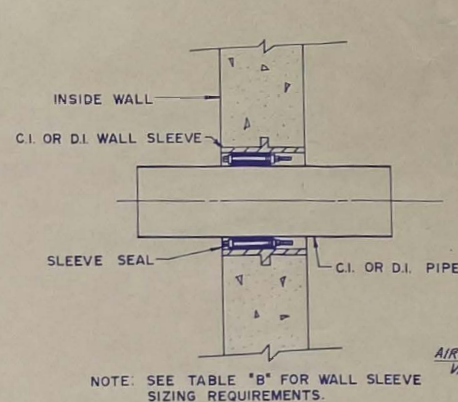
APPENDIX G: INFLUENT PUMP STATION DETAILS



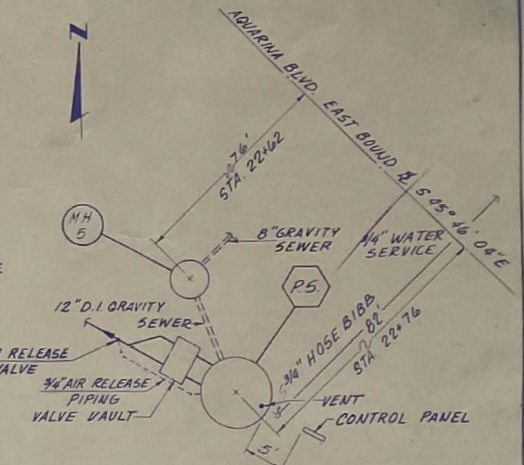
PLAN
N.T.S.

TABLE A			
DISCH PIPING	DIMENSIONS		FRAME & LID SIZE
	J	K	
4"	30"	48"	30" x 48"
6"	30"	48"	30" x 48"

TABLE B		
PIPE SIZE	WALL	SLEEVE SIZE
4"		6"
6"		8"



SLEEVE SEAL DETAIL
N.T.S.

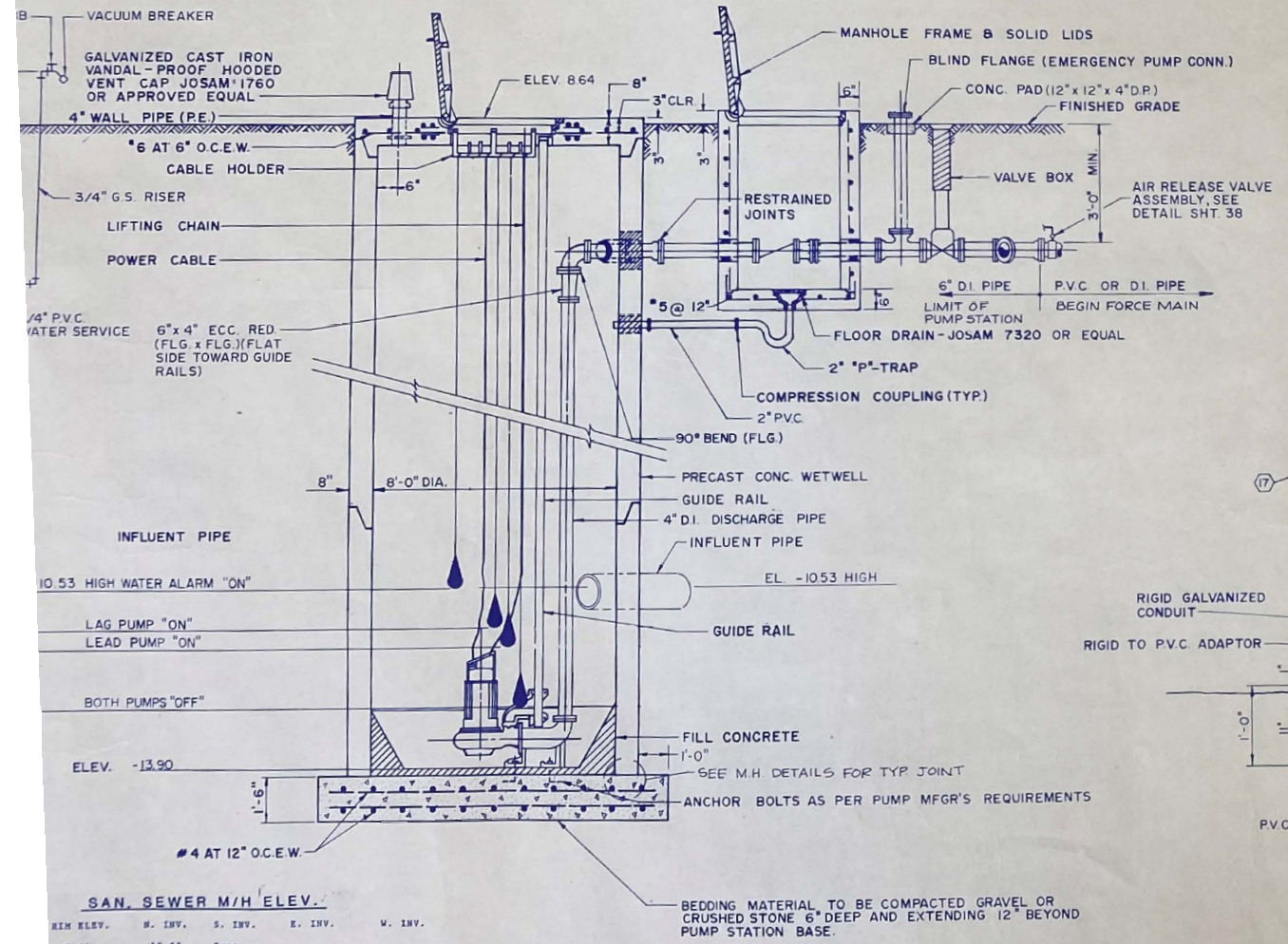


SITE PLAN
N.T.S.

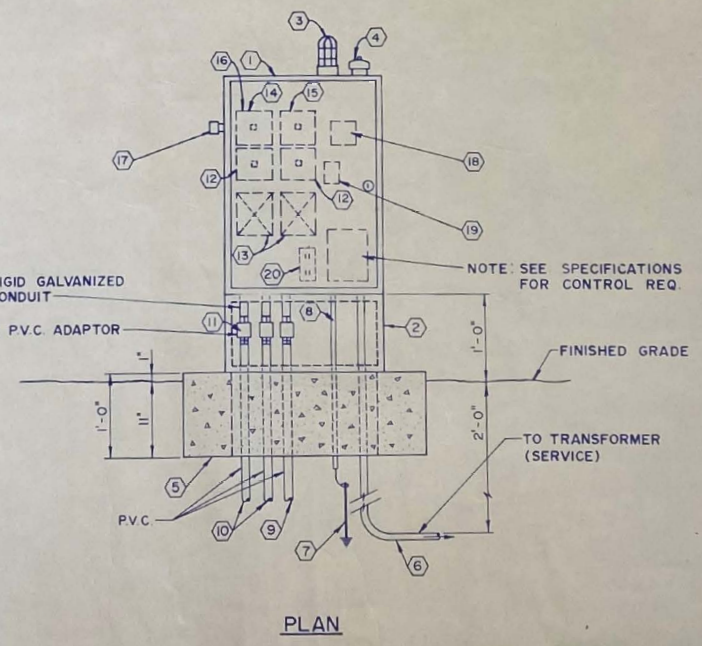
PUMP SPECIFICATIONS	
PUMPS REQUIRED	2
HIDROSTAL MODEL NO.	F4K-H
PUMP SIZE	4"
CAPACITY EACH (GPM)	520
TOTAL HEAD (FEET)	55
IMPELLER	354 MM
MOTOR H.P. REQ.	6.7/13
SPEED (R.P.M.)	850/1150
ELECTRICAL REQ.	3Ø / 230V

CONTROL PANEL NOTES

- 1) MOUNT POWER CO. METER ON BACK OF CONTROL PANEL PROVIDE WATER-PROOF CONDUIT NIPPLE PENETRATIONS IN BOTH HOUSINGS.
- 2) CONTRACTOR SHALL INSTALL A LAPSE TIME METER FOR EACH PUMP IN THE CONTROL PANEL.
- 3) CONTRACTOR SHALL PROVIDE A WIRING DIAGRAM FOR PUMPS AND CONTROLS TO THE ENGINEER FOR APPROVAL.
- 4) THIS DRAWING DEPICTS A FLOAT OPERATED PUMP CONTROL SYSTEM. FOR DESCRIPTION OF ALTERNATE BUBBLER / MERCURY MANOMETER PUMP CONTROL SYSTEM, SEE SPECIFICATIONS.



SECTION
N.T.S.



CONTROL PANEL ELEVATION (FRONT)
N.T.S.

LEGEND

- 1 - PREWIRED CONTROL PANEL IN NEMA 3R TYPE 304 STAINLESS STEEL, WEATHERPROOF CABINET, FOR 2 PUMPS. (MOUNTED AND CONNECTED BY ELECTRICAL CONTRACTOR)
- 2 - STAINLESS STEEL PEDESTAL BASE (TYPE 304)
- 3 - VAPOR PROOF 120V, 100W, RED LIGHT FIXTURE WITH GUARD & FLASHER, CONNECT TO HIGH WATER ALARM CIRCUIT (FURNISHED WITH CONTROL PANEL).
- 4 - WEATHER PROOF HORN. CONNECT TO HIGH WATER ALARM CIRCUIT (FURNISH WITH CONTROL PANEL).
- 5 - POURED CONCRETE BASE.
- 6 - SERVICE CONDUIT TO TRANSFORMER SIZE PER NATIONAL ELECTRICAL CODE (NEC).
- 7 - 5/8" DIA x 10'-0" LONG DRIVEN GALVANIZED GROUND ROD.
- 8 - GROUND CONDUCTOR IN RIGID CONDUIT CLAMP TO DRIVEN GROUND ROD AS SHOWN. SIZE PER NEC.
- 9 - 1" CONDUIT FOR LIQUID LEVEL CONTROL CABLES.
- 10 - 2" CONDUIT FOR SUBMERSIBLE PUMP WATER-PROOF CABLE.
- 11 - EXPLOSION PROOF SEAL IN CONDUIT.
- 12 - TRIP BREAKER FOR SUBMERSIBLE PUMP CIRCUIT LOCATED IN CABINET (ea. PUMP 230 V, 3 Ø)
- 13 - SUBMERSIBLE PUMP STARTERS IN CABINET SIZE PER NEC.
- 14 - MAIN CIRCUIT BREAKER SIZE PER NEC.
- 15 - EMERGENCY CIRCUIT BREAKER SIZE PER NEC.
- 16 - LIGHTNING ARRESTOR.
- 17 - EMERGENCY GENERATOR RECEPTACLE (WP) PYLE NATIONAL JRE-4100 (100A) FURNISHED WITH CONTROL PANEL.
- 18 - 120V TO 24V TRANSFORMER.
- 19 - FUSE BLOCK FOR 120V CONTROL (TAP) PROTECTION (20A FUSE)
- 20 - DUPLEX 120V RECEPTACLE W/ G.I.F. IN PANEL.

NOTE: GRINDER PUMPS SHALL BE ADAPTED TO FIT HIDROSTAL GUIDE RAILS & DISCHARGE PIPING

RECORD DRAWINGS APRIL 1984

APPROVED	FOR:	POST, BUCKLEY, SCHUH & JERNIGAN, INC. CONSULTING ENGINEERS AND PLANNERS	PUMP STATION DETAILS	AQUARINA BEACH COMMUNITY	JOB NO. 775-050.24 775-050-4 DATE: MAY 1984 SHEET 39 OF 39
NOT TO SCALE	AQUARINA DEVELOPMENTS, INC. 321 OCEAN AVENUE, SUITE 10 MELBOURNE BEACH, FLORIDA 32951				REG. FLA. ENGINEER NO. 90362 DATE



woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS



**AQUARINA
UTILITIES, INC.
WATER SYSTEM
ASSESSMENT**

**ENGINEERING
MEMORANDUM**

210 South Florida Avenue | Suite 220
Lakeland, Florida 33801
800.426.4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0233748.02
Central States Water
Resources
July 2021

TABLE OF CONTENTS

SECTION	PAGE NO.
EXECUTIVE SUMMARY	ES-1
1. INTRODUCTION	1-1
1.1 General System Information	1-1
1.2 Water Use	1-2
2. WATER TREATMENT FACILITY	2-1
2.1 Facility Description	2-1
2.1.1 Source	2-2
2.1.1.1 Well #1 – Irrigation and Fire Suppression Well	2-2
2.1.1.2 Well #2 – Drinking Water Well	2-3
2.1.1.3 Well #3 – Not Used	2-4
2.1.2 Treatment	2-5
2.1.2.1 Reverse Osmosis	2-5
2.1.2.2 Aeration	2-7
2.1.2.3 Disinfection	2-7
2.1.3 Pumps	2-8
2.1.4 Storage	2-10
2.1.4.1 Ground Level Storage Tank	2-10
2.1.4.2 Hydropneumatic Tank	2-11
2.1.4.3 Fire and Irrigation Storage Tank	2-12
2.1.5 Building	2-12
2.1.6 Back-Up Power	2-13
2.2 Permit Information	2-14
2.2.1 Water Quality and MCL Exceedances	2-14
2.2.2 Compliance and Violation History	2-14
2.3 Recommended Repairs and Improvements	2-14
2.3.1 General Plant	2-14
2.3.1.1 Electrical Items	2-15
2.3.2 Water Treatment and Pumping	2-15
3. WATER DISTRIBUTION SYSTEM	3-1
3.1 Distribution System Description	3-1
3.1.1 General Distribution	3-1
3.1.2 Services	3-2
3.2 Recommended Repairs and Improvements	3-2
4. CAPITAL ESTIMATES	4-1
4.1 Triage Repairs	4-1
4.2 Improvements and Other Repairs	4-1

TABLES

Table 1-1:	Aquarina System Information
Table 2-1:	Main System Components
Table 2-2:	Pumps
Table 4-1:	General Plant Triage Repairs
Table 4-2:	General Plant Capital Improvements
Table 4-3:	Water Treatment and Pumping Capital Improvements

FIGURES

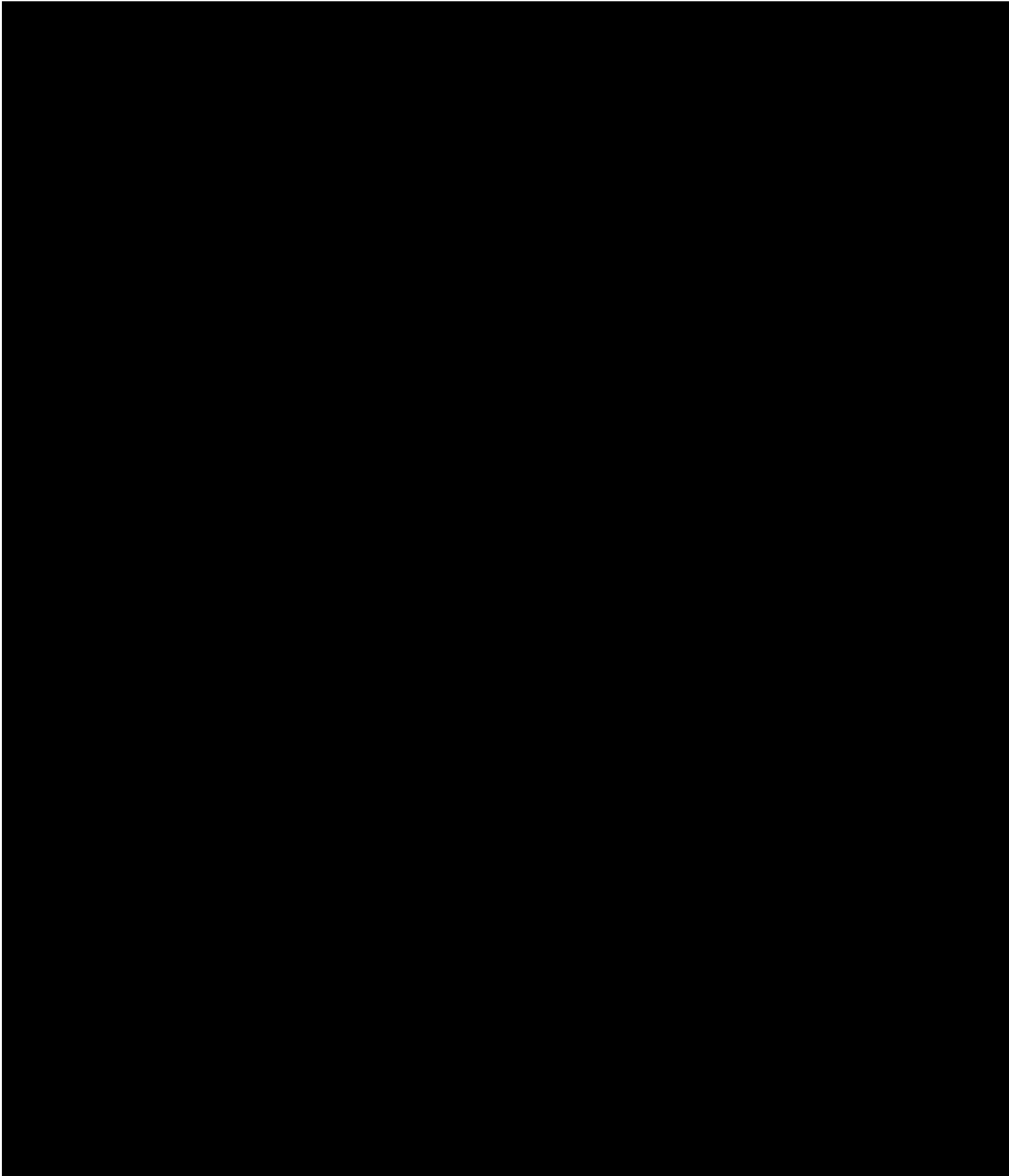
Figure 1-1:	Aquarina Average Water Use 2019
Figure 2-1:	Well #1 Irrigation and Fire Suppression Well
Figure 2-2:	Well #2 – Drinking Water Well
Figure 2-3:	Abandoned Well 3
Figure 2-4:	ValueMax RO System
Figure 2-5:	Vantage M83 RO System
Figure 2-6:	Aeration Tower and Clearwell
Figure 2-7:	Chlorine Treatment
Figure 2-8:	Well #2 Booster Pumps
Figure 2-9:	Transfer Pumps
Figure 2-10:	High Service Pumps
Figure 2-11:	Fire and Irrigation Pumps
Figure 2-12:	Ground Level Storage Tank
Figure 2-13:	Hydropneumatic Tank
Figure 2-14:	Fire and Irrigation Storage Tank
Figure 2-15:	Water Treatment Building
Figure 2-16:	Emergency Shower, Drains, and Chemical Containment
Figure 2-17:	Emergency Generator
Figure 2-18:	Fire and Irrigation Pump Condition

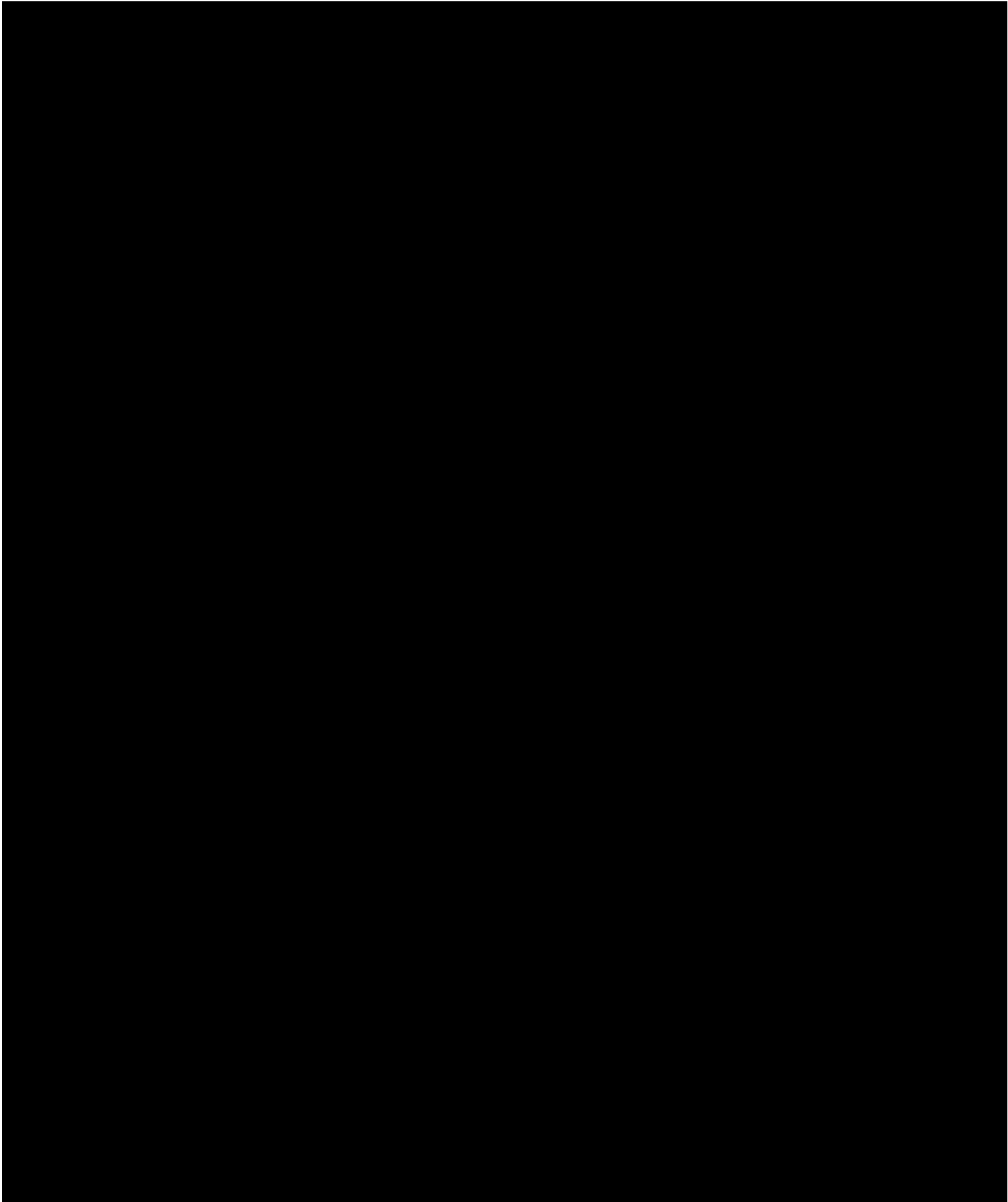
APPENDICES

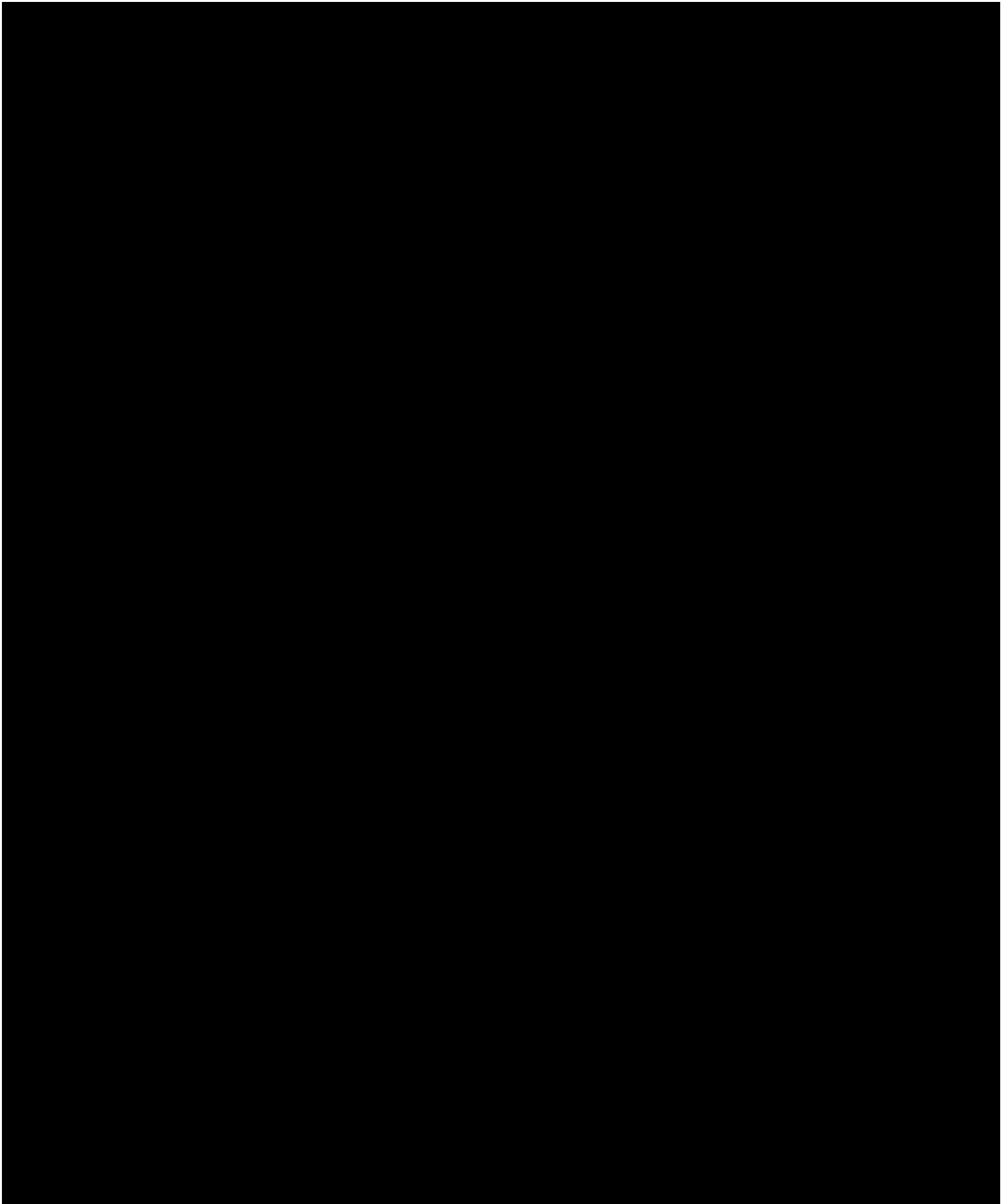
Appendix A:	Site Plan
Appendix B:	Source Water Assessment & Protection Program Results
Appendix C:	Tank Inspections Reports
Appendix D:	Consumer Confidence Report
Appendix E:	Sanitary Survey Report
Appendix F:	Vendor Recommendations

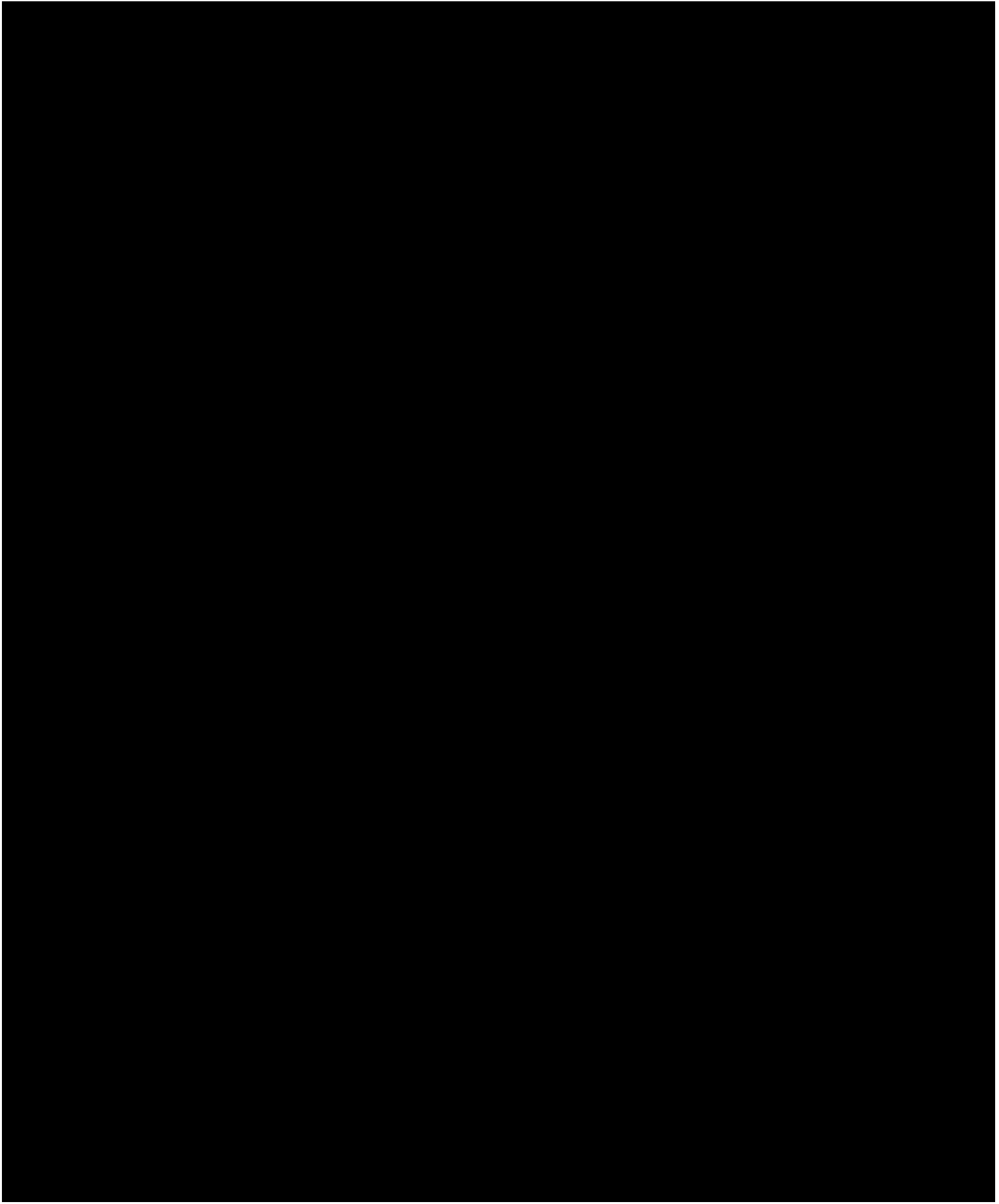
EXECUTIVE SUMMARY

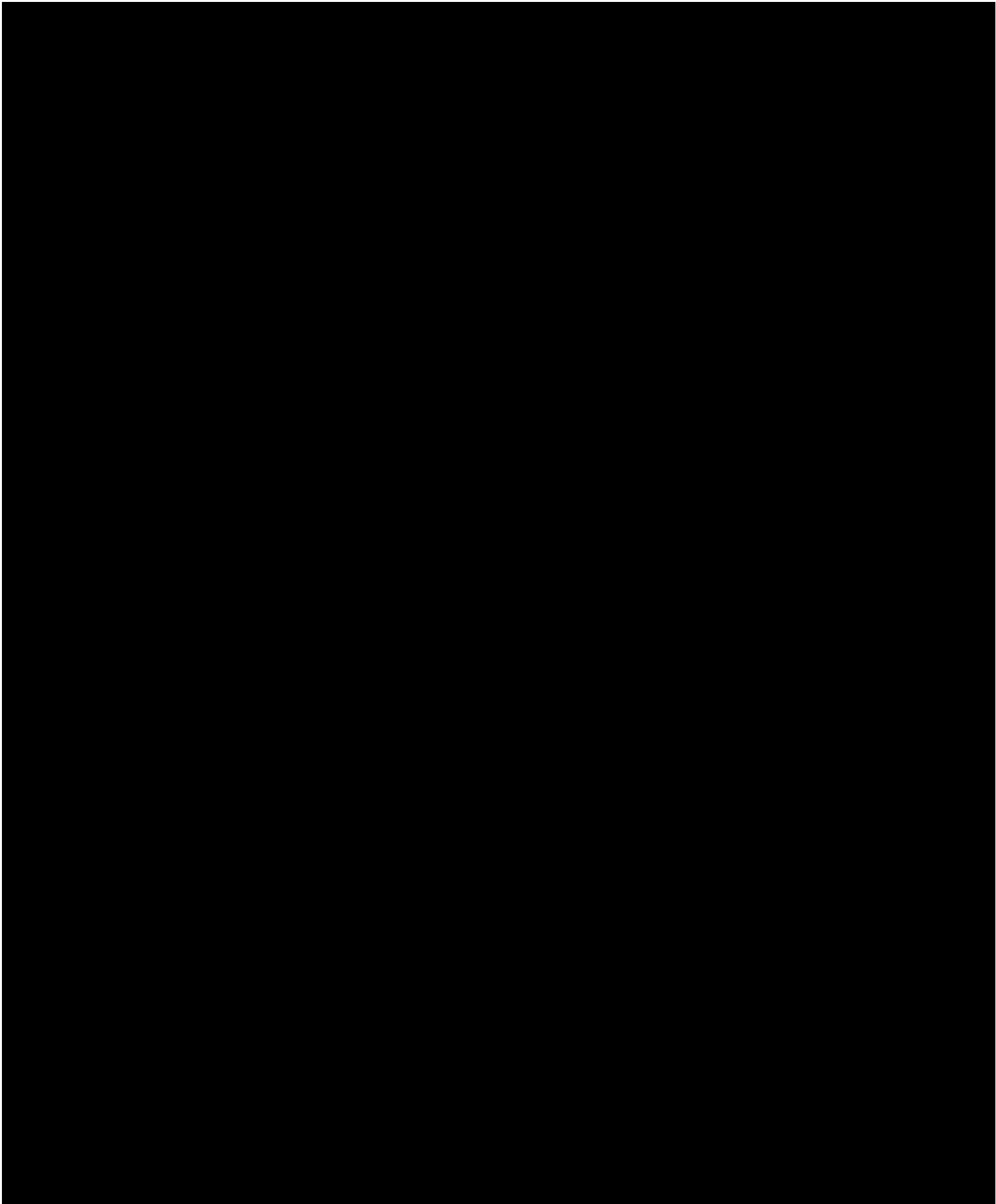
An engineering evaluation for the Aquarina Utilities Water Treatment Plant in Melbourne Beach, FL was conducted by Woodard & Curran to provide feedback and guidance to Central States Water Resources on regulatory compliance, permitting, technical items and recommendations for repair or improvements. The evaluation herein is based on a site visit conducted on March 10, 2021, reports submitted by the utility to the Florida Department of Environmental Protection, and technical documents provided by Aquarina Utilities.

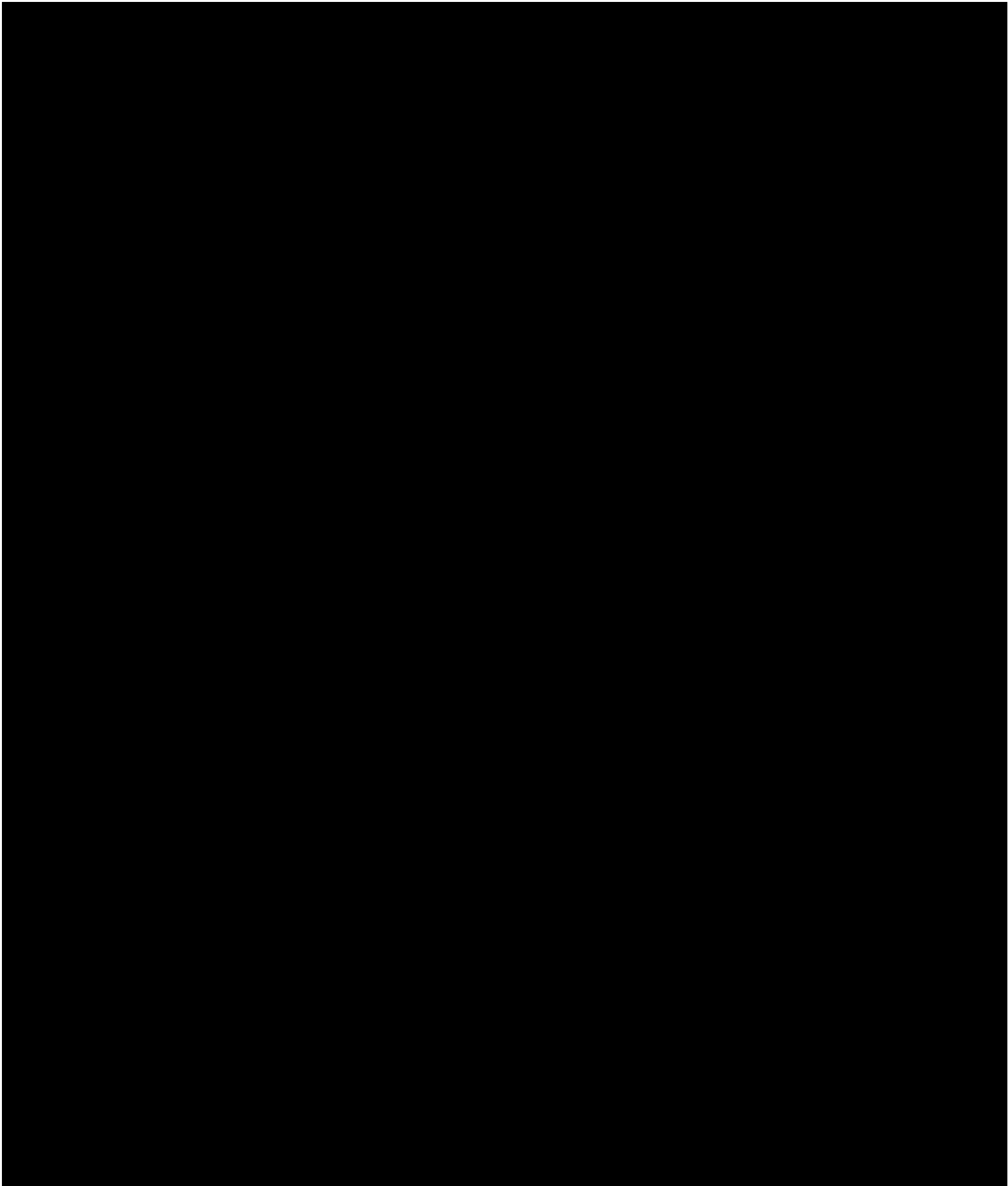


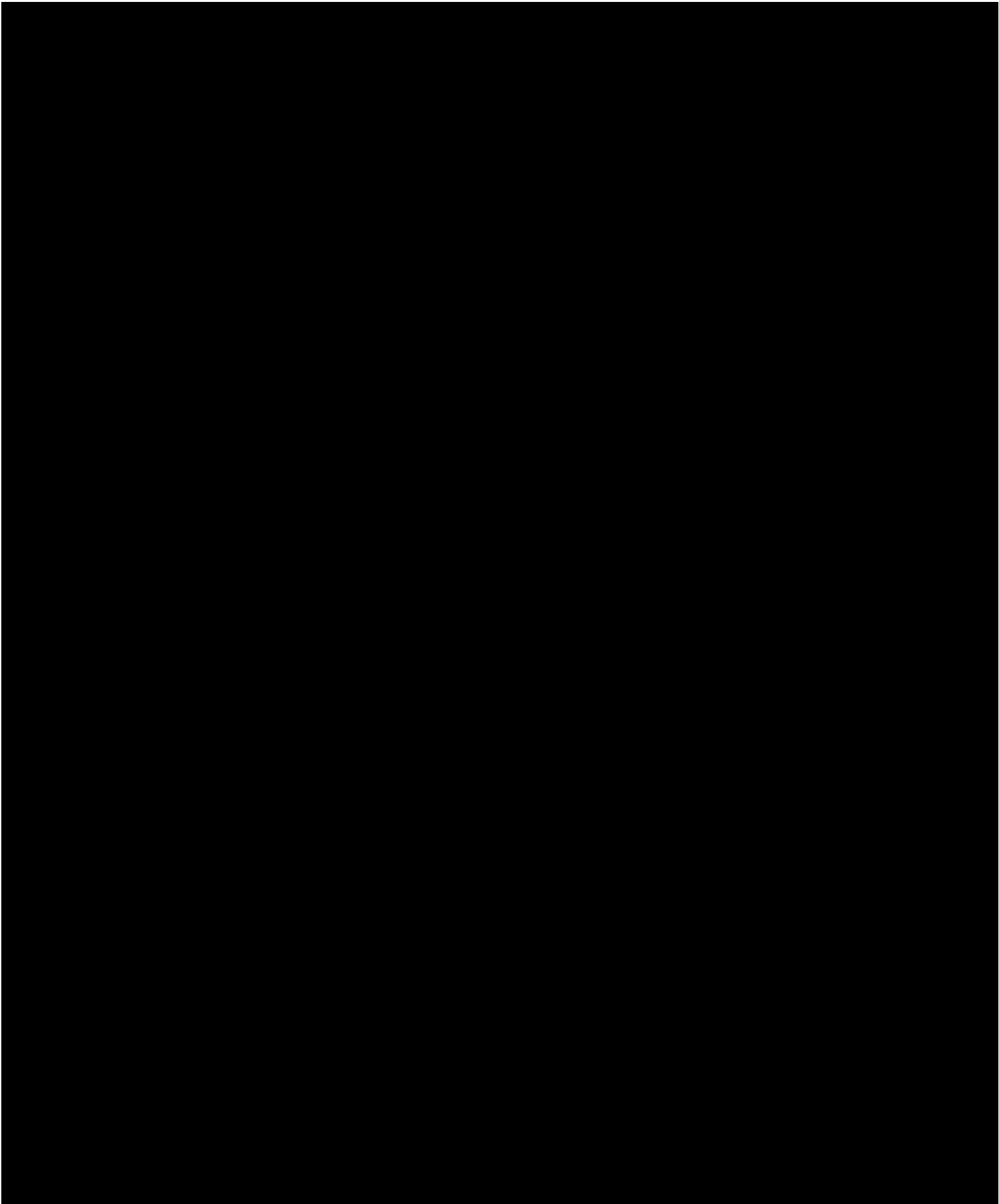


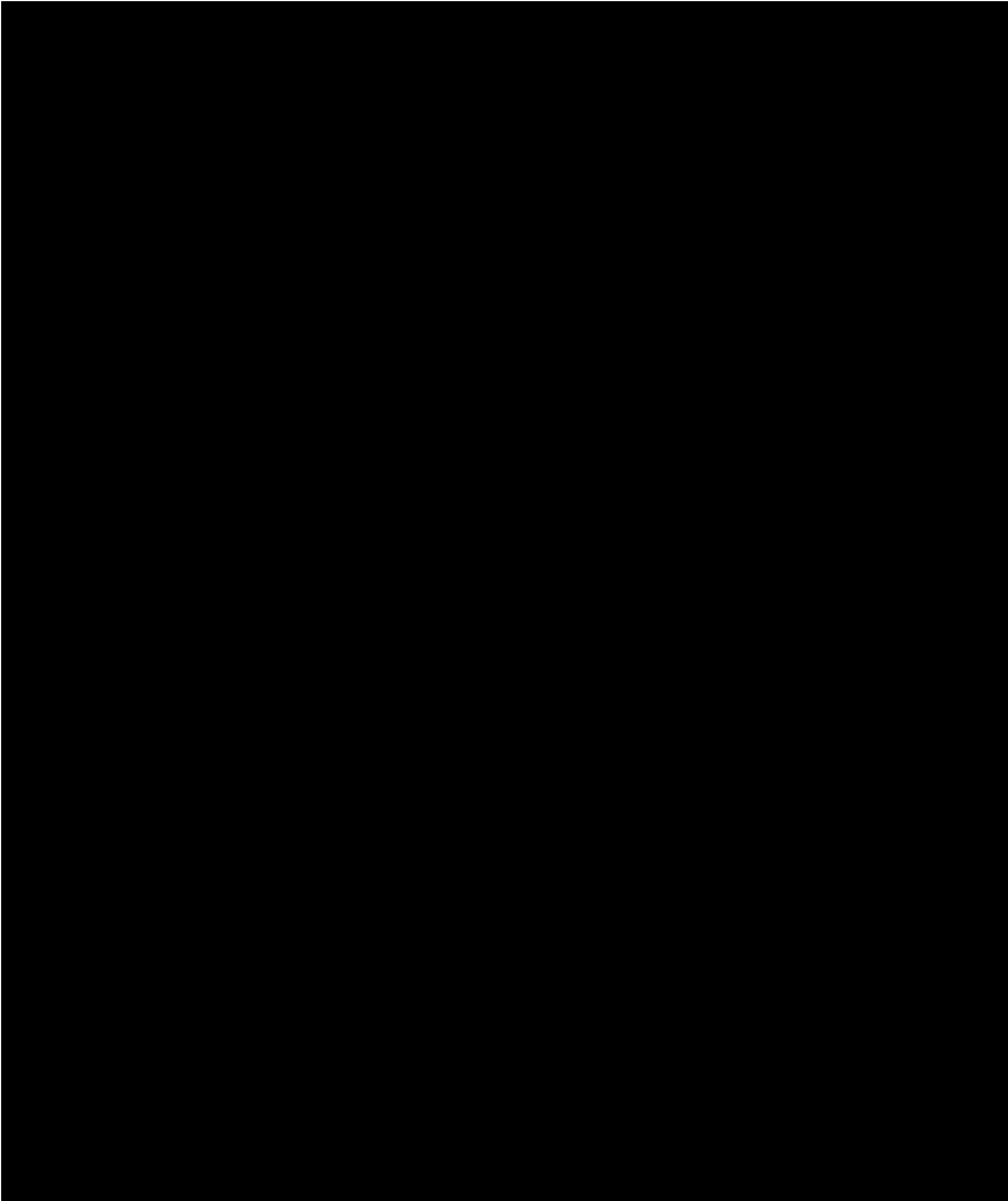


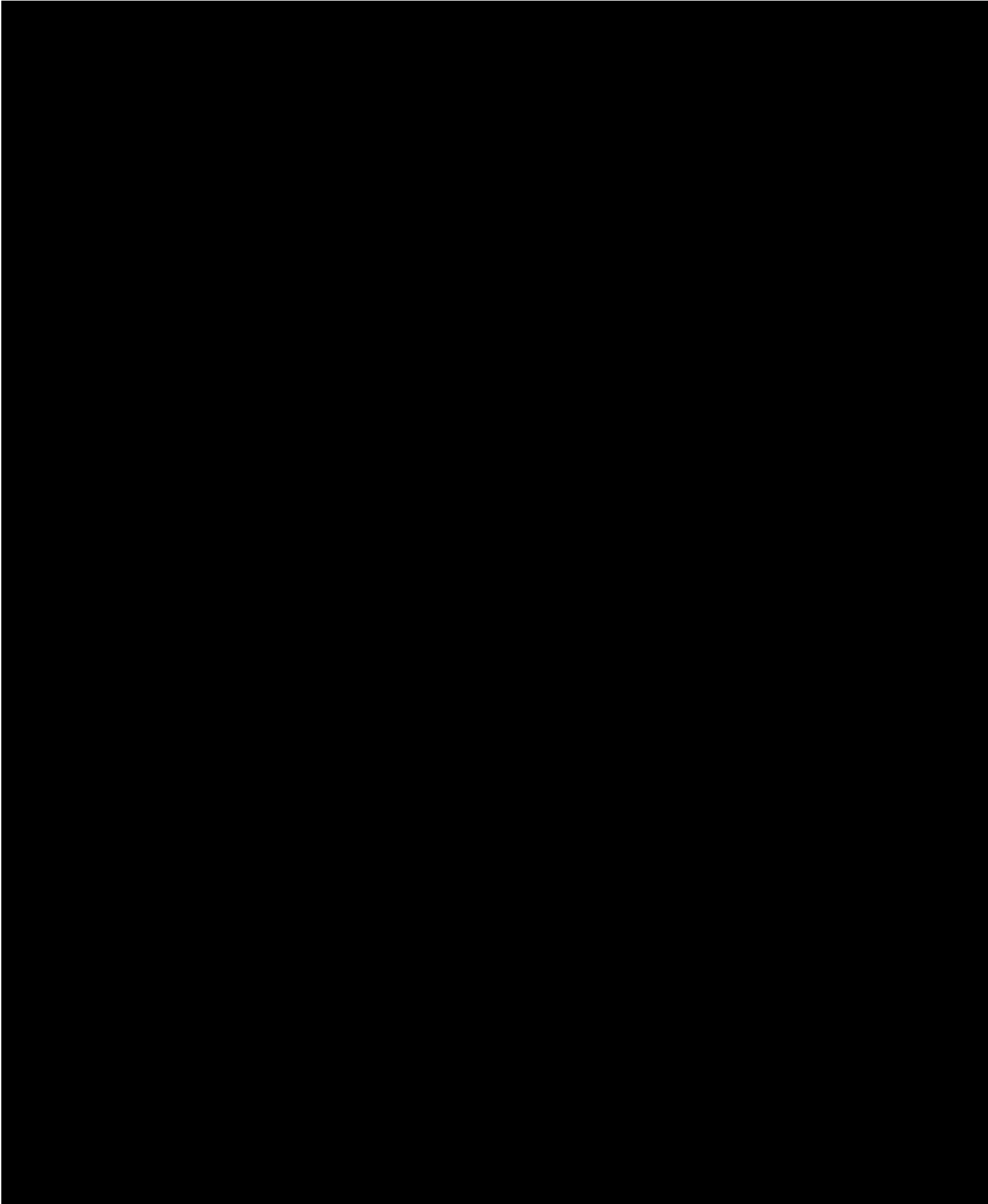


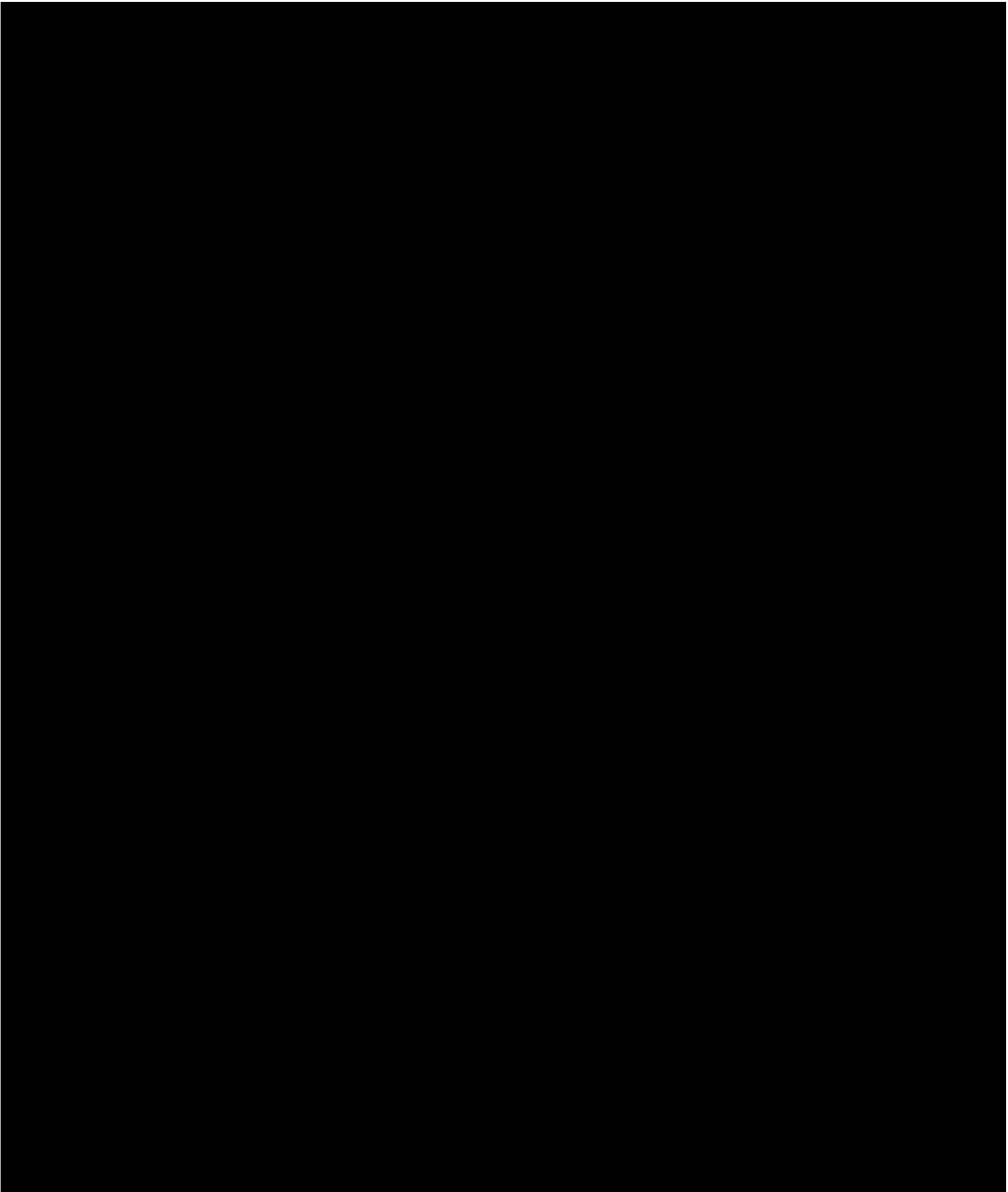


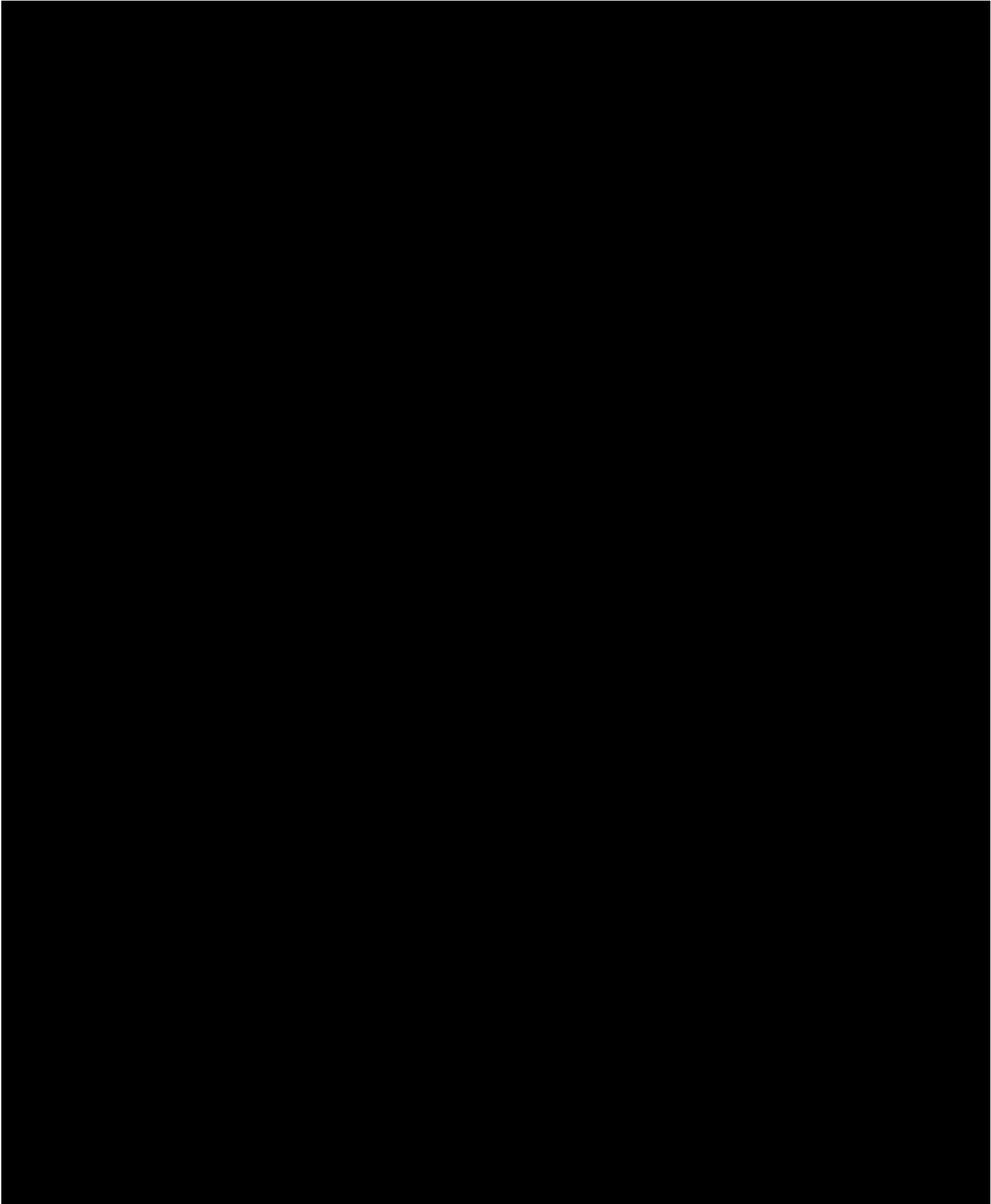


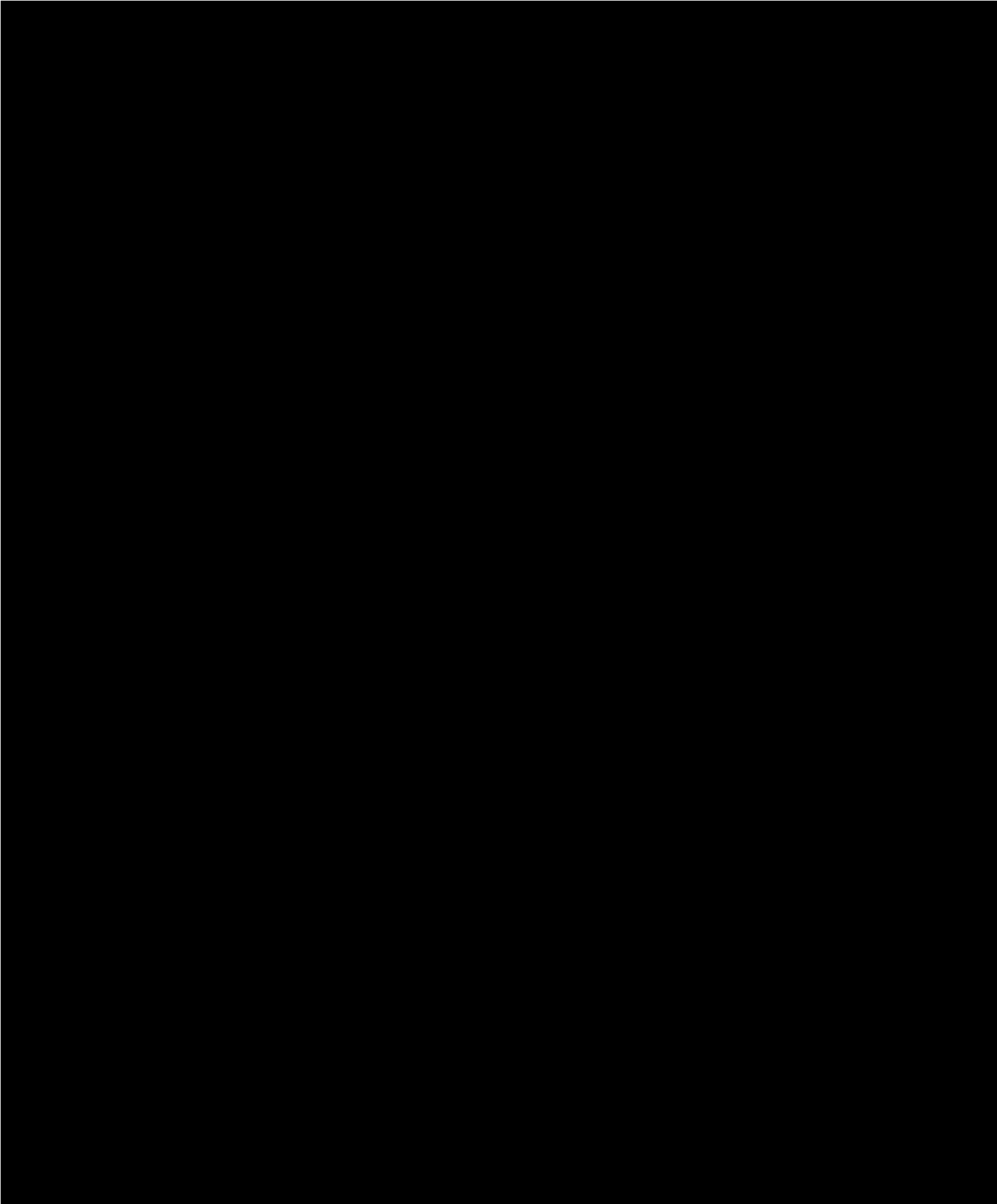


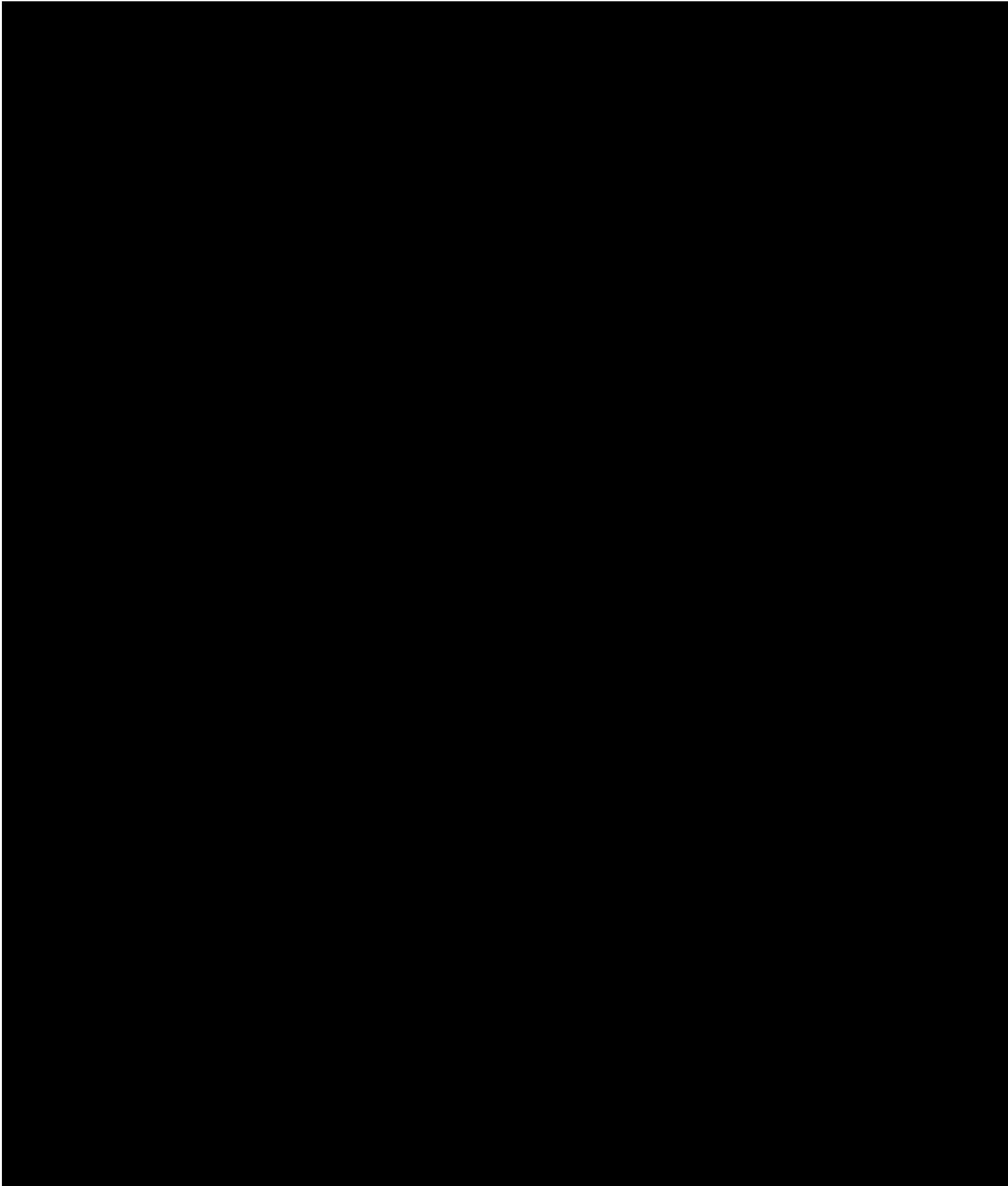


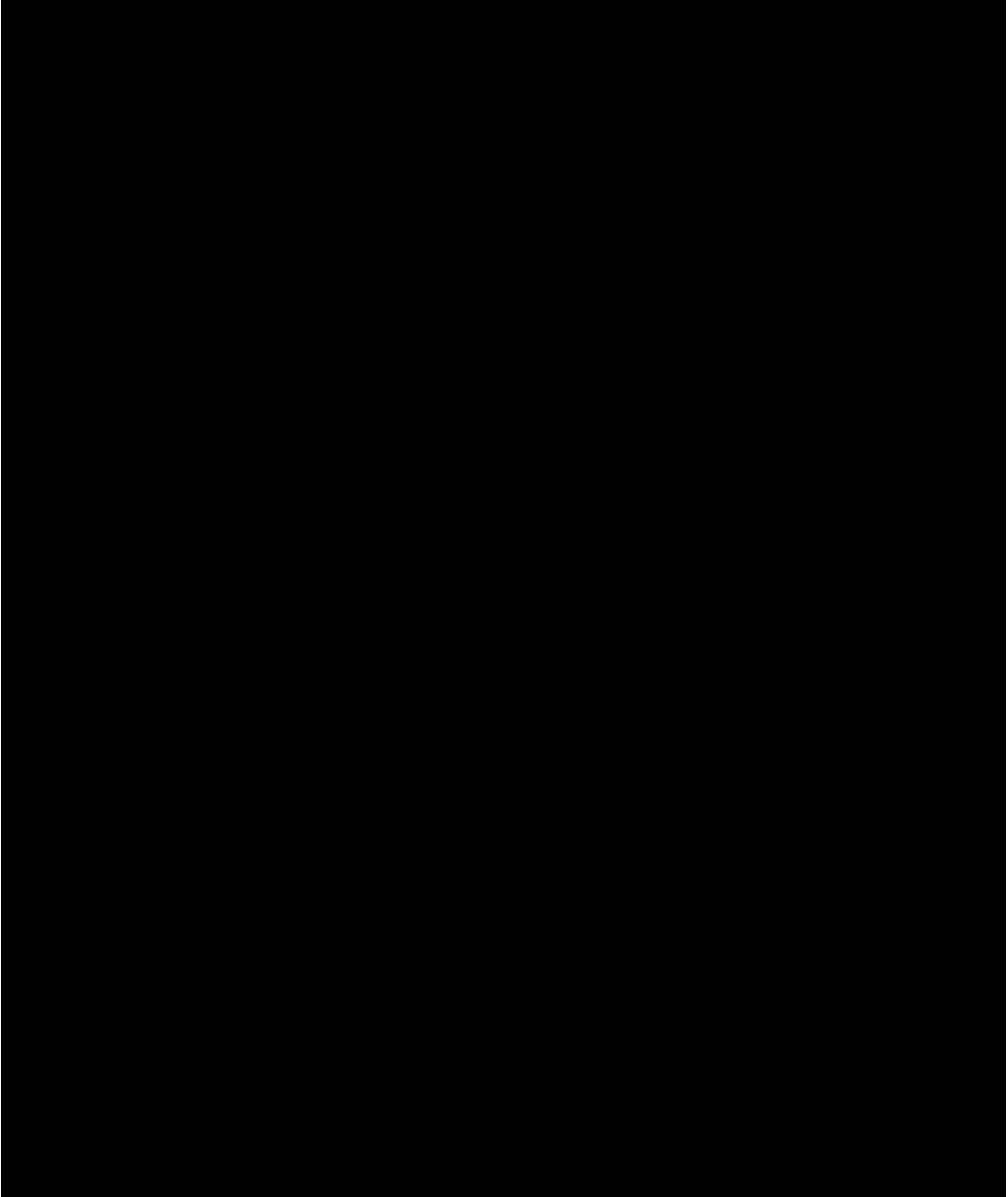


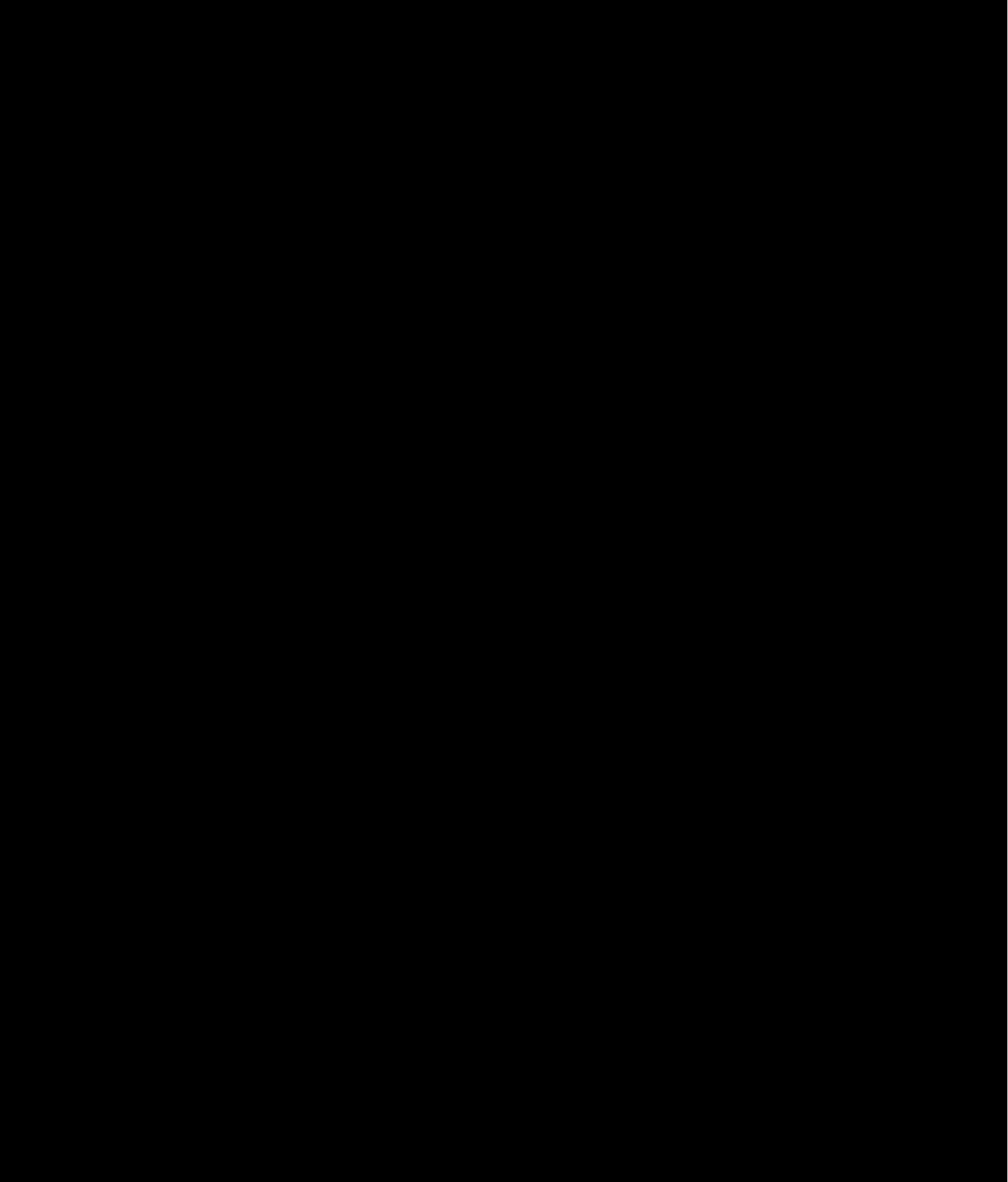


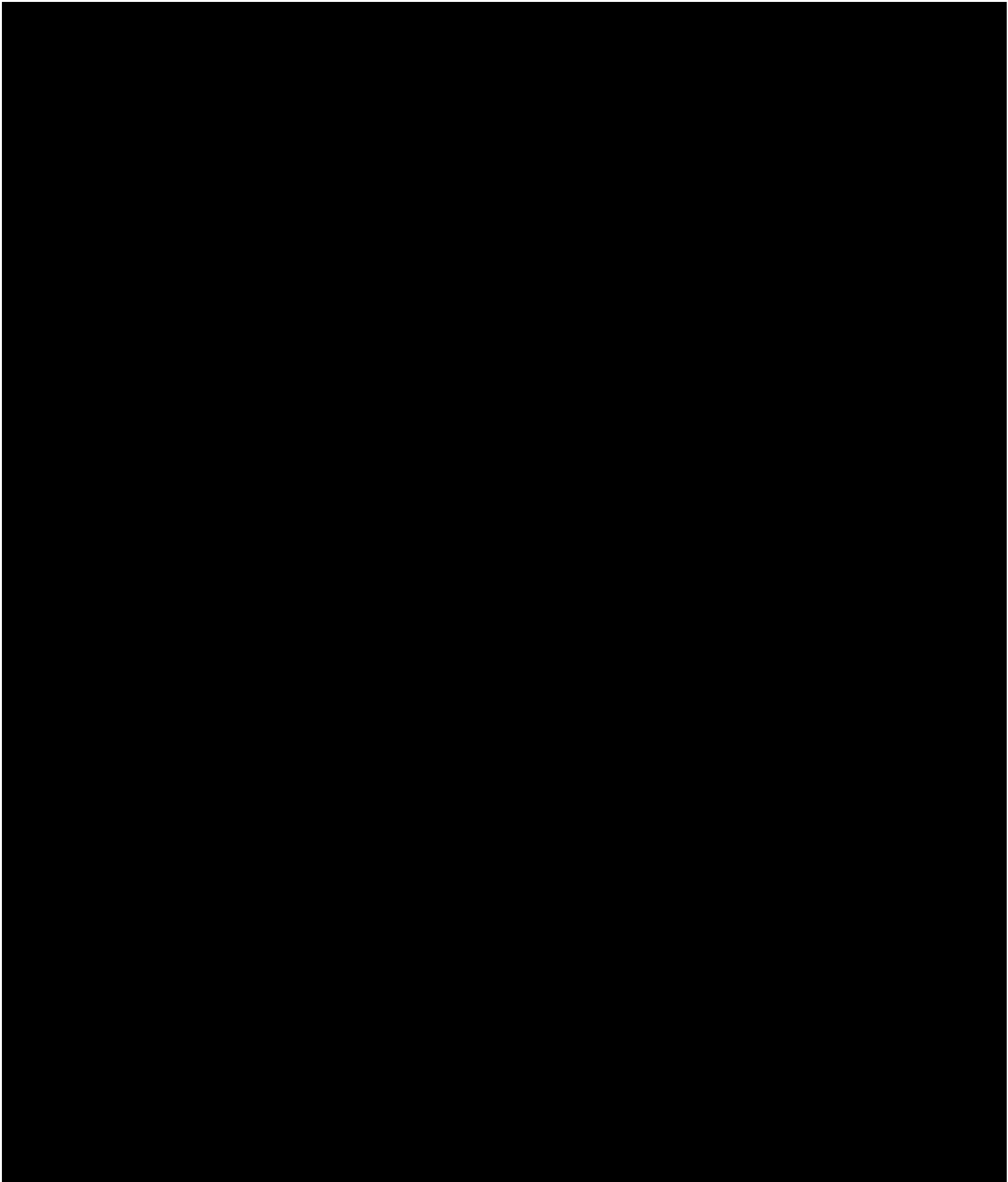


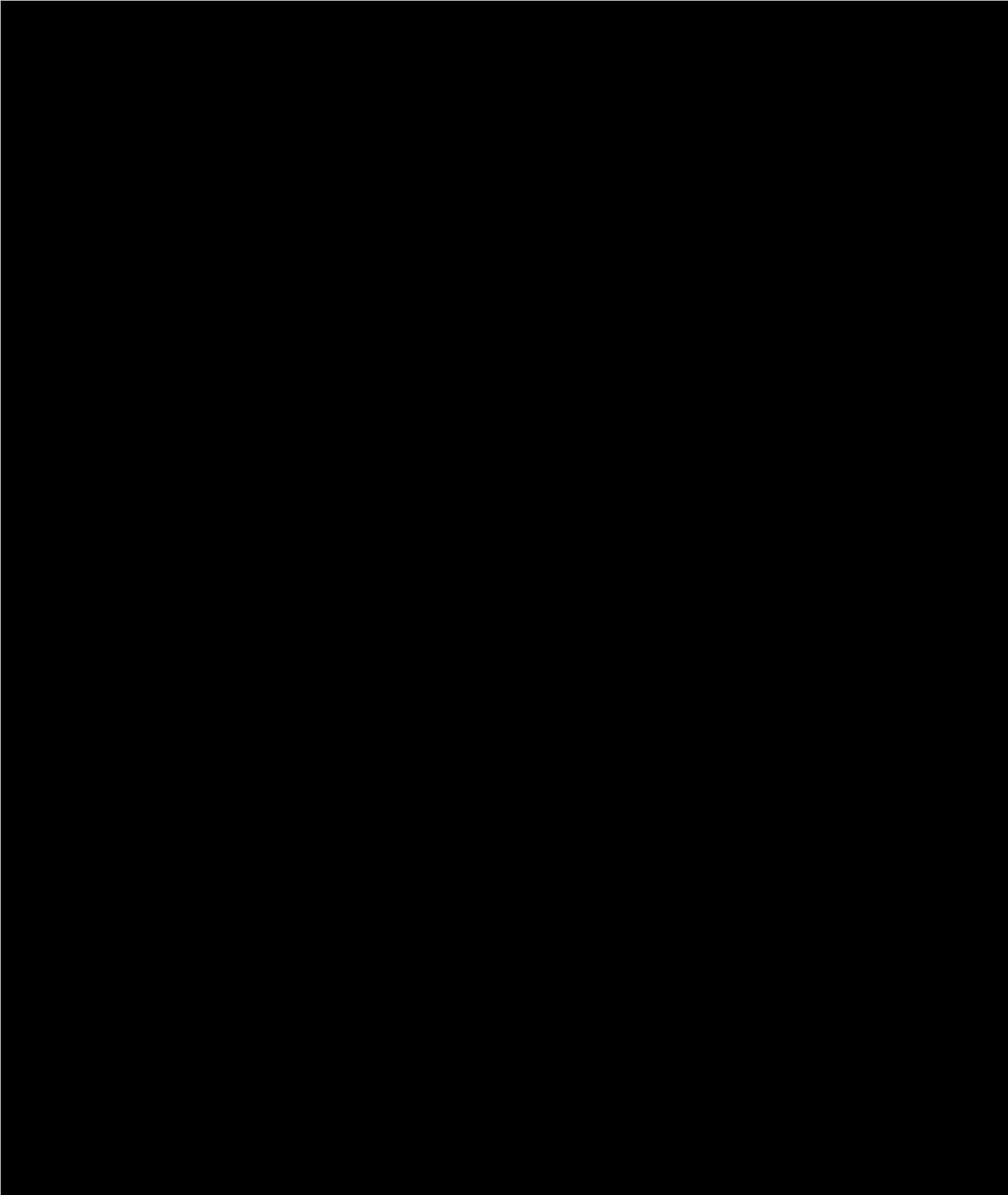


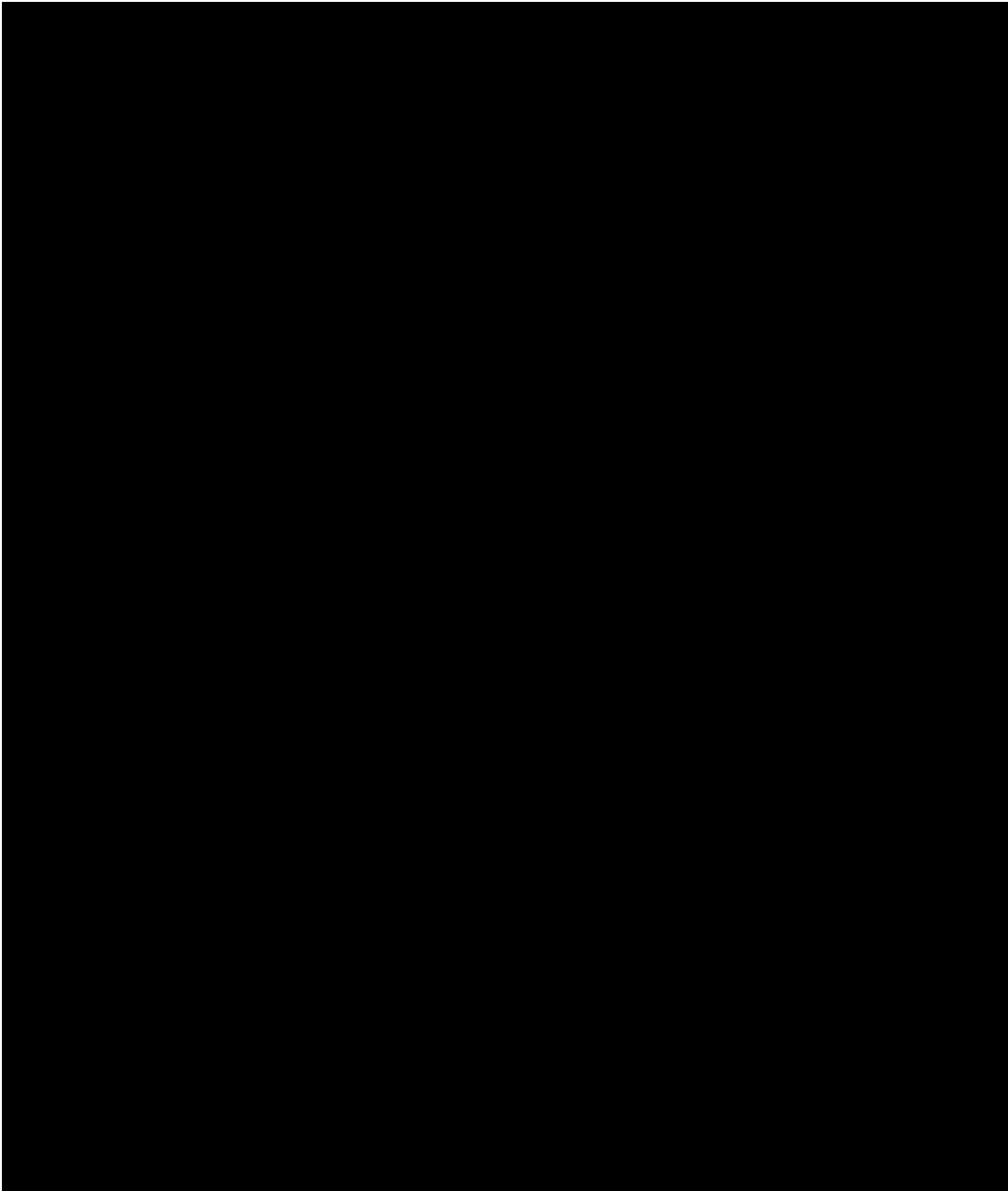


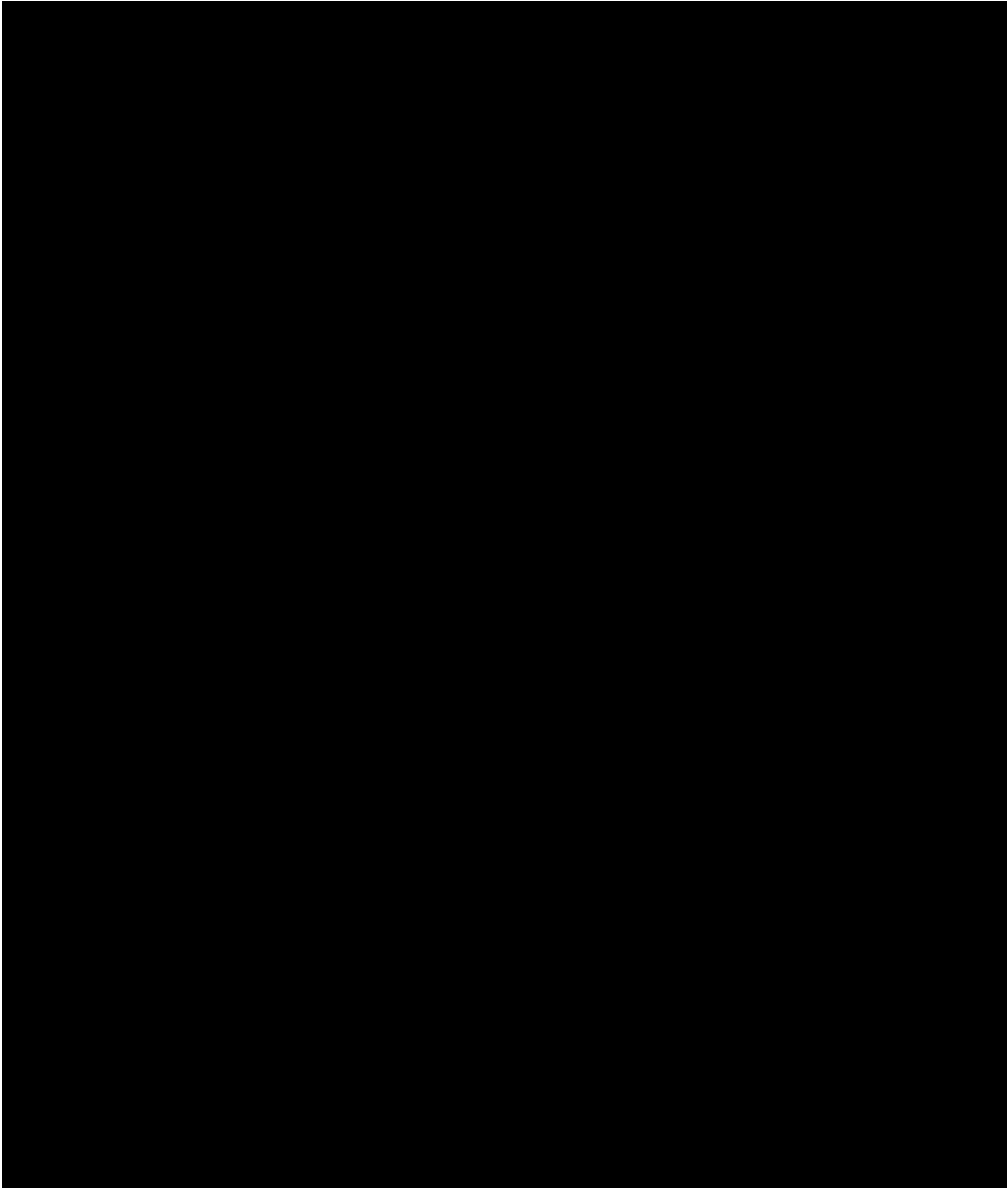


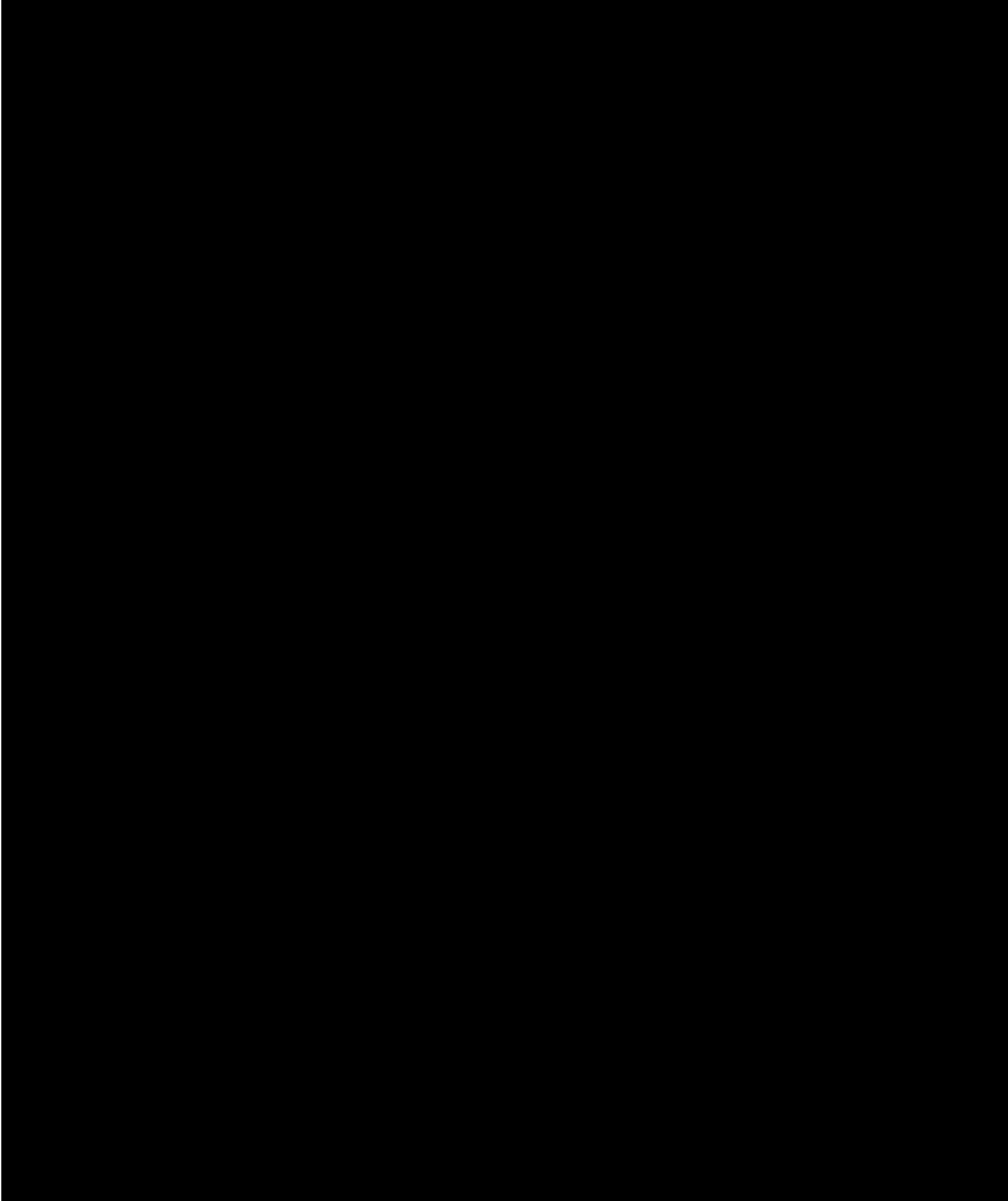


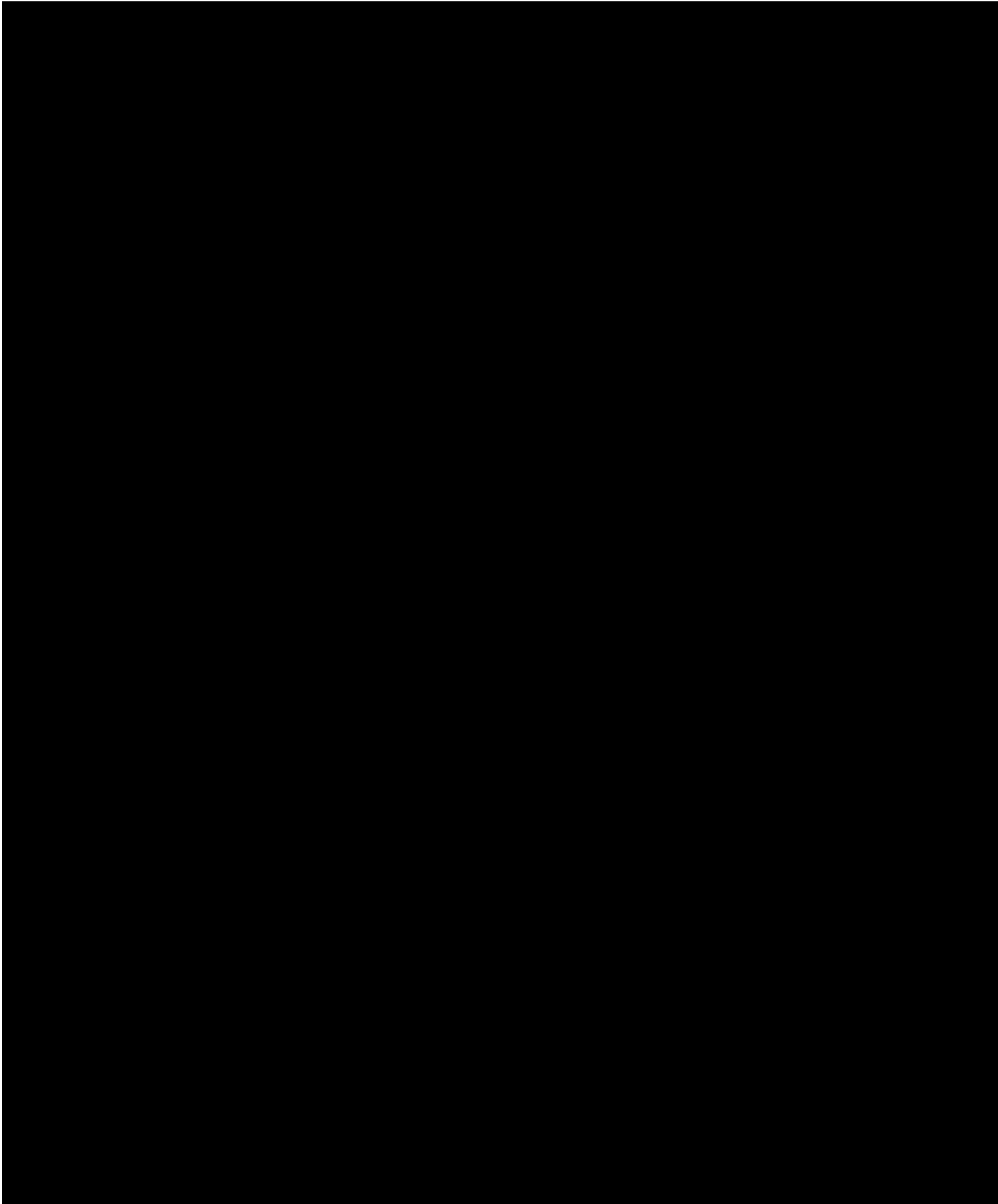




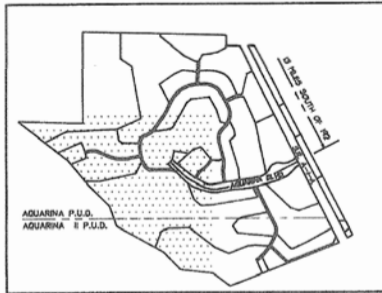








APPENDIX A: SITE PLAN



INDEX MAP

AQUARINA P.U.D.
AQUARINA II P.U.D.

LEGEND:

- CONTOUR LINE
 - - - - - EXISTING WATER LINE
 - - - - - EXISTING NON-POTABLE WATER
 - - - - - EXISTING SANITARY SEWER
 - - - - - PROPOSED WATER LINE
 - - - - - PROPOSED NON-POTABLE WATER
 - - - - - PROPOSED SANITARY SEWER
 - - - - - EXIST. STORM SEWER
 - - - - - PROPOSED STORM SEWER
 - - - - - TRACT LINE
 - - - - - JURISDICTIONAL WETLAND LINE
 - - - - - SHORE LINE
-
- ⊕ EXISTING FIRE HYDRANT
 - ⊕ PROPOSED FIRE HYDRANT
 - ⊕ SANITARY MANHOLE
 - ⊕ EXISTING SANITARY MANHOLE
 - ⊕ MITERED END SECTION
 - ⊕ CONTROL STRUCTURE
 - ⊕ STORM INLET
 - ⊕ EXIST. STORM INLET
 - ⊕ EXIST. STORM MANHOLE
-
- ⊕ TEE
 - ⊕ BEND
 - ⊕ END CAP W/BLOW-OFF ASSEMBLY
 - ⊕ GATE VALVE
 - ⊕ REDUCER

APPROXIMATE LIMITS OF SHORE LINE APRIL 20, 1993

AQUARINA DEVELOPMENTS, INC.
235 HAMMOCK SHORE DRIVE
MELBOURNE BEACH, FLORIDA 32951

AQUARINA/AQUARINA II P.U.D.

NO.	DATE	REVISION	REVISED PER COUNTY COMMENTS
1	1/17/94		
2			
3			
4			
5			
6			
7			

FLEIS ASSOCIATES

SOUTHEAST BANK BUILDING
1090 HIGHWAY A1A, SUITE 200
SATTELLITE BEACH, FLORIDA 32957

ENGINEERS / PLANNERS / DEVELOPERS

EDWARD M. FLEIS
P.E. NO. 30632

DATE: _____

(407) 777-2701

THIS DOCUMENT IS NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED HERE

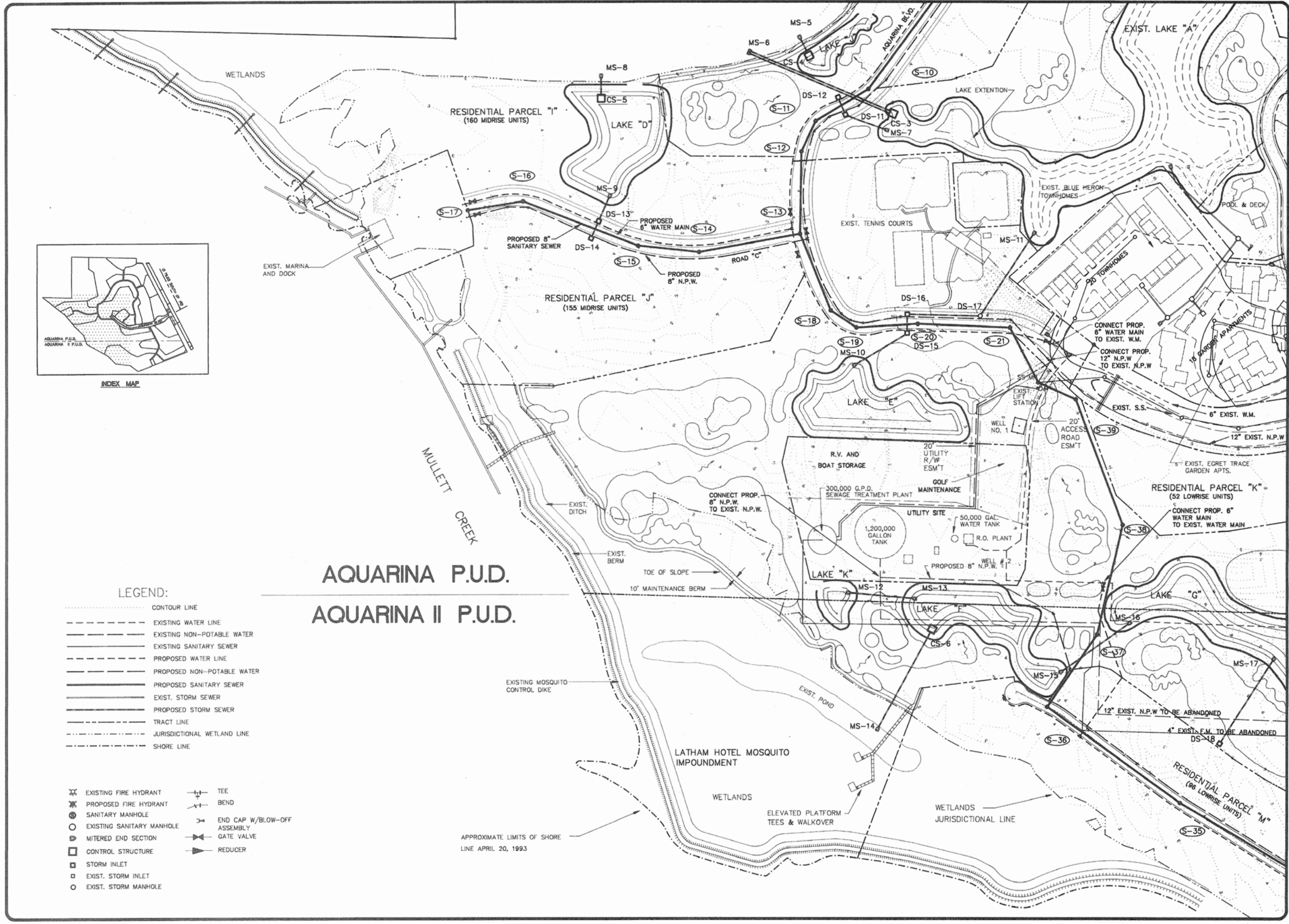
Edward M. Fleis
DATE: 10/26/93

DESIGNED BY:	DATE
ROR	10/26/93
DRAWN BY:	RR
CHECKED BY:	ROR
APPROVED BY:	EHF
ACAD CODE:	92573C12
PROJECT NO.:	92570

MASTER UTILITY PLAN III

C-12

SHEET 12 OF 24



APPENDIX B: SOURCE WATER ASSESSMENT & PROTECTION PROGRAM RESULTS



- » SWAPP Homepage
- » Search By County
- » Search by PWS Name or Number
- » How to Help?

Definitions

- » Aquifers
- » Public Water Systems
- » Assessment
- » Potential Contaminants
- » Susceptibility
- » Prevention

Contact Us

- » Email
- » Mailing Address
- » Source Water Protection Workshop

EPA Source Water Protection website



Source Water Assessment & Protection Program

Results for: 2019

AQUARINA UTILITIES
235 AQUARINA BLVD
MELBOURNE BEACH, FL 32951

Public Water System ID: 3054060

Previously Known As:
AQUARINA DEVELOPMENT
SERVICE MANAGEMENT SYSTEMS, INC

County: BREVARD
DEP Regulatory Office: DEP Central District
3319 Maguire Blvd, Suite 232
Orlando, FL 32803
407-897-4100

Public Water System Type : COMMUNITY
Public Water System Source : GROUND

Primary Use: SUBDIVISION

Population Served: 750

Size of Assessment Area:

GROUND: For this system, a 1000-foot radius circle around each well was used to define the assessment area.

Number of Wells: 2

Well ID	Owner ID	FLUWID Status	Well Depth(ft)	Aquifer
4207	WELL#1 BACKUP 450'/595'350GPM	AAC2808 ACTIVE	595	Floridan Aquifer
4209	WELL#3 FLOWING 400'/590'	AAH7648 ACTIVE	Not Available	Floridan Aquifer

Results:

GROUND WATER:

Number of Unique Potential Contaminant Sources: 2

Facility Type	Facility Class	Status	Name	Affected Well	Susceptibility Score	Concern Level
DOMESTIC WASTEWATER	WASTEWATER SITE	A	Aquarina Beach Community WWTF	4209	<u>0.01</u>	<u>LOW</u>
DOMESTIC WASTEWATER	WASTEWATER SITE	A	Aquarina Beach Community WWTF	4207	<u>0.01</u>	<u>LOW</u>
DOMESTIC WASTEWATER	WASTEWATER FACILITY	A	Aquarina Beach Community WWTF	4209	<u>0.01</u>	<u>LOW</u>
DOMESTIC WASTEWATER	WASTEWATER FACILITY	A	Aquarina Beach Community WWTF	4207	<u>0.01</u>	<u>LOW</u>

Last updated: February 19, 2020

[Copyright](#) © 2012 State of Florida

[Disclaimer](#)

[Exit Disclaimer](#)

[Privacy Statement](#)

M.S. 49 Tallahassee, Florida
32399 850-245-2118 (phone) /
850-245-2128 (fax)

[DEP Home](#) | [About DEP](#) | [Contact Us](#) | [Search](#) | [Site Map](#)

APPENDIX C: TANK INSPECTIONS REPORTS



5,000 Gallon Aquarina Pressure Vessel Inspection Report

Melbourne, Florida

Prepared For:
Kevin Burge
Aquarina Utilities

Prepared By:
Tim McDaniel
Water System Consultant

Date: July 17, 2018

Reviewed By:
Jason G. Saylor, P.E.
Director, Engineering
Utility Service Co., Inc.

Date: August 13, 2018



General Information

INTRODUCTION

On July 17, 2018, Utility Service Co., Inc. conducted a washout inspection of the 5,000-gallon Aquarina Blvd. pressure vessel. The purpose of the inspection was to determine the condition of the coatings and structure and evaluate the tank for compliance with current sanitation, safety & security regulations and guidelines in accordance AWWA, OSHA, Florida Department of Environmental Protection, US EPA and the US Dept. of Homeland Security.

In this report, you will find a description of the current condition of this tank along with photographs to support the recommendations.

The determinations and recommendations made within this report with respect to the condition, integrity, or appearance of the structure are based upon visual observations and did not include any evaluation of the structural design, structural integrity, or structural tolerances of the tank or any components. Extensive testing or investigation of the structure to determine the extent of material damage, deterioration, or degradation was not completed.

TANK DETAILS

CAPACITY:	5,000 Gallons	DESIGN:	Pressure Vessel
INSPECTION DATE:	July 17, 2018	INSPECTOR:	Garrett DuPree Stephen Yeomans
CONSTRUCTION STYLE:	Welded	CONSTRUCTION DATE:	1993
BUILDER:	Dixie Southern	HEIGHT/ DIMENSION:	22ft x 5ft dia.
LADDER GATE:	N/A	SAFETY CLIMB EQUIPMENT:	N/A
EXTERIOR COATING:	Alkyd	EXTERIOR LEAD/ CHROMIUM PRESENCE:	BDL
INTERIOR COATING:	Epoxy	INTERIOR LEAD/CHROMIUM PRESENCE:	BDL

ESTIMATED REPLACEMENT VALUE

The replacement cost is estimated at \$40,000.00, to \$50,000.00 for the tank alone.

Exterior Coatings Conditions

TANK SHELL

Exterior shell coating is in good condition. No corrosion was noted, and the coating continues to protect the substrate. Some algae is present on the underside of the tank.

TANK ROOF

Exterior coating on the roof appeared to be in good condition as well.

RECOMMENDATIONS

- Pressure washing to remove algae from the bottom of the tank and remove the salt because of environment would help keep the coating intact.

Interior Conditions

ROOF AND AREA ABOVE HIGH WATER LEVEL

Interior coating is starting break down and corrosion is present on most of the weld seams. The end caps are showing surface rust across a five-foot by one-foot area. The roof panels in between the weld seams are in good condition.

SIDEWALLS

Coating in the middle area of the tank is beginning to break down. Areas below the water level appear to be in good condition. However, corrosion is present along the entire area around the tank at the waterline. Some of the coating has broken down and steel is showing. The inside area of the manway had tuberculation around the perimeter. When washed it showed the coating is compromised in those areas.

FLOOR

The floor had sediment the entire length of the tank however it was only 1/4 inch deep. The openings, drain, and fill line all had tuberculation. These areas around the weld seams are starting to pit.

RECOMMENDATIONS

- Power tool cleaning of the corroded areas should be completed and repairs to areas of metal loss (pitting) and recoating utilizing a 100% solids epoxy to minimize the cure time.
- Abrasive blasting of the interior of this tank at this time is not cost efficient or recommended, however waiting to do any repairs to the coating in a pressure vessel will allow corrosion and pitting to continue, which may compromise the pressure capacity of the vessel (due to metal thickness losses). Therefore, completion of the interior coating repairs is strongly recommended within the next year.

SAFETY

Access Hatch

This tank is equipped with one access opening that is in good condition.

SANITATION

Roof Openings

The only roof openings are for the pressure relief and air control valves. No issues noted.

STRUCTURE

Foundation and Saddles

The tank is supported by three steel saddles on concrete piers. All three saddles are corroded in various areas near the bottom plates. Metal loss is evident. The tank is also secured to the foundation by a steel braided cables attached to bolts in the foundation.

Tank Shell

The tank shell appears to be in good condition with no visible metal loss.

SECURITY

Site: Tank is located within a protected area.

RECOMMENDATIONS

- **Complete repairs to corroded areas of tank saddles as soon as possible to ensure tank is properly supported.**

5,000 Gallon Pressure Vessel Aquarina Utilities Melbourne, Florida





Photo #1



Photo #2



Photo #3



Photo #4



Photo #5



Photo #6



Photo #7

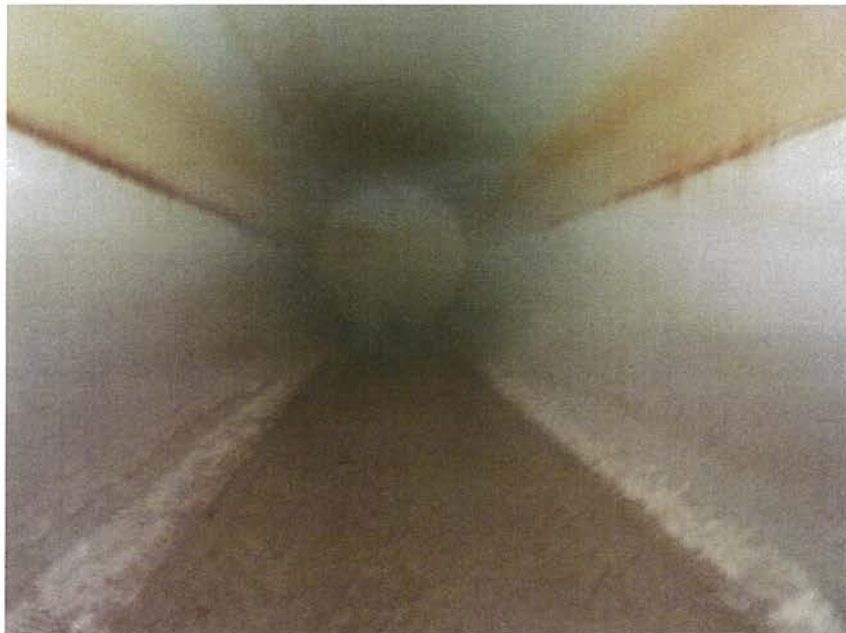


Photo #8



Photo #9

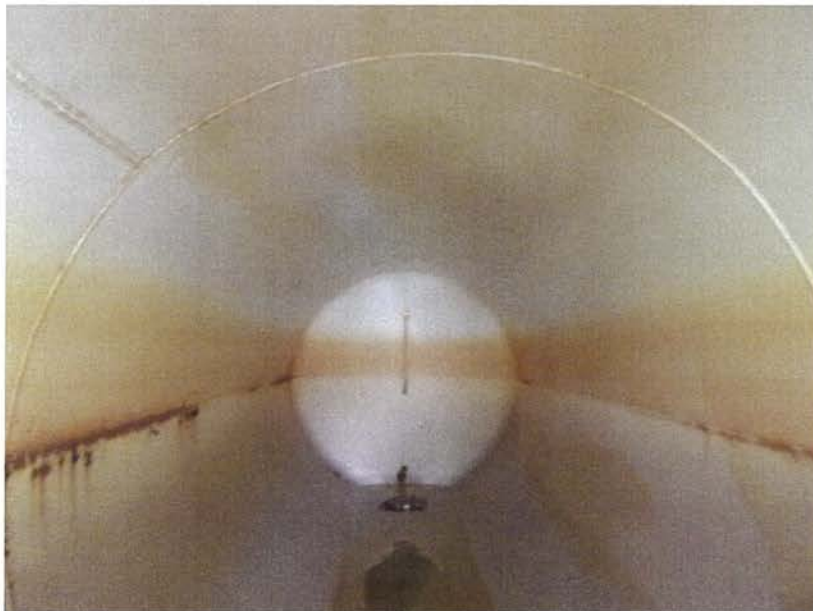


Photo #10



Photo #11



Photo #12



Photo #13



Photo #14



Photo #15



Photo #16



Photo #17



Photo #18



Photo #19



Photo #20

250,000 Gallon Plant Ground Storage Tank Inspection Report

Melbourne, Florida

Prepared for:
Kevin Burge
Aquarina Utility

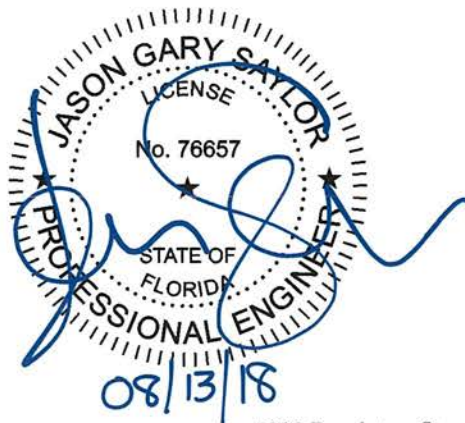
Prepared by:
Tim McDaniel
Water System Consultant

Date:
July 17, 2018

Reviewed by:
Jason G. Saylor, P.E.
Director, Engineering
Utility Service Company, Inc.



Date:
August 13, 2018



General Information

INTRODUCTION

On July 17, 2018, Utility Service Co., Inc. conducted a washout inspection of the 250,000-gallon Ground Storage Tank located at 435 Aquarina Blvd. in Melbourne, FL. The purpose of the inspection was to determine the condition of the coatings and structure, and evaluate the tank for compliance with current sanitation, safety & security guidelines and regulations published by AWWA, OSHA, Florida Department of Environmental Protection, US EPA, and the US Dept. of Homeland Security.

In this report, you will find a description of the current condition of this tank along with photographs to support the recommendations.

The determinations and recommendations made within this report with respect to the condition, integrity, or appearance of the structure are based upon visual observations made during the condition assessment. The condition assessment did not include an evaluation of the structural design, structural integrity, or structural tolerances of the tank or any components. Extensive testing or investigation of the structure to determine the extent of material damage, deterioration, or degradation was not completed.

TANK DETAILS

CAPACITY:	250,000 Gallons	DESIGN:	Concrete Ground Storage Tank
INSPECTION DATE:	7-17-2018	INSPECTOR:	Garrett DuFree
CONSTRUCTION STYLE:	Concrete	CONSTRUCTION DATE:	Estimated 1972
BUILDER:	Crom	HEIGHT/ DIMENSION:	22ft x 44ft dia.
LADDER GATE:	N/A	SAFETY CLIMB EQUIPMENT:	Rigid Rail
EXTERIOR COATING:	Acrylic	EXTERIOR LEAD/ CHROMIUM PRESENCE:	N/A
INTERIOR COATING:	N/A	INTERIOR LEAD/CHROMIUM PRESENCE:	N/A

ESTIMATED REPLACEMENT VALUE

The replacement cost of this tank is estimated at \$190,000 to \$225,000.

Exterior Coatings Conditions

TANK SHELL

The exterior coating is in good condition, with minor cracks only showing in a couple of areas. Overall the coating is protecting the substrate.

TANK ROOF

Coating on tank roof is in good condition and continues to protect the substrate.

RECOMMENDATIONS

- **None at this time.**
-

Interior Conditions

ROOF AND AREA ABOVE HIGH WATER LEVEL

There is no coating on the interior of the tank. The concrete appears to be in good condition. There are small areas in the roof where the reinforcement support is visible and some corrosion is occurring.

FLOOR AND SIDEWALLS

The floor appears to be in good condition, with very little sediment present. Sediment was removed with pressure washing.

Minor cracking and iron staining is present on the sidewalls. Overall, the sidewalls appeared to be in good condition.

Following the cleaning, the entire tank was disinfected per AWWA "Spray Method #2".

RECOMMENDATIONS

- **None at this time.**
-

Safety/Sanitation/Structure/Security

SAFETY

Ladders

Ladders were found to be in good condition.

Shell Access Hatch

Tank is equipped with a one standard Crom shell access manway that was found to be in good condition.

Secondary Roof Access Hatch

Tank is equipped with a roof hatch access hatch that was found to be in good condition. Hatch cover seals with gasket to frame.

Aviation Warning Lights

N/A

SANITATION

Roof Hatch

Hatch cover seals with gasket to frame. Gasket in good condition.

Center Roof Vent

Center venter screens were intact and in good condition.

Overflow

This tank is equipped with four (4) overflow outlets at edge of tank roof. All screens were intact.

STRUCTURE

Foundation

Foundation was not visible for inspection, with grass growing directly up to tank base.
No issues noted at tank base.

SECURITY

Site

The tank is located within a fenced area.

SUMMARY AND RECOMMENDATIONS

SUMMARY

Overall the tank is in good condition with no significant deficiencies to report.

RECOMMENDATIONS

- **No recommendations at this time.**

250,000 Gallon Aquarina GST Tank Melbourne, Florida



Photo #1



Photo #2



Photo #3



Photo #4



Photo #5

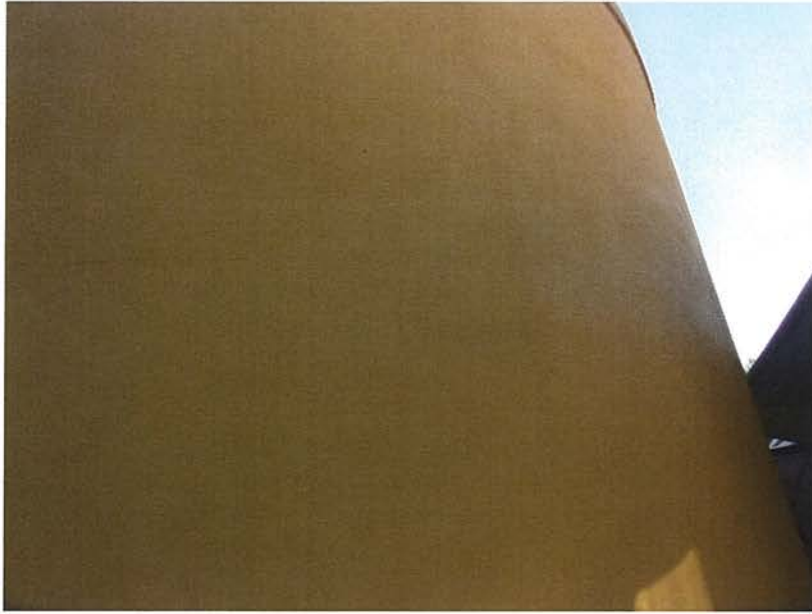


Photo #6



Photo #7



Photo #8



Photo #9

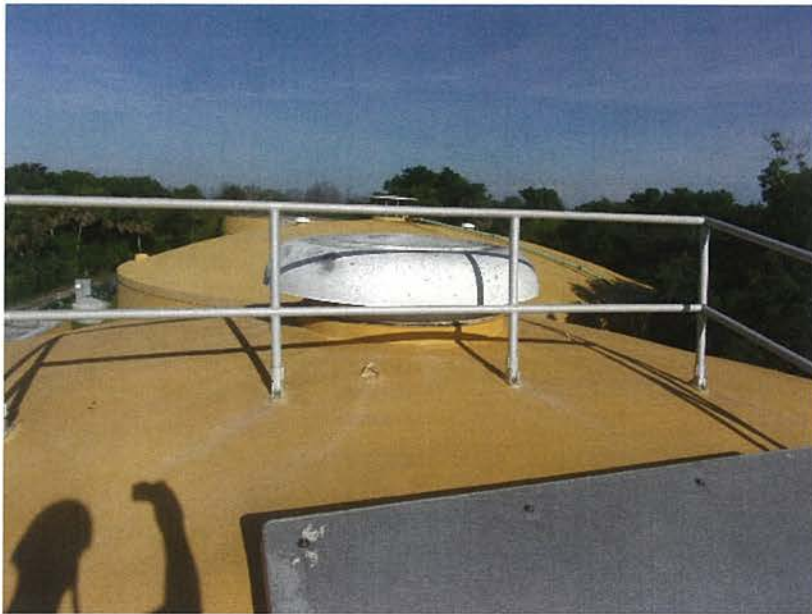


Photo #10



Photo #11



Photo #12



Photo #13



Photo #14



Photo #15



Photo #16



Photo #17



Photo #18



Photo #19



Photo #20



Photo #21



Photo #22



Photo #23

APPENDIX D: CONSUMER CONFIDENCE REPORT

2020 Water Quality Report

Aquarina Utilities, Inc.



We are pleased to present to you an Annual Water Quality Report for the year 2020. This report is designed to inform you about the quality water and services provided to you under Aquarina Utilities, Inc. during the past year.

Aquarina Utilities, Inc. is a family owned and operated Florida business committed to providing you with quality water in the year to come. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Your drinking water is drawn from two potable wells (drawing from 595 feet deep into the Floridan Aquifer), located within the Aquarina development, and treated with a completely updated system, including purification by a reverse-osmosis system and chlorine disinfection, before delivery to your home. We monitor the system closely and employ the added security of remote notification by a computer should any change be needed to ensure that our water processing is proceeding smoothly. We continue to make improvements to both our facility and process, working to achieve our goal of the best quality water service for you, our valued customers.

This report shows the 2020 water quality results and what they mean.

If you have any questions about this report or concerning your water utility, or you want to obtain a copy of this report, please contact Aquarina Utilities, Inc. by email at aquarinautilities@bellsouth.net or call (772) 708-8350. Questions pertaining to the actual test results will be answered by our "A" certified chief operator and superintendent, Kevin Burge, at (772) 708-7946. Additional information may be obtained from the EPA at their Safe drinking Water Hotline (800-426-4791).

In compliance with state and federal laws, rules, regulations and guidelines, the owners and operators of public water systems are required to routinely monitor for contaminants in your drinking water. This monitoring includes comprehensive, regularly scheduled and reported testing of water samples by an outside laboratory and is strictly regulated by state and federal agencies. The results included in this report reflect the testing conducted Aquarina Utilities, Inc. during the period from 1 January 2020 to 31 December 2020. These results are compiled and distributed to you by Aquarina Utilities, Inc. Also included in these results are test results from earlier years for contaminants sampled less often than annually. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. For contaminants not required to be tested for in the year 2020, the test results indicated are for the most recent testing done in accordance with regulations set forth by the state and approved by the United States Environmental Protection Agency (EPA). The schedule for all testing is established by the state.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (A) **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- (D) **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- (E) **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

In 2020 the Florida Department of Environmental Protection performed a Source Water Assessment of our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. The only potential source of contamination identified in the assessment is domestic wastewater, with a 0.01 susceptibility level. This means that there is a very **low** level of concern for any contamination from this source to affect our drinking water **before** it is treated. The assessment results

are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp (search “Aquarina Utilities”) or they can be obtained by emailing aquarinautilities@bellsouth.net and requesting the information.

In the table below, you may find unfamiliar terms and abbreviations. To help you better understand these terms we've provided a list of definitions below:

** Results in the Level Detected column for radioactive contaminants, inorganic contaminants, synthetic organic contaminants including pesticides and herbicides, and volatile organic contaminants are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency.

INORGANIC CONTAMINANTS							
Contaminant & Unit of Measurement	Dates of Sampling (mo. / yr.)	MCL Violation Y / N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	11/2018	N	0.012	0.0046	2.0	2.0	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Fluoride (ppm)	11/2018	N	0.23	0.094	4.0	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at the optimum level of 0.7 ppm
Sodium (ppm)	11/2018	N	21.8	34.0	N / A	160	Salt water intrusion, leaching from soil.

TTHMs and Stage 2 Disinfection / Disinfection By-Product (D/DBP) Contaminant and Disinfectant Residuals							
For the following contaminants monitored under Stage 1 D/DBP regulations, the level is the annual average of the quarterly averages: Bromate, Chloramines, Chlorine, Haloacetic Acids, and / or TTHM (MCL ppb). Range of Results is the range of results (lowest to highest) at the individual sampling sites.							
Contaminant & Unit of Measurement	Dates of Sampling (mo. / yr.)	MCL Violation Y / N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
TTHM (Total Trihalomethanes) (ppb)	12/2020	N	0.47 U	N/A	N/A	MCL = 80	By-product of drinking water disinfection.
HAA5 (Haloacetic Acid) (ppb)	12/2020	N	0.90 U	N/A	N/A	MCL = 60	By-product of drinking water disinfection.
Chlorine (ppm)	1/2020 - 12/2020	N	0.5	0.3 - 0.8	MRDLG = 4	MRDL = 4.0	Water additive used to control microbes.

LEAD AND COPPER (TAP WATER)							
Contaminant & Unit of Measurement	Dates of Sampling (mo. / yr.)	AI Violation Y / N	90th Percentile Result	No. of sampling sites exceeding the AI	MCLG	AL	Likely Source of Contamination
Copper (tap water) (ppm)	10/2018	N	0.198	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	10/2018	N	0.002	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Initial Distribution System Evaluation (IDSE): An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of **trihalomethanes (THMs) and haloacetic acids (HAAs)**. Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

“ND” means **not detected** and indicates that the substance was not found by laboratory analysis.

Picocurie per liter (pCi/L): measure of the radioactivity in water

Parts per billion (ppb) or Micrograms per liter (µg/l): one part by weight of analyte to 1 billion parts by weight of the water sample.

Parts per million (ppm) or Milligrams per liter (mg/l): one part by weight of analyte to 1 million parts by weight of the water sample.

The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table above are the only contaminants detected in your drinking water. As you can see by the table, our system had no water quality violations. We're proud that your drinking water meets or exceeds all Federal and State requirements.

Lead. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Aquarina Utilities, Inc. is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care

providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

We at Aquarina Utilities, Inc. would like you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. If you have any questions or concerns about the information provided, please feel free to call any of the numbers listed.

View Your Account Balances Online!!

Visit www.ub-pay.com to set up your online account using your Aquarina Utilities account number and the municipal code AquarinaFL to be able to see your water, sewer, and irrigation account balances and payment histories.

Make Credit Card Payments:

To make a credit card payment on your water/sewer/irrigation account, access your bill online at www.ub-pay.com. Set up your account login using your Aquarina Utilities account number(s) and the municipality code **AquarinaFL**. For the small fee detailed on the website, you can enjoy the convenience of paying by credit card.

Direct Debit from Checking Accounts:

We now offer direct debit from your checking account for payment of your water and sewer bills. If the convenience of this option- never having to think about whether you changed your billing address or when your payment is due while you are traveling- seems the right fit for you, please give Holly a call at (772) 708-8350 or email her at aquarinautilities@bellsouth.net for more details. All renters are required to pay by direct debit.

Payment by Check or Money Order:

Of course, property owners may always pay by personal check or money order, mailed to **Aquarina Utilities, Inc.; P.O.Box 628733; Orlando, FL 32862-8733**. Your prompt payments on or before the due date indicated on your bill are very much appreciated!

Receive your Bill by Email:

Save yourself that call for your account balance or that unpleasant late notice because you never received your bill!

We strongly encourage all our customers who regularly use email to send us an email requesting that their bills be sent electronically. As regular "snail" mail continues to become more uncertain, we ask that everyone who is computer-capable please provide an email address so we can send your bill to your email account rather than to your regular billing address. Email billing customers will not receive a paper bill in the mail.

Late Fees:

Due to the large number of late-paying accounts and delinquencies among our customers, the Florida Public Service Commission has approved a late fee of \$7.00 for every late account. We encourage everyone to make an effort to get their payments into us by the due date indicated on your billing to avoid this fee. We sure appreciate those wonderful customers who pay promptly! For those paying using the "Bill-pay" option in your online banking package, we request that you to make those payment requests before the 15th of the month to avoid late payments. It might take longer than expected for your bank to disburse the payment and for the mail to deliver it.

Public Alert:

Please take a moment to update your contact information on the **Public Alert** system. This system is designed to provide immediate notification by telephone and email in the event of a boil water notice or other emergency issue. Only by logging into the Public Alert website and providing your contact information will you be notified in the event of a boil water notice or emergency. Please take the time to complete this vital process to ensure that you receive proper notification in the event of an emergency. www.public-alert.com

Website:

www.aquarinautilities.com is now up and running. We will post boil water notices and other public notices on this site. It also has links to related websites such as the Florida Public Service Commission and the Florida Department of Environmental Protection.



Welcome to Aquarina Utilities, Inc!

Aquarina Utilities, Inc. is a family owned and operated Florida business dedicated to the provision of quality water and wastewater service. Our Service Team is made up of a number of qualified and experienced people who strive to improve our facilities at Aquarina and ensure that the water and service we supply are of the best quality. Kevin Burge heads the team with experience, education, and ingenuity. Kevin holds a double “A” certification in both water and wastewater operations. This double certification is fairly rare and is only held by the highest level administrators and chief operators in large municipal systems. Kevin earned a Master’s Degree in Environmental Toxicology and is only a course or two short of a second Master’s in Civil and Environmental Engineering. He has a Bachelor of Science in Biology and an Associate’s Degree in Marine Biology. He holds state licenses for water distribution systems and the inspection and repair of backflow prevention equipment, and he continues his education in water and wastewater operations and maintenance to ensure that the plant is state-of-the-art and running smoothly. Kevin manages all the complicated sampling schedules and compliance issues required by state and federal agencies like the Florida Department of Environmental Protection. He is the man who makes it his business to provide water that meets all the state and federal safety standards in the industry. Kevin has been working in this field since 1987, when he began with his father Reg and their first treatment plant in Jensen Beach, Florida.

The second member of our Service Team is Mrs. Holly Burge, wife of Kevin Burge and mother of their two children. An experienced cartographer, Holly is a military veteran and holds a Bachelor of Science in Geology and Geophysics. She is responsible for all accounting and customer relations. Holly is our connection with the Florida Public Service Commission and all of our valued customers. In addition to her duties for Aquarina Utilities, she facilitates the education of her two teenage children and is a key element in the smooth operation of our family and church affairs. Holly is a double “C” certified water and wastewater operator and also contributes to the plant operations and maintenance. She is the force that fills the gaps and keeps us on our toes.

Finally, Aquarina Utilities, Inc. values the services of the fine employees who are instrumental in the daily operation and care of the facility at Aquarina. Mr. Ronald Chupka of Satellite Beach has been our daily operator for the past ten years and was responsible for the general operations of the plant during the week. Mr. Chupka has been in the business a long time and has been a very dependable asset to our team. He has elected to retire in 2021, and our daily operations will then be managed by US Water. Mr. James Sullivan has been our most important link to the Aquarina undergrounds in maintenance and we have recently added Mr. Kenny Evans to our maintenance team as an operator trainee. This group of dedicated individuals has been working hard to serve the water and wastewater needs of the Aquarina Community. We look forward to plant improvements and the influx of new customers that will come with additional development. We look forward to working with the builders and developers to improve our community.

We absolutely encourage all our customers to call or email us with inquiries and concerns about any issue you might have regarding your water and sewer service. We’d love to hear from you. Kevin is happy to discuss any questions you might have about treatment, and Holly is pleased to have the opportunity to talk to many of you regarding your billing concerns. Kevin is available 24 hrs a day at (772) 708-7946. Holly is available to answer billing questions Monday through Friday, 9am to 1pm at (772) 708-8350 (cell). We urge you to email us at aquarinautilities@bellsouth.net for the best response to your needs. If your call is not answered immediately, it will be returned as soon as possible. Thank you for letting us serve you!

We Love the New Meters!!

During the summer of 2020, all of the water meters in the Aquarina system were replaced with electronically read meters. These meters have already proven invaluable in their ability to maintain usage records on a daily basis and to monitor flow and help identify leaks. Their 99.9% accuracy for the next 20 years will continue to help us accurately assess the volume of leaks and are helping us maintain our water budget for the St. John’s River Water Management District.

Did you know?

Did you know that a little maintenance on the part of our customers helps us save you money?

Your sewer clean-out:

For most of the residents of Aquarina and the neighborhoods we service, this very important access to your sewer line is located in the front yard somewhere. This access is critical to clearing any blockages in your sewer lateral!!



Some tips for keeping your sewer line in good condition:

- **Locate your clean out and be sure it is in good condition.**
Broken clean-outs and caps allow surface water, dirt, debris and RATS into the sewer system, increasing your rates through increased treatment costs and expensive equipment repairs. It is an important responsibility of each customer to keep his lateral and cleanout in good condition so the system remains intact and free from unwanted infiltration for maximum efficiency in treatment. Keeping this access in good repair helps save you money!
- **Keep the area of your sewer (and water!!) lines free from threatening plants such as trees and shrubs.**
The entire length of both sewer and water lines should be completely clear of trees and shrubs. These plants generate strong root systems which easily crush, crack and damage your lines. The utility's responsibility for repairs ends at the meter box for water and at the main for sewer, so the burden of paying a plumber for other repairs falls to the homeowner. Homeowners and associations can also be held responsible for plantings that damage utility property, so be careful what you plant and where! Removing plants that might damage your water and sewer lines will surely save you money!

Meter Boxes and Meters:



Did you know that the homeowner is responsible for keeping the area in and around his/her meter box clear of plants and debris?

- The area at least three feet above and one foot on each side, all around the meter box should be cleared of plantings. This provides access to read the meter and service it if necessary. Meters with restricted access can be denied service or have their reads estimated until proper access is restored.
- Keep the interior of the meter box clear of debris and dirt. The meter should be fully exposed and accessible, with dirt completely cleared away from the sides and bottom. You should be able to pass a hand easily under both the water line and the meter. Again, uncleared meters can be denied service or have their reads estimated until proper access is restored.
- The top of the meter box should be easily and completely visible to a reader. It is a good idea to have your landscape personnel trim around the lids to keep them fully exposed and discourage them from running over the lids with mowers, as damage to the boxes can be billed to the homeowner.

FOR CORRESPONDENCE ONLY:

Aquarina Utilities, Inc.
P.O. Box 1114
Fellsmere, FL 32948
aquarinautilities@bellsouth.net

FOR PAYMENTS ONLY:

Aquarina Utilities, Inc.
P.O. Box 628733
Orlando, FL 62862-8733

24hr Emergency only:

(772) 708-7946 (Kevin's Cell)

Billing Questions (Holly):

Onsite Office Hours 9am -1pm M-F
(772) 708-8350 (cell)

General Information and Updates for Breaks and Outages: try our website at *aquarinautilities.com*

Pay by check through the mail or your bank, direct debit of your checking account, or pay with a credit card at **www.ub-pay.com**. Set up your login with the municipality code **AquarinaFL**, your account number and email address.

Be sure to disable your browser's pop-up blocker before your attempt to use the website to pay.

Email is the **BEST** way to get in touch with us. Calls will be returned as soon as possible.

APPENDIX E: SANITARY SURVEY REPORT



FLORIDA DEPARTMENT OF Environmental Protection

CENTRAL DISTRICT OFFICE
3319 MAGUIRE BLVD., SUITE 232
ORLANDO, FLORIDA 32803

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

January 14, 2020

Kevin R. Burge, Manager
Aquarina Utilities, Inc.
235 Aquarina Boulevard
Melbourne beach, FL 32941
AquarinaUtilities@bellsouth.net

Re: Aquarina Utilities
PW Facility ID #3054060
Brevard County

Dear Mr. Burge:

Department personnel conducted an inspection of the above-referenced facility on November 1, 2019. Based on the information provided following the inspection, the facility was determined to be in compliance with the Department's rules and regulations. A copy of the inspection report is attached for your records.

The Department appreciates your efforts to maintain this facility in compliance with state and federal rules. Should you have any questions or comments, please contact Manuel F. Cardona at 407-897-4134 or via e-mail at Manuel.Cardona@FloridDEP.gov

Sincerely,

David Smicherko

David Smicherko, Manager
Central District
Florida Department of Environmental Protection

Enclosure: Inspection Report

cc: David Smicherko, Manuel Cardona, Central District

State of Florida
Department of Environmental Protection
Central District

SANITARY SURVEY REPORT

Plant Name AQUARINA UTILITIES County Brevard PWS ID # 3054060
Plant Location 235 Aquarina Blvd., Melbourne Beach, FL 32951 Phone 321/327-2930
Owner Name Aquarina Utilities, Inc. Phone 321/327-2930
Owner Address P.O. Box 308, Jensen Beach, FL 34958
Contact Person Kevin Burge Title Director Phone 772/708-7946
This Survey Date 11/1/19 Last Survey Date 7/26/17 Last Compliance Inspection Date 4/30/09

PWS TYPE: Community

PLANT CATEGORY & CLASS: (2C)

MAX-DAY DESIGN CAPACITY: 86,400 gpd

PWS STATUS: Approved

RAW WATER SOURCE

GROUND; Number of Wells 2
 PURCHASED from PWS ID # _____
 Emergency Water Source _____
Emergency Water Capacity _____

STANDBY POWER SOURCE: Yes

Source Baldor diesel
Capacity of Standby (kW) 475
Switchover: Automatic Manual
Hrs Operated Under Load 1 hr/wk.
What equipment does it operate?
 Well Pumps All
 High Service Pumps All
 Treatment Equipment All
Satisfy avg. daily demand? Yes No Unknown
Audio-visual alarm? Yes No
Comments A/V alarm installed 3/21/18.

TREATMENT PROCESSES IN USE

Hypochlorination, reverse osmosis, cartridge filtration,
packed tower aeration, and corrosion control(antiscalant)

SERVICE AREA CHARACTERISTICS

Subdivision _____
Food Service: Yes No N/A
Number of Service Connections 300
Population Served 750 Basis MOR

OPERATION & MAINTENANCE LOG: Yes

Location Water treatment plant
Comments _____

CERTIFIED OPERATOR: Yes

Operator(s) & Certification Class-Number:
Kevin Burge A-16321. Refer to the MOR for a
complete list of operators.

Hrs/day: Required 1 Actual 1
Days/wk: Required 5+2 Actual 5+2
Non-consecutive Days? Yes No N/A
Comments _____

MONTHLY OPERATION REPORTS (MORs)

MORs submitted regularly? Yes No N/A
Data missing from MORs? No Yes N/A
Average Day (from MORs) 41,129 gpd
Maximum Day (from MORs) 96,000 gpd 03/19
Comments The permitted max-day design capacity was
exceeded during 02/19 and 03/19. Explanation by facility
attributes this to the meter reading procedures which have
since been updated.

Flow Measuring Device Flow Meter
Meter Size & Type Sensus
Date Last Calibrated 9/8/17

PLANS AND MAPS

Coliform Sampling Plan Yes No N/A
D/DBP Monitoring Plan Yes No N/A
Lead and Copper Plan Yes No N/A
Distribution System Map Yes No N/A
Emergency Response Plan Yes No N/A
Comments _____

PREVENTIVE MAINTENANCE/O&M

Operation & Maintenance Manual Yes No
Preventive Maintenance Program Yes No
Flushing Program Yes No N/A
Records Yes No N/A
Isolation Valve Exercise Yes No N/A
Records Yes No N/A
Comments _____

CROSS CONNECTION CONTROL

BFPAs None observed # Tested Unknown
WWTP RPZ N/A Date Tested N/A
Written Plan Yes Date 10/17
Comments _____

GROUND WATER SOURCE

Well Number (Florida Unique Well ID #)	1 (AAC2808) North	2 (AAC2807)	3 (AAH7648) South	
Year Drilled	1981	1981	Unknown	
Depth Drilled	595'	590'	Unknown	
Drilling Method	Cable tool	Cable tool	Unknown	
Type of Grout	Neat cement	Neat cement	Unknown	
Static Water Level	39'	39'	Unknown	
Pumping Water Level	Artesian	Artesian	Unknown	
Design Well Yield	Unknown	Unknown	Unknown	
Test Yield	Unknown	Unknown	Unknown	
Actual Yield (if different than rated capacity)	600 gpm	600 gpm	Unknown	
Strainer	Unknown	Unknown	Unknown	
Length (outside casing)	400'	400'	Unknown	
Diameter (outside casing)	18"	18"	18"	
Material (outside casing)	Black steel	Black steel	Black steel	
Well Contamination History	None	None	None	
Is inundation of well possible?	No	Unknown	No	
6' X 6' X 4" Concrete Pad	Yes	Unknown	Yes	
SET BACKS	Septic Tank	>100'	Unknown	>100'
	Reuse Water	>100'	Unknown	>100'
	WW Plumbing	>100'	Unknown	>100'
	Other Sanitary Hazard	None observed	Unknown	None observed
PUMP	Type	Artesian	Artesian	Artesian
	Manufacturer Name	N/A	N/A	N/A
	Model Number	N/A	N/A	N/A
	Rated Capacity (gpm)	N/A	N/A	N/A
	Motor Horsepower	N/A	N/A	N/A
Well casing 12" above grade?	Yes	Unknown	Yes	
Well Casing Sanitary Seal	OK	Unknown	OK	
Raw Water Sampling Tap	Yes	Unknown	Yes	
Above Ground Check Valve	Yes	Unknown	Yes	
Security	Yes	Unknown	Yes	
Well Vent Protection	N/A	N/A	N/A	

COMMENTS Well #1 flows to the GST. Well #2 used for fire protection and irrigation, Well #3 flows to the RO system.

CHLORINATION (Disinfection)

Type: Gas Hypo
 Make Pulsatron Capacity 30 gpd
 Chlorine Feed Rate 30% stroke, 50 spm
 Avg. Amount of Cl₂ gas used N/A
 Chlorine Residuals: Plant 0.88 Remote 0.21
 Remote tap location Tennis Court restroom
 DPD Test Kit: On-site With operator
 None Not Used Daily
 Injection Points Into aerator catchment tank
 Booster Pump Info N/A
 Comments _____

AERATION (Gases, Fe, & Mn Removal)

Type Forced draft Capacity 78 gpm
 Aerator Condition Good
 Visible Algae Growth None
 Protective Screen Condition Good
 Frequency of Cleaning Every 2 years
 Date Last Inspected/Cleaned 09/19
 Comments _____

FILTRATION (Suspended Solids Removal)

Type Hytrex Cartridge Filters
 Size 5 micron No. of Units 2
 Length of Filter Runs 4-6 months
 Type of Filter Media Vertical wound cartridge
 Is media visible? No Clean after BW? N/A
 Filter Rate 80 gpm BW Rate N/A
 Filter Capacity 80 gpm
 Cracks/Cementation/Channeling None observed
 Effluent Stability OK Algae Growth None observed
 Turbidity in clearwell? No
 Head Loss Gauge Yes
 Comments Filters changed in lieu of backwash.

REVERSE OSMOSIS (Dissolved Solids Removal)

Make Codeline (2 stage) Pressure 230 psi
 No. of Modules 4 Permeate Cap. 55 gpm
 Blend Rate (GPM) 14
 Chemicals Used AF 600
 Waste-to-product Ratio 1:3
 Pre-treatment Filtration, antiscalant
 Effluent Quality: TDS (mg/L) N/A
 Waste Disposal Site WWTP
 IW Permit # & Expir. Date N/A
 Comments _____

STORAGE FACILITIES

(G) Ground (C) Clearwell (E) Elevated
 (B) Bladder (H) Hydropneumatic / flow-through

Tank Type/Number	G	H	C
Capacity (gal)	150,000	3,000	350
Material	Concrete	Steel	Fiberglass
Gravity Drain	Yes	Yes	Yes
By-Pass Piping	No	Yes	No
Protected Openings	Yes	Yes	Yes
Sight Glass or Level Indicator	Yes	Yes	No
PRV/ARV	N/A	PRV	N/A
Pressure Gauge	N/A	Yes	N/A
On/Off Pressure	8'/12'	45/52	N/A
Access Secured	Yes	Yes	Yes
Access Manhole	Yes	Yes	Yes
Tank Sample Tap Location	Discharge piping	On tank	Discharge piping
Date of Inspection	2018/07	2018/07	N/A
Date of Cleaning	2018/07	2018/07	2018

Comments _____

HIGH SERVICE PUMPS

Pump #	H1/H2	T1/T2	B1/B2	RO Feed
Type	Centrifugal	Centrifugal	Centrifugal	Vertical turbine
Make	Ampco	Sta-Rite	Ampco	Grundfos
Model	2x1/2ZC2	Unknown	2X1	Unknown
Capacity (gpm)	175	Unknown	Unknown	Unknown
Motor HP	15	1	7.5	15
Date Installed	6/13	6/13	6/13	6/13

Comments _____

ANTISCALANT

Meets NSF 60 & 61 AF600 - Yes
 Comments _____

DEFICIENCIES:

No deficiencies were noted at the time of the inspection.

MONITORING REMINDER:

- Nitrate and nitrite samples are required to be collected from the point of entry (POE) to the distribution system annually. The 2019 results have been received.
- Ensure that all results are submitted in a timely manner. Reports are due within the first ten days following the end of the required monitoring period, or the first ten days following the month in which the sample results were received, whichever time is shortest. [62-550.730(1)(a), F.A.C.]
- Monitoring schedules are available on the Central District's FTP site: <https://floridadep.gov/central/cd-compliance-assurance/content/resources-drinking-water-facilities-and-operators-central>

COMMENTS:

- **Contact FRWA (Florida Rural Water Association) at 850-668-2746, or frwa@frwa.net**, for free technical assistance with your system. FRWA has extended benefits offered to members.
- Provide documentation that the finished-drinking-water meter has been calibrated at least every 5 years.
Checking the calibration of finished-drinking-water meters at treatment plants shall be performed in accordance with the equipment manufacturer's recommendations or in accordance with a written preventive maintenance program established by the supplier of water. [Rule 62-555.350(2), F.A.C.]
- Suppliers of water shall submit written notification to the Department before beginning work or alterations to the public water system. Each notification shall be submitted to the appropriate Department of Environmental Protection District Office or Approved County Health Department and shall include the following: a description of the scope, purpose, and location of the work or alterations; and assurance that the work or alterations will comply with applicable requirements listed in Rule 62-555.330, F.A.C. Suppliers of water may begin such work or alterations 14 days after providing notification to the Department unless they are advised by the Department that the notification is incomplete or that a construction permit is required.
- Suppliers of water shall telephone the SWO at 1-800-320-0519 immediately (i.e., within two hours) after discovery of any actual or suspected sabotage or security breach, or any suspicious incident, involving a public water system. [Rule 62-555.350(10)(a), F.A.C.]
- Suppliers of water shall telephone, and speak directly to a person at, the appropriate DEP District Office as soon as possible, but never later than noon of the next business day, in the event of any of the following emergency or abnormal operating conditions:
 - The occurrence of any abnormal color, odor, or taste in a public water system's raw or finished water;
 - The failure of a public water system to comply with applicable disinfection requirements; or
The breakdown of any water treatment or pumping facilities, or the break of any water main, in a public water system if the breakdown or break is expected to adversely affect finished-water quality, interrupt water service to 150 or more service connections or 350 or more people, interrupt water service to any one service connection for more than eight hours, or necessitate the issuance of a precautionary "boil water" notice in accordance with the Department of Health's "Guidelines for the Issuance of Precautionary Boil Water Notices" as adopted in Rule 62-555.335, F.A.C. [Rule 62-555.350(10)(b), F.A.C.]

COMMENTS (continued):

- Suppliers of water shall notify affected water customers in writing or via telephone, newspaper, radio, or television; and telephone, and speak directly to a person at, the appropriate DEP District Office by no later than the previous business day before taking PWS components out of operation for planned maintenance or repair work if the work is expected to adversely affect finished-water quality, interrupt water service to 150 or more service connections or 350 or more people, interrupt water service to any one service connection for more than eight hours, or necessitate the issuance of a precautionary "boil water" notice in accordance with the Department of Health's "Guidelines for the Issuance of Precautionary Boil Water Notices" as adopted in Rule 62-555.335, F.A.C. [Rule 62-555.350(10)(d), F.A.C.]
- Suppliers of water shall issue precautionary "boil water" notices as required or recommended in the Department of Health's "Guidelines for the Issuance of Precautionary Boil Water Notices" as adopted in Rule 62-555.335, F.A.C. [Rule 62-555.350(11), F.A.C.]



Inspector Signature

Manuel F. Cardona

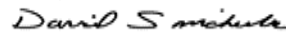
Printed Name

Environmental Consultant

Title

12/30/19

Date



Reviewer Signature

David Smicherko

Printed Name

Environmental Manager

Title

1/13/2020

Date

APPENDIX F: VENDOR RECOMMENDATIONS

**Aquarina Water Treatment Plant
Vendor Options**

Vendor Specialty	Vendor Name	Status	Vendor Contact Information	
Operation and Maintenance Company	U.S. Water Services Corp.	Current Vendor	727-848-8292	4939 Cross Bayou Boulevard, New Port Richey, FL 34652
Labs or Testing Companies	Pace Analytical	Current Vendor	813-855-1844	110 South Bayview Blvd, Oldsmar, FL 34677
	Advanced Environmental Labs	Potential Vendor	407-937-1594	380 North Lake Blvd., Suite 1048 Altamonte Springs, FL 32701
General Contractors	Wharton Smith	Potential Vendor	352-323-1374	608 N Canal St, Leesburg, FL 34748
Well Drillers	Florida Well Drilling, Inc.	Potential Vendor	321-725-1809	1729 Agora Cir, Palm Bay, FL 32909
	Drilling and Irrigation Services	Potential Vendor	321-508-3999	303 Arcadia Court West, Melbourne, FL 32901
Electricians	ACF Standby Systems (Generator Repair)	Current Vendor	800-282-5359	9311 Solar Drive, Tampa, FL 33619
Gas/Propane Supplier	Glover Oil	Current Vendor	321-723-3953	3109 S. Main Street, Melbourne, FL 32901
Pipe Supplier	Florida Well Drilling, Inc.	Potential Vendor	321-725-1809	1729 Agora Cir, Palm Bay, FL 32909
	Drilling and Irrigation Services	Potential Vendor	321-508-3999	303 Arcadia Court West, Melbourne, FL 32901
Pump Supplier	Barney's Pump	Current Vendor	863-557-6298	2965 Barneys Pumps Pl, Lakeland, FL 33812
	R.C. Beach & Assoc, Inc.	Potential Vendor	727-216-3240	625 Grand Central St., Clearwater, FL 33756
Chemical Treatment Supplier	Hawkins, Inc.	Current Vendor	800-330-1369	381 S Central Ave, Oviedo, FL, 32765



woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS