July 10th, 2017

Karen Kharatyan
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
X0B 1J0

Re: Water License 2AM-MEL1631 Part D, Item 3 / NIRB Project Certificate 11MN034 Condition 18 - Submission of Construction Summary Report for the Sewage Treatment Plant

Mr. Kharatyan,

Agnico Eagle Mines Limited is developing the Meliadine Project, a gold mine located approximately 25 km north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson Bay, the Project site is located on a peninsula between the east, south, and west basins of Meliadine Lake (63°1'23.8'' N, 92°13'6.42"W) on Inuit Owned Land.

Facilities that are planned to be constructed for the operation of the future Meliadine Mine include a mill, power plant, maintenance facilities, tank farm for fuel storage, freshwater treatment plant, sewage treatment plant, and accommodation and kitchen facilities for 520 people.

Commissioning of the Sewage Treatment Plant was completed April 7, 2017. In accordance with Water License 2AM-MEL1631, Part D, Item 3 and Schedule D, and Project Certificate 11MN034 Condition 18, please find enclosed with this letter, a copy of the Construction Summary Report for the Sewage Treatment Plant.

Should you have any questions regarding this submission, please contact me.

Regards,

Agnico Eagle Mines Limited – Meliadine Division

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Environmental Compliance Counselor

Meliadine Sewage Treatment Plant

Construction Summary Report (As-Built report)

In Accordance with Water License 2AM-MEL1631 (Part D, Item 3)

Prepared by:

Agnico Eagle Mines Limited – Meliadine Division

July 2017

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APPENDICES

1 INTRODUCTION

As required by Water License A No. 2AM-MEL1631 – Agnico Eagle Mines Limited for the Meliadine Gold Project (Part D, Item 3), this report summarizes the construction work of the Sewage Treatment Plant (STP). Included in this report:

- Summary of the construction;
- Summary of field decisions and mitigation measures implemented during construction;
- As-built drawings;
- Photographs of the infrastructure.

2 SUMMARY OF THE CONSTRUCTION

2.2 SITE LOCATION AND ACCESS

Agnico Eagle Mines Limited (Agnico Eagle) is developing the Meliadine Project (the Project), a gold mine located approximately 25 km north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson Bay, the Project site is located on a peninsula between the east, south, and west basins of Meliadine Lake (63°1’23.8’’ N, 92°13’6.42"W) on Inuit Owned Land.

The figure below presents a site location plan (Figure 1).

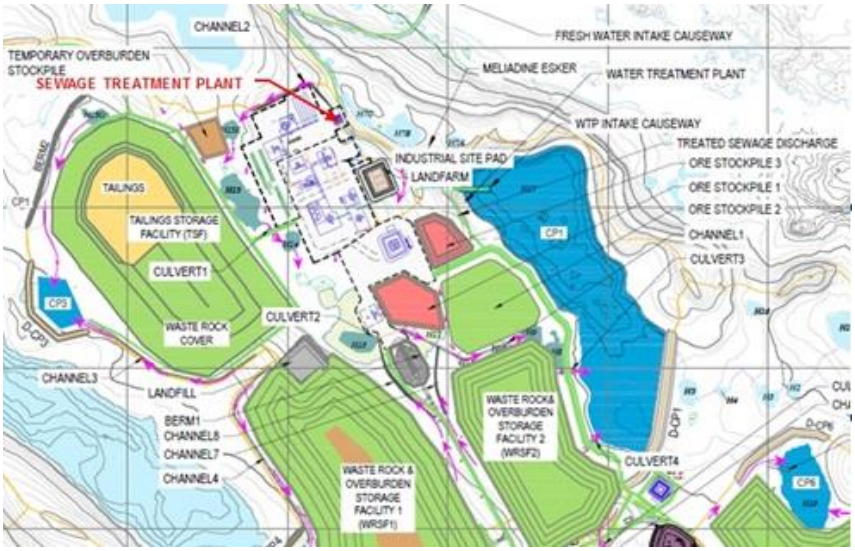

Figure 1. Plan of the site and location of the STP

2.3 SCHEDULE

The overall schedules for the STP are as follows:

- Period of construction and commissioning: From March 3rd, to April 6th, 2017.
    - Period of clear water test: From March 22th to March 24th ,2017
    - Period of raw water test: From March 26th to April 6th, 2017
- Date of operation start-up: April 7th, 2017.
- The construction monitoring was managed by the supplier (H2O Innovation).

Construction monitoring summary is presented in Appendix A.

2.4 TREATMENT PLANT CHARACTERISTICS

The STP relies on bacterial activity. The process is composed of five (5) steps described below: screening and flow equalization, aerobic biological treatment, membrane filtration, ultraviolet disinfection, and sludge handling. The flow diagram is available in Appendix B.

2.4.1 Screening and Flow Equalization

Influent wastewater is pumped to the two (2) aerated equalization tanks (EQ). The equalization system is able to manage a variation in flows. It provides raw wastewater storage of up to 50% of the design flow to store feed during high flow periods and to ensure feed supplementation during low flow periods. It provides a stable and consistent raw feed for the downstream processes. Equalized water is pumped via two (2) equalization pumps into a standpipe inside the second tank and flows from that pipe by gravity to the fine screens. The fine screens are rotary drum screens with 2 mm perforated plate openings that operate continuously. The screens ensure the removal of large debris to protect downstream equipment. Pressurized wash water is used intermittently to clean the screens and screenings.

2.4.2 Aerobic Biological Treatment

Screened raw water falls by gravity from the screens into the sump tank, where it is pumped to the aerobic tank, which is located outdoors. Aerobic biological treatment removes the organic load (measured as BOD) of the wastewater. Bacteria grown in the bioreactor remove unwanted organic pollutants to produce a treated water of high quality. Oxygen is supplied by regenerative blowers and is injected by fine bubble diffusers in the tank. The diffusers are designed for a wide range of air flows, according to the system’s demand in oxygen. It keeps a dissolved oxygen concentration at concentrations more than 2 mg/L at any time to satisfy the needs of the

biomass. The mixed liquor suspended solids (MLSS) overflows into a standpipe inside the tank and flows by gravity to the membrane filtration trains. The dry bacteria product, BEC105, could be used in the treatment process to stimulate biological activity when needed. Since the beginning of operation, a defoamer (anti-foam agent) is used to reduce the production of foam, which may cause overflow. Less than 0.5 liter of product is used daily and it is possible that it will be reduced depending on the foam production. As the flow rate increases, the foam is expected to reduce. Caustic soda (NaOH) is used to maintain the optimal pH condition for the bacteria inside the aerobic tank. The bacterial activity may cause the production of acidity and an alkali such as NaOH keeps the alkalinity balanced and helps to stabilize the pH between 6 and 8.

2.4.3 Membrane Filtration System

Membrane filtration (MBR) is used to separate the bacteria from the water to ensure they are kept in the process at the desired concentration. Activated sludge is returned at a constant flow rate to the aerobic tank to prevent a build-up of sludge in the membrane tank. The return activated sludge (RAS) is pumped at a higher flow rate than the design flow rate of the plant, to make sure that there is good circulation in the whole system and that there is no accumulation of solids.

The membranes are totally submerged and have a pore size of 0.4 microns, which remove all suspended solids in the effluent. Permeation pumps are provided to suction the effluent through the membrane modules and transport it to the permeate tank. Permeation pumps are supplied with variable speed drives to overcome any changes in transmembrane pressure and achieve the design at all times. The operating cycle for the selected modules is to suction effluent water for seven (7) minutes and to relax the membrane for one (1) minute. The cycle optimizes the long-term operation of the membrane modules. The housings are constructed with an integrated diffuser at the bottom to aerate continuously the membrane and prevent clogging and accumulation of sludge. The relaxation of the membranes allows extending the interval between cleanings (CIP or Clean-In- Place). CIP cleans are done about twice a year. Washes are performed with permeate stored in the permeate storage tank while a cleaning chemical (sodium hypochlorite (NaClO) and citric acid ($C_8H_8O_7$)) is added. Chemical solutions are reverse flowing through the membranes, which are soaked for a few hours after. After washing, the permeation is restarted. While a train is washing, the other train can continue to treat water and ensure a continuous production of effluent.

Once a week, a chemically enhanced backpulse (CEB) should be performed on the membrane modules with sodium hypochlorite to mitigate membrane fouling. Permeate flow is reversed to flow back into the membranes while the cleaning chemical is added inline.

2.4.4 Ultraviolet Disinfection System

From the permeate pumps, each membrane bioreactor train sends permeate through an inline ultraviolet (UV) disinfection system. It is a physical process that inactivates instantaneously microorganisms. The UV system process adds no chemicals to the water, and therefore, has no impact on the chemical composition of the effluent. From here, effluent is sent to a common permeate storage tank. The permeate tank acts as a reservoir for treated water that is pumped to a discharge location. This tank can also be used for CEB and CIP process, as previously mentioned.

2.4.5 Sludge Handling System

Since bacteria continue to reproduce as they consume organics and nutrients, the concentration of biomass, measured as Mixed Liquor Suspended Solids (MLSS), increases with time. Periodic sludge wasting is required to control the MLSS concentration in the bioreactor tanks. Sludge is sent to the sludge storage tank by redirecting the flow of the RAS pump. A blower and coarse bubble diffuser system maintains an aerobic environment within the sludge tank to minimize the proliferation of odors. Periodic settling is used to facilitate the thickening of the waste activated sludge. The supernatant (upper portion of the tank) is sent back to the sump tank by opening a valve, where it will re-enter the treatment process. This operation, called decanting, reduces the volume of sludge that needs to be handled and extends the period of time that the sludge tank can be used before thickened sludge is disposed.

3 FIELD DECISIONS AND MITIGATION MEASURES

The construction of the STP generally followed the design drawing, except for the following:

Addition of defoamer: less than 0.5 L is used per day. This product is needed because of the formation of foam due to the activity of bacteria. This product is only needed at the beginning of the operation of the STP and the quantity will reduce with the augmentation of daily flow rate.

During the commissioning, the following issues occurred and have been solved:

- During a blizzard, the heavy winds pushed snow through the air damper. It caused minor leaks from the fan heater. To avoid this leaking, the fan speed was turned down during the blizzard.
- The main power disconnect was damaged during construction and was fixed.
- Baseboard heater was heating the wall instead of the floor. The heater was adjusted to 5°Celcius to minimized wall heating.

- The temporary insulation on the piping coming out of container #1 was damaged during the blizzard event. The piping was sealed with the permanent insulation after the event.
- Ventilation for artic conditions was deficient in the areas of the membrane, screen/waste and effluent reservoir. Artic vents were installed in those areas to prevent freezing during winter.
- Damaged by the blizzard, one of the Container#1 baseboard heaters was replaced.
- During the tests conducted on clear water, the equalization tank B T-19000B and Aeration reservoir T-72000 needed to be kept warm. A process air blower was used to keep the tank from freezing and auxiliary equipment was used to heat the water in the reservoir.
- The Container#1 and the Container#2 baseboard heaters were presented some dysfunctions. The electronic system was bypassed and an external thermostat control was installed for fixing the problem.
- The electronics of one of the flow indicating transmitter that measures the level of raw water going to the equalizer tanks (FIT-11274) had been isolated in a way the displays stays accessible before powering it up and commissioning it. However the device is not resistant to extreme cold temperatures. Before the start of this operation, the isolation has been completed to insure good function of this device.
- Equalizer tanks 1 and 2 (T19000A/B) and Aerobic tank (T-72000) level sensor 1/2" ball valve froze before the first clear water test. To ensure that this does not cause sensor level wrong reading during tests, verifications were done and the issue was solved. Equalizer tanks 1 and 2 (T19000A/B), and Aerobic tank (T-72000) level sensor insulation were completed with urethane.

4 SUMMARY OF ANALYSIS RESULT OF WATER QUALITY TEST

As indicated in the STP Operation and Maintenance Manual (OMM), inspections were conducted on the water quality daily and weekly once sewage started to flow through the STP. Physical parameters such as turbidity, temperature and flow rate were recorded, and samples collected to monitor the chemical water quality parameters presented in Table 1 which also lists the expected concentrations. Appendix C presents the laboratory analysis of water samples collected the days before and after the first discharge to CP1 on April 7th. Results show that the STP's effluent quality significantly improved the weeks following commissioning. Concentrations of Ammonia Nitrogen (NH3-N), nitrites (NO2), Total Kjeldahl Nitrogen, and total coliforms exceeded the expected concentrations initially but decreased in the following weeks. As the biological system was leaning towards equilibrium, the concentrations of most parameters are in accordance with the expected water quality concentrations listed below in Table 1. Parameters including nitrates (NO3) and nitrites (NO2) have some daily concentrations higher than expected initially. As a reminder, the final effluent from the STP is discharged into the CP1 attenuation pond. Water is then released to the receiving environment (i.e. Meliadine lake) if water quality results meet NWB Water License 2AM-MEL1631 and *Metal Mining Effluent Regulations* criteria.

Table 1. Water quality parameters and the concentrations to expect

Parameter	Influent Average	Effluent Quality
BOD	200-300 mg/L	<25 mg/L
COD	500 mg/L*	<50 mg/L
TSS	50-350 mg/L	<25 mg/L
Ammonia Nitrogen (NH_3-N)	40-50 mg/L	0.89 mg/L
NO_3 (nitrate)	0.02 mg N/L*	50 mg N/L
NO_2 (nitrite)	0.01 mg N/L*	2 mg N/L
Tot.Kjeldahl Nitrogen	45-60 mg/L	12-19 mg N/L*
T-Phoshorus	5-12 mg/L	10 mg/L*
pH	6.5 - 8.5	6 - 9
Alkalinity as $CaCO_3$	250 mg/L	50 mg/L
Total Coliforms	15,900,000*	1000 cfu/100 mL
Fecal Coliforms	4,800,000*	1000 cfu/100mL

**Data from Meadowbank*

5 DRAWINGS AND PHOTOGRAPHS

As-built drawings are presented in Appendix D. Table 2 lists the different drawings included in Appendix D.

Table 2. List of drawings contained in Appendix D

Drawing Number	Drawing Name
U65875-C01-0001_R6	Process and instrumentation diagrams legend
U65875-C01-0110_R6	Raw Water Screening
U65875-C01-0190_R6	Feed Water Equalization
U65875-C01-0720_R6	Aerobic Tank
U65875-C01-0740_R6	Membrane Filtration
U65875-C01-0750_1_R6 **U65875-C01-0750_2_R6**	Blowers for Membrane Bioreactor System
U65875-C01-0790_R6	Permeate Tank
U65875-C01-0800_1_R6 **U65875-C01-0800_2_R6**	Dosing Skid - Cleaning Chemicals and Alkalinity
U65875-C01-0960_R6	Sludge Handling System

Appendix E contains photographs taken once the construction and commissioning.

Appendix A: Construction Monitoring Summary

Day	Time (from-to)		Work description	Comments/Delays
3/3/2017	**13:30pm to 17:30pm**		**Arrival on site**	WTP raw water tank feed to fire suppression system have to be insolated prior to fill raw water tank.
		STP/WTP	Material expedited from H2OI verification/gathering	
		WTP	Give the material to the plumber and give instruction to fix the 1 1/4'' PVC piping broken line	
		STP/WTP	STP/WTP interconnections verification	
		STP	Prepare material and give instruction to plumber in prevision of EQ sump and effluent sump inversion for the day after	
		STP	Smoke detector batteries replacement	
		WTP	Installing 5 microns and 10 microns Filters	
3/4/2017	**6:00am to 17:30pm**		**2nd day on site**	WTP raw water tank feed to fire suppression system have been insolated by plumber. EQ sump and effluent sump inversion could not be completed due to exteme weather condition
		WTP	I/O test	
		WTP	Start-up UV units, Test	
		WTP	pH/Cl probe wiring connection	
		WTP	Give instruction to the plumber to fix the 2'' broken PVC flange	
		WTP	Smoke detector batteries replacement	
3/5/2017	**6:00am to 17:30pm**		**3td day on site**	
		STP	EQ sump and effluent sump inversion completed by plumbers	
		STP	EQ pumps electrical connection completed by electriciens	
		WTP	Test the control between raw water lift station and WTP	
		WTP	Fix LT-10060 raw water level transmitter issue.	
3/6/2017	**6:00am to 17:30pm**		**4th day on site**	H2OI might have to start commissioning on STP, depending on how long it takes to solve the issues on the WTP raw water lift station.
		WTP	Raw water lift pumps start-up. No water came in the WTP.	
		STP	Troubleshooting remote emergency stop button electrical interconnection	
			Pick up Alexis M. at his arrival at 13:30	
		STP/WTP	Discuss about the next incoming days planning since raw water feed is not available on WTP.	
	1 hour		Camp orientation	

Day	Time (from-to)		Work description	Comments/Delays
3/7/2017	**6:00am to 17:30pm**		**5th day on site**	Some progress have been achieve on STP commissioning since WTP commissioning is delayed due to raw water lift pumps issue
		STP/WTP	7:30am meeting with agnico eagle. It have been determine that agnico eagle will witness some pre operational tests before starting up the systems.	
		STP	Replace 2 faulty pressure gages.	
		STP	Connect the 3 pH probes and the O2 sensor the transmitter.	
		STP/WTP	Verify VFD motor parameters	
		STP	Verify system parameters	
		STP	O/I test	
3/8/2017	**no site**		**6th day on site**	Blizzard red code all day
		STP/WTP	Double checking documentation in order to validate system determined set-point/adjustment	
3/9/2017			**7th day on site**	
		STP/WTP	Double checking the STP/WTP documentation in order to validate system determined set-point/adjustment.	Blizzard red code all day
3/10/2017	**10:00am to 17:30**		**8th day on site**	Blizzard red code, access to site at 10:00am
	1 heure	STP/WTP	Put together the OIT list for STP/WTP	
	2 heures	STP	H2S/CH2 gas detector installation	
3/11/2017	**6:00 to 17:30**		**9th day on site**	
	5 hours	STP	H2S/CH2 gas detector installation	
	1 hour	STP/WTP	13:30pm meeting with Agnico-Eagle	
	1 heure	STP/WTP	Solving Wi-Fi connection with the laptop supplied with the system (Programming laptop)	
3/12/2017	**6:00 to 17:30**		**10th day on site**	
	5 hours	STP	H2S/CH2 gas detector installation	
	1 hour	STP/WTP	14:00 meeting with Agnico-Eagle	
3/13/2017	**6:00am to 17:30pm**		**11th day on site**	
	30 minutes	STP/WTP	13:00 weekly conference call with Agnico-Eagle	
	3 heures	WTP	Solving UV intensity signal issue	
3/14/2017	**6:00am to 17:30pm**		**12th day on site**	
	2 heures	STP	Gas detector programming integration and test	
	2 heures	STP/WTP	Install 3 air dampers. WTP container#1 air damper not accessible with a ladder.	

Day	Time (from-to)		Work description	Comments/Delays
3/15/2017	**6:00am to 17:30pm**		**13th day on site**	Raw water lift station is operational and provide water to WTP from 10:00am. Non-potable water is ready to supply camp network, and STP Equalisation reservoir T-19000A by the end of the day
	5 heures	WTP	WTP start-up	
	2 hours 30 minutes	STP	Meeting with Agnico to coordinate STP commissioning	
3/16/2017	**6:00am to 17:30pm**		**14th day on site**	
	1 hour	STP	Meeting with Agnico to coordinate STP commissioning	
	2 heures	STP	Put on paper the coordination details discussed during previous meetings. Sent to H2OI engineering for approval.	
	1 heure	WTP	Put together an WTP operational testing check sheet under Agnico Eagle request	
	1 heure	WTP	Dosing pump clear water test/drawndown	
	30 minutes	WTP	pH and turbidity probe calibration	
3/17/2017	**10:30am to 17:30**		**15th day on site**	
	30 minutes	WTP	Agnico-Eagle operator training	
		WTP	Monitoring WTP distribution pump fixed speed operation to allow low pressure and smooth distribution network filling/venting	
		WTP	Verification while distribution network is pressurized	
3/18/2017	**6:00am to 17:30pm**		**16th day on site**	Camp sewage lift station not available to fill STP reservoir
	1 heure	WTP	Distribution pump automatic operation fine tuning	
3/19/2017	**6:00am to 17:30pm**		**17th day on site**	Start filling up STP equalisation reservoir T_19000B when bottom tie in for auxiliary water warm up system is ready at 9:00am
		STP	Outdoor reservoir T-19000A/B, T-72000 level sensor insolation	
		STP	Trottling T-19000A top blower valve to equilibrate the air supply to both equalization tank	
3/20/2017	**6:00am to 17:30pm**		**18th day on site**	Blizzard red code, Billy T. move into new camp in construction to keep working during blizzard
		STP	Filling up Aerobic tank T-72000	
		STP	Testing EQ pumps, screen filter, sump pumps automation while filling up Aerobic tank	

Day	Time (from-to)		Work description	Comments/Delays
3/21/2017	**6:00am to 17:30pm**		**19th day on site**	Realise there is metal chips on the sump tank. Raise the flag that the Aerobic tank to membrane tank 6'' pipe should have been cleaned from contruction debris. No progress can be done during the cleaning because this pipe was needed to progress on the operation testing. WTP raw water pump quit working during the day, and cause WTP shut down.
	5h	STP	Working with plumber to clean the 6 inch pipe from metal chips	
	2h	STP	Working with plumber to fix the 2 inch valve FV-74050-2 leak	Loosened during transportation. Have to drain a part of Aeration tank to fix the leak.
		STP	Filling Membrane tanks	
		STP	Test recirculation	
3/22/2017	**6:00am to 17:30pm**		**20th day on site**	Plumber installed 3X arctic vent
		STP	Clear water operational test membrane train 1 and 2. (permeation cycle)	
3/23/2017	**6:00am to 17:30pm**		**21th day on site**	
		STP	Clear water operational test membrane train 1 and 2. (CEB cycle, sludge wasting cycle)	
3/24/2017	**6:00am to 17:30pm**		**22th day on site**	Emptied Equalisation tank B by 12:00pm. EQ tankA filling valve frozen so no sewage was introduce, and no water was drained from Aerobic tank.
		STP	Finalize clear water test	

Appendix B: Process Flow Schematics

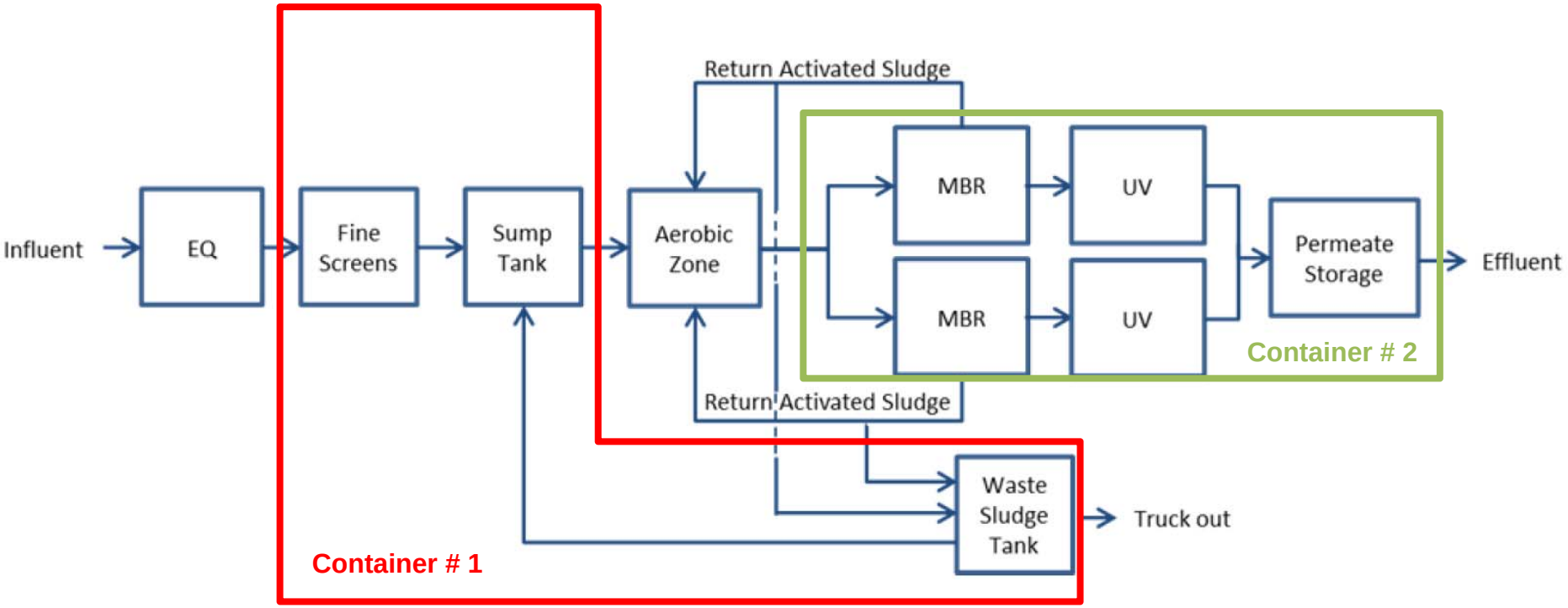

Figure 2: Process Flow Schematics (The steps in the boxes occur in the structure (the red box is in container 1 and the green box is in container 2; the others occur in tanks outside)

Appendix C: analysis result of water quality test

Table. Results of analysis of water quality parameters on STP water samples

Parameters	Units	Results	Results	Results	Results	Results Maxxam	Results H2L	Results Maxxam	Results Maxxam	Results H2Lab	Results H2L	Results Maxxam	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Expected Effluent Quality
		26-Mar	30-Mar	3-Apr	6-Apr	12-Apr	12-Apr	13-Apr	17-Apr	17-Apr	20-Apr	20-Apr	24-Apr	27-Apr	1-May	4-May	8-May	11-May	15-May	18-May	22-May	25-May	29-May	
pH (M-TIT-1.0)	-	8.61	8.43	8.69	8.74	-	8.38	7.4	6.84	6.98	6.41	-	6.3	6.82	6.54	6.99	6.84	7.27	7.31	7.33	7.51	7.39	7.64	6 to 9
M.E.S. (M-SOLI-1.0)	mg/L	<1	1	<1	1	-	4	2	5	7	4	6	<1	1	<1	1	1	<1	1	<1	<1	<1	<10	<25
Azote ammoniacal (NH3-NH4) (M-NH3-2.0)	mg N/L	88	106.84	98.43	90.21	*74*	93.33	48	27	27.84	29.29	29	40	24	8.1	6.6	0.37	0.71	0.25	0.15	0.2	0.7	0.06	0.89
NH3 (non-ionized)		-	-	-	-	-	5.78	-	-	0.07	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
NH4		-	-	-	-	-	87.55	-	-	27.77	29.27	-	-	-	-	-	-	-	-	-	-	-	-	-
Azote Kjeldahl (M-NTK-1.0)	mg N/L	78	105.34	105.33	97.12	-	116.82	49	29	28.48	3.42	-	34	37	11	12	4.8	<5.0	8.2	3.3	2.1	7.7	3.5	12 to 19
DBO5 (LBS-DBO-399-A)	mg/L	4	<1	1	1	-	7	3	3	4		-	<2	3	<2.0	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<25
Nitrates (NO3) (M-NITR-2.0)	mg N/L	<0.10	< 0.01	0.03	0.33	-	<0.01	<10	<10	<0.01	1.88	-	10	69.3	14	<10	18	21	15.5	16	21	60.7	96.4	50
Nitrites (NO2) (M-NITR-2.0)	mg N/L	0.016	0.09	0.57	3.14	-	22.7	51.6	72.5	75.8	77	-	61.6	13	66.9	58.7	75.9	64.2	40.7	36.3	34	2.29	0.107	2
Phosphore total (P) (M-P-3.0)	mg P/L	4.5	8.37	8.88	8.7	-	9.94	11	12	11.9	12.3	-	13	12	13	12	12	13	9.7	9.3	10	7.2	8	10
Fecal Coliforms	UFC/100mL	40.0	<100	<100	15	-	10	ND	1000	1000	4000	-	<2	<10	2	2200	160	ND	<10	-	<10	ND	<2	1000
Total Coliforms	UFC/100mL	***	<100	<10000	2000	-	ND	ND	110000	110000	90000	-	<10	100	<100	30000	10000	ND	<1000	-	<100	ND	<1000	1000
AAHB	UFC/mL	>30000	40000	>30000	>200000	-	>30000	ND	>30000	>30000	220000	-	>3000	73	>30000	>30000	100000	ND	27100	-	12500	ND	>30000	
Atypical Colonies	UFC/100mL	>200000	600000	210000	50000	-	>2000000	ND	150000	150000	70000	-	1180	3000	1800	40000	80000	ND	156000	-	1200	ND	48000	

Extra Parameters (not OMM)	Units	26-Mar	30-Mar	3-Apr	6-Apr	12-Apr	12-Apr	13-Apr	17-Apr	17-Apr	20-Apr	20-Apr	24-Apr	27-Apr	1-May	4-May	8-May	11-May	15-May	18-May	22-May	25-May	29-May
UV Transmissivity	%T	33	-	27	-	-	25	24	24	25	25	-	24	23	23	23	24	23	31	35	33	39	38
Oil and Grease	mg/L	0.7	<1	<1	<1	<0.50	-	1.3	1.7	1	<1	-	0.8	<0.50	1.6	0.8	2.4	<0.50	1.5	1.9	0.7	1	1.2
COD	mg/L	61	-	60	55	-	67	76	93	59	84	-	80	83	84	84	71	89	64	57	61	57	49
Alkalinity	mg/L CaCO3	320	-	392	381	-	316	74	43	63	57	-	20	33	23	41	36	61	62	51	65	46	60
Bicarb. Alkalinity	mg/L CaCO3	-	-	-	-	-	-	-	43			-	20	-	-	-	-	-	-	-	-	-	-
Carb. Alkalinity	mg/L CaCO3	-	-	-	-	-	-	-	<1.0			-	<1	-	-	-	-	-	-	-	-	-	-

Appendix D: Sewage Treatment Plant as-Built Drawing

VALVE SYMBOLS

N.OPEN N.CLOSED

- BALL
- V-BALL
- BUTTERFLY
- DIAPHRAGM
- GATE
- GLOBE
- NEEDLE
- PLUG
- SAMPLE/DRAIN
- CHECK
- BACKFLOW PREVENTER
- 3-WAY, 4-WAY
- PRESSURE REGULATING
- BACK PRESSURE REGULATING
- FLOW CONTROL
- 2-WAY SOLENOID
- 3-WAY SOLENOID
- 4-WAY SOLENOID
- AIR RELEASE
- VACUUM BREAKER
- PRESSURE RELEASE
- SLUICE GATE/WEIR

VALVE ACTUATOR SYMBOLS

- PNEUMATIC (FAIL LAST POSITION)
- PNEUMATIC FAIL CLOSE
- PNEUMATIC FAIL OPEN
- ELECTRIC
- DIAPHRAGM
- POSITIONER (ANY ACTUATOR TYPE)
- HAND OVERRIDE (ANY ACTUATOR TYPE)
- TRAVEL STOPS (ANY ACTUATOR TYPE)

FLOWMETER SYMBOLS

INTEGRAL / CLOSE COUPLED / REMOTE

- MAGNETIC
- PADDLE
- VORTEX
- DP/ORIFICE
- THERMAL
- ROTAMETER

INSTRUMENTATION SYMBOLS

LOCALLY MOUNTED	IN CONTROL PANEL	DESCRIPTION
X	X	DISCRETE INSTRUMENT
	X	PRIMARY PLC OR DCS SHARED CONTROL
	X	SECONDARY PLC OR DCS SHARED CONTROL
	X	COMPUTER FUNCTION

INSTRUMENT FUNCTIONS

- K — SIGNAL PROCESSING FUNCTION
- A/M — AUTO/MANUAL
- Σ — ADDITION/SUMMATION
- Δ — DIFFERENTIAL
- ◇ — INTERLOCK LOGIC FUNCTION
- x̄/n — AVERAGING

INSTRUMENT CONNECTIONS

- SOCKETWELD
- THREADED
- WELDED

PIPING SYMBOLS

- FLANGED CONNECTION
- THREADED CONNECTION
- BLIND FLANGE
- DOUBLE CONTAINMENT
- QUICK DISCONNECT VICTAULIC
- x" INSULATION THICKNESS — INSULATION
- QUICK DISCONNECT CAMLOK
- x" INSULATION THICKNESS — HEAT TRACING E=ELECTRIC S=STEAM G=GLYCOL
- CAPPED PIPE END
- DRAIN OUTLET
- UNION
- REDUCER ECCENTRIC REDUCER
- EXPANSION/FLEXIBLE/ ISOLATION JOINT

PIPING ABBREVIATIONS

316 SS	316 STAINLESS STEEL
304 SS	304 STAINLESS STEEL
316L SS	LOW CARBON 316 STAINLESS STEEL
304L SS	LOW CARBON 304 STAINLESS STEEL
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CARBON STEEL
DI	DUCTILE IRON
HDPE	HIGH-DENSITY POLYETHYLENE
PE	POLYETHYLENE
PVC	POLYVINYL CHLORIDE
RLCS	RUBBER LINED CARBON STEEL
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
CML	CEMENT MORTAR LINED

LINE SYMBOLOGY

- MAIN PROCESS LINE
- SECONDARY PROCESS LINE
- PROCESS LINE, BY OTHERS
- COMM LINK (EX. PLC TO HMI)
- COMM LINK (EX. PLC TO DCS)
- ELECTRIC WIRING
- PNEUMATIC LINE
- LINE JUMPER
- PIPE DISCONTINUATION
- FLOW DIRECTION ARROWS
- 4" 316 SS SCH.10 — LINES SIZE/ MATERIAL IDENTIFIER
- SKID BOUNDARY — SKID BY H_2O Innovation / BY OTHERS
- REVISION
- LINES TO/FROM OTHER SHEETS — DESCRIPTION: C01-0001 SHT 1 — DESTINATION

PUMP SYMBOLS

- CENTRIFUGAL
- CHEMICAL METERING
- DIAPHRAGM
- POSITIVE DISPLACEMENT
- VACUUM
- SUBMERSIBLE OR FLOATING
- VERTICAL TURBINE
- PERISTALTIC/HOSE

MISCELLANEOUS EQUIPMENT SYMBOLS

- CARTRIDGE FILTER HOUSING
- AUTOMATIC STRAINER
- SILENCER
- MIXER
- STATIC MIXER
- RESIN TRAP
- MOTOR
- EDUCTOR OR VENTURI
- Y STRAINER
- CONICAL OR TEMPORARY STRAINER
- PULSATION DAMPENER
- DIAPHRAGM
- FLOW ORIFICE
- AIR COMPRESSOR
- RUPTURE DISK (PRESSURE)
- RUPTURE DISK (VACUUM)
- SPECTACLE BLIND (NORMALLY OPEN, NORMALLY CLOSED)
- INJECTION QUILL
- FILTER
- REFRIGERATED AIR DRYER
- TANK
- MMF TANK
- IMMERSED HEATER
- IN-LINE HEATER
- ULTRASONIC LEVEL TRANSMITTER
- FLOAT-STYLE LEVEL TRANSMITTER
- CHEMICAL CONTAINMENT
- CALIBRATION COLUMN
- MEMBRANE
- UV STERILIZER
- DIFFUSERS: COARSE BUBBLE / FINE BUBBLE
- POSITIVE DISPLACEMENT BLOWER
- REGENERATIVE BLOWER
- CENTRIFUGAL BLOWER
- TURBOCHARGER
- BIO-WHEEL
- MANWAY

FLOW INSTRUMENTS

FAH	FLOW ALARM HIGH
FAL	FLOW ALARM LOW
FCV	FLOW CONTROL VALVE
FE	FLOW ELEMENT
FI	FLOW INDICATOR
FIC	FLOW INDICATING CONTROLLER
FIT	FLOW INDICATING TRANSMITTER
FR	FLOW RECORDING
FSH	FLOW SWITCH HIGH
FSL	FLOW SWITCH LOW
FV	FLOW CONTROL OR ON/OFF VALVE
FQ	FLOW TOTALIZER
FX	ELEMENT CONTROLLED BY FLOW
FY	FLOW SIGNAL CONVERT, I/P, OR SOLN

PRESSURE INSTRUMENTS

PAH	PRESSURE ALARM HIGH
PAL	PRESSURE ALARM LOW
PC	PRESSURE CONTROLLER
PCV	SELF REG PRESS CONTROL VALVE
PDH	DIFFERENTIAL PRESSURE HIGH
PDI	DIFFERENTIAL PRESSURE INDICATOR
PDIT	DIFF PRESS INDICATING TRANSMITTER
PDSH	DIFFERENTIAL PRESS SWITCH HIGH
PG	PRESSURE GAUGE
PI	PRESSURE INDICATOR
PIC	PRESSURE INDICATING CONTROLLER
PIT	PRESSURE INDICATING TRANSMITTER
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PSV	SELF REG PRESS SAFETY VALVE
PT	PRESSURE TRANSMITTER
PX	ELEMENT CONTROLLED BY PRESSURE
PY	PRESS SIGNAL CONVERT, I/P, OR SOLN
PSLH	PRESSURE SWITCH LOW HIGH

LEVEL INSTRUMENTS

LAH	LEVEL ALARM HIGH
LAL	LEVEL ALARM LOW
LCV	SELF REG LEVEL CONTROL VALVE
LE	LEVEL ELEMENT
LG	LEVEL GAUGE
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LIT	LEVEL INDICATING TRANSMITTER
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LT	LEVEL TRANSMITTER
LV	LEVEL CONTROL OR ON/OFF VALVE
LX	ELEMENT CONTROLLED BY LEVEL
LY	LEVEL SIGNAL CONVERT, I/P, OR SOLN

TEMPERATURE INSTRUMENTS

TAH	TEMPERATURE ALARM HIGH
TAL	TEMPERATURE ALARM LOW
TC	TEMPERATURE CONTROLLER
TE	TEMPERATURE ELEMENT
TG	TEMPERATURE GAUGE
TI	TEMPERATURE INDICATOR
TIC	TEMP INDICATING CONTROLLER
TIT	TEMP INDICATING TRANSMITTER
TSH	TEMPERATURE SWITCH HIGH
TSL	TEMPERATURE SWITCH LOW
TT	TEMPERATURE TRANSMITTER
TV	TEMP CONTROL OR ON/OFF VALVE
TX	ELEMENT CONTROLLED BY TEMP
TY	TEMP SIGNAL CONVERT, I/P, OR SOLN

ELECTRICAL ABBREVIATIONS

JB	JUNCTION BOX
MCP	MAIN CONTROL PANEL
RIO	REMOTE I/O PANEL
PP	POWER PANEL
VFD	VARIABLE FREQUENCY DRIVE
HOA	HAND-OFF-AUTO

ANALYTICAL INSTRUMENTS

AAH	ANALYTICAL ALARM HIGH
AAL	ANALYTICAL ALARM LOW
AE	ANALYTICAL ELEMENT
AI	ANALYTICAL INDICATOR
AIC	ANAL INDICATING CONTROLLER
AIT	ANAL INDICATING TRANSMITTER
ASH	ANALYTICAL SWITCH HIGH
ASL	ANALYTICAL SWITCH LOW
AT	ANALYTICAL TRANSMITTER
AX	ELEMENT CONTROLLED BY ANALYTICAL
AY	ANALYTICAL SIGNAL CONVERT, I/P, OR SOL

MISCELLANEOUS INSTRUMENTS

HS	HAND SWITCH
HI	HAND SWITCH POSITION INDICATOR
II	CURRENT INDICATOR
QQI	TOTALIZER INDICATOR
SC	SPEED CONTROLLER
SI	SPEED INDICATOR
YA	MOTOR ALARM
YC	MOTOR CONTROL
YI	MOTOR ON/OFF INDICATOR
ZIC	SWITCH CLOSE INDICATOR
ZIO	SWITCH OPEN INDICATOR
ZSC	POSITION SWITCH CLOSED
ZSO	POSITION SWITCH OPEN
ZT	POSITION TRANSMITTER
ZI	POSITION INDICATOR

VALVES & EQUIPMENT

AC	AIR COMPRESSOR
ARV	AIR RELEASE VALVE
AS	AIR SUPPLY
B	BLOWER
BT	BULK TOTE
CBD	COARSE BUBBLE DIFFUSER
CV	CHECK VALVE
ED	EDUCTOR
F	FILTER
FBD	FINE BUBBLE DIFFUSER
FL	FAIL LAST (DEFAULT IF NOT SHOWN)
FC	FAIL CLOSED
FO	FAIL OPEN
FQG	CALIBRATION COLUMN
H	HEATER
HCV	HAND CONTROL VALVE
HTR	HEATER
HV	HAND VALVE
M	MOTOR
MX	MIXER
P	PUMP
RT	RESIN TRAP
ST	SPILL TANK
STR	STRAINER
T	TANK
UV	ULTRAVIOLET
HV	HAND VALVE
MV	MULTI FUNCTION VALVE

OTHER ABBREVIATIONS

CAP	CAPACITANCE
CIP	CLEAN-IN-PLACE
COND	CONDUCTIVITY
DO2	DISSOLVED OXYGEN
ESP	EMERGENCY STOP
IA	INSTRUMENT AIR
I/P	CURRENT TO PNEUMATIC CONVERTER
ORP	OXIDATION REDUCTION POTENTIAL
pH	HYDROGEN ION
RES	RESISTIVITY
RTD	RESISTANCE TEMP DETECTOR
SOL	SOLENOID
SP	SET POINT
uS	MICROSIEMENS
MIT	MEMBRANE INTEGRITY TEST

REGISTERED PROFESSIONAL ENGINEER — R. DESGAGNÉ — LICENSEE — NT/NU — 12/06/2017

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05	21/09/2016	REVISED AS BUILT	M.P.	H.S.	H.C.	R.D.
04	08/02/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
03	25/07/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
01	11/07/2016	CHANGE SUMP TANK BALL TO GATE VALVE,SOLENOID TO ELECTRIC VALVE,TURBIDITY METER TO 120V	M.P.	H.S.	H.C.	H.C.

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UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64
DECIMALS .0 X ±0.030
.0 XX ±0.010
.0 XXX ±0.005
ANGLES ±0.5°
HOLE SIZES +1/64 -0
HOLE CENTERS ±1/64
DO NOT SCALE PRINTS

MELIADINE STP

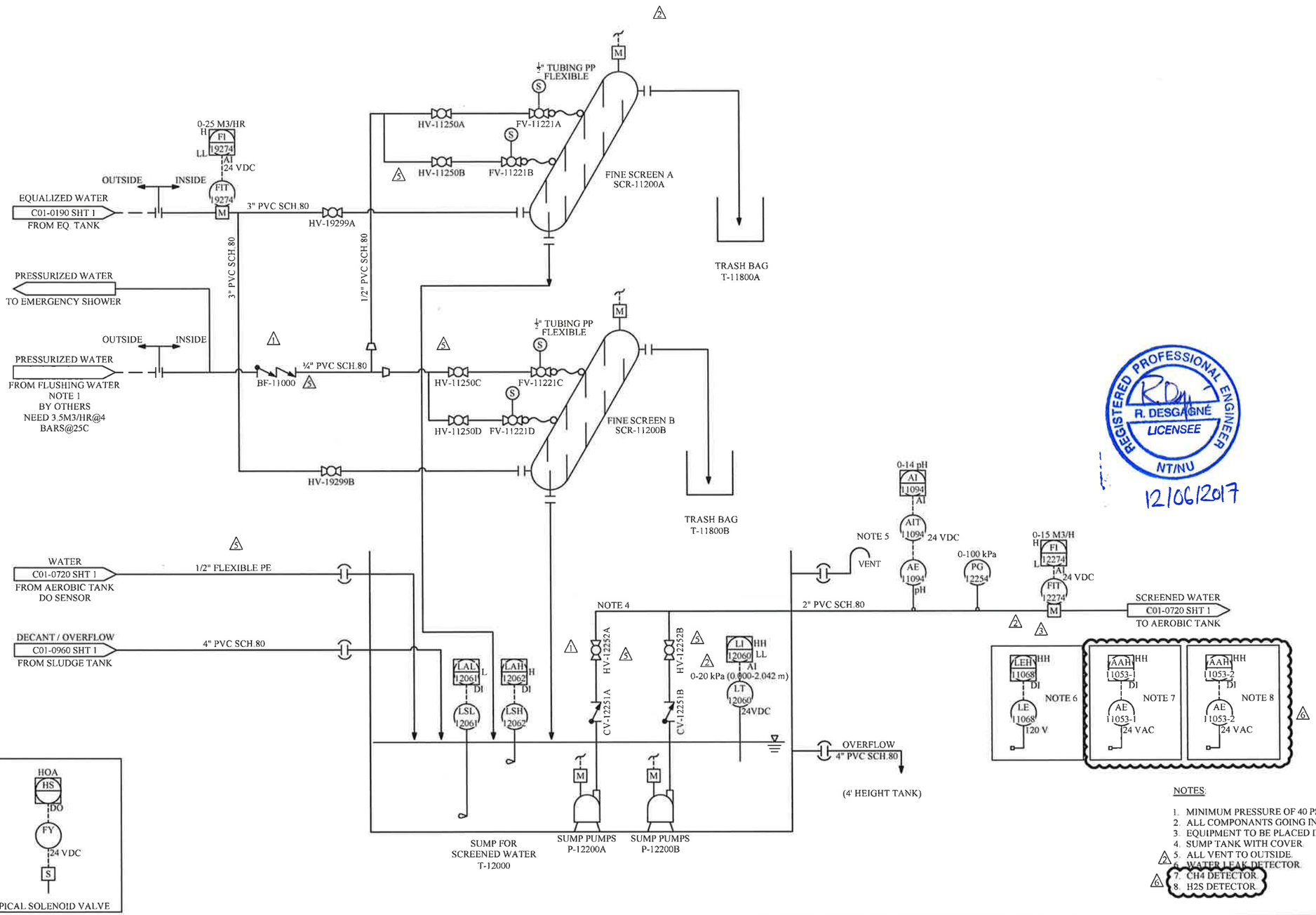
216 M3/DAY

TITLE: PROCESS AND INSTRUMENTION DIAGRAMS LEGEND

SCALE: N/A

DRAWING NUMBER: U65875--C01-0001 SHEET: 1 of 1

REVISION: 06



NOTES:

1. MINIMUM PRESSURE OF 40 PSIG REQUIRED.
2. ALL COMPONANTS GOING IN TO THE RIO-101.
3. EQUIPMENT TO BE PLACED IN CONTAINER #1.
4. SUMP TANK WITH COVER.
5. ALL VENT TO OUTSIDE.
6. WATER LEAK DETECTOR.
7. CH4 DETECTOR.
8. H2S DETECTOR.

REGISTERED PROFESSIONAL ENGINEER
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LICENSEE
NT/NU
12/06/2017

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UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64
DECIMALS 0 X ±0.030
0 XX ±0.015
ANGLES ±0.5°
HOLE SIZES ±0.1
HOLE CENTERS ±1/64
DO NOT SCALE PRINTS

MELIADINE STP

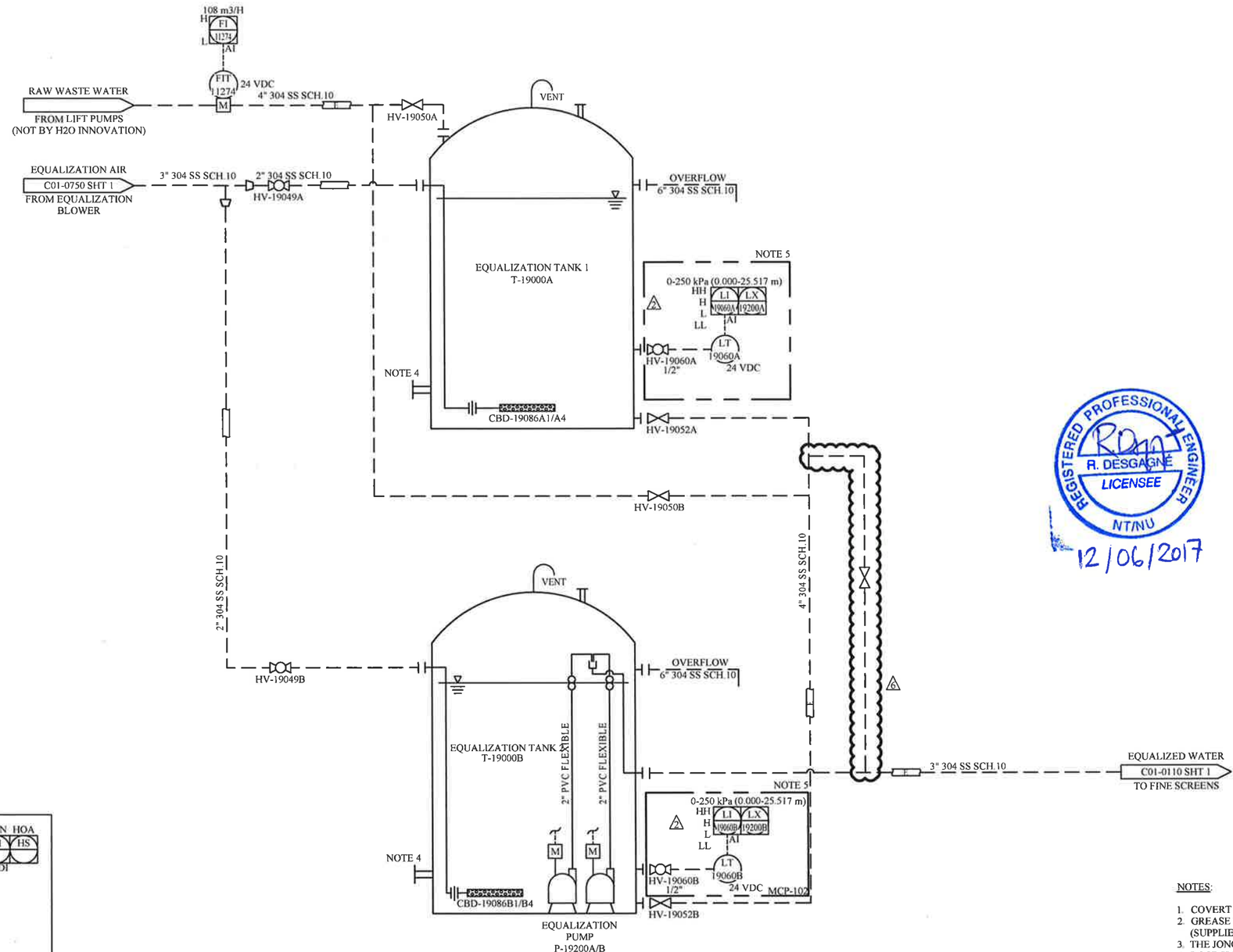
216 M3/DAY

TITLE:
RAW WATER SCREENING
PROCESS & INSTRUMENTATION DIAGRAM

SCALE: N/A

DRAWING NUMBER: U65875-C01-0110
SHEET: 1 of 1

REVISION 06



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12/06/2017

NOTES:

1. COVERT PROVIDE BUT NOT INSTALL.
2. GREASE TRAP TO BE INSTALLED UPSTREAM OF STP (SUPPLIED BY H2O INNOVATION, INSTALLED BY OTHERS)
3. THE JONCTION BOX IS HOOK ON THE EQUALIZATION TANK.
4. DOOR HATCH ACCESS.
5. PROTECTION COVER.
6. ALL COMPONANTS GOING INTO THE MCP-102

DRAWING REVISION

REV	DATE	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
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l'eau est le chemin du savoir à partager

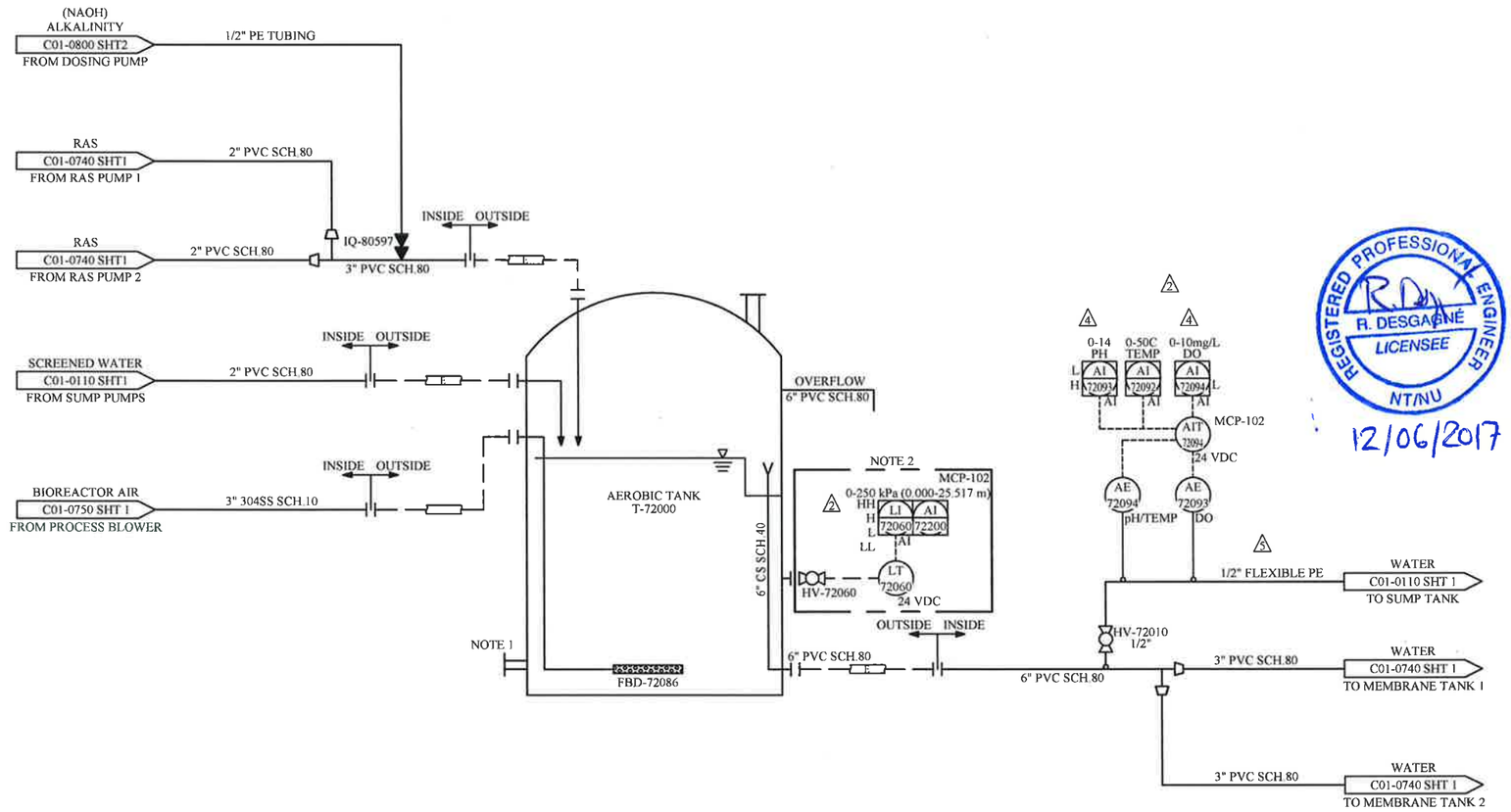
UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64"
DECIMALS 0.X ±0.500
0.XX ±0.015
ANGLES ±0.5°
HOLE SIZES ±1/64"
HOLE CENTERS ±1/64"
DO NOT SCALE PRINTS

MELIADINE STP

216 M3/DAY

TITLE:
FEED WATER EQUALIZATION
PROCESS & INSTRUMENTATION DIAGRAM

SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0190	06
	SHEET: 1 of 1	



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NOTES:

1. DOOR HATCH ACCESS.
2. PROTECTION COVER.

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UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64"
DECIMALS 0 X ±0.030
0 XX ±0.015
ANGLES ±0.5°
HOLE SIZES ±1/64"
HOLE CENTERS ±1/32"
DO NOT SCALE PRINTS

MELIADINE STP

216 M3/DAY

TITLE:
AERIOBIC TANK
PROCESS & INSTRUMENTATION DIAGRAM

SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0720	06
	SHEET: 1 of 1	

CITRIC ACID
C01-0800 SHT 1
FROM DOSING PUMP

FV-83798-T

1/2" PE TUBING

HYPOCHLORITE
C01-0800 SHT 1
FROM DOSING PUMP

FV-83598-T

1/2" PE TUBING

NOTE 3

FV-31026-T
1"
120V

-100 to 100 kPa
PI 79045-T AI
DP 79045-T TMP
HH H L LL
PT 79045-T
24VDC

2" PVC SCH.80

IQ-83597-T

IQ-83797-T

0-15 m3/Hr
FI 79075-T
FX 79003-T
FIT 79074-T
24 VDC

FV-79099-T

1½" PVC SCH 80

1½" HOSE

COMMISSIONING WATER
RECYCLE

UV INTENSITY
0-160 mW/cm2
FAULT XIW 91000 DI
START YC 91000 DO
XIF 91000 AI

UV CONTROLLER
120VAC, 1PH,60Hz

FV-79001-T

2" PVC FLEXIBLE VACUUM HOSE

0-100 kPa (0.00-10.207 m)
LI 74060-T AI
LX 79000-T
HH H L LL
LT 74060-T
24 VDC

2" PVC SCH.80

PERMEATE/CIP PUMP
P-79000-T

CV-79051-T

0-100 kPa
PG 79054-T

FIT 79074-T 24 VDC

FV-79098-T

HV-79201-T

2" PVC SCH.80

UV-91000-T

HV-79052-T

PERMEATE
C01-0790 SHT 1
TO PERMEATE TANK

VENT
NOTE 6

FV-79002-T

2" PVC SCH.80

CIP WATER
C01-0790 SHT 1
FROM PERMEATE TANK

HV-74023-T

CV-74028-T

MEMBRANE AIR SCOUR
C01-0750 SHT 2
FROM MEMBRANE BLOWER

3" 304LSS SCH.10

PRETREATED WATER
C01-0720 SHT 1
FROM AEROBIC TANK

3" PVC SCH.80

FV-74050-T

4" PVC SCH 80

MEMBRANE TANK
T-74000-T
NOTE 5

F-74000-T

HV-74051-T

RAS/WAS PUMP
P-74600-T

CV-74651-T

0-100 kPa
PG 74654-T

HV-74629-T
1"

0-25 m3/Hr
FI 74674-T
FX 74600-T
FIT 74674-T
24 VDC

2" PVC SCH.80

HV-74652-T

2" PVC SCH.80

RAS
C01-0720 SHT 1
TO AEROBIC TANK

FV-96001-T

2" PVC SCH.80

WAS
C01-0960 SHT 1
TO SLUDGE TANK

AAH 74053-1 DI
AE 74053-1
24 VAC
NOTE 9

AAH 74053-2 DI
AE 74053-2
24 VAC
NOTE 10

LEH 74068 DI
LE 74068
120 V
NOTE 8

SIGNAL
FROM PROCESS VARIABLE
PID SPD START FLT RUN HOA
PIC SI YC YA YI HS
AO AI DO DI DI
SC
M 600 VAC, 3 PH, 60 Hz
TYPICAL PUMP MOTOR (WITH VFD)

START FLT RUN HOA
YC YA YI HS
DO DI DI
M 600 VAC, 3PH, 60HZ
TYPICAL RAS / WAS PUMP MOTOR

HOA
HSC HSO
DO DO
M 120 VAC, 1 PH, 60 Hz
TYPICAL ELECTRIC VALVE

HOA
HS
DO
FY
24 VDC
S
TYPICAL SOLENOID VALVE

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NT/NU
12/06/2017

NOTES:

1. DRAWING TYPICAL FOR A SINGLE TRAIN. A TOTAL OF 2 TRAINS ARE PROVIDED.
2. TAG NUMBERS OF EQUIPMENT ON EACH TRAIN TO SUBSTITUTE TRAIN NUMBER FOR "T".
3. HEIGHT OF 4.6 FT REQUIRED ABOVE MEMBRANE TANK LIQUID.
4. ALL COMPONANTS GOING INTO MCP-102.
5. MBR TANK WITH COVER.
6. ALL VENT TO OUTSIDE
7. EQUIPMENT TO BE PLACED IN CONTAINER #2.
8. WATER LEAK DETECTOR.
9. CH4 DETECTOR.
10. H2S DETECTOR.

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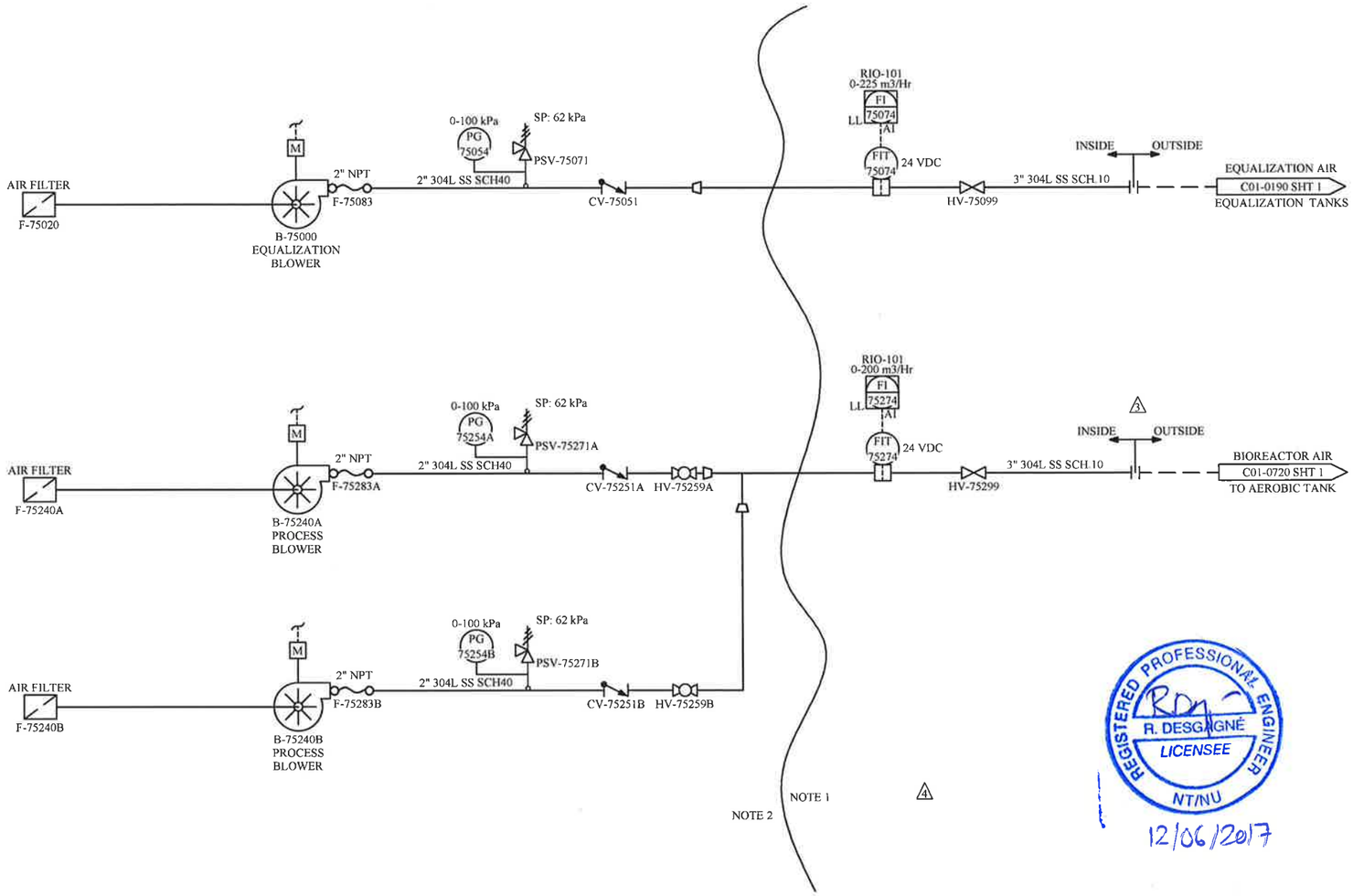
UNLESS NOTED OTHERWISE
INTERPRETATION AND TYPES
TOLERANCES
FRACTIONS ±1/64
DECIMALS .X ±0.030
.XXX ±0.015
ANGLES ±0.5°
HOLE SIZES +1/64 -0
HOLE CENTERS ±1/64
DO NOT SCALE PRINTS

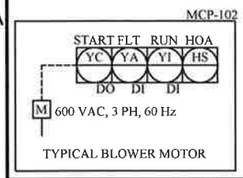
MELIADINE STP

216 M3/DAY

TITLE:
MEMBRANE FILTRATION
PROCESS & INSTRUMENTATION DIAGRAM

SCALE: N/A
DRAWING NUMBER: U65875-C01-0740
SHEET: 1 of 1
REVISION: 06





REGISTERED PROFESSIONAL ENGINEER
R. DESGAGNÉ
LICENSEE
NT/NU
12/06/2017

4

NOTES:

1. EQUIPMENT TO BE PLACED IN CONTAINER #1.
2. EQUIPMENT TO BE PLACED IN CONTAINER #2.

DRAWING REVISION

REV	DATE (DD/MM/YYYY)	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
06	02/12/2016	REVISED AS INSTALLED	M.P.	R.D.	H.C.	R.D.
05	21/09/2016	REVISED AS BUILT	M.P.	H.S.	H.C.	R.D.
04	08/02/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
03	25/07/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
01	11/07/2016	CHANGE SUMP TANK BALL TO GATE VALVE,SOLENOID TO ELECTRIC VALVE,TURBIDITY METER TO 120V	M.P.	H.S.	H.C.	H.C.

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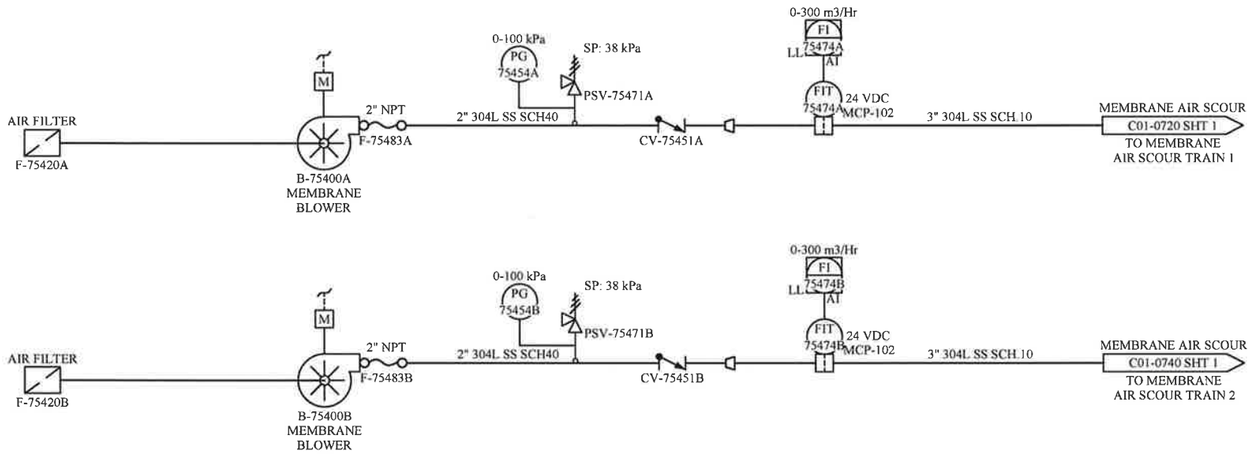
UNLESS NOTED OTHERWISE
INTERPRETATION ANSI/Y14.5
TOLERANCES
FRACTIONS ±1/64
DECIMALS X.X ±0.030
X.XX ±0.015
ANGLES ±0.5°
HOLE SIZES ±1/64"
HOLE CENTERS ±1/32"
DO NOT SCALE PRINTS

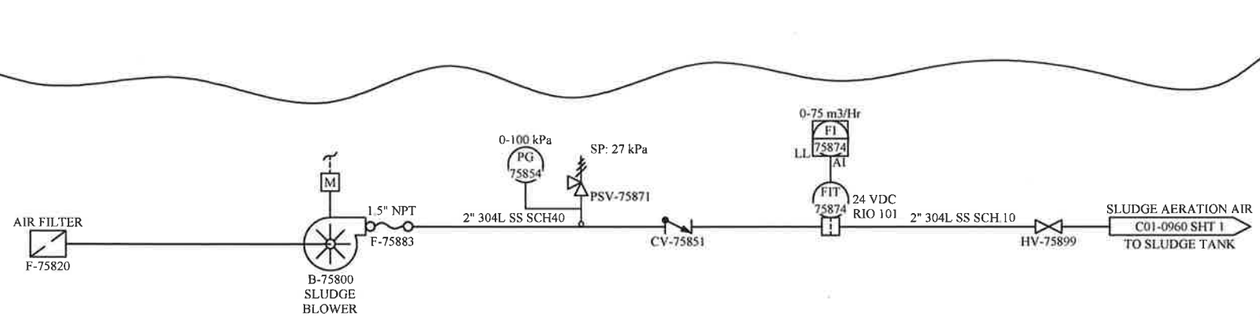
MELIADINE STP

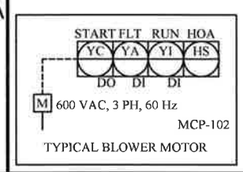
216 M3/DAY

TITLE:
BLOWERS FOR MBR SYSTEM
PROCESS & INSTRUMENTATION DIAGRAM

SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0750 SHEET: 1 of 2	06







REGISTERED PROFESSIONAL ENGINEER
R. DESGAGNÉ
LICENSEE
NT/NU
12/OC/2017

NOTES:

1. EQUIPMENT TO BE PLACED IN CONTAINER #1.
2. EQUIPMENT TO BE PLACED IN CONTAINER #2.

DRAWING REVISION

REV	DATE (DD/MM/YYYY)	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
06	02/12/2016	REVISED AS INSTALLED	M.P.	R.D.	H.C.	R.D.
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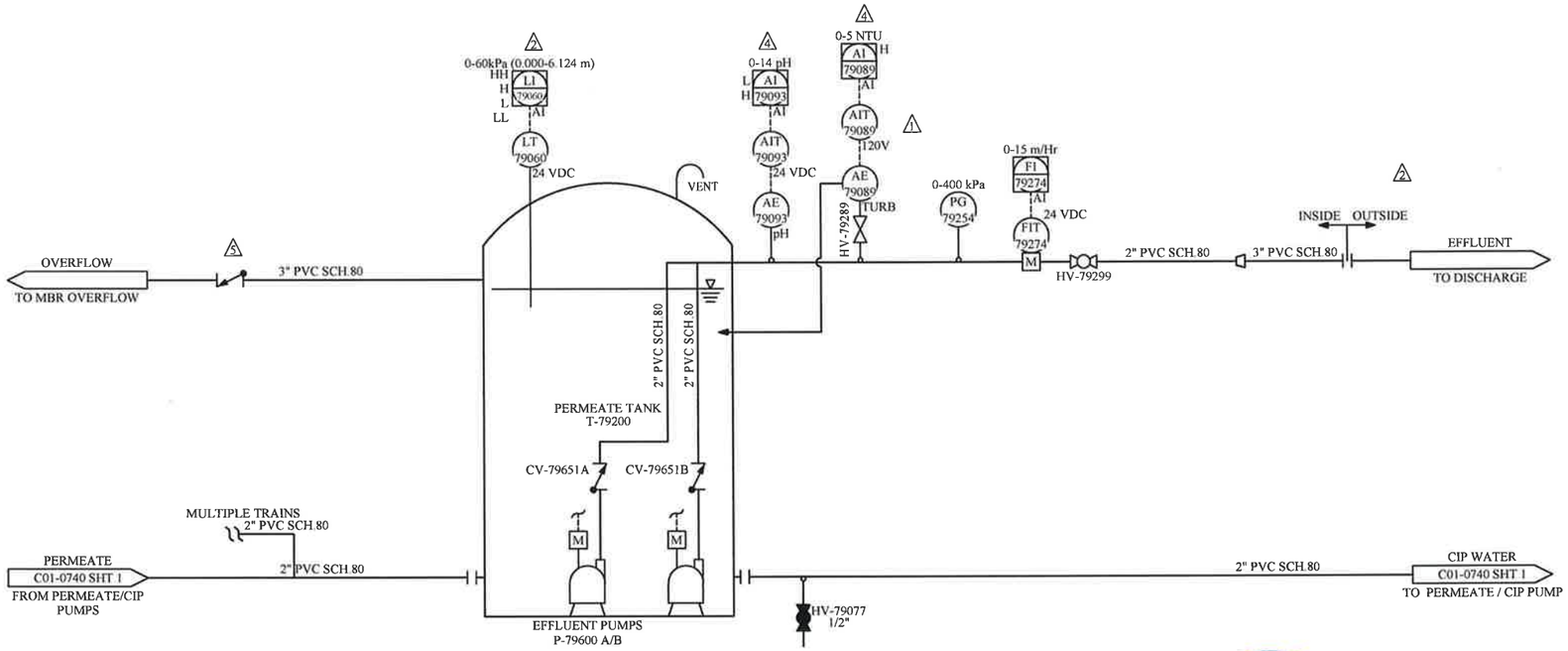
UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/16
DECIMALS: 0.X ±0.030
0.XX ±0.015
ANGLES ±0.5°
HOLE SIZES +1/64 -0
HOLE CENTERS ±1/64
DO NOT SCALE PRINTS

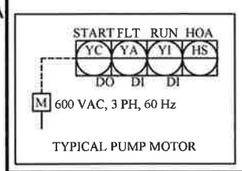
MELIADINE STP

216 M3/DAY

TITLE:
BLOWERS FOR MBR SYSTEM
PROCESS & INSTRUMENTATION DIAGRAM

SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0750 SHEET: 2 of 2	06





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NT/NU
12/06/2017

NOTES:

1. ALL COMPONANTS GOING INTO MCP-102.
2. EQUIPMENT TO BE PLACED IN CONTAINER #2.

DRAWING REVISION

REV	DATE (DD/MM/YYYY)	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
06	02/12/2016	REVISED AS INSTALLED	M.P.	R.D.	H.C.	R.D.
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01	11/07/2016	CHANGE SUMP TANK BALL TO GATE VALVE,SOLENOID TO ELECTRIC VALVE,TURBIDITY METER TO 120V	M.P.	H.S.	H.C.	H.C.

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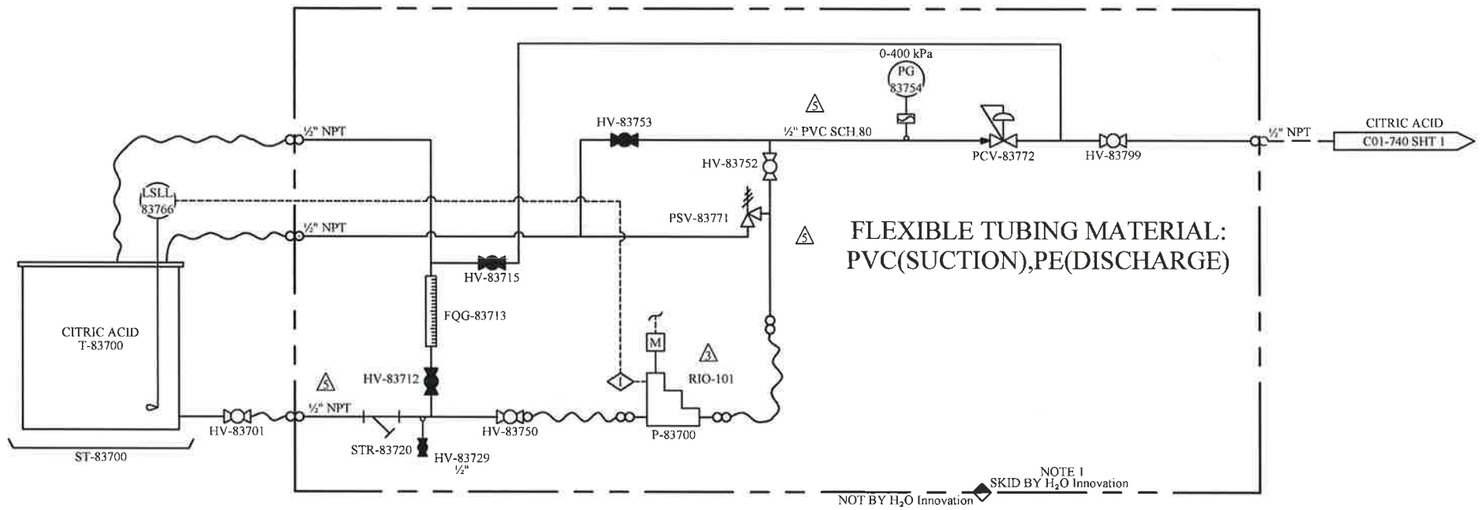
UNLESS NOTED OTHERWISE
INTERPRETATION: ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64
DECIMALS 0.X ±0.030
0.XX ±0.015
0.XXX ±0.5°
ANGLES ±1/2°
HOLE SIZES ±1/2°
HOLE CENTERS
DO NOT SCALE PRINTS

MELIADINE STP

216 M3/DAY

TITLE:
PERMEATE TANK
PROCESS & INSTRUMENTATION DIAGRAM

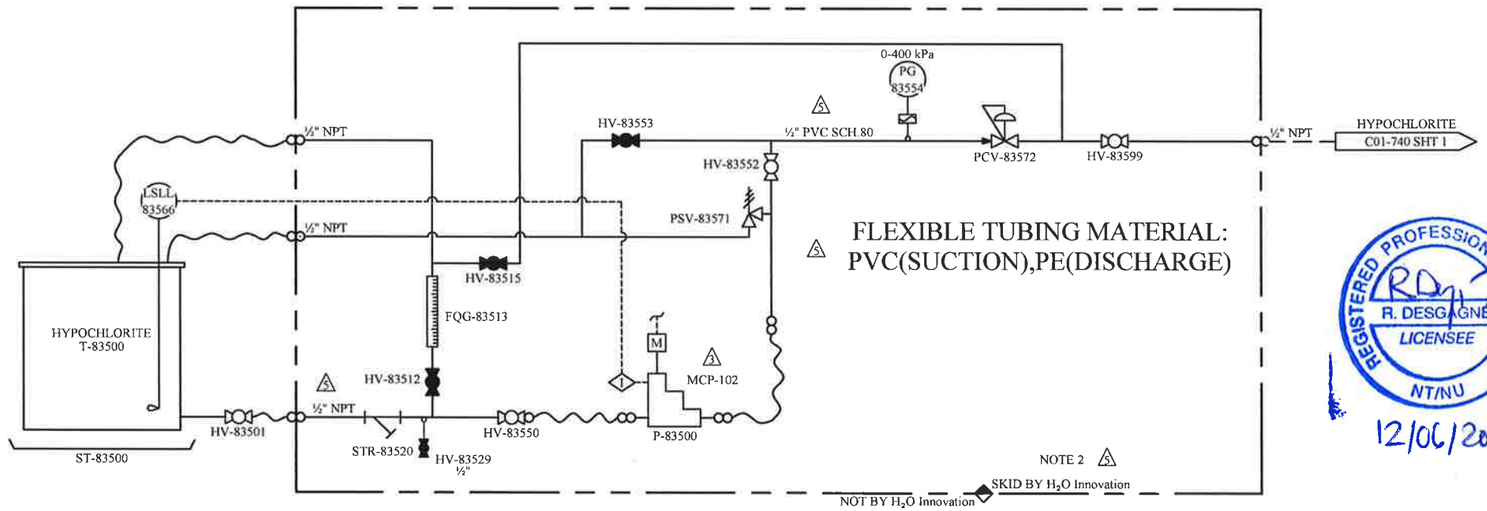
SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0790 SHEET: 1 of 1	06



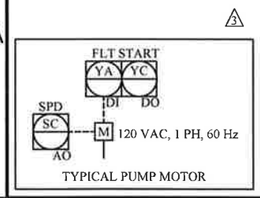
CITRIC ACID, 50 % SOLUTION DOSING SYSTEM

NOTE 1

NOTE 2



SODIUM HYPOCHLORITE, 10.3 % DOSING SYSTEM



TYPICAL PUMP MOTOR

REGISTERED PROFESSIONAL ENGINEER
R. DESGAGNÉ
LICENSEE
NT/NU
12/06/2017

NOTES:

1. EQUIPMENT TO BE PLACED IN CONTAINER #1.
2. EQUIPMENT TO BE PLACED IN CONTAINER #2.

DRAWING REVISION

REV	DATE	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
06	02/12/2016	REVISED AS INSTALLED	M.P.	R.D.	H.C.	R.D.
05	21/09/2016	REVISED AS BUILT	M.P.	H.S.	H.C.	R.D.
04	08/02/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
03	25/07/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
01	11/07/2016	CHANGE SUMP TANK BALL TO GATE VALVE,SOLENOID TO ELECTRIC VALVE,TURBIDITY METER TO 120V	M.P.	H.S.	H.C.	H.C.

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UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64
DECIMALS 0.X ±0.030
0.XX ±0.015
ANGLES ±0.5°
HOLE SIZES ±1/64
HOLE CENTERS ±1/64
DO NOT SCALE PRINTS

MELIADINE STP

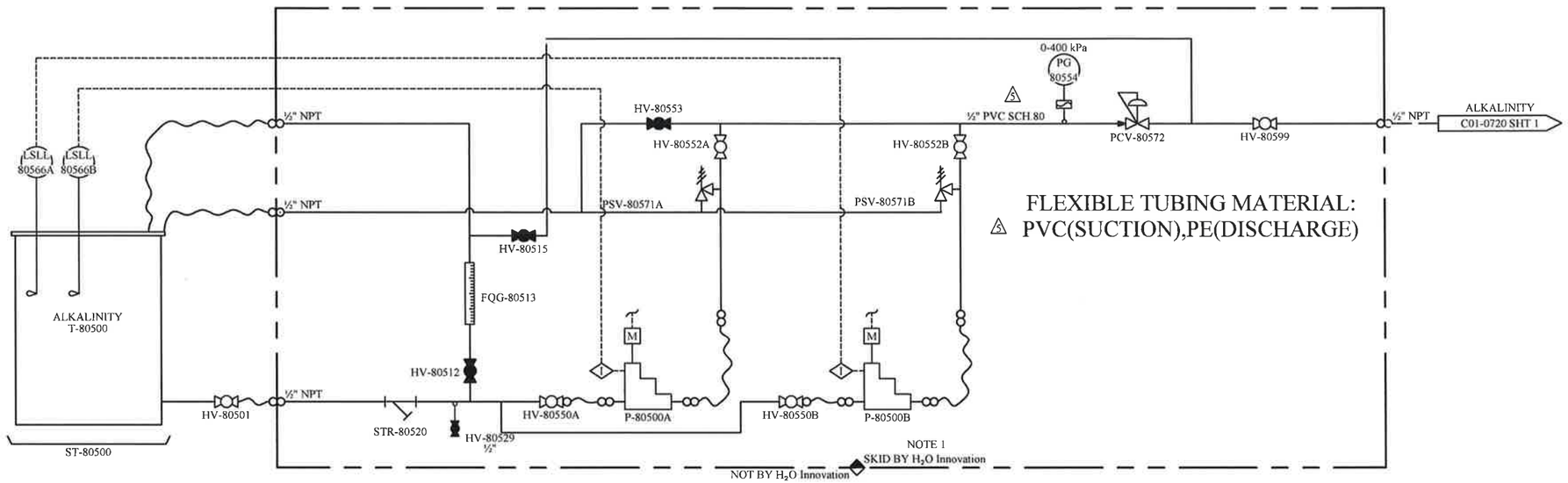
216 M3/DAY

TITLE:
DOSING SKIDS - CLEANING CHEMICALS
PROCESS & INSTRUMENTATION DIAGRAM

SCALE: N/A

DRAWING NUMBER: U65875-C01-0800
SHEET: 1 of 2

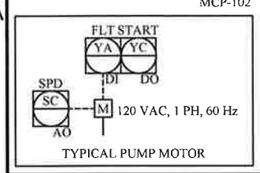
REVISION 06



5 HYDROXYDE DE SODIUM, 25%, ALKALINITY ADJUSTMENT
CHEMICAL DOSING SYSTEM

REGISTERED PROFESSIONAL ENGINEER
R. DESGAGNÉ
LICENSEE
NT/NU
12/06/2017

3 MCP-102



TYPICAL PUMP MOTOR

NOTES:

1. EQUIPMENT TO BE PLACED IN CONTAINER #2.

DRAWING REVISION

REV	DATE (dd/mm/yyyy)	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
06	02/12/2016	REVISED AS INSTALLED	M.P.	R.D.	H.C.	R.D.
05	21/09/2016	REVISED AS BUILT	M.P.	H.S.	H.C.	R.D.
04	08/02/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
03	25/07/2016	REVISED AS PER COMMENT	M.P.	H.S.	H.C.	H.C.
01	11/07/2016	CHANGE SUMP TANK BALL TO GATE VALVE,SOLENOID TO ELECTRIC VALVE,TURBIDITY METER TO 120V	M.P.	H.S.	H.C.	H.C.

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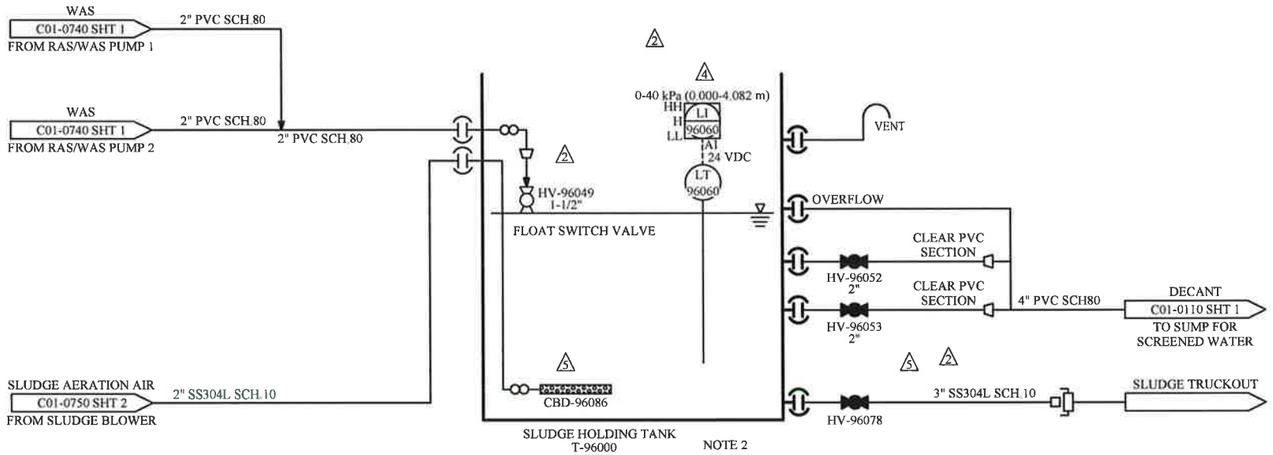
UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64"
DECIMALS .X ±0.030
.XX ±0.015
ANGLES ±0.5°
HOLE SIZES +1/64" -0"
HOLE CENTERS ±1/64"
DO NOT SCALE PRINTS

MELIADINE STP

216 M3/DAY

TITLE:
DOSING SKIDS - ALKALINITY
PROCESS & INSTRUMENTATION DIAGRAM

SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0800 SHEET: 2 of 2	06



NOTES:

1. ALL COMPONANTS GOING INTO RIO 101.
2. SLUDGE HOLDING TANK WITH COVER.
3. ALL VENT TO OUTSIDE.

DRAWING REVISION

REV	DATE (dd/mm/yyyy)	REVISION DESCRIPTION	DRAWN	CHKD	ENG	APPVD
06	02/12/2016	REVISED AS INSTALLED	M.P.	R.D.	H.C.	R.D.
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01	11/07/2016	CHANGE SUMP TANK BALL TO GATE VALVE,SOLENOID TO ELECTRIC VALVE,TURBIDITY METER TO 120V	M.P.	H.S.	H.C.	H.C.

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UNLESS NOTED OTHERWISE
INTERPRETATION ANSI Y14.5
TOLERANCES
FRACTIONS ±1/64"
DECIMALS .0 X ±0.010
.0 XX ±0.015
ANGLES ±0.5°
HOLE SIZES ±1/64"
HOLE CENTERS ±1/64"
DO NOT SCALE PRINTS

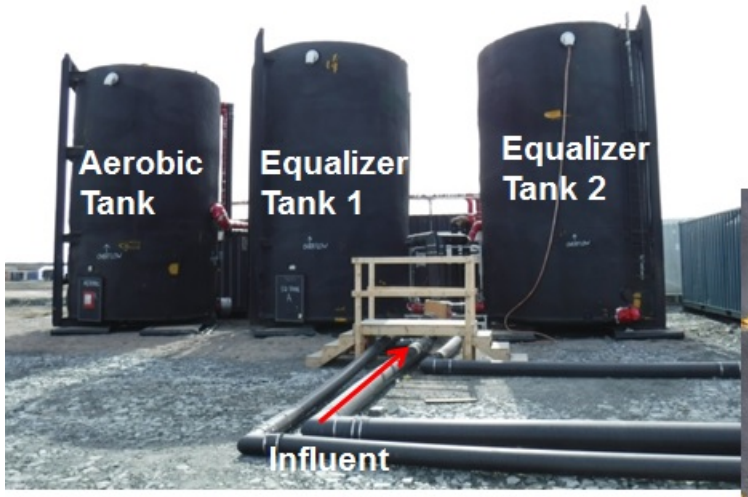
MELIADINE STP

216 M3/DAY

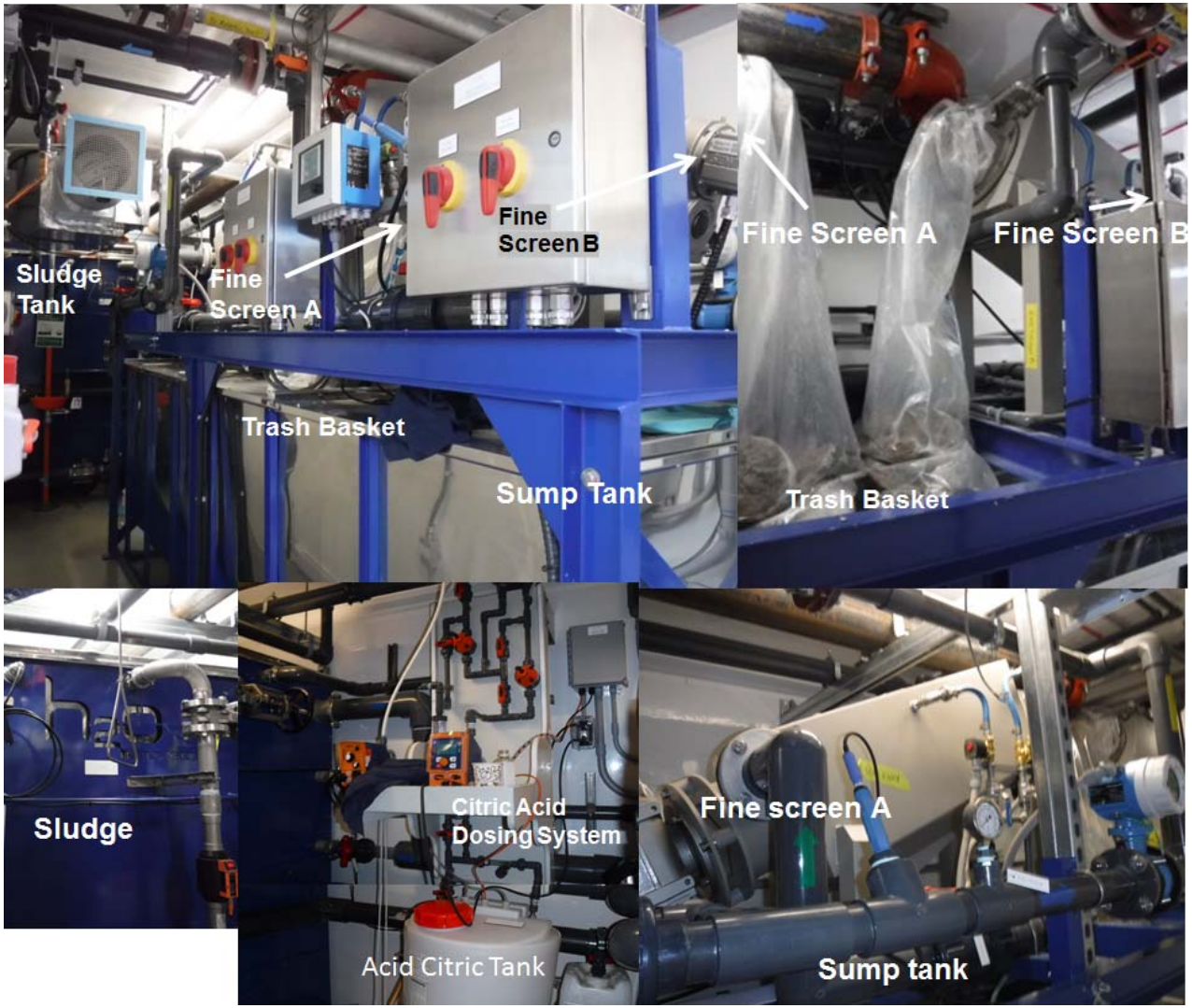
TITLE:
SLUDGE HANDLING SYSTEM
PROCESS & INSTRUMENTATION DIAGRAM

SCALE:	DRAWING NUMBER:	REVISION
N/A	U65875-C01-0960 SHEET: 1 of 1	06

Appendix E: Sewage Treatment Plant Photographs



Photos of the ouside view of the Sewage Treatment Plant



Photos of the inside view of Container # 1

Photos of the inside view of Container # 2