June Lake Public Utility District
Wastewater Treatment Plant Evaluation Study

60640500 December 2020

June Lake Public Utility District

AECOM

Daniel Cronquist PE, Project Manager

5001 E. Commercenter Drive, Suite 100, Bakersfield CA 93309

Table of Contents

Appendices

Section 1
Introduction

1.1 Background

The June Lake Public Utility District (JLPUD or District) is located in Mono County approximately 325 miles north of Los Angeles, California, and 150 miles south of Reno, Nevada. The District is situated in the June Lake Loop, which is just south of U.S. Highway 395 on State Highway 158. The June Lake Loop is an area of great natural beauty lying immediately east of the main divide of the Sierra Nevada at an average elevation of approximately 7,600 feet. The area consists of a string of lakes, of which Silver Lake, Gull Lake and a portion of June Lake are located within the District's boundaries. "June Mountain" is located southeast of June Lake and reaches a height of 10,125 feet. The key elements of the Loop area are the surrounding mountains, and the system of creeks and lakes that form a unique natural environment within the Sierras.

The initial development of the June Lake Loop, including the June Lake Village, occurred in the 1930's and grew without any specific plan or goal until the implementation of the June Lake Loop General Plan in 1974, which was updated in 1991. The June Mountain Ski Area was completed in 1960. Until that time, all development within the community centered around summer recreational uses and consisted primarily of United States Forest Service (USFS) summer home tracts, campgrounds, permanent and semi-permanent residences and commercial resort facilities. The conversion of the area to a summer/winter resort increased the number of recreational visitors to the area and created additional pressure on the natural and man-made environment of the area.

The District economy is based almost entirely on personal services, recreational facilities and transient accommodations. June Lake Village functions as a shopping and service center to permanent residents, ski enthusiasts, sportsmen and other visitors to the June Lake area.

High temperature in the area generally varies between 60ºF and 80ºF during the summer. Winter temperatures may drop as low as –30ºF. Precipitation occurs mainly during the late winter and generally increases with altitude. Summer showers occur infrequently and are usually of short duration. Winter storms are commonly regional in nature, whereas summer storms occur as localized thunderstorms in the mountains.

The June Lake Public Utility District provides sewerage service to three major service areas, the June Lake Village, Down-Canyon, and the USFS Silver Lake Tract (sometimes referred to as "Millionaire's Row"). In addition, service is provided on a contract basis to U.S. Forest Service Campgrounds, including Oh! Ridge Campground, June Lake Campground, Reverse Creek (Upper) and Gull Lake (Lower) Campgrounds, and Silver Lake Campground and several parking facilities along the June Lake Loop.

All wastewater is generated within the District's service area except for Oh Ridge Campground, Pine Cliff Campground, and Grant Lake Marina which are served on a contract basis. All wastewater flows to the main trunkline along Highway 158 to the collection system Pump Station Number 2, except for Grant Lake Marina. The campground located at Grant Lake Marina has its own private collection system and is located downstream from Pump Station Number 2. The location of Pump Station Number 2 is at the westerly end of the Down-Canyon area. From Pump Station Number 2, the sewerage flows via forced main and gravity about nine miles to the wastewater treatment plant (WWTP). At Grant Lake, the Marina/Campground has its own lift station that connects to the District's forced mainline. The District's mainline proceeds northernly along Highway 158 then cuts off the highway and transverses below the dam at Grant Lake and on to the WWTP located adjacent to Highway 395, please see **Figure 1**. It should be noted that Grant Lake Marina operates seasonally from May through October as does the other campgrounds along the June Lake loop.

The March 2005 June Lake Public Utility District Wastewater System Evaluation prepared by Boyle Engineering Corporation covered both the wastewater collection system and treatment plant. This Wastewater Treatment Plant Evaluation is an update of that report focusing solely on the treatment plant.

1.2 Work Scope

The scope of this study is as follows:

- Develop the flow and loading parameters based on current operations at the WWTP,
- Analyze the unit processes,
- Identify deficiencies in the operation and treatment capabilities of the WWTP and make recommendations to address those deficiencies,
- Identify deficiencies in the electrical power systems of the WWTP and make recommendations to address those deficiencies,
- Identify deficiencies in the control systems and communication systems of the WWTP and make recommendations to address those deficiencies, and
- Prepare cost estimates of the recommended improvements. Included in this work is an estimate for a complete replacement of the existing WWTP with a new plant. It is assumed the estimate for the new plant would be based on a plant capable of producing undisinfected secondary effluent. The effluent quality would not exceed 40 mg/L for BOD, 40 mg/L for TSS, and 10 mg/L for NO_3/Ammonia.

COUNTY MAP

LOCATION MAP

AECOM

Figure: 1

LOCATION MAP

WASTEWATER TREATMENT PLANT
EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60640500

Project Management Initials: Designer:____ Checked:____ Approved:____ ANSI B 11" x 17"

Last saved by: GABRIEL.ROSALES(2020-10-14) Last Plotted: 2020-10-14
Filename: S:\0160640500 - WWTP EVALUATION UPDATE TASK ORDER # 05\900_CAD_GIS\910_CAD\06-FIGURES\60640500 - FIG 1.DWG

Section 2
Wastewater Treatment Plant

2.1 Wastewater Characteristics

The JLPUD wastewater treatment plant is operated under waste discharge requirements (WDRs) adopted by the California Regional Water Quality Control Board, Lahontan Region, in Order No. 6-93-19. This order sets forth general specifications concerning the operation of the plant and limits the maximum 24-hour average day flow to 1.0 million gallons. The order also limits effluent constituents of BOD_5 and methylene-blue-active substances (foamants). A copy of Order No. 6-93-19 is included in **Appendix A**. The waste discharge requirements also mandate a specific sampling and monitoring program for plant effluent.

2.1.1 WWTP Flow

The sewage generated from the JLPUD collection system is primarily from domestic and commercial sources. **Figures 2** and **3** show the average monthly flows and the average daily flows respectively for years 2010 through 2019 at the WWTP as reported in the District's annual reports. The WWTP flows are measured by a 30 degree V-notch weir in the control overflow structure adjacent to control building at the wastewater treatment plant and a portable Stevens 61R Meter.

The plant average monthly flow is 5.11 MG and varies from 2.46 MG to 11.7 MG. The plant average daily flow is 0.17 mgd and varies from 0.08 mgd to 0.39 mgd. The current design capacity of the WWTP is 1.0 mgd.

2.1.2 Flow Variations

Analyses of the historic average flow records indicate that the treatment plant experiences the expected seasonal variations. As with any wastewater system, hourly variations also occur.

Figure 4 graphically shows the average monthly flow distribution for years 2010 through 2019. As expected, variations occur according to the influx of seasonal visitors. The highest monthly flows occur between April and July with the lowest flows between October and December.

Figure 5 reflects this same data as a percentage of the average monthly flow of 5.11 MG. For June, the flow was 25% higher than the average monthly flow. For November, the flow was 29% less than the average monthly flow.

Based on typical curves from the National Sanitation Foundation, diurnal flow variations follow a pattern of high morning and early evening peaks with early morning hour flows being the lowest. This pattern was validated by the review of daily flows at the JLPUD WWTP. Peak hour flows exceeded the average daily flow by 2 to 2.5 times the average daily flow. Therefore, the peaking factor of 2.35 used in the original WWTP was selected to be used in this evaluation.

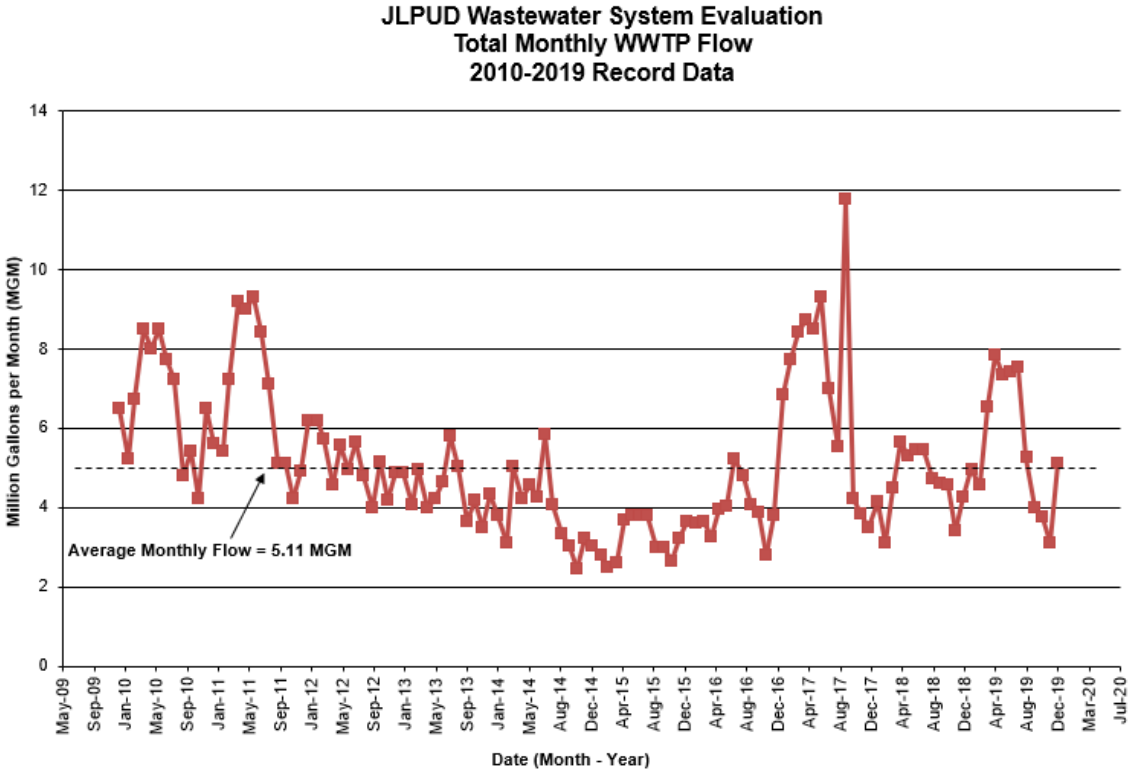


Figure 2: Total Monthly WWTP Flows

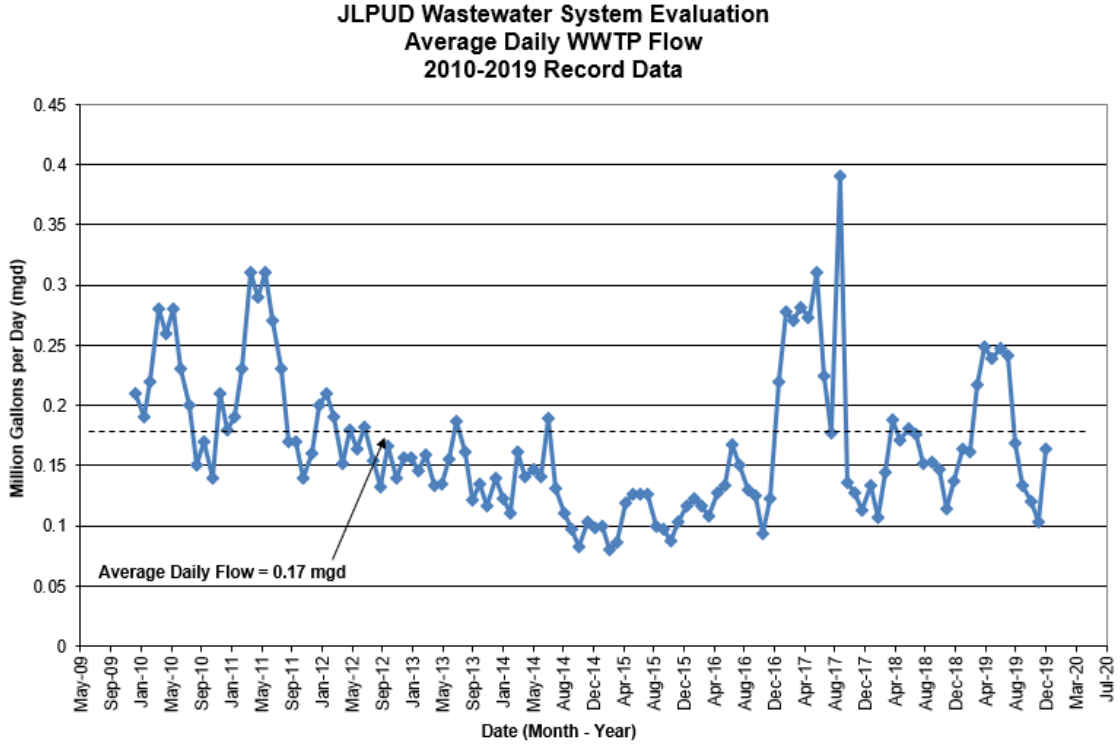


Figure 3: Average Daily WWTP Flows

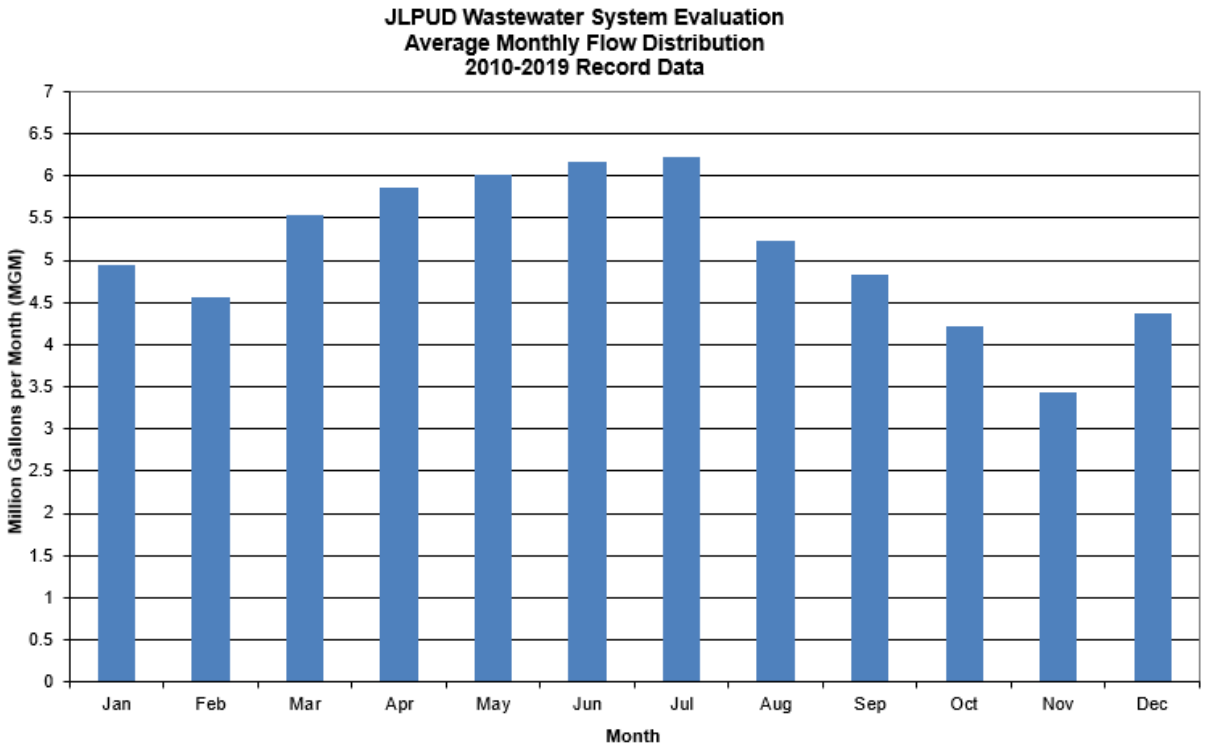


Figure 4: Average Monthly Flow Distribution

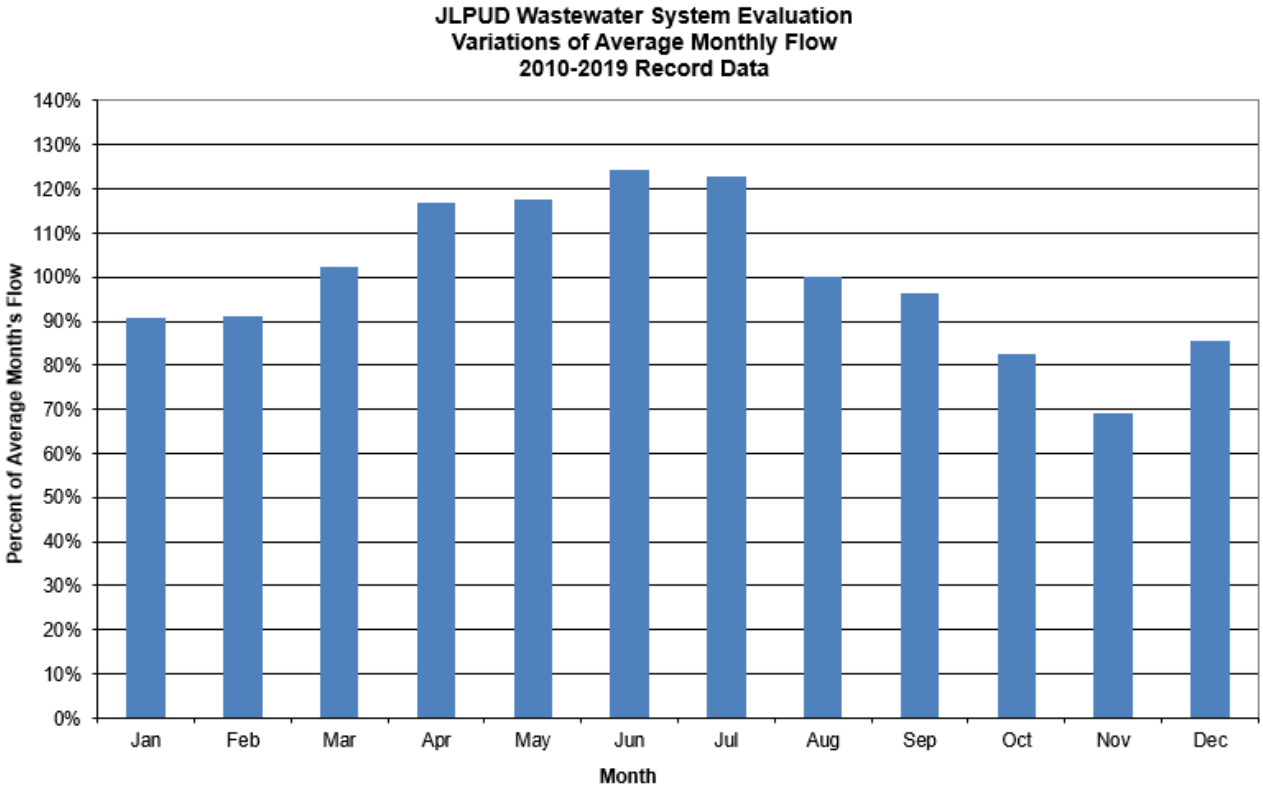


Figure 5: Variations of Average Monthly Flow

2.1.3 WWTP Flow Projections

Table 1 summarizes the existing average day flow and maximum month average day flows calculated from the data in **Figure 2** and **3**. The number of existing sewer connection is calculated using the maximum month average demand per connection and the existing maximum month average day wastewater flow between the years 2010 and 2019. The number of existing sewer connections is used to calculate the available capacity for growth.

Table 2 shows the summary of current flow conditions. All aspects of this report shall address each projection scenario for average day flow, maximum month average day flow, and peak hour flow.

Table 1: Projected Flow Calculation

Calculation	Description
11.7 MGM	Maximum Month Wastewater Flow (2010-2019)
5.11 MGM	Average Month Wastewater Flow (2010-2019)
0.17 MGD	Existing Annual Average Day Wastewater Flow (ADWF) (2010 – 2019)
0.39 MGD	Existing Maximum Month Average Day Wastewater Flow (MMADF) (2010 – 2019)
518	Existing Sewer Connections
753 GPD	MMADF Flow Per Connection
1.0 MGD	WWTP Permitted and Design Capacity
0.80 MGD	80% of WWTP Permitted Capacity
811	Sewer Connections Available for Growth

Table 2: Flow Summary

Flow Description	Existing Flow (MGD)
Average Day Wastewater Flow	0.17
Maximum Month Average Day Wastewater Flow	0.39
Peak Hour Wastewater Flow (Factor = 2.35)	0.40
Plant Design Flow	1.0

2.2 Solids and Biological Loads

Two constituents that impact the plant's design requirements are the influent biochemical oxygen demand (BOD_5) and the influent total suspended solids (TSS). In the design of the original plant, the engineer used influent values of 228 mg/l BOD and influent TSS of 250 to 300 mg/l. Recent reductions in water use due to increasingly efficient plumbing fixtures, water conscious residents and the drought have tended to increase the BOD concentration.

The use of the 90% frequency value for BOD_5 and TSS is appropriate for planning and design purposes. It provides a reasonable level of confidence in the treatment plant performance relative to the actual wastewater that is to be treated. This is preferred over using an average value, where the influent BOD_5 and TSS concentrations exceed the design value 50% of the time. With the 90% value the influent BOD_5 and TSS concentrations would only exceed the design value 10% of the time.

Influent BOD_5 and TSS test results for 2010 through 2019 were plotted on frequency diagrams as shown on **Figures 6** and **7** respectively. The frequency diagrams revealed that 90% of the time the influent BOD_5 concentration is less than 345 mg/l and the TSS concentration is less than 250 mg/l.

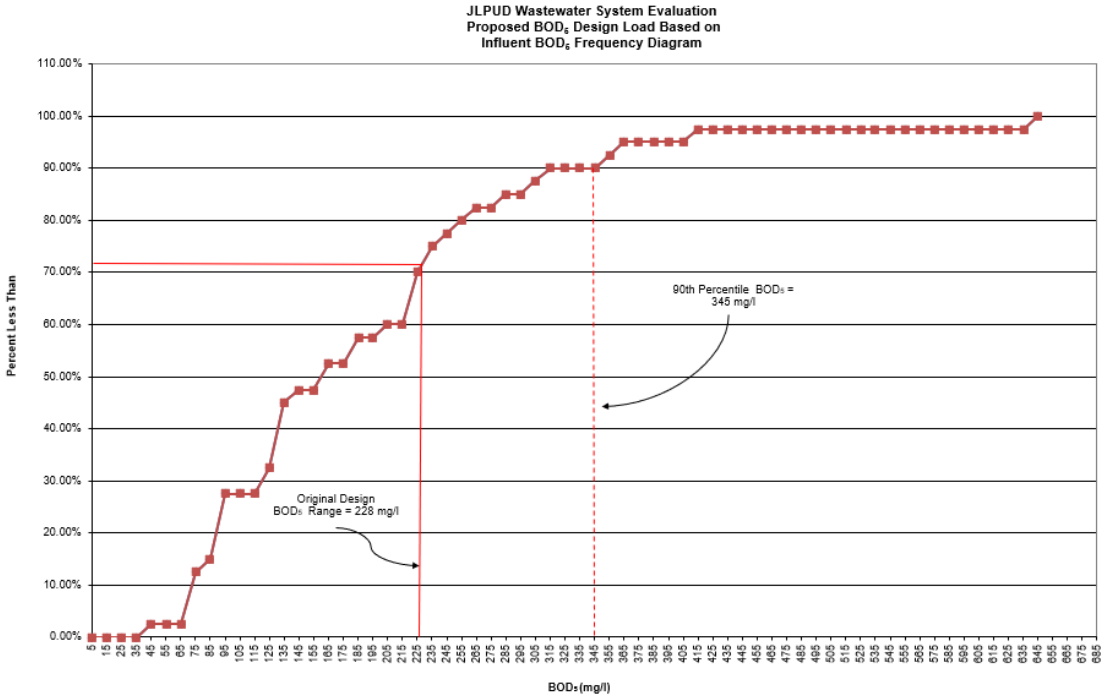


Figure 6: Influent BOD_5 Frequency Diagram

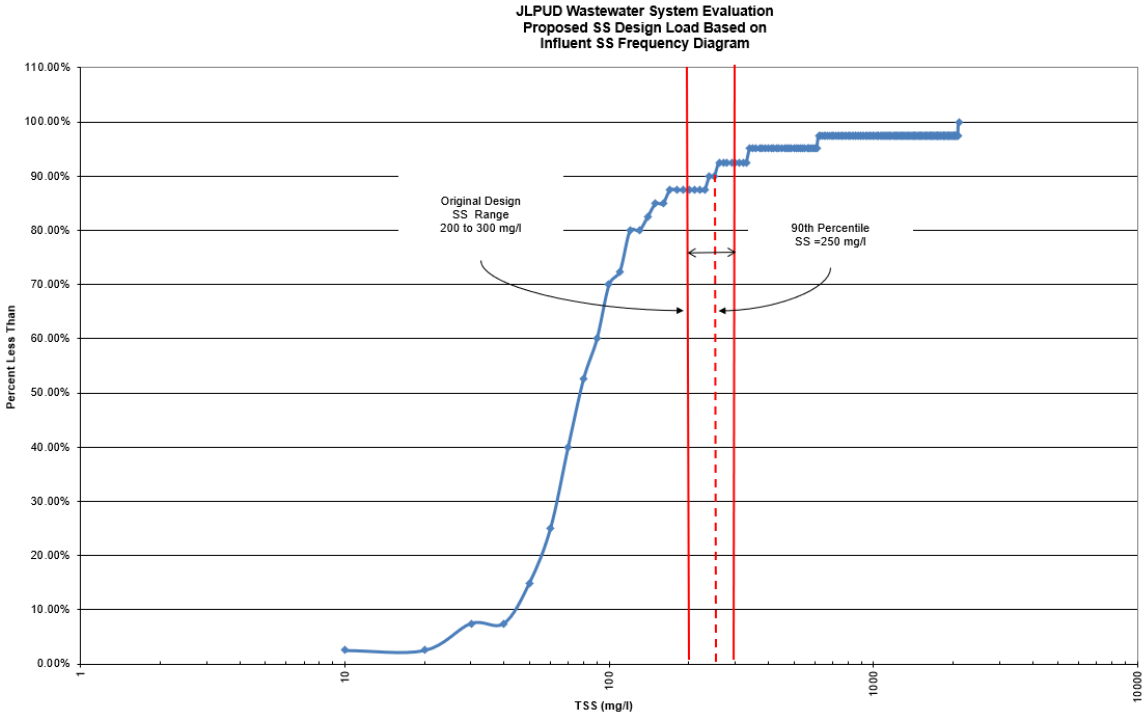


Figure 7: Influent TSS Frequency Diagram

2.3 Design Parameters

A summary of the treatment plant design parameters used in this evaluation is shown in **Table 3** below.

Table 3: Summary of Design Parameters

Flow Description	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)
ADWF	0.17	345	489	250	354
MMADF	0.39	345	1,122	250	813
Plant Capacity	1.0	345	2,877	250	2,085

2.4 Proposed Plant Improvements

Currently, influent is delivered from Lift Station No. 2 directly into the oxidation ditch. Overflow from the oxidation ditch then flows into the clarifier. Sludge is recirculated from the clarifier back to oxidation ditch or wasted to the sludge beds. Clarified effluent is discharged to the percolation ponds. The receiving waters are the ground waters of the Mono Lake sub-basin. **Figure 8** shows a process flow diagram for the existing plant.

The proposed plant improvement includes the addition of a screening facility, flow metering facilities, sampling facilities, improvements to the existing oxidation ditch, improvements to the existing clarifier, and improvements to the existing sludge beds. **Figure 9** shows a process flow diagram for the proposed plant improvements while **Figure 10** provides the hydraulic profile.

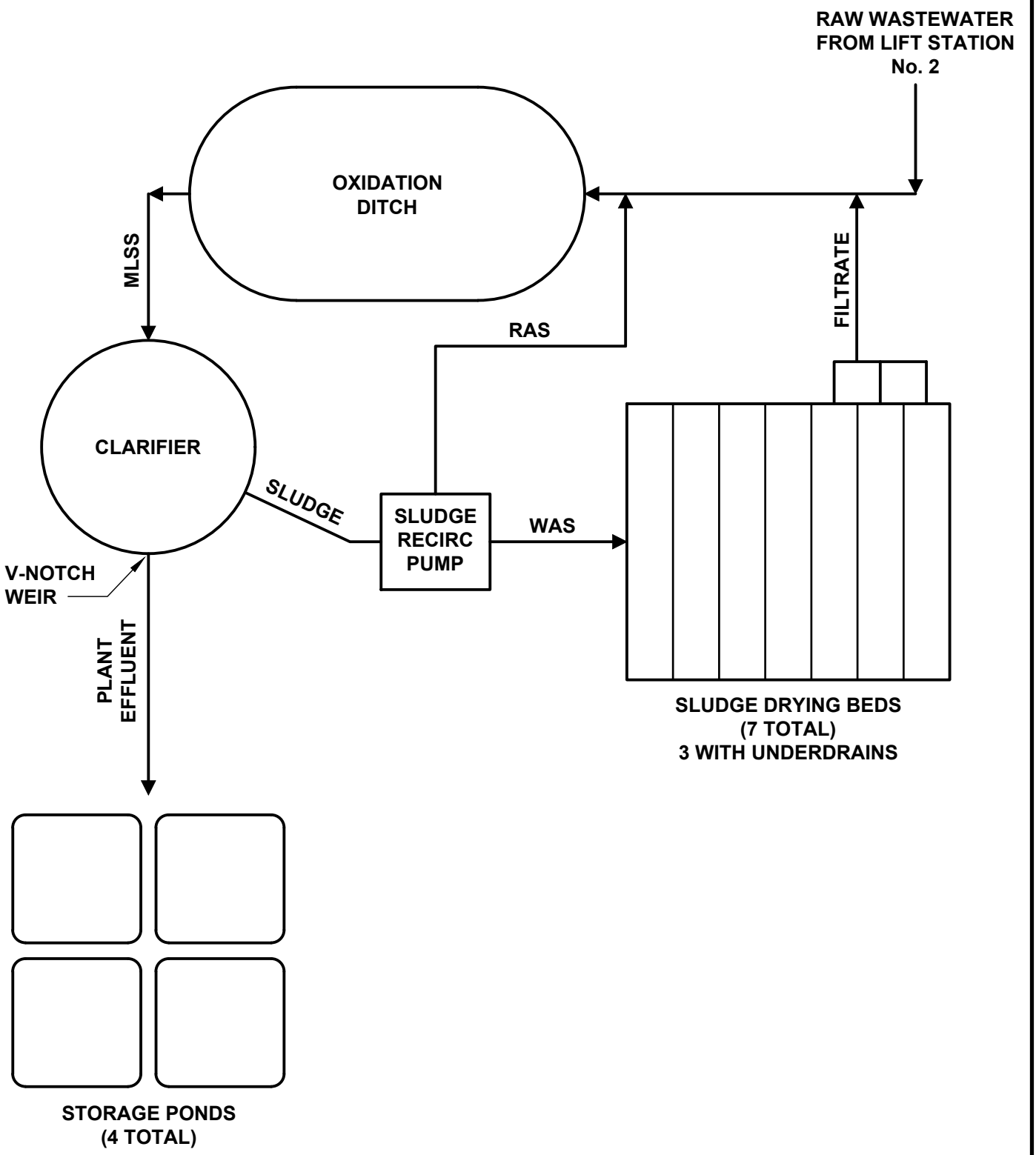
During construction, flow will be temporarily diverted to the existing ponds. The ponds will be modified to operate as a facultative pond treatment system in order to continue generating effluent that meets the District's WDRs.

2.4.1 Screening Facility

There is currently no screening process for the wastewater prior to entry into the oxidation ditch. The only screening occurs at the oxidation ditch effluent line to the clarifier and consists of an operator-retrofitted basket. The basket has numerous openings, approximately 2-inch square each, which only remove large particles and requires manual cleaning of the basket as the basket becomes clogged.

It is proposed that a mechanically operated screening system (see **Figure 11**) be installed to remove particles from the influent prior to entering the oxidation ditch. The influent would flow through the screen which uses an auger to lift the debris out of the flow path and transport it to the waste compactor and out to a dumpster bag. The screened debris can then be disposed of in a landfill.

The screen is typically set on a timer to operate at preset schedules and has a level control emergency feature to automatically turn on when the upstream water surface elevation exceeds a set point and during freezing conditions. A 12" wide by 4' deep lined, concrete channel with a bypass will be constructed to accommodate the screen and allow for maintenance.

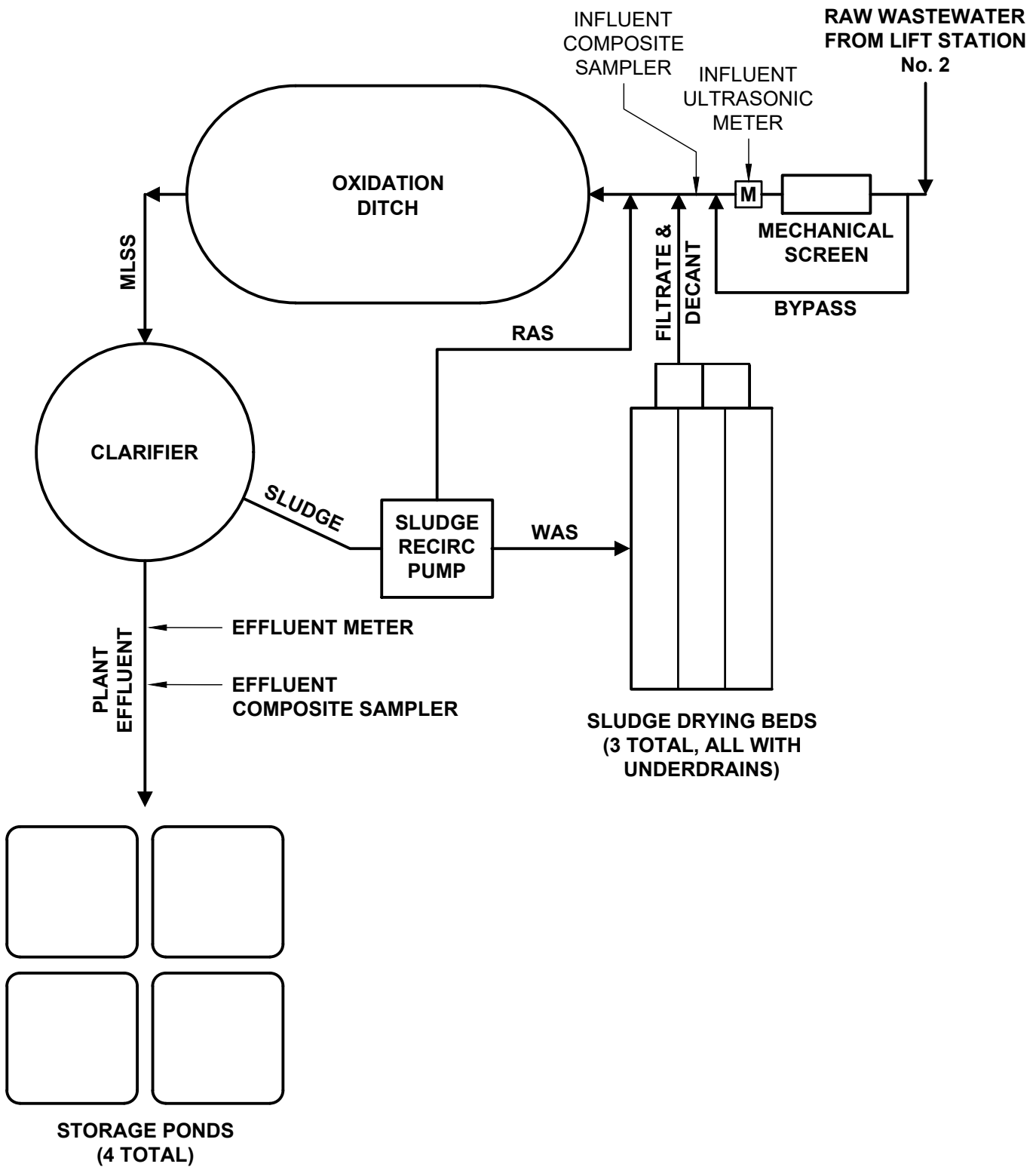


WASTEWATER TREATMENT PLANT EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60640500

EXISTING PROCESS FLOW DIAGRAM

AECOM

Figure: 8

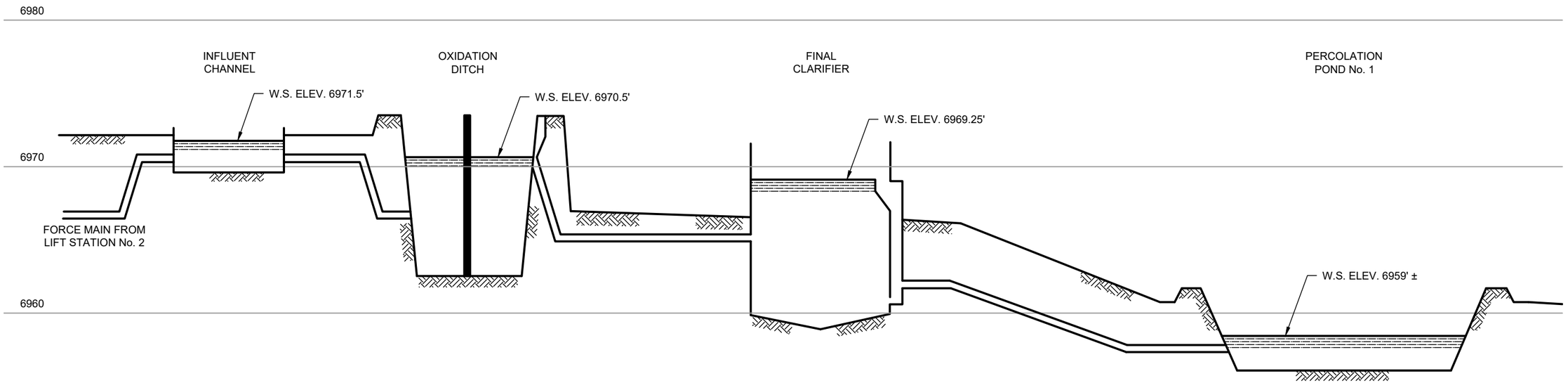


WASTEWATER TREATMENT PLANT EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60640500

PROPOSED PROCESS FLOW DIAGRAM

AECOM

Figure: 9



ELEVATIONS BASED ON PLANT DESIGN FLOW 1.0 MGD

HYDRAULIC PROFILE

NO SCALE

AECOM
Figure: 10

HYDRAULIC PROFILE

WASTEWATER TREATMENT PLANT
EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60640500

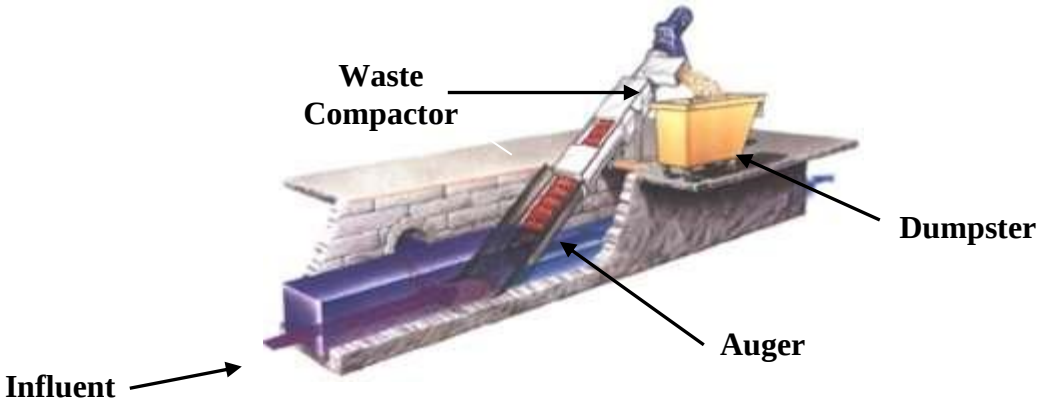


Figure 11: Screening Facility

Additional features of the screen include a continuous bagger assembly, ultrasonic level monitoring, and outdoor freeze protection of the equipment. Two manholes will be constructed, one before the channel inlet and one after the channel exit. This will function as a bypass to allow access to the equipment in the channel. **Figure 12** illustrates the proposed configuration.

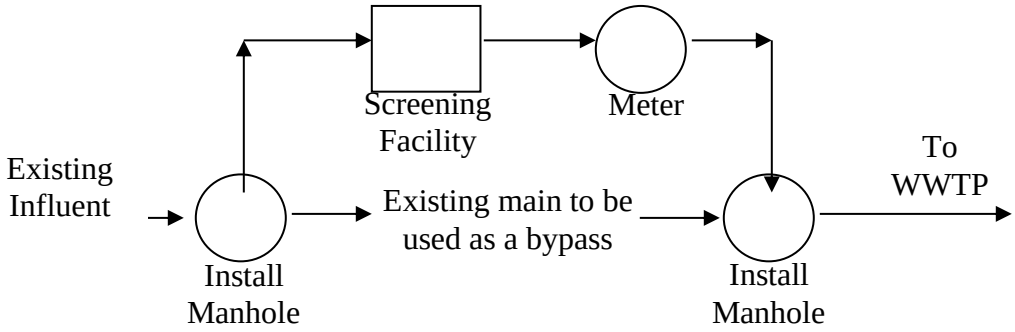


Figure 12: Manhole Bypass

2.4.2 Influent and Effluent Flow Metering Facilities

The only flow metering facility currently in place is a V-notch weir located on the effluent discharge pipe from the secondary clarifier. The weir does not account for the volume of water lost during sludge wasting and therefore does not represent the true flow rates entering the treatment facility.

A flow metering facility is proposed downstream of the screen prior to entering the oxidation ditch to monitor and record influent flows to the wastewater treatment plant. The proposed facility is an in-channel Palmer Bowlus flume with an ultrasonic meter to determine flow rates similar to **Figure 13**. The flume can be installed in the new screening channel and provide real-time data to the plants SCADA system.

As a secondary function, the meter can be used to determine if infiltration and inflow are occurring during precipitation events between Lift Station No. 2 and the treatment plant or if the force main is leaking by comparing the plant influent flows with Lift Station No. 2 flows.

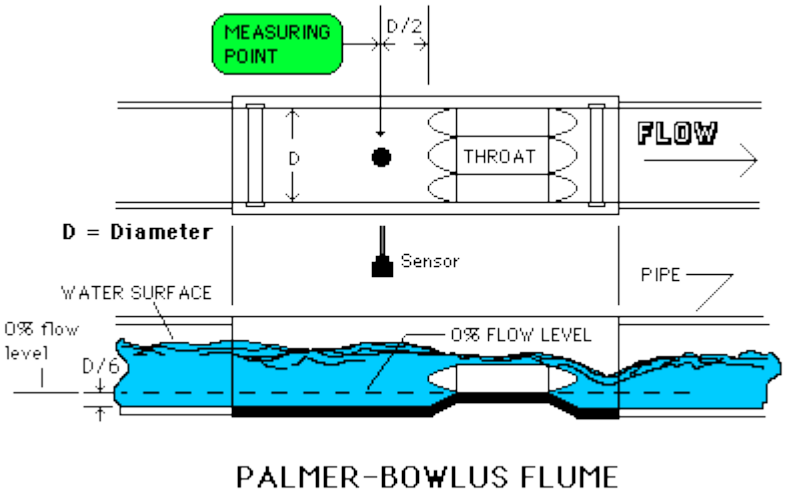


Figure 13: Channel Flow Meter

In addition, an in-pipe magnetic flow meter is proposed for the effluent line between the clarifier and pond discharge. This meter will allow the District to quantify the amount of effluent discharged to the storage ponds and account for any losses in the treatment process including sludge wasting. The pipeline for the meter will be designed so that the meter flow full at all times.

2.4.3 Influent and Effluent Composite Samplers

In order to improve the accuracy and consistency of the District's sampling regime, it is proposed to install all weather composite samplers at the head of the treatment process and at the end of the treatment process. The example sampler shown below (**Figure 14**) includes a climate control system to maintain the integrity of the saved sample.

Figure 14: All-Weather Composite Sampler

Providing composite samples to plant personnel will provide the District with better analytics that can lead to improved plant operation and efficiency.

2.4.4 Oxidation Ditch

There is a single oxidation ditch designed for 1.0 MGD that was constructed over 40 years ago. The ditch contains two brush aerators and three floating aerators (Figure 16). The ditch has never been fully drained for maintenance or inspection to determine its structural condition because there is no redundant ditch. Visible cracks in the concrete perimeter and in the center wall indicate that cracks could extend below the water level and perhaps down to the ditch base. If the cracking has penetrated the side slopes below the water level, there is a potential for leakage from the ditch. The access bridges to the existing brush aerators are corroded and the concrete supports damaged. Replacement of the bridges and support structures is recommended. The two aerator brushes have not received maintenance in the last 10 years and show signs of deterioration. Rehabilitation of the aerator brushes and the replacement of the bearings is recommended. Refer to **Figure 15** for oxidation ditch structural issues.

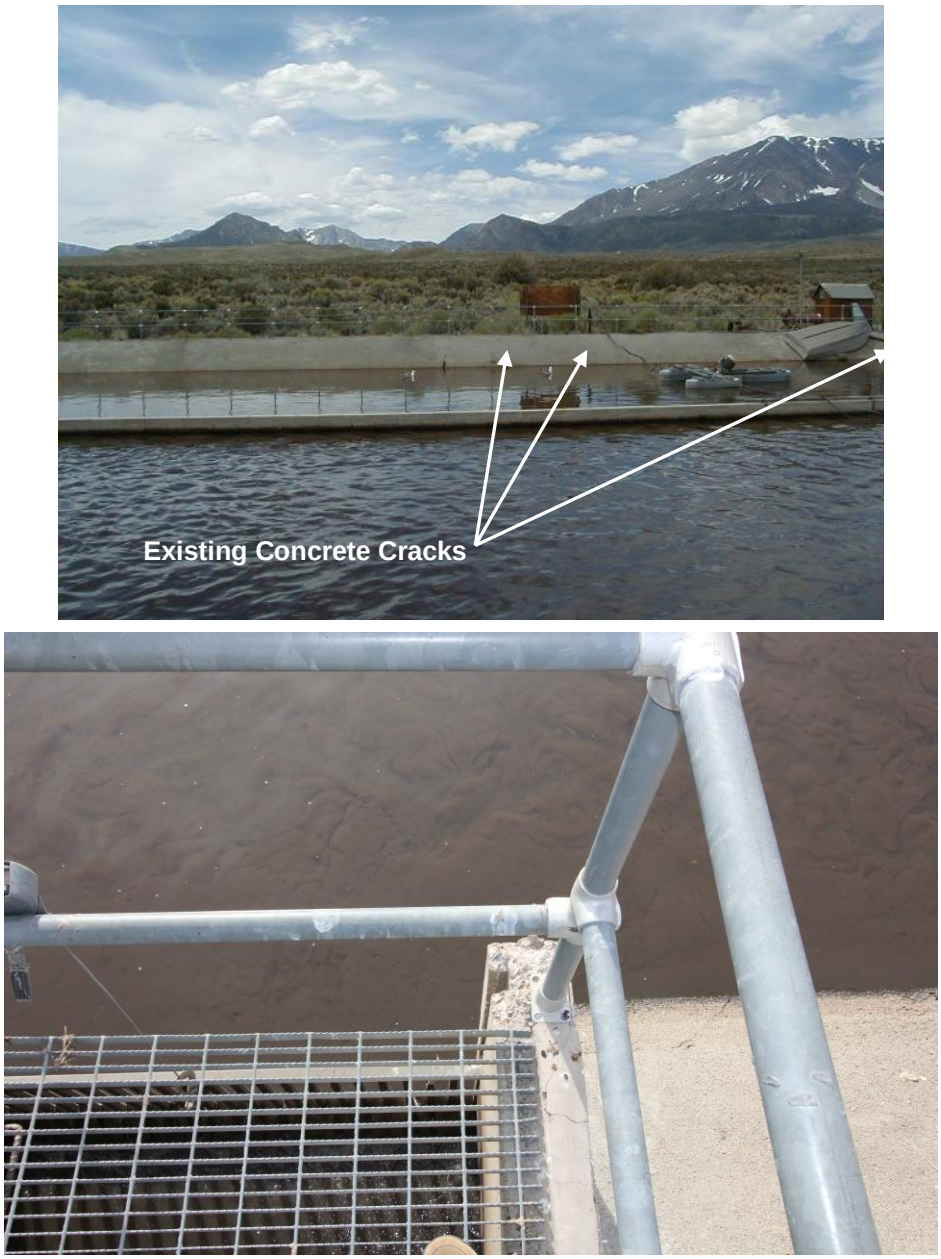


Figure 15: Oxidation Ditch Structural Issues

Due to the short duration, peak hour flows are not considered in the operational analysis of the oxidation ditch. Based on current flows, the oxidation ditch is oversized. Typical recommended hydraulic retention times (HRT) range from 18 to 24 hours but the June Lake PUD oxidation ditch has an HRT of 75 hours at MMADF. The result of long HRTs is excessive sludge age that can cause settling problems and difficulty maintaining biomass. Therefore, it is recommended that the plant provide an aeration capacity that is 50% above the standard recommended aeration requirements at ADWF and MMADF. At plant capacity the HRT is reduced so the 50% increase is not applicable. To enhance treatment in the oxidation ditch, JLPUD adds the following additives to the ditch: Biostem in winter months and foam busters in summer. **Table 4** analyzes aeration capacity and requirements for biochemical treatment.

Table 4: Aeration Capacity and Requirements for Biochemical Treatment

	Current Aerator Capacity = 100-HP (brush) and 30-HP (floating)					
	Flow (MGD)	**BOD_5 (lb/day)**	**O_2 to Convert BOD_5 (lbs O_2/lb BOD_5)**	**Total Daily O_2 Requirement (lbs)**	**HP to O_2 Conversion (lbs O_2/HP-hr)**	**Aeration Power Requirement (HP)**
ADWF	0.17	489	5.25	2,568	1.5	71
MMADF	0.39	1,122	5.25	5,891	1.5	164
Plant Capacity	1.0	2,877	3.5	10,071	1.5	280

The existing aeration equipment is not adequate to meet the current oxygen demands for biochemical treatment at MMADF. Therefore, the District should replace the existing floating aerators with three, new bridge mounted aerators with higher horsepower. The existing aerators (see **Figure 16**) can be relocated to Pond No. 1.

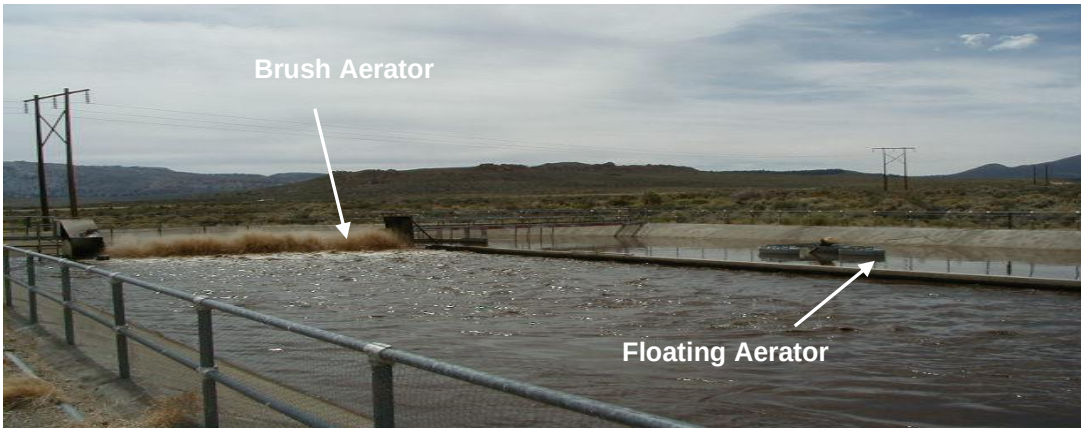


Figure 16: Existing Oxidation Ditch Aerators

Debris and soil from the surrounding area commonly blows into the oxidation ditch due to the excessive prevailing winds. As part of the plant improvements, a stainless-steel angled bar screen with 3-inch bar spacing (see **Figure 17**) should be installed on the oxidation ditch outlet to prevent debris from migrating to the clarifier. The screen will catch large debris and a rake can be used to extract the debris from the oxidation ditch. In addition, construction of a 4-ft chain link fence, oriented perpendicular to the prevailing

wind will help prevent debris from depositing inside of the oxidation ditch. Gates will be provided at all bridge locations.

While the flows to the WWTP are being diverted to the ponds, the oxidation ditch can be drained and inspected. Cracks and other items discovered during the inspection will be repaired during this time.

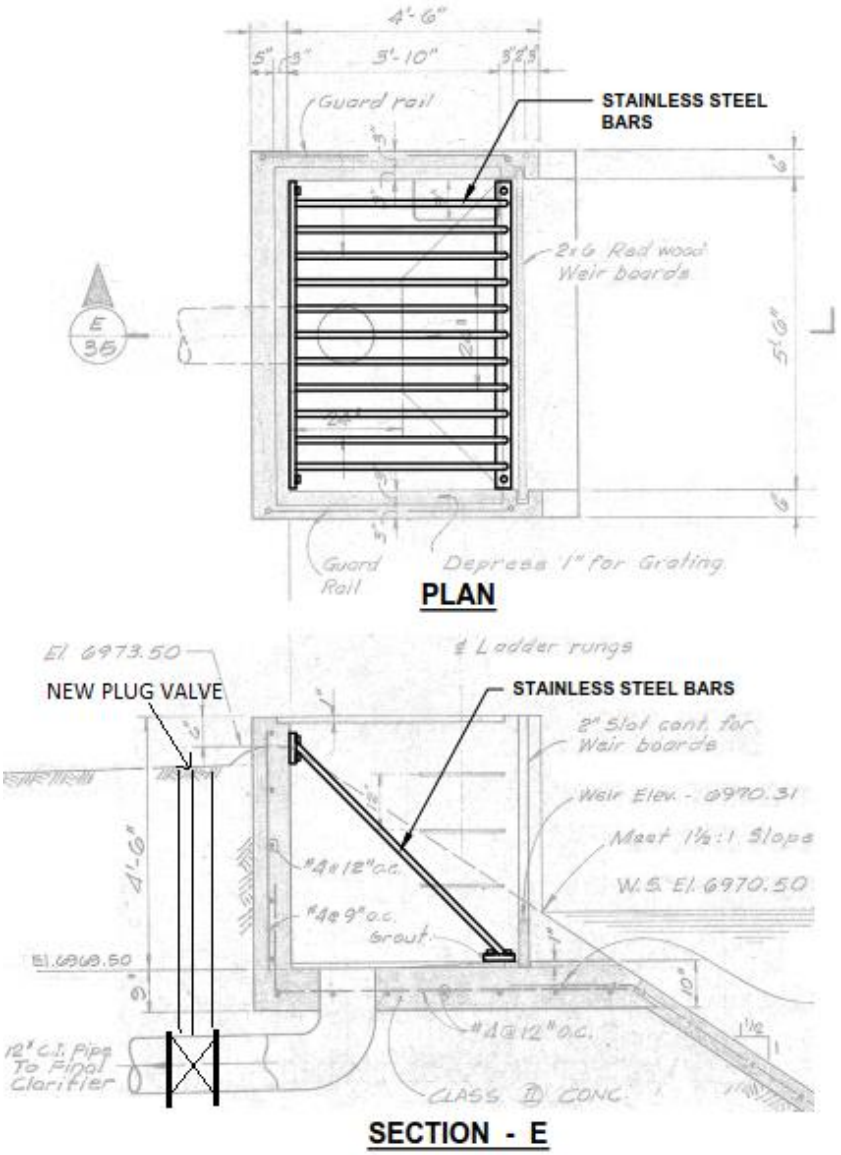


Figure 17: Oxidation Ditch Bar Screen

2.4.5 Nitrification

The point of discharge for the effluent is into percolation ponds located north of the process treatment. The receiving waters are the ground waters of the Mono Lake Sub-Basin. The district currently meets all of the

requirements under their current waste discharge requirements but has become increasingly concerned with the possibility of nitrate reaching the ground water from the leachate.

Following the district's request, possible nitrification strategies were reviewed, and the most viable options is described below. The operating data provided by the District shows an average effluent TKN of 7.76 mg/L and nitrate/nitrite of 53 mg/L. Values for TKN varied between 0 mg/L and 20 mg/L meanwhile values for nitrate/nitrite varied between 0.018 mg/L to 140 mg/L, with higher values often obtained in warmer months. The proposed nitrification strategies are based on assumed effluent limits for nitrate of 10 mg/L.

Nitrification can be accomplished within the existing oxidation ditch. This is done by strategically placing aerators along the ditch channel length and creating aerobic and anoxic zones. To ensure full nitrification the aerators should provide sufficient aeration to meet the requirements for both the biochemical and nitrogen loading. **Table 5** analyses the total aeration requirements for simultaneous treatment.

Table 5: Aeration Capacity and Requirements for Biochemical Treatment and Nitrogen Loading

	Current Aerator Capacity = 100-HP (brush) and 30-HP (floating)							
	Flow (MGD)	**TKN (lb/day)**	**O_2 to Convert TKN (lbs O_2/lb TKN)**	**Daily O_2 Requirement for TKN (lbs)**	**Daily O_2 Requirement for BOD (lbs)**	**Total Daily O_2 Requirement (lbs) (TKN + BOD)**	**HP to O_2 Conversion (lbs O_2/HP-hr)**	**Aeration Power Requirement (HP)**
ADWF	0.17	98	4.6	449	2,568	3,017	1.5	84
MMADF	0.39	228	4.6	1,050	5,891	6,941	1.5	193
Plant Capacity	1.0	584	4.6	2,685	10,071	10,071	1.5	354

The four aerators proposed for biochemical treatment would be upsized to meet the oxygen requirements for full nitrification.

This setup will provide the District with adequate oxygen to treat the MMADF of 0.39 MGD. It is recommended that the District install 3-new 40-hp bridge mounted aerator/mixers in the configuration shown in **Figure 18**.

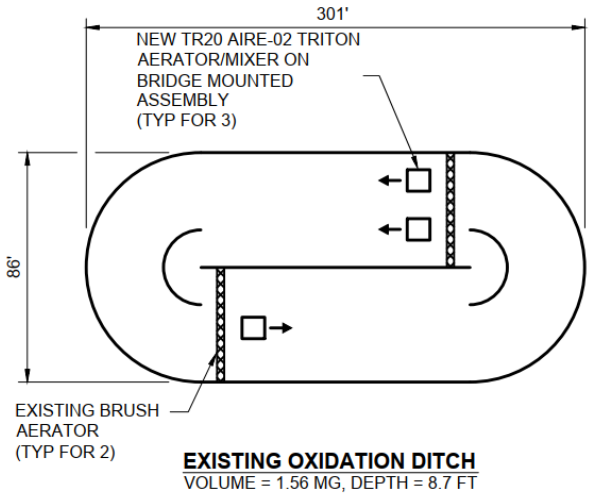


Figure 18: Oxidation Ditch Proposed Aerator Layout

Should the District need to increase their treatment capacity in the future they can add additional bridge mounted aerators or replace the 40-hp units with larger ones.

2.4.6 Clarifier

There is only one clarifier and it was also constructed over 30 years ago. The clarifier is approximately 45-feet in diameter with an average water depth of 8.5-feet. A wooden cover and space heaters are used to reduce freeze-up conditions in the clarifier. The steel supports on the cover will eventually corrode and may become unable to support the required loads. It is proposed the existing cover be replaced with a truss-supported aluminum cover to reduce freeze-up conditions. Refer to **Figure 19,** which shows the existing clarifier and proposed cover. The cover will include an observation hatch and perimeter hatches to facilitate access for maintenance. For a reduced cost, the District could consider a fabric cover but due to the extreme climate and wind conditions at the site, the fabric cover would have a reduced lifespan.

Figure 19: Clarifier Cover

The clarifier capacity was calculated for the current flows as is shown in **Table 6**. The existing clarifier is able to meet current flows and is capable of meeting the plant permitted capacity of 1.0 MGD.

Table 6: Clarifier Capacity

	Max. Mo. Avg. Day (MGD)	Clarifier Area (ft^2)	Overflow Rate (GPD/ft^2)	Detention Time (hrs)
Present	0.39	1,590	245	6
Permitted	1.0	1,590	629	2.5

At MMADF, the long HRT could cause some of the sludge to float. It is recommended that the District install Stamford baffles along the perimeter wall to reduce the amount of floating sludge that could exit the clarifier over the weir. The skimmer arms and scrapers are past the end of their design life and require replacement.

It is recommended that the District replace the existing EIMCO Type clarifier mechanicals with new Ovivo suction tube clarifier mechanicals per the following:

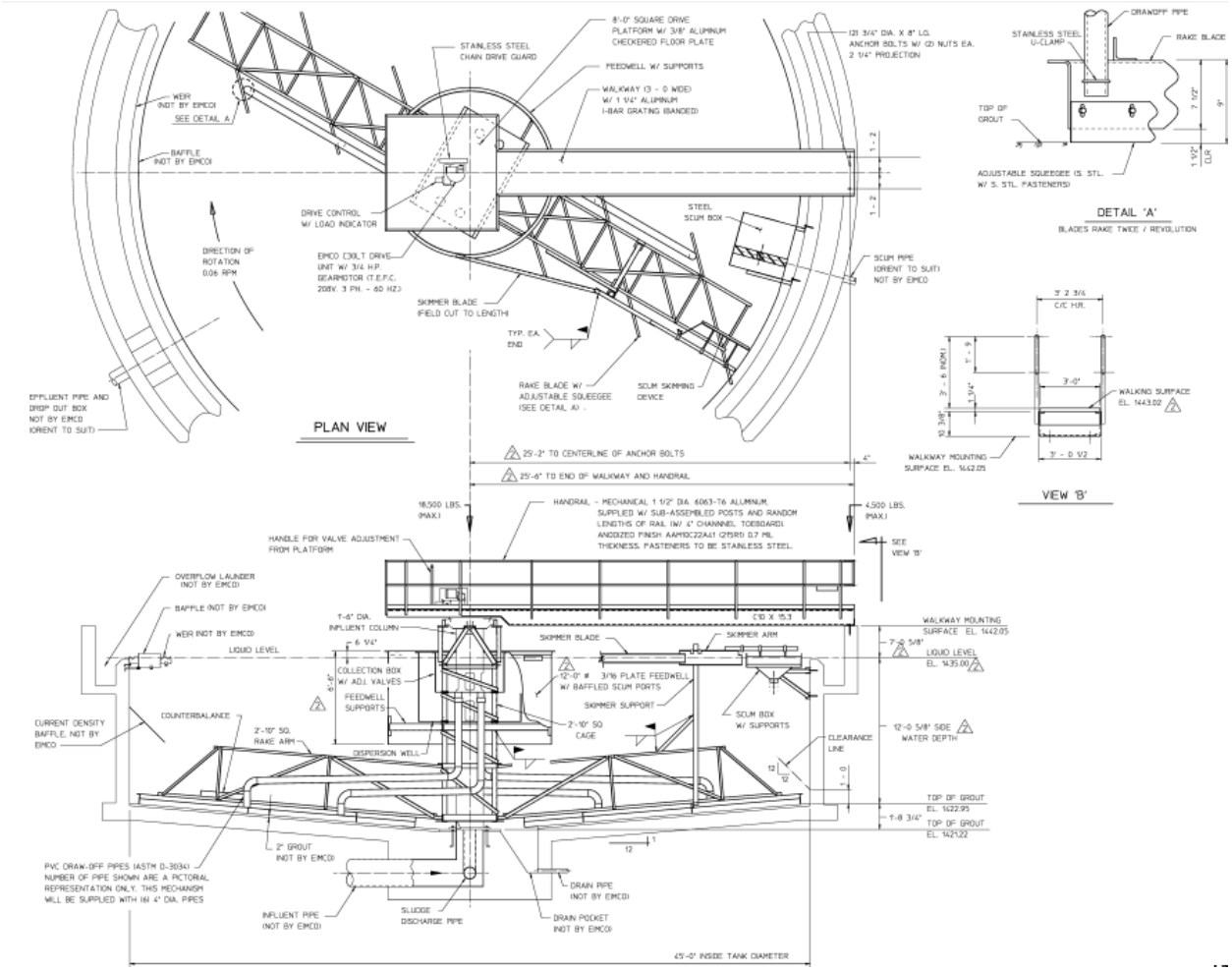


Figure 20: Recommended Clarifier Mechanicals

Like the oxidation ditch, there is no redundancy for the clarifier so all inspection and repairs to the concrete, scum baffles, and weir will be conducted while the plant flows are redirected to the pond system.

2.4.7 Sludge Beds

There are presently seven sludge beds with a total combined area of approximately 16,200 ft^2. The plant was initially designed with four unlined sludge beds. The three additional beds were installed as part of a plant expansion. These additional basins have an approximate depth of 18-inches and concrete bottoms with an under drain and the drained liquid is pumped back to the treatment process. The sludge pump was replaced recently and is still in good condition, however, the motor should be replaced. The facility receives an average of 68-inches of snow with temperatures averaging a low of 20ºF during the coldest month. During the coldest winter months, the shallow sludge beds freeze hindering the overall storage capacity.

The district currently only operates the four original unlined sludge beds. The original beds have native soil bottoms with no under drains. The State Water Quality Control Board has become increasingly critical of this type of sludge bed. Their concern is the possibility of contaminants reaching the ground water from the bed leachate.

Preliminary estimates for the sludge dewatering will be based on assumptions and parameters presented in the following tables:

Table 7 Sludge Bed Design Criteria

Average Day Flow	0.17 MGD
BOD	345 mg/L
Yield[1]	0.75 lbs VSS[2]/ lb BOD
Sludge Solid Concentration	1% solid by weight
Dewatering Schedule	6 hours of operation / day 5 days per week

Based on the above criteria, the bio-solid production rate equals:

Table 8 Sludge Production

Daily Sludge Production	367 lbs/day as dry solids 4,394 gal/day bulk volume
Required Dewatering Rate (based on a 30 hr/wk schedule)	514 lbs/day or 86 lbs/hr. 6,161 gpd or 17 gpm

Table 9 Sludge Bed Requirements

Yearly Sludge Production	133,800 lbs/yr as dry solids
Typical Solids Loading Rate[1]	15 lbs/yr/ft^2
Sludge Bed Area Requirement	8,920 ft^2

Per the above, the existing beds are capable of providing efficient sludge drying. However, due to the cold weather impacts to the lined beds and concerns with the unlined beds, it is recommended to completely rehabilitate the larger unlined sludge beds to allow for more efficient operation throughout the year.

It is proposed that the area with the four original unlined beds be excavated to remove and dispose all sludge and sand. In their place, three rectangular paved sludge drying beds with underdrains and supernatant collection shall be constructed. The beds are recommended to be constructed with dimensions of 40-feet wide and 120-feet long each. Use of the beds should be rotated with beds operated one at a time and the sludge dried and removed before fresh sludge is added to the bed. The proposed three sludge drying beds would provide a total combined area of approximately 14,400 ft^2. It is proposed that the small rectangular sludge drying beds be abandoned in place.

The underdrainage and supernatant are to be pumped back to the oxidation ditch. This pumping system is to consist of one pump. **Figure 21** illustrates a recommended cross-sectional layout configuration for the refurbished sludge beds which would provide a ramp to facilitate the entrance of a front-end loader to remove sludge and auger mixing vehicle to increase drying speed.

---

[1] Design of Municipal Wastewater Treatment Plants, WEF Manual of Practice No. 8 (MOP8) Fig 11.7(b), 1992.

[2] Volatile Suspended Solids (VSS)

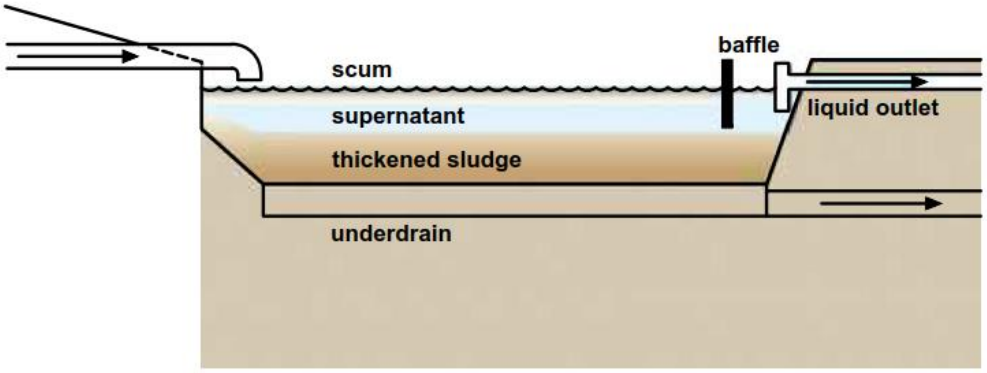


Figure 21: Recommended Sludge Bed Cross Section Configuration

Alternative – 1

The alternative proposes to replace the drying beds by a mechanically operated dewatering unit. A skid mounted screw press (see **Figure 21a**) would be installed within a proposed building. The screw press includes a progressive cavity sludge pump that pumps the sludge from the clarifier through the screw press and returns dewatered sludge through a chute that is dropped to a dumpster or can be modified to be applied to the sludge drying beds. The dewatered sludge can then be disposed of in a landfill.

Figure 21a: Skid Mounted Screw Press

The screw press proposed would operate twice a week and include a fail-safe system to alert the operator of any malfunctions. The skid would be housed within a building of approximately 14-feet by 12-feet with a minimum height of 11-feet.

2.4.8 Percolation Ponds

There are currently four percolation ponds in use at the treatment plant with a total wetted area of approximately 421,000 ft^2 or 9.7 acres. Due to a lack of data, we were not able to analyze the infiltration capacity of the ponds. It is proposed that tests be done on the soil to determine the infiltration rate. According to the National Resources Conservation Service Web Soil Survey, the ponds are constructed on Alamedawell Loamy Sand. The estimated infiltration rate ranges from 0.20 to 2.00 in/hr. Using the most conservative hourly infiltration rate, the daily infiltration rate is estimated to be 4.8 in/day. Therefore, the current percolation ponds would have an infiltration capacity to dispose of approximately 1.26 MGD.

During construction, the ponds will be temporarily converted for use as a pond treatment system. The ponds will be configured to provide a facultative pond, maturation pond, and an infiltration pond. Minor modifications will be required to effect the change including:

- Reconfiguring of the inlet/outlet pipes;
- Lining of the facultative pond (Pond No. 1) with HDPE to reduce infiltration;
- Relocating the existing surface aerators from the oxidation ditch to the facultative pond to assist the treatment process.

An additional benefit of lining Pond No. 1 will be that it can be used in the future as an equalization basin should the District need the additional capacity. The downside is that it potentially reduces the plants infiltration capacity by about 0.30 MGD.

Figure 22 shows a recommended layout for using the ponds to provide temporary wastewater stabilization and treatment.

2.4.9 Site Improvements

The site has also not received any major improvements over the past 30 years. The buildings show signs of exterior wear and the original paved driveway is cracked and needs repair.

It is proposed to strip and repaint the exterior surfaces of the laboratory/control building, shop building, and truck port with the District's approved color (see Appendix D). Additionally, it is proposed to strip and seal coat the interior walls and floor of the Laboratory/Control building with the District's approved color.

The building's roof has also shown deterioration, it is proposed that the roof for the laboratory/control building and the truck-port be replaced with the same type.

It is further recommended that the existing paved driveway is removed and the driveway is paved with asphalt adequate for high mountain, high desert regions, performance grade (PG) 64-28 (See appendix E).

2.4.10 Miscellaneous Improvements

As part of the recommended improvements to the treatment plant, the following items should be addressed:

- Replace the existing 3-way lubricated plug valves on the scum box and sludge lines. These are located in the lab building.

- Replace the existing 12" gate valve on the clarifier bypass line.

- Add a shut off valve (lubricated plug) to the line from the oxidation ditch to the clarifier, just downstream of the new screen on the oxidation ditch outlet.

- Provide a new check valve (spring-arm) just ahead of the sludge pump.

- Replace existing non-potable water pressure tank and pump located inside the laboratory/control building and corresponding piping.

PLAN

NO SCALE

SECTION THROUGH PONDS

NO SCALE

AECOM

Figure: 22

EFFLUENT PONDS
PLAN AND SECTION

WASTEWATER TREATMENT PLANT
EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60640500

Project Management Initials: Designer: Checked: Approved: ANSI B 11" x 17"

Last saved by: GABRIEL.ROSALES (2020-10-22) Last Plotted: 2020-10-22
Filename: S:\JOT\60640500 - WWTP EVALUATION\UPDATE TASK ORDER # 05\900_CAD_GIS\910_CAD\06-FIGURES\60640500 - FIG 5.DWG

Section 3
Electrical & Instrumentation Systems

3.1 Instrumentation and Control Systems

AECOM's approach, guidance, and understanding of the June Lake WWTP supervisory control and data acquisition (SCADA) system improvement is based on the information gathered by AECOM Engineers during their site visit on December 19, 2016. Present operation of the plant equipment is manual mode with limited monitoring and control capability. It is our understanding that June Lake Public Utility District desires to upgrade the existing obsolete system with a Programmable Log Controller (PLC) controlled, fully automated control system.

3.1.1 Instrumentation to be Demolished

Flow metering facility using V-notch weir located on the effluent discharge pipe from the secondary clarifier will be demolished.

3.1.2 New Instrumentation to be Added

Control system and instrument wire termination will be housed in a NEMA 12 Instrument Control Panel (ICP) inside the existing Electrical Room. The control system will interface and match the existing SCADA and telemetry system owned by the district. The operator will be able monitor and make process changes on an Operator Interface at the Instrument Control Panel as well as at the existing central SCADA system.

Networking between packaged skid based systems and ICP will be using Ethernet or Modbus over Ethernet communication protocol. An ethernet switch with spare ports and a fiber port will be installed in the ICP for future plant expansion.

New Radar flowmeter will be installed in the influent channel and a magnetic flowmeter on the effluent discharge line. Flowmeters will be capable of measuring flow in GPM, and flow total in MGD. Flowmeter readings and meter health will be monitored by the PLC.

Influent screen Run and Fail status will be reported to the PLC for monitoring and recording in SCADA. The influent screen packaged system will be equipped with upstream and downstream level sensors and a level transmitter to monitor adequate screen operation.

3.1.3 Control Strategy

The following equipment will be operated manually and will only provide status signals to PLC:

- Brush Aerators in Oxidation Ditch - Two
- High Pressure Effluent (HPE) Pump - One
- Floating Aerators – Three

- Bridge Mounted Aerators – Three
- Clarifier
- Influent Screen

Following equipment will be operated from the PLC in Auto mode in addition to manual operation:

- Sludge Pump – One

Following metering instruments will be monitored by PLC:

- Influent and Effluent flow meters
- Influent and Effluent Sampler alarms
- Intrusion switches

3.1.4 SCADA Communication

The SCADA system communication media is the vital element of the entire SCADA system. AECOM will conduct a workshop with June Lake Public Utility District to discuss and identify the district's preferences for the present communication network as well as alternatives for the future district wide integration. For SCADA communications, it is noted that cellular communication is not entirely reliable in the area. There is a potential to connect via a fiber system located on the WWTP property.

3.2 Electrical Improvements

The existing electrical equipment is currently located inside the existing WWTP Control Building. The existing electrical equipment consists of the main switchboard (MSA) and the motor control center (MCC). The main switchboard is powered from an existing Pacific Gas and Electric (PG&E) pole mounted transformer. Refer to **Figure 23** for existing single line diagram.

It is recommended to provide rodent barriers on all outside electrical junction boxes.

3.2.1 Electrical Equipment to be Demolished

The following is a list of electrical equipment proposed to be demolished:

- Main Switchboard "MSA"
- Motor Control Center "MCC"
- Motors, control and power conduit, and wire to Rotor 1 and Rotor 2
- Motor, control and power conduit, and wire to Sludge Pump

- Motor, control and power conduit, and wire to High Pressure Pump (HPE)
- Motor, control and power conduit, and wire to Final Clarifier
- 15KVA, 480-120/208V transformer and conduit and wire
- 5KW Unit Heater and 7.5KW unit Heater and conduit and wire
- Combination motor starters, control and power conduit, and wire to Aerators #1, #2, and #3.

Refer to **Figure 23** for existing single line diagram.

Note: Only exposed conduit will be removed, if the conduit is below grade, it will be abandoned in place and only the wire will be removed.

3.2.2 New Electrical Equipment to be Added

A new Main Switchboard “MSB-1” and a new Motor Control Center “MCC-1” will replace the existing Main Switchboard “MSB” and the existing Motor Control Center “MCC”. The new main switchboard and the new motor control center will be located outside in a NEMA 3R non walk-in enclosure.

A new outdoor, 350KW diesel generator will provide backup power in case of utility power failure. The generator fuel tank will be rated for 8 hour running time at 100% full load and will be mounted below the frame of the generator.

A new automatic transfer switch will automatically start the generator in case of utility power failure.

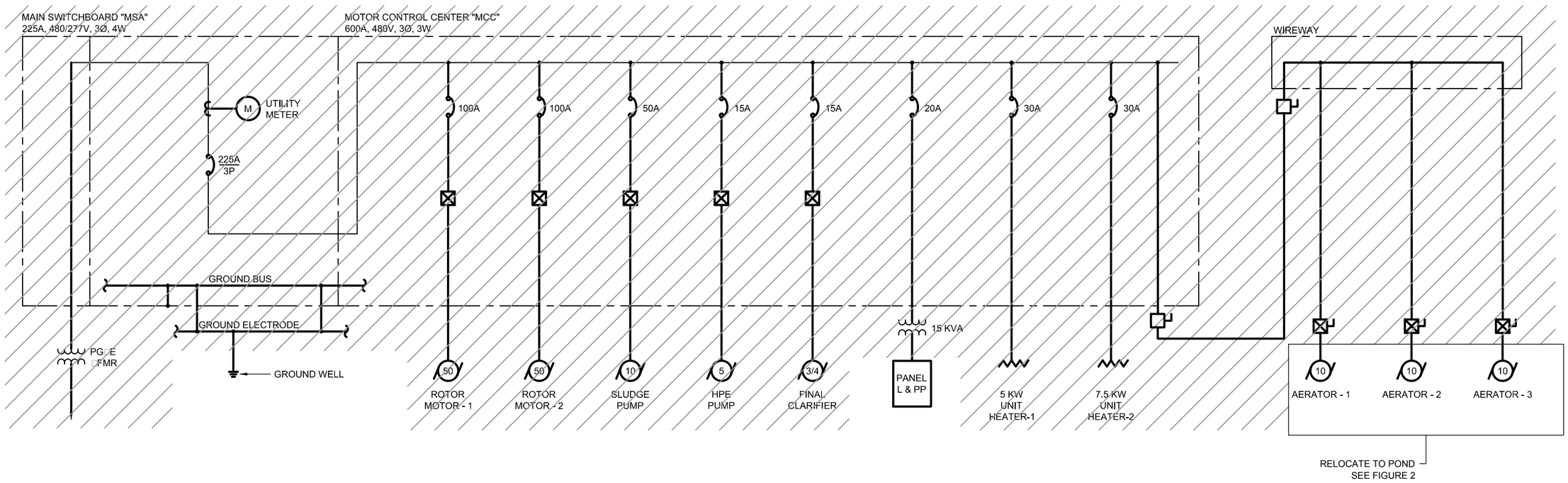
Refer to **Figure 24** for Revised Single Line Diagram. The following is a list of equipment that will be added:

- Main Switchboard “MSB-1”
- Motor Control Center “MCC-1”
- 600 Amp Automatic Transfer Switch
- 350KW generator
- Conduit and controls to new motors.

3.2.3 Electrical Controls

The electrical equipment will be controlled as follows:

- Rotor 1 will be controlled by a solid-state, soft-start motor starter, in order to minimize the size of the new generator. The motor starter will be mounted within the new motor control center MCC-1 and a lockout stop pushbutton will be located adjacent to Rotor 1. The Rotor-1 will operate continuously 7 days a week, 24 hours per day.
- Rotor 2 will be controlled by a solid-state, soft-start motor starter, in order to minimize the size of the new generator. The motor starter will be mounted within the new motor control center MCC-1 and a lockout stop pushbutton will be located adjacent to Rotor 2. The Rotor-2 will operate continuously 7 days a week, 24 hours per day.



1 | EXISTING SINGLE LINE DIAGRAM
-

DEMOLITION NOTES

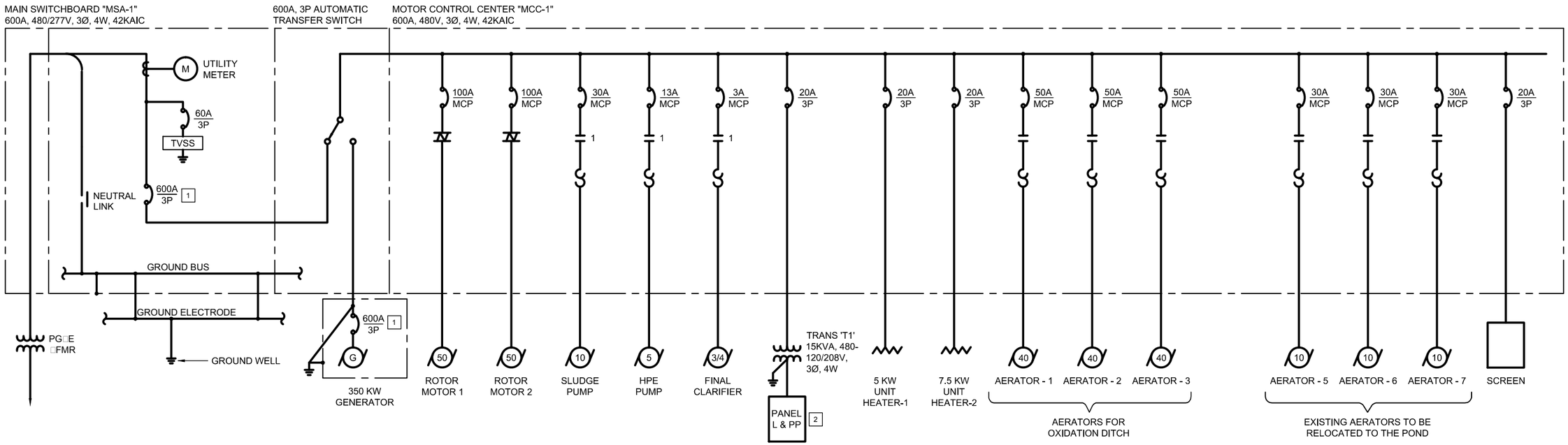
1. REMOVE AND DISPOSE OF EXISTING MOTOR CONTROL CENTER, MAIN SWITCHBOARD, UNIT HEATERS, SLUDGE PUMP MOTOR, HPE MOTOR AND FINAL CLARIFIER MOTOR. REMOVE EXPOSED CONDUIT AND WIRE. ABANDON UNDERGROUND CONDUIT AND REMOVE WIRES.

AECOM

FIGURE: 23

EXISTING SINGLE LINE DIAGRAM

WASTEWATER TREATMENT PLANT
EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60526487



1 | **REVISED SINGLE LINE DIAGRAM**

MOTOR CONTROL CENTER "MCC-1"					
DESCRIPTION	VOLTAGE	PHASE	CONNECTED		
			HP	KVA	AMPS
ROTOR MOTOR 1	480	3	50	51.8	
ROTOR MOTOR 2	480	3	50	51.8	
SLUDGE PUMP	480	3	10	11.2	
HPE PUMP	480	3	5	6.1	
FINAL CLARIFIER	480	3	0.75	1.1	
TRANSFORMER "T1"	480	3	-	15	
UNIT HEATER 1	480	3	-	5	
UNIT HEATER 2	480	3	-	7.5	
AERATOR - 1	480	3	40	41.5	
AERATOR - 2	480	3	40	41.5	
AERATOR - 3	480	3	40	41.5	
AERATOR - 4 (FUTURE)					
AERATOR - 5	480	3	10	11.2	
AERATOR - 6	480	3	10	11.2	
AERATOR - 7	480	3	10	11.2	
SCREEN	480	3	1.5	2	
LCL 25□ LARGEST MOTOR (50 HP)	480	3	50	13	
MCC TOTAL LOAD				322.5	388

NOTES:

1. PROVIDE A 100□ RATED MAIN CIRCUIT BREAKER.
2. PANEL L □ PP IS E□ISTING.

AECOM

FIGURE: 24

REVISED SINGLE LINE DIAGRAM

WASTEWATER TREATMENT PLANT
EVALUATION STUDY
JUNE LAKE PUBLIC UTILITY DISTRICT
Project No.: 60640500

Project Management Initials: Designer: Checked: Approved: ANSI D 22□□34"

Last saved by: GHILARDUCCID (2017-08-24) Last Plotted: 2017-08-24
Filename: S:\JO\60\52\6497 - WWTP EVALUATION\900 WORKING\DOCS-CAD\06-FIGURES\FIGURE-24.DWG

Xref: \PROJECT_TITLE_BLOCKS_ACM-G-ES_ANSI_D_LAND.dwg

- The Sludge Pump will be controlled by an across the line motor starter. The motor starter will be located in the new motor control center MCC-1. The starter will have a hand/off/auto switch. In Auto the PLC will control the pump such that it will have a continuous cycle that will turn on for 12 minutes and then shut off for 12 minutes.

- The High Pressure Effluent (HPE) Pump will be controlled by an across the line motor starter. The motor starter will be located within the new motor control center MCC-1. The starter will have a HAND/OFF switch for manual control only, there will be no Auto control.

- The Final Clarifier will be controlled by an across the line motor starter. The motor starter will be located within the new motor control center MCC-1. The starter will have a HAND/OFF switch for manual control only, there will be no Auto control. In addition there will also be another HAND/OFF switch located within the clarifier shelter. The clarifier will have high torque alarm and high torque shutdown. The alarm will be an input to SCADA.

- Aerators-1, 2, 3, 5, 6 and 7 (4 is future) will be controlled by across the line motor starters. The motor starters will be located within the new motor control center MCC-1 and a lockout stop pushbutton will be located adjacent to each aerator. The starters will have a HAND/OFF switch only, there will be no AUTO control. The aerator will operate continuously 7 days a week, 24 hours per day.

3.2.4 Electrical Equipment to Remain in Place

The following is a list of equipment that will remain in place:

- Panel L&PP
- Control Building interior lights and switches
- Control Building exterior lights and switch
- Control Building convenience receptacles
- Control Building exhaust fan
- Control Building hot water heater
- Control Building exhaust fan
- Maintenance/Storage Building power

3.2.5 Security Requirements

Intrusion alarm switches will be installed on the Control Building doors, and the signals will be sent to Central Control via the SCADA system.

Section 4
Recommendations & Estimated Costs

4.1 Recommendations

The following recommendations are made concerning the treatment plant. See **Table 9** for the Opinion of Probable Cost (OPC).

- Construct a new 12" x 4' x 30' lined, concrete influent channel.
- Install a new influent screen into the channel to remove debris from the influent.
- Install a Palmer Bowlus flume and ultrasonic meter in the new channel to measure flow into the plant. It is recommended that the screening facility and the metering facility be constructed adjacent to the influent line as a bypass. Manholes are proposed to be installed along the existing influent main to divert the flow through the screen and metering channel. An effluent metering facility is also recommended downstream of the clarifier prior to the pond discharge.
- Install an influent composite sampler at the screening facility and an effluent composite sampler at the clarifier discharge.
- Replace the existing 3-way lubricated plug valves on the scum box and sludge lines located in the laboratory/control building.
- Drain the oxidation ditch and perform a structural inspection. Since a cost estimate cannot be prepared until the oxidation ditch is drained and inspected, an allowance is included in the OPC.
- Construct new steel supported bridges at the oxidation ditch. Railings and connectors are to be salvaged to the owner.
- Replace the clarifier bypass line gate valve.
- Rehabilitate and repair existing aerator brushes and bearings.
- Install three new bridge mounted aerators with working platforms in the oxidation ditch.
- Install 4-ft fence with access gates as debris protection around the oxidation ditch racetrack.
- Install a new aluminum cover with an observation hatch for the existing clarifier as well as perimeter hatches to facilitate access for maintenance.
- Replace the clarifier internal mechanicals including the skimmer and scraper, install Stamford baffles along the perimeter wall.
- Drain the clarifier and perform a structural inspection. Since a cost estimate cannot be prepared until the clarifier is drained and inspected, an allowance is included in the OPC.
- Replace existing sludge motor and suction and discharge piping located inside of laboratory/control building.
- The four original unlined sludge drying beds are to be rehabilitated into three new beds that are concrete lined on the bottom and provided with underdrains and supernatant collection. The underdrainage and supernatant are to be pumped back to the oxidation ditch. This pumping system is to consist of one duty pump.

Section 4
Recommendations & Estimated Costs

4.1 Recommendations

The following recommendations are made concerning the treatment plant. See **Table 9** for the Opinion of Probable Cost (OPC).

- Construct a new 12" x 4' x 30' lined, concrete influent channel.
- Install a new influent screen into the channel to remove debris from the influent.
- Install a Palmer Bowlus flume and ultrasonic meter in the new channel to measure flow into the plant. It is recommended that the screening facility and the metering facility be constructed adjacent to the influent line as a bypass. Manholes are proposed to be installed along the existing influent main to divert the flow through the screen and metering channel. An effluent metering facility is also recommended downstream of the clarifier prior to the pond discharge.
- Install an influent composite sampler at the screening facility and an effluent composite sampler at the clarifier discharge.
- Replace the existing 3-way lubricated plug valves on the scum box and sludge lines located in the laboratory/control building.
- Drain the oxidation ditch and perform a structural inspection. Since a cost estimate cannot be prepared until the oxidation ditch is drained and inspected, an allowance is included in the OPC.
- Construct new steel supported bridges at the oxidation ditch. Railings and connectors are to be salvaged to the owner.
- Replace the clarifier bypass line gate valve.
- Rehabilitate and repair existing aerator brushes and bearings.
- Install three new bridge mounted aerators with working platforms in the oxidation ditch.
- Install 4-ft fence with access gates as debris protection around the oxidation ditch racetrack.
- Install a new aluminum cover with an observation hatch for the existing clarifier as well as perimeter hatches to facilitate access for maintenance.
- Replace the clarifier internal mechanicals including the skimmer and scraper, install Stamford baffles along the perimeter wall.
- Drain the clarifier and perform a structural inspection. Since a cost estimate cannot be prepared until the clarifier is drained and inspected, an allowance is included in the OPC.
- Replace existing sludge motor and suction and discharge piping located inside of laboratory/control building.
- The four original unlined sludge drying beds are to be rehabilitated into three new beds that are concrete lined on the bottom and provided with underdrains and supernatant collection. The underdrainage and supernatant are to be pumped back to the oxidation ditch. This pumping system is to consist of one duty pump.

- Modify the existing ponds to temporarily operate as a facultative pond treatment system during the plant upgrades and repairs. Modifications include lining Pond No. 1 with 60 mil HDPE, installing inlet/outlets to transfer effluent between ponds, and the relocation of the existing floating aerators from the oxidation ditch to Pond No. 1.

- Install a new main switchboard and main control center.

- Install new standby generator.

- Pressure wash and repaint laboratory/control building, shop building, and truck-port per approved District color (see Appendix D). Strip and sealcoat interior walls and floor of laboratory/control building, shop, and truck port with District approved color.

- Replace existing asphalt shingle roofing of the laboratory/control building and the truck-port with the same type.

- Electrical Improvements include the following

    - All electrical work required for the proposed mechanical modifications

    - Update existing electrical outlets in laboratory/control building.

    - Update existing lighting in the laboratory/control building.

- Demolish existing pavement and construct asphalt road adequate for high mountain, high desert regions. (see Appendix E)

4.2 Opinion of Probable Construction Cost of Improvements

The opinion of probable construction cost for the recommended improvements is shown on **Table 9.** The cost for construction was prepared using a combination of items from the Caltrans cost book, manufacturer quotes, and previously constructed projects. Mono County is a large rural area with limited options for hotel stays. The closest available hotels are located in Mammoth Lake, approximately 30 minutes from the wastewater treatment plant and normally have high prices, as the area is considered a year-round resort location. A 25 percent contingency is included at the preliminary conceptual level to cover increases in equipment costs, increases in the cost Per Diem for the contractor and engineer, and uncertainties of the condition of existing equipment given the age of the wastewater treatment plant. The cost estimate provided also includes a total construction cost for the future, using an assumed 5 percent escalation per year for 5 years for a grant total of $6,899,000.

4.3 Cost to Replace Entire WWTP

Replacement of the entire WWTP would entail construction of a fully redundant, Title 22 permitted, WWTP. Referencing various cost curves for new plant construction generated a range of $10 per gallon per day to $30 per gallon per day. Assuming that the District would continue using technology similar to the current plant, which is on the lower end of the scale, construction costs will be estimated at $14 per gallon per day. Assuming the new plant will also have a capacity of 1.0 MGD gives us an estimated construction cost of $14,000,000.

Table 9: Summary of Estimated 2020 Costs of Recommended Improvements

Item	Description	Unit	Quantity	Cost ($)	Amount ($)
General					
	Mobilization (5% of construction cost)	LS	1	$ 125,000	$ 125,000
	Allowance for Lodging & Per Diem for remote location (30% of construction cost)	LS	1	$ 748,000	$ 748,000
	Storm Water Pollution Control (SWPPP)	LS	1	$ 12,000	$ 12,000
Screening and Bypass					
	12" X 4' X 30' lined, reinforced concrete channel	CY	7	$ 4,100	$ 28,700
	Shaftless Spiral Screen	LS	1	$ 161,000	$ 161,000
	Bypass Manholes	EA	2	$ 14,000	$ 28,000
	Railings & Safety	LF	68	$ 360	$ 25,000
	Piping Modifications	LS	1	$ 15,000	$ 15,000
Influent/Effluent Monitoring					
	Influent flume and ultrasonic monitoring station	EA	1	$ 16,000	$ 16,000
	Effluent magnetic flowmeter	EA	1	$ 15,000	$ 15,000
	Influent and Effluent composite sampling stations	EA	2	$ 18,000	$ 36,000
	Piping Modifications	LS	1	$ 11,500	$ 11,500
Oxidation Ditch Improvements					
	Oxidation ditch structural repairs allowance	LS	1	$ 116,000	$ 116,000
	Replace existing bridges	LS	4	$ 10,000	$ 40,000
	Install 3 new bridge mounted aerators w/ work platforms	LS	1	$ 326,000	$ 326,000
	Rehabilitate aerator brushes	LS	2	$ 40,000	$ 80,000
	Debris fence with access gates	LF	500	$ 70	$ 35,000
Clarifier Improvements					
	Clarifier structural repair allowance	LS	1	$ 58,000	$ 58,000
	Remove wood cover and install aluminum cover	LS	1	$ 230,000	$ 230,000
	Replace internal clarifier mechanicals	LS	1	$ 403,000	$ 403,000
	Add Stamford baffles and miscellaneous work	LS	1	$ 43,000	$ 43,000
Temporary Treatment - Pond Improvements					
	Line Pond No. 1 with 60 mil HDPE and all appurtenances	LS	1	$ 117,000	$ 117,000
	Construct inlets/outlets	EA	5	$ 5,000	$ 25,000
	Relocate aerators	LS	1	$ 12,000	$ 12,000
Sludge Bed Improvements					
	Concrete Lining & Underdrains	LS	1	$ 110,000	$ 110,000
	Supernatant Collection	LF	100	$ 60	$ 6,000
	Pumping system, incl piping & valves	LS	1	$ 18,000	$ 18,000
	Sludge motor, incl. piping	LS	1	$ 2,000	$ 2,000
Miscellaneous Improvements					
	Replace Plug Valves on scum box & sludge lines	LS	3	$ 38,000	$ 114,000
	Replace valve on clarifier bypass line	LS	1	$ 5,000	$ 5,000
	Add Plug Valve on line from ox ditch to clarifier	LS	1	$ 14,000	$ 14,000
	New Check Valve upstream of sludge pump	EA	1	$ 4,000	$ 4,000
	Piping Modifications	LS	1	$ 9,000	$ 9,000
	Potable Water Pressure Tank and Piping	LS	1	$ 2,000	$ 2,000
Electrical and I&C Improvements					
	Electrical Improvments	LS	1	$ 312,000	$ 312,000
	I&C Improvements	LS	1	$ 77,000	$ 77,000
Permits and Compliance Fees					
	Labor compliance	LS	1	$ 25,000	$ 25,000
Building and Site Improvements					
	Clean and Repair Paint Building's Paint	LS	1	$ 49,000	$ 49,000
	Roof Improvements	LS	1	$ 24,500	$ 24,500
	Asphalt Paving	TON	82	$ 375	$ 32,000
Bidding and Construction					
	Engineering design services (design report, plans, specifications, OPC)	LS	1	$ 464,000	$ 464,000
	Engineering construction support services (bidding, submittals, RFIs, site visits, inspection, change orders, grant and contract administration assistance)	LS	1	$ 300,000	$ 300,000
	Materials testing and inspection	LS	1	$ 50,000	$ 50,000
				Subtotal	$ 4,324,000
				Contingencies @ 25%	$ 1,081,000
				Total (rounded)	$ 5,405,000
				Escalation - 5% per year	$ 1,494,000
				Total (2025 value - rounded)	$ 6,899,000

The following cost estimate for the alternative to the sludge drying bed improvements is provided as a comparison only and is excluded from the total engineer's cost estimate.

Table 9 Cont.: Summary of Estimated 2020 Costs of Recommended Improvements

Biosolids Handling - Alternate to Sludge Bed Improvements					
	Screw Press	LS	1	$ 345,000	$ 345,000
	Building	LS	1	$ 150,000	$ 150,000
	Foundation	CY	22	$ 3,000	$ 65,000
	Piping Modifications	LS	1	$ 12,000	$ 12,000
				Total	$ 572,000

Appendix A

Waste Discharge Permit

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. 93-19
WDID NO. 6B260101002

REVISED WASTE DISCHARGE REQUIREMENTS

FOR

JUNE LAKE PUBLIC UTILITY DISTRICT
Mono County

I. MONITORING

A. Flow Monitoring

The following shall be recorded in a permanent log book and reported quarterly:

1. The average flow rate, in million gallons per day (mgd), of wastewater to the treatment facility calculated for each month.

2. The freeboard (distance from the top of the lowest part of the dike to the wastewater surface in the pond) measured each month in each pond. If a pond does not contain wastewater, indicate that it is empty.

B. Plant Influent Monitoring

Influent to the treatment plant shall be sampled quarterly and analyzed to determine the magnitude of the following parameters and the results of the analyses shall be reported quarterly:

Parameter	Type of Units	Sample
Oil & Grease	mg/l	grab
BOD_5 [1/]	mg/l	8 hour composite
Suspended Solids	mg/l	8 hour composite
Temperature	°C or °F	grab
pH	pH units	grab

Samples shall be collected at a turbulent, well mixed point.

1/ Biochemical Oxygen Demand (5 day, 20°C) of a unfiltered sample.

C. Plant Effluent Monitoring

Effluent discharged to the evaporation/percolation ponds shall be sampled quarterly and analyzed to determine the magnitude of the following parameters and the results of the analyses shall be reported quarterly:

Parameter	Type of Units	Sample
BOD_5 [1/]	mg/l	8 hour composite
Oil & Grease	mg/l	grab
Total Dissolved Solids (TDS)	mg/l	grab
Chloride	mg/l	grab
Dissolved Oxygen	mg/l	grab
Temperature	°C or °F	grab
pH	pH units	grab
TKN [2/]	mg/l	grab
Nitrate Nitrogen	mg/l as N	grab
Ammonia Nitrogen	mg/l as N	grab

Samples shall be collected at a well mixed point in the effluent. If no discharge to the percolation pond has occurred during the monitoring period then the monitoring report shall reflect "no discharge".

D. Ground Water Monitoring

1. The discharger shall drill at least one (1) ground water monitoring well to demonstrate ground water level. The well shall be drilled and logged by a licensed well driller utilizing a method that will detect zones with signficant increases in soil moisture. If ground water is encountered at a depth of less than five-hundred (500) feet below ground surface, the discharger shall submit a ground water monitoring system plan and a time schedule for installation of ground water monitoring wells described below. If groundwater is not found to a depth of five-hundred (500) feet, groundwater monitoring will not be required.

2. If groundwater is present at a depth of less than five-hundred (500) feet the discharger shall submit a report describing a ground water monitoring system and a time schedule for installation of ground water monitoring wells by June 11, 1993. The monitoring system, at a minimum shall include:

   a. A minimum of three monitoring wells shall be proposed to determine the gradient of the ground water.

2/ Total Kjeldahl Nitrogen

The proposal may include the use of existing wells if the design, location, and construction of the existing wells can be documented as appropriate for the purposes of monitoring the effects of the disposal ponds on the local ground water aquifer.

b. Additional well(s) shall be installed, if necessary, to insure that at least one (1) well is upgradient and two (2) wells are down gradient of the wastewater treatment facilities. The Discharger shall demonstrate that at least one of the downgradient wells are located such that ground water potentially impacted by the discharge will be monitored.

c. The specific design and location of the wells shall be reviewed and approved by the Executive Officer.

d. An as-built design report for all ground water monitoring features shall be submitted within 60 days after the ground water monitoring system is installed. This report shall include a statement of certification signed by a registered civil engineer, geologist, or certified engineering geologist regarding the placement, lithology and construction of the wells.

3. Prior to August 11, 1993 the ground water monitoring wells shall be installed at the disposal site in accordance with the submitted report.

After well completion and development, and prior to September 11, 1993 an analysis of the water in the monitoring wells for the parameters listed in item 4 of this section shall be provided.

4. Grab samples from the entire thickness or the upper 20 feet, whichever is less, of the uppermost ground water bearing zone shall be collected, beginning on or before September 11, 1993 and annually thereafter, from the monitoring wells and analyzed to determine the magnitude of the following parameters:

Parameter	Units
MBAS[3/]	mg/l
Total Dissolved Solids	mg/l
pH	pH units
Temperature	°C or °F
Chloride	mg/l
Nitrate Nitrogen	mg/l as N

3/ Methylene Blue Active Substances

Parameter	Units
Purgeable Halocarbons[4/5/]	mg/l → EPA 601 * EPA 8270
Base/Neutral/Acid Extractable Organics[4/6/]	mg/l → EPA 625
Purgeable Aromatic[4/7/]	mg/l → EPA 602 *

* or 624?

The results of these analysis shall be reported in the annual report.

E. Offsite Disposal

The Discharger shall include in each monitoring report the volume and type of all waste hauled off site for disposal. The person or company doing the hauling and the legal point of disposal shall also be recorded.

F. Sampling and Analysis Methods

1. Sampling analysis methods shall be in accordance with the current editions of one of the following documents:

   a. Methods for Chemical Analysis of Water and Wastes, Environmental Protection Agency
   b. Standard Methods for the Examination of Water and Wastewater

   Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The method used shall also be reported.

2. The Discharger shall calibrate and perform maintenance procedures on all monitoring equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book.

G. Operation and Maintenance

1. A brief summary of any operational problems and maintenance activities shall be submitted to the Board with each monitoring report. This summary shall discuss:

   a. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities.

4/ Analysis shall be conducted for those substances included on the EPA list of priority pollutants and all other substances known to be discharged to the June Lake Area sewer system.

5/ Purgeable organics analysis shall be conducted in accordance with EPA method 601, 40 CFR part 136, Appendix A.

6/ Base/neutral/acid extractable organics analysis shall be conducted in accordance with EPA method 625, 40 CFR, part 136, Appendix A.

7/ Purgeable Aromatics analysis shall be conducted in accordance with EPA method 602, 40 CFR part 136, Appendix A.

Appendix B

Equipment Information Sheets

Aeration Industries International
a newterra company

PROJECT NUMBER: 17-5-7423
DATE: 11/19/2020

TO: Yeimy Ojeda, EIT (661) 448-0102 yeimy.ojeda@aecom.com	**PROJECT NAME:** June Lake, CA – Oxidation Ditch Retrofit **SALES MANAGER:** Brian Jones / (501) 416-8928 **REPRESENTATIVE:** Luke Breshears / (559) 859-1566 Muniquip LLC

AERATION INDUSTRIES INTERNATIONAL is pleased to offer the following:

Three (3) AIRE-O_2 Triton 2.0 Aerators, consisting of:
- 40HP, 230/460 volt, 3-phase, 900 RPM, TEFC, premium efficiency motor
- 7.5HP regenerative blower
- Field replaceable, water-lubricated lower bearing
- Field replaceable, water-resistant sleeve
- 316 SS dual-blade primary PowerMix™ propeller
- 304 SS Saturn Ring diffuser
- 304 SS housing, mounting flange, and hollow shaft

  Note: Aerators shall arrive fully assembled for immediate mounting

Three (3) Universal Bridge Mounts, consisting of:
- 304 SS rails and mounting hardware
- Vortex shield attached to aerator housing
- SS Blower Pedestal
- Mini-crane winch retrieval system

  Note: Bridge mount devices require minimal field assembly

One (1) Control System Panel/Package, consisting of:
- NEMA outdoor-rated panel enclosure
- Operates Three Triton aerators
- Six (6) HOA Selector switches
- Motor starters with ambient-adjustable overload relays
- Programmable timers for each motor
- UL 508 serialized label

180' 4/4 SEOOW Electrical Cable (40HP mixer motor; 460VAC)
180' 12/4 SEOOW Electrical Cable (7.5HP blower motor; 460VAC)

Three (3) Year Warranty (See General Terms and Conditions)
Startup/Installation Supervision (One trip, two days on site)
Freight FOB Jobsite

BUDGETARY PRICE: $222,200 USD

Aeration Industries International
a newterra company

OPTIONAL ADDER: DO Control System, including:

- Programmable Logic Controller (PLC)
- HMI Touchscreen
- Variable Frequency Drives
- Two (2) Dissolved oxygen probes
- One (1) DO probe controller with sunshield

BUDGETARY ADDER PRICE: $28,950 USD

EXCLUSIONS:	Installation, duties, and taxes are not included. Cord grips, anchoring hardware, mooring posts, and all items not specifically listed above are excluded.
NOTE:	If required, submittals will be done four weeks from receipt of purchase order. Delivery is fourteen to eighteen weeks from submittal approval. Quotation valid for 30 days.
TERMS:	General Terms and Conditions Attached (2 Pages)

4100 Peavey Road • Chaska, Minnesota 55318 • USA
Telephone: (952) 448-6789 • Email: aiii@aireo2.com • Fax: (952) 448-7293

Aeration Industries International
AIRE-O_2

Tri-Oval System Summary

PROJECT DETAILS

Project Name:	June Lake, CA	Date:	10/8/20
Project Location:	CA	Prepared By:	BFA
Project Number	17-5-7423	Revision:	1

DESIGN PARAMETERS

Influent Characteristics

BOD_5	345	mg/L	Average Flow	0.50	MGD
	1439	lbs/day	Design Flow	0.50	MGD
TSS	250	mg/L			
	1043	lbs/day			
TKN	70	mg/L			
			*Minimum Basin Temperature	50	degrees F
			*Maximum Basin Temperature	68	degrees F

*asummed

Anticipated Effluent Values

BOD_5	10	mg/L
NH_3-N	1	mg/L

BASIN DETAILS

Number of Basins	2		Depth	8.7	ft
Required Volume	1.58	MG	Straight Length	217	ft
Design Volume	1.58	MG	Channel Width	43	ft
HRT	75.8	hours	*Overall Length	305	ft
			*Overall Width	89	ft

*Accounting for both basins and walls

DESIGN VAUES

Aerobic

Food/Mass (F:M) Ratio	0.07	mg BOD/mg MLVSS-day	BOD Oxygen Requirement	1.50	Lbs of O2/lbs of BOD
MLSS Concentration	1623	mg/l	TKN Oxygen Requirement	4.6	Lbs of O2/lbs of TKN
SRT	25.0	days	Actual Oxygen Required	3419	lb O2/day
			Standard Oxygen Required	336	lb O2/hr

AERATION AND MIXING

Aeration			Mixing		
Type of Aerator	TR-40		Design Mixing Intensity	60	HP/MG
# of Units	3		Mixing Power Required	95	HP
Total Power	143	HP	Mixing Intensity Provided	90	HP/MG
Total Oxygen Output	364	lb O2/hr			

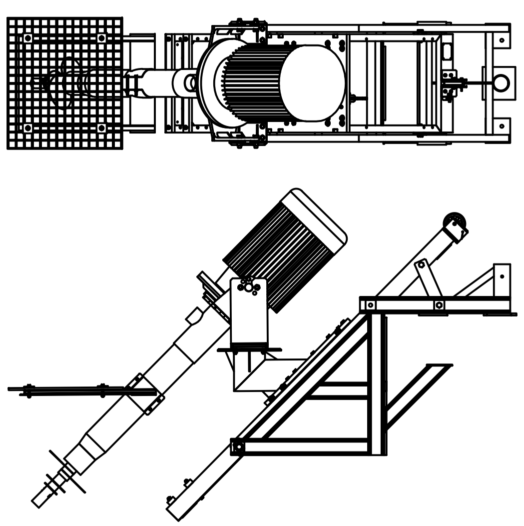
LABEL	EQUIPMENT	QTY
A	40HP TRITON 2.0 ON UNIVERSAL MOUNT	3
B	BRIDGES TO BE CONSTRUCTED BY OTHERS	2

BASIN INFORMATION

VOLUME = 1.56 MG
DEPTH = 8.7 FT

E□ISTING O□IDATION DITCH

UNIT REPRESENTATION

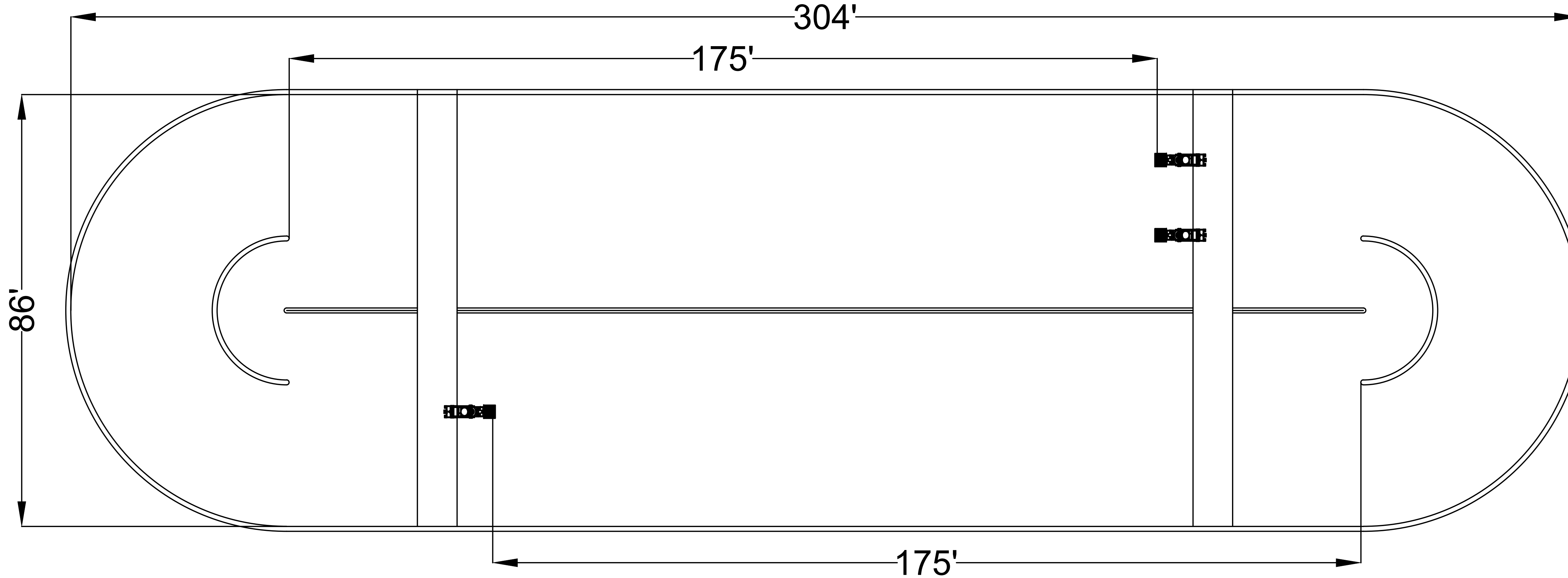


INSTALLATION NOTES:

STRUCTURAL ENGINEERING BY OTHERS.

DRAWING IS PRELIMINARY AND NOT FOR CONSTRUCTION

BRIDGES TO BE CONSTRUCTED BY OTHERS, PLEASE SEE UNIVERSAL MOUNT RECOMMENDATIONS TO DETERMINE REQUIRED THICKNESS OF BRIDGES



REV.	DATE:	BY:	DESCRIPTION:
C1	11/19/2020	BFA	REQUEST FOR BRIDGE MOUNT OPTION
B1	10/13/2020	BFA	DESIGN FLOW INCREASED TO 0.5 MG
A1	9/30/2020	BFA	ISSUE OF DWG

Aeration Industries' International, LLC.
4100 Peavey Rd, Chaska, MN 55318•USA www.aireo2.com
Phone: +1-952-448-6789 • Fax: +1-952-448-7293
aii@aireo2.com

DRAWN BY: BFA DATE:
CHECKED BY: DATE: 9/30/2020
DO NOT SCALE DRAWING

DRAWING STATUS:
- ■ CONCEPT
- ☐ PROPOSAL
- ☐ APPROVAL
- ☐ AS-BUILT

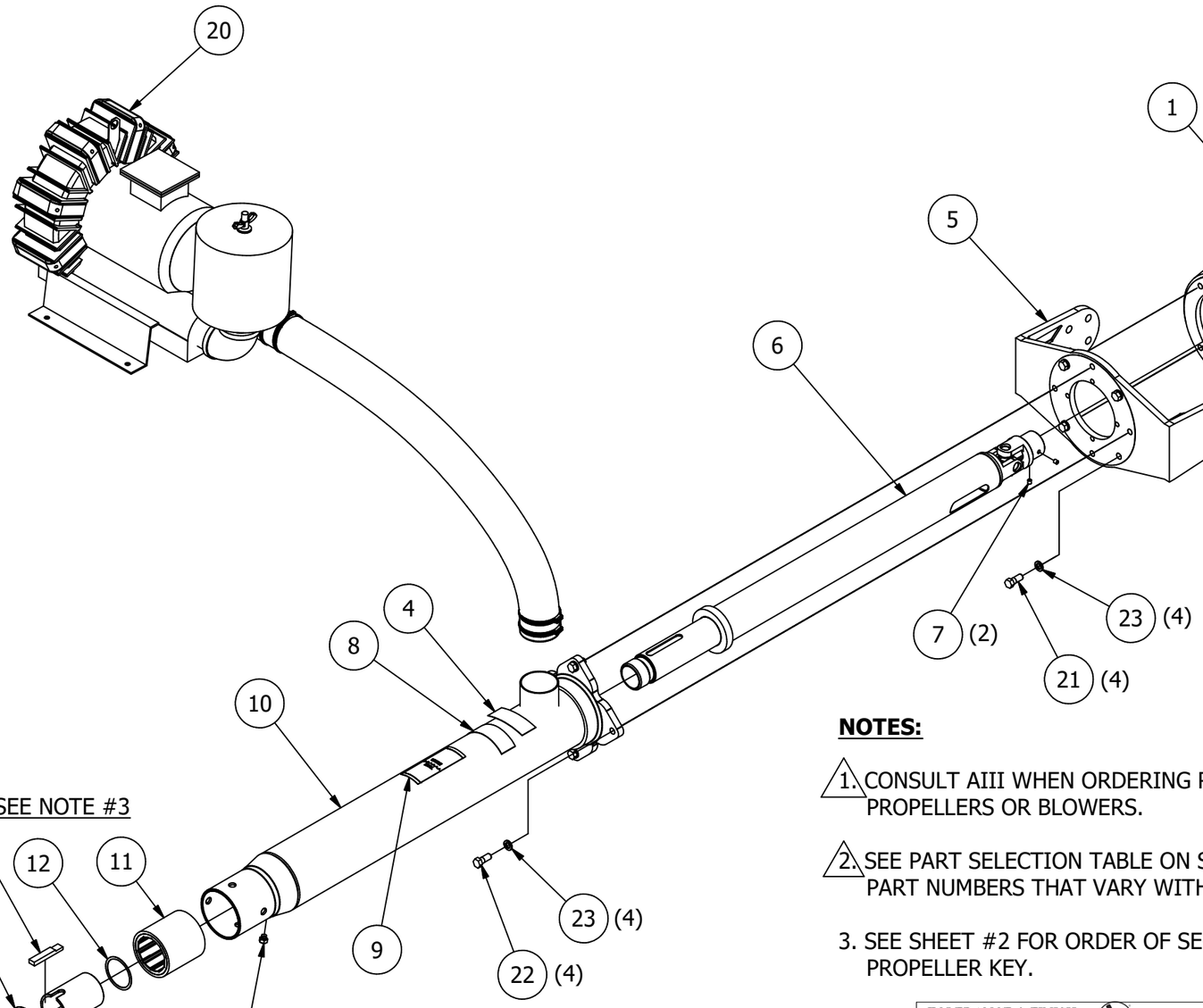
TITLE: JUNE LAKE CA

SHEET OF

REV: A1 PROJECT NUMBER: 17-5-7423

BILL OF MATERIAL			
ITEM	PART NO.	DESCRIPTION	QTY.
1	⚠1	MOTOR 50/60HZ NEMA	1
2	224013	LABEL, SERIAL NO.	1
3	224152	LABEL, MOTOR ROTATION DIRECTION	1
4	224114	LABEL, TRITON	1
5	⚠2	MOUNTING FLANGE	1
6	⚠2	SHAFT ASSEMBLY	1
7	⚠2	SET SCREW	2
8	224021	LABEL, BEARING CAUTION	1
9	224154	LABEL, WATER LEVEL INDICATOR	1
10	330107	HOUSING, 20-60HP, 50/60HZ TRITON	1
11	213054 213027	ARB BEARING, 2.875" SPINDLE CRB BEARING, 2.875" SPINDLE	1
12	215810	WASHER-TRT 2.0, 3.75" O.D. X 3.250 I.D., S.S.	1
13	215811	WASHER-TRT 2.0, KEYED, 4.50" O.D. X 3.250" I.D. S.S.,	1
14	247046	SDS SLEEVE-TRT 2.0, 3.25" SPINDLE	1
15	⚠1	PROPELLER	1
16	215156	SET SCREW, .50-13UNC X .50 LG., S.S.	1
17	223106	ATOMIZER ASSY WITH HOLES-TRT 2.0, 3" SPINDLE	1
18	215331	SET SCREW, M8 X 1.25 X 8MM LG., S.S.	2
19	⚠2	KEY-TRITON 2.0, PROPELLER	1
20	⚠1	BLOWER ASSY	1
21	215150	BOLT HHCS, .625-11UNC X 1.50 LG., S.S.	4
22	⚠2	BOLT HHCS, .625-11UNC, S.S.	4
23	215151	WASHER LOCK, .625 X 1.073 O.D., S.S.	8
24	215785	HOUSING DRAIN BOLT	1

REVISION HISTORY				
REV	ECO NO.	DESCRIPTION	BY	DATE
-	19-3074	RELEASED FOR PRODUCTION	JFW	10-8-19



NOTES:

1. ⚠1 CONSULT AIII WHEN ORDERING REPLACEMENT MOTORS, PROPELLERS OR BLOWERS.
2. ⚠2 SEE PART SELECTION TABLE ON SHEET #2 FOR SPECIFIC PART NUMBERS THAT VARY WITH MOTOR SIZE.
3. SEE SHEET #2 FOR ORDER OF SEQUENCE FOR LOCATING PROPELLER KEY.

DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-
FRACTIONS ± 1/32
ANGLE ± 1°
FINISH 125
WELDMENTS
ONE PLACE ± 0.06 | 2 PLACE ± 0.03 | 3 PLACE ± 0.015
MACHINED PARTS
ONE PLACE ± 0.03 | 2 PLACE ± 0.01 | 3 PLACE ± 0.005

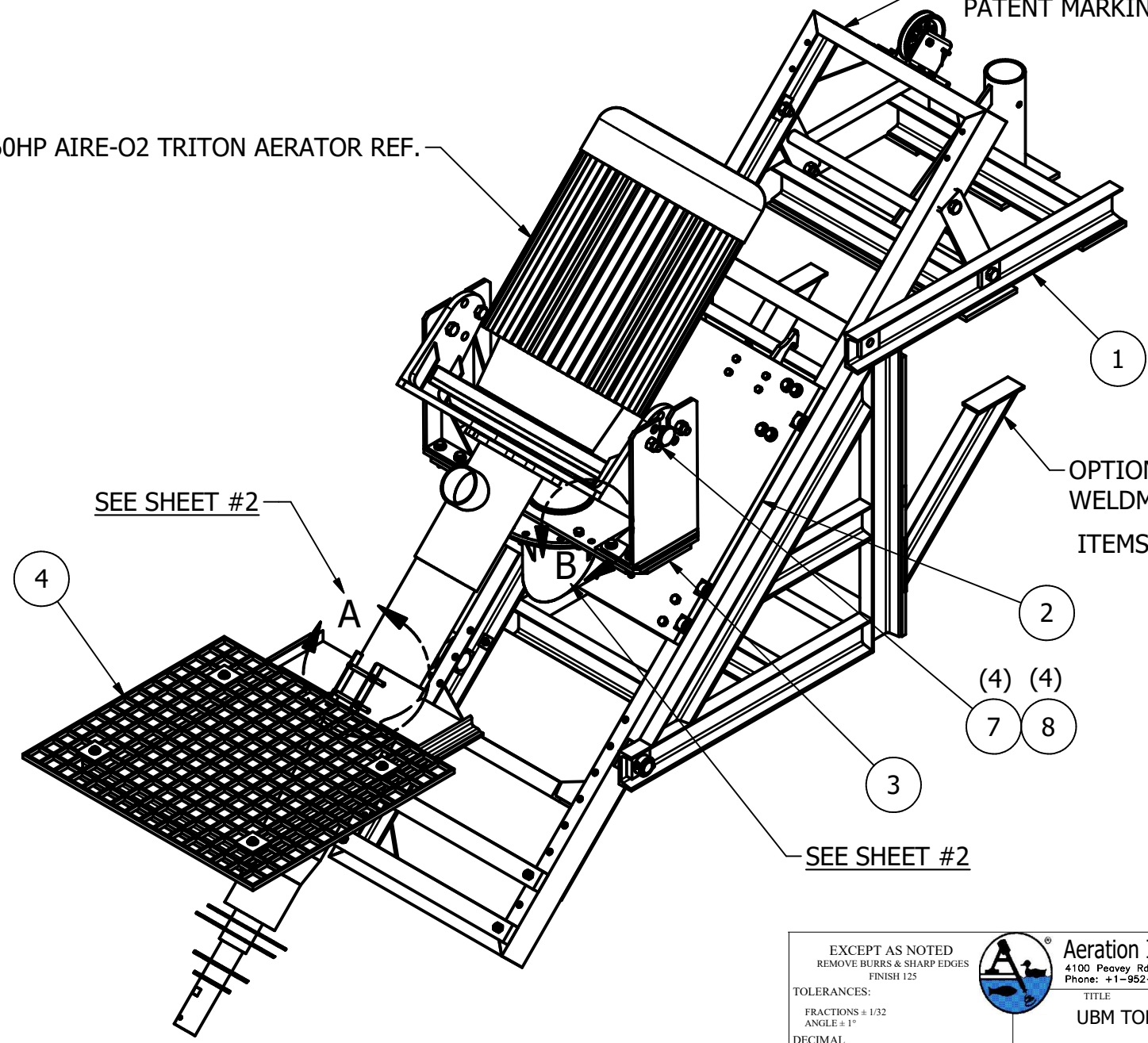
Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. ai@aireo2.com

DRAWN	DATE
Joe.Widman	10/11/2019
REVISED	DATE

TITLE: TRITON 2.0 ASSEMBLY, 20-60HP, 50/60HZ NEMA, LARGE HOUSING

DRAWING NO.	REV.
360718	-

SCALE	SIZE	SHEET
-	B 11" X 17"	1 OF 2



NOTE: SEE SHEET #3 FOR BILL OF MATERIAL AND REVISION HISTORY

EXCEPT AS NOTED
REMOVE BURRS & SHARP EDGES
FINISH 125
TOLERANCES:
FRACTIONS ± 1/32
ANGLE ± 1°
DECIMAL
ONE PLACE ± 0.06
2 PLACE ± 0.03
3 PLACE ± 0.015

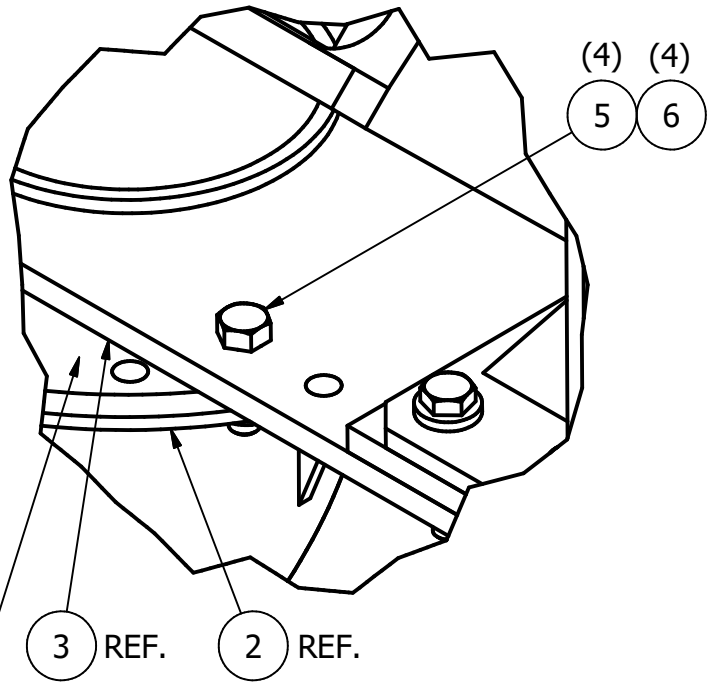
Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. all@aireo2.com

TITLE
UBM TOP ASSEMBLY-60HP, WK

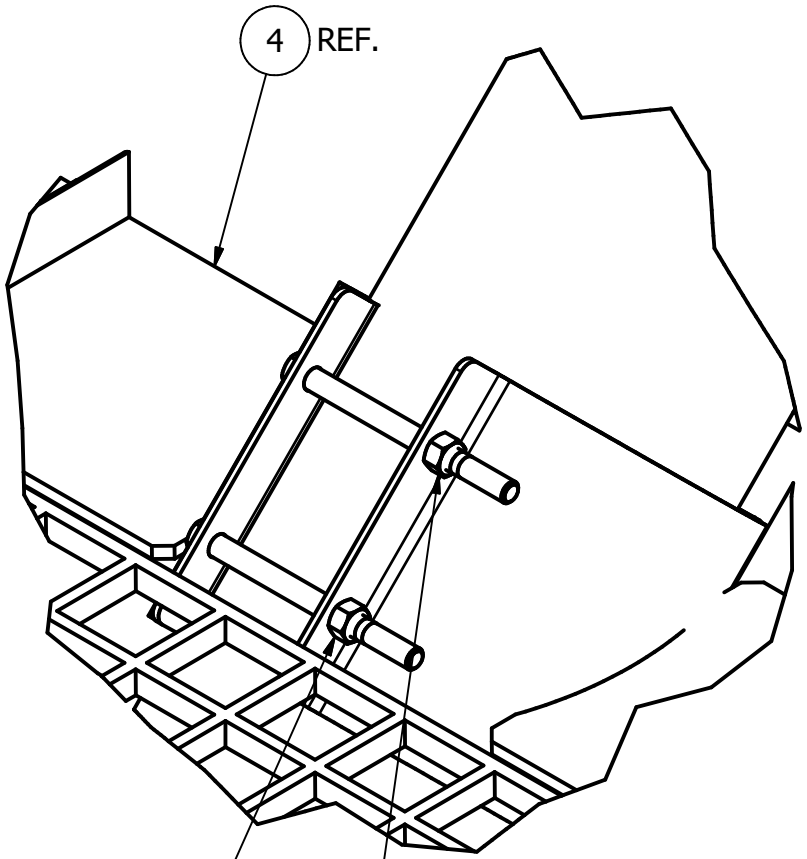
DRAWN	DATE
J.WIDMAN	2/23/2017
REVISED	DATE

DRAWING NO.	DISK NO.	REV.
360602_WK		B

SCALE	SIZE	SHEET
1:1	A4	1 OF 4



DETAIL B
SCALE 1 / 3



DETAIL A
SCALE 1 / 3

WHEN ITEM #4 IS LOCATED IN DESIRED POSITION, TIGHTEN THESE NUTS AS REQUIRED.

APPLY ZINC BASE GREASE IN BETWEEN ITEMS #2 & #3 FOR LUBRICATION. ALSO APPLY TO THE OUTER SURFACE ON THE TUBE PROTRUSION ON ITEM #3 AND THE INNER SURFACE OF THE RECEIVING TUBE ON ITEM #2.

EXCEPT AS NOTED
REMOVE BURRS & SHARP EDGES
FINISH 125
TOLERANCES:
FRACTIONS ± 1/32
ANGLE ± 1°
DECIMAL
ONE PLACE ± 0.06
2 PLACE ± 0.03
3 PLACE ± 0.015

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. all@aireo2.com

TITLE
UBM TOP ASSEMBLY-60HP, WK

DRAWN	DATE
J.WIDMAN	2/23/2017
REVISED	DATE

DRAWING NO.	DISK NO.	REV.
360602_WK		B

SCALE	SIZE	SHEET
1:1	A4	2 OF 4

BILL OF MATERIAL

ITEM	PART NUMBER	DESCRIPTION	QTY
1	410913_WK	SLIDE FRAME SUPPORT ASSEMBLY, WK	1
2	410914_WK	ROLLER PLATE ASSEMBLY. WK	1
3	410915_WK	MOUNTING FLANGE SUPPORT ASSEMBLY, WK	1
4	5101640	VORTEX SHIELD ASSEMBLY-HOUSING MOUNTED, LARGE HOUSING, 45 DEGREE	1
5	215553	HHCS 1/2-13UNC X 1.75 LG. S.S.	4
6	215903	HEX LOCKNUT 1/2-13UNC S.S.	4
7	215197	HHCS 3/4-10UNC X 2.50 LG. S.S.	4
8	215198	HEX LOCKNUT 3/4-10UNC S.S.	4
9	410952_WK	WALKWAY BRACE ASSEMBLY-LEFT, WK	1
10	410953_WK	WALKWAY BRACE ASSEMBLY-RIGHT, WK	1
11	224176	PATENT MARKING - UNIVERSAL MOUNT	1
12	215800	18-8 STAINLESS STEEL BLIND RIVET, .125 DIA.	4

REVISION HISTORY

REV	ECO NO.	DESCRIPTION	BY	DATE
-	17-2841	RELEASED TO PRODUCTION	JH	2/23/2017
A	17-2884	ADDED SHEET #4 AND ITEMS 11 & 12	JFW	6-12-17
B	18-2951	ADDED LUBRICATION NOTE (SHEET #2)	JFW	5-8-18

EXCEPT AS NOTED
REMOVE BURRS & SHARP EDGES
FINISH 125
TOLERANCES:
FRACTIONS ± 1/32
ANGLE ± 1°
DECIMAL
ONE PLACE ± 0.06
2 PLACE ± 0.03
3 PLACE ± 0.015

DRAWN J. WIDMAN DATE 2/23/2017
REVISED DATE

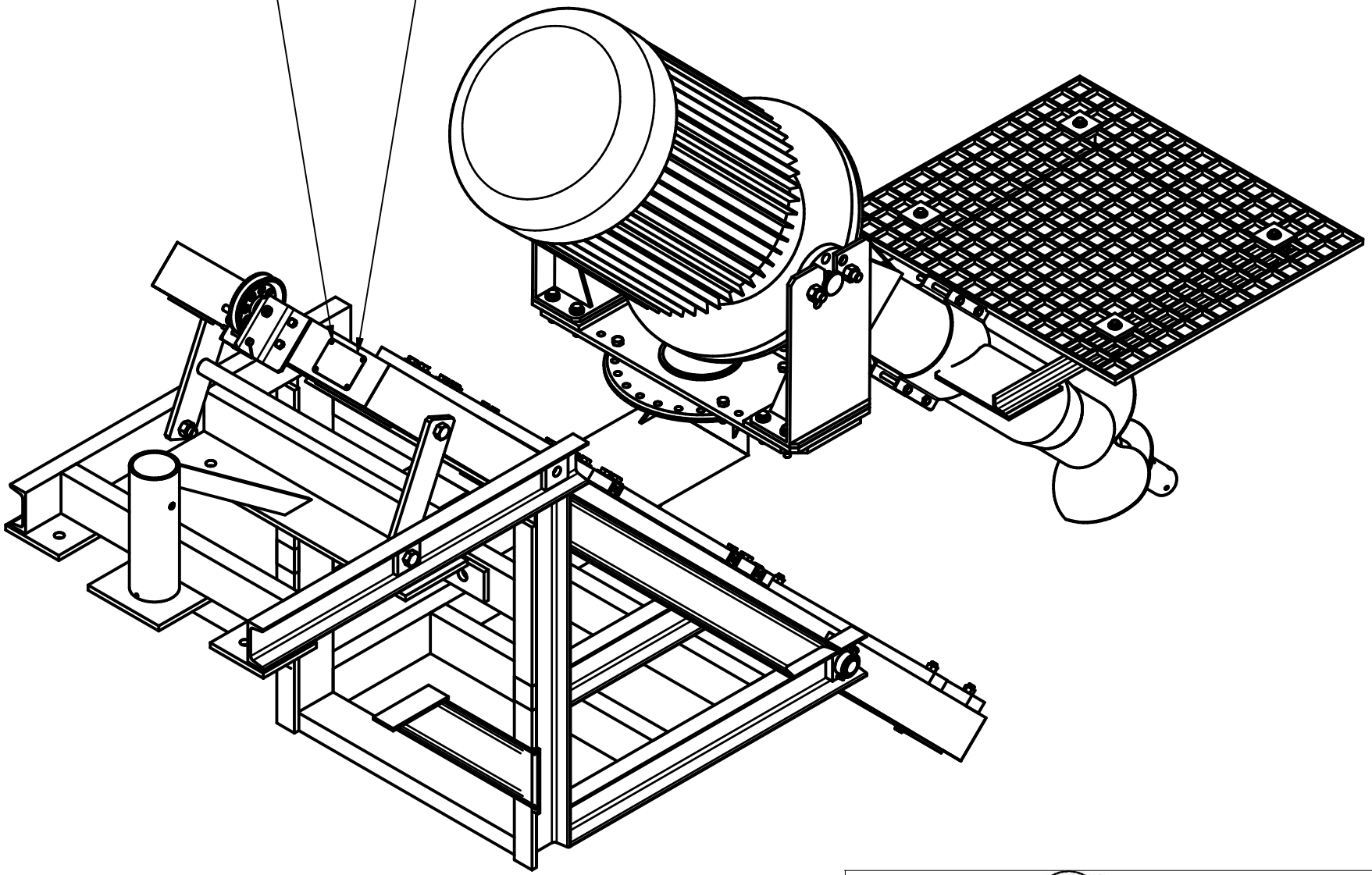
Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. all@aireo2.com

TITLE
UBM TOP ASSEMBLY-60HP, WK

DRAWING NO. 360602_WK
DISK NO.
REV. B
SCALE 1:1
SIZE A4
SHEET 3 OF 4

RIVET (4) 12

11 PATENT MARKING PLATE



VIEW LOOKING FROM REAR

EXCEPT AS NOTED
REMOVE BURRS & SHARP EDGES
FINISH 125

TOLERANCES:

FRACTIONS ± 1/32
ANGLE ± 1°

DECIMAL

ONE PLACE	2 PLACE	3 PLACE
± 0.06	± 0.03	± 0.015

DRAWN	DATE
Joe Widman	2/23/2017
REVISED	DATE

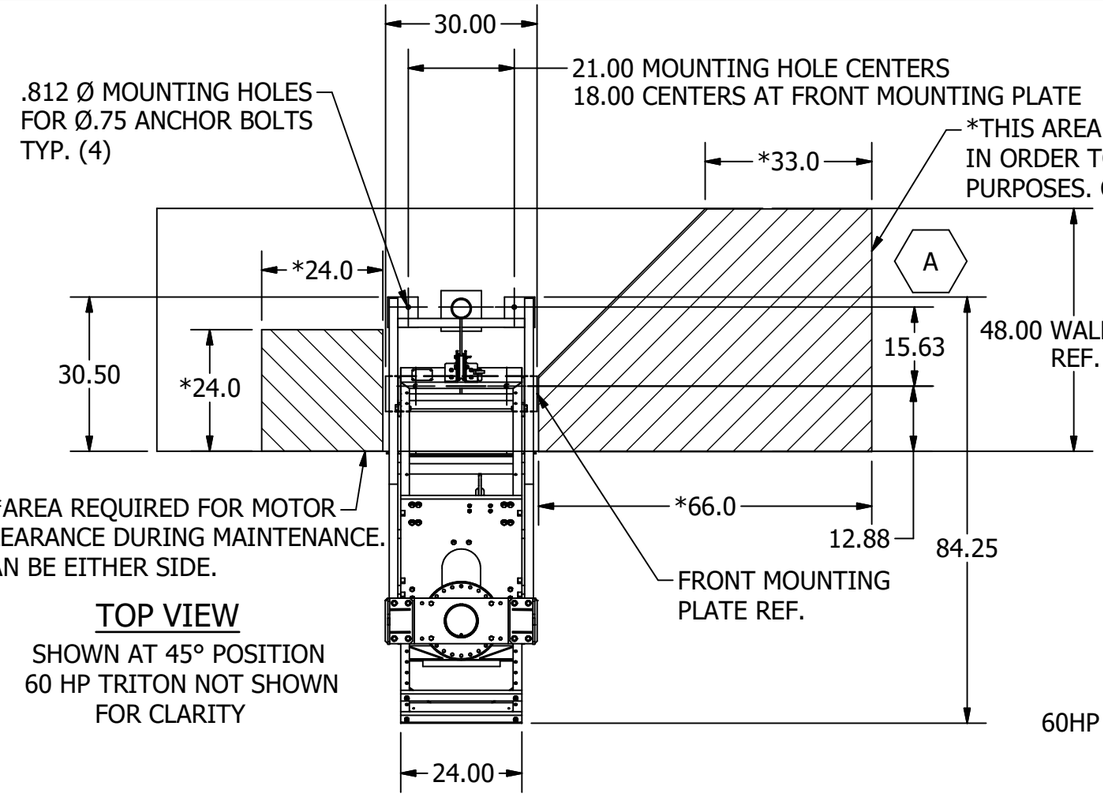
Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. all@aireo2.com

TITLE
UBM TOP ASSEMBLY-60HP, WK

DRAWING NO.	DISK NO.	REV.
360-602_WK		B

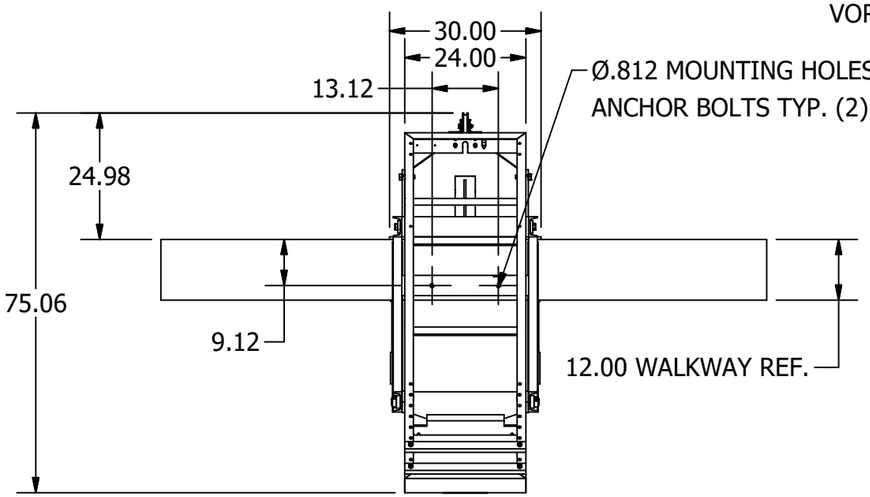
SCALE	SIZE	SHEET	OF
1:1	A4	4	4

REVISION HISTORY				
REV	ECO NO.	DESCRIPTION	BY	DATE
-	15-2675	RELEASED FOR PRODUCTION	JFW	04-09-15
A	17-2884	15.63 WAS 16.63	JFW	6-12-17



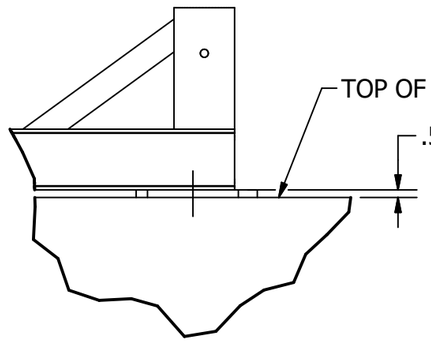
TOP VIEW

SHOWN AT 45° POSITION
60 HP TRITON NOT SHOWN FOR CLARITY

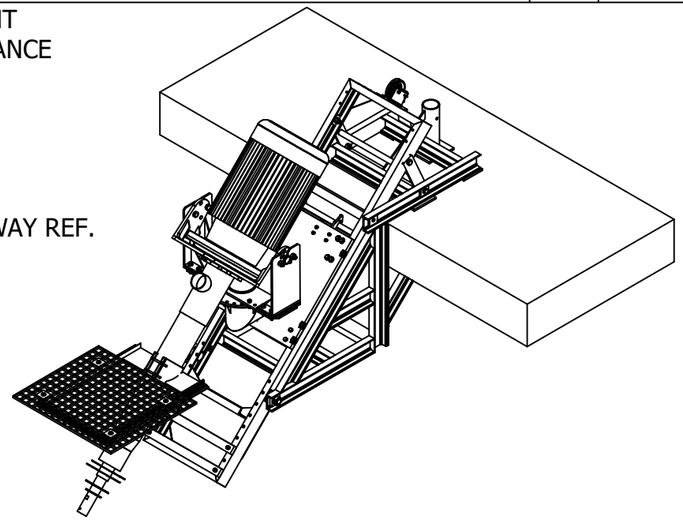


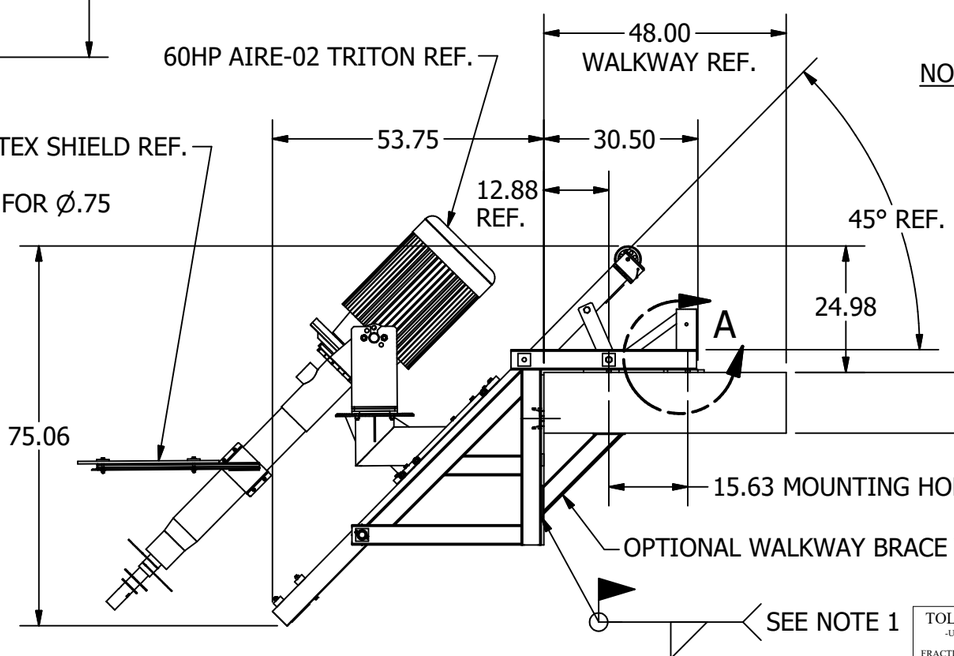
FRONT VIEW

SHOWN AT 45° POSITION
60 HP TRITON, ROTATION PLATE WELDMENT & MOUNTING FLANGE SUPPORT ASSY NOT SHOWN FOR CLARITY



DETAIL A





SIDE VIEW

NOTES:

1. IN APPLICATIONS WHERE THE WALKWAY BRACE WELDMENT IS USED, ONE END MUST BE FLUSH AGAINST THE BOTTOM OF THE WALKWAY BEFORE THE OPPOSITE END IS WELDED TO THE SLIDE FRAME SUPPORT ASSEMBLY AS SHOWN.

DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-

FRACTIONS ± 1/32
ANGLE ± 1° FINISH 125

WELDMENTS

ONE PLACE	2 PLACE	3 PLACE
± 0.06	± 0.03	± 0.015

MACHINED PARTS

ONE PLACE	2 PLACE	3 PLACE
± 0.03	± 0.01	± 0.005

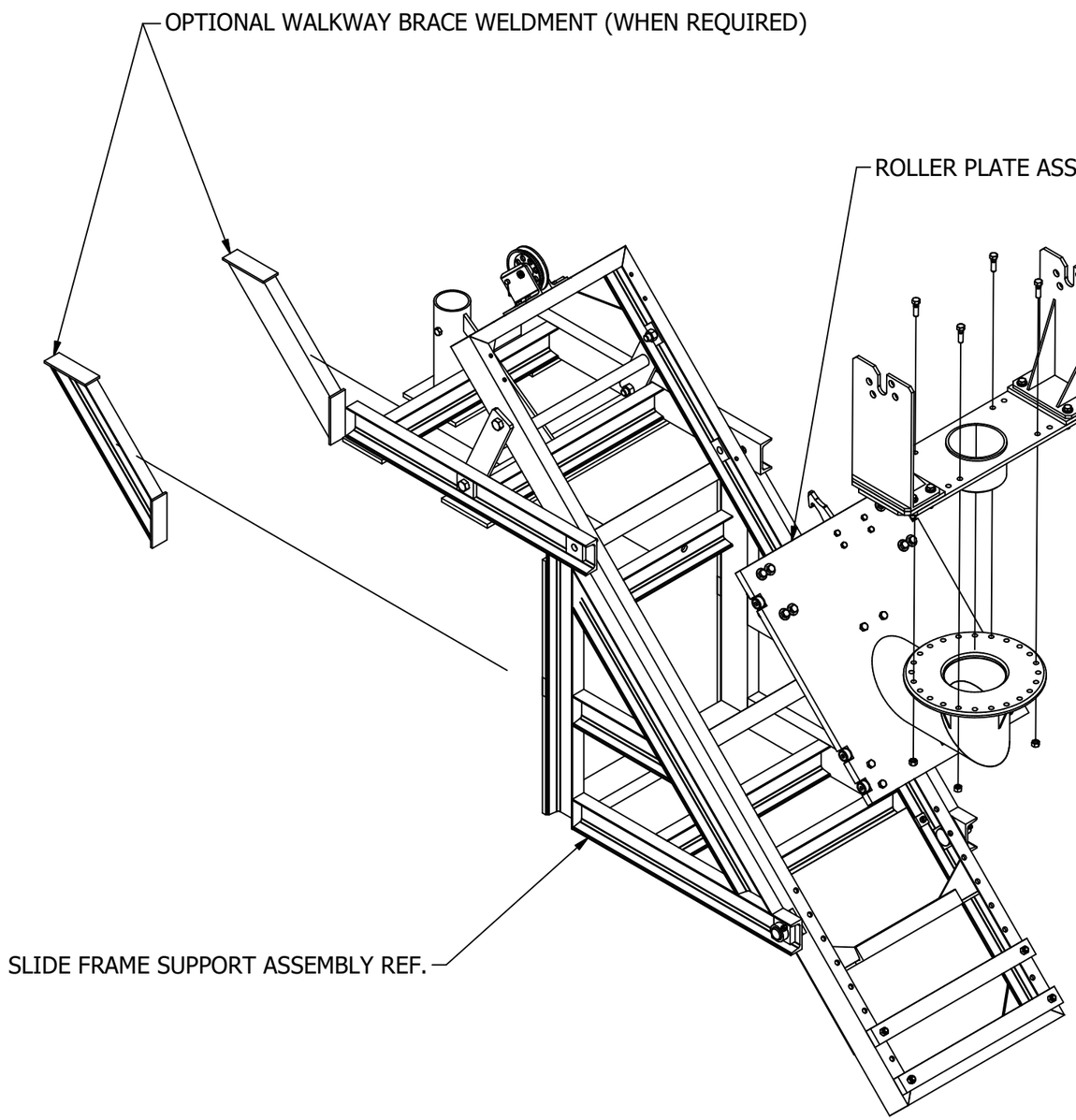
DRAWN	DATE
Joe.Widman	4/9/2015
REVISED	DATE

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. air@aireo2.com

TITLE
OUTLINE DIMENSIONS-60HP UBM ASSEMBLY

DRAWING NO.	REV.
360-605	A

SCALE	SIZE	SHEET
-	B 11" X 17"	1 OF 5



FIELD ASSEMBLY INSTRUCTIONS

1. TOOLS REQUIRED: (2) 3/4" WRENCHES

2. RATCHET AND 3/4" SOCKET

3. COMPONENTS AS ILLUSTRATED

DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-

FRACTIONS ± 1/32
ANGLE ± 1° FINISH 125

WELDMENTS
ONE PLACE ± 0.06 | 2 PLACE ± 0.03 | 3 PLACE ± 0.015

MACHINED PARTS
ONE PLACE ± 0.03 | 2 PLACE ± 0.01 | 3 PLACE ± 0.005

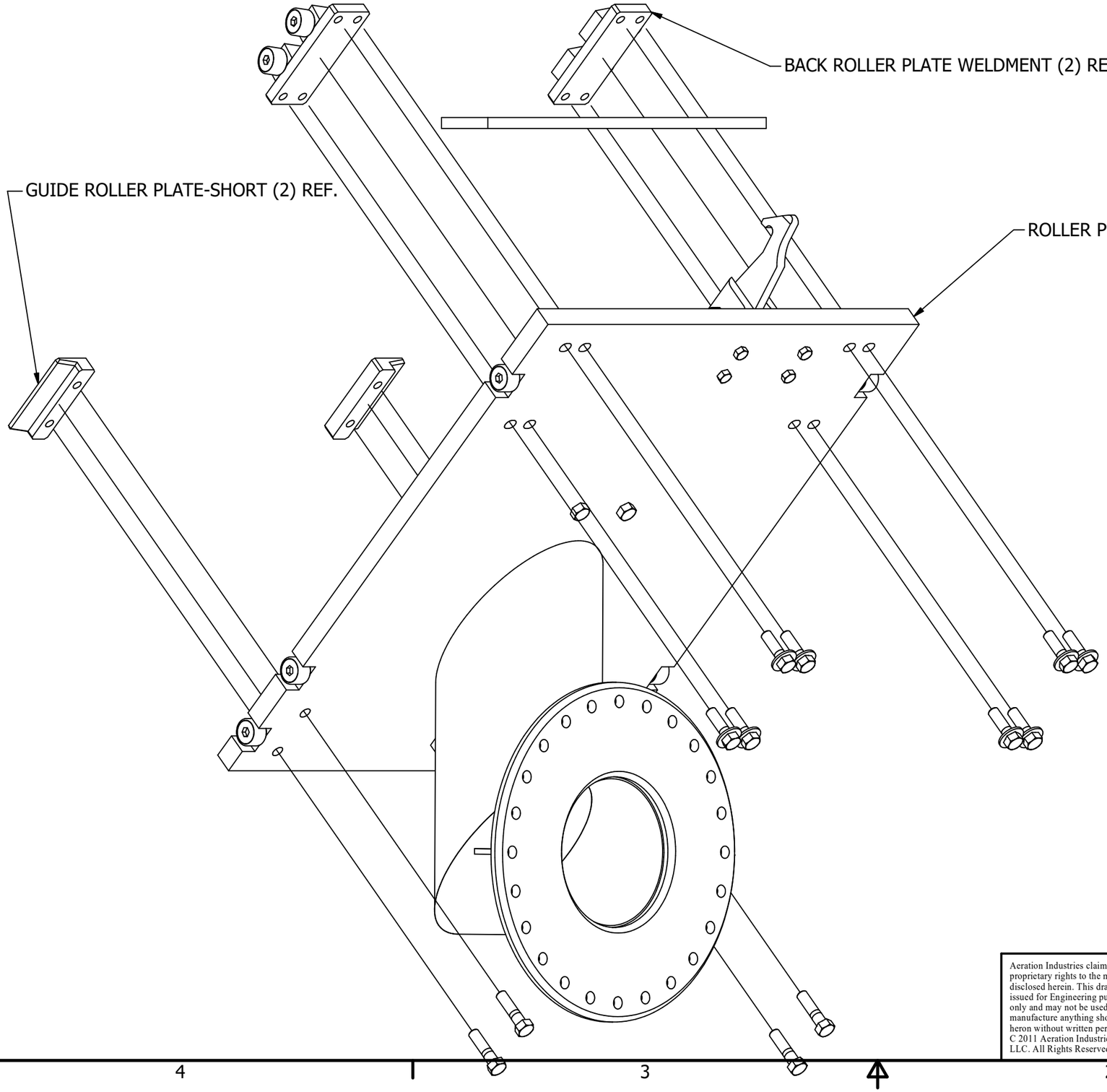
DRAWN	DATE
Joe.Widman	4/9/2015
REVISED	DATE

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. aii@aireo2.com

TITLE
OUTLINE DIMENSIONS-60HP UBM ASSEMBLY

DRAWING NO.	REV.
360-605	A

SCALE	SIZE	SHEET
-	B 11" X 17"	2 OF 5



STEP ONE

1. REMOVE (2) BACK ROLLER PLATE WELDMENTS AND (2) GUIDE ROLLER PLATES FROM THE ROLLER PLATE ASSEMBLY.

DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-

FRACTIONS ± 1/32
ANGLE ± 1° FINISH 125

WELDMENTS

ONE PLACE	2 PLACE	3 PLACE
± 0.06	± 0.03	± 0.015

MACHINED PARTS

ONE PLACE	2 PLACE	3 PLACE
± 0.03	± 0.01	± 0.005

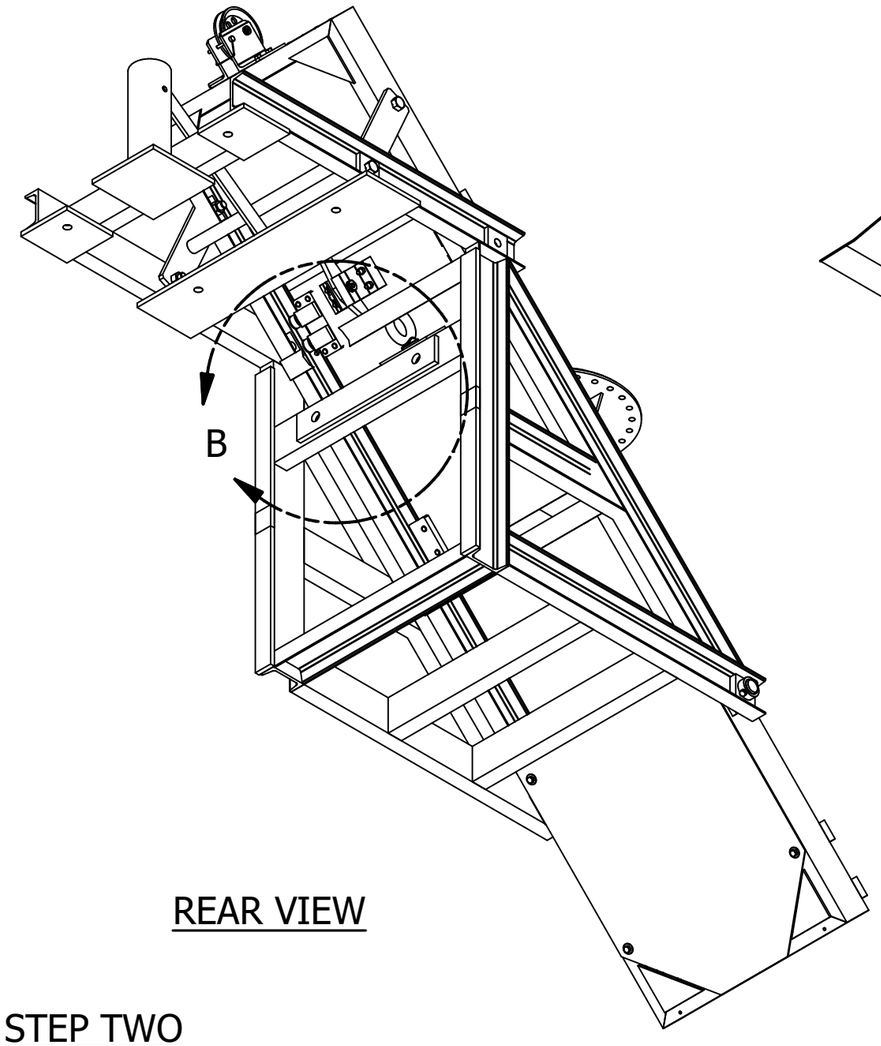
DRAWN	DATE
Joe.Widman	4/9/2015
REVISED	DATE

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. aii@aireo2.com

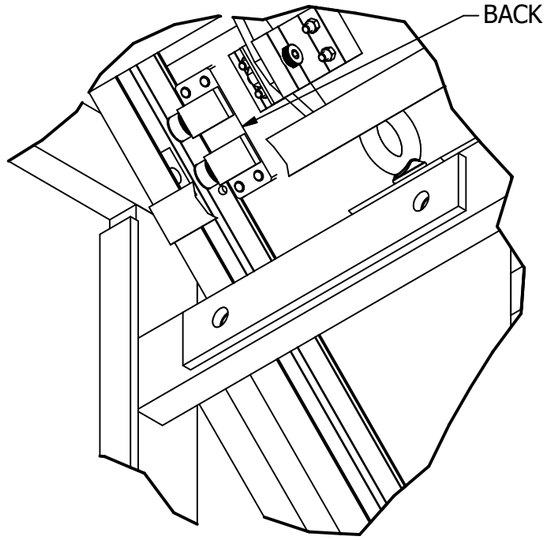
TITLE
OUTLINE DIMENSIONS-60HP UBM ASSEMBLY

DRAWING NO.	REV.
360-605	A

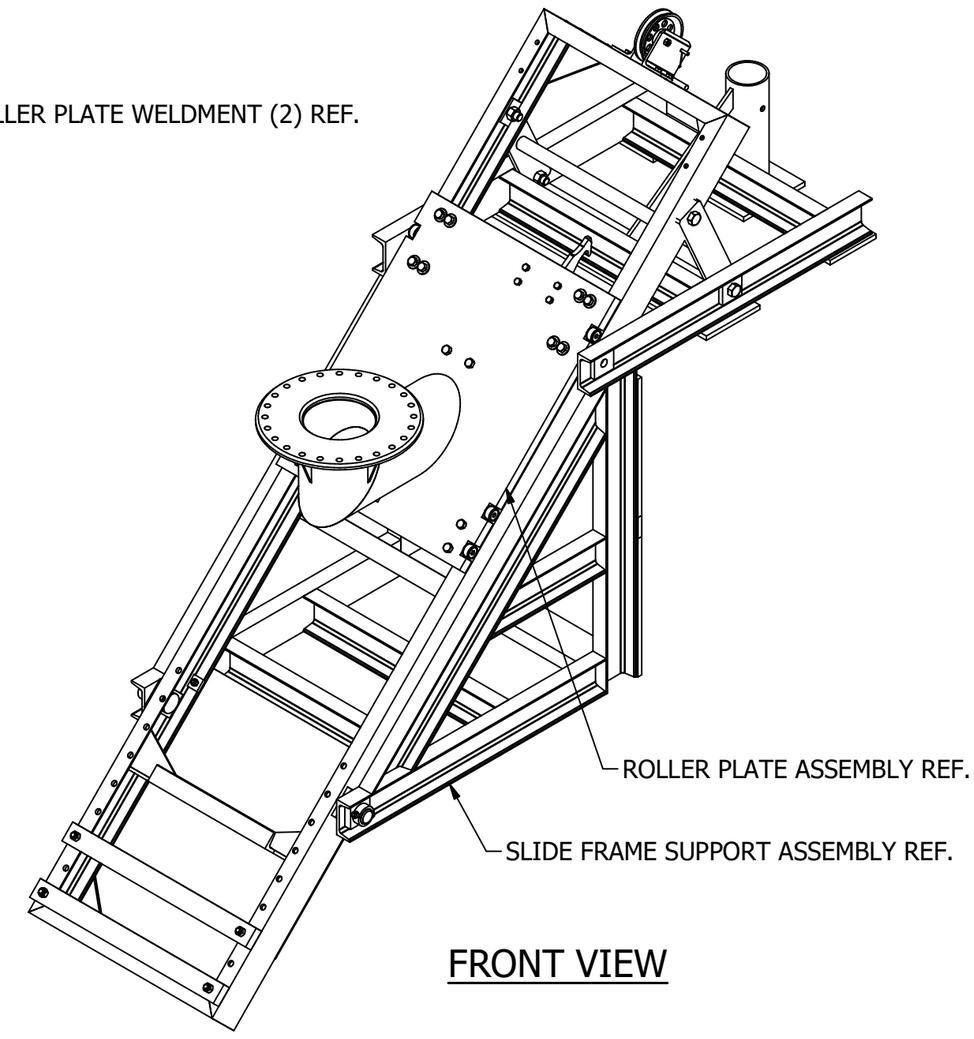
SCALE	SIZE	SHEET
-	B 11" X 17"	3 OF 5



REAR VIEW



DETAIL B



FRONT VIEW

STEP TWO

1. LOCATE ROLLER PLATE ASSEMBLY ONTO SLIDE FRAME ASSEMBLY AND REST AGAINST NEAREST STOP BAR.

2. INSTALL (2) GUIDE ROLLER PLATES ON BOTTOM SIDE OF ROLLER PLATE.

3. INSTALL (2) BACK ROLLER PLATE WELDMENTS ON BOTTOM SIDE OF ROLLER PLATE.

4. ADJUST BACK ROLLER PLATE WELDMENTS IN THE SLOTTED HOLES ON ROLLER PLATE TO ENSURE THE ROLLER PLATE ASSEMBLY ROLLS FREELY.

5. ADJUST BACK ROLLER PLATE WELDMENTS TO MINIMIZE SLACK FROM ROLLER PLATE ASSEMBLY AND TO AVOID BINDING/SIDEPLAY.

DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-

FRACTIONS ± 1/32
ANGLE ± 1° FINISH 125

WELDMENTS
ONE PLACE ± 0.06 | 2 PLACE ± 0.03 | 3 PLACE ± 0.015

MACHINED PARTS
ONE PLACE ± 0.03 | 2 PLACE ± 0.01 | 3 PLACE ± 0.005

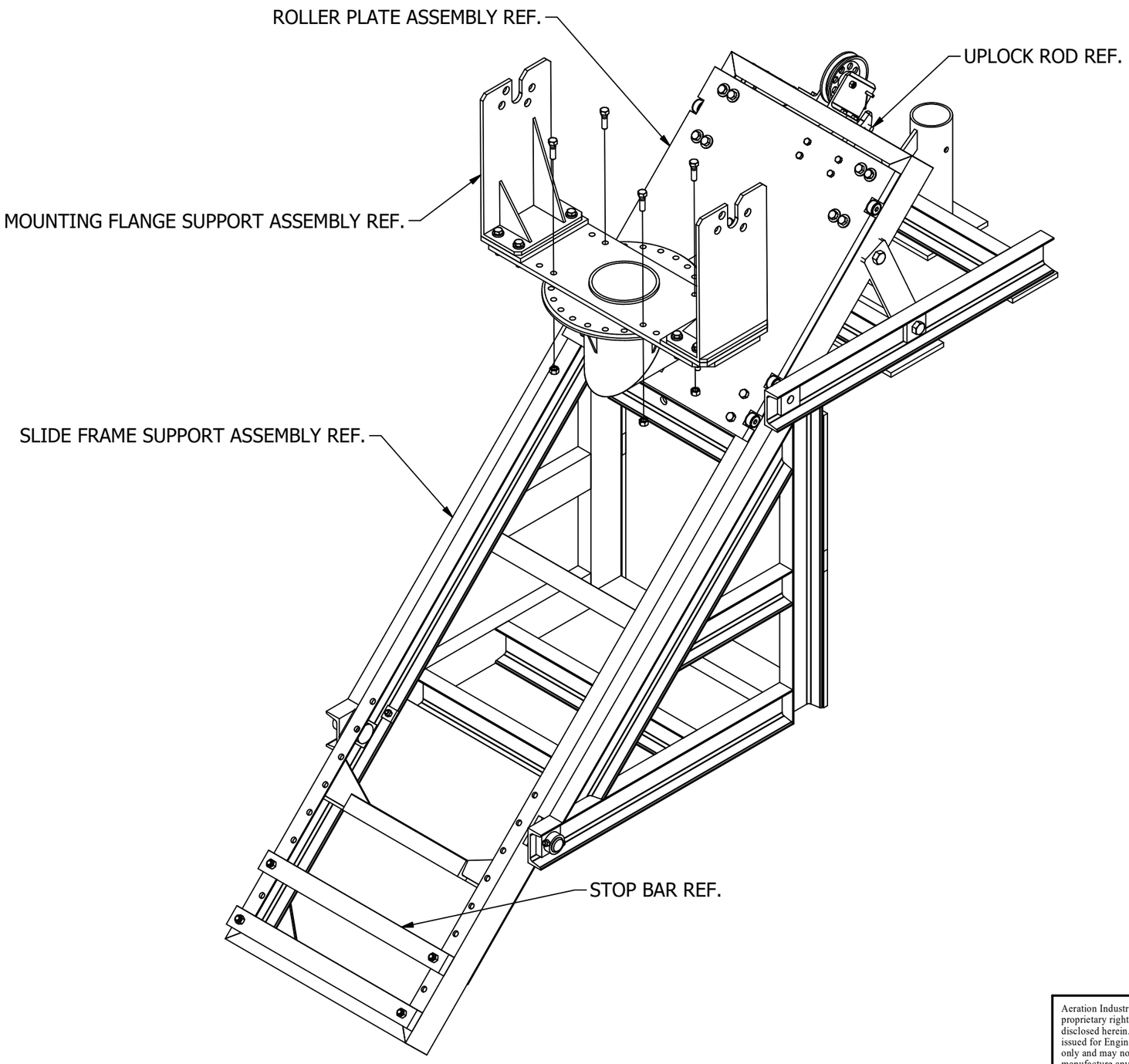
DRAWN Joe.Widman | DATE 4/9/2015
REVISED | DATE

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. aii@aireo2.com

TITLE
OUTLINE DIMENSIONS-60HP UBM ASSEMBLY

DRAWING NO. 360-605 | REV. A

SCALE - | SIZE B 11" X 17" | SHEET 4 OF 5



STEP THREE

1. WITH THE ROLLER PLATE ASSEMBLY IN THE LOWER POSITION AGAINST THE STOP BAR, INSTALL THE MOUNTING FLANGE SUPPORT ASSEMBLY BUT DO NOT ATTACH BOLTS & NUTS.

2. SLIDE THE ROLLER PLATE ASSEMBLY WITH THE MOUNTING FLANGE SUPPORT ASSEMBLY UP THE SLIDE FRAME SUPPORT ASSEMBLY UNTIL THE UPLOCK LOCKS ONTO THE UPLOCK ROD.

3. ROTATE THE MOUNTING FLANGE SUPPORT ASSEMBLY TO THE DESIRED ANGLE AND ATTACH THE (4) 1/2" BOLTS AND NUTS SUPPLIED.

4. UBM IS NOW READY FOR INSTALLATION

DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-

FRACTIONS ± 1/32
ANGLE ± 1° FINISH 125

WELDMENTS
ONE PLACE ± 0.06 | 2 PLACE ± 0.03 | 3 PLACE ± 0.015

MACHINED PARTS
ONE PLACE ± 0.03 | 2 PLACE ± 0.01 | 3 PLACE ± 0.005

DRAWN	DATE
Joe.Widman	4/9/2015
REVISED	DATE

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: +1-952-448-6789. Fax: +1-952-448-7293. air@aireo2.com

TITLE
OUTLINE DIMENSIONS-60HP UBM ASSEMBLY

DRAWING NO.	REV.
360-605	A

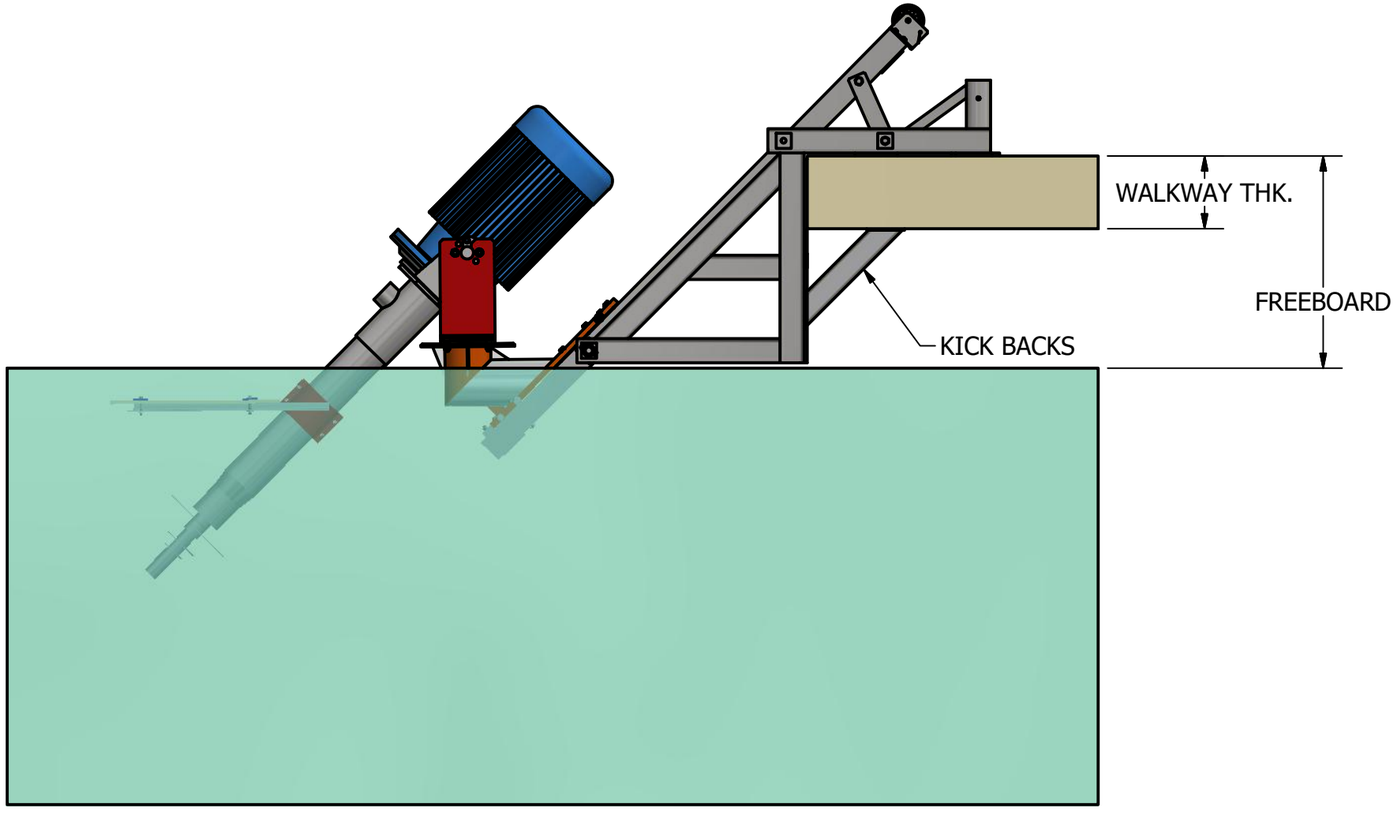
SCALE	SIZE	SHEET
-	B 11" X 17"	5 OF 5

1. FREEBOARD RANGE:

5 - 15 HP: 20 INCH TO 35 INCH
20 - 60 HP: 16.5 INCH TO 31.5 INCH

***UNIVRESAL MOUNT CAN BE CUSTOMIZED FOR FREEBOARD LESS THAN THE MINIMUM FREEBOARD LISTED ABOVE.**
SEE ENGINEERING FOR INSTRUCTIONS.

2. WALKWAY: MIN. THICKNESS 12 INCH IS REQUIRED FOR PROPER MOUNTING.
*** THE TWO KICK-BACK ARE NOT NEEDED IF WALKWAY THICKNESS EXCEED 17.5".**



DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED IN ACCORDANCE WITH ANSI Y14.5-2009 STANDARDS

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

BREAK ALL SHARP EDGES AND REMOVE BURRS

TOLERANCE & FINISH
-UNLESS NOTED OTHERWISE-

FRACTIONS ± 1/32
ANGLE ± 1°
FINISH 125

WELDMENTS
ONE PLACE ± .06 | 2 PLACE ± .03 | 3 PLACE ± .015

MACHINED PARTS
ONE PLACE ± .03 | 2 PLACE ± .01 | 3 PLACE ± .005

DRAWN	DATE
Jing.Huang	9/20/2017
REVISED	DATE

Aeration Industries International, LLC.
4100 Peavey Rd, Chaska MN 55318 USA. www.aireo2.com
Phone: 1-952-448-6789. Fax: 1-952-448-7293. email: aireo2.com

TITLE
UBM FREEBOARD & WALKWAY THK INSTRUCTION

DRAWING NO.	REV.

SCALE	SIZE	SHEET
-	B 11" X 17"	OF

Aeration Industries International
a newterra company

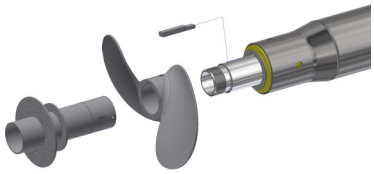
Aire-O_2 Triton® 2.0

New innovations in mechanical designs allow the Aire-O_2 Triton® 2.0 (patents pending) to provide better aeration efficiency, mixing capacity, and power consumption savings, as well as more seamless and flexible installation, operation and maintenance.

WHY CHOOSE TRITON 2.0?

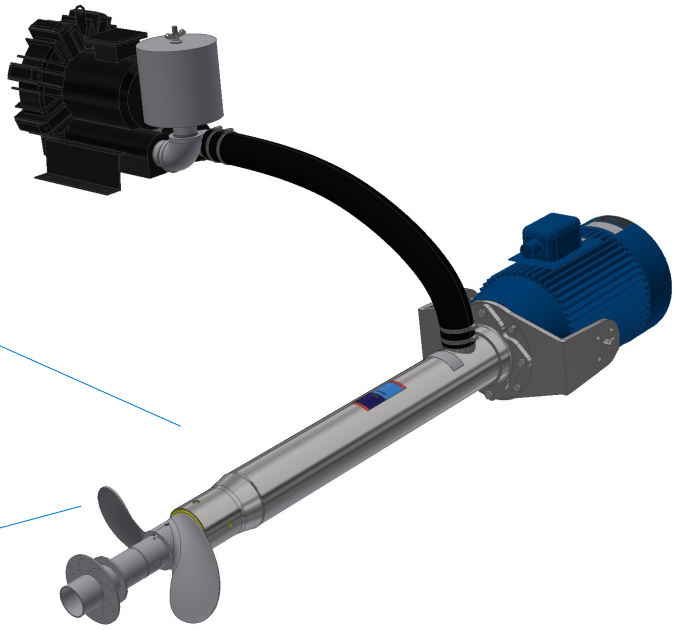
- Keyed connection enables easier installation and maintenance
- Power consumption lowered by more than 18%
- Aeration efficiency increased by up to 20%
- Mixing capacity increased by up to 54%
- Fine bubble aeration with a mixing only option for BNR applications
- Maintains or upgrades without removing or draining the basin
- Performs in challenging, heavy debris conditions
- Operates for year with minimal maintenance
- Surface mounted, horizontal mixing provides better dispersion and directional control with no splash or aerosol

The trusted way to deliver oxygen



KEYED CONNECTION

Keyed connected between the atomizer, propeller, and sleeve for easier installation and maintenance, as well as stronger connection and better longevity.



CUSTOMIZED PROPELLER

Fully customized propeller for better aeration efficiency and higher mixing capacity

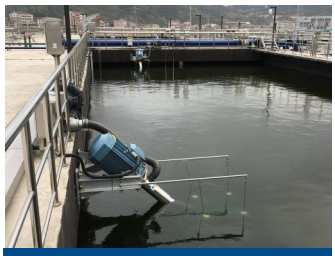
** Patent pending*

ENHANCED ATOMIZER

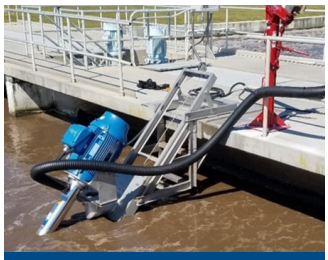
Newly enhanced atomizer for optimized oxygen transfer

** Patent pending*

FLEXIBLE MOUNTING SOLUTIONS



Wall Mount



Universal Mount

Bridge Mount

Float Mount

ADDITIONAL ACCESSORIES

- Anti-Erosion Baffle
- Guide Rail
- Swing Arm
- Davit Crane
- Vortex Shield
- Maintenance Platform
- Winch Mooring
- Float Support

** Consult your sales representative for selection assistance*

Aeration Industries® International | +1-952-448-6789 | 4100 Peavey Road Chaska, MN, 55318 USA

www.aerationindustries.com

Aeration Industries International
a newterra company

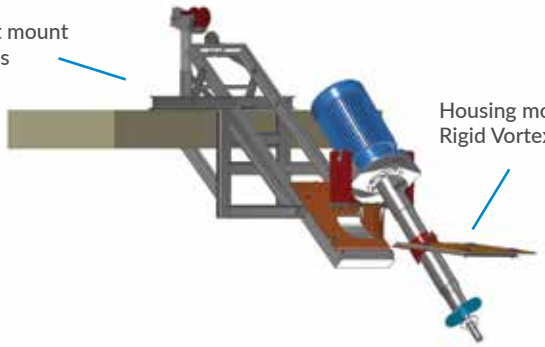
Aire-O_2™ Universal Mount

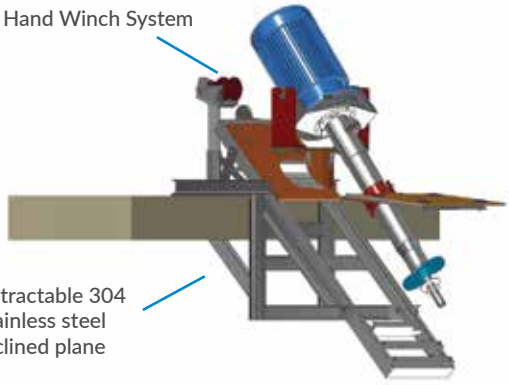
WHY CHOOSE THE AIRE-O_2™ UNIVERSAL MOUNT?

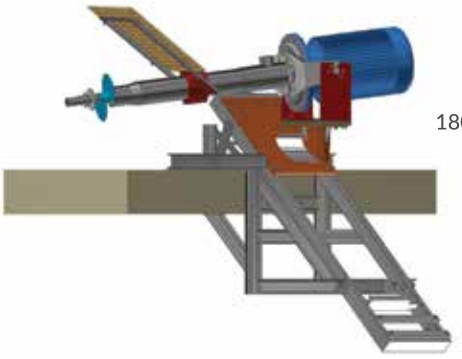
- Integrated, fully retractable retrieval system offers ease of maintenance with the ability to slide the Aire-O_2 Triton® up the inclined plane. All routine maintenance can be conducted while safely fixed to the Universal Mount
- Hand winch offers simple equipment removal with easy accessibility
- Adjustable angles with ability to rotate 180 degrees provides flexibility for complete mixing in any basin geometry
- Mount directly to walkway or wall with varying free-board heights
- All stainless steel construction for reliability in industrial and municipal applications

AERATION INDUSTRIES® INTERNATIONAL, LLC
AIRE-O_2 ®
UNIVERSAL MOUNT
REV-
U.S. PATENT 9,675,942. OTHER PATENTS PENDING.

Aire-O_2™ Universal Mount







Aeration Industries® International | +1-952-448-6789 | 4100 Peavey Road Chaska, MN, 55318 USA

www.aerationindustries.com

AERATION INDUSTRIES INTERNATIONAL, LLC

General Terms and Conditions

1. **Price.** Published prices are subject to change without notice and shall not be binding on Seller until reduced to writing signed by Seller. All prices are F.O.B. Chaska, MN, and do not include transportation cost or charges relating to transportation, which costs and charges shall be solely the responsibility of Purchaser. Prices quoted include standard packing according to Seller's specifications. Special packing requested by Purchaser, including packing for exports, shall be paid by the Purchaser as an additional charge.

2. **Taxes.** To the extent legally permissible, all present and future taxes, imposed by any Federal, State, Local or foreign authority, which Seller may be required to pay or collect upon or with reference to the sale, purchase, transportation, delivery, storage, use or consumption of goods or services, including taxes upon, or measured by the receipts therefrom, shall be paid by Purchaser. Amounts covered hereby shall be added to the price, or billed as a separate item as the law may require or as the Seller may determine. No offset against or reduction in price shall be allowed Purchaser by reason of taxes owed, paid or payable by Purchaser, or charged by Purchaser's account.

3. **Credit and Payment.** Credit accounts will be opened only with firms or individuals approved by Seller's Credit Department. Unless otherwise provided, in any case where delivery is made on credit, Purchaser shall have thirty (30) days from date of the invoice in which to make payment for the goods. Seller reserves the right at any time upon notice to Purchaser, to alter or suspend credit, or to change the credit terms provided herein, when in its sole opinion the financial condition of the Purchaser so warrants. In addition, the Seller may at any time, with or without notice to Purchaser, and at its option, suspend work and shipment under this contract if, in the Seller's sole opinion, the financial condition of the Purchaser so warrants. In such cases, in addition to any other remedies herein, or by law provided, cash payment or satisfactory security from the Purchaser may be required by the Seller before credit is restored or Seller continues performance. If the Purchaser fails to make payment or fails to furnish security satisfactory to Seller, then Seller shall also have the right to enforce payment of the full contract price of the work completed and in process. Upon default by Purchaser in payment when due, Purchaser shall pay immediately to Seller the entire unpaid amounts for any and all shipments made to purchaser irrespective of the terms of said shipment and whether said shipments are made pursuant to this contract or any other contract of sale between Seller and Purchased, and Seller may withhold all subsequent shipments until the full account is settled. Acceptance by the Seller of less than full payment shall not be a waiver of any or its rights hereunder. The seller reserves the right, at its discretion, to charge up to 1½% per month for amounts not paid within stated terms.

4. **Cancellation.** Cancellation of orders once placed with and accepted by us can only be made by us. Should the Purchaser, due to change in design or other good and sufficient cause, desire to effect cancellation of the order, same will be accepted on the following basis:

Purchaser shall pay in full the costs of all material, dies, tools, patterns and fixtures provided for this order, that are on hand or for which we are obligated, together with all labor and other expense incurred in connection therewith. Invoices covering said costs shall be due and payable immediately upon our acceptance of cancellation.

5. **Patents.** To the best of our knowledge, the articles purchased hereunder do not infringe any Letters Patent granted to others by the United States of America or by any country foreign thereto. We do not assume any responsibility or liability for any claim of infringement brought against the Purchaser, its successors, assigns, customers or udders of its product. The Purchaser agrees to hold us harmless against any claim of infringement which arises out of compliance by us with specifications furnished by Purchaser.

6. **Risk of Loss, Title.** The risk of loss of the goods shall pass to the Purchaser as soon as they are deposited with the carrier for shipment to the Purchaser, but title to the goods shall remain in the seller until the purchase price therefore has been paid.

7. **Shipment.** All shipments shall be F.O.B. Chaska, MN, and the date of shipment shall be contingent upon the date of acceptance of Seller's offer. Seller's obligation with respect to shipments of the goods shall not extend beyond a) putting the goods in the possession of such a carrier and making such a contract for the transportation thereof as may be reasonable having regard to the nature of the good; b) obtaining and delivering within a reasonable time such documents as may be necessary for Purchaser to obtain possession of goods; and c) notifying the Purchaser of the shipment within a reasonable time. Seller shall have the right to ship all of the goods at one time or in portions from time to time within the time of shipment. This contract shall be deemed separable as to the goods sold. Purchaser may not refuse to accept any lot or portion of the goods shipped hereunder on the grounds that there has been a failure to ship any other lot or that goods in any other lot were nonconforming. Any such default by Seller will not substantially impair the value of this contract as a whole and will not constitute a breach of the contract as a whole. The goods shall be deemed to have been tendered to Purchaser when they have been deposited with the carrier.

8. **Inspection and Acceptance.** Purchaser shall have the right to inspect the goods upon receipt of them and shall have the opportunity, at that time, to run adequate tests to determine whether the goods shipped conform to the specification of this contract.

Purchaser shall recompense Seller, at the contract price, for all goods used in testing and Purchaser shall bear any expense incurred in the inspection of the goods used in testing, whether or not the goods are non-conforming. Failure to inspect the goods or failure to notify the Seller in writing that the goods are nonconforming with ten (10) days of the receipt of the goods by Purchaser, shall constitute a waiver of Purchaser's rights of inspection and rejection for nonconformity and shall be equivalent to an irrevocable acceptance of the goods by Purchaser. Acceptance – Unless we receive notification to the contrary promptly from you, we will consider the foregoing conditions as been acceptable to you.

9. **Excuse in Seller's Performance.** This contract is subject to an the Seller shall not be responsible or liable for any delay directly or indirectly resulting from or contributed limitations on Seller's production, capabilities, prompt settlement of all details relating to the materials covered by this proposal, and to delays due to fires, explosions, acts of God, strikes or other differences with workmen, shortage of utility, facility, components or labor, delay in transportation, breakdown or accident, war and acts of war, compliance with or other action taken to carry out the intent of purposes of any law or regulation, changes, or revisions, accidents or any other causes or contingencies not caused by Seller or other which Seller had no reasonable control. In the event that any one or more deliveries hereunder is suspended or delayed by reason of any one or more of the occurrences or contingencies aforesaid, any and all deliveries so suspended or delayed shall be made after such disabilities have ceased to exist, and nothing herein contained shall be construed as lessening in any event the full amount of goods herein purchased and sold, but only as deferring delivery and payment in the events and to the extent herein provided for. Neither shall any delay in shipment be considered as a default under this contract or give rise to any liability on the part of Seller for items of incidental, special consequential damage unless such delay was directly and proximately caused by the willful and wanton act of gross negligence of Seller. Acceptance of material on delivery shall constitute a waiver of any claims against seller for damages on accounts of delay.

10. **Warranty.** Seller warrants that it will, at its option, repair or replace the goods, or return the purchase price thereof, which are found to be defective in material or workmanship or not in conformity with the contract requirements provided that, within three (3) year of shipment thereof, Purchaser gives written notice of such defect to Seller, the Purchaser returns the goods to Seller at point of original manufacture, with transportation charges prepaid by Purchaser, and an examination by Seller discloses to its satisfaction the existence of such defect or nonconformity with the contract requirements. In no event shall Seller be liable for any incidentals, special or consequential damages resulting from said effects or nonconformity. This warranty specifically excludes all labor charges that could be incurred.

THE FOREGOING DOES NOT APPLY TO COMPONENTS WHERE WERE NOT MANUFACTURED BY SELLER, AND IS EXPRESSLY IN LIEU OF OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR USE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FOREGOING, NO AGENT, EMPLOYEE OR REPRESENTATIVE OF THE SELLER HAS ANY AUTHORITY TO BIND THE SELLER TO ANY AFFIRMATION, REPRESENTATION OR WARRANTY CONCERNING THE GOODS SOLD UNDER THIS SALES CONTRACT, AND UNLESS AN AFFIRMATION, REPRESENTATION OR WARRANTY MADE BY AN AGENT EMPLOYEE OR REPRESENTATIVE IS SPECIFICALLY INCLUDED WITHIN THIS WRITTEN AGREEMENT, IT SHALL NOT BE ENFORCEABLE TY THE PURCHASER.

11. **Remedies of Purchaser.** If goods are tendered which do not conform with the specifications under the sales contract and these goods are rejected by Purchaser, Seller shall have the right to cure the tender by either correcting the goods or substituting conforming goods. In the event that such substituted goods fail to conform to the contract or in the event of any other breach or repudiation of this contract by Seller, Purchaser shall not be entitled to recover any incidental or consequential damages as those terms are defined in Section 2-715 of the Minnesota Uniform Commercial Code and Purchaser's right to damages shall be limited to the difference between the contract and the market price of the goods as provided in Section 2-713 of the Minnesota Uniform Commercial Code. Purchaser shall not have the right to "cover" as provided in Section 2-712 of the Minnesota Uniform commercial code nor any rights to recover damages for any loss resulting in the ordinary course of events from nonconformity of tender as contained in Section 2-714(1) of the Minnesota Uniform Commercial Code.

12. **Assignments.** No right to interest in this contract shall be assigned by Purchaser, without the written permission of Seller, and no delegation of any obligation owned by Purchaser shall be made without permission of the Seller. Any attempted assignment of delegation shall be wholly void and totally ineffective for all purposed.

13. **Alterations, Interpretations and Definitions.** This contract shall be governed by the laws of Minnesota and is intended also as a complete and exclusive statement of the terms of their agreement. No course of prior dealings between the parties, and no usage of the trade shall be relevant to supplement or explain any term used in this contract. Acceptance or acquiescence to a course of performance rendered under this contract shall not be relevant to determine the meaning of this contract, even though the accepting or acquiescing party has knowledge of the nature of the performance and an opportunity for objection. Waiver by Seller of a breach by Purchaser of any provision of this contract shall not be deemed a waiver of future compliance therewith, and such provision shall remain in full force and effect. Any term used in this contract which is not defined herein shall have the same definition as that contained in the Minnesota Uniform Commercial Code.

Budget Proposal

Project:
June Lake, CA

Equipment:
SPECO WasteMaster® Shaftless Spiral Screen

Represented By:
Coombs Hopkins Company
Jeremey Neil
Phone: 760-931-0555
Email: jeremy@coombshopkins.com

Regional Sales Manager:
Enviro-Care
Alan Spratt
Phone: 224-302-0304
Email: aspratt@enviro-care.com

Project No.: WEC217109
March 23, 2017

Enviro-Care
A WAMGROUP® Company
1570 St. Paul Avenue - Gurnee IL 60031
P: 815.636.8306
F: 847.672.7968
www.enviro-care.com

ITEM: "A" - One (1) SPECO WasteMaster® Shaftless Spiral Screen
Model GCP300

BASIS OF DESIGN (EACH)

Application:	Municipal Sewage Screening
Peak Design Flow:	1.0 MGD
Downstream Water Level (estimated):	11.0 inches @ peak flow
Screen Headloss at peak flow:	5.65 inches w/ 30% blinding
Max Allowed Upstream Water Level:	18.1 inches
Channel Width:	12 inches
Channel Depth:	48 inches
Screen Opening:	6 mm
Opening Type:	Perforated
Angle of Inclination:	35 degrees
Wash Water Requirement:	18 GPM at 30-40 PSI
Discharge Height:	5.3 feet from top of channel

FINE SCREEN (EACH)

- Semi-cylindrical screenings basket from type 304 stainless steel
- Conveyor tube with wear bars from type 304 stainless steel.
- Neoprene side seals fastened to basket to prevent bypass around the screen.
- Shaftless spiral screw from high strength alloy steel with protective primer coating and brushes attached in the basket area. Brushes are supplied in sections each covering 180° of the spiral and shall have nylon bristles molded into a plastic core and attached to the screw with stainless steel fasteners.
- Dual chambered dewatering zone from type 304 stainless steel with hinged access door.
- Discharge zone from SINT® engineered polymer, self-cleaning design.
- Dewatering zone drain flush spray system from type 304 stainless steel with manual ball valve.
- Plastic hose for drain connection to direct pressate back into the channel.
- Drive unit with 1.5 HP TEFC motor suitable for 460/3/60 electrical supply.
- Basket mounted spray bar from type 304 stainless steel.
- Centralized washing system with type 304 stainless steel piping, connecting all unit spray locations to single point for customer connection. Includes manual ball valves and solenoids.

- Fasteners – 304 stainless steel.

FINE SCREEN SUPPORTS

- A stand from type 304 stainless steel is supplied to support the fine screen unit. Support shall allow unit to be rotated out of the channel.

CONTROL PANEL AND INSTRUMENTATION (EACH)

- One (1) NEMA 4X type 304 stainless steel wall mount main control panel suitable for 480/3/60 electrical supply. Control panel shall contain the following control devices for operation of the spiral screen.
  1. Main disconnect with through door interlock handle.
  2. Control transformer 480/120.
  3. Branch circuit protection.
  4. Screen motor starter (IEC) with overloads.
  5. Current monitor for screen motor overtorque/overload protection.
  6. Emergency stop pushbutton.
  7. HOA switch for each motor.
  8. HOA switch for each solenoid valve.
  9. Hour meter for each motor.
  10. Run indicating lights.
  11. Alarm lights indicating overcurrent and starter overload.
  12. Alarm reset pushbutton.
  13. Programmable control relay for screen control logic functions.
  14. Run and alarm auxiliary contacts.
  15. UL Label.

- One (1) NEMA 4X Emergency Stop pushbutton station.
- One (1) NEMA 4X safety microswitch mounted to dewatering/discharge access door.
- Two (2) NEMA 4X 120V brass body solenoid valves to control water spray functions.
- One (1) mercury free type float switch with stainless steel mounting bracket.

SPARE PARTS (TOTAL)

- None.

FIELD SERVICE (TOTAL)

- Site service of one (1) trip for a total of two (2) days for installation inspection, startup and operator training.

CLARIFICATIONS/COMMENTS

- None.

OPTIONAL ITEMS (EACH)

- Item A-1: Continuous Bagger Assembly to collect dewatered screenings at discharge with refillable bag cassette.
- Item A-2: Ultrasonic Level Sensor - Milltronics Pointek ULS200 ultrasonic sensor suitable for installation in a Class 1 Division 2 hazardous area with stainless steel mounting bracket. (Replaces float switch).
- Item A-3: Outdoor Freeze Protection - Weather protection system. Dewatering zone, transport tube (above channel) and wash water piping wrapped with self-regulating heat trace cable supplied with insulation and protective jacket. Electrical wiring routed to a factory mounted conduit box for field connection. Includes One (1) NEMA 4X ambient temperature thermostat to control heat tracing and GFCI circuit breaker mounted in the control panel.

NOTE: ANY ITEM NOT LISTED ABOVE TO BE FURNISHED BY OTHERS.

EXCLUSIONS

Taxes, electrical wiring, conduit or electrical equipment, piping, valves, or fittings, shimming material, lubricating oil or grease, shop or field painting, field welding, erection, hoist or lifting apparatus, detail shop fabrication drawings, performance testing, unloading, storage, concrete work, civil design, grating, platforms, stairs, hand railing, dumpster (except as specifically noted).

This proposal section has been reviewed for accuracy and is approved for issue:
By: Chris Kincaid Date: March 23, 2017

BUDGETARY PRICING

Item	Equipment	Price in USD
A	One (1) SPECO Flo-Sieve WasteMaster® Spiral Screen Model GCP300	$50,000
A-1	Adder – Continuous Bagger Assembly	$1,500
A-2	Adder – Ultrasonic Level Sensor	$2,500
A-3	Adder – Outdoor Freeze Protection	$13,000

Validity:

Prices are valid for a period of 30 days from the date of this proposal. Beyond 30 days, delivery is subject to prior sales.

Warranty Statement and Term:

Enviro-Care Company, Inc. warrants the supplied equipment to the original end user against defects in workmanship or material under normal use and service in compliance with the original design specifications and the maintenance requirements and instructions as found in the Operations & Maintenance Manual. All Enviro-Care supplied equipment is warranted for twelve (12) months from date of start-up or eighteen (18) months from date of shipment, whichever occurs first.

Warranty Exclusions:

This warranty does not cover costs for standard and/or scheduled maintenance performed, nor does it cover consumables and Enviro-Care parts that, by virtue of their operation, require replacement through normal wear (aka: Wear Parts), unless a defect in material or workmanship can be determined by Enviro-Care. Wear parts are defined as brushes, rollers, spray nozzles, drum seals and other items specifically identified in the Operations & Maintenance Manual.

Warranty Coverage:

Enviro-Care's liability is limited to the supply or repair of defective parts returned, freight prepaid by buyer to a location specified by Enviro-Care. Repaired or replacement parts will be shipped to buyer prepaid via standard ground freight. Express or expedited shipments will be at the expense of the buyer.

Exclusions and Exceptions:

This Warranty excludes damage or wear to equipment caused by misapplication of product, improper maintenance, accident, abuse, unauthorized alteration or repair, Acts of God, or installation or operation that is non-compliant with Enviro-Care installation and operations instructions.

Limited Liability:
Enviro-Care shall not under any circumstances be liable for any incidental or consequential damages arising from loss, damage to property, personal injury or other damage or losses owing to the failure of Enviro-Care's equipment. The liability of Enviro-Care Company, Inc. is limited as set forth above within the time period set forth above.

Term: 15% with Submittal Approval
80% Net 30 Days after Shipment
5% Net 30 days after Startup. Startup not to exceed 180 days from equipment delivery.

Taxes: No sales or use taxes have been included in our pricing.

Freight: Prices quoted are F.O. B. shipping point with freight allowed to a readily accessible location nearest jobsite. Any claims for damage or loss in shipment to be initiated by purchaser.

Submittals: Full submittals will be supplied approximately **4 to 6 weeks** after receipt and acceptance of purchase order at the Enviro-Care offices.

Shipment: Shipment time is approximately **16 to 18 weeks** after receipt of approved submittal is received at the Enviro-Care offices. Under no circumstances will verbal approval be accepted.

Additional Field Service: This service may be scheduled at $1,250.00 per day plus expenses or is available through a yearly service contract.

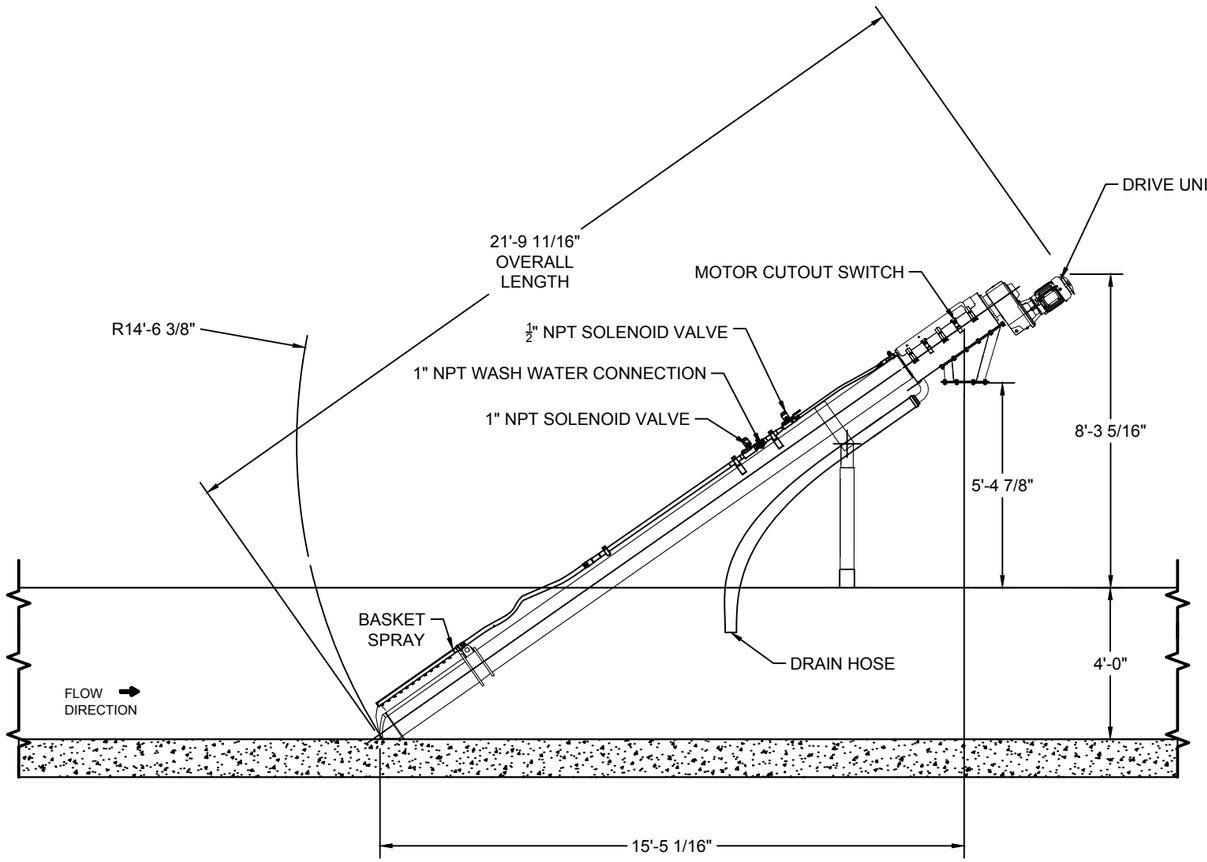
Material of Construction: Enviro-Care is providing the equipment from the type of material specified for this project. If from 304L stainless steel the concentration of chloride and hydrogen sulfide (H2S) in the equipment operating environment shall be kept below the following values:

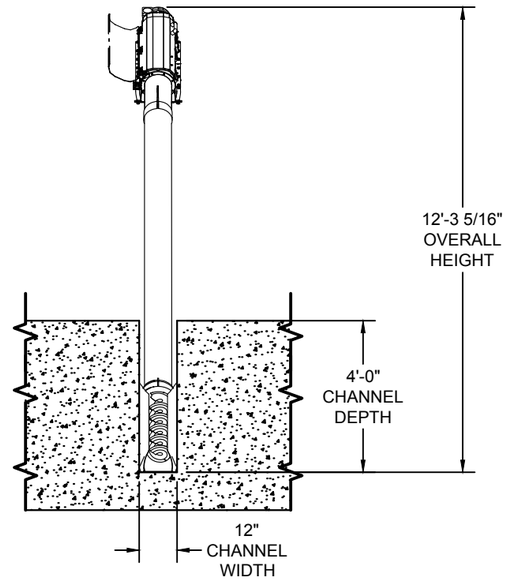
- Chloride <200 mg/L
- Hydrogen Sulfide (H2S) <6ppm

If not already done so, Enviro-Care can provide the equipment from 316L stainless steel for a price adder for environments that exceed the values noted above.

Please issue Purchase Orders to:
Enviro-Care
1570 St Paul Avenue
Gurnee, IL 60031

Attn: Stephen Rioux
Phone: 224-302-0308
Email: srioux@enviro-care.com





ELEVATION
SCALE: 1/4" = 1'-0"

PROCESS DESIGN INFORMATION (EACH SCREEN):

APPLICATION:	DOMESTIC SEWAGE SCREENING
PEAK DESIGN FLOW:	1.0 MGD
CHANNEL WIDTH:	12 INCHES
CHANNEL DEPTH:	4 FEET
ANGLE OF INCLINATION:	35 DEGREES FROM HORIZONTAL
DISCHARGE HEIGHT:	5'-4 7/8" FEET FROM TOP OF CHANNEL

Rev	Revision Description	Date	Rev By	Approver
D				
C				
B				
A				

Enviro-Care
A WAMGROUP® Company

Status: INFORMATION ONLY

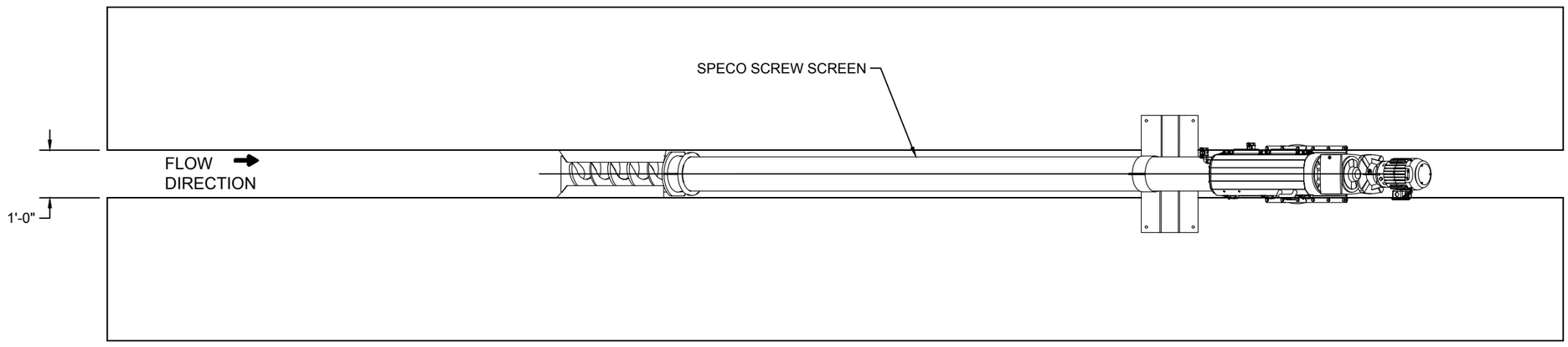
Title
GENERAL ARRANGEMENT: JUNE LAKE, CA
MODEL: GCP300-LC5500 SPECO SCREW SCREEN

Designer	Checker	Date	Sheet
JW24	CK09	03-22-2017	1 of 2

Third Angle Projection

Drawing Number: WEC217109-A

Revision: -



PLAN
SCALE: 3/8" = 1'-0"

Rev	Revision Description	Date	Rev By	Approver
D				
C				
B				
A				

Enviro-Care
A WAMGROUP® Company

Status: INFORMATION ONLY

Title
GENERAL ARRANGEMENT: JUNE LAKE, CA
MODEL: GCP300-LC5500 SPECO SCREW SCREEN

Designer	Checker	Date	Sheet
JW24	CK09	03-22-2017	2 of 2

Third Angle Projection

Drawing Number: WEC217109-A

Revision: -

PONTON INDUSTRIES, INC.
SINCE 1970

22901 Savi Ranch Pkwy, Suite B
Yorba Linda, CA 92887
Tel: (714) 998-9073
Fax: (714) 998-9083
info@pontonind.com
www.pontonind.com

QUOTE#: PONQ41865

DATE: Sep 30, 2020

Your Local Representative for ...

SIEMENS

Sold to:

AECOM
Yeimy Ojeda
5001 E. Commercenter Dr. STE-100
Bakersfield, CA 93309

Phone: (661) 325-7253
Email: yeimy.ojeda@aecom.com

~Featured Item~

Meet the enhanced HydroRanger 200 and MultiRanger 200. Easier to use, easier to set up. Just plain better. For close to thirty years the HydroRanger 200 and MultiRanger 200 have been industry standards for level measurement in water/wastewater applications. Now we have made the best even better. Contact us to learn more!

Quoted by	Est. Lead Time	F.O.B	Ship Via	Terms
Cheryl Madeira	2-3 weeks ARO	Factory	Best Way	Net 30 OAC

ADDRESS PO TO: Siemens Industry

Line No	Product Details	Qty	Unit Price	Ext. Price
1.	**Siemens 12" MAG 5100W 7ME6580-5DJ14-2AA2** SITRANS FM MAG 5100 W Full-bore electromagnetic flow sensor, flanged, diameter DN 25 to DN 2000 (1" to 78"). Suitable for volume flow measurement of liquids (conductive) , for applications in water abstraction, water & wastewater treatment, water distribution networks, custody transfer metering. 0 . 5D DN300, 12 Inch J ANSI B16.5, Class 150 1 carbon steel flanges ASTM A105 (150micron painting) 4 Ebonite 2 Hastelloy C-276 A Sensor with remote transmitter (Order transmitter sep) A No bus communication 2 1/2 inch NPT Polyamid Terminal or 6000 I compact.	1	$ 4,031.00	$ 4,031.00
2.	**Siemens MAG 5000 7ME6910-1AA10-1AA0** MAG 5000 IP67 PLASTIC 230V MAG 5000, IP67 / NEMA 4X/6, Polyamid enclosure, With display, 115-230V AC 50/60 Hz	1	$ 1,515.00	$ 1,515.00
3.	**Siemens Wall Mt Kit FDK:085U1053** Wall mounting unit, 4x 1/2 NPT cable glands	1	$ 266.00	$ 266.00
4.	**Siemens USM Potting Kit FDK:085U0220** USM Potting Kit 1 tin Sylgard 517 A, 0.5 kg 1 tin Sylgard 517 B, 0.5 kg 1 mixing utensil 1 funnel Sylgard 517 A and B Silicone Dielectric Gel is a two-component clear silicone	1	$ 161.00	$ 161.00
5.	**Siemens Mag Cable Kit - 10m A5E01181647** SITRANS F M Accessory MAG 5000/6000 2x 10 m (32.8 ft) Cable kit including standard coil cable, 3x 1.5 mm2 (3x 0.0024 inch2), gage 18, single shielded with PVC jacket, and special electrode cable, 3x 0.25 mm2 (3x 0.0004 inch2), double shielded with PVC jacket, temperature range: -30...+70 °C (-22...+ 158 °F)	1	$ 173.00	$ 173.00
			Sub Total	$ 6,146.00
			Tax	$ 0.00
			Adjustment	$ 0.00
			Grand Total	**$ 6,146.00**

ADDRESS PO TO: Siemens Industry

Notes:

Siemens Terms and Conditions

1. APPLICABLE TERMS. This Agreement governs the sale of equipment, components, parts, and materials provided by Siemens ("Products"). Any applicable addenda, these terms, Siemens
proposal, price quote, purchase order, or acknowledgement issued by Siemens form the parties' final agreement ("Agreement"). In the event of a conflict between these documents, precedence shall apply in accordance with the order listed in the previous sentence. Siemens' proposal, offer or acceptance is conditioned on Buyer's acceptance of this Agreement. Any additional or conflicting terms in Buyer's request for proposal, specifications, purchase order or any other written or oral communication are not binding on Siemens unless separately signed by Siemens. Siemens' failure to object to Buyer's additional or conflicting terms does not operate as a waiver of any terms contained in this Agreement.

2. PRICING & PAYMENT. Prices and payment terms are: (i) as stated in Siemens' proposal, or if none are stated; (ii) Siemens' standard prices in effect when Siemens receives Buyer's
purchase order; or if neither (i) or (ii) apply, then Siemens' standard prices in effect when the Products ship. (a) Payment. Unless stated in Siemens' proposal, all payments are due net thirty (30) days from the invoice date in United States Dollars. (b) Credit Approval. All orders are subject to credit approval by Siemens. Siemens may modify, suspend or withdraw the credit amount or payment terms at any time. If there is doubt as to Buyer's financial condition, Siemens may withhold manufacturing or shipment, require cash payments, or require other satisfactory security. Siemens may recover shipped Products from the carrier pending such assurances. (c) Installment Shipment. Where Products are delivered in shipments or only part of a shipment fails to comply with this Agreement, the Buyer may only reject the non-compliant portion. Buyer will separately pay for each shipment. If Siemens holds or stores Products for Buyer, it shall do so at Buyer's sole risk and expense. (d) Taxes, Shipping, Packing, Handling. Unless stated in writing by Siemens, Siemens' prices exclude charges for freight, unloading, storage, insurance, taxes, excises, fees, duties or other government charges related to the Products. Buyer will pay these amounts or reimburse Siemens. If Buyer claims a tax or other exemption or direct payment permit, Buyer will provide a valid exemption certificate or permit and indemnify, defend and hold Siemens harmless from any taxes, costs and penalties arising from same. Siemens' prices include the costs of its standard domestic packing only. Any packing deviation, including U.S. Government sealed packing, will be charged to Buyer. Increases, changes (including in application), adjustments or surcharges which may be incurred are for Buyer's account. (e) Late Payments. Late payments shall bear interest at an annual percentage rate of twelve percent (12%) or the highest rate allowed by law, whichever is lower. (f) Disputed Invoice. If Buyer disputes all or any portion of an invoice, it must first deliver written notice to Siemens of the disputed amount and the basis for the dispute within twenty-one (21) days of receiving the invoice. Failure of Buyer to timely notify Siemens of any dispute constitutes a waiver of Buyer's claim. If Buyer only disputes a portion of the invoice, Buyer must pay the undisputed portion in accordance with Article 2(a). Upon resolution of the dispute, Buyer must pay the invoice or the remainder of the invoice, plus any accrued interest on the late payment. (g) Suspension/Termination Right. Siemens may suspend work if an undisputed invoice is more than thirty (30) days past due. Siemens may terminate this Agreement if an undisputed invoice is more than sixty (60) days past due. Unless prohibited by law, Siemens may also terminate this Agreement immediately in the event of a material adverse change in Buyer's financial condition including, but not limited to, bankruptcy, insolvency, liquidation or similar financial condition.

3. DELIVERY; TITLE; RISK OF LOSS. Products will be delivered F.O.B. Siemens point of shipment with title and risk of loss or damage passing to Buyer at that point. Buyer is responsible for all
transportation, insurance and related expenses. The related expenses shall include any taxes, duties or documentation fees. Siemens may make partial shipments. Any shipping, delivery and
installation dates are estimated dates only. Siemens is not liable for any loss or expense incurred by Buyer or Buyer's customers if Siemens fails to meet its delivery schedule.

4. DEFERMENT AND CANCELLATION. Buyer has no right to defer shipment but may cancel this Agreement on thirty (30) days written notice if Siemens has not already performed. If Buyer
cancels this Agreement, it shall pay all cancellation charges including, without limitation: (i) the full price for any finished Product; (ii) for partially completed product, the portion of the price determined to be due by Siemens based on its percentage of completion of the Product; (iii) reasonable overhead and profit; and (iv) any payments due subcontractors and/or suppliers for any materials, components or products ordered which cannot be cancelled, refunded, or redirected for other beneficial use.

5. TRANSPORTATION AND STORAGE. (a) When Products are ready for shipment, Siemens will: (i) inform Buyer, and Buyer will then promptly give shipping instructions to Siemens; (ii)
determine the method of transportation and shipment routing; and (iii) ship the Products with freight prepaid by normal transportation. If Buyer fails to provide timely shipping instructions, Siemens will ship the Products by normal transportation means to Buyer or to a storage location selected by Siemens. Buyer will pay or reimburse any excess transportation charges for special or expedited transportation. (b) If Products are placed into storage, delivery occurs and risk of loss transfers to Buyer when the Products are placed on the carrier for shipment to the storage location. If the Products are to be stored in the facility where manufactured, delivery occurs and risk of loss transfers to Buyer when placed in the storage location. Buyer will pay all Siemens' storage expenses, including but not limited to, preparation for and placement into storage, handling, freight, storage, inspection, preservation, maintenance, taxes and insurance, upon receipt of an invoice(s) from Siemens. When conditions permit and upon payment to Siemens of all amounts due, Buyer must arrange, at its expense, to remove the Products from storage. Buyer bears the risk of loss, damage or destruction to Products in storage.

6. FORCE MAJEURE / DELAYS. If Siemens' performance is delayed by any cause beyond its reasonable control (regardless of whether the cause was foreseeable), including without limitation
acts of God, strikes, labor shortage or disturbance, fire, accident, war or civil disturbance, delays of carriers, cyber-attacks, terrorist attacks, failure of normal sources of supply, or acts or inaction of government, Siemens' time of performance will be extended by a period equal to the length of the delay plus any consequences of the delay. Siemens will notify Buyer within a reasonable time after becoming aware of any such delay.

7. BUYER'S REQUIREMENTS. Siemens' performance is contingent upon Buyer timely fulfilling all of its obligations under this Agreement. These obligations include the Buyer supplying all
documents and approvals needed for Siemens to perform, including but not limited to technical information and data, drawing and document approvals, and necessary commercial documentation. Siemens may request a change order for an equitable adjustment in prices and times for performance, as well as for any additional costs or any delay resulting from the failure of Buyer or Buyer's contractors, successors or assigns to meet these obligations.

8. INDEMNITY. Siemens and Buyer (each as an "Indemnitor") shall indemnify the other ("Indemnitee") from and against all third party claims alleging bodily injury, death or damage to a third
party's tangible property, but only to the extent caused by the Indemnitor's negligent acts or omissions. If the injury or damage is caused by the parties' joint or contributory negligence, the loss and/or expenses shall be borne by each party in proportion to its degree of fault. No part of the Product(s) or Buyer's site is considered third party property. Indemnitee shall provide the Indemnitor with prompt written notice of any third party claims covered by this Article. Indemnitor has the unrestricted right to select and hire counsel and the exclusive right to conduct the legal defense and/or settle the claim on the Indemnitee's behalf. The Indemnitee shall not make any admission(s) which might be prejudicial to the Indemnitor and shall not enter into a settlement without the express permission of the Indemnitor.

9. WARRANTIES. (a) Warranties. Siemens warrants that: (i) each Product is free from defects in material and workmanship; (ii) each Product materially conforms to Siemens' specifications that
are attached to, or expressly incorporated into this Agreement; and (iii) at the time of delivery, Siemens has title to each Product free and clear of liens and encumbrances (collectively, the "Warranties"). The Warranties do not apply to software furnished by Siemens. The sole and exclusive warranties for any software are set forth in the applicable Software License/Warranty Addendum. (b) Conditions to the Warranties. The Warranties are conditioned on: (i) no repairs, modifications or alterations being made to the Product other than by Siemens or its authorized representatives; (ii) Buyer handling, using, storing, installing, operating and maintaining the Product in compliance with any parameters or instructions in any specifications attached to, or incorporated into this Agreement; (iii) compliance with all generally accepted industry standards; (iv) Buyer discontinuing use of the Product after it has, or should have had, knowledge of any defect; (v) Buyer providing prompt written notice of any warranty claims within the warranty period described below; (vi) at Siemens' discretion, Buyer either removing and shipping the Product or non-conforming part thereof to Siemens, at Buyer's expense, or granting Siemens reasonable access to the Products to assess the warranty claims; (vii) Product not having been subjected to accident (including force majeure), alteration, abuse or misuse; and (viii) Buyer not being in default of any payment obligation. (c) Exclusions from Warranty Coverage. The Warranties do not apply to any equipment not provided by Siemens under this Agreement. Any Product that is described as being experimental, developmental, prototype, or pilot is specifically excluded from the Warranties and is provided to Buyer "as is" with no warranties of any kind. Normal wear and tear is excluded, including any expendable items that comprise part of the Product (such as fuses, light bulbs and lamps). Siemens does not warrant or guarantee that any Product will be secure from cyber threats, hacking or similar malicious activity. Products that are networked, connected to the internet, or otherwise connected to computers or other devices must be appropriately protected by Buyer and/or end user against unauthorized access. (d) Warranty Period. Buyer must provide written notice of any claims for breach of Warranties by the earlier of twelve (12) months from initial operation of the Product or eighteen (18) months from shipment. Additionally, absent written notice within the warranty period, any use or possession of the Product after expiration of the warranty period is conclusive evidence that the

Warranties have been satisfied. (e) Remedies. Buyer's sole and exclusive remedies for breach of the Warranties are limited, at Siemens' discretion, to repair or replacement of the Product, or its non-conforming parts, within a reasonable time period, or refund of all or part of the purchase price. The warranty on repaired or replaced parts is limited to the remainder of the original warranty period. Unless Siemens agrees otherwise in writing, Buyer will be responsible for any costs associated with: (i) gaining access to the Product; (ii) removal, disassembly, replacement, installation, or reinstallation of any equipment, materials or structures to permit Siemens to perform its warranty obligations; (iii) transportation to and from the Siemens factory or repair facility; and (iv) damage to equipment components or parts resulting in whole or in part from non-compliance by the Buyer with Article 9(b) or from their deteriorated condition. All exchanged Products replaced under this Warranty will become the property of Siemens. (f) Transferability. The Warranties are only transferable during the warranty period and only to the Product's initial end-user. (g) THE WARRANTIES IN THIS ARTICLE 9 ARE SIEMENS' SOLE AND EXCLUSIVE WARRANTIES AND ARE SUBJECT TO THE LIMITS OF LIABILITY IN ARTICLE 10 BELOW. SIEMENS MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING AND USAGE OF TRADE.

10. LIMITATION OF LIABILITY. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, SIEMENS IS NOT LIABLE, WHETHER BASED IN CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, INDEMNITY OR ANY OTHER LEGAL OR EQUITABLE THEORY, FOR: LOSS OF USE, REVENUE, SAVINGS, PROFIT, INTEREST, GOODWILL OR OPPORTUNITY, COSTS OF CAPITAL, COSTS OF REPLACEMENT OR SUBSTITUTE USE OR PERFORMANCE, LOSS OF INFORMATION AND DATA, LOSS OF POWER, VOLTAGE IRREGULARITIES OR FREQUENCY FLUCTUATION, CLAIMS ARISING FROM BUYER'S THIRD PARTY CONTRACTS, OR FOR ANY TYPE OF INDIRECT, SPECIAL, LIQUIDATED, PUNITIVE, EXEMPLARY, COLLATERAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR ANY OTHER LOSS OR COST OF A SIMILAR TYPE. SIEMENS' MAXIMUM LIABILITY UNDER THIS AGREEMENT IS THE ACTUAL PURCHASE PRICE RECEIVED BY SIEMENS FOR THE PRODUCT THAT GAVE RISE TO THE CLAIM. BUYER AGREES THAT THE EXCLUSIONS AND LIMITATIONS IN THIS ARTICLE 10 WILL PREVAIL OVER ANY CONFLICTING TERMS AND CONDITIONS IN THIS AGREEMENT AND MUST BE GIVEN FULL FORCE AND EFFECT, WHETHER OR NOT ANY OR ALL SUCH REMEDIES ARE DETERMINED TO HAVE FAILED OF THEIR ESSENTIAL PURPOSE. THESE LIMITATIONS OF LIABILITY ARE EFFECTIVE EVEN IF SIEMENS HAS BEEN ADVISED BY BUYER OF THE POSSIBILITY OF SUCH DAMAGES. THE WAIVERS AND DISCLAIMERS OF LIABILITY, RELEASES FROM LIABILITY AND LIMITATIONS ON LIABILITY EXPRESSED IN THIS ARTICLE 10 EXTEND TO SIEMENS' AFFILIATES, PARTNERS, PRINCIPALS, SHAREHOLDERS, DIRECTORS, OFFICERS, EMPLOYEES, SUPPLIERS, AGENTS, AND SUCCESSORS AND ASSIGNS.

11. PATENT AND COPYRIGHT INFRINGEMENT. Siemens will, at its option and expense, defend or settle any suit or proceeding brought against Buyer based on an allegation that any Product or use thereof for its intended purpose constitutes an infringement of any Patent Cooperation Treaty country member's patent or misappropriation of a third party's trade secret or copyright in the country where the Product is delivered by Siemens. Buyer will promptly give Siemens written notice of the suit or proceeding and the authority, information, and assistance needed to defend the claims. Siemens shall have the full and exclusive authority to defend and settle such claim(s) and will pay the damages and costs awarded in any suit or proceeding so defended. Buyer shall not make any admission(s) which might be prejudicial to Siemens and shall not enter into a settlement without Siemens' consent. Siemens is not responsible for any settlement made without its prior written consent. If the Product, or any part thereof, as a result of any suit or proceeding so defended is held to constitute infringement or its use by Buyer is enjoined, Siemens will, at its option and expense, either: (i) procure for Buyer the right to continue using said Product; (ii) replace it with substantially equivalent non-infringing Product; or (iii) modify the Product so it is non-infringing. Siemens will have no duty or obligation under this Article 11 if the Product is: (i) supplied according to Buyer's design or instructions and compliance therewith has caused Siemens to deviate from its normal course of performance; (ii) modified by Buyer or its contractors after delivery; or (iii) combined by Buyer or its contractors with devices, methods, systems or processes not furnished hereunder and by reason of said design, instruction, modification, or combination a suit is brought against Buyer. In addition, if by reason of such design, instruction, modification or combination, a suit or proceeding is brought against Siemens, Buyer must protect Siemens in the same manner and to the same extent that Siemens has agreed to protect Buyer under this Article 11. THIS ARTICLE 11 IS AN EXCLUSIVE STATEMENT OF SIEMENS' DUTIES AND BUYER'S REMEDIES RELATING TO PATENTS, TRADE SECRETS AND COPYRIGHTS, AND DIRECT OR CONTRIBUTORY INFRINGEMENT THEREOF.

12. CONFIDENTIALITY. (a) Both during and after the term of this Agreement, the parties will treat as confidential all information obtained from the disclosing party and all information compiled or generated by the disclosing party under this Agreement for the receiving party, including but not limited to business information, manufacturing information, technical data, drawings, flow charts, program listings, software code, and other software, plans and projections. Neither party may disclose or refer to the work to be performed under this Agreement in any manner that identifies the other party without advance written permission. However, Siemens has the right to share confidential information with its affiliates and subcontractors, provided those recipients are subject to the same confidentiality obligations set forth herein. (b) Nothing in this Agreement requires a party to treat as confidential any information which: (i) is or becomes generally known to the public, without the fault of the receiving party; (ii) is disclosed to the receiving party, without obligation of confidentiality, by a third party having the right to make such disclosure; (iii) was previously known to the receiving party, without obligation of confidentiality, which fact can be demonstrated by means of documents which are in the possession of the receiving party upon the date of this Agreement; (iv) was independently developed by receiving party or its representatives, as evidenced by written records, without the use of discloser's confidential information; or (v) is required to be disclosed by law, except to the extent eligible for special treatment under an appropriate protective order, provided that the party required to disclose by law will promptly advise the originating party of any requirement to make such disclosure to allow the originating party the opportunity to obtain a protective order and assist the originating party in so doing. (c) It is Siemens' policy not to unlawfully or improperly receive or use confidential information, including trade secrets, belonging to others. This policy precludes Siemens from obtaining, directly or indirectly from any employee, contractor, or other individual rendering services to Siemens confidential information of a prior employer, client or any other person which such employee, contractor, or individual is under an obligation not to disclose. Buyer agrees to abide by this policy.

13. COMPLIANCE WITH LAWS. The parties agree to comply with all applicable laws and regulations, including but not limited to those relating to the manufacture, purchase, resale, exportation, transfer, assignment or use of the Products.

14. CHANGES IN WORK. No change will be made to the scope of work unless Buyer and Siemens agree in writing to the change and any resulting price, schedule or other contractual
modifications. If any change to any law, rule, regulation, order, code, standard or requirement impacts Siemens' obligations or performance under this Agreement, Siemens may request a change order for an equitable adjustment in the price and time of performance.

15. NON-WAIVER. Any waiver by a party of strict compliance with this Agreement must be in writing, and any failure by the parties to require strict compliance in one instance will not waive its right to insist on strict compliance thereafter.

16. MODIFICATION OF TERMS. This Agreement may only be modified by a written instrument signed by authorized representatives of both parties.

17. ASSIGNMENT. Neither party may assign all or part of this Agreement, or any rights or obligations under this Agreement, without the prior written consent of the other; but either party may assign its rights and obligations, without recourse or consent, to any parent, wholly owned subsidiary, or affiliate or affiliate's successor organization (whether as a result of reorganization, restructuring or sale of substantially all of a party's assets). However, Buyer shall not assign this Agreement to: a competitor of Siemens; an entity in litigation with Siemens; or an entity lacking the financial capability to satisfy Buyer's obligations. Any assignee expressly assumes the performance of any obligation assigned. Siemens may grant a security interest in this Agreement and/or assign proceeds of this Agreement without Buyer's consent.

18. APPLICABLE LAW AND JURISDICTION. This Agreement is governed by and construed in accordance with the laws of the State of Delaware, without regard to its conflict of laws principles.
The application of the United Nations Convention on Contracts for the International Sale of Goods is excluded. BOTH SIEMENS AND BUYER KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVE ALL RIGHTS TO A JURY TRIAL IN ANY ACTION OR PROCEEDING RELATED IN ANY WAY TO THIS AGREEMENT. Each party agrees that claims and disputes arising out of this Agreement must be decided exclusively in a federal or state court of competent jurisdiction located in a state in which either Buyer or Siemens maintains its principal place of business. Each party submits to the personal jurisdiction of such courts for the purpose of litigating any claims or disputes.

19. SEVERABILITY. If any provision of this Agreement is held invalid, illegal or unenforceable, the remaining provisions will not in any way be affected or impaired. A court may modify the invalid, illegal or unenforceable provision to reflect, as closely as possible, the parties' original intent.

20. EXPORT / IMPORT COMPLIANCE. Buyer acknowledges that Siemens is required to comply with applicable export / import laws and regulations relating to the sale, export, import, transfer,
assignment, disposal and use of the Products, including any export / import license requirements. Buyer agrees that Products will not at any time directly or indirectly be used, exported, imported, sold, transferred, assigned or otherwise disposed of in a manner which will result in non-compliance with any export / import laws and regulations. Siemens' continuing performance hereunder is conditioned on compliance with such export / import laws and regulations at all times.

21. PRODUCT RETURNS. Prior to the return of any Product to Siemens, Buyer must identify the Product or portion thereof and obtain written authorization and shipping instructions from
Siemens. Siemens has the right, in its sole discretion, to permit or reject any such return. Siemens' authorization to return any Product to Siemens does not relieve Buyer of its obligation to pay for such Product. Upon receipt, inspection, and acceptance of the Product by Siemens, Siemens will issue a credit memo to Buyer, less applicable re-stocking fees. Siemens reserves the right to reject any hazardous material.

22. NUCLEAR. Unless expressly authorized in writing by Siemens, the Products must not be used in or in connection with a nuclear facility or application. If Buyer uses any Product in connection
with any nuclear facility or activity, it does so at its own risk and Buyer will indemnify, defend and hold Siemens harmless, and waives and will require its insurers to waive all right of recovery against Siemens for any damage, loss, destruction, injury or death resulting from a "nuclear incident," as defined in the Atomic Energy Act of

1954, as amended, whether or not due to Siemens' negligence. Siemens' consent to Buyer's use of the Product in connection with any nuclear facility or application will be subject to additional terms and conditions that Siemens deems necessary to protect its interests.
23. SURVIVAL. The articles titled "Patent and Copyright Infringement," "Limitation of Liability," "Confidentiality," "Delivery; Title; Risk of Loss," "Export / Import Compliance," and "Nuclear" survive
termination, expiration or cancellation of this Agreement.

“Although we are working hard to meet the delivery and performance dates mentioned above, temporary delays in delivery and service performance concerning us and/or our suppliers/sub-contractors may occur as a result of the Covid-19 Virus. Therefore, the delivery/performance date (mentioned above) is non-binding. The delivery/performance is subject to uninterrupted supply chain, production and logistics and may be postponed. Also, we reserve the right to partial delivery/performance of service. If you have questions, please get in touch with your local Siemens contact.”

 **WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov**

PONTON INDUSTRIES, INC.
SINCE 1970

22901 Savi Ranch Pkwy, Suite B
Yorba Linda, CA 92887
Tel: (714) 998-9073

Fax: (714) 998-9083
info@pontonind.com
www.pontonind.com

QUOTE#: PONQ41873

DATE: Sep 30, 2020

Your Local Representative for ...

Plasti-Fab

~Featured Item~

FREE LUNCH while you learn! Perfect for Monthly Training or Safety Meetings. Learning has never been so tasteful! It's easy just arrange with Ponton Industries to come out to your facility and provide a technical seminar on one or more of our principals. We provide the lunch! Call or email today!

Sold to:

AECOM
Yeimy Ojeda
2400 Professional Parkway
Santa Maria, CA 93455

Phone: (805) 938-0855
Email: yeimy.ojeda@aecom.com

Quoted by	Est. Lead Time	F.O.B	Ship Via	Terms
Diane Blackburn	6-8 Weeks After Drawing Approval	Factory	Best Way	Net 30 OAC

ADDRESS PO TO: Ershigs - Plastifab division

Line No	Product Details	Qty	Unit Price	Ext. Price
1.	**Plasti-Fab Flume 12" Palmer-Bowlus Flume**	1	$ 1,186.00	$ 1,186.00

1 12" Palmer-Bowlus flume w/ Approach 4D+1 with:
Composite FRP 1/4" thickness
White gel coated interior and exterior
Spreaders and anchor clips
Integral staff gauge marked in feet and centimeters
Adjustable stainless steel ultrasonic mounting bracket

Adapters not included.

Sub Total	$ 1,186.00
Tax	$ 0.00
Adjustment	$ 0.00
Grand Total	**$ 1,186.00**

ADDRESS PO TO: Ershigs - Plastifab division

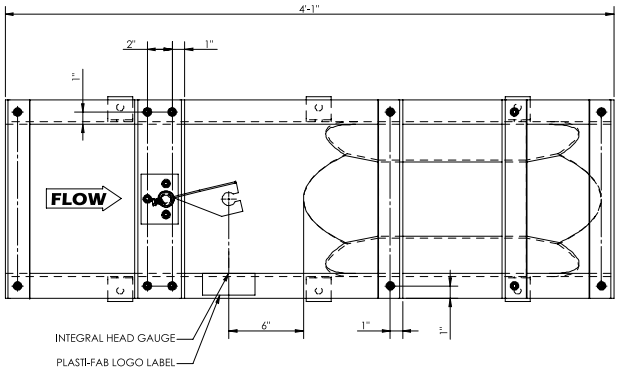
Notes:

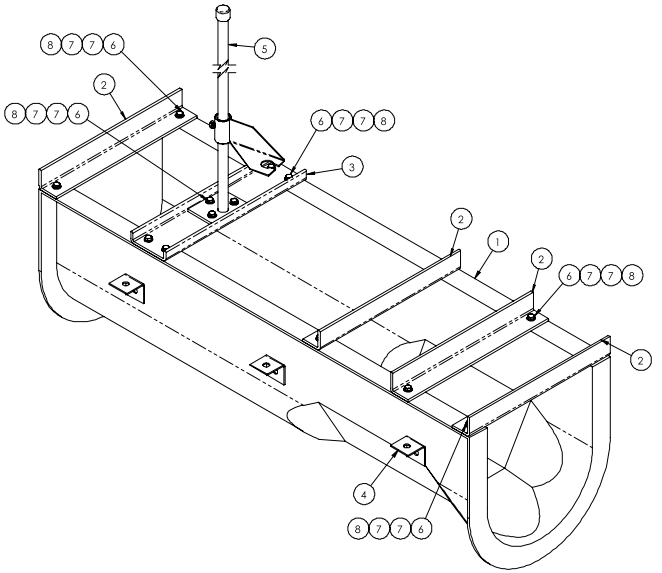
Terms and Conditions

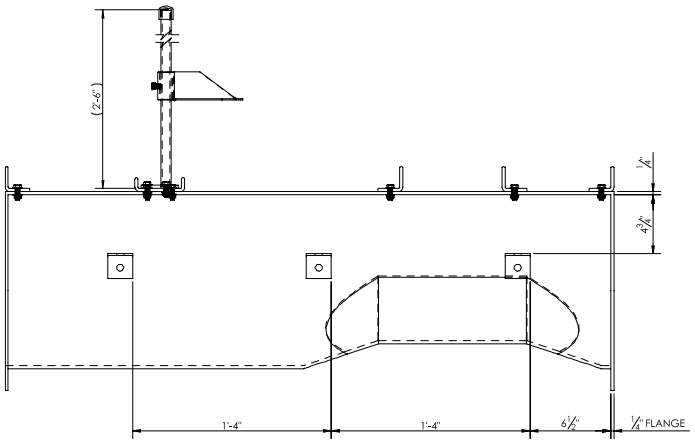
Prices are firm for 90 days by referencing above Quote Number. Lead times do not include "transit time". Taxes and Shipping are not included in this quote. Proof of non-taxable status is required if applicable. Credit reviewed prior to order entry and will be issued if approved. Payment terms are EITHER 1% Discount Net 15, Net 30, 1% Adder Net 45, or 2% Adder Net 60. Plasti-Fab's Standard Terms & Conditions will apply to this order. Standard warranty is 24 months from date of shipment from factory.

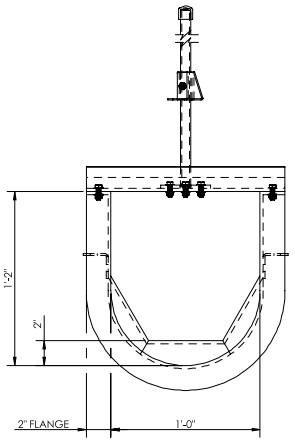
WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

REVISIONS				
REV.	DESCRIPTION	NCR/ECO NO.	REVISED BY	DATE
A	INITIAL RELEASE		T. BAILEY	7/13/2011
B	GENERAL REVISION; UPDATED DESCRIPTION & PART NUMBER FOR SONIC BRACKET		T. BAILEY	11/10/2013









BOM TABLE					
ITEM NO.	002/QTY	DESCRIPTION	MATERIAL	LENGTH	PART NUMBER
1	1	12" PALMER-BOWLUS FLUME	FRP (HLU, POLYESTER)		PB012-00
2	4	EQUAL LEG ANGLE, 2" X 2" X 1/4"	FRP (PULTRUDED, POLYESTER)	1'-4"	312-0001
3	1	CHANNEL, 4" X 1 1/8" X 1/4"	FRP (PULTRUDED, POLYESTER)	1'-4"	313-0001
4	6	2" KEYTAB CLIP W/ 9/16" HOLES	A36	-	410-0007
5	1	SONIC BRACKET ASSEMBLY, OPEN FACE, 30" HIGH	T-304 S/S		1000-0001
6	15	HHCS, 5/16-18UNC X 1"	T-304 S/S	-	661-0012
7	30	5/16 FLAT WASHER	T-304 S/S	-	664-0029
8	15	HEX NUT, 5/16-18UNC	T-304 S/S	-	663-0001

NOTES:

1. THE MINIMUM THICKNESS IS 1/4" FRP (FIBERGLASS REINFORCED PLASTIC).
2. THE INSIDE SURFACE IS SMOOTH WHITE GEL COAT.
3. THE OUTSIDE SUREFACE IS WHITE GEL COAT.
4. MINIMUM GLASS CONTENT IS 30%. EXCLUSIVE OF RESIN RICH SURFACES.
5. THE HEAD GAGE (100THS OF A FOOT & CENTIMETERS) IS MOLDED INTO THE SIDE OF THE FLUME.
6. PLACE SMALL FLOW DIRECTION ARROW DECAL ON BOTTOM OF FLUME @ APPROXIMATELY 3' FROM INLET END.
7. PLACE PLASTI-FAB LOGO LABEL ON TOP FLANGE AT APPROXIMATE CENTER-LINE OF MEASUREMENT POINT OR GAGE LOCATION.
8. RESIN: CCP STYPOL C1-1200-22.

Name	Company
Signature	Date

Job No.

PROJECT: 12" PALMER-BOWLUS FLUME STANDARDS TUALATIN, OREGON USA

CUSTOMER: PLASTI-FAB, INC.

REF: -

P.O. NO: -

Plasti-Fab
TUALATIN, OR.

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET/INCHES

TOLERANCES UNLESS OTHERWISE SPECIFIED.	
≤ 6'-0"	± 1/16"
> 6'-0" AND ≤ 25'-0"	± 1/8"
> 25'-0"	± 1/2"

PLASTI-FAB PART NUMBER:

MATERIAL INFORMATION: -

SPECIAL FINISH REQUIREMENT:

	NAME:	DATE:
DRAWN BY:	T. BAILEY	5/16/2011
CHECKED BY:		

TITLE: 12" PALMER-BOWLUS FLUME WITH APPROACH & SONIC BRACKET

SIZE D | **DRAWING NO.:** FLUM-PB012-002 | **REV.** B

WEIGHT: 39 | **SCALE:** 1:5

PONTON INDUSTRIES, INC.
SINCE 1970

22901 Savi Ranch Pkwy, Suite B
Yorba Linda, CA 92887
Tel: (714) 998-9073

Fax: (714) 998-9083
info@pontonind.com
www.pontonind.com

QUOTE#: PONQ41866-1

DATE: Oct 13, 2020

Your Local Representative for ...

HACH®

~Featured Item~

Why Warranty Plus? Lower your long-term costs, prolong the life of your product, and ensure consistent reporting. Partner with Hach for service to be confident that your instruments and operations are well maintained and functioning smoothly. Your Service Plus Extended Warranty includes a lot! Ask us!!

Sold to:

AECOM
Yeimy Ojeda
2400 Professional Parkway
Santa Maria, CA 93455

Phone: (805) 938-0855
Email: yeimy.ojeda@aecom.com

Quoted by	Est. Lead Time	F.O.B	Ship Via	Terms
Diane Blackburn	3-4 Weeks ARO	Factory	Best Way	Net 30 OAC

ADDRESS PO TO: Hach, 5600 Lindbergh Drive, Lovelend, CO, 80538

Line No	Product Details	Qty	Unit Price	Ext. Price
1.	ee FL1500 LOGGER, 10-30VDC, BASIC LFV001.99.D2NXH	1	$ 4,049.00	$ 4,049.00
2.	US9001, ULTRASONIC SENSOR, DOWNLOOKING 9487100	1	$ 1,302.00	$ 1,302.00
			Sub Total	$ 5,351.00
			Tax	$ 0.00
			Adjustment	$ 0.00
			Grand Total	**$ 5,351.00**

ADDRESS PO TO: Hach, 5600 Lindbergh Drive, Lovelend, CO, 80538

Notes:

Terms and Conditions

All purchases of Hach Company products and/or services are expressly and without limitation subject to Hach Company's Terms & Conditions of Sale ("Hach TCS"), incorporated herein by reference and published on Hach Company's website at www.hach.com/terms. Hach TCS are contained directly and/or by reference in Hach's offer, order acknowledgment, and invoice documents. The first of the following acts constitutes an acceptance of Hach's offer and not a counteroffer and creates a contract of sale "Contract" in accordance with the Hach TCS: (i) Buyer's issuance of a purchase order document against Hach's offer; (ii) acknowledgement of Buyer's order by Hach; or (iii) commencement of any performance by Hach pursuant to Buyer's order. Provisions contained in Buyer's purchase documents (including electronic commerce interfaces) that materially alter, add to or subtract
from the provisions of the Hach TCS are not part of the Contract.

Due to International regulations, a U.S. Department of Commerce Export License may be required. Hach reserves the right to approve specific shipping agents. Wooden boxes suitable for ocean shipment are extra. Specify final destination to ensure proper documentation and packing suitable for International transport. In addition, Hach may require : 1). A statement of intended end-use; 2).Certification that the intended end-use does not relate to proliferation of weapons of mass destruction (prohibited nuclear end use, chemical / biological weapons, missile technology); and 3). Certification that the goods will not be diverted contrary to U.S. law.

ORDER TERMS:
Terms are Subject to Credit Review
Please reference the quotation number on your purchase order.

Sales tax is not included. Applicable sales tax will be added to the invoice based on the U.S. destination, if applicable provide a resale/exemption certificate. Shipments will be prepaid and added to invoices unless otherwise specified.
Equipment quoted operates with standard U.S. supply voltage. Hach standard terms and conditions apply to all sales.
Additional terms and conditions apply to orders for service partnerships.
Prices do not include delivery of product. Reference attached Freight Charge Schedule and Collect Handling Fees. Standard lead time is 30 days.
This Quote is good for a one time purchase.

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

ADVANTAGES OF WORKING WITH HACH

Technical Support	**Pick&Ship™**	**Hach ServicePlus® Programs**
Provides post-sale instrumentation and application support ✓ Hach's highly skilled Technical Support staff is dedicated to helping you resolve technical issues before, during and after the sale. ✓ Available via phone, e-mail, or live online chat at Hach.com! ✓ Toll-free phone: 800-227-4224 ✓ E-mail: techhelp@hach.com www.Hach.com	Pick&Ship™ Program offers a better way to keep your supplies in stock ✓ **Convenience** of one purchase order for the entire year ✓ **Flexibility** to change, cancel or create new orders ✓ **Savings** from locking in prices & thus avoiding price surges and rush charges ✓ **Peace of mind** with automatic, reliable shipments just as you need them www.Hach.com/pickandship	Instrument Protection and Service ✓ Savings of more than 20% versus a "pay as you go" approach ✓ Freedom from maintenance ✓ Worry-free compliance with Hach's certification ✓ Fixed maintenance budget for the entire year www.hach.com/service-contracts

ADVANTAGES OF SIMPLIFIED SHIPPING AND HANDLING

Safe & Fast Delivery	**Save Time – Less Hassle**	**Save Money**
✓ Receive tracking numbers on your order acknowledgement ✓ Hach will assist with claims if an order is lost or damaged in shipment	✓ No need to set up deliveries for orders or to schedule pickup ✓ Hach ships order as product is available, at no additional charge, when simplified shipping and handling is used.	✓ No additional invoice to process – save on time and administrative costs ✓ Only pay shipping once, even if multiple shipments are required

STANDARD SIMPLIFIED SHIPPING AND HANDLING CHARGES 1, 2, 3				**Pricing Effective 9/1/2018**		**Collect 4**
Total Price of Merchandise Ordered	Standard Surface (Mainland USA)	Second Day Delivery (Mainland USA)	Next Day Delivery (Mainland USA)	Second Day Delivery (Alaska & Hawaii)	Next Day Delivery (Alaska & Hawaii)	Handling Fee Effective 4/11/2020
$0.00 - $49.99	$17.99	$44.99	$83.90	$72.21	$137.27	$13.47
$50.00 - $149.99	$28.59	$84.24	$159.00	$120.84	$229.73	$13.85
$150.00 - $349.99	$50.22	$133.98	$272.91	$169.07	$329.04	$14.72
$350.00 - $649.99	$69.95	$182.91	$363.75	$228.65	$442.76	$15.48
$650.00 - $949.99	$88.16	$191.13	$399.98	$236.66	$446.10	$16.04
$950.00 - $1,999.99	$110.91	$235.85	$498.69	$280.67	$543.06	$17.52
$2,000.00 - $3,99	$128.04	$250.64	$513.44	$291.54	$554.54	$20.22
$4,000.00 - $5,999.99	$148.44	$260.33	$538.23	$292.89	$570.53	$24.90
$6,000.00 - $7,999.99	$175.40	$296.40	$612.84	$323.07	$622.86	$29.04
$8,000.00 - $9,999.99	$200.15	$336.83	$658.19	$360.41	$683.52	$33.51
Over $10,000	2.5% of Net Order Value	4.5% of Net Order Value	7% of Net Order Value	4.5% of Net Order Value	7% of Net Order Value	$51.84

1 Shipping & Handling charges shown are only applicable to orders billing and shipping to U.S. destinations. Shipping & Handling charges will be prepaid and added to invoice. Shipping & Handling for the Reagent Delivery Program is charged on each shipment release and is based on the total price of each shipment release. Shipping & Handling charges are subject to change without notice.
2 Additional Shipping & Handling charges will be applied to orders containing bulky and/or especially heavy orders. Refrigerated and all weather Samplers do not qualify for simplified Shipping & Handling charges, and are considered heavy products. Dissolved Oxygen Sensors can be damaged if exposed to temps below freezing, causing sensor failure. Must be shipped over night or 2nd day air during the cold weather months.
3 Orders shipping to Alaska or Hawaii: Additional Shipping & Handling charges may be applied at time of order processing. Second Day and Next Day delivery is not available to all destinations.
4 Hach Company will assess a collect handling fee on orders with collect shipping terms. This handling fee covers the additional costs that Hach Company incurs from processing and managing collect shipments.

SALES TAX
Sales Tax is not included in the attached quotation. Applicable sales and usage taxes will be added to your invoice, at the time of order, based on

U.S. destination of goods, unless a valid resale/exemption certificate for destination state is provided to the above address or fax number, attention of the Tax Dept

TERMS & CONDITIONS OF SALE FOR HACH COMPANY PRODUCTS AND SERVICES

This document sets forth the Terms & Conditions of Sale for goods manufactured and/or supplied, and services provided, by Hach Company of Loveland, Colorado ("Hach") and sold to the original purchaser thereof ("Buyer"). Unless otherwise specifically stated herein, the term "Hach" includes only Hach Company and none of its affiliates. Unless otherwise specifically stated in a previously-executed written purchase agreement signed by authorized representatives of Hach and Buyer, these Terms & Conditions of Sale establish the rights, obligations and remedies of Hach and Buyer which apply to this offer and any resulting order or contract for the sale of Hach's goods and/or seirvices ("Products").

1. APPLICABLE TERMS & CONDITIONS: These Terms & Conditions of Sale are contained directly and/or by reference in Hach's offer, order acknowledgment, and invoice documents. The first of the following acts constitutes an acceptance of Hach's offer and not a counteroffer and creates a contract of sale ("Contract") in accordance with these Terms & Conditions: (i) Buyer's issuance of a purchase order document against Hach's offer; (ii) acknowledgement of Buyer's order by Hach; or (iii) commencement of any performance by Hach pursuant to Buyer's order. Provisions contained in Buyer's purchase documents (including electronic commerce interfaces) that materially alter, add to or subtract from the provisions of these Terms & Conditions of Sale are not a part of the Contract.

2. CANCELLATION: Buyer may cancel goods orders subject to fair charges for Hach's expenses including handling, inspection, restocking, freight and invoicing charges as applicable, provided that Buyer returns such goods to Hach at Buyer's expense within 30 days of delivery and in the same condition as received. Buyer may cancel service orders on ninety (90) day's prior written notice and refunds will be prorated based on the duration of the service plan. Inspections and re-instatement fees may apply upon cancellation or expiration of service programs. Seller may cancel all or part of any order prior to delivery without liability if the order includes any Products that Seller determines may not comply with export, safety, local certification, or other applicable compliance requirements.

3. DELIVERY: Delivery will be accomplished FCA Hach's facility located in Ames, Iowa or Loveland, Colorado, United States (Incoterms 2010). For orders having a final destination within the U.S., legal title and risk of loss or damage pass to Buyer upon transfer to the first carrier. For orders having a final destination outside the U.S., legal title and risk of loss or damage pass to Buyer when the Products enter international waters or airspace or cross an international frontier. Hach will use commercially reasonable efforts to deliver the Products ordered herein within the time specified on the face of this Contract or, if no time is specified, within Hach's normal lead-time necessary for Hach to deliver the Products sold hereunder. Upon prior agreement with Buyer and for an additional charge, Hach will deliver the Products on an expedited basis. Standard service delivery hours are 8 am – 5 pm Monday through Friday, excluding holidays.

4. INSPECTION: Buyer will promptly inspect and accept any Products delivered pursuant to this Contract after receipt of such Products. In the event the Products do not conform to any applicable specifications, Buyer will promptly notify Hach of such nonconformance in writing. Hach will have a reasonable opportunity to repair or replace the nonconforming product at its option. Buyer will be deemed to have accepted any Products delivered hereunder and to have waived any such nonconformance in the event such a written notification is not received by Hach within thirty (30) days of delivery.

5. PRICES & ORDER SIZES: All prices are in U.S. dollars and are based on delivery as stated above. Prices do not include any charges for services such as insurance; brokerage fees; sales, use, inventory or excise taxes; import or export duties; special financing fees; VAT, income or royalty taxes imposed outside the U.S.; consular fees; special permits or licenses; or other charges imposed upon the production, sale, distribution, or delivery of Products. Buyer will either pay any and all such charges or provide Hach with acceptable exemption certificates, which obligation survives performance under this Contract. Hach reserves the right to establish minimum order sizes and will advise Buyer accordingly.

6. PAYMENTS: All payments must be made in U.S. dollars. For Internet orders, the purchase price is due at the time and manner set forth at www.hach.com. Invoices for all other orders are due and payable NET 30member state of the E.U.) that has issued as of the delivery date, solely by reason of the sale or normal use of any Products sold to Buyer hereunder and from reasonable expenses incurred by Buyer in defense of such suit if Hach does not undertake the defense thereof, provided that Buyer promptly notifies Hach of such suit and offers Hach either (i) full and exclusive control of the defense of such suit when Products of Hach only are involved, or (ii) the right to participate in the defense of such suit when products other than those of Hach are also involved. Hach's warranty as to use patents only applies to infringement arising solely out of the inherent operation of the Products according to their applications as envisioned by Hach's specifications. In case the Products are in such suit held to constitute infringement and the use of the Products is enjoined, Hach will, at its own expense and at its option, either procure for Buyer the right to continue using such Products or replace them with non-infringing products, or modify them

DAYS from date of the invoice without regard to delays for inspection or transportation, with payments to be made by check to Hach at the above address or by wire transfer to the account stated on the front of Hach's invoice, or for customers with no established credit, Hach may require cash or credit card payment in advance of delivery. In the event payments are not made or not made in a timely manner, Hach may, in addition to all other remedies provided at law, either: (a) declare Buyer's performance in breach and terminate this Contract for default; (b) withhold future shipments until delinquent payments are made; (c) deliver future shipments on a cash-with- order or cash-in-advance basis even after the delinquency is cured; (d) charge interest on the delinquency at a rate of 1-1/2% per month or the maximum rate permitted by law, if lower, for each month or part thereof of delinquency in payment plus applicable storage charges and/or inventory carrying charges; (e) repossess the Products for which payment has not been made; (f) recover all costs of collection including reasonable attorney's fees; or (g) combine any of the above rights and remedies as is practicable and permitted by law. Buyer is prohibited from setting off any and all monies owed under this from any other sums, whether liquidated or not, that are or may be due Buyer, which arise out of a different transaction with Hach or any of its affiliates. Should Buyer's financial responsibility become unsatisfactory to Hach in its reasonable discretion, Hach may require cash payment or other security. If Buyer fails to meet these requirements, Hach may treat such failure as reasonable grounds for repudiation of this Contract, in which case reasonable cancellation charges shall be due Hach. Buyer grants Hach a security interest in the Products to secure payment in full, which payment releases the security interest but only if such payments could not be considered an avoidable transfer under the U.S. Bankruptcy Code or other applicable laws. Buyer's insolvency, bankruptcy, assignment for the benefit of creditors, or dissolution or termination of the existence of Buyer, constitutes a default under this Contract and affords Hach all the remedies of a secured party under the U.C.C., as well as the remedies stated above for late payment or non-payment. See ¶20 for further wire transfer requirements.

7. LIMITED WARRANTY: Hach warrants that Products sold hereunder will be free from defects in material and workmanship and will, when used in accordance with the manufacturer's operating and maintenance instructions, conform to any express written warranty pertaining to the specific goods purchased, which for most Hach instruments is for a period of twelve (12) months from delivery. Hach warrants that services furnished hereunder will be free from defects in workmanship for a period of ninety (90) days from the completion of the services. Parts provided by Hach in the performance of services may be new or refurbished parts functioning equivalent to new parts. Any non-functioning parts that are repaired by Hach shall become the property of Hach. No warranties are extended to consumable items such as, without limitation, reagents, batteries, mercury cells, and light bulbs. All other guarantees, warranties, conditions and representations, either express or implied, whether arising under any statute, law, commercial usage or otherwise, including implied warranties of merchantability and fitness for a particular purpose, are hereby excluded. The sole remedy for Products not meeting this Limited Warranty is replacement, credit or refund of the purchase price. This remedy will not be deemed to have failed of its essential purpose so long as Hach is willing to provide such replacement, credit or refund.

8. INDEMNIFICATION: Indemnification applies to a party and to such party's successors-in-interest, assignees, affiliates, directors, officers, and employees ("Indemnified Parties"). Hach is responsible for and will defend, indemnify and hold harmless the Buyer Indemnified Parties against all losses, claims, expenses or damages which may result from accident, injury, damage, or death due to Hach's breach of the Limited Warranty. Buyer is responsible for and will defend, indemnify and hold harmless the Hach Indemnified Parties against all losses, claims, expenses or damages which may result from accident, injury, damage, or death due to negligence, misuse or misapplication of any goods or services, violations of law, or the breach of any provision of this Contract by the Buyer, its affiliates, or those employed by, controlled by or in privity with them. Buyer's workers' compensation immunity, if any, does not preclude or limit its indemnification obligations.

9. PATENT PROTECTION: Subject to all limitations of liability provided herein, Hach will, with respect to any Products of Hach's design or manufacture, indemnify Buyer from any and all damages and costs as finally determined by a court of competent jurisdiction in any suit for infringement of any U.S.

so they become non-infringing,or remove the Products and refund the purchase price (prorated for depreciation) and the transportation costs thereof. The foregoing states the entire liability of Hach for patent infringement by the Products. Further, to the same extent as set forth in Hach's above obligation to Buyer, Buyer agrees to defend, indemnify and hold harmless Hach for patent infringement related to (x) any goods manufactured to the Buyer's design, (y) services provided in accordance with the Buyer's instructions, or (z) Hach's Products when used in combination with any other devices, parts or software not provided by Hach hereunder.

10. TRADEMARKS AND OTHER LABELS: Buyer agrees not to remove or alter
any indicia of manufacturing origin or patent numbers contained on or within the Products, including without limitation the serial numbers or trademarks on nameplates or cast, molded or machined components.

11. SOFTWARE AND DATA. All licenses to Hach's separately-provided software products are subject to the separate software license greement(s) accompanying the software media. In the absence of such express licenses and for all other software, Hach grants Buyer only a personal, non-exclusive license to access and use the software provided by Hach with Products purchased hereunder solely as necessary for Buyer to enjoy the benefit of the Products. A portion of the software may contain or consist of open source software, which Buyer may use under the terms and conditions of the specific license under which the open source software is distributed. Buyer agrees that it will be bound by all such license agreements. Title to software remains with the applicable licensor(s). In connection with Buyer's use of Products, Hach may obtain,receive, or collect data or information, including data produced by the Products.In such cases, Buyer grants Hach a non-exclusive, worldwide, royalty-free,perpetual, non-revocable license to use, compile, distribute, display, store,process, reproduce, or create derivative works of such data, or to aggregate such data for use in an anonymous manner, solely to facilitate marketing, sales and R&D activities of Hach and its affiliates.

12. PROPRIETARY INFORMATION; PRIVACY: "Proprietary Information"means any information, technical data or know-how in whatever form,whether documented, contained in machine readable or physical components,mask works or artwork, or otherwise, which Hach considers proprietary,including but not limited to service and maintenance manuals. Buyer and its customers, employees and agents will keep confidential all such Proprietary Information obtained directly or indirectly from Hach and will not transfer or disclose it without Hach's prior written consent, or use it for the manufacture,procurement, servicing or calibration of Products or any similar products, or cause such products to be manufactured, serviced or calibrated by or procured from any other source, or reproduce or otherwise appropriate it. All such Proprietary Information remains Hach's property. No right or license is granted to Buyer or its customers, employees or agents, expressly or by implication,with respect to the Proprietary Information or any patent right or other proprietary right of Hach, except for the limited use licenses implied by law.Hach will manage Customer's information and personal data in accordance with its Privacy Policy, located at http://www.hach.com/privacypolicy.

13. CHANGES AND ADDITIONAL CHARGES: Hach reserves the right to make design changes or improvements to any products of the same general class as Products being delivered hereunder without liability or obligation to incorporate such changes or improvements to Products ordered by Buyer unless agreed upon in writing before the Products' delivery date. Services which must be performed as a result of any of the following conditions are subject to additional charges for labor, travel and parts: (a) equipment alterations not authorized in writing by Hach; (b) damage resulting from improper advantage, with respect to any of Buyer's activities related to this Contract. Hach asks Buyer to "Speak Up!" if aware of any violation of law,regulation or our Standards of Conduct ("SOC") in relation to this Contract. See http://danaher.com/integrity-and-compliance and www.danaherintegrity.com for a copy of the SOC and for access to our Helpline portal.

17. RELATIONSHIP OF PARTIES: Buyer is not an agent or representative of Hach and will not present itself as such under any circumstances unless and to the extent it has been formally screened by Hach's compliance department and received a separate duly-authorized letter from Hach setting forth the scope and limitations of such authorization.

18. FORCE MAJEURE: Hach is excused from performance of its obligations under this Contract to the extent caused by acts or omissions that are beyond its control of, including but not limited to Government embargoes,blockages,seizures or freeze of assets, delays or refusals to grant an export or import license or the suspension or revocation thereof, or any other acts of any Government; fires, floods, severe weather conditions, or any other acts of God;quarantines; labor strikes or lockouts; riots; strife; insurrections; civil disobedience or acts of criminals or terrorists; war; material shortages or delays in deliveries to Hach by third parties. In the event of the existence of any force majeure circumstances, the period of time for delivery, payment terms and
payments under any letters of credit will be extended for a period of time equal
to the period of delay. If the force majeure circumstances extend for six months,
Hach may, at its option, terminate this Contract without penalty and without being deemed in default or in breach thereof.

patent (or European patent for Products that Hach sells to Buyer for end use in aimproper use or handling, accident, neglect, power surge, or operation in an environment or manner in which the instrument is not designed to operate oris not in accordance with Hach's operating manuals; (c) the use of parts or accessories not provided by Hach; (d) damage resulting from acts of war,terrorism or nature; (e) services outside standard business hours; (f) site prework not complete per proposal; or (g) any repairs required to ensure equipment meets manufacturer's specifications upon activation of a service agreement.

14. SITE ACCESS / PREPARATION / WORKER SAFETY / ENVIRONMENTAL COMPLIANCE: In connection with services provided by Hach, Buyer agrees to permit prompt access to equipment. Buyer assumes full responsibility to backup
or otherwise protect its data against loss, damage or destruction before services are performed. Buyer is the operator and in full control of its premises,including those areas where Hach employees or contractors are performing service, repair and maintenance activities. Buyer will ensure that all necessary
measures are taken for safety and security of working conditions, sites and installations during the performance of services. Buyer is the generator of any resulting wastes, including without limitation hazardous wastes. Buyer is solely responsible to arrange for the disposal of any wastes at its own expense. Buyer
will, at its own expense, provide Hach employees and contractors working on Buyer's premises with all information and training required under applicable safety compliance regulations and Buyer's policies. If the instrument to
be serviced is in a Confined Space, as that term is defined under OSHA regulations,
Buyer is solely responsible to make it available to be serviced in an unconfined space. Hach service technicians will not work in Confined Spaces. In the event that a Buyer requires Hach employees or contractors to attend safety or compliance training programs provided by Buyer, Buyer will pay Hach the standard hourly rate and expense reimbursement for such training attended.
The attendance at or completion of such training does not create or expand any warranty or obligation of Hach and does not serve to alter, amend, limit or supersede any part of this Contract.

15. LIMITATIONS ON USE: Buyer will not use any Products for any purpose other than those identified in Hach's catalogs and literature as intended uses.Unless Hach has advised the Buyer in writing, in no event will Buyer use any Products in drugs, food additives, food or cosmetics, or medical applications for humans or animals. In no event will Buyer use in any application any Product
that requires FDA 510(k) clearance unless and only to the extent the Product has such clearance. Buyer will not sell, transfer, export or re-export any Hach Products or technology for use in activities which involve the design,development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor use Hach Products or technology in any facility which
engages in activities relating to such weapons. Unless the "ship-to" address is in California, U.S.A., the Products are not intended for sale in California and may lack markings required by California Proposition 65; accordingly, unless Buyer has ordered Products specifying a California ship-to address, Buyer will not sell
or deliver any Hach Products for use in California. Any warranty granted by Hach is void if any goods covered by such warranty are used for any purpose not permitted hereunder.

16. EXPORT AND IMPORT LICENSES AND COMPLIANCE WITH LAWS:
Unless otherwise specified in this Contract, Buyer is responsible for obtaining any required export or import licenses. Buyer will comply with all laws and regulations applicable to the installation or use of all Products, including applicable import and export control laws and regulations of the U.S., E.U. and any other country having proper jurisdiction, and will obtain all necessary export licenses in connection with any subsequent export, re-export, transfer and use of all Products and technology delivered hereunder. Buyer will comply with all local, national, and other laws of all jurisdictions globally relating to anti-corruption, bribery, extortion, kickbacks, or similar matters which are applicable to Buyer's business activities in connection with this Contract,including but not limited to the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"). Buyer agrees that no payment of money or provision of anything of value will be offered, promised, paid or transferred, directly or indirectly, by any person or entity, to any government official, government employee, or employee of any company owned in part by a government, political party, political party official, or candidate for any government office or political party office to induce such organizations or persons to use their authority or

19. NON ASSIGNMENT AND WAIVER: Buyer will not transfer or assign this Contract or any rights or interests hereunder without Hach's prior written consent. Failure of either party to insist upon strict performance of any
provision of this Contract, or to exercise any right or privilege contained herein,
or the waiver of any breach of the terms or conditions of this Contract will not be construed as thereafter waiving any such
terms,conditions,rights,or privileges, and the same will continue and remain in force and effect as if no waiver had occurred.

20. WIRE TRANSFERS: Buyer and Hach both recognize that there is a risk of
wire fraud when individuals impersonating a business demand immediate payment under new wire transfer instructions. To avoid this risk, Buyer must verbally confirm any new or changed wire transfer instructions by calling Hach at +1-970-663-1377 and speaking with Hach's Credit Manager before transferring any monies using the new wire instructions. Both parties agree that they will not institute wire transfer instruction changes and require immediate payment under the new instructions but will instead provide a ten (10) day grace period to verify any wire transfer instruction changes before any outstanding payments are due using the new instructions.

21. LIMITATION OF LIABILITY: None of the Hach Indemnified Parties will be liable to Buyer under any circumstances for any special, treble, incidental or
consequential damages, including without limitation, damage to or loss of property other than for the Products purchased hereunder; damages incurred in installation, repair or replacement; lost profits, revenue or opportunity; loss of use; losses resulting from or related to downtime of the products
or inaccurate measurements or reporting; the cost of substitute products;
or claims of Buyer's customers for such damages, howsoever caused,
and whether based on warranty, contract, and/or tort (including negligence, strict liability or otherwise). The total liability of the Hach Indemnified Parties arising out of the performance or nonperformance hereunder or Hach's obligations in connection with the design, manufacture, sale, delivery, and/or use of Products will in no circumstance exceed in the aggregate a sum equal to twice the amount actually paid to Hach for Products delivered hereunder.

22. APPLICABLE LAW AND DISPUTE RESOLUTION: The construction,interpretation and performance hereof and all transactions hereunder shall be governed by the laws of the State of Colorado, without regard to its principles or laws regarding conflicts of laws. If any provision of this Contract violates any Federal, State or local statutes or regulations of any countries having jurisdiction of this transaction, or is illegal for any reason, said provision shall be self-deleting without affecting the validity of the remaining provisions.Unless otherwise specifically agreed upon in writing between Hach and Buyer,any dispute relating to this Contract which is not resolved by the parties shall be adjudicated in order of preference by a court of competent jurisdiction (i) in the State of Colorado, U.S.A. if Buyer has minimum contacts with Colorado
influence to obtain or retain an improper business advantage for Buyer or for Hach, or which otherwise constitute or have the purpose or effect
of public or commercial bribery, acceptance of or acquiescence in extortion,kickbacks or other unlawful or improper means of obtaining business or anyand the U.S., (ii) elsewhere in the U.S. if Buyer has minimum contacts with the U.S. but not Colorado, or (iii) in a neutral location if Buyer does not
have minimum contacts with the United States.

23. ENTIRE AGREEMENT & MODIFICATION: These Terms & Conditions of Sale constitute the entire agreement between the parties and supersede any prior agreements or representations, whether oral or written. No change to or Modification of these Terms & Conditions shall be binding upon Hach unless in a written instrument specifically referencing that it is amending these Terms & Conditions of Sale and signed by an authorized representative of Hach. Hach rejects any additional or inconsistent Terms & Conditions of Sale offered by Buyer at any time, whether or not such terms or conditions materially alter the Terms & Conditions herein and irrespective of Hach's acceptance of Buyer's
order for the described goods and services

HACH US9000 ULTRASONIC SENSOR SERIES:

Flow Monitoring & Level Alarming

Applications

- Wastewater
- Collection Systems
- Industrial Water

US9001 Down-Looking Ultrasonic Sensor

US9003 In-Pipe Ultrasonic Sensor

Hach US9001B Ultrasonic Sensor with Ballast

More ultrasonic sensor options to solve more flow monitoring challenges.

The Hach US9000 Ultrasonic Sensor Series provides you with a variety of independent level-measuring capabilities, giving you even more ways to ensure your flow data collection is consistent and accurate. These state-of-the-art non-contact sensors are excellent for both level measurement and alarming, or paired with a submerged AV sensor for redundant level measurement.

Hach US9001 Down-Looking Ultrasonic Sensor

Mounted perpendicular to the flow surface, the Hach US9001 Down-Looking Ultrasonic Sensor is often used with a hydraulic structure to determine flow, including weirs, flumes and configurable level-area and head-flow tables.

Hach US9001B Ultrasonic Sensor with Ballast

The US9001B resourcefully takes the Down-Looking Ultrasonic Sensor and adds cable-straightening ballast to create a highly reliable SSO and CSO alarming solution when coupled with a wireless Hach FL900 Series Flow Logger. And with highly accessible top-side mounting options that don't require confined space entry, installation and maintenance is quick and simple, making this an extremely economical approach. So now you can capture data from more sites in your network without crushing your budget. Simply use the proven accuracy of the FLO-DAR® AV Sensor to monitor your critical primary sites, and then employ this more economical alarming option at secondary locations to smartly expand your system awareness and still live within your financial plan. Plus, you can also capture additional flow data using Manning's equation.

Hach US9003 In-Pipe Ultrasonic Sensor

Configured to eliminate inherent ultrasonic deadband, the Hach US9003 provides accurate measurements even in near-full pipe conditions. This clever approach places the transducer parallel to the flow surface within an engineered enclosure that contains a 45° reflector. As a result, you can effectively collect flow level data in tight open-channel scenarios while greatly reducing this non-contact sensor's chances of fouling.

Constant Awareness

Combined with a wireless Hach FL900 Series Flow Logger to transmit data and alarms right to your desktop or mobile phone, these ultrasonic monitoring and alarming solutions from Hach are extraordinarily convenient. And real-time data is available 24/7 through FSDATA Online Data Manager software from anywhere you have internet access. Not only does this dramatically increase your timely knowledge of every event, it also reduces site visits for data collection, meter adjustments, or sensor cleaning.

Specifications*

Hach US9001 Down-Looking Ultrasonic Sensor

Dimensions	Ø x L: Ø 3.02 x 10.31 cm (Ø 1.19 x 4.06 in.)
Enclosure	316 stainless steel
Weight	0.76 kg (1.68 lb) with 9.14 m (30 ft) cable
Mounting	Wall mount, adjustable arm mount
Frequency	120 kHz
Accuracy	0.2 mm/25.4 mm (0.008 in./in.) from the calibration point at steady state temperature, still air and ideal target
Measurement Range	13.34 to 396.24 cm (5.25 to 156 in.)
Power Requirements	12 VDC, 0.0416 A, 0.5 W
Operating Temperature	-18 to 60°C (0 to 140°F)
Operating Humidity	0 to 95%, non-condensing
Storage Temperature	-40 to 60°C (-40 to 140°F)
Resolution	0.254 mm (0.01 in.)
Cable Jacket Material	Polyurethane
Cable Diameter	6.10 mm (0.24 in.)
Cable Length	9.14 m (30 ft), 91.44 m (300 ft) maximum
Beam Angle	9° (half angle typical)
Enclosure Rating	NEMA 6P, IP68
Compatible Instrument	Hach FL900 Series Flow Logger
Certifications	CE

Hach US9001B Ultrasonic Sensor with Ballast

Specifications are identical to the US9001 Down-Looking Ultrasonic Sensor, plus the following Ballasting Kit:

Length	343.4 mm (13.52 in.) - Ballast Only 403.9 mm (15.9 in.) - Ballast with Sensor
Diameter	40.6 mm (1.60 in.)
Weight Total	1179.3 g (2.6 lb)

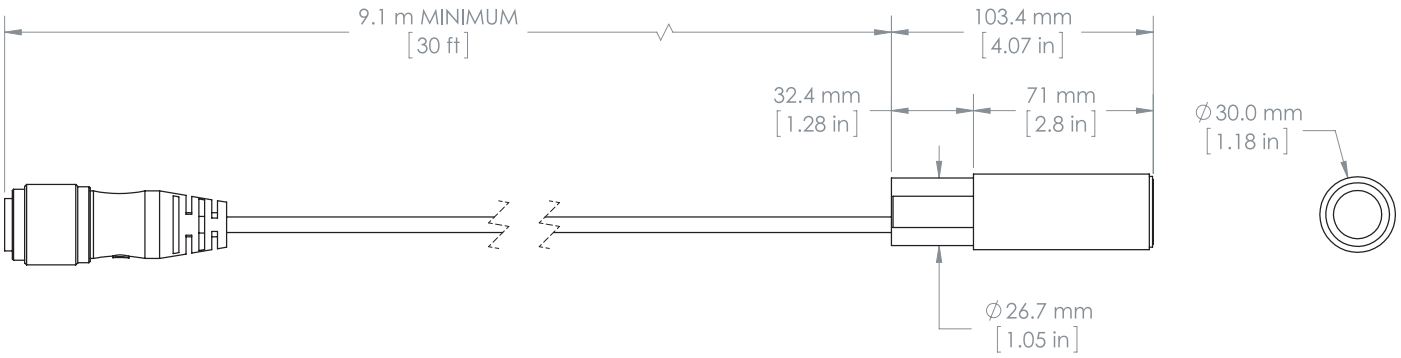
Hach US9003 In-Pipe Ultrasonic Sensor

Dimensions	Ø 4.06 x 28.04 cm (Ø 1.6 x 11.04 in.)
Enclosure	316 stainless steel and ABS
Weight	0.92 kg (2.03 lb) with 9.14 m (30 ft) cable
Mounting	In-pipe mount
Frequency	120 kHz
Accuracy	0.2 mm/25.4 mm (0.008 in./in.) from the calibration point at steady state temperature, still air and ideal target
Measurement Range	0 to 382.91 cm (0.00 to 150.75 in.)
Power Requirements	12 VDC, 0.0416 A, 0.5 W
Operating Temperature	–18 to 60 °C (0 to 140 °F)
Operating Humidity	0 to 95%, non-condensing
Storage Temperature	-40 to 60 °C (-40 to 140 °F)
Resolution	0.254 mm (0.01 in.)
Cable Jacket Material	Polyurethane
Cable Diameter	6.10 mm (0.24 in.)
Cable Length	9.14 m (30 ft), 91.44 m (300 ft) maximum
Beam Angle	6° (half angle typical)
Enclosure Rating	NEMA 6P, IP68
Compatible Instrument	Hach FL900 Series Flow Logger
Certifications	CE

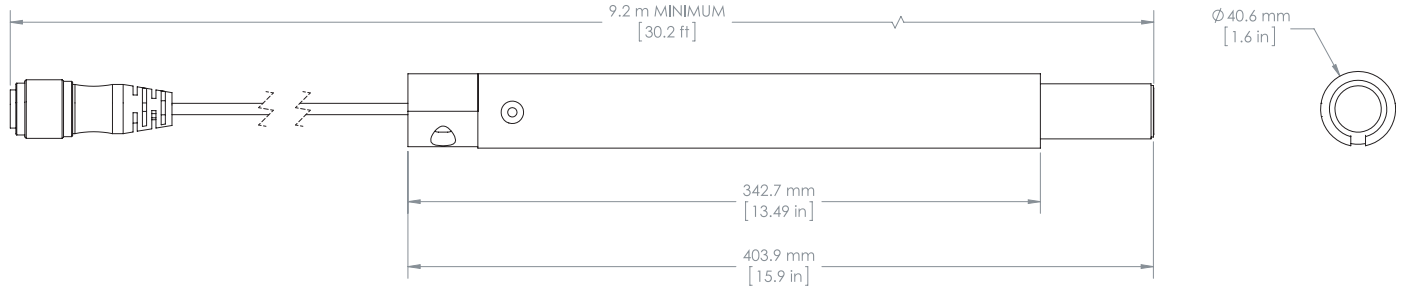
**Subject to change without notice.*

Dimensions

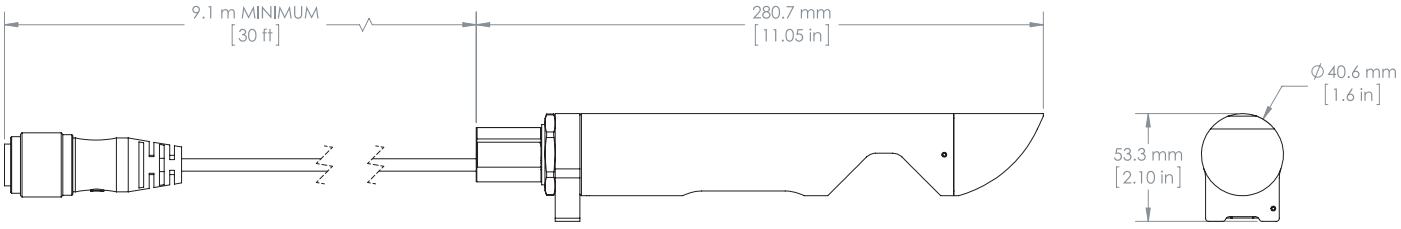
Hach US9001 Digital Down–Looking Ultrasonic Sensor



Hach US9001B Ultrasonic Sensor with Ballast



Hach US9003 Digital In-Pipe Ultrasonic Sensor

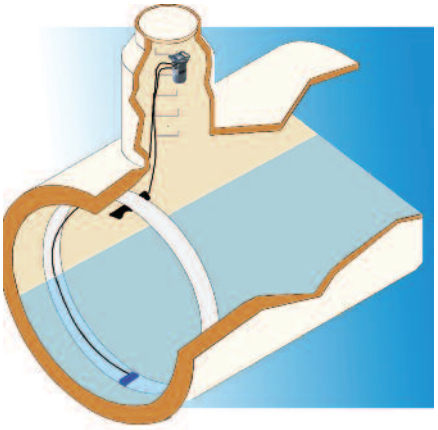


Installation

Hach US9001 Down-Looking Ultrasonic Sensor

Hach US9001B Ultrasonic Sensor with Ballast

Hach US9003 In-Pipe Ultrasonic Sensor



Ordering Information

9487100	US9001 Ultrasonic Down-looking Sensor, 9.1 m (30 ft) cable
9487300	US9003 Ultrasonic In-pipe Sensor, 9.1 m (30 ft) cable
9088800	US9001B Ultrasonic Sensor with Ballast, suspension kit and mounting hardware
9088200	Suspended Ballast Component Kit (sensor sold separately)
9088600	Calibration Target for US9001B
245000501	Q-Stick pole 12.4-7.3 m (8-24 ft) for calibration target

Cable Options for All Sensors in Series

9489000	Extension cable with connectors, 15.2 m (50 ft)
9488100	Extension cable, 82.3 m (270 ft), bare wire one end
9488000	Extension kit for conduit, includes: 82.3 m (270 ft) cable with bare wires and junction box with 61 cm (24 in.) cable and connector to logger *Note: Order the ultrasonic sensor, dispensing gun, and gel cartridges separately.*
7725600	Gel cartridges (Qty: 3) with feed tubes (Qty: 3), for the junction box
7715300	Dispensing gun for gel cartridge
9488200	Junction box with 61 cm (24 in.) cable for junction box to FL90X connection *Note: Order the dispensing gun and gel cartridges separately.*

US9003 Mounting Hardware Options

4021	15.2 cm (6 in.) spring ring
4022	20.3 cm (8 in.) spring ring
4023	25.4 cm (10 in.) spring ring
4024	30.5 cm (12 in.) spring ring
9706100	Scissor band for 38.1 (15 in.) pipe
9706200	Scissor band for 45.7 cm (18 in.) pipe
9706300	Scissor band for 53.3 (21 in.) pipe
9706400	Scissor band for 61 cm (24 in.) pipe
9706500	Scissor band for 68.6 cm (27 in.) pipe
9706600	Scissor band for 76.2 cm (30 in.) pipe
9706700	Scissor band for 83.8 cm (33 in.) pipe
9706800	Scissor band for 91.4 cm (36 in.) pipe
9706900	Scissor band for 106.7 cm (42 in.) pipe
3766	Scissor band for 38.1-106.7 cm (15-42 in.) pipe
3868	Mounting clip
3875	Mounting bracket, permanent

US9001 Mounting Hardware Options

2904	Mounting bracket, floor or wall, adjustable
2974	Mounting bracket, wall, permanent

US9001B Mounting Hardware Options

9088100	Standard mounting hardware kit (includes bracket, anchor, nut & washer)
9542	Spanner bar for 457.2-685.8 cm (18-27 in.) pipe
9557	Spanner bar for 711.2-1219.2 cm (28-48 in.) pipe
5713000	Instrument support bracket

For additional information on products mentioned in this datasheet, request the following literature:

Hach Wireless Level-Alarming Network Extension (LIT2806)
Redundant-Level Metering System (LIT2805)
Hach FL900 Series Flow Logger (DOC053.53.35081)
Hach FSDATA Online Data Manager Software (LIT2707)

HACH COMPANY World Headquarters: Loveland, Colorado USA

United States: 800-368-2723 tel 970-619-5150 fax hachflowsales@hach.com
Outside United States: 970-622-7120 tel
hachflow.com

LIT2804 Rev 3
Printed in U.S.A.

HACH®
Be Right™

AS950 ALL-WEATHER REFRIGERATED SAMPLERS

Applications

- Wastewater
- Collections
- Industrial Pretreatment
- Environmental Monitoring
- Stormwater

Sampling has never been this easy.

The AS950 All-Weather Refrigerated Sampler makes programming, data transfer and operation more intuitive and virtually error-free.

Easiest and Most Intuitive Operation

The large full color display and intuitive programming give you access to all your programmable criteria on a single screen—eliminating scrolling through menus and supporting error-free operation.

Most Convenient Data Transfer and Programming Available

The AS950 is the only sampler that utilizes a USB drive to upload and download data and copy programs from one sampler to another.

Confidence in Your Sampling Process

The program status screen instantly communicates alarms, missed samples and program progress for quick and easy troubleshooting.

Resists Corrosion

The All Weather Refrigerated (AWR) sampler base is designed to endure humid and highly corrosive environments, minimizing damage caused by corrosive gases, rodents, and standing water to guarantee environmental integrity.

Accurate and Consistent Sample Preservation

The custom-designed air-sensing thermostat controls temperature in accordance with USEPA and international guidelines, preserving samples regardless of outside temperatures and conditions.

Easy Maintenance at Low Cost

Spring-mounted rollers provide long tubing life keeping maintenance costs low. The desiccant and pump tubing can easily be accessed; the replacement is possible without any tools. The rugged see-through pump cover is made for a quick visual inspection.

HACH®

Be Right™

Specifications*

Sampling Features

Dual Programs
Up to 2 sample programs can be run sequentially, in parallel, or according to day of week scheduling; enabling a single sampler to function like multiple samplers

Sampling Modes
Pacing:
Time Weighted, Flow Weighted, Time Table, Flow Table, Event

Distribution:
Single bottle composite, multi-bottle composite, multi-bottle discrete, bottles per sample, samples per bottle or a combination of bottles per sample and samples per bottle

Run Modes
Continuous or non-continuous

Status Screen
Communicates what program is running, if there are any missed samples, when the next sample will be taken, how many samples remain, number of logged channels, time of last measurement, memory available, number of active channels, if alarms were triggered, when alarms were triggered, active sensors and cabinet temperature

Alarms
Configurable alarms that show on status screen and are recorded in diagnostics alarm logs. Alarms can be set for system diagnostics and logging such as program end, sample complete, missed samples and full bottle. Channel alarms are setpoint alarms for the recorded measurements (channels), such as pH, level and power supply voltage.

Manual Sample
Initiates a sample collection independent of program in progress

Automatic Shutdown
Multiple Bottle Mode: After complete revolution of distributor arm (unless Continuous Mode is selected)

Composite Mode: After preset number of samples have been delivered to composite container, from 1 to 999 samples, or upon full container.

Sample Volume
Programmable in 10-mL (0.34 oz) increments from 10 to 10,000 mL (3.38 oz to 2.6 gal)

Interval Between Samples
Selectable in single increments from 1 to 9,999 flow pulses (momentary contact closure 25 ms or 5 to 12 Vdc pulse; 4-20 mA interface optional), or 1 to 9,999 minutes in one minute increments

Set Point Sample Trigger
When equipped with flow sensor or pH/temperature sensor or peripheral monitoring options, sampling can be triggered upon an upset condition when field selectable limits are exceeded

Datalogging
SAMPLE HISTORY
Stores up to 4000 entries for sample time stamp, bottle number and sample status (success, bottle full, rinse error, user abort, distributor error, pump fault, purge fail, sample timeout, power fail and low main battery)

MEASUREMENTS
Stores up to 325,000 entries for selected measurement channels in accordance with the selected logging interval

EVENT LOG
Stores up to 2000 entries. Records Power On, Power Fail, Firmware Updated, Pump Fault, Distributor Arm Error, Low Memory Battery, Low Main Battery, User On, User Off, Program Started, Program Resumed, Program Halted, Program Completed, Grab Sample, Tube Change Required, sensor communication errors, cooling failed, heating failed, thermal error corrected

Diagnostics
View event and alarm logs as well as maintenance diagnostics

**Subject to change without notice.*

Specifications*

AS950 All Weather Refrigerated Sampler (AWRS)

Cabinet	IP24, low-density polyethylene with UV inhibitor
Refrigeration components and copper plumbing	Corrosion protected with conformal coating; all exposed copper tubing is insulated to avoid sweating and condensation
Sample Cooling	Top mounted compressor and fan-forced air cooled condenser 11/5 HP 115 VAC: 115 °C (239 °F) thermal overload protector, 7.1 locked rotor amps 230 VAC: 120 °C (248 °F) thermal overload protector, 7.6 A peak start current 3-sided wraparound plate type evaporator Rigid foam insulation: 3 in. sides, 5 in. top, 6 in. bottom Lockable lid to prevent tampering with programming Recovery Time: Sampler temperature recovers to 4°C within 5 minutes after door has been held open for one minute in 24°C (75°F) ambient environment while in an active cooling cycle. Pull Down Time: From 24°C (75°F) to 4°C (39°F), 20 minutes Temperature Control: 4 (±0.8) °C (39 (±1.5) °F)1
Sample Containers	SINGLE BOTTLE: 10 L (2.5 gal) glass or polyethylene, or 21 L (5.5 gal) polyethylene MULTIPLE BOTTLES: Two 10 L (2.5 gal) polyethylene or glass, four 10 L (2.5 gal) polyethylene or glass, eight 2.3 L (0.6 gal) polyethylene or 1.9 L (0.5 gal) glass, twelve 2 L (0.5 gal) polyethylene, twenty-four 1 L (0.3 gal) polyethylene or 350 mL (12 oz.) glass
Installation category, pollution degree	II, 2
Temperature	Operating: 0 to 50 °C (32 to 122 °F); with AC battery backup: 0 to 40 °C (32 to 104 °F) with controller compartment heater: –40 to 50 °C (–40 to 122 °F); with controller compartment heater and AC battery backup: -15 to 40 °C (5 to 104 °F Liquid Crystal Display (LCD): -10 to 70°C (-14 to 158°F) Storage: -40 to 60°C (-40 to 140°F)
Power Requirements (includes compressor)	115 VAC, 60 Hz, 4.2 A or 6.4 A with controller compartment heater 230 VAC, 50 Hz, 2.7 A or 4.1 A with controller compartment heater Overload Protection: 115 VAC: 7.5 A circuit breaker 230 VAC: 5.0 A circuit breaker
AC Power Backup (Pump Controller Only)	Rechargeable 6 amp-hour gel lead acid battery takes over automatically with AC line power failure Integral trickle charger maintains battery as full charge
Dimensions (W x D x H)	76 x 81 x 130 cm (30 x 32 x 51 in.)
Weight	86 kg (190 lb)
Certifications	CE, UL, CSA

AS950 Controller

Housing	PC/ABS blend, NEMA 4X, 6, IP68, corrosion and ice resistant
Graphics Display	1/4 VGA, Color; self-prompting/ menu-driven program
User Interface	Membrane switch keypad with 2 multiple function soft keys
Program Languages	Chinese, English, French, German, Italian, Spanish, Portuguese
Program Lock	Access code protection prevents tampering
Memory	Sample history: 4000 records; Data log: 325,000 records; Event log: 2000 records
Communications	USB and optional RS485 (Modbus)
AUX port inputs	One 0/4-20 mA input for flow pacing
Certifications	CE, UL

**Subject to change without notice.*

Specifications*

Sample Pump and Strainer

Sample Pump
High-speed peristaltic, dual roller, with 0.95 ID x 0.16 OD cm (3/8 ID x 5/8 in. OD) pump tube

Pump Body
IP37, polycarbonate cover

Vertical Lift
8.5 m (28 ft) using 8.8 m (29 ft) maximum of 3/8-in vinyl intake tube at sea level at 20 to 25 °C (68 to 77 °F)

Tubing
Pump tubing:
9.5 mm ID x 15.9 OD mm (3/8-in ID x 5/8-in. OD) silicone

Intake tubing: 1.0 to 4.75 m (3.0 to 15.5 ft) minimum length, ¼-in. or 3/8-in. ID vinyl or 3/8-in. ID Teflon®-lined polyethylene with protective outer cover (black or clear)

Sample Volume Repeatability (typical)
±5% of 200 mL sample volume with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8- in vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m (5000 ft) elevation

Sample Volume Accuracy (typical)
±5% of 200 mL sample volume with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8- in. vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m (5000 ft) elevation

Transfer Velocity (typical)
0.9 m/s (2.9 ft/s) with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8-in. vinyl intake tubing, 21 °C (70 °F) and 1524 m (5000 ft) elevation

Pump Flow Rate
4.8 L/min (1.25 gpm) at 1 m (3 ft) vertical lift with 3/8-in intake tube typical

Internal Clock
±1 second per day at 25 °C (77 °F)

Intake
Strainers: Choice of Teflon® and 316 stainless steel construction, or all 316 stainless steel in standard size, high velocity, and low profile for shallow depth applications

Purge: Air purged automatically before and after each sample; duration automatically compensates for varying intake line lengths

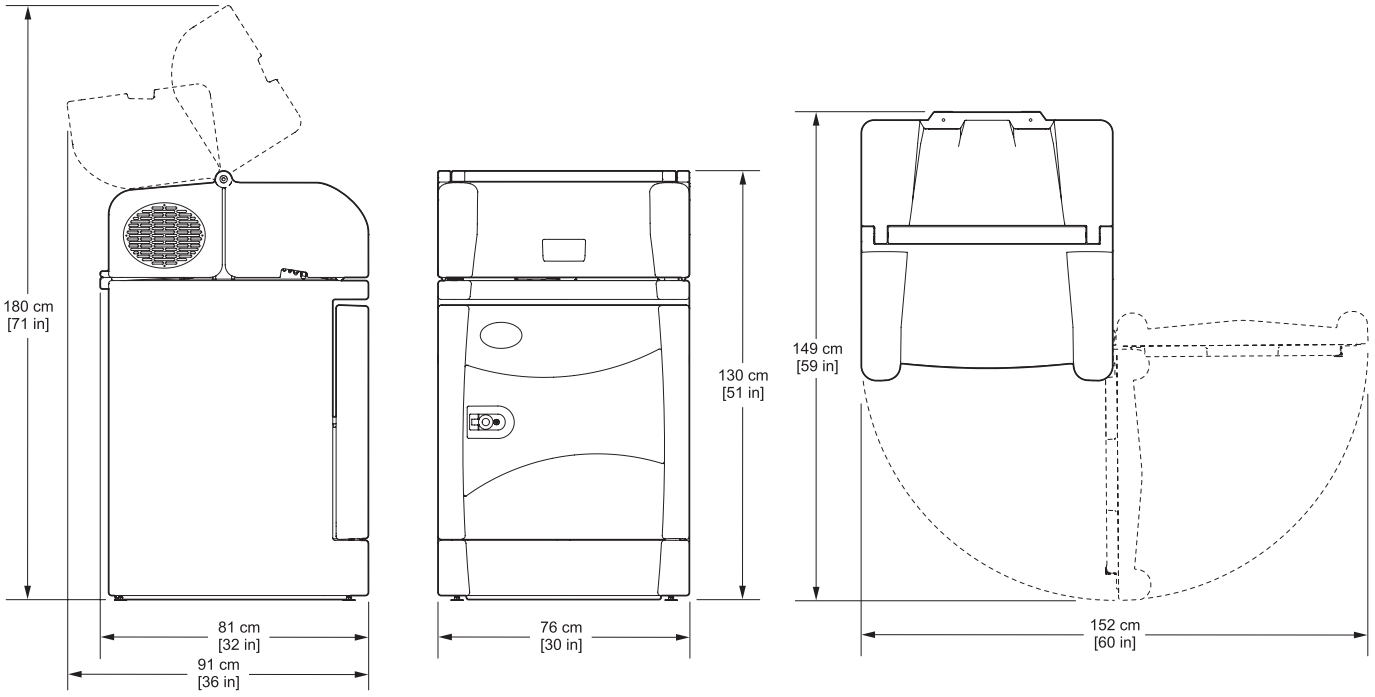
Rinse: Intake line automatically rinsed with source liquid prior to each sample, from 1 to 3 rinses

Retries or Fault: Sample collection cycle automatically repeated from 1 to 3 times if sample not obtained on initial attempt

**Subject to change without notice.*

Dimensions

The refrigeration compartment door of the AS950 All Weather Refrigerated Sampler is lockable (two keys are provided). The lid is also lockable for added security.



Ordering Information

AS950 All Weather Refrigerated Sampler (AWRS) Bundles

Includes AWRS base (115 Vac), sample bottle(s), vinyl intake tubing (25 ft.), and Teflon/stainless steel strainer. To order different combinations, please contact Hach Company.

ASA.CXXX1X11XX	All Weather Refrigerated Sampler with AS950 controller; includes 21-L (5.5 gal) PE container and full bottle shut off
ASA.CXXX1X31XX	All Weather Refrigerated Sampler with AS950 Controller; includes 4 10-L (2.5 gal) PE containers and distributor arm
ASA.CXXX1X41XX	All Weather Refrigerated Sampler with AS950 Controller; includes 24 1-L PE containers and distributor arm

Bottle Options

6559	2.5 Gallon Glass, with Teflon-lined cap
1918	2.5 Gallon Polyethylene, with cap
6494	5.5 Gallon Polyethylene, with cap
2318	Set of (2) 2.5 Gallon Glass, with Teflon-lined caps
2316	Set of (2) 2.5 Gallon Polyethylene, with caps
2317	Set of (4) 2.5 Gallon Glass, with Teflon-lined caps
2315	Set of (4) 2.5 Gallon Polyethylene, with caps
657	Set of (8) 2.3 Liter Polyethylene, with caps
1118	Set of (8) 1.9 Liter Glass, with Teflon-lined caps
9493000	Set of (12) 2 Liter Polyethylene, with caps
737	Set of (24) 1 Liter Polyethylene, with caps
732	Set of (24) 350 mL Glass, with Teflon-lined caps

Bottle Accessories

1511	Bottle Tray for 24 and 8 bottle sets
1322	Retainer for (24) 1 Liter Polyethylene and (8) bottle sets
1056	Retainer for (24) 350 mL Glass bottle sets
3527	Extension Tube for 6559 and 1918 Containers
8838	Composite Tube Support for all Composite Containers
8847	Full Bottle Shut-off for all Composite Containers

Distributors

8841	Distributor with Arm for 12 and 24 Bottle Configurations
8842	Distributor with Arm for 8 Bottle Configuration
8843	Distributor with Arm for 2 and 4 Bottle Configurations

Intake Tubing and Strainers

920	Vinyl Intake Tubing, 25 ft., 3/8-in. ID
922	Teflon-lined, Polyethylene Tubing, 25-ft., 3/8-in. ID (requires Connector Kit, Prod. No. 2186)
926	Strainer, Teflon/Stainless Steel
2070	Strainer, 316 stainless steel
2071	Strainer, for shallow depth applications, 316 stainless steel
2186	Connector Kit, for Teflon-lined polyethylene tubing
4652	Strainer, high velocity and shallow depth

Pump Tubing

4600-15	Pump Tubing, 15 ft.
4600-50	Pump Tubing, 50 ft.
8888	Pump Tube Insert
9501400	Pump Tube Insert, Non-contact liquid detect

Factory Installed Options (contact sales representative)

Two Sensor Ports
Accepts Hach digital Differential pH, Hach digital AV9000 analyzer with submerged area velocity flow and/or Hach digital US9000 ultrasonic level sensors

Rain/RS485 Port
Accepts Hach Rain Gauge (not included) or can be used as RS485 communications

Non-Contact Liquid Detect
Sample volume accuracy for applications that require complete tubing replacement

Inputs/Outputs

9494500	IO9001 Module (connects through auxiliary port) Includes 1 relay (high voltage).
9494600	IO9004 Module (connects through auxiliary port) Includes multiple 0/4-20 mA outputs and inputs for recorded measurements and to receive measurements from external instruments, four low voltage, contact closure, and four relays controlled by alarms.

Accessories

6613100	Anchor Kit Set
9504700	USB Cable, A to A

DOC053.53.35021.Apr15

HACH COMPANY World Headquarters: Loveland, Colorado USA
United States: 800-227-4224 tel 970-669-2932 fax orders@hach.com
Outside United States: 970-669-3050 tel 970-461-3939 fax int@hach.com
hach.com

HACH®
Be Right™

PONTON INDUSTRIES, INC.
SINCE 1970

22901 Savi Ranch Pkwy, Suite B
Yorba Linda, CA 92887
Tel: (714) 998-9073

Fax: (714) 998-9083
info@pontonind.com
www.pontonind.com

QUOTE#: PONQ41864

DATE: Sep 30, 2020

Your Local Representative for ...

HACH

~Featured Item~

Why Warranty Plus? Lower your long-term costs, prolong the life of your product, and ensure consistent reporting. Partner with Hach for service to be confident that your instruments and operations are well maintained and functioning smoothly. Your Service Plus Extended Warranty includes a lot! Ask us!!

Sold to:

AECOM
Yeimy Ojeda
2400 Professional Parkway
Santa Maria, CA 93455

Phone: (805) 938-0855
Email: yeimy.ojeda@aecom.com

Quoted by	Est. Lead Time	F.O.B	Ship Via	Terms
Diane Blackburn	3-4 Weeks AROj	Factory	Best Way	Net 30 OAC

ADDRESS PO TO: Hach, 5600 Lindbergh Drive, Lovelend, CO, 80538

Line No	Product Details	Qty	Unit Price	Ext. Price
1.	**AS950 AWRS All Weather Refrigerated Sampler, 115V, 5.5GAL POLY ASA.CXXX1X11XX** 115V Base w/Lock Composite 5.5 Gallon Polyethylene Bottle Kit 25' Vinyl Tubing and Teflon/316 Stainless Steel Strainer	1	$ 7,781.00	$ 7,781.00

Sub Total	$ 7,781.00
Tax	$ 0.00
Adjustment	$ 0.00
Grand Total	**$ 7,781.00**

ADDRESS PO TO: Hach, 5600 Lindbergh Drive, Lovelend, CO, 80538

Notes:

Terms and Conditions

Prices are firm for 30 days by referencing above Quote Number. Taxes and Shipping are not included in this quote. Lead times do not include "transit time". Proof of non-taxable status is required if applicable. Credit reviewed prior to order entry and will be issued if approved. Standard warranty varies by product line but is based from factory ship date.

**** All purchases of Hach Company products and/or services are expressly and without limitation subject to Hach Company's Terms & Conditions of Sale ("Hach TCS"), incorporated herein by reference and published on Hach Company's website at www.hach.com/terms. Hach TCS are incorporated by reference into each of Hach's offers or quotations, order acknowledgments, and invoice and shipping documents. The first of the following acts shall constitute an acceptance of Hach's offer and not a counteroffer and shall create a contract of sale ("Contract") in accordance with the Hach TCS, subject to Hach's final credit approval: (i) Buyer's issuance of a purchase order document against Hach's offer or quotation; (ii) Hach's acknowledgement of Buyer's order; or (iii) commencement of any performance by Hach in response to Buyer's order. Provisions contained in Buyer's purchase documents that materially alter, add to or subtract from the provisions of these Terms and Conditions of Sale shall be null and void and not condered part of the Contract.**

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Hunt, Tyler

From:	Jeremy Neill <jeremy@chcwater.com>
Sent:	Tuesday, May 02, 2017 5:54 PM
To:	Hunt, Tyler
Cc:	Brian Villacorta
Subject:	CST Covers Budgetary Quote - June Lake, CA
Attachments:	214285 TSTMEFC 51ft.pdf; TS EFC 2.jpg; TS EFC 1.jpg; CST Covers Extruded Flat Cover.pdf
Importance:	High

Tyler,

Below you'll find our budgetary quote for a flat aluminum cover from CST Covers for the 45-ft diameter clarifier at June Lake. I've also included a sample specification, example drawings from a similar project, and a couple photos of the assembled cover being completed at CST's factory before shipment. These types of covers are industry standard, and as such we do a ton of them.

June Lake, CA

CST to provide Truss Supported Extruded Flat Covers over (1) 45ft Dia. existing final clarifier tank.

- Delivered Materials Only: $ 130,000
- CST Delivered and Installed: $ 170,000
  - Truss Height: ~8-9ft from top of wall to top to top of truss.
  - Estimated Field Man Hours: 400
  - Estimated Trucks: 2.

Cover Parameters:

- Walkable and Removable panels each weighing no more than 150 pounds
- The covers have an integral bi-directional slip resistant surface which extends a 0.1-inch above the panel surface
- The cover system are designed to be substantially air and water tight under the specified design loading conditions.
- The cover are designed for a 400 pound load distributed over one square foot at any location.
- Deflection L/240 with L equal to the span of the component

Appurtenances Included:

- None included for budget purposes. Inspection hatches, flanged nozzles for foul air connection, goose neck vents for air intake, etc. available for nominal adder cost.

Note that the budgetary quote provided to you today is subject to change due to variable aluminum cost. Final pricing shall be contingent upon time of delivery, required appurtenances, labor conditions, job site conditions and final design criteria required.

Kindly review and let me know if you have any questions, comments or concerns.

Jeremy

Jeremy Neill, P.E.
2011 Palomar Airport Road, Suite 303
Carlsbad, CA 92011

The Coombs-Hopkins Company
www.coombshopkins.com
(760) 931-0555 main office line
(760) 385-6389 direct office line
(714) 337-1570 mobile
jeremy@coombshopkins.com

From: Hunt, Tyler [mailto:Tyler.Hunt@aecom.com]
Sent: Thursday, April 20, 2017 9:02 AM
To: Jeremy Neill <jeremy@chcwater.com>
Subject: RE: June Lake Republic Utility District - June Lake, CA WEC217109 June Lake, CA

Jeremy,

See attached original drawings from the 70s. I also attached a photo. The owner wants to replace the wooden clarifier roof with an aluminum one as part of the project.

Tyler Hunt, PE QSD
Senior Engineer
AECOM Water
D 805.938.5364
tyler.hunt@aecom.com

AECOM
2400 Professional Parkway, Suite 100
Santa Maria, CA 93455
T 805.938.0855 F 805.938.0047
www.aecom.com

From: Jeremy Neill [mailto:jeremy@chcwater.com]
Sent: Wednesday, April 19, 2017 5:26 PM
To: Hunt, Tyler
Subject: RE: June Lake Republic Utility District - June Lake, CA WEC217109 June Lake, CA

Tyler,

Yes, we can provide either parts alone or turnkey (parts + installation). Do you have as-builts and/or submittal drawings? Who is the manufacturer of the existing clarifier? FYI, I represent Ovivo for clarifiers.

Jeremy Neill, P.E.
2011 Palomar Airport Road, Suite 303
Carlsbad, CA 92011

The Coombs-Hopkins Company
www.coombshopkins.com
(760) 931-0555 main office line

(760) 385-6389 direct office line
(714) 337-1570 mobile
jeremy@coombshopkins.com

From: Hunt, Tyler [mailto:Tyler.Hunt@aecom.com]
Sent: Wednesday, April 19, 2017 12:48 PM
To: Jeremy Neill <jeremy@chcwater.com>
Subject: RE: June Lake Republic Utility District - June Lake, CA WEC217109 June Lake, CA

Jeremy,

As part of this project, we need to replace the skimmer arms and scrappers in the existing clarifier. Is this something you guys can supply? The clarifier has a diameter of 45' and a depth of 8.5 feet. Again, I am looking for some budget pricing for our report.

Thanks,

Tyler Hunt, PE QSD
Senior Engineer
AECOM Water
D 805.938.5364
tyler.hunt@aecom.com

AECOM
2400 Professional Parkway, Suite 100
Santa Maria, CA 93455
T 805.938.0855 F 805.938.0047
www.aecom.com

Ojeda, Yeimy G

From: Brian Villacorta <brian@chcwater.com>
Sent: Friday, October 09, 2020 12:15 PM
To: Ojeda, Yeimy G
Subject: [EXTERNAL] Re: June Lake WWTP Rehabilitation

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Yeimy,
Thanks for your patience as I was getting cost updates on equipment for June Lake. We have seen some price increases on the clarifier and aluminum cover systems, but the good news is that the screen pricing has remained about the same.

- Ovivo Clarifier Mechanism: 2017 Price: $133K; 2020 Price: $175K
- CST Clarifier Cover System (Furnish Material Only): 2017 Price: $130K; 2020 Price: $160K;
- CST Clarifier Cover System (Furnish and Install): 2017 Price: $170K; 2020 Price: $200K
- Enviro-Care Speco Spiral Basket Screen: 2017 Price: $67K; 2020 Price: $70K

I hope this helps. I'm still working through a proposal for an ammonia treatment system by Parkson known as the TumblOx and the water quality data you provided was helpful. I hope to have more details on this by early next week.

Did you get a chance to review the EnviroMix mixing systems as well as give any more thought to aerobic digestion? Let me know if you need me to act on any additional details for these process options. Please send me a reply email to confirm receipt. Thanks. -Brian

Brian Villacorta, P.E., BCEE
The Coombs-Hopkins Company | Carlsbad, CA
OFFICE (760) 931-0555 | CELL (925) 989-6041 | FAX (760) 930-1276
www.coombshopkins.com | Follow on LinkedIn

"Representing quality equipment for the treatment of water and wastewater"

From: Ojeda, Yeimy G <Yeimy.Ojeda@aecom.com>
Sent: Monday, September 28, 2020 4:56 PM
To: Brian Villacorta <brian@chcwater.com>
Subject: June Lake WWTP Rehabilitation

Good morning Brian,

Thank you for taking the time to talk about the June Lake WWTP Evaluation last Thursday. Following our call, back in 2017, our team prepared an Evaluation Report for the June Lake PUD. The report included cut sheets and budgetary cost estimates for equipment recommended by your team. I would like to obtain updated budgetary estimates for the same equipment, check if any newer models have come out since that would fit the project, and also get your input/recommendations on two other additional processes.

Equipment recommended in 2017: (Information obtained in 2017 sent via We-Transfer)

SPECO Wastemaster Shaftless Spiral Screen – Model GCP300
Clarifier Flat Aluminum Cover – CST Covers OVIVO

Need recommendations for:

1. Shallow sludge bed – freezing in the winter. – solutions?
2. Full nitrification.

Design Criteria:

- MMADF: 0.31 MGD
- Design Flow: 1 MGD
- Influent BOD: 357 mg/L (MMADF)
- Influent SS: 332 mg/L (MMADF)
- Effluent TDS: 250 mg/L
- Effluent Amm/Nit: 13 mg/L
- MLSS : 1200 – 1500 mg/L

Answers to the two following questions:

1. What is the clients take on equipment for the headworks?
    a. Do they have manpower or do they prefer an automatic system? - 1 staff does all of the treatment plant – unless recommend a newer model that is easier to maintain and doesn't mind the snow from the sierra Nevada, the previously recommended model is fine.
2. What is the clients scope of work for the nitrification system? Engineering design?
    a. The goal is to use the evaluation study to obtain a grant application for the design and construction of the plant. Our goal is to provide the full design meanwhile reusing as much as what they already have there as possible.
    b. It is also important to note that they only have a Grade 3 operator.
    c. Seems like repurposing the oxidation ditch into multiple stages is what most have in mind.
    d. Client wants something that is conventional and the state will approve.

Let me know if you have any questions. Thank you!

Yeimy Ojeda, EIT
Engineer I, Water Business Line
D +1-661-283-2333
M +1-661-448-0102
yeimy.ojeda@aecom.com

AECOM
5501 E Commercenter Center Drive
Suite 100
Bakersfield, CA
T +1-661-283-2323
aecom.com

Imagine it. Delivered.

LinkedIn Twitter Facebook Instagram

FORTUNE WORLD'S MOST ADMIRED COMPANIES

EXTRUDED FLAT COVER SAMPLE SPECIFICATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. This section defines the design requirements for the aluminum extruded flat cover(s) as described in the contract drawings and documents.

1.02 SUBMITTALS

A. Before executing any of the work in this section, prints or drawings shall be submitted to the engineer showing dimensions, sizes, thickness, gauges, materials, finishes, joint attachment and erection procedure.

B. A complete set of design calculations for the cover(s) shall also be submitted. These calculations shall be signed by a registered professional engineer. All work shall be fabricated and erected in accordance with the approved drawings.

C. Certification that the specified material alloys, sizes and quantities have been furnished shall be submitted upon completion of the project.

1.03 REFERENCES

A. The following codes and standards form a part of this section to the extent specified herein:

1. ASTM C-864-90 Standard Specifications for Preformed Gasket and Sealing Material
2. Aluminum Association Specifications for Aluminum Structures
3. Aluminum Association Aluminum Design Manual; Specifications and Guidelines for Aluminum Structures
4. ASCE 8-02 Specification for the Design of Cold-Formed Stainless Steel Structural Members
5. ASTM F593 Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
6. Federal Specification TT - S - 00230C

PART 2 - PRODUCTS

2.01 DESCRIPTION

A. The extruded flat covers shall be clear-span and self-supporting from the peripheral structure. The cover system shall consist of removable panels each weighing no more than 150 pounds. The required lifting force per panel shall not exceed the dead weight of the panel. The extruded panels utilize specially extruded panel structural members, slip-resistant top planks with stiffeners, and integral perimeter flashing/endcaps. Both male and female panels must independently be designed to meet both the design loading and the deflection limits specified herein. Elastomeric weatherseal gasket shall form a continuous substantially watertight seal along all panel edges. The gaskets shall be fully enclosed to prevent ultraviolet exposure.

B. Each panel must be able to be removed without needing to remove more than the two adjacent panels. The need for removing separate flashing or “hold-down” extrusions longer than the width of the panel is prohibited. Primary panel support members shall be integral to the panels. Upon removal of the panels, the entire area beneath the panels shall be exposed and no substructure in the form of beams or box-beams shall remain in the basin(s) to be covered. To facilitate removal, panels shall incorporate integral lifting handles. Handles shall be located at both ends of the cover panels and shall not penetrate the cover panels or pond water.

C. The extruded flat cover shall have an integral bi-directional slip resistant surface which extends a minimum of 0.1-inch above the panel surface. Raised surfaces without the use of texturing to achieve slip resistance are not acceptable. The use of checkered plate, paint, tape, sandblasting, or other applied systems to achieve the slip resistant surface is expressly prohibited.

D. The extruded flat cover system shall be Top Mount, with the covers slip resistant walking surface 6-8 inches above the top of the basin or tank wall. Lifting handles shall be integral with the panel endcaps.

E. All metal components of the flat cover structure shall be aluminum or 300 series stainless steel. No galvanized, painted, or plated steel shall be used. The use of structural plastic is expressly prohibited. Dissimilar materials in the supporting structure shall be isolated from the aluminum flat cover by means of a compatible elastomeric gasket.

F. The use of structural members in contact with the contents of the tank is expressly prohibited.

G. The design shall prevent water pooling which may result in over-stressing the flat cover.

2.01 DESCRIPTION (CONTINUED)

H. The extruded flat cover will have a mill finish surface.

I Fasteners shall be designed with a factor of safety of 2.34 on ultimate strength and 1.65 on yield strength.

J. The removable extruded flat cover system shall be designed to be substantially air and water tight under the specified design loading conditions

2.02 EXPERIENCE/QUALIFICATIONS

A. No equipment shall be supplied by any manufacturer not regularly engaged in the manufacturing and production of extruded flat cover(s) in the size and character herein specified. The manufacturer must have designed, manufactured and installed at least one (1) formed panel flat cover of the same type and size as unit(s) specified herein. This flat cover must be in satisfactory use for a period not less than ten (10) years.

B. The cover manufacturer must own and operate its own US-based manufacturing facility, and the use of a fabrication facility that is not US-based and/or owned and operated by the cover manufacturer is expressly prohibited. Manufactures that do not meet these qualifications will not be considered.

C. The cover manufacturer must be ISO 9001 certified.

2.03 MATERIALS

A. The following is a summary of approved materials and/or material specifications. All aluminum alloys shall be as defined by the Aluminum Association and published in the ALUMINUM STANDARDS AND DATA.

1. **Bolts and Fasteners** - Bolts shall be 300 series stainless steel per ASTM F593, Alloy Group 1. Lockbolts shall be 7075-T73 aluminum or 305 stainless steel. Screws shall be aluminum or 300 series stainless steel.

2. **Structural Shapes** - Aluminum structural shapes shall be alloy 6061-T6 or 6063-T6. Load supporting surfaces shall be 0.1-inch minimum thickness.

3. **Miscellaneous Shapes** - Miscellaneous aluminum shapes shall be alloy 6061-T6 or 6063-T6.

4. **Gaskets** - All gaskets shall be Neoprene conforming to ASTM C-864-90, resistant to ozone and shielded from exposure to ultraviolet light. The gaskets must have a ¼" minimum thickness.

5. **Sealant** - All sealants shall be silicone, GE Silpruf SCS 9000.09 and resistant to ozone and ultraviolet light and conform to Federal Specification TT-S-00230C.

6. **Miscellaneous Penetration Seals**- All other penetration seals shall be weatherproof rubber seals.

2.03 MATERIALS (CONTINTUED)

7. **Support Bearings** – Bearings at the supports (if required) shall conform to AASHTO Division 2 Section 25. Acceptable bearing surfaces for sliding bearings are Teflon to stainless steel only. In order to avoid damage to the Teflon and to reduce the coefficient of bearing friction, Teflon shall not bear on aluminum surfaces.

2.04 DESIGN LOADS

A. The entire extruded flat cover structure shall be designed to sustain the loads specified herein, within the stress limitations of the Aluminum Association Aluminum Design Manual. In no case shall the formed panel flat cover be designed for any loads less than those specified by the local building code and/or local amendments.

B. The load cases to be considered shall be those described below unless more severe loads are specified by the purchaser.

1. **Dead Load** – The dead load shall be defined as the weight of the structure and all permanently attached to and supported by the structure.

2. **Live Load** – As required per ASCE 7-05 Section 4.9.1.

3. **Snow Load** – As required per ASCE 7-05 but not less than required by local building codes and/or local amendments.
   Importance Factor (I) = 1.0 or greater per ASCE 7-05 Table 1-1.
   Exposure Factor (C_e) = 1.0 or greater per ASCE 7-05 Table 7-2.
   Thermal Factor (C_t) = 1.2.

4. **Non-Uniform Snow Load** – As required per ASCE 7-05 but not less than required by local building codes and/or local amendments.

5. **Wind Load** – As required per ASCE 7-05 but not less than required by local building codes and/or local amendments.
   Importance Factor (I) = 1.0 or greater per ASCE 7-05 Table 6-1.
   Exposure Factor = C minimum or D where required.

6. **Vacuum/Pressure Load** - As specified by the purchaser.

7. **Load Combinations** – As required per ASCE 7-05 Section 2.4.1.

8. **Temperature** - The load combinations listed above shall be considered for a temperature change of 100 degrees F below the installation temperature and 100 degrees F above the installation temperature and for a material temperature range of 40 degrees F below 0 to 160 degrees F above zero.

9. **Panel Design Load** - In addition to the above mentioned loads and load combinations, the aluminum panels shall be designed for a 400 pound load distributed over one square foot at any location. This load is to be taken as acting separately and not simultaneously with other design loads.

2.04 DESIGN LOADS (CONTINUED)

10. **Deflection** - For the above loads and load combinations, the deflection of all components (structural and cladding) shall not exceed L/240 with L equal to the span of the component. This deflection limit applies not only to the flat cover as a whole, but also to the decking of the cover spanning between the supporting edges of each panel or module. Calculations stamped by a registered Professional Engineer shall be provided at the time of submittal to ensure that this requirement has been met.

2.05 MANUFACTURERS

A. The aluminum extruded flat cover shall be as manufactured by CST Covers - Gardena, California (310) 353-5100 or Conroe, Texas (936) 539-1747.

PART 3- EXECUTION

3.01 INSTALLATION

A. All work shall be executed by skilled mechanics with a supervisor experienced in the erection of extruded flat covers. The flat cover shall be erected plumb and level and in proper alignment.

3.02 WARRANTY

A. The extruded flat cover manufacturer shall warrant that the work described herein shall be free from defects, workmanship and material. The flat cover manufacturer shall replace or repair only faulty workmanship or defective material furnished by it that is reported to it within one (1) year from the date of completion of this scope of work.

END OF SPECIFICATION

Ovivo USA, LLC
4246 Riverboat Road, Suite 300
Salt Lake City, Utah
84123-2583
USA

Telephone: 801.931.3000
Facsimile: 801.931.3080

www.ovivowater.com

OVIVO
Worldwide Experts in Water Treatment

To: Jeremy Neill – Coombs-Hopkins

From: Todd Morris

Cc: File

Date: May 2, 2017

Subject: June Lake Public Utility District – Mono County, CA – Clarifier Replacement Budget Pricing

Jeremy,

We have prepared budget pricing for one (1) clarifier replacement for the existing 1973 vintage EIMCO 45' diameter Type C2D clarifier, serial number 22105-01A. The replacement clarifier is an Ovivo Type C3S suction tube clarifier. This equipment is to be installed by others. See Table 1 below for the scope of supplies and services budgeted for the project.

Preliminary Budget

One (1) 45' diameter Ovivo Type C3S clarifier_____$ 133,000.^{00}

Best Regards,

Todd Morris
Rebuild Group Marketing Manager
Sedimentation Group
Direct: (801) 931-3047
Email: todd.morris@ovivowater.com

TABLE 1

JUNE LAKE, CA. – WASTEWATER TREATMENT PLANT
ONE (1) – 45'Ø OVIVO CLARIFIER – TYPE C3S

This budget price includes the following clarifier equipment and services:

- Complete Clarifier Center Drive Mechanism, Model C30HT
  - Torque control switches set to original drive settings
  - Motor drive assembly with gear motor, sprockets, chain, chain guard and adjustable mounting plate
- Bridge and Walkway Assembly
  - Access platform around drive
  - Handrailing and toe kick, I-bar grating walking surface
- Rake arms with V-configured rake blades and 304 stainless steel squeegees
- Return sludge PVC piping (six pipes of 4" diameter) and PVC rotating control valves with handle
- Sludge collection well with seals to the center column
- Center column with inlet openings, top and bottom flanges
- Sludge withdrawal pipe located concentrically within center influent column
- Center cage with attachments for rake arms and center drive unit
- Feedwell with feedwell supports from center cage
- Skimmer assembly with dual skimmer arms and single sludge collection box
- 304 stainless steel assembly hardware for components above
- Field service of one (1) trip of one (1) day for startup and checkout
- FCA factory, freight allowed to jobsite
- Fabricated steel is shipped with an SSPC-SP-10 surface finish and one (1) coat 3-5 mil DFT of Tnemec epoxy primer for finish painting by others.
- Engineering plus general arrangement and general erection drawings
- One (1) year warranty

Items NOT Included

- No Installation or labor services
- No draining or cleaning of tank prior to start of installation
- No clarifier cover components or hardware
- No weir, scum baffle or weir and baffle cleaning equipment
- No clarifier components other than those mentioned in our scope
- No finish or touch up painting
- No overtime work or removal of old debris

Thank you for considering Ovivo equipment.

Ojeda, Yeimy G

From: Chris Truszkowski <chris@nefco.us>
Sent: Tuesday, October 13, 2020 4:50 AM
To: Ojeda, Yeimy G
Cc: Matt Bentley; Ryan Spanton; Jed Jenkins
Subject: [EXTERNAL] RE: June Lake PUD - Budgetary Estimate

Good morning Yeimy,

Sorry for the delay on this.

Per request, price and scope is as follows…

Budget price including freight to the jobsite is $18,530.00

Detailed Scope of Supply:

1. FRP Density Current Baffle for One (1) 45' Dia. Clarifiers

The each Density Current Baffle set will consist of 19 baffle modules that combine the baffle panel, baffle bracket, vents and mounting and stiffening flanges in an integrally molded unit. Each baffle module is 1/4" thick x 35" wide x 8' long and mounts directly to the tank wall. Each baffle panels extends about 30" into the tank. The integral bracket holds the baffle at a 30° angle from the horizontal, which has been proven the most effective in diverting rising solids back into the main volume of the tank. Mounting holes are factory drilled and sealed. The baffle is delivered with all the 316 stainless steel fasteners required for a complete installation. FRP color is black.

Exclusions: Caulk, sealants, assembly, installation, and field services are not included.
Delivery: Submittals provided 4-6 weeks ARWO. Materials 8-12 weeks ADA.

The price for this material is FOB Jobsite and includes freight to the above referenced location. Price does not include installation or any applicable fees or taxes. Payment terms are 100% thirty (30) days from date of invoice.

This proposal will remain valid for a period of ninety (90) days from the bid date. Price is valid for delivery on or before March 30, 2021.

Please let me know if you need anything else.

Thanks,

NEFCO

Chris Truszkowski
Sales Executive
chris@nefco.us
561.775.9303 Extension 205
www.nefco.us

WBENC

From: Ojeda, Yeimy G <Yeimy.Ojeda@aecom.com>
Sent: Monday, October 12, 2020 6:15 PM
To: Chris Truszkowski <chris@nefco.us>
Subject: RE: June Lake PUD - Budgetary Estimate

Good afternoon Chris,

When should we expect a budgetary proposal for the Stamford Baffle 3.0?

Yeimy Ojeda, EIT
Engineer I, Water Business Line
D +1-661-283-2333
M +1-661-448-0102
yeimy.ojeda@aecom.com

AECOM
5501 E Commercenter Center Drive
Suite 100
Bakersfield, CA
T +1-661-283-2323
aecom.com

Imagine it. Delivered.

LinkedIn Twitter Facebook Instagram

From: Chris Truszkowski <chris@nefco.us>
Sent: Wednesday, September 30, 2020 2:00 PM
To: Ojeda, Yeimy G <Yeimy.Ojeda@aecom.com>
Subject: [EXTERNAL] RE: June Lake PUD - Budgetary Estimate

Hello Yeimy,

This should be enough information to put together a budget proposal. We do have the Stamford baffle 3.0.

Please see attached brochure, CFD study and specification.

I will get you a proposal here soon.

Thanks,

Chris Truszkowski
Sales Executive
chris@nefco.us
561.775.9303 Extension 205
www.nefco.us
WBENC

From: Ojeda, Yeimy G <Yeimy.Ojeda@aecom.com>
Sent: Tuesday, September 29, 2020 2:09 PM
To: Sales@NEFCO.us
Subject: June Lake PUD - Budgetary Estimate

Good morning,

In 2017, our team prepared an Evaluation Report for the June Lake PUD. The report included cut sheets and budgetary cost estimates for the Stamford Baffle 2.0 which we are recommending to install on an existing clarifier. I would like to obtain updated budgetary estimates for the same equipment and check if any newer models have come out since then that would fit the project. I have attached the treatment plants record drawings for the clarifier for your use. Please let me know if you need any more information to complete the request.

Yeimy Ojeda, EIT
Engineer I, Water Business Line
D +1-661-283-2333
M +1-661-448-0102
yeimy.ojeda@aecom.com

AECOM
5501 E Commercenter Center Drive
Suite 100
Bakersfield, CA
T +1-661-283-2323
aecom.com

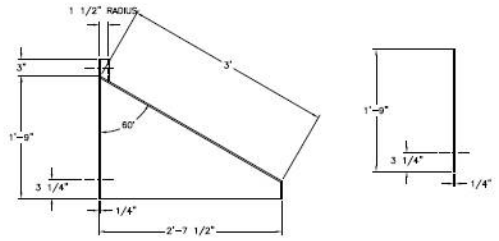
Imagine it. Delivered.

LinkedIn Twitter Facebook Instagram

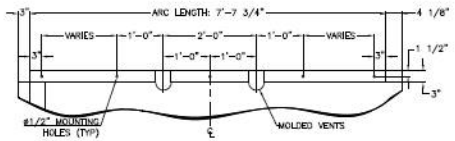
FORTUNE WORLD'S MOST ADMIRED COMPANIES

NEFCO Clarifier Baffle Vents – Existing Concept

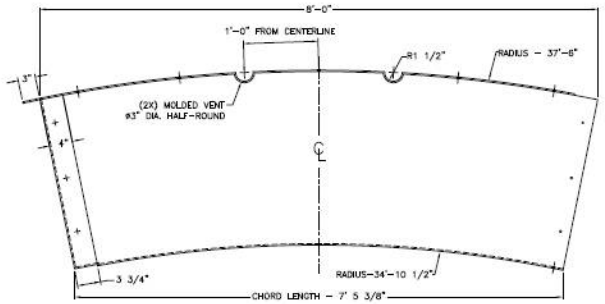
STAMFORD BAFFLE 2.0
CURRENT VENT CONFIGURATION
(NOT TO SCALE)



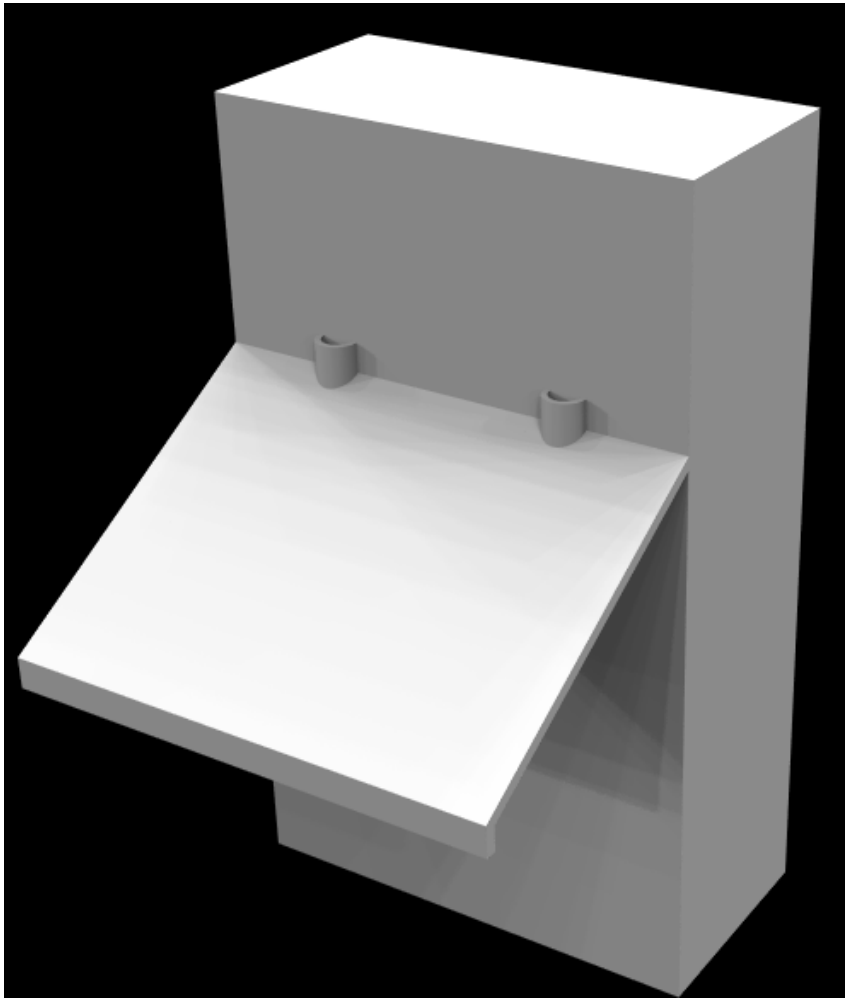
END VIEW
(NOT TO SCALE)



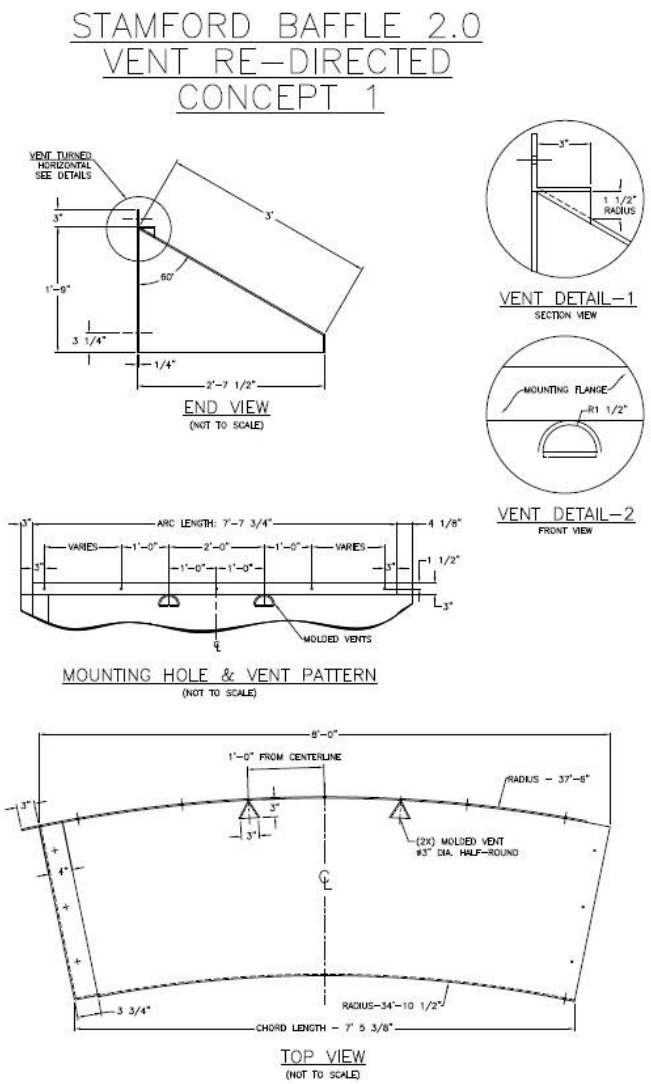
MOUNTING HOLE & VENT PATTERN
(NOT TO SCALE)

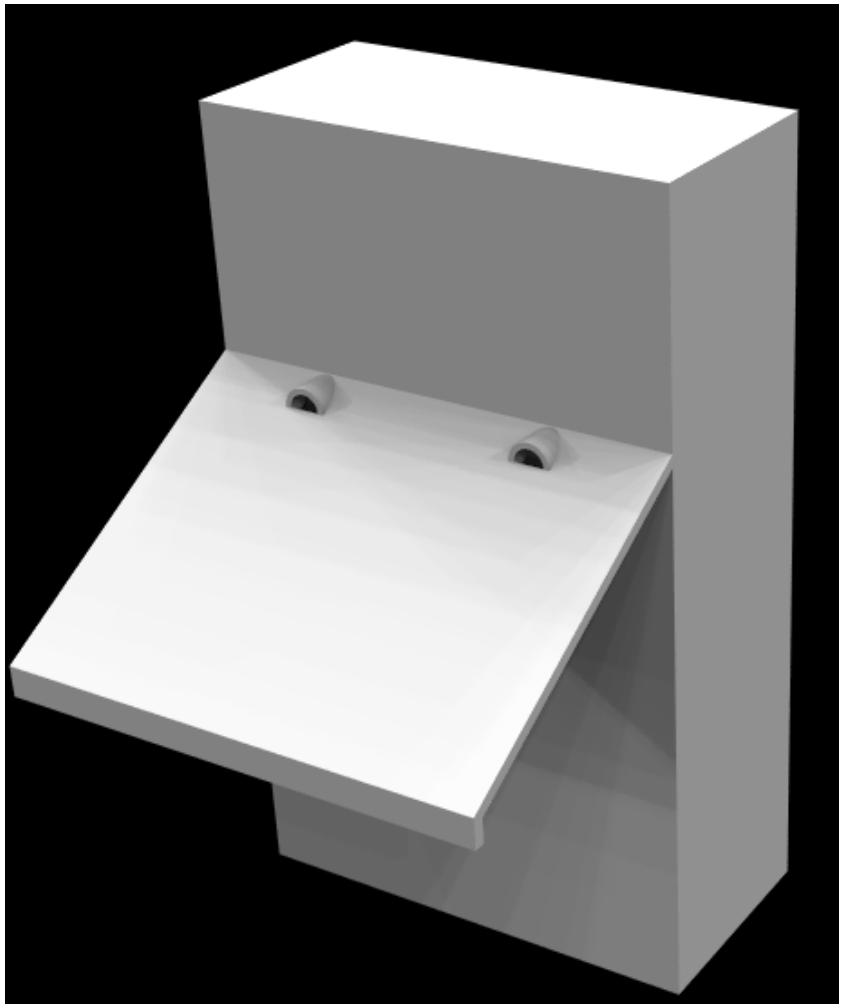


TOP VIEW
(NOT TO SCALE)

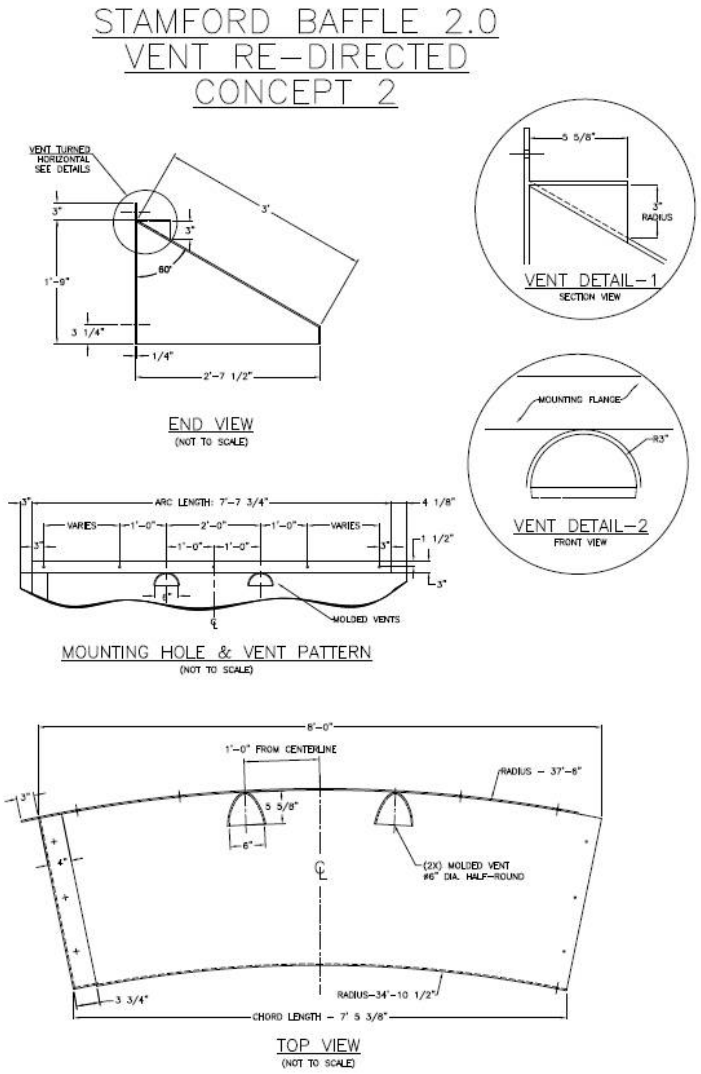


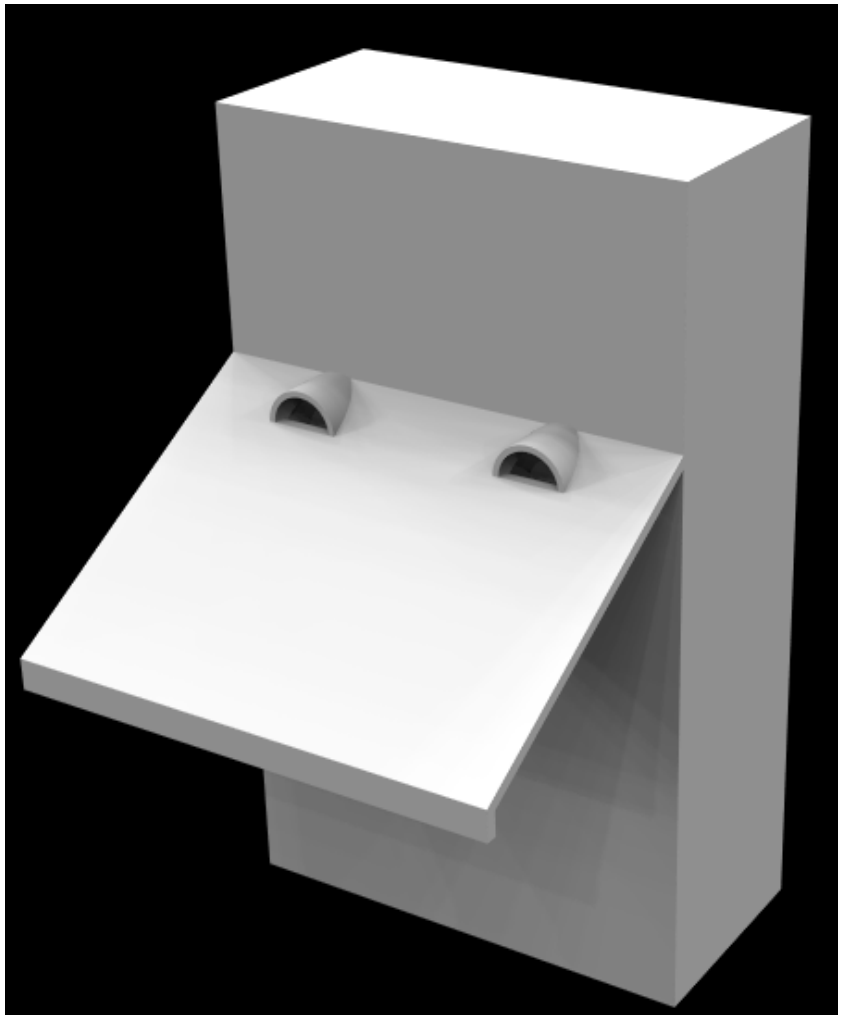
NEFCO Clarifier Baffle Vents – Concept 01



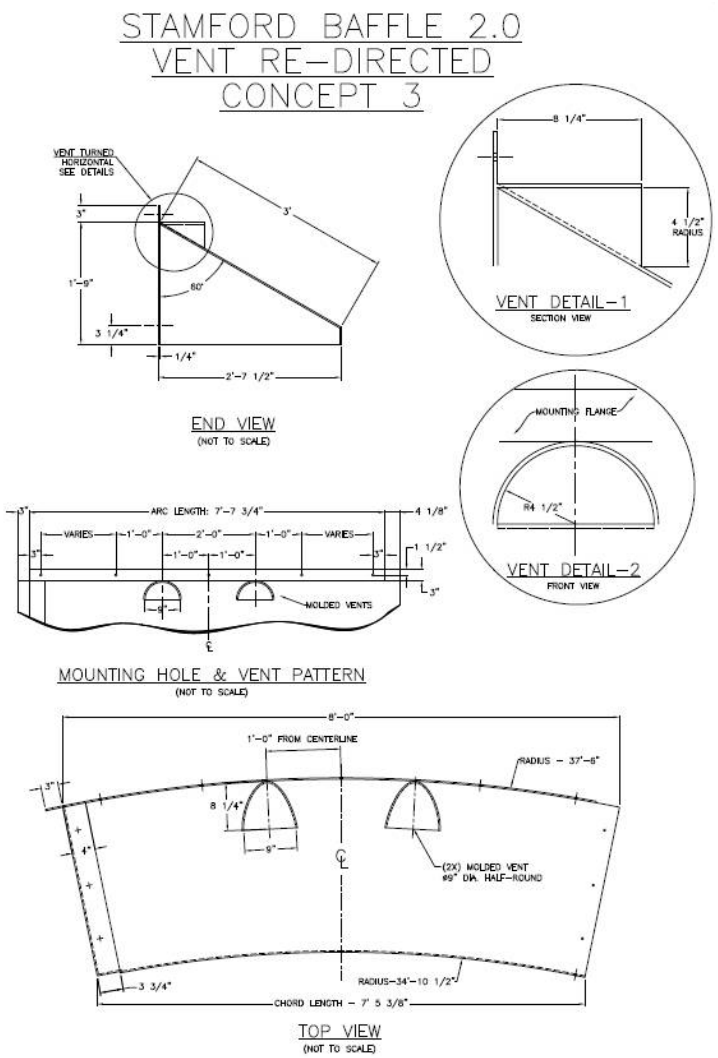


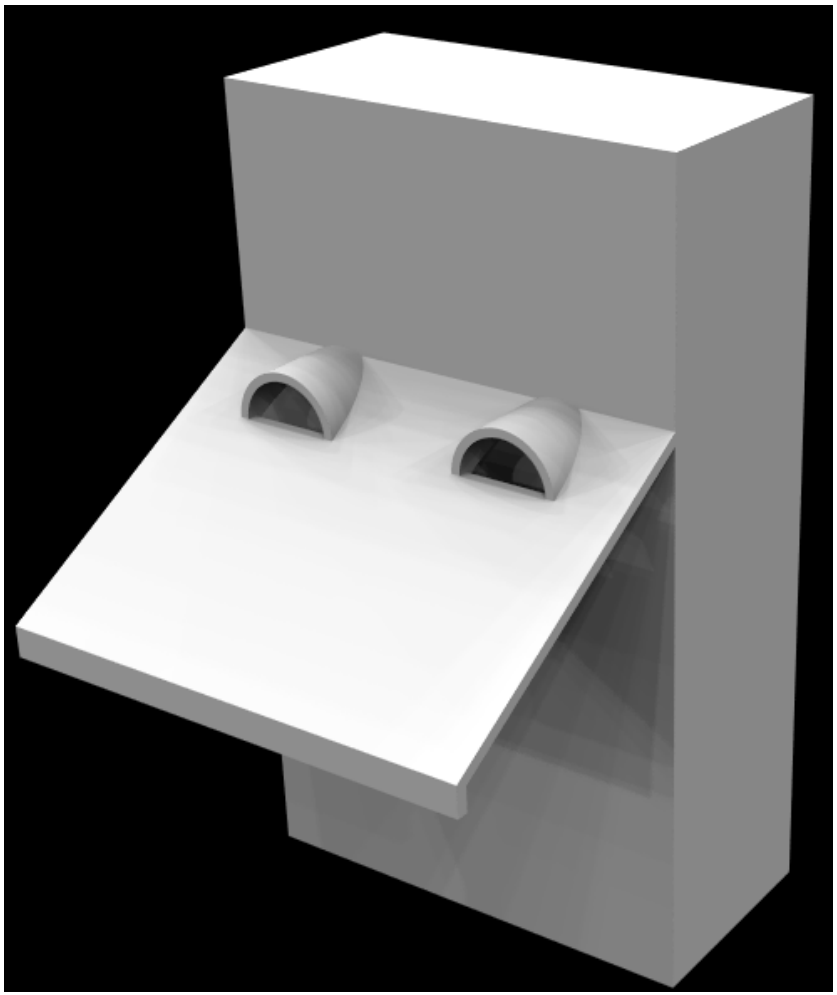
NEFCO Clarifier Baffle Vents – Concept 02



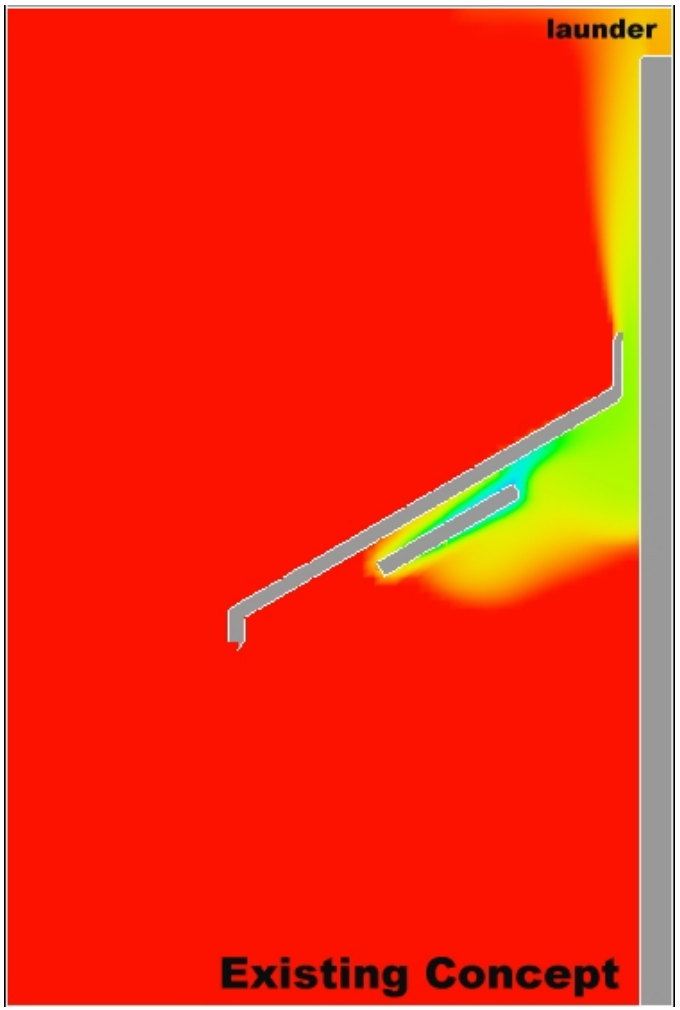


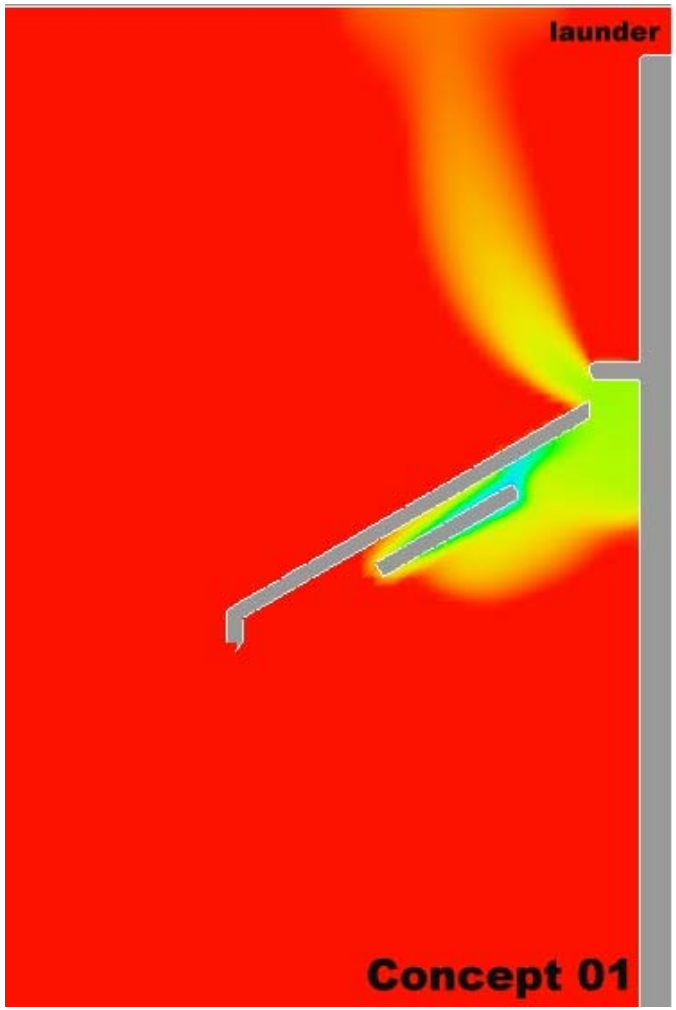
NEFCO Clarifier Baffle Vents – Concept 03



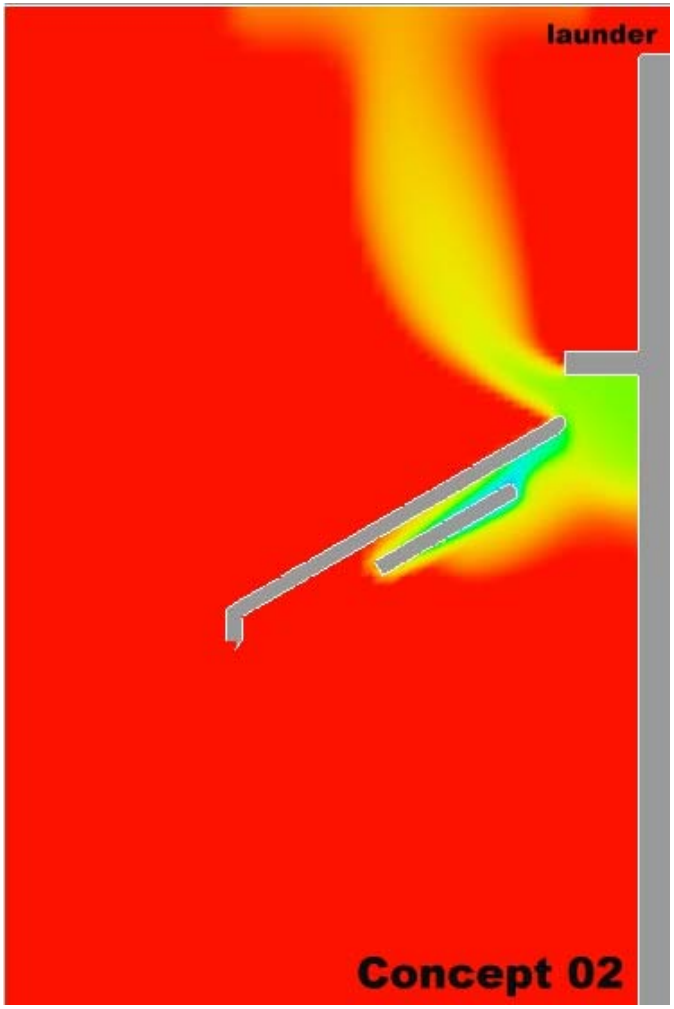


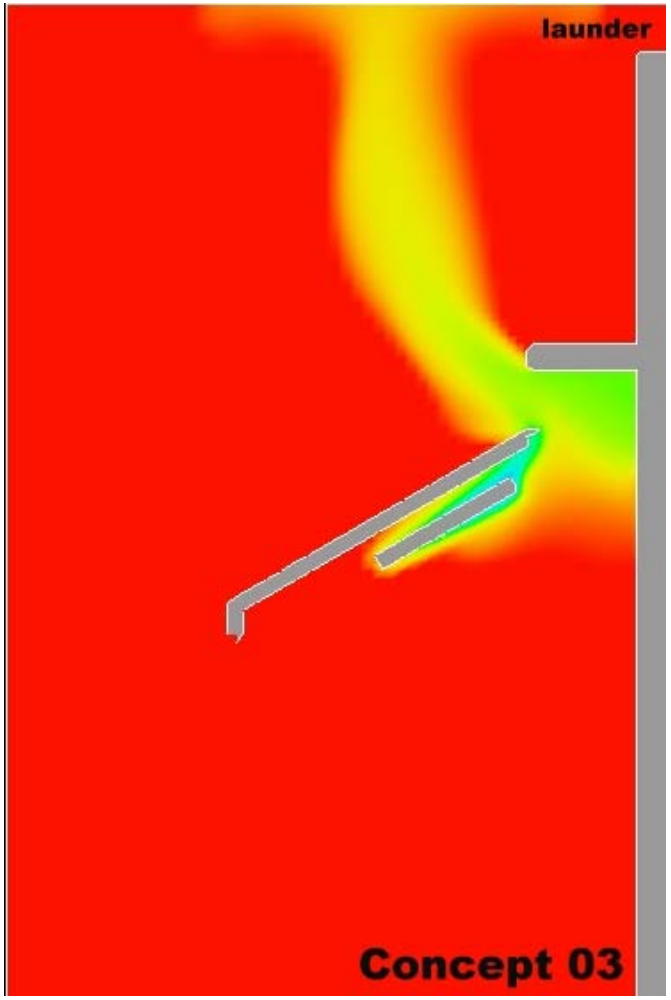
NEFCO Clarifier Baffle Vents – Gassing Simulations (section on vent center-line)





NEFCO Clarifier Baffle Vents – Gassing Simulations (section on vent center-line)





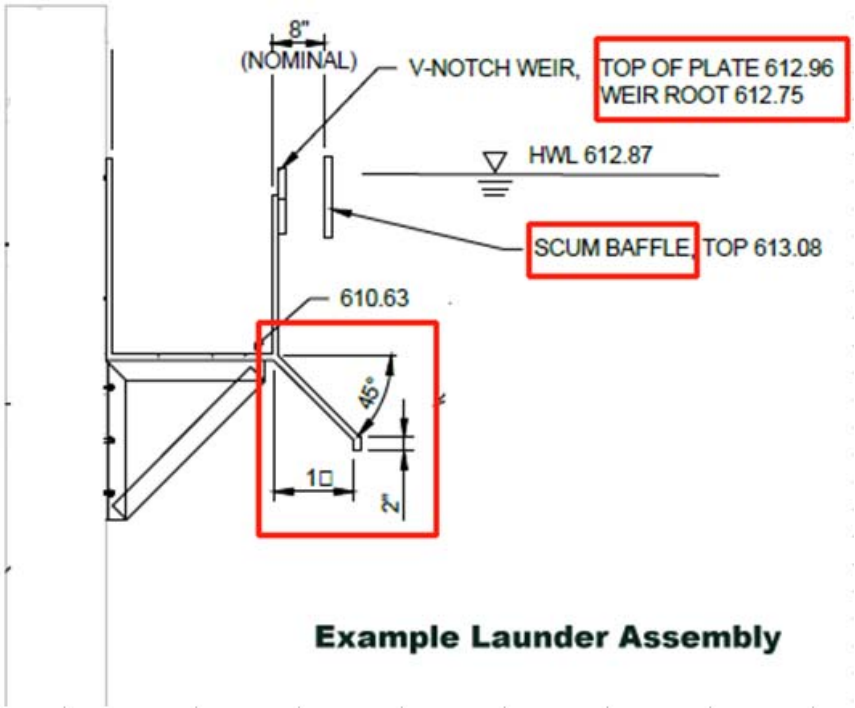
NEFCO Clarifier Baffle Vents – Model Update

NEFCO Example Clarifier		
Clarifier Diameter	100.00	ft
Launder length	314.15	ft
Launder Flow Rate	10.00	cfs
Flow Rate per foot	0.032	cfs
Flow depth over weir	1.200	inch
	0.100	ft
Flow Rate in Model	0.127	cfs
Launder Velocity	0.318	fps

Some typical clarifier dimension and flow data were approximated. The resulting flow discharge and launder weir flow in the model now better represent the local speeds close to the launder and scum baffle.

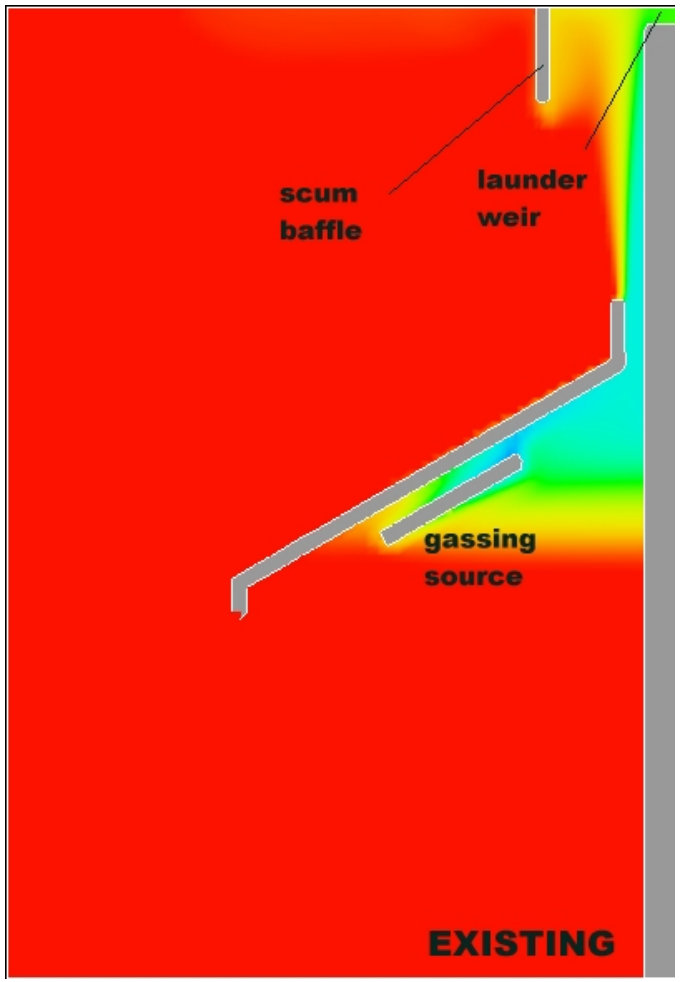
This new model approach was developed To investigate the likely effect of the new NEFCO vents in a clarifier fitted with a typical scum baffle and if the vents could move the gassing flow beyond the baffle and thus away from the launder.

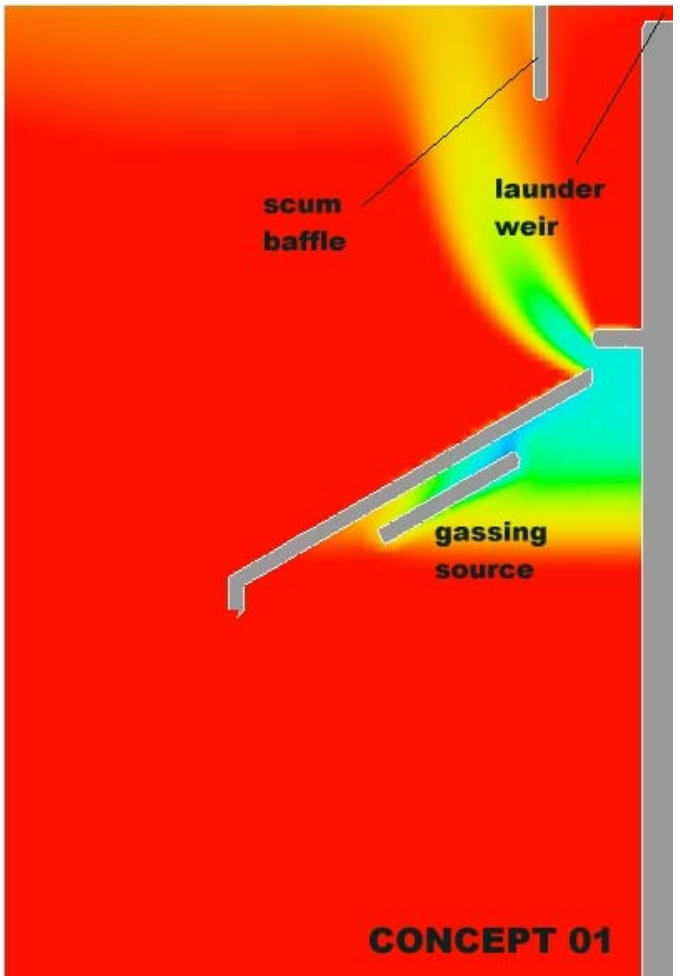
To develop a more detailed model for the vents, we added a scum-baffle in a typical nominal configuration and increased the resolution of the launder weir to simulate a typical local effect on the flow over a 1.2 inch weir head elevation. This configuration represents a more typical clarifier launder zone.



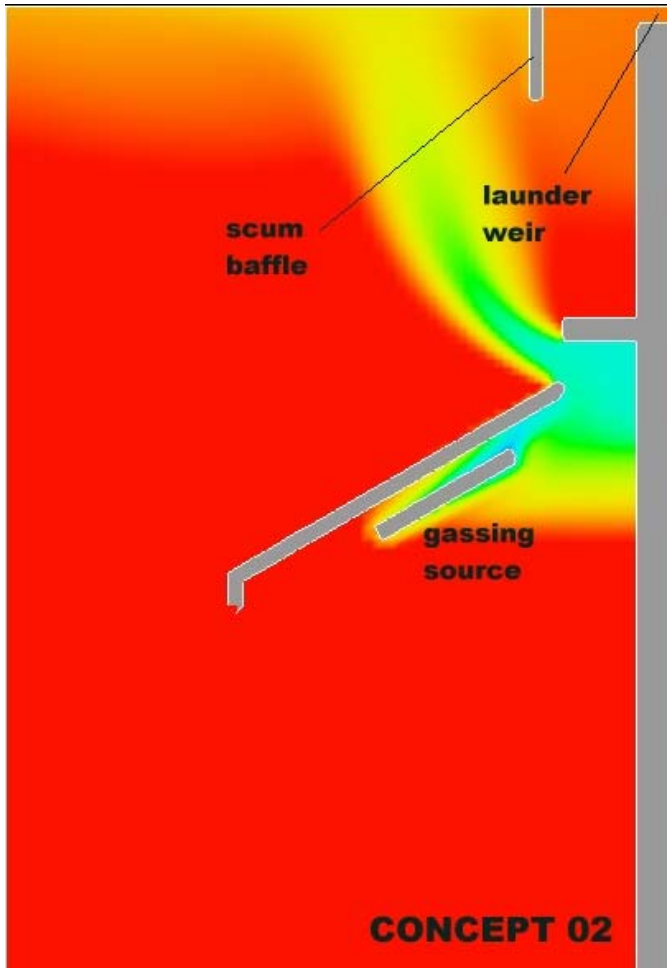
Example Launder Assembly

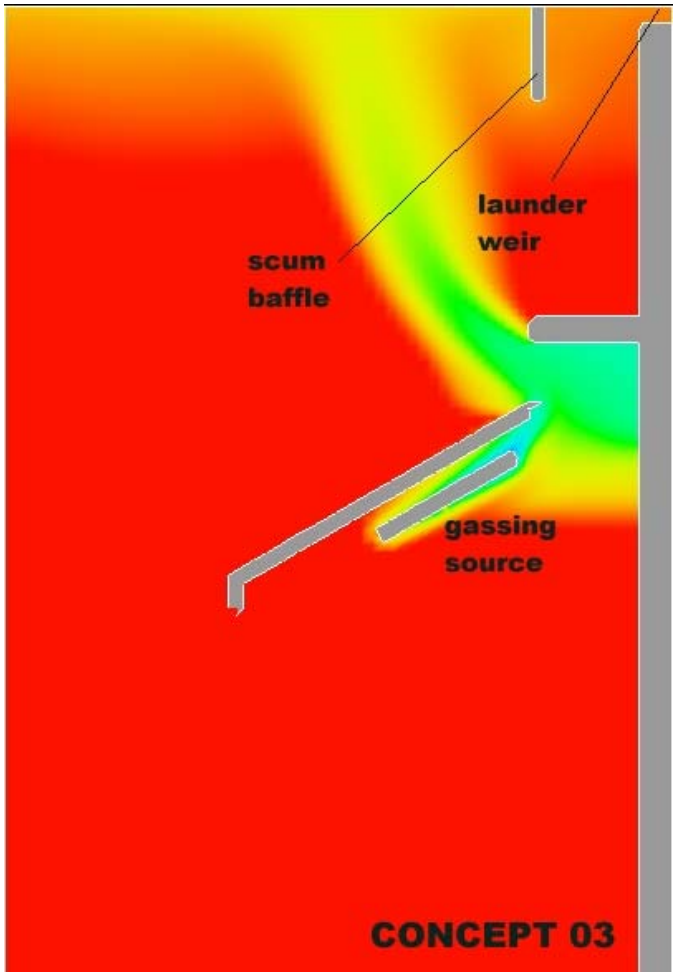
NEFCO Clarifier Baffle Vents – With Scum Baffle (section on vent center-line)





NEFCO Clarifier Baffle Vents – With Scum Baffle (section on vent center-line)





NEFCO Clarifier Baffle Vents – Particle Tracking Simulations

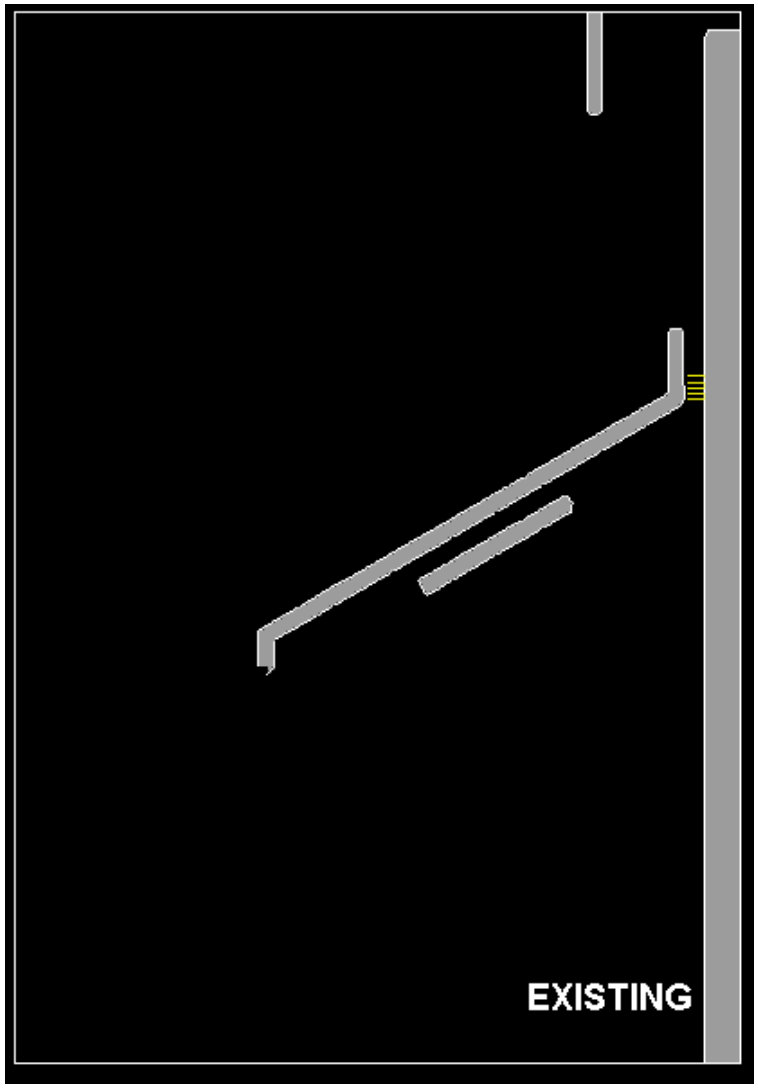
The CFD model was augmented to include the scum baffle and its likely effect on the positively buoyant gassing plume released from beneath the NEFCO peripheral baffle (plus any plume entrained solids).

The model was further advanced with the addition of particles injected at the vents which are moved toward the surface in the gassing plume. These particles were calibrated to represent typical solids within the clarifier which would settle at around 4 metres/hour (13 ft/hour), a value broadly representative of a good settling solid from many earlier clarifier studies with our CFD approach at NEFCO.

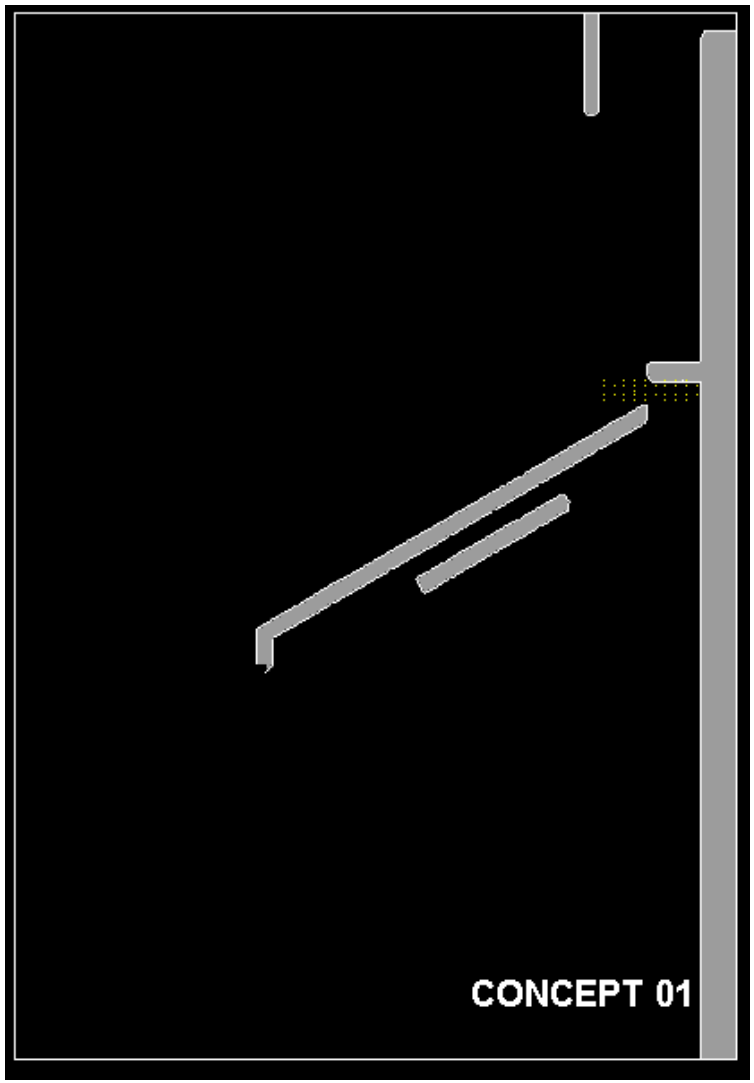
The gassing plume rises many times faster than the typical flows and settling speeds in a clarifier, however the gassing is expected to be episodic (not continuous) and the simulations represent one such event over 2 minutes of real-time. As the speed of the gassing plume is so much greater than the capacity of the solids to settle, these will not start to settle until they move outside the influence of the plume.

When the solids are ejected from the plume they will settle back into the clarifier provided they have not moved close enough to the launder to be drawn over it as carry-over. If they progress away from the launder, then it is likely that they will settle back into the body of the clarifier. The AVI video animations which follow, show the progression of the solids particles within the gassing plume.

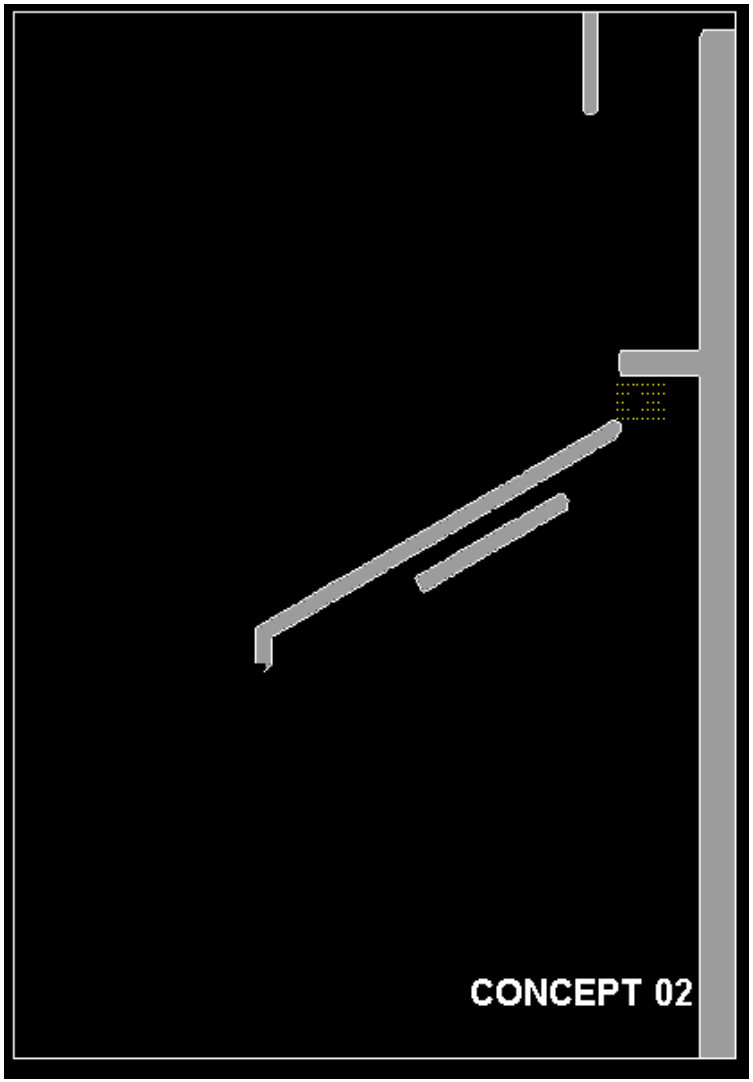
NEFCO Clarifier Baffle Vents – EXISTING (with particles)



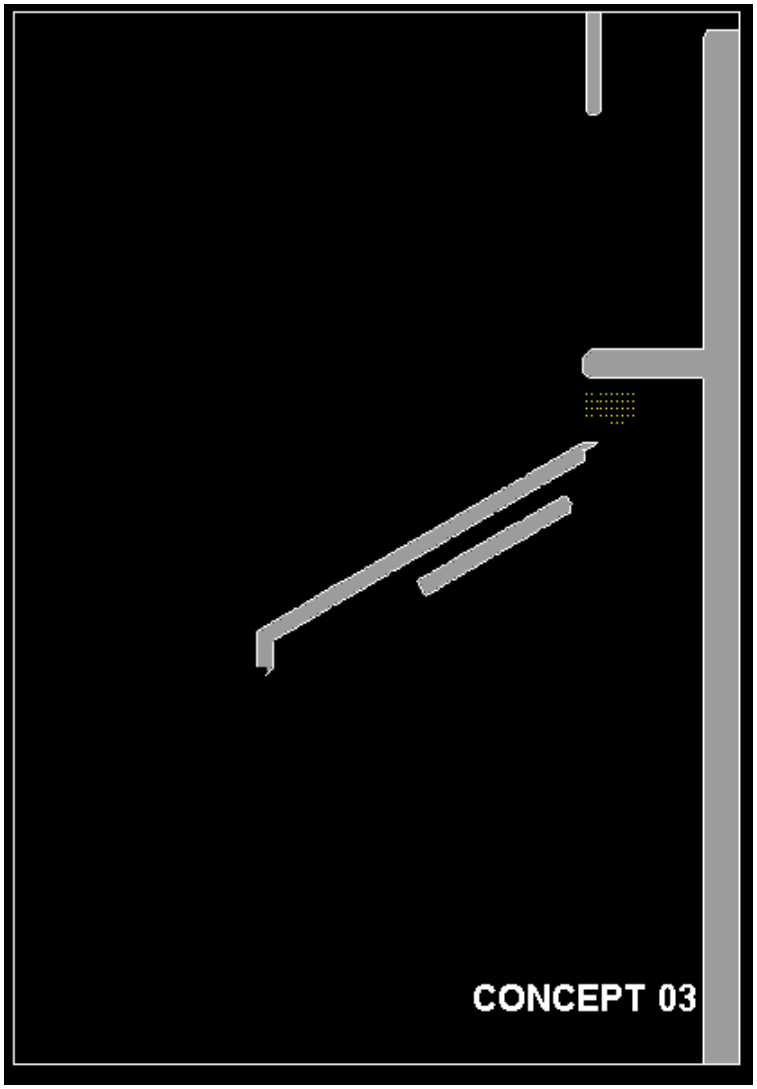
NEFCO Clarifier Baffle Vents – CONCEPT 01 (with particles)



NEFCO Clarifier Baffle Vents – CONCEPT 02 (with particles)



NEFCO Clarifier Baffle Vents – CONCEPT 03 (with particles)



NEFCO Clarifier Baffle Vents – Conclusions

In the EXISTING configuration all of the solids particles are carried over the launder as the gassing plume tends to drive flow up the sidewall and directly toward the launder and outboard of the scum baffle.

In all the various new CONCEPT configurations developed by NEFCO the gassing plume is ejected slightly inboard into the clarifier and when the scum baffle is in the typical nominal 8 inches or so from the launder it is likely that the gassing plume will encounter the surface, inboard of the scum baffle.

One promising aspect of the inclusion of the typical position of the scum baffle is that it seems possible that the NEFCO vent concepts can be used to encourage the gassing (and any entrained solids) to move away from the launder. This will depend very heavily on the actual form of the gassing plume (its density) and the distance over which the plume rises to the surface (the resulting vector intercepting the surface).

Provided the gas plume is ejected by the vents far enough to allow the plume to encounter the surface at a point inboard of the scum baffle, then most of the entrained particles and any positively buoyant material in the plume will be likely to move inboard of the scum baffle and not immediately out over the launder as in the EXISTING configuration.

Once inboard of the scum baffle, slowly settling solids would tend to move back into the body of the clarifier.

NEFCO Clarifier Baffle Vents – Density Current Interception

The NEFCO concepts for release of gassing seemed to be effective and further study was requested to provide an outline analysis of the potential effects of the concepts on the performance of the NEFCO density current baffle when exposed to a blanket top density current from the clarifier (in the absence of gassing). The idea being, that the gassing is likely to be intermittent (and the baffle seems to deal quite effectively with this condition) and the primary requirement of the baffle to assist in the redirection of blanket top density currents, which occur more often than the intermittent gassing.

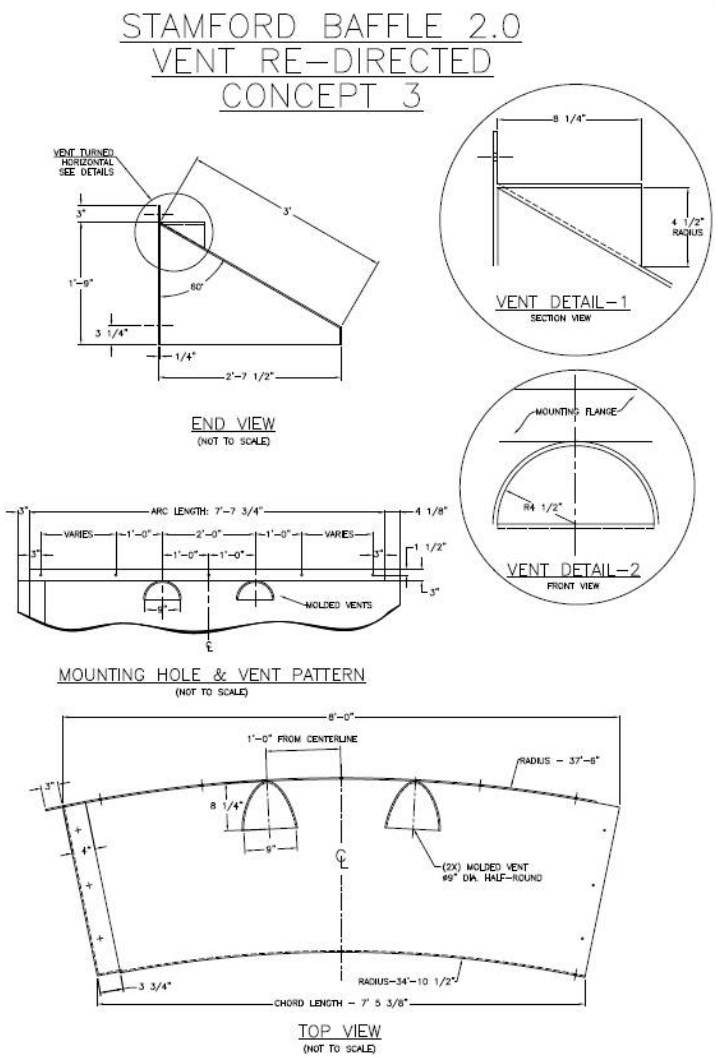
Concept 03 was chosen as the candidate for initial outline testing of what might be likely to happen if the design were exposed to a strong blanket top density current from deeper in the clarifier.

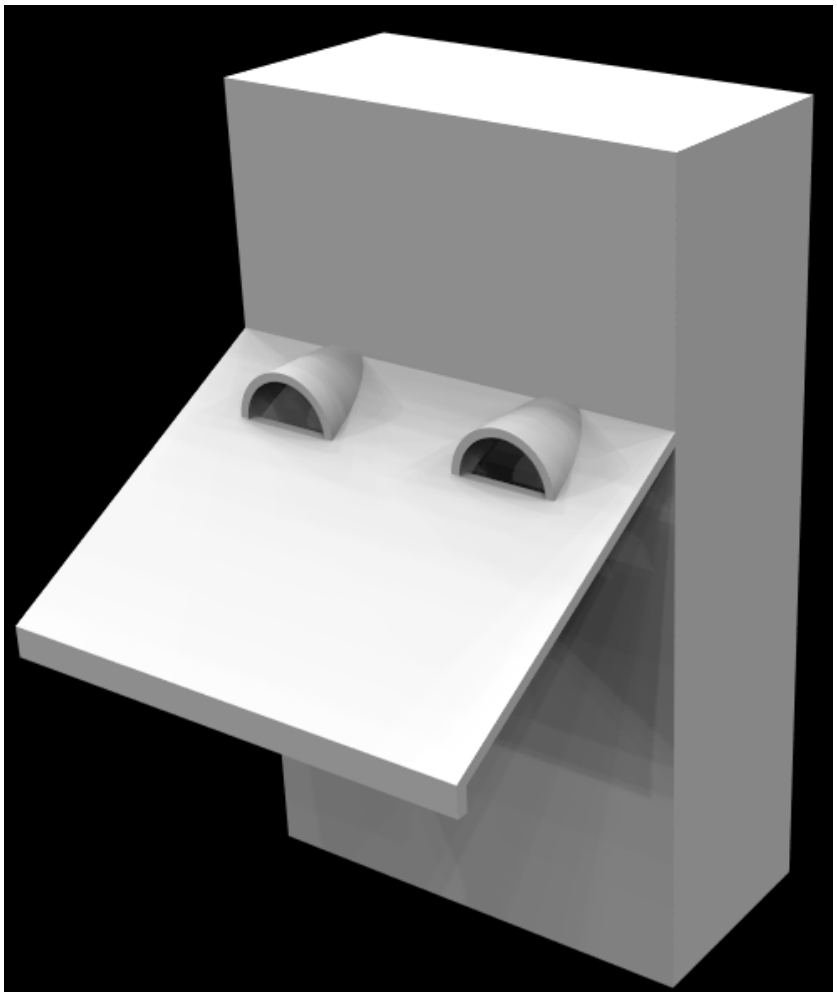
It is not computationally possible within the limits of the available CFD technology, to model the whole clarifier in transient (time-varying) mode as we have done in high-resolution 3D local studies of the gassing release. We therefore approximated the density current in a new 3D local simulation as an upwelling flow vertically up the sidewall, below the new density current baffle design.

The upwelling flow was applied using similar variable density settling models and parameters which we would normally use to simulate solid settling in the full clarifier. The upwelling current velocity was set to be higher than that which we would normally expect to simulate a relatively unlikely maximum condition, the expectation being that if the design can operate effectively in this condition it is likely to do so more effectively in lower speed upwelling conditions more representative of the normal operation.

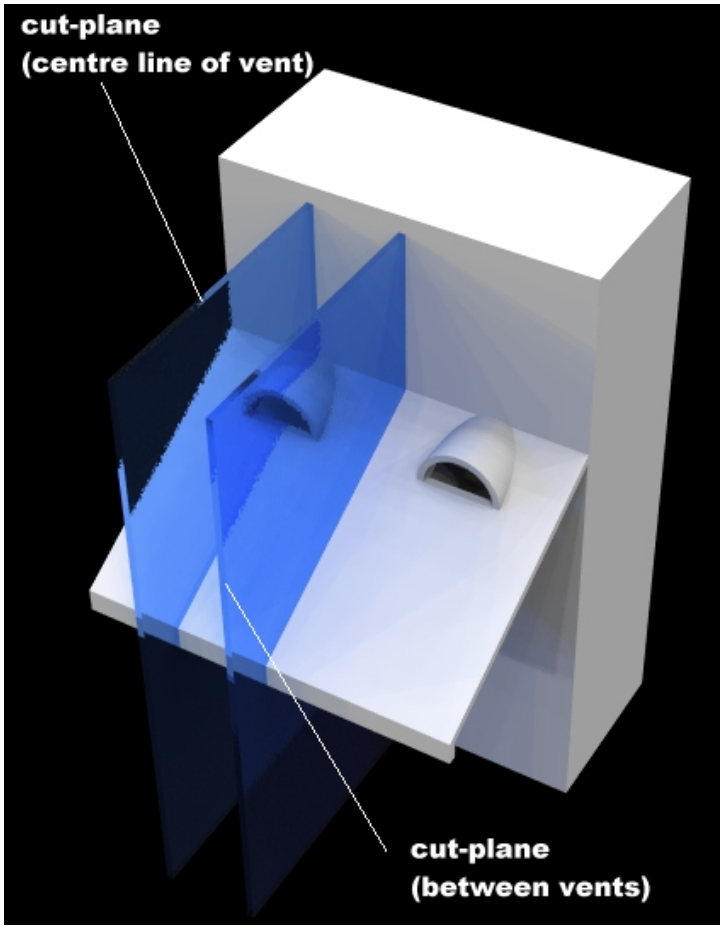
The main interest in these initial studies was to ascertain if the vents provided a route for solids to move up the sidewall beneath the density current baffle, through the vent and then over the launder.

NEFCO Clarifier Baffle Vents – Concept 03



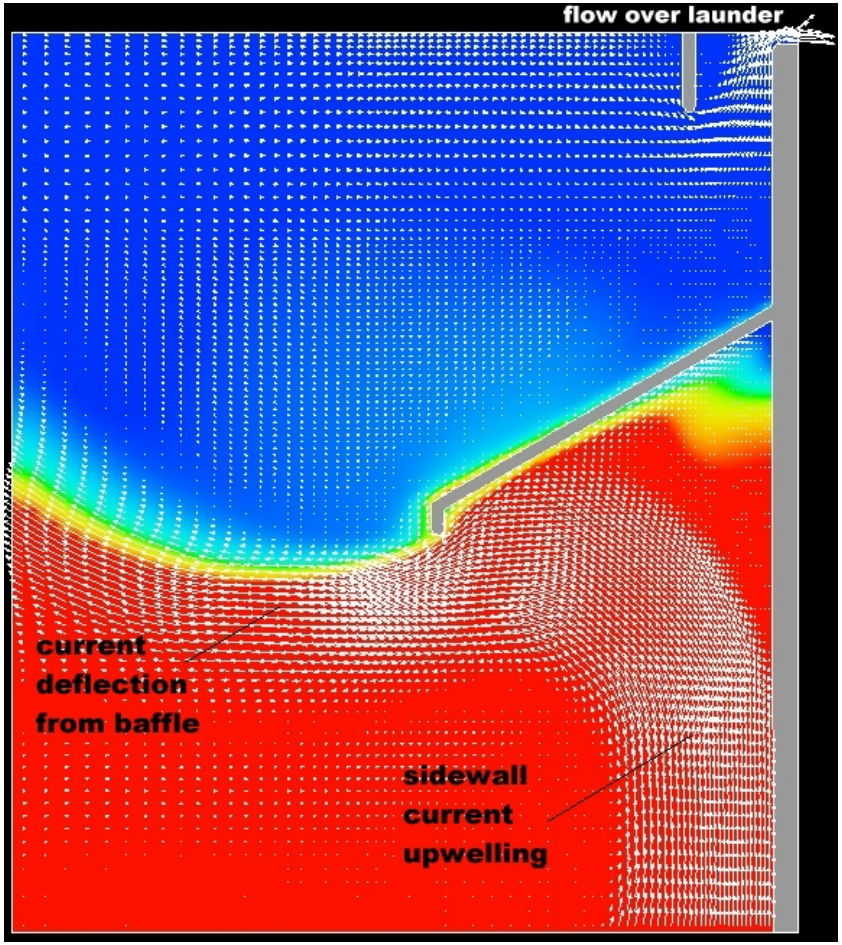


NEFCO Clarifier Baffle Vents – Density Current Interception

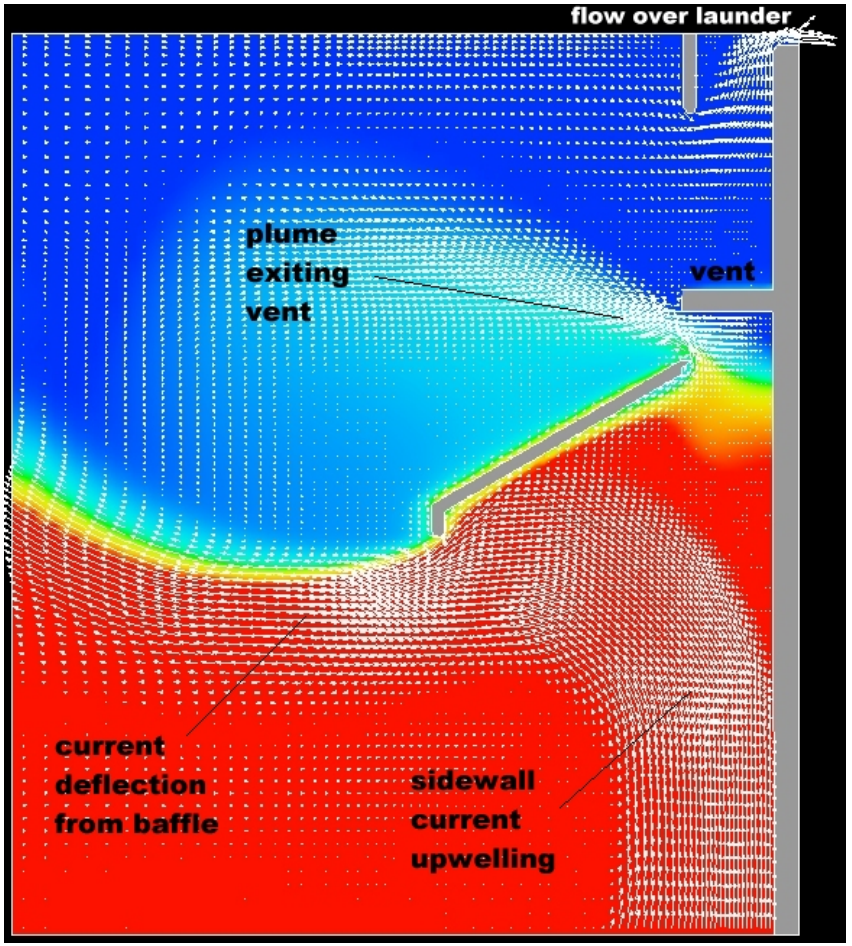


cut planes for graphics viewing

NEFCO Clarifier Baffle Vents – Density Current Interception

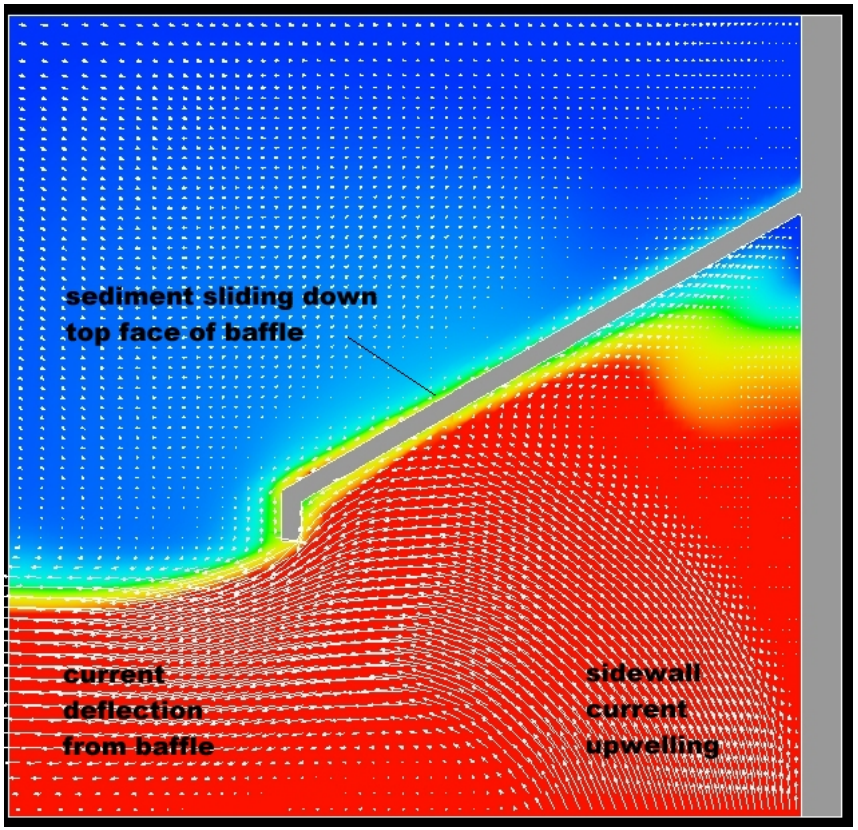


between vents

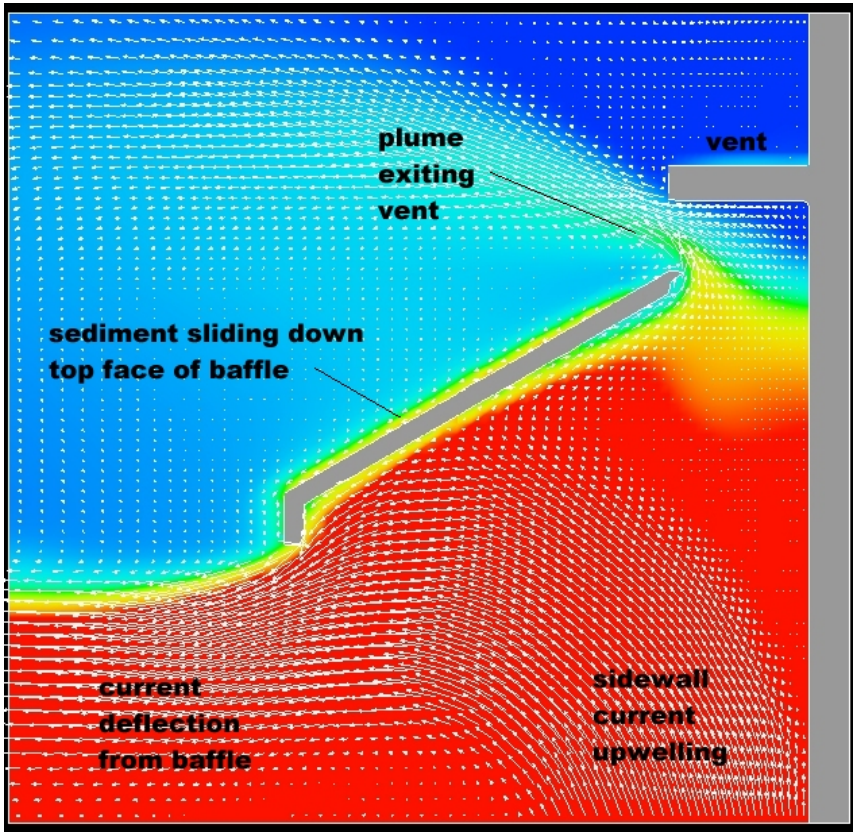


on vent center-line

NEFCO Clarifier Baffle Vents – Density Current Interception

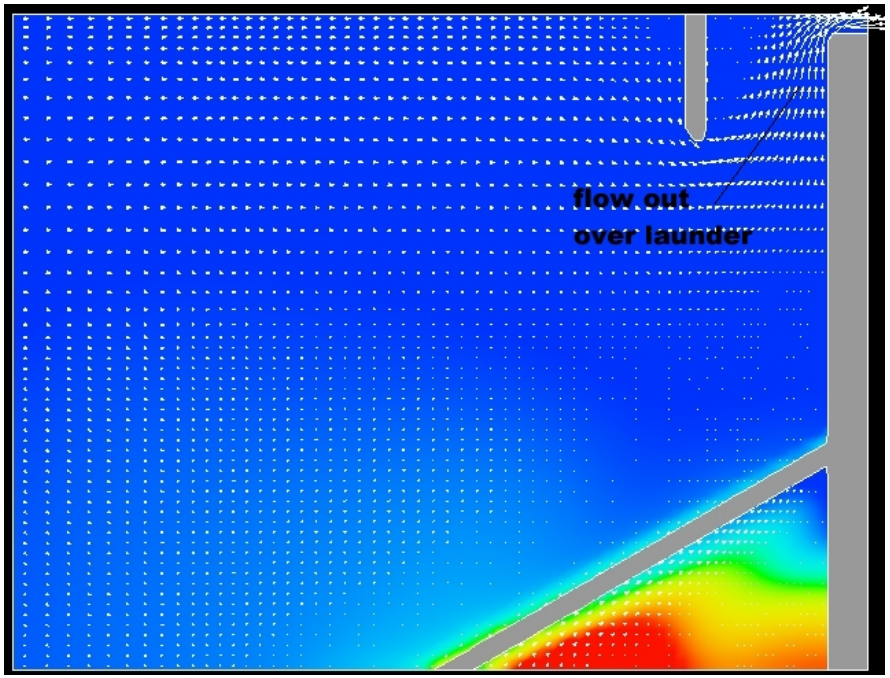


between vents

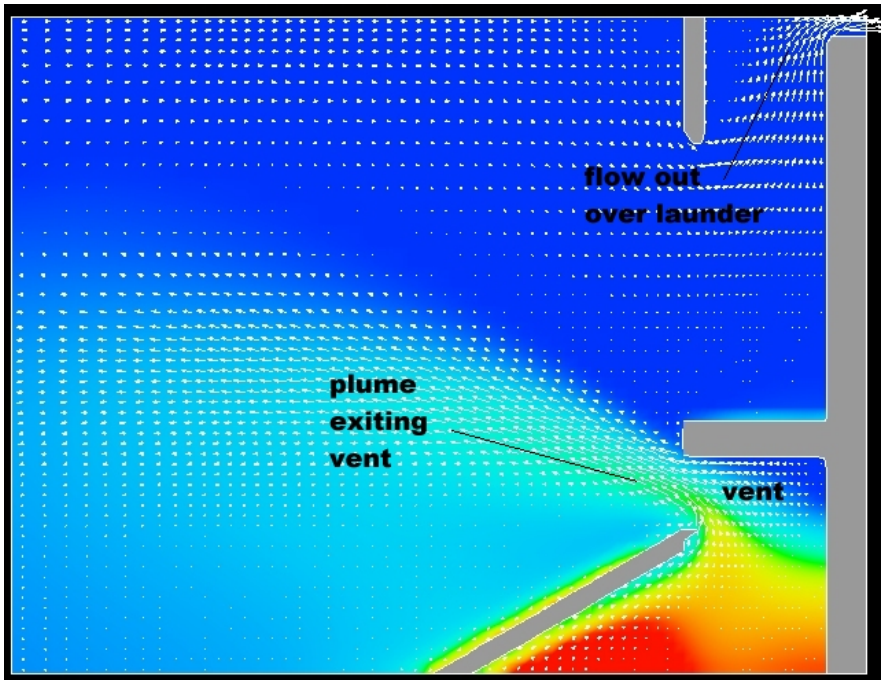


on vent center-line

NEFCO Clarifier Baffle Vents – Density Current Interception



between vents



on vent center-line

NEFCO Clarifier Baffle Vents – Density Current Interception

The NEFCO concepts for deflection of blanket top current and subsequent sidewall upwelling seem to also be effective with the new vent design proposals.

A particularly strong sidewall current was applied to the model with solids settlement included. Whilst the pressure gradient developed by the deflection of the current by the baffle did allow some of the finer solids to pass through the vent, the resulting jet plume from the vent does not tend to direct this material over the launder. If the NEFCO baffle was not in place, such a strong current would undoubtedly pass significant solids over the launder.

The simulations suggest that the plume is ejected in a more horizontal manner than in the case for the gassing simulations and this would make logical sense in that those earlier simulations were for a positively buoyant plume and these solids simulations relate to a plume with a small (but significant) solids content, which will result in a slight negative buoyancy.

The effect of the flow through the vent seems to be to direct the jet inboard into the clarifier rather than outboard toward the launder and this would seem a very positive result.

These are only preliminary and qualitative simulations of the potential flow from gassing and from solids movement through the vents in the new NEFCO baffle proposals, but they suggest that a positive outcome from both gassing and solids transfer is likely with the new designs. Subsequent detailed design of the projection distance of the vents or the positioning of the scum-baffle could assist further in the ability of the designs to protect the launder from either gassing flows or the movement of small amounts of solids through the vents.

Appendix C

2010-2019 Year End Reports

SCWTP	2018 JAN	2018 FEB	2018 MAR	2018 APR	2018 MAY	2018 JUNE	2018 JULY	2018 AUG	2018 SEPT	2018 OCT	2018 NOV	2018 DEC	
METER START	598816000	601380000	603542000	605898000	607305000	607342000	609518000	615031000	619920000	624187000	625817000	627811000	
METER STOP	601380000	603542000	605898000	607305000	607342000	609518000	615031000	619920000	624187000	625817000	627811000	630068000	
PRODUCTION	2564000	2162000	2356000	1407000	37000	2176000	5513000	4889000	4267000	1630000	1994000	2257000	
X 1000	2564000	2162000	2356000	1407000	37000	2176000	5513000	4889000	4267000	1630000	1994000	2257000	
MG	2.56	2.16	2.36	1.41	0.04	2.18	5.51	4.89	4.27	1.63	1.99	2.26	31.25
GPM	57.44	48.43	52.78	31.52	0.83	48.75	123.50	109.52	95.59	36.51	44.67	50.56	700.09
JLWTP													
METER START	6406843	6406843	6406843	6674480	7535265	1108711	4131013	5006161	5816186	6885813	8847424	8873940	
METER STOP	6406843	6406843	6674480	7535265	11108711	4131013	5006161	5816186	6885813	8847424	8873940	8873940	
PRODUCTION	0	0	267637	860785	3573446	3022302	875148	810025	1069627	1961611	26516	0	
MG	0.00	0.00	0.27	0.86	3.57	3.02	0.88	0.81	1.07	1.96	0.03	0.00	12.47
GPM	0.00	0.00	6.00	19.28	80.05	67.70	19.60	18.15	23.96	43.94	0.59	0.00	279.28
FROM SCWTP													
METER START	8885722	8904717	8933267	8948942	8949408	8949408	8970832	9009133	9009133	9009157	9011765	9031581	
METER STOP	8904717	8933267	8948942	8949408	8949408	8970832	9009133	9009133	9009157	9011765	9031581	9070910	
PRODUCTION	18995	28550	15675	466	0	21424	38301	0	24	2608	19816	39329	
X 10	189950	285500	156750	4660	0	214240	383010	0	240	26080	198160	393290	
MG	0.18995	0.2855	0.15675	0.00466	0	0.21424	0.38301	0	0.00024	0.02608	0.19816	0.39329	
GPM	4.2551523	6.3956093	3.5114247	0.1043907	0	4.7992832	8.5799731	0	0.0053763	0.5842294	4.4390681	8.8102599	
CLARK WTP													
METER START	455784	456763	456763	456763	459593	3367	23155	47770	69634	76255	76255	76255	
METER STOP	456763	456763	456763	459593	470621	23155	47770	69634	76255	76255	76255	76255	
PRODUCTION	979	0	0	2830	11028	19788	24615	21864	6621	0	0	0	
X 100	97900	0	0	283000	1102800	1978800	2461500	2186400	662100	0	0	0	
MG	0.0979	0	0	0.283	1.1028	1.9788	2.4615	2.1864	0.6621	0	0	0	8.7725
GPM	2.2662037	0	0	6.5509259	25.527778	45.805556	56.979167	50.611111	15.326389	0	0	0	203.0671
PETERSEN WTP													
METER START	733922	735568	736854	736854	739397	2485	19371	39001	56147	82921	106951	123079	
METER STOP	735568	736854	738165	739397	742212	19371	39001	56147	82921	106951	123079	139478	
PRODUCTION	1646	1286	1311	2543	2815	16886	19630	17146	26774	24030	16128	16399	
X 100	164600	128600	131100	254300	281500	1688600	1963000	1714600	2677400	2403000	1612800	1639900	
MG	0.1646	0.1286	0.1311	0.2543	0.2815	1.6886	1.963	1.7146	2.6774	2.403	1.6128	1.6399	14.6594
GPM	3.81	2.98	3.03	5.89	6.52	39.09	45.44	39.69	61.98	55.63	37.33	37.96	339.34
WWTP													
METER START	752706	756858	759951	764425	770078	775379	780809	786251	790964	795562	800138	803548	
METER STOP	756858	759951	764425	770078	775379	780809	786251	790964	795562	800138	803548	807815	
PRODUCTION	4152	3093	4474	5653	5301	5430	5442	4713	4598	4576	3410	4267	
X ~~200~~(1000)*	4152000	3093000	4474000	5653000	5301000	5430000	5442000	4713000	4598000	4576000	3410000	4267000	
MG	4.152	3.093	4.474	5.653	5.301	5.43	5.442	4.713	4.598	4.576	3.41	4.267	
GPM	102.98	76.71	110.96	140.20	131.47	134.67	134.97	116.89	114.04	113.49	84.57	105.83	

NOTE: 1440 MINUTES IN 24 HOURS
28 DAYS X 1440 = 40320
29 DAYS X 1440 = 41760
30 DAYS X 1440 = 43200
31 DAYS X 1440 = 44640

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report 2019

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	63	2	7.12	7.1
June	Influent	94.9	8.7	84	7.1
September	Influent	180	12	76	7
December	Influent	70	4.1	62	7.6

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	6.2	8.9	ND	15	6.75	200	11	19	9.7
June	Effluent	3.4	3.7	ND	17	6.89	170	1.8	80	0.14
September	Effluent	3.8	5.7	ND	25	6.9	350		31	
December	Effluent	6.4	9.2	ND	16	7.4	170	3	13	0.094
			6.875							

Temperature (F°)

Month	Influent	Effluent
March	48	48
June		58.8
September	56	59.9
December	53.6	46.8

Monitoring Well Levels - Staic Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3	well 1	well 2	Well3	Well 1	Well 2	Well 3	Well1	Well2	Well3
Top Casting	7000	6986.39	6983.31	Depth to groundwater			Temperature			PH		
March	6907	6946.39	6983.31									
June												
September	6946.39	6905.59	6983.31									
December	6851.97	6862.59	6983.31	64.5 ft	43ft	0	57.6	55.6	0	7.6	5.7	0

Wasterwater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	4.93	4.55	6.53	7.84	7.34	7.43	7.51	5.26	3.99	3.736	3.115	5.09
Average MGD	0.164	0.162	0.217	0.249	0.239	0.247	0.242	0.169	0.133	0.12	0.103	0.164

Temp F°	PH Units	TDS mg/L	CL mg/L	MBAS mg/L	NO3 mg/L	EPA625 Orgs	EPA8270C Orgs
52.2	7.15	180	21	0.072	7	Attached	Attached

Date:	Pond 1	Pond 2	Pond 3	Pond 4
12/1/2019	29Ft	Empty	Empty	Empty

SCWTP	2018 JAN	2018 FEB	2018 MAR	2018 APR	2018 MAY	2018 JUNE	2018 JULY	2018 AUG	2018 SEPT	2018 OCT	2018 NOV	2018 DEC	
METER START	598816000	601380000	603542000	605898000	607305000	607342000	609518000	615031000	619920000	624187000	625817000	627811000	
METER STOP	601380000	603542000	605898000	607305000	607342000	609518000	615031000	619920000	624187000	625817000	627811000	630068000	
PRODUCTION	2564000	2162000	2356000	1407000	37000	2176000	5513000	4889000	4267000	1630000	1994000	2257000	
X 1000	2564000	2162000	2356000	1407000	37000	2176000	5513000	4889000	4267000	1630000	1994000	2257000	
MG	2.56	2.16	2.36	1.41	0.04	2.18	5.51	4.89	4.27	1.63	1.99	2.26	31.25
GPM	57.44	48.43	52.78	31.52	0.83	48.75	123.50	109.52	95.59	36.51	44.67	50.56	700.09
JLWTP													
METER START	6406843	6406843	6406843	6674480	7535265	1108711	4131013	5006161	5816186	6885813	8847424	8873940	
METER STOP	6406843	6406843	6674480	7535265	11108711	4131013	5006161	5816186	6885813	8847424	8873940	8873940	
PRODUCTION	0	0	267637	860785	3573446	3022302	875148	810025	1069627	1961611	26516	0	
MG	0.00	0.00	0.27	0.86	3.57	3.02	0.88	0.81	1.07	1.96	0.03	0.00	12.47
GPM	0.00	0.00	6.00	19.28	80.05	67.70	19.60	18.15	23.96	43.94	0.59	0.00	279.28
FROM SCWTP													
METER START	8885722	8904717	8933267	8948942	8949408	8949408	8970832	9009133	9009133	9009157	9011765	9031581	
METER STOP	8904717	8933267	8948942	8949408	8949408	8970832	9009133	9009133	9009157	9011765	9031581	9070910	
PRODUCTION	18995	28550	15675	466	0	21424	38301	0	24	2608	19816	39329	
X 10	189950	285500	156750	4660	0	214240	383010	0	240	26080	198160	393290	
MG	0.18995	0.2855	0.15675	0.00466	0	0.21424	0.38301	0	0.00024	0.02608	0.19816	0.39329	
GPM	4.2551523	6.3956093	3.5114247	0.1043907	0	4.7992832	8.5799731	0	0.0053763	0.5842294	4.4390681	8.8102599	
CLARK WTP													
METER START	455784	456763	456763	456763	459593	3367	23155	47770	69634	76255	76255	76255	
METER STOP	456763	456763	456763	459593	470621	23155	47770	69634	76255	76255	76255	76255	
PRODUCTION	979	0	0	2830	11028	19788	24615	21864	6621	0	0	0	
X 100	97900	0	0	283000	1102800	1978800	2461500	2186400	662100	0	0	0	
MG	0.0979	0	0	0.283	1.1028	1.9788	2.4615	2.1864	0.6621	0	0	0	8.7725
GPM	2.2662037	0	0	6.5509259	25.527778	45.805556	56.979167	50.611111	15.326389	0	0	0	203.0671
PETERSEN WTP													
METER START	733922	735568	736854	736854	739397	2485	19371	39001	56147	82921	106951	123079	
METER STOP	735568	736854	738165	739397	742212	19371	39001	56147	82921	106951	123079	139478	
PRODUCTION	1646	1286	1311	2543	2815	16886	19630	17146	26774	24030	16128	16399	
X 100	164600	128600	131100	254300	281500	1688600	1963000	1714600	2677400	2403000	1612800	1639900	
MG	0.1646	0.1286	0.1311	0.2543	0.2815	1.6886	1.963	1.7146	2.6774	2.403	1.6128	1.6399	14.6594
GPM	3.81	2.98	3.03	5.89	6.52	39.09	45.44	39.69	61.98	55.63	37.33	37.96	339.34
WWTP													
METER START	752706	756858	759951	764425	770078	775379	780809	786251	790964	795562	800138	803548	
METER STOP	756858	759951	764425	770078	775379	780809	786251	790964	795562	800138	803548	807815	
PRODUCTION	4152	3093	4474	5653	5301	5430	5442	4713	4598	4576	3410	4267	
X ~~200~~(1000)*	4152000	3093000	4474000	5653000	5301000	5430000	5442000	4713000	4598000	4576000	3410000	4267000	
MG	4.152	3.093	4.474	5.653	5.301	5.43	5.442	4.713	4.598	4.576	3.41	4.267	
GPM	102.98	76.71	110.96	140.20	131.47	134.67	134.97	116.89	114.04	113.49	84.57	105.83	

NOTE: 1440 MINUTES IN 24 HOURS
28 DAYS X 1440 = 40320
29 DAYS X 1440 = 41760
30 DAYS X 1440 = 43200
31 DAYS X 1440 = 44640

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report 2018

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	163.6	5.6	63	7.17
June	Influent	75.3	15	71	6.65
September	Influent	306	16	71	6.61
December	Influent	66.6	3.6	110	7.6

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	3.4	9	10	15	6.25	220	2.6	0.018	
June	Effluent	2.7	5.3	ND	21	6.78	260	4.4	76	2.2
September	Effluent	3.7	14.2	ND	24	6.3	330	4.9	30	0.7
December	Effluent	3.4	11.8	ND	13	6.76	180	2.4	64	0.2
			10.075							

Temperature (F°)

Month	Influent	Effluent
March	46	40
June	52	55.9
September	55	59.9
December	46	35

Monitoring Well Levels - Staic Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6909.17	6949.98	6983.31
June	6910	6951.39	6983
September	6910	6949.89	6983.31
December	6908	6946.59	6983.31

Wasterwater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	1.646	1.286	4.474	10.127	15.428	5.43	5.44	4.713	4.59	4.58	3.41	4.27
Average MGD	0.053	0.045	0.144	0.337	0.497	0.181	0.175	0.152	0.153	0.147	0.113	0.137

Temp F°	PH Units	TDS mg/L	CL mg/L	MBAS mg/L	NO3 mg/L	EPA625 Orgs	EPA 8270C Orgs
56	6.9	160	19	ND	4.2	Report Attached	Report Attached

Flow values incorrect per email from Jon Simmons - 11/2/2020

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report 2017

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	93	12	44	7.35
June	Influent	305	33	240	7.46
September	Influent	176.9	ND	140	7.73
December	Influent	165	5	52	7.2

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	3.8	19.6	N.D.	13	6.9	190	3.9	35	1.3
June	Effluent	3.9	11.7	ND	13	6.88	210	1.8	64	0.21
September	Effluent	3.8	6.3	N.D	24	6.42	320	2.6	120	0.22
December	Effluent	7	24.3	N.D.	15	7	160	3.5	59	0.32
			15.475							

Temperature (F°)

Month	Influent	Effluent
March	56	60
June	53	72
September	60	72
December	48	64

Monitoring Well Levels - Staic Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6914	6951.39	6983.31
June	6910	6951.86	6983.31
September	6910	6951.89	6983.31
December	6908	6950	6983.31

Wasterwater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	6.837	7.702	8.397	8.723	8.48	9.301	6.985	5.511	11.742	4.217	3.826	3.503
Average MGD	0.22	0.278	0.27	0.282	0.273	0.31	0.225	0.177	0.391	0.136	0.127	0.113

Temp F°	PH Units	TDS mg/L	CL mg/L	MBAS mg/L	NO3 mg/L	EPA625 Orgs	EPA 8270C Orgs
64		190		0.068	17	Report Attached	Report Attached

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report 2016

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	134	15	79	7.2
June	Influent	201	11	56	7.34
September	Influent	408	39	98	7.23
December	Influent	130	17	120	7.5

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	3.32	56.6	N.D.	21	7.29	230	16	31	13
June	Effluent	1.94	15.6	0.85	26	6.84	260	13	5.8	2.6
September	Effluent	2.87	6.6	N.D	32	7	270	11	140	10
December	Effluent	2.48	13	1.2	16	6.43	220	4.5	82	0.17
			22.95							

Temperature (F°)

Month	Influent	Effluent
March	60	70
June	60	70
September	58	58
December	50	68

Monitoring Well Levels - Staic Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6905.75	6950.56	6983.31
June	6909	6950.39	6983.31
September	6906	6949.89	6983.31
December	6904	6948.78	6983.31

Wasterwater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	3.656	3583	3.647	3.247	3.94	4.01	5.199	4.783	4.081	3.871	2.804	3.808
Average MGD	0.117	0.123	0.117	0.108	0.127	0.133	0.167	0.15	0.13	0.125	0.093	0.123

Temp F°	PH Units	TDS mg/L	CL mg/L	MBAS mg/L	NO3 mg/L	EPA625 Orgs	EPA 8270C Orgs
60	7.14	230	33	0.044	1.8	Report Attached	Report Attached

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report 2015

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	216	63	150	7.01
June	Influent	134	19	95	7.44
September	Influent	259	39	98	7.23
December	Influent	91	8.6	62	7.09

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	4.04	53.8	N.D	92	7.4	200	14	24	13
June	Effluent	3.52	6.7	N.D	23	6	270	5.8	110	3.2
September	Effluent	2.87	20.4	N.D	32	7	270	11	140	10
December	Effluent	4.5	44.9	N.D	16	7	190	15	27	12
			31.45							

Temperature (F°)

Month	Influent	Effluent
March	52	56
June	52	68
September	62	57
December	52	50

Monitoring Well Levels - Staic Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6905.6	6951.39	6983.31
June	6905.8	6950.79	6983.31
September	6905	6950.39	6983.31
December	6905	6950.89	6983.31

Wasterwater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	3.029	2.802	2.491	2.6	3.69	3.8	3.8	3.8	2.991	3.001	2.63	3.204
Average MGD	0.0989	0.1	0.08	0.086	0.119	0.126	0.126	0.126	0.099	0.097	0.088	0.103

Monitoring Well number 2 (pohysical and Chemical Data)

Temp F°	PH Units	TDS mg/L	CL mg/L	MBAS mg/L	NO3 mg/L	EPA625 Orgs	EPA 8270C Orgs
60	7.05	220	30	0.065	0.18	Report Attached	Report Attached

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report 2014

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	219	140	620	7
June	Influent	245	25	86	7.11
September	Influent	359	280	120	6.36
December	Influent	641	250	2100	6.31

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	4.99	12	N.D	13	7.69	130	14	9.5	13
June	Effluent	3.22	30.5	N.D	25	4.82	250	9.6	120	7.3
September	Effluent	2.13	30.5	N.D	28	5.59	370	13	120	10
December	Effluent	2.97	52.9	N.D	15	7.53	180	13	29	12
			31.475							

Temperature (F°)

Month	Influent	Effluent
March	50	54
June	60	52
September	60	68
December	50	52

Monitoring Well Levels - Staic Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6906.2	6952.19	6983.31
June	6906	6951.59	6983.31
September	6905.6	6951.39	6983.31
December	6905.6	6949.99	6983.31

Wasterwater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	3.774	3.092	5.034	4.227	4.563	4.24	5.85	4.06	3.32	3.02	2.46	3.2
Average MGD	0.122	0.11	0.162	0.141	0.147	0.141	0.189	0.131	0.111	0.097	0.082	0.103

Monitoring Well number 2 (pohysical and Chemical Data)

Temp F°	PH Units	TDS mg/L	CL mg/L	MBAS mg/L	NO3 mg/L	EPA625 Orgs	EPA 8270C Orgs
60	6.99	170	29	0.046	1.8	Report Attached	Report Attached

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Report - 2013

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	129	20	24	7.15
June	Influent	221	5	47	7.18
September	Influent	278	99	170	6.85
December	Influent	226	150	55	7.47

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	4.23	46.9	N.D.	11	7.17	170	11	9.3	10
June	Effluent	2.91	9.7	1.7	20	5.59	520	3.5	84	0.97
September	Effluent	1.85	23.8	N.D.	24	6.78	270	8.2	120	5.4
December	Effluent	5.62	40.6	N.D.	14	6.98	180	4.8	51	2.5

Temperature (°F)

Month	Influent	Effluent
March	58	62
June	56	70
September	56	60
December	50	54

Monitoring Well Levels - Static Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6905.1	6951.89	6983.31
June	6906	6951.39	6983.31
September	6906.4	6951.39	6983.31
December	6906.4	6951.39	6983.31

Wastewater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	4.854	4.076	4.94	3.99	4.2	4.653	5.8	5.03	3.62	4.19	3.48	4.34
Average MGD	0.157	0.146	0.159	0.133	0.135	0.155	0.187	0.162	0.121	0.135	0.116	0.14

Monitoring Well number 2 (Physical and Chemical Data)

Temp ° F	PH Units	TDS mg/L	CL/mg/L	MBAS mg/L	NO3 mg/L	EPA 625 Orgs	EPA 8270C Orgs
61	6.43	190	29	0.12	22	Report Attached	Report Attached

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Data - 2012

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	127	4.8	55	7.32
June	Influent	229	25	100	6.93
September	Influent	252	20	62	7.32
December	Influent	86	53	22	7.09

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	3.6	44.9	N.D.	12	7.25	140	9.8	3.3	8
June	Effluent	2.4	19.6	N.D.	21	5.69	230	5.6	95	3.5
September	Effluent	1.5	27.1	N.D.	24	5.62	270	7.6	110	4.5
December	Effluent	4.7	16.1	N.D.	13	6.92	150	8.5	25	5.1

Temperature (°F)

Month	Influent	Effluent
March	40	43
June	54	60
September	60	69
December	50	58

Monitoring Well Levels - Static Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6905.8	6946.39	6983.31
June	6906.6	6946.39	6983.31
September	6905	6950.69	6983.31
December	6906.2	6947.71	6983.31

Wastewater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	6.164	6.161	5.736	4.568	5.576	4.929	5.647	4.781	3.972	5.143	4.186	4.873
Average MGD	0.2	0.21	0.19	0.152	0.18	0.164	0.182	0.154	0.132	0.166	0.14	0.157

Monitoring Well number 2 (Physical and Chemical Data)

Temp ° F	PH Units	TDS mg/L	CL/mg/L	MBAS mg/L	NO3 mg/L	EPA 625 Orgs	EPA 8270C Orgs
60	6.4	190	18	0.13	22	N.D.	N.D.

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Data - 2011

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	PH Units
March	Influent	87	250	67	6.88
June	Influent	121	27	120	6.66
September	Influent	137	2300	340	5.93
December	Influent	120	12	49	7.23

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Amm/Nit mg/L
March	Effluent	3.7	31	N.D.	15	7.05	180	6.4	6.2	0.56
June	Effluent	3.5	10.6	1.4	13	7.31	180	7.3	21	5.7
September	Effluent	1.3	16.6	N.D.	20	5.01	230	3.8	88	0.8
December	Effluent	3.2	41.4	N.D.	11	7.17	140	9.1	8.5	6.7

Temperature (°F)

Month	Influent	Effluent
March	42	36
June	50	54
September	54	56
December	48	40

Monitoring Well Levels - Static Water Level corrected to Sea Level

Month	Well 1	Well 2	Well 3
March	6906.7	6945.29	6983.31
June	6906.7	6946.39	6983.31
September	6906.4	6946.89	6983.31
December	6906.6	6946.78	6983.31

Monitoring Well number 2 (Physical and Chemical Data)

Temp ° F	PH Units	TDS mg/L	CL/mg/L	MBAS mg/L	NO3 mg/L	EPA 625 Orgs	EPA 8270C Orgs
59	6.43	190	19	<.10	42	N.D.	N.D.

Wastewater Treatment Plant Flows by Month

	January	February	March	April	May	June	July	August	September	October	November	December
Total M/G	5.6	5.4	7.2	9.18	8.98	9.3	8.4	7.1	5.1	5.1	4.2	4.9
Average MGD	0.18	0.19	0.23	0.31	0.29	0.31	0.27	0.23	0.17	0.17	0.14	0.16

Wastewater Treatment Plant Influent and Effluent Analysis - Year End Data -2010

Month	Source	BOD mg/L	O&G mg/L	S.S. mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L
March	Influent	70	19	76	13	6.97	160	7.7	0.93
June	Influent	221	19	260	21	6.8	240	33	0.38
September	Influent	348	32	82	18	7.2	180	35	0.43
December	Influent	38	14	63	12	7.23	170	12	0.61
Average	***Influent***	***169.25***	***21***	***120.25***	***16***	***7.05***	***187.5***	***21.925***	***0.5875***

Month	Source	D.O. mg/L	BOD mg/L	O&G mg/L	S.S. mg/L	CL mg/L	PH Units	TDS mg/L	TKN mg/L	NO3/NO2 mg/L	Ammonia Nitrogen mg/L
March	Effluent	3	47	3	15	16	7.54	170	13	3.2	
June	Effluent	1.9	33	2.2	11	20	7.4	190	20	3.5	
September	Effluent	1.3	72	3.2	24	22	6.4	210	6	85	
December	Effluent	4	14.8	N.D.	7.3	11	7.36	150	4.1	23	0.1
Average	***Influent***	***2.55***	***41.7***	***2.8***	***14.325***	***17.25***	***7.175***	***180***	***10.775***	***28.675***	***0.1***

Temperature (°F)

Month	Influent	Effluent
March	46	38
June	54	52
September	58	58
December	52	51
Average	***52.5***	***49.75***

Monitoring Well Levels - Elevation in Feet

Month	Well 1	Well 2	Well 3
March	6905	6951.4	6983.31
June	6905.4	6948.8	6983.31
September	6906.4	6946.1	6983.31
December	6906	6940.2	6983.31
Average	***6905.7***	***6946.63***	***6983.31***

Monitoring Well number 2 (Physical and Chemical Data)

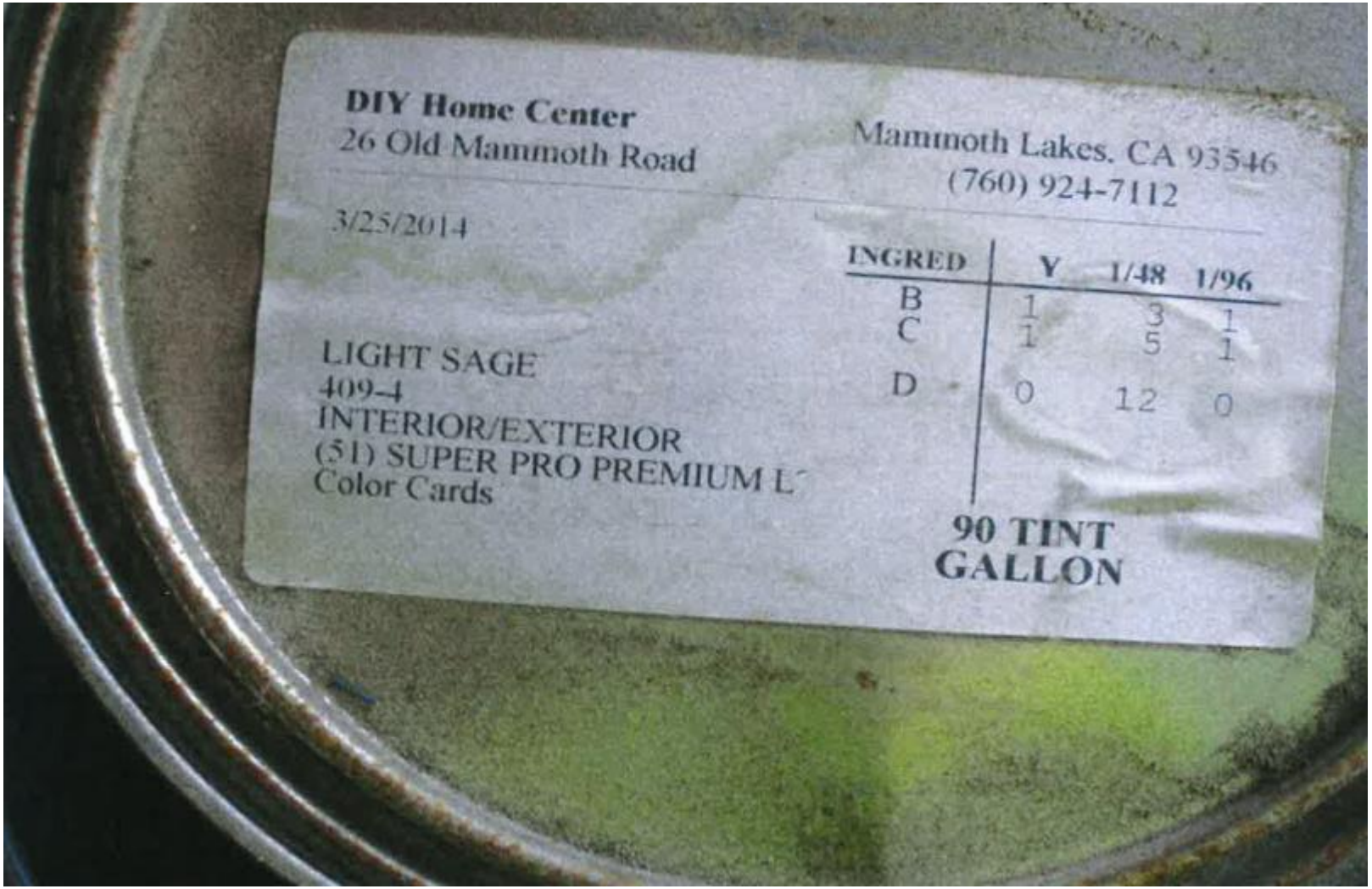
Temp. ° F	PH Units	TDS mg/L	CL/mg/L	MBAS mg/L	NO3 mg/L	EPA 625 Orgs	EPA 8270C Orgs
58	***6.44***	***190***	***19***	***<.10***	***27***	***N.D***	***N.D.***

Wastewater Treatment Plant Flows by Month

	January	February	March	April	May	June
Total M/G	*6.5*	*5.2*	*6.7*	*8.5*	*8*	*8.5*
Average MGD	*0.21*	*0.19*	*0.22*	*0.28*	*0.26*	*0.28*
	July	August	September	October	November	December
Total M/G	*7.7*	*7.2*	*4.8*	*5.4*	*4.2*	*6.5*
Average MGD	*0.23*	*0.2*	*0.15*	*0.17*	*0.14*	*0.21*

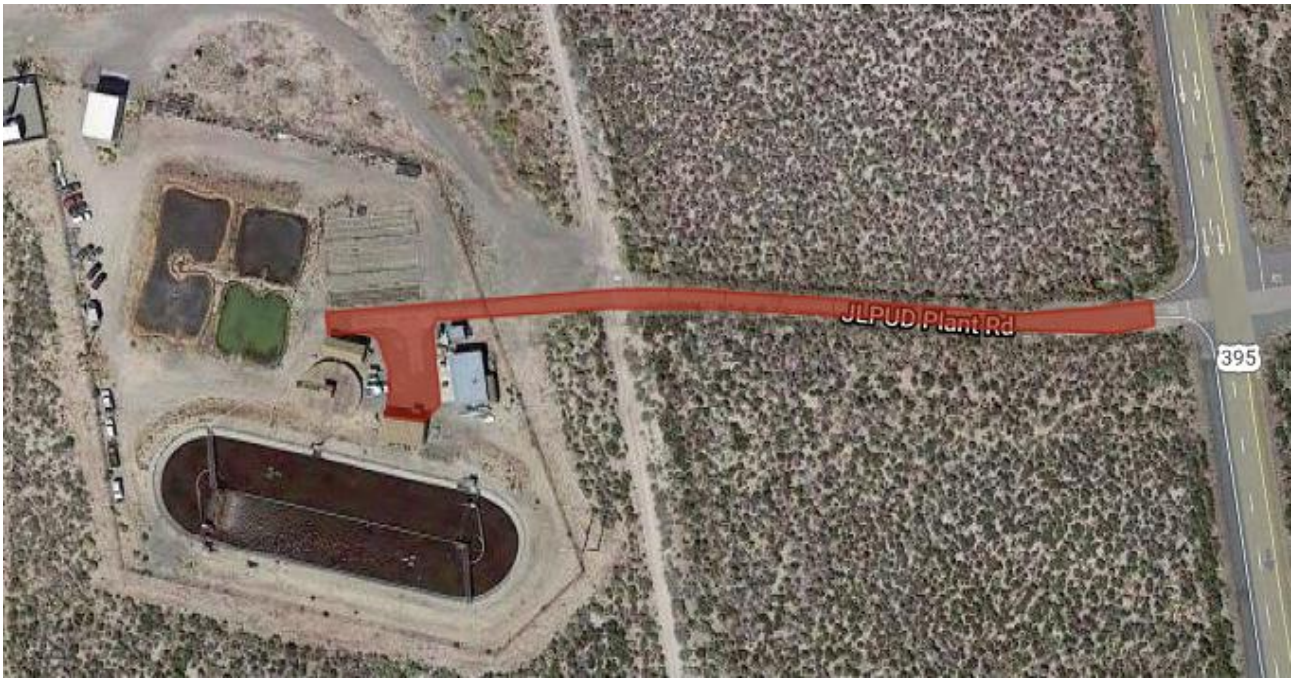
Appendix D

Exterior Paint – District Approved Color


DIY Home Center
26 Old Mammoth Road
Mammoth Lakes. CA 93546
(760) 924-7112
3/25/2014
INGRED Y 1/48 1/96
B 1 3 1
C 1 5 1
D 0 12 0
LIGHT SAGE
409-4
INTERIOR/EXTERIOR
(51) SUPER PRO PREMIUM L
Color Cards
90 TINT
GALLON

Appendix E

Asphalt Road Install Area



Asphalt Pavement Replacement