

Electronic Report Transmittal Form

Attention: Brendan Kenny (916) 464-4635
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, Ca 95670-6114

Discharger: Wild Wings County Service Area
Name of Facility: Wild Wings Water Recycling Facility
MRP No: R5-2002-0077
CIWQS Place ID: 272537
County: Yolo

I am hereby submitting to the Central Valley Water Board the following information:

Check all that apply:

Technical Report Title and Date **Self-Monitoring Report for Wild Wings**

Monthly Monitoring Report for the Month of _____.

1st / 2nd / 3rd / 4th (circle one) Quarterly Monitoring Report for the year _____.

1st / 2nd (circle one) Semi-annual Monitoring Report for the year _____.

Annual Monitoring Report for the year 2017.

Violation Notification:

During the Monitoring period, there were / were not (circle one) any violations of the WDRs.

1. The Violations were: See report, Attachment 5
2. Have the violations been corrected? Yes / No. If no, what will be done to correct the violations:

Certification Statement:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: 

Phone: 702-236-2332

Printed Name: Jeff Lambeth

Date: 02/01/2018

Electronic Report Submittal:

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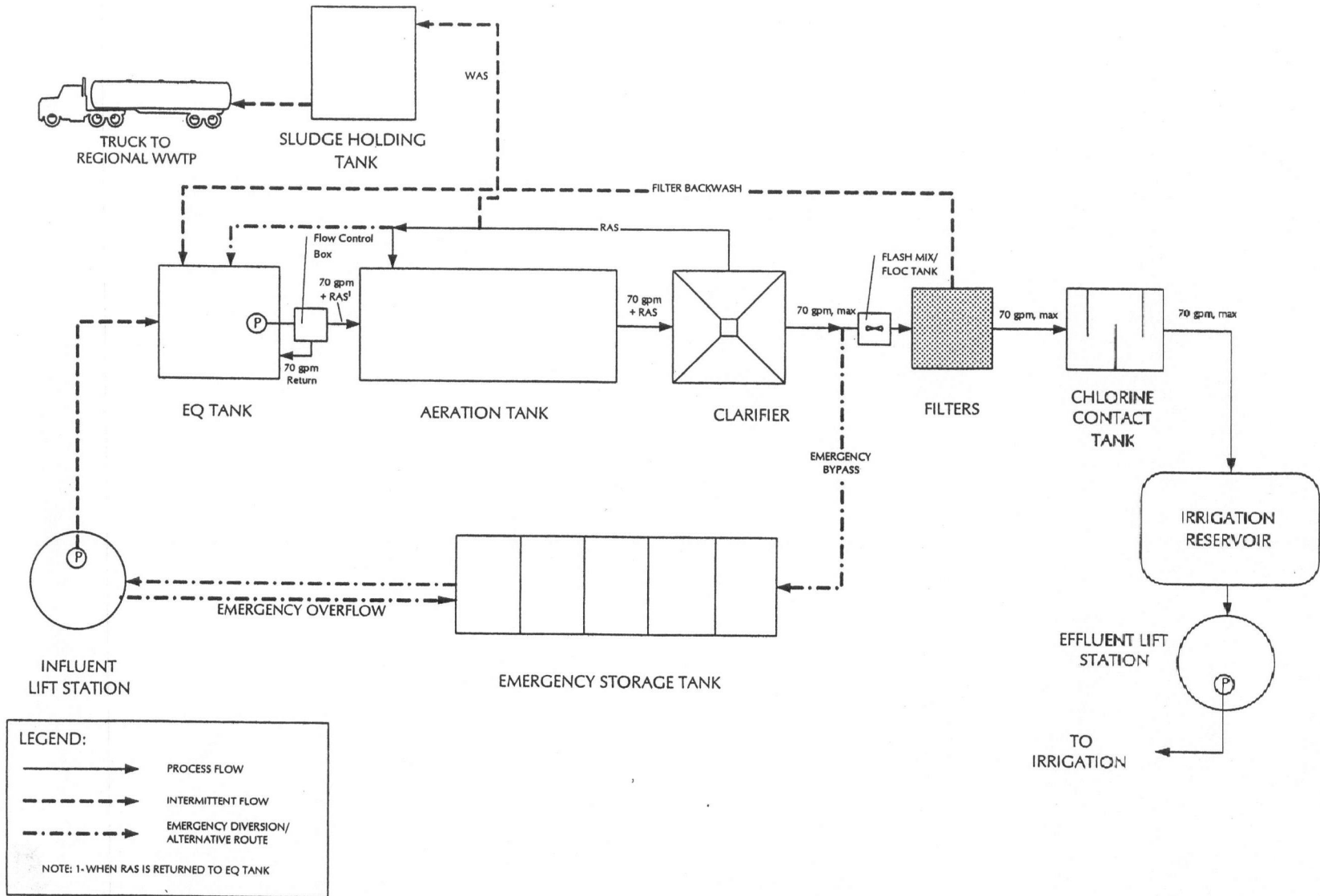
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2. Attach the PDF file to the email.
3. Send the email and PDF attachment to:
Centralvalleysacramento@waterboards.ca.gov (Please note that in order to ensure your reports are cataloged correctly and routed to the appropriate Regional Board staff, only one report/attachment shall be included with each e-mail.)

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ATTACHMENT 1

Wild Wings Flow Diagram



FLOW DIAGRAM FOR 101,000 GPD TERTIARY WASTEWATER PLANT, WILD WINGS DEV. YOLO COUNTY

ATTACHMENT 2

Annual Water Supply Monitoring

Wild Wings Water Recycling Facility – Fourth Quarter 2017 Groundwater Monitoring Report WDR Order No. R5-2002-0077

Prepared for: National O&M, Inc.

Prepared by: Silver State Analytical laboratories, Inc. in association with Frohnen Consultants

Date: January 16, 2018

SSAL WO. No. 17110807



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January 16, 2018

Mr. Jeff Lambeth
National O&M, Inc.
P.O. Box 21187
Roanoke, VA 24018

VIA Email.

**Re: Groundwater Monitoring Report
Fourth Quarter 2017
Wild Wings Water Recycling Facility, Yolo County, CA
WDR No. R5-2002-0077**

Dear Mr. Lambeth:

Silver State Analytical Laboratories, Inc. and Frohnen Consultants are pleased to present this report as a summary of the Groundwater Monitoring Data from the Fourth Quarter of 2017.

If you have any questions regarding this report, please call David Frohnen at 702-873-4478 or Carly Wood at 775-857-2400.

Sincerely,
Silver State Analytical Laboratories, Inc.

A handwritten signature in black ink that reads "Carly Wood".

Carly Wood
Laboratory Director

Frohnen Consultants

A handwritten signature in black ink that reads "David J. Frohnen".

David J. Frohnen, PE (CA # 43942)
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1 INTRODUCTION

Silver State Analytical Laboratories (SSAL) in conjunction with Frohnen Consultants prepared this groundwater monitoring report on behalf of National O&M, Inc. (National) for the Wild Wings Water Recycling Facility (WWRF) at the Wild Wings residential development, in Yolo County, California. This report represents and summarizes data collected and analyzed by SSAL, in conjunction with contract laboratory work, in November and December 2017; and also includes historical data and information from previous reports, consultants and laboratories.

National requested that SSAL provide groundwater monitoring and reporting for the WWRF to comply with Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDR) Order R5-2002-0077. The WDR requires quarterly monitoring and reporting of the groundwater levels and quality at the monitoring wells. National, under contract with Yolo County, began operating the WWRF on April 1, 2016. SSAL performed the field sampling and monitoring at the site on November 14, 2017.

1.1 LOCATION

The Wild Wings development is located north of Highway 16 and west of County Road 94B at 18530 Wildwings Drive, Woodland, CA 95695, and is surrounded by agricultural land to the west, Cache Creek and the Yolo Fliers Golf Club to the north, the Watts-Woodland Airport to the east, and several rural residences to the south. In early 2015, almond orchards were planted in the agricultural land to the west of the site and water wells were installed to provide water for the orchards. The WWRF encompasses 3.67 acres (400 by 400 feet) along the southwestern side of the Wild Wings development. Figure 1 shows the location of the WWRF along with general site information and locations of seven (7) monitoring wells.

1.2 SITE INFORMATION

The Wild Wings development consists of over 300 homes, a nine-hole golf course (including several ponds/lakes), and the WWRF, all built on 238 acres of previously undeveloped land. The WWRF has been operating since February 2005. Domestic wastewater from the Wild Wings development is treated to a tertiary level at the WWRF. The treated water is then blended with groundwater obtained from two deep on-site water supply wells and is used for irrigation of the golf course. The mixture of applied irrigation water typically consists of approximately one-fourth recycled water, but this ratio will vary by month. When irrigation demands are reduced, a lined storage pond on the WWRF site stores the recycled water. National does not operate or maintain the golf course irrigation system or ponds on the golf course.

1.3 MONITORING WELLS

Seven monitoring wells, MW-1 through MW-7, were constructed in May through June 2004. The monitoring wells were installed on the Wild Wings development in the vicinity of the WWRP. The locations of the monitoring wells are shown on Figure 1.

The WDR required that the monitoring wells be constructed to monitor the uppermost aquifer. While drilling, soil samples were collected to assess the subsurface lithology and to locate the uppermost aquifer. Review of the well logs shows that clays with various amounts of silt, sand, and gravel are predominant at the site. However, beds of coarse-grained materials, sands and gravels, with trace amounts of silt and clay were also logged at all monitoring well sites.

The monitoring wells were completed to depths ranging from 31 to 74 feet below ground surface (bgs). Each well is constructed with 2-inch schedule 40 PVC well casing and screen. The screen intervals are 10 feet in length at most wells, with the exception of MW-4 and MW-5R, which have 15- and 20-foot screen intervals, respectively. The top of each well casing is fitted with an expandable plug to prevent surface water from entering the wells. The top of each well is secured in a subsurface vault. Table 1 summarizes the well construction details.

The well screens are not at the same depth in all of the monitoring wells. The depths varied based on when groundwater was first encountered. Thick clay beds were encountered at MW-4 and MW-5R and continued to relatively deep depths. MW-4 and MW-5R have deeper screen intervals than the other monitoring wells, ranging from an elevation of 51 to 71 feet mean sea level (msl). In contrast, MW-1, MW-2, MW-6, and MW-7 are screened at shallower depths, between 73 to 95 feet msl. MW-3 has the shallowest screen interval ranging from an elevation of 90 to 100 feet msl.

The lithologic sequences of strata encountered during well drilling show a heterogeneous appearance across the site making lateral geologic correlation difficult on a site scale (Luhdorff and Scalmanini, 2006). Furthermore, the uppermost water-bearing zone in which all monitoring wells are screened has weak to no lateral continuity across the site based on the lithologic logs. Based on evaluation of the lithology and well construction details, the consistent anomalously high groundwater elevations, and analytical results from previous monitoring reports, MW-3 appears to be screened in a perched water zone and not within the unconfined to semi-confined aquifers in which the other monitoring wells are screened. Therefore, groundwater in MW-3 does not appear to be in direct hydraulic communication with the other network wells.

1.4 PUMP DETAILS

The wells are equipped to use a WaTerra inertia sampling pump. A dedicated high density polyethylene 5/8-inch OD tube equipped with a one-way valve at the bottom (foot valve) is stored in each well. The polyethylene tubing and foot valve rest on the bottom of the well casing when not in use and extend to within a few inches of the top of the well casing at each well. The foot valve allows water to enter the tubing as it is pushed downwards, and retains the water when the tube is pulled upwards again. The repeated action of raising and lowering the tube lifts the water to the surface in a continuous column. The pump mechanism, which the tubing attaches to, is transported between wells.

1.5 HISTORIC MONITORING RESULTS

The WWRf has been active since February 2005. The WDR required that three monitoring events take place prior to the startup of the WWRf; however, only one monitoring event was performed. Quarterly monitoring commenced in March 2005. Historic monitoring results are summarized below:

- Groundwater levels have ranged from 19.7 to 56.7 feet below top of casing (btoc) or 64.0 to 101.7 feet mean sea level (msl). Groundwater has consistently been the shallowest at MW-3 and the deepest at MW-4. Since the fourth quarter 2008 MW-7 has been dry about 75 percent of the sampling events and has been dry from the third quarter 2013 until the first quarter of 2017 – corresponding to the California regional drought conditions. Table 2 summarizes the historic groundwater levels and Figure 2 displays a line graph of these historical groundwater levels.
- Groundwater flow direction has been consistently towards the northeast to east-northeast. Using MW-1, MW-4, and MW-5R to determine flow direction and gradient, the flow direction has varied from 53.3 to 75.0 degrees and the groundwater gradient has ranged from 0.005 to 0.009 ft./ft. The gradient has gradually steepened and the flow direction has changed to a more easterly direction since monitoring started in 2005. The most recent monitoring event in November 2017 indicates a 3-point gradient of 0.006 ft./ft. and a direction of 75 degrees. Table 3 summarizes historic groundwater flow directions and gradients.
- MW-1 has been consistently up-gradient of the recycled water effluent pond, whereas MW-4, MW-6, and MW-7 have consistently been down-gradient of the recycled water effluent pond. MW-2 is located adjacent to the recycled water effluent pond. MW-5R appears to be an up-gradient well that is recharged from Cache Creek, but is slightly down-gradient to the recycled water effluent pond.

- MW-3 has consistently had higher groundwater surface elevations than the other monitoring wells. Because of this, supplemented by the shallow screen interval, poor recharge, persistent presence of total coliform organisms as well as an overall different water quality than the other wells, and often gray to tan color of the water, MW-3 appears to be screened in a perched water zone. This perched or mounded water table appears prominently in the August 2017 data – but the November 2017 data did not look as pronounced.
- The WDR requires that monitoring wells be sampled and analyzed for the following constituents: pH, total dissolved solids (TDS), sodium, chloride, boron, iron, manganese, nitrate (as nitrogen), nitrite (as nitrogen), ammonia (as nitrogen), total nitrogen, total coliform organisms, and total trihalomethanes (TTHMs). In addition to the WDR requirements, samples collected up to February 2008 were analyzed for fecal coliform. Historical monitoring results are summarized in Table 4. Figures 3 through 9 show concentration trend graphs for the monitoring parameters.
- Metals analyses are required from the monitoring wells. Sampling protocol requires that the turbidity be below 5 Nephelometric Units (NTU) when collecting water samples for metal analyses, otherwise the sample must be filtered prior to being collected and reported as dissolved metals. Due to historical issues with turbidity and purging, the sampling protocol for Q4 2017 was adopted to field filter.
- Total coliform organisms have been sporadically detected at all wells since monitoring commenced. They have been most consistently detected at MW-3, which also has had positive results for fecal bacteria; however, since the second quarter 2013, total coliform organisms at MW-3 have only been detected four times. MW-3 has had past worm-like organisms and has been treated with disinfection products. Recently, no organisms have been visible and the Q3 sampling event had no detections for disinfection by-products, as analyzed for TTHM's.
- Groundwater quality samples were not obtained from MW-7 between November 2006 and November 2016, except for May and August 2011, due to either the well being dry or an insufficient amount of water in the well to collect samples. Since the wet weather in winter 2016 -2017, sufficient amounts of sample water from MW-7 have been retrieved for laboratory analyses – Until November 2017. In

November 2017, there was not sufficient water to purge in MW-7 to collect samples and perform laboratory analyses.

- Groundwater quality analytical results were not available for the fourth quarter 2006 (except for total coliform results), first quarter 2007, and first quarter 2008.
- MW-2 has had historical security issues related to soils and foreign water entering the well vault. Previous reports contain details of this issue.

1.6 GROUNDWATER QUALITY LIMITATIONS

Interim Groundwater Limitations

Borings HB-2, HB-3, HB-7, and B-27 were drilled prior to the startup of the WWRF and within the vicinity of the WWRF. Water samples collected from these borings were used as the background water quality, using the average value for each constituent. Interim groundwater limitations for the WWRF were developed by comparing the basin plan Water Quality Objectives (WQOs) and background water quality data and using the highest value as the interim groundwater limitation. The interim groundwater limitations are listed at the top of Table 4.

The following summarizes how the WWRF monitoring wells have historically compared to the interim groundwater limitations:

- Boron has exceeded the interim groundwater limitations at all wells since quarterly monitoring commenced. Down-gradient monitoring wells MW-2 and MW-6 have had higher concentrations than up-gradient well MW-1.
- Up-gradient MW-1 is typically at or exceeding the interim groundwater limitations for TDS, chloride, nitrate (as nitrogen), and total nitrogen. Historically the TDS, chloride, nitrate (as nitrogen) and total nitrogen results are higher at MW-1 than at any other well in the monitoring well network. However, since 2013 chloride has been highest at down-gradient well MW-4 and nitrate concentrations have been the same at MW-4 as at MW-1 since June 2016 and continuing so through June 2017.
- MW-2, the closest well to the WWRF, regularly exceeded the interim groundwater limitations for total nitrogen prior to 2008, from 2008 through 2016 total nitrogen has been less than the interim limitations. But since 2017, is again above the interim limit. For Q4 2017, MW-2 depicts higher nitrate and total nitrogen than the recent past. Prior to the fourth quarter 2013 the interim groundwater limitations were occasionally

exceeded for sodium at MW-2, but since this time they have been below the interim groundwater limitations, until June 2017 when they again were slightly above the interim limit. Chloride levels at MW-2 exceeded the interim groundwater limitations from the fourth quarter 2010 through the first quarter 2012, but since this time the levels have been less than the interim limitations.

- Quarterly monitoring results at cross-gradient MW-5R and down-gradient MW-4, MW-6, and MW-7 have rarely exceeded the interim groundwater limitations for any constituent, with the exception of chloride and total nitrogen at MW-4 and sodium at MW-6 (with some exceptions).

Final Groundwater Limitations

On January 8, 2008, the RWQCB requested Yolo County prepare a Background Groundwater Quality Study/Groundwater Degradation Assessment Report to establish statistically derived water quality limitations. Central Valley Environmental, Incorporated (CVEI) prepared a Background Groundwater Quality Study/Groundwater Degradation Assessment Report dated April 1, 2009. Yolo County submitted the report to the RWQCB. CVEI used statistical methods to derive tolerance intervals representing the 95th quantile of all water quality sampling results from 2004 through February 2009. CVEI used these values in conjunction with the WQOs, using the greater of the two, to recommend Final Groundwater Limitations. Approval of the Final Groundwater Limitations by the RWQCB is still pending. However, since 2009 the sample population has more than doubled and therefore the analyses may be outdated.

2 GROUNDWATER MONITORING

Groundwater monitoring was performed on November 14, 2017, by SSAL personnel experienced with groundwater sampling. The following sections describe the monitoring protocol used to measure the depth to water, purge the wells, and collect water quality samples from the monitoring wells.

2.1 GROUNDWATER LEVELS

SSAL personnel measured the depth to groundwater at the monitoring wells using an electric water level sounder accurate to 0.01 foot. The sounder was cleaned and decontaminated prior to the first monitoring well measurement and between each well site by thoroughly washing and scrubbing the sounding probe and line with a laboratory-grade detergent (Alconox) and distilled water, followed by a triple rinse with distilled water. The sounding probe and line was then sprayed with a 10 percent bleach solution to kill any bacteria. The sounding probe was allowed to air dry between wells.

2.2 PRE-SAMPLING ACTIVITIES

After the depth to groundwater was measured at a monitoring well, the well was purged. Each monitoring well was purged by lifting the polyethylene tubing that resides in each well and connecting it to the WaTerra Hydrolift II electric pump. Prior to purging, the top 6 inches of the polyethylene tubing was decontaminated. The polyethylene tube was then connected to a vinyl tube via a double-barbed nipple and the vinyl tubing was routed to an empty 5-gallon bucket. The double-barbed nipple and vinyl tubing were cleaned and decontaminated prior to initial use and between each well (primary disinfection). The procedures for cleaning and decontaminating are the same as listed above (Groundwater Levels) except the vinyl tubing received six rinses with distilled water after cleaning.

Prior to collecting the groundwater samples, each monitoring well was micro purged (verbal approval, RWQCB 2008). Micro purging consisted of pumping each well until field parameters such as pH, temperature, and EC stabilized. Field parameters were measured by collecting purge water from the discharge line at select intervals and using a calibrated multi-parameter meter to record the readings. The volume purged and field parameters are documented on purge logs, which are presented in Appendix A. The purge water was collected in 5-gallon buckets and then transported back to the WWRF and discharged to the wastewater holding tanks.

2.3 GROUNDWATER SAMPLING

Once each monitoring well was purged, SSAL personnel collected water samples in laboratory-prepared bottles. Prior to collecting the first sample, the vinyl tube connected to the 5-gallon bucket was disconnected from the bucket and the tip was sprayed with a 10 percent bleach solution to kill any bacteria that may have been present in the bucket and inadvertently transferred to the sampling tube (secondary disinfection). To eliminate any residual chlorine, pumping was then resumed for about 30 to 60 seconds (approximately 0.25 to 0.5 gallons) and the end of the vinyl tube was elevated and pinched so that the entire tubing surface was in contact with the purge water prior to sampling. The bacteriological (total coliform) sample was the first sample collected and was collected directly from the end of the vinyl tube, followed by collection of samples for THMs. The samples for all other constituents analyzed were collected next. Water samples for metals were filtered in the field using a disposable 0.45 micron filter before being placed into acidified laboratory prepared sample bottles. Trip blanks are included by CLS for TTHM's analysis, when requested.

Nitrile gloves were worn while collecting samples. A new set of gloves was used at every monitoring well. The samples were placed in an ice chest and cooled to 4 degrees Celsius and delivered to California Laboratory Services (CLS) of Rancho Cordova, California, a California-certified laboratory, under standard chain-of-custody procedures. Samples collected from the monitoring wells were analyzed for TDS, sodium, chloride, boron, iron, manganese, nitrate (as N), nitrite (as N), ammonia (as N), total N, total coliform organisms, and total trihalomethanes per the WDR requirements. Table 4 presents the results for the monitoring wells and Table 5 presents the results for the trip blank and equipment blank samples. Appendix B contains the laboratory data sheets and chain-of-custody forms.

2.4 GROUNDWATER LEVELS AND FLOW DIRECTION

The measured groundwater levels in each well were subtracted from the surveyed ground surface elevation at each well. Table 2 lists the elevation of the top of the well casing (TOC) (reference point) at each well and presents the current and historic depths-to-water and groundwater surface elevations. The groundwater surface elevations were used to generate groundwater contours from which the groundwater gradient was calculated. Figure 10 shows the groundwater contours and flow direction for November 2017. Groundwater gradients and flow directions were estimated using wells MW-1, MW-4, and MW-5R. Table 3 summarizes these estimates.

3 FINDINGS

3.1 GROUNDWATER LEVELS

Groundwater levels in November 2017 (fourth quarter 2017) ranged from 70.73 to 95.50 feet msl and were within historic ranges. Relative to msl, the highest elevation is 95.50 feet at MW-3 followed closely by MW-1 at 95.15. The lowest groundwater elevation is at MW-4 at 70.73 feet and is consistent with historical trends. This late summer/fall seasonal low water level trend continues and is fairly consistent within the monitoring well network. Table 2 lists the water level measurements. Figure 2 shows the current and historic groundwater levels.

Due to MW-3 being screened within a perched water zone it was left out of groundwater contouring, flow direction, and gradient calculations.

Between the third quarter of 2017 and the fourth quarter of 2017, groundwater levels declined approximately 1.0 to 2.6 feet overall. This matches what is commonly understood to be seasonal variations with wet winter/spring seasons followed by dry summers and early falls. This pattern continued into late summer and early fall (with little regional rainfall) being dry and yielding additional decreases in water levels in the monitoring wells.

3.2 GROUNDWATER FLOW DIRECTION AND GRADIENT

The groundwater flow direction and gradient for November 2017 were calculated using wells MW-1, MW-4, and MW-5R, which is consistent with past practice and historically reported data. Using these wells, the groundwater flow direction was to the east northeast (75.0 degrees) with a gradient of 0.006 feet/feet. The groundwater gradient and direction is consistent with historic results. Figure 10 displays the groundwater surface elevations at each well, the groundwater contours, and flow direction. In the northern portion of the site the groundwater flow direction appears to be influenced by Cache Creek. Table 3 lists the historic and current groundwater flow directions and gradients.

3.3 GROUNDWATER QUALITY

Tables 4 and 5 summarize the analytical results in table format and Figures 3 through 9 show the historical water quality parameter concentrations in graphical format.

Current (fourth quarter 2017) water quality results were compared to historic water quality results to assess potential increasing trends. Overall, the water quality analytical testing results for the third quarter of 2017 were within historical ranges and trends. Of specific note is the pronounced increase in nitrate and total nitrogen at MW-2. MW-2 also had

increased levels this quarter for boron and TDS. One overall trend this quarter was the slight overall increase in pH measurements. However, measurements differences between quarters varied somewhat by individual well and all pH data remains within the WQO range at all monitoring wells. Boron was observed to slightly increase overall as noticed upticks in several wells. Nitrogen and nitrate levels were near recent analytical ranges for all wells except MW-2. The recent increases in water quality parameters at MW-2 could be due to seasonal factors or related to the past well security – sealing issues, or other factor. Overall TDS levels appear very close to historical levels and ranges at each well. The spatial variation of TDS, nitrate and boron concentrations over the recent past are best explained by the recent rainfall/dryness patterns, recharge and pumping changes in the area groundwater. The ammonia levels in MW-3 continue to be a concern and reason to discount MW-3's overall WQ data. No other significant trends in groundwater quality trends were observed from this quarter's monitoring results.

MW-3 continues to be the outlier in water quality as those results are significantly different from the remaining monitoring wells. Further, the consistent high levels of coliform and ammonia are indicators of perched groundwater that is more influence by shallow groundwater the may be influenced more by surface water and shallow ground conditions.

Historically, up-gradient MW-1 has had the highest concentrations of TDS, chloride, nitrate (as N), and total nitrogen. However, beginning in 2013 chloride concentrations at MW-4 have consistently been above those at MW-1 and continued through this quarter (4th 2017). Concentrations in both MW-4 and MW-6 are still below the historic high levels in MW-1.

With the recent pronounced increases in water quality parameters at MW-2, the historic pattern of MW-1 (up gradient) being the location of the highest TDS, Chloride and sodium is no longer the case. MW-2 is now the highest for TDS, nitrate/TN, and sodium. Refer to the water quality figures for additional trends.

The highest nitrate (as N) (21 mg/L) and total N (21 mg/L) concentrations were detected in the samples from MW-2, these levels now exceed those at MW-1 for the current quarter. MW-2 had the highest boron (6.2 mg/L) concentration detected, also consistent with historic results.

Total coliform was detected in the samples from MW-2, 3, and 4 at low levels (4.5 to 540 MPN/100 mL). The level at MW-4 of 540 appears an outlying possibly due to weather or sampling/sample handling procedures. At these levels, no serious contamination threat is considered – however continued caution in sampling protocols and attention to analytical trends is warranted. The coliform positive trend since the last quarter indicated an

improvement in water quality as measured and influenced by field sampling protocols. Total coliform is typically detected in the sample from MW-3 at high levels – it was only modest this sampling event.

Ammonia (as N) was detected at measurable concentrations only at MW-2, 3 and 4; varying from 0.10 to 0.13 mg/L. All others were below the reporting limit of 0.10 mg/L. Ammonia (as N) is not typically detected at any of the wells in the monitoring network (aside from MW-3).

Iron was not reported in any of the monitoring wells for fourth quarter 2017. Manganese was reported at MW-3, consistent with past data and again indicating a partially separated aquifer for sampling at MW-3.

THMs were not detected in any of the water samples from the monitoring wells.

3.4 COMPARISON TO INTERIM GROUNDWATER LIMITATIONS

The water quality results from the fourth quarter 2017 monitoring event show that every monitoring well sampled exceeded the interim groundwater limitation for boron, consistent with historic results.

Based on the understanding that the interim groundwater quality limits remain the higher of the background level for the site and the basin wide WQO (water quality objective), the following is a summary of each wells exceedances for the current quarter for other general mineral analytes (excluding boron).

MW-1: none

MW-2: sodium, total nitrogen, chloride, nitrate

MW-3: not applicable

MW-4: chloride, total nitrogen

MW-5R: none

MW-6: total nitrogen

MW-7: No Data. Insufficient sample volume.

4 CONCLUSION

The groundwater contours and flow directions show there are two potential sources of groundwater to the area. MW-5R monitors water entering the area that is recharged by Cache Creek, north of the WWRF area. Water also enters the area from the south near MW- 1 and MW-2 from regions used for agriculture. MW-4, MW-6, and MW-7 are in a mixing zone between these water sources and as such minor shifts in groundwater gradients may result in a change in water quality that reflects these two different water sources. In 2015 almond orchards were planted in the fields just west of the monitoring area and water wells were installed to provide water for the orchards. Deep percolation from irrigation or pumping could affect groundwater levels and flow directions, but to date they do not appear to be affecting groundwater beneath the WWRF area. In past monitoring events, it appeared groundwater pumping east of the monitoring well network was affecting MW-4 and could be affecting MW-7.

In general, the annual rainfall amounts, irrigation practices at farm lands and golf courses and variations in groundwater pumping to meet local domestic water needs can impact the local groundwater contours, flow direction and gradients. However, for the fourth quarter 2017 monitoring event, these parameters remained within historical ranges for groundwater levels. The most recent GW contours reflect a slight overall decrease from the spring and early summer 2017 levels as expected for seasonal variations and the overall dry period of the fall.

The analytical results from the fourth quarter 2017 sampling event show several results above the interim groundwater limitations. All wells exceeded the interim groundwater limitations for boron, which is consistent with historic monitoring results. Additionally, several wells have chloride and total nitrogen levels slightly above the interim limits.

Notable, MW-2 shows increased levels this quarter for nitrate, total nitrogen, boron, chloride and TDS. This is the second quarter in a row for increases in multiple parameters at MW-2. This well could be having seasonal spikes in parameter levels related to the dry weather (concentrating effect) or MW-2 could be under an undetermined influencing force. This also could be related to seasonal movements of groundwater and gradients in the area, security and sanitary seal concerns around the well area or other factors. Continued vigilance and water quality monitoring should be undertaken to detect any further degradation of the water quality in this area.

MW-6 appears to have a pattern where TDS and chloride concentrations spike upward after the well receives considerable recharge. This could be due to minerals/salts which have been

deposited/trapped in the unsaturated sediments getting flushed and dissolved into solution when groundwater levels rise into these sediments.

MW-1 consistently has several constituents above the interim groundwater limitations since monitoring began, including the initial sampling event prior to the startup of the WWRF. The interim groundwater limitations are based on both WQOs and background water quality data. The borings used to establish background water quality data for the WWRF are down-gradient of MW-1 and therefore do not actually reflect background concentrations for up-gradient MW-1. The higher concentrations at MW-1 are indicative of the groundwater quality up-gradient from the WWRF and not due to the WWRF. Interestingly, for fourth quarter 2017, MW-1 saw a few water quality parameters go lower. This trend will be tracked in the future.

The fourth quarter analyses for THM's resulted in no detections. This indicates a clean and reliable sampling event and data. Past concerns with cross contamination from disinfection protocols were not observed this sampling event.

Review of the current quarter and historical data trends indicate the local groundwater quality appears to remain in historical ranges since before and after the operations of the WWRF.

**Wild Wings Water Recycling Facility – Fourth Quarter 2017
Groundwater Monitoring Report
WDR Order No. R5-2002-0077**

TABLES

Table 1
Monitoring Well Construction Details
Wild Wings Water Recycling Facility, Yolo County, CA

Well	Date Installed	Depth of Borehole (feet bgs)	Depth of Well Casing (feet bgs)	Screened Interval (feet bgs)	Slot Size (inches)	Grout (feet bgs)	Bentonite Seal (feet bgs)	Sand Pack (feet bgs)	Casing Material	TOC Elevation (feet msl)	Screen Elevations (feet msl)
MW-1	6/3/2004	46	41	31-41	0.010	0.5-25.5	25.5-28.5	28.5-45	2-inch Sch. 40 PVC, flush thread	126.22	95.22 -85.22
MW-2	6/2/2004	51.5	47	37-47	0.010	0.5-31	31-34.5	34.5-47	2-inch Sch. 40 PVC, flush thread	124.93	87.93 -77.93
MW-3	6/3/2004	31.5	31	21-31	0.010	0.5-14.5	14.5-19	19-32	2-inch Sch. 40 PVC, flush thread	121.37	100.37 -90.37
MW-4	6/1/2004	71.5	70	55-70	0.010	0.5-48	48-52	52-70	2-inch Sch. 40 PVC, flush thread	120.71	65.71 -50.71
MW-5R	6/10/2004	75	74	54-74	0.010	0.5-47	47-52	52-75	2-inch Sch. 40 PVC, flush thread	125.42	71.42 -51.42
MW-6	5/27/2004	50	49	39-49	0.010	0.5-33	33-37	37-50	2-inch Sch. 40 PVC, flush thread	121.59	82.59 -72.59
MW-7	5/28/2004	45	39	29-39	0.010	0.5-22	22-26.5	26.5-45	2-inch Sch. 40 PVC, flush thread	114.55	85.55 -75.55

Notes:

Information for monitoring wells was extracted from Monitoring Well Installation Report (Geologic and Hydrogeologic Study) for the Wild Wings Residential Development , Jacobson Helgoth Consultants, Inc., August 2004.

All monitoring wells were drilled and constructed by PC Exploration of Rocklin, CA. An Ingersol Rand A-400 drill rig with an 8-inch diameter hollow stem auger was used. Oversight was provided by Jacobson Helgoth Consultants. Wellheads were constructed in subsurface vaults with flush mount covers and locking well caps. The top of the PVC casing is approximately 1.3 feet below ground surface (bgs).

TOC = top of casing; surveyed in reference to mean sea level by Morrow Surveying of West Sacramento, CA, on June 26, 2004

Table 2 (MW-1)
Static Water Level Measurement in Monitoring Wells
Wild Wings Water Recycling Facility, Yolo County, CA

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)
MW-1	6/15/2004	126.22	32.81	93.41
	3/29/2005		30.62	95.6
	6/16/2005		29.62	96.6
	9/29/2005		31.75	94.47
	12/6/2005		31.4	94.82
	2/16/2006		29.99	96.23
	5/16/2006		27.25	98.97
	8/21/2006		29.73	96.49
	11/20/2006		30.27	95.95
	2/8/2007		31.37	94.85
	5/7/2007		30.79	95.43
	8/29/2007		32.38	93.84
	2/21/2008		29.96	96.26
	5/27/2008		29.7	96.52
	8/27/2008		30.49	95.73
	11/24/2008		32.43	93.79
	2/18/2009		30.72	95.5
	5/21/2009		31.28	94.94
	8/7/2009		32.96	93.26
	11/5/2009		34.34	91.88
	2/8/2010		32.05	94.17
	5/7/2010		31.85	94.37
	8/18/2010		31.22	95
	11/2/2010		32	94.22
	12/28/2010		30.76	95.46
	2/23/2011		31.33	94.89
	5/5/2011		29.44	96.78
	8/16/2011		30.23	95.99
	11/8/2011		31.95	94.27
	2/27/2012		32.84	93.38
	5/21/2012		32.8	93.42
	8/9/2012		33.84	92.38
	11/19/2012		34.39	91.83
	2/21/2013		32.1	94.12
	5/15/2013		31.73	94.49
	8/15/2013		32.84	93.38
	11/7/2013		33.69	92.53
	2/25/2014		34.38	91.84
	5/22/2014		35.22	91
	8/27/2014		36.65	89.57
	11/12/2014		36.93	89.29
	2/26/2015		34.88	91.34
	5/13/2015		35.6	90.62
	8/4/2015		36.03	90.19
	11/5/2015		36.9	89.32
	2/4/2016		35.33	90.89
	6/30/2016		34.37	91.85
	8/25/2016		34.59	91.63
	11/17/2016		34.9	91.32
	3/7/2017		26.18	100.04
	6/27/2017		28.14	98.08
	8/23/2017		30.09	96.13
	11/14/2017		31.07	95.15

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

**Table 2 (MW-2)
Static Water Level Measurement in Monitoring Wells
Wild Wings Water Recycling Facility, Yolo County, CA**

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)
MW-2	6/15/2004	124.93	34.75	90.18
	3/29/2005		33.2	91.73
	6/16/2005		31.71	93.22
	9/29/2005		36.67	88.26
	12/6/2005		36.29	88.64
	2/16/2006		31.85	93.08
	5/16/2006		28.12	96.81
	8/21/2006		33.17	91.76
	11/20/2006		34.75	90.18
	2/8/2007		34.81	90.12
	5/7/2007		35.53	89.4
	8/29/2007		39.92	85.01
	2/21/2008		33.15	91.78
	5/27/2008		34.25	90.68
	8/27/2008		37.59	87.34
	11/25/2008		37.3	87.63
	2/19/2009		36.01	88.92
	5/21/2009		36.47	88.46
	8/7/2009		40.14	84.79
	11/5/2009		41.38	83.55
	2/8/2010		38.48	86.45
	5/7/2010		35.8	89.13
	8/18/2010		36.66	88.27
	11/2/2010		38.25	86.68
	12/28/2010		37.08	87.85
	2/23/2011		35.68	89.25
	5/5/2011		30.87	94.06
	8/16/2011		33.73	91.2
	11/8/2011		35.93	89
	2/27/2012		36.04	88.89
	5/21/2012		35.89	89.04
	8/9/2012		37.54	87.39
	11/19/2012		37.9	87.03
	2/21/2013		34.6	90.33
	5/15/2013		36.4	88.53
	8/15/2013		38.8	86.13
	11/7/2013		38.74	86.19
	2/25/2014		38.78	86.15
	5/22/2014		41.17	83.76
	8/27/2014		dry	
11/12/2014		45.07	79.86	
2/26/2015		39.83	85.1	
5/13/2015		39.72	85.21	
8/4/2015		39.35	85.58	
11/5/2015		41.79	83.14	
2/4/2016		40.41	84.52	
6/30/2016		37.44	87.49	
8/25/2016		38.39	86.54	
11/17/2016		37.67	87.26	
3/7/2017		27.4	97.53	
6/27/2017		30.42	94.51	
8/23/2017		33.31	91.62	
11/14/2017		35.97	88.96	

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

Table 2 (MW-3)
Static Water Level Measurement in Monitoring Wells
Wild Wings Water Recycling Facility, Yolo County, CA

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)	
MW-3	6/15/2004	121.37	20.42	100.95	
	3/29/2005		21.33	100.04	
	6/16/2005		20.14	101.23	
	9/29/2005		22.45	98.92	
	12/6/2005		21.54	99.83	
	2/16/2006		21.65	99.72	
	5/16/2006		26.51	94.86	
	8/21/2006		21.49	99.88	
	11/20/2006		21.14	100.23	
	2/8/2007		23.02	98.35	
	5/7/2007		20.63	100.74	
	8/29/2007		22.99	98.38	
	2/21/2008		21.24	100.13	
	5/27/2008		22.19	99.18	
	8/28/2008		23	98.37	
	11/25/2008			24.39	96.98
	2/19/2009			19.67	101.7
	5/21/2009			21.31	100.06
	8/7/2009			22.49	98.88
	11/5/2009			24.29	97.08
	2/8/2010			20.2	101.17
	5/7/2010			23.21	98.16
	8/18/2010			23.55	97.82
	11/2/2010			25.13	96.24
	12/28/2010			19.95	101.42
	2/23/2011			20.66	100.71
	5/5/2011			21.64	99.73
	8/16/2011			23.3	98.07
	11/8/2011			25.03	96.34
	2/27/2012			24.69	96.68
	5/21/2012			24.44	96.93
	8/9/2012			25.58	95.79
	11/19/2012			25.96	95.41
	2/21/2013			24.15	97.22
	5/15/2013			25.45	95.92
	8/16/2013			26.67	94.7
	11/7/2013			25.97	95.4
	2/25/2014			25.44	95.93
	5/22/2014			26.5	94.87
	8/27/2014			28.75	92.62
11/12/2014			29.53	91.84	
2/26/2015			21.33	100.04	
5/13/2015			23.53	97.84	
8/4/2015			25.7	95.67	
11/5/2015			28.7	92.67	
2/4/2016			24.81	96.56	
6/30/2016			25.89	95.48	
8/25/2016			27.74	93.63	
11/17/2016			29.6	91.77	
3/7/2017			19.13	102.24	
6/27/2017			22.75	98.62	
8/23/2017			23.33	98.04	
11/14/2017			25.87	95.50	

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

Table 2 (MW-4)
Static Water Level Measurement in Monitoring Wells
Wild Wings Water Recycling Facility, Yolo County, CA

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)
MW-4	6/15/2004	120.71	44.59	76.12
	3/29/2005		42.83	77.88
	6/16/2005		41.93	78.78
	9/29/2005		na	
	12/6/2005		46.6	74.11
	2/16/2006		42.31	78.4
	5/16/2006		37.61	83.1
	8/21/2006		42.25	78.46
	11/20/2006		41.8	78.91
	2/8/2007		40.85	79.86
	5/7/2007		40.92	79.79
	8/29/2007		46.13	74.58
	2/21/2008		41.2	79.51
	5/27/2008		42.34	78.37
	8/28/2008		45.65	75.06
	11/25/2008		46.07	74.64
	2/19/2009		45.29	75.42
	5/21/2009		44.44	76.27
	8/7/2009		49.54	71.17
	11/5/2009		51	69.71
	2/8/2010		49.31	71.4
	5/7/2010		45.94	74.77
	8/18/2010		48.05	72.66
	11/2/2010		49.05	71.66
	12/28/2010		48.01	72.7
	2/23/2011		46.31	74.4
	5/5/2011		42.04	78.67
	8/16/2011		45.02	75.69
	11/8/2011		46.64	74.07
	2/27/2012		44.72	75.99
	5/21/2012		44.56	76.15
	8/9/2012		48.08	72.63
	11/19/2012		49.78	70.93
	2/21/2013		45.9	74.81
	5/15/2013		46.69	74.02
	8/16/2013		50.67	70.04
	11/7/2013		51.99	68.72
	2/25/2014		50.88	69.83
	5/22/2014		51.08	69.63
	8/27/2014		55.49	65.22
11/12/2014		56.36	64.35	
2/26/2015		53.85	66.86	
5/13/2015		53.9	66.81	
8/4/2015		55.42	65.29	
11/5/2015		56.74	63.97	
2/4/2016		56.4	64.31	
6/30/2016		54.22	66.49	
8/25/2016		55.21	65.5	
11/17/2016		55.54	65.17	
3/7/2017		48.46	72.25	
6/27/2017		47.06	73.65	
8/23/2017		48.59	72.12	
11/14/2017		49.98	70.73	

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

**Table 2 (MW-5R)
 Static Water Level Measurement in Monitoring Wells
 Wild Wings Water Recycling Facility, Yolo County, CA**

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)
MW-5R	6/15/2004	125.42	39.37	86.05
	3/29/2005		37.65	87.77
	6/16/2005		35.62	89.8
	9/29/2005		40.73	84.69
	12/6/2005		40.78	84.64
	2/16/2006		36.02	89.4
	5/16/2006		37.05	88.37
	8/21/2006		36.12	89.3
	11/20/2006		38.95	86.47
	2/8/2007		38.97	86.45
	5/7/2007		38.42	87
	8/29/2007		42.97	82.45
	2/21/2008		37.5	87.92
	5/27/2008		38.06	87.36
	8/27/2008		41.41	84.01
	11/24/2008		41.84	83.58
	2/18/2009		40.73	84.69
	5/21/2009		40.54	84.88
	8/7/2009		43.1	82.32
	11/5/2009		45.2	80.22
	2/8/2010		42.4	83.02
	5/7/2010		39.77	85.65
	8/18/2010		40.15	85.27
	11/2/2010		42.53	82.89
	12/28/2010		41.53	83.89
	2/23/2011		40.1	85.32
	5/5/2011		34.65	90.77
	8/16/2011		36.78	88.64
	11/8/2011		40.14	85.28
	2/27/2012		40.31	85.11
	5/21/2012		38.6	86.82
	8/9/2012		40.68	84.74
	11/19/2012		42.11	83.31
	2/21/2013		39.03	86.39
	5/15/2013		39.69	85.73
	8/15/2013		41.55	83.87
	11/7/2013		42.43	82.99
	2/25/2014		42.28	83.14
	5/22/2014		44.12	81.3
	8/27/2014		49.26	76.16
11/12/2014		48.34	77.08	
2/26/2015		43.39	82.03	
5/13/2015		43.03	82.39	
8/4/2015		42.8	82.62	
11/5/2015		45.3	80.12	
2/4/2016		43.76	81.66	
6/30/2016		41.06	84.36	
8/25/2016		42.23	83.19	
11/17/2016		41.53	83.89	
3/7/2017		32.08	93.34	
6/27/2017		34.96	90.46	
8/23/2017		38.11	87.31	
11/14/2017		39.69	85.73	

TOC = Top of Casing
 msl = mean sea level
 DTW = depth to water
 btoc = below top of casing

Table 2 (MW-6)
Static Water Level Measurement in Monitoring Wells
Wild Wings Water Recycling Facility, Yolo County, CA

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)
MW-6	6/15/2004	121.59	37.96	83.63
	3/29/2005		37.26	84.33
	6/16/2005		34.92	86.67
	9/29/2005		40.59	81
	12/6/2005		40.77	80.82
	2/16/2006		35.32	86.27
	5/16/2006		30.28	91.31
	8/21/2006		35.59	86
	11/20/2006		38.57	83.02
	2/8/2007		38.46	83.13
	5/7/2007		37.97	83.62
	8/29/2007		42.96	78.63
	2/21/2008		37.02	84.57
	5/27/2008		37.56	84.03
	8/27/2008		41.26	80.33
	11/24/2008		41.98	79.61
	2/18/2009		40.67	80.92
	5/21/2009		39.94	81.65
	8/7/2009		42.98	78.61
	11/5/2009		45.37	76.22
	2/8/2010		42.51	79.08
	5/7/2010		39.51	82.08
	8/18/2010		40.14	81.45
	11/2/2010		42	75.57
	12/28/2010		41.67	79.92
	2/23/2011		40.1	81.49
	5/5/2011		34.03	87.56
	8/16/2011		36.23	85.36
	11/8/2011		40.27	81.32
	2/27/2012		40.2	81.39
	5/21/2012		38.67	82.92
	8/9/2012		41.03	80.56
	11/19/2012		42.47	79.12
	2/21/2013		38.91	82.68
	5/15/2013		39.64	81.95
	8/15/2013		41.84	79.75
	11/7/2013		42.65	78.94
	2/25/2014		42.34	79.25
	5/22/2014		44.14	77.45
	8/27/2014		dry	
11/12/2014		dry		
2/26/2015			43.62	77.97
5/13/2015			43.65	77.94
8/4/2015			43.2	78.39
11/5/2015			45.58	76.01
2/4/2016			43.92	77.67
6/30/2016			41.31	80.28
8/25/2016			42.62	78.97
11/17/2016			41.8	79.79
3/7/2017			31.88	89.71
6/27/2017			34.37	87.22
8/23/2017			37.96	83.63
11/14/2017			39.71	81.88

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

Table 2 (MW-7)
Static Water Level Measurement in Monitoring Wells
Wild Wings Water Recycling Facility, Yolo County, CA

Well	Date	TOC Elevation (feet msl)	DTW (feet btoc)	Water Surface Elevation (feet msl)
MW-7	6/15/2004	114.55	36.22	78.33
	3/29/2005		35.8	78.75
	6/16/2005		33.77	80.78
	9/29/2005		38.09	76.46
	12/6/2005		dry	
	2/16/2006		34.08	80.47
	5/16/2006		28.69	85.86
	8/21/2006		34.29	80.26
	11/20/2006		36.96	77.59
	2/8/2007		36.85	77.7
	5/7/2007		36.22	78.33
	8/29/2007		dry	
	2/21/2008		35.55	79
	5/27/2008		35.92	78.63
	8/27/2008		38.16	76.39
	11/24/2008		dry	
	2/18/2009		dry	
	5/21/2009		dry	
	8/7/2009		dry	
	11/5/2009		dry	
	2/8/2010		dry	
	5/7/2010		37.4	77.15
	8/18/2010		dry	
	11/2/2010		dry	
	12/28/2010		dry	
	2/23/2011		37.95	76.6
	5/5/2011		33.15	81.4
	8/16/2011		34.92	79.63
	11/8/2011		dry	
	2/27/2012		38.04	76.51
	5/21/2012		36.95	77.6
	8/9/2012		dry	
	11/19/2012		dry	
	2/21/2013		37.21	77.34
	5/15/2013		37.55	77
	8/15/2013		dry	
	11/7/2013		dry	
	2/25/2014		dry	
	5/22/2014		dry	
	8/27/2014		dry	
	11/12/2010		dry	
	2/26/2015		dry	
5/13/2015		dry		
8/4/2015		dry		
11/5/2015		dry		
2/4/2016		dry		
6/30/2016		dry		
8/25/2016		dry		
11/17/2016		dry		
3/7/2017		32.01	82.54	
6/27/2017		33.57	80.98	
8/23/2017		36.69	77.86	
11/14/2017		38.26	76.29	

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

Table 3
Groundwater Flow Direction and Gradient
Wild Wings Water Recycling Facility, Yolo County, CA

Sample Date	Water Surface Elevation ¹			Gradient (ft/ft)	Flow Direction (degrees) ₂
	MW-1	MW-5R	MW-4		
6/15/2004	93.41	86.05	76.12	0.006	65
3/29/2005	95.6	87.77	77.88	0.006	64.2
6/16/2005	96.6	89.8	78.78	0.006	67.3
9/29/2005	94.47	84.69	n/a	n/a	n/a
12/6/2005	94.82	84.64	74.11	0.007	61.7
2/16/2006	96.23	89.4	78.4	0.006	67.2
5/16/2006	98.97	88.37	83.1	0.006	53.3
8/21/2006	96.49	89.3	78.46	0.006	66.4
11/20/2006	95.95	86.47	78.91	0.006	58.5
2/8/2007	94.85	86.45	79.86	0.005	58.3
5/7/2007	95.43	87	79.79	0.005	59.4
8/29/2007	93.84	82.45	74.58	0.007	56.9
2/21/2008	96.26	87.92	79.51	0.006	61.4
5/27/2008	96.52	87.36	78.37	0.006	61.1
8/27/2008	95.73	84.01	75.06	0.007	58
11/24/2008	93.79	83.58	74.64	0.007	59.7
2/18/2009	95.5	84.69	75.42	0.007	59.4
5/21/2009	94.9	84.88	76.27	0.006	59.4
8/4/2009	93.26	82.32	71.17	0.008	61.5
11/5/2009	91.88	80.22	69.71	0.008	60
2/8/2010	94.17	83.02	71.4	0.008	61.8
5/7/2010	94.37	85.65	74.77	0.007	64
8/18/2010	95	85.27	72.66	0.008	64.5
11/2/2010	94.22	82.89	71.66	0.008	61.2
12/28/2010	95.46	83.89	72.7	0.008	60.9
2/23/2011	94.89	85.32	74.4	0.007	62.9
5/5/2011	96.78	90.77	78.67	0.006	69.9
8/16/2011	95.99	88.64	75.69	0.007	68.3
11/8/2011	94.27	85.28	74.07	0.007	64
2/27/2012	93.38	85.11	75.99	0.006	62.5
5/21/2012	93.42	86.82	76.15	0.006	67.3
8/9/2012	92.38	84.74	72.63	0.007	67
11/19/2012	91.83	83.31	70.93	0.007	65.9
2/21/2013	94.12	86.39	74.81	0.007	66.3
5/15/2013	94.49	85.73	74.02	0.007	64.9
8/15/2013	93.38	83.87	70.04	0.008	66
11/7/2013	92.53	82.99	68.72	0.008	66.3
2/25/2014	91.84	83.14	69.83	0.007	66.6
5/22/2014	91	81.3	69.63	0.007	63.6
8/27/2014	89.57	76.16	65.22	0.009	58.8
11/12/2014	89.29	77.08	64.35	0.009	61.8
2/26/2015	91.34	82.03	66.86	0.008	67.4
5/13/2015	90.62	82.39	66.81	0.008	69.2
8/4/2015	90.19	82.62	65.29	0.008	71.3
11/5/2015	89.32	80.12	63.97	0.009	68.3
2/4/2016	90.89	81.66	64.31	0.009	69.1
6/30/2016	91.85	84.36	66.49	0.009	71.8
8/25/2016	91.63	83.19	65.5	0.009	70.3
11/17/2016	91.32	83.89	65.17	0.009	72.4
3/7/2017	100.04	93.34	72.25	0.009	74.7
6/27/2017	98.08	90.46	73.66	0.008	71.0
8/23/17	96.13	87.31	72.12	0.006	74.0
11/14/2017	95.15	85.73	70.73	0.006	75.0

¹ Groundwater elevations from 6/15/04 to 2/21/08 were provided by DelTech and groundwater elevations from 5/27/08 to 3/7/2017 are provided by GEI. Groundwater elevations from 6/27/2017 to present by SSAL.

² Measured clockwise with North as 0.0 degrees, Using graphical methods perpendicular to groundwater contours.

TOC = Top of Casing
msl = mean sea level
DTW = depth to water
btoc = below top of casing

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	pH	TDS	Na (d)	Cl	B (d)	Fe (d)	Mn (d)	NO3-N	NO2-N	NH3-N	Total Nitrogen	Coliform Bacteria (total)	Coliform Bacteria (fecal)	Coliform Bacteria (E. coli)	TTHM(1) (EPA 601)	Lab Notes
			Std. Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	(MPN/100 mL)	(MPN/100 mL)	(MPN/100 mL)	(µg/L) -
Recommended Interim Limitation ²	WO Objective		6.5-8.5	450	69	106	0.6	0.3	0.05	10	1	0.5	10	nd	nd	nd	100	-
	Background		7.6	1100	155	138	-	<0.1	0.64	18	-	0.5	-	<2.0	<2.0	-	-	-
MW-1	6/15/2004	STL	7.7	1,410	112	391	2.1	<0.10	-	18.7	<0.05	<0.10	18.7	>23.0	<1.1	<1.1	<0.5	
MW-1	3/29/2005	BSK	7.9	1,200	160	360	3.7	<0.05	<0.01	27	<0.15	<1	27	2.2	<1.1	-	<0.5	
MW-1	6/16/2005	BSK	7.7	1,200	130	340	3.2	<0.05	<0.01	25	<0.20	<1	25	<1.1	<1.1	-	<0.5	3
MW-1	9/29/2005	BSK	7.8	1,200	130	310	3.2	<0.05	<0.01	27	<0.15	<1	27	<1.1	<1.1	-	<0.5	
MW-1	12/6/2005	BSK	8.1	1,100	120	340	2.9	<0.05	<0.01	27	<0.15	<1	27	<1.1	<1.1	<1.1	6.12	3
MW-1	2/16/2006	BSK	8.0	1,300	110	340	2.7	<0.05	<0.01	27	<0.10	<1	27	<1.1	<1.1	-	<0.5	
MW-1	5/16/2006	BSK	8.0	1,100	130	300	3.4	<0.05	<0.01	27	<0.15	<1	27	<1.1	<1.1	-	<0.5	
MW-1	8/21/2006	BSK	8.0	1,000	120	270	3.6	<0.05	<0.01	25	<0.05	<0.10	-	<1.1	<1.1	-	<0.5	
MW-1	11/20/2006	BSK	-	-	-	-	-	-	-	-	-	-	-	>23.0	<1.1	-	-	
MW-1	2/16/2007	BSK	-	-	-	-	-	-	No sample retrieved				-	-	-	-	-	
MW-1	5/7/2007	BSK	8.0	1,100	140	250	4.2	<0.05	<0.01	27	<0.05	<1.0	27	2.2	<1.1	-	<0.5	
MW-1	8/29/2007	BSK	8.0	1,100	110	240	3.6	<0.05	<0.01	24	*	<1.0	24	<1.1	<1.1	-	<0.5	
MW-1	11/28/2007	BSK	8.0	1,100	130	220	4.0	<0.05	<0.01	26	*	<1.0	26	<1.1	<1.1	-	<0.5	
MW-1	2/21/2008	BSK	-	-	-	-	-	-	-	-	-	-	-	<1.1	<1.1	-	-	
MW-1	5/27/2008	CLS	7.3	1,100	120	250	3.5	0.10	<0.02	23	<0.10	<0.10	23	1.3	-	-	<0.50	
MW-1	8/27/2008	CLS	7.4	1,100	120	230	3.6	<0.10	<0.02	24	<0.10	<0.10	24	<1.8	-	-	<0.50	
MW-1	11/24/2008	CLS	7.4	1,100	120	260	3.2	0.44	<0.02	25	<0.10	<0.10	25	<1.8	-	-	<0.50	
MW-1	2/18/2009	CLS	-	980 (5)	130	170	4.0	<0.10	<0.02	19	<0.10	<0.10	19	<1.8	-	-	<0.50	
MW-1	5/21/2009	CLS	7.3	1,100	110	210	3.5	<0.10	<0.02	21	<0.10	<0.10	21	<1.8	-	-	<0.50	
MW-1	8/4/2009	CLS	7.3	1,100	96	240	3.1	0.13	<0.02	23	<0.10	<0.10	23	2.0	-	-	<0.50	
MW-1	11/5/2009	CLS	7.1 ⁶	1,100 ⁵	110	260	3.1	0.15	<0.02	24	<0.10	<0.10	24	<1.8	-	-	<0.50	
MW-1	2/8/2010	CLS	7.4	1,200	120	290	3.5	<0.10	<0.02	25	<0.10	<0.10	25	<1.8	-	-	<0.50	
MW-1	5/7/2010	CLS	7.4	1,100	120	280	3.0	<0.10	<0.02	25	<0.10	<0.10	25	<1.8	-	-	<0.50	
MW-1	8/18/2010	CLS	7.2	1,100	140	250	3.6	<0.10	<0.02	24	<0.10	<0.10	24	2.0	-	-	<0.50	
MW-1	11/2/2010	CLS	7.4	1,200	130	280	3.3	<0.10	<0.02	26	<0.10	<0.10	27	<1.8	-	-	<0.50	
MW-1	2/23/2011	CLS	7.4	1,100	130	270	3.6	<0.10	<0.02	26	<0.10	<0.10	26	<1.8	-	-	<0.50	
MW-1	5/5/2011	CLS	7.4	1,100	130	250	3.7	<0.10	<0.02	24	<0.10	<0.10	24	<1.8	-	-	<0.50	
MW-1	8/16/2011	CLS	7.4	1,200	140	200	4.2	<0.10	<0.02	24	<0.10	<0.10	24	<1.8	-	-	<0.50	
MW-1	11/8/2011	CLS	7.3	1,200	130	220	4.0	<0.10	<0.02	20	<0.10	<0.10	20	<1.8	-	-	<0.50	
MW-1	2/27/2012	CLS	7.3	1,100	140	220	4.4	<0.10	<0.02	21	<0.10	<0.10	21	<1.8	-	-	<0.50	
MW-1	5/21/2012	CLS	7.5	1,100	130	230	4.0	<0.10	<0.02	23	<0.10	0.13	23	<1.8	-	-	<0.50	
MW-1	8/9/2012	CLS	7.6	1,100	130	210	3.9	<0.10	<0.02	20	<0.10	<0.10	20	<1.8	-	-	<0.50	
MW-1	11/19/2012	CLS	7.3	1,200	120	220	3.5	<0.10	<0.02	20	<0.10	<0.10	20	<1.8	-	-	<0.50	
MW-1	2/21/2013	CLS	7.2	1,100	140	200	4.1	<0.10	<0.02	19	<0.10	0.14	19	<1.8	-	-	<0.50	
MW-1	5/15/2013	CLS	7.2	1,200	130	220	4.1	<0.10	<0.02	23	<0.10	<0.10	23	<1.8	-	-	<0.50	
MW-1	8/15/2013	CLS	7.3	1,100	130	230	3.7	0.15	<0.02	22	<0.10	<0.10	22	<1.8	-	-	<0.50	
MW-1	11/7/2013	CLS	7.4	1,100	150	240	3.4	<0.10	<0.02	22	<0.10	<0.10	22	<1.8	-	-	<0.50	
MW-1	2/25/2014	CLS	7.4	1,100	100	260	3.5	<0.10	<0.02	22	<0.10	<0.10	22	<1.8	-	-	<0.50	
MW-1	5/22/2014	CLS	7.4	1,100	110	220	3.3	<0.10	<0.02	20	<0.10	<0.10	20	<1.8	-	-	<0.50	
MW-1	8/27/2014	CLS	7.5	1,200	110	230	3.5	<0.10	<0.02	20	<0.10	<0.10	20	<1.8	-	-	<0.50	
MW-1	11/12/2014	CLS	7.3 ⁶	1,000 ⁷	93	240	2.8	<0.10	<0.02	20	<0.10	<0.10	20	<1	-	-	<0.50	
MW-1	2/26/2015	CLS	7.3	990	110	200	3.5	<0.10	<0.02	17	<0.10	<0.10	17	<1.8	-	-	<0.50	
MW-1	5/13/2015	CLS	7.4	1,100	100	200	3.5	<0.10	<0.02	17	<0.10	<0.10	17	<1.8	-	-	<0.50	
MW-1	8/4/2015	CLS	7.3	1,200	110	200	3.6	<0.10	<0.02	19	<0.10	<0.10	19	<1.8	-	-	<0.50	
MW-1	11/5/2015	CLS	7.3	1,200	100	220	3.2	<0.10	<0.02	20	<0.10	<0.10	20	<1.8	-	-	<0.50	
MW-1	2/4/2016	CLS	7.3	1,200	110	200	3.9	<0.10	<0.02	20	<0.40	<0.10	20	<1.8	-	-	<0.50	
MW-1	6/30/2016	CLS	7.2	1,100	110	180	3.9	<0.10	<0.02	16	<0.40	<0.10	16	<1.8	-	-	<0.50	
MW-1	8/25/2016	CLS	7.3	990	100	170	3.3	<0.10	<0.02	16	<0.40	<0.10	16	2.0	-	-	8.5	
MW-1	11/17/2016	CLS	7.4	1,100	110	180	3.7	<0.10	<0.02	17	<0.40	<0.10	17	<1.8	-	-	<0.50	
MW-1	3/7/2017	CLS	7.4	990	110	230	3.5	<0.10	<0.02	15	<0.40	0.18	15	<1.8	-	-	<0.50	
MW-1	6/27/2017	CLS	7.1	1100	150	140	4.6	<0.10	<0.02	16	<0.40	0.19	16	2.0	-	-	<0.50	
MW-1	8/23/2017	CLS	6.6	960	150	130	5.1	<0.10	<0.02	14	<0.40	<0.10	14	2.0	-	-	<0.50	
MW-1	11/14/2017	CLS	7.2	960	150	120	5.1	<0.10	<0.02	11	<0.40	<0.10	11	<1.8	-	-	<0.50	

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	pH Std. Unit	TDS mg/L	Na (d) mg/L	Cl mg/L	B (d) mg/L	Fe (d) mg/L	Mn (d) mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	Total Nitrogen mg/L	Coliform Bacteria (total) (MPN/100 mL)	Coliform Bacteria (fecal) (<i>E. coli</i>)	TTHM(1) (EPA 601) (µg/L) -	Lab Notes	
Recommended Interim Limitation ²	WQ Objective		6.5-8.5	450	69	106	0.6	0.3	0.05	10	1	0.5	10	nd	nd	nd	100	-
	Background		7.6	1100	155	138	-	<0.1	0.64	18	-	0.5	-	<2.0	<2.0	-	-	-
MW-2	6/15/2004	STL	7.6	884	147	78.4	5.9	<0.10	-	11.9	<0.05	<0.10	11.9	23.0	<1.1	<1.1	<0.5	
MW-2	3/29/2005	BSK	7.8	880	200	95	7.2	<0.05	<0.01	11	<0.15	<1	11	1.1	<1.1	-	<0.5	
MW-2	6/16/2005	BSK	7.6	920	150	100	5.5	<0.05	<0.01	11	<0.10	<1	11	>23.0	>23.0	-	<0.5	
MW-2	9/29/2005	BSK	7.8	960	170	110	5.8	<0.05	<0.01	12	<0.15	<1	12	5.1	<1.1	-	<0.5	
MW-2	12/6/2005	BSK	8.0	970	180	130	6.1	<0.05	<0.01	12	<0.10	<1	12	1.1	<1.1	<1.1	0.88	3
MW-2	2/16/2006	BSK	7.9	940	150	120	5.4	<0.05	<0.01	11	<0.10	<1	11	<1.1	<1.1	-	0.92	3
MW-2	5/16/2006	BSK	8.0	1,000	170	120	5.9	<0.05	<0.01	13	<0.15	4.0	13	<1.1	<1.1	-	0.63	3
MW-2	8/21/2006	BSK	7.9	1,000	150	140	5.2	<0.05	<0.01	14	<0.05	<0.10	-	<1.1	<1.1	-	<0.5	
MW-2	11/20/2006	BSK	-	-	-	-	-	-	-	-	-	-	-	>23.0	<1.1	-	-	
MW-2	2/16/2007																	
MW-2	5/7/2007	BSK	7.9	920	170	120	6.0	<0.05	<0.01	11	<0.05	<1.0	11	<1.1	<1.1	-	<0.5	
MW-2	8/29/2007	BSK	7.9	850	130	110	4.8	<0.05	<0.01	10	*	<1.0	10	<1.1	<1.1	-	<0.5	
MW-2	11/28/2007	BSK	7.8	890	150	100	5.3	<0.05	<0.01	11	*	<1.0	11	<1.1	<1.1	-	<0.5	
MW-2	2/21/2008	BSK	-	-	-	-	-	-	-	-	-	-	-	1.1	<1.1	-	-	
MW-2	5/28/2008	CLS	7.0	910	170	97	5.7	<0.10	<0.01	9.1	<0.10	<0.10	9.2	<1.8	-	-	<0.50	
MW-2	8/27/2008	CLS	7.0	910	150	100	5.0	<0.10	<0.02	9.5	<0.10	0.11	9.6	<1.8	-	-	<0.50	
MW-2	11/25/2008	CLS	7.2	950	150	100	5.0	<0.10	<0.02	9.1	<0.10	<0.10	9.1	79	-	-	<0.50	
MW-2	2/19/2009	CLS	-	880(5)	140	100	4.9	<0.10	<0.02	8.2	<0.10	<0.10	8.5	6.8	-	-	<0.50	
MW-2	5/21/2009	CLS	7.1	870	140	89	4.7	<0.10	<0.02	8.1	<0.10	<0.10	8.3	<1.8	-	-	<0.50	
MW-2	8/4/2009	CLS	7.0	860	120	91	4.2	<0.10	<0.02	8.0	<0.10	<0.10	8.0	<1.8	-	-	<0.50	
MW-2	11/5/2009	CLS	-	790(5)	150	100	4.8	<0.10	<0.02	7.9	<0.10	<0.10	8.0	<1.8	-	-	<0.50	
MW-2	2/8/2010	CLS	7.2	960	170	110	5.6	0.10	<0.02	7.9	<0.10	<0.10	7.9	7.8	-	-	<0.50	
MW-2	5/7/2010	CLS	7.1	950	160	120	5.1	<0.10	<0.02	7.5	<0.10	<0.10	7.5	<1.8	-	-	<0.50	
MW-2	8/18/2010	CLS	7.1	1,000	180	130	5.7	0.22	<0.02	8.3	<0.10	0.11	8.5	<1.8	-	-	<0.50	
MW-2	11/2/2010	CLS	7.1	1,100	210	140	6.1	<0.10	<0.02	8.4	<0.10	<0.10	8.7	<1.8	-	-	<0.50	
MW-2	2/23/2011	CLS	7.1	1,200	160	160	5.7	<0.10	<0.02	8.5	<0.10	0.17	11	13	-	-	<0.50	
MW-2	5/5/2011	CLS	7.1	970	160	150	5.6	<0.10	<0.02	7.3	<0.10	<0.10	7.6	<1.8	-	-	<0.50	
MW-2	8/16/2011	CLS	7.1	1,100	190	170	6.6	0.17	<0.02	9.4	<0.10	<0.10	9.6	<1.8	-	-	<0.50	
MW-2	11/8/2011	CLS	7.0	1,200	180	170	6.3	<0.10	<0.02	8.8	<0.10	<0.10	8.8	<1.8	-	-	<0.50	
MW-2	2/27/2012	CLS	7.0	1,100	190	140	7.0	<0.10	<0.02	8.0	<0.10	<0.10	8.2	<1.8	-	-	<0.50	
MW-2	5/21/2012	CLS	7.1	990	180	130	7.3	<0.10	<0.02	8.2	<0.10	0.20	8.4	2.0	-	-	<0.50	
MW-2	8/9/2012	CLS	7.4	1,000	140	120	4.7	<0.10	<0.02	8.8	<0.10	0.11	9.0	<1.8	-	-	<0.50	
MW-2	11/19/2012	CLS	7.0	1,000	170	110	6.0	<0.10	<0.02	8.6	<0.10	<0.10	8.9	2.0	-	-	<0.50	
MW-2	2/21/2013	CLS	7.0	930	170	100	6.2	0.14	<0.02	8.7	<0.10	0.12	8.9	14.0	-	-	<0.50	
MW-2	5/15/2013	CLS	7.1	940	170	120	6.2	<0.10	<0.02	8.6	<0.10	<0.10	8.7	<1.8	-	-	<0.50	
MW-2	8/15/2013	CLS	7.0	990	160	120	5.2	<0.10	<0.02	8.3	<0.10	<0.10	8.6	<1.8	-	-	<0.50	
MW-2	11/7/2013	CLS	7.0	900	150	110	5.7	<0.10	<0.02	8.1	<0.10	0.17	8.4	<1.8	-	-	<0.50	
MW-2	2/25/2014	CLS	7.1	830	140	86	5.9	<0.10	<0.02	8.4	<0.10	<0.10	8.6	<1.8	-	-	<0.50	
MW-2	5/22/2014	CLS	7.0	830	140	73	5.6	<0.10	<0.02	8.1	<0.10	<0.10	8.1	<1.8	-	-	<0.50	
MW-2	8/27/2014																	
MW-2	11/12/2014																	
MW-2	2/26/2015	CLS	7.0	800	130	87	5.3	<0.10	<0.02	8.3	<0.10	<0.10	8.4	<1.8	-	-	<0.50	
MW-2	5/13/2015	CLS	7.2	830	130	86	5.3	<0.10	<0.02	9.2	<0.10	<0.10	9.3	<1.8	-	-	<0.50	
MW-2	8/4/2015	CLS	7.2	830	150	88	5.4	<0.10	<0.02	8.3	<0.10	<0.10	8.5	<1.8	-	-	<0.50	
MW-2	11/5/2015	CLS	7.1	920	130	84	4.5	<0.10	<0.02	8.5	<0.10	<0.10	8.6	<1.8	-	-	<0.50	
MW-2	2/4/2016	CLS	7.1	840	140	83	5.4	<0.10	<0.02	9.0	<0.40	<0.10	9.2	<1.8	-	-	<0.50	
MW-2	6/30/2016	CLS	7.0	770	130	83	5.1	<0.10	<0.02	9.2	<0.40	<0.10	9.2	<1.8	-	-	0.94	
MW-2	8/25/2016	CLS	7.1	820	150	88	4.8	<0.10	<0.02	9.7	<0.40	0.17	9.7	<1.8	-	-	9.9	
MW-2	11/17/2016	CLS	7.3	820	140	94	4.9	<0.10	<0.02	10.0	<0.40	0.12	11.0	<1.8	-	-	<0.50	
MW-2	3/7/2017	CLS	7.2	840	140	120	5.4	<0.10	<0.02	8.8	<0.40	<0.10	9.0	<1.8	-	-	<0.50	
MW-2	6/27/2017	CLS	6.9	940	160	130	5.5	<0.10	<0.02	16	-	0.12	16	7.8	-	-	<0.50	
MW-2	8/23/2017	CLS	7.1	960	180	130	6.3	<0.10	<0.02	18	<0.40	<0.10	18	17	-	-	<0.50	
MW-2	11/14/2017	CLS	7.1	1,000	170	140	6.2	<0.10	<0.02	21	<0.40	0.10	21	4.5	-	-	<0.50	

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	pH Std. Unit	TDS mg/L	Na (d) mg/L	Cl mg/L	B (d) mg/L	Fe (d) mg/L	Mn (d) mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	Total Nitrogen mg/L	Coliform Bacteria			TTHM(1) (EPA 601) (µg/L) -	Lab Notes
														(total) (MPN/100 mL)	(fecal)	(E. coli)		
Recommended Interim Limitation ²	WQ Objective		6.5-8.5	450	69	106	0.6	0.3	0.05	10	1	0.5	10	nd	nd	nd	100	-
	Background		7.6	1100	155	138	-	<0.1	0.64	18	-	0.5	-	<2.0	<2.0	-	-	-
MW-3	6/15/2004	STL	7.7	435	90.6	34.8	1.7	<0.10	-	1.7	<0.05	<0.10	1.7	23.0	<1.1	<1.1	<0.5	
MW-3	3/29/2005	BSK	7.8	390	96	38	1.5	<0.05	<0.01	2.9	<0.05	<1	2.9	>23.0	1.1	-	<0.5	
MW-3	6/16/2005	BSK	7.6	380	81	26	1.2	<0.05	<0.01	0.70	<0.10	<1	0.70	5.1	<1.1	-	1.6	3
MW-3	9/29/2005	BSK	7.8	620	120	57	2.0	<0.05	<0.01	1.8	<0.10	<1	1.8	>23.0	12.0	-	0.79	3
MW-3	12/6/2005	BSK	8.1	610	140	62	2.1	<0.05	<0.01	1.6	<0.10	<1	1.6	>23.0	3.6	3.6	5.4	3
MW-3	2/16/2006	BSK	7.9	380	74	31	1.1	0.10	<0.01	1.4	<0.05	<1	1.4	16.1	1.1	-	<0.5	
MW-3	5/16/2006	BSK	8.0	420	72	32	1.1	<0.05	<0.01	1.6	<0.05	<1	1.6	>23.0	5.1	-	2.6	3
MW-3	8/21/2006	BSK	8.0	480	110	49	1.7	0.15	<0.01	0.9	<0.05	<0.10	-	<1.1	<1.1	-	<0.5	
MW-3	11/20/2006	BSK	-	-	-	-	-	-	-	-	-	-	-	>23.0	<1.1	-	-	
MW-3	2/16/2007																	
MW-3	5/7/2007	BSK	7.9	550	160	65	2.0	<0.05	<0.01	0.54	<0.05	<1.0	-	2.2	<1.1	-	<0.5	
MW-3	8/29/2007	BSK	7.9	690	160	92	2.4	<0.05	<0.01	1.4	*	<1.0	1.4	>23.0	<1.1	-	<0.5	
MW-3	11/28/2007	BSK	7.8	770	170	94	2.4	0.27	0.45	2.3	*	<1.0	5.3	23.0	2.2	-	<0.5	
MW-3	2/21/2008	BSK	-	-	-	-	-	-	-	-	-	-	-	12.0	<1.1	-	-	
MW-3	5/28/2008	CLS	7.0	530	120	56	1.7	7.1	0.17	2.1	<0.10	<0.10	9.4	280	-	-	<0.50	
MW-3	8/28/2008	CLS	7.0	640	160	69	2.0	<0.10	<0.02	2.0	<0.10	0.12	2.7	540	-	-	<0.50	
MW-3	11/25/2008	CLS	7.1	680	170	67	2.1	0.34	0.19	0.58	<0.10	0.17	1.6	240	-	-	<0.50	
MW-3	2/19/2009	CLS	-	580(5)	130	75	1.8	0.69	0.14	1.3	<0.10	0.14	2.6	>1600	-	-	<0.50	
MW-3	5/21/2009	CLS	7.1	500	130	53	1.6	20	0.68	<0.50	<0.10	<0.10	1.2	79	-	-	<0.50	
MW-3	8/5/2009	CLS	7.0	690	130	73	1.8	0.31	0.04	0.55	<0.10	0.14	1.8	430	-	-	<0.50	
MW-3	11/5/2009	CLS	-	600(5)	160	77	2.1	0.33	0.25	1.0	<0.10	0.64	2.8	>1600	-	-	<0.50	
MW-3	2/8/2010	CLS	7.0	530	130	52	1.7	0.55	0.04	0.69	<0.10	0.15	1.5	1600	-	-	<0.50	
MW-3	5/7/2010	CLS	6.9	580	140	78	1.6	<0.10	0.06	1.1	<0.10	0.26	2.6	23	-	-	<0.50	
MW-3	8/18/2010	CLS	7.1	670	200	87	2.4	2.7	0.50	1.2	<0.10	0.93	3.4	350	-	-	5.2	
MW-3	11/2/2010	CLS	7.0	870	200	120	2.8	0.28	0.46	5.3	<0.10	0.36	7.2	280	-	-	1.5	
MW-3	2/24/2011	CLS	6.7	590	140	73	1.8	<0.10	<0.02	1.6	<0.10	0.17	2.5	1600	-	-	<0.50	
MW-3	5/5/2011	CLS	6.9	650	130	95	1.9	0.11	0.03	4.0	<0.10	0.30	4.6	33	-	-	<0.50	
MW-3	8/16/2011	CLS	7.4	910	170	120	3.2	<0.10	<0.02	5.0	<0.10	<0.10	5.4	94	-	-	<0.50	
MW-3	11/8/2011	CLS	7.0	920	180	130	2.7	2.0	0.35	3.7	<0.10	0.56	4.9	63	-	-	<0.50	
MW-3	2/27/2012	CLS	6.9	740	180	110	2.4	5.5	0.33	2.0	<0.10	0.43	3.2	49	-	-	<0.50	
MW-3	5/21/2012	CLS	7.0	760	160	98	2.3	<0.10	0.03	2.1	<0.10	0.13	3	13	-	-	<0.50	
MW-3	8/9/2012	CLS	7.3	850	180	110	2.3	0.22	0.03	2.9	<0.10	0.37	3.5	<1.8	-	-	1.7	
MW-3	11/19/2012	CLS	7.0	900	180	120	2.3	0.59	0.18	4.1	<0.10	0.31	5.4	130	-	-	<0.50	
MW-3	2/21/2013	CLS	6.9	670	170	110	2.0	0.18	0.04	2.4	<0.10	0.35	3.2	4	-	-	<0.50	
MW-3	5/15/2013	CLS	7.0	710	160	110	2.1	<0.10	0.07	1.8	<0.10	<0.10	2.1	<1.8	-	-	0.93	
MW-3	8/16/2013	CLS	7.4	630(5)	140	82	1.8	9.10	0.15	1.6	<0.10	0.16	3.7	<1.8	-	-	0.63	
MW-3	11/7/2013	CLS	6.9	620	150	81	1.4	<0.10	0.07	1.8	<0.10	0.12	2.5	<1.8	-	-	<0.50	
MW-3	2/25/2014	CLS	7.2	760	180	170	2.3	3.10	0.13	2.7	<0.10	0.32	3.3	>1600	-	-	<0.50	
MW-3	5/22/2014	CLS	7.0	860	170	170	2.3	0.96	0.03	1.9	<0.10	<0.10	2.3	<1.8	-	-	<0.50	
MW-3	8/27/2014	CLS	7.1	900	150	170	1.9	0.55	0.13	1.8	<0.10	0.20	2.4	<1.8	-	-	0.62	
MW-3	11/12/2014																	
MW-3	2/26/2015	CLS	7.0	650	130	110	1.9	<0.10	<0.02	1.1	<0.10	<0.10	1.7	920	-	-	<0.50	
MW-3	5/13/2015	CLS	7.0	700	140	150	1.7	0.26	<0.02	2.4	<0.10	<0.10	2.6	<1.8	-	-	<0.50	
MW-3	8/4/2015	CLS	7.0	700	150	120	1.9	16.00	0.32	2.1	<0.10	0.30	2.7	<1.8	-	-	<0.50	
MW-3	11/5/2015																	
MW-3	2/4/2016	CLS	7.1	980	210	230	2.1	<0.10	<0.02	1.7	<0.40	0.25	2.4	220	-	-	<0.50	
MW-3	6/30/2016	CLS	7.0	740	150	150	2.1	11.00	0.18	2.2	<0.40	0.16	3.1	9.0	-	-	3.1	
MW-3	8/25/2016																	
MW-3	11/17/2016																	
MW-3	3/7/2017	CLS	7.2	420	84	52	0.94	1.10	0.10	<0.40	<0.40	0.17	0.95	23.0	-	-	<0.50	
MW-3	6/27/2017	CLS	6.9	510	120	66	1.3	<0.10	<0.10	0.90	<0.40	0.44	4.6	540	-	-	<0.50	
MW-3	8/23/2017	CLS	7.3	610	170	55	2.1	0.12	<0.02	0.48	<0.40	0.33	1.7	>1600	-	-	<0.50	
MW-3	11/14/2017	CLS	7.1	580	130	78	1.7	<0.10	0.039	1.6	<0.40	0.13	4.2	13	-	-	<0.50	

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	pH Std. Unit	TDS mg/L	Na (d) mg/L	Cl mg/L	B (d) mg/L	Fe (d) mg/L	Mn (d) mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	Total Nitrogen mg/L	Coliform Bacteria			TTHM(1) (EPA 601) (µg/L) -	Lab Notes	
														(total) (MPN/100 mL)	(fecal)	(E. coli)			
Recommended Interim Limitation ²	WQ Objective		6.5-8.5	450	69	106	0.6	0.3	0.05	10	1	0.5	10	nd	nd	nd	100	-	
	Background		7.6	1100	155	138	-	<0.1	0.64	18	-	0.5	-	<2.0	<2.0	-	-	-	
MW-4	6/15/2004	STL	8.0	647	53.3	138	1.0	0.87	-	8.4	<0.05	<0.10	8.4	9.2	<1.1	<1.	<0.5		
MW-4	3/29/2005	BSK	8.1	570	69	170	1.2	<0.05	<0.01	9.7	<0.10	<1	9.7	23.0	<1.1	-	<0.5		
MW-4	6/16/2005	BSK	8.0	600	59	170	1.0	<0.05	<0.01	9.7	<0.10	<1	9.7	<1.1	<1.1	-	0.81	3	
MW-4	9/29/2005								No sample retrieved										
MW-4	12/6/2005	BSK	8.2	570	55	180	1.1	<0.05	<0.01	9.9	<0.10	<1	9.9	<1.1	<1.1	<1.1	1.4	3	
MW-4	2/16/2006	BSK	8.1	590	49	180	0.96	<0.05	<0.01	9.7	<0.10	<1	9.7	<1.1	<1.1	-	1.8	3	
MW-4	5/16/2006	BSK	8.2	650	56	180	1.1	<0.05	<0.01	9.9	<0.10	<1	9.9	<1.1	<1.1	-	0.99	3	
MW-4	8/21/2006	BSK	8.2	590	49	170	1.0	<0.05	<0.01	9.7	<0.05	<0.10	-	>23.0	9.2	-	<0.5		
MW-4	11/20/2006	BSK	-	-	-	-	-	-	-	-	-	-	-	<1.1	<1.1	-	-		
MW-4	2/16/2007								No sample retrieved										
MW-4	5/7/2007	BSK	8.2	560	54	170	1.1	<0.05	<0.01	44 ⁴	<0.05	<1.0	44 ⁴	<1.1	<1.1	-	<0.5		
MW-4	8/29/2007	BSK	8.2	570	47	180	1.1	<0.05	<0.01	9.5	*	<1.0	9.5	6.9	<1.1	-	<0.5		
MW-4	11/28/2007	BSK	8.1	570	52	190	1.0	<0.05	<0.01	11	*	<1.0	11	<1.1	<1.1	-	<0.5		
MW-4	2/21/2008	BSK	-	-	-	-	-	-	-	-	-	-	-	<1.1	<1.1	-	-		
MW-4	5/27/2008	CLS	7.7	550	51	180	1.0	<0.10	<0.02	9.4	<0.10	<0.10	9.5	<1.8	-	-	<0.50		
MW-4	8/28/2008	CLS	7.5	560	52	170	0.94	<0.10	<0.02	9.5	<0.10	<0.10	9.7	<1.8	-	-	<0.50		
MW-4	11/25/2008	CLS	7.8	620	51	190	0.98	<0.10	<0.02	10	<0.10	<0.10	10	<1.8	-	-	<0.50		
MW-4	2/19/2009	CLS	-	650(5)	53	190	1.2	<0.10	<0.02	10	<0.10	<0.10	10	<1.8	-	-	<0.50		
MW-4	5/21/2009	CLS	7.9	620	50	170	0.98	<0.10	<0.02	9.3	<0.10	<0.10	9.3	<1.8	-	-	<0.50		
MW-4	8/5/2009	CLS	7.6	600	41	190	0.88	<0.10	<0.02	10	<0.10	<0.10	10	<1.8	-	-	<0.50		
MW-4	11/5/2009	CLS	7.8 (6)	710(5)	53	190	1.0	<0.10	<0.02	10	<0.10	<0.10	10	<1.8	-	-	<0.50		
MW-4	2/8/2010	CLS	7.8	630	59	210	1.2	0.15	<0.02	11	<0.10	<0.10	11	<1.8	-	-	<0.50		
MW-4	5/7/2010	CLS	7.6	710	54	220	0.96	0.12	<0.02	12	<0.10	<0.10	12	<1.8	-	-	<0.50		
MW-4	8/18/2010	CLS	7.6	560	59	200	1.1	<0.10	<0.02	11	<0.10	<0.10	11	<1.8	-	-	<0.50		
MW-4	11/2/2010	CLS	7.8	650	66	210	1.2	<0.10	<0.02	11	<0.10	<0.10	11	<1.8	-	-	<0.50		
MW-4	2/23/2011	CLS	7.7	680	57	220	1.1	<0.10	<0.02	12	<0.10	<0.10	12	<1.8	-	-	<0.50		
MW-4	5/5/2011	CLS	7.8	810	53	230	0.98	<0.10	<0.02	12	<0.10	<0.10	12	<1.8	-	-	<0.50		
MW-4	8/16/2011	CLS	8.0	690	58	210	1.1	<0.10	<0.02	12	<0.10	<0.10	12	<1.8	-	-	<0.50		
MW-4	11/8/2011	CLS	7.7	630	57	210	1.0	<0.10	<0.02	11	<0.10	<0.10	11	<1.8	-	-	<0.50		
MW-4	2/27/2012	CLS	7.7	610	62	210	1.2	<0.10	<0.02	11	<0.10	<0.10	11	<1.8	-	-	<0.50		
MW-4	5/21/2012	CLS	7.7	650	58	210	1.2	<0.10	<0.02	12	<0.10	0.26	12	<1.8	-	-	<0.50		
MW-4	8/9/2012	CLS	8.0	600	63	220	1.1	<0.10	<0.02	12	<0.10	0.19	12	<1.8	-	-	<0.50		
MW-4	11/19/2012	CLS	7.6	610	55	210	1.0	<0.10	<0.02	12	<0.10	<0.10	12	<1.8	-	-	<0.50		
MW-4	2/21/2013	CLS	7.6	670	66	230	1.1	<0.10	<0.02	15	<0.10	<0.10	15	<1.8	-	-	<0.50		
MW-4	5/15/2013	CLS	7.6	680	57	240	1.1	0.21	<0.02	15	<0.10	<0.10	15	<1.8	-	-	<0.50		
MW-4	8/16/2013	CLS	7.7	870(5)	58	250	1.1	<0.10	<0.02	14	<0.10	0.14	14	<1.8	-	-	<0.50		
MW-4	11/7/2013	CLS	7.6	670	56	250	1.0	<0.10	<0.02	14	<0.10	0.14	14	<1.8	-	-	<0.50		
MW-4	2/25/2014	CLS	7.7	830	70	250	1.0	<0.10	<0.02	14	<0.10	<0.10	14	<1.8	-	-	<0.50		
MW-4	5/22/2014	CLS	7.8	700	57	230	1.1	<0.10	<0.02	13	<0.10	<0.10	13	<1.8	-	-	<0.50		
MW-4	8/27/2014	CLS	7.8	840	58	250	1.0	<0.10	<0.02	14	<0.10	<0.10	14	<1.8	-	-	<0.50		
MW-4	11/12/2014	CLS	7.7 ⁶	740 ⁷	54	260	1.0	<0.10	<0.02	15	<0.10	<0.10	15	<1	-	-	<0.50		
MW-4	2/26/2015	CLS	7.7	720	52	260	1.0	<0.10	<0.02	16	<0.10	<0.10	16	<1.8	-	-	<0.50		
MW-4	5/13/2015	CLS	7.8	770	53	250	1.0	<0.10	<0.02	15	<0.10	<0.10	15	<1.8	-	-	<0.50		
MW-4	8/4/2015	CLS	7.8	750	56	240	1.0	<0.10	<0.02	16	<0.10	<0.10	16	<1.8	-	-	<0.50		
MW-4	11/5/2015	CLS	7.8	970	60	240	1.1	<0.10	<0.02	17	<0.10	<0.10	17	<1.8	-	-	<0.50		
MW-4	2/4/2016	CLS	7.8	760	49	240	0.82	<0.10	<0.02	17	<0.40	0.17	17	<1.8	-	-	<0.50		
MW-4	6/30/2016	CLS	7.6	690	50	240	0.95	<0.10	<0.02	16	<0.40	<0.10	16	<1.8	-	-	<0.50		
MW-4	8/25/2016	CLS	7.7	560	56	220	0.88	<0.10	<0.02	16	<0.40	0.14	16	<1.8	-	-	12		
MW-4	11/17/2016	CLS	7.7	660	50	220	0.85	<0.10	<0.02	17	<0.40	<0.10	17	<1.8	-	-	<0.50		
MW-4	3/7/2017	CLS	7.7	670	49	250	0.95	<0.10	<0.02	14	<0.40	<0.10	14	<1.8	-	-	<0.50		
MW-4	6/27/2017	CLS	7.5	680	55	230	0.87	<0.10	<0.02	15	<0.40	<0.10	15	<1.8	-	-	<0.50		
MW-4	8/23/2017	CLS	7.5	630	57	220	1.0	<0.10	<0.02	14	<0.40	<0.10	14	79	-	-	<0.50		
MW-4	11/14/2017	CLS	7.5	660	58	240	0.97	<0.10	<0.02	15	<0.40	0.13	15	540	-	-	<0.50		

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	pH Std. Unit	TDS mg/L	Na (d) mg/L	Cl mg/L	B (d) mg/L	Fe (d) mg/L	Mn (d) mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	Total Nitrogen mg/L	Coliform Bacteria			TTHM(1) (EPA 601) (µg/L) -	Lab Notes
														(total) (MPN/100 mL)	(fecal)	(E. coli)		
Recommended Interim Limitation ²	WQ Objective		6.5-8.5	450	69	106	0.6	0.3	0.05	10	1	0.5	10	nd	nd	nd	100	-
	Background		7.6	1100	155	138	-	<0.1	0.64	18	-	0.5	-	<2.0	<2.0	-	-	-
MW-5R	6/15/2004	STL	8.1	461	91.7	42.3	2.1	<0.10	-	1.6	<0.05	<0.10	1.6	>23.0	<1.1	<1.1	<0.5	
MW-5R	3/29/2005	BSK	8.2	490	120	48	2.6	<0.05	<0.01	2.0	<0.10	<1	2.0	5.1	<1.1	-	<0.5	
MW-5R	6/16/2005	BSK	8.2	450	95	49	2.0	<0.05	<0.01	1.4	<0.10	<1	1.4	1.1	<1.1	-	4.0	3
MW-5R	9/29/2005	BSK	8.2	430	92	48	2.0	<0.05	<0.01	1.1	<0.10	<1	1.1	1.1	<1.1	-	<0.5	
MW-5R	12/6/2005	BSK	8.4	430	92	51	2.1	<0.05	<0.01	1.6	<0.10	<1	1.6	<1.1	<1.1	<1.1	1.8	3
MW-5R	2/16/2006	BSK	8.3	450	91	48	2.0	<0.05	<0.01	1.7	<0.10	<1	1.7	<1.1	<1.1	-	1.6	3
MW-5R	5/16/2006	BSK	8.3	360	92	47	2.1	<0.05	<0.01	1.1	<0.10	<1	1.1	<1.1	<1.1	-	1.6	3
MW-5R	8/21/2006	BSK	8.3	420	78	47	1.8	<0.05	<0.01	1.1	<0.05	<0.10	-	<1.1	<1.1	-	<0.5	
MW-5R	11/20/2006	BSK	-	-	-	-	-	-	-	-	-	-	-	23.0	<1.1	-	-	
MW-5R	2/16/2007																	
MW-5R	5/7/2007	BSK	8.3	420	89	49	2.0	<0.05	<0.01	1.1	<0.05	<1.0	1.1	<1.1	<1.1	-	<0.5	
MW-5R	8/29/2007	BSK	8.3	470	91	44	1.9	<0.05	<0.01	2.0	*	<1.0	2.0	<1.1	<1.1	-	1.14	
MW-5R	11/28/2007	BSK	8.2	460	95	45	2.1	<0.05	<0.01	2.1	*	<1.0	2.1	1.1	<1.1	-	<0.5	
MW-5R	2/21/2008	BSK	-	-	-	-	-	-	-	-	-	-	-	<1.1	<1.1	-	-	
MW-5R	5/28/2008	CLS	7.7	450	97	44	2.1	<0.05	<0.01	1.4	<0.10	<0.10	1.5	<1.8	-	-	<0.50	
MW-5R	8/27/2008	CLS	7.9	450	91	44	2.0	<0.10	<0.02	1.5	<0.10	<0.10	1.7	<1.8	-	-	<0.50	
MW-5R	11/24/2008	CLS	7.9	470	93	46	2.0	<0.10	<0.02	1.8	<0.10	<0.10	1.9	<1.8	-	-	<0.50	
MW-5R	2/18/2009	CLS	-	470(5)	92	48	2.1	<0.10	<0.02	1.8	<0.10	<0.10	2.0	<1.8	-	-	<0.50	
MW-5R	5/21/2009	CLS	7.9	470	86	44	1.9	<0.10	<0.02	1.6	<0.10	<0.10	1.6	<1.8	-	-	<0.50	
MW-5R	8/4/2009	CLS	7.9	480	78	44	1.9	<0.10	<0.02	1.7	<0.10	<0.10	1.7	<1.8	-	-	<0.50	
MW-5R	11/5/2009	CLS	7.7(6)	450(5)	98	44	2.1	<0.10	<0.02	1.7	<0.10	<0.10	1.8	<1.8	-	-	<0.50	
MW-5R	2/8/2010	CLS	7.9	490	110	45	2.4	0.12	<0.02	2.0	<0.10	<0.10	2.0	<1.8	-	-	<0.50	
MW-5R	5/7/2010	CLS	7.9	490	100	43	2.1	<0.10	<0.02	2.2	<0.10	<0.10	2.2	<1.8	-	-	<0.50	
MW-5R	8/18/2010	CLS	7.8	520	120	43	2.2	<0.10	<0.02	2.6	<0.10	<0.10	2.9	110	-	-	<0.50	
MW-5R	11/2/2010	CLS	8.0	560	120	42	2.2	<0.10	<0.02	2.8	<0.10	<0.10	2.8	<1.8	-	-	<0.50	
MW-5R	2/23/2011	CLS	7.9	520	100	42	2.2	<0.10	<0.02	3.0	<0.10	<0.10	3.4	<1.8	-	-	<0.50	
MW-5R	5/5/2011	CLS	7.9	380	92	45	1.9	<0.10	<0.02	2.9	<0.10	<0.10	2.9	2.0	-	-	<0.50	
MW-5R	8/16/2011	CLS	7.9	470	100	50	2.2	<0.10	<0.02	1.8	<0.10	<0.10	1.8	<1.8	-	-	<0.50	
MW-5R	11/8/2011	CLS	7.9	460	97	46	2.1	<0.10	<0.02	2.1	<0.10	<0.10	2.1	<1.8	-	-	<0.50	
MW-5R	2/27/2012	CLS	7.9	460	110	45	2.3	<0.10	<0.02	2.3	<0.10	<0.10	2.3	<1.8	-	-	<0.50	
MW-5R	5/21/2012	CLS	8.0	440	100	44	2.3	<0.10	<0.02	2.4	<0.10	<0.10	2.6	<1.8	-	-	<0.50	
MW-5R	8/9/2012	CLS	8.1	510	120	42	2.5	<0.10	<0.02	2.5	<0.10	<0.10	2.7	<1.8	-	-	<0.50	
MW-5R	11/19/2012	CLS	7.9	480	100	39	2.1	<0.10	<0.02	2.5	<0.10	<0.10	2.6	<1.8	-	-	<0.50	
MW-5R	2/21/2013	CLS	7.8	490	100	39	2.1	<0.10	<0.02	2.2	<0.10	<0.10	2.2	4.5	-	-	<0.50	
MW-5R	5/15/2013	CLS	7.7	460	100	48	2.2	<0.10	<0.02	2.5	<0.10	<0.10	2.6	<1.8	-	-	<0.50	
MW-5R	8/15/2013	CLS	7.9	480	110	45	2.0	<0.10	<0.02	2.7	<0.10	<0.10	3.1	<1.8	-	-	<0.50	
MW-5R	11/7/2013	CLS	7.8	480	110	45	2.1	<0.10	<0.02	2.7	<0.10	<0.10	3.0	<1.8	-	-	<0.50	
MW-5R	2/25/2014	CLS	8.0	520	110	41	2.3	<0.10	<0.02	2.7	<0.10	<0.10	2.8	<1.8	-	-	<0.50	
MW-5R	5/22/2014	CLS	8.0	490	96	38	2.0	<0.10	<0.02	2.5	<0.10	<0.10	2.5	<1.8	-	-	<0.50	
MW-5R	8/27/2014	CLS	8.0	530	98	40	2.0	<0.10	<0.02	2.7	<0.10	<0.10	2.7	<1.8	-	-	<0.50	
MW-5R	11/12/2014	CLS	7.9 ⁶	534 ⁷	99	35	2.1	<0.10	<0.02	3.2	<0.10	<0.10	3.2	<1	-	-	<0.50	
MW-5R	2/26/2015	CLS	7.9	520	100	39	2.2	<0.10	<0.02	3.4	<0.10	<0.10	3.5	<1.8	-	-	<0.50	
MW-5R	5/13/2015	CLS	8.0	520	98	43	2.1	<0.10	<0.02	3.3	<0.10	<0.10	3.3	<1.8	-	-	<0.50	
MW-5R	8/4/2015	CLS	7.9	530	110	40	2.1	<0.10	<0.02	3.3	<0.10	<0.10	3.6	<1.8	-	-	<0.50	
MW-5R	11/5/2015	CLS	7.9	560	95	38	1.9	<0.10	<0.02	3.1	<0.10	<0.10	3.2	<1.8	-	-	<0.50	
MW-5R	2/4/2016	CLS	8.0	550	99	38	2.1	0.18	<0.02	3.1	<0.40	<0.10	3.2	<1.8	-	-	<0.50	
MW-5R	6/30/2016	CLS	7.8	500	96	38	2.1	<0.10	<0.02	2.9	<0.40	<0.10	3.2	<1.8	-	-	0.68	
MW-5R	8/25/2016	CLS	7.9	490	110	40	2.0	<0.10	<0.02	2.9	<0.40	<0.10	2.9	<1.8	-	-	2.1	
MW-5R	11/17/2016	CLS	8.0	500	100	39	2.0	<0.10	<0.02	3.0	<0.40	<0.10	3.2	<1.8	-	-	<0.50	
MW-5R	3/7/2017	CLS	7.7	470	77	34	1.7	<0.10	0.058	2.0	<0.40	0.24	2.4	920	-	-	<0.50	
MW-5R	6/27/2017	CLS	7.1	290	21	4.0	0.3	<0.10	<0.02	<0.40	<0.40	0.12	0.81	170	-	-	<0.50	
MW-5R	8/23/2017	CLS	7.7	400	64	41	1.5	<0.10	<0.02	1.5	<0.40	0.31	1.9	33	-	-	<0.50	
MW-5R	11/14/2017	CLS	7.7	410	77	51	1.8	<0.10	<0.02	<0.40	<0.40	<0.10	<0.20	<1.8	-	-	<0.50	

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	pH Std. Unit	TDS mg/L	Na (d) mg/L	Cl mg/L	B (d) mg/L	Fe (d) mg/L	Mn (d) mg/L	NO3-N mg/L	NO2-N mg/L	NH3-N mg/L	Total Nitrogen mg/L	Coliform Bacteria			TTHM(1) (EPA 601) (µg/L) -	Lab Notes	
														(total) (MPN/100 mL)	(fecal)	(E. coli)			
Recommended Interim Limitation ²	WQ Objective		6.5-8.5	450	69	106	0.6	0.3	0.05	10	1	0.5	10	nd	nd	nd	100	-	
	Background		7.6	1100	155	138	-	<0.1	0.64	18	-	0.5	-	<2.0	<2.0	-	-	-	
MW-6	6/15/2004	STL	7.6	865	143	87.7	5.6	<0.10	-	12.2	<0.05	<0.10	12.2	16.1	<1.1	<1.1	<0.5		
MW-6	3/29/2005	BSK	7.8	870	180	110	6.6	<0.05	<0.01	11	<0.15	<1	11	5.1	<1.1	-	<0.5		
MW-6	6/16/2005	BSK	7.7	910	150	130	5.4	<0.05	<0.01	12	<0.15	<1	12	<1.1	<1.1	-	<0.5		
MW-6	9/29/2005	BSK	7.8	870	150	100	5.2	<0.05	<0.01	11	<0.15	<1	11	<1.1	<1.1	-	<0.5		
MW-6	12/6/2005	BSK	8.1	900	160	110	5.6	<0.05	<0.01	12	<0.10	<1	12	<1.1	<1.1	<1.1	<0.5		
MW-6	2/16/2006	BSK	7.9	900	140	130	4.9	<0.05	<0.01	12	<0.10	<1	12	<1.1	<1.1	-	<0.5		
MW-6	5/16/2006	BSK	8.0	1,000	160	150	5.5	<0.05	<0.01	13.0	<0.10	<1	13	<1.1	<1.1	-	<0.5		
MW-6	8/21/2006	BSK	7.9	860	140	160	4.7	<0.05	<0.01	13.0	<0.05	<0.10	-	<1.1	<1.1	-	<0.5		
MW-6	11/20/2006	BSK	-	-	-	-	-	-	-	-	-	-	-	>23.0	<1.1	-	-		
MW-6	2/16/2007								No sample retrieved										
MW-6	5/7/2007	BSK	7.9	900	160	120	5.5	<0.05	<0.01	11.0	<0.05	<1.0	11	16.1	<1.1	-	<0.5		
MW-6	8/29/2007	BSK	7.8	880	130	100	4.5	<0.05	<0.01	9.7	*	<1.0	9.7	<1.1	<1.1	-	<0.5		
MW-6	11/28/2007	BSK	7.8	850	150	96	5.1	<0.05	<0.01	8.7	*	<1.0	8.7	<1.1	<1.1	-	<0.5		
MW-6	2/21/2008	BSK	-	-	-	-	-	-	-	-	-	-	-	<1.1	<1.1	-	-		
MW-6	5/27/2008	CLS	7.1	900	150	130	4.8	<0.10	<0.02	9.0	<0.10	<0.10	9.1	<1.8	-	-	<0.50		
MW-6	8/27/2008	CLS	7.2	820	150	97	4.6	<0.10	<0.02	8.5	<0.10	0.12	8.6	<1.8	-	-	<0.50		
MW-6	11/24/2008	CLS	7.2	810	140	92	4.3	<0.10	<0.02	8.0	<0.10	<0.10	8.1	<1.8	-	-	<0.50		
MW-6	2/18/2009	CLS	-	820(5)	140	100	4.3	<0.10	<0.02	7.7	<0.10	<0.10	8.0	<1.8	-	-	<0.50		
MW-6	5/21/2009	CLS	7.2	880	140	97	4.3	<0.10	<0.02	7.9	<0.10	<0.10	7.9	<1.8	-	-	<0.50		
MW-6	8/4/2009	CLS	7.1	860	120	95	3.9	<0.10	<0.02	7.8	<0.10	<0.10	7.8	<1.8	-	-	<0.50		
MW-6	11/5/2009	CLS	-	750(5)	150	89	4.4	<0.10	<0.02	7.0	<0.10	<0.10	7.2	4.5	-	-	<0.50		
MW-6	2/8/2010	CLS	7.2	850	170	96	5.0	<0.10	<0.02	7.1	<0.10	<0.10	7.4	<1.8	-	-	<0.50		
MW-6	5/7/2010	CLS	7.1	910	160	120	4.6	<0.10	<0.02	7.5	<0.10	<0.10	7.7	<1.8	-	-	<0.50		
MW-6	8/18/2010	CLS	7.0	930	180	120	4.9	<0.10	<0.02	8.0	<0.10	<0.10	8.3	<1.8	-	-	<0.50		
MW-6	11/2/2010	CLS	7.2	930	180	110	4.8	<0.10	<0.02	7.7	<0.10	<0.10	7.9	1.8	-	-	<0.50		
MW-6	2/23/2011	CLS	7.2	920	160	120	4.8	<0.10	<0.02	7.5	<0.10	<0.10	8.0	2.0	-	-	<0.50		
MW-6	5/5/2011	CLS	7.1	990	150	200	4.1	<0.10	<0.02	4.3	<0.10	<0.10	4.5	<1.8	-	-	<0.50		
MW-6	8/16/2011	CLS	7.2	1,100	160	200	4.5	<0.10	<0.02	9.9	<0.10	<0.10	9.9	<1.8	-	-	<0.50		
MW-6	11/8/2011	CLS	7.0	990	160	140	4.6	<0.10	<0.02	8.0	<0.10	<0.10	8.2	<1.8	-	-	<0.50		
MW-6	2/27/2012	CLS	7.1	880	180	120	5.4	<0.10	<0.02	8.5	<0.10	0.13	8.5	<1.8	-	-	<0.50		
MW-6	5/21/2012	CLS	7.2	870	160	120	5.8	0.11	<0.02	8.6	<0.10	0.18	8.8	<1.8	-	-	<0.50		
MW-6	8/9/2012	CLS	7.5	970	130	110	3.9	<0.10	<0.02	8.5	<0.10	0.11	8.8	<1.8	-	-	<0.50		
MW-6	11/19/2012	CLS	7.1	950	170	100	5.1	<0.10	<0.02	8.1	<0.10	<0.10	8.3	<1.8	-	-	<0.50		
MW-6	2/21/2013	CLS	6.9	900	160	110	5.3	<0.10	<0.02	7.9	<0.10	0.11	7.9	<1.8	-	-	<0.50		
MW-6	5/15/2013	CLS	7.0	890	160	120	5.1	<0.10	<0.02	8.9	<0.10	0.18	9.0	<1.8	-	-	<0.50		
MW-6	8/15/2013	CLS	7.1	890	150	110	5.0	<0.10	<0.02	8.9	<0.10	<0.10	9.3	<1.8	-	-	<0.50		
MW-6	11/7/2013	CLS	7.0	850	180	110	3.6	<0.10	<0.02	8.8	<0.10	0.18	9.0	<1.8	-	-	<0.50		
MW-6	2/25/2014	CLS	7.2	910	140	100	5.4	<0.10	<0.02	8.4	<0.10	<0.10	8.6	<1.8	-	-	<0.50		
MW-6	5/22/2014	CLS	7.1	880	150	93	5.3	<0.10	<0.02	8.5	<0.10	<0.10	8.8	<1.8	-	-	<0.50		
MW-6	8/27/2014								No sample retrieved										
MW-6	11/12/2014								No sample retrieved										
MW-6	2/26/2015	CLS	7.1	850	140	94	5.2	1.0	0.04	8.3	<0.10	<0.10	8.4	<1.8	-	-	<0.50		
MW-6	5/13/2015	CLS	7.2	860	130	87	4.8	<0.10	<0.02	8.5	<0.10	<0.10	8.6	<1.8	-	-	<0.50		
MW-6	8/4/2015	CLS	7.3	810	140	90	4.6	<0.10	<0.02	7.7	<0.10	<0.10	7.9	<1.8	-	-	<0.50		
MW-6	11/5/2015	CLS	7.2	830	160	81	5.0	<0.10	<0.02	8.5	<0.10	<0.10	8.6	<1.8	-	-	<0.50		
MW-6	2/4/2016	CLS	7.2	810	140	82	4.7	<0.10	<0.02	8.9	<0.40	<0.10	9.0	<1.8	-	-	<0.50		
MW-6	6/30/2016	CLS	7.1	780	120	87	4.3	<0.10	<0.02	8.5	<0.40	<0.10	8.5	<1.8	-	-	0.80		
MW-6	8/25/2016	CLS	7.1	730	150	86	4.3	<0.10	<0.02	8.5	<0.40	<0.10	8.5	<1.8	-	-	3.3		
MW-6	11/17/2016	CLS	7.3	760	140	86	4.2	<0.10	<0.02	9.0	<0.40	0.11	9.2	<1.8	-	-	<0.50		
MW-6	3/7/2017	CLS	7.1	1,000	150	260	3.8	<0.10	<0.02	11.0	<0.40	0.11	11.0	<1.8	-	-	<0.50		
MW-6	6/27/2017	CLS	6.9	910	150	190	3.8	<0.10	<0.02	9.9	<0.40	0.18	10.0	14	-	-	<0.50		
MW-6	8/23/2017	CLS	7.2	920	150	160	4.2	<0.10	<0.02	11	<0.40	0.16	11.0	<1.8	-	-	<0.50		
MW-6	11/14/2017	CLS	7.0	880	150	130	4.3	<0.10	<0.02	12	<0.40	<0.10	12	<1.8	-	-	<0.50		

Table 4
Groundwater Quality Monitoring Results
Wild Wings Water Recycling Facility, Yolo County, CA

Laboratory Notes:

STL = Severn Trent Laboratory of West Sacramento, CA; BSK = BSK Laboratories of Fresno, CA; TDS = total dissolved solids; NO₃-N = nitrate as nitrogen; NO₂-N = nitrite as nitrogen; NH₃-N = ammonia as nitrogen; (d) = dissolved fraction; TTHM = total trihalomethanes; nd = nondetect
italic font style = Analysis for magnesium, total Kjeldahl nitrogen, fecal coliform and E. coli organisms is not required by RWQCB Order R5-2002-0077.

¹ = Total trihalomethanes consist of the sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

² = See WDRs Item E. 1. Ground Water Limitations; WQ Objective = a variety of applicable regional water quality goals compiled by RWQCB staff; Background = Tolerance Limit (calculated from August 2001 borings and monitoring wells MW-1 and MW-5R)

³ (in Lab Notes column) = Chloroform detection; this compound was also detected in the laboratory method blank; this compound is a common laboratory contaminant.

⁴ = Nitrate (as nitrogen) laboratory result for 5/7/2007 at MW-4 is reported as shown on the laboratory report although the concentration is about four times higher than historic results. It is probable that the concentration was reported for nitrate (as nitrate). Due to the age of the sample, laboratory validation of the result could not be performed.

⁵ = Sample was extracted/analyzed outside the EPA recommended holding time

⁶ = Measured in the field

⁷ = Calculated using field Electrical Conductivity measurement

* = Nitrate as nitrogen and Nitrite as Nitrogen results were combined as one

- = Sample not collected or not measured for this constituent

Notes on Laboratory Data depicted on Figures.

1. MW-7 – Data for NO₃, and TN for 5/7/2007 is not graphed due to concerns with data.
2. MW-5R – Data for Chloride for 6/27/2017 is suspect (dilution factor?) but is shown on graph.
3. Data reported as less than the laboratory reporting limit is shown on figures as “zero”

Table 5
Quality Assurance/Quality Control Samples
Wild Wings Water Recycling Facility, Yolo County, CA

Sampling Point	Sample Date	Lab	TTHM ¹ (ug/L)	Lab Notes
EB-1	11/17/2017	CLS	1.1	-
	3/7/2017	CLS	2.0	-
Trip Blanks	11/17/2017	CLS	<0.50	-
	3/7/2017	CLS	<0.50	-
	6/28/2017	CLS	<0.50	
	8/23/2017	CLS	<0.50	

TTHM = total trihalomethanes; nd = nondetect

¹ = Total trihalomethanes consist of the sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane

**Wild Wings Water Recycling Facility – Fourth Quarter 2017
Groundwater Monitoring Report
WDR Order No. R5-2002-0077**

FIGURES

FIGURE 2
HISTORICAL STATIC WATER LEVEL TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA

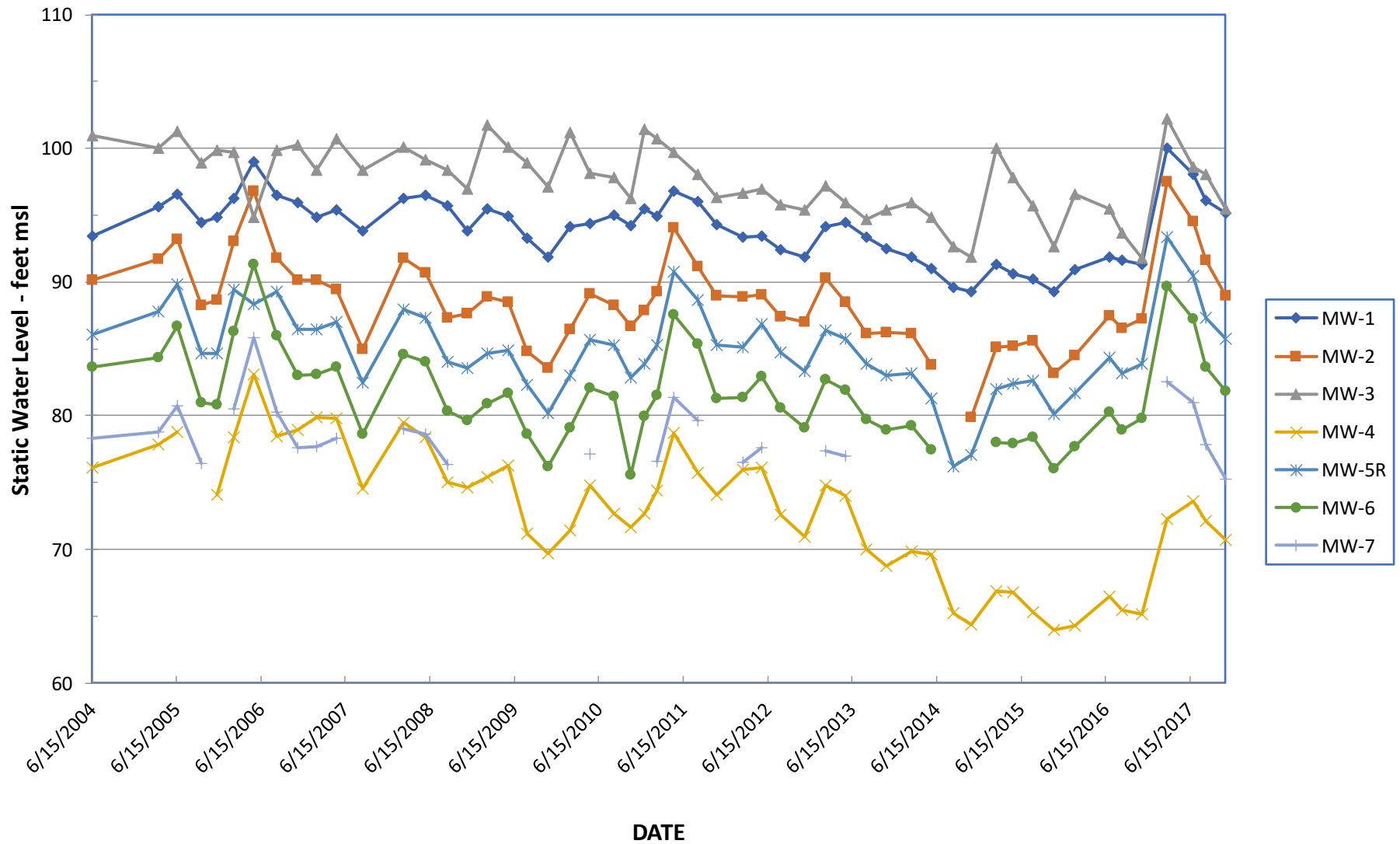


FIGURE 3
HISTORICAL pH TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA

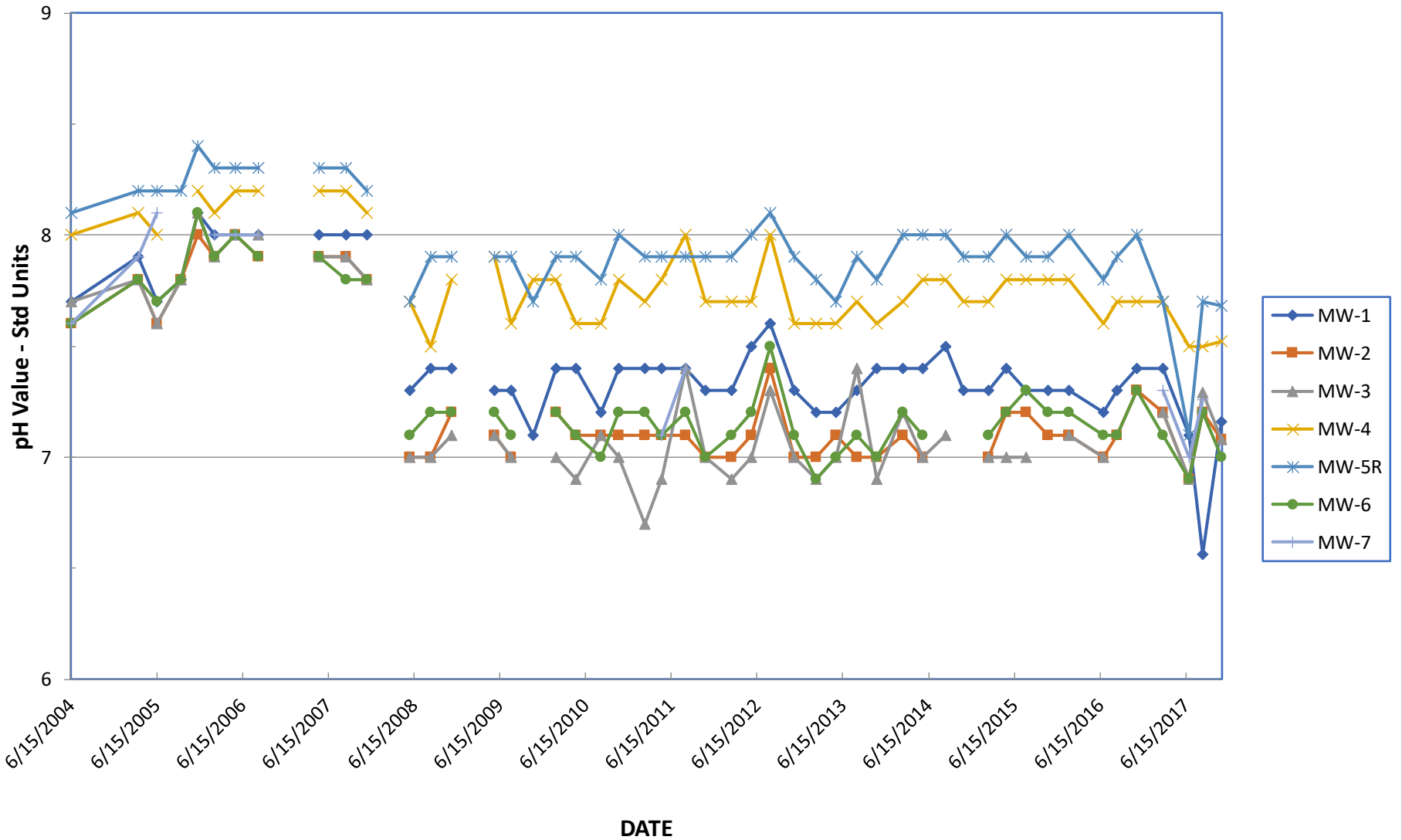


FIGURE 4
HISTORICAL TOTAL DISSOLVED SOLIDS TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA

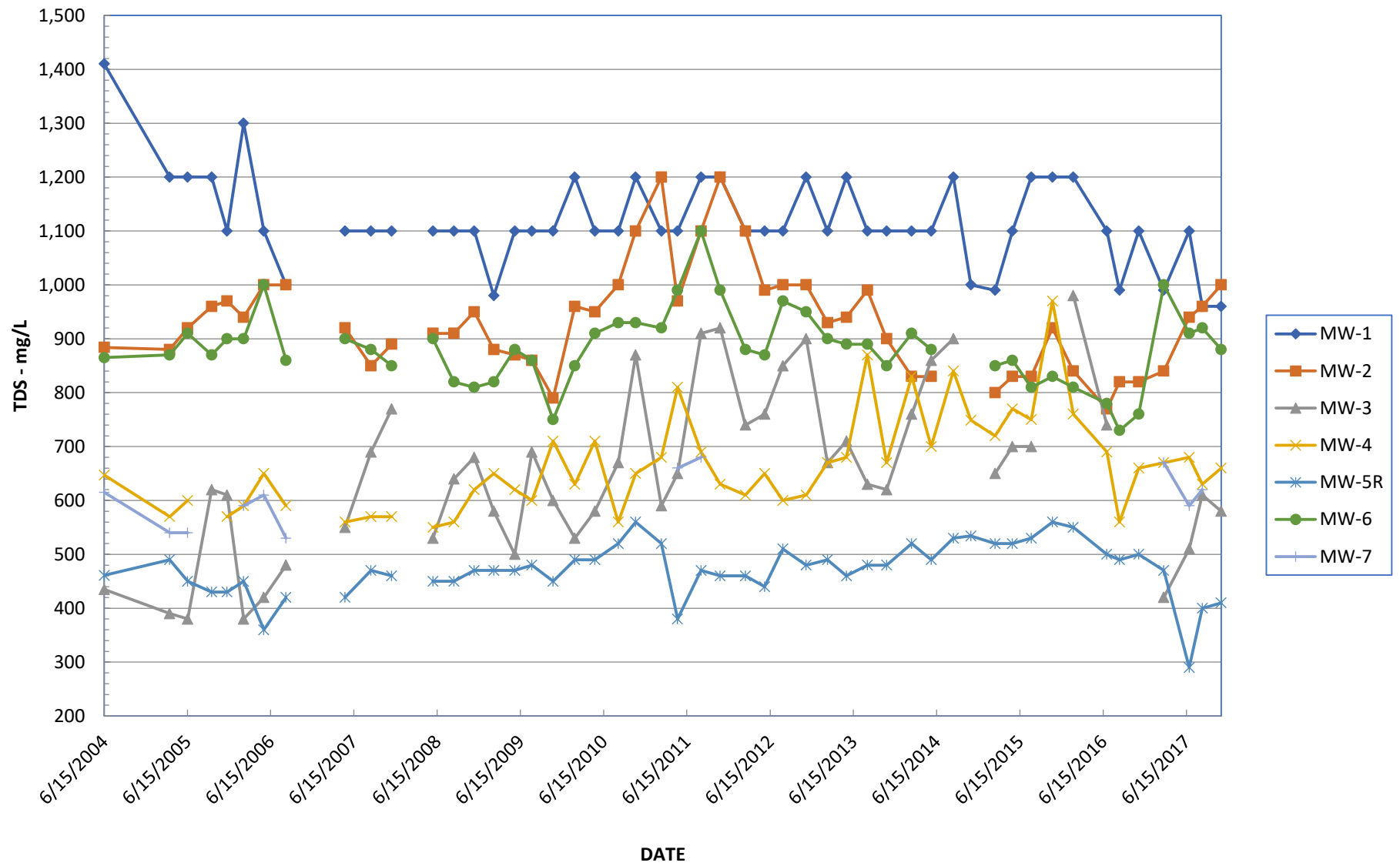
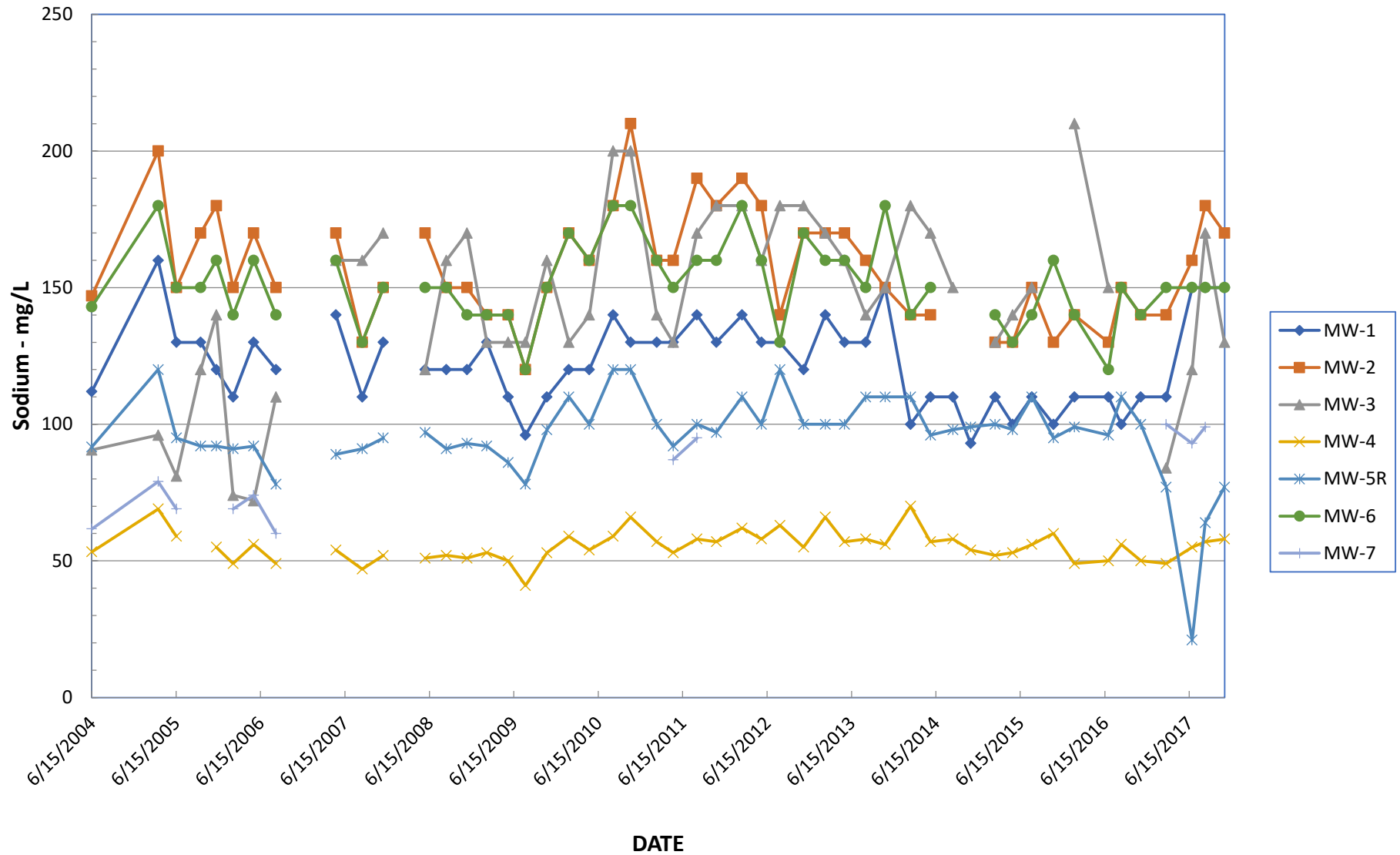
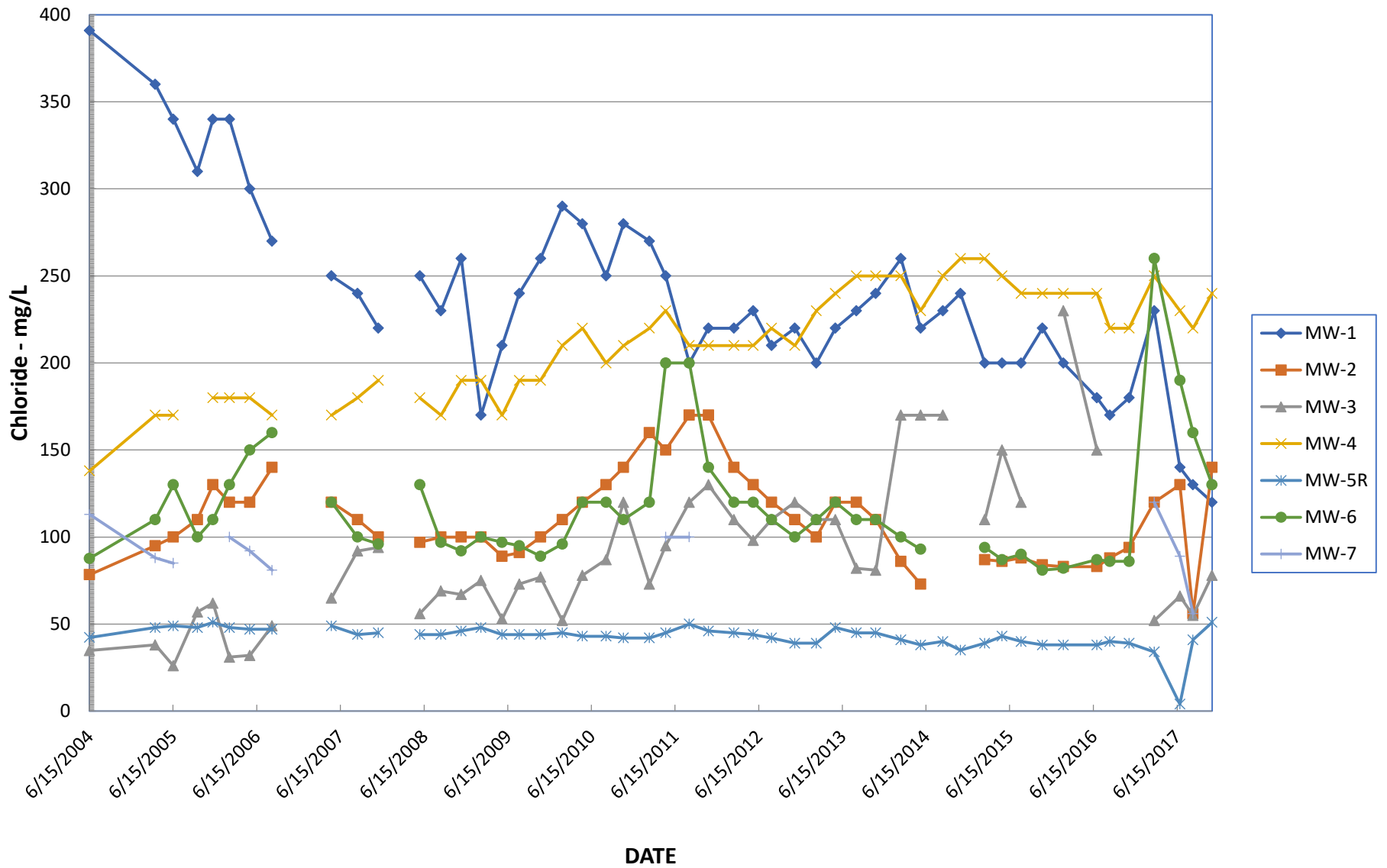


FIGURE 5
HISTORICAL SODIUM TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA



**FIGURE 6
HISTORICAL CHLORIDE TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA**



**FIGURE 7
HISTORICAL BORON TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA**

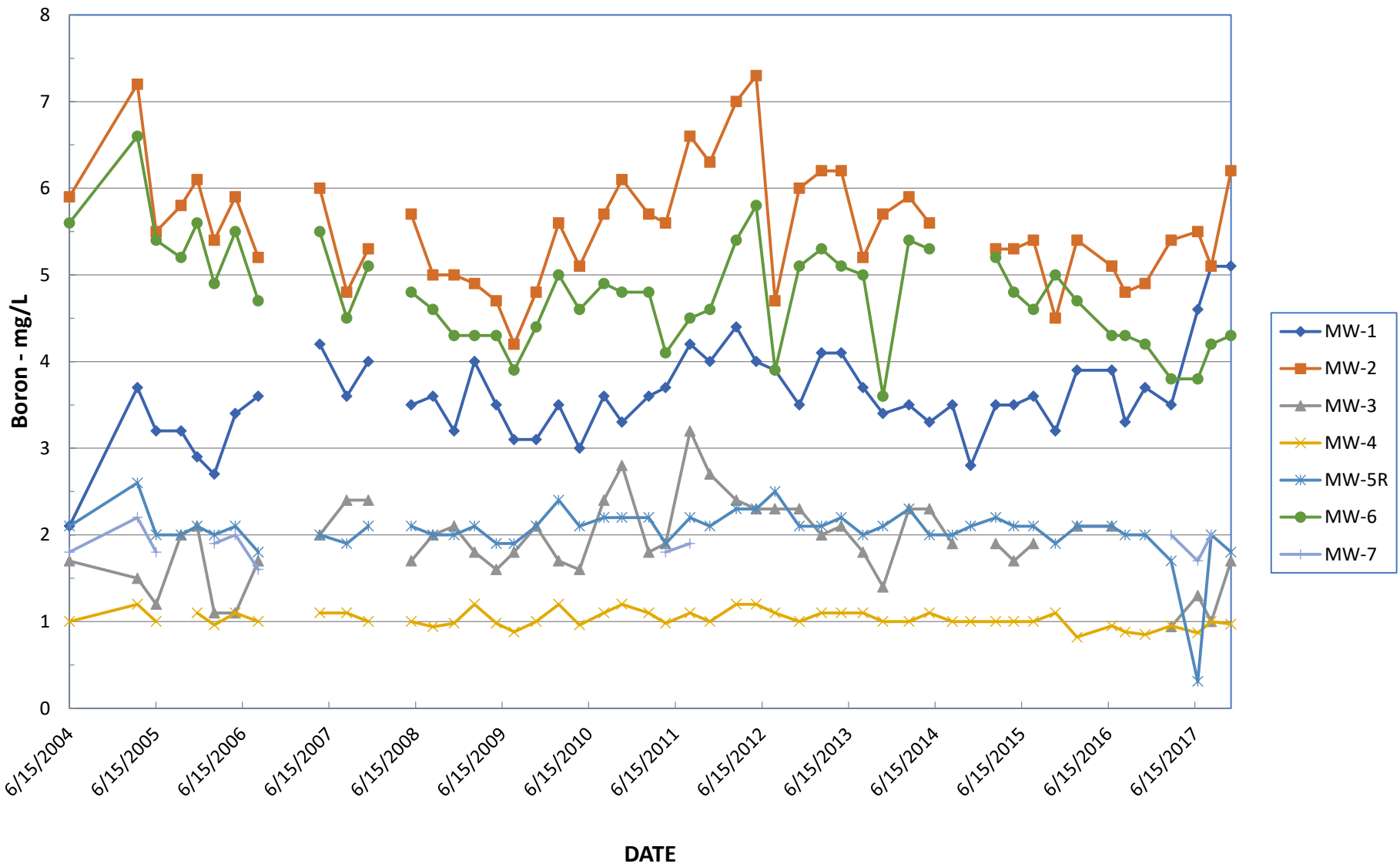


FIGURE 8
HISTORICAL NITRATE (AS NITROGEN) TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA

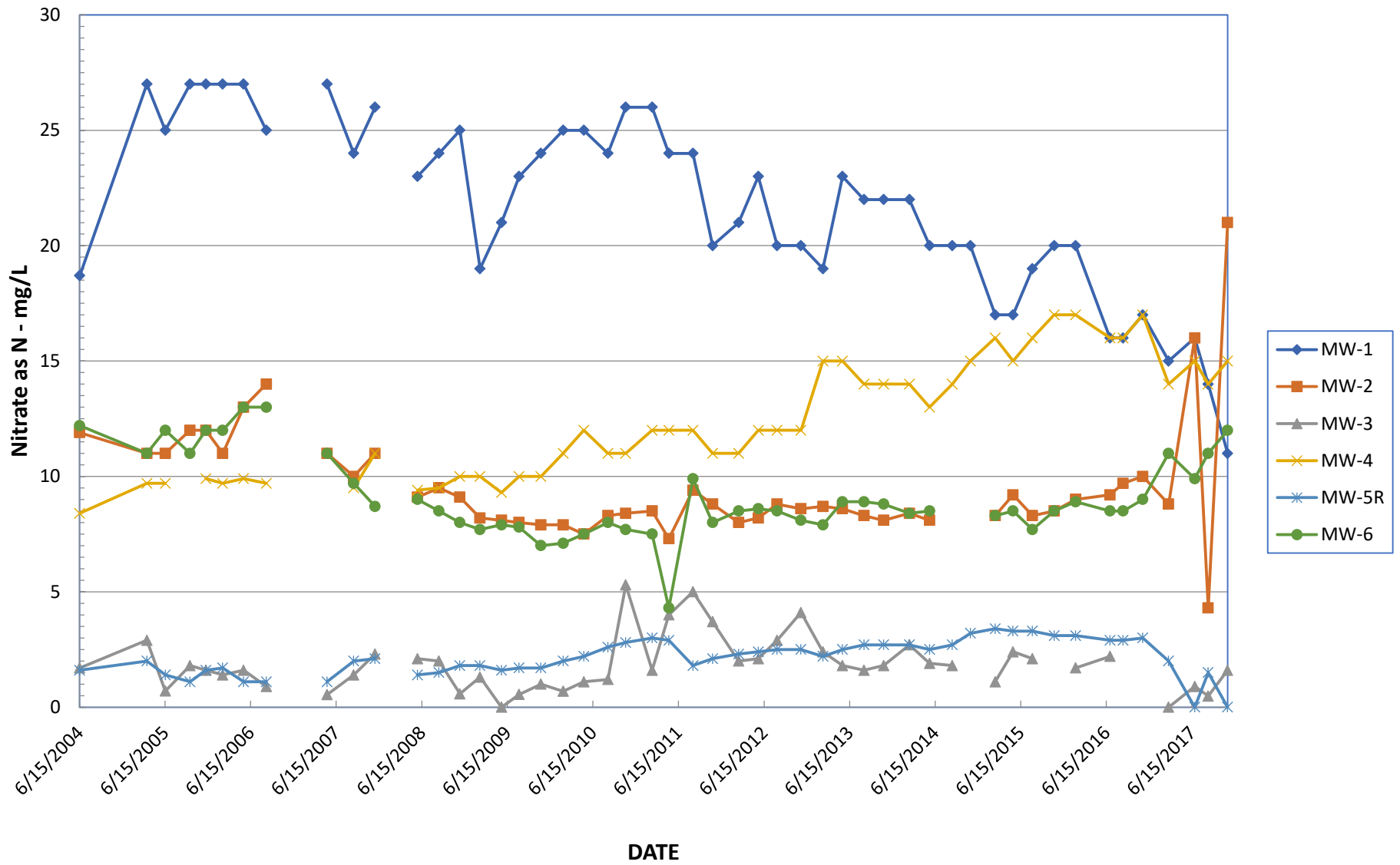
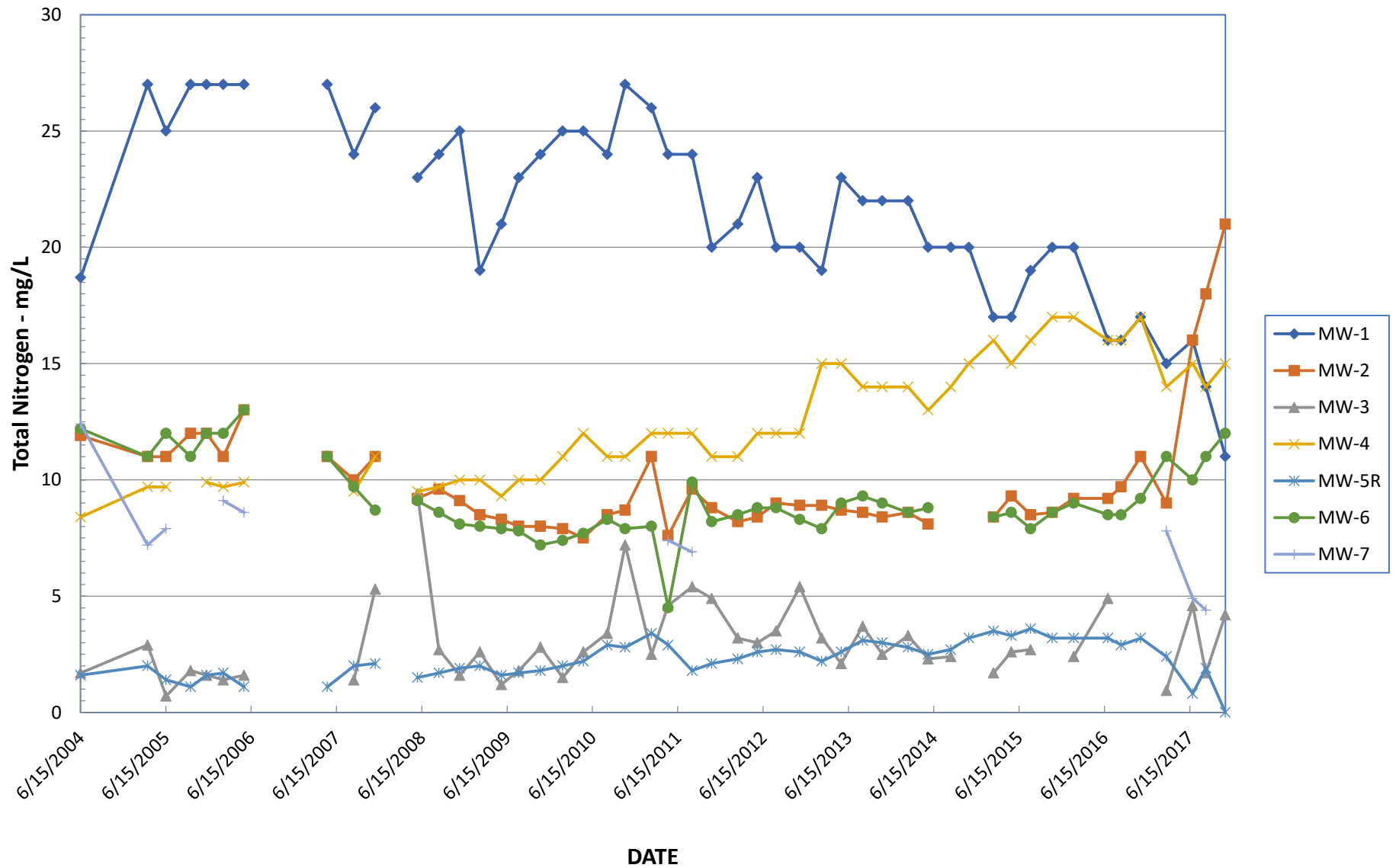


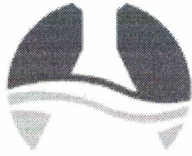
FIGURE 9
HISTORICAL TOTAL NITROGEN TRENDS
WILD WINGS WATER RECYCLING FACILITY, YOLO COUNTY, CA



**Wild Wings Water Recycling Facility – Fourth Quarter 2017
Groundwater Monitoring Report
WDR Order No. R5-2002-0077**

APPENDIX A

FIELD SAMPLING – PURGE LOGS



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings
 Date: 11/14/17
 Weather: Cool, overcast
 DTW: 35.97
 Total Depth: 35.97 ft
 Well ID: MW-2

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
1303	0.5 gallon			20.9	7.36	861
1306	1.0 gallon			20.8	7.31	842
1309	1.5 gallon			20.5	7.27	836
1313	2.0 gallon			20.4	7.21	829
1317	2.5 gallon			20.2	7.18	827
1321	3.0 gallon			20.2	7.19	819

Comments:

Sample Collected @ 1330

Sampled By: J. Trupasso

Equipment used:

Pump: Watera Hydralift

Water Quality Meter: Hanna 991300

Misc: No water inside Well Box this visit.



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings

Date: 11/14/17

Weather: Overcast, Cool 56°

DTW: 31.07

Total Depth: _____

Well ID MW-1

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
0915	0.5 gallon		31.07	19.6	7.31	1684
0920	1.0 gallon				7.24	1641
0924	1.5 gallon				7.28	1627
0929	2.0 gallon				7.21	1616
0933	2.5 gallon				7.19	1620
0937	3.0 gallon				7.17	1602

Comments:

Sample collected @ 0955

Sampled By: J. Trapasso

Equipment used:

Pump: Waterra Hydralift

Water Quality Meter: Hanna 991300

Misc: _____



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings

Date: 11/14/17

Weather: Cloud, Overcast

DTW: 39.69

Total Depth: _____

Well ID MW-5R

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
1006	0.5 Gallon			20.04	7.87	718
1009	1.0 Gallon			20.01	7.61	703
1012	1.5 Gallon			20.0	7.41	688
1015	2.0 Gallon			20.8	7.43	686
1018	2.5 Gallon			20.8	7.40	672 ⁶⁷²
1021	3.0 Gallon			20.8	7.41	675

Comments:

Sample collected @ 1027

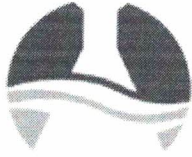
Sampled By: J. Trapasso

Equipment used:

Pump: Watera Hydrolit

Water Quality Meter: Hanna 991300

Misc:



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings

Date: 11/14/17

Weather: Cool, overcast 60°

DTW: 39.71

Total Depth: _____

Well ID MW-6

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
1045	0.5 gallon			20.6	7.58	1610
1048	1.0 gallon			20.0	7.54	1603
1051	1.5 gallon			20.5	7.37	1595
1054	2.0 gallon			20.4	7.31	1587
1057	2.5 gallon			20.4	7.25	1582
1100	3.0 gallon			20.2	7.26	1581

Comments:

Sample collected @ 1104

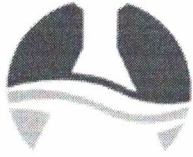
Sampled By: J. Trapasso

Equipment used: _____

Pump: Watera HydraLift

Water Quality Meter: Hanna 991300

Misc: _____



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings

Date: 11/14/17

Weather: Cool, overcast 63°

DTW: 49.98

Total Depth: _____

Well ID MW-4

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
1121	0.5 gallon			20.7	7.79	1119
1124	1.0 gallon			20.9	7.71	1107
1125	1.5 gallon			20.8	7.69	1102
1128	2.0 gallon			21.0	7.64	1096
1131	2.5 gallon			21.0	7.61	1098
1135	3.0 gallon			21.2	7.57	1092

Comments:

Sample collected @ 1159

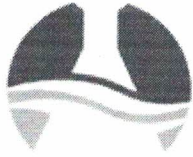
Sampled By: J. Rapasso

Equipment used:

Pump: Watera Hydralift

Water Quality Meter: Hanna 991300

Misc:



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings

Date: _____

Weather: _____

DTW: 38.26

Total Depth: _____

Well ID MW-7

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
-	Well	was	Dry			
-	Unable	to collect	sample or	readings		

Comments:

Sample collected (g) DR/

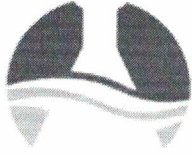
Sampled By: J. Triguasso

Equipment used: _____

Pump: _____

Water Quality Meter: _____

Misc: Well went Dry immediately, checked again after 10 minute wait. Well had not recharged for purging at that time.



SilverState

Analytical Laboratories

Purge Log

Project Name/#: Wild Wings

Date: 11/14/17

Weather: Cool, overcast

DTW: 25.87

Total Depth: _____

Well ID MW-3

Time	Purge Vol.	Flow Rate	DTW-Feet	Temp C	PH	Conductivity mS/cm
1217	0.5 gallon			20.3	7.19	849
1220	1.0 gallon			20.2	7.17	822
1223	1.5 gallon			20.3	7.11	819
1226	2.0 gallon			20.4	7.10	812
1229	2.5 gallon			20.6	7.06	802
1234	3.0 gallon			20.6	7.01	799

Comments:

Sample Collected @ 1242

Sampled By: J. Tripasso

Equipment used:

Pump: Waterra Hydralift

Water Quality Meter: Hanna 991300

Misc:

**Wild Wings Water Recycling Facility – Fourth Quarter 2017
Groundwater Monitoring Report
WDR Order No. R5-2002-0077**

APPENDIX B

**LABORATORY ANALYTICAL RESULTS
AND CHAIN OF CUSTODY FORMS**

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

November 21, 2017

CLS Work Order #: 17K0704
COC #:

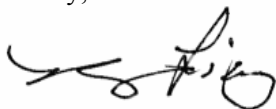
Paul Bishop
National O&M, Inc
P.O. Box 21187
Roanoke, VA 24018

Project Name: Wild Wings Recycling Facility

Enclosed are the results of analyses for samples received by the laboratory on 11/14/17 14:53. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

CA SWRCB ELAP Accreditation/Registration number 1233

Report To:				Client Job Number			ANALYSIS REQUESTED				GEOTRACKER							
Name and Address National O & M Inc.				Destination Laboratory			PRESERVATIVES Total Coliform Organisms THMS PH, TDS, Total Nitrogen Nitrite as N, Nitrate as N, Ci B, FE, Mn, Na - Dissolved Ammonia as N				FED REPORT <input type="checkbox"/> YES <input type="checkbox"/> NO							
PO Box 21187 Roanoke, VA											GLOBAL ID							
Project Manager Joe Trapasso											FIELD CONDITIONS							
Email Phone jtrapasso@ssalabs.com cwood@ssalabs.com 916-975-7592											TURNAROUND TIME IN DAYS				SPECIAL INSTRUCTIONS			
Project Name Wild Wings Recycling Facility																		
Sampled By Joe Trapasso III											1 2 5 10							
Job Description Quarterly Sampling Q4																		
Site Location 18530 Wild Wings Drive, Woodland CA																		
DATE	TIME	SAMPLE IDENTIFICATION	FIELD ID	CONTAINER														
				MATRIX	NO.	TYPE												
11/14/17	0955	MW-1		H2O	7													
11/14/17	1027	MW-5R		H2O	7													
11/14/17	1108	MW-6		H2O	7													
11/14/17	1159	MW-4		H2O	7													
11/14/17	1242	MW-3		H2O	7													
11/14/17	1334	MW-2		H2O	7													
11/14/17				H2O	7												INVOICE TO	
11/14/17				H2O	7													
SUSPECTED CONSTITUENTS							SAMPLE RETENTION TIME				PRESERVATIVES (1) HCL (3) - COLD (2) HNO (4) - H2SO4							
RELEASED BY (Signature)				PRINT NAME/COMPANY			DATE/TIME			RECEIVED BY (Signature)				PRINT NAME/COMPANY				
				Joe Trapasso/SSA LABS			11/14/17 1153											
RECEIVED AT LAB BY:				DATE/TIME: 11/14/17 1458			CONDITIONS/COMMENTS: 04											
SHIPPED BY:				<input type="checkbox"/> FED EX <input type="checkbox"/> UPS <input type="checkbox"/> OTHER				AIR BILL #										

CLS LABS
SAMPLE RECEIVING EXCEPTION REPORTS

CLS Labs Job # 17K0704

Problem discovered by: GC

Date: 11/14/17

Nature of problem

Sulfite Chlorine, Total Chlorine, Residual **Ph** Dissolved O2

(Circle analysis above) Received out of HOLD time.

Client contacted? Yes No Spoke With: _____

By whom: _____ Date: / / Time: _____ HRS

Client instructions:

Resolution of problem:

Logged in regardless and will be ran for analysis requested.

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
--	--	-------------------------------------

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (17K0704-01) Water Sampled: 11/14/17 09:55 Received: 11/14/17 14:53									
Ammonia as N	ND	0.10	mg/L	1	1708774	11/15/17	11/15/17	SM4500-NH3F-1997	
Chloride	120	2.5	"	5	1708754	11/14/17	11/14/17	EPA 300.0	
Nitrate as N	11	2.0	"	"	"	"	11/14/17	"	
Nitrite as N	ND	0.40	"	1	"	"	"	"	
pH	7.16	0.01	pH Units	"	1708738	11/14/17	11/15/17	SM4500-H B	HT-F
Total Dissolved Solids	960	10	mg/L	"	1708770	11/15/17	11/16/17	SM2540C	
Total Kjeldahl Nitrogen	ND	0.20	"	"	1708820	11/16/17	11/16/17	SM4500-NH3F-1997	
Total Nitrogen	11	0.40	"	"	1708826	11/16/17	11/16/17	EPA 351.3/300	
MW-5R (17K0704-02) Water Sampled: 11/14/17 10:27 Received: 11/14/17 14:53									
Ammonia as N	ND	0.10	mg/L	1	1708774	11/15/17	11/15/17	SM4500-NH3F-1997	
Chloride	51	2.5	"	5	1708754	11/14/17	11/14/17	EPA 300.0	
Nitrate as N	ND	0.40	"	1	"	"	11/14/17	"	
Nitrite as N	ND	0.40	"	"	"	"	"	"	
pH	7.68	0.01	pH Units	"	1708738	11/14/17	11/15/17	SM4500-H B	HT-F
Total Dissolved Solids	410	10	mg/L	"	1708770	11/15/17	11/16/17	SM2540C	
Total Kjeldahl Nitrogen	0.22	0.20	"	"	1708820	11/16/17	11/16/17	SM4500-NH3F-1997	
Total Nitrogen	ND	0.40	"	"	1708826	11/16/17	11/16/17	EPA 351.3/300	
MW-6 (17K0704-03) Water Sampled: 11/14/17 11:00 Received: 11/14/17 14:53									
Ammonia as N	ND	0.10	mg/L	1	1708774	11/15/17	11/15/17	SM4500-NH3F-1997	
Chloride	130	2.5	"	5	1708754	11/14/17	11/14/17	EPA 300.0	
Nitrate as N	12	2.0	"	"	"	"	"	"	
Nitrite as N	ND	0.40	"	1	"	"	"	"	
pH	7.00	0.01	pH Units	"	1708738	11/14/17	11/15/17	SM4500-H B	HT-F
Total Dissolved Solids	880	10	mg/L	"	1708770	11/15/17	11/16/17	SM2540C	
Total Kjeldahl Nitrogen	ND	0.20	"	"	1708820	11/16/17	11/16/17	SM4500-NH3F-1997	
Total Nitrogen	12	0.40	"	"	1708826	11/16/17	11/16/17	EPA 351.3/300	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (17K0704-04) Water Sampled: 11/14/17 11:59 Received: 11/14/17 14:53									
Ammonia as N	0.13	0.10	mg/L	1	1708774	11/15/17	11/15/17	SM4500-NH3F-1997	
Chloride	240	5.0	"	10	1708754	11/14/17	11/14/17	EPA 300.0	
Nitrate as N	15	2.0	"	5	"	"	"	"	
Nitrite as N	ND	0.40	"	1	"	"	"	"	
pH	7.52	0.01	pH Units	"	1708738	11/14/17	11/15/17	SM4500-H B	HT-F
Total Dissolved Solids	660	10	mg/L	"	1708770	11/15/17	11/16/17	SM2540C	
Total Kjeldahl Nitrogen	ND	0.20	"	"	1708820	11/16/17	11/16/17	SM4500-NH3F-1997	
Total Nitrogen	15	0.40	"	"	1708826	11/16/17	11/16/17	EPA 351.3/300	
MW-3 (17K0704-05) Water Sampled: 11/14/17 12:42 Received: 11/14/17 14:53									
Ammonia as N	0.13	0.10	mg/L	1	1708774	11/15/17	11/15/17	SM4500-NH3F-1997	
Chloride	78	2.5	"	5	1708754	11/14/17	11/14/17	EPA 300.0	
Nitrate as N	1.6	0.40	"	1	"	"	"	"	
Nitrite as N	ND	0.40	"	"	"	"	"	"	
pH	7.08	0.01	pH Units	"	1708738	11/14/17	11/15/17	SM4500-H B	HT-F
Total Dissolved Solids	580	10	mg/L	"	1708770	11/15/17	11/16/17	SM2540C	
Total Kjeldahl Nitrogen	2.6	1.0	"	5	1708820	11/16/17	11/16/17	SM4500-NH3F-1997	
Total Nitrogen	4.2	0.40	"	1	1708826	11/16/17	11/16/17	EPA 351.3/300	
MW-2 (17K0704-06) Water Sampled: 11/14/17 13:34 Received: 11/14/17 14:53									
Ammonia as N	0.10	0.10	mg/L	1	1708774	11/15/17	11/15/17	SM4500-NH3F-1997	
Chloride	140	2.5	"	5	1708754	11/14/17	11/14/17	EPA 300.0	
Nitrate as N	21	2.0	"	"	"	"	11/14/17	"	
Nitrite as N	ND	0.40	"	1	"	"	"	"	
pH	7.08	0.01	pH Units	"	1708738	11/14/17	11/15/17	SM4500-H B	HT-F
Total Dissolved Solids	1000	10	mg/L	"	1708770	11/15/17	11/16/17	SM2540C	
Total Kjeldahl Nitrogen	0.20	0.20	"	"	1708820	11/16/17	11/16/17	SM4500-NH3F-1997	
Total Nitrogen	21	0.40	"	"	1708826	11/16/17	11/16/17	EPA 351.3/300	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
--	--	-------------------------------------

Metals (Dissolved) by EPA 200 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (17K0704-01) Water Sampled: 11/14/17 09:55 Received: 11/14/17 14:53									
Boron	5100	50	µg/L	1	1708765	11/15/17	11/20/17	EPA 200.7	
Iron	ND	100	"	"	"	"	"	"	
Manganese	ND	20	"	"	"	"	"	"	
Sodium	150000	1000	"	"	"	"	"	"	
MW-5R (17K0704-02) Water Sampled: 11/14/17 10:27 Received: 11/14/17 14:53									
Boron	1800	50	µg/L	1	1708765	11/15/17	11/20/17	EPA 200.7	
Iron	ND	100	"	"	"	"	"	"	
Manganese	ND	20	"	"	"	"	"	"	
Sodium	77000	1000	"	"	"	"	"	"	
MW-6 (17K0704-03) Water Sampled: 11/14/17 11:00 Received: 11/14/17 14:53									
Boron	4300	50	µg/L	1	1708765	11/15/17	11/20/17	EPA 200.7	
Iron	ND	100	"	"	"	"	"	"	
Manganese	ND	20	"	"	"	"	"	"	
Sodium	150000	1000	"	"	"	"	"	"	
MW-4 (17K0704-04) Water Sampled: 11/14/17 11:59 Received: 11/14/17 14:53									
Boron	970	50	µg/L	1	1708765	11/15/17	11/20/17	EPA 200.7	
Iron	ND	100	"	"	"	"	"	"	
Manganese	ND	20	"	"	"	"	"	"	
Sodium	58000	1000	"	"	"	"	"	"	
MW-3 (17K0704-05) Water Sampled: 11/14/17 12:42 Received: 11/14/17 14:53									
Boron	1700	50	µg/L	1	1708765	11/15/17	11/20/17	EPA 200.7	
Iron	ND	100	"	"	"	"	"	"	
Manganese	39	20	"	"	"	"	"	"	
Sodium	130000	1000	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Metals (Dissolved) by EPA 200 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (17K0704-06) Water Sampled: 11/14/17 13:34 Received: 11/14/17 14:53									
Boron	6200	50	µg/L	1	1708765	11/15/17	11/20/17	EPA 200.7	
Iron	ND	100	"	"	"	"	"	"	
Manganese	ND	20	"	"	"	"	"	"	
Sodium	170000	1000	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Microbiological Parameters by APHA Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (17K0704-01) Water Sampled: 11/14/17 09:55 Received: 11/14/17 14:53									
Total Coliforms	<1.8	1.8	MPN/100 mL	1	1708753	11/14/17	11/16/17	SM 9221	
MW-5R (17K0704-02) Water Sampled: 11/14/17 10:27 Received: 11/14/17 14:53									
Total Coliforms	<1.8	1.8	MPN/100 mL	1	1708753	11/14/17	11/18/17	SM 9221	
MW-6 (17K0704-03) Water Sampled: 11/14/17 11:00 Received: 11/14/17 14:53									
Total Coliforms	<1.8	1.8	MPN/100 mL	1	1708753	11/14/17	11/18/17	SM 9221	
MW-4 (17K0704-04) Water Sampled: 11/14/17 11:59 Received: 11/14/17 14:53									
Total Coliforms	540	1.8	MPN/100 mL	1	1708753	11/14/17	11/17/17	SM 9221	
MW-3 (17K0704-05) Water Sampled: 11/14/17 12:42 Received: 11/14/17 14:53									
Total Coliforms	13	1.8	MPN/100 mL	1	1708753	11/14/17	11/18/17	SM 9221	
MW-2 (17K0704-06) Water Sampled: 11/14/17 13:34 Received: 11/14/17 14:53									
Total Coliforms	4.5	1.8	MPN/100 mL	1	1708753	11/14/17	11/18/17	SM 9221	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Trihalomethanes by EPA Method 524.2

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (17K0704-01) Water Sampled: 11/14/17 09:55 Received: 11/14/17 14:53									
Bromodichloromethane	ND	0.50	µg/L	1	1708799	11/15/17	11/15/17	EPA 524.2	
Bromoform	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Total Trihalomethanes (THM)	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i> 99 % 70-130 " " " "									
<i>Surrogate: Toluene-d8</i> 97 % 70-130 " " " "									
MW-5R (17K0704-02) Water Sampled: 11/14/17 10:27 Received: 11/14/17 14:53									
Bromodichloromethane	ND	0.50	µg/L	1	1708799	11/15/17	11/15/17	EPA 524.2	
Bromoform	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Total Trihalomethanes (THM)	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i> 97 % 70-130 " " " "									
<i>Surrogate: Toluene-d8</i> 98 % 70-130 " " " "									
MW-6 (17K0704-03) Water Sampled: 11/14/17 11:00 Received: 11/14/17 14:53									
Bromodichloromethane	ND	0.50	µg/L	1	1708799	11/15/17	11/15/17	EPA 524.2	
Bromoform	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Total Trihalomethanes (THM)	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i> 102 % 70-130 " " " "									
<i>Surrogate: Toluene-d8</i> 99 % 70-130 " " " "									

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Trihalomethanes by EPA Method 524.2

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (17K0704-04) Water Sampled: 11/14/17 11:59 Received: 11/14/17 14:53									
Bromodichloromethane	ND	0.50	µg/L	1	1708799	11/15/17	11/15/17	EPA 524.2	
Bromoform	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Total Trihalomethanes (THM)	ND	0.50	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	99 %	70-130	"	"	"	"	"	"
<i>Surrogate: Toluene-d8</i>	100 %	70-130	"	"	"	"	"	"

MW-3 (17K0704-05) Water Sampled: 11/14/17 12:42 Received: 11/14/17 14:53									
Bromodichloromethane	ND	0.50	µg/L	1	1708799	11/15/17	11/15/17	EPA 524.2	
Bromoform	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Total Trihalomethanes (THM)	ND	0.50	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %	70-130	"	"	"	"	"	"
<i>Surrogate: Toluene-d8</i>	99 %	70-130	"	"	"	"	"	"

MW-2 (17K0704-06) Water Sampled: 11/14/17 13:34 Received: 11/14/17 14:53									
Bromodichloromethane	ND	0.50	µg/L	1	1708799	11/15/17	11/15/17	EPA 524.2	
Bromoform	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Total Trihalomethanes (THM)	ND	0.50	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %	70-130	"	"	"	"	"	"
<i>Surrogate: Toluene-d8</i>	98 %	70-130	"	"	"	"	"	"

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1708754 - General Prep

Blank (1708754-BLK1)

Prepared & Analyzed: 11/14/17

Chloride	ND	0.50	mg/L							
Nitrite as N	ND	0.40	"							
Nitrate as N	ND	0.40	"							

LCS (1708754-BS1)

Prepared & Analyzed: 11/14/17

Chloride	5.02	0.50	mg/L	5.00		100	80-120			
Nitrate as N	2.06	0.40	"	2.00		103	80-120			
Nitrite as N	1.90	0.40	"	2.00		95	80-120			

LCS Dup (1708754-BSD1)

Prepared & Analyzed: 11/14/17

Chloride	4.93	0.50	mg/L	5.00		99	80-120	2	20	
Nitrate as N	2.04	0.40	"	2.00		102	80-120	1	20	
Nitrite as N	1.88	0.40	"	2.00		94	80-120	0.9	20	

Matrix Spike (1708754-MS1)

Source: 17K0680-01

Prepared & Analyzed: 11/14/17

Chloride	54.4	0.50	mg/L	5.00	51.9	50	80-120			QM-4X
Nitrate as N	2.44	0.40	"	2.00	0.505	97	80-120			
Nitrite as N	1.91	0.40	"	2.00	ND	96	80-120			

Matrix Spike Dup (1708754-MSD1)

Source: 17K0680-01

Prepared & Analyzed: 11/14/17

Chloride	54.4	0.50	mg/L	5.00	51.9	49	80-120	0.08	20	QM-4X
Nitrate as N	2.42	0.40	"	2.00	0.505	96	80-120	0.9	20	
Nitrite as N	1.89	0.40	"	2.00	ND	95	80-120	0.9	20	

Batch 1708770 - General Preparation

Blank (1708770-BLK1)

Prepared: 11/15/17 Analyzed: 11/16/17

Total Dissolved Solids	ND	10	mg/L							
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CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1708770 - General Preparation

Duplicate (1708770-DUP1)	Source: 17K0704-02		Prepared: 11/15/17 Analyzed: 11/16/17							
Total Dissolved Solids	400	10	mg/L		408			2	20	

Batch 1708774 - General Preparation

Blank (1708774-BLK1)	Prepared & Analyzed: 11/15/17									
Ammonia as N	ND	0.10	mg/L							

LCS (1708774-BS1)	Prepared & Analyzed: 11/15/17									
Ammonia as N	0.403	0.10	mg/L	0.500		81	80-120			

LCS Dup (1708774-BSD1)	Prepared & Analyzed: 11/15/17									
Ammonia as N	0.404	0.10	mg/L	0.500		81	80-120	0.2	25	

Matrix Spike (1708774-MS1)	Source: 17K0676-01		Prepared & Analyzed: 11/15/17							
Ammonia as N	0.355	0.10	mg/L	0.500	ND	71	75-125			QM-7

Matrix Spike Dup (1708774-MSD1)	Source: 17K0676-01		Prepared & Analyzed: 11/15/17							
Ammonia as N	0.354	0.10	mg/L	0.500	ND	71	75-125	0.3	25	QM-7

Batch 1708820 - General Preparation

Blank (1708820-BLK1)	Prepared & Analyzed: 11/16/17									
Total Kjeldahl Nitrogen	ND	0.20	mg/L							

LCS (1708820-BS1)	Prepared & Analyzed: 11/16/17									
Total Kjeldahl Nitrogen	0.413	0.20	mg/L	0.500		83	80-120			

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1708820 - General Preparation										
LCS Dup (1708820-BSD1)				Prepared & Analyzed: 11/16/17						
Total Kjeldahl Nitrogen	0.411	0.20	mg/L	0.500		82	80-120	0.5	20	
Matrix Spike (1708820-MS1)				Source: 17K0714-01 Prepared & Analyzed: 11/16/17						
Total Kjeldahl Nitrogen	0.397	0.20	mg/L	0.500	0.179	44	75-125			QM-7
Matrix Spike Dup (1708820-MSD1)				Source: 17K0714-01 Prepared & Analyzed: 11/16/17						
Total Kjeldahl Nitrogen	0.409	0.20	mg/L	0.500	0.179	46	75-125	3	25	QM-7

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Metals (Dissolved) by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1708765 - 6010A/No Digestion

Blank (1708765-BLK1)

Prepared: 11/15/17 Analyzed: 11/20/17

Boron	ND	50	µg/L							
Calcium	ND	1000	"							
Iron	ND	100	"							
Magnesium	ND	1000	"							
Manganese	ND	20	"							
Potassium	ND	1000	"							
Sodium	ND	1000	"							

LCS (1708765-BS1)

Prepared: 11/15/17 Analyzed: 11/20/17

Boron	1040	50	µg/L	1000		104	85-115			
Calcium	5400	1000	"	5000		108	85-115			
Iron	1010	100	"	1000		101	85-115			
Magnesium	5310	1000	"	5000		106	85-115			
Manganese	1060	20	"	1000		106	85-115			
Potassium	5020	1000	"	5000		100	85-115			
Sodium	5260	1000	"	5000		105	85-115			

Matrix Spike (1708765-MS1)

Source: 17K0704-01

Prepared: 11/15/17 Analyzed: 11/20/17

Boron	6070	50	µg/L	1000	5080	98	70-130			
Calcium	108000	1000	"	5000	111000	NR	70-130			QM-4X
Iron	909	100	"	1000	ND	91	70-130			
Magnesium	77800	1000	"	5000	78300	NR	70-130			QM-4X
Manganese	936	20	"	1000	ND	94	70-130			
Potassium	7970	1000	"	5000	1960	120	70-130			
Sodium	145000	1000	"	5000	149000	NR	70-130			QM-4X

Matrix Spike (1708765-MS2)

Source: 17K0714-10

Prepared: 11/15/17 Analyzed: 11/20/17

Boron	970	50	µg/L	1000	19.1	95	70-130			
Calcium	23900	1000	"	5000	21500	49	70-130			QM-4X
Iron	932	100	"	1000	ND	93	70-130			
Magnesium	12600	1000	"	5000	8640	78	70-130			
Manganese	973	20	"	1000	1.16	97	70-130			
Potassium	5520	1000	"	5000	1020	90	70-130			

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Metals (Dissolved) by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1708765 - 6010A/No Digestion

Matrix Spike (1708765-MS2)

Source: 17K0714-10

Prepared: 11/15/17 Analyzed: 11/20/17

Sodium	12400	1000	µg/L	5000	8280	83	70-130			
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CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Trihalomethanes by EPA Method 524.2 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1708799 - EPA 5030 Water MS

Blank (1708799-BLK1)

Prepared & Analyzed: 11/15/17

Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	"							
Chloroform	ND	0.50	"							
Dibromochloromethane	ND	0.50	"							
Total Trihalomethanes (THM)	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	8.95		"	10.0		90	70-130			
<i>Surrogate: Toluene-d8</i>	9.65		"	10.0		97	70-130			

LCS (1708799-BS1)

Prepared & Analyzed: 11/15/17

Bromodichloromethane	18.0	0.50	µg/L	20.0		90	70-130			
Bromoform	18.9	0.50	"	20.0		94	70-130			
Chloroform	17.3	0.50	"	20.0		86	70-130			
Dibromochloromethane	18.4	0.50	"	20.0		92	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	8.85		"	10.0		89	70-130			
<i>Surrogate: Toluene-d8</i>	10.4		"	10.0		104	70-130			

LCS Dup (1708799-BSD1)

Prepared & Analyzed: 11/15/17

Bromodichloromethane	17.9	0.50	µg/L	20.0		89	70-130	1	30	
Bromoform	18.7	0.50	"	20.0		94	70-130	0.7	30	
Chloroform	16.9	0.50	"	20.0		85	70-130	2	30	
Dibromochloromethane	18.3	0.50	"	20.0		91	70-130	0.9	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	8.81		"	10.0		88	70-130			
<i>Surrogate: Toluene-d8</i>	10.0		"	10.0		100	70-130			

Matrix Spike (1708799-MS1)

Source: 17K0659-01

Prepared & Analyzed: 11/15/17

Bromodichloromethane	20.7	0.50	µg/L	20.0	ND	103	60-140			
Bromoform	20.4	0.50	"	20.0	ND	102	60-140			
Chloroform	20.0	0.50	"	20.0	ND	100	60-140			
Dibromochloromethane	20.8	0.50	"	20.0	ND	104	60-140			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	10.1		"	10.0		101	70-130			
<i>Surrogate: Toluene-d8</i>	10.7		"	10.0		107	70-130			

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings Recycling Facility Project Number: [none] Project Manager: Paul Bishop	CLS Work Order #: 17K0704 COC #:
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Trihalomethanes by EPA Method 524.2 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1708799 - EPA 5030 Water MS

Matrix Spike Dup (1708799-MSD1)	Source: 17K0659-01			Prepared & Analyzed: 11/15/17						
Bromodichloromethane	19.1	0.50	µg/L	20.0	ND	96	60-140	8	30	
Bromoform	20.0	0.50	"	20.0	ND	100	60-140	2	30	
Chloroform	18.4	0.50	"	20.0	ND	92	60-140	8	30	
Dibromochloromethane	19.7	0.50	"	20.0	ND	99	60-140	5	30	
Surrogate: 1,2-Dichloroethane-d4	9.66		"	10.0		97	70-130			
Surrogate: Toluene-d8	10.4		"	10.0		104	70-130			

CALIFORNIA LABORATORY SERVICES

National O&M, Inc
P.O. Box 21187
Roanoke, VA 24018

Project: Wild Wings Recycling Facility
Project Number: [none]
Project Manager: Paul Bishop

CLS Work Order #: 17K0704
COC #:

Notes and Definitions

QM-7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
HT-F	This is a field test method and it is performed in the lab outside holding time.
BT-4	<1.8
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ATTACHMENT 3

Annual Biosolids Summary

**Wild Wings Water Recycling Facility
Biosolids Hauled 2017**

Month	Pressed Biosolids (Tons)
January	0.00
February	0.00
March	5.83
April	0.00
May	4.27
June	0.00
July	0.00
August	0.00
September	0.00
October	0.00
November	0.00
December	0.00
Total	10.10
Minimum	0.00
Maximum	5.83
Average	0.84

Month	Liquid Sludge Hauled (Gals.)
January	0
February	0
March	0
April	0
May	25000
June	17500
July	12000
August	19500
September	0
October	0
November	0
December	40000
Total	114000
Minimum	0
Maximum	40000
Average	9500

Pressed biosolids were hauled by Waste Management to the Yolo County Landfill for 2017.

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

September 19, 2017

CLS Work Order #: 17I0454
COC #: 183159

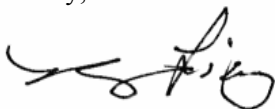
Jeff Lambeth
National O&M, Inc
P.O. Box 21187
Roanoke, VA 24018

Project Name: Wild Wings - Sludge Sample

Enclosed are the results of analyses for samples received by the laboratory on 09/12/17 12:50. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.
Laboratory Director

CA SWRCB ELAP Accreditation/Registration number 1233

CLS - Labs

CHAIN OF CUSTODY

CLS ID No.: 17E0454

LOG No 183159

REPORT TO: NAME AND ADDRESS NATIONAL O&M		CLIENT JOB NUMBER		ANALYSIS REQUESTED			GEOTRACKER: EDF REPORT <input type="checkbox"/> YES <input type="checkbox"/> NO GLOBAL ID: _____				
PROJECT MANAGER JEFF LAMBETH PHONE#		DESTINATION LABORATORY <input type="checkbox"/> CLS (916) 638-7301 3249 FITZGERALD RD. RANCHO CORDOVA, CA 95742 <input type="checkbox"/> OTHER		PRESERVATIVES	CAM 17 METALS C6 - EPA 7196 070 Solids			COMPOSITE: COMPOSITE GRABS #1 - #4 & ANALYZE AS 1.			
PROJECT NAME Wild Wings - Sludge Sample		SAMPLED BY John Hones						FIELD CONDITIONS:		TURN AROUND TIME	
JOB DESCRIPTION		SITE LOCATION						1 DAY		SPECIAL INSTRUCTIONS	
								2 DAY		OR	
DATE	TIME	SAMPLE IDENTIFICATION	MATRIX	CONTAINER NO.	TYPE	3 DAY	5 DAY	ALT. ID:			
9/12/17	0900	GRAB #1	SLUDGE	1	Bot.						
		GRAB #2				X					
		GRAB #3				X					
		GRAB #4				X		4:1 Composite			
SUSPECTED CONSTITUENTS				PRESERVATIVES:		INVOICE TO:					
RELINQUISHED BY (SIGN)		PRINT NAME / COMPANY		DATE / TIME		RECEIVED BY (SIGN)		PRINT NAME / COMPANY			
		John Hones / NOM		9/12/17 10900				COMPASS			
REC'D AT LAB BY:		DATE / TIME		CONDITIONS / COMMENTS:		PO. #		QUOTE #			
		9-12-17 1750		cls (2.5)							
SHIPPED BY:		<input type="checkbox"/> FED X		<input type="checkbox"/> UPS		<input checked="" type="checkbox"/> OTHER		AIR BILL #			

Good-Product Mar./Field Samples/Tarms and Conditions
 Pre-Chain/Tarms and Conditions
 Yellow: Lab file copy/Tarms and Conditions
 White-Lab/Tarms and conditions

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Grab #1 thru Grab #4 (Comp) (1710454-05) Sludge Sampled: 09/12/17 08:00 Received: 09/12/17 12:50									
Antimony	ND	2.7	mg/kg dry	5	1706988	09/14/17	09/14/17	EPA 6020/7000	
Antimony	ND	2.5	mg/kg	"	"	"	"	EPA 6020	
Arsenic	6.6	1.0	"	"	"	"	"	"	
Arsenic	7.1	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Barium	27	1.0	mg/kg	"	"	"	"	EPA 6020	
Barium	29	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Beryllium	ND	1.1	"	"	"	"	"	"	
Beryllium	ND	1.0	mg/kg	"	"	"	"	EPA 6020	
Cadmium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Chromium	12	1.0	mg/kg	"	"	"	"	EPA 6020	
Chromium	13	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Cobalt	1.0	1.0	mg/kg	"	"	"	"	EPA 6020	
Cobalt	1.1	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Copper	28	1.0	mg/kg	"	"	"	"	EPA 6020	
Copper	30	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Lead	ND	2.5	mg/kg	"	"	"	"	EPA 6020	
Lead	ND	2.7	mg/kg dry	"	"	"	"	EPA 6020/7000	
Mercury	ND	0.090	"	1	1707082	09/18/17	09/19/17	EPA 7471A	
Mercury	ND	0.10	mg/kg	"	"	"	"	"	
Molybdenum	3.0	1.0	"	5	1706988	09/14/17	09/14/17	EPA 6020	
Molybdenum	3.3	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Nickel	6.2	1.0	mg/kg	"	"	"	"	EPA 6020	
Nickel	6.6	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Selenium	ND	2.5	mg/kg	"	"	"	"	EPA 6020	
Selenium	ND	2.7	mg/kg dry	"	"	"	"	EPA 6020/7000	
Silver	ND	1.0	mg/kg	"	"	"	"	EPA 6020	
Silver	ND	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Thallium	ND	1.0	mg/kg	"	"	"	"	EPA 6020	
Thallium	ND	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	
Vanadium	4.1	1.0	mg/kg	"	"	"	"	EPA 6020	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Grab #1 thru Grab #4 (Comp) (1710454-05) Sludge Sampled: 09/12/17 08:00 Received: 09/12/17 12:50									
Vanadium	4.4	1.1	mg/kg dry	5	1706988	"	09/14/17	EPA 6020/7000	
Zinc	130	2.5	mg/kg	"	"	"	"	EPA 6020	
Zinc	140	1.1	mg/kg dry	"	"	"	"	EPA 6020/7000	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Grab #1 thru Grab #4 (Comp) (1710454-05) Sludge Sampled: 09/12/17 08:00 Received: 09/12/17 12:50									
Hexavalent Chromium	ND	10	µg/kg	1	1706931	09/13/17	09/14/17	EPA 7199	
Hexavalent Chromium	ND	11	µg/kg dry	"	"	"	"	"	
Solids, %	93		%	"	1706918	09/12/17	09/13/17	SM 2540B	

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1706988 - EPA 3050B

Blank (1706988-BLK1)

Prepared & Analyzed: 09/14/17

Arsenic	ND	0.20	mg/kg wet							
Arsenic	ND	0.20	mg/kg							
Lead	ND	0.50	mg/kg wet							
Lead	ND	0.50	mg/kg							
Selenium	ND	0.50	mg/kg wet							
Selenium	ND	0.50	mg/kg							
Thallium	ND	0.20	mg/kg wet							
Thallium	ND	0.20	mg/kg							
Antimony	ND	0.50	mg/kg wet							
Antimony	ND	0.50	mg/kg							
Barium	ND	0.20	mg/kg wet							
Barium	ND	0.20	mg/kg							
Beryllium	ND	0.20	mg/kg wet							
Beryllium	ND	0.20	mg/kg							
Cadmium	ND	0.20	mg/kg wet							
Cadmium	ND	0.20	mg/kg							
Chromium	ND	0.20	mg/kg wet							
Chromium	ND	0.20	mg/kg							
Cobalt	ND	0.20	mg/kg wet							
Cobalt	ND	0.20	mg/kg							
Copper	ND	0.20	mg/kg wet							
Copper	ND	0.20	mg/kg							
Nickel	ND	0.20	mg/kg wet							
Nickel	ND	0.20	mg/kg							
Molybdenum	ND	0.20	mg/kg wet							
Molybdenum	ND	0.20	mg/kg							
Silver	ND	0.20	mg/kg wet							
Silver	ND	0.20	mg/kg							
Vanadium	ND	0.20	mg/kg wet							
Vanadium	ND	0.20	mg/kg							
Zinc	0.257	0.20	mg/kg wet							QB-1

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1706988 - EPA 3050B

Blank (1706988-BLK1)

Prepared & Analyzed: 09/14/17

Zinc	ND	0.50	mg/kg							
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LCS (1706988-BS1)

Prepared & Analyzed: 09/14/17

Arsenic	8.63	0.20	mg/kg	10.0		86	75-125			
Arsenic	8.63	0.20	mg/kg wet	10.0		86	75-125			
Lead	9.64	0.50	mg/kg	10.0		96	75-125			
Lead	9.64	0.50	mg/kg wet	10.0		96	75-125			
Selenium	8.31	0.50	"	10.0		83	75-125			
Selenium	8.31	0.50	mg/kg	10.0		83	75-125			
Thallium	9.87	0.20	"	10.0		99	75-125			
Thallium	9.87	0.20	mg/kg wet	10.0		99	75-125			
Antimony	9.08	0.50	mg/kg	10.0		91	75-125			
Antimony	9.08	0.50	mg/kg wet	10.0		91	75-125			
Barium	9.88	0.20	mg/kg	10.0		99	75-125			
Barium	9.88	0.20	mg/kg wet	10.0		99	75-125			
Beryllium	0.892	0.20	"	1.00		89	75-125			
Beryllium	0.892	0.20	mg/kg	1.00		89	75-125			
Cadmium	0.890	0.20	mg/kg wet	1.00		89	75-125			
Cadmium	0.890	0.20	mg/kg	1.00		89	75-125			
Chromium	9.31	0.20	mg/kg wet	10.0		93	75-125			
Chromium	9.31	0.20	mg/kg	10.0		93	75-125			
Cobalt	9.21	0.20	"	10.0		92	75-125			
Cobalt	9.21	0.20	mg/kg wet	10.0		92	75-125			
Copper	9.17	0.20	mg/kg	10.0		92	75-125			
Copper	9.17	0.20	mg/kg wet	10.0		92	75-125			
Nickel	9.17	0.20	"	10.0		92	75-125			
Nickel	9.17	0.20	mg/kg	10.0		92	75-125			
Molybdenum	9.84	0.20	mg/kg wet	10.0		98	75-125			
Molybdenum	9.84	0.20	mg/kg	10.0		98	75-125			
Silver	9.59	0.20	"	10.0		96	75-125			
Silver	9.59	0.20	mg/kg wet	10.0		96	75-125			
Vanadium	9.47	0.20	mg/kg	10.0		95	75-125			

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1706988 - EPA 3050B

LCS (1706988-BS1)

Prepared & Analyzed: 09/14/17

Vanadium	9.47	0.20	mg/kg wet	10.0		95	75-125			
Zinc	8.10	0.20	"	10.0		81	75-125			
Zinc	8.10	0.50	mg/kg	10.0		81	75-125			

Matrix Spike (1706988-MS1)

Source: 1710464-01

Prepared & Analyzed: 09/14/17

Arsenic	11.8	1.0	mg/kg	10.0	3.52	83	75-125			
Arsenic	11.8	1.0	mg/kg wet	10.0	3.52	83	75-125			
Lead	22.0	2.5	mg/kg	10.0	12.5	95	75-125			
Lead	22.0	2.5	mg/kg wet	10.0	12.5	95	75-125			
Selenium	8.27	2.5	mg/kg	10.0	0.265	80	75-125			
Selenium	8.27	2.5	mg/kg wet	10.0	0.265	80	75-125			
Thallium	9.80	1.0	"	10.0	0.150	96	75-125			
Thallium	9.80	1.0	mg/kg	10.0	0.150	96	75-125			
Antimony	1.64	2.5	mg/kg wet	10.0	0.595	10	75-125			QM-5
Antimony	1.64	2.5	mg/kg	10.0	0.595	10	75-125			QM-5
Barium	116	1.0	"	10.0	102	134	75-125			QM-4X
Barium	116	1.0	mg/kg wet	10.0	102	134	75-125			QM-4X
Beryllium	1.19	1.0	mg/kg	1.00	0.235	96	75-125			
Beryllium	1.19	1.0	mg/kg wet	1.00	0.235	96	75-125			
Cadmium	1.36	1.0	mg/kg	1.00	0.495	87	75-125			
Cadmium	1.36	1.0	mg/kg wet	1.00	0.495	87	75-125			
Chromium	41.1	1.0	"	10.0	32.9	82	75-125			
Chromium	41.1	1.0	mg/kg	10.0	32.9	82	75-125			
Cobalt	14.1	1.0	mg/kg wet	10.0	5.80	83	75-125			
Cobalt	14.1	1.0	mg/kg	10.0	5.80	83	75-125			
Copper	34.3	1.0	mg/kg wet	10.0	25.3	90	75-125			
Copper	34.3	1.0	mg/kg	10.0	25.3	90	75-125			
Nickel	53.1	1.0	mg/kg wet	10.0	54.6	NR	75-125			QM-4X
Nickel	53.1	1.0	mg/kg	10.0	54.6	NR	75-125			QM-4X
Molybdenum	209	1.0	"	10.0	211	NR	75-125			QM-4X
Molybdenum	209	1.0	mg/kg wet	10.0	211	NR	75-125			QM-4X
Silver	9.24	1.0	"	10.0	ND	92	75-125			

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1706988 - EPA 3050B

Matrix Spike (1706988-MS1)	Source: 1710464-01			Prepared & Analyzed: 09/14/17						
Silver	9.24	1.0	mg/kg	10.0	ND	92	75-125			
Vanadium	34.6	1.0	"	10.0	23.9	107	75-125			
Vanadium	34.6	1.0	mg/kg wet	10.0	23.9	107	75-125			
Zinc	120	2.5	mg/kg	10.0	119	11	75-125			QM-4X
Zinc	120	1.0	mg/kg wet	10.0	119	11	75-125			QM-4X

Matrix Spike Dup (1706988-MSD1)	Source: 1710464-01			Prepared & Analyzed: 09/14/17						
Arsenic	11.5	1.0	mg/kg	10.0	3.52	80	75-125	3	30	
Arsenic	11.5	1.0	mg/kg wet	10.0	3.52	80	75-125	3	30	
Lead	22.2	2.5	mg/kg	10.0	12.5	97	75-125	0.9	30	
Lead	22.2	2.5	mg/kg wet	10.0	12.5	97	75-125	0.9	30	
Selenium	9.27	2.5	"	10.0	0.265	90	75-125	11	30	
Selenium	9.27	2.5	mg/kg	10.0	0.265	90	75-125	11	30	
Thallium	9.99	1.0	mg/kg wet	10.0	0.150	98	75-125	2	30	
Thallium	9.99	1.0	mg/kg	10.0	0.150	98	75-125	2	30	
Antimony	1.41	2.5	mg/kg wet	10.0	0.595	8	75-125	15	30	QM-5
Antimony	1.41	2.5	mg/kg	10.0	0.595	8	75-125	15	30	QM-5
Barium	185	1.0	"	10.0	102	822	75-125	46	30	QM-4X
Barium	185	1.0	mg/kg wet	10.0	102	822	75-125	46	30	QM-4X
Beryllium	1.22	1.0	mg/kg	1.00	0.235	99	75-125	2	30	
Beryllium	1.22	1.0	mg/kg wet	1.00	0.235	99	75-125	2	30	
Cadmium	1.42	1.0	"	1.00	0.495	93	75-125	4	30	
Cadmium	1.42	1.0	mg/kg	1.00	0.495	93	75-125	4	30	
Chromium	51.6	1.0	mg/kg wet	10.0	32.9	187	75-125	23	30	QM-4X
Chromium	51.6	1.0	mg/kg	10.0	32.9	187	75-125	23	30	QM-4X
Cobalt	16.0	1.0	mg/kg wet	10.0	5.80	102	75-125	12	30	
Cobalt	16.0	1.0	mg/kg	10.0	5.80	102	75-125	12	30	
Copper	32.3	1.0	"	10.0	25.3	71	75-125	6	30	QM-5
Copper	32.3	1.0	mg/kg wet	10.0	25.3	71	75-125	6	30	QM-5
Nickel	95.7	1.0	"	10.0	54.6	412	75-125	57	30	QM-4X
Nickel	95.7	1.0	mg/kg	10.0	54.6	412	75-125	57	30	QM-4X
Molybdenum	227	1.0	mg/kg wet	10.0	211	157	75-125	8	30	QM-4X

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1706988 - EPA 3050B

Matrix Spike Dup (1706988-MSD1)	Source: 1710464-01			Prepared & Analyzed: 09/14/17						
Molybdenum	227	1.0	mg/kg	10.0	211	157	75-125	8	30	QM-4X
Silver	9.42	1.0	mg/kg wet	10.0	ND	94	75-125	2	30	
Silver	9.42	1.0	mg/kg	10.0	ND	94	75-125	2	30	
Vanadium	35.7	1.0	mg/kg wet	10.0	23.9	118	75-125	3	30	
Vanadium	35.7	1.0	mg/kg	10.0	23.9	118	75-125	3	30	
Zinc	122	2.5	"	10.0	119	29	75-125	1	30	QM-4X
Zinc	122	1.0	mg/kg wet	10.0	119	29	75-125	1	30	QM-4X

Batch 1707082 - EPA 7471A

Blank (1707082-BLK1)	Prepared: 09/18/17 Analyzed: 09/19/17									
Mercury	ND	0.083	mg/kg wet							
Mercury	ND	0.10	mg/kg							

LCS (1707082-BS1)	Prepared: 09/18/17 Analyzed: 09/19/17									
Mercury	0.213	0.10	mg/kg	0.208		102	75-125			
Mercury	0.213	0.083	mg/kg wet	0.208		102	75-125			

Matrix Spike (1707082-MS1)	Source: 1710464-01			Prepared: 09/18/17 Analyzed: 09/19/17						
Mercury	0.145	0.10	mg/kg	0.208	0.0107	64	75-125			QM-5
Mercury	0.145	0.083	mg/kg wet	0.208	0.0107	64	75-125			QM-5

Matrix Spike Dup (1707082-MSD1)	Source: 1710464-01			Prepared: 09/18/17 Analyzed: 09/19/17						
Mercury	0.133	0.083	mg/kg wet	0.208	0.0107	59	75-125	8	25	QM-5
Mercury	0.133	0.10	mg/kg	0.208	0.0107	59	75-125	8	25	QM-5

CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 1710454 COC #: 183159
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1706918 - General Preparation

Blank (1706918-BLK1) Prepared: 09/12/17 Analyzed: 09/13/17

Solids, %	0.00		%							
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Batch 1706931 - General Prep

Blank (1706931-BLK1) Prepared: 09/13/17 Analyzed: 09/14/17

Hexavalent Chromium	ND	10	µg/kg wet							
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Hexavalent Chromium	ND	10	µg/kg							
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LCS (1706931-BS1) Prepared: 09/13/17 Analyzed: 09/14/17

Hexavalent Chromium	98.1	10	µg/kg	100		98	80-120			
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Hexavalent Chromium	98.1	10	µg/kg wet	100		98	80-120			
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LCS Dup (1706931-BSD1) Prepared: 09/13/17 Analyzed: 09/14/17

Hexavalent Chromium	96.1	10	µg/kg	100		96	80-120	2	20	
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Hexavalent Chromium	96.1	10	µg/kg wet	100		96	80-120	2	20	
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Matrix Spike (1706931-MS1) Source: 1710454-05 Prepared: 09/13/17 Analyzed: 09/14/17

Hexavalent Chromium	88.9	10	µg/kg	100	ND	89	75-125			
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Hexavalent Chromium	95.5	11	µg/kg dry	107	ND	89	75-125			
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Matrix Spike Dup (1706931-MSD1) Source: 1710454-05 Prepared: 09/13/17 Analyzed: 09/14/17

Hexavalent Chromium	93.2	10	µg/kg	100	ND	93	75-125	5	25	
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Hexavalent Chromium	100	11	µg/kg dry	107	ND	93	75-125	5	25	
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CALIFORNIA LABORATORY SERVICES

National O&M, Inc P.O. Box 21187 Roanoke, VA 24018	Project: Wild Wings - Sludge Sample Project Number: [none] Project Manager: Jeff Lambeth	CLS Work Order #: 17I0454 COC #: 183159
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Notes and Definitions

- QM-5 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QB-1 The method blank or calibration verification blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified)
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

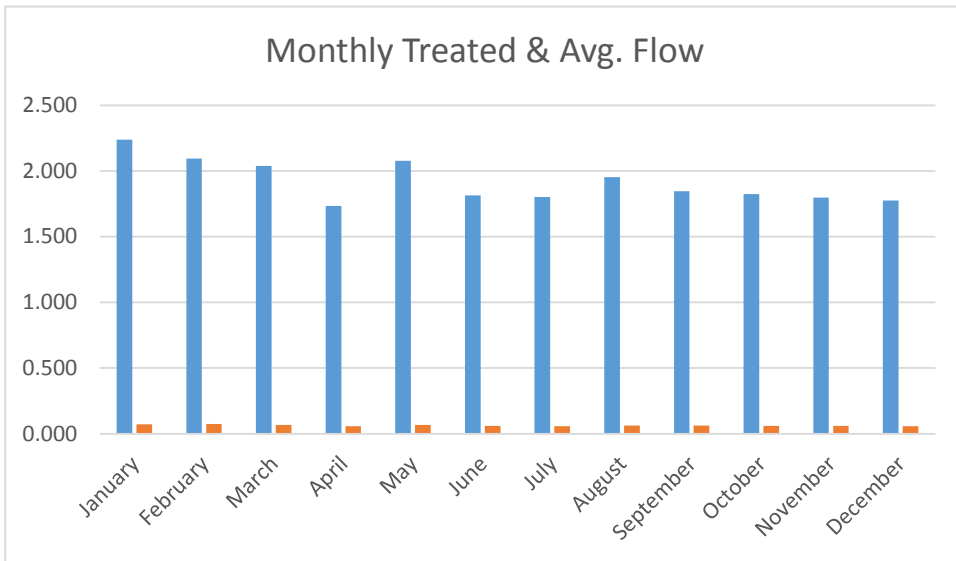
ATTACHMENT 4

Monitoring Data Summary

Wild Wings Water Recycling Facility
Total Treated Flow 2017

Month	Total Treated (MG)	Avg. Daily Flow (MGD)
January	2.239	0.072
February	2.096	0.075
March	2.040	0.066
April	1.734	0.058
May	2.079	0.067
June	1.816	0.061
July	1.803	0.058
August	1.953	0.063
September	1.848	0.062
October	1.824	0.059
November	1.799	0.060
December	1.775	0.057
Total	23.006	0.757
Minimum	1.734	0.057
Maximum	2.239	0.075
Average	1.917	0.063

Wild Wings Water Recycling Facility
Total Treated Flow 2017



**Wild Wings Water Recycling Facility
Tertiary Effluent Monthly Sampling Results 2017**

	pH Avg.	BOD Avg.	TSS Avg.	EC	TDS	TKN	Nitrate (N)	Total Nitrogen	NH3 as N
Jan	8.0	1.4	ND	1428	630	0.43	0.66	1.1	0.20
Feb	7.3	ND	2.6	1173	540	0.5	1.3	1.8	ND
Mar	7.4	1.3	8.2	1054	750	0.59	3.7	4.4	0.30
Apr	7.6	ND	2.4	1213	800	1.1	0.74	1.9	0.19
May	7.4	9.2	7.2	1120	560	3.3	ND	3.3	2.80
Jun	7.1	0.6	ND	1210	*	*	*	*	*
Jul	7.2	ND	ND	1051	570	ND	3.8	4.0	ND
Aug	7.3	ND	ND	1250	540	0.39	3.4	3.8	0.17
Sep	7.2	1.8	4.0	1077	640	0.98	22	23.0	0.11
Oct	7.3	2.6	8.5	1014	710	0.9	13	14.0	0.13
Nov	7.2	1.6	1.2	1210	710	0.52	9.5	10.0	ND
Dec	7.4	1.9	ND	1210	**	**	**	**	**

* No samples pulled

** Samples not pulled in December due to construction

**Wild Wings Water Recycling Facility
Recycled Water Storage Pond
Monthly Results 2017**

	Freeboard Avg.	D.O. Avg.	pH Avg.	EC	TDS	Total Nitrogen
Jan	9.0	10.3	8.7	1203	590	1.7
Feb	8.7	7.8	7.7	1271	550	1.1
Mar	7.8	10.4	7.5	903	580	1.0
Apr	7.0	6.4	7.9	1199	590	1.0
May	7.8	10.4	10.3	780	540	1.4
Jun	6.9	10.9	7.3	1240	*	*
Jul	8.5	10.7	7.4	1022	500	1.5
Aug	7.3	10.8	7.2	1104	530	1.9
Sep	7.3	10.4	7.4	1270	500	4.9
Oct	7.5	10.4	7.5	1117	560	6.1
Nov	9.0	10.1	7.5	1317	560	8.1
Dec	10.1	10.5	7.3	1315	700	6.1

* No samples pulled

ATTACHMENT 5

Wastewater Performance & Compliance

Compliance and Performance of the Wild Wings Water Recycling Facility #R5-2002-0077

The Wild Wings Recycling Facility experienced higher than normal flows intermittently throughout the year of 2017 exceeding the design capability of the facility. The higher flows were due to I/I issues within the collection system. This caused operational difficulties and at times plant washout. We also experienced equipment and a tertiary sand filter failure which in all contributed and caused the following violations:

January, 2017

The daily maximum Total Coliform for the tertiary effluent was exceeded on 1/11/2017 with a 84 MPN/100mL.

We were experiencing high flows on this as we had been for several days due to heavy rain. The chlorine residual at time of sampling was 11.0 mg/l. We believe this result could be attributed to the weather and the extreme flows. This was the only exceedance for the month. There was no discharge to the golf course the entire month.

March, 2017

The daily maximum Total Coliform for the tertiary effluent was exceeded on 3/26/2017 with a 130 MPN/100mL.

This was an isolated event that could be attributed to the high flows we had been experiencing. The chlorine residual at the time of sampling was 11.0 mg/l. The daily results before and after the 26th were in compliance.

May, 2017

We encountered higher than normal flows from May 18th through May 22nd causing the plant to be hydraulically overloaded and causing our secondary clarifier to washout periodically over that time. Our daily flow averages have been 70k to 75k. The flows were:

May 18th 87,600 gals.

May 19th 120,800 gals.

May 20th 105,600 gals.

May 21st 112,100 gals.

May 22nd 98,600 gals.

Equipment Maintenance/Repairs:

- The online turbidity and chlorine meter sample pumps were replaced on May 26th.
- We installed a new chlorine Hach CL17 analyzer to replace the SureFlow unit on June 1st.
- We repaired the SCADA system on June 2nd to restore continuous SCADA recordings of the chlorine and turbidity analyzers.

June, 2017

Due to an oversight, the operator missed the monthly sampling for the month of June. The facility performed well during the month, did not experience any high flows or overloading, nor issues with any of the remaining sampling. Preventative and corrective actions were implemented immediately to preclude missed samples from happening again.

August, 2017

Compliance and Performance of the Wild Wings Water Recycling Facility #R5-2002-0077

The daily maximum Total Coliform for the tertiary effluent was exceeded on 8/13/2017 with a 49 MPN/100mL.

October, 2017

The daily maximum Total Coliform for the tertiary effluent was exceeded on 10/12/17 & 10/13/17 with a 1600 MPN/100m on both days.

Staff replaced the effluent sample pump and put back online. At the time the sample tubing was not disinfected. This has been corrected and no further issues have been noted.

December, 2017

The daily maximum Total Coliform for the tertiary effluent was exceeded on 12/10/17, 12/12/17 & 12/20/17 with a 1600 MPN/100m for each day.

The County contracted with EEI to perform repairs on the failed tertiary sand filter. Repair work began on 12-20-17. In order to affect the necessary repairs, the contractor bypassed the tertiary filter to the recycled storage pond, therefore no e-coli samples were collected during the period December 21 through December 31, 2017 and no tertiary monthly samples collected.