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February 1, 2011

Mr. F. Thomas Lubozynski, P.E.
Waste Program Administrator
Solid and Hazardous Waste Program
Florida Department of Environmental Protection, Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767



Re: 13th Semi-Annual Water Quality Monitoring Report
J.E.D. Solid Waste Management Facility, Osceola County, Florida
Permit No. SO49-0199726-015
WACS Facility ID #89544

Dear Mr. Lubozynski:

Submitted herewith is the subject report documenting the 13th semi-annual water quality monitoring event conducted at the J.E.D. Solid Waste Management (JED) Facility located in Osceola County, Florida. This report is being submitted as required for compliance with the conditions contained within the Monitoring Plan Implementation Schedule (MPIS) for the above referenced permit. In accordance with the permit conditions, this semi-annual water quality monitoring event was performed in November 2010. This report is being submitted within the sixty day period after receipt of the final analytical data reports from the laboratory. This report satisfies the semi-annual water quality monitoring compliance requirements as described in the Permit.

As noted in the revised MPIS, two electronic copies of the water quality report are being submitted to FDEP. Each electronic copy contains a pdf of the entire water quality report and the required ADaPT compatible electronic data deliverable (EDD) saved on a compact disk (CD). One CD is attached to this transmittal letter. The second CD containing an electronic copy of this report, including the EDD compatible with the ADaPT software has been sent to the attention of Mr. Clark Moore in Tallahassee, Florida.

If you have any questions or need additional information, please do not hesitate to contact the undersigned at (813) 388-1026.

Sincerely,

Kirk Wills
Senior Engineer

Attachments

Copy: Mike Kaiser, WSI
Clark Moore, FDEP Tallahassee

Prepared for:



Waste Services, Inc.
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**13th SEMI-ANNUAL
WATER QUALITY MONITORING REPORT
J.E.D. SOLID WASTE MANAGEMENT
FACILITY
OSCEOLA COUNTY, FLORIDA**

Prepared by:



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January 2011

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1. INTRODUCTION

1.1 Terms of Reference

This report documents the implementation of the Water Quality Monitoring Plan (Plan) for the J.E.D. Solid Waste Management (JED) facility. The Plan was prepared as a part of the JED facility permit applications. The requirements for executing the Plan are presented in the Monitoring Plan Implementation Schedule (MPIS) of the current permit (Permit Numbers SC49-0199726-004 and SO49-0199726-005) that authorizes the development of Phases 1 through 3 at the JED facility. The current permit was issued by the Florida Department of Environmental Protection (FDEP) on April 4, 2008. This report presents the results for the 13th semi-annual water quality (groundwater, surface water, and leachate) monitoring event conducted between November 1, 2010 and November 11, 2010.

This report was prepared on behalf of Waste Services Incorporated (WSI), parent company of Omni Waste of Osceola County, LLC, owner and operator of the JED facility by Mr. Kirk E. Wills of Environmental Planning Specialists, Inc. (EPS). In accordance with EPS's peer review procedures, Mr. Robert Thompson, P.G. reviewed this report. A completed water quality certification form (FDEP Form 62-701.900(31)) is included in Appendix A.

1.2 Overview

The Plan and the MPIS describe a water quality monitoring program at the JED facility that has as its intent to: (i) measure and report groundwater and surface water conditions for the monitoring network; (ii) monitor the groundwater flow direction; (iii) monitor the groundwater and surface water quality on a semi-annual basis; and (iv) monitor leachate quality on an annual basis. The 13th semi-annual water quality monitoring has been completed. This report includes presentation and discussions of the sample locations, sampling procedures, laboratory analyses and results, field data measurements, groundwater level measurements, groundwater flow direction, surface water quality monitoring, and leachate monitoring. In addition, this report includes a comparison of the analytical results of this sampling event to applicable Groundwater Cleanup Target Levels (GCTLs) as promulgated in Chapter 62-777, Florida Administrative Code (FAC).

1.3 Site Description

The JED facility is located in eastern Osceola County, Florida, west of highway U.S. 441, and approximately 6.5 miles south of Holopaw. The facility includes a Class I landfill, which is linked to highway U.S. 441 by a 2.86-mile access road. The JED facility comprises a total of approximately 2,179 acres. The landfill footprint at build-out is approximately 264 acres and consists of a total of 21 landfill cells that provide available waste capacity for a period of approximately 30 years. The FDEP issued a permit to construct and operate Phase 1 development of the JED facility in October 2003. Phase 1 development includes four landfill cells (Cells 1 through 4), located in the northern part of the landfill and covering approximately 54 acres. As part of Phase 1, forty-five (45) groundwater monitoring wells were installed in fifteen (15) clusters (MW-1 through MW-15) around the perimeter of the Phase 1 development area. The baseline water quality report for the Phase 1 monitoring well network was submitted to FDEP in May 2004. All components of the Phase 1 development have been constructed.

The FDEP issued a permit to construct and operate Phases 2 and 3 at the JED facility in March 2007. The development of Phases 2 and 3 includes six cells (Cells 5 through 10) with a total footprint of approximately 72 acres. As part of Phases 2 and 3 development, and as approved by FDEP, six (6) existing Phase 1 monitoring wells (MW-14 A, B, and C, and MW-15 A, B, and C), and ten (10) piezometers were decommissioned. The wells and piezometers were decommissioned to allow for construction of future cells, construction of a storm water retention basin located within Phases 2 and 3, and due to the proximity of piezometers to the new network wells installed. The decommissioning of the monitoring wells and piezometers was discussed in the Phases 2 and 3 baseline water quality report. For the development of Phases 2 and 3, twenty-four (24) additional groundwater monitoring wells were installed in eight (8) well clusters (MW-16 through MW-23) around the perimeter of the Phases 2 and 3 development areas in September 2007. The baseline water quality report for the Phases 2 and 3 monitoring well network was submitted to FDEP in January 2008.

The FDEP issued a permit to construct and operate Phases 1 through 3 with vertical expansion at the JED facility in April 2008. The MPIS was revised on April 6, 2009, updating the sample locations and sampling schedule. The MPIS was revised again on June 22, 2009 to include electronic data reporting requirements. For monitoring purposes, the JED facility was given the Water Assurance Compliance System (WACS) facility identification number 89544.

2. MONITORING WELL DETAILS

2.1 Well Layout and Construction

For the Phase 1 development, forty five (45) groundwater monitoring wells were installed in fifteen (15) clusters (MW-1 through MW-15) around the perimeter of the Phase 1 development area. Monitoring well clusters were located such that the spacing between well clusters was no greater than 500 ft, in accordance with the FDEP permit requirements. For development of Phases 2 and 3, twenty four (24) groundwater monitoring wells were installed in eight (8) clusters (MW-16 through MW-23) around the perimeter of the Phases 2 and 3 development areas. In accordance with the FDEP permit requirements, the monitoring well clusters were located such that the spacing between detection well clusters (MW-16 through MW-21) was approximately 500 feet (ft), and the spacing between background well clusters (MW-22 and MW-23) was approximately 800 ft. Each monitoring well cluster consisted of three (3) groundwater monitoring wells installed (i) across the water table to monitor the upper limit of the surficial aquifer (identified as A-zone [shallow] wells); (ii) within the lower limit of the upper surficial aquifer above the intermediate clay layer (identified as C-zone [deep] wells); and (iii) at an intermediate depth between the shallow and deep wells (identified as B-zone [intermediate] wells).

A layout depicting the location of groundwater monitoring wells installed for Phases 2 and 3, and the previously installed groundwater monitoring wells for Phase 1, and the piezometers installed as part of the hydro-geologic investigation are shown for the shallow zone (“A” wells) on Figure 1. As shown, groundwater monitoring well clusters MW-1 through MW-13 and MW-23 were installed along the top of the outer edge of the landfill perimeter berm. The ground surface at the location of the wells in the perimeter berm is at approximately Elevation 92 ft with respect to National Geodetic Vertical Datum of 1929 (NGVD, 1929). Groundwater monitoring well clusters MW-16 and MW-17 were installed along the outer edge of the landfill perimeter berm that serves as the initial storm water berm. The ground surface at these two well locations is at approximately Elevation 85 ft NGVD, 1929. Groundwater monitoring well clusters MW-18 through MW-22 were installed along the interim Phase 3 storm water berm at the southern limit of the Phase 3 development at approximately Elevation 84 ft NGVD, 1929. The locations of each well, in Florida state plane coordinates and latitude/longitude, and elevation NGVD, 1929 were surveyed by professional land surveyors licensed in the State of Florida.

Wells were constructed with 2-inch diameter schedule 40 PVC casing. The well screens were 10-ft in length with #6-slot (0.006-in.). A 30/45 graded silica sand was placed around the screen to a height of 2 to 3 ft above the top of the screen. A seal of 30/65 graded fine silica sand was placed above the sand filter around the screen. The remaining annular space from the top of the fine sand filter seal to the existing ground surface was grouted using a tremie pipe with a cement/bentonite mixture containing no more than 5 percent bentonite by dry weight. The PVC well casings were extended approximately 2.5 to 3 ft above the existing ground surface. Surface completion consisted of a protective steel or aluminum casing with a lockable cover set in a concrete pad. Each well was provided with a well cap, padlock, and an identification label. A summary of the monitoring well construction details are presented in Table 1.

2.2 Turbidity Issues

As discussed in the baseline water quality reports for the Phase 1, and Phases 2 and 3 monitoring networks, the formation around the screened intervals consists primarily of a fine, brown to dark brown, silty sand. Due to the subsurface formation properties, fine-grained and colloidal material are able to pass through the sand filter pack in many wells, primarily in the B-zone and C-zone wells. This is the case even though the wells are constructed using the smallest screen slot size (0.006 in.) commonly available. Most of the intermediate and deep wells had turbidity values in excess of the 20 nephelometric turbidity unit (NTU) criterion even after extended well development and the removal of multiple well volumes.

The difficulty in attaining the desired turbidity criterion was originally discussed at a meeting between Geosyntec Consultants (Geosyntec) and FDEP on January 12, 2004 during the well development activities associated with the wells installed as part of the Phase 1 development. Geosyntec notified FDEP again on September 14, 2007 of the elevated turbidity levels even after extended well development during development of the Phases 2 and 3 monitoring wells. In accordance with these discussions, it was agreed to collect field-filtered (1-micron) and unfiltered samples for metals analyses for any sample with a turbidity value greater than 20 NTU. The data generated by the dual sampling is expected to help demonstrate: (i) what effect turbidity may have on metal analyses (i.e., compare total and dissolved metals concentrations); and (ii) whether groundwater samples with turbidities greater than 20 NTU showed higher concentrations of metals than those samples with turbidities less than 20 NTU.

3. MONITORING WELL SAMPLING

3.1 Sampling Locations and Procedures

In accordance with the current MPIS (revised June 22, 2009), twenty-six (26) monitoring wells installed as part of the Phase 1 development and seven (7) of the monitoring wells installed as part of the Phase 2 and 3 development were sampled. Low-flow sampling techniques were used for groundwater sample collection. Except for the turbidity considerations as described in the previous section, all groundwater sampling was performed in accordance with the current applicable FDEP Standard Operating Procedures (DEP-SOP-001-01, December 2008) for groundwater sampling. Additionally for quality control (QC) purposes, two equipment blanks were collected and analyzed.

Peristaltic pumps were used to purge and sample all A-zone (shallow) and the majority of the C-zone (deep) groundwater monitoring wells. A stainless steel submersible pump was used to purge and sample the remainder of the C-zone (deep) and the one C-zone (intermediate) groundwater well (MW-16B). New tubing (silicone and/or polyethylene) was used at each monitoring well location.

During the purging process, a YSI 556 water quality meter equipped with a flow-through cell was used to monitor the following field parameters: pH; temperature; field conductivity; oxidation-reduction potential (ORP); and dissolved oxygen. Turbidity levels were measured using a LaMotte 2020e turbidity meter. Field parameters were recorded on sample collection forms, which are contained in Appendix B. Observations pertaining to the color of the groundwater samples collected were also noted on the sample collection forms. When the field parameters stabilized within the acceptable tolerances required by the FDEP SOP, well purging was considered complete and groundwater samples were collected. For wells where the turbidity was not less than 20 NTU, stability was established by purging at least 5 well volumes and observing variations in the measured turbidity. For problematic wells, once the turbidity had stabilized and all other parameters conformed to the guidance set forth in the FDEP SOP's, samples were collected. A non-filtered and field-filtered (1-micron) metals sample was collected from each monitoring well where turbidity measurements exceeded the 20 NTU level.

For monitoring wells where peristaltic pumps were used, volatile organic compound (VOC) sample vials were filled by removing the down well sample tubing, disconnecting the tubing from the water quality meter flow through cell, and reversing the flow direction on the peristaltic pump.

For the monitoring wells that were purged and sampled with the stainless steel submersible pump, all sample aliquots were filled directly from the down-well tubing.

The calibration of the water quality monitoring instruments was checked daily and re-calibrated when necessary. Water quality instrument calibration forms are presented in Appendix C. Samples were placed in coolers and packed with bagged ice for transport to the analytical laboratory. Chain-of-Custody (COC) forms were completed and accompanied the samples to the analytical laboratory. All COC forms have been included in Appendix D of this report. Trip blank samples accompanied all sample coolers with VOC samples. Temperature blanks were packed in each sample cooler. Security seals were affixed to every cooler shipped.

3.2 Sample Analyses

Samples were analyzed by Columbia Analytical Services, Inc. (Columbia) of Jacksonville, Florida in accordance with the National Environmental Laboratory Accreditation Conference (NELAC) standards. Columbia holds certification from the Florida Department of Health (FDOH) for the analytical test methods used for this project and is certified in the State of Florida for analysis of environmental samples.

Groundwater samples were analyzed by Columbia for total ammonia as nitrogen (N), chlorides, nitrate, total dissolved solids (TDS), iron, mercury, sodium, and the 40 Code of Federal Regulations (CFR) Part 258 Appendix I parameters. Other required parameters (i.e., pH; temperature; conductivity; turbidity; ORP; and dissolved oxygen) were measured in the field during collection of the groundwater samples.

4. ANALYTICAL RESULTS

4.1 Field Parameters

Table 2 provides a summary of the field measurements of selected water quality parameters utilized for determining sample stability for this semi-annual monitoring event.

4.2 Groundwater Monitoring Wells

The analytical laboratory results for this groundwater sampling event have been transferred to a compact disc (CD) and are included in Appendix E. Analytical results have been summarized in Table 3 to show all parameters where a constituent concentration was reported above the applicable FDEP Groundwater Cleanup Target Level (GCTL). Any parameter exceeding the GCTL has been highlighted orange. The following discussion regarding groundwater quality is limited to those parameters where the GCTL was exceeded in at least one groundwater monitoring well and has been organized by analytical method.

Total Metals (Method 6020 and Method 7470 for Mercury)

Arsenic was detected (above the method reporting limit [MRL]) in fifteen (15) monitoring wells in concentrations ranging between 0.45 and 19.7 micrograms per liter ($\mu\text{g/L}$). All reported concentrations were less than the GCTL for arsenic of 10 $\mu\text{g/L}$ with the exception of MW-11A and MW-13A, where the reported concentrations were 11.2 $\mu\text{g/L}$ and 19.7 $\mu\text{g/L}$, respectively. As discussed in the third biennial water quality monitoring report (November 2010), a positive correlation exists between iron and arsenic levels for monitoring wells at the site. This has been documented throughout the State of Florida, and is due to the fact that low levels of naturally occurring arsenic are bound up primarily by ferric (iron) hydroxides in many Florida soils. This has been discussed in previous correspondence with FDEP. The arsenic concentrations detected in MW-11A and MW-13A for the 13th semi-annual event are comparable with historical data reported for these two wells during previous monitoring events.

Iron was detected above the GCTL of 300 $\mu\text{g/L}$ in all thirty-three (33) of the monitoring wells sampled in concentrations ranging between 420 and 16,900 $\mu\text{g/L}$. Iron has historically exceeded the GCTL in all wells at the site for all monitoring events including

the baseline events. The iron concentrations reported for the 13th semi-annual event are typical of previous monitoring events.

Ammonia-N (Method 350.1)

Ammonia-N was detected in all of the thirty-three (33) monitoring wells sampled in concentrations ranging between 0.073 mg/L and 21.6 mg/L. All reported concentrations are less than the GCTL for ammonia-N of 2.8 mg/L except for MW-1A, 3A, 4A, 5A, 6A, 7A, 8A, 9A, 10A, 11A, 019A, and 23A where the reported concentrations ranged between 3.24 and 21.6 mg/L. Ammonia-N has historically been detected in these wells at the site for the previous monitoring events since the 1st and 2nd semi-annual water quality events, and GCTL for ammonia was exceeded in the baseline event for MW-5A and MW-19A. Of the locations where ammonia exceeded the GCTL during the 13th semi-annual event, monitoring wells MW-1A, 3A, 4A, 6A, 7A, 8A, 9A, 11A, 19A, and 23A indicated an increase when compared to the 12th semi-annual event. Monitoring wells MW-5A and MW-10A indicated a decrease when compared to the 12th semi-annual event. The highest ammonia concentration detected in a baseline monitoring event was 16 mg/L in MW-19A. All of the ammonia concentrations detected for the 13th semi-annual event are all below this concentration, except for MW-19A (21.6 mg/L). Of all the monitoring wells sampled as part of the semi-annual monitoring, MW-19A is located the furthest from any active disposal cell.

40 CFR Part 258, Appendix I Volatile Compounds (Method 8260)

Benzene was detected (above the MRL) in eight (8) monitoring wells (MW-1A, 3A, 8A, 9A, 10A, 11A, 12A, and 13A) at concentrations of ranging between 1.3 and 11.5 µg/L, which are all above the GCTL of 1.0 µg/L.

Vinyl Chloride was detected in two (2) wells (MW-9A, and 11A) at concentrations of 1.45 µg/L and 1.38 µg/L, respectively, which are both above the GCTL of 1.0 µg/L.

The GCTL for benzene was exceeded in MW-1A, 3A, 8A, 9A, 10A, 11A, 12A, and 13A. The GCTL for vinyl chloride was exceeded in MW-9A, and 11A. In accordance with Chapter 62-701.510(7)(a) F.A.C. and Paragraph 4 of Monitoring Plan Implementation Schedule section of the FDEP Permit, the FDEP is to be notified within 14 days after the receipt of the laboratory data of any GCTL exceedances. The notification is to also inform the FDEP if any confirmational samples will be collected from any of the wells or if the data will be accepted as indicative of groundwater conditions. On behalf of WSI,

EPS notified Mr. Thomas Lubozynski (FDEP) in a letter dated December 14, 2010 of all the GCTL exceedances for which certified data was received by EPS. The letter also notified the FDEP that no confirmational samples would be collected and the data was accepted as representative of current groundwater conditions. FDEP responded to the notification letter in an email from Ms. Laxsamee Levin (FDEP), dated December 15, 2010.

As reported in the 6th semi-annual water quality monitoring report, the cause of the exceedances (benzene and vinyl chloride) in MW-9A appeared to be related to storm water issues associated with the landfill. As part of the Phase I partial closure project completed in November 2009, the landfill side slopes between elevation 180 ft and the landfill perimeter berm (approximately elevation 96 ft) for Cells 1-4 were covered with a geomembrane and vegetated soil cap. This closure system will significantly reduce or prevent soil run-off from the active landfill area.

Based on the results of recent investigations into potential landfill gas migration issues, it is becoming more apparent that the detections and exceedances of VOCS may be largely attributable to landfill gas migration at the perimeter berm area and not solely to surface water run-off as first reported.

4.3 Data Validation

All analyses were performed within the method specified holding times.

Two equipment blanks were collected during the 13th semi-annual monitoring event. One (1) equipment blank (EB) was collected using the stainless steel submersible pump set up used for collection of the groundwater sample at MW-23C. The second equipment blank was collected using the peristaltic pump set-up used for collection of the groundwater sample from MW-11A. De-ionized water supplied by Columbia was pumped through the submersible pump and tubing and analyzed for the same parameters as the groundwater samples. The same procedure was also used for the peristaltic pump set up. As described in the case narratives for the two lab reports containing the results for the two equipment blanks (J1005286 and J1005431), the laboratory had recently installed a new de-ionized water system and an incorrect water type was provided for the collection of the field quality control samples. Due to this error, the two equipment blank samples had detections that are highly suspect that are attributable to the water provided and not the field decontamination procedures or equipment and materials used for the sampling event.

4.4 Impact of Turbidity on Metals Concentrations

As discussed in Section 2.2 of this report, extended well development was not successful in clearing up some of the B-zone (intermediate) and C-zone (deep) groundwater monitoring wells.

Turbidity levels were less than the FDEP guidance of 20 NTUs in thirty (30) of the thirty-three (33) wells sampled. A review of the analytical results for MW-19A, 23A, and 19C (the only three wells sampled with a final measured turbidity level > 20 NTUs) shows no significant difference between the dissolved and total metals concentrations. Historical data shows that the turbidity levels for the wells has improved over the course of the semi-annual water quality monitoring events and the need to continue collection of dissolved metal samples may no longer be necessary.

5. GROUNDWATER LEVEL MEASUREMENTS AND FLOW DIRECTION

5.1 Field Measurements

Groundwater level measurements were obtained on November 1, 2010 from all of the Phases 1 through 3 groundwater monitoring wells and the remaining piezometers installed as part of the original site hydrogeological investigation. All groundwater levels measurements were made within an approximate 6-hr period. The groundwater level measurements from the monitoring wells and piezometers are presented in Table 4.

It should be noted that, as part of the site hydrogeological investigation, a total of 27 piezometers were installed. Two (2) piezometers (DP-1 and DP-2) located at the northern part of the site within Cell 1 footprint were decommissioned and abandoned on October 3, 2003 by Ambient Technologies, Inc. (ATI) of St. Petersburg, Florida. Two (2) additional piezometers (DP-3 and DP-4) located within Cell 3 footprint were decommissioned and abandoned on January 16, 2006 by National Environmental Technology, Inc (NET) Drilling Services of Dover, Florida. For the development of Phases 2 and 3, six (6) of the Phase 1 groundwater monitoring wells (MW-14A, 14B, 14C, 15A, 15B, and 15C) and ten (10) additional piezometers (DP-5, DP-6, DP-7, DP-8, DP-9, DP-10, DP-11, DP-12, DP-13, and SZ-1) were decommissioned and abandoned on July 10 and 11, 2007 by NET Drilling Services.

5.2 Water level Contours

The water level contour map prepared from groundwater level measurements for the upper surficial aquifer zone (i.e., A-zone) is presented in Figure 1.

Historically, the direction of the horizontal component of groundwater flow for all three zones is predominantly east-northeast towards Bull Creek. However, the dewatering operation for the Bronson's borrow area has created a localized groundwater depression on the west side of the Phase 1 and 2 development areas. Groundwater flow along the western property boundary is predominantly west towards the dewatering area. The groundwater level elevation data collected from the remainder of the A-zone monitoring well network indicate the direction of the horizontal component of groundwater flow is predominantly east-northeast toward Bull Creek.

Comparison of water levels between the A, B and C wells shows a similar vertical gradient ($1E^{-3}$ ft/ft). These gradients are consistent with the regional gradient in the upper surficial

aquifer and indicate an interconnected, sluggish flow regime in the saturated zone above the Intermediate Confining Unit (ICU).

6 SURFACE WATER SAMPLING

6.1 Sampling Locations and Procedures

Two (2) surface water sampling locations established during the initial hydrogeological investigation were selected by FDEP for routine water quality monitoring. As stated in the Permit, surface water samples are only to be collected when there is flow in Bull Creek.

At the time of the 13th semi-annual water quality monitoring event, no flow was observed in Bull Creek at either the upstream monitoring station (SW-4) or the downstream monitoring location (SW-3). Since there was no flow, no surface water samples were collected as part of this 13th semi-annual event.

7 LEACHATE SAMPLING

7.1 Sampling Location and Procedures

In accordance with the permit requirements, a leachate sample is to be collected from each disposal cell on an annual basis. To date, Cells 1 through 6 have been constructed and have received waste. Therefore, leachate samples for this 13th semi-annual sampling event were collected from primary leachate sump risers for Cells 1 through 6 only. These leachate samples collected as part of the 13th semi-annual sampling event fulfills the leachate sampling requirement for the 2010 calendar year.

The leachate samples were collected from sampling ports that are connected to each of the primary leachate sump risers. An YSI 556 water quality meter was used to measure field parameters including temperature, pH, dissolved oxygen, conductivity, ORP, and turbidity. The leachate samples were collected in accordance with the applicable FDEP SOPs.

7.2 Sample Analyses

The leachate sample was analyzed by Columbia in accordance with the NELAC standards for total ammonia-N, total alkalinity (as CaCO₃), chlorides, nitrate, total dissolved solids (TDS), iron, mercury, sodium, BOD, COD and the 40 CFR, Part 258 Appendix II parameters. Other required parameters (i.e., pH; temperature; conductivity; turbidity; ORP and dissolved oxygen) were field measured during collection of the leachate samples.

7.3 Field Measurements and Analytical Results

Table 5 provides a summary of the field parameter values and field data measured for the leachate samples.

The analytical results for the leachate samples are presented on a CD in Appendix D. Analytical results have been summarized in Table 5 to show all parameters where a constituent concentration was reported above the method detection limit. No constituents tested exceeded the regulatory levels listed in 40 CFR Part 261.24. It should be noted that the leachate from the JED facility is removed from the site for treatment at the City of St. Cloud waste water treatment facility or re-circulated within the active disposal area.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Sampling Locations

The existing monitoring well network is adequate for monitoring purposes and no changes are recommended.

8.2 Sample Analyses

The detections of ammonia, iron, and arsenic above the GCTLs in specific groundwater monitoring wells have been discussed in detail in the 1st, 2nd, and 3rd Biennial Technical Reports on Water Quality (November 2006, September 2008, and November 2010). We believe that the iron, arsenic and ammonia are naturally occurring and are not related to landfill operations. Our recommendation is to continue to monitor these constituents as part of the current MPIS.

The detections of various VOCs in a significant number of the shallow (A-Zone) wells are noted. Initially, it was thought that the early detections and exceedances of benzene and vinyl chloride were attributable to storm water management issues in the vicinity of MW-9A; however, it appears that landfill gas migration may be influencing these shallow groundwater monitoring wells rather than storm water management issues. Note that the shallow groundwater wells are screened approximately two (2) feet up into the landfill perimeter berm, which is approximately two (2) feet higher than the original land surface prior to the development of the landfill. With this well screen within the constructed landfill perimeter berm, potential landfill gas migration within this berm could be influencing the groundwater within these wells. Omni is currently investigating landfill gas migration within the perimeter berm and outer dry retention storm water berms at the site and those findings may help determine if the shallow groundwater monitoring wells are being influenced by landfill gas.

Our recommendation is to continue semi-annual monitoring of these constituents as part of the current MPIS while this on-going gas migration investigation continues. As part of the landfill gas migration investigation, it may be beneficial to monitor select wells for the presence of landfill gas in the well headspace.

Tables

Table 1 (1 of 3)

**SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY**

Well Designation	Latitude (NAD 1983)	Longitude (NAD 1983)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet)	Total Depth (feet BTOC)	Screen Setting				Sand Pack (feet BTOC)	Fine-Grained Sand Seal (feet BTOC)
							(feet BTOC)		(feet Elevation)			
							Top	Bottom	Top	Bottom		
MW-1A	28 03 48.55	81 05 59.88	19900	9-Dec-03	95.1	23.0	13.0	23.0	82.1	72.1	10.6	8.2
MW-2A	28 03 51.99	81 05 59.90	19903	10-Dec-03	95.2	22.6	12.6	22.6	82.6	72.6	10.3	8.9
MW-3A	28 03 55.34	81 05 59.91	19906	11-Dec-03	94.6	22.8	12.8	22.8	81.9	71.9	10.4	9.0
MW-4A	28 03 58.97	81 05 59.92	19909	12-Dec-03	95.5	23.1	13.1	23.1	82.4	72.4	10.8	9.4
MW-5A	28 04 02.92	81 05 59.95	19912	24-Nov-03	95.3	22.5	12.5	22.5	82.8	72.8	10.1	9.1
MW-6A	28 04 06.50	81 05 59.15	19915	25-Nov-03	94.7	22.6	12.6	22.6	82.2	72.2	10.6	8.6
MW-7A	28 04 07.13	81 05 54.78	19918	26-Nov-03	95.5	23.3	13.3	23.3	82.2	72.2	10.3	9.3
MW-8A	28 04 06.20	81 05 50.64	19921	5-Dec-03	94.7	22.5	12.5	22.5	82.2	72.2	10.2	8.6
MW-9A	28 04 04.34	81 05 46.60	19924	4-Dec-03	94.7	22.4	12.4	22.4	82.3	72.3	10.0	8.6
MW-10A	28 04 00.07	81 05 44.77	19927	3-Dec-03	96.3	22.1	12.1	22.1	84.1	74.1	9.8	7.6
MW-11A	28 03 55.43	81 05 43.27	19930	3-Dec-03	93.6	22.8	12.8	22.8	80.7	70.7	10.5	9.1
MW-12A	28 03 52.08	81 05 43.26	19933	2-Dec-03	95.1	23.0	13.0	23.0	82.1	72.1	10.7	9.3
MW-13A	28 03 48.67	81 05 43.25	19936	8-Dec-03	95.2	22.5	12.5	22.5	82.7	72.7	10.2	7.7
MW-14A	Monitoring Well Abandoned 10 July 2007											
MW-15A	Monitoring Well Abandoned 10 July 2007											
MW-16A	28 03 44.55	81 05 40.22	22342	21-Sep-07	88.69	18.63	8.1	18.1	80.6	70.6	6.1	5.1
MW-17A	28 03 42.38	81 05 35.42	22345	22-Sep-07	88.86	19.88	9.4	19.4	79.5	69.5	7.4	6.4
MW-18A	28 03 37.21	81 05 35.16	22348	11-Sep-07	87.56	17.70	7.2	17.2	80.4	70.4	5.2	4.2
MW-19A	28 03 33.40	81 05 39.60	22351	11-Sep-07	87.54	17.65	7.2	17.2	80.4	70.4	5.2	4.2
MW-20A	28 03 31.82	81 05 45.45	22354	19-Sep-07	87.12	17.93	7.4	17.4	79.7	69.7	5.4	4.4
MW-21A	28 03 32.10	81 05 52.48	22357	14-Sep-07	87.20	18.04	7.5	17.5	79.7	69.7	5.5	4.5
MW-22A	28 03 32.35	81 05 59.48	22360	14-Sep-07	87.71	18.00	7.5	17.5	80.2	70.2	5.5	4.5
MW-23A	28 03 42.41	81 05 59.79	22363	25-Sep-07	97.90	27.75	17.3	27.3	80.7	70.7	15.3	14.3

Table 1 (2 of 3)

**SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY**

Well Designation	Latitude (NAD 1983)	Longitude (NAD 1983)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet)	Total Depth (feet BTOC)	Screen Setting				Sand Pack (feet BTOC)	Fine-Grained Sand Seal (feet BTOC)
							(feet BTOC)		(feet Elevation)			
							Top	Bottom	Top	Bottom		
MW-1B	28 03 48.59	81 05 59.89	19901	9-Dec-03	95.0	47.9	37.9	47.9	57.1	47.1	35.6	33.1
MW-2B	28 03 51.94	81 05 59.90	19904	10-Dec-03	95.2	48.3	38.3	48.3	56.9	46.9	36.0	34.6
MW-3B	28 03 55.31	81 05 59.91	19907	11-Dec-03	94.7	47.6	37.6	47.6	57.1	47.1	35.3	33.9
MW-4B	28 03 59.01	81 05 59.92	19910	12-Dec-03	95.2	47.4	37.4	47.4	57.8	47.8	35.1	33.5
MW-5B	28 04 02.88	81 05 59.95	19913	24-Nov-03	95.3	47.1	37.1	47.1	58.2	48.2	34.4	32.7
MW-6B	28 04 06.48	81 05 59.18	19916	25-Nov-03	94.6	47.4	37.4	47.4	57.2	47.2	34.9	33.5
MW-7B	28 04 07.13	81 05 54.81	19919	26-Nov-03	95.3	47.5	37.5	47.5	57.8	47.8	34.5	33.5
MW-8B	28 04 06.19	81 05 50.60	19922	5-Dec-03	94.6	49.6	39.6	49.6	55.0	45.0	37.1	35.6
MW-9B	28 04 04.31	81 05 46.56	19925	4-Dec-03	94.6	49.1	39.1	49.1	55.5	45.5	36.8	35.3
MW-10B	28 04 00.04	81 05 44.75	19928	3-Dec-03	96.2	48.3	38.3	48.3	58.0	48.0	35.9	33.9
MW-11B	28 03 55.40	81 05 43.27	19931	2-Dec-03	93.6	47.9	37.9	47.9	55.7	45.7	35.5	34.0
MW-12B	28 03 52.05	81 05 43.27	19934	1-Dec-03	95.0	49.0	39.0	49.0	56.1	46.1	36.6	35.1
MW-13B	28 03 48.64	81 05 43.24	19937	8-Dec-03	95.1	47.2	37.2	47.2	58.0	48.0	34.8	33.4
MW-14B	Monitoring Well Abandoned 10 July 2007											
MW-15B	Monitoring Well Abandoned 10 July 2007											
MW-16B	28 03 44.52	81 05 40.17	22343	21-Sep-07	88.73	38.09	27.6	37.6	61.1	51.1	25.6	24.6
MW-17B	28 03 42.35	81 05 35.36	22346	20-Sep-07	88.79	40.18	29.7	39.7	59.1	49.1	27.7	26.7
MW-18B	28 03 37.16	81 05 35.19	22349	11-Sep-07	87.43	37.80	27.3	37.3	60.1	50.1	25.3	24.3
MW-19B	28 03 33.38	81 05 39.66	22352	11-Sep-07	87.64	37.73	27.2	37.2	60.4	50.4	25.2	24.2
MW-20B	28 03 31.82	81 05 45.51	22355	19-Sep-07	87.27	37.76	27.3	37.3	60.0	50.0	25.3	24.3
MW-21B	28 03 32.09	81 05 52.55	22358	17-Sep-07	87.23	37.63	27.1	37.1	60.1	50.1	25.1	24.1
MW-22B	28 03 32.36	81 05 59.54	22361	14-Sep-07	87.69	37.96	27.5	37.5	60.2	50.2	25.5	24.5
MW-23B	28 03 42.46	81 05 59.79	22364	25-Sep-07	97.91	42.75	32.3	42.3	65.7	55.7	30.3	29.3

Table 1 (3 of 3)

**SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY**

Well Designation	Latitude (NAD 1983)	Longitude (NAD 1983)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet)	Total Depth (feet BTOC)	Screen Setting				Sand Pack (feet BTOC)	Fine-Grained Sand Seal (feet BTOC)
							(feet BTOC)		(feet Elevation)			
							Top	Bottom	Top	Bottom		
MW-1C	28 03 48.63	81 05 59.88	19902	9-Dec-03	95.2	75.2	65.2	75.2	30.0	20.0	62.9	61.4
MW-2C	28 03 51.90	81 05 59.89	19905	10-Dec-03	95.3	68.4	58.4	68.4	36.9	26.9	56.1	53.7
MW-3C	28 03 55.28	81 05 59.91	19908	11-Dec-03	94.7	68.7	58.7	68.7	36.0	26.0	56.3	54.8
MW-4C	28 03 59.04	81 05 59.92	19911	12-Dec-03	95.4	72.5	62.5	72.5	32.9	22.9	61.2	59.6
MW-5C	28 04 02.83	81 05 59.95	19914	24-Nov-03	95.4	73.0	63.0	73.0	32.4	22.4	60.7	58.7
MW-6C	28 04 06.46	81 05 59.22	19917	25-Nov-03	94.6	73.2	63.2	73.2	31.4	21.4	60.2	57.7
MW-7C	28 04 07.13	81 05 54.86	19920	25-Nov-03	94.9	73.3	63.3	73.3	31.6	21.6	60.3	59.3
MW-8C	28 04 06.17	81 05 50.55	19923	5-Dec-03	94.5	73.9	63.9	73.9	30.6	20.6	61.6	59.8
MW-9C	28 04 04.29	81 05 46.53	19926	4-Dec-03	94.5	73.8	63.8	73.8	30.8	20.8	61.4	59.4
MW-10C	28 04 00.01	81 05 44.74	19929	3-Dec-03	96.4	73.7	63.7	73.7	32.7	22.7	61.4	60.0
MW-11C	28 03 55.36	81 05 43.26	19932	2-Dec-03	93.7	73.4	63.4	73.4	30.3	20.3	61.0	59.6
MW-12C	28 03 52.01	81 05 43.26	19935	1-Dec-03	95.1	73.6	63.6	73.6	31.5	21.5	60.2	58.7
MW-13C	28 03 48.60	81 05 43.25	19938	8-Dec-03	95.0	73.0	63.0	73.0	32.1	22.1	60.7	58.2
MW-14C	Monitoring Well Abandoned 10 July 2007											
MW-15C	Monitoring Well Abandoned 10 July 2007											
MW-16C	28 03 44.50	81 05 40.11	22344	21-Sep-07	88.8	67.7	57.2	67.2	31.6	21.6	55.2	54.2
MW-17C	28 03 42.31	81 05 35.31	22347	20-Sep-07	88.9	67.3	56.8	66.8	32.0	22.0	54.8	53.8
MW-18C	28 03 37.10	81 05 35.22	22350	12-Sep-07	87.4	67.2	56.7	66.7	30.8	20.8	54.7	53.7
MW-19C	28 03 33.37	81 05 39.72	22353	10-Sep-07	87.4	66.7	56.2	66.2	31.2	21.2	54.2	53.2
MW-20C	28 03 31.82	81 05 45.57	22356	18-Sep-07	87.4	66.8	56.3	66.3	31.1	21.1	54.3	53.3
MW-21C	28 03 32.10	81 05 52.61	22359	17-Sep-07	87.1	62.6	52.1	62.1	35.1	25.1	50.1	49.1
MW-22C	28 03 32.36	81 05 59.60	22362	13-Sep-07	87.6	67.3	56.8	66.8	30.8	20.8	54.8	53.8
MW-23C	28 03 42.51	81 05 59.80	22365	24-Sep-07	97.9	67.1	56.6	66.6	41.4	31.4	54.6	53.6

Table 2

**SUMMARY OF FINAL FIELD PARAMETER RESULTS AND FIELD DATA
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY**

Monitoring Well	Temperature (°C) ¹	pH (Standard Units)	Specific Conductance (uS/cm) ²	Turbidity (NTUs) ³	Oxidation-Reduction Potential (mV) ⁴	DO (mg/L) ⁵	Purging Method
MW-1A	23.5	4.76	188	0.6	-76.9	0.57	Peristaltic Pump
MW-2A	21.52	4.75	181	0.8	-78.9	0.75	Peristaltic Pump
MW-3A	28.32	4.9	559	0.5	-76.3	0.58	Peristaltic Pump
MW-4A	25.22	4.8	302	0.6	-50.4	0.86	Peristaltic Pump
MW-5A	25.0	3.91	391	1.6	-54.0	0.59	Peristaltic Pump
MW-6A	27.6	4.8	362	0.4	-61.7	0.53	Peristaltic Pump
MW-7A	25.93	4.94	200	0.3	-74.3	0.37	Peristaltic Pump
MW-8A	25.35	4.36	396	1.1	-20.1	0.54	Peristaltic Pump
MW-9A	26.1	4.92	225	9.6	-1.5	0.39	Peristaltic Pump
MW-10A	26.01	4.97	143	12.3	-15.7	0.5	Peristaltic Pump
MW-11A	27.35	5.26	371	4.0	-65.4	0.55	Peristaltic Pump
MW-12A	27.27	4.39	152	0.7	-7.7	0.51	Peristaltic Pump
MW-13A	25.56	5.25	150	3.8	-28.9	0.45	Peristaltic Pump
MW-16A	27.32	4.87	55	3.4	-76.0	0.5	Peristaltic Pump
MW-19A	27.04	6.01	724	38.6	-116.6	0.44	Peristaltic Pump
MW-23A	25.73	5.34	259	45	-72.6	0.71	Peristaltic Pump
MW-1C	24.13	5.43	82	6.5	-45.0	0.46	Peristaltic Pump
MW-2C	22.48	4.9	45	0.8	-12.4	0.39	Peristaltic Pump
MW-3C	26.24	5.27	76	1.5	-6.9	0.35	Peristaltic Pump
MW-4C	24.62	5.64	117	16.8	-75.1	0.18	Submersible Pump
MW-5C	23.61	5.06	82	0.9	-34.4	0.28	Peristaltic Pump
MW-6C	25.52	4.94	51	3.4	-29.1	0.35	Peristaltic Pump
MW-7C	24.9	5.25	75	1.7	-1.4	0.35	Peristaltic Pump
MW-8C	24.59	4.91	68	1.2	-19.1	0.45	Peristaltic Pump
MW-9C	25.3	5.58	133	3.9	-60.4	0.22	Peristaltic Pump
MW-10C	24.93	5.05	66	6.6	9.2	0.3	Peristaltic Pump
MW-11C	25.98	5.27	118	0.6	-27.0	0.53	Peristaltic Pump
MW-12C	25.72	4.9	57	1.0	7.0	0.61	Peristaltic Pump
MW-13C	24.37	4.91	70	3.1	-14.3	0.41	Peristaltic Pump
MW-16C	25.73	5.08	117	2.4	-62.8	0.4	Submersible Pump
MW-19C	25.6	5.4	119	46.5	-117.3	0.15	Submersible Pump
MW-23C	24.15	5.65	108	16.7	-34.7	0.21	Submersible Pump
MW-16B	24.86	4.91	61	17.3	-128.0	0.27	Submersible Pump

Notes:

¹ °C = degrees Celsius² uS/cm = micro Siemens per centimeter³ NTU = Nephelometric Turbidity Units⁴ mV = millivolts⁵ mg/L = milligram per liter

Table 3

**SUMMARY OF GROUNDWATER ANALYTICAL DATA
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY**

Well ID	Acetone	Vinyl Chloride	Cis-1,2 Dichloroethene	1,1-Dichloroethene	1,4-Dichlorobenzene	1,2-Dichloropropane	Benzene	Ethylbenzene	Toluene	EDC	Total Xylenes	Arsenic	Iron	Ammonia	TDS
	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (mg/L)	GCTL (mg/L)
	6,300	1	70	7	75	5	1	30	40	3	20	10	300	2.8	500
MW-1A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	6.1	6.44	1.54	<0.18	8.25	1.95	3,110	4.72	80
MW-1C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	420	0.073	48
MW-2A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	0.63	15,000	1.65	80
MW-2C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	490	0.088	24
MW-3A	<5.6	<0.22	<0.36	<0.16	1.18	<0.12	6.65	4.01	<0.19	<0.18	1.47	.45 i	16,900	7.23	245
MW-3C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	850	0.086	37
MW-4A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	.63 i	<0.18	<0.41	0.82	1,120	12.7	121
MW-4C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	720	0.118	70
MW-5A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	0.54	1150	5.81	242
MW-5C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	950	0.097	44
MW-6A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	0.94 i	<0.21	<0.19	<0.18	<0.41	0.83	16,900	3.24	115
MW-6C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	770	0.134	47
MW-7A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	1.31	9,140	4.51	80
MW-7C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	720	0.088	48
MW-8A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	1.3	<0.21	<0.19	<0.18	<0.41	0.54	3,650	6.5	165
MW-8C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	970	0.129	44
MW-9A	<5.6	1.45	1.26	<0.16	1.58	<0.12	11.5	1.69	1.31	<0.18	10.78	1.69	1,050	13.2	159
MW-9C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	670	0.226	83
MW-10A	<5.6	<0.22	.85 i	<0.16	<0.1	<0.12	2.74	<0.21	<0.19	<0.18	1.13 i	1.53	620	7.19	93
MW-10C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	840	0.118	42
MW-11A	<5.6	1.38	1.15	<0.16	<0.1	0.5 i	5.65	<0.21	0.3 i	<0.18	0.32 i	11.2	13,700	6.71	232
MW-11C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	510	0.098	63
MW-12A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	2.19	<0.21	<0.19	<0.18	<0.41	1.6	1,950	0.343	69
MW-12C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	620	0.094	27
MW-13A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	1.31	<0.21	<0.19	<0.18	<0.41	19.7	16,400	1.26	95
MW-13C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	540	0.111	32
MW-16A	13.4 i	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	1,150	0.084	39
MW-16B	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	1,010	0.153	34
MW-16C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	1.15	1.49	<0.18	<0.41	<0.4	840	0.122	65
MW-19A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	7.69	11,600	21.6	972
MW-19C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	1,090	0.113	79
MW-23A	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	1.31	2,120	9.9	214
MW-23C	<5.6	<0.22	<0.36	<0.16	<0.1	<0.12	<0.21	<0.21	<0.19	<0.18	<0.41	<0.4	560	0.134	66

Estimated value - reported between MDL and MRL

Detect

Exceeds GCTL

Table 4

(1 of 3)

GROUNDWATER LEVEL MEASUREMENTS
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility				Sampling Personnel: Joe Terry		
Location: Osceola County, Florida				Field Conditions: clear, ~77°F		
Date: 1-Nov-2010						
Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
DP-1						Piezometer Abandoned 03 October 2003
DP-2						Piezometer Abandoned 03 October 2003
DP-3						Piezometer Abandoned 16 January 2006
DP-4						Piezometer Abandoned 16 January 2006
DP-5						Piezometer Abandoned 10 July 2007
DP-6						Piezometer Abandoned 10 July 2007
DP-7						Piezometer Abandoned 10 July 2007
DP-8						Piezometer Abandoned 10 July 2007
DP-9						Piezometer Abandoned 10 July 2007
DP-10						Piezometer Abandoned 10 July 2007
DP-11						Piezometer Abandoned 10 July 2007
DP-12						Piezometer Abandoned 10 July 2007
DP-13						Piezometer Abandoned 11 July 2007
DP-14	9:12	82.0	6.23	18.6	75.74	
DP-15	9:12	82.0	6.22	53.7	75.76	protective casing lid broken
DP-16	8:54	82.6	5.99	18.5	76.58	protective casing hinge rusted
DP-17	8:54	82.6	6.04	53.7	76.54	protective casing hinge rusted
DP-18	10:27	84.4	6.37	52.9	78.01	protective casing rusted, lid broken
DP-19	10:27	84.3	6.30	18.4	78.04	protective casing lid broken
DP-20	11:00	83.1	5.89	18.4	77.18	protective casing lid broken
DP-21	11:00	83.0	5.84	53.7	77.16	
DP-22	9:06	81.0	5.76	18.6	75.24	protective casing lid broken
DP-23	9:06	81.3	5.47	53.8	75.80	
DP-24	8:57	82.2	5.96	18.6	76.26	protective casing lid broken
SZ-1						Piezometer Abandoned 10 July 2007
SZ-2	11:00	83.2	6.67	75.4	76.49	protective casing lid broken
SZ-3	9:05	81.3	5.62	78.9	75.65	protective casing lid broken
MW-1A	12:50	95.1	18.40	23.0	76.72	
MW-1B	12:50	95.0	18.27	47.9	76.73	
MW-1C	12:50	95.2	18.46	74.4	76.72	
MW-2A	12:45	95.2	18.78	22.6	76.43	
MW-2B	12:45	95.2	18.75	48.1	76.42	
MW-2C	12:45	95.3	18.91	68.4	76.41	
MW-3A	12:40	94.6	18.40	22.8	76.24	
MW-3B	12:40	94.7	18.42	47.7	76.26	
MW-3C	12:40	94.7	18.41	68.8	76.25	

Table 4

(2 of 3)

GROUNDWATER LEVEL MEASUREMENTS
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility				Sampling Personnel: Joe Terry		
Location: Osceola County, Florida				Field Conditions: clear, ~77°F		
Date: 1-Nov-2010						
Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
MW-4A	12:35	95.5	19.12	23.1	76.36	
MW-4B	12:35	95.2	18.83	47.4	76.35	
MW-4C	12:35	95.4	19.00	72.6	76.39	
MW-5A	12:30	95.3	17.97	22.5	77.35	
MW-5B	12:30	95.3	18.58	47.1	76.72	
MW-5C	12:30	95.4	18.82	73.0	76.57	
MW-6A	12:24	94.7	18.01	22.6	76.71	
MW-6B	12:24	94.6	17.88	47.5	76.72	
MW-6C	12:24	94.6	18.00	73.1	76.58	
MW-7A	12:18	95.5	18.65	23.3	76.83	
MW-7B	12:18	95.3	18.44	48.0	76.83	
MW-7C	12:18	94.9	18.20	73.4	76.73	
MW-8A	12:13	94.7	17.80	22.5	76.87	
MW-8B	12:13	94.6	17.73	49.3	76.85	
MW-8C	12:13	94.5	17.78	73.8	76.72	
MW-9A	11:52	94.7	17.76	22.4	76.90	
MW-9B	11:52	94.6	17.76	49.1	76.87	
MW-9C	11:52	94.5	17.87	74.7	76.67	
MW-10A	11:46	96.3	19.35	22.1	76.90	
MW-10B	11:46	96.2	19.37	48.3	76.86	
MW-10C	11:46	96.4	19.65	74.9	76.71	
MW-11A	11:40	93.6	16.91	22.8	76.65	
MW-11B	11:40	93.6	16.98	47.9	76.61	
MW-11C	11:40	93.7	17.05	73.6	76.60	
MW-12A	11:35	95.1	18.25	23.0	76.85	
MW-12B	11:35	95.0	18.26	49.0	76.75	
MW-12C	11:35	95.1	18.39	73.6	76.71	
MW-13A	11:30	95.2	18.17	22.5	77.02	
MW-13B	11:30	95.1	18.10	47.3	77.02	
MW-13C	11:30	95.0	18.09	73.0	76.95	
MW-14A	Monitoring Well Abandoned 10 July 2007					
MW-14B	Monitoring Well Abandoned 10 July 2007					
MW-14C	Monitoring Well Abandoned 10 July 2007					
MW-15A	Monitoring Well Abandoned 10 July 2007					
MW-15B	Monitoring Well Abandoned 10 July 2007					
MW-15C	Monitoring Well Abandoned 10 July 2007					

Table 4

(3 of 3)

GROUNDWATER LEVEL MEASUREMENTS
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility				Sampling Personnel: Joe Terry		
Location: Osceola County, Florida				Field Conditions: clear, ~77°F		
Date: 1-Nov-2010						
Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
MW-16A	9:38	88.69	10.52	18.63	78.17	
MW-16B	9:37	88.73	11.59	38.09	77.14	
MW-16C	9:38	88.77	11.76	67.65	77.01	
MW-17A	9:26	88.86	11.81	19.88	77.05	
MW-17B	9:26	88.79	11.95	40.18	76.84	
MW-17C	9:26	88.85	12.08	67.33	76.77	
MW-18A	11:22	87.56	10.58	17.70	76.98	
MW-18B	11:22	87.43	10.48	37.80	76.95	
MW-18C	11:22	87.42	10.51	67.15	76.91	
MW-19A	11:15	87.54	10.34	17.65	77.20	
MW-19B	11:15	87.64	10.42	37.73	77.22	
MW-19C	11:15	87.44	10.28	66.70	77.16	
MW-20A	10:50	87.12	9.50	17.93	77.62	
MW-20B	10:50	87.27	9.70	37.76	77.57	
MW-20C	10:50	87.35	9.84	66.75	77.51	
MW-21A	10:40	87.20	9.43	18.04	77.77	
MW-21B	10:40	87.23	9.45	37.63	77.78	
MW-21C	10:40	87.13	9.34	62.57	77.79	
MW-22A	10:32	87.71	9.87	18.00	77.84	
MW-22B	10:32	87.69	9.78	37.96	77.91	
MW-22C	10:32	87.55	10.07	67.25	77.48	
MW-23A	12:55	97.90	20.57	27.75	77.33	
MW-23B	12:55	97.91	20.57	42.75	77.34	
MW-23C	12:55	97.93	20.62	67.05	77.31	

Table 5

SUMMARY OF FIELD MEASUREMENTS AND ANALYTICAL RESULTS FOR LEACHATE SAMPLES
13th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

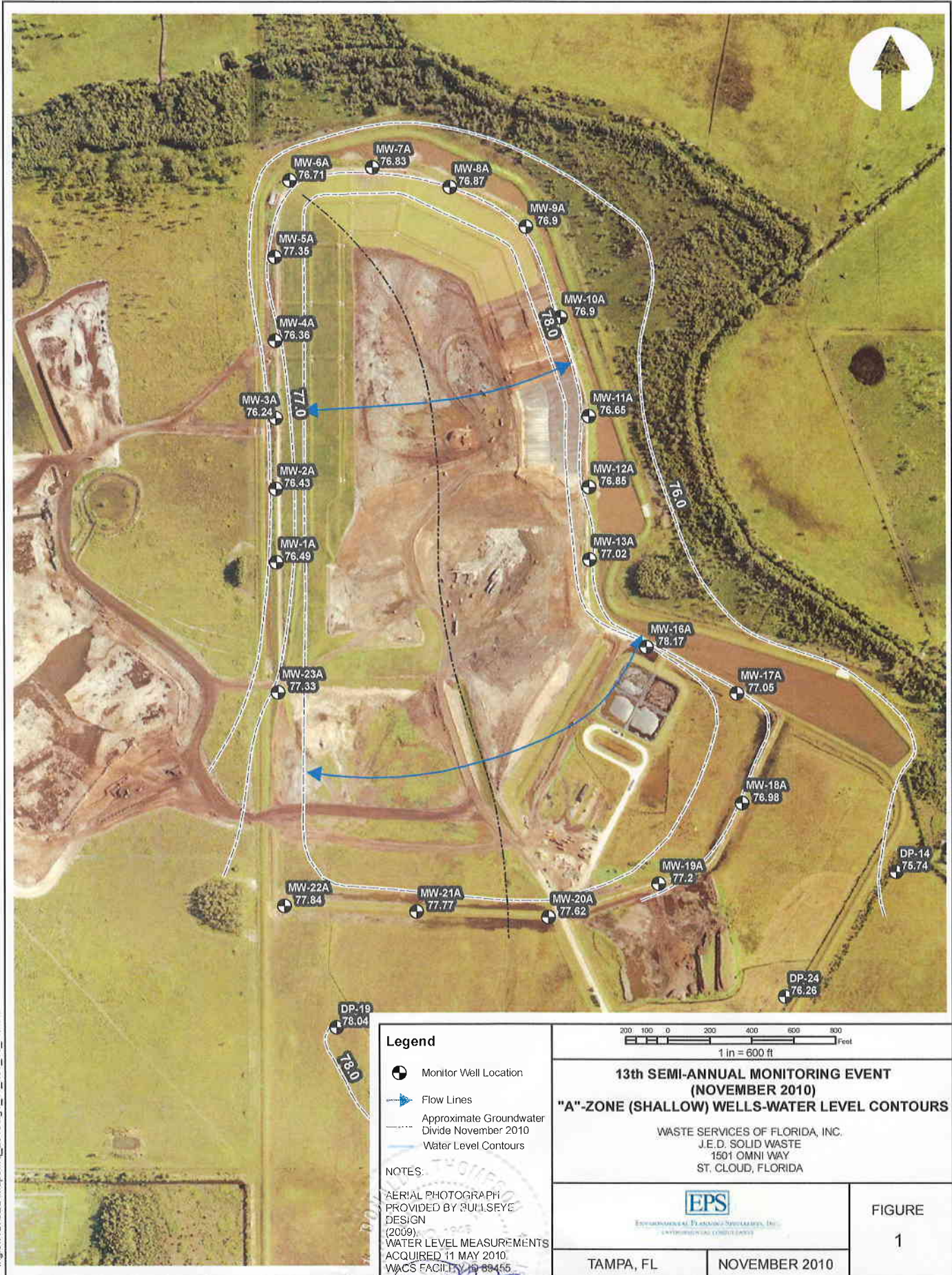
Parameter	Units	Regulatory Level ¹	L-1 Nov-10	L-2 Nov-10	L-3 Nov-10	L-4 Nov-10	L-5 Nov-10	L-6 Nov-10
FIELD MEASUREMENTS								
Temperature	°C		30.74	32.09	27.53	37.77	33.68	30.52
pH	Std Units		7.13	6.77	6.97	7.31	7.02	7.39
Conductivity	mS/cm		23.96	15.98	16.93	19.45	16.39	16.87
Turbidity	NTU ⁵		3.4	0.8	6.2	6	8.5	2.10
ORP ⁶	mV		-146.9	-42.4	-203.6	-65.4	-42.2	-56.90
Dissolved Oxygen	mg/L ⁸		1.28	2.6	0.48	0.33	3.02	5.37
ANALYTICAL RESULTS								
Biological Oxygen Demand (BOD)	mg/L		167	507	133	490	124	119
Chemical Oxygen Demand (COD)	mg/L		7,490	7,010	8,350	9,090	5,490	6,430
Ammonia-N	mg/L		1,090	816	798	1,150	696	904
Nitrate as N	mg/L		3.7	BDL ²	BDL	3.2	BDL	BDL
1,4-Dichlorobenzene	µg/L ⁹		10	14	13.6	6.5 i	9.2 i	5.6 i
2,4-Dimethylphenol	µg/L		11 i	BDL	BDL	BDL	BDL	BDL
2-Butanone (MEK)	µg/L	200,000	832	1,150	BDL	660	871	BDL
4-methyl-2-pentanone (MIBK)	µg/L		9.6 i	16 i	BDL	52.3 i	20.1 i	BDL
2-Methylphenol	µg/L		16 i	BDL	BDL	BDL	7.5 i	28 i
4-Methylphenol	µg/L		290	900	97	1,800	120	BDL
Acetone	µg/L		687	1,250	82.3 i	879	512	BDL
Antimony	µg/L		40 i	12 i	23	58	7 i	22
Arsenic	µg/L	5,000	138	200	43.5	178	56	73
Barium	µg/L	100,000	471	350	332	271	178	430
Benzene	µg/L	500	5.8 i	8.7 i	10.4	6.6 i	7.1 i	6.1 i
Benzyl alcohol	µg/L		BDL	BDL	BDL	150 i	BDL	BDL
Beryllium	µg/L		2.9 i	3.2 i	1.3 i	2.5 i	1.7 i	1.6 i
Cadmium	µg/L	1,000	1.7 i	BDL	1.7 i	BDL	BDL	4.3
Chloride	mg/L		4,470	2,970	3,180	2,490	2,770	2,740
Chromium	µg/L	5,000	545	515	363	548	262	467
Cobalt	µg/L		37	13	33	33	30	29
Copper	µg/L		57	13	13	57	12	30
Cyanide, Total	µg/L		33	30	33	36	40	25
Ethylbenzene	µg/L		37.3	39.7	51.2	32.2	50.8	29.9
Iron	µg/L		6,770	2,580	4,550	4,110	3,680	3030
Isobutyl Alcohol	µg/L		BDL	BDL	BDL	927 i	BDL	BDL
Lead	µg/L	5,000	31	11	11.9	23	6 i	26.9
m&p-Xylenes	µg/L		38.1	43.5	56.5	40.1	76.2	47.7
Naphthalene	µg/L		7.2 i	17.1 i	BDL	16.6 i	9.2 i	BDL
Nickel	µg/L		596	132	250	197	224	298
N-Nitrosodi-n-propylamine	µg/L		BDL	310	BDL	BDL	42 i	BDL
o-Xylene	µg/L		18.3	25.3	26	22.4	35.3	22.2
Phenol	µg/L		220	980	7.5 i	1,100	65	BDL
Selenium	µg/L	1,000	120	87	83	113	56	140
Sodium	mg/L		2,430	1,410	1,880	1,440	1,550	1,610
Sulfide	mg/L		24 i	22 i	18 i	24 i	22 i	8 i
Tin	µg/L		15 i	10 i	8 i	28 i	BDL	8 i
Toluene	µg/L		6.7 i	29.3	21	29.5	35.6	51.5
Total Dissolved Solids (TDS)	mg/L		14,700	10,400	11,600	11,000	9,280	11,200
Vanadium	µg/L		514	753	606	571	419	807
Zinc	µg/L		114	34	67	290	58	73

Notes:

- Maximum concentration of contaminants for the toxicity characteristic listed in 40 CFR 261.24.
- BDL = Below method detection limit.
- °C = degrees Celsius
- mS/cm = milli Siemens per centimeter
- NTU = Nephelometric Turbidity Units
- ORP = Oxidation-Reduction Potential
- mV = millivolts
- mg/L = milligram per liter
- µg/L = microgram per liter
- i = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

Figures

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Appendix A

Water Quality Monitoring Certification
FDEP Form 62-701.900(31)



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(31), F.A.C.
Form Title: Water Quality Monitoring Certification
Effective Date: January 6, 2010
Incorporated in Rule 62-701.510(9), F.A.C.

WATER QUALITY MONITORING CERTIFICATION

PART I GENERAL INFORMATION

- (1) Facility Name J.E.D. Solid Waste Management Facility
Address 1501 Omni Way
City Saint Cloud Zip 34773 County Osceola
Telephone Number (407) 891-3720
- (2) WACS Facility ID 89544
- (3) DEP Permit Number SO49-0199726-015
- (4) Authorized Representative's Name Mike Kaiser Title Engineer
Address 1501 Omni Way
City Saint Cloud Zip 34773 County Osceola
Telephone Number (407) 891-3720
Email address (if available) mkaiser@wsii.us

CERTIFICATION

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 submission of false information including the possibility of fine and imprisonment.

1/31/2011
(Date)

Mike Kaiser

(Owner or Authorized Representative's Signature)

PART II QUALITY ASSURANCE REQUIREMENTS

- Sampling Organization Environmental Planning Specialists, Inc. (EPS)
- Analytical Lab NELAC / HRS Certification # E82502
- Lab Name Columbia Analytical Services (CAS)
- Address 9143 Philips Highway, Suite 200 Jacksonville, Florida 32256
- Phone Number (904) 739-2277
- Email address (if available) _____

Appendix B

Field Sampling Logs (Monitoring Wells & Leachate)

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-1A		SAMPLE ID: MW-1A	
		DATE: 9 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) / SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 0940		SAMPLING ENDED AT: 0950	
PUMP OR TUBING DEPTH IN WELL (feet): 21				TUBING MATERIAL CODE: PE		FIELD-FILTERED: Y (N) Filtration Equipment Type:		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-1A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-1A	3	CG	40mL	None	None		8011		RFPP	<100
MW-1A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	200
MW-1A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	200
MW-1A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	200
REMARKS: Odor: none weather: clear, ~53°F, slightly breeze										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-1C	SAMPLE ID: MW-1C		DATE: 9 November 2010

PURGING DATA

WELL DIAMETER (inches): 2.0		TUBING DIAMETER (inches): 0.25		WELL SCREEN INTERVAL DEPTH: 65.2 feet to 75.2 feet		STATIC DEPTH TO WATER (feet): 19.48		PURGE PUMP TYPE OR BAILER: peristaltic			
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) <div style="text-align: right;">= (feet - feet) X 0.16 gallons/foot = gallons</div>											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) <div style="text-align: right;">= 0.0 gallons + (0.0026 gallons/foot X 77 feet) + 0.12 gallons = 0.32 gallons</div>											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 70			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 70			PURGING INITIATED AT: 0825		PURGING ENDED AT: 0900		TOTAL VOLUME PURGED (gallons): 1.75	
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) <u>µmhos/cm</u> or (µS/cm)	DISSOLVED OXYGEN (circle units) <u>mg/L or</u> % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0850	1.25	1.25	0.05	18.65	5.43	24.06	82	0.47	8.6	clear	-44.5
0855	0.25	1.50	0.05	18.65	5.43	24.12	82	0.48	6.9	clear	-43.2
0900	0.25	1.75	0.05	18.65	5.43	24.13	82	0.46	6.5	clear	-45.0
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 0905		SAMPLING ENDED AT: 0908	
PUMP OR TUBING DEPTH IN WELL (feet): 70				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N)		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-1C	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-1C	3	CG	40mL	None	None		8011		RFPP	<100
MW-1C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	200
MW-1C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	200
MW-1C	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	200
REMARKS: Odor: none 3 EV: 1.0 gal weather: clear, ~53°F, slightly breezy										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-2A	SAMPLE ID: MW-2A		DATE: 9 November 2010

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 0755		SAMPLING ENDED AT: 0809	
PUMP OR TUBING DEPTH IN WELL (feet): 21				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N)		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)							DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-2A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100	
MW-2A	3	CG	40mL	None	None		8011	RFPP	<100	
MW-2A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals	APP	180	
MW-2A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃	APP	180	
MW-2A	1	PE	250mL	None	None		TDS, Cl, NO ₃	APP	180	
REMARKS: Odor: Sulfur-like Weather: clear, ~48°F										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+ 0.2$ mg/L or $+ 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+ 5$ NTU or $+ 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-2C		SAMPLE ID: MW-2C	
		DATE: 9 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 0730		SAMPLING ENDED AT: 0740	
PUMP OR TUBING DEPTH IN WELL (feet): 64				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="radio"/> N		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> TUBING Y <input checked="" type="radio"/> (replaced)							DUPLICATE: Y <input checked="" type="radio"/>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-2C	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-2C	3	CG	40mL	None	None		8011		RFPP	<100
MW-2C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	200
MW-2C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	200
MW-2C	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	200
REMARKS: Odor: none 3EV: 1.0 gal weather: clear, 24.8°F										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009


Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-3A	SAMPLE ID: MW-3A	DATE: 8 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): 			SAMPLING INITIATED AT: 1430		SAMPLING ENDED AT: 1440	
PUMP OR TUBING DEPTH IN WELL (feet): 21				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="radio"/> N		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> N				TUBING Y <input checked="" type="radio"/> N (replaced)			DUPLICATE: Y <input checked="" type="radio"/> N			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
mw-3A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
mw-3A	3	CG	40mL	None	None		8011		RFPP	<100
mw-3A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	200
mw-3A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	200
mw-3A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	200
REMARKS: Odor: none weather: clear, ~68°F										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

PURGING DATA

SAMPLING DATA

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-4A	SAMPLE ID: MW-4A	DATE: 8 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <i>1230</i>		SAMPLING ENDED AT: <i>1238</i>	
PUMP OR TUBING DEPTH IN WELL (feet): <i>21</i>				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="radio"/> N		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> N TUBING Y <input checked="" type="radio"/> N (replaced)							DUPLICATE: Y <input checked="" type="radio"/> N			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
<i>MW-4A</i>	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100	
<i>MW-4A</i>	3	CG	40mL	None	None		8011	RFPP	<100	
<i>MW-4A</i>	1	PE	250mL	HNO ₃	Prefilled by lab		Metals	APP	<i>200</i>	
<i>MW-4A</i>	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃	APP	<i>200</i>	
<i>MW-4A</i>	1	PE	250mL	None	None		TDS, Cl, NO ₃	APP	<i>200</i>	
REMARKS: <i>Odor: none</i> <i>weather: clear, ~62°F</i>										
SAMPLE CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-4C		SAMPLE ID: MW-4C	
		DATE: 8 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SIGNATURE(S): <i>Joe Terry</i>			INITIATED AT: 1255		ENDED AT: 1302	
PUMP OR TUBING DEPTH IN WELL (feet): 68				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="radio"/> N		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP <input checked="" type="radio"/> N TUBING Y <input checked="" type="radio"/> (replaced)							DUPLICATE: Y <input checked="" type="radio"/> N			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
mw-4C	3	CG	40mL	HCL	Prefilled by lab		8260		ESP	<100
mw-4C	3	CG	40mL	None	None		8011		ESP	<100
mw-4C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		ESP	300
mw-4C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		ESP	300
mw-4C	1	PE	250mL	None	None		TDS, Cl, NO ₃		ESP	300
REMARKS: Initial turbidity: 14.2 NTU 3EV: 1.8 gal Odor: none weather: clear, ~62°F										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-5A	SAMPLE ID: MW-5A	DATE: 8 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLE DATE: 10/25/15 INITIATED AT: 1055		SAMPLED AT: 1104	
PUMP OR TUBING DEPTH IN WELL (feet): 20				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N) Filtration Equipment Type:		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)							DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-SA	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100	
MW-SA	3	CG	40mL	None	None		8011	RFPP	<100	
MW-SA	1	PE	250mL	HNO ₃	Prefilled by lab		Metals	APP	200	
MW-SA	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃	APP	200	
MW-SA	1	PE	250mL	None	None		TDS, Cl, NO ₃	APP	200	
REMARKS: odor: sulfur-like weather: clear, 156°F, slight breeze										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)**

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-5C		SAMPLE ID: MW-5C	
		DATE: 8 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1030		SAMPLING ENDED AT: 1037		
PUMP OR TUBING DEPTH IN WELL (feet): 68				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N)		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)							DUPLICATE: Y (N)				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE		SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
mw-5c	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP		<100
mw-5c	3	CG	40mL	None	None		8011		RFPP		<100
mw-5c	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP		250
mw-5c	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP		250
mw-5c	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP		250
REMARKS: Odor: none 3EV: 1.0gnd Weather: clear, ~56°F, slight breeze.											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-6A	SAMPLE ID: MW-6A	DATE: 3 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:				SAMPLER(S) SIGNATURE(S):			SAMPLING INITIATED AT:		SAMPLING ENDED AT:	
PUMP OR TUBING DEPTH IN WELL (feet):				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>				TUBING Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> (replaced)			DUPLICATE: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-6A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	
MW-6A	3	CG	40mL	None	None		8011		RFPP	
MW-6A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	
MW-6A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	
MW-6A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	
REMARKS:										
Weather: p. cloudy, ~78°F, sl. breeze. gw odor: sulfur-like										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-6C		SAMPLE ID: MW-6C	DATE: 3 November 2010

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.2 feet to 73.2 feet	STATIC DEPTH TO WATER (feet): 17.99	PURGE PUMP TYPE OR BAILER: peristaltic
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)				
$= (\quad \text{feet} - \quad \text{feet}) \times 0.16 \text{ gallons/foot} = \quad \text{gallons}$				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)				
$= 0.0 \text{ gallons} + (0.0026 \text{ gallons/foot} \times 75 \text{ feet}) + 0.12 \text{ gallons} = 0.32 \text{ gallons}$				
INITIAL PUMP OR TUBING	FINAL PUMP OR TUBING			

[illegible]

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

[illegible]

REMARKS: 3 EV: 1.0 gal

weather: p. cloudy, ~78°F, slight breeze

odor: none

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump;
RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-7A	SAMPLE ID: MW-7A	DATE: 3 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1250		SAMPLING ENDED AT: 1300		
PUMP OR TUBING DEPTH IN WELL (feet): 21				TUBING MATERIAL CODE: PE		FIELD-FILTERED: Y (N) Filtration Equipment Type:		FILTER SIZE: _____ µm			
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE		SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
MW-7A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP		<100
MW-7A	3	CG	40mL	None	None		8011		RFPP		<100
MW-7A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP		200
MW-7A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP		200
MW-7A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP		200
REMARKS: Odor, sulfur-like Weather: n-sunny, ~78°F											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+ 5$ NTU or $+ 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-7C	SAMPLE ID: MW-7C	DATE: 3 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:				SAMPLER(S) SIGNATURE(S):			SAMPLING INITIATED AT:		SAMPLING ENDED AT:		
Joe Terry / EPS				<i>Joe Terry</i>			1220		1230		
PUMP OR TUBING DEPTH IN WELL (feet): 68				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <u>N</u> Filtration Equipment Type:		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP Y <u>N</u>				TUBING Y <u>N</u> (replaced)			DUPLICATE: Y <u>N</u>				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
Mw-7C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100		
Mw-7C	3	CG	40mL	None	None		8011	RFPP	<100		
Mw-7C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals	APP	220		
Mw-7C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃	APP	220		
Mw-7C	1	PE	250mL	None	None		TDS, Cl, NO ₃	APP	220		
REMARKS: 3 EV: 1.0 gal weather: p. sunny, ~78°F odor: none											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-8A		SAMPLE ID: MW-8A	
		DATE: 3 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:				SAMPLER(S) SIGNATURE(S):			SAMPLING INITIATED AT:		SAMPLING ENDED AT:	
PUMP OR TUBING DEPTH IN WELL (feet):				TUBING MATERIAL CODE: PE		FIELD-FILTERED: Y (N)		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-BA	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-BA	3	CG	40mL	None	None		8011		RFPP	<100
MW-BA	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	200
MW-BA	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	200
MW-BA	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	200
REMARKS:										
weather: clear, ~74°F odor: slight sulfur-like										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: <i>MW-BC</i>	SAMPLE ID: <i>MW-BC</i>	DATE: <i>3</i> November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:				SAMPLER(S) / SIGNATURE(S):			SAMPLING INITIATED AT:		SAMPLING ENDED AT:	
PUMP OR TUBING DEPTH IN WELL (feet):				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> TUBING Y <input checked="" type="checkbox"/> (replaced)				DUPLICATE: Y <input checked="" type="checkbox"/>						
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
mw-bc	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	
mw-bc	3	CG	40mL	None	None		8011		RFPP	
mw-bc	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	
mw-bc	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	
mw-bc	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	
REMARKS: SEV: 1.0 gal										
weather: clear ~74°F				Odor: none						
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-9A		SAMPLE ID: MW-9A	
		DATE: 3 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <i>0835</i>		SAMPLING ENDED AT: <i>0844</i>	
PUMP OR TUBING DEPTH IN WELL (feet): <i>20</i>				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <i>(N)</i> Filtration Equipment Type:		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <i>(N)</i>				TUBING Y <i>(N)</i> (replaced)			DUPLICATE: Y <i>(N)</i>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
<i>MW-9A</i>	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
<i>MW-9A</i>	3	CG	40mL	None	None		8011		RFPP	<100
<i>MW-9A</i>	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	<i>200</i>
<i>MW-9A</i>	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	<i>200</i>
<i>MW-9A</i>	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	<i>200</i>
REMARKS: <i>Odor: none</i> <i>weather: clear, ~60°F</i>										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+ 5$ NTU or $+ 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-9C	SAMPLE ID: MW-9C	DATE: 3 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 0900		SAMPLING ENDED AT: 0910	
PUMP OR TUBING DEPTH IN WELL (feet): 69				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N) Filtration Equipment Type:		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-9C	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP <100	
MW-9C	3	CG	40mL	None	None		8011		RFPP <100	
MW-9C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP 220	
MW-9C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP 220	
MW-9C	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP 220	
REMARKS: 3 EV: 1.0 gal weather: clear, ~68°F odor: none										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-104		SAMPLE ID: MW-104	
		DATE: 2 November 2010	

PURGING DATA

PURGING DATA				
WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.1 feet to 22.1 feet	STATIC DEPTH TO WATER (feet): 19.30	PURGE PUMP TYPE OR BAILER: peristaltic
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)				
= (22.1 feet - 19.30 feet) X 0.16 gallons/foot = 0.45 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)				
= 0.0 gallons + (0.0026 gallons/foot X 19.30 feet) + 0.12 gallons = 0.13 gallons				

[illegible]

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1440		SAMPLING ENDED AT: 1450	
PUMP OR TUBING DEPTH IN WELL (feet): 21				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N) Filtration Equipment Type:		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-10A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-10A	3	CG	40mL	None	None		8011		RFPP	<100
MW-10A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	
MW-10A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	
MW-10A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	

REMARKS:

weather: overcast, $\sim 76^{\circ}\text{F}$, $\sim 5\text{ mph}$ breeze

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump;
RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-10C		SAMPLE ID: MW-10C	
		DATE: 2 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <u>1510</u>		SAMPLING ENDED AT: <u>1520</u>	
PUMP OR TUBING DEPTH IN WELL (feet): <u>69</u>				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <u>(N)</u> Filtration Equipment Type:		FILTER SIZE: _____ μ m	
FIELD DECONTAMINATION: PUMP Y <u>(N)</u> TUBING Y <u>(N)</u> (replaced)							DUPLICATE: Y <u>(N)</u>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-10C	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-10C	3	CG	40mL	None	None		8011		RFPP	<100
MW-10C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	225
MW-10C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	225
MW-10C	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	225
REMARKS: 3 EV! 1.0 gal Odor: none weather: overcast, ~76°F, ~5 mph breeze										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

PURGING DATA				
WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.8 feet to 22.8 feet	STATIC DEPTH TO WATER (feet): 16.90	PURGE PUMP TYPE OR BAILER: peristaltic

PURGING DATA

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1125	PURGING ENDED AT: 1222	TOTAL VOLUME PURGED (gallons): 2.05
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WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88									
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016									
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)									

SAMPLING DATA

PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y <u>N</u> Filtration Equipment Type:	FILTER SIZE: _____ μm
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SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	ANALYSIS AND/OR METHOD	EQUIPMENT CODE	FLOW RATE (mL per minute)
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REMARKS: odor: sulfur-like Collected in equipment blank w/ lab supplied $\text{NI H}_2\text{O}$ for same analysis as above
 temperature: ambient ~71°F collected w/ 100% sulfur with a gas syringe and a sample ID: FB-1 time: 1250

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: <i>mw-11C</i>	SAMPLE ID: <i>mw-11C</i>	DATE: <i>2</i> November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) / SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <i>1155</i>		SAMPLING ENDED AT: <i>1209</i>		
PUMP OR TUBING DEPTH IN WELL (feet): <i>69</i>				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <i>(N)</i> Filtration Equipment Type:		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP Y <i>(N)</i>				TUBING Y <i>(N)</i> (replaced)			DUPLICATE: Y <i>(N)</i>				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE		SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
<i>MW-11C</i>	<i>3</i>	<i>CG</i>	<i>40mL</i>	<i>HCL</i>	<i>Prefilled by lab</i>		<i>8260</i>		<i>RFPP</i>		<i><100</i>
<i>MW-11C</i>	<i>3</i>	<i>CG</i>	<i>40mL</i>	<i>None</i>	<i>None</i>		<i>8011</i>		<i>RFPP</i>		<i><100</i>
<i>MW-11C</i>	<i>1</i>	<i>PE</i>	<i>250mL</i>	<i>HNO₃</i>	<i>Prefilled by lab</i>		<i>Metals</i>		<i>APP</i>		<i>250</i>
<i>MW-11C</i>	<i>1</i>	<i>PE</i>	<i>125mL</i>	<i>H₂SO₄</i>	<i>Prefilled by lab</i>		<i>NH₃</i>		<i>APP</i>		<i>250</i>
<i>MW-11C</i>	<i>1</i>	<i>PE</i>	<i>250mL</i>	<i>None</i>	<i>None</i>		<i>TDS, Cl, NO₃</i>		<i>APP</i>		<i>250</i>
REMARKS: <i>3 EV: 1.0 gal</i> <i>Weather: overcast, ~76°F</i> <i>Odor: none</i>											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-12A	SAMPLE ID: MW-12A	DATE: 2 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <i>1030</i>		SAMPLING ENDED AT: <i>1030</i>	
PUMP OR TUBING DEPTH IN WELL (feet): <i>21</i>				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <i>(N)</i> Filtration Equipment Type:		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <i>(N)</i>				TUBING Y <i>(N)</i> (replaced)			DUPLICATE: Y <i>(N)</i>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			SAMPLE PUMP FLOW RATE (mL per minute)	
<i>MW-12A</i>	<i>3</i>	<i>CG</i>	<i>40mL</i>	<i>HCL</i>	<i>Prefilled by lab</i>		<i>8260</i>		<i>RFPP</i>	
<i>MW-12A</i>	<i>3</i>	<i>CG</i>	<i>40mL</i>	<i>None</i>	<i>None</i>		<i>8011</i>		<i>RFPP</i>	
<i>MW-12A</i>	<i>1</i>	<i>PE</i>	<i>250mL</i>	<i>HNO₃</i>	<i>Prefilled by lab</i>		<i>Metals</i>		<i>APP</i>	
<i>MW-12A</i>	<i>1</i>	<i>PE</i>	<i>125mL</i>	<i>H₂SO₄</i>	<i>Prefilled by lab</i>		<i>NH₃</i>		<i>APP</i>	
<i>MW-12A</i>	<i>1</i>	<i>PE</i>	<i>250mL</i>	<i>None</i>	<i>None</i>		<i>TDS, Cl, NO₃</i>		<i>APP</i>	
REMARKS: <i>weather: clear, ~70°F</i> <i>odor: none</i>										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

PURGING DATA

SAMPLING DATA

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

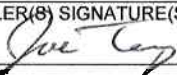
Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-13A	SAMPLE ID: MW-13A		DATE: 2 November 2010

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SIGNATURE(S): 			SAMPLING INITIATED AT: 0840		SAMPLING ENDED AT: 0846	
PUMP OR TUBING DEPTH IN WELL (feet): 20				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="radio"/> N <input type="radio"/>		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> N <input type="radio"/>				TUBING Y <input checked="" type="radio"/> N <input type="radio"/> (replaced)			DUPLICATE: Y <input checked="" type="radio"/> N <input type="radio"/>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-13A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP <100	
MW-13A	3	CG	40mL	None	None		8011		RFPP <100	
MW-13A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP 200	
MW-13A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP 200	
MW-13A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP 200	
REMARKS: weather: clear, ~68°F Odor: none										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** $\pm 0.2^{\circ}\text{C}$ **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-13C	SAMPLE ID: MW-13C	DATE: 2 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLE(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 0815		SAMPLING ENDED AT: 0820	
PUMP OR TUBING DEPTH IN WELL (feet): 60				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N)		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-13C	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-13C	3	CG	40mL	None	None		8011		RFPP	<100
MW-13C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	250
MW-13C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	250
MW-13C	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	250
REMARKS: 3 EV: 1.0 gal weather: clear, ~60% Odor: none										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-16A	SAMPLE ID: MW-16A		DATE: 1 November 2010

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1425		SAMPLING ENDED AT: 1432	
PUMP OR TUBING DEPTH IN WELL (feet): 15				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <u>N</u> Filtration Equipment Type:		FILTER SIZE: _____ µm	
FIELD DECONTAMINATION: PUMP Y <u>N</u> TUBING Y <u>N</u> (replaced)							DUPLICATE: Y <u>N</u>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-16A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	<100
MW-16A	3	CG	40mL	None	None		8011		RFPP	<100
MW-16A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	300
MW-16A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	300
MW-16A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	300
REMARKS: Initial turbidity: 5.5 NTU Weather: m. sunny, ~90°F. Odor: slight sulfur-like										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

PURGING DATA

SCREEN INTERVAL

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SIGNATURE(S):

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-16C	SAMPLE ID: MW-16C	DATE: 7 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <i>1450</i>		SAMPLING ENDED AT: <i>1457</i>	
PUMP OR TUBING DEPTH IN WELL (feet): <i>63</i>				TUBING MATERIAL CODE: PE		FIELD-FILTERED: Y <i>(N)</i>		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP Y <i>(N)</i>				TUBING Y <i>(N)</i> (replaced)			DUPLICATE: Y <i>(N)</i>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-16C	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	
MW-16C	3	CG	40mL	None	None		8011		RFPP	
MW-16C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	
MW-16C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	
MW-16C	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	
REMARKS: initial turbidity; 2.1 NTU weather: a. sunny, ~90°F Odor: none 3 Equip. Vol: 1.0 gal										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-19A	SAMPLE ID: MW-19A	DATE: 9 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1425		SAMPLING ENDED AT: 1438	
PUMP OR TUBING DEPTH IN WELL (feet): 14				TUBING MATERIAL CODE: PE		FIELD-FILTERED: (Y) N		FILTER SIZE: 1 µm		
FIELD DECONTAMINATION: PUMP Y (N)				TUBING Y (N) (replaced)			DUPLICATE: Y (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-19A	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP <100	
MW-19A	3	CG	40mL	None	None		8011		RFPP <100	
MW-19A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP 375	
MW-19A	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP 375	
MW-19A	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP 375	
MW-19A	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP 375	
REMARKS: initial turbidity: 36 NTU. odor: none weather: clear, 74°F, slight breeze Turbidity after filter: 30 NTU										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-19C	SAMPLE ID: MW-19C	DATE: 9 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1500		SAMPLING ENDED AT: 1510	
PUMP OR TUBING DEPTH IN WELL (feet): 62				TUBING MATERIAL CODE: PE		FIELD-FILTERED: <input checked="" type="radio"/> Y <input type="radio"/> N Filtration Equipment Type: metals only		FILTER SIZE: 1 µm		
FIELD DECONTAMINATION: PUMP <input checked="" type="radio"/> Y <input type="radio"/> N				TUBING Y <input checked="" type="radio"/> N (replaced)			DUPLICATE: Y <input checked="" type="radio"/> N <input type="radio"/>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-19C	3	CG	40mL	HCL	Prefilled by lab		8260		ESP	
MW-19C	3	CG	40mL	None	None		8011		ESP	
MW-19C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		ESP	
MW-19C	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		ESP	
MW-19C	1	PE	250mL	None	None		TDS, Cl, NO ₃		ESP	
MW-19C	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		ESP	
REMARKS: initial turbidity: 123 NTU. 3 EV: 1.8 gal weather: clear, ~74°F, slight breeze Odor: none turbidity after filter: 1.0 NTU										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPF = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings < 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-23A	SAMPLE ID: MW-23A	DATE: 9 November 2010	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: <i>1235</i>		SAMPLING ENDED AT: <i>1249</i>	
PUMP OR TUBING DEPTH IN WELL (feet): <i>24</i>				TUBING MATERIAL CODE: PE		FIELD-FILTERED: <input checked="" type="radio"/> Y <input type="radio"/> N Filtration Equipment Type: <i>for metals only</i>		FILTER SIZE: <i>1</i> μ m		
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> (N)				TUBING Y <input checked="" type="radio"/> (replaced)			DUPLICATE: Y <input checked="" type="radio"/> (N)			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
<i>MW-23A</i>	3	CG	40mL	HCL	Prefilled by lab		8260		RFPP	
<i>MW-23A</i>	3	CG	40mL	None	None		8011		RFPP	
<i>MW-23A</i>	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		APP	
<i>MW-23A</i>	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		APP	
<i>MW-23A</i>	1	PE	250mL	None	None		TDS, Cl, NO ₃		APP	
<i>MW-23A</i>	1	PE	250mL	HNO ₃	Prefilled by lab		Dissolved Metals		APP	
REMARKS: <i>initial turbidity: 62.8 NTU. Odor: none</i> <i>weather: clear, ~68°F, slight breeze</i> <i>Turbidity after filter: 1.5 NTU</i>										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)		SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-23C		DATE: 9 November 2010	
SAMPLE ID: MW-23C			

PURGING DATA

WELL DIAMETER (inches): 2.0		TUBING DIAMETER (inches): 0.375		WELL SCREEN INTERVAL DEPTH: 57.1 feet to 67.1 feet		STATIC DEPTH TO WATER (feet): 20.67		PURGE PUMP TYPE OR BAILER: electric submersible			
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) $= (\text{feet} - \text{feet}) \times 0.16 \text{ gallons/foot} = \text{gallons}$											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) $= 0.0 \text{ gallons} + (0.006 \text{ gallons/foot} \times 70 \text{ feet}) + 0.12 \text{ gallons} = 0.6 \text{ gallons}$											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 62			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 62			PURGING INITIATED AT: 1020		PURGING ENDED AT: 1100		TOTAL VOLUME PURGED (gallons): 20	
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) (mg/L or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1050	15.00	15.00	0.50	21.52	5.66	24.13	109	0.26	18	clear	-19.5
1055	2.50	17.50	0.50	21.52	5.65	24.15	108	0.23	17.1	clear	-26.1
1100	2.50	20.00	0.50	21.52	5.65	24.15	108	0.21	16.7	clear	-34.7
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.008; 1/2" = 0.010; 5/8" = 0.016											
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / EPS				SAMPLER(S) SIGNATURE(S): <i>Joe Terry</i>			SAMPLING INITIATED AT: 1105		SAMPLING ENDED AT: 1110		
PUMP OR TUBING DEPTH IN WELL (feet): 62				TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y (N)		FILTER SIZE: _____ µm		
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N) (replaced)							DUPLICATE: Y (N)				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE		SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
mw-23c	3	CG	40mL	HCL	Prefilled by lab		8260		ESP		<100
mw-23c	3	CG	40mL	None	None		8011		ESP		<100
mw-23c	1	PE	250mL	HNO ₃	Prefilled by lab		Metals		ESP		300
mw-23c	1	PE	125mL	H ₂ SO ₄	Prefilled by lab		NH ₃		ESP		300
mw-23c	1	PE	250mL	None	None		TDS, Cl, NO ₃		ESP		300
EB-2 collected for same parameters as above. Collection time 11:30											
REMARKS: initial turbidity: 30 NTU Chlorine 3EV: 1.8 µg/L weather: clear, ~68°F, slight breeze											
After decontamination of pump collected an equipment blank through pump w/lab supplied DI water.											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $+0.2$ mg/L or $+10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally $+5$ NTU or $+10\%$ (whichever is greater)

Revision Date: February 12, 2009

Leachate Sampling Form

Client: WSI Project: J.E.D. Solid Waste Management Facility Task: 03 Date: 10 November 2010 Sampled By: J. Terry

Station: L-1 Sump 1 (primary effluent) WACS ID: 19947

Sample Rate: ~400 ml/min Sample Rate (VOC's): <100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 0642173AM

Sampling Method: ☐ Bailer ☐ Peristaltic Pump ☐ Submersible Pump ☐ Gravity Feed ☒ Port Pump (Make & Model): _____

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1125	30.74	7.13	23,956	3.4	-146.9	1.28	dark brown	

Field Conditions/Observations: clear, ~72°F

Detectable Odor: ☒ Yes ☐ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	<u>HCl</u> <u>11/10/10</u>	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO3, BOD5, TDS
7	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-1 Sample Time: 1130 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: ☐ Courier ☒ UPS (Airbill No. 7X5W0962210003033) Other (_____)

Notes: Leachate was collected into a 2.5 gallon glass vessel from port in sump piping and then poured into sample containers. Glass vessel was decontaminated in between sampling locations. Leachate effervesces when in contact w/acid preserved bottles. To avoid head space in vials for 8260 the vial was rinsed w/leachate to remove acid prior to filling for collection.

Leachate Sampling Form

Client: WSI Project: J.E.D. Solid Waste Management Facility Task: 03 Date: 10 November 2010 Sampled By: J. Terry

Station: L-2 Sump 2 (primary) (No. 1) WACS ID: 199418

Sample Rate: ~400 ml/min Sample Rate (VOC's): <100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AM

Sampling Method: ☐ Bailer ☐ Peristaltic Pump ☐ Submersible Pump ☐ Gravity Feed ☒ Port Pump (Make & Model): _____

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1240	32.09	6.77	15.984	0.8	-42.4	2.60	dark brown	

Field Conditions/Observations: Clear, ~78°F

Detectable Odor: ☒ Yes ☐ No Describe: Sour

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	HCL <u>None</u>	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO3, BOD5, TDS
7	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-2 Sample Time: 1245 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: ☐ Courier ☒ UPS (Airbill No. 135W0982210003024) ☐ Other (_____)

Notes: Leachate was collected into a 2.5 gallon glass vessel from port in sump piping and then poured into sample containers. Glass vessel was decontaminated in between sampling locations. Leachate effervesces when in contact w/acid preserved bottles. To avoid head space in vials for 8260 the vial was rinsed w/leachate to remove acid prior to filling for collection.

Leachate Sampling Form

Client: WSI Project: J.E.D. Solid Waste Management Facility Task: 03 Date: // November 2010 Sampled By: J. Terry

Station: L-3 (primary No. 2) WACS ID: 19949

Sample Rate: 400 ml/min Sample Rate (VOC's): 400 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06421734M

Sampling Method: ☐ Bailer ☐ Peristaltic Pump ☐ Submersible Pump ☐ Gravity Feed ☒ Port Pump (Make & Model): _____

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
0635	27.53	6.97	16.932	6.2	-203.6	0.48	dark brown	

Field Conditions/Observations: Clear, ~55°F

Detectable Odor: ☒ Yes ☐ No Describe: Smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	HCl <u>11.10</u>	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO3, BOD5, TDS
7	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-3 Sample Time: 0645 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: ☐ Courier ☒ UPS (Airbill No. 13X5W0952210002972) ☐ Other (_____)

Notes: Leachate was collected into a 2.5 gallon glass vessel from port in sump piping and then poured into sample containers. Glass vessel was decontaminated in between sampling locations. Leachate effervesces when in contact w/ acid preserved bottles. To avoid headspace vials for 8260 were rinsed w/ leachate to remove acid preservative prior to filling for collection.

Leachate Sampling Form

Client: WSI Project: J.E.D. Solid Waste Management Facility Task: 03 Date: 10 November 2010 Sampled By: J. Terry

Station: L-4 (primary M1) WACS ID: 19950

Sample Rate: ~400 ml/min Sample Rate (VOC's): <100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AM

Sampling Method: Bailer Peristaltic Pump Submersible Pump Gravity Feed X Port Pump (Make & Model):

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1025	37.77	7.31	19.4416	6.0	-65.4	0.33	brown	

Field Conditions/Observations: Clear, ~68°F

Detectable Odor: X Yes No Describe: SO4

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	HCl <u>11/10/10</u>	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO3, BOD5, TDS
7	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-4 Sample Time: 1030 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: Courier X UPS (Airbill No. 1ZXS5W0982210002910) Other ()

Notes: Leachate was collected into a 2.5 gallon glass vessel from port in sump piping and then poured into sample containers. Glass vessel was decontaminated in between sampling locations. Leachate effervesces when in contact w/acid preserved bottles. To avoid head space in vials for 8260 the vial was rinsed w/leachate and to remove acid prior to filling for collection

Leachate Sampling Form

Client: WSI Project: J.E.D. Solid Waste Management Facility Task: 03 Date: 10 November 2010 Sampled By: J. Terry

Station: L-5 Sump 5 (primary No. 1) WACS ID: 22369

Sample Rate: ~400 ml/min Sample Rate (VOC's): <100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 0642173A11

Sampling Method: ☐ Bailer ☐ Peristaltic Pump ☐ Submersible Pump ☐ Gravity Feed ☒ Port Pump (Make & Model): _____

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
0855	33.68	7.02	16.393	8.5	-42.2	3.02	brown	

Field Conditions/Observations: clear, ~56°F

Detectable Odor: ☒ Yes ☐ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	HEL <u>None</u>	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO3, BOD5, TDS
7	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-5 Sample Time: 0900 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: ☐ Courier ☒ UPS (Airbill No. 13X5W0492210002981) ☐ Other (_____)

Notes: Leachate was collected into a 2.5 gallon glass vessel from port in sump piping and then poured into sample containers. Glass vessel was decontaminated in between sampling locations. Leachate effervesces when in contact with acid preserved bottles. To avoid head space in vials for 8260 had to rinse vial w/leachate and discard to remove acid prior to filling for collection.

Leachate Sampling Form

Client: WSI Project: J.E.D. Solid Waste Management Facility Task: 03 Date: 11 November 2010 Sampled By: J. Terry

Station: L-6 Sump 4 (pumping) No. 1 WACS ID: 22370

Sample Rate: ~400 ml/min Sample Rate (VOC's): <100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 0642173AA

Sampling Method: ☐ Bailer ☐ Peristaltic Pump ☐ Submersible Pump ☐ Gravity Feed ☒ Port Pump (Make & Model): _____

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
0755	30.52	7.39	16.870	2.1	-56.9	5.37	dark brown	

Field Conditions/Observations: clear, ~62°F

Detectable Odor: ☒ Yes ☐ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	<u>HCl</u>	<u>Pre-filled by Lab</u>	8260
1	HDPE	250	HNO ₃	Pre-filled by Lab	Metals
1	HDPE	125	H ₂ SO ₄	Pre-filled by Lab	NH ₃ , COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO ₃ , BOD ₅ , TDS
7	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-6 Sample Time: 0800 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: ☐ Courier ☒ UPS (Airbill No. 1ZXS04982210002963) ☐ Other (_____)

Notes: Leachate was collected into a 2.5 gallon glass vessel from port in sump piping and then poured into sample containers. Glass vessel was decontaminated in between sampling locations. Leachate effervesces when in contact w/acid preserved bottles. To avoid head space, vials for 8260 were rinsed w/ leachate to remove acid preservative prior to filling for collection.

Appendix C

Field Instrument Calibration Logs

Field Instrument Calibration Record

Client: WSI Project Name: J.E.D. Solid Waste Management Facility Task: 03 Date: 1 November 2010

Rental Company: ESS

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 0642173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME10404

Time: 0600

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.00	0.00	0.2	Y	I	DT
7656	21 Jan 2011	pH = 7.00	7.00	0.00	0.2	Y	I	DT
7796	17 Mar 2011	pH = 10.00	10.00	0.00	0.2	Y	I	DT
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.96	0.4	10%	Y	I	DT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.103	3.0	5%	Y	C	DT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	1.002	0.2	5%	Y	C	DT
	Per Table →	D.O. = 8.34 mg/L @ 24.5 °C	8.38	0.04	0.2 mg/l	Y	I	DT

Date: 2 Nov 2010 Time: 0530

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.01	0.01	0.2	Y	C	DT
7656	21 Jan 2011	pH = 7.00	7.03	0.03	0.2	Y	C	DT
7796	17 Mar 2011	pH = 10.00			0.2			
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.92	0.8	10%	Y	C	DT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.102	2.0	5%	Y	C	DT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	1.003	0.3	5%	Y	C	DT
	Per Table →	D.O. = 8.403 mg/L @ 24.1 °C	8.45	0.047	0.2 mg/l	Y	I	DT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L;

Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ± 8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ± 5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Client: WSI Project Name: J.E.D. Solid Waste Management Facility Task: 03 Date: 3 November 2010

Rental Company: ESS

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 0642173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME10404

Time: 0520

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.02	0.02	0.2	Y	C	DT
7656	21 Jan 2011	pH = 7.00	7.02	0.02	0.2	Y	C	DT
7796	17 Mar 2011	pH = 10.00			0.2			
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	10.12	1.2	10%	Y	C	DT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.103	3.0	5%	Y	C	DT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	0.995	0.5	5%	Y	C	DT
	Per Table →	D.O. = 8.35 mg/L @ 24.4°C	8.36	0.004	0.2 mg/l	Y	I	DT

Date: DT 0500 4 Nov 2010 Time: 0500

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.03	0.03	0.2	Y	C	DT
7656	21 Jan 2011	pH = 7.00	7.06	0.06	0.2	Y	C	DT
7796	17 Mar 2011	pH = 10.00			0.2			
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	10.15	1.5	10%	Y	C	DT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.100	0.00	5%	Y	I	DT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	1.000	0.00	5%	Y	I	DT
	Per Table →	D.O. = 8.38 mg/L @ 24.2°C	8.47	0.083	0.2 mg/l	Y	C	DT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L;

Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ± 8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ± 5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Client: WSI Project Name: J.E.D. Solid Waste Management Facility Task: 03 Date: 7 November 2010

Rental Company: ESS

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 0642173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME10404

Time: 1830

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.02	0.02	0.2	Y	C	DT
7656	21 Jan 2011	pH = 7.00	7.02	0.02	0.2	Y	C	DT
7796	17 Mar 2011	pH = 10.00			0.2			
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.85	1.5	10%	Y	C	DT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.101	1.0	5%	Y	C	DT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	0.992	0.8	5%	Y	C	DT
	Per Table →	D.O. = 8.576 mg/L @ 23.0 °C	8.64	0.062	0.2 mg/l	Y	I	DT

Date: 9 Nov 2010 Time: 0515

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.03	0.03	0.2	Y	C	DT
7656	21 Jan 2011	pH = 7.00	7.06	0.06	0.2	Y	C	DT
7796	17 Mar 2011	pH = 10.00			0.2			
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.85	1.5	10%	Y	C	DT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.102	2.0	5%	Y	C	DT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	0.992	0.8	5%	Y	C	DT
	Per Table →	D.O. = 8.514 mg/L @ 23.1 °C	8.54	0.026	0.2 mg/l	Y	I	DT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L;

Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ± 8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ± 5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Client: WSI Project Name: J.E.D. Solid Waste Management Facility Task: 03 Date: 10 November 2010

Rental Company: ESS

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME104041

Time: 0520

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.04	0.04	0.2	Y	C	PT
7656	21 Jan 2011	pH = 7.00	7.07	0.07	0.2	Y	C	PT
7796	17 Mar 2011	pH = 10.00	9.96	0.04	0.2	Y	C	PT
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.82	1.8	10%	Y	C	PT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm	0.103	3.0	5%	Y	C	PT
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	0.991	0.9	5%	Y	C	PT
	Per Table →	D.O. = 8.53 mg/L @ 23.3°C	8.56	0.03	0.2 mg/l	Y	I	PT

Date: 11 November 2010 Time: 0500

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.06	0.06	0.2	Y	C	PT
7656	21 Jan 2011	pH = 7.00	7.08	0.08	0.2	Y	C	PT
7796	17 Mar 2011	pH = 10.00	10.02	0.02	0.2	Y	C	PT
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.80	2.0	10%	Y	C	PT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm			5%			
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	0.990	1.0	5%	Y	C	PT
	Per Table →	D.O. = 8.49 mg/L @ 23.5°C	8.55	0.052	0.2 mg/l	Y	I	PT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L;

Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ± 8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ± 5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Client: WSI Project Name: J.E.D. Solid Waste Management Facility Task: 03 Date: 12 November 2010

Rental Company: ESS

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 0642173 AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME10404

Time: 0830

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00	4.04	0.04	0.2	Y	C	JT
7656	21 Jan 2011	pH = 7.00	7.08	0.08	0.2	Y	C	JT
7796	17 Mar 2011	pH = 10.00	10.03	0.03	0.2	Y	C	JT
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU	9.82	1.8	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm			5%			
8063	7 Jun 2011	Conductivity = 1.000 mS/cm	0.994	0.6	5%	Y	C	JT
	Per Table →	D.O. = 8.403 mg/L @ 24.1 °C	8.45	0.047	0.2 mg/l	Y	F	JT

Date: _____ Time: _____

Calibration Standard			Instrument Response	Percent Deviation ⁽¹⁾ or Difference	Allowable Deviation ⁽²⁾	Calibrated? Yes or No	Type of Calibration ⁽³⁾	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
7696	7 April 2011	pH = 4.00			0.2			
7656	21 Jan 2011	pH = 7.00			0.2			
7796	17 Mar 2011	pH = 10.00			0.2			
C034709	Oct. 2011	Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C033300	Sept. 2011	Turbidity = 10 NTU			10%			
		Turbidity = 50 NTU			6.5%			
8064	7 June 2011	Conductivity = 0.100 mS/cm			5%			
8063	7 Jun 2011	Conductivity = 1.000 mS/cm			5%			
	Per Table →	D.O. = _____ mg/L @ _____ °C			0.2 mg/l			

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L;

Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ± 8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ± 5% of Standard Value

Note (3): Initial, Continual, Final

Appendix D

Chain-of-Custody Forms



71005291
CAS Contact

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51605286

CAS Contact

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Project Name JED SWDF		Project Number		ANALYSIS REQUESTED (Include Method Number and C															
Project Manager Kirk Willis		Email Address kwillis@envplanning.com		PRESERVATIVE															
Company/Address EPS				1 0 3 0 2															
1936 Bruce B Downs Blvd #328				<div>8260 8011 NH₃ NO₃, Cl, TDS Metals</div>															
Wesley Chapel, FL 33543																			
Phone # 813-388-1026		FAX#																	
Sampler's Signature Joe Terry		Sampler's Printed Name Joe Terry																	
				NUMBER OF CONTAINERS															
				1. HCL 2. HNO ₃ 3. H ₂ SO ₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO ₄ 8. Other _____															
				REMARKS/ ALTERNATE DESCRIPTION															
CLIENT SAMPLE ID		LAB ID		SAMPLING DATE TIME		MATRIX													
MW-13A				11-2-10 0840		GW		9 x x x x x											
MW-13C				0815															
MW-12A				1020															
MW-12C				0940															
MW-11A				1225															
MW-11C				1155															
MW-10A				1440		↓													
MW-10C				1510		GW		↓ ↓ ↓ ↓ ↓ ↓											
EB-1				11-2-10 1250		H ₂ O		9 x x x x x											
Trip Blank				10-25-10 0830		DD H ₂ O		1 1											
SPECIAL INSTRUCTIONS/COMMENTS COOL ID: 10306-JED-1								TURNAROUND REQUIREMENTS ____ RUSH (SURCHARGES APPLY) X STANDARD REQUESTED FAX DATE _____ REQUESTED REPORT DATE _____				REPORT REQUIREMENTS ____ I. Results Only X II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data ____ V. Specialized Forms / Custom Report Edata ____ Yes ____ No				INVOICE INFORMATION PO# _____ BILL TO: _____			
SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N																			
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY					
Signature Joe Terry		Signature Charles Derriger		Signature		Signature		Signature		Signature		Signature		Signature					
Printed Name Joe Terry		Printed Name Charles Derriger		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name					
Firm EPS		Firm CAS		Firm		Firm		Firm		Firm		Firm		Firm					
Date/Time 11-2-10/1630		Date/Time 11/3/10 0920		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time					



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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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SR #

31005317
CAS Contact

Project Name JED SWAF		Project Number		ANALYSIS REQUESTED (Include Method Number)													
Project Manager Kirk Willis		Email Address kwillis@enrplaning.com		PRESERVATIVE		10302											
Company/Address EPS				NUMBER OF CONTAINERS		<div style="writing-mode: vertical-rl; transform: rotate(180deg);">9260 BOLL NH₃ TDS, Cl, NO₃ Metals</div>						<div style="writing-mode: vertical-rl; transform: rotate(180deg);">1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO₄ 8. Other _____</div>					
1936 Bruce B Downs Blvd #328																	
Wesley Chapel, FL 33543																	
Phone # 813-388-1026		FAX#															
Sampler's Signature [Signature]		Sampler's Printed Name Joe Terry										REMARKS/ ALTERNATE DESCRIPTION					
CLIENT SAMPLE ID		LAB ID		SAMPLING DATE TIME MATRIX													
MW-6A				11-3-10 1350 GW		9 X X X X X											
Mw-6C				1420													
mw-7A				1250													
mw-7C				1220													
Mw-8A				1020													
mw-8C				1050													
mw-9A				V 0835		V V V V V V											
mw-9C				11-3-10 0900 GW		9 X X X X X											
Trip Blank				10-25-10 0900 DEP H ₂ O		2 X											
SPECIAL INSTRUCTIONS/COMMENTS Cooler ID: 10307-JED-1				TURNAROUND REQUIREMENTS ____ RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD REQUESTED FAX DATE _____ REQUESTED REPORT DATE _____				REPORT REQUIREMENTS ____ I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data ____ V. Specialized Forms / Custom Report Edata ____ Yes ____ No				INVOICE INFORMATION PO# _____ BILL TO: _____					
SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N																	
RELINQUISHED BY 73		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY			
Signature [Signature]		Signature [Signature]		Signature		Signature		Signature		Signature		Signature		Signature			
Printed Name Joe Terry		Printed Name Charles Ramirez		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name			
Firm EPS		Firm CAS		Firm		Firm		Firm		Firm		Firm		Firm			
Date/Time 11-3-10/1545		Date/Time 11/4/10 0915		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time			



CAS Contact 5005393

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Project Name JED SWIF		Project Number		ANALYSIS REQUESTED (Include Method Number and)																	
Project Manager Kirk Willis		Email Address kwillis@planning.com		PRESERVATIVE 1 0 3 2 0 2																	
Company/Address EPS		NUMBER OF CONTAINERS		<div style="display: flex; justify-content: space-around; text-align: center;"> <div>B260</div> <div>BOW</div> <div>NH₃</div> <div>Metals</div> <div>TDS, Cl, NO₃</div> <div>Dissolved Metals</div> </div>																	
1936 Bruce B Downs Blvd #328																					
Wesley Chapel, FL 33543																					
Phone # 813-398-1026																					
FAX#		Sampler's Signature Joe Terry		Sampler's Printed Name Joe Terry		<div style="float: right; text-align: right;"> 0. NONE 1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO₄ 8. Other _____ REMARKS/ ALTERNATE DESCRIPTION </div>															
CLIENT SAMPLE ID		LAB ID		SAMPLING DATE														TIME		MATRIX	
MW-2A				11-9-10		0755		GW		9		X		X		X		X		X	
MW-2C						0730				9											
MW-1A						0940				9											
MW-1C						0905				9											
MW-23A						1235				10										X	
MW-23C						1105				9											
MW-19A						1425		V		10										X	
MW-19C						1500		GW		10		V		V		V		V		X	
EB-2				11-9-10		1130		D ₁ H ₂ O		9		X		X		X		X		X	
Trip Blank				10-25-10		1000		D ₁ H ₂ O		2		X									
SPECIAL INSTRUCTIONS/COMMENTS Cooler ID: 10313-JED-1										TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) <input checked="" type="checkbox"/> STANDARD REQUESTED FAX DATE REQUESTED REPORT DATE				REPORT REQUIREMENTS I. Results Only <input checked="" type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data V. Specialized Forms / Custom Report Edata Yes No				INVOICE INFORMATION PO# BILL TO:			
SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N																					
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY							
Signature Joe Terry		Signature Charles Barringer		Signature		Signature		Signature		Signature		Signature		Signature							
Printed Name Joe Terry		Printed Name Charles Barringer		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name							
Firm EPS		Firm CAS		Firm		Firm		Firm		Firm		Firm		Firm							
Date/Time 11-9-10/1600		Date/Time 11-10-10 0911		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time							



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51005460

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SR #

51005462

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SR # 71005486
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Project Name JED SWDF		Project Number		ANALYSIS REQUESTED (Include Method Number and)																													
Project Manager Kirk Wilk		Email Address kwill@envplanning.com		PRESERVATIVE		0 0 3 2 4/5 4 0 0 0																											
Company/Address EPS		SAMPLER'S INFORMATION Sampler's Signature: Joe Terry Sampler's Printed Name: Joe Terry		NUMBER OF CONTAINERS	<div><div>0260</div><div>0011</div><div>NO₃-COD</div><div>Metals</div><div>Sulfide</div><div>Cyanide</div><div>CL, NO₃-TDS, BOD</div><div>0270</div><div>0081</div><div>0082</div><div>0151</div></div>																REMARKS/ ALTERNATE DESCRIPTION												
1936 Bruce B Downs Blvd #328					0. NONE																												
Wesley Chapel, FL 33543					1. HCL																												
Phone # 813-388-1026					2. HNO ₃																												
FAX#		3. H ₂ SO ₄																															
CLIENT SAMPLE ID		LAB ID		SAMPLING DATE		TIME		MATRIX																									
L-3				11-11-10		0645		Leachate		17 X X X X X X X X X X X X X X																							
Trip Blank				10-25-10		1215		DF H ₂ O		2 X																							
SPECIAL INSTRUCTIONS/COMMENTS		TURNAROUND REQUIREMENTS								REPORT REQUIREMENTS								INVOICE INFORMATION															
Cooler ID: 10315-JED-L3		RUSH (SURCHARGES APPLY)								I. Results Only								PO#															
		X STANDARD								X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)								BILL TO:															
		REQUESTED FAX DATE								III. Results + QC and Calibration Summaries																							
		REQUESTED REPORT DATE								IV. Data Validation Report with Raw Data																							
See QAPP <input type="checkbox"/>		CUSTODY SEALS: Y N								V. Specialized Forms / Custom Report																							
Edata <input type="checkbox"/> Yes <input type="checkbox"/> No																																	
SAMPLE RECEIPT: CONDITION/COOLER TEMP:		RELINQUISHED BY								RECEIVED BY								RELINQUISHED BY								RECEIVED BY							
Signature: Joe Terry		Signature: Charles Barniger								Signature: Charles Barniger								Signature: Charles Barniger								Signature: Charles Barniger							
Printed Name: Joe Terry		Printed Name: Charles Barniger								Printed Name: Charles Barniger								Printed Name: Charles Barniger								Printed Name: Charles Barniger							
Firm: EPS		Firm: CPS								Firm: CPS								Firm: CPS								Firm: CPS							
Date/Time: 11-11-10/1200		Date/Time: 11-12-10 0954								Date/Time: 11-12-10 0954								Date/Time: 11-12-10 0954								Date/Time: 11-12-10 0954							



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51005462

CAS Contact

Project Name JED SWDP		Project Number		ANALYSIS REQUESTED (Include Method Number and Matrix)																			
Project Manager Kirk Wills		Email Address kwillis@enrplanning.com		PRESERVATIVE																			
Company/Address EPS																							
1936 Bruce B Downs Blvd #328																							
Wesley Chapel, FL 33543																							
Phone # 813-388-1026		FAX#																					
Sampler's Signature Joe Terry		Sampler's Printed Name Joe Terry																					
CLIENT SAMPLE ID				LAB ID		SAMPLING DATE		TIME		MATRIX		NUMBER OF CONTAINERS											
L-4						11-10-16		1030		Leachate		0 0 3 2 4 5 4 0 0 0 0											
Trip Blank						10-25-10		1020		AD H2O		0260 0011 NH4, COD Metals Sulfide Cyanide Cl, NO3, TDS, BOD 0270 0081 0082 0151											
SPECIAL INSTRUCTIONS/COMMENTS				TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION											
Cooler ID: 10314-JED-L4				RUSH (SURCHARGES APPLY)				I. Results Only				PO#											
				STANDARD				II. Results + QC Summaries (LCS, DUP, MS/MSD as required)				BILL TO:											
				REQUESTED FAX DATE				III. Results + QC and Calibration Summaries															
				REQUESTED REPORT DATE				IV. Data Validation Report with Raw Data															
See QAPP <input type="checkbox"/>								V. Specialized Forms / Custom Report															
SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____				CUSTODY SEALS: Y N				Edata Yes No															
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Appendix E

CD Containing Analytical Laboratory Reports