LANDSCIENCE
Environmental Consultants and Engineers

July 31, 2017

Mr. Wilbur Mayorga, P.E., Chief
Environmental Monitoring and Restoration Division
Department of Regulatory and Economic Resources
701 NW 1st Court, 4th Floor
Miami, Florida 33136

Subject: Semi-Annual Groundwater Monitoring Report
Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami-Dade County, Florida
Permit No. 0157225-005-SO
File-17023/SW-1409
LandScience Project No. 2176683

Dear Mr. Mayorga:

LandScience has completed the Semi-Annual Groundwater Monitoring (GWM) Report on the dissolved metal groundwater issue located at the above referenced facility. If you require any additional information, please contact the undersigned at (786) 457-5076.

Sincerely,
LANDSCIENCE INC.

Andrew Whitaker
Project Manager

SEMI-ANNUAL
GROUNDWATER MONITORING REPORT

for the

OKEECHOBEE TRANSFER FACILITY
PERMIT No. 0157225-005-SO / FILE-17023/SW-1409
LOCATED AT 14000 NORTHWEST 112TH AVENUE
MIAMI, MIAMI-DADE COUNTY, FLORIDA

Prepared for

WORLD WASTE RECYCLING, INC.
3500 Northwest 51st Street
Miami, Miami-Dade County, Florida 33142

Submitted to

MIAMI-DADE COUNTY DEPARTMENT OF ECONOMIC AND REGULATORY RESOURCES
Pollution Control Division
701 Northwest 1st Court, 4th Floor
Miami, Miami-Dade County, Florida 33136

Prepared by

LANDSCIENCE
12750 Northeast 7th Avenue
North Miami, Florida 33161

July 2017
Project Number 2176683

P.G. Certification

This Semi-Annual Groundwater Monitoring Event Report, for the Okeechobee Transfer Facility, located at 14000 Northwest 112th Avenue, Miami, Miami-Dade County, Florida, has been prepared under the responsible charge of the undersigned and has been found to conform to commonly accepted procedures consistent with applicable standards of practice pursuant to Chapter 62-701 of the Florida Administrative Code (F.A.C.).

I hereby certify that, in my professional judgement, this Semi-Annual Groundwater Monitoring Event Report satisfies applicable requirements and that the geological interpretations in this report provide reasonable assurance of achieving the assessment objectives stated in Chapter 62-701, F.A.C.

7/31/17

Mauricio Pagés, P.G.
Professional Geologist
Florida License No. PG 2900
LandScience, Inc.
12570 NE 7th Avenue
North Miami, FL 33161

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1.0 INTRODUCTION

This Semi-Annual Groundwater Monitoring (GWM) report has been prepared for the Okeechobee Transfer Facility located at 14000 Northwest 112th Avenue, Miami, Miami-Dade County, Florida, herein referred to as the 'subject property'.

The subject property, situated on the west side of Northwest 112th Avenue, is located in Miami, Miami-Dade County, Florida. According to information obtained from the Miami-Dade County Property Appraiser's Office, the subject property is approximately 3.36 acres in size and consists of vacant land. The site plan (2012 aerial photograph) showing the subject property boundaries and monitoring well locations is provided as **Figure 1**.

According to information presented in the *Initial Background Groundwater Monitoring Report*, dated April 22, 2013, and prepared by All State Engineering and Testing Consultants, Inc., laboratory analytical results for groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 indicated concentrations of aluminum and iron at levels exceeding their respective groundwater cleanup as established by the FDEP in FAC 62-701, Table I, *Groundwater and Surface Water Cleanup Target Levels (GCTLs)*, but did not exceed FAC 62-701, Table V, *Natural Attenuation Default Concentration*s *(NADCs) for Source Wells* for these compounds. Based on these results, All State recommended the implementation of NAM activities at the subject property for aluminum and iron. As a result, the client retained LandScience to conduct Groundwter Monitoring activities at the subject property. A copy of the most recent deliverable review letter from the Miami-Dade County DRER is included in **Appendix A**.

1.1 Site History Investigation

In the DRER correspondance letter dated May 17, 2016, the departemnt requested an investigation as to the source of the elevated iron levels detected at the subject property be conducted. Based on this request, LandScience reviewed historical aerial photographs for the subject proeprty and the surrounding

adjacent/abutting properties. Additonally, LandScience conducted a regulatory file review of documents within the Miami-Dade HPI Regulatory Database regarding the adjacent and abutting properties.

1.1.2 Historical Aerial Photograph Reivew

LandScience accessed the Florida Department of Transportation (FDOT) Aerial Photography Archive Collection (APAC) maintained in Tallahassee, Florida and the Broward County Property Appraiser's website to review current and historical aerial photographs of the Subject Property, adjacent, adjoining, and/or abutting properties, and nearby properties that were taken in the years 1968, 1973, 1978, 1985, 1991 and 1998 through 2017. No aerial photographs prior to 1968 were available for our review. Additional information regarding the Subject Property and the adjacent, adjoining, and/or abutting properties was obtained from the Miami-Dade County Property Appraiser's Office. Select copies of the historical aerial photogrpahs reviewed are included in **Appendix B**. Review of the available aerial photographs indicated the following concerning the Subject Property and adjacent, adjoining, and/or abutting properties:

<u>Subject Property</u>

The Subject Property has consisted of vacant land with a low-lying vegetation consisting of a grassy bermed area on the northern poritons and grassy areas on the southern portions similar to the current conditions since at least 2010. Prior to 2010, the Subject Property had consisted of vacant land with several soil piles on the southern portions and vacant land with a grassy bermed area on the northern portions since 2009. Prior to 2009, the Subject Property had consisted of vacant land used for metal container storage on the southern portions and the northern portions consisted of vacant land with a grassy bermed area since 2007. Prior to 2007, the Subject Property had consisted of vacant land with a sandy surface on the southern portions and the northern portions consisted of vacant land with a sandy bermed area since 2006. Prior to 2006, the Subject Property had consisted of vacant land with low-lying vegetation on the southern portions and consisted of damp slightly submerged vegetation on the northern portions since at least 2005. Prior to 2005, the Subject Property had consisted of vacant land with low-lying vegetation since at least 1998. Prior to 1998, the Subject Property had consisted of vacant land with truck parking and areas of soil piles since at

least 1991. Prior to 1991, the Subject Property had consisted of vacant land with low-lying vegetation since at least 1968.

Adjoining/Abutting/Adjacent Properties

The abutting property to the north of the Subject Property has consisted of vacant land with semi-trailer truck parking similar to the current conditions since at least 2014. Prior to 2014, this property had consisted of vacant parking area with a limerock base since at least 2012. Prior to 2012, this property had consisted of vacant land with a submerged area on the western portion since at least 2010. Prior to 2010, this property had consisted of vacant land with vegetation-hardwood trees since at least 1998. Prior to 1998, this property had consisted of vacant land with low-lying vegetation since at least 1968.

The ajacent property to the north/northeast of the Subject Property, beyond Northwest 112th Avenue, has consisted of vacant land similar to the current conditions since at least 2016. Prior to 2016, this property had consisted of vacant land with several large piles of soil/debris since at least 2010. Prior to 2010, this property had consisted of vacant land with parking for several semi-trailer truck since at least 2009. Prior to 2009, this property had consisted of vacant land with vegetation-hardwood trees since at least 1998. Prior to 1998, this property had consisted of vacant land with low-lying vegetation since at least 1968.

The abutting property to the south of the Subject Property, has consisted of vacant land with semi-trailer truck parking similar to the current conditions since at least 1991. Prior to 1991, this property had consisted of vacant land with low-lying vegetation since at least 1968.

The adjacent property to the south/southeast of the Subject Property, beyond Northwest 112th Avenue, has consisted of vacant land with semi-trailer truck parking similar to the current conditions since at least 1991. Prior to 1991, this property had consisted of vacant land with low-lying vegetation since at least 1968.

The adjacent property to the east of the Subject Property, beyond Northwest 112th Avenue, has consisted of vacant land with semi-trailer truck parking similar to the current conditions since at least 2007. Prior to

2007, this property had consisted of vacant cleared land since at least 2005. Prior to 2005, this property had consisted of vacant land with low-lying vegetation since at least 1968.

The abutting property to the west, west/northwest of the Subject Property, has consisted of vacant land with vegetation further bounded by a highway similar to the current conditions since at least 1968.

The abutting property to the west/southwest of the Subject Property, has consisted of vacant land with vegetation and a utility tower further bounded by a highway similar to the current conditions since at least 1978. Prior to 1978, this property had consisted of vacant land since at least 1968.

Based on the review of historical aerial photographs, which detailed property usage of the Subject Property and adjacent/abutting properties, there does not appear to be a difinitve conclusion as to whether these proeprties have contributed to the elevated iron levels detected on the Subeject Property. The property located to the north/northeast, beyond Northwest 112th Avenue, had conducted soil/debris staging for several years prior to 2016. The general groundwater flow direction at the Subejct Property has historically been toward the north. The remaining properties appear to have been historically generally used for semi-trailer truck parking and/or vacant land.

1.1.3 Review of Environmental Regulatory Records

LandScience visited the Miami-Dade County DERM HPI Regulatory online database to obtain and review the regulatory files for the adjacent and abutting properties in a effort to determine if the adjacent/abutting properties have contributed to the elevated iron levels detected on the Subeject Property. Review of the online database indicated that the adjacent/abutting properties to the north, south, east, beynd Northwest 112th Avenue, and southeast, beyond Northwest 112th Avenue, have generally operated as truck parking/truck staging facilities as identified in the historical aerial phtograph review. In addtion, no documents were available for the abutting property to the west as this property consits of undeveloped land. Review of the regulatory documents for these properties did not reveal operations which may have contributed to the eleveated iron levels at the Subject Property.

Review of the regulatory files for the property located to the northeast of the Subject Property beyond Northwest 112th Avenue (Folio Number 27-2019-001-0670), indicated that this property previously operated as a staging area for materials being used for road work by the City of Hialeah. An April 1999 enforcement document for the proeprty indicated that a Miami-Dade DERM inspector observed improper disposal of solid waste and the unpermitted filling of wetlands on the property. However, it appears the materials were subsequently removed from the property and the owner satified all DERM requriements and property returned to compliance in July 2000. More recent documents from 2012 through 2016 indicated that this property had been under a class IV permit 10-025 for construction of a fill pad and construction of two lakes for water management purposes for redevelopment of the site. Based on this information, the hydrological setting of this property (down-gradient) in relation to the Subject Property, it does not appear that this property has contributed to the elevated iron levels detected on the Subejct Property.

1.2 Objectives and Scope of Work

The primary objectives of the Semi-Annual GWM are to perform groundwater quality sampling for purposes of tracking the remediation of aluminum and iron by natural attenuation. The GWM activities were conducted in accordance with Chapter 62-701 of the Florida Administrative Code (FAC).

The objectives for the completion of the GWMP are as follows:

- Complete micro-purging protocols followed by groundwater sample collection for analysis of aluminum and iron via EPA Method 6010 from MW-1, MW-2, and MW-3.
- Compare the groundwater contaminant concentrations within the designated wells to the Chapter 62-701 Natural Attenuation Default Concentrations (NADCs) and the Groundwater Cleanup Target Levels (GCTLs).
- Prepare a GWMP report, which document all data collected during the monitoring event, as well as conclusions and recommendations.

Figure 1 is a scaled Site Layout (2012 aerial photograph) that illustrates the locations of the existing monitoring wells and site appurtenances.

2.0 EVALUATION OF WATER TABLE ELEVATIONS

Prior to groundwater sample collection on July 24, 2017, a representative of LandScience performed an evaluation of the groundwater flow direction by collection of liquid levels from monitoring wells, MW-1, MW-2, and MW-3, The depth to groundwater was determined by use of a Heron electronic interface probe, capable of detecting liquid thickness to an accuracy of 0.01-feet. The probe is also capable of detecting non-aqueous phase liquids, which were not detected within any site monitoring wells. Using the top of casing survey data from previous assessments, water table elevations were calculated and plotted on a site layout which is illustrated on **Figure 2**. Water table elevation iso-contours were plotted on the map to illustrate the generally northwestern groundwater flow direction. **Table 1** summarizes the historical through recent water table elevations.

3.0 GROUNDWATER QUALITY MONITORING

On July 24, 2017, a representative of LandScience visited the subject property to complete groundwater sampling from monitoring wells, MW-1, MW-2, and MW-3. Additionally, a representative of LandScience visited the subject property to complete groundwater sampling from monitoring well, MW-1, on May 1, 2017 as requested by the DRER. Groundwater purging and sampling was performed in accordance with FDEP Quality Assurance Standard Operating Procedure (QA/SOP) 001-01 for micro-purging, decontamination, and groundwater sample collection.

A YSI 6820 water quality meter with a flow cell was used to monitor the field parameter stabilization prior to sample collection. Micro purging was completed for the monitoring wells using the above listed equipment. Specifically, an initial depth to groundwater was obtained prior to well purging with a peristaltic pump. The instantaneous purge rate in gallons per minute (gpm) was measured with a Blue-White inline flow meter.

Following the controlled micro-purge of the first well volume, field parameters including pH, temperature, specific conductivity, dissolved oxygen, turbidity, color, odor, and depth to ground water were collected. If significant draw-down was observed, the extraction flow rate was lowered by slightly closing a needle valve that was located on the pressure side of the pump. By slightly closing the needle valve on the pump discharge, the instantaneous reduction in the extraction flow rate was able to be observed with the Blue-White flow meter.

Subsequent to the micro-purge of the first well volume, field parameters were measured every ¼ of a volume until parameters stabilized within 5-10%. The groundwater samples were collected from the vacuum side of the peristaltic pump, as required in the Micropurging protocols. Approximately 1.5 – 2.0 well volumes of groundwater were micro-purged prior to stabilization of field parameters. Upon collection, the groundwater samples were introduced into pre-cleaned sample containers, placed on ice, and transported to Jupiter Environmental Laboratories for analysis. The groundwater samples collected from monitoring wells, MW-1 on May 1, 2017 were analyzed for iron via EPA Method 6010. In addition, the groundwater samples collected from monitoring wells, MW-1, MW-2, and MW-3, on July 24, 2017 were analyzed for aluminum and iron via EPA Method 6010. **Appendix B** includes copies of the Groundwater Sampling Logs from the sampling event.

The laboratory analytical results for the groundwater sample collected from MW-1 on May 1, 2017, indicated that the concentration of iron exceeded the FDEP GCTL, and the FDEP NADC. The laboratory analytical results for the groundwater sample collected from MW-1 on July 24, 2017, indicated that the concentration of iron exceeded the FDEP GCTL, but was below the FDEP NADC. Laboratory analytical results indicated that the concentration of aluminum in MW-1 was below the FDEP GCTLs.

The laboratory analytical results for the groundwater sample collected from MW-2, indicated that the concentration of iron exceeded the FDEP GCTL, but was below the FDEP NADC. Laboratory analytical results indicated that the concentration of aluminum in MW-2 was below the FDEP GCTLs.

The laboratory analytical results for the groundwater sample collected from MW-3, indicated that the concentration of iron exceeded the FDEP GCTL, but was below the FDEP NADC. Laboratory analytical results indicated that the concentration of aluminum in MW-3 was below the FDEP GCTLs.

Appendix B includes a copy of the laboratory analytical results and the chain of custody. The groundwater quality results from the May 1, and July 24, 2017, sampling events are depicted in **Figure 3**. The groundwater quality results from the May 1, and July 24, 2017, sampling events, as well as from the previous sampling events, are included in **Table 2.** Also included on the table are applicable GCTLs and NADCs established by the FDEP.

5.0 CONCLUSIONS & RECOMMENDATIONS

Conclusions

Based upon the recent analytical results, LandScience draws the following conclusions:

MW-1

- The concentration of iron, which had increased to a level above both the FDEP GCTL and the FDEP NADC during the January 7, 2016 through May 1, 2017 sampling events, has decreased to a level above the FDEP GCTL and but below the FDEP NADC during this sampling event.
- The concentration of aluminum continues to be below the FDEP GCTL.

MW-2

- The concentration of iron, which had increased to a level above the FDEP GCTL, during the January 7, 2016 sampling event, continues to remain above the FDEP GCTL but remains below the FDEP NADC during this sampling event.
- The concentration of aluminum continues to be below the FDEP GCTL.

MW-3

- The concentration of iron, which had increased to a level above the FDEP GCTL, during the January 7, 2016 sampling event, continues to remain above the FDEP GCTL but remains below the NADC during this sampling event.
- The concentration of aluminum continues to be below the FDEP GCTL.

Recommendations

Based upon the conclusions discussed above, it appears that iron continues to be present the only constituent above the FDEP GCTL but below the FDEP NADC in the groundwater as represented by the groundwater samples collected from MW-1, MW-2 and MW-3. Therefore, LandScience recommends that the GWMP activities continue to assess the longer-term trend of contaminant concentrations in the groundwater.

TABLES

TABLE 1: GROUNDWATER ELEVATION SUMMARY

Facility Name: Okeechobee Transfer Facility
File-17012/SW-1409

All Measurements = Feet
No Data = Blank

WELL NO.	MW-1			MW-2			MW-3								
DIAMETER	2			2			2								
WELL DEPTH	14.00			14.00			12.00								
SCREEN INTERVAL	4.00-14.00			4.00-14.00			2.00-12.00								
TOC ELEVATION	6.60			8.62			6.00								
DATE	**ELEV**	**DTW**	**FP**	**ELEV**	**DTW**	**FP**	**ELEV**	**DTW**	**FP**						
3/20/2013	2.65	3.95	0.00	3.37	5.25	0.00	1.00	5.00	0.00						
7/19/2013	2.09	4.51	0.00	5.97	2.65	0.00	2.56	3.44	0.00						
1/17/2014	0.83	5.77	0.00	4.32	4.30	0.00	0.40	5.60	0.00						
7/17/2014	0.85	5.75	0.00	3.42	5.20	0.00	1.50	4.50	0.00						
1/21/2015	1.06	5.54	0.00	4.42	4.20	0.00	1.75	4.25	0.00						
7/9/2015	0.46	6.14	0.00	1.88	6.74	0.00	1.19	4.81	0.00						
1/7/2016	1.02	5.58	0.00	2.85	5.77	0.00	1.78	4.22	0.00						
7/16/2016	1.04	5.56	0.00	3.19	5.43	0.00	1.73	4.27	0.00						
1/23/2017	1.06	5.54	0.00	2.50	6.12	0.00	1.77	4.23	0.00						
5/1/2017	0.87	5.73	0.00	ND	ND	ND	ND	ND	ND						
7/24/2017	1.75	4.85	0.00	4.93	3.69	0.00	2.41	3.59	0.00						

ND=No Data

TABLE 2
SUMMARY OF HISTORICAL THROUGH RECENT GROUNDWATER ANALYTICAL ANALYTICAL RESULTS

Facility Name: Okeechobee Transfer Facility
File-17023/SW-1409

Sample		Aluminum	Iron
Location	Date		
MW-1	3/20/2013	**327**	**1,500**
	7/19/2013	21	**2,630**
	1/17/2014	27	**654**
	7/17/2014	18	**4,230**
	7/30/2014	NS	**3,120**
	1/21/2015	13	**2,200**
	7/9/2015	141	**1,350**
	1/7/2016	23	**6,000**
	3/4/2016	NS	**4,400**
	7/16/2016	0.54U	**7,400**
	1/23/2017	170	**13,000**
	5/1/2017	NS	**5,500**
	7/24/2017	29	**960**
MW-2	3/20/2013	68	**1,200**
	7/19/2013	151	214
	1/17/2014	36	113
	7/17/2014	15	218
	1/21/2015	7.1	**1,000**
	7/9/2015	40.2	182
	1/7/2016	6.6	**980**
	7/16/2016	0.54U	**1,500**
	1/23/2017	31	**2,000**
	7/24/2017	25	**2,400**
MW-3	3/20/2013	80	**1,310**
	7/19/2013	180	0.800U
	1/17/2014	13	**2,560**
	7/17/2014	25	47
	1/21/2015	14	270
	7/9/2015	32.1	91
	1/7/2016	33	**400**
	7/16/2016	48	**1,100**
	1/23/2017	29	**1,000**
	7/24/2017	39	**1,800**
FDEP GCTL		**200**	**300**
FDEP NADC		**2,000**	**3,000**

Legend:
Concentrations in micrograms per liter (ug/L)
Items in bold exceed FDEP GCTLs or NADCs

Laboratory Qualifiers:
U = Below Laboratory Method Detection Limit
NS= Not Sampled

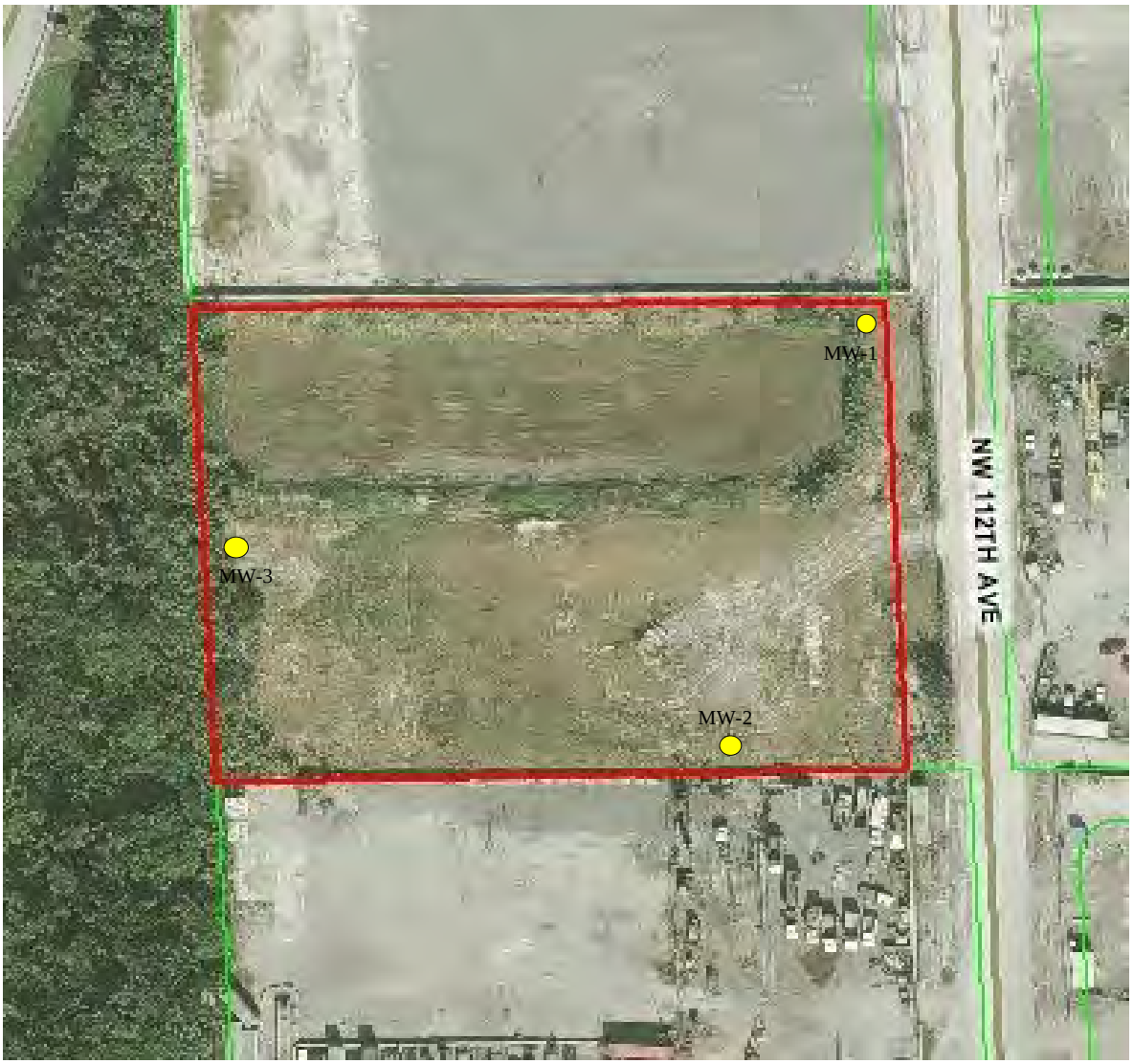
FIGURES

LEGEND:

Subject Property Boundary

Monitoring Well Location

N



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North Miami, FL
33161

FIGURE 1- SITE PLAN
(2012 AERIAL PHOTOGRAPH)

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami-Dade County,
Florida
File- 17023/SW-1409

Scale-

115 feet

LEGEND:

- Subject Property Boundary
- Monitoring Well Location
- (4.13) Groundwater Elevation in Feet
- Approximate Groundwater Flow Direction

N

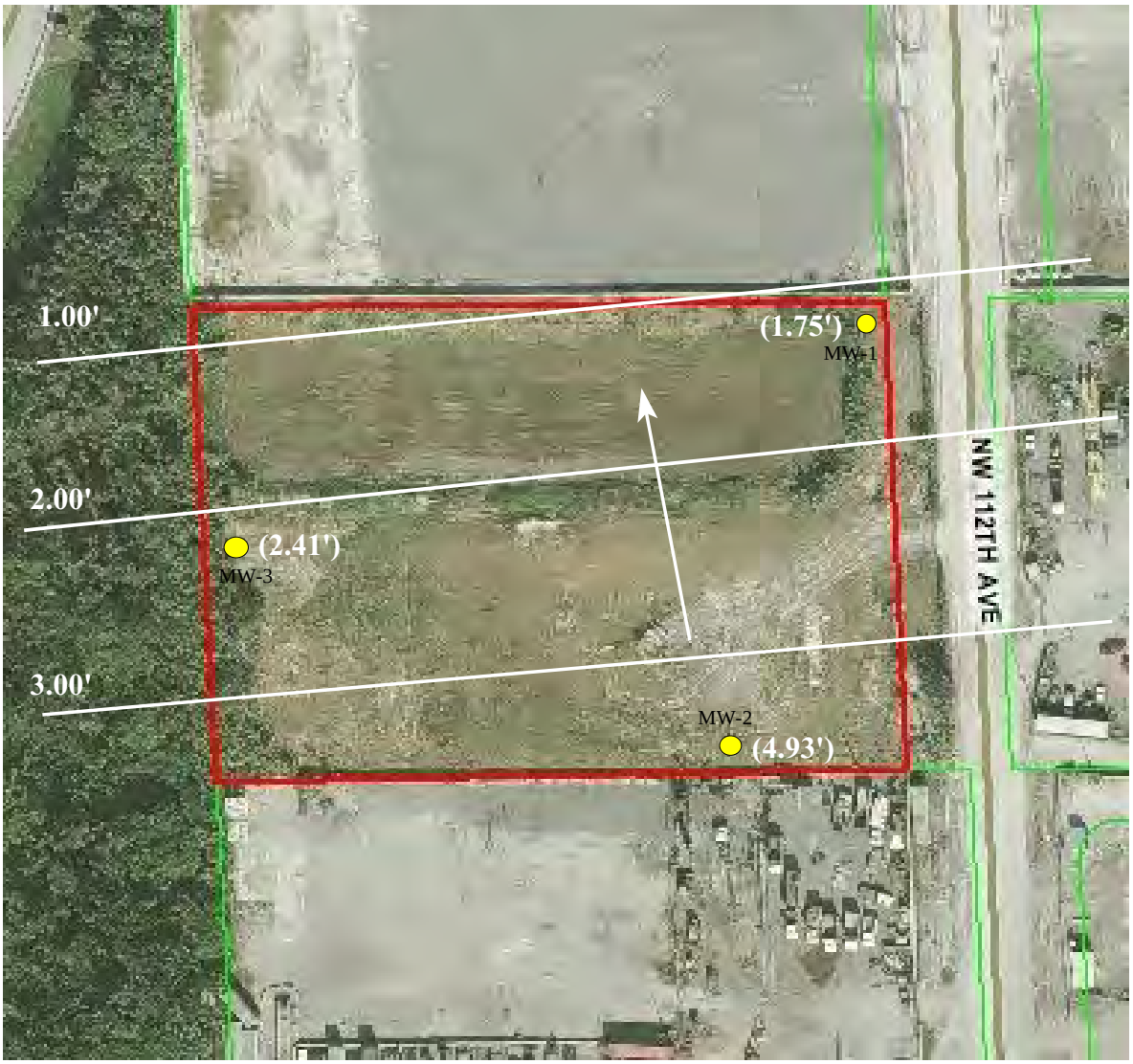

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FIGURE 2- WATER TABLE ELEVATIONS- July 24, 2017

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami-Dade County,
Florida
File- 17023/SW-1409

Scale-

115 feet

LEGEND:

Subject Property Boundary

Monitoring Well Location

Date	
200	Aluminum
300	Iron

Concentrations in ug/L
Items in Bold Exceed CTLs
NS- Not Sampled

N

LANDSCIENCE, INC.

12570 NE 7th Avenue
North Miami, FL
33161

FIGURE 3- IRON AND ALUMINUM CONCENTRATIONS IN GROUNDWATER-

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami-Dade County, Florida
File- 17023/SW-1409

Scale-

115 feet

APPENDIX A

Regulatory Documentation

MIAMI-DADE COUNTY

Carlos A. Gimenez, Mayor

Department of Regulatory and Economic Resources
Environmental Resources Management
701 NW 1st Court, 4th Floor
Miami, Florida 33136-3912
T 305-372-6700 F 305-372-6982

miamidade.gov

March 15, 2017

Robert Saroza
Okeechobee Transfer Inc.
3500 NW 51st Street
Miami, FL 33142

CERTIFIED MAIL NO. 7014 1200 0002 0825 5520
RETURN RECEIPT REQUESTED

Re: Semi-annual Groundwater Monitoring Plan Report (GWMPR) dated January 31, 2017 and prepared by LandScience Environmental Consultants and Engineers for the Okeechobee Transfer Station facility (SW-1409/File-17023/FDEP-0157225-006-SO) located at, near, or in the vicinity of 14000 NW 112th Avenue, Miami, Miami-Dade County, Florida.

Dear Mr. Saroza:

The Department of Regulatory and Economic Resources-Division of Environmental Resources Management (DERM) has reviewed the above-referenced document received February 1, 2017 and offers the following comment:

> The report indicates that the iron concentration in monitoring well MW-1 exceeds the applicable Cleanup Target Level (CTL). As per DERM's letter dated September 6, 2016, an investigation as to the source of the contamination was not conducted. Therefore, pursuant to Rule 62-701.510(6), Florida Administrative Code (FAC), a resampling of the monitoring well shall be conducted. If the iron concentration remains above the applicable CTL, then additional assessment/investigation will be required to be submitted with the July 2017 GWMP. Be advised that DERM will be conducting a groundwater sampling audit during the resampling event. Please notify Matt Santiago (matthew.santiago@miamidade.gov) ten (10) days prior to commencement of sampling activities. Be advised that failure to comply with the above may result in enforcement action for this site.

Be advised that once onsite operations begin, groundwater monitoring for all of the parameters listed in Chapter 62-701.730(8)(c), FAC, shall be incorporated into the semi-annual groundwater monitoring report.

Therefore, pursuant to the above and to FDEP Permit Specific Condition #20, DERM Permit Condition #22, and to Chapter 24, Code of Miami-Dade County and Chapter 62-701, FAC, two copies of an addendum to the GWMP, one paper and one electronic PDF on CD, which addresses the above comments shall be submitted within thirty (30) days of receipt of this letter along with the associated review fee of $900 ($400 for review of the January 31, 2017 GWMP, $250 for review of the April 12, 2016 GWMP Addendum and $250 for the next GWMP Addendum submittal) shall be included with the submittal.

DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. The consultant collecting the samples shall perform field sampling work in accordance with the SOP provided in Chapter 62-160, FAC, as amended. The laboratory analyzing the samples shall perform laboratory analyses pursuant to the National Environmental Laboratory Accreditation Program (NELAP) certification requirements. If the data submitted exhibits a substantial variance from DERM split sample analysis, a complete re-sampling using two independent certified laboratories will be required.

DERM shall be notified in writing a minimum of ten (10) working days prior to the implementation of any sampling or field activities. Email notifications shall be directed to dermpcd@miamidade.gov. Please include the DERM file number on all correspondence.

Be advised that failure to comply with the above may result in enforcement action for this site.

Any person aggrieved by any action or decision of the DERM Director may appeal said action or decision to the Environmental Quality Control Board (EQCB) by filing a written notice of appeal along with submittal of the applicable fee, to the Code Coordination and Public Hearings Section of DERM within fifteen (15) days of the date of the action or decision by DERM.

If you have any questions concerning the above, please contact Matt Santiago (matthew.santiago@miamidade.gov) of the Environmental Monitoring & Evaluation Section at (305) 372-6700.

Sincerely,

Wilbur Mayorga, P.E., Chief
Environmental Monitoring & Restoration Division

ms
ec: Patti Emad – DERM
Andrew Whitaker – LandScience, Inc. (awhitaker@landscienceinc.com)
FDEP File – WACS# 85432

APPENDIX B

Historical Aerial Photographs Showing the Subejct Property

Legend

Approximate Subject Property Location

N

Not to Scale

LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 1
2016 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale

LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 2
2010 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

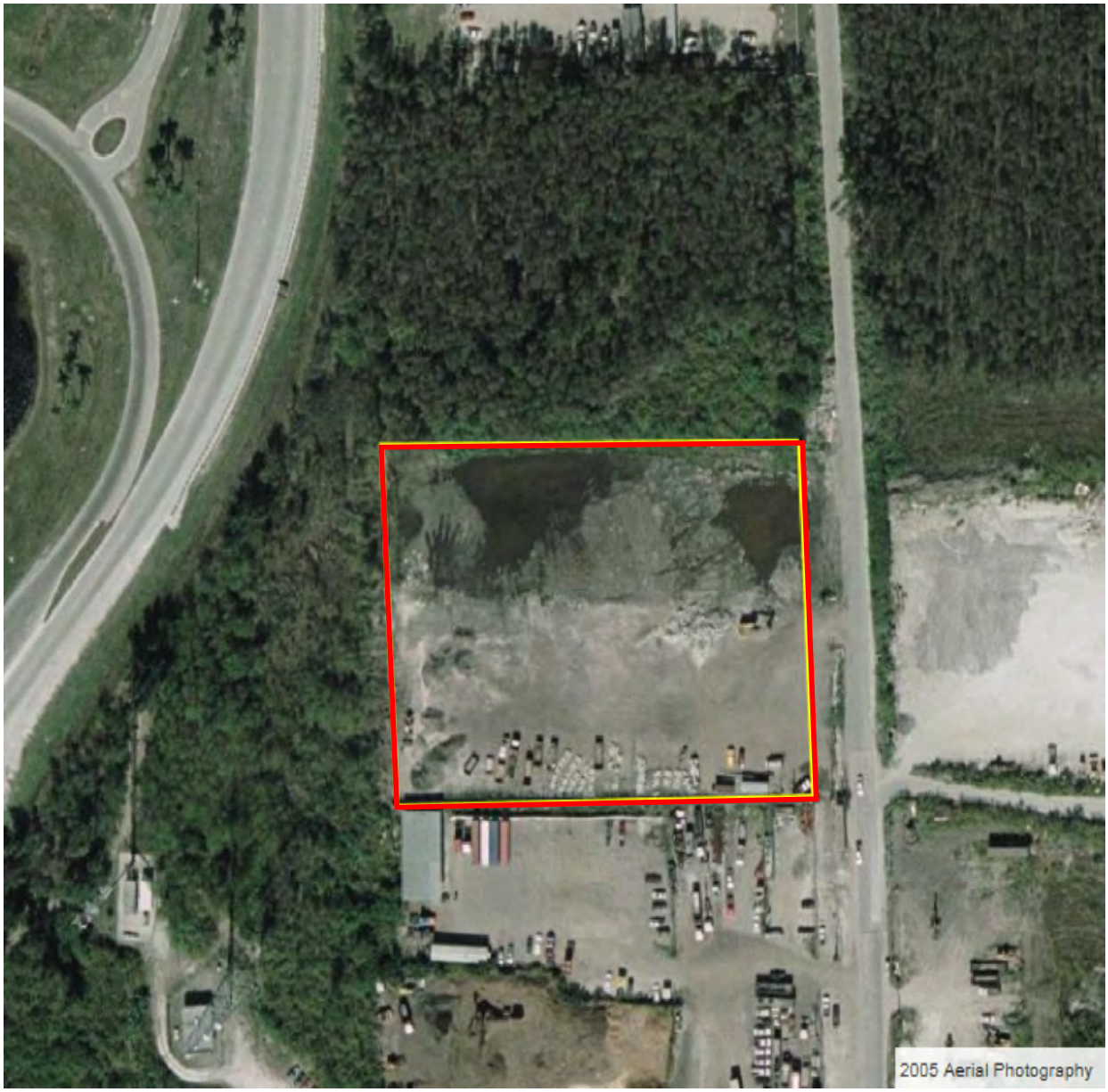
Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale



LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 3
2005 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale

LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 4
1998 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale

LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 5
1991 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale

LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 6
1985 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

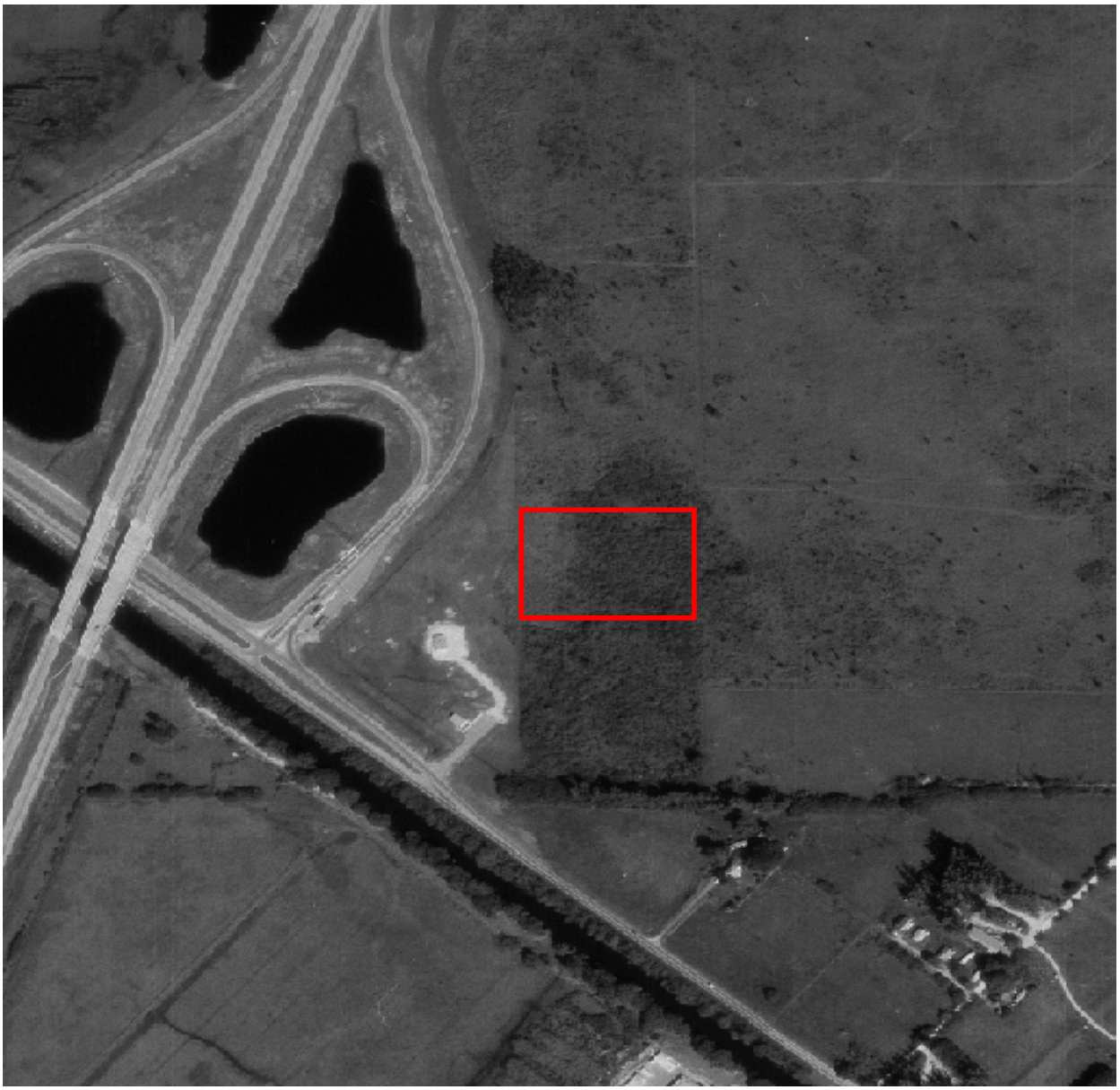
Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale



LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 7
1978 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

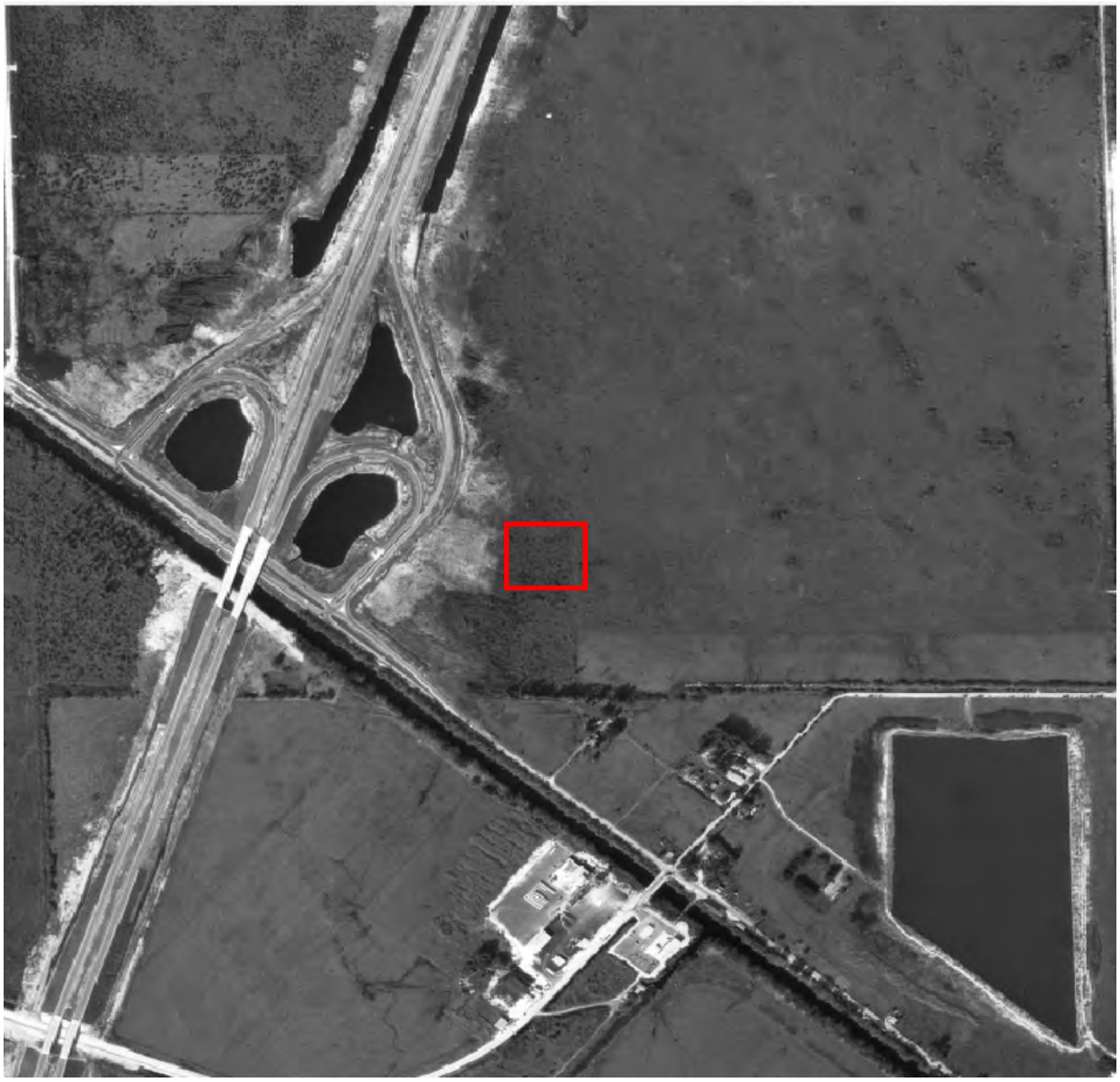
Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale



LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 8
1973 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

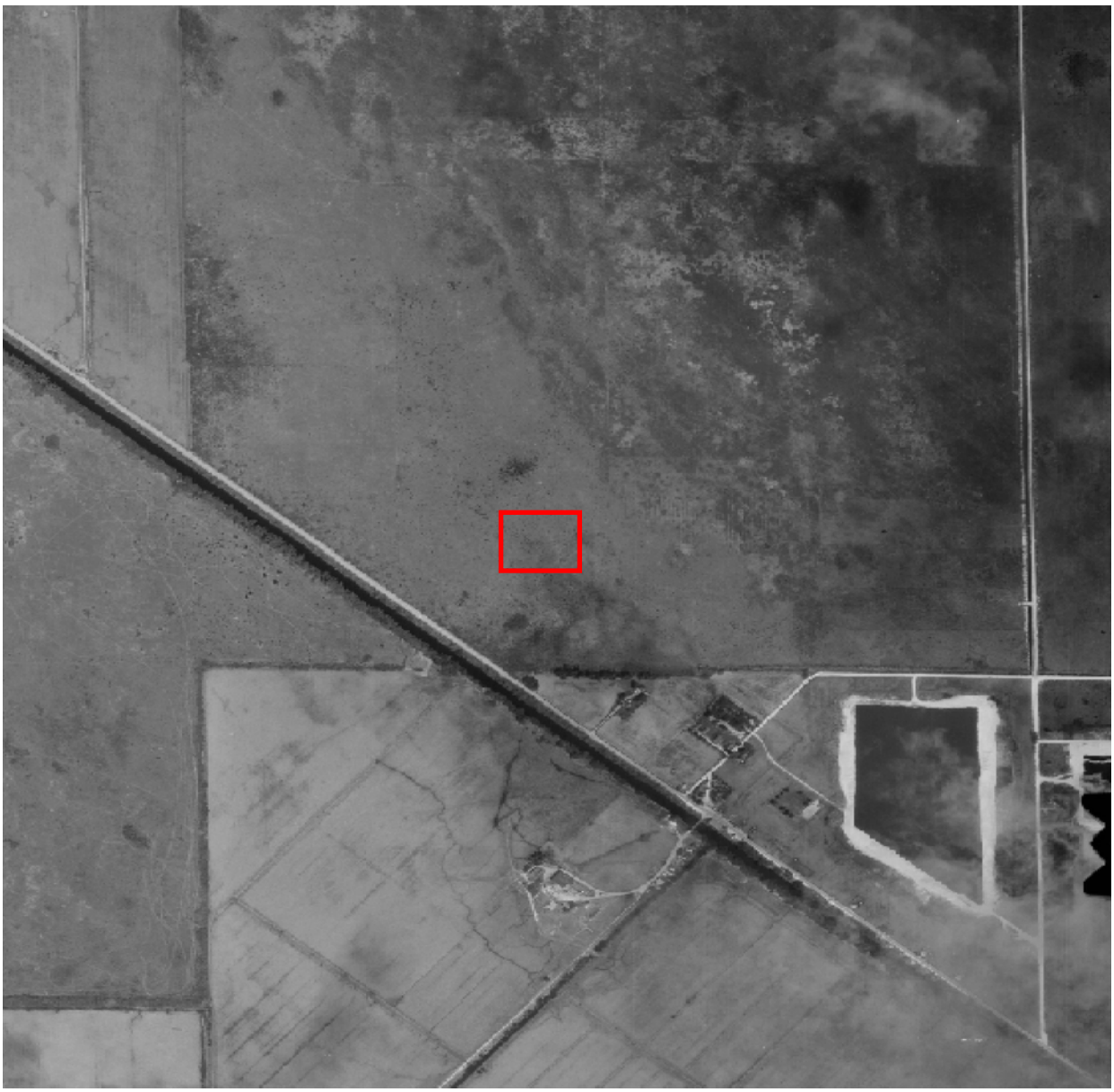
Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

Legend

Approximate Subject Property Location

N

Not to Scale



LANDSCIENCE
Miami, Florida

Project No: 2176683

Drawn By: OR

Date: 07/21/2017

Client(s): World Waste Recycling

FIGURE 9
1968 AERIAL PHOTOGRAPH SHOWING THE SUBJECT PROPERTY

Okeechobee Transfer Facility
14000 Northwest 112th Avenue
Miami, Miami Dade, Florida

APPENDIX C
Groundwater Laboratory Analytical Results, Chain of Custody Documentation, and FDEP Groundwater Sampling Logs

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118
www.jupiterlabs.com
clientservices@jupiterlabs.com

May 5, 2017

Andrew Whitaker
LandScience, Inc.
12570 NE 7th Ave.
Miami, FL 33161

RE: LOG# 1751408
Project ID: Okeechobee Transfer Station
COC# 1751408

Dear Andrew Whitaker:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, May 02, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless indicated by * in the body of the report. The enclosed Chain of Custody is a component of this package and should be retained with the package and incorporated therein.

Results for all solid matrices are reported in dry weight unless otherwise noted. Results for all liquid matrices are reported as received in the laboratory unless otherwise noted. Results relate only to the samples received. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

Samples are disposed of after 30 days of their receipt by the laboratory unless extended storage is requested in writing. The laboratory maintains the right to charge storage fees for archived samples. This report will be archived for 5 years after which time it will be destroyed without further notice, unless prior arrangements have been made.

Certain analyses are subcontracted to outside NELAC certified laboratories, please see the Project Summary section of this report for NELAC certification numbers of laboratories used. A Statement of Qualifiers is available upon request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rebecca Lourido

Rebecca Lourido for
Kacia Baldwin
V.P. of Operations

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

SAMPLE ANALYTE COUNT

Workorder: 1751408

Project ID: Okeechobee Transfer Station

Lab ID	Sample ID	Method	Analytes Reported
1751408001	MW-1	EPA 200.8 (Total)	1

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

SAMPLE SUMMARY

Workorder: 1751408

Project ID: Okeechobee Transfer Station

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1751408001	MW-1	Aqueous Liquid	5/1/2017 10:40	5/2/2017 16:54

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

ANALYTICAL RESULTS

Workorder: 1751408

Project ID: Okeechobee Transfer Station

Lab ID: **1751408001** Date Received: 5/2/2017 16:54 Matrix: Aqueous Liquid

Sample ID: **MW-1** Date Collected: 5/1/2017 10:40

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: EPA 200.8 Metals (W)						Preparation Method: EPA 200.2 mod. Analytical Method: EPA 200.8 (Total)				
Iron	5500	ug/L	20	9.4	4	5/4/2017 10:26	ZS	5/4/2017 18:09	ZS	

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

ANALYTICAL RESULTS QUALIFIERS

Workorder: 1751408

Project ID: Okeechobee Transfer Station

PARAMETER QUALIFIERS

PROJECT COMMENTS

1751408	A reported value of U indicates that the compound was analyzed for but not detected above the MDL. A value flagged with an "i" flag indicates that the reported value is between the laboratory method detection limit and the practical quantitation limit.

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

QUALITY CONTROL DATA

Workorder: 1751408

Project ID: Okeechobee Transfer Station

QC Batch: MXX/8560 Analysis Method: EPA 200.8 (Total)

QC Batch Method: EPA 200.2 mod.

Associated Lab Samples: 1751408001 1751424001 1751424002 1751424003 1751424004 1751424005 1751424006 1751424007

METHOD BLANK: 117110

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Iron	ug/L	U	2.4	

LABORATORY CONTROL SAMPLE & LCSD: 117111 117112

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Iron	ug/L	500	510	510	103	102	80-120	0	20	

MATRIX SPIKE SAMPLE: 117114 Original: 1751359011

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	5000	500	5300	60.7	70-130	

MATRIX SPIKE SAMPLE: 117116 Original: 1751419001

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	4.8	500	500	99	70-130	

SAMPLE DUPLICATE: 117113 Original: 1751359011

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
Iron	ug/L	5000	4900	2.02	20	

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

QUALITY CONTROL DATA

Workorder: 1751408

Project ID: Okeechobee Transfer Station

SAMPLE DUPLICATE: 117115 Original: 1751419001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
Iron	ug/L	4.8	U	56	20	

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 1751408

Project ID: Okeechobee Transfer Station

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1751408001	**MW-1**	EPA 200.2 mod.	MXX/8560	EPA 200.8 (Total)	MMS/7753

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter
Environmental Laboratories, Inc.

www.jupiterlabs.com
150 S. Old Dixie Highway, Jupiter, FL 33458
(561) 575-0030 • (888) 287-3218 • clientservices@jupiterlabs.com

J.E.L. Log # 1751408
P.O. # _____
Quote # _____

Company Name LANDSCIENCE
Address ON FILE
City State Zip
Sampling Site Address MIAMI, FL
Attn: A. WHITAKER Email
Project Name OKEECHOBEE TRANSFER STA. Project #
Sampler Name/Signature C. MURRAY

LAB ANALYSIS

Pres Codes

Parameters: 1 1204

Field Filtered (Y/N)

Requested Turnaround Time
Note: Rush requests subject to acceptance by the laboratory
___ Standard
___ Expedited
Due 5/9/17

#	Sample Label (Client ID)	Collected Date	Collected Time	Matrix Code*	# of Cont	Comments
01	MW-1	5/1/17	10:40	GW	1	
2						
3						
4						
5						
6						
7						
8						
9						
0						

Matrix Codes*

S	Soil/Solid Sediment	SW	Surface Water
GW	Ground Water	SL	Sludge
WW	Waste Water	O	Other (Please Specify)
DW	Drinking Water		

Pres Codes

A-	none	I-	Ice
B-	HNO_3	O-	Other
C-	H_2SO_4	M-	MeOH
D-	NaOH	N -	$Na_2S_2O_3$
E-	HCl	Z-	ZnAc

Relinquished by	Date	Time	Received by	Date	Time
C. MURRAY	5/2/17	14:56		5-2-17	14:56
	5-2-17	16:54		5-2-17	1654

QA/QC level with report
None ___1___2___3___ See price guide for applicable fees

FDEP Dry Cleaning ❑ FDEP UST Pre-Approval ❑
SFWMD ❑ ADaPT ❑ DOT ❑

Temp Control: 2.1 °C

751408

SAMPLE RECEIPT CONFIRMATION SHEET

Client Information

SDG:	1751408	Req:	1934
Client:	LandSci	Project:	A Whitaker
Level:	1	Date Rec'd:	5/2/2017 4:54:00 PM
Rec'd via:	courier		

Cooler Check

ID	Temp	# of samples	Security Tape Present	Security Tape Intact	Method of Receipt	Comments
	2.1	1	☐	☐		

Checked By: CLD

Sample Verification

Loose Caps?	No	All Samples on COC accounted For?	Yes
Broken Containers?	No	All Samples on COC?	Yes
pH Verified?	Yes	Written on Internal COC?	No
pH Strip Lot #	HC601354	Sample Vol. Suff. For Analysis?	Yes
Acid Preserved Samples Lot #	HNO3: 13179	Samples Rec'd W/I Hold Time?	Yes
Base Preserved Samples Lot #		Are All Samples to be Analyzed?	Yes
Samples Received From	courier	Correct Sample Containers?	Yes
Soil Origin (Domestic/Foreign		COC Comments written on COC?	No
Site Location/Project on COC?	Yes	Samplers Initials on COC?	Yes
Client Project # on COC?	No	Sample Date/Time Indicated?	Yes
Project Mgr. Indicated on COC	Yes	TAT Requested:	STD
COC relinquished/Dated by Client?	Yes	Client Requests Verbal Results?	No
COC Received/Dated by JEL	Yes		
JEL to Conduct ALL Analyses?	Yes		

Subcontract Analysis

Parameter	Via	Lab Name	Comments

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: OKEECHOBEE TRANSFER	SITE LOCATION: 14000 NW 112TH AVE. MIAMI, FL		
WELL NO: MW-1	SAMPLE ID: MW-1	DATE: 5/1/17	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 3.43 feet to 3.43 feet	STATIC DEPTH TO WATER (feet): 5.73	PURGE PUMP TYPE OR BAILER: PP

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

VWELL = (13.48 feet − 5.73 feet) X 0.16 gallons/foot = 1.23 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

VEQ T = 0.01 gallons + 0.0014 gallons/foot X 20 feet + 0.25 gallons = 0.29 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
7	7	10:25	10:40	4.00

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 mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:27	1.00	1.40	0.20	5.73	7.57	27.9	7.72	1.01	9.04	CLEAR	NONE
10:32	1.00	2.40	0.20	5.73	7.56	27.9	7.73	0.89	8.88	CLEAR	NONE
10:37	1.00	3.40	0.20	5.73	7.57	27.9	7.73	0.85	3.51	CLEAR	NONE
10:40	0.60	4.00	0.20	5.73	7.59	27.9	7.74	0.81	3.06	CLEAR	NONE

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
C. MURRAY - TIER	C. MURRAY	10:40	10:43

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y / N (circle) Filtration Equipment Type:	FILTER SIZE: ____ µm
7	HDPE		

FIELD DECONTAMINATION: PUMP (Y) N TUBING Y N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-1	1	PE	0.125L	HNO3 HCL		<2	TRAN	APP	50

REMARKS:

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: ± 5% Dissolved Oxygen: all readings ≤ 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

OKEE. TRANS.
5/1/17

DEP-SOP-001/01 Page 1 of 1
FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI 556 **INSTRUMENT #** 06H1774AK

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A AIR CALIBRATION
Standard B _____
Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/5/1	8:25	Aa	7.520	7.52	-	YES	AIR CAL	CM
		30.3°	mg/l	mg/l				
17/5/1	8:28	Aa	7.520	7.49	0.5%	YES	IC	CM
		30.3°	mg/l	mg/l				
		CCV DURING SAMPLE EVENT						
17/5/1	10:27	Aa	7.533	7.50	0.4%	YES	CCV	CM
a MW-1		30.2°	mg/l	mg/l				
		CCV FOLLOWING SAMPLE EVENT						
17/5/1	10:46	Aa	7.456	7.40	0.9%	YES	CCV	CM
		30.3	mg/l	mg/l				

OKEE TRANS.
5/1/17

DEP-SOP-001/01
FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI 556 **INSTRUMENT #** 06H777414

PARAMETER: *[check only one]*

☐ TEMPERATURE ☑ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A HANNA INST. - 84 uS/cm², 3/2018
Standard B HANNA INST. 80,000 uS/cm², 6/2019
Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/5/1	8:31	A	84 uS/cm²	80 uS/cm²	4.8%	YES	IC	CM
17/5/1	8:33	B	80,000 uS/cm²	79,510 uS/cm²	0.6%	YES	IC V	CM
		CCV DURING SAMPLE EVENT						
17/5/1 w MW-1	10:28	A	84 uS/cm²	82 uS/cm²	2.4%	YES	CCV	CM
		CCV FOLLOWING SAMPLE EVENT						
17/5/1	10:46	A	84 uS/cm²	84 uS/cm²	0%	YES	CCV	CM
17/5/1	10:50	B	80,000 uS/cm²	79,490 uS/cm²	0.6%	YES	CCV	CM

OICEE. TRANS.
5/1/17

DEP-SOP-001/01
FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI - 556 **INSTRUMENT #** 06H177444

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☑ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A CALTECH - 4.00 SU, 10/2013
Standard B CALTECH - 7.00 SU, 6/2013
Standard C CALTECH - 10.0 SU, 9/2013

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/5/1	8:36	B	7.00 SU	7.01 SU	0.6%	YES	IC	CH
17/5/1	8:38	A	4.00 SU	4.03 SU	0.8%	YES	IC	CH
17/5/1	8:40	C	10.0 SU	9.96 SU	0.4%	YES	ICV	CH
		CCV	DURING SAMPLE EVENT					
17/5/1 @ MW-1	10:29	B	7.00 SU	7.03 SU	0.4%	YES	CCV	CH
		CCV	FOLLOWING SAMPLE EVENT					
17/5/1 @	10:52	B	7.00 SU	7.02 SU	0.3%	YES	CCV	CH
17/5/1	10:54	C	10.0 SU	9.93 SU	0.7%	YES	CCV	CH

OKEE. CREEK.
5/1/17

FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI- 556 **INSTRUMENT #** 06H1774AM

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☑ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A HACH- 1.00 NTU, 12/2016

Standard B HACH- 100NTU 10/2017

Standard C HACH- 800 NTU 10/2017

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/5/1	8:43	A	1.00 NTU	1.04 NTU	4%	YES	IC	CM
17/5/1	8:46	B	100 NTU	99.5 NTU	0.5%	YES	IC	CM
17/5/1	8:48	C	800 NTU	788 NTU	1.5%	YES	ICV	CM
		CCV	DURING SAMPLE EVENT					
17/5/1 @ MW-1	10:30	A	1.00 NTU	1.01 NTU	1%	YES	CCV	CM
		CCV	FOLLOWING SAMPLE EVENT					
17/5/1 @	10:56	A	1.00 NTU	1.03 NTU	3%	YES	CCV	CM
17/5/1	10:58	B	100 NTU	99.0 NTU	1%	YES	CCV	CM

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118
www.jupiterlabs.com
clientservices@jupiterlabs.com

July 26, 2017

Andrew Whitaker
LandScience, Inc.
12570 NE 7th Ave.
Miami, FL 33161

RE: LOG# 1752574
Project ID: Okeechobee Transfer
COC# 1752574

Dear Andrew Whitaker:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, July 24, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless indicated by * in the body of the report. The enclosed Chain of Custody is a component of this package and should be retained with the package and incorporated therein.

Results for all solid matrices are reported in dry weight unless otherwise noted. Results for all liquid matrices are reported as received in the laboratory unless otherwise noted. Results relate only to the samples received. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

Samples are disposed of after 30 days of their receipt by the laboratory unless extended storage is requested in writing. The laboratory maintains the right to charge storage fees for archived samples. This report will be archived for 5 years after which time it will be destroyed without further notice, unless prior arrangements have been made.

Certain analyses are subcontracted to outside NELAC certified laboratories, please see the Project Summary section of this report for NELAC certification numbers of laboratories used. A Statement of Qualifiers is available upon request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melissa Mills for
Kacia Baldwin
V.P. of Operations

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

SAMPLE ANALYTE COUNT

Workorder: 1752574

Project ID: Okeechobee Transfer

Lab ID	Sample ID	Method	Analytes Reported
1752574001	MW-1	EPA 200.8 (Total)	2
1752574002	MW-2	EPA 200.8 (Total)	2
1752574003	MW-3	EPA 200.8 (Total)	2

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

SAMPLE SUMMARY

Workorder: 1752574

Project ID: Okeechobee Transfer

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1752574001	MW-1	Aqueous Liquid	7/24/2017 12:36	7/24/2017 18:30
1752574002	MW-2	Aqueous Liquid	7/24/2017 13:46	7/24/2017 18:30
1752574003	MW-3	Aqueous Liquid	7/24/2017 13:10	7/24/2017 18:30

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter Environmental Laboratories, Inc.
150 S. Old Dixie Highway
Jupiter, FL 33458
Phone: (561)575-0030
Fax: (561)575-4118

ANALYTICAL RESULTS

Workorder: 1752574

Project ID: Okeechobee Transfer

Lab ID: **1752574001** Date Received: 7/24/2017 18:30 Matrix: Aqueous Liquid

Sample ID: **MW-1** Date Collected: 7/24/2017 12:36

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: EPA 200.8 Metals (W)						Preparation Method: EPA 200.2 mod. Analytical Method: EPA 200.8 (Total)				
Aluminum	29	ug/L	2.0	0.54	4	7/25/2017 13:15	ZS	7/25/2017 17:54	ZS	
Iron	960	ug/L	20	9.4	4	7/25/2017 13:15	ZS	7/25/2017 17:54	ZS	

FDOH# E86546

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ANALYTICAL RESULTS

Workorder: 1752574

Project ID: Okeechobee Transfer

Lab ID: **1752574002** Date Received: 7/24/2017 18:30 Matrix: Aqueous Liquid

Sample ID: **MW-2** Date Collected: 7/24/2017 13:46

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: EPA 200.8 Metals (W)						Preparation Method: EPA 200.2 mod. Analytical Method: EPA 200.8 (Total)				
Aluminum	25	ug/L	2.0	0.54	4	7/25/2017 13:15	ZS	7/25/2017 17:58	ZS	
Iron	2400	ug/L	20	9.4	4	7/25/2017 13:15	ZS	7/25/2017 17:58	ZS	

FDOH# E86546

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ANALYTICAL RESULTS

Workorder: 1752574

Project ID: Okeechobee Transfer

Lab ID: **1752574003** Date Received: 7/24/2017 18:30 Matrix: Aqueous Liquid

Sample ID: **MW-3** Date Collected: 7/24/2017 13:10

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: EPA 200.8 Metals (W)						Preparation Method: EPA 200.2 mod. Analytical Method: EPA 200.8 (Total)				
Aluminum	39	ug/L	2.0	0.54	4	7/25/2017 13:15	ZS	7/25/2017 18:03	ZS	
Iron	1800	ug/L	20	9.4	4	7/25/2017 13:15	ZS	7/25/2017 18:03	ZS	

FDOH# E86546

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 1752574

Project ID: Okeechobee Transfer

PARAMETER QUALIFIERS

PROJECT COMMENTS

1752574	A reported value of U indicates that the compound was analyzed for but not detected above the MDL. A value flagged with an "i" flag indicates that the reported value is between the laboratory method detection limit and the practical quantitation limit.

FDOH# E86546

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QUALITY CONTROL DATA

Workorder: 1752574

Project ID: Okeechobee Transfer

QC Batch: MXX/8837 Analysis Method: EPA 200.8 (Total)

QC Batch Method: EPA 200.2 mod.

Associated Lab Samples: 1752574001 1752574002 1752574003

METHOD BLANK: 122259

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Aluminum	ug/L	U	0.13	
Iron	ug/L	U	2.4	

LABORATORY CONTROL SAMPLE & LCSD: 122260 122261

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Aluminum	ug/L	50	51	51	102	102	85-115	0	20	
Iron	ug/L	500	510	500	102	101	80-120	1.98	20	

MATRIX SPIKE SAMPLE: 122263 Original: 1752567001

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5.4	50	82	154	70-130	J4
Iron	ug/L	620	500	1200	117	70-130	

SAMPLE DUPLICATE: 122262 Original: 1752567001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
Aluminum	ug/L	5.4	6.6	20	20	
Iron	ug/L	620	650	4.72	20	

FDOH# E86546

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 1752574

Project ID: Okeechobee Transfer

QUALITY CONTROL PARAMETER QUALIFIERS

J4	MS/MSD recovery exceeded control limits due to matrix interference. LCS/LCSD recovery was within acceptable range.

FDOH# E86546

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 1752574

Project ID: Okeechobee Transfer

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1752574001	**MW-1**	EPA 200.2 mod.	MXX/8837	EPA 200.8 (Total)	MMS/7983
1752574002	**MW-2**	EPA 200.2 mod.	MXX/8837	EPA 200.8 (Total)	MMS/7983
1752574003	**MW-3**	EPA 200.2 mod.	MXX/8837	EPA 200.8 (Total)	MMS/7983

FDOH# E86546

CERTIFICATE OF ANALYSIS

Jupiter
Environmental Laboratories, Inc.

www.jupiterlabs.com
150 S. Old Dixie Highway, Jupiter, FL 33458
(561) 575-0030 • (888) 287-3218 • clientservices@jupiterlabs.com

J.E.L. Log # 175574
P.O. # _____
Quote # _____

Company Name: LANDSCIENCE
Address: ON FILE
City State Zip
Sampling Site Address: 14000 NW 112TH AVE, MIAMI, FL
Attn: A. WHITAKER Email
Project Name: OKEECHOBEE TRANSFER
Project #:
Sampler Name/Signature: C. McGRAY

LAB ANALYSIS

Requested Turnaround Time
Note: Rush requests subject to acceptance by the laboratory
___ Standard
X ✓ Expedited
Due 7/27/17

#	Sample Label (Client ID)	Collected Date	Collected Time	Matrix Code*	# of Cont	Pres Codes	Parameters: ALUMINUM	Parameters: IRON	Field Filtered (Y/N)	Comments
1	MW-1	7/24/17	12:36	GW	1		✓	✓		PLEASE PRO-
2	MW-2	7/24/17	13:46	GW	1		✓	✓		VIDE DATA
3	MW-3	7/24/17	13:10	GW	1		✓	✓		ON 7/27/17
4										
5										
6										
7										
8										
9										
10										

Matrix Codes*
S Soil/Solid Sediment; SW Surface Water
GW Ground Water; SL Sludge
WW Waste Water; O Other (Please Specify)
DW Drinking Water

Pres Codes
A- none; I- Ice
B- HNO_3; O- Other
C- H_2SO_4; M- MeOH
D- NaOH; N- $Na_2S_2O_3$
E- HCl; Z- ZnAc

Relinquished by	Date	Time	Received by	Date	Time
C. McGRAY	7/24/17	15:18	Roberta Navarro	7.24.17	15:18
[signature]	7/24/17	18:30	KB	7/24/17	1830

QA/QC level with report
None ___1___2___3___ See price guide for applicable fees

FDEP Dry Cleaning ❑ FDEP UST Pre-Approval ❑
SFWMD ❑ ADaPT ❑ DOT ❑

Temp Control: 6.0 °C

752574

SAMPLE RECEIPT CONFIRMATION SHEET

Client Information

SDG:	1752574	**Req:**	1934
Client:	LandSci	**Project:**	A Whitaker
Level:	1	**Date Rec'd:**	7/24/2017 6:30:00 PM
Rec'd via:	courier		

Cooler Check

ID	Temp	# of samples	Security Tape Present	Security Tape Intact	Method of Receipt	Comments
	6	3	☐	☐		

Checked By: MD

Sample Verification

Loose Caps?	No	**All Samples on COC accounted For?**	Yes
Broken Containers?	No	**All Samples on COC?**	Yes
pH Verified?	Yes	**Written on Internal COC?**	Yes
pH Strip Lot #	HC601354	**Sample Vol. Suff. For Analysis?**	Yes
Acid Preserved Samples Lot #		**Samples Rec'd W/I Hold Time?**	Yes
Base Preserved Samples Lot #		**Are All Samples to be Analyzed?**	Yes
Samples Received From	courier	**Correct Sample Containers?**	Yes
Soil Origin (Domestic/Foreign		**COC Comments written on COC?**	Yes
Site Location/Project on COC?	Yes	**Samplers Initials on COC?**	Yes
Client Project # on COC?	Yes	**Sample Date/Time Indicated?**	Yes
Project Mgr. Indicated on COC	Yes	**TAT Requested:**	RUSH
COC relinquished/Dated by Client?	Yes	**Client Requests Verbal Results?**	No
COC Received/Dated by JEL	Yes		
JEL to Conduct ALL Analyses?	Yes		

Subcontract Analysis

Parameter	Via	Lab Name	Comments

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: OKEECHOBEE TRANS.	SITE LOCATION: 14000 NW 112TH AVE, MIAMI, FL		
WELL NO: MW-1	SAMPLE ID: MW-1	DATE: 7/24/17	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 3.5 feet to 13.5 feet	STATIC DEPTH TO WATER (feet): 4.85	PURGE PUMP TYPE OR BAILER: PP

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

VWELL = 13.51 feet − 4.85 feet X 0.16 gallons/foot = 1.39 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

VEQ'T = 0.01 gallons + (0.001 gallons/foot X 20 feet) 0.25 gallons 0.29 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 12:15	PURGING ENDED AT: 12:36	TOTAL VOLUME PURGED (gallons):
6	6			4.20

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) mmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:23	1.60	1.60	0.20	4.85	7.39	30.2	703	0.95	7.61	CLEAR	NONE
12:28	1.00	2.60	0.20	4.85	7.38	30.2	702	0.86	7.49	CLEAR	NONE
12:33	1.00	3.60	0.20	4.85	7.37	30.2	702	0.80	7.26	CLEAR	NONE
12:36	0.60	4.20	0.20	4.85	7.37	30.2	701	0.78	7.15	CLEAR	NONE

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:36	SAMPLING ENDED AT: 12:40
C. MURRAY - T21	C. MURRAY		

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
6			

FIELD DECONTAMINATION: PUMP (Y) N TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-1	1	PE	0.125	HNO3 ICE	-	<2	ACWM, IRON	APP	100

REMARKS:

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: ± 5% Dissolved Oxygen: all readings ≤ 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: OKEECHOBEE TRANS	SITE LOCATION: 140000 NW 117TH AVE, MIAMI, FL	
WELL NO: MW-2	SAMPLE ID: MW-2	DATE: 7/24/17

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 3.18 feet to 13.19 feet	STATIC DEPTH TO WATER (feet): 3.69	PURGE PUMP TYPE OR BAILER: PP

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

1 WELL VOLUME = (13.19 feet − 3.69 feet) X 0.16 gallons/foot = 1.52 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

VENT = .001 gallons + (.00014 gallons/foot X 20 feet) + .025 gallons .029 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5	PURGING INITIATED AT: 13:25	PURGING ENDED AT: 13:46	TOTAL VOLUME PURGED (gallons): 4.20

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)	ODOR (describe)
13:33	1.00	1.00	0.20	3.69	7.30	30.0	595	1.07	5.33	CLEAR	NONE
13:38	1.00	2.00	0.20	3.69	7.28	30.0	593	0.95	4.60	CLEAR	NONE
13:43	1.00	3.00	0.20	3.69	7.27	30.0	592	0.90	4.23	CLEAR	NONE
13:46	0.60	4.20	0.20	3.69	7.27	30.0	592	0.87	4.08	CLEAR	NONE

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: C. MERRAY - TRC	SAMPLER(S) SIGNATURE(S): C. Merray	SAMPLING INITIATED AT: 13:40	SAMPLING ENDED AT: 13:50
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	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					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-2	1	PE	0.125	HNO_3 ICE	-	<2	ACCUM, 1120	APP	100

REMARKS:

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:** ± 5% **Dissolved Oxygen:** all readings ≤ 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: OKEECHOBEE TRANS	SITE LOCATION: 140 00 NW 112TH AVE, MIAMI, FL	
WELL NO: MW-3	SAMPLE ID: MW-3	DATE: 7/24/17

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 1.13 feet to 11.13 feet	STATIC DEPTH TO WATER (feet): 3.59	PURGE PUMP TYPE OR BAILER: PP

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

VWELL = (11.13 feet – 3.59 feet) x 0.16 gallons/foot = 1.21 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

VEQ'T 0.01 gallons + (0.001 gallons/foot X 20 feet) + 0.25 gallons = 0.29 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5	PURGING INITIATED AT: 12:50	PURGING ENDED AT: 13:10	TOTAL VOLUME PURGED (gallons): 4.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) mhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:57	1.40	1.40	0.20	3.59	7.40	30.3	603	0.95	8.08	CLEAR	NONE
13:02	1.00	2.40	0.20	3.59	7.37	30.2	601	0.85	0.74	CLEAR	NONE
13:07	1.00	3.40	0.20	3.59	7.35	30.2	598	0.81	6.59	CLEAR	NONE
13:10	0.60	4.00	0.20	3.59	7.35	30.1	596	0.79	6.39	CLEAR	NONE

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: C. MENDEZ AY-TEK	SAMPLER(S) SIGNATURE(S): C. Mendez AY	SAMPLING INITIATED AT: 13:10	SAMPLING ENDED AT: 13:13
PUMP OR TUBING DEPTH IN WELL (feet): 5	TUBING MATERIAL CODE: HDPE	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					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-3	1	PE	0.125 L	HNO3+ICE	–	<2	ALUM, IRON		

REMARKS:

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: ± 5% Dissolved Oxygen: all readings ≤ 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

OKEE. TRANS.
7/24/17

DEP-SOP-001/01
FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) VSI-556 **INSTRUMENT #** 06H1774AM

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CL ☑ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A AIR CALIBRATION
Standard B _____
Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/7/24	535	A @ 27.9°	7.842 mg/l	7.84 mg/l	-	YES	I.C CAL	CM
17/7/24	537	A @ 27.9°	7.842 mg/l	7.82 mg/l	0.3%	YES	I C	CM
		CCV DURING SAMPLE EVENT						
17/7/24 @ MW-3	1257	A @ 27.6°	7.884 mg/l	7.85 mg/l	0.4%	YES	CCV	CM
		CCV FOLLOWING SAMPLE EVENT						
17/7/24	135	A @ 29.2°	7.842 mg/l	7.80 mg/l	0.8%	YES	CCV	CM

OKEE. TRANS.

DEP-SOP-001/01 1/24/17

FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI - 550 **INSTRUMENT #** 06H1774147

PARAMETER: *[check only one]*

☐ TEMPERATURE ☑ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A HANNA INST. - 84 $\mu S/cm^2$, 3/2018

Standard B HANNA INST - 80000 $\mu S/cm^2$, 6/2019

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/1/24	5:40	A	84 $\mu S/cm^2$	87 $\mu S/cm^2$	3.6%	YES	IC	CM
17/1/24	5:42	B	80,000 $\mu S/cm^2$	80,600	0.8%	YES	ICV	CM
		CCV DURING SAMPLE EVENT						
17/1/24 @MW-3	11:58	A	84 $\mu S/cm^2$	85 $\mu S/cm^2$	1.2%	YES	CCV	CM
		CCV FOLLOWING SAMPLE EVENT						
17/1/24	13:57	A	84 $\mu S/cm^2$	88 $\mu S/cm^2$	4.8%	YES	CCV	CM
17/1/24	14:00	B	80,000 $\mu S/cm^2$	79,200 $\mu S/cm^2$	1%	YES	CCV	CM

OLEE, TRANS.
7/24/17

FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) YSI - 556 **INSTRUMENT #** 06H1774AM

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☑ pH ☐ ORP

☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A CALITECH - 4.00 SU, 10/2015

Standard B CALITECH - 7.00 SU 6/2018

Standard C CALITECH - 10.0 SU 9/2015

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/7/24	5:45	B	7.00 SU	6.96 SU	0.6%	YES	IC	CM
17/7/24	5:47	A	4.00 SU	4.04 SU	1%	YES	IC	CM
17/7/24	5:50	C	10.0 SU	9.91 SU	0.9%	YES	ICV	CM
		CCV	DURING	SAMPLE	EVENT			
17/7/24 @ MW-3	12:59	B	7.00 SU	6.98 SU	0.3%	YES	CCV	CM
		CCV	FOLLOWING	SAMPLE	EVENT			
17/7/24	14:02	B	7.00 SU	6.95 SU	0.7%	YES	CCV	CM
17/7/24	14:04	C	10.0 SU	9.90 SU	1%	YES	CCV	CM

OKEE. TRANS
7/24/17

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FT 1000 General Field Testing and Measurement

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) HACH 2100 **INSTRUMENT #** 06060018943

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CL ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A HACH - 1.00 NTU - 12/2018
Standard B HACH - 100 NTU - 10/2017
Standard C HACH - 800 NTU - 10/2017

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/7/24	5:56	A	1.00 NTU	0.95 NTU	5%	YES	IC	CM
17/7/24	5:59	B	100 NTU	101 NTU	1%	YES	IC	CM
17/7/24	6:00	C	800 NTU	816 NTU	2%	YES	IC	CM
		CCV DURING SAMPLE EVENT						
17/7/24 DUP-3	13:00	A	1.00 NTU	0.99 NTU	1%	YES	CCV	CM
		CCV FOLLOWING SAMPLE EVENT						
17/7/24	14:06	A	1.00 NTU	1.03 NTU	3%	YES	CCV	CM
17/7/24	14:08	B	100 NTU	104 NTU	4%	YES	CCV	CM