

## Smith, George

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**From:** Tift, Rachel  
**Sent:** Tuesday, September 05, 2017 9:06 AM  
**To:** SWD\_Waste  
**Subject:** FW: WACS 39859, Citrus County Central Landfill Inspection Response  
**Attachments:** FDEP Inspection Response 8.30.17.pdf

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**From:** Ray Oates [mailto:ray.oates@citrusbocc.com]  
**Sent:** Friday, September 1, 2017 3:46 PM  
**To:** Tift, Rachel  
**Cc:** Henry C. Norris ; Troy D. Hays (thays@jonesedmunds.com) ; LARRY J. BROCK  
**Subject:** WACS 39859, Citrus County Central Landfill Inspection Response

Dear Ms. Tift:

In reply to your site inspection of February 22, 2017, and subsequent inspection-related correspondence dated August 15, 2017; attached please find our response(s) to each of two (2) FDEP Current Violations and seven (7) Areas of Concern.

The attached file also includes the following.

1. Annual Site Life Calculation dated January 13, 2016.
2. Final Closure Soils Certification (related to *Declaration of Restrictive Covenant and Access Agreement*), dated August 27, 2017.
3. Second Quarter, 2017, Leachate Generation and Daily Precipitation Report, dated April 5, 2017, and
4. Second Quarter 2017, Phase 3 Secondary Leachate Flow Chart (3-D, Flow vs. Rainfall over time).

Should you have any questions regarding this correspondence, please do not hesitate to contact me.

Respectfully,

*Ray Oates, PG*

*Solid Waste Compliance Manager*

Citrus County Division of Solid Waste Management

230 W. Gulf to Lake Hwy

Lecanto, FL 34460

(352) 527-7670

(352) 527-7679 Direct #

(352) 527-7672 Fax

[Ray.Oates@citrusbocc.com](mailto:Ray.Oates@citrusbocc.com)

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## Board of County Commissioners

DEPARTMENT OF PUBLIC WORKS  
SOLID WASTE MANAGEMENT DIVISION

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8/30/2017

Ms. Rachel Tift  
Engineering Specialist, Compliance Assurance  
Florida Department of Environmental Protection  
13051 N. Telecom Parkway  
Temple Terrace, Florida, 33637-0926

RE: Citrus County Central Class I Landfill and Closed Class I Landfill  
Facility ID Number 39859  
Citrus County

**Dear Ms. Tift:**

In response to your correspondence dated August 15, 2017, enclosed please find our response to matters pertaining to Consent Order #05-1078 and your current areas of concern:

**CITRUS CENTRAL SLF**  
02/22/2017

**FDEP Current Violations:**

Rule: 62-701.510(3), 62-701.510(4), 62-701.730(10), 62-701.730(8)(f), 62-713.400(3)

**Question Number: 1.6**

Explanation: VOCs were reported above groundwater standards at MW-7 and MW-19 in the second SA 2016 Groundwater Monitoring Report and first SA 2017 Groundwater Monitoring Report. The first SA 2016 Groundwater Monitoring Report attributed the VOC exceedances at these wells to landfill gas. Corrective Action: On 2/22/2017 prior to the inspection, DEP, Citrus County, and Jones Edmunds had a meeting to discuss landfill gas migration and groundwater exceedances at the facility. After the inspection, the facility assessed the adequacy of the existing landfill gas monitoring system and groundwater monitoring system and submitted a plan (Landfill Gas Assessment and Groundwater Delineation plan, revised 6/6/2017, received 6/9/2017) to retrofit/expand both systems to determine the extent and path of landfill gas migration and impacts to groundwater. Please submit updates on the implementation of the Landfill Gas Assessment and Groundwater Delineation plan. The results of the expanded monitoring should be used to develop a remediation plan.

**County Response Question Number 1.6:**

The three groundwater wells and the eleven landfill gas monitoring probes proposed in the 6/6/2017 Landfill Gas Assessment and Groundwater Delineation Plan (Plan) were installed July 24<sup>th</sup> through August 18<sup>th</sup> at the landfill. The three groundwater wells have been developed and sampled and we are currently awaiting the analytical results from the laboratory. All of the landfill gas monitoring probes were fitted with dedicated tubing. As detailed in the Plan, the existing and

new landfill gas monitoring probes were fitted with tubing to multiple depths for measuring landfill gas levels at discrete intervals in the probe. The County is currently working on a report detailing the well and probe construction details and the initial sampling event of the new groundwater wells. The report will be submitted to FDEP by the October 24, 2017 deadline included in the Landfill Gas Assessment and Groundwater Delineation plan.

**FDEP Current Areas of Concern:**

Area: Phase III

Rule: 62-701.500(7)(d)

**Question Number: 2.17**

Explanation: At the time of the inspection, a narrow working face was not being practiced in Phase 3, and daily and intermediate cover was sparse in places leaving waste exposed. Corrective Action: Documentation was provided via email on 3/3/2017 and 3/10/2017 which included: pictures of efforts to reduce the working face area and improve cover, the landfill daily inspection log updated to include a checklist item for maintaining the working face width < 50' x 75', and a copy of a Citrus County memo dated 2/24/2017 used to brief operations staff on the permit requirements related to the working face and daily and intermediate cover. Please continue to maintain a narrow working face and apply initial and intermediate cover as required so that waste is not exposed.

Area: Phase III

Rule: 62-701.500(7)(e)

Question Number: 2.18

Explanation: See 2.17

Corrective Action: See 2.17

Area: Phase III

Rule: 62-701.500(7)(f)

Question Number: 2.19

Explanation: See 2.17.

Corrective Action: See 2.17.

**County Response Question Number 2.17:**

As documented via email on 3/3/2017 and 3/10/2017 and per your direction, we are continuing to maintain a narrow working face and applying initial and intermediate cover as required so that waste is not exposed.

**Comment 1.2** - It appears that a landfill survey was conducted in September 2016 but an annual estimate of remaining life was not received. Please provide.

**County Response Comment Number 1.2:**

Please see the attached Annual Site Life Calculation Report and supporting documentation prepared on December 21, 2016. GET SEALED COPY FROM MARK SCHROEDER



**Comment 1.8** - Please be reminded that the wording in the next audit note submitted should be revised per the request sent to Ms. Angela Vick of the Citrus County Board of County Commissioners by the Solid Waste Financial Assurance group on 4/27/2016.

**County Response Comment 1.8:**

FDEP's reminder is noted. The Citrus County Clerk's Office (Solid Waste Financial Assurance group) is in receipt of the FDEP's letter by Mr. Tor JM Benjar, (dated April 27, 2016). We have reminded our Clerk's Office personnel of the importance of making the FDEP's requested language changes in the 2017 Financial Assurance Report.

**Comment 1.9** - Please be reminded that the report required by Appendix 4 of Permit 21375-25-SO/01, Declaration of Restrictive Covenant and Access Easement Agreement, Item 2.c, is due to the Department by July 1 each year. The report is necessary in order for the Department to review cost estimates. Please provide the report as soon as practical, but by no later than September 1, 2017.

**County Response Comment 1.9:**

The Soils Covenant Area Report was forwarded to Ms. Melissa Madden of FDEP on August 28, 2017. Attached is a copy of the report.

**Comment 2.22** - Several Phase 3 leakage action rate (LAR) exceedances were noted during the month of June 2017 in the 2017 Quarter 2 Leachate Generation and Daily Precipitation Report. Please provide an update on the status of the storm water controls currently in place and their effectiveness in reducing leachate generation in Phase 3. If these controls are found to be adequate, additional investigation into the continued exceedances of the Phase 3 LAR may be required. Please note that the 2017 Quarter 1 Leachate Generation and Daily Precipitation Report (.xls file) was not attached to the submittal email dated April 7, 2017. Please provide this report.

**County Response Comment 2.22:**

Attached is a copy of the 2017 Quarter 1 Leachate Generation and Daily Precipitation report. In our continued efforts to reduce Phase 3 leakage action rates (LAR's), we have performed maintenance to the swales located at the top of the embankments of the active waste cell to reduce the area of influence of leachate generation and to decrease the potential for surface water infiltration into the secondary liner.

Attached is graph of Second Quarter 2017 Phase 3 Secondary Leachate Flow, plotted along with date and rainfall data. The graphs shows exceedances for the periods of June 10<sup>th</sup> through June 14<sup>th</sup>, and June 29<sup>th</sup> through June 30<sup>th</sup>, when respective rainfall amounts of 3.3 inches and 1.9 inches were recorded.

In the past, summer rainfall events exceeding 1.0-2.0 inches occasionally resulted in secondary liner exceedances of 680 gallons/day. Based on our observations of the relationship between rainfall and LAR exceedances, our maintenance to the swales surrounding the active waste cell appear to support a consequential reduction in secondary leachate flow.



**Comment 3.13** - GP-3 appeared damaged at the time of the inspection. Jones Edmunds personnel evaluated the adequacy of this well and determined that the probe was bent in the protective casing. The County proposed to cut this probe at the surface and install a new pad with a flush mount cover. Please provide updates on the progress of this repair.

**County Response Comment 3.13:**

GP-3 was bent over; however, the probe was open to the original total depth and functioning correctly. The casing was put back vertical and the pad was reinforced with compacted soil under and around it. The PVC probe is not damaged and is working as intended. At this time the probe will continue to have the above ground stick-up. Therefore, flush mount completion is not necessary. It has been repaired.

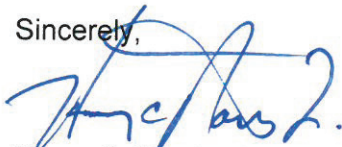
**Comment 3.14** - Landfill gas odors were detected at the facility near the property boundary north of the closed landfill areas. Please continue to monitor this area and implement the Landfill Gas Assessment and Groundwater Delineation plan (see Corrective Action for Area of Concern Item 1.6).

**County Response Comment 3.14:**

We will continue to monitor landfill gas odors throughout the facility as well as near the property boundary north of the closed landfill areas. Newly installed gas and groundwater wells (see County Response 1.6) should detect concentrations of any north and northwest migrating landfill gas. The GCCS expansion design by Jones Edmunds is approximately 90% and we expect the expansion of the solar powered vapor extraction north of the closed cells to be operational by the second quarter of 2018.

If you should need additional information or clarification of these responses, please let me know.

Sincerely,



Henry C. Norris, Jr.

Director, Citrus County Division of Solid Waste Management

HCN:RO

CC: Jeff Rogers, P.E., Director, Department of Public Works (Electronic)

Troy Hays, Jones Edmunds



**Board of County Commissioners  
DEPARTMENT OF PUBLIC WORKS  
SOLID WASTE MANAGEMENT DIVISION**

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TDD Telephone 527-5303

email: [landfillinfo@bocc.citrus.fl.us](mailto:landfillinfo@bocc.citrus.fl.us)

Citrus Springs/Dunnellon/Inglis/Yankeetown area Toll Free (352) 489-2120

January 13, 2016

Mr. Steve Morgan  
Dept of Environmental Protection  
13051 N Telecom Parkway  
Temple Terrace, FL 33637-0926

**Re: Citrus County Central Class I Landfill (FDEP Permit No. 21375-018-S0/01)  
Annual Site Life Calculation Transmittal for Phases 1/1A, 2 and 3**

Dear Mr. Morgan:

Pursuant to Specific Condition # C.13.e. of the subject operation permit (which requires landfill site life calculations to be submitted annually no later than January 15<sup>th</sup> of each year), please find enclosed 2015 Site Life Calculations reports and supporting documentation prepared by Citrus County Division of Engineering.

If you should need additional information, please let me know.

Sincerely,

Henry C. Norris, Jr.  
Director, Division of  
Solid Waste Management

CC: Jeff Rogers, P.E. Director, Dept. Of Public Works (w/o map attachments)

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Date 3/24/17  
Initials RO  
Solid Waste Management





**DEPARTMENT OF PUBLIC WORKS  
DIVISION OF ENGINEERING**

3600 W. Sovereign Path, Suite 241  
Lecanto, Florida 34461

Telephone: (352) 527-5446 Fax: (352) 527-5476  
Citrus Springs/Dunnellon/Inglis/Yankeetown area - Toll Free (352) 489-2120  
TTY Telephone: (352) 527-0825 or (352) 527-5312

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**CITRUS COUNTY CENTRAL LANDFILL  
OCTOBER 2016 SITE LIFE CALCULATION ANNUAL REPORT**

**FDEP PERMIT NO. 21375-008-S0/01**

**PHASES 1/1A, 2 and 3**

**Located in S1/T19S/R18E, Citrus County, Florida**

**Prepared for:**

**Citrus County Department of Public Works  
Solid Waste Management Division  
Attn: Henry Norris, Director  
230 W. Gulf-to-Lake Highway  
Lecanto, FL 34461  
(352) 527-7670**

**Prepared on December 19, 2016**

  
12/20/16 Mark E. Schroder, P.E.  
FL. License No. 67585  
County Engineer

Citrus County's Department of Public Works - Division of Engineering has calculated the remaining site life for Phases 1/1A, 2 and 3 of the Citrus County Central Landfill based on the past twelve months of data. The remaining airspace was estimated using population projections, projections of future waste receipts and topographic survey efforts performed by the Citrus County Survey Section in September 2016. The topographic survey information was compiled using real time kinematic satellite navigation (GPS) and is based on NAVD88 datum.

Phases 1/1A, 2, and 3:

The airspace consumed from October 1, 2015 (the date of the previous topographic survey as prepared by the Citrus County Survey Section and as referenced in the December 2015 Site Life Calculation Report) to September 29, 2016 (the date of the current survey) was calculated by comparing the digitally generated surfaces from the two surveys. The airspace consumed during this time period was 89,425CY, as shown on sheet 1 of 3 in attachment A. Waste tonnage records supplied by Citrus County Solid Waste Management Division for the same period recorded 88,186 tons entering the landfill. This translates to an effective airspace consumption rate of 1,904lb./CY or 1.05 CY/TN of waste disposed. The volume of the Cap was entered on the calculation as zero. For the calculations, the final closure surface has been lowered by two feet and the final 4' cap will be installed after 2' of settlement. Therefore the volume of the cap was entered into the calculations as 0CY assuming that the airspace will be available before placement.

The remaining life through build out of Phases 1/1A, 2 and 3 was estimated by multiplying the future projected quantities of waste by the current effective airspace consumption rate. Waste tonnage was assumed to increase each year at the same rate as the population. Population growth in Citrus County from 2015 to 2016 was significantly higher than past years. This year population growth has been estimated using the "Medium" projections in the University of Florida Bureau of Economic Research (BEBR) population projections for Citrus County. The projected waste tonnage for each year is multiplied by the effective airspace consumption rate to obtain the airspace volume consumed each year. This is then subtracted from the remaining airspace for each year until the available airspace is depleted. The calculations indicate that Phases 1/1A, 2, and 3 have approximately 1,823,829CY of available airspace as of the September 29, 2016 survey (Attachment #1, Sheet 2) and that this airspace could be completely utilized by July 2032. This assumes that waste will continue to be added to the landfill at the current generation rates and effective density. As Statutory Recycling is implemented waste generation rates will decrease thereby adding a factor of safety to the calculations. For quick reference, the previous Site Life Calculation Report prepared on December, 15 2015 estimated this date to be September 2030 Using Low projection.



Phases 1/1A, 2, and 3

Landfill Side Slopes

Specific Condition C.13.f of the site's FDEP Permit (Permit No. 21375-008-S0/01) requires that the disposal capacity and site life calculations submitted each year be accompanied by a survey indicating that the actual above grade side slopes are no greater than the design slopes and that the top elevation does not exceed the design elevation. As shown in the cross-sections provided on Sheet 3 of Attachment #1, the side slopes appear to be less than or equal to the design slopes, and the design top elevation of the landfill has not been attained.

# **ATTACHMENT 1**

## **VOLUME CALCULATION DRAWINGS**

(Refer to 24"x36" Drawings)



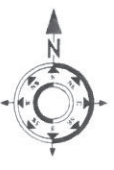
CITRUS COUNTY  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF ENGINEERING

CITRUS COUNTY  
CENTRAL LANDFILL  
OCTOBER 2016 SITE  
LIFE CALCULATION  
REPORT



CITRUS COUNTY  
CENTRAL LANDFILL  
10/01/2015 SURVEY  
VS.  
09/28/2016 SURVEY  
VOLUME ESTIMATE  
PLAN

DATE	10/28/2016
BY	Mark T. Thomas
CHECKED BY	
DATE	10/28/2016
BY	Mark T. Thomas
CHECKED BY	
DATE	10/28/2016
BY	Mark T. Thomas
CHECKED BY	



PROFILE VIEWS ARE ON SHEET 3

LEGEND AND ABBREVIATIONS

EXISTING ELEVATION CONTOUR (25' INTERVAL) 09/28/2016 SURVEY  
EXISTING ELEVATION CONTOUR (25' INTERVAL) 10/01/2015 SURVEY  
EXISTING ELEVATION CONTOUR (25' INTERVAL) 10/04/2015 SURVEY  
EXISTING ELEVATION CONTOUR (25' INTERVAL) 10/04/2015 SURVEY

SITE VOLUME TABLE

SITE	CITRUS COUNTY CENTRAL LANDFILL
SURFACE 1	OCTOBER 2015 (FIELD SURVEY OF 2015)
SURFACE 2	NOVEMBER 2016 (FIELD SURVEY OF 2016)
CUT UNADJUSTED	86,511 CU. YD.
FILL UNADJUSTED	89,511 CU. YD.
NET UNADJUSTED	89,425 CU. YD.
METHOD	COMPOSITE

SURVEY SOURCE NOTE

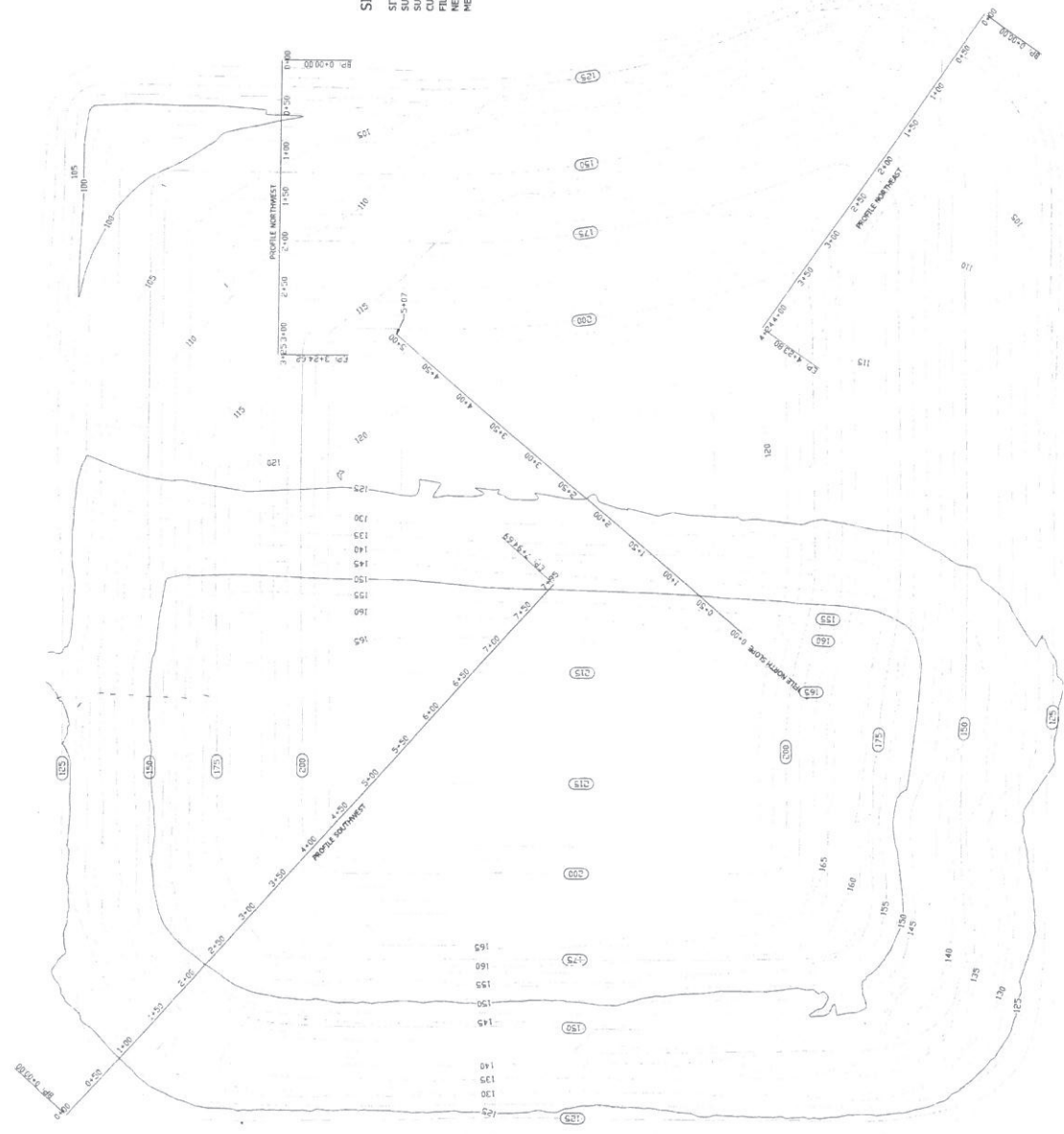
This Comparable Volume report for the period stated was calculated based on a Citrus County Surface compilation of Real Time Kinematic (RTK) Global Positioning data collected by Citrus County Survey Section personnel on or around September 28, 2016 for the 2015-2016 Volume Calculation Report. This data was compared to a Base Surface created from data collected by Citrus County Survey Section personnel on or around October 1, 2015, for the 2014 - 2015 Base Surface Comparable Report.

As the original designed landfill closure surface was calculated and published utilizing NAVD of 29, the original 2014 - 2015 and 2015 - 2016 were collected in NAVD 88 and the surfaces were adjusted +0.85' per NGS Vertical transformation, converting the NAVD 88 elevations to NAVD 29 elevations for relative volume calculations.

The above stated data was collected via GPS RTK under my direction utilizing acceptable Survey Standards.

Mark T. Thomas

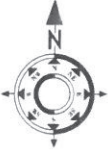
Florida Registered Surveyor no. 5151



CONTOUR LINES WITH ADJUSTED  
ELEVATION LABELS ARE FINAL  
SURFACE LINES. ALL OTHER  
ELEVATION LABELS ARE FOR REFERENCE.



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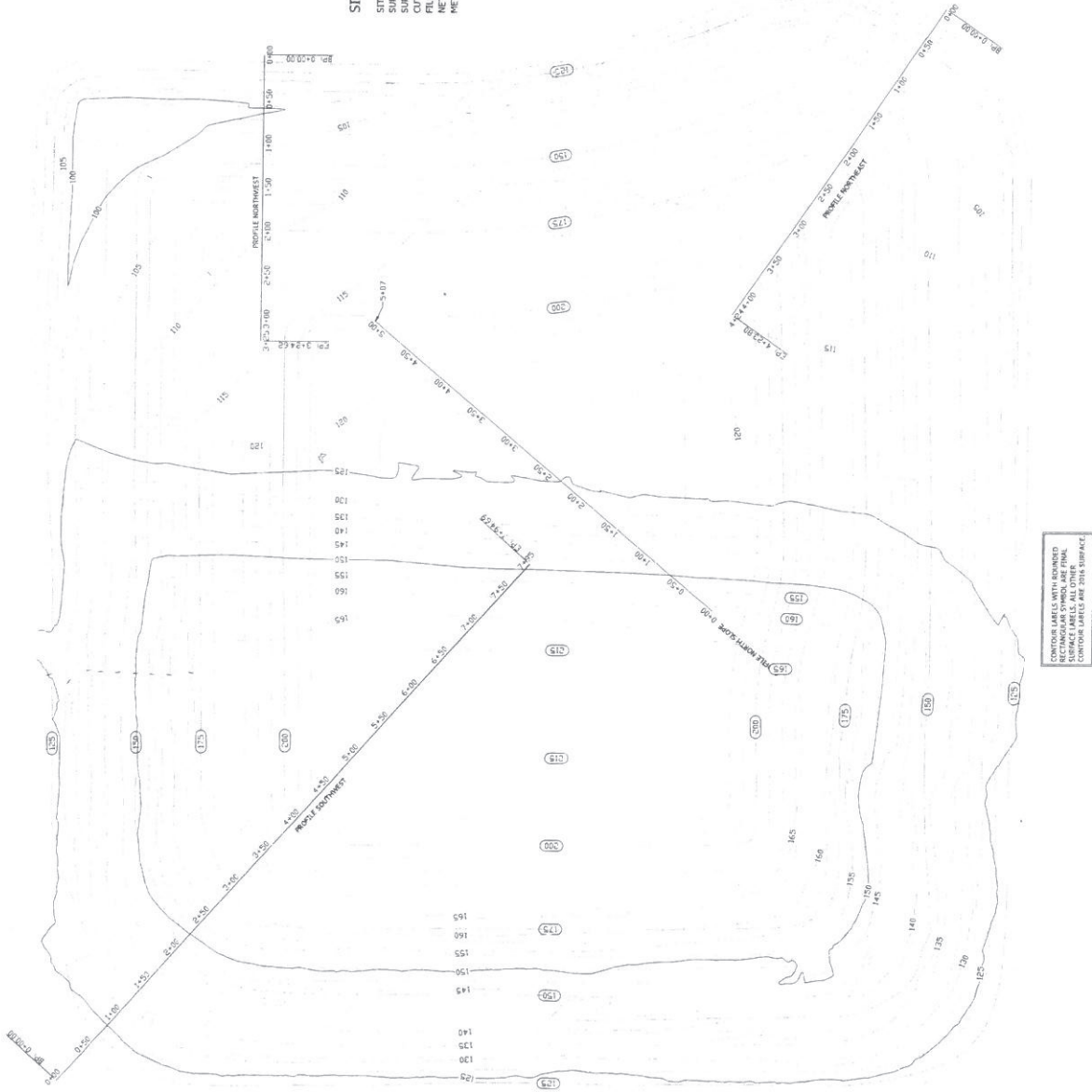
PROFILE VIEWS ARE ON SHEET 3

## LEGEND AND ABBREVIATIONS

EXISTING ELEVATION CONTOUR (5' INTERVAL) 10/01/2016 SURVEY  
EXISTING ELEVATION CONTOUR (1' INTERVAL) 10/01/2016 SURVEY  
DESIGN ELEVATION CONTOUR (5' INTERVAL) FINAL CLOSURE  
DESIGN ELEVATION CONTOUR (1' INTERVAL) FINAL CLOSURE

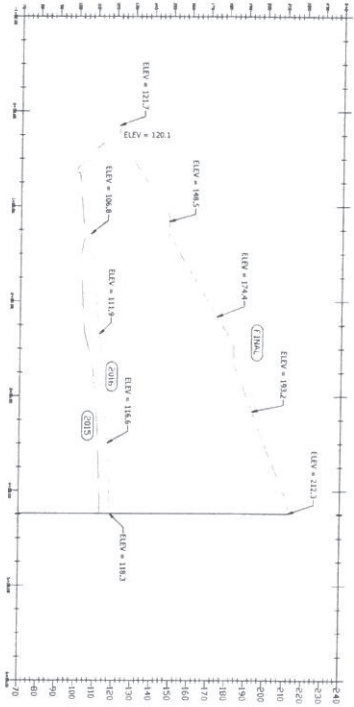
## SITE VOLUME TABLE

SITE	CITRUS COUNTY CENTRAL LANDFILL FINAL CLOSURE (DESIGN)
SURFACE 1	OCTOBER 2016 (Field Survey of 2016 waste area combined with 2015 base surface)
SURFACE 2	668 CU. YD.
FILL UNADJUSTED	1,824.497 CU. YD.
CUT UNADJUSTED	1,823.829 CU. YD.
NET UNADJUSTED	
METHOD	COMPOSITE





PROFILE NORTHEAST

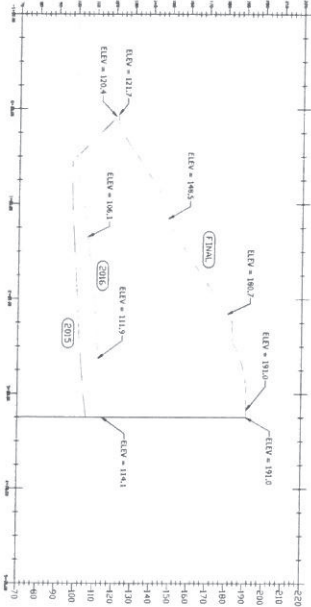


LEGEND AND ABBREVIATIONS

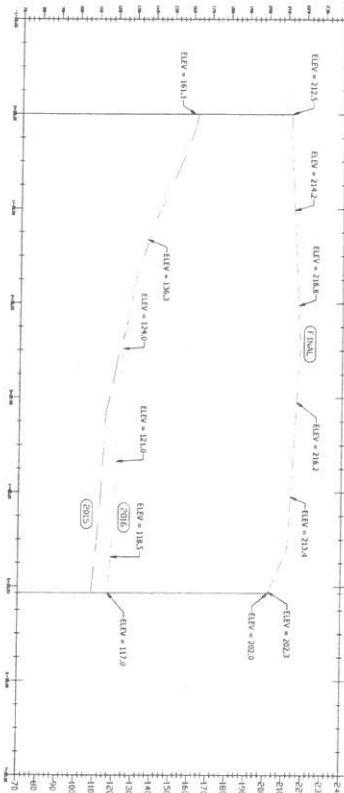
SURFACE 1 FINAL CLOSURE (DESIGN)  
 SURFACE 2 OCTOBER 2015 (FIELD SURVEY BY CITRUS COUNTY)  
 SURFACE 3 09/28/2016 (FIELD SURVEY BY CITRUS COUNTY)

PLAN VIEWS ARE ON SHEETS 1 AND 2

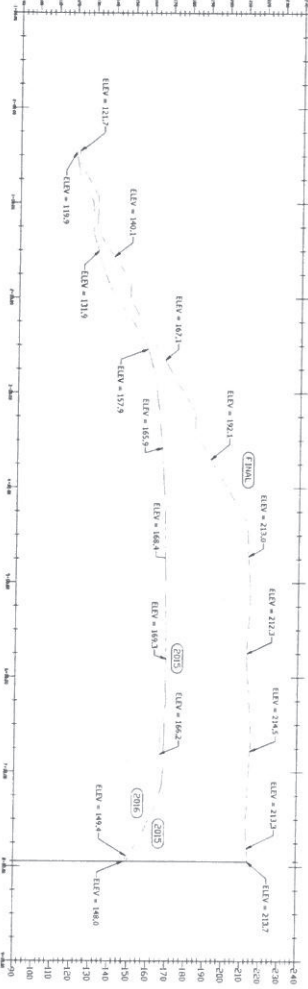
PROFILE NORTHWEST



PROFILE NORTH SLOPE



PROFILE SOUTHWEST



CITRUS COUNTY  
 CENTRAL LANDFILL  
 OCTOBER 2016 SITE  
 LIFE CALCULATION  
 REPORT

CITRUS COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF ENGINEERING

3800 COVERGROVE PATH  
 SUITE 241  
 ULCANTO, FLORIDA 34461  
 (888) 527-5446

CITRUS COUNTY  
 CENTRAL LANDFILL  
 FINAL CLOSURE  
 09/28/2016 SURVEY  
 10/04/2016 SURVEY  
 PROFILES

DATE: 10/03/2016  
 TIME: 10:00  
 BY: [Signature]  
 CHECKED: [Signature]

3  
 3

## **ATTACHMENT 2**

### **SITE LIFE CALCULATIONS**

## **ATTACHMENT 2**

### **SITE LIFE CALCULATIONS**

**CITRUS COUNTY SOLID WASTE MANAGEMENT DIVISION  
CENTRAL LANDFILL SITE LIFE CALCULATION  
DECEMBER 2016 REPORT**

**Objective:** Calculate the October 2016 remaining site life for Phases 1 thru 3 using waste tonnage records from Citrus County and calculated waste generation projections.

**Approach:**

1. Calculate the available airspace as of the most recent survey.
2. Calculate the "Effective Density" using volume consumed between October 2015 through September 2016.
3. Use the effective density to calculate the remaining life of the available airspace.

Available Airspace Calculation:

Airspace available from Oct 2016 to Final Grade = 1,823,829 CY (From Survey)

Air volume consumed Oct 2015 through September 2016 = 92,654 CY (From SWM)

Effective Density Calculation:

Waste Disposed of between 10/2015 through 09/2016 = 88,186 tons (From Landfill Records)

Effective Density=  $\frac{88,186 \text{ ton}}{92,654 \text{ CY}} \times \frac{2,000 \text{ lbs}}{1 \text{ ton}} = \frac{1,903.56 \text{ lbs}}{1 \text{ CY}}$

Effective Airspace Consumption Rate=  $\frac{92,654 \text{ CY}}{88,186 \text{ ton}} \times \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 1.05 \text{ CY/ton}$

Assuming the waste will be filled up to the final capacity and allowed to settle before placing the cover soil.

Cap Volume = 0 CY

Subtract Cap Volume from air volume (airspace available) to determine useable waste volume for site life calculation.

Remaining Volume= 1,823,829 CY - 0 CY = 1,823,829 CY

Site Life Calculation

The site life calculation is based on Citrus County waste tonnage records and population projections from the University of Florida Bureau of Business and Economic Research (BEER). The historic population growth trends have been lower than the BEER Low estimates. This year population growth was significantly higher than past years. Therefore, the Medium population projection was used.

FISCAL YEAR	TONNAGE	VOLUME CONSUMED (CY)	NET REMAINING AIRSPACE (CY)
2013-2014	79,908	113,295	
2014-2015	82,992	87,197	1,823,829
2015-2016	88,186	92,654	1,731,175
2016-2017	90,079	94,643	1,636,532
2017-2018	91,036	95,648	1,540,884
2018-2019	91,992	96,653	1,444,231
2019-2020	92,949	97,658	1,346,572
2020-2021	93,924	98,683	1,247,889
2021-2022	94,899	99,708	1,148,182
2022-2023	95,875	100,732	1,047,450
2023-2024	96,850	101,757	945,693
2024-2025	97,825	102,781	842,911
2025-2026	98,728	103,730	739,182
2026-2027	99,631	104,678	634,503
2027-2028	100,533	105,627	528,876
2028-2029	101,436	106,575	422,301
2029-2030	102,339	107,524	314,777
2030-2031	103,120	108,345	206,432
2031-2032	103,902	109,166	97,266
2032-2033	104,684	109,988	-12,722
2033-2034	105,465	110,809	-123,531
2034-2035	106,247	111,630	-235,161

**CONCLUSION:** Estimated Phases 1/1A, 2 & 3 Fill Completion Date = July 2032



**CITRUS COUNTY CENTRAL LANDFILL  
WASTE TONNAGE PROJECTION**

Year	*Population (BEBR Medium Estimate)	% Change in Population	Tons/Year
2010 <sup>(1)</sup>	141,236		
2011 <sup>(1)</sup>	140,956	-0.20%	<b>81,477</b>
2012 <sup>(1)</sup>	140,761	-0.14%	81,326
2013 <sup>(1)</sup>	140,519	-0.17%	81,326
2014 <sup>(1)</sup>	140,796	0.20%	79,908
<b>2015<sup>(1)</sup></b>	<b>138,100</b>	<b>-1.95%</b>	<b>82,992</b>
2016	143,054	3.46%	88,186
2017	146,192	2.15%	90,079
2018	147,762	1.06%	91,036
2019	149,331	1.05%	91,992
<b>2020</b>	<b>150,900</b>	<b>1.04%</b>	<b>92,949</b>
2021	152,500	1.05%	93,924
2022	154,100	1.04%	94,899
2023	155,700	1.03%	95,875
2024	157,300	1.02%	96,850
<b>2025</b>	<b>158,900</b>	<b>1.01%</b>	<b>97,825</b>
2026	160,380	0.92%	98,728
2027	161,860	0.91%	99,631
2028	163,340	0.91%	100,533
2029	164,820	0.90%	101,436
<b>2030</b>	<b>166,300</b>	<b>0.89%</b>	<b>102,339</b>
2031	167,580	0.76%	103,120
2032	168,860	0.76%	103,902
2033	170,140	0.75%	104,684
2034	171,420	0.75%	105,465
<b>2035</b>	<b>172,700</b>	<b>0.74%</b>	<b>106,247</b>
2036	173,860	0.67%	106,956
2037	175,020	0.66%	107,665
2038	176,180	0.66%	108,374
2039	177,340	0.65%	109,083
<b>2040</b>	<b>178,500</b>	<b>0.65%</b>	<b>109,792</b>

\*Population projection data for Citrus County originated from the University of Florida Bureau of Economic and Business Research (BEBR) Florida Population Studies, Bulletin 168. A linear interpolation for yearly population increase was performed between the years in bold.

<sup>(1)</sup> Previously reported value: 2015 Site Life Calculation Annual report.

The 2016 "Tons/Year" amount is based on scale house data supplied by the Waste Management Department and is based upon the monthly collection reports from 10/01/2015 - 09/30/2016.

**CITRUS COUNTY CENTRAL LANDFILL  
WASTE TONNAGE PROJECTION**

Year	*Population (BEBR Medium Estimate)	% Change in Population	Tons/Year
2010 <sup>(1)</sup>	141,236		
2011 <sup>(1)</sup>	140,956	-0.20%	<b>81,477</b>
2012 <sup>(1)</sup>	140,761	-0.14%	81,326
2013 <sup>(1)</sup>	140,519	-0.17%	81,326
2014 <sup>(1)</sup>	140,796	0.20%	79,908
<b>2015<sup>(1)</sup></b>	<b>138,100</b>	<b>-1.95%</b>	<b>82,992</b>
2016	143,054	3.46%	88,186
2017	146,192	2.15%	90,079
2018	147,762	1.06%	91,036
2019	149,331	1.05%	91,992
<b>2020</b>	<b>150,900</b>	<b>1.04%</b>	<b>92,949</b>
2021	152,500	1.05%	93,924
2022	154,100	1.04%	94,899
2023	155,700	1.03%	95,875
2024	157,300	1.02%	96,850
<b>2025</b>	<b>158,900</b>	<b>1.01%</b>	<b>97,825</b>
2026	160,380	0.92%	98,728
2027	161,860	0.91%	99,631
2028	163,340	0.91%	100,533
2029	164,820	0.90%	101,436
<b>2030</b>	<b>166,300</b>	<b>0.89%</b>	<b>102,339</b>
2031	167,580	0.76%	103,120
2032	168,860	0.76%	103,902
2033	170,140	0.75%	104,684
2034	171,420	0.75%	105,465
<b>2035</b>	<b>172,700</b>	<b>0.74%</b>	<b>106,247</b>
2036	173,860	0.67%	106,956
2037	175,020	0.66%	107,665
2038	176,180	0.66%	108,374
2039	177,340	0.65%	109,083
<b>2040</b>	<b>178,500</b>	<b>0.65%</b>	<b>109,792</b>

\*Population projection data for Citrus County originated from the University of Florida Bureau of Economic and Business Research (BEBR) Florida Population Studies, Bulletin 168. A linear interpolation for yearly population increase was performed between the years in bold.

<sup>(1)</sup> Previously reported value: 2015 Site Life Calculation Annual report.

The 2016 "Tons/Year" amount is based on scale house data supplied by the Waste Management Department and is based upon the monthly collection reports from 10/01/2015 - 09/30/2016.





# Board of County Commissioners

DEPARTMENT OF PUBLIC WORKS

DIVISION OF ENGINEERING

3600 W. Sovereign Path, Suite 241

Lecanto, Florida 34461

Telephone: (352) 527-5446 Fax: (352) 527-5482

Citrus Springs/Dunnellon/Inglis/Yankeetown area - Toll Free (352) 489-2120

TTY Telephone: (352) 527-0825 or (352) 527-5312

August 25, 2017

Mr. Henry C. Norris, Jr., Director  
Citrus County Division of Solid Waste Management  
230 W. Gulf to Lake Hwy  
Lecanto, FL 34461

**RE: FDEP Permit #21375-18-SO/01**  
**Final Closure Soils**

Dear Mr. Norris,

In accordance with Appendix 4 of the above-referenced permit, *Declaration of Restrictive Covenant and Access Agreement*, Item 2.c, I have performed a site inspection and topographic analysis of the "Soils Covenant Area" depicted in Figure 1 attached to the SCS Engineers letter to Mr. Henry Freedenberg PE, PG dated May, 3, 2016. With this Letter I hereby provide the following certification:

**The Quantity Of Suitable Soils Needed For Use As Final Cover Of The Facility Remains Within The Restricted Property.**

If you have any questions or require additional information, please don't hesitate to contact me.

Sincerely,

Mark E Schröder, P.E.  
FL License #67585

Citrus County Department of Public Works  
Engineering Division - Engineer I

Scanned to E-Bridge  
Date 8/28/17  
Initials RU  
Solid Waste Management

Submitted Electronically  
SWD\_Waste@dep  
Addresses & cc  
Date: 8/28/17  
Initials RU



## SCS ENGINEERS

May 3, 2016  
File No: 09210021.26

**Mr. Henry Freedenberg PE, PG**  
Solid Waste Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road, MS 4565  
Tallahassee, Florida 32399

RE: Soils Covenant for the Citrus County Central Landfill Operations Permit Renewal  
Permit No: 21375-18-SO/01

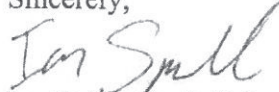
Dear Mr. Freedenberg,

Citrus County intends to complete a covenant with the Florida Department of Environmental Protection in order to allow for the preservation of a volume of soil that the State of Florida could utilize to close the permitted landfill Phases 1 through 3. This would only occur if the County fails to conduct the closure when the landfill is filled to the permitted capacity. SCS Engineers has computed the necessary volumes to provide the closure soil based on computer modeling for the final configuration of the landfill. The area shown on Figure 1 will provide sufficient cover material to close Phases 1 through 3. The attached cover material calculations include one foot of intermediate cover and two feet of protective liner cover.

Please note that the calculations include the one foot thick intermediate cover as per the regulations. The County has been placing the intermediate cover in accordance with the regulations on those locations where the waste fill has reached final grades. Therefore, more soil material is available in the covenant designated borrow area than is necessary for the final closure.

On behalf of Citrus County, SCS is pleased to present this information.

Sincerely,



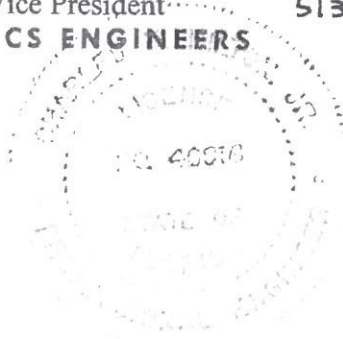
Ian U. Spurlock, E.I.  
Staff Professional  
**SCS ENGINEERS**



Charles E. "Ed" Hilton, Jr. P.E.  
Vice President  
513116  
**SCS ENGINEERS**

CC: Cory Dilmore, FDEP  
Philip J. Ciaravella, FDEP  
Larry Brock, Citrus County  
Henry Norris, Citrus County  
Cathy Winter, Citrus County

Attachments



CLIENT Citrus County	PROJECT Operations Permit Renewal	JOB NO. 09210021.26
SUBJECT Closure Soil Calculations	BY IUS	DATE 3/9/2016
	CHECKED CEH	DATE 3/9/2016

**Volume of Soil for closure of Phases 1-3**

The volume includes 12" of Intermediate Cover addition to in place cover plus 24" protective cover soil over the liner. From the Closure Cost Estimate Calculations sheets the total soil volume required is:

$$3' \times 1,531,581 \text{ sq. ft.} = 4,594,743 \text{ cu. ft.} = 170,176 \text{ cu. yd.}$$

The calculation is based on the surface area of the proposed closure, including side slope consideration.

Immediately following this page, Figure 1 shows the approximate area being set aside for soils covenant area. The area is approximately 148,226 sq. ft. and 80 feet deep at its deepest. This area contains a total volume of 171,875 cu. yd. of soil. Therefore there is enough soil in the soils covenant area for the closure construction.

**Soil Classifications**

Based on the CH2M HILL geotechnical investigation provided to DEP in the Application for Permit, Citrus County Transfer Station, Volume II, received by FDEP on June 11, 2009, the following information is provided.

"The soil boring and soundings generally encountered medium dense to dense sand, silty sand and clayey sand to the maximum borings and sounding depth of 80 feet, except for borings B-1, B-3, B-6 and B-12, which encountered very loose to loose sand from ground surface to approximately 10 feet below the ground surface. The water table was not encountered in any of the borings."

Borings B-1(60'), B-3(60'), B-10(30'), P-6(30') and P-7(25') are near or inside the soils covenant area as seen on Figure 1. The locations of all the borings can be seen on Figure 2 by King Engineering Associates. Based on the Soil classifications from the report the soils are classified as SP, SM, SP-SM, SM-SC and SP-SC. These soil types are acceptable for closures. During the closure project(s) the material excavated will be monitored for unsuitable material and any found will be removed from the application.

Note: The County has decided not to build the Transfer Station and associated improvements shown on the King drawing.

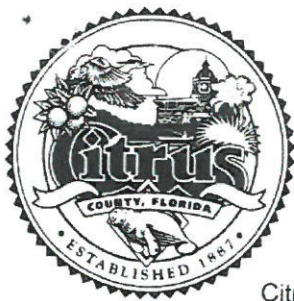




FIGURE 1 - SOILS COVENANT AREA

SCS ENGINEERS





**Board of County Commissioners  
DEPARTMENT OF PUBLIC WORKS  
SOLID WASTE MANAGEMENT DIVISION**

P.O. Box 340, Lecanto, Florida 34460

Telephone: (352) 527-7670 FAX: (352) 527-7672

TDD Telephone 527-5303

email: [landfillinfo@bocc.citrus.fl.us](mailto:landfillinfo@bocc.citrus.fl.us)

Citrus Springs/Dunnellon/Ingles/Yankeetown area Toll Free (352) 489-2120

April 5, 2017

Florida Department of Environmental Protection  
Solid Waste Section  
13051 N Telecom Pkwy  
Temple Terrace, FL 33637-0926

Re: **Citrus County Central Landfill - Permit No. 21375-018-SO/01  
Leachate Generation and Daily Precipitation Report  
WACS I.D. # 39859 - Electronic Submittal**

Dear FDEP:

In compliance with Specific Condition C.8.e.2, of the above referenced permit, enclosed please find the quarterly Leachate Generation and Daily Precipitation Report for the months of January, February and March, 2017; together with the Year-to-Date Leachate Tracking Summary.

Exceedances on 2/16/17 and 3/03/17-3/-5/17 from secondary flow phases 1 and 1A were related to intermittent pump failure.

If you should need additional information, please let me know.

Sincerely,

Henry C. Norris, Jr.  
Director, Citrus County  
Division of Solid Waste Management

Scanned to E-Bridge  
Date 4/2/17  
Initials RO  
Solid Waste Management

HCN:RO

CC: Jeff Rogers, P.E., Director, Department of Public Works (Electronic)  
Troy Hays, Jones Edmunds – Gainesville (Electronic)

## CITRUS COUNTY CENTRAL LANDFILL

PHASE 1 AND 1A													
DATE	RAIN IN INCHES	80-1(S) P 80-1(S) FLOW	80-2(P) P 80-2(P) FLOW	80-1(P) P 80-1(P) FLOW	80-2(P) P 80-2(P) FLOW	80-3(S) P 80-3(S) FLOW	80-1(P-1) P 80-1(P-1) FLOW	80-2(P-2) P 80-2(P-2) FLOW	80-3(P-3) P 80-3(P-3) FLOW	80-1(P-4) P 80-1(P-4) FLOW	80-2(P-5) P 80-2(P-5) FLOW	80-3(P-6) P 80-3(P-6) FLOW	80-4(P-7) P 80-4(P-7) FLOW
01/01/17 Sun	0.00	204742 A	158 508783 A	1167 1367080 A	907 292852 A	2035 5833 A	0 24181707 A	3607 922074 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A
01/02/17 Sun	0.00	205001 A	158 5090273 A	1167 1367080 A	907 292852 A	2035 5833 A	0 24181707 A	3607 922074 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A
01/03/17 Tue	0.00	205160 A	141 5094386 A	1167 1367080 A	907 292852 A	2035 5833 A	0 24181707 A	3607 922074 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A
01/04/17 Wed	0.00	205301 A	242 5095555 A	2092 1366697 A	1771 2937094 A	1490 5833 A	0 24181707 A	3607 922074 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A
01/05/17 Thu	0.00	205443 A	294 5095555 A	2092 1366697 A	1771 2937094 A	1490 5833 A	0 24181707 A	3607 922074 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A	3671 922082 A
01/06/17 Fri	2.78	205837 A	188 5097635 A	2429 1366697 A	1405 2947924 A	4161 6066 A	1 24207632 A	922326 A	922326 A	922326 A	922326 A	922326 A	922326 A
01/07/17 Sat	0.00	206025 A	435 5100070 A	6 1370717 A	1405 2947924 A	3362 6066 A	54 24207632 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A
01/08/17 Sun	0.00	206460 A	435 5100070 A	6 1370717 A	1405 2947924 A	3362 6066 A	54 24207632 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A
01/09/17 Mon	0.00	206895 A	275 5100070 A	6 1370717 A	1405 2947924 A	3362 6066 A	54 24207632 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A
01/10/17 Tue	0.00	207170 A	250 5100070 A	6 1370717 A	1405 2947924 A	3362 6066 A	54 24207632 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A	14157 922326 A
01/11/17 Wed	0.00	207420 A	254 5100374 A	0 1376933 A	1742 295120 A	2701 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/12/17 Thu	0.00	207674 A	186 5100374 A	0 1376933 A	1742 295120 A	2701 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/13/17 Fri	0.00	207860 A	201 5100374 A	0 1376933 A	1742 295120 A	2701 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/14/17 Sat	0.00	208061 A	218 5100374 A	2377 1381207 A	1654 295925 A	1376 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/15/17 Sun	0.00	208279 A	218 5100374 A	2377 1381207 A	1654 295925 A	1376 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/16/17 Mon	0.00	208497 A	200 5111127 A	2376 1382511 A	1304 2963901 A	2482 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/17/17 Tue	0.00	208692 A	195 5111127 A	2376 1382511 A	1304 2963901 A	2482 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/18/17 Wed	0.00	208892 A	220 5111127 A	2376 1382511 A	1304 2963901 A	2482 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/19/17 Thu	0.00	209112 A	246 5116358 A	2276 1384706 A	1819 2967235 A	1350 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/20/17 Fri	0.00	209368 A	167 5118598 A	2276 1384706 A	1819 2967235 A	1350 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/21/17 Sat	0.00	209525 A	191 5125234 A	7135 1389128 A	1171 2971166 A	2551 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/22/17 Sun	1.20	209716 A	190 5131769 A	6035 1390299 A	2606 2976255 A	3365 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/23/17 Mon	0.00	209906 A	374 5137803 A	6034 1392905 A	2606 2976255 A	3365 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/24/17 Tue	0.00	210280 A	514 5137803 A	8 1395511 A	1894 2984396 A	1412 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/25/17 Wed	0.00	210794 A	486 5137811 A	0 1398285 A	1894 2984396 A	1412 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/26/17 Thu	0.00	211260 A	486 5137811 A	0 1398285 A	1894 2984396 A	1412 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/27/17 Fri	0.00	211746 A	612 5137811 A	0 1398285 A	1894 2984396 A	1412 6185 A	0 24207632 A	922331 A	922331 A	922331 A	922331 A	922331 A	922331 A
01/28/17 Sat	0.00	212358 A	780 5137822 A	11 1400895 A	1882 2992659 A	2760 6185 A	104 2435898 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A
01/29/17 Sun	0.00	213138 A	780 5144714 A	3445 1403769 A	1882 2992659 A	2760 6185 A	104 2435898 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A
01/30/17 Mon	0.00	213918 A	823 5144714 A	0 1405851 A	1882 2992659 A	2760 6185 A	104 2435898 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A
01/31/17 Tue	0.00	214741 A	777 5144714 A	0 1405851 A	1882 2992659 A	2760 6185 A	104 2435898 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A
02/01/17 Wed	0.00	215518 A	5144736 A	22 1405851 A	1882 2992659 A	2760 6185 A	104 2435898 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A	5279 924107 A
TOTAL	3.90		10776	56853	48719	73887	534	201977	2877	14187	381136	385323	

POC - PUMP OPERATION CODE  
 A - AUTOMATIC  
 M - MANUAL  
 O - OFF

Scanned to E-Bridge  
 Date 4/7/17  
 Initials 4/7/17  
 Solid Waste Management



## CITRUS COUNTY CENTRAL LANDFILL

PHASE 1 AND 1A																		PHASE 2																		PHASE 3																		TOTAL PHASE 1, 1-A, 2 & 3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
DATE	DAY	INCHES	RAIN	80-1 (S) P	80-1 (S) P	80-2 (P) P	80-2 (P) P	80-1 (P) P	80-1 (P) P	80-2 (P) P	80-2 (P) P	80-3 (S) P	80-3 (S) P	80 (P-1) P	80 (P-1) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P	80 (P-2) P

POC - PUMP OPERATION CODE

A - AUTOMATIC

M - MANUAL

O - OFF

Scanned to E-Bridge  
Date 4/7/17  
Initials RS  
Solid Waste Management



CITRUS COUNTY CENTRAL LANDFILL

PHASE 1 AND 1A													PHASE 2													PHASE 3													TOTAL PHASE 1, 1A, 2 & 3			
DATE	DAY	INCHES	RAIN	80-1 (S) P	80-1 (S) O	Secondary FLOW	80-2 (P) P	80-2 (P) O	Primary FLOW	80-1 (P) P	80-1 (P) O	Primary FLOW	80-2 (P) P	80-2 (P) O	Primary FLOW	80-3 (S) P	80-3 (S) O	Secondary FLOW	80 (P-1) P	80 (P-1) O	Primary FLOW	80 (P-2) P	80 (P-2) O	Secondary FLOW	80 ACRES TOTAL	80 ACRES PRIMARY	80 ACRES TOTAL FLOW															
03/01/17	Wed	0.00	0.00	234877	0	540	5181189	A	2038	1442554	A	878	3056108	A	2465	6727	A	39	2456635	A	5495	928367	A	6	585	10876	11461	585	902	7658												
03/02/17	Thu	0.00	0.00	235417	0	876	5183227	A	0	1445132	A	873	3056095	A	1331	6786	A	22	2456230	A	5454	928373	A	4	585	10876	11461	585	902	7658												
03/03/17	Fri	0.00	0.00	236293	0	1942	5183227	A	542	1448005	A	1182	3059905	A	1393	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/04/17	Sat	0.00	0.00	238235	0	1802	5183227	A	12432	1447187	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/05/17	Sun	0.00	0.00	240037	0	1802	5183227	A	12432	1448368	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/06/17	Mon	0.00	0.00	241639	0	1802	5183227	A	12432	1449549	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/07/17	Tue	0.00	0.00	242658	0	1802	5183227	A	12432	1451400	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/08/17	Wed	0.00	0.00	243219	0	1802	5183227	A	12432	1453186	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/09/17	Thu	0.00	0.00	243966	0	1802	5183227	A	12432	1455141	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/10/17	Fri	0.00	0.00	244804	0	1802	5183227	A	12432	1456551	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/11/17	Sat	0.00	0.00	245471	0	1802	5183227	A	12432	1457954	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/12/17	Sun	0.00	0.00	246133	0	1802	5183227	A	12432	1459118	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/13/17	Mon	1.00	0.00	246794	0	1802	5183227	A	12432	1460402	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/14/17	Tue	0.00	0.00	247411	0	1802	5183227	A	12432	1461702	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/15/17	Wed	0.00	0.00	248038	0	1802	5183227	A	12432	1463022	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/16/17	Thu	0.00	0.00	248671	0	1802	5183227	A	12432	1464344	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/17/17	Fri	0.00	0.00	249304	0	1802	5183227	A	12432	1465666	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/18/17	Sat	0.00	0.00	249937	0	1802	5183227	A	12432	1466988	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/19/17	Sun	0.00	0.00	250570	0	1802	5183227	A	12432	1468310	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/20/17	Mon	0.00	0.00	251203	0	1802	5183227	A	12432	1469632	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/21/17	Tue	0.00	0.00	251836	0	1802	5183227	A	12432	1470954	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/22/17	Wed	0.00	0.00	252469	0	1802	5183227	A	12432	1472276	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/23/17	Thu	0.00	0.00	253102	0	1802	5183227	A	12432	1473598	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/24/17	Fri	0.00	0.00	253735	0	1802	5183227	A	12432	1474920	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/25/17	Sat	0.00	0.00	254368	0	1802	5183227	A	12432	1476242	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/26/17	Sun	0.00	0.00	255001	0	1802	5183227	A	12432	1477564	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/27/17	Mon	0.00	0.00	255634	0	1802	5183227	A	12432	1478886	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/28/17	Tue	0.00	0.00	256267	0	1802	5183227	A	12432	1480208	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/29/17	Wed	0.00	0.00	256900	0	1802	5183227	A	12432	1481530	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/30/17	Thu	0.00	0.00	258072	0	1802	5183227	A	12432	1482852	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
03/31/17	Fri	0.00	0.00	258860	0	1802	5183227	A	12432	1484174	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
04/01/17	Sat	0.00	0.00	259114	0	1802	5183227	A	12432	1485496	A	1181	3061286	A	2163	6790	A	7	2457286	A	5202	928377	A	39	585	10876	11461	585	902	7658												
TOTAL	1.00			24743		60011			42153			65536			206			158071		5118		30067		335771						355838												

POC - PUMP OPERATION CODE  
A - AUTOMATIC  
M - MANUAL  
O - OFF

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Date 4/1/2017  
Initials RS  
Solid Waste Management

**CITRUS COUNTY CENTRAL LANDFILL  
LEACHATE GALLONS**

MONTH	RAIN DATA	7-ACRE TOTAL OF LEACHATE	80-ACRE TOTAL OF PRIMARY LEACHATE PHASE 1, 1A, 2 & 3	80-ACRE TOTAL OF SECONDARY LEACHATE PHASE 1, 1A, 2 & 3	SURFACE LEACHATE OR SPECIAL PROJECT	TOTAL INFLUENT LEACHATE	HAULED LEACHATE (RAW) FOR DISPOSAL OFF-SITE	FORCE MAIN LEACHATE (RAW) FOR DISPOSAL OFF-SITE	EFFLUENT DISPOSAL ON-SITE	TOTAL DISPOSAL	BALANCE
JANUARY	3.90	10086	381136	14187	0	405409	0	169000	0	169000	236409
FEBRUARY	3.10	8986	299649	23137	0	331772	0	197000	0	197000	134772
MARCH	1.00	6921	355838	30067	0	392826	0	159000	0	159000	233826
APRIL	0.00	0	0	0	0	0	0	0	0	0	0
MAY	0.00	0	0	0	0	0	0	0	0	0	0
JUNE	0.00	0	0	0	0	0	0	0	0	0	0
JULY	0.00	0	0	0	0	0	0	0	0	0	0
AUGUST	0.00	0	0	0	0	0	0	0	0	0	0
SEPTEMBER	0.00	0	0	0	0	0	0	0	0	0	0
OCTOBER	0.00	0	0	0	0	0	0	0	0	0	0
NOVEMBER	0.00	0	0	0	0	0	0	0	0	0	0
DECEMBER	0.00	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>8.00</b>	<b>25993</b>	<b>1036623</b>	<b>67391</b>	<b>0</b>	<b>1130007</b>	<b>0</b>	<b>525000</b>	<b>0</b>	<b>525000</b>	<b>605007</b>

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Initials AO  
Solid Waste Management



# Citrus County Central Landfill Phase 3 Secondary Leachate Flow 2nd Quarter 2017

