



August 28, 2015

Mr. Richard Tedder, P.E.
Solid Waste Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 4565
Tallahassee, Florida 32399

Subject: Remaining Disposal Capacity and Site Life – Reporting Year 2015
Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9)
Southeast County Landfill
Permit No.: 35435-022-SO/01

Dear Mr. Tedder,

On behalf of the Hillsborough County Public Works Department, Solid Waste Management Division (SWMD), HDR has prepared the remaining disposal capacity and site life estimates for Phases I-VI and the Capacity Expansion Area (CEA) (Permit No 35435-022-SO/01), Southeast County Landfill (SCLF), Hillsborough County, Florida in accordance with Rule 62-701.500(13)(c) and Specific Condition Part C.14.b of the facility's solid waste operations permit.

Annual Topographic Survey and Remaining Capacity Analysis

The aerial topographic survey was performed by Pickett and Associates, Inc. (Pickett) on July 7, 2015 (see Attachment A) and demonstrates that Phases I-VI and the CEA Sections 7, 8, and 9 have been filled in general accordance with the permitted operations sequence plans including sideslopes no greater than 4H to 1V (Phases I-VI) and 3H to 1V (CEA Sections 7, 8, and 9). In addition, the top elevations do not exceed the permitted maximum design height elevation of 255 feet NVGD and 285 feet NGVD for Phases I-VI and the CEA Sections 7, 8, and 9, respectively. Waste has not been placed outside the permitted limits of waste/liner in both Phases I-VI and the CEA Sections 7, 8, and 9.

Using AutoCAD software, the gross remaining airspace volumes were calculated using the permitted conceptual final build-out contours for Phases I-VI and the CEA Sections 7, 8, and 9, and comparing the surfaces to the January 7, 2015 topographic survey (refer to Attachment A for volume summaries). The estimated gross remaining airspace for the Phases I-VI and the CEA Sections 7, 8, and 9 is 8,808,618 cubic yards (CY) based on the airspace analyses performed using AutoCAD.



Assumptions used in calculating the remaining site life are discussed in the notes provided in Table 1. Based on the information provided by the SWMD, approximately 211,808 tons of municipal solid waste (MSW) was disposed of at the SCLF between July 1, 2014 and June 30, 2015. This is 7,060 tons less than reported from July 1, 2014 through June 30, 2015. Of the 211,808 tons disposed at the SCLF during this time period, 135,302 tons were disposed in Phases I-VI, and 76,506 tons in CEA Sections 7, 8, and 9. Assuming an apparent waste density of 1,900 pounds per cubic yard (PCY), the estimated annual airspace consumed in cubic yards was 222,956 CY, of which 142,423 CY of air space was consumed in Phases I-VI and 80,533 CY in the CEA Sections 7, 8, and 9. The apparent waste density is defined as the actual waste tonnage disposed divided by the volume of airspace consumed by waste and daily cover soil.

Remaining Disposal Capacity and Site Life for the CEA (Sections 7, 8, and 9)

The estimated remaining disposal capacity (remaining airspace) of CEA Sections 7, 8, and 9 is 886,120 CY which was calculated by subtracting the final cover soil volume of 157,996 CY from the gross remaining air space of 1,044,116 CY. The remaining site life of the CEA was calculated assuming the current disposal rate at the SCLF is 222,956 CY per year, the disposal rate will increase 1.5-percent annually, and half of the waste will be placed in the CEA Sections 7, 8, and 9. Using these assumptions, the remaining site life for the CEA Sections 7, 8, and 9 was estimated to be approximately 7.5 years from July 7, 2015, as shown in Table 1. The estimated remaining site life will fluctuate depending on the future waste composition, disposal rates, and in-situ waste density.

Remaining Disposal Capacity and Site Life for Phases I-VI

The estimated remaining disposal capacity (remaining airspace) of Phases I-VI is 7,098,633 CY which was calculated by subtracting the final cover soil volume of 665,869 CY from the gross remaining air space of 7,764,502 CY. The remaining site life of Phases I-VI was calculated assuming the current disposal rate at the SCLF is 222,956 CY per year, the disposal rate will increase 1.5-percent annually, and half of the waste will be placed in Phases I-VI. Using these assumptions, the remaining site life for Phases I-VI was estimated to be approximately 28.7 years from July 7, 2015, as shown in Table 1. The estimated remaining site life will fluctuate depending on the future waste composition, disposal rates, and in-situ waste density.

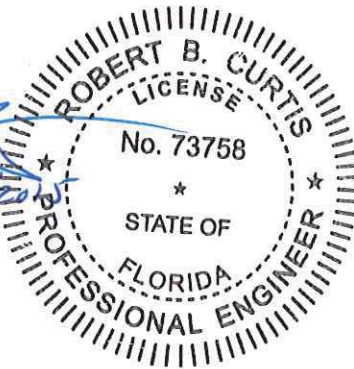


Please call me if you require any clarifications or additional information.

Sincerely,

HDR Engineering, Inc.


Robert B. Curtis, P.E.
Sr. Project Engineer
FL PE#73758
HDR CA# 4213



Richard A. Siemering
Florida Waste Operations Manager

Attachments (2) – Table 1 and Topographic Survey (Attachment A)

cc: Kimberly Byer, SWMD
Larry Ruiz, SWMD
Ron Cope, EPC

Table 1
Projected Remaining Capacity and Site Life
Phase I-VI and Capacity Expansion Area (Sections 7, 8, and 9)
Southeast County Landfill
Hillsborough County, Florida
July 7, 2015

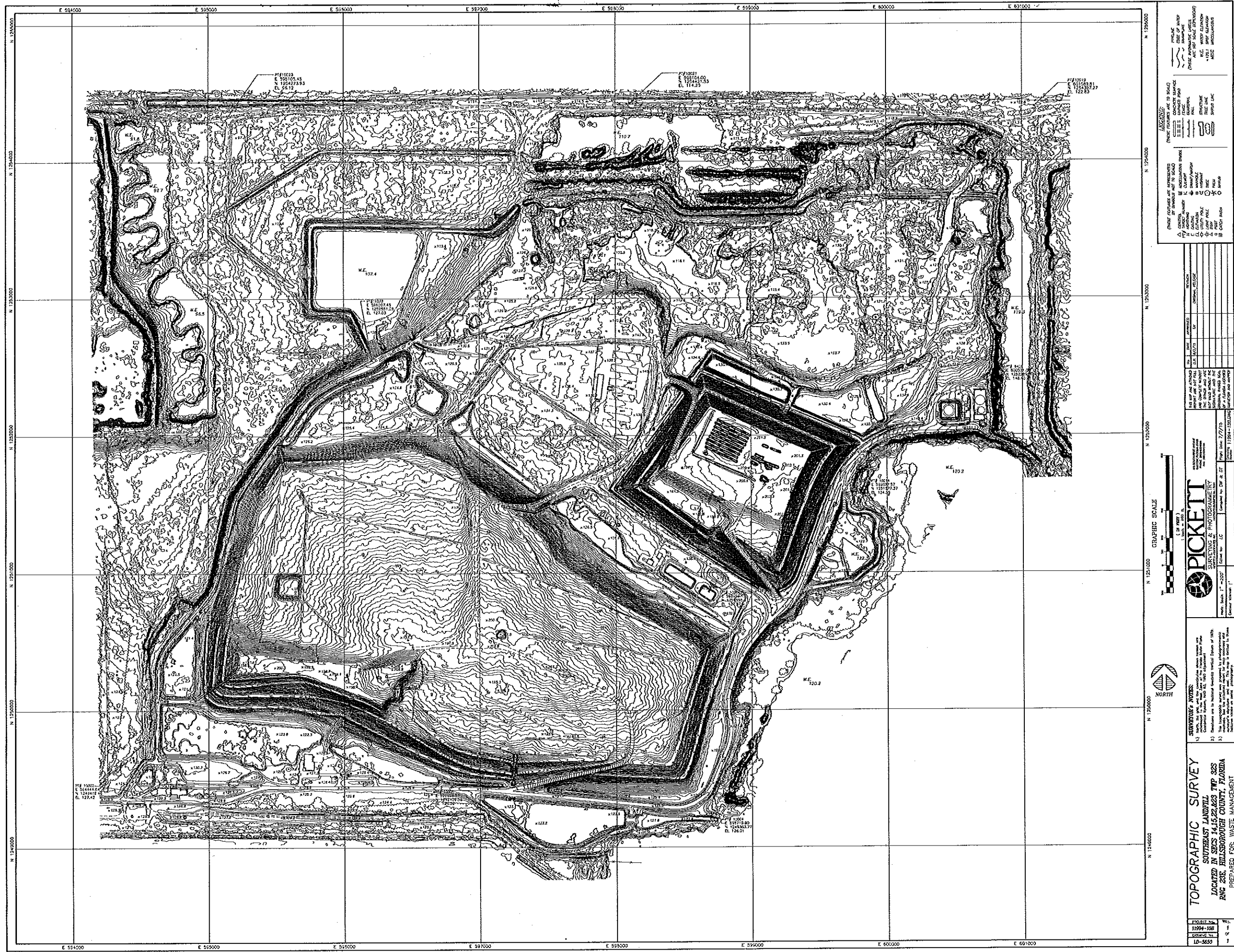
Phases I - VI Remaining Gross Air Space ³ =	7,764,502	CY	Phases I - VI Estimated Final Cover Soils =	665,869	CY
CEA Sections 7-9 Remaining Gross Air Space ³ =	1,044,116	CY	CEA Section 7-9 Estimated Final Cover Soils =	157,996	CY
Total Gross Remaining Air Space =	8,808,618	CY			
Design Life Estimates from Table Below:			Total Remaining Net Air Space (Gross Air Space - Final Cover Soils) =		
CEA Sections 7-9 =	7.5	years	Annual Disposal Rate Increase =	1.5%	
Phases I-VI =	28.7	years	Apparent Waste Density =	1,900	lbs/CY

Year	Projected Disposal Rates ^{1,2}	Diversion to Section 7-9	Diversion to Phases I-VI	Waste to Phases I-VI	Waste to Phases I-VI	Waste to Sections 7-9	Waste to Sections 7-9	Remaining Capacity for Phases I-VI ⁵	Remaining Capacity for Sections 7-9 ⁵
	Tons	%	%	Tons	CY ³	Tons	CY ³	CY	CY
					Beginning Capacity as of July 7, 2015			7,098,633	886,120
2015	105,904	50%	50%	52,952.00	55,738.95	52,952.00	55,738.95	7,042,894.05	830,381.05
2016	214,985	50%	50%	107,492.50	113,150.00	107,492.50	113,150.00	6,929,744.05	717,231.05
2017	218,209.78	50%	50%	109,104.89	114,847.25	109,104.89	114,847.25	6,814,896.80	602,383.80
2018	221,482.92	50%	50%	110,741.46	116,569.96	110,741.46	116,569.96	6,698,326.84	485,813.84
2019	224,805.17	50%	50%	112,402.58	118,318.51	112,402.58	118,318.51	6,580,008.34	367,495.34
2020	228,177.24	50%	50%	114,088.62	120,093.29	114,088.62	120,093.29	6,459,915.05	247,402.05
2021	231,599.90	50%	50%	115,799.95	121,894.69	115,799.95	121,894.69	6,338,020.36	125,507.36
2022	235,073.90	50%	50%	117,536.95	123,723.11	117,536.95	123,723.11	6,214,297.26	1,784.26
2023	238,600.01	1%	99%	236,904.97	249,373.65	1,695.04	1,784.26	5,964,923.61	0.00
2024	242,179.01	0%	100%	242,179.01	254,925.27	0.00	0.00	5,709,998.34	0.00
2025	245,811.69	0%	100%	245,811.69	258,749.15	0.00	0.00	5,451,249.19	0.00
2026	249,498.87	0%	100%	249,498.87	262,630.39	0.00	0.00	5,188,618.80	0.00
2027	253,241.35	0%	100%	253,241.35	266,569.84	0.00	0.00	4,922,048.95	0.00
2028	257,039.97	0%	100%	257,039.97	270,568.39	0.00	0.00	4,651,480.56	0.00
2029	260,895.57	0%	100%	260,895.57	274,626.92	0.00	0.00	4,376,853.64	0.00
2030	264,809.01	0%	100%	264,809.01	278,746.32	0.00	0.00	4,098,107.32	0.00
2031	268,781.14	0%	100%	268,781.14	282,927.52	0.00	0.00	3,815,179.81	0.00
2032	272,812.86	0%	100%	272,812.86	287,171.43	0.00	0.00	3,528,008.38	0.00
2033	276,905.05	0%	100%	276,905.05	291,479.00	0.00	0.00	3,236,529.38	0.00
2034	281,058.63	0%	100%	281,058.63	295,851.19	0.00	0.00	2,940,678.19	0.00
2035	285,274.51	0%	100%	285,274.51	300,288.95	0.00	0.00	2,640,389.24	0.00
2036	289,553.62	0%	100%	289,553.62	304,793.29	0.00	0.00	2,335,595.95	0.00
2037	293,896.93	0%	100%	293,896.93	309,365.19	0.00	0.00	2,026,230.76	0.00
2038	298,305.38	0%	100%	298,305.38	314,005.67	0.00	0.00	1,712,225.10	0.00
2039	302,779.96	0%	100%	302,779.96	318,715.75	0.00	0.00	1,393,509.35	0.00
2040	307,321.66	0%	100%	307,321.66	323,496.49	0.00	0.00	1,070,012.86	0.00
2041	311,931.49	0%	100%	311,931.49	328,348.93	0.00	0.00	741,663.93	0.00
2042	316,610.46	0%	100%	316,610.46	333,274.17	0.00	0.00	408,389.76	0.00
2043	321,359.62	0%	100%	321,359.62	338,273.28	0.00	0.00	70,116.48	0.00
2044	326,180.01	0%	20%	66,540.72	70,042.87	0.00	0.00	73.61	0.00

Notes:

- 1 Projected disposal rate tonnages based on historical tonnage received in 2014 (224,839 tons) and annual increase based on Hillsborough County Planning Commission Population Estimates of 1.5% average annual increases for 2004 - 2025.
- 2 Project disposal rate for 2015 based on approximately 6 months remaining in 2015 (July 1 - December 31) = 211,808 x 6 months / 12 months = 105,904 tons.
- 3 Cubic yard conversion from tons based on 1,900 lbs/cy apparent waste density based on typical waste densities calculated using monthly surveys and tonnage reports by the
- 4 Remaining estimated air space based on Pickett's July 7, 2015 aerial topographic survey and permitted final buildout contours.
- 5 Remaining volumes and site life calculations based on gross remaining air space. Final cover soil for Phases I-VI has been deducted from the available air space. The total remaining air space for Phases I-VI is 7,764,502 cubic yards. From the financial assurance cost estimates, it was estimated that 665,869 cubic yards of final cover soil would be needed for closure of Phases I-VI. Therefore, the total available net remaining air space for waste and daily cover soil is 7,764,502 - 665,869 cubic yards = 7,098,633 cubic yards. Similarly, final cover soil for CEA has been deducted from the available air space. The total remaining air space for the CEA (Sections 7-9) is 1,044,116 cubic yards. From the financial assurance cost estimates, it was estimated that 157,996 cubic yards of final cover soil would be needed for closure of the CEA (Sections 7-9). Therefore, the total available net remaining air space for waste and daily cover soil is 1,044,116 - 157,996 cubic yards = 886,120 cubic yards.

ATTACHMENT A
TOPOGRAPHIC SURVEY
AND
VOLUME SUMMARIES





RECEIVED

AUG 05 2015

SOUTHEAST COUNTY LANDFILL

WASTE MANAGEMENT

15960 County Road 672
Lithia, FL 33547
813 634 9203
813 634 6518 Fax

August 5, 2015

Larry Ruiz
Sr. Engineering Specialist
Hillsborough County Department of Solid Waste Management
15960 C. R. 672 Eight Miles East of 301 South
Lithia, Florida 33547

Sub: Semi-Annual Record Drawings 2015

Mr. Ruiz:

Attached you will find 2015 Semi-Annual Aerial Topography per Section 8.11 of the Contract. If you have any questions, please contact me.

Sincerely,

Ernest Ely
Site Manager
Attachments: Annual Volume Report

SURVEYOR'S REPORT

Southeast Landfill Hillsborough County, Florida

Prepared for:



Prepared by:



PICKETT & ASSOCIATES PROJECT NO.: 11994-15B
TITLE/TYPE OF SURVEY: TOPOGRAPHIC SURVEY
DATE OF SURVEY: 07/07/15

***NOTE: THIS REPORT AND ACCOMPANYING MAP TITLED SOUTHEAST LANDFILL
ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID
WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA
LICENSED SURVEYOR AND MAPPER.***

ACCURACY STATEMENT: The following stated plus or minus tolerances encompass a minimum of 90% of the difference between photogrammetrically measured values and any ground truth of all well-identified features. Mapped features will meet or exceed the Florida Minimum Technical Standards.

VERTICAL: Contours may be measured to an estimated vertical positional accuracy of 0.5'. Spot elevations and well-identified features have been measured to an estimated vertical positional accuracy of 0.25'.

HORIZONTAL: Well-identified features have been measured to an estimated horizontal positional accuracy of 1.66', as per Florida Minimum Technical Standards. All measurements are in U.S. Survey Feet.

MAP PLOTTING: This map is intended to be displayed at a scale of 1" = 50' (1:600) or smaller.

DATUM:

HORIZONTAL: Coordinates are referenced to the West Zone of the Florida State Plane Coordinate System, NAD 83/90 adjustment. Referenced to Hillsborough County Horizontal Control Monuments LW-E and LW-D.

VERTICAL: Elevations are to National Geodetic Vertical Datum of 1929, and are referenced to Hillsborough County Horizontal Control Monuments LW-E and LW-D.

Control Points Used for Image Rectification:

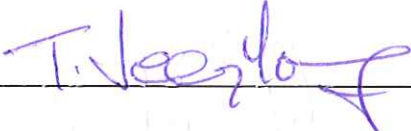
<u>Pt#</u>	<u>Easting</u>	<u>Northing</u>	<u>Elevation</u>
4530	597249.91	1253593.61	125.08
4532	594975.02	1250721.79	130.97
6426	600531.06	1252289.80	148.40
10000	596658.59	1249409.50	126.59
10002	594444.64	1249416.46	127.42
10004	598710.90	1249383.77	126.01
10006	598999.12	1250855.31	137.37
10014	599697.57	1251577.37	134.55
10019	601089.81	1254397.27	122.83
10021	598104.00	1254421.53	114.20
10023	595105.45	1254273.93	96.12
16273	596207.45	1252551.28	127.03

Measurement Methods:

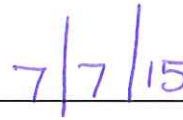
This map is limited to those features visible on aerial imagery. Color digital imagery was acquired at an average altitude of 2500' using a metric precision digital camera whose focal length is 70.3mm. Mapping was performed using LiDAR and softcopy photogrammetric techniques. The LiDAR data has a estimated point sample distance of 0.71 foot and a density of 1.9675 points per square foot (± 21.18 points per square meter). For a vertical accuracy check, the LiDAR data was compared to the eleven (11) points set as targets for aerial imagery. The Root Mean Square Error of the Elevations (RMSEZ) is 0.13 foot, being the equivalent of 0.254' FGDC/NSSDA Vertical Accuracy. All measurements are in U.S. Survey Feet.

Limitations:

This mapping should be used for preliminary design work only and should not replace an actual field survey where the required accuracy is greater than the accuracy stated in this report. No responsibility is assumed for areas outside the contracted scope.



T. JEFFREY YOUNG, PSM, CP
FLORIDA REGISTRATION NO. 5440
PICKETT AND ASSOCIATES, INC.
FLORIDA REGISTRATION NO. 364



SURVEY DATE

Memo

Date: Friday, August 14, 2015

Project: Hillsborough County SCLF Site Life Volumes Calculations

To: Robert Curtis

From: Braden Johnson

Subject: Internal Volumes Report Memo

As requested, I have prepared four volume calculations using AutoCAD Civil 3D 2014 comparing volume differences between the January 2015 and July 2015 topographic surveys, and July 2015 and final design grades for both Phases I-VI and the Capacity Expansion areas at the landfill. Calculated volumes are for the following four scenarios:

1. Comparison of January 2015 to July 2015 topographic surveys for Phases I-VI.
2. Comparison of July 2015 to final design grades for Phases I-VI.
3. Comparison of July 2015 to final design grades for each Phase (Phases 1-VI).
4. Comparison of January 2015 to July 2015 topographic surveys for the Capacity Expansion Area.
5. Comparison of July 2015 topographic survey to final design grades for the Capacity Expansion Area.
6. Comparison of July 2015 topographic survey to final design grades for each section of the Capacity Expansion Area (Sections 7, 8, and 9).

Surfaces models used for calculations were created using the following sources:

- July 2015 topographic survey provided by Pickett & Associates, dated July 7, 2015.
- January 2015 topographic survey provided by Pickett & Associates, dated January 7, 2015.
- Phases V and VI – Lift 23 (Final Lift), Phases I-VI Operating Sequence, dated 6/2013.
- Fill Sequence 18, Capacity Expansion Area Sections 7, 8 and 9 Operating Sequence, dated 6/2013.

Drawings for each scenario have been color coded to facilitate review for areas requiring cut/fill.

The results of the volumes are as follows (units= cubic yards):

1. Comparison of January 2015 to July 2015 topographic surveys for Phases I-VI.

Volume Cut: 12,365.91	Volume Fill: 133,967.73	Volume Net: 121,601.82
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2. Comparison of July 2015 to final design grades for Phases I-VI.

Volume Cut: 16,572.41	Volume Fill: 7,764,501.81	Volume Net: 7,747,929.40
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3. Comparison of July 2015 to final design grades for each Phase (Phases I-VI).

Area:	Volume Cut:	Volume Fill:	Volume Net:
Phase I	1,961.22	1,368,066.06	1,366,104.84
Phase II	1,902.93	1,424,950.96	1,423,048.03
Phase III	8,669.69	1,344,257.63	1,335,587.93
Phase IV	0.01	980,754.68	980,754.67
Phase V	3,192.59	2,095,987.38	2,092,794.80
Phase VI	845.97	550,485.10	549,639.13

4. Comparison of January 2015 to July 2015 topographic surveys for the Capacity Expansion Area.

Volume Cut: 5,647.26	Volume Fill: 18,800.58	Volume Net: 13,153.32
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5. Comparison of July 2015 topographic survey to final design grades for the Capacity Expansion Area.

Volume Cut: 17,926.46	Volume Fill: 1,044,115.55	Volume Net: 1,026,189.09
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6. Comparison of July 2015 topographic survey to final design grades for each section of the Capacity Expansion Area (Sections 7, 8, and 9).

Area:	Volume Cut:	Volume Fill:	Volume Net:
Section 7	6,656.62	460,629.74	453,973.12
Section 8	751.18	145,573.31	144,822.13
Section 9	10,519.10	437,911.77	427,392.67