

# HARTMAN & ASSOCIATES, INC.

**OFFICERS:**

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Harold E. Schmidt, Jr., P.E., DEE  
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Michael B. Bonar, P.E.  
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Douglas P. Dufresne, P.G.  
Jon D. Fox, P.E.  
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Daniel M. Nelson, P.E.

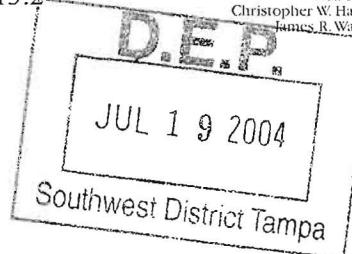
engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

**ASSOCIATES:**

James E. Golden, P.G.  
Andrew T. Woodcock, P.E., M.B.A.  
John P. Toomey, P.E.  
Jennifer L. Woodall, P.E.  
L. Todd Shaw, P.E.  
Rafael A. Terrero, P.E., DEE  
Jill M. Hudkins, P.E.  
Valerie C. Davis, P.G.  
Charles M. Shultz, P.E.  
Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Laffrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero  
Christopher W. Hardin, P.E.  
James R. Warner, E.I.

March 30, 2004  
(Resubmitted July 15, 2004)

HAI #99.0331.007  
File 13.2

Via UPS Ground

Ms. Susan Pelz, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject:** Grouting Completion Report  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida

Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Inc. (AAM), Hartman & Associates, Inc. (HAI) is submitting for your review the grouting completion report for the remediation of the subsidence area in cell 16, at the subject site in Dade City, Florida.

The subsidence area was discovered during an HAI site visit on January 12, 2004. The Department was notified about the existing site conditions within 24-hours, as required by the approved Construction Permit. AAM was advised by one of its consultants to fill in the subsidence area with clay immediately to prevent any additional slumping and to create areas stable enough to accommodate a drill rig. The approximate location of the subsidence area prior to being filled and the top of the excavated slope was marked and surveyed by Foresight Surveyors, Inc. A map showing the surveyed location of the subsidence area is included as Figure 1. HAI was onsite from January 15 through 17, 2004 with UES drillers to complete SPT borings in an effort to delineate the lateral and vertical extent of the subsidence area.

Using the lithologic description and blow count data from the SPT borings, engineers from UES calculated the approximate volume of grout required to remediate the subsidence area. LRE Ground Services, Inc. was onsite from March 2 through 9, 2004 to complete the grouting operation. A total of 357 cubic yards of grout was injected into a total of twenty-seven (27) grout injection points, within and adjacent to the original subsidence area.

Universal Engineering Sciences, Inc. (UES) observed the remedial grouting operation at the site, performed by LRE Ground Services, Inc. A grouting completion report, signed and sealed by a UES engineer has been included in Attachment A. Field notes completed by the onsite UES technician during the remedial grouting are included in Attachment B.

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TELEPHONE (407) 839-3955 • FAX (407) 839-3790 • www.consulthai.com

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ORLANDO    FORT MYERS    FT. LAUDERDALE    JACKSONVILLE    DESTIN    ATLANTA

F142

Ms. Susan Pełz, P.E.  
March 30, 2004  
Page 2



We trust that we have provided the adequate information required for the submittal of the grouting completion report for the subject site in Dade City, Florida. Please feel free to contact us if you require additional information or have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

A handwritten signature in black ink, appearing to read "Miguel A. Garcia".

Miguel A. Garcia  
Project Hydrogeologist

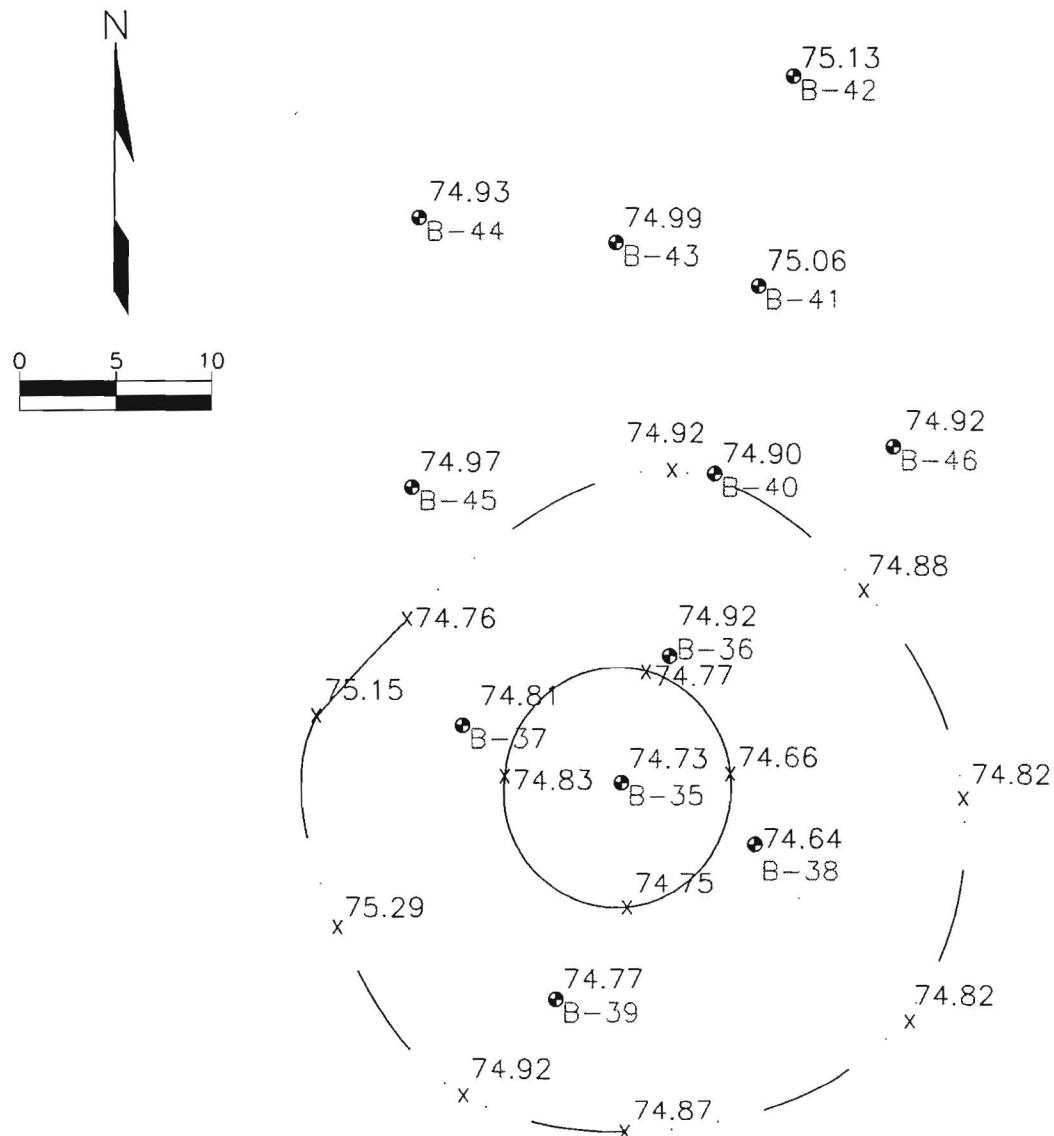
A handwritten signature in black ink, appearing to read "Bruce W. Lafrenz".

Bruce W. Lafrenz  
Project Hydrogeologist/Associate

MAG/cr/99.0331.007/corresp/grouting completion.doc

cc: Dominic Iafrate, Angelo's Recycled Materials, Inc., Warren, MI  
Craig Bryan, Angelo's Aggregate Materials, Inc., Largo, FL

## **FIGURES**



## LEGEND

● SPT BORINGS  
 ✕ SURVEY SPOT LOCATIONS  
 ○ SUBSIDENCE OUTLINE  
 — TOP OF SLOPE OF EXCAVATION AREA

CELL 16

CELL 15



HARTMAN & ASSOCIATES, INC.  
engineers, hydrogeologists, surveyors & management consultants

201 EAST PINE STREET - SUITE 1000 - ORLANDO, FL 32801  
TELEPHONE (407) 839-3955 - FAX (407) 839-3790

SUBSIDENCE AREA  
ENTERPRISE LANDFILL  
& DISPOSAL FACILITY  
PASCO, FLORIDA

FIGURE  
1



## ATTACHMENT A



# UNIVERSAL ENGINEERING SCIENCES

Consultants in: Geotechnical Engineering • Environmental Sciences  
Construction Materials Testing • Threshold Inspection • Private Provider Inspection



March 10, 2004

Mr. Dominic Iafrate  
Angelo's Recycled Materials, Inc.  
1755 20<sup>th</sup> Avenue SE  
Largo, FL 34641

Reference: Grouting Completion Report  
Dade City Class III Landfill  
NEC Enterprise Rd. and Auton Rd.  
Dade City, Florida  
UES Project No. 80626-002-02

Dear Mr. Iafrate:

As authorized, Universal Engineering Sciences, Inc. (UES) observed remedial grouting operation at the proposed retention area at Dade City landfill, performed by LRE Ground Services, Inc. The purpose of the grouting operation was to remediate suspected sinkhole conditions below the portion of the retention area by filling of any subsurface voids encountered in the general vicinity of the soil subsidence that occurred recently at this location.

UES developed the grouting program based on geotechnical subsurface exploration at the subject site directed by Hartman and Associates. The assessment regarding the remedial scope of work was made based upon the subsurface information provided by the SPT borings performed within the general vicinity of the soil subsidence.

A total of twenty seven (27) grout injection points were used during the grouting program. The approximate location, depth of installed casing, and actual pumped grout quantity for each grout injection point location are presented on the attached Grout Injection Point Location Plan. The installed length of the grout injection points generally varied from 10 to 46 feet, reflecting the variable subsurface conditions encountered during the geotechnical exploration. Grout injection point #26 however, was installed within a major void or partially filled void within limestone, believed to have contributed to the recent sinkhole related subsidence. A total of 68.6 yards of grout (nearly 20% of the grout total) was injected through this grout injection point alone. Total of 886 feet of casing was used to inject 357 cubic feet of grout. Approximately 8 cubic yards of grout was returned after completion of the grouting program.

The completion date, installed length of each grout injection point and the amount of grout pumped is presented in the following table. The grout injection points are listed in numerical order.

9802 Palm River Road • Tampa, FL 33619-4438 • (813) 740-8506 • Fax (813) 740-8706

OFFICES IN: • Clermont • Daytona Beach • DeBary • Fort Myers • Gainesville • Hollywood • Jacksonville • Ocala • Orlando • Palm Coast  
• Rockledge • Sarasota • St. Augustine • Tampa • West Palm Beach

Angelo's Recycled Materials, Inc.  
UES Project No. 80626-002-02  
March 10, 2004

GIP#	DATE COMPLETED	CASING LENGTH (FT)	TOTAL GROUT PUMPED (YDS <sup>3</sup> )
1	March 3, 2004	45	27.2
2	March 2, 2004	45	27.0
3	March 2, 2004	38	19.9
4	March 2, 2004	34	7.1
5	March 3, 2004	26	3.0
6	March 8, 2004	30	26.0
7	March 8, 2004	46	32.5
8	March 5, 2004	32	9.4
9	March 5, 2004	34	14.5
10	March 3, 2004	26	17.2
11	March 9, 2004	22	1.8
12	March 9, 2004	27	1.2
13	March 5, 2004	31	7.0
14	March 5, 2004	32	17.9
15	March 9, 2004	35	4.1
16	March 9, 2004	35	3.8
17	March 5, 2004	29	0.2
18	March 4, 2004	33	10.2
19	March 8, 2004	34	0.2
20	March 8, 2004	35	6.8
21	March 8, 2004	36	1.4
22	March 9, 2004	10	0.1
23	March 5, 2004	38	19.0
24	March 8, 2004	30	16.5
25	March 8, 2004	43	14.4
26	March 5, 2004	60	68.6
TOTAL		886	357.0

Based on the grout take and depth of grout injection points, it appears that one major cavity and several zones of very loose soil conditions indicating possible sinkhole activity may have existed in the immediate vicinity and to the north of the occurred subsidence.

Angelo'S Recycled Materials, Inc.  
UES Project No. 80626-002-02  
March 10, 2004

Based on our observation of the grouting program performed within the proposed retention area, and our subsequent analysis of data gathered during the grouting, we feel that the intent of the remedial program was met. In our opinion, the subsurface grouting met the goals of the remedial program, by improving the overall subsurface conditions within the treated area and reducing the risk of future soil subsidences. We note that measures such as subsurface grouting are intended to treat, in a practical and cost-effective manner, potentially detrimental subsurface conditions which could affect the ground surface. However, evaluation of the effectiveness of treatment is subject to inference and interpretation of the end result and cannot be predicted with certainty.

It has been a pleasure assisting you with this phase of your program. If you have any questions regarding this report or when we can be of further assistance please contact the undersigned at (813) 740-8506.

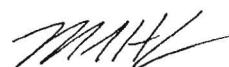
Respectfully submitted,

**UNIVERSAL ENGINEERING SCIENCES, INC.**

Certificate of Authorization No. 549



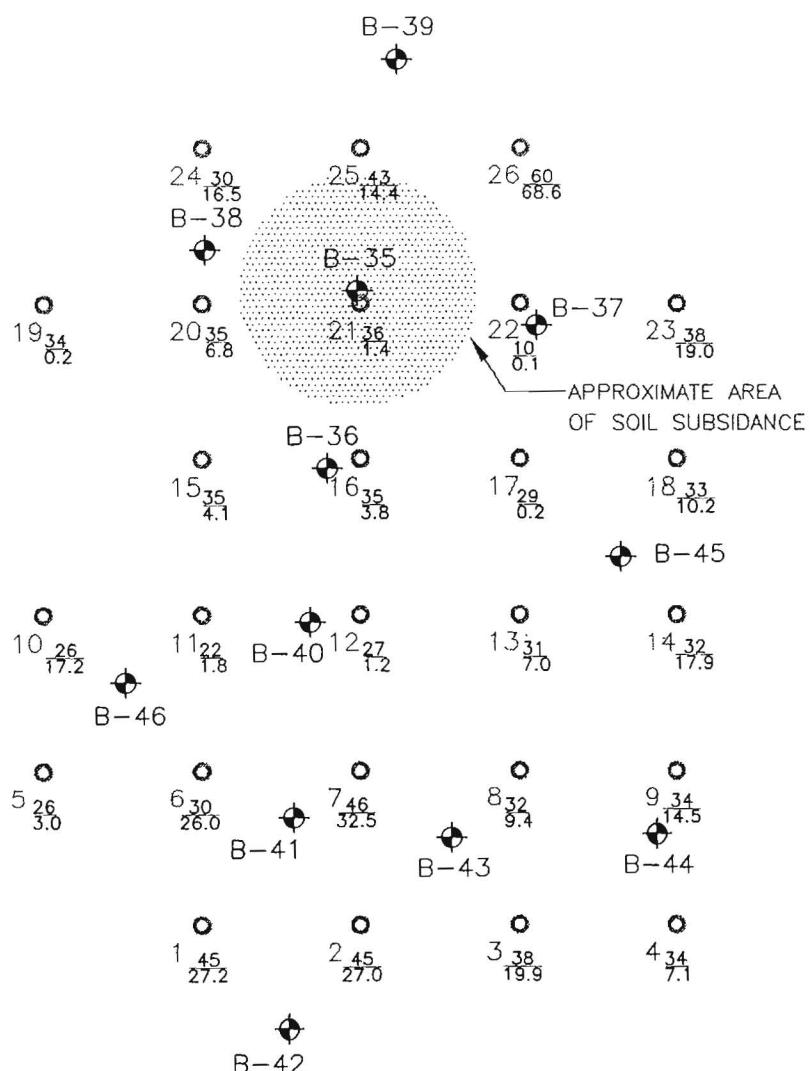
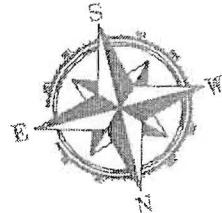
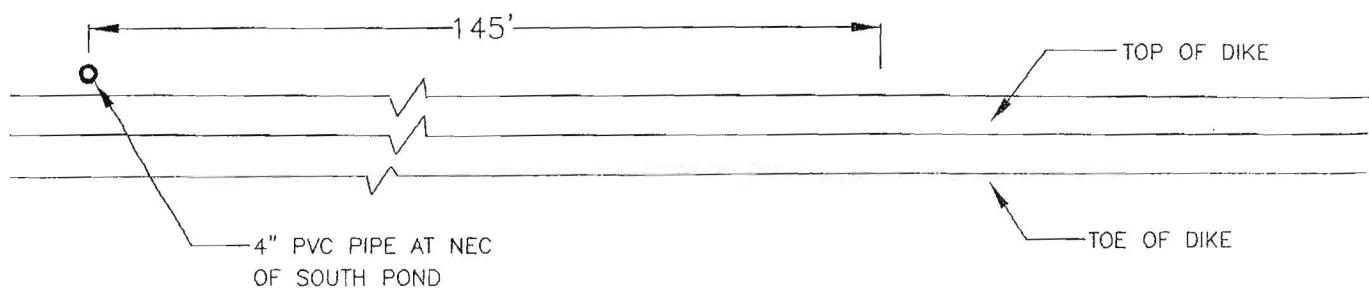
Dusan Jovanovic  
Senior Project Manager



Mark Hardy, P.E.  
Tampa Regional Manager  
Professional Engineer No. 57233  
Date 3-10-04



Attachment: Grout Injection Point Location Plan  
cc: Client (3)



LEGEND:

- 1 Approximate SPT boring location
- 2 Approximate primary grout injection point location
- 25  
1.5 Depth of pin (ft.)/ Grout pumped (cubic yards)

GRAPHIC SCALE  
(IN FEET)



UNIVERSAL  
ENGINEERING SCIENCES

RETENTION POND SOIL SUBSIDENCE  
DADE CITY CLASS III LANDFILL  
DADE CITY, FLORIDA

FINAL GROUT INJECTION POINT LOCATION PLAN

DRAWN BY: C.C.	DATE: MAR. 10, 2004	CHECKED BY: D.J.	DATE: MAR. 10, 2004
SCALE: 1" = 10'	PROJECT NO: 80626-002-02	REPORT NO:	APPENDIX:

## **ATTACHMENT B**



Universal Engineering Sciences, Inc.

9802 Palm River Road

Tampa, Florida 33619-4438

**Telephone:** (813) 740-8506

Telephone: (813) 740-8506 Fax: (813) 740-8706 Website: [www.uesd.com](http://www.uesd.com)

JUL 19 2004

## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-3-04

Project: **DADE CITY LANDFILL**

**Injection Point:** \_\_\_\_\_

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 27 0

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 27 0



Universal Engineering Sciences, Inc.  
9802 Palm River Road  
Tampa, Florida 33619-4438  
Telephone: (813) 740-8506 Fax: (813) 740-8706 Website: www.uesrl.com

## GROUT MONITORING LOG

Client: ANGELO'S RECYCLING

Date: 3-2-04

Project: DADE CITY LANDFILL

Injection Point: 2

Csng. Depth (ft.)	Grout Time		Max. Pressure (psi)	Pump Strokes	Reason to stop pumping				Remarks
	Start	Finish			H P	G H	G P	C M	
45	← TOTAL CASING DEPTH			4-9					Continue Truck
115	1401	1426	160	468					End Truck 3445
				5-9					New Truck
42	1433	1433	400+	2	X				3355
111			110.0+	5	X				3005
40			400+	6	X				3005
38	1434	1455	140	427					End Truck 1446 10
32									
			6-9						New Truck
32	1531	1558	216	523					End Truck 2 3455
27					X				REK 5
22		1618				X			Flush
									Completed
									END DAY

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

Supervisor: \_\_\_\_\_

Inspector: JOHN MOTKO

Company: LRE

Total (Cu. Yd.): 27.0

Total To Date (Cu. Yd.): \_\_\_\_\_



**Universal Engineering Sciences, Inc.**  
9802 Palm River Road  
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## GROUT MONITORING LOG

## Day one

Client: ANGELO'S RECYCLING

Date: 3-2-04

Project: DADE CITY LANDFILL

Injection Point: 3

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 19.9

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 19.9



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**9802 Palm River Road**  
**Tampa, Florida 33619-4438**  
**Telephone: (813) 740-8506 Fax: (813) 740-8706 Website: [www.uesrl.com](http://www.uesrl.com)**

## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-2-04

Project: DADE CITY LANDFILL

**Injection Point:** 9

7.1

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 7.1

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 7.1



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## GROUT MONITORING LOG

Client: ANGELO'S RECYCLING

Date: 3-3-87

Project: DADE CITY LANDFILL

**Injection Point:** 5

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 3.0

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 3.0



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-8-04

3-8-04

Project: DADE CITY LANDFILL

Injection Point:  6

Injection Point: 

7.5

10.0

85

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 26

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 26.0



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## GROUT MONITORING LOG

**Client:** ANGELO'S RECYCLING

Date: 3-8-04

Project: DADE CITY LANDFILL

Injection Point: 7

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 32.5

**Total To Date (Cu. Yd.):**



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-5-04

Project: DADE CITY LANDFILL

**Injection Point:** 8

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 9.4

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 9.4



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## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-5-84

3-5.94

Project: DADE CITY LANDFILL

**Injection Point:** 9

9

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 14.5

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 14.5



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## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-3-04

Project: DADE CITY LANDFILL

**Injection Point:** 10

8, 8

8.4

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 17.2

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 17.2



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## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-9-04

Project: DADE CITY LANDFILL

**Injection Point:** //

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): | .8

**Total To Date (Cu. Yd.):**



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-9-04

Project: DADE CITY LANDFILL

**Injection Point:** 12

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 1.2

**Total To Date (Cu. Yd.):**



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**9802 Palm River Road**  
**Tampa, Florida 33619-4438**  
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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-5-89

Project: DADE CITY LANDFILL

Injection Point: 13

19

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 7.0

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 7.0



**Universal Engineering Sciences, Inc.**  
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## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-5-01

3-5-01

Project: DADE CITY LANDFILL

**Injection Point:**

14

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 17.9

**Total To Date (Cu. Yd.):**

**Total (Cu. Yd.):**



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-9-04

Project: DADE CITY LANDFILL

**Injection Point:** 13

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 4.1

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 4.1



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-9-04

Project: DADE CITY LANDFILL

**Injection Point:** 16

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 3.8

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 3.8



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## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-5-09

Project: DADE CITY LANDFILL

**Injection Point:** 17

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 0.2

**Total To Date (Cu. Yd.):**



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9802 Palm River Road  
Tampa, Florida 33619-4438  
Telephone: (813) 740-8506 Fax: (813) 740-8706 Website: [www.uesrl.com](http://www.uesrl.com)

## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-27-01

Project: DADE CITY LANDFILL

**Injection Point:** 8

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 10.2

Total To Date (Cu. Yd.):



**Universal Engineering Sciences, Inc.**  
9802 Palm River Road  
Tampa, Florida 33619-4438  
Telephone: (813) 740-8506 Fax: (813) 740-8706 Website: [www.uesrl.com](http://www.uesrl.com)

## GROUT MONITORING LOG

**Client:** ANGELO'S RECYCLING

Date: 3-8-04

Project: DADE CITY LANDFILL

**Injection Point:** 19

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 0.7

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 0.7





**Universal Engineering Sciences, Inc.**  
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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-8-04

Project: DADE CITY LANDFILL

**Injection Point:** 2

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 1.4

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 1.4



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## GROUT MONITORING LOG

Client: ANGELO'S RECYCLING

Date: 3-9-84

Project: DADE CITY LANDFILL

Injection Point: 22

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu, Yd): 0.1

**Total To Date (Cu. Yd.):**

0.1



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-24-04

Project: DADE CITY LANDFILL

Injection Point: 23

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 7.8 +

**Total To Date (Cu. Yd.):**



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## GROUT MONITORING LOG

Client: ANGELO'S RECYCLING

Date: 3-5-84

Project: DADE CITY LANDFILL

Continue Injection Point: 23

from 3-11-05

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 7.8 + 11.2 = 19.0

**Total To Date (Cu. Yd.):**



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## GROUT MONITORING LOG

Client: ANGELO'S RECYCLING

Date: 7-1-04

Project: DADE CITY LANDFILL

Injection Point: 24

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 16.5

**Total To Date (Cu. Yd.):**

**Total (Cu. Yd.):** 16.5



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## **GROUT MONITORING LOG**

**Client:** ANGELO'S RECYCLING

Date: 3-5-84

Project: DADE CITY LANDFILL

Injection Point: 23

**HP** - High Pressure; **GH** - Ground Heave; **GP** - Grout out of Pipe; **CM** - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 2.8 +

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 2.8 +



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## GROUT MONITORING LOG

**Client:** ANGELO'S RECYCLING

Date:

3-f. 04

Project: DADE CITY LANDFILL

CONTINUE Injection Point: 25

from 3-5-04

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

Inspector: JOHN MOTKO

**Company:** LRE

Total (Cu. Yd.): 2.8 + 11.6 = 14.4

**Total To Date (Cu. Yd.):**

Total (Excl. Tax): \_\_\_\_\_



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-3-04

Project: DADE CITY LANDFILL

Injection Point: 26

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 6.6+

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 6.6+



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## **GROUT MONITORING LOG**

Client: ANGELO'S RECYCLING

Date: 3-4-04

3-4-04

Project: DADE CITY LANDFILL

**Injection Point:** 26

Continue from 2-3-04

**HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communication**

**Supervisor:**

**Inspector: JOHN MOTKO**

**Company:** LRE

Total (Cu. Yd.): 6.6 + 18

**Total To Date (Cu. Yd.):**

Total (Cu. Yd.): 6.6 + 18



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## GROUT MONITORING LOG

Client: ANGELO'S RECYCLING

Date:

3-501

Project: DADE CITY LANDFILL

(continued) Injection Point: 26

from 3-4-04

HP - High Pressure; GH - Ground Heave; GP - Grout out of Pipe; CM - Communications

**Supervisor:**

Inspector: JOHN MOTKO

**Company:** LRE

$$\text{Total (Cu. Yd.)} : \quad 6.5 + 18 + 44 = 68.6$$

**Total To Date (Cu. Yd.):**