

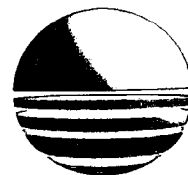
WACS  
#45799

## GEOTECHNICAL REPORTS

### WEST PASCO COUNTY LANDFILL EXPANSION CELLS A-3 AND SW-2 SPRING HILL, FLORIDA



CAMP DRESSER & MCKEE  
TAMPA, FLORIDA  
813-281-2900



HANDEX OF FLORIDA, INC.  
MT. DORA, FLORIDA  
352-735-1800

# UNIVERSAL ENGINEERING SCIENCES

## PROCTOR TEST RESULTS

### CLIENT

Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

### PROJECT NAME/LOCATION

West Pasco County Landfill Expansion: Cells A-3 and  
SW-2, Pasco County, Florida

PROJECT NO.: 70096-001-02

Sample Location: SW-2

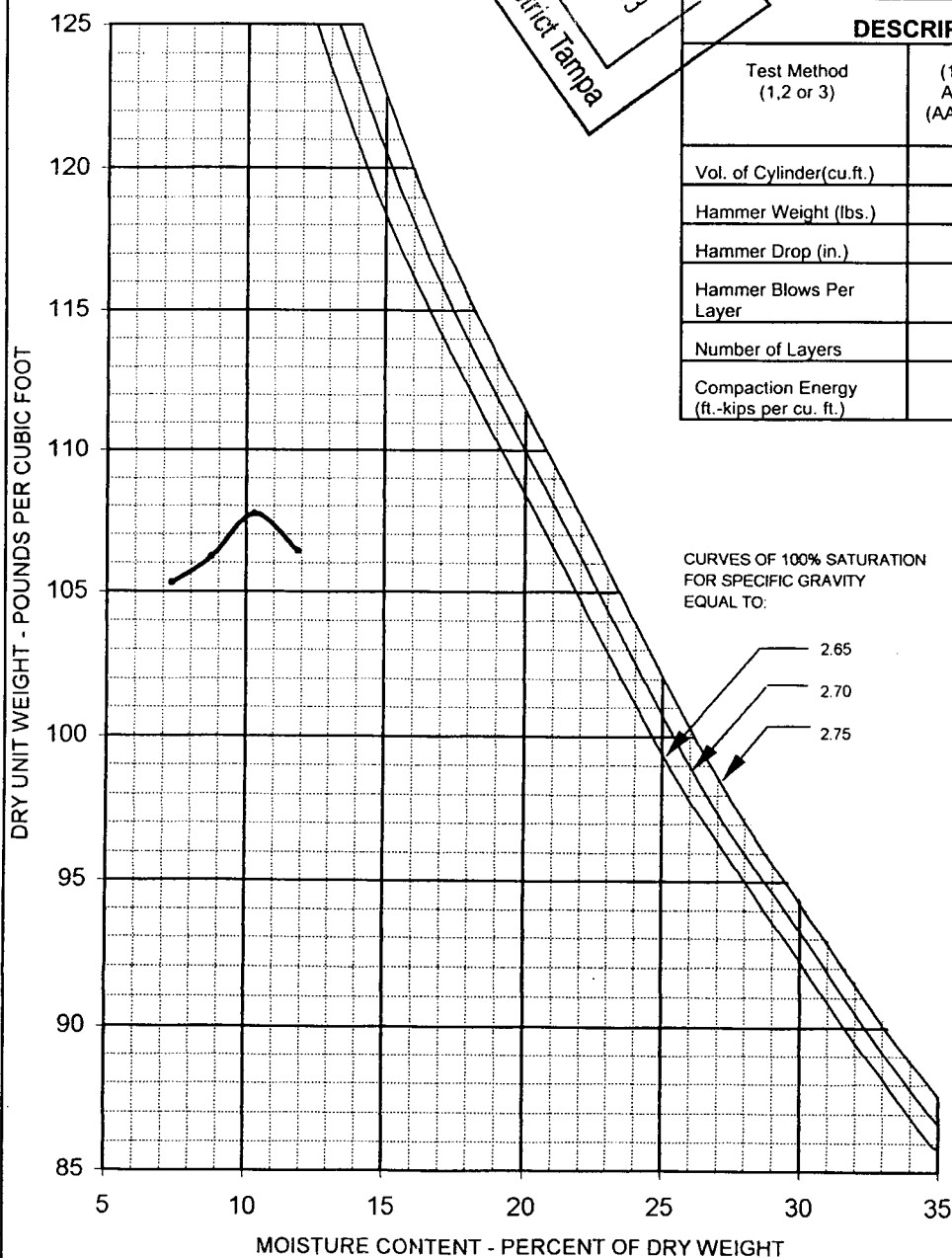
Sample Description: Very Light Brown Sand

### DESCRIPTION OF PROCTOR TESTS

Test Method (1, 2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder (cu. ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ft.-kips per cu. ft.)	12.375	56.259	56.259

### SUMMARY OF TEST RESULTS

Lab No.	N/A
Date Tested	11/26/01
Test Method	ASTM D-1557
Maximum Dry Density (pcf)	107.8
Optimum Moisture Content (%)	10.3
Wash 200 (%)	N/A



UNIVERSAL ENGINEERING SCIENCES, INC.  
Certificate of Authorization No. 00000549

*Wayne Pandorf*  
Wayne Pandorf, P.E.  
Florida Registration No. 30254  
Date: 8-15-2002

CH

Date: November 27, 2001  
Re-Issued: August 15, 2002

Report No.: PR #1

# UNIVERSAL ENGINEERING SCIENCES

## PROCTOR TEST RESULTS

### CLIENT

Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

### PROJECT NAME/LOCATION

West Pasco County Landfill Expansion: Cells A-3 and  
SW-2, Pasco County, Florida

PROJECT NO.: 70096-001-02

Sample Location: SW-2

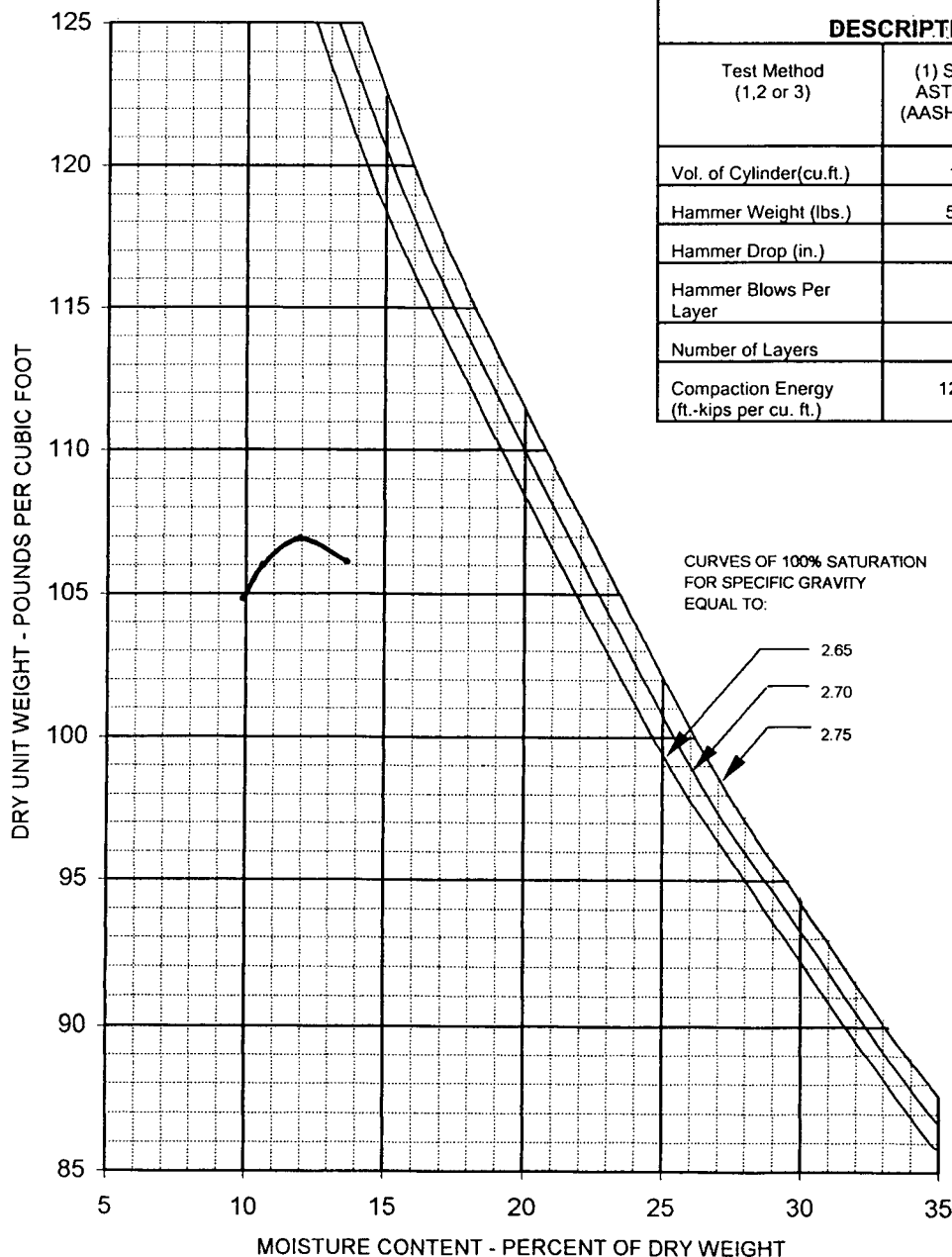
Sample Description: Light Brown Sand

### DESCRIPTION OF PROCTOR TESTS

Test Method (1, 2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder(cu.ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ft.-kips per cu. ft.)	12.375	56.259	56.259

### SUMMARY OF TEST RESULTS

Lab No.	N/A
Date Tested	11/26/01
Test Method	ASTM D-1557
Maximum Dry Density (pcf)	107.0
Optimum Moisture Content (%)	12.0
Wash 200 (%)	N/A



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Certificate of Authorization No. 00000549

*Wayne Pandorf*  
Wayne Pandorf, P.E.  
Florida Registration No. 30254  
Date: 8-15-2002

CH

Date: November 27, 2001  
Re-Issued: August 15, 2002

Report No.: PR #2

# UNIVERSAL ENGINEERING SCIENCES

## PROCTOR TEST RESULTS

### CLIENT

Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

### PROJECT NAME/LOCATION

West Pasco County Landfill Expansion: Cells A-3 and  
SW-2, Pasco County, Florida

PROJECT NO.: 70096-001-02

Sample Location: Cell A-3

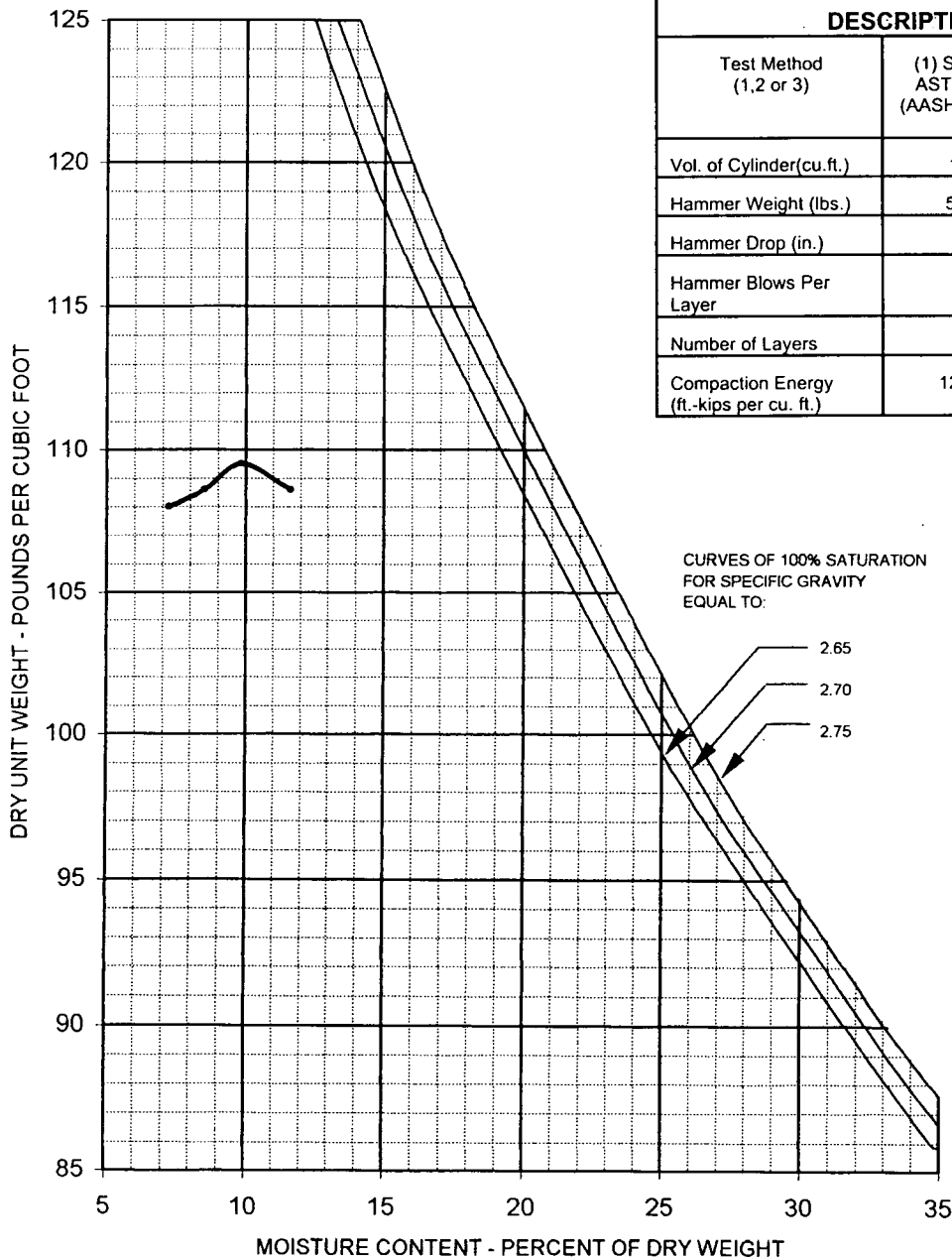
Sample Description: Light Brown Sand

### DESCRIPTION OF PROCTOR TESTS

Test Method (1, 2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder(cu.ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ft.-kips per cu. ft.)	12.375	56.259	56.259

### SUMMARY OF TEST RESULTS

Lab No.	253
Date Tested	1/8/02
Test Method	ASTM D-1557
Maximum Dry Density (pcf)	109.5
Optimum Moisture Content (%)	9.8
Wash 200 (%)	N/A



UNIVERSAL ENGINEERING SCIENCES, INC.  
Certificate of Authorization No. 00000549

*Wayne Pandorf, P.E.*  
Wayne Pandorf, P.E.  
Florida Registration No. 30254  
Date: 8.15.2002

CH

Date: January 11, 2002  
Re-Issued: August 15, 2002

Report No.: PR #3

# UNIVERSAL ENGINEERING SCIENCES

## PROCTOR TEST RESULTS

### CLIENT

Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

### PROJECT NAME/LOCATION

West Pasco County Landfill Expansion: Cells A-3 and  
SW-2, Pasco County, Florida

PROJECT NO.: 70096-001-02

Sample Location: Cell A-3

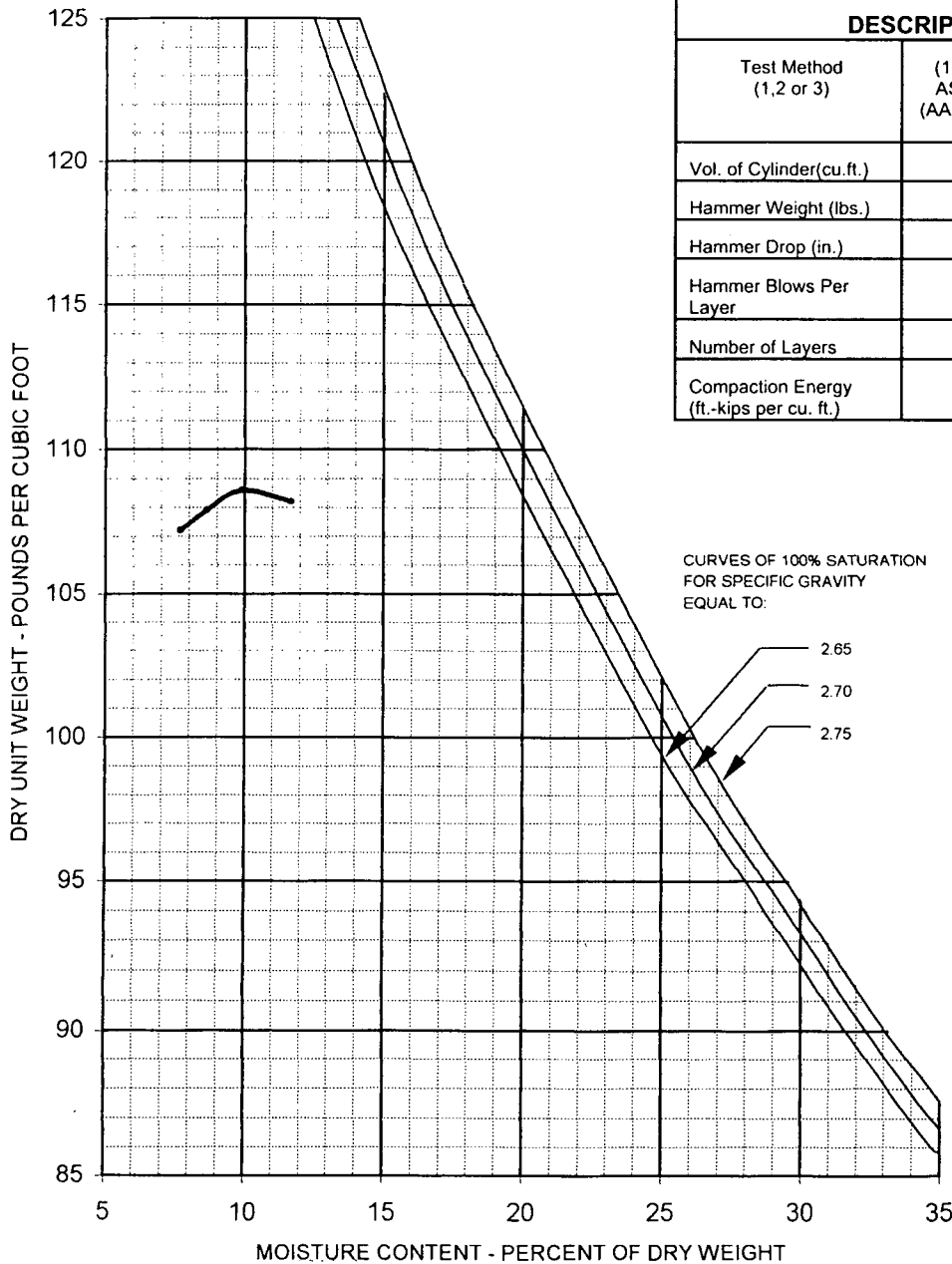
Sample Description: Light Brown Sand

### DESCRIPTION OF PROCTOR TESTS

Test Method (1, 2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder(cu.ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ft.-kips per cu. ft.)	12.375	56.259	56.259

### SUMMARY OF TEST RESULTS

Lab No.	254
Date Tested	1/8/02
Test Method	ASTM D-1557
Maximum Dry Density (pcf)	108.7
Optimum Moisture Content (%)	9.9
Wash 200 (%)	N/A



UNIVERSAL ENGINEERING SCIENCES, INC.  
Certificate of Authorization No. 00000549

*Wayne Pandorf*  
Wayne Pandorf, P.E.  
Florida Registration No. 30254  
Date: 8.15.2002

CH

Date: January 11, 2002  
Re-Issued: August 15, 2002

Report No.: PR #4

# UNIVERSAL ENGINEERING SCIENCES

## PROCTOR TEST RESULTS

### CLIENT

Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

### PROJECT NAME/LOCATION

West Pasco County Landfill Expansion: Cells A-3 and  
SW-2, Pasco County, Florida

PROJECT NO.: 70096-001-02

Sample Location: Stockpile

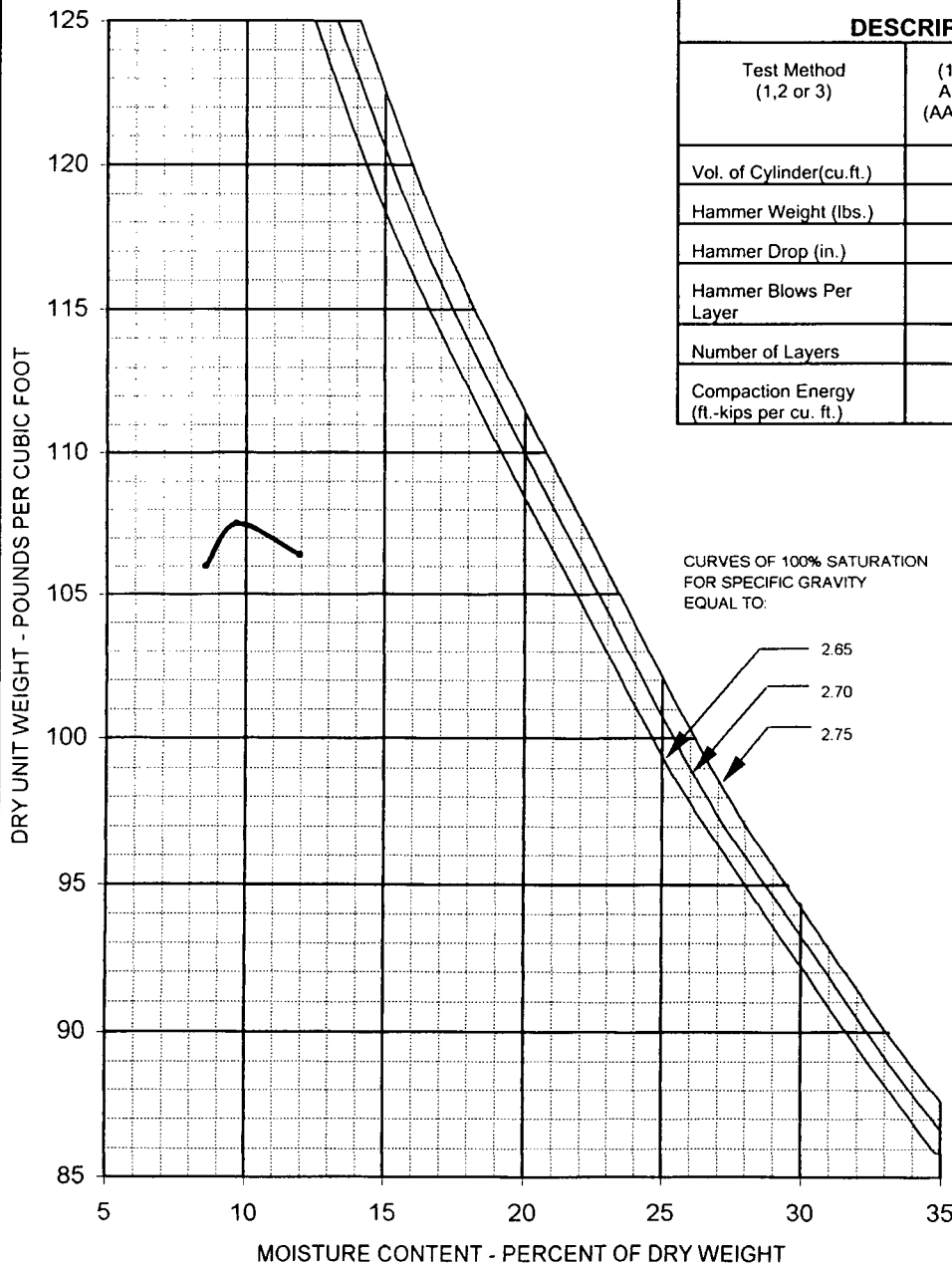
Sample Description: Dark Brown to Brown Slightly Silty Sand

### DESCRIPTION OF PROCTOR TESTS

Test Method (1, 2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder (cu. ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ft.-kips per cu. ft.)	12.375	56.259	56.259

### SUMMARY OF TEST RESULTS

Lab No.	270
Date Tested	1/24/02
Test Method	ASTM D-1557
Maximum Dry Density (pcf)	107.5
Optimum Moisture Content (%)	9.7
Wash 200 (%)	N/A



UNIVERSAL ENGINEERING SCIENCES, INC.  
Certificate of Authorization No.: 00000549

Wayne Pandorf, P.E.  
Florida Registration No. 30254  
Date: 8.15.2002

CH

Date: February 15, 2002  
Re-Issued: August 15, 2002

Report No.: PR #5

# UNIVERSAL ENGINEERING SCIENCES

## PROCTOR TEST RESULTS

### CLIENT

Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

### PROJECT NAME/LOCATION

West Pasco County Landfill Expansion: Cells A-3 and  
SW-2, Pasco County, Florida

PROJECT NO.: 70096-001-02

Sample Location: Backfill

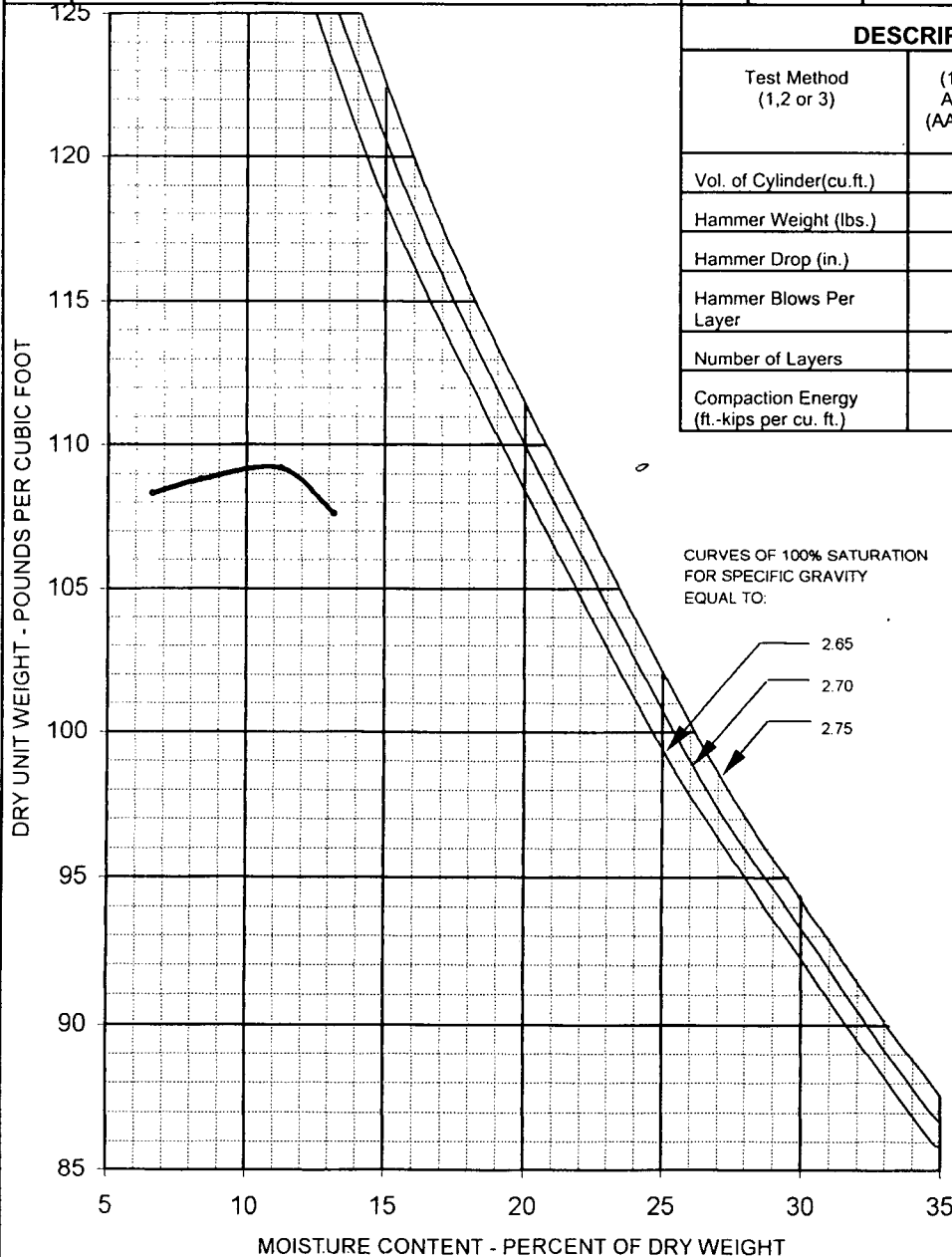
Sample Description: Dark Brown Sand with Trace of Clay

### DESCRIPTION OF PROCTOR TESTS

Test Method (1, 2 or 3)	(1) Standard ASTM D698 (AASHTO T-99)	(2) Modified ASTM D1557 (AASHTO T-180 4" mold)	(3) Modified ASTM D1557 (AASHTO T-180 6" mold)
Vol. of Cylinder(cu.ft.)	1/30	1/30	1/13.333
Hammer Weight (lbs.)	5-1/2	10	10
Hammer Drop (in.)	12	18	18
Hammer Blows Per Layer	25	25	56
Number of Layers	3	5	5
Compaction Energy (ft.-kips per cu. ft.)	12.375	56.259	56.259

### SUMMARY OF TEST RESULTS

Lab No.	348
Date Tested	4/3/02
Test Method	ASTM D-1557
Maximum Dry Density (pcf)	109.0
Optimum Moisture Content (%)	11.0
Wash 200 (%)	N/A



UNIVERSAL ENGINEERING SCIENCES, INC.  
Certificate of Authorization No.: 00000549

Wayne Pandorf, P.E.  
Florida Registration No. 30254  
Date: 8-15-2002

cc: Client (1)

Date: April 5, 2002  
Re-issued: August 15, 2002

Report No.: PR #6



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #1  
Date: December 6, 2001  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** SW-2 (Liner Subgrade)

**Reference Datum:** Top of Liner Subgrade

**Type of Test - Field:** ASTM D-2937 Drive Cylinder Method  
**Laboratory:** ASTM D-1557 Modified Proctor  
**Date Tested:** 11/27/01

**Remarks:** The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
1	N. 1470455, E. 324020	0	107.8	10.3	105.9	2.3	98.2
2	N. 1470350, E. 324020	0	107.8	10.3	110.4	10.1	102.4
3	N. 1470280, E. 324035	0	107.8	10.3	105.8	8.0	98.1
4	N. 1470540, E. 324340	0	107.0	12.0	102.6	4.7	96.0
5	N. 1470460, E. 324210	0	107.8	10.3	108.2	2.3	100.0
6	N. 1470330, E. 324205	0	107.0	12.0	105.3	4.2	98.4
7	N. 1470250, E. 324200	0	107.0	12.0	105.6	2.7	98.7
8	N. 1470170, E. 324205	0	107.0	12.0	104.6	7.1	98.0
9	N. 1470290, E. 323880	0	107.0	12.0	108.2	10.1	101.0
10	N. 1470565, E. 324350	0	107.0	12.0	104.0	2.1	97.2
11	N. 1470290, E. 323860	0	107.0	12.0	104.5	2.5	97.6
12	N. 1470105, E. 324460	0	107.0	12.0	102.6	7.8	96.0
13	N. 1470090, E. 324470	0	107.8	10.3	103.8	4.4	96.3
14	N. 1470170, E. 323890	0	107.8	10.3	103.1	9.4	95.7
15	N. 1470440, E. 323890	0	107.8	10.3	110.4	10.1	102.4

**Technician:** Kay Vazquez

**cc:** Client (1)

cb





# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #1  
Date: December 6, 2001  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

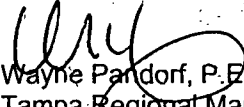
TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
16	N. 1470170, E. 323860	0	107.0	12.0	103.6	5.5	96.8

Technician: Kay Vazquez

cc: Client (1)

cb

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #2  
Date: December 6, 2001  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** SW-2 (Liner Subgrade)

**Reference**  
**Datum:** Top of Liner Subgrade

**Type of Test - Field:** ASTM D-2937 Drive Cylinder Method  
**Laboratory:** ASTM D-1557 Modified Proctor  
**Date Tested:** 11/30/01

**Remarks:** The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
17	N. 1470460, E. 324375	0	107.8	10.3	104.9	5.5	97.3
18	N. 1470330, E. 324370	0	107.8	10.3	105.8	11.4	98.2
19	N. 1470180, E. 324370	0	107.0	12.0	101.6	5.5	95.0
20	N. 1470460, E. 324490	0	107.0	12.0	110.0	10.1	102.8
21	N. 1470550, E. 324510	0	107.8	10.3	109.4	11.6	101.5
22	N. 1470560, E. 324500	0	107.0	12.0	103.7	7.1	96.9
23	N. 1470330, E. 324500	0	107.8	10.3	104.0	5.5	96.5
24	N. 1470190, E. 324500	0	107.8	10.3	109.5	10.6	101.6
25	N. 1470490, E. 324650	0	107.0	12.0	102.3	5.9	95.6
26	N. 1470110, E. 324650	0	107.0	12.0	108.2	10.1	101.1
27	N. 1470090, E. 324680	0	107.8	10.3	108.7	10.0	100.8
28	N. 1470090, E. 325090	0	107.8	10.3	104.5	6.7	97.0
29	N. 1470180, E. 324680	0	107.0	12.0	102.6	6.5	96.0
30	N. 1470470, E. 324850	0	107.0	12.0	101.7	7.0	95.1
31	N. 1470310, E. 324845	0	107.0	12.0	102.9	7.1	96.2
32	N. 1470180, E. 324850	0	107.0	12.0	102.4	5.8	95.7

**Technician:** Kay Vazquez

**cc:** Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #2  
Date: December 6, 2001  
Re-Issued: August 15, 2002

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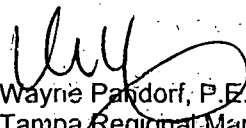
TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
33	N. 1470480, E. 324970	0	107.8	10.3	107.5	12.6	99.7
34	N. 1470300, E. 324960	0	107.8	10.3	102.6	7.4	95.1
35	N. 1470190, E. 324985	0	107.0	12.0	101.8	7.8	95.2
36	N. 1470260, E. 325130	0	107.8	10.3	102.2	6.0	95.0
37	N. 1470165, E. 325135	0	107.0	12.0	101.8	7.8	95.2

Technician: Kay Vazquez

cc: Client (1)

cb

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #3  
Date: January 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** SW-2

**Reference Datum:** Top of Liner Subgrade

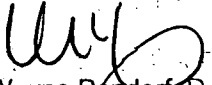
**Type of Test - Field:** ASTM D-2937 Drive Cylinder Method  
**Laboratory:** ASTM D-1557 Modified Proctor  
**Date Tested:** 1/7/02

**Remarks:** The tests below, with the exception of those marked with an asterisk, meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
38	N. 1467845, E. 319689	0	109.5	9.8	101.1	11.2	92.3*
39	N. 1467790, E. 319695	0	109.5	9.8	96.1	12.4	87.7*
40	N. 1467905, E. 319699	0	109.5	9.8	94.5	15.6	86.3*
41	N. 1468006, E. 319693	0	109.5	9.8	97.6	13.4	89.1*
42	N. 1468056, E. 319715	0	109.5	9.8	109.0	8.9	99.9
43	N. 1468081, E. 319710	0	109.5	9.8	108.6	9.2	99.2
44	N. 1468142, E. 319791	0	108.7	9.8	110.5	10.2	100.9
45	N. 1468082, E. 319825	0	108.7	9.8	109.1	9.6	100.3
46	N. 1467785, E. 319814	0	109.5	9.8	106.5	10.2	97.2

**Technician:** Paul Bragg

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certification of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

cc: Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #4  
Date: January 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

Client: Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: A-3

Reference  
Datum: Top of Liner Subgrade

Type of Test - Field: ASTM D-2937 Drive Cylinder Method      Date Tested: 1/7/02  
Laboratory: ASTM D-1557 Modified Proctor

Remarks: The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
47	N. 1467842, E. 319799	0	109.5	9.8	107.3	11.5	97.9
48	N. 1467964, E. 319796	0	109.5	9.8	108.0	12.4	98.6
49	N. 1468030, E. 319850	0	109.5	9.8	104.2	10.5	95.1
50	N. 1467831, E. 319997	0	109.5	9.8	106.7	10.8	97.4
51	N. 1467755, E. 319975	0	109.5	9.8	113.6	8.8	103.7
52	N. 1468147, E. 319976	0	108.7	9.8	113.4	9.8	104.3
53	N. 1468093, E. 319957	0	108.7	9.8	105.3	10.6	96.8
54	N. 1468030, E. 319957	0	109.5	9.8	107.3	10.2	97.9
55	N. 1467954, E. 319939	0	109.5	9.8	110.9	9.4	101.2

Technician: Paul Bragg

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

cc: Client (1)

cb

Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #5  
Date: January 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

Client: Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: A-3

Reference  
Datum: Top of Liner Subgrade

Type of Test - Field: ASTM D-2937 Drive Cylinder Method      Date Tested: 1/7/02  
Laboratory: ASTM D-1557 Modified Proctor

Remarks: The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

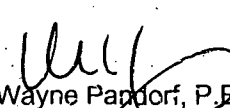
TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
56	N. 1468159, E. 320091	0	108.7	9.8	112.4	10.4	103.4
57	N. 1468094, E. 320126	0	108.7	9.8	106.1	9.8	97.6
58	N. 1468028, E. 320090	0	109.5	9.8	108.1	10.2	98.7
59	N. 1467956, E. 320091	0	109.5	9.8	105.8	8.8	96.6
60	N. 1467858, E. 320080	0	109.5	9.8	107.5	10.4	98.1
61	N. 1467784, E. 320136	0	109.5	9.8	108.3	10.8	98.9

Technician: Paul Bragg

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

cc: Client (1)

cb

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #6  
Date: January 11, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

Client: Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: A-3 Banks and Bottom of Cell

#### Reference

Datum: Top of Liner Subgrade

Type of Test - Field: ASTM D-2937 Drive Cylinder Method  
Laboratory: ASTM D-1557 Modified Proctor

Date Tested: 1/10/02

Remarks: The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
62	Retest of Test No.38	0	109.5	9.9	111.1	6.4	101.5
63	Retest of Test No.39	0	109.5	9.9	111.8	7.0	102.1
64	Retest of Test No.40	0	109.5	9.9	109.7	7.0	100.2
65	Retest of Test No.41	0	109.5	9.9	109.7	6.5	100.2
66	N. 1468014, E. 320251	0	109.5	9.9	111.6	6.0	101.9
67	N. 1467858, E. 320253	0	109.5	9.9	108.8	5.8	99.4
68	N. 1467757, E. 320233	0	109.5	9.9	108.9	7.4	99.4
69	N. 1468136, E. 320232	0	108.7	9.9	109.3	6.6	100.5
70	N. 1467753, E. 320245	0	108.7	9.9	109.7	7.8	100.9
71	N. 1467867, E. 320380	0	109.5	9.9	110.7	8.0	101.3
72	N. 1468022, E. 320527	0	109.5	9.9	107.2	7.8	97.9
73	N. 1467876, E. 320544	0	109.5	9.9	109.3	7.4	99.8
74	N. 1468026, E. 320675	0	109.5	9.9	106.5	6.8	97.3
75	N. 1467875, E. 320677	0	109.5	9.9	106.4	8.2	97.2

Technician: Paul Bragg

cc: Client (1)

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #6  
Date: January 11, 2002  
Re-Issued: August 15, 2002

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TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
76	N. 1468144, E. 320383	0	108.7	9.9	107.4	8.4	98.8
77	N. 1468142, E. 320547	0	108.7	9.9	109.4	7.8	100.6
78	N. 1467755, E. 320429	0	108.7	9.9	107.0	7.2	98.4
79	N. 1467757, E. 320585	0	108.7	9.9	104.9	7.6	96.5
80	N. 1468012, E. 320785	0	108.7	9.9	108.2	6.8	99.5
81	N. 1467767, E. 320779	0	108.7	9.9	110.5	7.0	101.7

Technician: Paul Bragg

cc: Client (1)

cb

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002





# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #7  
Date: February 1, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Backfill Reclaimed Water Line

**Reference**  
**Datum:** Top of Pipe

**Type of Test - Field:** ASTM D-2937 Drive Cylinder Method  
**Laboratory:** ASTM D-1557 Modified Proctor  
**Date Tested:** 1/31/02

**Remarks:** The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
82	10' South of North End	+2	107.9	9.7	106.8	8.0	99.3
83	10' South of North End	+1	107.9	9.7	109.5	8.6	101.4
84	310' South of North End	+2	107.9	9.7	105.5	7.4	97.7
85	310' South of North End	+1	107.9	9.7	107.6	8.2	99.7
86	620' South of North End	+2	107.9	9.7	109.2	7.9	101.2
87	620' South of North End	+1	107.9	9.7	108.0	7.4	100.1
88	920' South of North End	+2	107.9	9.7	102.8	7.2	95.3
89	920' South of North End	+1	107.9	9.7	104.9	6.8	97.2
90	1220' South of North End	+2	107.9	9.7	107.5	5.4	99.7
91	1220' South of North End	+1	107.9	9.7	109.0	6.4	101.1
92	1520' South of North End	+2	107.9	9.7	106.3	5.4	98.5
93	1520' South of North End	+1	107.9	9.7	106.9	5.8	99.1
94	1820' South of North End	+2	107.9	9.7	110.7	10.0	102.6
95	1820' South of North End	+1	107.9	9.7	111.8	10.4	103.6

**Technician:** Paul Bragg

**cc:** Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

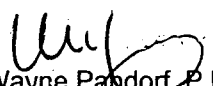
Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #7  
Date: February 1, 2002  
Re-Issued: August 15, 2002

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TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
96	2120' South of North End	+2	107.9	9.7	105.5	7.8	98.7
97	2120' South of North End	+1	107.9	9.7	106.8	8.2	99.0
98	2420' South of North End	+2	107.9	9.7	105.0	6.2	97.3
99	2420' South of North End	+1	107.9	9.7	104.2	5.6	96.7
100	2720' South of North End	+2	107.9	9.7	106.5	7.6	98.7
101	2720' South of North End	+1	107.9	9.7	107.0	8.4	99.2
102	3020' South of North End	+2	107.9	9.7	104.3	5.2	97.1
103	3020' South of North End	+1	107.9	9.7	102.5	4.8	95.0
104	3320' South of North End	+2	107.9	9.7	106.4	5.6	98.6
105	3320' South of North End	+1	107.9	9.7	108.3	8.8	100.3
106	3515' South of North End	+2	107.9	9.7	103.9	7.8	96.3
107	3515' South of North End	+1	107.9	9.7	104.7	8.4	97.1

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8.15.2002

Technician: Paul Bragg

cc: Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #8  
Date: April 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Anchor Trench, Cell SW-2

**Reference**

**Datum:** Top of Fill

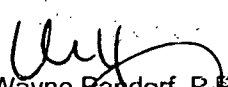
**Type of Test - Field:** ASTM D-2922 Nuclear Method  
**Laboratory:** ASTM D-1557 Modified Proctor

**Date Tested:** 4/5/02

**Remarks:** The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
108	100' North of Southwest Corner	0	107.0	12.0	105.2	9.1	98.3
109	200' North of Southwest Corner	0	107.0	12.0	102.9	9.6	96.2
110	300' North of Southwest Corner	0	107.0	12.0	103.6	8.3	96.8
111	100' North of Southeast Corner	0	107.0	12.0	103.1	10.1	96.4
112	200' North of Southeast Corner	0	107.0	12.0	105.5	8.5	98.6
113	300' North of Southeast Corner	0	107.0	12.0	102.2	9.9	95.5
114	Southeast Corner	0	107.0	12.0	104.5	8.2	97.7
115	100' East of Southwest Corner	0	107.0	12.0	101.5	9.0	94.9
116	200' East of Southwest Corner	0	107.0	12.0	102.6	8.7	95.9

Reviewed By:  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

**Technician:** Kenny Dunn

**cc:** Client (1)

cb



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #9  
Date: April 9, 2002  
Re-Issued: August 15, 2002

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## IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Anchor Trench, Cell SW-2

**Reference**

**Datum:** Top of Fill

**Type of Test - Field:** ASTM D-2922 Nuclear Method  
**Laboratory:** ASTM D-1557 Modified Proctor

**Date Tested:** 4/5/02

**Remarks:** The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
117	300' East of Southwest Corner	0	107.0	12.0	104.1	9.4	97.3
118	400' East of Southwest Corner	0	107.0	12.0	103.4	9.2	96.6
119	500' East of Southwest Corner	0	107.0	12.0	100.9	10.3	94.3
120	Southwest Corner	0	107.0	12.0	102.5	9.8	95.8
121	100' West of Southeast Corner	0	107.0	12.0	101.1	8.5	94.4
122	200' West of Southeast Corner	0	107.0	12.0	105.2	9.5	98.3
123	300' West of Southeast Corner	0	107.0	12.0	103.7	8.1	96.9
124	400' West of Southeast Corner	0	107.0	12.0	101.3	8.6	94.7
125	500' West of Southeast Corner	0	107.0	12.0	102.6	7.9	95.9

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

**Technician:** Kenny Dunn

**cc:** Client (1)

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #11  
Date: April 9, 2002  
Re-Issued: August 15, 2002

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### IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Anchor Trench, Cell A-3

**Reference  
Datum:** Bottom of Fill

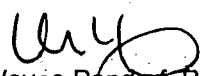
**Type of Test - Field:** ASTM D-2922 Nuclear Method  
**Laboratory:** ASTM D-1557 Modified Proctor

**Date Tested:** 4/5/02

**Remarks:** The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density. -1 to -2 feet of fill.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
135	200' East of Southwest Corner	0	107.0	12.0	99.8	7.1	93.3
136	300' East of Southwest Corner	0	107.0	12.0	102.2	8.5	95.5
137	400' East of Southwest Corner	0	107.0	12.0	101.8	7.5	95.1
138	500' East of Southwest Corner	0	107.0	12.0	100.5	8.2	93.9
139	100' West of Southeast Corner	0	107.0	12.0	102.6	7.1	95.9
140	200' West of Southeast Corner	0	107.0	12.0	104.1	9.6	97.3
141	300' West of Southeast Corner	0	107.0	12.0	104.5	7.3	97.7
142	400' West of Southeast Corner	0	107.0	12.0	101.3	8.0	94.7
143	500' West of Southeast Corner	0	107.0	12.0	103.7	7.1	96.9

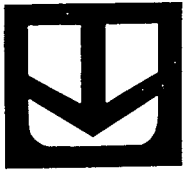
Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

**Technician:** Kenny Dunn

**cc:** Client (1)

cb



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #12  
Date: April 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: Anchor Trench, Cell A-3

Reference  
Datum: Top of Fill

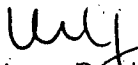
Type of Test - Field: ASTM D-2922 Nuclear Method  
Laboratory: ASTM D-1557 Modified Proctor

Date Tested: 4/5/02

Remarks: The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
144	100' North of Southwest Corner	0	107.0	12.0	104.4	8.3	97.6
145	200' North of Southwest Corner	0	107.0	12.0	102.2	7.6	95.5
146	300' North of Southwest Corner	0	107.0	12.0	101.5	9.4	94.9
147	100' North of Southeast Corner	0	107.0	12.0	105.5	8.2	98.6
148	200' North of Southeast Corner	0	107.0	12.0	103.6	8.1	96.8
149	300' North of Southeast Corner	0	107.0	12.0	101.9	8.5	95.2
150	Southeast Corner	0	107.0	12.0	104.8	9.7	97.9
151	Southwest Corner	0	107.0	12.0	102.6	7.2	95.9
152	100' East of Southwest Corner	0	107.0	12.0	103.2	9.6	96.4

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8.15.2002

Technician: Kenny Dunn

cc: Client (1)

cb



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #13  
Date: April 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: Anchor Trench, Cell A-3

Reference  
Datum: Top of Fill


Type of Test - Field: ASTM D-2922 Nuclear Method  
Laboratory: ASTM D-1557 Modified Proctor

Date Tested: 4/5/02

Remarks: The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
153	200' East of Southwest Corner	0	107.0	12.0	106.1	7.5	99.2
154	300' East of Southwest Corner	0	107.0	12.0	103.0	9.7	96.3
155	400' East of Southwest Corner	0	107.0	12.0	103.7	8.4	97.0
156	500' East of Southwest Corner	0	107.0	12.0	104.2	7.3	97.4
157	100' West of Southeast Corner	0	107.0	12.0	104.0	10.0	97.2
158	200' West of Southeast Corner	0	107.0	12.0	104.3	9.2	97.5
159	300' West of Southeast Corner	0	107.0	12.0	101.5	9.6	94.9
160	400' West of Southeast Corner	0	107.0	12.0	105.1	8.9	98.2
161	500' West of Southeast Corner	0	107.0	12.0	103.7	10.3	97.0

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

Technician: Kenny Dunn

cc: Client (1)

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #14  
Date: April 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Anchor Trench, Cell A-3

**Reference  
Datum:** Bottom of Fill

**Type of Test - Field:** ASTM D-2922 Nuclear Method  
**Laboratory:** ASTM D-1557 Modified Proctor

**Date Tested:** 4/5/02

**Remarks:** The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
162	100' North of Southwest Corner	0	107.0	12.0	104.9	9.7	98.0
163	200' North of Southwest Corner	0	107.0	12.0	102.2	8.3	95.5
164	300' North of Southwest Corner	0	107.0	12.0	100.5	8.8	93.9
165	100' South of Southeast Corner	0	107.0	12.0	104.2	8.1	97.4
166	200' South of Southeast Corner	0	107.0	12.0	100.1	9.1	93.6
167	300' South of Southeast Corner	0	107.0	12.0	103.6	8.0	96.8
168	Southeast Corner	0	107.0	12.0	101.5	9.5	94.9
169	Southwest Corner	0	107.0	12.0	102.7	9.0	96.0
170	100' East of Southwest Corner	0	107.0	12.0	103.8	7.9	97.0

Reviewed By:  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

**Technician:** Kenny Dunn

**cc:** Client (1)

cb





# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #15  
Date: April 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: Anchor Trench, Cell SW-2

Reference  
Datum: Bottom of Fill


Type of Test - Field: ASTM D-2922 Nuclear Method  
Laboratory: ASTM D-1557 Modified Proctor

Date Tested: 4/5/02

Remarks: The tests below meet the minimum 90 percent relative soil compaction requirement of Laboratory Proctor maximum dry density. -1 to -2 feet of fill.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
171	200' East of Southwest Corner	0	107.0	12.0	105.7	7.5	98.8
172	300' East of Southwest Corner	0	107.0	12.0	102.6	8.1	95.9
173	400' East of Southwest Corner	0	107.0	12.0	103.2	8.6	96.4
174	500' East of Southwest Corner	0	107.0	12.0	103.7	6.9	96.9
175	100' West of Southeast Corner	0	107.0	12.0	104.6	9.0	97.8
176	200' West of Southeast Corner	0	107.0	12.0	100.8	7.3	94.2
177	300' West of Southeast Corner	0	107.0	12.0	103.5	7.7	96.7
178	400' West of Southeast Corner	0	107.0	12.0	104.1	8.6	97.3
179	500' West of Southeast Corner	0	107.0	12.0	101.5	7.2	94.9

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

Technician: Kenny Dunn

cc: Client (1)

cb



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #16  
Date: April 9, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Access Road for Cell A-2 <sup>3</sup>

**Reference Datum:** Top of Fill

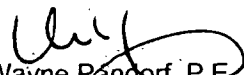
**Type of Test - Field:** ASTM D-2922 Nuclear Method  
**Laboratory:** ASTM D-1557 Modified Proctor

**Date Tested:** 4/5/02

**Remarks:** The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
180	Centerline of Road	0	108.7	9.9	108.3	8.1	99.6
181	Centerline of Road -1	0	108.7	9.9	107.9	7.6	99.3
182	Centerline of Road -2	0	108.7	9.9	107.3	7.1	98.7
183	Centerline of Road -3	0	108.7	9.9	108.5	7.9	99.3

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

**Technician:** Kenny Dunn

**cc:** Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #17  
Date: May 22, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Entrance A3, SW2, & Manhole Structures

**Reference**  
**Datum:** Top of Pipe, Sanitary Structure

**Type of Test - Field:** ASTM D-2937 Drive Cylinder Method  
**Laboratory:** ASTM D-1557 Modified Proctor  
**Date Tested:** 5/8/02

**Remarks:** The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density, with the exception of those marked with an asterisk (\*). FG refers to Finished Grade.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
184	Entrance A3, Elliptical Concrete Pipe	+1	109.5	9.8	93.2	11.6	85.1*
185	RETEST of Test No. 184 Entrance A3, Elliptical Concrete Pipe	+1	109.5	9.8	100.8	11.2	92.1*
186	SW2 Entrance at Center Line	+1	109.5	9.8	108.7	8.5	99.3
187	RETEST of Test No. 185 Entrance A3, Elliptical Concrete Pipe	+1	109.5	9.8	114.1	13.5	104.2
188	RETEST Entrance A3, 2' Right of Center Line	+1	109.5	9.8	112.0	14.5	102.3
189	A2 Metering Manholes, -10' FG	0	109.5	9.8	96.5	11.8	88.1*
190	RETEST of Test No. 189 A2 Metering Manholes, -10' FG	0	109.5	9.8	107.3	14.0	98.0
191	A2 Metering Manholes, -8' FG	0	109.5	9.8	108.6	14.0	99.2
192	A2 Metering Manholes, -6' FG	0	109.5	9.8	109.0	8.5	99.5
193	A2 Metering Manholes, -4' FG	0	109.5	9.8	108.2	14.0	98.8
194	A2 Metering Manholes, -1' FG	0	109.5	9.8	110.2	13.9	100.6
195	A3 Metering Manholes, -8' FG	0	109.5	9.8	107.5	12.6	98.2
196	A3 Metering Manholes, -6' FG	0	109.5	9.8	104.1	12.0	95.1

**Technician:** Brian Smith

**cc:** Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #17  
Date: May 22, 2002  
Re-Issued: August 15, 2002

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TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
197	RETEST of Test No. 196 A3 Metering Manholes, -6' FG	0	109.5	9.8	105.9	10.0	96.7
198	A3 Metering Manholes, -4' FG	0	109.5	9.8	109.8	14.4	100.3
199	A3 Metering Manholes, -2' FG	0	109.5	9.8	110.1	14.0	100.5
200	A3 Metering Manholes, -1' FG	0	109.5	9.8	114.5	13.5	104.6
201	A3 Metering Manholes, FG	0	109.5	9.8	110.1	14.0	100.5
202	SW2 Metering Manholes, -8' FG	0	109.5	9.8	105.8	14.5	96.6
203	SW2 Metering Manholes, -6' FG	0	109.5	9.8	110.2	13.9	100.6
204	SW2 Metering Manholes, -4' FG	0	109.5	9.8	104.8	7.0	95.7
205	SW2 Metering Manholes, -2' FG	0	109.5	9.8	107.1	13.0	97.8
206	SW2 Metering Manholes, -1' FG	0	109.5	9.8	104.1	12.0	95.1
207	SW2 Metering Manholes, FG	0	109.5	9.8	105.9	10.0	96.7

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002

Technician: Brian Smith

cc: Client (1)

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #18  
Date: May 22, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: SW2 Entrance, Metering Manhole

#### Reference

Datum: <sup>(1)</sup>Bottom of Subbase; <sup>(2)</sup>Top of Pipe

Type of Test - Field: ASTM D-2922 Nuclear Method  
Laboratory: ASTM D-1557 Modified Proctor

Date Tested: 5/10/02

Remarks: The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density, with the exception of those marked with an asterisk (\*).

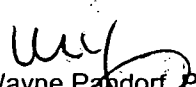
TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS			
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)	Base Depth (in.)
208	Entrance to SW2, East Side	0 <sup>(1)</sup>	129.5	7.8	121.6	9.3	93.9*	8
209	Entrance to SW2, West Side	0 <sup>(1)</sup>	129.5	7.8	122.3	8.9	94.4*	8
210	25' North of Manhole	-1 <sup>(2)</sup>	108.7	9.9	105.9	9.0	97.4	12
211	50' North of Manhole	-2 <sup>(2)</sup>	108.7	9.9	104.2	8.3	95.8	12
212	75' North of Manhole	-3 <sup>(2)</sup>	108.7	9.9	105.3	9.1	96.8	12
213	100' North of Manhole	-4 <sup>(2)</sup>	108.7	9.9	105.1	9.0	96.6	12

Technician: Mikal Abdullah

cc: Client (1)

cb

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8.15.2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #19  
Date: May 26, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: Road Crossings and Entrance Ways

Reference  
Datum: Top of Limerock Base

Type of Test - Field: ASTM D-2937 Drive Cylinder Method      Date Tested: 5/17/02  
Laboratory: ASTM D-1557 Modified Proctor

Remarks: The tests below do not meet the minimum 98 percent relative soil compaction requirement of Laboratory Proctor maximum dry density, as indicated by an asterisk (\*). TOP refers to Top of Pipe.


TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS			
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)	Base Depth (in.)
214	E Side of Rd., Leachate Rd. Crossing	TOP	129.5	7.8	121.3	11.0	93.6*	24
215	W Side of Rd., Leachate Rd. Crossing	TOP	129.5	7.8	110.9	9.6	85.7*	24
216	E Side of Rd., Wash Down Station Crossing	TOP	129.5	7.8	110.0	9.9	84.9*	18

Technician: Wayne Thomas

cc: Client (1)

cb

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8-15-2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #20  
Date: May 26, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: Road Crossings and Entrance Ways

Reference  
Datum: Top of Limerock Base

Type of Test - Field: ASTM D-2922 Nuclear Method  
Laboratory: ASTM D-1557 Modified Proctor

Date Tested: 5/20/02

Remarks: The tests below meet the minimum 98 percent relative soil compaction requirement of Laboratory Proctor maximum dry density. All tests were taken in the center of the indicated test area. Test No. 217 was farthest north, moving to the south for the last test.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS			
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)	Base Depth (in.)
217	Crossing	0	129.5	7.8	128.5	7.5	99.2	18
218	Entrance	0	129.5	7.8	127.8	6.8	98.7	10
219	Small Crossing	0	129.5	7.8	128.8	7.4	99.4	18
220	Small Crossing	0	129.5	7.8	128.5	7.2	99.2	18
221	Small Crossing	0	129.5	7.8	129.9	8.2	100.3	18
222	Crossing	0	129.5	7.8	129.2	8.1	99.5	18
223	Small Crossing	0	129.5	7.8	124.7	8.0	103.7	18
224	Crossing	0	129.5	7.8	123.5	7.3	102.3	18
225	Entrance	0	129.5	7.8	128.1	6.2	98.9	10

Technician: Wayne Thomas

cc: Client (1)

cb

Reviewed By:  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8.15.2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #21  
Date: June 3, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### IN-PLACE DENSITY TEST REPORT

Client: Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

Area Tested: Lift Station, SW1

Reference  
Datum: Bottom of Sanitary Structure

Type of Test - Field: ASTM D-2937 Drive Cylinder Method      Date Tested: 5/30/02  
Laboratory: ASTM D-1557 Modified Proctor

Remarks: The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
226	Lift Station SW1	0	109.1	11.0	106.1	4.8	97.2
227	Lift Station SW1	+2	109.1	11.0	111.7	5.2	102.3
228	Lift Station SW1	+5	109.1	11.0	109.5	9.8	100.3

Technician: Luke Burel

cc: Client (1)

cb

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8.15.2002





# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: DR #22  
Date: June 3, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## IN-PLACE DENSITY TEST REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Area Tested:** Lift Station

**Reference Datum:** Bottom of Sanitary Structure

**Type of Test - Field:** ASTM D-2937 Drive Cylinder Method  
**Laboratory:** ASTM D-1557 Modified Proctor  
**Date Tested:** 5/31/02

**Remarks:** The tests below meet the minimum 95 percent relative soil compaction requirement of Laboratory Proctor maximum dry density.

TEST LOCATION			LABORATORY RESULTS		FIELD TEST RESULTS		
Test No.	Description of Test Location	Depth (ft.)	Maximum Density (pcf)	Optimum Moisture (%)	Dry Density (pcf)	Field Moisture (%)	Soil Compaction (%)
229	AS LS1 Lift Station	0	109.1	11.0	110.3	7.8	101.0
230	AS LS1 Lift Station	+1	109.1	11.0	103.7	7.2	95.1
231	AS LS1 Lift Station	+2	109.1	11.0	103.5	8.3	95.0
232	AS LS1 Lift Station	+3	109.1	11.0	106.8	7.9	97.9
233	AS LS1 Lift Station	+4	109.1	11.0	103.6	6.5	95.1

**Technician:** Luke Burel

**cc:** Client (1)

cb

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Professional Registered Engineer No. 30254  
Date: 8.15.2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:

70096-001-02

Report No.:

1

Date 1st &

Final Issue:

February 12, 2002

Re-Issued:

August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### COMPRESSIVE STRENGTH OF 6" X 12" CONCRETE TEST SPECIMENS (ASTM C-39)

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Structural Element:** Unknown

**Sample Location:** Unknown

**Set # 1 of 1 total sets.**

**Sampled From:** Concrete Truck

**Sampled By:** Client

#### General Information

**General Contractor:** u/k  
**Supplier:** u/k  
**Truck Number:** u/k  
**Ticket Number:** u/k  
**Mix Design Number:** u/k  
**Admixture:** u/k

#### Specified Strength / Placement Information

**Specified Strength:** u/k psi at 28 days.  
**Mix Design Strength:** u/k psi at 28 days.  
**Water Added at Site:** u/k gals.  
**Truck Load:** u/k cu yds.  
**Cumulative Quantity:** u/k cu yds.  
**Total Yds. for the Day:** u/k cu yds.

#### Sampling Information

**Date/Time Batched:** u/k u/k  
**Date/Time Sampled:** u/k u/k  
**Weather Condition:** u/k

#### Field Test Results

**Air Content:** u/k %

**Slump:** u/k in.

**Ambient Temp:** u/k °F

**Concrete Temp:** u/k °F

**Other Results / Comments:** N/A

RESULTS of LAB TESTING	Date Tested	Age (days)	Type of Fracture	Test Specimen X-Sect. Area (in <sup>2</sup> )	Max. Compressive Load (lbs.)	Test Compressive Strength (psi)	Average (psi)
	2/11/02	7	2	28.27	67,040	2370	
REMARKS	<b>Note:</b> All information pertinent to concrete placement (slump, water, class, etc.) along with casting the test specimens was prepared by the client. Universal Engineering Sciences is only responsible for the Compressive Strength Test. No other information was offered.						



1 = Cone, 2 = Cone & Split, 3 = Cone & Shear, 4 = Shear, 5 = Columnar  
H = Hold, CB = Corner Break

Sampled to ASTM C-172 - Yes  
Molded to C-31 - Yes  
Initially Cured to ASTM C-31 - Yes  
Cured & Tested in Lab to ASTM C-31 & C-39 - Yes  
**This Form Conforms With ASTM C-39**

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

Wayne Pandon, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
Report No.:  
Date 1st &  
Final Issue:  
Re-Issued:

70096-001-02  
2  
February 27, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### COMPRESSIVE STRENGTH OF 6" X 12" CONCRETE TEST SPECIMENS (ASTM C-39)

Client: Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

Project: West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

<b>Structural Element:</b> Unknown		
<b>Sample Location:</b> Unknown		
<b>Set # 1 of 1 total sets.</b>	<b>Sampled From:</b> Concrete Truck	<b>Sampled By:</b> Client

General Information	Specified Strength / Placement Information	Sampling Information
General Contractor: u/k	Specified Strength: u/k psi at 28 days.	Date/Time Batched: u/k u/k
Supplier: u/k	Mix Design Strength: u/k psi at 28 days.	Date/Time Sampled: u/k u/k
Truck Number: u/k	Water Added at Site: u/k gals.	Weather Condition: u/k
Ticket Number: u/k	Truck Load: u/k cu yds.	
Mix Design Number: u/k	Cumulative Quantity: u/k cu yds.	
Admixture: u/k	Total Yds. for the Day: u/k cu yds.	

#### Field Test Results

Air Content: u/k %	Slump: u/k in.	Ambient Temp: u/k °F	Concrete Temp: u/k °F
Other Results / Comments: N/A			

RESULTS of LAB TESTING	Date Tested	Age (days)	Type of Fracture	Test Specimen X-Sect. Area (in <sup>2</sup> )	Max. Compressive Load (lbs.)	Test Compressive Strength (psi)	Average (psi)
	2/26/02	7	4	28.27	141,170	4990	
REMARKS	<b>Note:</b> All information pertinent to concrete placement (slump, water, class, etc.) along with casting the test specimens was prepared by the client. Universal Engineering Sciences is only responsible for the Compressive Strength Test. No other information was provided.						



1 = Cone, 2 = Cone & Split, 3 = Cone & Shear, 4 = Shear, 5 = Columnar  
H = Hold, CB = Corner Break

Sampled to ASTM C-172 - Yes  
Molded to C-31 - Yes  
Initially Cured to ASTM C-31 - Yes  
Cured & Tested in Lab to ASTM C-31 & C-39 - Yes  
This Form Conforms With ASTM C-39

cc: Client (1)

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No. 00000549

Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002

cb



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: LBR # 1  
Date: May 16, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LIMEROCK BEARING RATIO REPORT

**Client:** Handex  
Attention: Gary Conaway  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion: Cells A-3 and SW-2 - Pasco County, Florida

**Sample:** Limerock

**Location:** Southwest Entrance

**Maximum Density:** 129.6PCF  
**Optimum Moisture:** 7.8%  
**Maximum LBR:** 165  
**Required LBR Value:** 100

**Limerock Bearing Ratio -**  
**Sample By and Date:**  
**Date Received:**  
**Date Tested:**  
**FDOT - LBR Technician, Certificate No.**

**FM 5-515**  
MA 5/10/02  
5/10/02  
5/13/02  
AK

#### Stress Penetration Curve Attached


**Note:** The above sample does meet the required LBR value of 100.

**Technician:** Mikal Abdullah

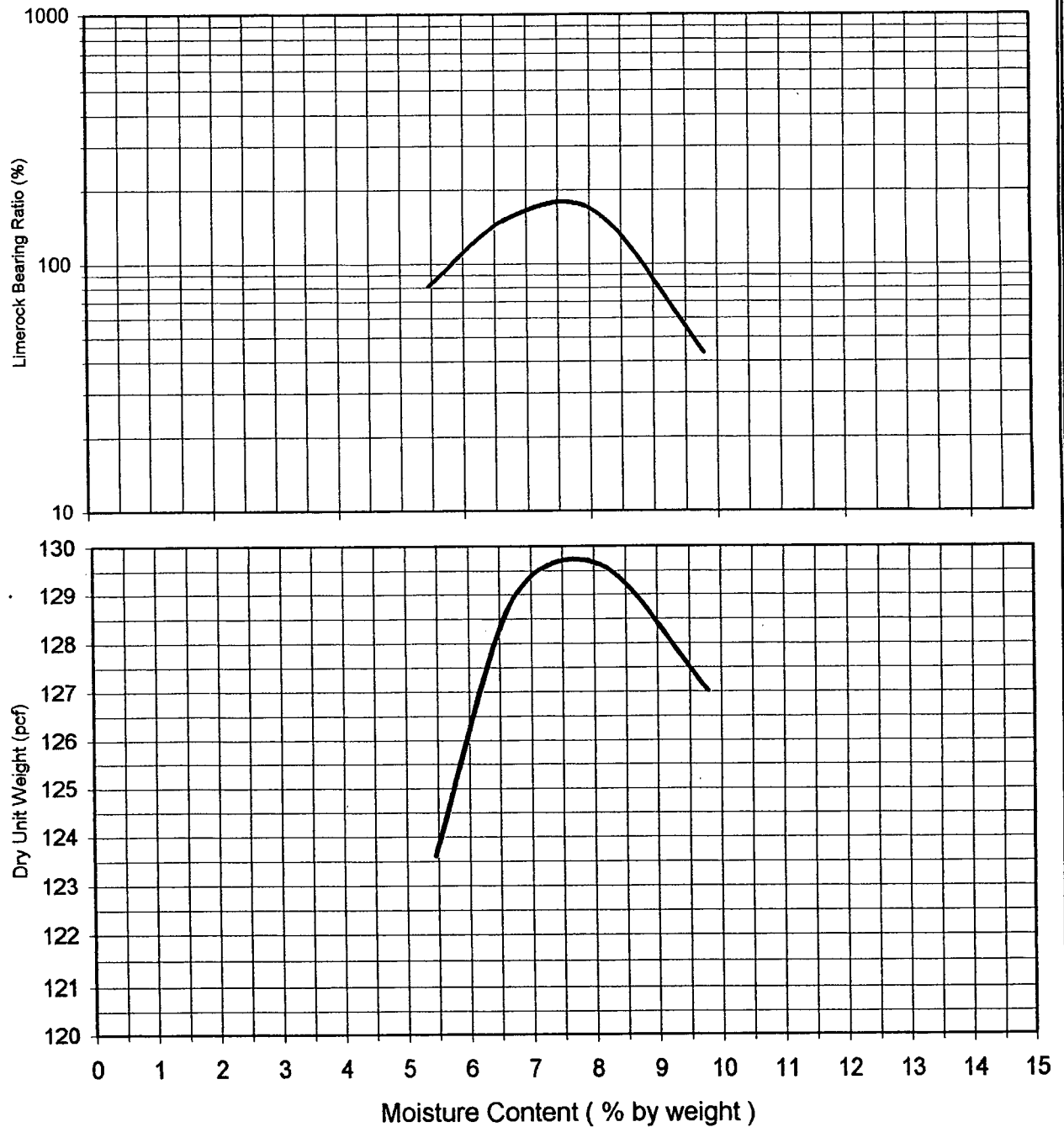
**cc:** Client (1)

cb

**Reviewed By:**  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No. 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

# LIMEROCK BEARING RATIO



Client: Handex  
 Project: Wes Pasco Landfill  
 Soil Description: Limerock  
 Lab #: L-396  
 Location of Sample: Southwest Entrance

LBR Value: 165  
 Optimum Moisture: 7.8  
 Max. Dry Density: 129.5  
 Required LBR: 100

Rock



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#1  
Date: January 23, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** David Barnett

**Soil Description:** 1 1/2 " River Rock

**Date Tested:** 1/23/02      **Tested By:** David Barnett

**Date Sampled:** 1/15/02      **Type:** Crushed Concrete

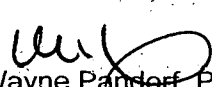
Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	99.6	90-100
1 in.	48.6	20-55
3/4 in.	8.1	0-15
3/8 in.	0.3	0-5

Calcium Carbonate Content = .14%

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Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#2  
Date: February 22, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Wayne Thomas


**Soil Description:** 1 1/2 " River Rock      **Sample No:** 2

**Date Tested:** 2/21/02      **Tested By:** Kay Vazquez

**Date Sampled:** 2/18/02      **Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	0	100
1 1/2 in.	98.6	90-100
1 in.	70.1*	20-55
3/4 in.	18.6*	0-15
3/8 in.	0.8	0-5
Calcium Carbonate Content = 0.66%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#2A  
Date: March 6, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Brian Smith

**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 2A

**Date Tested:** 3/6/02      **Tested By:** Brian Smith

**Date Sampled:** 3/5/02      **Type:** River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	69.2*	20-55
3/4 in.	16.4*	0-15
1/2 in.	0	0-5

Note: The asterisk (\*) indicates that the sample does not meet the required specification.

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

cc: Client (1)

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#3  
Date: February 22, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Soil Description:** 1 1/2" River Rock

**Date Tested:** 2/21/02

**Date Sampled:** 2/18/02

**Technician:** Wayne Thomas

**Sample No.:** 3

**Tested By:** Kay Vazquez

**Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	0	100
1 1/2 in.	100	90-100
1 in.	68.8*	20-55
3/4 in.	14.9	0-15
3/8 in.	0.9	0-5
Calcium Carbonate Content = 0.66%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#3A  
Date: March 6, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Brian Smith

**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 3A

**Date Tested:** 3/6/02      **Tested By:** Brian Smith

**Date Sampled:** 3/5/02      **Type:** River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	67.3*	20-55
3/4 in.	9.4	0-15
1/2 in.	0	0-5

Note: The asterisk (\*) indicates that the sample does not meet the required specification.

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#4  
Date: February 22, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Wayne Thomas

**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 4

**Date Tested:** 2/21/02      **Tested By:** Kay Vazquez

**Date Sampled:** 2/18/02      **Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	0	100
1 1/2 in.	100	90-100
1 in.	68.8*	20-55
3/4 in.	16.1*	0-15
3/8 in.	0.6	0-5
Calcium Carbonate Content = 0.36%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

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Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#4A  
Date: March 6, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Brian Smith

**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 4A

**Date Tested:** 3/6/02      **Tested By:** Brian Smith

**Date Sampled:** 3/5/02      **Type:** River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	64.5*	20-55
3/4 in.	14.8	0-15
1/2 in.	0	0-5
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

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Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#5  
Date: February 22, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Wayne Thomas

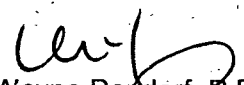
**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 5

**Date Tested:** 2/21/02      **Tested By:** Kay Vazquez

**Date Sampled:** 2/18/02      **Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	0	100
1 1/2 in.	100	90-100
1 in.	69.0*	20-55
3/4 in.	13.5	0-15
3/8 in.	0.5	0-5
Calcium Carbonate Content = 0.44%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By:  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

cc: Client (1)

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#5A  
Date: March 7, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Brian Smith

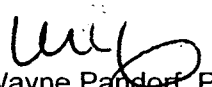
**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 5A

**Date Tested:** 3/8/02      **Tested By:** Brian Smith

**Date Sampled:** 3/7/02      **Type:** River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	45.9	20-55
3/4 in.	12.2	0-15
1/2 in.	0	0-5
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

cc: Client (1)

dr



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#6  
Date: February 22, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Wayne Thomas

**Soil Description:** 1 1/2 " River Rock

**Sample No.:** 6

**Date Tested:** 2/21/02

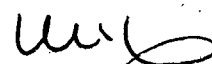
**Tested By:** Kay Vazquez

**Date Sampled:** 2/18/02

**Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	0	100
1 1/2 in.	0	90-100
1 in.	68.0*	20-55
3/4 in.	13.8	0-15
3/8 in.	0.8	0-5
Calcium Carbonate Content = 0.56%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

cc: Client (1)

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA# 6A  
Date: March 7, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Soil Description:** 1 1/2 " River Rock

**Date Tested:** 3/8/02

**Date Sampled:** 3/7/02

**Technician:** Brian Smith


**Sample No.:** 6A

**Tested By:** Brian Smith

**Type:** River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	54.3	20-55
3/4 in.	5.8	0-15
1/2 in.	0	0-5
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

cc: Client (1)

dr



# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#7  
Date: February 22, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Wayne Thomas

**Soil Description:** 1 1/2 " River Rock      **Sample No.:** 7

**Date Tested:** 2/21/02      **Tested By:** Kay Vazquez

**Date Sampled:** 2/18/02      **Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	0	100
1 1/2 in.	0	90-100
1 in.	68.7*	20-55
3/4 in.	15.8*	0-15
3/8 in.	0.7	0-5
Calcium Carbonate Content = 0.50%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

cc: Client (1)

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA# 7A  
Date: March 7, 2002  
Re-Issued: August 15, 2002

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## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Soil Description:** 1 1/2 " River Rock

**Date Tested:** 3/8/02

**Date Sampled:** 3/7/02

**Technician:** Brian Smith

**Sample No.:** 7A

**Tested By:** Brian Smith

**Type:** River Rock

<u>Sieve Size</u>	<u>Percent Passing</u>	<u>Specification</u>
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	60.1*	20-55
3/4 in.	5.6	0-15
1/2 in.	0	0-5
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

cc: Client (1)

dr



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#8  
Date: February 25, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Wayne Thomas

**Soil Description:** 1 1/2 " River Rock

**Sample No.:** 8

**Date Tested:** 2/22/02

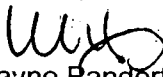
**Tested By:** Kay Vazquez

**Date Sampled:** 2/21/02

**Type:** Crushed Concrete

<u>Sieve Size</u>	<u>Percent Passing</u>	<u>Specification</u>
2 in.	0	100
1 1/2 in.	99.7	90-100
1 in.	68.6*	20-55
3/4 in.	20.3*	0-15
3/8 in.	0.3	0-5
Calcium Carbonate Content = 0.26%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

cc: Client (1)

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA# 8A  
Date: March 7, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Soil Description:** 1 1/2 " River Rock

**Date Tested:** 3/8/02

**Date Sampled:** 3/7/02

**Technician:** Brian Smith

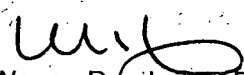
**Sample No.:** 8A

**Tested By:** Brian Smith

**Type:** River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	97.9	90-100
1 in.	63.1*	20-55
3/4 in.	8.1	0-15
1/2 in.	0	0-5
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

Reviewed By,  
Universal Engineering Sciences, Inc.  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#9  
Date: February 25, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Wayne Thomas

**Soil Description:** 1 1/2 " River Rock

**Sample No.:** 9

**Date Tested:** 2/22/02


**Tested By:** Kay Vazquez

**Date Sampled:** 2/21/02

**Type:** Crushed Concrete

<u>Sieve Size</u>	<u>Percent Passing</u>	<u>Specification</u>
2 in.	0	100
1 1/2 in.	98.9	90-100
1 in.	71.2*	20-55
3/4 in.	19.6*	0-15
3/8 in.	0.9	0-5
Calcium Carbonate Content = 0.12%		
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

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Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#10  
Date: April 3, 2002  
Re-Issued: August 15, 2002

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## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Unknown


**Soil Description:** Crushed Concrete      **Sample No.:** 1

**Date Tested:** Unknown      **Tested By:** Unknown

**Date Sampled:** Unknown      **Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	45.6	20-55
3/4 in.	10.8	0-15
3/8 in.	0.6	0-5
Calcium Carbonate Content = 0.18%		

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Tampa Regional Manager  
Registered Professional Engineers No. 30254  
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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
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Project No.: 70096-001-02  
Report No. SA#11  
Date: April 3, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Unknown

**Soil Description:** Crushed Concrete      **Sample No.:** 2

**Date Tested:** Unknown      **Tested By:** Unknown

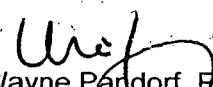
**Date Sampled:** Unknown      **Type:** Crushed Concrete

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	44.9	20-55
3/4 in.	7.5	0-15
3/8 in.	0.3	0-5
Calcium Carbonate Content = 0.08%		

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Wayne Pardorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002





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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#12  
Date: April 3, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Unknown

**Soil Description:** 1 1/2" River Rock      **Sample No.:** 3

**Date Tested:** Unknown      **Tested By:** Chris Haley


**Date Sampled:** Unknown      **Type:** 1 1/2" River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	54.1	20-55
3/4 in.	10.4	0-15
1/2 in.	0	0-5

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Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#13  
Date: April 3, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington      **Technician:** Unknown

**Soil Description:** 1 1/2" River Rock      **Sample No.:** 4

**Date Tested:** Unknown      **Tested By:** Chris Haley

**Date Sampled:** Unknown      **Type:** 1 1/2" River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	98.3	90-100
1 in.	51.8	20-55
3/4 in.	8.8	0-15
1/2 in.	2.1	0-5

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Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002



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Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#14  
Date: April 3, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Unknown

**Soil Description:** 1 1/2" River Rock

**Sample No.:** 5

**Date Tested:** Unknown


**Tested By:** Chris Haley

**Date Sampled:** Unknown

**Type:** 1 1/2" River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	50.9	20-55
3/4 in.	5.3	0-15
1/2 in.	0.7	0-5

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Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
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Project No.: 70096-001-02  
Report No. SA#15  
Date: April 3, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Unknown

**Soil Description:** 1 1/2" River Rock

**Sample No.:** 330/7

**Date Tested:** 3/27/02


**Tested By:** Brian Smith

**Date Sampled:** 3/26/02

**Type:** 1 1/2" River Rock

Sieve Size	Percent Passing	Specification
2 in.	98.5	100
1 1/2 in.	72.5*	90-100
1 in.	18.9*	20-55
3/4 in.	0.6	0-15
1/2 in.	0	0-5
Note: The asterisk (*) indicates that the sample does not meet the required specification.		

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Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: SA#16  
Date: April 3, 2002  
Re-Issued: August 15, 2002

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### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Unknown

**Soil Description:** 1 1/2" River Rock

**Sample No.:** 331 (6)

**Date Tested:** 3/27/02

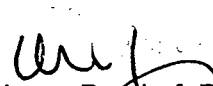
**Tested By:** Brian Smith

**Date Sampled:** 3/26/02

**Type:** 1 1/2" River Rock

<u>Sieve Size</u>	<u>Percent Passing</u>	<u>Specification</u>
2 in.	99.3	100
1 1/2 in.	66.6*	90-100
1 in.	12.7*	20-55
3/4 in.	0.7	0-15
1/2 in.	0	0-5
<b>Note: The asterisk (*) indicates that the sample does not meet the required specification.</b>		

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Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#17  
Date: April 3, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Unknown

**Soil Description:** 1 1/2" River Rock

**Sample No.:** 8

**Date Tested:** 4/2/02

**Tested By:** Brian Smith

**Date Sampled:** 3/29/02

**Type:** 1 1/2" River Rock

Sieve Size	Percent Passing	Specification
2 in.	100	100
1 1/2 in.	99	90-100
1 in.	52	20-55
3/4 in.	6.2	0-15
1/2 in.	0	0-5

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Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No. SA#18  
Date: April 3, 2002  
Re-Issued: August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## REPORT ON SIEVE ANALYSIS

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion, Cells A-3 and SW-2, Pasco County, Florida

**Location:** Conrad Yelvington

**Technician:** Unknown

**Soil Description:** 1 1/2" River Rock

**Sample No.:** 6

**Date Tested:** Unknown

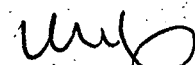
**Tested By:** Chris Haley

**Date Sampled:** Unknown

**Type:** 1 1/2" River Rock

<u>Sieve Size</u>	<u>Percent Passing</u>	<u>Specification</u>
2 in.	100	100
1 1/2 in.	100	90-100
1 in.	55.2	20-55
3/4 in.	5.8	0-15
1/2 in.	0.5	0-5

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Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineers No. 30254  
Date: 8.15.2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.: 70096-001-02  
Report No.: 1  
Date 1<sup>st</sup> Issue: January 7, 2002  
Date 2<sup>nd</sup> Issue: January 11, 2002  
Date 3<sup>rd</sup> Issue: January 22, 2002  
Date 4<sup>th</sup> Issue: January 24, 2002  
Date Final Issue: January 30, 2002  
Re-Issued: August 15, 2002

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### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

**Location:** Cells A-3 and SW-2, Cover Material

**Soil Description:** Brown Sand

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
A	$4.9 \times 10^{-3}$	0.4	2.4	0.83
B	$4.9 \times 10^{-3}$	0.3	2.0	0.92
C	$5.4 \times 10^{-3}$	0.2	2.2	0.47
D	$5.1 \times 10^{-3}$	0.1	2.3	0.27
E	$4.9 \times 10^{-3}$	0.3	2.3	0.12
F	$5.2 \times 10^{-3}$	0.3	2.3	0.43
G	$4.9 \times 10^{-3}$	0.3	2.9	0.65
H	$4.9 \times 10^{-3}$	0.4	2.2	0.14

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**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
Report No.:  
Date of Issue:  
Re-Issued:

70096-001-02  
2  
January 29, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

**Location:** Cells A-3 and SW-2, Cover Material


**Soil Description:** Brown Sand

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
I	$4.8 \times 10^{-3}$	0.1	2.9	0.14
J	$5.1 \times 10^{-3}$	0.1	3.5	0.30
K	$5.2 \times 10^{-3}$	0.1	2.8	0.18
L	$5.1 \times 10^{-3}$	0.3	2.3	0.18
M	$4.9 \times 10^{-3}$	0.3	2.2	0.20
N	$5.2 \times 10^{-3}$	0.3	2.9	0.22
O	$5.0 \times 10^{-3}$	0.3	2.1	0.18

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**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
Report No.:  
Date of Issue:  
Re-Issued:

70096-001-02  
3  
February 7, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

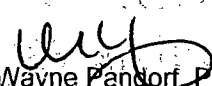
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
P	$1.8 \times 10^{-2}$	0.2	2.1	0.10
Q	$2.0 \times 10^{-2}$	0.2	2.0	0.18
R	$1.9 \times 10^{-2}$	0.2	2.2	0.10
S	$1.9 \times 10^{-2}$	0.2	2.1	0.21

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Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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# UNIVERSAL

## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
Report No.:  
Date of Issue:  
Re-Issued:

70096-001-02  
4  
February 12, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
T	$2.0 \times 10^{-2}$	0.3	2.2	0.14
U	$2.0 \times 10^{-2}$	0.2	1.8	0.18

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Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:

70096-001-02

Report No.:

5

Date of Issue:

February 15, 2002

Re-Issued:

August 15, 2002

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## LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

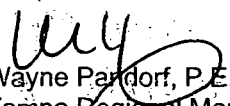
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** David Barnett

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
AA	$4.9 \times 10^{-3}$	0.4	2.4	0.04
BB	$8.3 \times 10^{-3}$	0.4	2.4	0.05

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Reviewed By:  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
Report No.:  
Date of Issue:  
Re-Issued:

70096-001-02  
6  
February 18, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

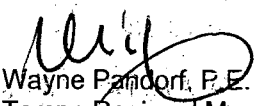
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** David Barnett

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
BC	$8.3 \times 10^{-3}$	0.3	2.0	0.28
BD	$1.1 \times 10^{-2}$	0.3	1.9	0.37

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**Universal Engineering Sciences, Inc.**  
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Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:

70096-001-02

Report No.:

7

Date of Issue:

February 22, 2002

Re-Issued:

August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** David Barnett

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
EE	$1.7 \times 10^{-2}$	0.3	4.3	0.20
FF	$2.0 \times 10^{-2}$	0.3	3.1	0.26

cc: Client (1)

Reviewed By:  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002

cb



# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
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8  
February 26, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

## LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

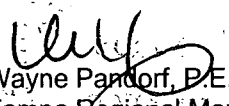
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
GG North	$2.5 \times 10^{-2}$	0.3	2.6	0.10
HH South	$2.8 \times 10^{-3}$	0.3	3.1	0.06

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

Project No.:  
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9  
March 4, 2002  
August 15, 2002

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### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

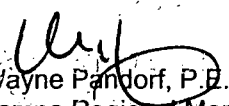
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
II	$2.1 \times 10^{-2}$	0.3	2.2	0.20
JJ	$2.4 \times 10^{-2}$	0.2	3.5	0.26

cc: Client (1)

Reviewed By:  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8.15.2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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10  
March 6, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

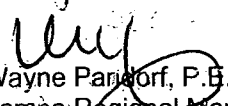
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
QQ	$2.7 \times 10^{-2}$	0.3	2.3	0.22
RR	$2.8 \times 10^{-2}$	0.3	3.1	0.06

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Paragorff, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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11  
March 8, 2002  
August 15, 2002

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### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
QQ	$2.7 \times 10^{-2}$	0.3	2.3	0.22
RR	$2.8 \times 10^{-2}$	0.3	3.1	0.06

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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August 15, 2002

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### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion

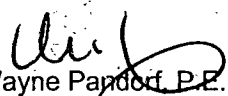
**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** David Barnett

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
SS	$8.3 \times 10^{-3}$	0.3	1.5	0.12
TT	$8.7 \times 10^{-3}$	0.6	1.2	0.06
WW	$6.0 \times 10^{-3}$	0.4	1.6	0.08
XX	$7.1 \times 10^{-3}$	0.4	1.0	0.12
YY	$7.3 \times 10^{-3}$	0.4	1.1	0.27
ZZ	$6.6 \times 10^{-3}$	0.3	1.1	0.22

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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March 13, 2002  
August 15, 2002

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## LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion


**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
AAA	$6.0 \times 10^{-3}$	0.4	2.8	0.06
BBB	$5.4 \times 10^{-3}$	0.4	2.4	0.20
CCC	$5.8 \times 10^{-3}$	0.4	2.6	0.01
DDD	$7.2 \times 10^{-3}$	0.3	2.6	0.14

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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14  
March 18, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion


**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** David Barnett

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
EEE	$5.6 \times 10^{-3}$	0.3	3.4	0.06
FFF	$4.8 \times 10^{-3}$	0.6	3.2	0.04
GGG	$5.9 \times 10^{-3}$	0.6	3.2	0.08
HHH	$8.1 \times 10^{-3}$	0.3	3.8	0.12

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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15  
March 19, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY PERMEABILITY REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion


**Location:** SW-2

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)
TEST	$3.9 \times 10^{-3}$

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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March 25, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion


**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
III	$5.0 \times 10^{-3}$	0.2	2.3	0.24
JJJ	$4.8 \times 10^{-3}$	0.3	2.1	0.18
KK2	$4.2 \times 10^{-3}$	0.1	2.7	0.24
LLL	$4.9 \times 10^{-3}$	0.1	2.2	0.16

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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## ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences •  
Construction Materials Testing • Threshold Inspections

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17  
April 1, 2002  
August 15, 2002

5804 Breckenridge Parkway • Suite E • Tampa, FL 33610 • (813) 740-8506 • FAX (813) 740-8706

### LABORATORY ANALYSIS REPORT

**Client:** Handex  
2306 Gravel Drive, Building 31  
Fort Worth, Texas 76118

**Project:** West Pasco County Landfill Expansion


**Location:** Cells A-3 and SW-2, Cover Material

**Tested By:** Chris Haley

Sample	Laboratory Permeability (cm/sec.)	Organic Content (%)	- 200 Wash (%)	Carbonate Content (%)
MMM	$4.2 \times 10^{-3}$	0.2	1.5	0.26
NNN	$3.8 \times 10^{-3}$	0.3	1.5	0.18
OOO	$5.1 \times 10^{-3}$	0.3	1.9	0.24
PPP	$4.9 \times 10^{-3}$	0.5	1.9	0.18
QQQ	$4.3 \times 10^{-3}$	0.3	2.0	0.16
RRR	$4.5 \times 10^{-3}$	0.4	1.7	0.12

cc: Client (1)

Reviewed By,  
**Universal Engineering Sciences, Inc.**  
Certificate of Authorization No.: 00000549

  
Wayne Pandorf, P.E.  
Tampa Regional Manager  
Registered Professional Engineer No. 30254  
Date: 8-15-2002

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