



Town of Surfside

UPDATE
May 14, 2014

Sand Testing Results

Update (#1): The Town independently tested samples of the transferred sand from the Surf Club. The test results indicated an elevated arsenic reading. The May 9th report prepared by independent testing company (Terracon, Thomas Tepper, P.E.) provides the following analysis:

Results of several studies on the background concentrations of chemicals in soils in Miami-Dade County were recently presented by Mr. Wilbur Mayorga, M.S., P.E. of Environmental Monitoring and Restoration Division (DERM) on February 27, 2014 to the 'Contaminated Media Forum - Background Work Group' and were published in the Miami-Dade County website (<http://www.miamidade.gov/environment/research-reports.asp>). Review of the results presented in this study shows that anthropogenic background concentration for arsenic in soil in the project area is 5.2 mg/kg, which is of the same order of magnitude found in the samples that we analyzed.

Based on our understanding of the sequence of events during excavation, the similarity of the two sand samples in terms of arsenic concentrations and their close proximity to the values reported in the literature as 'background' for the area, leads us to believe that the concentrations measured in the laboratory tests reflect background levels.

Although the professional analysis describes these readings as “background levels”, the Town Commission has authorized retaining the services of a toxicology expert with experience in beach issues to fully investigate the test results, determine the existence of any health/safety issues relating to the test result findings and, if necessary, identify remedial or corrective actions.

Further, the Town Commission authorized requesting immediate involvement and assistance from the Florida Department of Environmental Protection in properly addressing and resolving the issue related to the elevated readings.

Information on the website on this topic will be updated daily.

Attached is a copy of the May 13, 2014 informational packet of the sand testing.

Update (#2): Wednesday, May 14 (2:00 pm)

1. Conference call with Wilber Mayorga (DERM: Chief of Environmental Monitoring and Restoration Division)

Summary:

- Mr. Mayorga reviewed the Town's independent testing report including the data relating to arsenic levels
 - Indicated that the testing results are consistent with previous research and published report on arsenic levels
 - Stated the test results are consistent with naturally occurring arsenic levels on the barrier island in Miami-Dade County
2. Conference call with Dr. Samir Elmir (Director, Miami-Dade Health Department; Dr. Lilian Rivera, Health Officer and Olga Connor, PIO)

Summary:

- Dr. Elmir indicated that the department reviewed test results
- Discussed test results with DERM and indicated that arsenic levels are consistent with the naturally occurring arsenic levels for the beach area
- Concluded that the arsenic level in the sand excavated at the Surf Club was within one order of magnitude for arsenic levels in the beach area
- Forwarded a copy of the Town's test results to the State toxicologist in Tallahassee; awaiting response of test results
- Will respond to media once the State toxicology office responds with their input/findings (could be as early as today – Wednesday)

Future Actions

1. Thursday, May 15 – 8:30 am conference call with HSWMR (Chris Teaf, PhD – President and Director of Toxicology) – independent toxicologist (potential service provider to Town to perform toxicology assessment and identify remedial actions as a result of assessment).
2. Thursday, May 15 – 9:30 am meeting with Fausto Gomez (Gomez Barker and Associates) to assist in preparing the Town's request to FDEP to actively review test results; provide analysis and identify any necessary remediation.



Town of Surfside

MEMORANDUM

To: Town Commission
From: Michael P. Crotty, Town Manager
Date: May 13, 2014
Subject: Sand Testing Results – Surf Club Sand Transfer Project

Attached are the results of the sand testing. This independent testing was performed by Terracon and included testing for beach compatibility and toxicology.

Thomas Tepper, PE of Terracon will present the test results to the Commission at tonight's meeting and respond to any questions.

The toxicology report and correspondence dated May 9 identifies a reading higher than the 2.1 residential limits for arsenic. The Terracon report states that a DERM study indicates that for this area of Miami-Dade County (see attached) the background concentrations for arsenic is 5.2 mg/kg. The May 9 correspondence of Terracon states that:

Results of several studies on the background concentrations of chemicals in soils in Miami-Dade County were recently presented by Mr. Wilbur Mayorga, M.S., P.E. of Environmental Monitoring and Restoration Division (DERM) on February 27, 2014 to the 'Contaminated Media Forum - Background Work Group' and were published in the Miami-Dade County website (<http://www.miamidade.gov/environment/research-reports.asp>). Review of the results presented in this study shows that anthropogenic background concentration for arsenic in soil in the project area is 5.2 mg/kg, which is of the same order of magnitude found in the samples that we analyzed.

Based on the sequence of events during the excavation and filling for the renourishment project, one can infer that the shallow excavated material was placed near the southern limits of the renourishment area and the deeper material near its northern limits. Consequently, it is believed that the sand sampled near 88th Street and that sampled near 94th Street are representative of the shallow and deep portions of the cut, respectively. Based on our understanding of the sequence of events during excavation, the similarity of the two sand samples in terms of arsenic concentrations and their close proximity to the values reported in the literature as 'background' for the area, leads us to believe that the concentrations measured in the laboratory tests reflect background levels.

Upon receipt of each report, I forwarded the test results to the permitting agency (FDEP) for their input so it could be included in the Commission report. FDEP geologist Dr. Jennifer Coor reported this morning that, "the Department doesn't require contaminants testing for sand placement, unless the material is coming from a place that is believed to be contaminated, such as a port/harbor. Tim Rach oversees the ERP permits, and may have more experience with various contaminants in permits and allowable limits by the Department. His contact information is: timothy.rach@dep.state.fl.us. I have read both the reports, and I think the grain size statistics and color that was presented is consistent with the application and sediments that I reviewed. I have never worked with arsenic in beach sands, but after reading the Terracon report, I would tend to agree that these would be acceptable levels as the sand both comes from and was placed in a region with a slightly high natural arsenic level".

As previously reported, samples were taken in April by FDEP for testing and FDEP representative Christian Lambright reports that their testing confirms beach compatible sand. The May 1 report on independent testing of Terracon on the sand samples indicates similar results utilizing FDEP protocols for determining beach compatibility.

Respectfully Submitted

by: Michael Crotty
Michael P. Crotty
Town Manager



May 9, 2014

Town of Surfside
9293 Harding Avenue
Surfside, Florida 33154

Attention: Mr. Ross Prieto - Building Official

Re: Beach Sand Chemical Testing

Town of Surfside

Miami-Dade County, Florida
Project No. H8141017

Dear Mr. Prieto:

Pursuant to your written authorization Terracon Consultants, Inc. (Terracon) has performed sampling and laboratory testing and analysis of two soil samples recovered from the beach in the Town of Surfside. This letter summarizes the sampling procedure and furnishes the results of the chemical analyses performed.

On May 6, 2014 a Terracon representative recovered two samples of sand from the beach at the approximate locations prescribed by you. We understand that the soil was imported to the subject site for a beach renourishment project that extended from 88th Street to 96th street in the Town of Surfside. Based on discussions with you, we further understand that the sand was obtained from a site located at 9011 Collins Avenue, Miami which supported a structure built in 1935 and demolished early this year. The structure served as a social club with a pool deck. The material from the source site was excavated, transported to the beach and placed starting at the south limit of the project (88th Street) and working due north towards 96th Street. The terminal depth of excavation at the source site was approximately 15 feet below grade.

The samples were recovered over a depth of 12-inches (as measured from the surface grade) using a stainless steel scoop. The sample locations were as follows:

Sample No. 88 (88th Street) – 8' south and 4' east of emergency pole # 16.

Sample No. 94 (94th Street) – 12' south and 5' east of emergency pole # 5.

The samples were transported to Pace Analytical Services, Inc. where they were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) using the FL-PRO method and fourteen metals using EPA Method 6010 (preparation per method EPA 3050). The metals analysis included Arsenic (As), Aluminum (Al), Barium (Ba), Cadmium (Cd), Chromium (Cr), Copper (Cu), Iron (Fe), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Selenium (Se), Silver (Ag), and Zinc (Zn).

Results of the analyses are tabulated on the attached sheet and compared with the soil cleanup target levels (SCTLs) presented in Florida Administrative Code Chapter 62-777 (Contaminated

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Geotechnical

Environmental

Construction Materials

Facilities

Beach Sand Comparability Testing

Town of Surfside • Miami, Florida

May 9, 2014 • Terracon Project No. H8141017

Terracon

Site Cleanup Criteria Rule, Risk Impact Statement) for residential and commercial use settings. Review of the analytical results shows that all parameters, save for arsenic, have concentrations below the residential and commercial SCTLs. The concentrations of arsenic were 7.8 and 7.0 for sample Nos. 88 and 94, respectively. The concentrations are above the SCTL of 2.1 mg/kg for residential exposure settings but below the 12 mg/Kg threshold for commercial use settings.

Results of several studies on the background concentrations of chemicals in soils in Miami-Dade County were recently presented by Mr. Wilbur Mayorga, M.S., P.E. of Environmental Monitoring and Restoration Division (DERM) on February 27, 2014 to the 'Contaminated Media Forum – Background Work Group' and were published in the Miami-Dade County website (<http://www.miamidade.gov/environment/research-reports.asp>). Review of the results presented in this study shows that anthropogenic background concentration for arsenic in soil in the project area is 5.2 mg/kg, which is of the same order of magnitude found in the samples that we analyzed.

Based on the sequence of events during the excavation and filling for the renourishment project, one can infer that the shallow excavated material was placed near the southern limits of the renourishment area and the deeper material near its northern limits. Consequently, it is believed that the sand sampled near 88th Street and that sampled near 94th Street are representative of the shallow and deep portions of the cut, respectively. Based on our understanding of the sequence of events during excavation, the similarity of the two sand samples in terms of arsenic concentrations and their close proximity to the values reported in the literature as 'background' for the area, leads us to believe that the concentrations measured in the laboratory tests reflect background levels.

Terracon appreciates the opportunity to assist you on this project. Should you require any clarification or amplification, please contact us.

Very truly yours,

TERRACON

No. 78173

Juan Ramirez, P.E.
Project Engineer

FL Registration No. 76173

PROFESSIONAL ENGINEER

Thomas J. Tepper, P.E.

Senior Engineer

FL Registration No. 27451

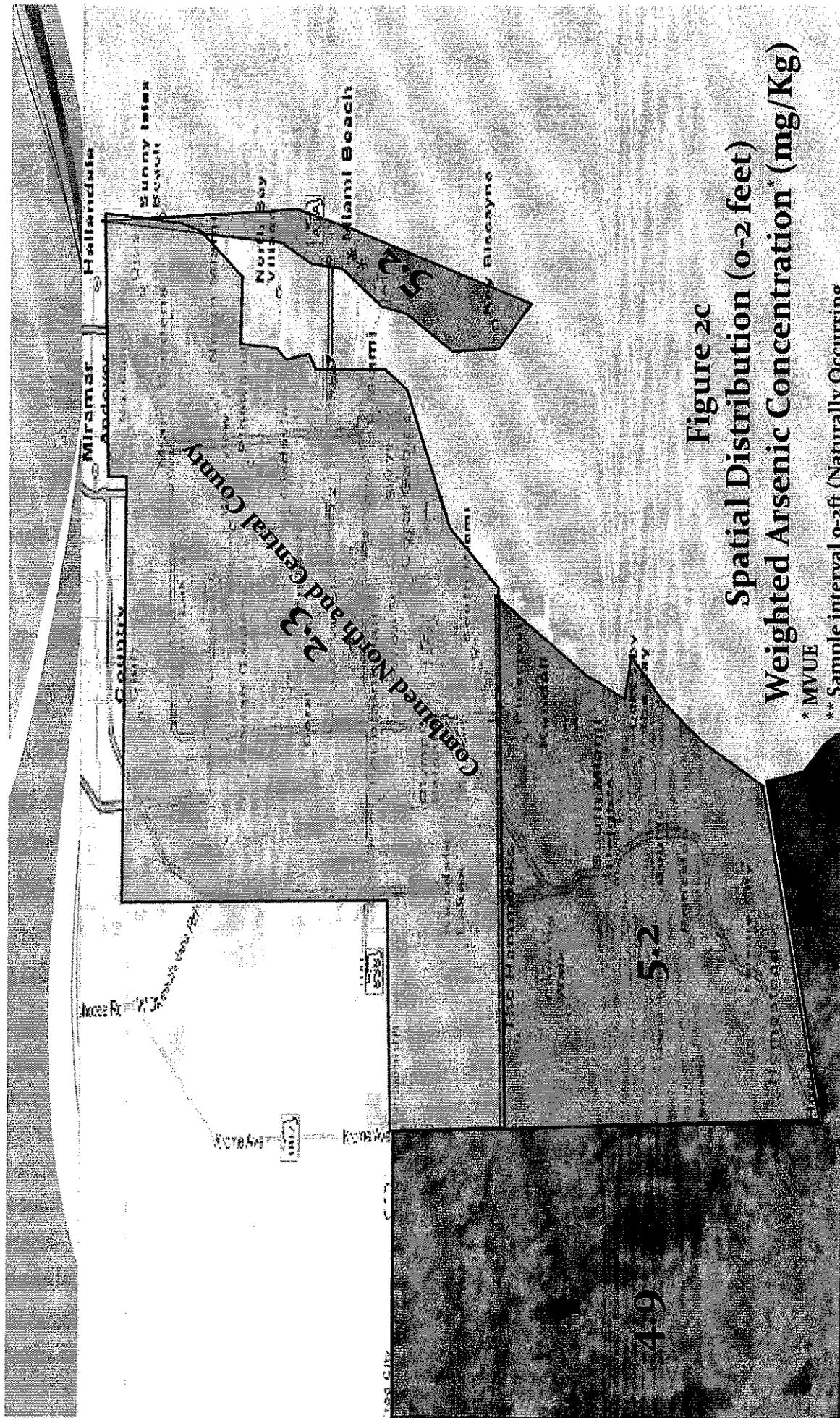


Figure 2c
Spatial Distribution (0-2 feet)
Weighted Arsenic Concentration* (mg/Kg)

* MVUE

** Sample interval 0-2ft (Naturally Occurring

Background Concentrations)

ATTACHMENT:
ANALYTICAL RESULTS

METAL	RESULT (mg/kg)		RESIDENTIAL LIMITS (mg/kg)	COMMERCIAL /INDUSTRIAL LIMITS (mg/kg)
	Sample No 88	Sample No 94		
TRPH	2.7 U	2.6 U	460	2700
Arsenic (As)	7.8	7.0	2.1	12
Aluminum (Al)	271	165	80,000	*
Barium (Ba)	12.5	8.7	120**	130,000
Cadmium (Cd)	0.073	0.028 I	82	1700
Chromium (Cr)	5.6	5.3	210	470
Copper (Cu)	3.6	0.85	150**	89,000
Iron (Fe)	1410	1170	53,000	*
Lead (Pb)	9.5	2.8	400	1,400
Manganese (Mn)	18.2	12.8	3,500	43,000
Mercury (Hg)	0.010	0.0043 U	3	17
Nickel (Ni)	0.44	0.26	340**	35,000
Selenium (Se)	0.40 U	0.38 U	440	11,000
Silver (Ag)	0.13 U	0.13 U	410	8,200
Zinc (Zn)	22.2	6.6	26,000	630,000

* Contaminant is not a health concern for this exposure scenario.

** Direct exposure value based on acute toxicity considerations.

U Indicates that the compound was analyzed for, but not detected.

I Indicates that the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.



May 1, 2014

Town of Surfside
9293 Harding Avenue
Surfside, Florida 33154

Attention: Mr. Ross Prieto - Building Official

Re: Beach Sand Comparability Testing
Town of Surfside
Miami-Dade County, Florida
Project No. H8141017

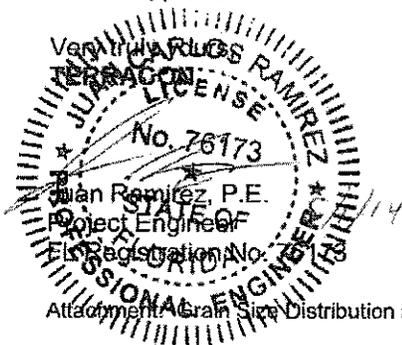
Dear Mr. Prieto:

Pursuant to our written authorization Terracon Consultants, Inc. (Terracon) has completed laboratory testing and analysis of the beach sand soil samples delivered to our laboratory by a Town of Surfside representative. This letter summarizes the results of our work.

We understand that soil samples delivered to our laboratory were sampled from in-place fill that was used for a beach renourishment project in the Town of Surfside and require compatibility testing per criteria set forth by the Florida Department of Environmental Protection (FDEP) Chapter 62B. The three samples were delivered in 5-gallon buckets labeled sample No. 88, 92 and 96. Testing of the soils for grain size distribution and Munsell color designation is required for the compatibility evaluation.

The grain size distributions were determined using sieve sizes that are generally consistent with those prescribed by the FDEP. Reduction of the grain size information also included the development of grain size frequency curves (a plot of individual weight percent versus grain size) and the statistical parameters of mean grain size, median grain size, effective size and standard deviation (or sorting) for each soil sample. The attached sheets also present the percent passing (i.e. percent of the material finer than the indicated U.S. Standard sieve size) with the values for the specific sieve sizes spelled out in FDEP Chapter 62B (sieve Nos. 230, 4 and 3/4") highlighted in blue and Munsell color designation for each soil sample.

Terracon appreciates the opportunity to assist you on this project. We trust that the information provided in the report is clear and understandable. Should it require any clarification or amplification, however, please contact us.



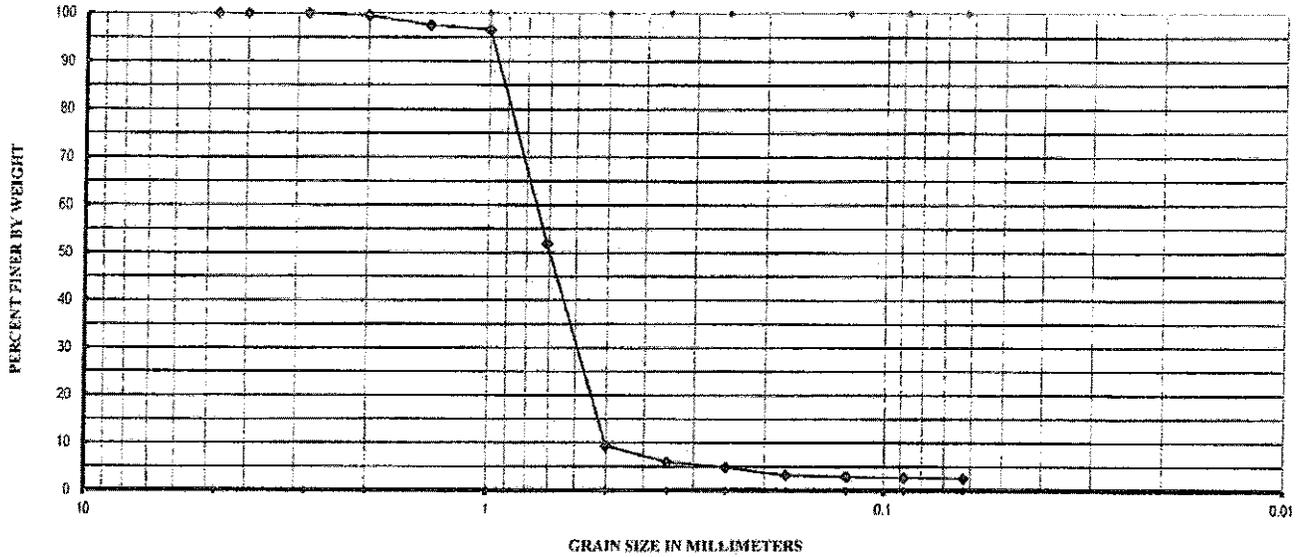

FOR
Thomas J. Tepper, P.E.
Senior Engineer
FL Registration No. 27451

Attachment: Grain Size Distribution and Frequency Curves for Samples No. 88, 92 and 96.

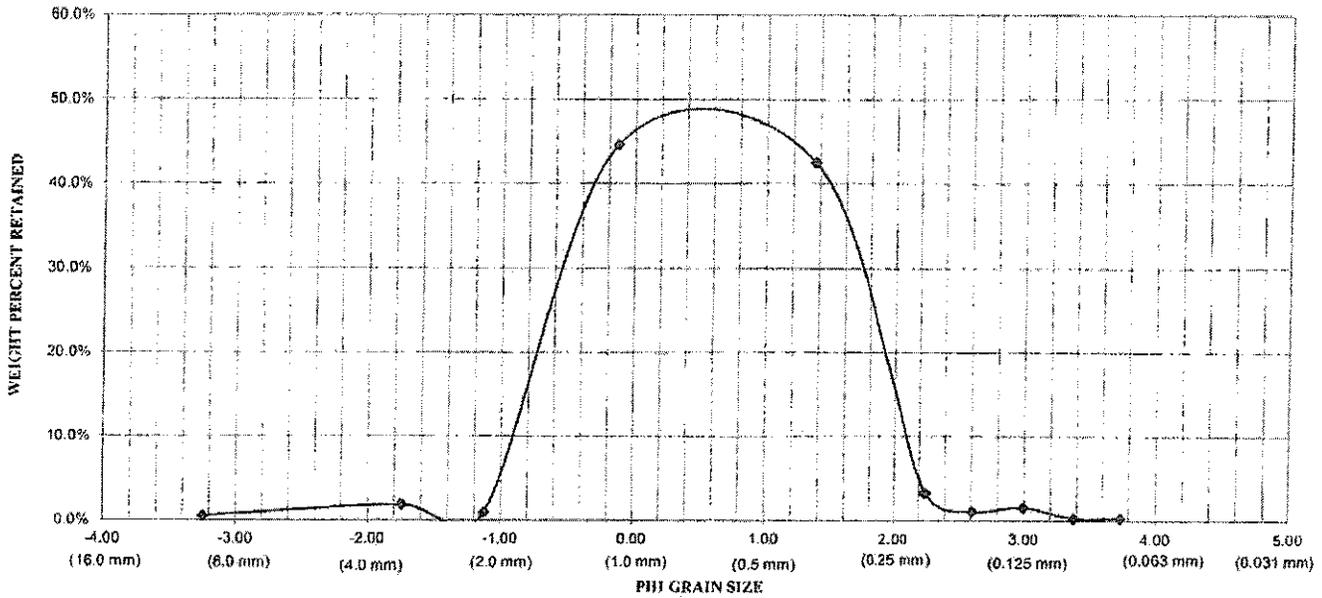
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Beach Renourishment Project H8141017



Grain Size Distribution Curve



Frequency Distribution Curve

Sample Number:	Sample Location:	Soil Description	Munsell Value	Specific Gravity (SSD)							
88	Sample delivered by the client	Brown fine to medium SAND with shell fragments (SP)	10YR - 6/2 Brown	N/A							
U.S. Sieve No.	#4	#8	#10	#30	#60	#80	#100	#140	#170	#230	
% Passing	100.0%	99.5%	97.5%	96.6%	51.9%	9.4%	6.0%	4.9%	3.3%	2.9%	2.6%
Median, mm (D ₅₀)	0.70	Mean (mm)	0.66	Eff Size, mm (D ₁₀)	0.50	Uniformity Coef. (D ₆₀ /D ₁₀)	1.46	Sorting Coef. or Phi Standard Dev.	1.01		

CLIENT NAME: Town of Surfside
PROJECT NAME: Beach Renourishment Project
PROJECT NO.: H8141017
DATE: 04/30/14



**ATTACHMENT:
ANALYTICAL RESULTS**

METAL	RESULT (mg/kg)	RESIDENTIAL LIMITS (mg/kg)	COMMERCIAL /INDUSTRIAL LIMITS (mg/kg)
TRPH	2.5 U	460	2700
Arsenic (As)	8.9	2.1	12
Aluminum (Al)	280	80,000	*
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Cadmium (Cd)	0.056	82	1700
Chromium (Cr)	5.5	210	470
Copper (Cu)	3.3	150**	89,000
Iron (Fe)	1580	53,000	*
Lead (Pb)	9.8	400	1,400
Manganese (Mn)	20.1	3,500	43,000
Mercury (Hg)	0.0063 I	3	17
Nickel (Ni)	0.33	340**	35,000
Selenium (Se)	0.36 U	440	11,000
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Zinc (Zn)	22.0	26,000	630,000

* Contaminant is not a health concern for this exposure scenario.

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May 5, 2014

Town of Surfside
9293 Harding Avenue
Surfside, Florida 33154

Attention: Mr. Ross Prieto - Building Official

Re: Beach Sand Chemical Testing

Town of Surfside
Miami-Dade County, Florida
Project No. H8141017

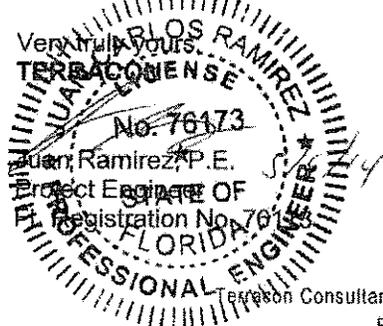
Dear Mr. Prieto:

Pursuant to our written authorization Terracon Consultants, Inc. (Terracon) has completed laboratory testing and analysis of the beach sand soil samples delivered to our laboratory by a Town of Surfside representative. This letter summarizes the chemical analysis performed on one of the samples.

We understand that soil samples delivered to our laboratory were sampled (sampling procedures unknown) from in-place fill that was used for a beach renourishment project in the Town of Surfside and require chemical testing. Three samples were delivered in 5-gallon buckets labeled sample No. 88, 92 and 96. A sample was recovered from bucket labeled No. 88 and was bottled in a 250 milliliter glass container and transported to Pace Analytical Services, Inc. where it was analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) using the FL-PRO method and fourteen metals using EPA Method 6010 (preparation per method EPA 3050). The metals analysis included Arsenic (As), Aluminum (Al), Barium (Ba), Cadmium (Cd), Chromium (Cr), Copper (Cu), Iron (Fe), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Selenium (Se), Silver (Ag), and Zinc (Zn).

Results of the analyses are tabulated on the attached sheet and compared against the soil cleanup target levels (SCTLs) presented in Florida Administrative Code Chapter 62-777 (Contaminated Site Cleanup Criteria Rule, Risk Impact Statement) for residential and commercial use settings. Review of the analytical results shows that all parameters, save for arsenic, have concentrations below the residential and commercial SCTL levels. The detected concentration for arsenic is 8.9 mg/Kg which is above the SCTL of 2.1 mg/kg for residential exposure limit, but below the 12 mg/Kg threshold for commercial use settings. Terracon recommends performing additional testing on specimens properly sampled from in-place to avoid the potential for cross-contamination.

Terracon appreciates the opportunity to assist you on this project. Should you require any clarification or amplification, please contact us.



Thomas J. Tepper
Thomas J. Tepper, P.E.
Senior Engineer
FL Registration No. 27451

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