



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

1000 Northwest 111th Avenue, Room 6203
Miami, FL 33172

STEPHANIE C. KOPELOUSOS
SECRETARY

ADDENDUM #1 **DATED JUNE 16, 2009**

FAILURE TO ACKNOWLEDGE RECEIPT OF THIS DOCUMENT MAY RESULT IN YOUR PROPOSAL BEING DECLARED NON-RESPONSIVE

PROJECT/PROPOSAL NUMBER: E-6F11
FINANCIAL PROJECT NUMBER: 423829-1-52-01
CONTRACT NUMBER: E-6F11
COUNTY(IES): MIAMI-DADE
LETTING DATE/TIME: JUNE 25, 2009, AT 2:00 P.M.
LOCATION: DISTRICT SIX ADAM LEIGH CANN BUILDING
1000 NW 111TH AVENUE, FRONT LOBBY
MIAMI, FLORIDA 33172
PROJECT DESCRIPTION: SEALED BIDS ARE REQUESTED FOR DRAINAGE/RETENTION IMPROVEMENTS OF STATE ROAD 907 (ALTON ROAD) TO ALLISON DRIVE.

Below please find the answers to the questions received from prospective bidders on this project:

Question #1

The corresponding DEP permit #0230814-005-UC expired 12/06. Please advise of extension and/or any change to permit.

Answer to Question #1

DEP permit #0230814-005-UC has been extended to December 15, 2009. Please see the attached Florida Department of Environmental Protection permit extension letter.

Question #2

Please provide the Reasonable Assurance Report?

Answer to Question #2

Please see the attached Reasonable Assurance Report prepared by URS Corporation for the Florida Department of Transportation on 3/31/09.

ADDENDUM #1
DATED JUNE 16, 2009

PROJECT/PROPOSAL NUMBER: E-6F11
FINANCIAL PROJECT NUMBER(S): 423829-1-52-01
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KENNETH ROBERTSON
DISTRICT CONTRACTS AND PROCUREMENT MANAGER

PLEASE ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING IN THE AREA PROVIDED.

RETURN THIS ACKNOWLEDGMENT BY FAX (305) 470-5717, TO MY ATTENTION.

COMPANY NAME

SIGNATURE

TITLE

PRINT NAME



Florida Department of Environmental Protection

Southeast District
400 N. Congress Avenue, Suite 200
West Palm Beach, Florida 33401

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

ELECTRONIC CORRESPONDENCE

February 25, 2009

POST REVIEW LETTER FOR PERMIT EXTENSION

Florida Department of Transportation
Attn.: Ms. Alice Bravo
District Environmental Management Engineer
1000 NW 111th Avenue, Room 6103
Miami, FL 33172
Alice.Bravo@dot.state.fl.us

County: Miami-Dade
Project Name: Allison Road
File Number: 0230814-017-UC

RE: Extension of FDEP Construction Permit UC 0230814-005-UC dated December 16, 2004

Dear Ms. Bravo:

This letter serves to acknowledge the February 13, & 23, 2009 receipt of your request to extend FDEP construction permit UC 0230814-005-UC dated December 16, 2004 that expired on December 31, 2006. The extenuation circumstances explained in your letter have been considered and the Department has determined that the submitted explanation is acceptable for permit extension.

Please submit within ninety (90) days, page 1 of 4 of the application DEP Form 62-528.900(3), F.A.C., with complete information about the Water Well Contractor and his/her signature on this form.

An extension of permit will be granted for additional time to construct the stormwater drainage well up to December 15, 2009 after receipt of acceptable completed page 1 of 4 of the application DEP Form 62-528.900(3), F.A.C.

Please note the construction permit cannot be extended further than December 15, 2009 per Chapter 62-004, F.A.C. and the construction of well(s) must be completed by December 15, 2009.

Sincerely,

Joseph R. May, P.G.
Program Manager
Underground Injection Control

JRM/PSW

CC: Joseph Haberfeld, FDEP/TLH
Cathy McCarty FDEP/TLH
Manny Tobon, DERM – tobonm@miamidade.gov
Marie K. Hall, DERM - hallm@miamidade.gov
Lillian Costa, District Environmental Permit Coordinator, FDOT - lillian.costa@dot.state.fl.us
Carlos F. Garcia, PG, URS-carlos_f_garcia@urscorp.com



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FL 33410

FEB 23 2009

Palm Beach Gardens Regulatory Office
SAJ-2008-1457 (IP-AAZ)

Florida Department of Transportation
Attn: Ms. Lillian Costa
1000 NW 111th Avenue, Room 6101
Miami, Florida 33172

Dear Ms. Costa:

The U.S. Army Corps of Engineers (Corps) is pleased to enclose the Department of the Army permit, which should be available at the construction site. Work may begin immediately but the Corps must be notified of:

- a. The date of commencement of the work,
- b. The dates of work suspensions and resumptions of work, if suspended over a week, and
- c. The date of final completion.

This information should be mailed to the Enforcement Section of the Regulatory Division of the Jacksonville District at Post Office Box 4970, Jacksonville, Florida 32232-0019. The Enforcement Section is also responsible for inspections to determine whether Permittees have strictly adhered to permit conditions.

IT IS NOT LAWFUL TO DEVIATE FROM
THE APPROVED PLANS ENCLOSED.

Sincerely,

David S. Hobbie
Chief Regulatory Division

DEPARTMENT OF THE ARMY PERMIT

Permittee: Florida Department of Transportation, District 6
Attn: Ms. Lillian Costa
1000 NW 111th Avenue
Miami, FL 33172

Permit No: SAJ-2008-1457(IP-AAZ)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The applicant would improve approximately 3.0 miles of the SR 823 from Okeechobee Road to West 23rd Street. The project includes widening SR 823 from the existing four lanes and a two-way turning lane to a divided six lane roadway with a median. The project would excavate 0.94 acre and fill 2.14 acres of the Red Road Canal. A bulkhead is proposed along sections of the eastern bank of the Red Road Canal, replacing sections with culverts and the reconstruction of portions to maintain flow. The work described above is to be completed in accordance with the drawings affixed at the end of this permit instrument.

Project Location: The proposed project is located in waters of the United States adjacent to State Road (SR) 823 from Okeechobee Road to West 23rd Street, Sections 18, 1, and 12; Township 53S, Ranges 41 and 40E; Miami-Dade County, Florida.

Directions to site: Travel Interstate 95, exit on Okeechobee Road (SR 25), travel west, then north on SR 823. The project site is from Okeechobee Road to West 23rd Street.

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on 2/23/14. If you find that you need more time to complete the authorized activity, submit your request for a time extension

PERMIT NUMBER: SAJ-2008-1457(IP-AAZ)

PERMITTEE: Florida Department of Transportation, District 6

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to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. **Reporting Address:** All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232. The Permittee shall reference this permit number, SAJ-1996-3984(IP-AAZ), on all submittals.

PERMIT NUMBER: SAJ-2008-1457(IP-AAZ)

PERMITTEE: Florida Department of Transportation, District 6

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2. **Commencement Notification:** Within 10 days from the date of initiating the authorized work, the Permittee shall provide to the Corps a written notification of the date of commencement of work authorized by this permit.

3. **Erosion Control:** Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas adjacent to wetlands shall be stabilized using sod, degradable mats, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work has been completed and the site has been stabilized.

4. **As-Builts:** Within 60 days of completion of the authorized work or at the expiration of the construction window of this permit, whichever occurs first, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 4) to the Corps. The drawings shall be signed and sealed by a registered professional engineer and include the following:

(a) A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing should show all "earth disturbance," including wetland impacts, water management structures, and any on-site mitigation areas.

(b) List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

(c) The Department of the Army Permit number.

PERMIT NUMBER: SAJ-2008-1457(IP-AAZ)

PERMITTEE: Florida Department of Transportation, District 6

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(d) Include pre- and post-construction aerial photographs of the project site, if available.

5. **Fill Material:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

6. **Endangered Species:**

(a) The permittee agrees to abide by the enclosed standard construction conditions designed to protect the West Indian manatee (Attachment 4).

(b) The twelve existing outfalls would be removed, nine existing outfalls would remain, and two new outfalls will be constructed with the new drainage system. The permittee agrees to install pollution control devices and manatee exclusion grating on the new and existing outfalls.

(c) The permittee agrees to abide by the enclosed standard construction conditions designed to protect the eastern indigo snake (Attachment 5).

7. **Historical Resources:** No structure or work shall adversely affect or disturb properties listed in the National Register of Historic Places or those eligible for inclusion in the National Register. Shall any resources be impacted, the permittee shall stop work, notify the SHPO immediately at 500 South Bronough Street, Tallahassee, FL 32399, Attn: Sherry Anderson or by phone at 850-245-6432 as well as the U.S. Army Corps of Engineers office at 2170 SW Canal Street, Stuart, FL 34997 or by telephone at (772) 219-8418. After such notifications, project activities should not resume without verbal and/or written authorization from the SHPO.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

PERMIT NUMBER: SAJ-2008-1457(IP-AAZ)

PERMITTEE: Florida Department of Transportation, District 6

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() Section 10 of the Rivers and Harbors Act of 1899
(33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research and
Sanctuaries Act of 1972(33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other
Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or
exclusive privileges.

c. This permit does not authorize any injury to the
property or rights of others.

d. This permit does not authorize interference with any
existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the
Federal Government does not assume any liability for the
following:

a. Damages to the permitted project or uses thereof as a
result of other permitted or unpermitted activities or from
natural causes.

b. Damages to the permitted project or uses thereof as a
result of current or future activities undertaken by or on behalf
of the United States in the public interest.

c. Damages to persons, property, or to other permitted
or unpermitted activities or structures caused by the activity
authorized by this permit.

d. Design or construction deficiencies associated with
the permitted work.

e. Damage claims associated with any future
modification, suspension, or revocation of this permit.

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4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

PERMIT NUMBER: SAJ-2008-1457(IP-AAZ)

PERMITTEE: Florida Department of Transportation, District 6

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Lillian Costa

(PERMITTEE)

Ms. Lillian Costa

Florida Department of Transportation

2/9/09

(DATE)

LILLIAN COSTA

(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Joe White

(DISTRICT ENGINEER)

Paul L. Grosskruger

Colonel, U.S. Army

2/24/09

(DATE)

PERMIT NUMBER: SAJ-2008-1457(IP-AAZ)

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When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE-SIGNATURE)

(DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)



**Florida Department of
Environmental Protection**
Twin Towers Office Bldg., 2600 Blair Stone Road,
Tallahassee, Florida 32399-2400

DEP Form No:	62-528.900(3)
Form Title:	Construction/Clearance Permit Application for Class V Well
Effective Date:	
DEP Application No.:	(Filled in by DEP)

CONSTRUCTION/CLEARANCE PERMIT APPLICATION FOR CLASS V WELL

(Depending on the nature of proposed injection well system, the Department may require the use of Form 62-528.900(1), F.A.C., in lieu of this form.)

In compliance with Chapter 403, Florida Statutes, the undersigned water well contractor applies for a permit and approval from the Department of Environmental Protection for the installation of a Class V well on the following property owned by:

Corporation or Owner's Name

Facility Name SIC Code

00000

Facility Address City County Zip

Latitude/Longitude Type of Discharge

It is understood that the Department reserves the right, under the Statutes, to revoke the permit should this well at any time contaminate or otherwise affect other waters in the vicinity, or for other cause.

OWNER OR AUTHORIZED REPRESENTATIVE* (circle one)

Name and Official Title (printed or typed)

Street City State Zip Telephone No.

Owner or Authorized Representative's* Signature Date

*Attach letter of authorization.

WATER WELL CONTRACTOR:

Water Well Contractor's Name, Title and State License Number (printed or typed)

Street City State Zip Telephone No.

Water Well Contractor' s Signature Date

PROJECT DESCRIPTION

Type of Class V Injection Well: (Indicate number of each well type)

Group 1

A/C Return Flow Wells _____
 Cooling Water Return Flow Wells,
 Closed-looped System _____

Group 2

Connector Wells _____
 Recharge Wells _____

Group 3

Wells Receiving Domestic Waste _____

Group 4

Laundry Waste Wells _____
 Other Non-hazardous Industrial
 or Commercial Disposal Wells
 (explain) _____

Group 6

Lake Level Control Wells _____
 Stormwater Drainage Wells _____

Group 7

Aquifer Storage and Recovery
 Wells _____

Group 8

Swimming Pool Drainage Wells _____
 Other Wells (explain) _____

Description and Use of Proposed Injection System:

(If the proposed well is to receive stormwater, a drainage plan of the area draining to the well should be included. The drainage plan should illustrate any septic tanks, landfills, farm operations or other installations and/or landscape features which could contribute to stormwater contamination.)

Nature and Volume of Injection Fluid:

(The Department may require an analysis, including bacteriological analysis, in accordance with Rule 62-528.635, F.A.C.)

DEP Form No:	62-528.900(3)
Form Title:	Construction/Clearance Permit Application for Class V Well
Effective Date:	
DEP Application No.:	(Filled in by D&P)

Proposed Pretreatment: _____

Include a plot plan showing location of well(s).

Well Design and Construction Details:

(Complete for each well and for multi-casing configurations or unusual construction provisions. An elevation drawing of the proposed well should be included.)

Proposed Total Depth: _____ feet Depth of Casing(s): _____ feet

Diameter of Well: _____ inches Type of Casing:

Cement: Type _____ _____ PVC _____ Steel

 Depth _____ _____ Other _____ None

 Thickness _____

Water Supply Wells:

When required by Rule 62-528.635, F.A.C., attach a map section showing the locations of all water supply wells within a one-half (1/2) mile radius of the proposed well. The well depths, and casing depths should be included. When required by Rule 62-528.635, F.A.C., results of bacteriological examinations of water from all water supply wells within one-half (1/2) mile and drilled to approximate depth of proposed well should be attached.

Area of Review: (if required)

Include the proposed radius of the area of review with justification for that radius. Provide a map showing the location of the proposed injection well or well field area for which a permit is sought and the applicable area of review. Within the area of review, the map must show the number or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, public water systems, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected. Only information of public record and pertinent information known to the applicant is required to be included on this map.

DEP Form No: 62-528.900(3)
Form Title: Construction/Clearance
Permit Application for Class V Well
Effective Date:
DEP Application No.: (Filled in by DEP)

INSPECTION REPORT ON CLASS V WELL
(for agency use only)

THE FOLLOWING REPORT OF INSPECTION TO BE COMPLETED BY: _____

Local Program/Water Management District

This is to certify that I have this _____ day of _____ 19____,
investigated this application for a permit, and recommend (a) approval (b) disapproval for
the following reasons:

Date

Signature

Name and Title (Please Type)



**REASONABLE ASSURANCE REPORT
DRAINAGE IMPROVEMENTS
S.R. 907 (63RD STREET)
AND ALLISON ROAD
MIAMI BEACH, FLORIDA
FINANCIAL PROJECT ID
N° 423829-1-52-01**

**Prepared for:
FLORIDA DEPARTMENT
OF TRANSPORTATION
FDEP Permit No. 0230814-005UC**

**Prepared by:
URS Corporation
7650 Corporate Center Drive, Suite 401
Miami, FL 33126
(305) 884-8900
March 2009**

URS Job # 38701628


**Edward Marks, P.G.
Geologist**


**Carlos F. Garcia, P.G.
Consultant**

3/31/09

**REASONABLE ASSURANCE REPORT
S.R. 907 (63RD STREET) AND ALLISON ROAD
MIAMI BEACH, FL
FM No: 423829-1-52-01**

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REASONABLE ASSURANCE REPORT
S.R. 907 (63RD STREET) AND ALLISON ROAD
MIAMI BEACH, FL
FM No: 423829-1-52-01

EXECUTIVE SUMMARY

URS Corporation (URS) was contracted by the Florida Department of Transportation (FDOT) to conduct the necessary deep well investigations for the drainage improvements planned for the intersection of S.R. 907 (63rd Street) and Allison Road, Miami Beach, Florida, Financial Management (FM) No: 423829-1-52-01.

Current plans for the drainage improvements include the installation of drainage structures that include a single drainage well and associated piping.

The Florida Administrative Code (FAC) Chapter 62-528 (Underground Injection Control) indicates that, in order to obtain approval for a Class V underground injection well, it is necessary to demonstrate to the satisfaction of the Florida Department of Environmental Protection (FDEP) that the stormwater injection activities will not have an adverse effect on surface water or underground sources of drinking water.

In order to evaluate the geologic and hydrogeologic characteristics of the proposed project area, URS inspected the installation of a single test boring, located near the intersection of Allison Road and 63rd Street. The location of the test boring is shown in Figure 1. The test boring is located approximately at N25° 50' 39.41" and W80° 07' 24.91".

The test boring was installed using Standard Penetration Test (SPT) procedures, recording blow counts for each 18" section. Areas with Dense (30 to 50 blows/6") and Very Dense (>50 blows/6") were detected at 23.5 to 25', 28.5 to 32.5', 73.5 to 75', 95.5 to 100' and at 116 to 120' BLS.

During the installation, groundwater samples were collected and evaluated for total dissolved solids (TDS). The first sample, collected at 30' below land surface (BLS) indicated a TDS concentration above 10,000 mg/L. This indicated that the groundwater was classified as G-III (non-potable).

Two existing storm water injection wells are located east of the proposed injection well site at S.R. 907 (63rd Street) and Allison Road. At 6060 Indian Creek Drive, Miami Beach, FL, a single well with a casing depth of 170' bls and a total depth of 217' bls was installed. At Terra Beachside Villas, 6000 Collins Avenue, Miami Beach, FL, three storm water injection wells have been installed. These have casing depths of 150', 150' and 85' and total depths of 166', 160' and 95'.

Based on the above, URS recommends that drainage well on SR 907 (63rd Street) and Allison Drive be constructed with a casing that extends a minimum of 90' BLS, before continuing with open hole construction.

**REASONABLE ASSURANCE REPORT
S.R. 907 (63RD STREET) AND ALLISON ROAD
MIAMI BEACH, FL
FINANCIAL PROJECT ID N° 423829-1-52-01**

1.0 INTRODUCTION

URS Corporation (URS) was contracted by the Florida Department of Transportation (FDOT) to conduct the necessary deep well investigations for the drainage improvements planned for the intersection of S.R. 907 (63rd Street) and Allison Road, Miami Beach, Florida Financial Management (FM) No: 423829-1-52-01.

Current plans for the drainage improvements include the installation of drainage structures that include a single drainage well and associated piping.

The Florida Administrative Code (FAC) Chapter 62-528 (Underground Injection Control), indicates that, in order to obtain approval for a Class V underground injection well, it is necessary to prepare a Reasonable Assurance Report, which demonstrates to the satisfaction of the Florida Department of Environmental Protection (FDEP) that the stormwater injection activities will not have an adverse effect on surface water or underground sources of drinking water.

In order to evaluate the geologic and hydrogeologic characteristics of the proposed project area, URS inspected the installation of a single test boring, located near the intersection of Allison Road and 63rd Street. The location of the test boring is shown in **Figure 1**. The test boring is located approximately at N25° 50' 39.41" and W80° 07' 24.91".

2.0 REVIEW OF PUBLICATIONS

A review of existing publications was conducted prior to the installation of the test borings. Publications related to Miami-Dade County geology and hydrogeology were reviewed to identify the characteristics of the subsurface lithology and hydrogeology in the vicinity of the project areas. A list of the publications reviewed for this report, are included in Section 5.0 – References.

2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY.

The proposed stormwater injection well site is located on Allison Island, part of the Miami Beach island chain in Miami, Florida. The Miami Beach island chain trends north - south and separates North Biscayne Bay to the west from the Atlantic Ocean to the east. Allison Island is a small man' made island whose axis is north – south. It is approximately 3,300 feet long and 500 feet wide and is located in Indian Creek between Miami Beach proper to the east, and La Gorce Island to the west. According to the United States Geological Survey (USGS) Miami, Florida (1982) 7.5-minute topographic quadrangle map, the proposed stormwater injection well site on Allison Island is approximately 5 feet above mean sea level.

The islands of Miami Beach and the Florida Keys are not considered to have usable freshwater aquifer systems. The primary classification of the surficial aquifers throughout the Miami Beach Islands and the Florida Keys are classified as G-III aquifers, containing greater than 10,000 ppm dissolved solids. This characteristic is due to the islands being of small mass and composed of highly porous geology, and being completely surrounded by saltwater. Groundwater flow on the islands is tidally influenced.

The general geology of Miami-Dade County has been described by Causaras (1986) and Fish (1991). Miami-Dade County is underlain by the Pamlico Sand, Miami Oolite, Anastasia Formation, Key Largo Limestone and Fort Thompson Formation. These formations form the Biscayne Aquifer. The Biscayne Aquifer is the sole source of drinking water for Miami-Dade County. The aquifer is divided into three, distinct, highly permeable water-bearing zones. These zones are generally separated by dense, clean silty-to sandy limestone and well-cemented quartz sands, which may act as aquitards. The uppermost, water-producing zone is a thin, shallow strip within the Miami Oolite, which extends from the surface to approximately 20 feet below land surface where present.

The shallow water-producing zone is separated by silty, cemented, quartz sand. This sand can be up to 25 feet in thickness. The intermediate zone extends from between 45 to

65 feet below land surface. This limestone unit of the Fort Thompson Formation is sandy, shelly and cavernous. Beneath this intermediate zone is a dense limestone, filled with clays, which serves as an aquitard in certain areas.

Underlying the dense limestone is the third, predominant water-producing zone of the Biscayne Aquifer. Below these water-producing zones is the upper portion of the Tamiami Formation, which is relatively impermeable.

The Biscayne Aquifer supplies water to all or part of the population of Miami-Dade, Broward and Palm Beach County. Most of the water needs for over three million residents are supplied by this unconfined aquifer. The Biscayne Aquifer has been designated as a sole source drinking water aquifer by the United States Environmental Protection Agency (EPA). Based on the definitions provided in FAC 62-520.410, the aquifer is classified as G-II, based on an overall dissolved solids content of less than 10,000 mg/L. Groundwater with a content of total dissolved solids (TDS) above 10,000 mg/L is considered G-III

2.2 REGIONAL SALTWATER INTRUSION

Prior to any human-induced drainage, the saltwater interface was estimated to be at, or near the coast line (Sonenshein, 1996). Since the introduction of drainage canals and wellfields, saltwater has been seeping inland as the water level in the Biscayne Aquifer is lowered. Driven by tides, seawater has flowed inland from the drainage canals, resulting in saltwater intrusion. Most of the coastal areas in Miami-Dade County show saltwater intrusion. According to Klein and Waller (1985), the saltwater intrusion near the shore is found at approximately 50 feet below land surface. Since 1984, there have been many events that have affected the Biscayne Aquifer water level.

The majority of Allison Island is a man-made. It was originally was a small island that was created with fill, prior to 1950. The interface between the G-II and G-III quality groundwater is expected to be very shallow.

2.3 EXISTING STORM WATER INJECTION WELLS

URS requested information from FDEP regarding existing permitted storm water injection wells.

The results of this query was information on the installation of storm water injection wells in two locations, east of the proposed S.R. 907 (63rd Street) and Allison Road storm water injection well.

Location: 6060 Indian Creek Drive, Miami Beach, FL
SWIW Location: N 25° 50' 38.0937", W 80° 7' 17.8512"
Casing Depth 170'
Total Depth 217'

Location: Terra Beachside Villas
6000 Collins Avenue
SWIW Locations: N 25° 50' 31.6500", W 80° 7' 16.0400
N 25° 50' 32.7400", W 80° 7' 16.1600
N 25° 50' 34.5600", W 80° 7' 16.0500
Casing Depths 150', 150' and 85'
Total Depths 166', 160' and 95'

3.0 SITE INVESTIGATION

In order to obtain site-specific information, URS inspected the installation of one test boring and described the lithology to 120' below land surface. To evaluate the depth of the G-II/G-III interface, a conductivity study and confirming laboratory analyses were performed. Confirming groundwater samples were collected for laboratory analyses and to establish the site-specific relationship between field conductivity and total dissolved solids.

3.1 TEST BORING INSTALLATION

URS selected the location at the intersection of SR 907 and Allison Road. Clearance of buried utilities was obtained through the Sunshine State One-Call of Florida.

The well was installed by Intercounty Laboratories, Inc. under the direction of Hydrologic Associates, Inc., using Standard Penetration Test methods. No drilling mud was used in the installation.

Groundwater samples were collected as the boring progressed, beginning at 30' BLS and collected each subsequent ten (10) foot interval, to the termination depth of 120' BLS.

3.2 SITE SPECIFIC GEOLOGY AND HYDROGEOLOGY

The collected samples were described by Hydrologic Associates and are included in **Appendix A**. The geologic boring log is included as **Figure 2**.

The lithology observed at the SR 907 Test boring indicated dark gray sand with shell fragments transitioning to light grey sand with thin white limestone beds to a depth of 23.5' below land surface (BLS). This was followed by the Key Largo Limestone, which transitioned to light brown sand at approximately 60' BLS. The sand continued to approximately 75' BLS, where a white limestone transitioned to a calcareous cemented sandstone at 86' BLS (Tamiami Fm.). This calcareous sandstone continued to a depth of 100' BLS, where it began alternating with sandstones, sand and shell hash interbeds to a depth of 120' BLS.

During the installation of the SPT, blow counts were recorded for each six inches of each 18" section. Areas with Dense (30 to 50 blows/6") and Very Dense (>50 blows/6") were detected at 23.5 to 25', 28.5 to 32.5', 73.5 to 75', 95.5 to 100' and at 116 to 120' BLS.

3.3 EVALUATION OF G-II/G-III INTERFACE

On February 9, 10 and 11, 2009, during the installation of the soil boring, groundwater samples were collected every ten feet, from 30' to the termination depth of 120' BLS. Conductivity values were obtained using a YSI 550 meter. Subsequently, selected samples were analyzed for total dissolved solids (TDS) and chloride. Laboratory analyses results are provided in **Appendix B**. The following Table 1 summarizes the results.

Depth below top of casing (Ft.)	Conductivity μ mhos/cm	Laboratory Analyses Results	
		Chloride mg/L	Total Dissolved Solids mg/L
30	36,820	NS	NS
40	38,870	NS	NS
50	35,120	NS	NS
60	38,250	26,200	13,800
80	41,200	30,000	14,800
90	49,550	28,500	15,800
100	49,860	28,700	13,500
120	40,760	NS	NS

NS: Not sampled for analyses

It appears that the interface between the G-II and G-III aquifer is located above 30' BLS. This is not unexpected, as Allison Island is a fill island in between two of the Miami Beach barrier islands.

3.3 EVALUATION OF G-II/G-III INTERFACE

On February 9, 10 and 11, 2009, during the installation of the soil boring, groundwater samples were collected every ten feet, from 30' to the termination depth of 120' BLS. Conductivity values were obtained using a YSI 550 meter. Subsequently, selected samples were analyzed for total dissolved solids (TDS) and chloride. Laboratory analyses results are provided in **Appendix B**. The following Table 1 summarizes the results.

Table 1 Comparison between Conductivity Reading and Laboratory Analyses Results			
Depth below top of casing (Ft.)	Conductivity μ mhos/cm	Laboratory Analyses Results	
		Chloride mg/L	Total Dissolved Solids mg/L
30	36,820	NS	NS
40	38,870	NS	NS
50	35,120	NS	NS
60	38,250	26,200	13,800
80	41,200	30,000	14,800
90	49,550	28,500	15,800
100	49,860	28,700	13,500
120	40,760	NS	NS
NS: Not sampled for analyses			

It appears that the interface between the G-II and G-III aquifer is located above 30' BLS. This is not unexpected, as Allison Island is a fill island in between two of the Miami Beach barrier islands.

5.0 REFERENCES

Causaras, C. R. Geology of the Surficial Aquifer System, Dade County, Florida, Water-Resources Investigations, No. WRI 86-4126, U. S. Geologic Survey, Reston, VA, 1986

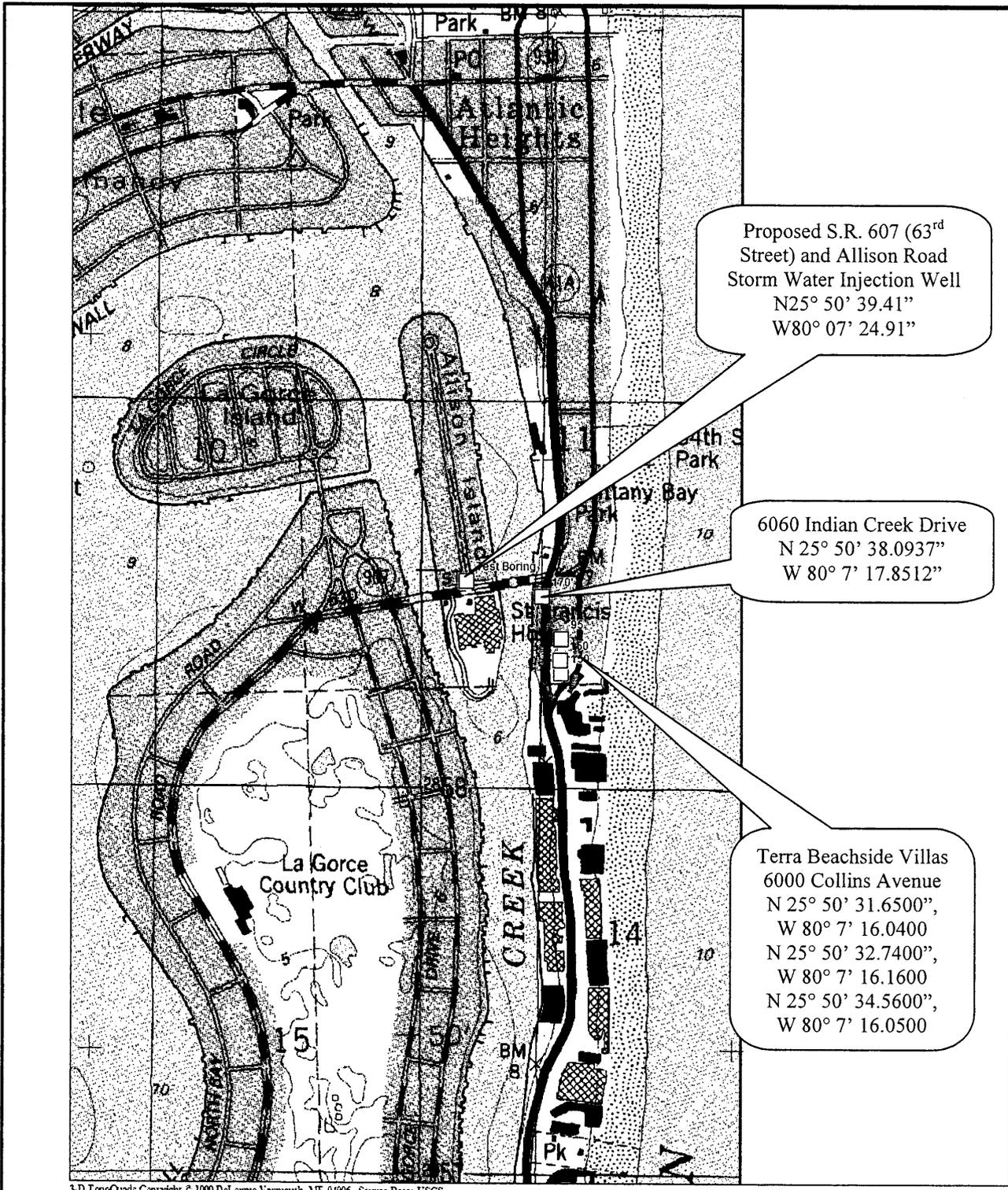
Fish, J. E.; Stewart, M. Hydrogeology of the Surficial Aquifer System, Dade County, Florida, Water-Resources Investigation No. WRI 90-4108, U.S. Geological Survey, Reston, VA, 1990

Klein, H.; Waller, B.G. Synopsis of Saltwater Intrusion in Dade County, Florida through 1984. Water-Resources Investigations, No. 85-4104, U. S. Geological Survey, Reston, VA, 1985

Randazzo, Anthony F. Jones, Douglas S. Editors, The Geology of Florida, University Press of Florida, Gainesville, FL, 1997.

Sonenshein, Roy; Kosalka, E. J. Trends in Water-Table Altitude (1984-93) and Saltwater Intrusion (1974-93) in the Biscayne Aquifer, Dade County, Florida, Open-File Report No. OF-0705, U. S. Geological Survey, Reston, VA, 1996

Sonenshein, Roy, Delineation of Saltwater Intrusion of the Biscayne Aquifer, Eastern Dade County, Florida, 1995. Water-Resources Investigations, No. 96-4285, U. S. Geological Survey, Reston, VA, 1996



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS
 350 ft Scale: 1:12,800 Detail: 14-0 Datum: WGS84

Source: U.S.G.S. 7.5" Quadrangle Map Series
 Miami, 1988

Project: FM No: 423829-1-52-01

Location: Miami Beach, FL

Job No: 38701628

**Location of Proposed and Nearby
 Storm Water Injection Wells**



Figure 1

Allison Road and 63rd Street
Miami Beach, FL
Roadway and Drainage Improvements
Geologic Boring Log

Depth		Lithologic Description	Blow Counts				Conductivity µmhos/cm	Total Dissolved Solids mg/L	Chloride mg/L
From	To		0-6"	6-12"	12-18"	18-24"			
0	0.5	No Sample	No Blow Counts Collected						
0.5	1								
1	1.5								
1.5	2								
2	2.5								
2.5	3								
3	3.5								
3.5	4								
4	4.5								
4.5	5								
5	5.5								
5.5	6								
6	6.5	Dark grey sand w/ shell fragments	6	6	8	7			
6.5	7								
7	7.5								
7.5	8								
8	8.5								
8.5	9								
9	9.5								
9.5	10								
10	10.5								
10.5	11								
11	11.5								
11.5	12								
12	12.5								
12.5	13								
13	13.5								
13.5	14								
14	14.5								
14.5	15								
15	15.5								
15.5	16								
16	16.5								
16.5	17								
17	17.5								
17.5	18								
18	18.5								
18.5	19	Light grey sand w/ white limestone interbeds	4	2	2				
19	19.5								
19.5	20								
20	20.5								
20.5	21								
21	21.5								
21.5	22								
22	22.5								
22.5	23								
23	23.5								
23.5	24								
24	24.5	White limestone with light grey sand, good K	60/5"				36,820		
24.5	25								
25	25.5								
25.5	26								
26	26.5								
26.5	27								
27	27.5								
27.5	28								
28	28.5								
28.5	29								
29	29.5								
29.5	30								
30	30.5								
30.5	31								
31	31.5								
31.5	32								
32	32.5								
32.5	33								
33	33.5								
33.5	34								
34	34.5								
34.5	35								
35	35.5								
35.5	36								
36	36.5								
36.5	37								
37	37.5								
37.5	38								
38	38.5								
38.5	39								
39	39.5								
39.5	40								
			3	12	6				

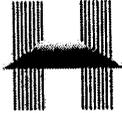
Allison Road and 63rd Street
Miami Beach, FL
Roadway and Drainage Improvements
Geologic Boring Log

Depth		Lithologic Description	Blow Counts				Conductivity µmhos/cm	Total Dissolved Solids mg/L	Chloride mg/L
From	To		0-6"	6-12"	12-18"	18-24"			
40	40.5	Grey, very fragmented LS, good K					38,870		
40.5	41								
41	41.5								
41.5	42		9	14	14				
42	42.5								
42.5	43								
43	43.5								
43.5	44								
44	44.5		9	10	10				
44.5	45								
45	45.5								
45.5	46								
46	46.5								
46.5	47		13	10	9				
47	47.5								
47.5	48								
48	48.5								
48.5	49								
49	49.5		5	6	6				
49.5	50								
50	50.5						35,120		
50.5	51								
51	51.5								
51.5	52		10	7	8				
52	52.5								
52.5	53								
53	53.5								
53.5	54								
54	54.5		6	6	6				
54.5	55								
55	55.5								
55.5	56								
56	56.5								
56.5	57	6	4	4					
57	57.5								
57.5	58								
58	58.5								
58.5	59	White Limestone with lt. brown sand	6	3	4				
59	59.5								
59.5	60								
60	60.5					38,250	26,200	13,800	
60.5	61								
61	61.5								
61.5	62	Light brown sand	2	2	2				
62	62.5								
62.5	63								
63	63.5								
63.5	64								
64	64.5		3	2	2				
64.5	65								
65	65.5								
65.5	66								
66	66.5	No Recovery	6	6	7				
66.5	67								
67	67.5								
67.5	68								
68	68.5								
68.5	69		2	3	2				
69	69.5								
69.5	70								
70	70.5								
70.5	71								
71	71.5	Light brown sand	2	Weight of Hammer					
71.5	72								
72	72.5								
72.5	73								
73	73.5								
73.5	74	White limestone and lt. brown sand	3	32	8				
74	74.5								
74.5	75								
75	75.5								
75.5	76								
76	76.5								
76.5	77								
77	77.5								
77.5	78								
78	78.5								
78.5	79								
79	79.5								
79.5	80	Soft lt. brown	12	9	12				

Allison Road and 63rd Street
Miami Beach, FL
Roadway and Drainage Improvements
Geologic Boring Log

Depth		Lithologic Description	Blow Counts				Conductivity µmhos/cm	Total Dissolved Solids mg/L	Chloride mg/L
From	To		0-6"	6-12"	12-18"	18-24"			
80	80.5	calcareous sandstone, good to very good K					41,200	30,000	14,800
80.5	81								
81	81.5								
81.5	82		12	13	12				
82	82.5								
82.5	83								
83	83.5								
83.5	84								
84	84.5		20	6	6				
84.5	85								
85	85.5								
85.5	86	Calcareous cemented cavity-riddled sandstone					49,550	28,500	15,800
86	86.5								
86.5	87		6	2	1				
87	87.5								
87.5	88								
88	88.5								
88.5	89								
89	89.5		28	8	26				
89.5	90								
90	90.5								
90.5	91								
91	91.5								
91.5	92	9	9	5					
92	92.5								
92.5	93								
93	93.5								
93.5	94								
94	94.5	Lt. brown calcareous sandstone w/ quartz sand and shell hash, lower K than overlying unit, increasing sand w/ depth	8	13	13		49,860	28,700	13,500
94.5	95								
95	95.5								
95.5	96								
96	96.5		47	50/5"					
96.5	97								
97	97.5								
97.5	98								
98	98.5								
98.5	99		15	47	9				
99	99.5								
99.5	100								
100	100.5								
100.5	101								
101	101.5	Lt. brown sand w/ sandstone, lower K than above	26	26	22				
101.5	102								
102	102.5								
102.5	103								
103	103.5								
103.5	104								
104	104.5	Brown to lt. brown calcareous sandstone, very high K (Tamiami Fm)	10	12	8				
104.5	105								
105	105.5								
105.5	106								
106	106.5								
106.5	107		10	8	13				
107	107.5								
107.5	108								
108	108.5								
108.5	109		17	10	15				
109	109.5								
109.5	110								
110	110.5								
110.5	111								
111	111.5								
111.5	112	26	12	7					
112	112.5								
112.5	113								
113	113.5								
113.5	114	Sandstone with lt. brown sand and shell hash interbeds	9	10	17				
114	114.5								
114.5	115								
115	115.5								
115.5	116								
116	116.5	Brown calcareous sandstone	40	32	50/3"				
116.5	117								
117	117.5								
117.5	118								
118	118.5								
118.5	119		50/3"						
119	119.5								
119.5	120					40,760			

Proposed Casing
Depth = 90'



HYDROLOGIC ASSOCIATES U.S.A., INC.

ENVIRONMENTAL CONSULTANTS - HYDROGEOLOGIC TESTING
WELL DRILLING SERVICES - PETROLEUM CONTRACTOR

February 12, 2009

Mr. Carlos Garcia, P.E.
URS Corp.
7650 Corporate Center Drive
Suites 400 and 401
Miami, FL 33126-1220

RE: DOT Test Boring, Allison Road & 63rd Street, Miami Beach

Dear Carlos,

Attached is the geologic log, conductivity profiling data, MOT, and the driller's blow count log for the test borehole referred to as DOT Allison Road.

HAI personnel at the site included our Senior Hydrogeologist and two technicians to serve as traffic control personnel. All drill cuttings, fluids, etc. were contained and not allowed to run into the proximal storm drain. The pavement was protected by a visquene covering during drilling operations.

The geologic log shows good permeability sediments from 25 ft to the borehole's total depth of 120 ft bls (below land surface). The conductivity data shows highly mineralized water from the initial sample taken near the first occurrence of limestone (25 ft) down to the total depth of the borehole.

If you need any additional information, please do not hesitate to call. Again, it is a pleasure working with you and the staff at URS.

Sincerely,

Bradley G. Waller
President and Principal Hydrologist

Attachments: Geologic field log
Specific Conductance profile
MOT
Driller's SPT blow count log

Cc: Ed Marks, URS

NASSAU
P.O. Box CB-12762, Suite # 186
Cable Beach, Nassau, Bahamas
Phone: (242) 324-3924

MAIN OFFICE MIAMI
9730 E. Hibiscus Street, Unit C
Miami, FL 33157
Phone: (305) 252-7118 • Fax: (305) 254-0874
WEBSITE: WWW.HAIMIAMI.COM

ORLANDO
109 Bayberry Road
Altamonte Springs, Florida 32714
Phone: (407) 788-1355 • Fax: (407) 788-1135

**GEOLOGIC LOG, DOT/URS EXPLORATORY BOREHOLE
ALLISON ROAD AND 63rd STREET, MIAMI BEACH**

Feet bls	Description (Formational name listed at formation's first occurrence)
0-6	no sample
6-8	dark grey sand w/shell fragments (Recent undifferentiated beach deposits)
8-10	a/a
11-12.5	a/a
13.5-15	dark grey sand, a/a, w/finer grain lighter grey sand at bottom of sample
16-17.5	dark grey sand & shell
18.5-20	light grey finer grain sand w/ white limestone interbeds
21-22.5	grey sand & shell w/ white limestone
23.5-25	white limestone w/ light grey sand; first good K zone (Anastasia Formation)
26-27.5	white limestone, good K
28.5-30	a/a (water sample)
31-32.5	a/a
33.5-35	white to grey limestone, good K
36-37.5	a/a
38.5-40	grey very fragmented limestone, v. good K (water sample)
41-42.5	white limestone, v. fragmented, v. good K
43.5-45	a/a
46-47.5	a/a
48.5-50	a/a (water sample)
51-52.5	a/a

53.5-55 white fragmented limestone w/ light brown calcareous sandstone in nodules; v. high K zone

56-57.5 white fragmented limestone, v. good K

58.5-60 white limestone w/ quartz sand (water sample)

61-62.5 tan quartz sand

63.5-65 tan quartz sand, some consolidated; v. little recovery

66-67.5 NR; probably quartz sand

68.5-70 NR

71-72.5 tan quartz sand, v. little recovery

73.5-75 tan quartz sand & white limestone; better K than overlying sand unit

76-77.5 soft tan calcareous sandstone; good K

78.5-80 a/a; v. good K (water sample)

81-82.5 a/a

83.5-85 tan calcareous sandstone, v. goodK

86-87.5 calcareous-cemented cavity-riddled sandstone, v. high K (see blow count log)

88.5-90 a/a, but harder, likely not as cavity-riddled (water sample)

91-92.5 a/a

93.5-95 tan calcareous sandstone w/ tan quartz sand & shell hash; lower K than overlying sandstone unit

96-97.5 sand & sandstone, a/a; sand probably interbedded rather than filling cavities

98.5-100 a/a, but higher sand content (water sample)

101-102.5 tan quartz sand w/ some sandstone; lower K than overlying units

103.5-105 brown to tan calcareous sandstone, v. high K (Tamiami Formation)

106-107.5 a/a

108.5-110 sandstone, a/a, but harder, probably less cavities

111-112.5 a/a

113.5-115 sandstone w/tan sand & shell hash interbeds lower K than overlying units

116-117.5 brown calcareous sandstone, v. high K

118.5-120 a/a(water sample)

T. D. 120 ft bgs; borehole abandoned with borehole materials to 10 ft bgs, than cemented to land surface and patched with asphalt.

INTERCOUNTY LABORATORIES, INC.
 10125 NW 116th WAY, SUITE 18 MIAMI, FLORIDA 33178
 TELEPHONE: (305) 651-8483 FACSIMILE: (305) 651-4460
 GEOTECHNICAL, ENVIRONMENTAL AND MATERIALS TESTING ENGINEERS

REPORT OF SOIL BORING LOG # B-1

SHEET NO.: 1 OF 2

CLIENT:

PROJECT NO.:

PROJECT:

63 Street - ALANSON RD (Miami Beach)

LOCATION OF BORING:

DEPTH (Ft)	SOIL DESCRIPTION	S P T'S				"N"	REC.	REMARKS
0 - 2								
2 - 4								
4 - 6								
6 - 8		6	6	8	7		16"	
8 - 10		7	6	7	6		16"	
11 - 12 1/2		6	6	6	6		18"	
13 1/2 - 15		4	4	4			12"	
16 - 17 1/2		4	4	3			12"	
18 1/2 - 20		4	2	2			13"	
21 - 22 1/2		6	4	3			13"	
23 1/2 - 25		50/5"					4"	
26 - 27 1/2		13	10	9			8"	
28 1/2 - 30		29	30	28			12"	
31 - 32 1/2		22	37	27			15"	
33 1/2 - 35		8	18	18			10"	
36 - 37 1/2		10	15	10			10"	
38 1/2 - 40		3	12	6			8"	
41 - 42 1/2		9	14	14			8"	
43 1/2 - 45		9	10	10			9"	
46 - 47 1/2		13	10	9			9"	

DRILL CREW:

LATANO F

DRILL EQUIPMENT:

B-5+

WATER LEVEL:

DATE DRILLED:

02-05-09

ELEVATION:

CHECKED BY:

M.A.M.

INTERCOUNTY LABORATORIES, INC.
 10125 NW 116th WAY, SUITE 18 MIAMI, FLORIDA 33178
 TELEPHONE: (305) 651-8483 FACSIMILE: (305) 651-4460
 GEOTECHNICAL, ENVIRONMENTAL AND MATERIALS TESTING ENGINEERS

REPORT OF SOIL BORING LOG # B- 1

SHEET NO.: 2 OF 3

CLIENT:

PROJECT NO.:

PROJECT:

63 street / Allison RD

LOCATION OF BORING:

DEPTH (FT)	SOIL DESCRIPTION	SPT'S			"N"	REC.	REMARKS
48 1/2 - 50		5	6	6		8"	
51 - 52 1/2		10	7	8		9"	
53 1/2 - 55		6	6	6		6"	
56 - 57 1/2		6	4	4		8"	
58 1/2 - 60		6	3	4		10"	
61 - 62 1/2		2	2	2		6"	
63 1/2 - 65		3	2	2		4"	
66 - 67 1/2	NO recovery	6	6	7		0	
68 1/2 - 70	" " "	2	3	2		0	
71 - 72 1/2		2	w/hammer			3"	
73 1/2 - 75		3	32	8		6"	
76 - 77 1/2		7	9	16		8"	
78 1/2 - 80		12	9	12		6"	
81 - 82 1/2		12	13	12		8"	
83 1/2 - 85		20	6	6		4"	
86 - 87 1/2		6	2	1		8"	
88 1/2 - 90		28	8	26		10"	
91 - 92 1/2		9	9	5		8"	
93 1/2 - 95		8	13	13		10"	
96 - 97 1/2		47	50/5"			6"	

DRILL CREW: Yuniestky

DRILL EQUIPMENT: B-57

WATER LEVEL:

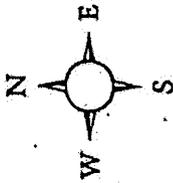
DATE DRILLED: 02-10-09

ELEVATION:

CHECKED BY:

**SPECIFIC CONDUCTANCE PROFILE DATA
DOT/URS EXPLORATORY BOREHOLE
ALLISON ROAD AND 63rd STREET, MIAMI BEACH**

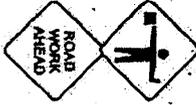
Depth (ft below ground surface)	Conductivity (umhos/cm)
30	36,820
40	38,870
50	35,120
60	38,250
80	41,200
90	49,550
100	49,860
120	40,760



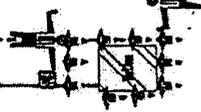
HYDROLOGIC ASSOC USA
BOBS BARRICADES

WILL BE SET UP TO
FDOT STANDARD
INDEX 605 2008

ALLISON RD



SIDEWALK
CLOSED



SIDEWALK
CLOSED

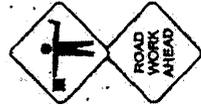


NW 63 ST



PLACING DRILLING RIG
ON ALLISON AT ENTRANCE
TO DRILL WELL JUST SOUTH
OF RIG PLACEMENT

WORKING HOURS
8AM TO 6PM





Genapure Analytical Services, Inc.
3231 NW 7th Avenue
Boca Raton, FL 33431
Phone: (561) 447-7373
Fax: (561) 447-7374

February 17, 2009

BRAD WALLER
HYDROLOGIC
9730 E. Hibiscus St.
Miami, FL 33157

RE:
Workorder: 901500
Project: DOT ALLISON RD

Dear BRAD WALLER:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, February 11, 2009. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Neshmah Castaneda".

Neshmah Castaneda
ncastaneda@genapure.com
Project Manager

FL-NELAC E86240

Statement of uncertainty is available upon request.

FL Qualifiers: I=value between MDL and PQL; V=value was positive in Blank; J=estimated value. See comment;

U=undetected; Q=out of hold

EPA Qualifiers: B=value was positive in Blank; J=estimated value. May be between MDL and PQL;

U=undetected; Q=out of hold

Enclosures

Report ID: 901500 - 4421732

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SAMPLE SUMMARY

Lab ID	Sample ID	Collector	Matrix	Date Collected	Date Received
901500001	ALLISON 60	CL	Groundwater	2/10/2009 10:00	2/11/2009 15:15
901500002	ALLISON 80	CL	Groundwater	2/10/2009 11:00	2/11/2009 15:15
901500003	ALLISON 90	CL	Groundwater	2/10/2009 12:00	2/11/2009 15:15
901500004	ALLISON 100	CL	Groundwater	2/10/2009 13:00	2/11/2009 15:15

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ANALYTICAL RESULTS

Lab ID: 901500001 Date Received: 2/11/2009 15:15 Matrix: Groundwater
Sample ID: ALLISON 60/ Date Collected: 2/10/2009 10:00:00 AM

Parameters	Results	Qual	Units	MDL	PQL	DF	Prepared	Analyzed	By
Wet Chemistry									
Analytical Method: SM 2540 C									
Total Dissolved Solids(TDS)	26200		mg/L	350	500	50		2/14/2009 10:43	AR
Analytical Method: SM 4500-Cl E									
Chloride	13800		mg/L	250	500	500		2/17/2009 14:56	ZE

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ANALYTICAL RESULTS

Lab ID: 901500002 Date Received: 2/11/2009 15:15 Matrix: Groundwater
Sample ID: ALLISON 80/ Date Collected: 2/10/2009 11:00:00 AM

Parameters	Results	Qual	Units	MDL	PQL	DF	Prepared	Analyzed	By
Wet Chemistry									
Analytical Method: SM 2540 C									
Total Dissolved Solids(TDS)	30000		mg/L	140	200	20		2/14/2009 10:43	AR
Analytical Method: SM 4500-Cl E									
Chloride	14800		mg/L	250	500	500		2/17/2009 14:57	ZE

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ANALYTICAL RESULTS

Lab ID: 901500003 Date Received: 2/11/2009 15:15 Matrix: Groundwater
Sample ID: ALLISON 90/ Date Collected: 2/10/2009 12:00:00 PM

Parameters	Results	Qual	Units	MDL	PQL	DF	Prepared	Analyzed	By
Wet Chemistry									
Analytical Method: SM 2540 C									
Total Dissolved Solids(TDS)	28500		mg/L	7.00	10.0	1		2/14/2009 10:43	AR
Analytical Method: SM 4500-Cl E									
Chloride	15800		mg/L	250	500	500		2/17/2009 14:58	ZE

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ANALYTICAL RESULTS

Lab ID: 901500004 Date Received: 2/11/2009 15:15 Matrix: Groundwater
Sample ID: ALLISON 100/ Date Collected: 2/10/2009 1:00:00 PM

Parameters	Results	Qual	Units	MDL	PQL	DF	Prepared	Analyzed	By
Wet Chemistry									
Analytical Method: SM 2540 C									
Total Dissolved Solids(TDS)	28700		mg/L	350	500	50		2/14/2009 10:43	AR
Analytical Method: SM 4500-Cl E									
Chloride	13500		mg/L	250	500	500		2/17/2009 14:59	ZE

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QUALITY CONTROL DATA

QC Batch: SOLI/1462 Analysis Method: SM 2540 C
 QC Batch Method: SM 2540 C
 Associated Lab Samples: 901500001 901500002 901500003 901500004

METHOD BLANK: 16600

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Wet Chemistry				
Total Dissolved Solids(TDS)	mg/L	7.00U	7.00	

SAMPLE DUPLICATE: 16601 Original: 901475002

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
Wet Chemistry						
Total Dissolved Solids(TDS)	mg/L	657	627	4.7	20	

SAMPLE DUPLICATE: 16889 Original: 901503001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
Wet Chemistry						
Total Dissolved Solids(TDS)	mg/L	533	549	3	20	

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QUALITY CONTROL DATA

QC Batch: LACH/1742 Analysis Method: SM 4500-Cl E
 QC Batch Method: SM 4500-Cl E
 Associated Lab Samples: 901500001 901500002 901500003 901500004

METHOD BLANK: 17030

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Wet Chemistry Chloride	mg/L	0.50U	0.50	

LABORATORY CONTROL SAMPLE & LCSD: 17031 17032

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Wet Chemistry Chloride	mg/L	25	25.2	25.2	101	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 17033 17034 Original: 901376001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Wet Chemistry Chloride	mg/L	118	125	289	265	136	117	90-110	15	20	

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QUALITY CONTROL DATA QUALIFIERS

QUALITY CONTROL PARAMETER QUALIFIERS

- [1] MS and/or MSD recoveries outside control limits. However, LCS and/or LCSD within limits. Data reported.

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QUALITY CONTROL CROSS REFERENCE TABLE

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
901500001	ALLISON 60	SM 2540 C	SOLI/1462		
901500002	ALLISON 80	SM 2540 C	SOLI/1462		
901500003	ALLISON 90	SM 2540 C	SOLI/1462		
901500004	ALLISON 100	SM 2540 C	SOLI/1462		
901500001	ALLISON 60	SM 4500-CI E	LACH/1742		
901500002	ALLISON 80	SM 4500-CI E	LACH/1742		
901500003	ALLISON 90	SM 4500-CI E	LACH/1742		
901500004	ALLISON 100	SM 4500-CI E	LACH/1742		

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