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February 7, 2017

Hon. Jay Schneiderman, Supervisor
Town of Southampton
116 Hampton Road
Southampton, NY 11969

Re: The Hills at Southampton
Nelson & Pope Project Number 05105
Sanitary Sewage Disposal

Dear Mr. Supervisor:

We have been retained by Discovery Land Company (DLC) to design the sewage treatment facility for the above referenced site. We are currently in the design stage for an innovative wastewater treatment system that utilizes a modified trickling filter with fixed-film media design which provides tertiary treatment to below the applicable effluent limitation of 10 milligrams per liter (mg/l) for Total Nitrogen in effluent.

Although the proposed project will be well below the SCDHS sanitary density limitations under Article 6 of the Suffolk County Sanitary Code (SCSC) the proposed condition, our client has decided to augment the wastewater treatment system by employing the use of a full scale sewage treatment plant. The proposed facility will be capable of discharging effluent at or below 10 mg/L Total Nitrogen based on the specific characteristics of The Hills at Southampton Planned Development District.

As the flow generated by the facility will vary based on the season, the sewage treatment plant will be designed to accommodate these seasonal flow characteristics. Specifically, the plant will be modular in nature, allowing low flows to be treated with additional modules to be employed as flow increases to ensure adequate treatment. We currently anticipate that flows ranging from 5,000-10,000 gallons per day (gpd) during low season and 45,000 gpd during high season which will be treated by the facility. We envision that four process trains of approximately 11,000 gallons per day will be used to treat the influent. Additionally, since the original design is modular, additional offsite connections such as neighboring single family homes and the East Quogue School could be connected to the facility once it is further expanded.

Since the facility will require an operator to be present seven days per week, every day of the year, the operator will be able to adjust the process to accommodate any flow variability that may occur. Given that the seasonality of the facility will only peak and ebb once per year, the adjustment of operations to ensure complete treatment can easily be accommodated. Additionally, due to the short start up time required for each of the process trains, no degradation of treatment will occur during the startup period of each train.

The specific process to be employed is the Baswood Biovore system. Baswood has been used at other DLC facilities, with one in full operation in Cabo San Lucas, Mexico, and one forthcoming in Duchess County, New York that was approved for construction by the New York State Department of Environmental Conservation (NYSDEC). Other Baswood systems are in successful operation throughout the country. In addition, N&P engineers have met with the Suffolk County Department of Health Services (SCDHS) to initiate the local approval process. Given the initial reception, the ideal match of this system or the specific project, and the ability of the system to consistently meet

discharge limitations, the local approval process is expected to focus on the technical engineering of the facility which will ultimately obtain SCDHS approval.
Attached to this letter is empirical data demonstrating the viability of the Baswood process to treat Total Nitrogen (TN). The first set were samples taking at a facility located in Cabo San Lucas, Mexico. Composite samples were taken and as can be seen the strength of waste is comparable to typical domestic waste. It is important to note that the facility reduced TN effluent down to 9 mg/l, below the current NYSDEC standard.

Other data from an industrial pretreatment facility located outside of Houston, Texas indicates that the Baswood process reduced Total Nitrogen below the Reported Limit. This is a clear indicator of the process ability to reduce high strength waste as well as domestic waste.

Although we are not required to treat wastewater under the current proposal, our client is fully committed to treating wastewater. Most importantly, we are employing a state of the art system to treat during all periods of sanitary flow, not just during the facility's peak season. The process has been proven to treat for both Total Nitrogen and Total Phosphorus, both of which are tertiary pollutants that require advanced treatment systems like the Baswood Biovore system. DLC's commitment is in support of their overall objective of achieving a "net nitrogen negative" project.

Contact me if you have any questions or concerns regarding the documents.

Regards,
Nelson & Pope
Engineers & Surveyors

Thomas Lembo, P.E.
Partner

Tom Lembo

From: Bill Faulds <bfaulds@baswood.com>
Sent: Monday, February 6, 2017 4:10 PM
To: Chic Voorhis; Tom Lembo; Mark Hissey
Subject: Test Results Cabo Installation
Attachments: PastedGraphic-2.pdf; PastedGraphic-1.pdf; PastedGraphic-2.pdf

Chic:
Cabo Results for 1 February 2017

2/01/17
Total nitrogen.
In comp: 33
T100: 24
T200: 24
T300: 10
Eff comp:9

Total phosphate.
In comp: 20.1
T100: 16.3
T200: 8.2
T300: 1.9
Eff comp:1.2

Ammonia.
In comp:28
T100: 12
T200: 2
T300:0
Eff comp:0

Toc.
In comp:15.3
T100: 8.1
T200: 3.0
T300: 0
Eff comp: 0

Cod.
In comp: 230
T100: 120
T200: 80
T300: 20
Eff comp: 10

I have an industrial report for a plant where we pretreat and have no N or P requirements, See below
Will assemble additional
Regards,
Bill

Bill Faulds,
Baswood Corporation
bfaulds@baswood.com
314.803.2992

LABORATORY TEST RESULTS

Job ID : 15010377

Date 1/23/

me: Baswood, Inc. Attn: Keith Atkinson

ame: DPSG Houston / 2400 Holly Hall St., Houston, TX 77054

nple ID: WW
ected: 01/10/15
ected: 08:00
ormation:

Job Sample ID: 15010377.02
Sample Matrix Water

od	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time
)	Anions							
	Nitrite-N	BRL	mg/L	1	0.1			01/19/15 12:52
	Nitrate-N	BRL	mg/L	1	0.1			01/19/15 12:52
	Nitrate/Nitrite as N	BRL	mg/L	1	0.1			01/19/15 12:52
	Total Dissolved Solids							
	TDS	2292	mg/L	2.00	20			01/13/15 11:32
)	Total Suspended Solids							
	TSS	779.0	mg/L	10	25			01/13/15 14:32
	Volatile Dissolved Solids[1]	430	mg/L	1	10			01/16/15 12:30
	Volatile Suspended Solids							
	VSS[1]	545	mg/L	1	2.5			01/13/15 17:02
	Specific Gravity[1]	1.0012		1				01/12/15 15:50
NH3D	Total Kjeldahl Nitrogen							
	TKN	105.9	mg/L	20	10			01/16/15 13:10
P-E								
	Phosphorus	11.8658	mg/L	20	1			01/14/15 13:50

LABORATORY TEST RESULTS

Job ID : 15010377

Date

Baswood, Inc.

Attn: Keith Atki

DPSG Houston / 2400 Holly Hall St., Houston, TX 77054

D: Effluent SP#2
01/10/15
09:00
on:

Job Sample ID: 15010377.01
Sample Matrix Water

Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Tim
Anions							
Nitrite-N	BRL	mg/L	1	0.1			01/19/15
Nitrate-N	BRL	mg/L	1	0.1			01/19/15
Nitrate/Nitrite as N	BRL	mg/L	1	0.1			01/19/15
Total Dissolved Solids							
TDS	1796	mg/L	2.00	20			01/13/15
Total Suspended Solids							
TSS	71.4	mg/L	2.00	5.00			01/13/15
Volatile Dissolved Solids[1]	84	mg/L	1	10			01/16/15
Volatile Suspended Solids							
VSS[1]	50.8	mg/L	1	2.5			01/13/15
Specific Gravity[1]	0.9998		1				01/12/15
Total Kjeldahl Nitrogen							
TKN	29.2	mg/L	10	5.00			01/16/15
Phosphorus	5.2395	mg/L	10	0.500			01/14/15