



June 4, 2014

The Board of County Commissioners
Attn: Chairman Tom Henning
3299 Tamiami Trail East
Suite 303
Naples, FL 34112

Dear Chairman Henning:

Collier Resources Company (CRC) has been responsibly engaged in oil exploration and production in Southwest Florida since 1943. We take pride in our seven decade record of environmental stewardship.

On May 13, 2014, Noah Kugler, an independent consultant -- retained by the Conservancy of Southwest Florida -- asserted to the Board of County Commissioners that two of our former lessees' wells (numbers 86 and 103) were not properly plugged after drilling operations were concluded many years ago.

"FDEP records indicate that these dry-hole wells were never properly plugged and abandoned..." wrote Kugler.

Consequently, Mr. Kugler asserted that groundwater in the area of the Collier-Hogan 20-3H well may have been contaminated. This news came as a surprise and caused us a great deal of concern.

CRC took immediate action to understand the facts. We retained Dr. Robert Maliva, Ph.D., P.G., Schlumberger Water Services USA Inc., a subject matter expert, to conduct an independent review of the relevant public records, and also to offer an opinion based on sound science of the potential impacts of oil and gas exploration and development activities on groundwater resources, specifically as it relates to the Collier-Hogan 20-3H well.

Enclosed, you will find a white paper titled "Potential Impacts of Oil Exploration and Production on Collier County Groundwater Resources" by Dr. Maliva, detailing his research and findings.

In his review, Dr. Maliva found that "wells 86 and 103 are indeed adequately plugged to prevent flow from the Sunniland Formation into the Florida Aquifer System and thus suggestions that they pose a risk to groundwater resources from well stimulation activities in the Collier-Hogan 20-3H are unfounded."



In recent months, there have been all sorts of rumors circulating regarding a business that we have conducted responsibly and with sensitivity to the environment since World War II. All we ever ask is a fair hearing based on sound science and the facts. We are always willing to consider any reasonable recommendations from interested parties as to how we can improve what we are doing.

We would welcome the opportunity to present before the Commission or county staff a detailed explanation of how these wells are plugged, as this may fully alleviate any remaining questions or concerns.

Sincerely,

A handwritten signature in blue ink that reads "Tom Jones".

Tom Jones
Vice President

Cc:
Commissioner Fred W. Coyle
Commissioner Donna Fiala
Commissioner Georgia Hiller, Esq.
Commissioner Tim Nance
County Manager Leo Ochs, Jr.
County Attorney Jeffrey Klatzkow, Esq.

Potential Impacts of Oil Exploration and Production on Collier County Groundwater Resources

**Scott Manahan P.E., and Kapo Coulibaly, Ph.D., P.G.
June 3, 2014**

Collier County relies primarily on groundwater for potable water. State laws and regulations require that oil and gas exploration and development activities be conducted in a manner that is protective of groundwater resources. The oil and gas industry has had an excellent safety record in southwest Florida since the first well was drilled here over 70 years ago, and there is no scientific basis to believe that the Collier-Hogan 20-3H well poses a high potential for contaminating water supply aquifers on which the County depends.

The target zone for the Collier-Hogan 20-3H well is the Sunniland Formation, which is located over two miles below the freshwater aquifers used for potable water supply. It is also located more than 7,000 feet below the Floridan Aquifer, a water-bearing zone that is suitable for potable water supply in Collier County only with advanced treatment (desalination). A diagram of the geology of the project site area is attached. There are thousands of feet of essentially impermeable confining strata between the Sunniland Formation and Floridan Aquifer.

The Collier Hogan 20-3H well begins at land surface and intercepts several geologically distinct zones before terminating in the Sunniland Formation. The following procedures are utilized to ensure there is no contamination between these different zones and, in particular, of any aquifer that is currently or may in the future be used for potable water supply:

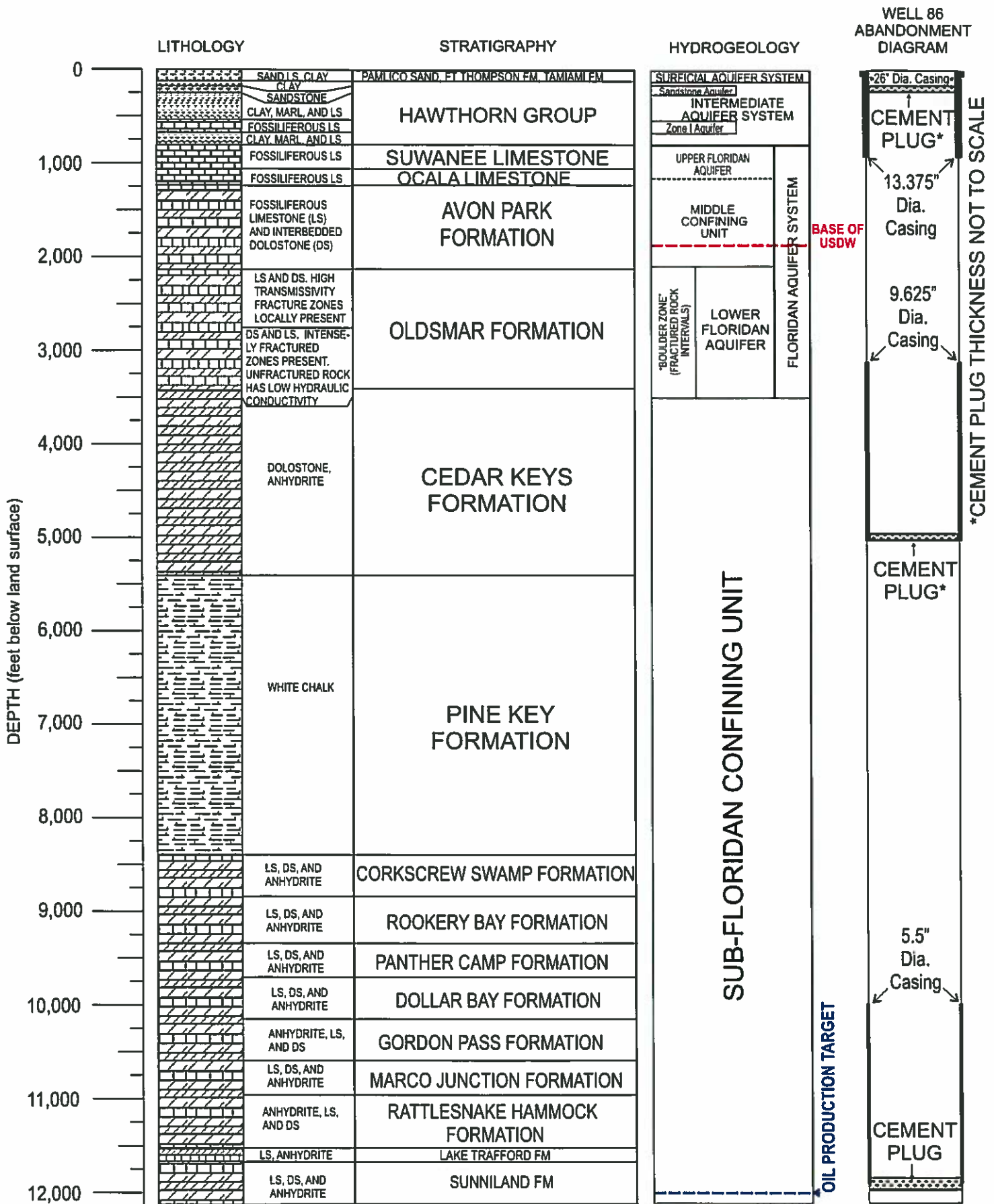
- The well is constructed with multiple casing strings. Four separate steel casings (conductor, surface, intermediate, and production) provide redundant protection of the water-table and Lower Tamiami freshwater aquifers that used for potable water supply.
- The protection of the freshwater and brackish aquifers (Underground Sources of Drinking Water; USDWs) includes a surface casing that is completely cemented in place to land surface. USDWs are defined by the USEPA and FDEP as aquifers that contain total dissolved solids of less than 10,000 milligrams per liter.
- The mechanical integrity of the surface, intermediate, and production casing strings was confirmed by pressure testing to a minimum pressure of 1,000 psi.

There is no factual or scientific basis for stating that the Collier-Hogan 20-3H well may have introduced contaminants into aquifer zones intercepted by the well borehole or dry hole wells. All state requirements and permit conditions were followed to ensure that well exploration activities do not impact water supply sources. Accordingly, there is no basis for stating that the Collier-Hogan 20-3H well development activities pose a high risk for contaminant migration to existing private wells such as the Orangetree Utility wells or the Northeast Collier County brackish water wellfield.

Unplugged wells have the potential to become conduits for vertical fluid flow and thus bypass confining strata. Statements that there are unplugged wells (or wells unplugged below 97 feet) in the proximity of the Collier-Hogan 20-3H well are factually incorrect. The plugging and abandonment records for the two wells

in question (Florida permit Nos. 86 and 103) are publically accessible records that are readily available from the Department of Environmental Protection (FDEP) Oil and Gas Section. Copies of the "Notice of Intent to Abandon and Plug Well" and "Affidavit on Plugging Completion" for both wells are attached. Both wells 86 and 103 each have two cement plugs between the Sunniland Formation and bottom of the Floridan Aquifer System. The deep plugs in well 86 are reported to be located at 5010 and 11850-11950 feet and those in well 103 at 4380 and 7653 feet. Well 86 has a shallow plug reported at 250 feet.

The plugging of wells 86 and 103 was performed in accordance with state requirements at the time. An additional requirement in the current rules (Florida Rule 62C-29.009) is the placement of plugs in the Floridan Aquifer System at the base of the USDW and at the base of freshwater aquifers. The primary purpose of the USDW and freshwater aquifer plugs is to prevent intra-aquifer and inter-aquifer flow, rather than upward flow from the Sunniland Formation, which is prevented by the deeper plugs. The public record confirms that wells 86 and 103 were properly plugged to prevent flow from the Sunniland Formation into the Floridan Aquifer. Statements that wells 86 and 103 were not properly plugged or that they have become so degraded that they pose a risk to groundwater resources from well development activities associated with Collier-Hogan 20-3H are unfounded.



Lithology and Stratigraphy below 3,500 feet taken from Mitchell-Tapping, H.J. and Mitchell-Tapping, A.M., 2003, Exploration of the Sunniland Formation of South Florida: Transactions Gulf Coast Association of Geological Societies, v.53 p. 599-609

Hydrogeologic Column for Southwest Florida

STATE BOARD OF CONSERVATION
STATE OF FLORIDANOTICE OF INTENTION TO ABANDON AND PLUG WELL

INSTRUCTIONS: File in duplicate with Board. One copy will be returned with approval or denial. This form shall be accompanied by \$15.00 permit fee for all permits to abandon each dry hole.

FIELD: Sunniland - S/W Lake Trafford
 OPERATOR: Humble Oil & Refg. Co. ADDRESS: Houston, Texas.
 LEASE: East Coast Realities Corp. C WELL: 1 COUNTY: Collier
 SURVEY: T-118 R-28-E SECTION: 21 DRILLING PERMIT NO. 86
 LOCATION: Center of NE 1/4th of SW 1/4th

TYPE OF WELL: DRY TOTAL DEPTH: 12,120'
 (Oil, Gas, or Dry Hole)
 ALLOWABLE (If Assigned): -
 LAST PRODUCTION TEST: OIL: - (Bbls.) WATER: - (Bbls.) GAS: - (MCF)

PRODUCING HORIZON: _____ PRODUCING FROM: _____ TO: _____

FULL DETAILS OF PROPOSED PLAN OF PLUGGING (including length and depth of plugs, plans for mudding, cementing, testing, and removing casing):

Approx. 2889' of 9-5/8" casing will be pulled and approx. 9989' of 5-1/2" casing will be pulled.

First Plug will be placed from 11,950' to 12,120' using 100 sacks of cement.

Second cement plug " from 11,800' to 11,950' using 35 sacks of cement.

Set cement plug in bottom of 9-5/8" casing at 5,010' using 110 sacks of cement.

Set cement plug at 250' using 30 sacks of cement.

Heavy drilling mud will be placed between plugs.

DATE OF COMMENCING PROPOSED OPERATIONS: 10-20-48
 NAME OF PARTY PLUGGING WELL: HO&R Company ADDRESS: Everglades, Fla.
 CORRESPONDENCE SHOULD BE SENT TO: Everglades, Florida.

NAME: R. B. Gustafson

TITLE: District Superintendent.

ACTION OF STATE BOARD OF CONSERVATION

APPROVED: Oct 26, 1948

DENIED: _____

STATE BOARD OF CONSERVATION

BY: P. A. Gray

Sunniland District agent's check No. 867-E attached.

Orig&cc: Mr. Herman Gunter
 cc: Mr. C. C. Clifton
 cc: Mr. R. E. Sinclair
 cc: File

THE STATE BOARD OF CONSERVATION
OF FLORIDA
TALLAHASSEE, FLORIDA

AFFIDAVIT ON PLUGGING COMPLETION

(Instructions: This form shall be filed within thirty (30) days after the plugging of any well.)

The State Board of Conservation
Tallahassee, Florida

Sirs:

You are hereby notified of the abandonment of a well known as Humble Oil
& Rfg. (Operator) Well No. 1 on the Gulf Coast Realities Co farm
or lease in Section No. 21, in Collier County, Florida,
permission to drill which was granted on the 9th day of June, 19 48
by Permit No. 86.

Date Notice of Intention to Abandon was filed 10-26-48.

Date plugging was commenced 10-20-48.

Date plugging was completed 10-20-48.

Details: (Here give a detailed account of the manner in which work was performed, including the following nature and quantities of materials used in plugging and the depths and lengths of the various plugs; records of any tests or measurements made; amount, size, and depth of all casing left in the well; volume and gravity of mud-laden fluid used; pressure retained in mudding; casing and its position left in hole.)

Set 35 sx. Unaflo cement plug from 11,950' to 11,800' and 110 sx. Unaflo cement plug from at 5010' and 30 sx. Unaflo cement plug at 250'.
The following casing was left in the hole.

63.00' of 26" 77.25# Casing - 2-jts; 1102.64' of 13-3/8" 61# J-55 Casing, 26-jts.

2109.00' of 9-5/8" 40# N-80 Casing, 52-jts; 1897.70' of 5-1/2" Casing, 61-jts.

Heavy drilling mud was placed between plugs.

Name of person in charge of plugging Mr. R. B. Gustafson

ADDRESS of person in charge of plugging Everglades, Florida.

I hereby swear or affirm that the information given herewith is to the best of the knowledge and belief of the affiant a complete and correct record of the well and all work done on it.

Name of affiant Frank Bee
Position District Chief Clerk
Representing HOR Company (Operator)
Address Everglades, Florida.



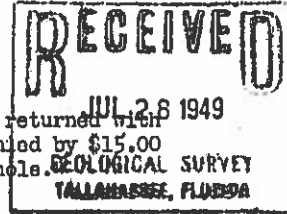
SUBSCRIBED and Sworn to before me on this 19 day of November,

Elle M. Lord
NOTARY PUBLIC

Orig: Mr. Herman Gunter, Tallahassee
cc: Mr. C. C. Clifton; R. E. Sinclair; Geo. Lee & Setg-Houston & Tallahassee, Fla

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STATE BOARD OF CONSERVATION
STATE OF FLORIDA



NOTICE OF INTENTION TO ABANDON AND PLUG WELL

INSTRUCTIONS; File in duplicate with Board. One copy will be returned with approval or denial. This form shall be accompanied by \$15.00 permit fee for all permits to abandon each dry hole.

FIELD: Suniland (S/W Lake Trafford)
OPERATOR: Humble Oil & Refining Company ADDRESS: Houston, Texas.
LEASE: Gulf Coast Realities Corp. "E" WELL: 1 COUNTY: Collier
SURVEY: - SECTION: 19 DRILLING PERMIT NO. 103
LOCATION: In the Center of the S/W Quarter of the S/W Quarter of Section 19, T-17-S; R-28-E.

TYPE OF WELL: DRY HOLE TOTAL DEPTH: _____
(Oil, Gas or Dry Hole)

ALLOWABLE (If Assigned): _____
LAST PRODUCTION TEST: OIL: _____ (Bbls.) WATER: _____ (Bbls.) GAS: _____ (MCF)

PRODUCING HORIZON: _____ PRODUCING FROM: _____ TO: _____

FULL DETAILS OF PROPOSED PLAN OF PLUGGING (Including length and depth of plugs, plans for mudding, cementing, testing, and removing casing);

- 150 sack cement plug will be placed at 7643'
- 100 " " " " at 4380'
- Well will be capped with Swage & Valve.
- Casing to be left in well:
- 73.00' - 24" Casing - 2-jts.
- 966.52' 13-3/8" " 24" "
- 4226.38' 9-5/8" " 116" "

7643
423
7220
4380
280
4100

DATE OF COMMENCING PROPOSED OPERATIONS: 7-27-49
NAME OF PARTY PLUGGING WELL: Humble Oil & Refg. Company ADDRESS: Everglades, Florida.
CORRESPONDENCE SHOULD BE SENT TO: Mr. R. B. Gustafson

NAME: Mr. R. B. Gustafson
TITLE: District Superintendent.

ACTION OF STATE BOARD OF CONSERVATION

APPROVED: Aug. 2, 1949
DENIED: _____

STATE BOARD OF CONSERVATION

BY: R. R. Gray, Secretary

- Orig&cc: Mr. Herman Gunter - Tallahassee
- cc: Mr. R. E. Sinclair
- cc: Mr. C. C. Clifton
- cc: File

THE STATE BOARD OF CONSERVATION
OF FLORIDA
TALLAHASSEE, FLORIDA

AFFIDAVIT OF PLUGGING COMPLETION

(Instructions: This form shall be filed within thirty (30) days after the plugging of any well.)

The State Board of Conservation
Tallahassee, Florida

Sirs:

You are hereby notified of the abandonment of a well known as Humble Oil & Realities Corp.
Refg. Co. (Operator) Well No. 1 on the Gulf Coast/ E farm
or lease in Section No. 19, in Collier County, Florida,
permission to drill which was granted on the 6th day of April, 1949
by Permit No. 103.

Date Notice of Intention to Abandon was filed 7-27-49.

Date plugging was commenced 7-27-49.

Date plugging was completed 7-27-49.

Details: (Here give a detailed account of the manner in which work was performed, including the following nature and quantities of materials used in plugging and the depths and lengths of the various plugs; records of any tests or measurements made; amount, size and depth of all casing left in the well; volume and gravity of mud-laden fluid used; pressure retained in mudding; casing and its position left in hole.)

150 sx. cement plug at 7643' and 100 sx. plug at 4380'. Well capped with

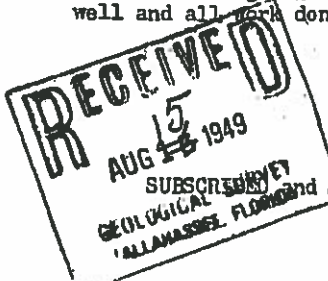
Swage and valve. Left in Hole:

| | | | | |
|-----------------|------------------------|----------------------------|---------------|-----------------|
| <u>73.00'</u> | <u>- 2 1/2" C sing</u> | <u>- 2-its^N</u> | <u>set at</u> | <u>97.00'</u> |
| <u>968.52'</u> | <u>13-3/8 "</u> | <u>2 1/2 "</u> | <u>"</u> | <u>988.52'</u> |
| <u>4226.38'</u> | <u>9-5/8 "</u> | <u>1 1/2 "</u> | <u>"</u> | <u>4248.58'</u> |

Name of person in charge of plugging Mr. R. B. Gustafson

ADDRESS of person in charge of plugging Everglades, Florida.

I hereby swear or affirm that the information given herewith is to the best of the knowledge and belief of the affiant a complete and correct record of the well and all work done on it.



Name of affiant Frank J. Lee
Position Chief Clerk
Representing HO&R Company (Operator)
Address Everglades, Florida.

and Sworn to before me on this 3 day of Aug, 1949.

Notary Public, State of Florida at Large.
My commission expires October 13, 1951.
Bonded by Mess. Bonding & Insurance Co.

- Orig: Mr. Herman Gunter
- cc: Mr. R. E. Sinclair
- cc: Mr. C. C. Clifton
- cc: Geo-Les&Scouting - Tall. - Houston
- cc: File