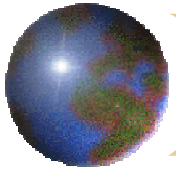


# *Exploration and Development in the Low Resistivity Pay*

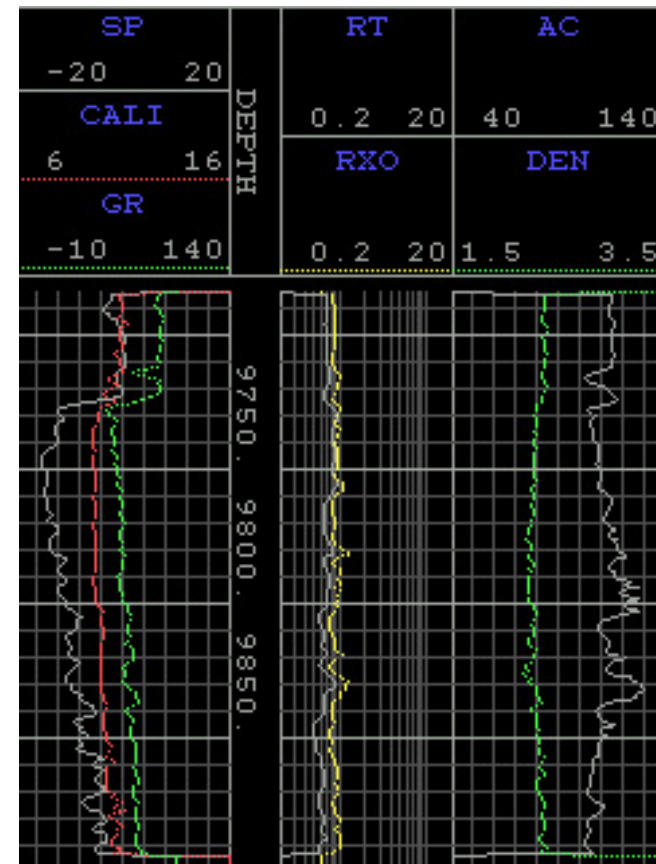
LOGDIGI, LLC

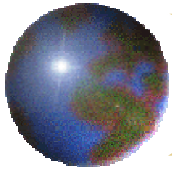
February 2, 2005



## *Do you really believe the oil/gas “hidden” in the extremely low resistivity?*

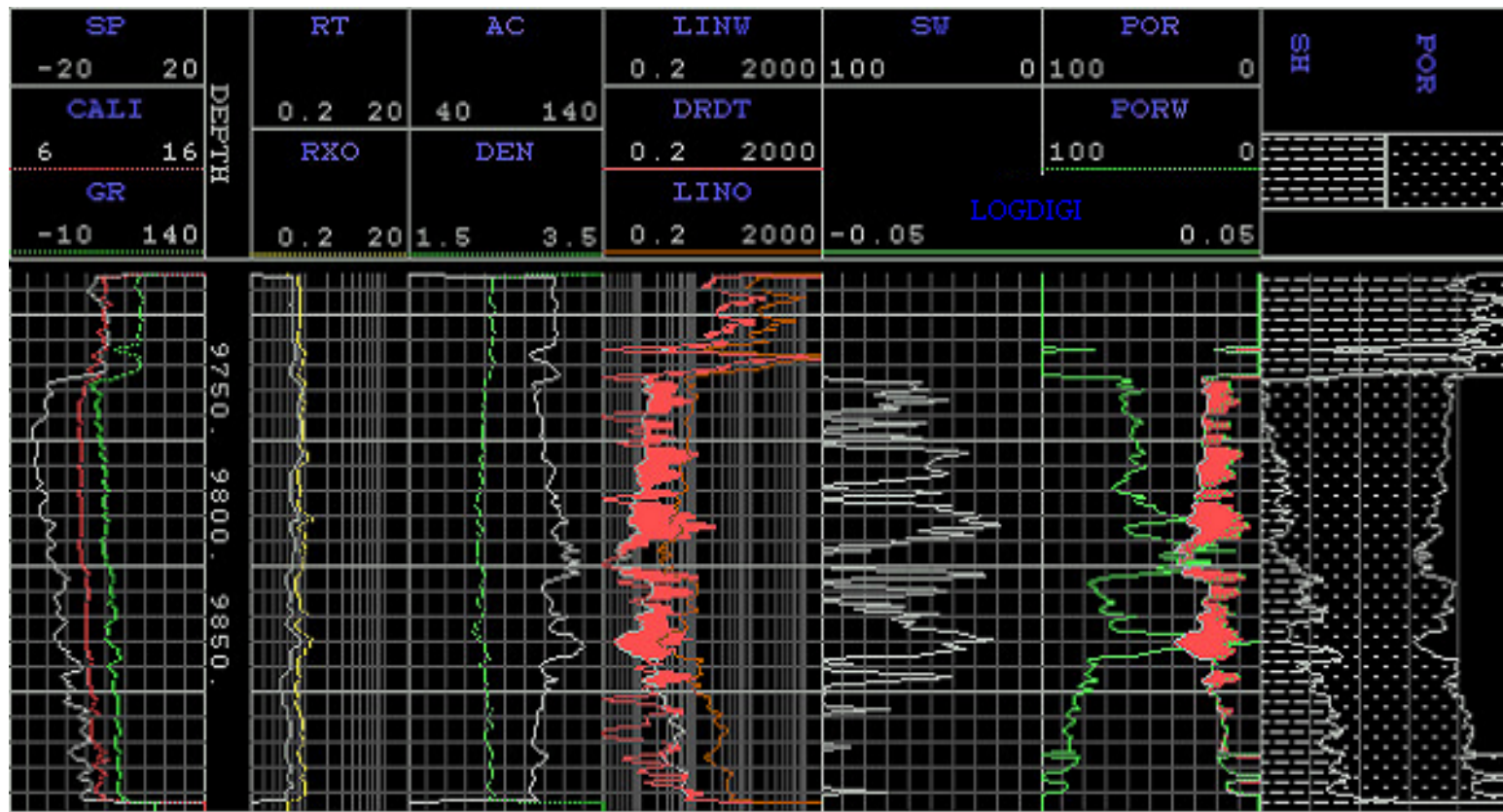
- Extremely low Resistivity < 1.0 ohm-meters
- Bureau of Economic only provided well log data in LAS. (see right picture was display in our software)
- During the evaluation, Bureau of Economic did not provide any sample analysis of petrophysical properties deduced from cuttings, sidewall cores, or conventional cores
- ?

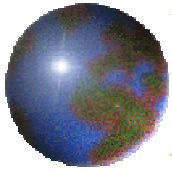




## Successful Example – Bureau of Economic Geology Evaluation

- Common log analysis, using density porosity yields water saturations of 55% to 60%, identified as water zone. Using complex calculation with expensive sample analysis to identify this zone could be oil/gas/water.
- The following result is our log analysis result



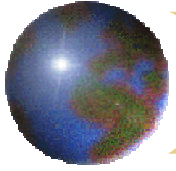


## *Successful Examples – Bureau of Economic Geology Evaluation*

- 9725 feet to 9805 feet and 9813 feet to 9833 feet were perforated.
- The well initially flowed 1,305 BOPD and 1.05 MMCFGPD on a 15/64 inch choke with no water. After two years of production the well was still producing 598 BOPD and had a cumulative production of 291,551 BO and no water.

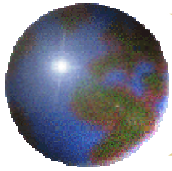
The Plio-Pleistocene sand illustrated in Figures 31 and 32 was perforated from 9725 feet to 9805 feet and 9813 feet to 9833 feet. The well initially flowed 1,305 BOPD and 1.05 MMCFGPD on a 15/64-inch choke with no water. After two years of production the well was still producing 598 BOPD and had a cumulative production of 291,551 BO and no water.

George Asquith



*Do you really believe the oil/gas “hidden” in the  
extremely low resistivity? (cont'd)*

- ✚ At first we show original logs (TOTAL-1.FMT)
  - Eight famous oil companies have processed this well
- ✚ Secondly we show our analysis result  
(TOTAL.FMT)



# TOTAL Minatome Corporation

## Oil Testing Report

## Our Analysis Result

DWIGHT'S ENERGYDATA, INC. RUN DATE: 01/10/95  
 OIL LEASE HISTORY Published 12/94  
 GULF OF MEXICO FEDERAL OFFSHORE OIL (#139,710,174096100S3 )

-----  
 OPERATOR (#226928) LEASE NAME  
 EXXON CO USA OCS 02111C 6 BLK 314

-----  
 LOCATION STATE DIST COUNTY (#710) OCS #  
 17 710 314 LA EUGENE ISLAND A 2111

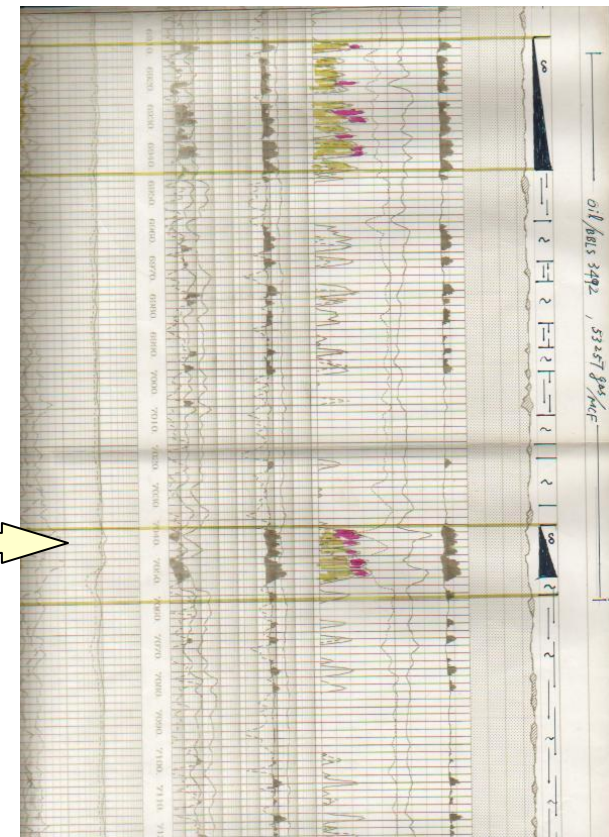
-----  
 API # FIELD (#372000) RESERVOIR  
 17-710-4096100 EUGENE ISLAND BLOCK 330 IIR3/3R7

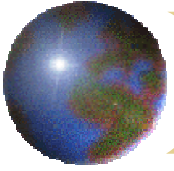
TOTAL DEPTH	UPPER PERF	LOWER PERF	GAS GATH	LIQ GATH	GAS GRAV	LIQ GRAV	TEMP GRAD
7287	6325	6652					

-----  
 COMP DATE 1ST PROD DATE LAST PROD DATE STATUS DATE STATUS  
 8406 9406 ACT

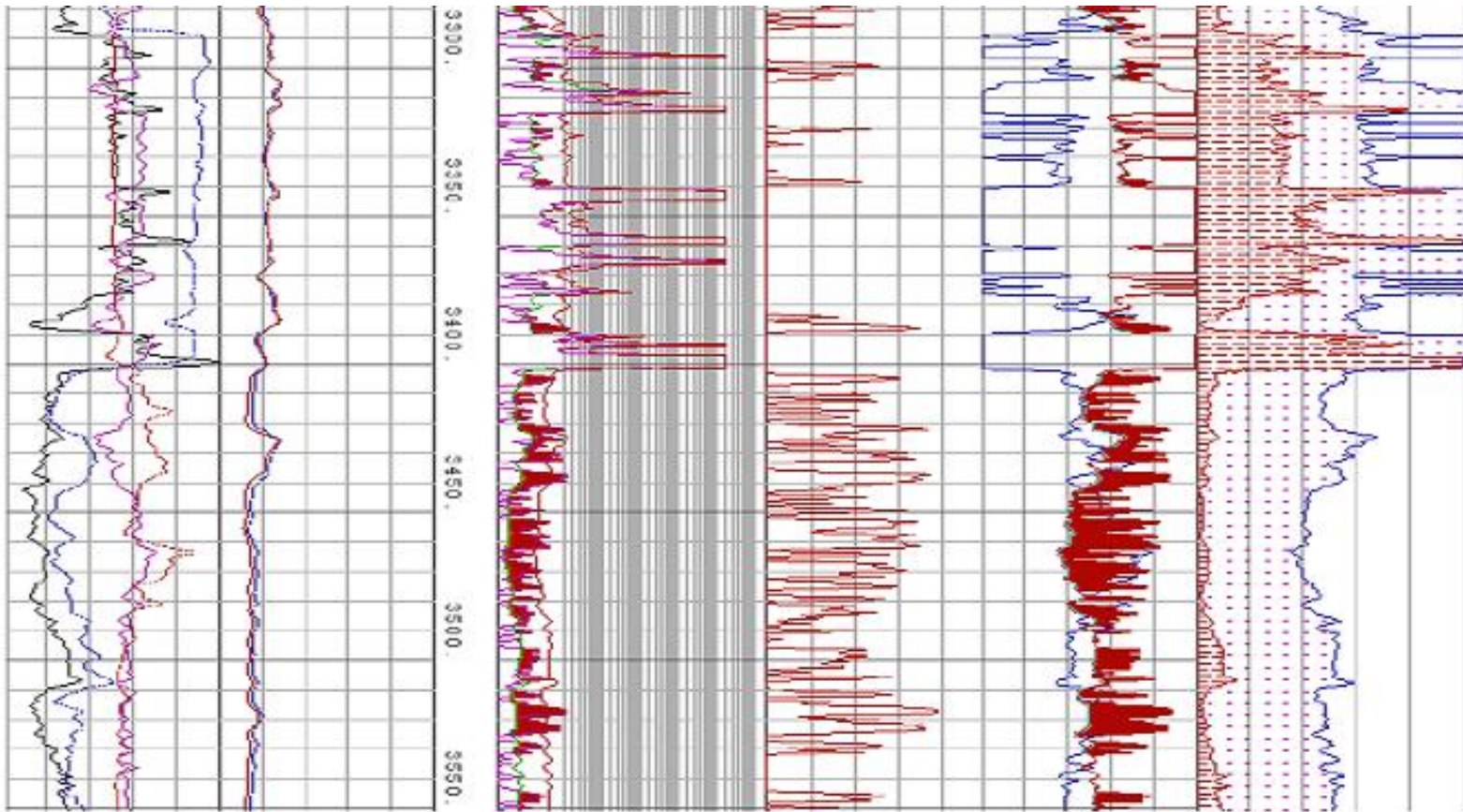
-----  
 CUM THRU LPD OIL/BBLS OIL CUM SINCE DATE CUM THRU LPD CSGHD GAS/MCF CASINGHEAD CUM SINCE DATE  
 552166 FPDAT 1,134,281 FPDAT

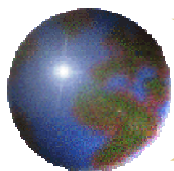
100% match





*We Found Low Resistivity Pay in Fort Bend October 2001*





*Our 2001 Well Log Analysis was Proved, 200 Feet Thick Low Resistivity Pay, Producing Millions MCF Gas Per Day*

**Reserve Volume & Production Value By Single Well Well Forecast Report**

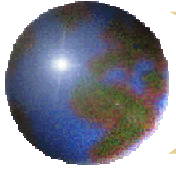
Date: October 3, 2001

State: Texas

County: Fort Bend

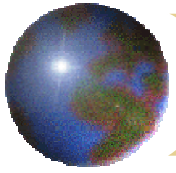
NO	DEPT(ft)	THCK(ft)	Ethck(ft)	POR(%)	SO(%)	GRV(MCF)	PRV(MCF)	RESULT
1	3180-3225	45	35	35	30	638,556.24	319,278.12	water
2	3270-3390	120	90	35	35	1,915,668.72	957,834.36	water
3	3400-3630	230	200	35	65	7,905,934.40	3,952,967.20	gas/water
4	3850-3860	10	9	25	65	304,943.18	152,471.59	gas/water
5	3960-3970	10	9	45	60	506,674.83	253,337.41	gas/water
6	4450-4465	15	14	45	75	1,231,501.32	615,750.66	? gas/water
7	4810-4845	35	32	22	40	782,878.64	391,439.32	water
8	4895-4920	25	22	21	50	682,342.95	341,171.48	water
9	5010-5100	90	80	25	30	1,772,319.36	886,159.68	water
10	5240-5280	40	34	21	20	446,624.48	223,312.24	water
11	5290-5330	40	35	22	30	722,480.77	361,240.39	water
12	5335-5370	35	32	20	10	200,167.83	100,083.92	water
13	5380-5390	10	9	23	30	194,225.35	97,112.68	water
14	5740-5750	10	9	6	10	16,889.16	8,444.58	gas
15	7295-7310	15	13	15	10	74,541.67	37,270.83	gas
16	7430-7435	5	4.5	10	10	17,983.83	8,991.91	gas
Total:		735	627.5			17,413,732.74	8,387,588.25	





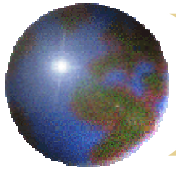
## *Low Resistivity Pay North of Victoria*

- \*\*\* have leased \*\*\* oil field (500 acres) exploring the Hugh Potential Reserves
- \*\*\* oil filed were developed in 1950's. Targeted Formation was Wilcox formation. Total Production was 12 million BBL. The targeted depth is 7800 feet.
- Currently, \*\*\* company drilled a very expensive well (\$1.7 million/well) to find a low resistivity pay based on drill core.
- This zone production information: 34 MMCFG, 103,092 BBL
- In this oil field, there are many old oil wells, using our technique, they do not need drill expensive new well, just use our technique to find the low resistivity pay.



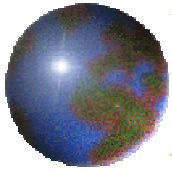
## *An Golden Investment Opportunity*

- Significant hydrocarbon accumulations are “hidden” in low resistivity sands
- With LogDigi technology, the investment is low risk with high return
  - Technique requirements:
    - Existing well-logging data
    - Discover previously unknown oil deposit in the same well by perforation



## *Technical Aspects*

- Existing limited logs analysis with our technique
  - Data requirements:
    - GR or SP (prefer to GR)
    - $R_t$  and  $R_{xo}$  (only 2 resistivities is enough)
    - DEN, AC or CNL (not necessary)
  - LogDigi equations
- Archie equation does not work in the low resistivity pay
- Dual water models do not work with limited logs

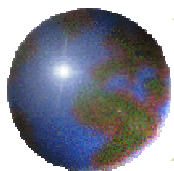


# Technical Aspects

(Cont'd)

- Logs analysis from drilling a new well with our technique
  - Data requirements is the same as existing log data
  - LogDigi equations
- Low resistivity gas zones are still bypassed by using common log analysis with using sample analysis of petrophysical properties deduced from cuttings, sidewall cores, or conventional cores.

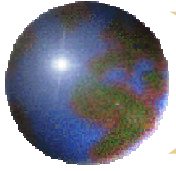
	Using full suites of logs/Common methods with sample analysis	Using limited logs/LogDigi
Low resistivity Oil/GAS	works	Works well
Low resistivity GAS	low resistivity gas zone is bypassed	Works well



# Comparisons

Common Methods	Our Method
Fairly complex calculations <sup>1,2,7</sup>	Easy calculations
Time weighs expensively <sup>1,2,7</sup>	Efficiency
Logs from a drilling new well are analyzed <sup>1</sup>	Logs from an existing well are analyzed <sup>4,5</sup>
Model-dependent formation evaluation <sup>1</sup>	Application in any formation evaluation <sup>4</sup>
Sample analysis of petrophysical properties deduced from cuttings, sidewall cores, or conventional cores. <sup>2</sup>	No necessary <sup>4</sup>
Accuracy is low in the low resistivity gas pay <sup>1,7</sup>	High accuracy over 90%, especially in extremely low resistivity <sup>4,5</sup>
High cost: over one million dollars/well <sup>3</sup>	Low cost: less than 100,000 dollars/well <sup>6</sup>
Low return, the optimal case 9.28:1 <sup>3</sup>	High return, at least 50:1 <sup>8</sup>

Reference 1. Productive low resistivity well logs of the offshore gulf of Mexico. 2. Worldwide examples of low resistivity pay. 3. South \*\*\*\* cost analysis. 4. Bureau of economic geology. 5. TOTAL evaluation. 6. Torch Energy. 7. Plio-Pleistocene sand, offshore gulf of Mexico. 8. ForBent production report



## *Conclusions*

- ✦ Developing low resistivity pay with existing old log data makes our technique unique.
- ✦ Accuracy, economy and high return are the keys of our technique.
- ✦ Our investor will also focus on them, right?