HR Vertilog

Magnetic Flux Leakage Inspection

Advanced Analysis

BAKER HUGHES

Company	Inergy Midstream
Well	30
Field	US Salt Storage
County	Schuyler
State	New York
Location:	

Section N/A	Township Reading	Range N/A

Date	Dec. 7, 2011
Service Order	618955
Recorded by	Matthew J. Wood
Witnessed by	Mr.Barry Moon
API Serial No.	31-097-61188-00

Permanent Datum:	N/A	Elevation: 0.000 ft.		Depth	2538.000
Log Measured From:	M.G.	2.000 ft. above Perm. Datum		Btm. Log Interval	2470.000
Drilling Measured From:	N/A	0.000 ft. above Perm. Datum		Top Log Interval	-3.000
				Fluid Type	Gas

Casing Data

Size	Weight	Grade	From	To	Length
7 inch	23.0 lb/ft	J55 (HR Std)	0	2500	2500.0

Equipment Data

Tool	7 to 9-5/8 Inch HRVRT 96 FL + 96 DIS Tool
Magnetizer	7 to 9-5/8 Inch HRVRT 96 FL + 96 DIS Tool
Telemetery	MUX-DB
Software Version	5.1.0.0

Calibration Data

Calibration File Name	4997-7-001-PA10339351-QA10339353.CAL
Date of Calibration	05/24/2011 15:35
Calibration Identifier	127844AB-B592-4EA0-8E43-E3DB6FDD2B79
Tool Number	4997-00
Calibrator Number	4997-7-001
Calibrator Size	(7 In - 178 mm)
Calibration Source File	20110516_134533_MEM.MVL
Calibration Software Rev	Microvision 32-bit 4.3.7.0
Comment	Microline Calibration after RMA425

In making interpretations of logs our employees will give customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Remarks

Thank you for choosing Baker Hughes Wireline Systems.
The crew on your location: S.McCourt, M.Marsh.
The Jcgr size ran was 5.96" o.d. It was ran to a depth of 2470'.
There was also a Segmented Bond Log ran. The well was found to be cemented to surface.
N/A = Unknown or unavailable at the time of logging.

Interpretation

18.65 ft. joint connection appears to be a "Girth Weld"
19.43 ft Hardware – Top of unknown external CSG
2446.39 ft Hardware – Bottom of Unknown Sized External CSG

Joint Interpretation Summary

Joint	From	To	Length	Class	Max Depth	Position	ID/OD
1	10.89	18.65	7.76	Class 1	-	-	-
2	18.65	40.40	21.75	Class 2	21.0%	19.45	OD
3	40.40	72.54	32.14	Class 1	-	-	-
4	72.54	105.57	33.03	Class 1	-	-	-
5	105.57	137.32	31.75	Class 1	-	-	-
6	137.32	169.22	31.90	Class 1	-	-	-
7	169.22	190.37	21.15	Class 1	-	-	-
8	190.37	212.22	21.85	Class 1	-	-	-
9	212.22	233.68	21.46	Class 1	-	-	-
10	233.68	254.85	21.17	Class 1	-	-	-
11	254.85	276.20	21.35	Class 1	-	-	-
12	276.20	297.79	21.59	Class 1	-	-	-
13	297.79	319.20	21.41	Class 1	-	-	-
14	319.20	340.45	21.25	Class 1	-	-	-
15	340.45	361.34	20.89	Class 1	-	-	-
16	361.34	383.20	21.86	Class 1	-	-	-
17	383.20	404.35	21.15	Class 1	-	-	-
18	404.35	425.27	20.92	Class 2	22.0%	421.14	ID
19	425.27	446.66	21.39	Class 1	-	-	-
20	446.66	468.72	22.06	Class 2	26.0%	453.19	ID
21	468.72	490.01	21.29	Class 1	-	-	-
22	490.01	510.81	20.80	Class 1	-	-	-
23	510.81	532.48	21.67	Class 2	21.0%	516.29	ID
24	532.48	553.98	21.50	Class 1	-	-	-
25	553.98	575.62	21.64	Class 1	-	-	-
26	575.62	596.97	21.35	Class 1	-	-	-
27	596.97	618.55	21.58	Class 1	-	-	-
28	618.55	640.10	21.55	Class 1	-	-	-
29	640.10	661.77	21.67	Class 1	-	-	-
30	661.77	682.82	21.05	Class 1	-	-	-
31	682.82	704.34	21.52	Class 1	-	-	-
32	704.34	725.90	21.56	Class 1	-	-	-
33	725.90	747.80	21.90	Class 1	-	-	-
34	747.80	769.21	21.41	Class 1	-	-	-
35	769.21	790.85	21.64	Class 1	-	-	-
36	790.85	812.02	21.17	Class 1	-	-	-
37	812.02	833.67	21.65	Class 2	20.0%	815.87	OD
38	833.67	855.28	21.61	Class 1	-	-	-
39	855.28	876.81	21.53	Class 1	-	-	-
40	876.81	897.40	20.59	Class 1	-	-	-
41	897.40	918.96	21.56	Class 1	-	-	-
42	918.96	940.62	21.66	Class 1	-	-	-
43	940.62	961.69	21.07	Class 1	-	-	-
44	961.69	983.22	21.53	Class 1	-	-	-
45	983.22	1004.80	21.58	Class 1	-	-	-
46	1004.80	1026.08	21.28	Class 1	-	-	-
47	1026.08	1047.50	21.42	Class 2	25.0%	1034.53	ID
48	1047.50	1069.07	21.57	Class 2	24.0%	1053.01	OD
49	1069.07	1090.80	21.73	Class 1	-	-	-
50	1090.80	1111.87	21.07	Class 1	-	-	-
51	1111.87	1133.15	21.28	Class 1	-	-	-
52	1133.15	1154.85	21.70	Class 2	22.0%	1148.25	OD
53	1154.85	1175.85	21.00	Class 1	-	-	-
54	1175.85	1197.50	21.65	Class 1	-	-	-
55	1197.50	1218.90	21.40	Class 2	25.0%	1216.49	ID
56	1218.90	1240.19	21.29	Class 1	-	-	-
57	1240.19	1262.02	21.83	Class 1	-	-	-
58	1262.02	1283.67	21.65	Class 1	-	-	-
59	1283.67	1304.96	21.29	Class 2	22.0%	1300.18	ID
60	1304.96	1326.21	21.25	Class 2	20.0%	1305.98	OD
61	1326.21	1347.10	20.89	Class 1	-	-	-
62	1347.10	1368.63	21.53	Class 1	-	-	-
63	1368.63	1388.55	19.92	Class 2	26.0%	1375.04	ID
64	1388.55	1409.62	21.07	Class 2	23.0%	1390.11	ID
65	1409.62	1430.99	21.37	Class 2	25.0%	1421.83	OD
66	1430.99	1452.40	21.41	Class 1	-	-	-
67	1452.40	1473.23	20.83	Class 1	-	-	-
68	1473.23	1495.25	22.02	Class 2	20.0%	1476.26	OD
69	1495.25	1516.67	21.42	Class 2	23.0%	1514.50	ID
70	1516.67	1538.17	21.50	Class 2	20.0%	1526.17	ID
71	1538.17	1559.20	21.03	Class 2	21.0%	1541.57	ID
72	1559.20	1580.57	21.37	Class 1	-	-	-
73	1580.57	1601.85	21.28	Class 2	26.0%	1593.90	ID
74	1601.85	1623.20	21.35	Class 1	-	-	-
75	1623.20	1645.12	21.92	Class 2	24.0%	1626.30	ID
76	1645.12	1666.33	21.21	Class 2	22.0%	1665.28	ID
77	1666.33	1687.61	21.28	Class 2	22.0%	1684.98	ID
78	1687.61	1708.72	21.11	Class 1	-	-	-
79	1708.72	1730.16	21.44	Class 2	20.0%	1712.99	ID
80	1730.16	1751.87	21.71	Class 1	-	-	-
81	1751.87	1773.86	21.99	Class 2	21.0%	1760.06	ID
82	1773.86	1794.03	20.17	Class 2	26.0%	1785.58	ID
83	1794.03	1815.28	21.25	Class 2	21.0%	1810.95	ID
84	1815.28	1836.25	20.97	Class 2	26.0%	1820.34	ID
85	1836.25	1857.85	21.60	Class 2	20.0%	1854.46	ID
86	1857.85	1879.17	21.32	Class 1	-	-	-
87	1879.17	1900.61	21.44	Class 2	24.0%	1894.45	ID
88	1900.61	1922.61	22.00	Class 1	-	-	-
89	1922.61	1944.10	21.49	Class 2	28.0%	1932.75	ID
90	1944.10	1964.07	19.97	Class 2	26.0%	1956.18	ID
91	1964.07	1985.25	21.18	Class 1	-	-	-
92	1985.25	2006.48	21.23	Class 1	-	-	-
93	2006.48	2026.85	20.37	Class 2	24.0%	2008.50	ID
94	2026.85	2047.14	20.29	Class 2	21.0%	2039.89	ID
95	2047.14	2068.24	21.10	Class 2	25.0%	2064.83	ID
96	2068.24	2089.75	21.51	Class 2	26.0%	2087.93	ID
97	2089.75	2110.07	20.32	Class 1	-	-	-
98	2110.07	2130.69	20.62	Class 1	-	-	-
99	2130.69	2152.15	21.46	Class 1	-	-	-
100	2152.15	2173.25	21.10	Class 1	-	-	-
101	2173.25	2192.15	18.90	Class 2	21.0%	2178.15	ID
102	2192.15	2213.54	21.39	Class 2	24.0%	2196.80	ID
103	2213.54	2234.87	21.33	Class 2	27.0%	2224.90	ID
104	2234.87	2255.90	21.03	Class 1	-	-	-
105	2255.90	2275.75	19.85	Class 1	-	-	-
106	2275.75	2295.16	19.41	Class 1	-	-	-
107	2295.16	2316.06	20.90	Class 1	-	-	-
108	2316.06	2337.04	20.98	Class 2	28.0%	2321.32	OD
109	2337.04	2357.90	20.86	Class 1	-	-	-
110	2357.90	2379.18	21.28	Class 2	23.0%	2373.31	OD
111	2379.18	2400.77	21.59	Class 2	22.0%	2385.93	ID
112	2400.77	2423.60	22.83	Class 2	24.0%	2405.23	ID
113	2423.60	2445.10	21.50	Class 1	-	-	-
114	2445.10	2461.09	15.99	Class 2	26.0%	2458.21	OD

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Files 20111207_08131A_PHR.MVL 20111207_081315_PHR.MVL

Main Log
5"/100'

Class 1	Class 2	Class 3	Class 4
0 – 20%	20 – 40%	40 – 60%	60 – 100%

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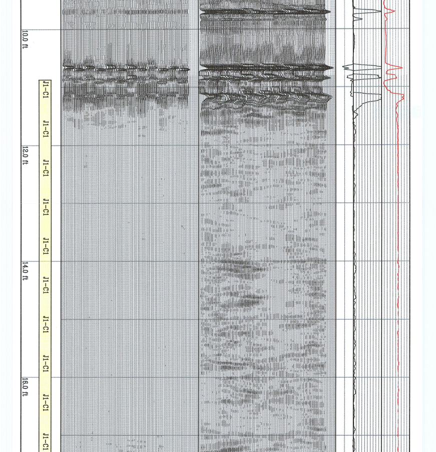
Expanded Scale – Top of Well

Class 1	Class 2	Class 3	Class 4
0 – 20%	20 – 40%	40 – 60%	60 – 100%



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