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B-909 BORING GEOPHYSICS FIELD LOG SUMMARY

SITE: NORTH ANNA COL
CLIENT: MACTEC
AUTHOR: R. STELLER

DATE: 8/30/06
JOB: 6410
PAGE 1 OF ~~2~~ RAS 8/30/06

CONTACT: STEVE CRISCENZO

PHONE: 919-949-1707

BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 3.7 0 TO ~~200'~~ 201.5; ____, ____ TO ____
BOREHOLE TOTAL DEPTH AS DRILLED: 201.5 RAS 8/30/06
CONDUCTOR CASING?: YES ✓ DEPTH TO BOTTOM OF CASING 80'; NO ____
DEPTH TO BEDROCK: ~80'
BOREHOLE FLUID: WATER ✓; FRESH WATER MUD ____; SALT WATER MUD ____;

LOGGING CREW: R. STELLER

LOG TYPE	FILE NAME	DEPTH RANGE	DATE	TIMES
ELOG TEST	B909ELOGTEST01	Ø	8/30/06	9:00 - 9:04
ELOG/GAMMA	B909ELOGUP01	200.0' - 35.25'	8/30/06	9:15 - 9:33
CALIPER TEST	B909CALTEST01	Ø	"	9:51 - 9:55
CALIPER/GAMMA	B909CALUP01	200.0' - 1.0'	"	10:05 - 10:28
CALIPER TEST	B909CALTEST02	Ø	"	10:31 - 10:36
ACOUSTIC TV	B909ALLUP01	200.0' - 2.0'	"	11:00 - 12:05
SUSPENSION PS.	B909_001 → _066.SEG	82.0' - 188.7'	"	12:30 - 13:05

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B-909 ELOG FIELD LOG

SITE: NORTH ANNA COL DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: _____ OFFICE PHONE: _____
CELL PHONE: _____
CONTACT: _____ OFFICE PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
DRILLER: _____ PHONE: _____
COMPANY: _____ PHONE: _____

GENERAL SITE CONDITIONS/LOCATION: _____

BOREHOLE DESIGNATION: B-909 LOCATION: _____

COUNTY: _____ RANGE: _____ TOWNSHIP: _____ SECTION: _____
BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 3.7 0 TO 200' ; ____, ____ TO ____
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ✓ DEPTH TO BOTTOM OF CASING ≈ 78' ; NO ____
DEPTH TO BEDROCK: NA DEPTH TO WATER TABLE: NA
BOREHOLE FLUID: WATER ✓ ; FRESH WATER MUD ____ ; SALT WATER MUD ____ ;
OTHER: _____
DEPTH TO BOREHOLE FLUID: NA TIME SINCE LAST CIRCULATION: NA

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: Fredericksburg, VA DEPARTURE TIME: 6:15
ARRIVED ON SITE: 7:45
STANDBY TIME: _____ CAUSE: _____
LOGGING STARTED: 9:15 LOGGING COMPLETED: 9:33

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SITE: NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 2 OF 2

WINCH: COMPROBE ____ SILVER ✓ OYO ____ OTHER ____
MICROLOGGER 5301 ✓ OTHER ____
ELOG PROBE 5490 ✓ OTHER ____

PROBE OFFSET	2.50M(8.20 FT)
CASING STICK-UP	- .75 +32.8 ft
DEPTH REF. OFFSET	40.25'

LOG NAME	START DEPTH	START TIME	END DEPTH	END TIME
B909 ELOG TEST 01	Ø	9:00	Ø	9:04
B909 ELOG UP 01	200.0'	9:15	35.25'	9:33

MAINTENANCE PERFORMED ON SITE: ____

EQUIPMENT PROBLEMS OR FAILURES: ____

SUGGESTIONS, ADDITIONS, CHANGES: ____

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B-909 CALIPER FIELD LOG

SITE: NORTH ANNA COL DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: _____ OFFICE PHONE: _____
CELL PHONE: _____
CONTACT: _____ OFFICE PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
DRILLER: _____ PHONE: _____
COMPANY: _____ PHONE: _____

GENERAL SITE CONDITIONS/LOCATION: _____

BOREHOLE DESIGNATION: B-909 LOCATION: _____

COUNTY: _____ RANGE: _____ TOWNSHIP: _____ SECTION: _____
BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 3.7" 0 TO 200' ; ____, ____ TO ____
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ✓ DEPTH TO BOTTOM OF CASING 78' ; NO ____
DEPTH TO BEDROCK: NA DEPTH TO WATER TABLE: NA
BOREHOLE FLUID: WATER ✓ ; FRESH WATER MUD ____ ; SALT WATER MUD ____ ;
OTHER: _____
DEPTH TO BOREHOLE FLUID: NA TIME SINCE LAST CIRCULATION: NA

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: Fredericksburg, VI DEPARTURE TIME: 6:15
ARRIVED ON SITE: 7:45
STANDBY TIME: _____ CAUSE: _____
LOGGING STARTED: 9:51 LOGGING COMPLETED: 10:30

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SITE:_NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT:_MACTEC JOB: 6410
AUTHOR:_R. STELLER PAGE 2 OF 2

WINCH: COMPROBE ✓ SILVER ____ OYO ____ OTHER ____
MICROLOGGER 5301 ✓ OTHER ____
CALIPER PROBE 5368 ✓ OTHER ____

PROBE OFFSET CASING STICK-UP DEPTH REF. OFFSET	12 IN MAX 2.08M(6.82 FT) ARMS - .75 6.07	24 IN MAX ARMS - ____

DEPTH ZERO ON EXIT = 6.10'

LOG NAME	START DEPTH	START TIME	END DEPTH	END TIME
B909CALTEST01	Ø	9:51	Ø	9:55
B909 CALUP01	200.0	10:05	1.0'	10:28
B909 CALTEST02	Ø	10:31	Ø	10:36

CALIBRATION PLATE S/N 201

	FILE NAME	AS BUILT 1.968 IN (50 MM)	3.937 IN (100 MM)	8.000 IN 203.2 MM	RVC COUPLING
AS MEAS.	B909 CALTEST 01	1.98	3.93	7.99	4.507 IN
AS MEAS.	B909 CALTEST 02	2.02	3.97	8.04	4.52
AS MEAS.					4.55
AS MEAS.					
AS MEAS.					
AS MEAS.					

MAINTENANCE PERFORMED ON SITE: ____

EQUIPMENT PROBLEMS OR FAILURES: ____

SUGGESTIONS, ADDITIONS, CHANGES: ____

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B-909 TELEVIEWER FIELD LOG

SITE: NORTH ANNA COL DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: _____ _OFFICE_ PHONE: _____
CELL PHONE: _____
CONTACT: _____ _OFFICE_ PHONE: _____
_____ PHONE: _____
CONTACT: _____ _____ PHONE: _____
_____ PHONE: _____
CONTACT: _____ _____ PHONE: _____
_____ PHONE: _____
DRILLER: _____ _____ PHONE: _____
COMPANY: _____ _____ PHONE: _____

DIRECTIONS TO SITE: _____

GENERAL SITE CONDITIONS/LOCATION: _____

BOREHOLE DESIGNATION: B-909 LOCATION: _____

COUNTY: _____ RANGE: _____ TOWNSHIP: _____ SECTION: _____
BOREHOLE CONSTRUCTION: CASED_____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 3.7" 0 TO 200' ; _____, _____ TO _____
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ✓ DEPTH TO BOTTOM OF CASING 78' ; NO____
DEPTH TO BEDROCK: NA DEPTH TO WATER TABLE: 160'
BOREHOLE FLUID: WATER ✓ ; FRESH WATER MUD_____; SALT WATER MUD _____;
OTHER: _____
DEPTH TO BOREHOLE FLUID: ~~NA~~ 160' TIME SINCE LAST CIRCULATION: NA

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SITE: NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 2 OF 2

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: FREDERICKSBURG, VA DEPARTURE TIME: 6:15
ARRIVED ON SITE: 7:45
STANDBY TIME: CAUSE:
LOGGING STARTED: 11:00 LOGGING COMPLETED: 12:05

WINCH: COMPROBE ____ SILVER ✓ OYO ____ OTHER ____
MICROLOGGER 5301 ✓ OTHER ____
TELEVIEWER OPTICAL #5117 ____ ACOUSTIC #5174 ✓ OTHER ____

PROBE TILT TEST 88.9° BRUNTON TILT 89°
PROBE AZIMUTH TEST 337.3° BRUNTON AZIMUTH 336°

PROBE OFFSET	OPTICAL 1.88M(6.17FT)	ACOUSTIC 1.44M(4.72FT)
CASING STICK-UP	-	- .75
DEPTH REF. OFFSET		3.97'

DEPTH ZERO ON EXIT = 4.05'

LOG NAME	START DEPTH	START TIME	END DEPTH	END TIME
B909 AM UP 01	200.0'	11:00	2.0'	12:05

MAINTENANCE PERFORMED ON SITE:

EQUIPMENT PROBLEMS OR FAILURES:

SUGGESTIONS, ADDITIONS, CHANGES:

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P-S SUSPENSION VELOCITY FIELD LOG

SITE: NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 4

CONTACT: STEVE CRISCENZO OFFICE PHONE: 919-831-8047
CELL PHONE: 919-949-1707
CONTACT: OFFICE PHONE:
PHONE:
CONTACT: PHONE:
PHONE:
CONTACT: PHONE:
PHONE:
DRILLER: PHONE:
COMPANY: PHONE:

DIRECTIONS TO SITE:

GENERAL SITE CONDITIONS/LOCATION:

EA#:
BOREHOLE DESIGNATION: B-909 LOCATION:

COUNTY: RANGE: TOWNSHIP: SECTION:
BOREHOLE CONSTRUCTION: CASED UNCASED ✓
DIAMETERS AND DEPTH RANGES: 3.7" 0 TO 200' ; , TO
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ✓ DEPTH TO BOTTOM OF CASING 60' ; NO
DEPTH TO BEDROCK: NA DEPTH TO WATER TABLE: 16'
BOREHOLE FLUID: WATER ✓ ; FRESH WATER MUD ; SALT WATER MUD ;
OTHER:
DEPTH TO BOREHOLE FLUID: 16' TIME SINCE LAST CIRCULATION: NA

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SITE: NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 2 OF 4

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: FREDERICKSBURG, VA DEPARTURE TIME: 6:15
ARRIVED ON SITE: 7:45
STANDBY TIME: CAUSE:
LOGGING STARTED: 12:30 LOGGING COMPLETED: 13:05
STANDBY TIME: CAUSE:
LOGGING STARTED: ~~12:30~~ RAS LOGGING COMPLETED:
DEMOBILIZED TO: ARRIVAL TIME:
ADDITIONAL DEMOB TIME: REASON:

BATTERIES CHANGED BEFORE LOGGING: YES____; NO ✓; STORED WITH NEW____

WINCH	COMPROBE ☐		GREY ☐	OYO ☐	RG ☐	OTH ☑		
INSTRUMENT	OYO 12004 ☐	15014 ☐	19029 ☐		RG 160023 ☑	160024 ☐		
RECEIVER S/N	12008 ☐	20042 ☐	26066 ☐	11001 ☐	23053 ☐	30086 ☑		

MAINTENANCE PERFORMED ON SITE:

EQUIPMENT PROBLEMS OR FAILURES:

SUGGESTIONS, ADDITIONS, CHANGES:
RAS 8/30/06

COMMENTS: DEPTH ZERO = ~~2.0m~~ 2.5m 23m = ~~1.77m~~ 2.27m.

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GEOVISION SUSPENSION LOGGING FIELD NOTES

SITE: NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 3 OF 4

DEPTH METERS	DEPTH FEET	UNFILTERED FILE NO.	FILTERED FILE NO.	COMMENTS CASING, WATER, ROCK, ETC
20.5	67.26			
21.0	68.90			
21.5	70.54			
22.0	72.18			
22.5	73.82			
23.0	75.46			
23.5	77.10			
24.0	78.74			
24.5	80.38			8" PVC CASE TO 80'
25.0	82.02	1		WITH STEEL CASING SHOE
25.5	83.66	2		
26.0	85.30	3		
26.5	86.94	4		
27.0	88.58	5		
27.5	90.22	6		
28.0	91.86	7		
28.5	93.50	8		
29.0	95.14	9		
29.5	96.78	10		
30.0	98.43	11		
30.5	100.07	12		
31.0	101.71	13		
31.5	103.35	14		
32.0	104.99	15		
32.5	106.63	16		
33.0	108.27	17		
33.5	109.91	18		
34.0	111.55	19		
34.5	113.19	20		
35.0	114.83	21		
35.5	116.47	22		
36.0	118.11	23		
36.5	119.75	24		
37.0	121.39	25		
37.5	123.03	26		
38.0	124.67	27		
38.5	126.31	28		
39.0	127.95	29		
39.5	129.59	30		
40.0	131.23	31		

GEOVISION SUSPENSION LOGGING FIELD NOTES

SITE: NORTH ANNA COL B-909 DATE: 8/30/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 4 OF 4

DEPTH METERS	DEPTH FEET	UNFILTERED FILE NO.	FILTERED FILE NO.	COMMENTS CASING, WATER, ROCK, ETC
40.5	132.87	32		
41.0	134.51	33		
41.5	136.15	34		
42.0	137.80	35		
42.5	139.44	36		
43.0	141.08	37		
43.5	142.72	38		
44.0	144.36	39		
44.5	146.00	40		
45.0	147.64	41		
45.5	149.28	42		
46.0	150.92	43		
46.5	152.56	44		
47.0	154.20	45		
47.5	155.84	46		
48.0	157.48	47		
48.5	159.12	48		
49.0	160.76	49		
49.5	162.40	50		
50.0	164.04	51		
50.5	165.68	52		
51.0	167.32	53		
51.5	168.96	54		
52.0	170.60	55		
52.5	172.24	56		
53.0	173.88	57		
53.5	175.52	58		
54.0	177.17	59		
54.5	178.81	60		
55.0	180.45	61		
55.5	182.09	62		
56.0	183.73	63		
56.5	185.37	64		
57.0	187.01	65		
57.5	188.65	66		BOTTOM MEASUREMENT?
58.0	190.29			HIT BOTTOM @ 57.75M. ⇒
58.5	191.93			PROBE TIP @ 201.6'
59.0	193.57			
59.5	195.21			
60.0	196.85			

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B-909 BORING GEOPHYSICS FIELD LOG SUMMARY

SITE: NORTH ANNA COL DATE: 9/12/06
CLIENT: MACTEC JOB:
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: STEVE CRISCENZO PHONE: 919-949-1707

BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 5" 0 TO ≈ 40' ; 3.7", ≈ 40' TO 200'
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ____ DEPTH TO BOTTOM OF CASING ____; NO ✓
DEPTH TO BEDROCK: ≈ 40'
BOREHOLE FLUID: WATER ____; FRESH WATER MUD ✓; SALT WATER MUD ____;

LOGGING CREW: R. STELLER

LOG TYPE	FILE NAME	DEPTH RANGE	DATE	TIMES
CALIPER TEST	B909CALTEST03	Ø	9/12/06	9:35 – 9:40
CALIPER/GAMMA	B909CALUP02	110.0' – Ø	"	9:54 – 10:08
CALIPER TEST	B909CALTEST04	Ø	"	10:15 – 10:20
SUSPENSION PS	B909_301 → 360.DAT	1.6' – 98.4'	"	10:35 – 11:31
ACOUSTIC TV	B909ATVUP	100.0' – 3.14'	"	12:00 – 12:28
ELOG TEST	B909ELOGTEST02	Ø	"	9:07 – 9:10
ELOG/GAMMA	B909ELOGUP02	120.0' – 25.2'	"	12:41 – 12:54

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B-909 CALIPER FIELD LOG

SITE: NORTH ANNA COL DATE: 9/12/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: _____ OFFICE PHONE: _____
CELL PHONE: _____
CONTACT: _____ OFFICE PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
DRILLER: _____ PHONE: _____
COMPANY: _____ PHONE: _____

GENERAL SITE CONDITIONS/LOCATION: _____

BOREHOLE DESIGNATION: B-909 LOCATION: _____

COUNTY: _____ RANGE: _____ TOWNSHIP: _____ SECTION: _____
BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 5" 0 TO ≈40' ; 3.7", ≈40 TO 200'
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ____ DEPTH TO BOTTOM OF CASING ____; NO ✓
DEPTH TO BEDROCK: ≈40' DEPTH TO WATER TABLE: NA
BOREHOLE FLUID: WATER ____; FRESH WATER MUD ✓; SALT WATER MUD ____;
OTHER: _____
DEPTH TO BOREHOLE FLUID: Ø TIME SINCE LAST CIRCULATION: ½ HR

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: Fredericksburg, VA DEPARTURE TIME: 6:30
ARRIVED ON SITE: 7:45
STANDBY TIME: – CAUSE: _____
LOGGING STARTED: 9:35 LOGGING COMPLETED: 10:20

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SITE:_NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT:_MACTEC JOB:_6410
AUTHOR:_R. STELLER PAGE 2 OF 2

WINCH: COMPROBE_____ SILVER ✓ OYO_____ OTHER_____
MICROLOGGER 5301 ✓ OTHER_____
CALIPER PROBE 5368 ✓ OTHER_____

PROBE OFFSET CASING STICK-UP DEPTH REF. OFFSET	12 IN MAX 2.08M(6.82 FT) ARMS - 1.58' 5.24'	24 IN MAX ARMS - _____

ZERO ON FOOT = 5.20'

LOG NAME	START DEPTH	START TIME	END DEPTH	END TIME
B909CALTEST03	Ø	9:35	Ø	9:40
B909 CALLIP 02	1100.0	9:54	Ø	10:08
B909 CALTEST04	Ø	10:15	Ø	10:20

CALIBRATION PLATE S/N 201

	FILE NAME	AS BUILT 1.968 IN (50 MM)	3.937 IN (100 MM)	8.000 IN 203.2 MM
AS MEAS.	B909CALTEST03	2.01	3.97	7.99
AS MEAS.	B909 CALTEST04	2.05	3.94	8.00
AS MEAS.				
AS MEAS.				
AS MEAS.				
AS MEAS.				

PVC COUPLING
4.57 IN.
4.55
4.55

MAINTENANCE PERFORMED ON SITE:_____

EQUIPMENT PROBLEMS OR FAILURES:_____

SUGGESTIONS, ADDITIONS, CHANGES:_____

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P-S SUSPENSION VELOCITY FIELD LOG

SITE: NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 4

CONTACT: STEVE CRISCENZO OFFICE PHONE: 919-831-8047
CELL PHONE: 919-949-1707
CONTACT: OFFICE PHONE:
PHONE:
CONTACT: PHONE:
PHONE:
CONTACT: PHONE:
PHONE:
DRILLER: PHONE:
COMPANY: PHONE:

DIRECTIONS TO SITE:

GENERAL SITE CONDITIONS/LOCATION:

EA#:
BOREHOLE DESIGNATION: B-909 LOCATION:

COUNTY: RANGE: TOWNSHIP: SECTION:
BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 5" 0 TO ≈40' ; 3.7", ≈40' TO 200'
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ____ DEPTH TO BOTTOM OF CASING ____; NO ✓
DEPTH TO BEDROCK: ≈40' DEPTH TO WATER TABLE: ____
BOREHOLE FLUID: WATER ____; FRESH WATER MUD ✓; SALT WATER MUD ____;
OTHER:
DEPTH TO BOREHOLE FLUID: Ø TIME SINCE LAST CIRCULATION: 1 HR

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SITE: NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 2 OF 4

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE:
MOBILIZED FROM: FREDERICKSBURG, VA DEPARTURE TIME: 6:30
ARRIVED ON SITE: 7:45
STANDBY TIME: CAUSE:
LOGGING STARTED: 10:35 LOGGING COMPLETED: 11:31
STANDBY TIME: CAUSE:
LOGGING STARTED: LOGGING COMPLETED:
DEMOBILIZED TO: ARRIVAL TIME:
ADDITIONAL DEMOB TIME: REASON:

BATTERIES CHANGED BEFORE LOGGING: YES ✓; NO ____; STORED WITH NEW ____

WINCH	COMPROBE ☐		GREY ☐	OYO ☐	RG ☐		OTH ☑	
INSTRUMENT	OYO 12004 ☐	15014 ☐	19029 ☐		RG 160023 ☑		160024 ☐	
RECEIVER S/N	12008 ☐	20042 ☐	26066 ☐	11001 ☐	23053 ☐		30086 ☑	

MAINTENANCE PERFORMED ON SITE:

EQUIPMENT PROBLEMS OR FAILURES:

SUGGESTIONS, ADDITIONS, CHANGES:

COMMENTS: DEPTH ZERO = 2.5m - .48m = 2.02 m
EXACT DEPTH ZERO = 2.03m

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SITE:_NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT:_MACTEC JOB:_6410
AUTHOR:_R. STELLER PAGE 3 OF 4

DEPTH METERS	DEPTH FEET	UNFILTERED FILE NO.	FILTERED FILE NO.	COMMENTS CASING, WATER, ROCK, ETC
0.5	1.64	301		
1.0	3.28	302		
1.5	4.92	303		
2.0	6.56	304		
2.5	8.20	305		
3.0	9.84	306		
3.5	11.48	307		
4.0	13.12	308		
4.5	14.76	309		
5.0	16.40	310		
5.5	18.04	311		
6.0	19.69	312		
6.5	21.33	313		
7.0	22.97	314		
7.5	24.61	315		
8.0	26.25	316		
8.5	27.89	317		
9.0	29.53	318		
9.5	31.17	319		
10.0	32.81	320		
10.5	34.45	321		
11.0	36.09	322		
11.5	37.73	323		
12.0	39.37	324		
12.5	41.01	325		
13.0	42.65	326		
13.5	44.29	327		
14.0	45.93	328		
14.5	47.57	329		$V_s \approx 2200$ m/s
15.0	49.21	330		
15.5	50.85	331		
16.0	52.49	332		
16.5	54.13	333		
17.0	55.77	334		
17.5	57.41	335		
18.0	59.06	336		
18.5	60.70	337		
19.0	62.34	338		
19.5	63.98	339		
20.0	65.62	340		

SITE:_NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT:_MACTEC JOB:_6410
AUTHOR:_R. STELLER PAGE 4 OF 4

DEPTH METERS	DEPTH FEET	UNFILTERED FILE NO.	FILTERED FILE NO.	COMMENTS CASING, WATER, ROCK, ETC
20.5	67.26	341		
21.0	68.90	342		
21.5	70.54	343		
22.0	72.18	344		
22.5	73.82	345		
23.0	75.46	346		
23.5	77.10	347		
24.0	78.74	348		
24.5	80.38	349		
25.0	82.02	350		
25.5	83.66	351		
26.0	85.30	352		
26.5	86.94	353		
27.0	88.58	354		
27.5	90.22	355		
28.0	91.86	356		
28.5	93.50	357		
29.0	95.14	358		
29.5	96.78	359		
30.0	98.43	360		
30.5	100.07			
31.0	101.71			
31.5	103.35			
32.0	104.99			
32.5	106.63			
33.0	108.27			
33.5	109.91			
34.0	111.55			
34.5	113.19			
35.0	114.83			
35.5	116.47			
36.0	118.11			
36.5	119.75			
37.0	121.39			
37.5	123.03			
38.0	124.67			
38.5	126.31			
39.0	127.95			
39.5	129.59			
40.0	131.23			

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B-909 TELEVIEWER FIELD LOG

SITE: NORTH ANNA COL DATE: 9/12/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: _____ OFFICE PHONE: _____
CELL PHONE: _____
CONTACT: _____ OFFICE PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
DRILLER: _____ PHONE: _____
COMPANY: _____ PHONE: _____

DIRECTIONS TO SITE: _____

GENERAL SITE CONDITIONS/LOCATION: _____

BOREHOLE DESIGNATION: B-909 LOCATION: _____

COUNTY: _____ RANGE: _____ TOWNSHIP: _____ SECTION: _____
BOREHOLE CONSTRUCTION: CASED ____ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 5" 0 TO ≈40' ; 3.7", ≈40 TO 200'
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ____ DEPTH TO BOTTOM OF CASING ____; NO ✓
DEPTH TO BEDROCK: ≈40 DEPTH TO WATER TABLE: _____
BOREHOLE FLUID: WATER ____; FRESH WATER MUD ✓; SALT WATER MUD ____;
OTHER: _____
DEPTH TO BOREHOLE FLUID: Ø TIME SINCE LAST CIRCULATION: 1.5 HR.

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SITE: NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 2 OF 2

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: FREDERICKSBURG, VA DEPARTURE TIME: 6:30
ARRIVED ON SITE: 7:45
STANDBY TIME: CAUSE:
LOGGING STARTED: 12:00 LOGGING COMPLETED: 12:28

WINCH: COMPROBE ___ SILVER ✓ OYO ___ OTHER ___
MICROLOGGER 5301 ✓ OTHER ___
TELEVIEWER OPTICAL #5117 ___ ACOUSTIC #5174 ✓ OTHER ___

PROBE TILT TEST 88.1° BRUNTON TILT 88.5° FREE HANGING @ 0.5°.
PROBE AZIMUTH TEST 56.0° BRUNTON AZIMUTH 59.0°

PROBE OFFSET	OPTICAL 1.88M(6.17FT)	ACOUSTIC 1.44M(4.72FT)
CASING STICK-UP	-	- 1.58'
DEPTH REF. OFFSET		3.14'

EXIT DEPTH REFERENCE = 3.14'

LOG NAME	START DEPTH	START TIME	END DEPTH	END TIME
B909 AmLP 02	100.0	12:08	3.14'	12:28

MAINTENANCE PERFORMED ON SITE: HARD ROCK @ 91.3'

EQUIPMENT PROBLEMS OR FAILURES:

SUGGESTIONS, ADDITIONS, CHANGES: ROCK GAIN @ 7 DB., SOIL GAIN @ 22 DB.

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B-909 ELOG FIELD LOG

SITE: NORTH ANNA COL DATE: 9/12/06
CLIENT: MACTEC JOB: 6410
AUTHOR: R. STELLER PAGE 1 OF 2

CONTACT: _____ OFFICE PHONE: _____
CELL PHONE: _____
CONTACT: _____ OFFICE PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
CONTACT: _____ PHONE: _____
PHONE: _____
DRILLER: _____ PHONE: _____
COMPANY: _____ PHONE: _____

GENERAL SITE CONDITIONS/LOCATION: _____

BOREHOLE DESIGNATION: B-909 LOCATION: _____

COUNTY: _____ RANGE: _____ TOWNSHIP: _____ SECTION: _____
BOREHOLE CONSTRUCTION: CASED ___ UNCASED ✓
DIAMETERS AND DEPTH RANGES: 5" 0 TO ≈40' ; 3.7", ≈40 TO 200'
BOREHOLE TOTAL DEPTH AS DRILLED: 200'
CONDUCTOR CASING?: YES ___ DEPTH TO BOTTOM OF CASING ___ ; NO ✓
DEPTH TO BEDROCK: ≈40' DEPTH TO WATER TABLE: _____
BOREHOLE FLUID: WATER ___ ; FRESH WATER MUD ✓ ; SALT WATER MUD ___ ;
OTHER: _____
DEPTH TO BOREHOLE FLUID: Ø TIME SINCE LAST CIRCULATION: 1HR

LOGGING CREW: R. STELLER
VEHICLE(S) USED AND MILEAGE: RENTAL
MOBILIZED FROM: Fredericksburg, VA DEPARTURE TIME: 6:30
ARRIVED ON SITE: 7:45
STANDBY TIME: _____ CAUSE: _____
LOGGING STARTED: 9:07 LOGGING COMPLETED: 12:54

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SITE:_NORTH ANNA COL B-909 DATE: 9/12/06
CLIENT:_MACTEC JOB:_6410
AUTHOR:_R. STELLER PAGE 2 OF 2

WINCH: COMPROBE____ SILVER ✓ OYO____ OTHER____
MICROLOGGER 5301 ✓ OTHER____
ELOG PROBE 5490 ✓ OTHER____

PROBE OFFSET	2.50M(8.20 FT)	
CASING STICK-UP	-1.58'	+32.80
DEPTH REF. OFFSET	39.42'	
EXIT ZERO =	39.40'	

LOG NAME	START DEPTH	START TIME	END DEPTH	END TIME
B909ELOG TEST 02	Ø	9:07	Ø	9:10
B909ELOG UP 02	120.0'	12:41	25.2'	12:54

MAINTENANCE PERFORMED ON SITE:____

EQUIPMENT PROBLEMS OR FAILURES: LONG RESISTIVITY TEST @ 10 OHM-METER SCALE NOT READING CORRECTLY, FAILURE OF TEST BOX.

SUGGESTIONS, ADDITIONS, CHANGES:____

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