ATTACHMENT 4. COVER LETTER WITH ATTACHMENTS CONTAINING ALLD, LINE TIGHTNESS, AND CATHODIC PROTECTION TEST RECORDS AND AN EXPLANATION FOR THE SENSORS MALFUNCTIONS AT BLDG. 238

U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
1 U. S. Coast Guard Training Center
Yorktown, VA 23690-5000

Staff Symbol: e
Phone: (757)856-2208
Fax: (757)856-2255
Email: matthew.a.rymer@uscg.mil

5090
September 14, 2011

Mr. Michael Prescott, P. E.
5221 Burke Drive
Alexandria, VA 22309

Dear Sir:

During your Underground Storage Tank inspection (UST) of our site on 9 September 2011 you requested additional testing documentation for our three USTs. Enclosed is the requested supplemental information for Training Center Yorktown UST numbers S3D, S3E, and S1AG. It includes Automatic Line Leak Detector, Line Tightness, and Cathodic Protection testing results for applicable tanks and also includes maintenance service tickets pertinent to the non-functioning interstitial monitoring probes observed during your inspection. As of 12 September 2011, new shielded wiring was installed between the S3D and S3E tank/piping monitoring probes and associated Veeder-Root control panel and all probes are functioning properly.

The enclosed supplemental information is in addition to the monthly interstitial monitoring reports provided to you at the inspection. Please do not hesitate to contact Mr. Rick Hylton, our staff environmental engineer, at 757-856-2267 for any additional information to support this inspection.

Sincerely,

M. A. RYMER, P. E.
Commander, U.S. Coast Guard
Chief, Facilities Engineering Division
By direction of the Commanding Officer

Enclosure: (1) USCG Training Center Yorktown Supplemental Information for EPA UST Inspection 9/9/2011

Copy: Commanding Officer, Coast Guard Shore Infrastructure Logistics Center

September 13, 2011

U.S. Coast Guard Training Center Yorktown
Supplemental Information for:
EPA Underground Storage Tank Inspection – September 9, 2011

CG Exchange Gas Station – UST Nos. S3D & S3E

1. Automatic Line Leak Detector Testing Results – UST Nos. S3D & S3E were most recently tested on:
    a. January 25, 2008
    b. October 2, 2009
    c. September 8, 2011

    See Attachment (1) for test results.

2. Line Tightness Testing Results – UST Nos. S3D & S3E were most recently tested on:
    a. January 25, 2008
    b. October 2, 2009
    c. September 8, 2011

    See Attachment (2) for test results.

3. Cathodic Protection Testing Results – UST Nos. S3D & S3E were most recently tested on:
    a. April 11, 2008
    b. September 8, 2011

    See Attachment (3) for test results.

4. Interstitial Monitoring Probes Non-functional – Our initial review indicates that the Gas Station began experiencing false alarms with the interstitial probes in the spring of 2011. They contracted their maintenance provider to troubleshoot this issue and help resolve. On June 10, 2011, the maintenance contractor determined that the existing unshielded wiring to the probes was causing the system to indicate false-positive alarm conditions and that new shielded wiring would potentially resolve this issue. The interstitial probes were disconnected on June 10, 2011. New wires were installed by the tank maintenance contractor on September 12, 2011, and the system has been checked. All probes are functioning properly. The Coast Guard is further investigating why the system was not immediately repaired and brought back on-line. In addition, we are evaluating the daily gas station Veeder-Root systems status and inventory control reports reviewed and kept by the operators to see if they meet regulatory leak detection requirements for the period the probes were disconnected.

    See Attachment (4) for related Maintenance Contractor Service Tickets

Boat Force Center Diesel Fueling Tank – UST No. S1AG

1. Automatic Line Leak Detector Testing Results – UST No. S1AG were most recently tested on:
    a. January 8, 2007
    b. April 11, 2008
    c. May 27, 2010 – Contracted inspection of all tank/leak detection systems
    d. September 8, 2011

    See Attachment (5) for test results.

2. Line Tightness Testing Results – UST No. S1AG were most recently tested on:

    a. January 8, 2007
    b. April 11, 2008
    c. August 2, 2009 – Line testing resulting from construction project 2511781
    d. September 8, 2011

    See Attachment (6) for test results.

September 13, 2011

ATTACHMENT (1)

2605 Build America Drive
Hampton, VA 23666
(757)826-3807

Mechanical Line Leak Detector Test Report

Site Mini MART Date 1-25-08 Time 10:00 AM

Address Yorktown VA

City US COAST GUARD State VA Zip

Product Reg Pass/Fail PASS Dispenser Test Point Impack

Model Number Serial Number

Product Prem Pass/Fail PASS Dispenser Test Point IMPACK

Model Number Serial Number

Product Pass/Fail Dispenser Test Point

If any mechanical line leak detector failed during the testing procedure, what work was performed to remedy the problem? (Be Specific)

Additional Comments:

Manager Signature

Vendor Signature Thomas E. Waters

* From 1/25/08 LLD on previous page. Annotated for record clarity on 9/15/2011

Leak Detector Test

Unit # 142 Grade AVL Serial # 585259

Model # DL3671L196 Pass/Fail PASS

Unit # 344 Grade RVL Serial # 585254

Model # DL3671L196 Pass/Fail Fail Replaced Leak detector

Unit # _____ Grade _____ Serial # _____

Model # _____ Pass/Fail _____

Unit # _____ Grade _____ Serial # _____

Model # _____ Pass/Fail _____

Unit # _____ Grade _____ Serial # _____

Model # _____ Pass/Fail _____

Unit # _____ Grade _____ Serial # _____

Model # _____ Pass/Fail _____

Unit # _____ Grade _____ Serial # _____

Model # _____ Pass/Fail _____

Unit # _____ Grade _____ Serial # _____

Model # _____ Pass/Fail _____

BESTEST LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7900

SITE DBA Coast Guard Training Facility

ADDRESS Training Facility

Yorktown, VA

TEST DATE 10/02/2009

TEST CONDUCTOR Adam N. Murray

OFFICE PHONE NUMBER (804) 271-4456

TEST PERFORMED	PRODUCT (PASS/FAIL)				
	Unleaded	Plus	Super	Diesel	Kerosene
LEAK DETECTORS	✓/	/	✓/	/	/
BALL FLOATS	/	/	/	/	/
SHEAR VALVES	/	/	/	/	/

CORRECTIONS MADE None

CORRECTIONS NEEDED None

Testing performed per manufacturer's specifications

BesTest LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-866-201-7966

SITE DBA Coast Guard

ADDRESS Mini Mart Bldg 213

Yorktown, VA

TEST DATE 09/08/2011

TEST CONDUCTOR Adam N. Murray

OFFICE PHONE NUMBER (804) 271-4456

TEST PERFORMED PRODUCT (PASS/FAIL)

	Unleaded	Plus	Super	Diesel	Kerosene
LEAK DETECTORS	✓/	/	✓/	/	/
BALL FLOATS	/	/	/	/	/
SHEAR VALVES	/	/	/	/	/

CORRECTIONS MADE None

CORRECTIONS NEEDED None

Testing performed per manufacturer's specifications

September 13, 2011

ATTACHMENT (2)

DATA CHART
For Use With

1-25-08

1 LOCATION: MINE MART

2 OWNER: GOAST GUARD YORKTOWN VA

3 OPERATOR: US COAST GUARD

4 REASON FOR TEST

5 TEST REQUESTED BY:

6 SPECIAL INSTRUCTIONS:

7 CONTRACTOR OR COMPANY MAKING TEST
MECHANIC(S) NAME

8 IS A TANK TEST TO BE MADE WITH THIS LINE TEST? ☐ YES ☐ NO

9 MAKE AND TYPE OF PUMP OR DISPENSERS

10 WEATHER TEMPERATURE IN TANKS °F °C COVER OVER LINES APPROXIMATE BURIAL DEPTH

IDENTIFY ACCOUNT IS TESTED	12 TIME (MILITARY)	13 LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	14 PRESSURE psi OR kPa BEFORE	AFTER	15 VOLUME READINGS BEFORE	AFTER	NET CHANGE	16 TEST RESULTS CONCLUSIONS, REMARKS AND COMMENTS
Res	9:00	START LINE TEST		45.0		.0706		
	9:15		44.0	45.0	.0690	.0690	.0000	
	9:30		44.0	45.0	.0690	.0690	.0000	
	9:45		45.0	45.0	.0690	.0690	.0000	
	10:00		45.0	45.0	.0690	.0690	.0000	Line Tight
	10:05	Bleed Back-ok	45.0	0.0	.0690	.0496	.0200	Bleed Back ok
P.M	10:00			45.0		.0390		
	10:15		45.0	40.0	.0380	.0380	.0010	
	10:30		45.0	42.0	.0370	.0370	.0000	
	10:45		45.0	44.0	.0370	.0370	.0000	
	11:00		45.0	45.0	.0370	.0370	.0010	-.0010 Line Tight
	11:05	Bleed Back ok	45.0	0.0	.0370	.0200	.0170	Bleed Back

BesTesT LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7900

Petro-Tite Line Test Data Sheet

LOCATION: Coast Guard Training Facility — Training Facility — Yorktown, VA
OWNER: Coast Guard Training Facility — Training Facility — Yorktown, VA
REASON FOR TEST: routine — TEST DATE: 10/02/09
TEST REQUESTED BY: Steve Graham
COMPANY PERFORMING TEST/TECHNICIAN'S NAME: BesTesT, LLC. — Adam N. Murray
Is a tank test to be made with this line test? X YES ___ NO — Make and type of pump & dispensers: Gilbarco disp's & RJ stp's
WEATHER: mild — Cover over lines: Concrete & Ground — Approx burial depth: 2.5'

IDENTIFY EACH LINE AS TESTED	TIME 24:00	LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	PRESSURE psi or kPa Before	PRESSURE psi or kPa After	VOLUME READING Before	VOLUME READING After	NET Change	TEST RESULTS CONCLUSIONS, REPAIRS, AND COMMENTS	
Super	1301	attached line test adapter							
	1306	test press/begin		50psi		.031			
	1321	line test, con't	50	50	.031	.031	+.000		
	1336	" "	50	50	.031	.031	+.000		
	1351	" "	50	50	.031	.031	+.000		
	1406	" "	50	50	.031	.031	+.000	+.000	* TIGHT *
	1407	bleedback check	50	0	.031	.056	+.025		
Unleaded	1307	attached line test adapter							
	1312	test press/begin		50psi		.017			
	1327	line test, con't	50	50	.017	.017	+.000		
	1342	" "	50	50	.017	.017	+.000		
	1357	" "	50	50	.017	.017	+.000		
	1412	" "	50	50	.017	.017	+.000	+.000	* TIGHT *
	1413	bleedback check	50	0	.017	.040	+.023		

ESTABROOK'S
Systems & Training for the Petroleum Industry

PRESSURE CALCULATION & WATER SENSOR CALIBRATION
DATA SHEET

Date: 10/2/09

MANUFACTURED BY: ESTABROOK'S INC. 1-877-368-7215

TOTAL TANK VOL.	10000
PRODUCT VOL.	3218
ULLAGE VOL.	6889
PRODUCT TYPE	Super
PBS # (NEW YORK)	
TANK #	1
LOCATION	Coast Guard Training Facility

Depth of Groundwater Determined

By:	Observation Well
Where:	Near Dispenser #4

PRESSURE SENSOR CALCULATION

.35 (INCHES OF PRODUCT)	x	.026 (WEIGHT OF PRODUCT)	=	.91	PSI (1)
0 (INCHES OF WATER IN TANK)	x	.036	=	0	PSI (2)
Line 1 + Line 2 = Total Positive Head Pressure In Tank			=	.91	PSI (3)
0 (INCHES OF WATER OUTSIDE TANK)	x	.036	=	0	PSI (4)
Total Head Pressure Minus Outside Water Pressure			=	.91	+/-PSI (5)
Always add .5 PSI			+	0.500	PSI (6)
NOTE: If Line 6 Is Less Than .5 PSI Line 7 Shall be .5 PSI					
TEST PRESSURE			=	1.41	+/-PSI (7)

ACOUSTIC TEST TIME

	Time	Pressure
Baseline Background:	1445	0.00
Blower Started:	1500	0.00
Test Pressure Reached:	1510	1.41
Blower Turned Off:	1516	1.41
Test Began:	1516	1.41
Test Ended:	1535	1.41

Equipment Calibration due date and serial numbers

	Serial Number	Calibration Due Date
In-Tank Microphone	M0912010	09/17/10
Acoustic Signal Processor	E0917003	09/17/10
Pressure Sensor	400341509	09/17/10
Water Sensor Display	D0910305	09/17/10
Water Sensor Probe	D0907601	09/17/10

WATER SENSOR CALIBRATION

	Cal #1	Cal #2	Cal #3
Added:			
Average:			

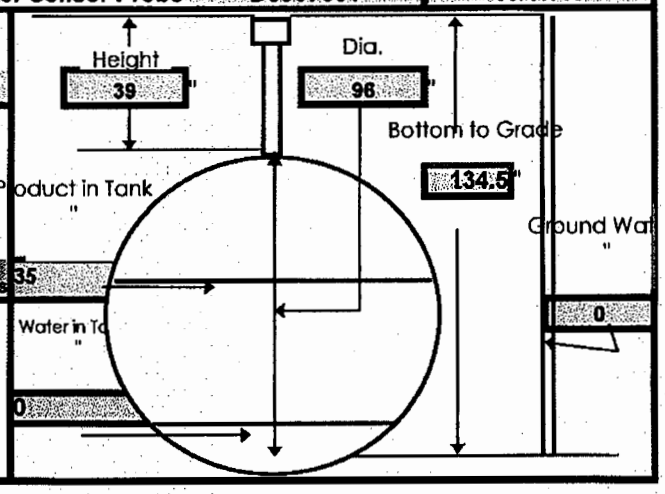
Calculation for Test Period

[ ] ÷ 3780 = [ ] ÷ .05 [0.000] x 60 = [0 minutes]

Avg. Cal. "A" Factor Min. Time of Test

Water Monitoring Test Period

Began:
Ended:



ESTABROOK'S
Systems & Training for the Petroleum Industry

PRESSURE CALCULATION & WATER SENSOR CALIBRATION DATA SHEET

Date: 10/2/09

MANUFACTURED BY: ESTABROOK'S INC. 1-877-368-7215

TOTAL TANK VOL.	40000
PRODUCT VOL.	5418
ULLAGE VOL.	4582
PRODUCT TYPE	Regular
PBS # (NEW YORK)	
TANK #	3
LOCATION	Coast Guard Training Facility

Depth of Groundwater Determined

By:	Observation Well
Where:	By Dispenser #4

PRESSURE SENSOR CALCULATION

50 (INCHES OF PRODUCT)	x	.026 (WEIGHT OF PRODUCT)	=	1.3	PSI (1)
0 (INCHES OF WATER IN TANK)	x	.036	=	0	PSI (2)
Line 1 + Line 2 = Total Positive Head Pressure In Tank			=	1.3	PSI (3)
0 (INCHES OF WATER OUTSIDE TANK)	x	.036	=	0	PSI (4)
Total Head Pressure Minus Outside Water Pressure			=	1.3	+/-PSI (5)
Always add .5 PSI			+	0.500	PSI (6)
NOTE: If Line 6 is Less Than .5 PSI Line 7 Shall be .5 PSI					
TEST PRESSURE			=	1.8	+/-PSI (7)

ACOUSTIC TEST TIME

	Time	Pressure
Baseline Background:	1320	0.00
Blower Started:	1330	0.00
Test Pressure Reached:	1340	1.8
Blower Turned Off:	1345	1.8
Test Began:	1345	1.8
Test Ended:	1425	1.8

Equipment Calibration due date and serial numbers

	Serial Number	Calibration Due Date
In-Tank Microphone	M0912010	09/17/10
Acoustic Signal Processor	E0917003	09/17/10
Pressure Sensor	400341509	09/17/10
Water Sensor Display	D0910305	09/17/10
Water Sensor Probe	D0907601	09/17/10

WATER SENSOR CALIBRATION

	Cal #1	Cal #2	Cal #3
Added:			

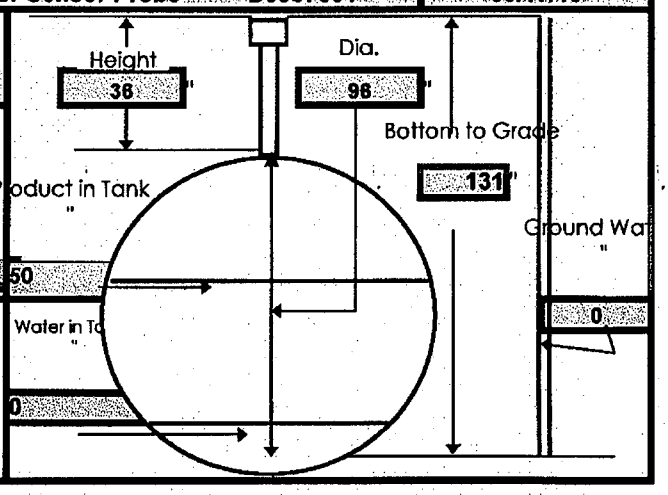
Average:

Calculation for "A" Factor

Avg. Cal. ÷ 3780 = "A" Factor + .05 0.000 x 60 = 0 minutes Min. Time of Test

Water Infusion Test Timed

Began:
Ended:



BesTesT LLC.
Complete Testing Services
3811 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7950

Petro-Tite Line Test Data Sheet

LOCATION: Coast Guard — Mini Mart Bldg 213 — Yorktown, VA

OWNER: Coast Guard — Mini Mart Bldg 213 — Yorktown, VA

REASON FOR TEST: routine — TEST DATE: 09/08/11

TEST REQUESTED BY: Ralph Corey Jones & Frank

COMPANY PERFORMING TEST/TECHNICIAN'S NAME: BesTesT, LLC. Adam N. Murray

Is a tank test to be made with this line test? ___ YES X NO — Make and type of pump & dispensers: Gilbarco disp's & RJ stp's

WEATHER: mild — Cover over lines: Concrete & earth — Approx burial depth: 2.5'

IDENTIFY EACH LINE AS TESTED	TIME 24:00	LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	PRESSURE psi or kPa Before	PRESSURE psi or kPa After	VOLUME READING Before	VOLUME READING After	NET Change	TEST RESULTS CONCLUSIONS, REPAIRS, AND COMMENTS	
Super	1015	attached line test adapter							
	1029	test press/begin		50psi		.043			
	1038	line test, con't	50	50	.043	.043	+.000		
	1053	" "	50	50	.043	.043	+.000		
	1108	" "	50	50	.043	.043	+.000		
	1123	" "	50	50	.043	.043	+.000	+.000	" TIGHT "
	1124	bleedback check	50	0	.043	.063	+.020		
Unleaded	1131	attached line test adapter							
	1136	test press/begin		50psi		.017			
	1151	line test, con't	50	50	.017	.017	+.000		
	1206	" "	50	50	.017	.017	+.000		
	1221	" "	50	50	.017	.017	+.000		
	1236	" "	50	50	.017	.017	+.000	+.000	" TIGHT "
	1237	bleedback check	50	0	.017	.038	+.021		

Certification: Leak rate of 0.1 gph with PD = 99.99% and PFA = 0.34%.
Leak Threshold: 0.05 gph. A pipeline system should not be declared tight if the test result indicates a loss that equals or exceeds this threshold. Vendor claims this equipment can detect leaks at .01 gph, and trains operators to declare leaks at .01 gph.

September 13, 2011

ATTACHMENT (3)

VIRGINIA DEQ	CATHODIC PROTECTION SYSTEM EVALUATION FORM	7531-CP (05/06)

- This form should be utilized to evaluate underground storage tank (UST) cathodic protection systems in the Commonwealth of Virginia.
- Access to the soil directly over the cathodically protected structure that is being evaluated must be provided.
- A site drawing depicting the UST cathodic protection system and all reference electrode placements must be completed.

I. UST OWNER		II. UST FACILITY	
NAME:		NAME: Coast Guard Training Center	MINI-MART ID #
ADDRESS:		ADDRESS:	
CITY:	PHONE:	CITY: YORKTOWN	COUNTY:
STATE:	ZIP:	STATE: VA ZIP:	PHONE:

III. REASON SURVEY WAS CONDUCTED (mark only one)

☑ Routine - 3 year ☐ Routine – within 6 months of installation ☐ 90-day re-survey after fail ☐ Re-survey after repair/modification

Date next cathodic protection survey must be conducted 4-11 (required within 6 months of installation/repair & every 3 years thereafter).

IV. CATHODIC PROTECTION TESTER'S EVALUATION (mark only one)

☑	PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VI).
☐	FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system(s) (complete Section VII).

TESTER'S NAME:	Richard E Murray Jr	SOURCE OF CERTIFICATION:	Steel Tank Institute
COMPANY NAME:	BesTesT, LLC	TYPE OF CERTIFICATION:	Cathodic Protection Tester
ADDRESS:	3611 Thurston Rd	CERTIFICATION NUMBER:	200-71
CITY: Richmond	STATE: VA ZIP: 23237	PHONE:	(804) 271-4456
CP TESTER'S SIGNATURE: RE Murray		DATE SIGNED: 4-11-08	DATE CP SURVEY PERFORMED:

V. CORROSION EXPERT'S EVALUATION (mark only one)

The survey must be conducted and/or evaluated by a corrosion expert when: a) supplemental anodes or other changes in the construction of the cathodic protection system are made, b) stray current may be affecting buried metallic structures or c) an inconclusive result was written in Section VI. (except for under STI-R972 – "Recommended Practice for the Addition of Supplemental Anodes to sti-P3® UST's")

☐	PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VI).
☐	FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system (indicate what action is necessary by completion of Section VII).

CORROSION EXPERT'S NAME:			SOURCE OF CERTIFICATION:
COMPANY NAME:			TYPE OF CERTIFICATION:
ADDRESS:			CERTIFICATION NUMBER:
CITY:	STATE:	ZIP:	PHONE:
CORROSION EXPERT'S SIGNATURE:			DATE:

VI. CRITERIA APPLICABLE TO EVALUATION (mark all that apply)

☐	-850mV ON / (Instant) OFF (circle "ON" or "OFF" to specify)	Structure-to-soil potential more negative than –850 mV with respect to a $Cu/CuSO_4$ reference electrode with protective current ON (galvanic) or temporarily interrupted (instant-OFF (impressed)) **Inconclusive?** ☐
☐	100 mV POLARIZATION	Structure(s) exhibit at least 100 mV of cathodic polarization. **Inconclusive?** ☐

VII. ACTION REQUIRED AS A RESULT OF THIS EVALUATION (mark only one)

☑	NONE	Cathodic protection is adequate No further action is necessary at this time Test again by no later than (see Section V).
☐	RETEST	Cathodic protection may not be adequate. Retest during the next 90 days to determine if passing results can be achieved.
☐	REPAIR & RETEST	Cathodic protection is not adequate. Repair/modification is necessary as soon as practical but within the next 90 days.

- This section may be utilized to conduct measurements of continuity on UST systems that are protected by cathodic protection systems.
- When conducting a fixed cell - moving ground survey, the reference electrode must be placed in the soil at a remote location and left undisturbed.
- Conduct point-to-point test between any two structures for which the fixed cell - moving ground survey is inconclusive or indicates possible isolation.
- For impressed current systems, the protected structure must be continuous with all other protected structures in order to pass the continuity survey.
- For galvanic systems, the structure that is to be protected must be isolated from any other metallic structure in order to pass the continuity survey

FACILITY NAME: Coast Guard Mini Mart

NOTE: The survey is not complete unless all applicable parts of sections I-XIV are also completed.

DESCRIBE LOCATION OF "FIXED REMOTE" REFERENCE ELECTRODE PLACEMENT:

STRUCTURE "A" [1]	STRUCTURE "B" [2]	STRUCTURE "A" [3] FIXED VOLTAGE (mV)	STRUCTURE "B" [4] FIXED VOLTAGE (mV)	POINT-TO-POINT [5] VOLTAGE DIFFERENCE	ISOLATED/ [6] CONTINUOUS
(example) PLUS TANK BOTTOM	(example) PLUS STEEL PRODUCT LINE @ STP	(example) -915 mV	(example) -908 mV		(example) INCONCLUSIVE
(example) PLUS TANK BOTTOM	(example) PLUS STEEL PRODUCT LINE @ STP			(example) 1 mV	(example) CONTINUOUS
Unl. TB	Super TB			.091	ISO
Unl TB	Unl STP RISER			.163	ISO
Unl. TB	Unl. ATG RISER			.125	ISO
Super TB	Super STP RISER			.079	ISO
Super TB	Super ATG RISER			.126	ISO

1. Describe the protected structure ("A") that you are attempting to demonstrate is continuous (e.g. plus tank bottom).
2. Describe the "other" protected structure ("B") that you are attempting to demonstrate is continuous (e.g. plus steel product line @ STP).
3. Record the fixed remote instant off structure-to-soil potential of the protected structure ("A") in millivolts (e.g. –915 mV).
4. Record the fixed remote instant off structure-to-soil potential of the "other" protected structure ("B") in millivolts (e.g. –908 mV).
5. Record the voltage difference observed between structure "A" and structure "B" when conducting "point-to-point" testing (e.g. 1mV).
6. Document whether the test (fixed cell and/or point-to-point) indicated the protected structure was isolated, continuous or inconclusive.

This section may be utilized to conduct a survey of the cathodic protection system by obtaining structure-to-soil potential measurements.

- **For Impressed Current (IC) systems**: the reference electrode must be placed (minimum of three locations) in the soil directly above the structure that is being tested and as far away from any active anode as practical to obtain a valid structure-to-soil potential (refer to the VADEQ cathodic protection evaluation guidance document for detailed discussion of electrode placement).
- Both "on" and "instant off" potentials must be measured for each structure that is intended to be under cathodic protection.
- The "instant off" potential must be -850 mV DC or more negative or the 100 mV DC polarization criterion must be satisfied in order to pass.

- **For Galvanic (G) systems**: the reference electrode must be placed (minimum of three locations) with at least one local and at least one placed remotely 25-100 feet away from the structure.
- Both the local and remote voltage must be -850 mV DC or more negative, in order for the structure to pass.
- Inconclusive is indicated when both the local and remote structure-to-soil potentials do not result in the same outcome (both must "pass" or both must "fail").
- As a place to record the "galvanic CP system voltage", use the "On Voltage" fifth column below; and, in cases with supplemental anodes use the "Instant Off" column six.

FACILITY NAME: Coast Guard Mini Mart

NOTE. This survey is not complete unless all applicable parts of sections I – XIV are also completed.

LOCATION[1] CODE	STRUCTURE[2]	CONTACT POINT[3]	REFERENCE CELL PLACEMENT[4]	ON[5] VOLTAGE	INSTANT[6] OFF VOLTAGE	100 mV polarization		PASS/[9] FAIL
						ENDING[7] VOLTAGE	VOLTAGE CHANGE[8]	
(example) R1-IC	(example) PLUS STEEL UST	(example) TANK BOTTOM	(example) SOIL @ PLUS TANK STP MANWAY	(example) -1070mV	(example) -875 mV			(example) PASS
(example) R2A-IC	(example) DIESEL PIPE	(example) DISPENSER 7/8	(example) SOIL @ DIESEL TANK STP MANWAY	(example) -810 mV	(example) -680 mV	(example) -575 mV	(example) 105 mV	(example) PASS
(example) R2B-IC	(example) DIESEL PIPE	(example) DISPENSER 7/8	(example) SOIL @ DIESEL TANK STP MANWAY	(example) -810 mV	(example) -720 mV	(example) -630 mV	(example) 90 mV	(example) FAIL
(example) R3A-G	(example) PREMIUM sti-P3®	(example) TANK BOTTOM	(example) SOIL @ PREM. TANK STP MANWAY	(example) -960 mV	(example) NA	(example) NA	(example) NA	(example) PASS
(example) R3B-G	(example) PREMIUM sti-P3®	(example) TANK BOTTOM	(example) SOIL @ PREM. TANK STP MANWAY	(example) -580 mV	(example) NA	(example) NA	(example) NA	(example) FAIL
(example) R3C-G	(example) PREMIUM sti-P3®	(example) TANK BOTTOM	(example for supplemental anode cases) SOIL @ PREM. TANK STP MANWAY	(example) -1070mV	(example) -855mV	(example) NA	(example) NA	(example) PASS
	Super Sti P3	TANK BOTTOM	Soil over Tank	-.938	✓	✓	✓	P
	" "	TB	Soil over Tank	-.972	✓	✓	✓	P
	" "	TB	Remote (taken in soil)	-.862	✓	✓	✓	P
	UNL. Sti P3	TB	Soil over Tank	-1.025	✓	✓	✓	P
	" "	TB	Soil over Tank	-1.010	✓	✓	✓	P
	" "	TB	Remote (taken in soil)	-1.021	✓	✓	✓	P

Use copies of this page as needed for additional reference cell readings.

1. Designate numerically or by code on the site drawing each local reference electrode placement (e.g. R1-IC, R2-G, R3-IC...etc.)
2. Describe the structure that is being tested (e.g. plus tank; diesel piping; flex connector, etc.)
3. Describe where the structure being tested is contected by the test lead (e.g. plus tank bottom; diesel piping @ dispenser 7/8; etc.)
4. Describe the exact location where the reference electrode is placed for each measurement (e.g. soil @ regular tank STP manway, soil @ dispenser 2, etc.)
5. (Applies to all tests) Record the structure-to-soil potential (voltage) observed with the current applied (e.g. -1070 mV.)
6. (Applies to all tests) Record the structure to soil potential (voltage) observed when the current is interrupted (e.g. 680 mV.)
7. (Applies to 100 mV polarization test only) Record the voltage observed at the end of the test period (e.g. 575 mV.)
8. (Applies to 100 mV polarization test only) Subtract the final voltage from the instant off voltage (e.g. 680 mV – 575 mV = 105 mV.)
9. Indicate if the tested structure passed or failed one of the two acceptable criteria (850 instant off or 100 mV polarization) based on your interpretation of data.

VIII. DESCRIPTION OF UST SYSTEM

TANK	PRODUCT	CAPACITY	TANK MATERIAL	PIPING MATERIAL	FLEX CONNECTORS
1	Unleaded		STIP 3	F6	Y
2	Super		STIP 3	F6	Y
3					
4					IN BOOTS
5					
6					
7					
8					
9					
10					

IX. IMPRESSED CURRENT RECTIFIER DATA (complete all applicable)

In order to conduct an effective evaluation of the cathodic protection system, a complete evaluation of rectifier operation is necessary.

RECTIFIER MANUFACTURER: N/A

RATED DC OUTPUT: VOLTS AMPS

RECTIFIER MODEL:

RECTIFIER SERIAL NUMBER:

RECTIFIER OUTPUT AS INITIALLY DESIGNED OR LASTLY RECOMMENDED (if available): _____ VOLTS _____ AMPS

EVENT	DATE	TAP SETTINGS		DC OUTPUT		HOUR METER	COMMENTS
		COARSE	FINE	VOLTS	AMPS		
"AS FOUND"							
"AS LEFT"							

X. IMPRESSED CURRENT POSITIVE & NEGATIVE CIRCUIT MEASUREMENTS (output amperage)

Complete if the system is designed to allow such measurements (i.e. individual lead wires for each anode are installed and measurement shunts are present).

CIRCUIT	1	2	3	4	5	6	7	8	9	10	TOTAL AMPS
ANODE (+)											
TANK (-)											

XI. DESCRIPTION OF CATHODIC PROTECTION SYSTEM REPAIRS AND/OR MODIFICATION

Complete if any repairs or modifications to the cathodic protection system are made OR are necessary. Certain repairs/modifications as explained in the text of the VADEQ cathodic protection guidance document are required to be designed and/or evaluated by a corrosion expert (completion of Section V required).

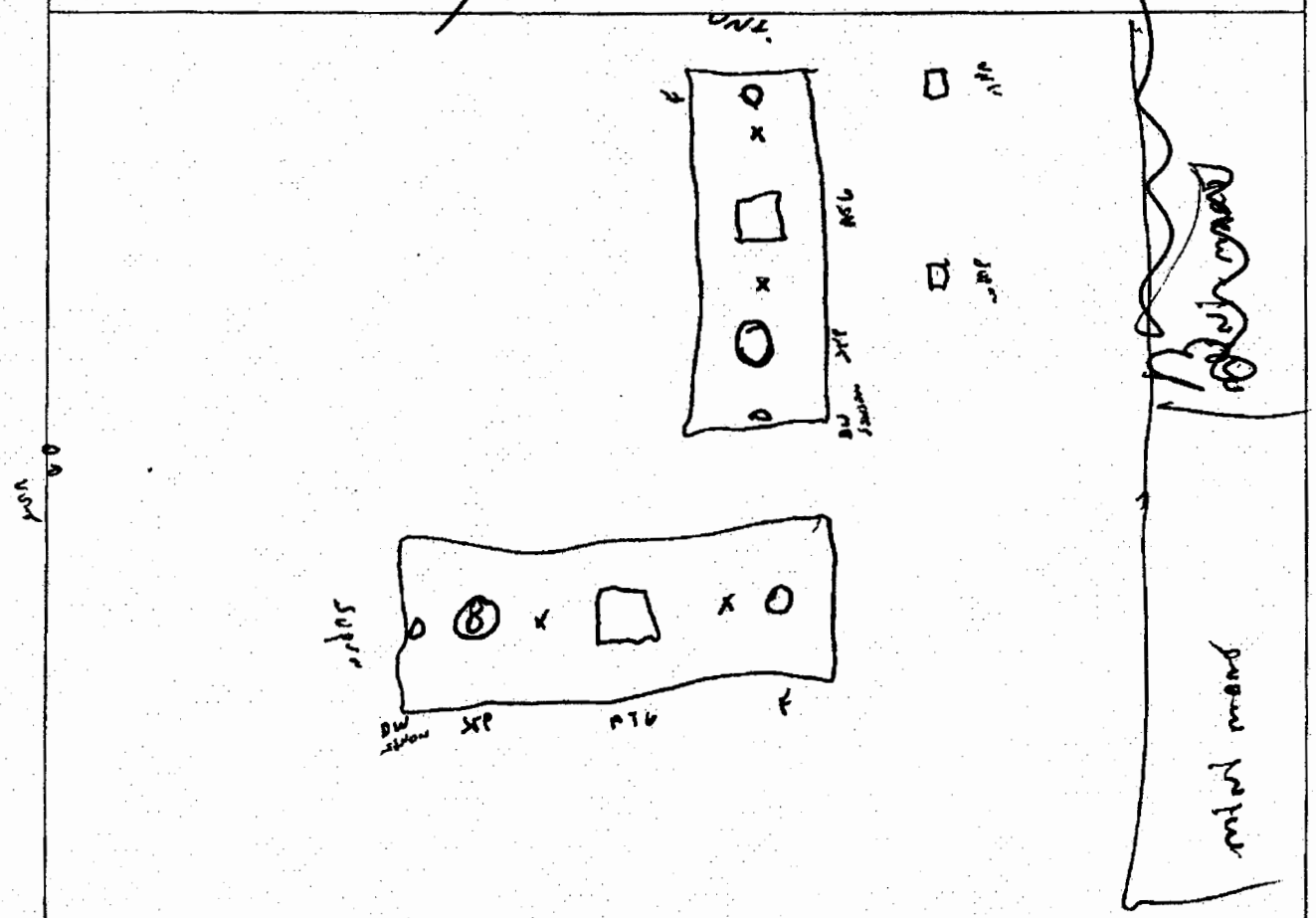
- ☐ Additional anodes for an impressed current system (attach corrosion expert's design).
- ☐ Supplemental anodes for a STI-P3® tank or metallic pipe (attach corrosion expert's design or documentation industry standard was followed).
- ☐ Repairs or replacement of rectifer (explain in "Remarks/Other" below).
- ☐ Anode header cables repaired and/or replaced(explain in "Remarks/Other" below).
- ☐ Impressed current protected tanks/piping not electrically continuous (explain in "Remarks/Other" below).
- ☐ Galvanically protected tanks/piping NOT electrically isolated (explain in "Remarks/Other" below).

Remarks/Other:

XII. UST FACILITY SITE DRAWING

Attach detailed drawing of the UST and cathodic protection systems. Sufficient detail must be given in order to clearly indicate where the reference electrode was placed for each structure-to-soil potential that is recorded on the survey forms. Any pertinent data must also be included. At a minimum indicate the following: all tanks, piping and dispensers; all buildings and streets; all anodes and wires; location of CP test stations; and, each reference electrode placement must be indicated by a code followed by a "IC" or "G" to indicate the type of CP system (e.g., R1-IC, R2-G, etc.) corresponding with the appropriate line number in Section XIV of this form. (Note, CP test stations (PP4)may be questionable for use as described in Section 6.1.2)

AN EVALUATION OF THE CATHODIC PROTECTION SYSTEM IS NOT COMPLETE WITHOUT AN ACCEPTABLE SITE DRAWING.



VIRGINIA DEQ

CATHODIC PROTECTION SYSTEM EVALUATION FORM

7531-CP (05/06)

- This form should be utilized to evaluate underground storage tank (UST) cathodic protection systems in the Commonwealth of Virginia.
- Access to the soil directly over the cathodically protected structure that is being evaluated must be provided.
- A site drawing depicting the UST cathodic protection system and all reference electrode placements must be completed.

NAME:		NAME:	Yorktown Coast Guard
ADDRESS:		ADDRESS:	Bldg 213 Mini Mart
CITY:	PHONE:	CITY:	Williamsburg COUNTY:
STATE:	ZIP:	STATE: VA	ZIP: 23692 PHONE:

☒ Routine - 3 year ☐ Routine - within 6 months of installation ☐ 90-day re-survey after fail ☐ Re-survey after repair/modification

Date next cathodic protection survey must be conducted 9/8/14 (required within 6 months of installation/repair & every 3 years thereafter)

☒	PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VI).
☐	FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system(s) (complete Section VII).

TESTER'S NAME:	Adam N Murray	SOURCE OF CERTIFICATION:	Steel Tank Institute
COMPANY NAME:	BesTesT, LLC	TYPE OF CERTIFICATION:	Cathodic Protection Tester
ADDRESS:	3811 Thurston Rd	CERTIFICATION NUMBER:	703-09
CITY: Richmond	STATE: VA ZIP: 23237	PHONE:	(804) 271-4456
TESTER'S SIGNATURE:		DATE SIGNED: 9/8/11	DATE OF SURVEY PERFORMED: 9/8/11

The survey must be conducted and/or evaluated by a corrosion expert when: a) supplemental anodes or other changes in the construction of the cathodic protection system are made; b) stray current may be affecting buried metallic structures or c) an inconclusive result was written in Section VI. (except for under STI-R972 - "Recommended Practice for the Addition of Supplemental Anodes to ~~a~~ P3® USTs")

☐	PASS	All protected structures at this facility pass the cathodic protection survey and it is judged that adequate cathodic protection has been provided to the UST system (indicate all criteria applicable by completion of Section VI).
☐	FAIL	One or more protected structures at this facility fail the cathodic protection survey and it is judged that adequate cathodic protection has not been provided to the UST system (indicate what action is necessary by completion of Section VII).

CORROSION EXPERT'S NAME:		SOURCE OF CERTIFICATION:	
COMPANY NAME:		TYPE OF CERTIFICATION:	
ADDRESS:		CERTIFICATION NUMBER:	
CITY:	STATE: ZIP:	PHONE:	
CORROSION EXPERT'S SIGNATURE:		DATE:	

☒	-850mV ON (impressed) OFF (circle "ON" or "OFF" to specify)	Structure-to-soil potentials more negative than -850 mV with respect to a Cu/CuSO$_4$ reference electrode with protective current ON (galvanic) or temporarily interrupted (instant-OFF (impressed)). Inconclusive? ☐
☐	100 mV POLARIZATION	Structure(s) exhibit at least 100 mV of cathodic polarization. Inconclusive? ☐

☒	NONE	Cathodic protection is adequate. No further action is necessary at this time. Test again by no later than (see Section VI).
☐	RETEST	Cathodic protection may not be adequate. Retest during the next 90 days to determine if passing results can be achieved.
☐	REPAIR & RETEST	Cathodic protection is not adequate. Repair/modification is necessary as soon as practical but within the next 90 days.

[illegible]

May 2006

This section may be utilized to conduct a survey of the cathodic protection system by obtaining structure-to-soil potential measurements.

- For Impressed Current (IC) systems: the reference electrode must be placed (minimum of three locations) in the soil directly above the structure that is being tested and as far away from any active anode as practical to obtain a valid structure-to-soil potential (refer to the VADEQ cathodic protection evaluation guidance document for detailed discussion of electrode placement).
- Both "on" and "instant off" potentials must be measured for each structure that is intended to be under cathodic protection.
- The "instant off" potential must be -850 mV DC or more negative or the 100 mV DC polarization criterion must be satisfied in order to pass.
- For Galvanic (G) systems: the reference electrode must be placed (minimum of three locations) with at least one local and at least one placed remotely 25-100 feet away from the structure.
- Both the local and remote voltage must be -850 mV DC or more negative, in order for the structure to pass.
- Inconclusive is indicated when both the local and remote structure-to-soil potentials do not result in the same outcome (both must "pass" or both must "fail").
- As a place to record the "galvanic CP system voltage", use the "On Voltage" fifth column below, and, in cases with supplemental anodes use the "Instant Off" column six.

FACILITY NAME: Coast Guard Mini Mart

NOTE: This survey is not complete unless all applicable parts of sections I – XIV are also completed.

LOCATION[1] CODE	STRUCTURE[2]	CONTACT POINT[3]	REFERENCE CELL PLACEMENT[4]	On[5] VOLTAGE	INSTANT[6] OFF VOLTAGE	100 mV polarization ENDING[7] VOLTAGE	100 mV polarization VOLTAGE CHANGE	PASS[8] FAIL
(example) R1-C	(example) PLUS STEEL JUST	(example) TANK BOTTOM	(example) SOIL @ PLUS TANK STP MANWAY	(example) -970 mV	(example) -875 mV			(example) PASS
(example) R2A1G	(example) DIESEL PIPE	(example) DISPENSER #1	(example) SOIL @ DIESEL TANK STP MANWAY	(example) -810 mV	(example) -890 mV	(example) -875 mV	(example) 105 mV	(example) PASS
(example) R2B3G	(example) DIESEL PIPE 4"	(example) DISPENSER #3	(example) SOIL @ DIESEL TANK STP MANWAY	(example) -910 mV	(example) -770 mV	(example) -830 mV	(example) 90 mV	(example) FAIL
(example) R3A1G	(example) PREMIUM STP 3"	(example) TANK BOTTOM	(example) SOIL @ PREM. TANK STP MANWAY	(example) -880 mV	(example) NA	(example) NA	(example) NA	(example) PASS
(example) R3B2G	(example) PREMIUM STP 3"	(example) TANK BOTTOM	(example) SOIL @ PREM. TANK STP MANWAY	(example) -880 mV	(example) NA	(example) NA	(example) NA	(example) FAIL
(example) R3C3G	(example) PREMIUM STP 3"	(example) TANK BOTTOM	(example) SOIL @ PREM. TANK STP MANWAY	(example) -870 mV	(example) -865 mV	(example) NA	(example) NA	(example) PASS
	Super	TB	Soil @ Frill	-890	—	—	—	P
	Super	TB	Soil @ STP	-924	—	—	—	P
	Super	TB	Remote	-900	—	—	—	P
	Reg	TB	Soil @ Frill	-890	—	—	—	P
	Reg	TB	Soil @ STP	-949	—	—	—	P
	Reg	TB	Remote	-899	—	—	—	P

Use copies of this page as needed for additional reference cell readings.

1. Enumerate numerically or by code on the site drawing each local reference electrode placement (e.g., R1-C, R2-G, R3-C, etc.)
2. Describe the structure that is being tested (e.g. plus tank diesel piping, flex connector, etc.)
3. Describe where the structure being tested is contacted by the test lead (e.g. plus tank bottom, diesel piping @ dispenser #1, etc.)
4. Describe the exact location where the reference electrode is placed for each measurement (e.g. soil @ regular tank STP manway; soil @ dispenser 2, etc.)
5. (Applies to all tests) Record the structure-to-soil potential (voltage) observed with the current applied (e.g. -1070 mV)
6. (Applies to all tests) Record the structure-to-soil potential (voltage) observed when the current is interrupted (e.g. 882 mV)
7. (Applies to 100 mV polarization test only) Record the voltage observed at the end of the test period (e.g. 875 mV)
8. (Applies to 100 mV polarization test only) Subtract the final voltage from the instant off voltage (e.g. 882 mV – 875 mV = 104 mV)
9. Indicate if the tested structure passed or failed any of the two acceptable criteria (850 instant off or 100 mV polarization) based on your best judgment of data.

PRODUCED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY PIPING PROGRAM
PO BOX 10009, RICHMOND, VA 23240-0009 PHONE (804) 698-4010 FACSIMILE (804) 698-4116 WWW.DEQ.STATE.VA.US

- This section may be utilized to conduct measurements of continuity on UST systems that are protected by cathodic protection systems.
- When conducting a fixed cell - moving ground survey, the reference electrode must be placed in the soil at a remote location and left undisturbed.
- Conduct point-to-point test between any two structures for which the fixed cell - moving ground survey is inconclusive or indicates possible isolation.
- For impressed current systems, the protected structure must be continuous with all other protected structures in order to pass the continuity survey.
- For galvanic systems, the structure that is to be protected must be isolated from any other metallic structure in order to pass the continuity survey.

FACILITY NAME: Coast Guard Mini Mart

NOTE: The survey is not complete unless all applicable parts of sections I-XIV are also completed.

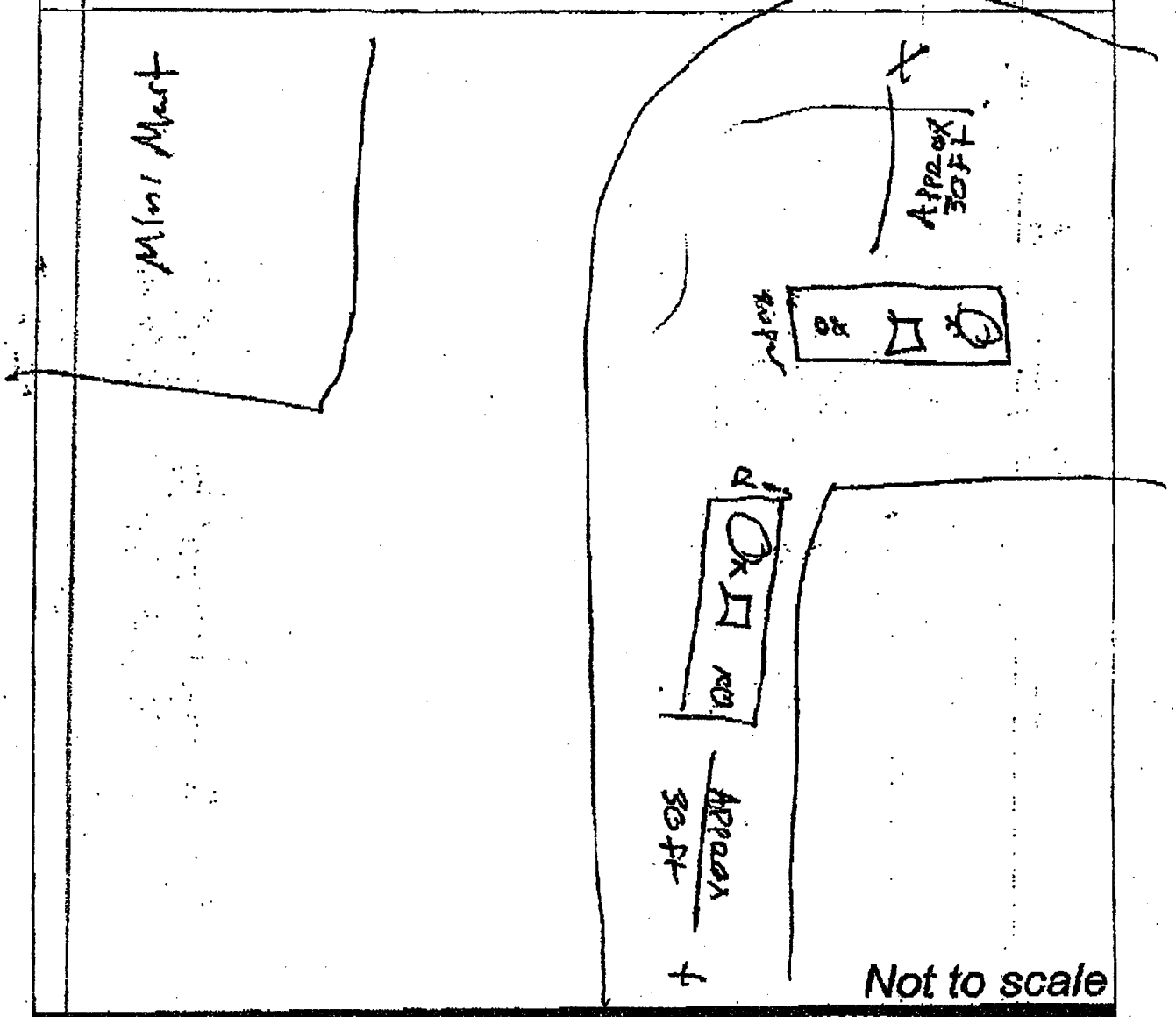
DESCRIBE LOCATION OF "FIXED REMOTE" REFERENCE ELECTRODE PLACEMENT:

STRUCTURE "A" [1]	STRUCTURE "B" [2]	STRUCTURE "A" FIXED VOLTAGE (mV) [3]	STRUCTURE "B" FIXED VOLTAGE (mV) [4]	POINT-TO-POINT VOLTAGE DIFFERENCE [5]	ISOLATED/ CONTINUOUS [6]
(example) PLUS TANK BOTTOM	(example) PLUS STEEL PRODUCT LINE @ STP	(example) -915 mV	(example) -908 mV		(example) INCONCLUSIVE
(example) PLUS TANK BOTTOM	(example) PLUS STEEL PRODUCT LINE @ STP			(example) 1 mV	(example) CONTINUOUS
Super TB	Super fill	—	—	60 mV	Iso
Super TB	Super STP	—	—	480 mV	Iso
Reg TB	Reg fill	—	—	240 mV	Iso
Reg TB	Reg STP	—	—	213 mV	Iso

1. Describe the protected structure ("A") that you are attempting to demonstrate is continuous (e.g. plus tank bottom).
2. Describe the "other" protected structure ("B") that you are attempting to demonstrate is continuous (e.g. plus steel product line @ STP).
3. Record the fixed remote instant off structure-to-soil potential of the protected structure ("A") in millivolts (e.g. –915 mV).
4. Record the fixed remote instant off structure-to-soil potential of the "other" protected structure ("B") in millivolts (e.g. –908 mV).
5. Record the voltage difference observed between structure "A" and structure "B" when conducting "point-to-point" testing (e.g. 1mV).
6. Document whether the test (fixed cell and/or point-to-point) indicated the protected structure was isolated, continuous or inconclusive.

Attach detailed drawing of the UST and cathodic protection systems. Sufficient detail must be given in order to clearly indicate where the reference electrode was placed for each structure-to-soil potential that is recorded on the survey forms. Any pertinent data must also be included. At a minimum indicate the following: all tanks, piping and dispensers; all buildings and streets; all anodes and wires; location of CP test stations; and, each reference electrode placement must be indicated by a code followed by a "IC" or "G" to indicate the type of CP system (e.g., R1-IC, R2-G, etc.) corresponding with the appropriate line number in Section XIV of this form. (Note, CP test stations (PP4)may be questionable for use as described in Section 6.1.2)

AN EVALUATION OF THE CATHODIC PROTECTION SYSTEM IS NOT COMPLETE WITHOUT AN ACCEPTABLE SITE DRAWING.



PRODUCED BY THE MISSOURI DEPARTMENT OF ENVIRONMENTAL QUALITY UST PROGRAM
P.O. BOX 176, JEFFERSON CITY, MO 65102 PHONE (573) 751-1010 FACSIMILE (573) 526-9239 WWW.DEQ.MISSOURI.GOV

NOTE: Drawing is not to scale. If any reference points are not obviously accessible by a manway, the concrete/asphalt has been drilled to reach a suitable soil contact location. Remote reference points are situated at a suitable point according to Steel Tank Institute STiP3 test protocols. - BesTesT, LLC

TANK	PRODUCT	CAPACITY	TANK MATERIAL	PIPING MATERIAL	FLEX CONNECTORS
1	Super	10,000	STIP3	Fiberglass	All in sumps
2	Reg	10,000	STIP3	Fiberglass	
3					
4					
5					
6					
7					
8					
9					
10					

In order to conduct an effective evaluation of the cathodic protection system, a complete evaluation of rectifier operation is necessary.

RECTIFIER MANUFACTURER:

RATED DC OUTPUT: VOLTS AMPS

RECTIFIER MODEL:

RECTIFIER SERIAL NUMBER:

RECTIFIER OUTPUT AS INITIALLY DESIGNED OR LASTLY RECOMMENDED (if available): _____ VOLTS _____ AMPS

EVENT	DATE	TAP SETTINGS		DC OUTPUT		HOUR METER	COMMENTS
		COARSE	FINE	VOLTS	AMPS		
"AS FOUND"							
"AS LEFT"							

Complete if the system is designed to allow such measurements (i.e. individual lead wires for each anode are installed and measurement access points are present).

CIRCUIT	1	2	3	4	5	6	7	8	9	10	TOTAL AMPS
ANODE (+)											
TANK (-)											

Complete if any repairs or modifications to the cathodic protection system are made OR are necessary. Certain repairs/modifications as explained in the text of the VADEQ cathodic protection guidance document are required to be designed and/or evaluated by a corrosion expert (completion of Section V required).

- ☐ Additional anodes for an impressed current system (attach corrosion expert's design).
- ☐ Supplemental anodes for a STI-P3® tank or metallic pipe (attach corrosion expert's design or documentation industry standard was followed).
- ☐ Repairs or replacement of rectifier (explain in "Remarks/Other" below).
- ☐ Anode header cables repaired and/or replaced (explain in "Remarks/Other" below).
- ☐ Impressed current protected tanks/piping not electrically continuous (explain in "Remarks/Other" below).
- ☐ Galvanically protected tanks/piping NOT electrically isolated (explain in "Remarks/Other" below).

Remarks/Other:

ATTACHMENT (4)

JONES & FRANK
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Remit To:
P. O. Box 600022
Raleigh, NC 27675-6022
www.jones-frank.com

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FREDERICKSBURG, VA (540) 735-9290	RICHMOND, VA (804) 412-0508	NORFOLK, VA (757) 853-3500
RALEIGH, NC (919) 231-1998	CHARLOTTE, NC (704) 393-8542	GREENVILLE, SC (864) 467-0083
COLUMBIA, SC (803) 731-4140	ATLANTA, GA (770) 322-0552	

SERVICE INVOICE: 0010154180

BILL TO:
18988
US COAST GUARD EXCHANGE SYSTEM
510 INDEPENDENCE PKWY
SUITE 500
CHESAPEAKE, VA 23320

SHIP TO:
US COAST GUARD MINI MART
BLDG 231
YORKTOWN, VA 23690

INVOICE DATE	CUSTOMER PO	PAYMENT TERMS	REFERENCE #	CALLER NAME
06/02/2011	LINDA	Net 10 Days	0010154180	LINDA

ITEM ID	EMPLOYEE	DATE	DESCRIPTION	QTY	UNIT PRICE	EXT PRICE
TRP00001	ENGLISHW	06/01/11	Standard Trip Charge	0.50	153.28	76.64
LAB00001	ENGLISHW	06/01/11	Retail Labor Regular Time	1.50	65.00	97.50
TRP00001	ENGLISHW	06/02/11	Standard Trip Charge	0.50	153.28	76.64
LAB00001	ENGLISHW	06/02/11	Retail Labor Regular Time	1.75	65.00	113.75

SERVICE REQUESTED
SET FLOOR LIMITS IN PASSPORT ***AUTHORIZED BY THE SITE***. ALSO SENSOR ALARMS ON THE V/R. KENNY TALKED THROUGH TURNING OFF SENSORS IN PROGRAMMING.

SERVICE PERFORMED
6-1-11 W.E. re-enabled sensors in V/R. V/R reading "All Functions Normal". Set floor limits in Passport to $75.00. V/R still reading "All Functions Normal". Checked liquid sensor diagnostics, all sensors reading normal status. Also all references and sample counts of sensors are reading within normal operating range. Found no issue w/ V/R @ this time.
6-1-11 W.E. Found V/R reading "all functions normal". Remade all field wire connections to probes/sensors. ALL WIRES ARE SOLID COPPER WIRE NOT SHIELDED TWISTED PAIRS. This is very likley the cause of all probe/sensor issues, and is the first thing needed to be addressed to futher troubleshoot all probe/sensor issues.

Vendor # 10CJ
Project#

RECEIVED
JUN 06 2011
By

G/L ACCT	Description	Amount
6111-45a	equip-maint.repairs	364.53

A FINANCE CHARGE WILL BE ADDED TO ALL PAST DUE ACCOUNTS

Net Amount includes all applicable sales and use taxes.

Sales Total	364.53
Disc.Amount	0.00
Net Amount	364.53

Service unit:
Norfolk
1300 Ingleside Road
Norfolk , VA 23502
Phone (757) 853-3500
Fax (757) 855-2665

JONES & FRANK
Petroleum Equipment Specialists

SITE SERVICED: US COAST GUARD MINI MART
BLDG 231

YORKTOWN ,VA 23690
7578562656

Date: 6/1/2011 12:34:11 PM

Invoice: **#0010154180**

Confirmation Code:

Start Time	End Time	Technician
6/1/2011 11:17:17 AM	6/1/2011 12:33:41 PM	WILLIAM ENGLISH

Work Requested:

SET FLOOR LIMITS IN PASSPORT ***AUTHORIZED BY THE SITE***. ALSO SENSOR ALARMS ON THE V/R. KENNY TALKED THROUGH TURNING OFF SENSORS IN PROGRAMMING.

Work Performed:

6-1-11 W.E. re-enabled sensors in V/R. V/R reading "All Functions Normal". Set floor limits in Passport to $75.00. V/R still reading "All Functions Normal". Checked liquid sensor diagnostics, all sensors reading normal status. Also all references and sample counts of sensors are reading within normal operating range. Found no issue w/ V/R @ this time.

Customer Comments:

Item ID	Description	QTY
TRP00001	Standard Trip Charge	1
LAB00001	Retail Labor Regular Time	1.5

Customer Signature _____ Date 06/01/11

Tech Signature _____ Date 6-1-11

Service unit:
Norfolk
1300 Ingleside Road
Norfolk , VA 23502
Phone (757) 853-3500
Fax (757) 855-2665

JONES & FRANK
Petroleum Equipment Specialists

SITE SERVICED: US COAST GUARD MINI MART
BLDG 231

YORKTOWN ,VA 23690
7578562656

Date: 6/2/2011 1:04:47 PM

Invoice: **#0010154180**

Confirmation Code:

Start Time	End Time	Technician
6/2/2011 11:24:02 AM	6/2/2011 1:04:00 PM	WILLIAM ENGLISH

Work Requested:

SET FLOOR LIMITS IN PASSPORT ***AUTHORIZED BY THE SITE***. ALSO SENSOR ALARMS ON THE V/R. KENNY TALKED THROUGH TURNING OFF SENSORS IN PROGRAMMING.

Work Performed:

6-1-11 W.E. re-enabled sensors in V/R. V/R reading "All Functions Normal". Set floor limits in Passport to $75.00. V/R still reading "All Functions Normal". Checked liquid sensor diagnostics, all sensors reading normal status. Also all references and sample counts of sensors are reading within normal operating range. Found no issue w/ V/R @ this time.
6-1-11 W.E. Found V/R reading "all functions normal". Remade all field wire connections to probes/sensors. ALL WIRES ARE SOLID COPPER WIRE NOT SHIELDED TWISTED PAIRS. This is very likley the cause of all probe/sensor issues, and is the first thing needed to be addressed to futher troubleshoot all probe/sensor issues.

Customer Comments:

Item ID	Description	QTY
TRP00001	Standard Trip Charge	1
LAB00001	Retail Labor Regular Time	1.5
TRP00001	Standard Trip Charge	1
LAB00001	Retail Labor Regular Time	1.75

Customer Signature L. Weis Date 6-2-11

Tech Signature Date 6-2-11

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Petroleum Equipment Specialists

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SERVICE INVOICE: 0010155692

JUN 23 2011

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18988
US COAST GUARD EXCHANGE SYSTEM
510 INDEPENDENCE PKWY
SUITE 500
CHESAPEAKE, VA 23320

SHIP TO:
US COAST GUARD MINI MART
BLDG 231
YORKTOWN, VA 23690

INVOICE DATE	CUSTOMER PO	PAYMENT TERMS	REFERENCE #	CALLER NAME
06/21/2011	LINDA	Net 10 Days	0010155692	LINDA

ITEM ID	EMPLOYEE	DATE	DESCRIPTION	QTY	UNIT PRICE	EXT PRICE
TRP00001	ENGLISHW	06/10/11	Standard Trip Charge	1.00	153.28	153.28
LAB00001	ENGLISHW	06/10/11	Retail Labor Regular Time	1.00	65.00	65.00

SERVICE REQUESTED
DISCONNECT SENSOR MODULE UNTIL WORK CAN BE DONE TO REPLACE SENSOR WIRING.

SERVICE PERFORMED
6-10-11 W.E. Disconnected sensor wiring & disabled sensors in programming.

Vendor # 1005
Project#

G/L ACCT	Description	Amount
10111-452	equip maint/rental	218.28

A FINANCE CHARGE WILL BE ADDED TO ALL PAST DUE ACCOUNTS

Net Amount includes all applicable sales and use taxes.

Sales Total	218.28
Disc.Amount	0.00
Net Amount	218.28

Service unit:
Norfolk
1300 Ingleside Road
Norfolk , VA 23502
Phone (757) 853-3500
Fax (757) 855-2665

JONES & FRANK
Petroleum Equipment Specialists

SITE SERVICED: US COAST GUARD MINI MART
BLDG 231

YORKTOWN ,VA 23690
7578562656

Date: 6/10/2011 9:50:22 AM

Invoice: **#0010155692**

Confirmation Code:

Start Time	End Time	Technician
6/10/2011 9:38:05 AM	6/10/2011 9:49:58 AM	WILLIAM ENGLISH

Work Requested:

DISCONNECT SENSOR MODULE UNTIL WORK CAN BE DONE TO REPLACE SENSOR WIRING.

Work Performed:

6-10-11 W.E. Disconnected sensor wiring & disabled sensors in programming.

Customer Comments:

Item ID	Description	QTY
TRP00001	Standard Trip Charge	1
LAB00001	Retail Labor Regular Time	1

Customer Signature Linda Weis Date 6-10-11

Tech Signature Date 6-10-11

YORKTOWNCOASTGUARDMM
BLD 213 TRAININGCNTR
YORKTOWN VA 23692
757 856 2656

SEP 1, 2011 8:00 AM

CSLD TEST RESULTS
- - - - - - - - - - - -
SEP 1, 2011 8:00 AM

T 1:PREMIUM
PROBE SERIAL NUM 472633

0.2 GAL/HR TEST
PER: SEP 1, 2011 PASS

T 2:UNLEADED
PROBE SERIAL NUM 531583

0.2 GAL/HR TEST
PER: AUG 31, 2011 PASS

Service unit:
Norfolk
1300 Ingleside Road
Norfolk , VA 23502
Phone (757) 853-3500
Fax (757) 855-2665

Jones & Frank

SITE SERVICED: US COAST GUARD MINI MART
BLDG 231

YORKTOWN ,VA 23690
7578562656

Date: 9/13/2011 10:10:59 AM

Invoice: **#0010171334**

Confirmation Code:

Start Time	End Time	Technician
9/13/2011 9:19:28 AM	9/13/2011 10:10:17 AM	CHRIS THOMAS

Work Requested:

Perform Line & Leak detector test, as well as cathodic protection

Work Performed:

9-13-11KW Performed Line & Leak detector test and cathodic protection test. 9.13.11CT- Verified operation of all liquid sensors after wiring had been replaced. Set each liquid sensor into alarm and verified operation and programming. Verified CSLD is operational. Premium tank had 0.2 gal/hr test pass yesterday (9/12/11) and UNLD had 0.2 gal/hr test pass today (9/13/11). Printed results for site MGMT. Checked inventory levels in each tank with stick. Programmed a 2.2" tank tilt in PREM and a 0.75" tank tilt in UNLD. This will give site more accurate inventory level, so it will match delivery drivers readings. Site now checks ok.

Customer Comments:

Item ID	Description	QTY
SUB00001	LINE AND LEAK DETECTOR TEST	1
SUB00001	CATHODIC PROTECTION SYSTEM TEST-STIP3	1
TRP00001	Standard Trip Charge	1
LAB00001	Retail Labor Regular Time	1

Customer Signature Linda R. Weis **Date** 9/13/11

Tech Signature _____ **Date** _____

ATTACHMENT (5)

BESTEST LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7900

SITE DBA Coast Guard LB&B

ADDRESS Barracks Rd

Yorktown, VA

TEST DATE 01/08/2007

TEST CONDUCTOR Richard E. Murray Jr.

OFFICE PHONE NUMBER (804) 271-4456

TEST PERFORMED	PRODUCT (PASS/FAIL)				
	Unleaded	Plus	Super	Diesel	Kerosene
LEAK DETECTORS	___/___	___/___	___/___	✓/___	___/___
SUMP SENSORS	___/___	___/___	___/___	___/___	___/___
SHEAR VALVES	___/___	___/___	___/___	___/___	___/___

CORRECTIONS MADE None

CORRECTIONS NEEDED None

Testing performed per manufacturer's specifications

BESTEST LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7900

SITE DBA U.S. Coast Guard

ADDRESS Boat Harbor

Yorktown, VA

TEST DATE 04/11/2008

TEST CONDUCTOR Richard E. Murray Jr.

OFFICE PHONE NUMBER (804) 271-4456

TEST PERFORMED	PRODUCT (PASS/FAIL)				
	Unleaded	Plus	Super	Diesel	Kerosene
LEAK DETECTORS	___/___	___/___	___/___	✓/___	___/___
SUMP SENSORS	___/___	___/___	___/___	___/___	___/___
SHEAR VALVES	___/___	___/___	___/___	___/___	___/___

CORRECTIONS MADE Diesel leak detector failed.

Replaced & re-tested.

CORRECTIONS NEEDED None

Testing performed per manufacturer's specifications

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SERVICE DEPARTMENT
WORK ORDER

1300 Ingleside Rd
Norfolk, Virginia 23502
757-853-3500
757-853-2641

ext. 3131 Kenny
$350.00

Ticket #/Job #: 1-108628
Date: 5/27/10
P.O. #:

Emergency Call? ☐ Yes ☑ No

Technician's Name: Chris Thomas
Service Location: U.S. Coast Guard
UTB Facility

Travel Start: [redacted]
Travel Stop:
Job Time Start
Job Time End

Site Phone #:

Part # /Material Used	Qty.	Loc.	Description	Serial #	$ Price
PART#					
PART#					
PART#					
PART#					
PART#					
PART#					

Service Requested: Boat deck diesel inspection

Service Performed: - Verified good seals on containment and fill adaptor. - Tank has overfill protection and sump sensors. - VR @ "All Functions Normal" - Failed 0.2 gal/hr test on 5/25/10, but passed 0.2 gal/hr CSLD test today 5/27. - Verified no leaks at Hose Reel/dispensers. - Hanging hardware also checks O.K.

EQUIPMENT INFO

model
serial
software
version

Fault code
componet code
remedy code

Warranty?: Yes ____ No ✓

Parts Sub-Total:
Tax:

Service Completed? Yes ✓ No ____

Labor ____ @$ ____ :
Mileage ____ @$ ____ :

Total COD Amount Due: $

Technician [signature]

Customer [signature]

BESTEST LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7800

SITE DBA Coast Guard Training Center

ADDRESS Marina

Yorktown, VA

TEST DATE 09/08/2011

TEST CONDUCTOR Adam N. Murray

OFFICE PHONE NUMBER (804) 271-4456

TEST PERFORMED	PRODUCT (PASS/FAIL)				
	Unleaded	Plus	Super	Diesel	Kerosene
LEAK DETECTORS	___/___	___/___	___/___	✓/___	___/___
BALL FLOATS	___/___	___/___	___/___	___/___	___/___
SHEAR VALVES	___/___	___/___	___/___	___/___	___/___

CORRECTIONS MADE None

CORRECTIONS NEEDED None

Testing performed per manufacturer's specifications

ATTACHMENT (6)

BesTesT LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7900

Petro-Tite Line Test Data Sheet

LOCATION: Coast Guard LB&B Barracks Rd Yorktown, VA
OWNER: Coast Guard LB&B Barracks Rd Yorktown, VA
REASON FOR TEST: routine TEST DATE 01/08/07
TEST REQUESTED BY: Jeff O'Connell
COMPANY PERFORMING TEST/TECHNICIAN'S NAME BesTesT, LLC. Richard E. Murray, Jr.
Is a tank test to be made with this line test? ___ YES X NO Make and type of pump & dispensers PMC disp's & RJ stp's
WEATHER mild Cover over lines Earth, concrete, pier Approx burial depth 2.5'

IDENTIFY EACH LINE AS TESTED	TIME 24:00	LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	PRESSURE psi or kPa		VOLUME READING		NET Change	TEST RESULTS CONCLUSIONS, REPAIRS, AND COMMENTS	
			Before	After	Before	After			
Diesel	13:25	attached line test adapter							
	13:30	test press/begin		50psi		.038			
	13:45	line test, con't	50	50	.038	.038	+.000		
	14:00	" "	50	50	.038	.038	+.000		
	14:15	" "	50	50	.038	.038	+.000		
	14:30	" "	50	50	.038	.038	+.000	+.000	* TIGHT *
	14:31	bleedback check	50	0	.038	.074	+.036		

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BesTesT LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4458
FAX: 1-888-201-7900

Petro-Tite Line Test Data Sheet

LOCATION: U.S. Coast Guard Boat Harbor Yorktown, VA
OWNER: U.S. Coast Guard Boat Harbor Yorktown, VA
REASON FOR TEST: routine TEST DATE 04/11/08
TEST REQUESTED BY: Matt Phinney Jones & Frank
COMPANY PERFORMING TEST/TECHNICIAN'S NAME BesTesT, LLC. Richard E. Murray, Jr.
Is a tank test to be made with this line test? ___YES X NO Make and type of pump & dispensers PMC/Gasboy disp's & RJ stp's
WEATHER mild Cover over lines Earth, concrete & dock Approx burial depth 2.5'

IDENTIFY EACH LINE AS TESTED	TIME 24:00	LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	PRESSURE psi or kPa		VOLUME READING		NET Change	TEST RESULTS CONCLUSIONS, REPAIRS, AND COMMENTS	
			Before	After	Before	After			
Diesel	10:50	attached line test adapter							
	10:55	test press/begin		50psi		.034			
	11:10	line test, con't	50	50	.034	.034	+.000		
	11:25	" "	50	50	.034	.034	+.000		
	11:40	" "	50	50	.034	.034	+.000		
	11:55	" "	50	50	.034	.034	+.000	+.000	* TIGHT *
	11:56	bleedback check	50	0	.034	.061	+.027		
Unleaded	11:02	attached line test adapter							
(suction)	11:07	test press/begin		20psi		.015			
	11:22	line test, con't	20	20	.015	.015	+.000		
	11:37	" "	20	20	.015	.015	+.000		
	11:52	" "	20	20	.015	.015	+.000		
	12:07	" "	20	20	.015	.015	+.000	+.000	* TIGHT *
	12:08	bleedback check	20	0	.015	.034	+.019		

JONES & FRANK CORPORATION

CERTIFICATION OF SYSTEM TESTING

PROJECT NUMBER: 01090219T
CLIENT: ENCOR
SITE: YORKTOWN USCG

I have conducted a pressurized test of the fuel piping, secondary piping, and fuel tank according to the Manufacturer's installation /upgrade specifications for the subject Project.

STANDARDS UTILIZED

System	psig	Duration	Acceptable Variation
Primary Piping	~~75~~ 50	1 hour	3%
Secondary Piping	5	1 hour	Non Detectable
Fuel Tank	5	1 hour	Non Detectable

TEST DATA:

System	Date	psig Start	psig End	Time Start	Time End
Primary Pipe	8-2-09	50	50	9 AM	10 AM
Sec. Pipe					
Fuel Tank					

I certify the system has passed all tests as detailed above.

Signed: _____
(Job Foreman)

Date: 8/2/09

I witnessed the system test on the fuel system at the above mentioned site. I am satisfied this system has been successfully tested under the subject guidelines and is approved for operational service.

Witness: _____
(Company Representative)

Date: 8-2-09

Witness: _____
(Inspector)

Date: _____

Diesel Line to docks

BesTesT LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4458
FAX: 1-888-201-7900

Petro-Tite Line Test Data Sheet

LOCATION: Coast Guard Training Center Marina Yorktown, VA

OWNER: Coast Guard Training Center Marina Yorktown, VA

REASON FOR TEST: routine | TEST DATE 09/08/11

TEST REQUESTED BY: Ralph Corey Jones & Frank

COMPANY PERFORMING TEST/TECHNICIAN'S NAME BesTesT, LLC. Adam N. Murray

Is a tank test to be made with this line test? ___ YES X NO

Make and type of pump & dispensers PMC disp's & RJ stp's

WEATHER mild Cover over lines Concrete & earth & air Approx burial depth 2.5'

IDENTIFY EACH LINE AS TESTED	TIME 24:00	LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	PRESSURE psi or kPa		VOLUME READING		NET Change	TEST RESULTS CONCLUSIONS, REPAIRS, AND COMMENTS	
			Before	After	Before	After			
Diesel	1303	attached line test adapter							
	1308	test press/begin		50psi		.040			
	1323	line test, con't	50	50	.040	.040	+.000		
	1338	" "	50	50	.040	.040	+.000		
	1353	" "	50	50	.040	.040	+.000		
	1408	" "	50	50	.040	.040	+.000	+.000	* TIGHT *
	1409	bleedback check	50	0	.040	.087	+.047		

Certification Leak rate of 0.1 gph with PD = 99.99% and PFA = 0.34%.
Leak Threshold: 0.05 gph. A pipeline system should not be declared tight if the test result indicates a loss that equals or exceeds this threshold. Vendor claims this equipment can detect leaks at .01 gph, and trains operators to declare leaks at .01 gph.

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BesTesT LLC.
Complete Testing Services
3611 Thurston Road
Richmond VA 23237
Phone: (804) 271-4456
FAX: 1-888-201-7900

Petro-Tite Line Test Data Sheet

LOCATION: U.S. Coast Guard Boat Harbor Yorktown, VA
OWNER: U.S. Coast Guard Boat Harbor Yorktown, VA
REASON FOR TEST: routine TEST DATE 04/11/08
TEST REQUESTED BY: Matt Phinney Jones & Frank
COMPANY PERFORMING TEST/TECHNICIAN'S NAME BesTesT, LLC. Richard E. Murray, Jr.
Is a tank test to be made with this line test? ___ YES X NO Make and type of pump & dispensers PMC/Gasboy disp's & RJ stp's
WEATHER mild Cover over lines Earth, concrete & dock Approx burial depth 2.5'

IDENTIFY EACH LINE AS TESTED	TIME 24:00	LOG OF TEST PROCEDURES, AMBIENT TEMPERATURE, WEATHER, ETC.	PRESSURE psi or kPa		VOLUME READING		NET Change	TEST RESULTS CONCLUSIONS, REPAIRS, AND COMMENTS	
			Before	After	Before	After			
Diesel	10:50	attached line test adapter							
	10:55	test press/begin		50psi		.034			
	11:10	line test, con't	50	50	.034	.034	+.000		
	11:25	" "	50	50	.034	.034	+.000		
	11:40	" "	50	50	.034	.034	+.000		
	11:55	" "	50	50	.034	.034	+.000	+.000	* TIGHT *
	11:56	bleedback check	50	0	.034	.061	+.027		
Unleaded	11:02	attached line test adapter							
(suction)	11:07	test press/begin		20psi		.015			
	11:22	line test, con't	20	20	.015	.015	+.000		
	11:37	" "	20	20	.015	.015	+.000		
	11:52	" "	20	20	.015	.015	+.000		
	12:07	" "	20	20	.015	.015	+.000	+.000	* TIGHT *
	12:08	bleedback check	20	0	.015	.034	+.019		