

CORROSION TECHNOLOGY SYSTEM LLC

9053 Millcliff Drive
Cincinnati, Ohio 45231
Sam.vessel@outlook.com
(513) 504-2428

STATE
FACILITY ID NUMBER
18406

UST Impressed Current Cathodic Protection System Report

1. UST Facility Information

AI Number	22		
UST Facility Name	Simar's Convenience #2 Store		
UST Facility Physical Address	Street Address: 2068 E Market Street		
	City: Nappanee	County: Elkhart	Zip Code: 46550

2. Cathodic Protection Tester Evaluation (mark only one)

Date of Evaluation	12 / 8 / 2024		
Reason For Evaluation (mark only one)	☒ New Install (within 180 days) ☐ Re-evaluation following repair / modification (within 180 days) ☐ Routine (every 36 months) ☐ Re-evaluation following a failure (within 130 days)		

All protected structures at this UST facility pass the cathodic protection system evaluation and it is judged that adequate cathodic protection has been provided to the UST system. Complete Section 4.

☒ Pass

One or more protected structure at this UST facility fail the cathodic protection system evaluation and it is judged that adequate cathodic protection has not been provided to the UST system. Complete Section 5.

☐ Fail

If the remote and the local potential readings do not both indicate the same test result on all protected structure (both pass or both fail), the cathodic protection system shall be re-evaluate and/or retested by a corrosion expert. Complete Section 3.

☐ Inconclusive

I certify that all the information provided on this document is true, accurate, and complete.

Cathodic Protection Tester Certification	Printed	Samuel L. Vessel	Date	12 / 10 / 2024
	Signature			
Certification Type (mark all that apply)	☒ NACE ☐ STI ☐ Other (specify)			
Certification	Number: CP04 #4097	Expiration Date:	10 / 12 / 2027	
Contact Information	Phone: (513) 504-2428	Email:	Sam.vessel@outlook.com	
Company Name	Corrosion Technology System LLC			

3. Corrosion Expert Evaluation (mark only one)

The evaluation shall be conducted and/or evaluated by a corrosion expert when: a) an inconclusive is indicated for any protected structure since both the local and the remote structure-to-soil potentials do not result in the same outcome (both pass or both fail); b) repairs to galvanized or uncoated steel piping are conducted or c) supplemental anodes are added to the tanks and/or piping without following an acceptable industry code.

Date of Evaluation	12 / 8 / 2024		
All protected structures at this UST facility pass the cathodic protection system evaluation and it is judged that adequate cathodic protection has been provided to the UST system. Complete Section 4.	☒ Pass		
One or more protected structure at this UST facility fail the cathodic protection system evaluation and it is judged that adequate cathodic protection has not been provided to the UST system. Complete Section 5.	☐ Fail		

I certify that all the information provided on this document is true, accurate, and complete.

Corrosion Expert Certification	Printed	Samuel L. Vessel	Date	12 / 10 / 2024
	Signature			
	License #	Corr Specialist, CP04 # 4097	License Expiration Date	10 / 12 / 2027

4. Application Evaluation Criteria (mark all that apply)

Structure-to-soil potential more negative than -850mV with respect to a Cu/CuSO4 reference electrode with the protective current temporarily interrupted (instant-off).

☒ 850 Off

Structure tested exhibits at least 100mV of cathodic polarization.

☐ 100 mV Polarization

5. Required Action (mark only one)

Cathodic protection is adequate. No further action is necessary at this time. Next evaluation due 3 years from the date of this evaluation or if another reason listed in Section 2 (Reason for Evaluation) occurs

☒ None

Cathodic protection may not be adequate. Re-evaluate during the next 90 days to determine if passing results can be achieved.

☐ Re-evaluation

Cathodic protection is not adequate. A repair or modification is necessary as soon as practical, but within the next 90 days.

☐ Repair & Re-evaluation

Next Cathodic Protection Evaluation shall be completed by

12 / 8 / 2024

6. Description of Evaluated UST System

Tank	Product	Capacity (gal)	Tanks	Piping	Flex Connectors	
					STP	UDC
1	Premium UL	10,000	STiP3 Coated & Bonded	FRP	Steel w/CP	Steel w/CP
2	Regular UL	10,000	STiP3 Coated & Bonded	FRP	Steel w/CP	Steel w/CP
3	Diesel Fuel	10,000	STiP3 Coated & Bonded	FRP	Steel w/CP	Steel w/CP
4	Kerosene Fuel	4,000	STiP3 Coated & Bonded	FRP	Steel w/CP	Steel w/CP
5						
6						

7. Impressed Current Rectifier Data

Manufacturer		Model		Serial Number		Rated DC Output		Initial Design or Lastly Recommended Output	
Universal Rectifier		ES-II		983517		Volts	Amps	Volts	Amps
Event	Date	Tap Settings		DC Output		20	10	14.58	2.34
		Coarse	Fine	Volts	Amps	Hour Meter		Comments	
"As Found"	12/8/2024	NA	NA	NA	NA	NA		Installed New CP Rectifier	
"As Left"	12/8/2024	1	2	1.732	0.92	NA		Commissioned Rectifier	

8. Impressed Current Positive & Negative Circuit Measurements (Output Amperage)

Complete if system is designed to report on measurements (e.g., individual lead wires for each anode are installed and measurement shunts are present).

Circuit	1	2	3	4	5	6	7	8	9	10	Totals
Anode (+)	0.040	0.060	0.090	0.050	0.070	0.060	0.060	0.050			0.480
Tank (-)	1.722	1.722	1.722	1.723	1.723	1.725	1.724	1.723			1.723

9. Description of Cathodic Protection System Repairs and/or Modifications

Provided detailed information about all modifications or repairs made to the cathodic protection system. Provide a detailed drawing below of the UST facility and cathodic protection systems. Sufficient detail shall 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. At a minimum indicate the following:

a) Tanks

b) Piping

c) Dispensers

d) Building and Streets

e) Anodes and Wires

f) Location of CP Test Stations

g) Each reference electrode placement (indicated by a code: 1, 2, T-1, T-1) corresponding with the appropriate line number in Section

☒ Additional anodes for an impressed current system (attach corrosion expert's design).

☐ 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).

Remarks/Other

Install new impressed current cathodic protection system consisting of a CP Rectifier, rated at 20V - 10A and eight (8) impressed current (MMO) mixed metal oxides anodes and a eight (8) circuit anode shunt box.

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Description of Cathodic Protection System Repairs and/or Modifications *(continued from Section 9)*

Detailed Drawings

See attached Site Sketch Drawing!

10. Impressed Current Cathodic Protection System Continuity Survey

Complete to document measurements of continuity on UST systems that are protected by impressed current cathodic protection systems.

Structure "A" ¹	Structure "B" ²	Structure "A" Fixed Remote Instant Off Voltage ³	Structure "B" Fixed Remote Instant Off Voltage ⁴	Point-to-Point Voltage Difference ⁵	Isolated / Continuous / Inconclusive ⁶
Plus Tank Bottom	Plus Steel Line @ STP	-915 mV	-908 mV		Inconclusive
Plus Tank Bottom	Plus Steel Line @ STP	50' North of Tank Pad		1 mV	Continuous
Premium UL Tank Bottom	Rectifier Negative	-1211	-1211	3.90	Continuous
Regular UL Tank Bottom	Rectifier Negative	-1210	1211	4.50	Continuous
Diesel Tank Bottom	Rectifier Negative	1209	1211	4.20	Continuous
Kerosene Tank Bottom	Rectifier Negative	1210	1211	4.00	Continuous
Comments					

¹ Describe the cathodically protected structure being demonstrated as isolated from unprotected structures (e.g. plus tank bottom).

² Describe the "other" protected structure being demonstrated as continuous (e.g. plus steel 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 protected structure "B" in millivolts (e.g. -908 mV).

⁵ Record the voltage difference observed between structure "A" and "B" when conducting point-to-point testing (e.g. 1 mV).

⁶ Document whether the test (fixed cell and/or point-to-point) indicated the protected structure was isolated, continuous or inconclusive

11. Impressed Current Cathodic Protection System Survey

Use this section to document a survey of an impressed current cathodic protection system by obtaining structure-to-soil potential measurements.

Location Code ⁷	Structure ⁸	Contact Point ⁹	Locate Reference Cell Placement ¹⁰	On Voltage ¹¹	Instant Off Voltage ¹²	Ending Voltage ¹³	Voltage Change ¹⁴	Pass / Fail ¹⁵
						100 mV Polarization		
Example 1	Plus Tank	Tank Bottom	Soil @ UNL tank STP Manway	-1070 mV	-875 mV			Pass
Example 2	Diesel Tank	Dispenser 7/8	Soil @ DSL tank Manway	-810 mV	-680 mV	-575 mV	105 mV	Pass
TP01	Premium Tank	Rectifier Negative	Tank West End	-1885	-1202			PASS
TP02	Premium Tank	Rectifier Negative	Tank Center	-1582	-1181			PASS
TP03	Premium Tank	Rectifier Negative	Tank East End	-1752	-1201			PASS
TP04	Regular Tank	Rectifier Negative	Tank East End	-1807	-1209			PASS
TP05	Regular Tank	Rectifier Negative	Tank Center	-1769	-1201			PASS
TP06	Regular Tank	Rectifier Negative	Tank West End	-1891	-1204			PASS
TP07	Diesel Tank	Rectifier Negative	Tank West End	-1825	-1202			PASS
TP08	Diesel Tank	Rectifier Negative	Tank Center	-1745	-1191			PASS
TP09	Diesel Tank	Rectifier Negative	Tank East End	-1825	-1196			PASS
TP10	Kerosene Tank	Rectifier Negative	Tank East End	-1767	-1198			PASS
TP11	Kerosene Tank	Rectifier Negative	Tank Center	-1593	-1161			PASS
TP12	Kerosene Tank	Rectifier Negative	Tank West End	-1770	-1169			PASS
TP13	Remote Read	Rectifier Negative	50' North of Tanks	-1760	-1211			PASS
TP14	Remote Read	Rectifier Negative	50' South of Tanks	-1821	-1210			PASS
TP15	Premium STP	STP Flex Pipe	Installed 2 anodes	-1263	-716 before			PASS
TP16	Regular STP	STP Flex Pipe	Installed 2 anodes	-1279	-445 before			PASS
TP17	Diesel STP	STP Flex Pipe	Installed 2 anodes	-1268	-716 before			PASS
TP18	Kerosene Flex	Flex Pipe	Installed 2 anodes	-1293	-786 before			PASS
TP19	Dispenser 1-2	Flex Pipe	Installed 3 anodes	-1498	-686 before			PASS
TP20	Dispenser 3-4	Flex Pipe	Installed 2 anodes	-1595	-641 before			PASS
TP21	Dispenser 5-6	Flex Pipe	Installed 2 anodes	-1262	-674 before			PASS
TP22	Dispenser 7	Flex Pipe	Installed 1 anode	-1495	-618 before			PASS
Comments								

If you have questions about how to complete this form, please call (513) 504-2428 or email Sam.vessel@outlook.com.

- ⁷ Describe the cathodically protected structure being demonstrated as isolated from unprotected structures (e.g. plus tank bottom).
- ⁸ Describe the "other" protected structure being demonstrated as continuous (e.g. plus steel line @ STP).
- ⁹ Record the fixed remote instant off structure-to-soil potential of the protected structure "A" in millivolts (e.g. -915 mV).
- ¹⁰ Record the fixed remote instant off structure-to-soil potential of the protected structure "B" in millivolts (e.g. -908 mV).
- ¹¹ Record the voltage difference observed between structure "A" and "B" when conducting point-to-point testing (e.g. 1 mV).
- ¹² Document whether the test (fixed cell and/or point-to-point) indicated the protected structure was isolated, continuous or inconclusive
- ¹³ 100 mV Polarization test only – Record the voltage observed at the end of the test period (e.g. 575 mV).
- ¹⁴ 100 mV Polarization test only – Subtract the final voltage from the instant off voltage (e.g. 680- mV – 575 mV = 105 mV).
- ¹⁵ Indicate if the tested structure passed or failed one of the two acceptable criteria (850 instant off or 100 mV polarization) based on interpretation of the data.

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Cincinnati, Ohio 45231
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UST Rectifier Operating Record for Impressed Current Cathodic Protection System (60-day Log)

AI Number	22		
UST Facility Name	Simar's Convenience #2 Store		
UST Facility Physical Address	Street Address: 2068 E Market Street		
	City: Nappanee	County: Elkhart	Zip Code: 46550

[illegible]

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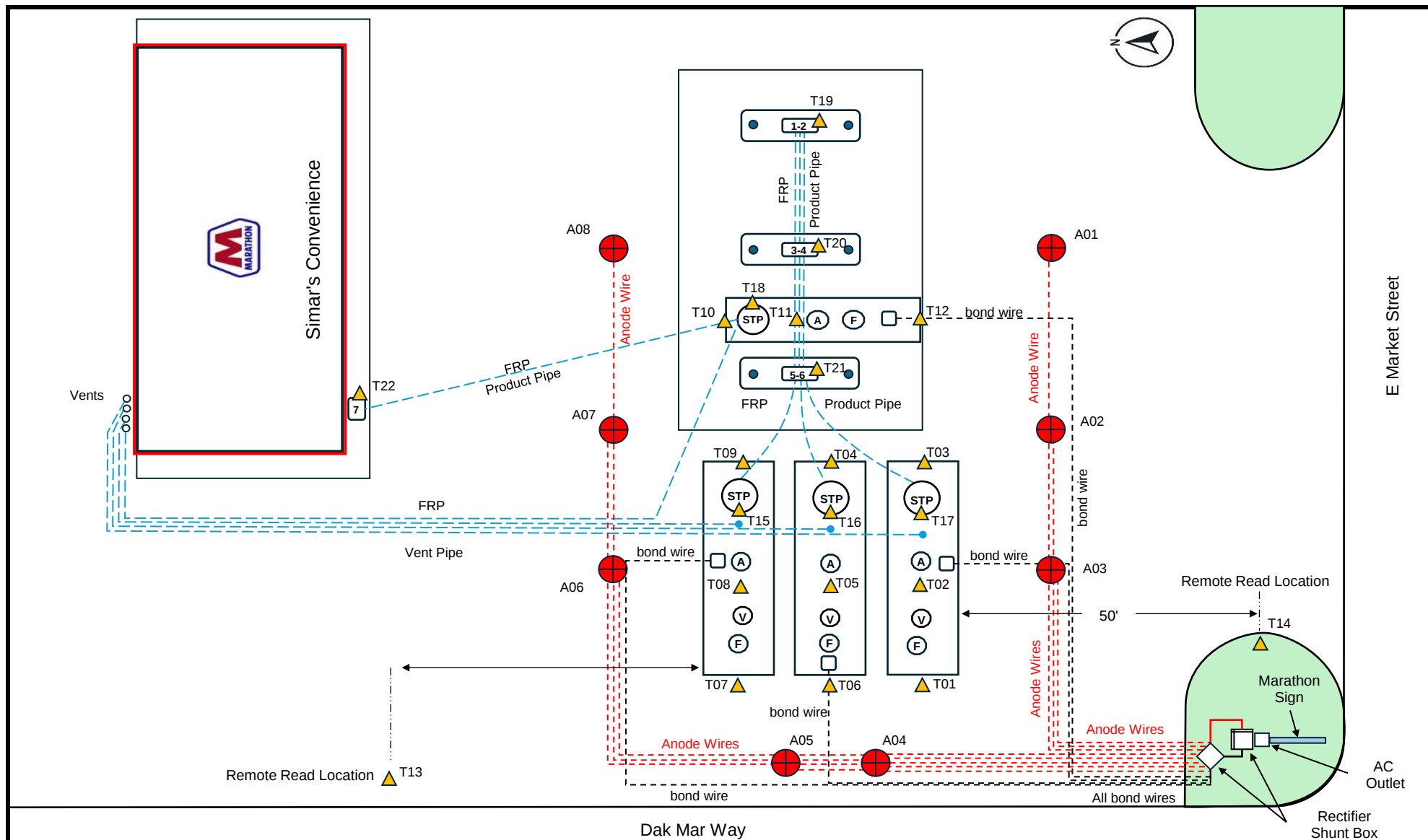
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(STP) Submersible Transfer Pump (STP)
 (A) ATG Port
 (C) Capped Port
 Fill Port
 (T) Test Station/Wire Port
 (V) Vapor Recovery Port

AI No.	22
FID	18406
County	Elkhart
Date.	12/8/2024
Contact	Mr. Gurmail Singh
Contact No.	(574) 238-8938

Simar's Convenience # 2

2068 E Market Street
 Nappanee, Indiana 46550
 Elkhart County
 Marathon Gas

CORROSION TECHNOLOGY SYSTEM LLC

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