

CONTENTS

Foreword..... iii

SECTIONS

1. Introduction..... **1**

 1.1 Origin 1

 1.2 Background 1

 1.3 Purpose 1

 1.4 Scope 2

 1.5 Sources 2

 1.6 Use of Other PEI Recommended Practices 2

 1.7 Importance of Competent Personnel..... 3

 1.8 Regulations 3

 1.9 Relationship of these Recommended Practices to Federal UST Regulation..... 3

2. Definitions **4**

 2.1 American Suction 4

 2.2 Appropriate Person..... 4

 2.3 Authority Having Jurisdiction (AHJ)..... 4

 2.4 Automatic Tank Gauge (ATG) 4

 2.5 Bacon Bomb Sampler 4

 2.6 Ball Float Valve..... 4

 2.7 Biocide 4

 2.8 Cathodic Protection 4

 2.9 Class I, Division 1 4

 2.10 Class I, Division 2 4

 2.11 Classified Area 5

 2.12 Closed Double-Walled Piping System 5

 2.13 Coaxial Vapor Recovery 5

 2.14 Containment Sump..... 5

 2.15 Deflection Plate 6

 2.16 Discriminating Sensor 6

 2.17 Dispenser Pan..... 6

 2.18 Dispenser Sump..... 6

 2.19 Drop Tube..... 6

 2.20 Drop Tube Shutoff Valve 6

 2.21 Dry Break 6

 2.22 Emergency Shutoff Valve..... 6

 2.23 Emergency Stop Switch 6

 2.24 European Suction 6

 2.25 Fill Adaptor 6

 2.26 Fill Cap..... 6

 2.27 Flexible Connector 6

 2.28 Fuel Dispenser..... 6

 2.29 Gauge Plate 6

 2.30 Groundwater Monitoring (GWM)..... 6

 2.31 Hydrostatic Sensor 6

 2.32 Intermediate Sump 6

 2.33 Interstitial Monitoring 6

 2.34 Interstitial Space..... 6

 2.35 Intrinsically Safe Circuit 6

 2.36 Leak Detection 7

 2.37 Line Leak Detector..... 7

2.38	Liquid Sensor	7
2.39	Lockout/Tagout	7
2.40	Manhole	7
2.41	Manway	7
2.42	Microbe	7
2.43	Monitoring Well	7
2.44	Observation Well	7
2.45	Open Double-Walled Piping System	7
2.46	Overfill Alarm	7
2.47	Penetration Fitting	7
2.48	Personal Protective Equipment (PPE)	7
2.49	Poppet	7
2.50	Pressure Sensor	7
2.51	Pressurized Pumping System	7
2.52	Probe	7
2.53	Product Sensor	7
2.54	Qualified Person	7
2.55	Riser	8
2.56	Safe Suction	8
2.57	Safety Data Sheet (SDS)	8
2.58	Schrader Valve	8
2.59	Sensor	8
2.60	Shear Valve	8
2.61	Soil Vapor Monitoring (SVM)	9
2.62	Spill Bucket	9
2.63	Spill Containment Manhole	9
2.64	Stage I Vapor Recovery	9
2.65	Stage II Vapor Recovery	9
2.66	STP	9
2.67	STP Sump	9
2.68	Strike Plate	9
2.69	Striker Plate	9
2.70	Submersible Turbine Pump (STP)	9
2.71	Sump	9
2.72	Swivel Adaptor	9
2.73	Tank Gauge Stick	9
2.74	Tank Pad	9
2.75	Test Boot	9
2.76	Transition Sump	9
2.77	Two-Point (Dual-Point) Vapor Recovery	9
2.78	Unsafe Suction	9
2.79	Vacuum Sensor	9
2.80	Vapor Recovery Adaptor	9
2.81	Vent Cap	9
2.82	Wear Plate	9
3.	Underground Storage Tank (UST) System Inspection	10
3.1	General	10
3.2	Why Inspect	10
3.3	What to Inspect	10
3.4	When to Inspect	10
3.5	Who Should Inspect	10
3.5.1	Relationship of Class A, B and C Operators to Level I and Level II Qualified Persons and Qualified Technicians	14
3.6	How to Inspect	14
3.7	Inspection Safety	15

4.	Documentation	16
4.1	General	16
4.2	Record Location and Retention.....	16
4.3	Inspection Documentation.....	16
4.4	Maintenance Documentation.....	16
4.5	Site Information.....	17
4.6	Class A, B and C Training Documentation.....	17
5.	Safety	18
5.1	General	18
5.2	Responsibility.....	18
5.3	Personal Protective Equipment (PPE).....	18
5.4	Vehicle Hazards.....	18
5.5	Chemical Hazards	18
5.6	Fire and Explosion Hazards	19
5.7	Electrical Hazards	19
5.8	Personnel Hazards.....	20
5.9	Confined Space Entry	21
5.10	Responding to Fuel Spills	21
6.	Daily UST System Inspection Checklist	22
6.1	General	22
6.2	Purpose.....	22
6.3	Preparation.....	22
6.4	Leak Detection	22
6.4.1	Automatic Tank Gauge (ATG).....	22
6.4.2	Electronic Leak Detection Monitor	23
6.4.3	Mechanical Line Leak Detector.....	23
6.4.4	Daily Inventory	24
6.5	Tank Fill Area.....	24
6.5.1	Fill Cover.....	24
6.5.2	Spill Containment Manhole	25
6.5.3	Fill Pipe.....	26
7.	Monthly UST System Inspection Checklist.....	28
7.1	General	28
7.2	Purpose.....	28
7.3	Preparation.....	28
7.4	Checklist Item: Review Site Training Documents.....	28
7.5	Review of Daily Inspections.....	28
7.6	Leak Detection Recordkeeping.....	29
7.6.1	Automatic Tank Gauge (ATG).....	30
7.6.2	Continuous Interstitial Monitoring (CIM).....	30
7.6.3	Monthly Piping Leak Test (MPLT).....	30
7.6.4	Statistical Inventory Reconciliation (SIR).....	30
7.6.5	Inventory Control (IC).....	31
7.6.6	Manual Groundwater Monitoring (GWM) or Soil Vapor Monitoring (SVM).....	31
7.6.7	Manual Interstitial Monitoring for Tanks (MIMT).....	32
7.6.8	Manual Interstitial Monitoring for Piping (MIMP).....	33
7.7	All Tanks	33
7.7.1	Checklist Item: All components of the spill kit are present and in good condition.....	33
7.7.2	Grade-Level Covers	33
7.7.3	Spill Containment Manhole Drain Valve.....	34
7.7.4	Drop Tube	34
7.7.5	Tank Gauge Stick.....	34
7.7.6	Check for Water	35
7.7.7	Tank Vents.....	35

7.8	Stage I Vapor Recovery.....	36
7.8.1	Two-Point (Dual-Point) Vapor Recovery.....	36
7.9	Observation and Monitoring Wells	37
7.9.1	Identification of Observation and Monitoring Wells.....	37
7.10	Corrosion Protection	38
7.10.1	Impressed-Current Cathodic Protection.....	38
7.11	Inspecting Unmonitored Dispensers and STPs.....	38
7.11.1	Accessing Dispenser Components.....	38
7.11.2	Accessing STPs.....	39
8.	Annual UST System Inspection Checklist.....	40
8.1	General	40
8.2	Purpose.....	40
8.3	Preparation.....	40
8.4	Verification and Review of Monthly Inspections	41
8.5	Initial Fuel Dispenser Inspection	41
8.6	Identifying the Steps Required for an Annual Dispenser, STP and Containment Sump Inspection.....	42
8.7	Identifying the Steps Required for a Leak Detection Device Inspection	47
8.8	Automatic Tank Gauge (ATG) Manhole.....	49
8.9	Fill Area.....	50
8.10	Overfill Prevention.....	51
8.10.1	Drop Tube Shutoff	51
8.10.2	Ball-Float Valve	51
8.10.3	Overfill Alarm.....	51
8.11	Leak Detection	51
8.11.1	ATG Console.....	52
8.11.2	Electronic Leak Detection Monitoring	53
8.11.3	Line Tightness Testing	53
8.11.4	Safe Suction Systems.....	53
8.11.5	Tank Tightness Testing.....	54
8.11.6	Statistical Inventory Reconciliation (SIR).....	54
8.11.7	Continuous Soil Vapor Monitoring (SVM)	54
8.11.8	Continuous Groundwater Monitoring (GWM).....	54
8.12	Corrosion Protection	55
8.12.1	Galvanic Cathodic Protection	55
8.12.2	Impressed-Current Cathodic Protection.....	55
8.12.3	Internal Tank Lining.....	55
8.13	Miscellaneous Inspection Items	56
8.13.1	Condition of Tank Pad and Surrounding Pavement	56
8.13.2	Stage II Liquid Collection Points	56
8.13.3	Stage I Vapor Recovery Testing.....	56
8.13.4	Stage II Vapor Recovery Testing	56
8.13.5	Checking the Site Diagram.....	57

APPENDICES

Appendix A: Checklists.....	58
Appendix A-1: Daily UST System Inspection Checklist	59
Appendix A-2: Monthly UST System Inspection Checklist.....	60
Appendix A-3: Annual UST System Inspection Checklist.....	62
Appendix A-4: Sample Site Diagram Form.....	72
Appendix B: Water Management in Storage Systems	73
Appendix C: Publication Reference	76