

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 6

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) 8

2.62 Spill Bucket 8

2.63 Spill Containment Manhole 8

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 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.	Monthly UST System Inspection Checklist.....	22
6.1	General	22
6.2	Purpose.....	22
6.3	Preparation.....	22
6.4	Checklist Item: Review Site Training Documents.....	22
6.5	Leak Detection Recordkeeping.....	23
6.5.1	Automatic Tank Gauge (ATG).....	23
6.5.2	Continuous Interstitial Monitoring (CIM).....	24
6.5.3	Monthly Piping Leak Test (MPLT).....	24
6.5.4	Statistical Inventory Reconciliation (SIR).....	24
6.5.5	Inventory Control (IC).....	25
6.5.6	Manual Groundwater Monitoring (GWM) or Soil Vapor Monitoring (SVM).....	25
6.5.7	Manual Interstitial Monitoring for Tanks (MIMT).....	26
6.5.8	Manual Interstitial Monitoring for Piping (MIMP).....	27
6.6	All Tanks	27
6.6.1	Checklist Item: All components of the spill kit are present and in good condition.....	27
6.6.2	Grade-Level Covers	27
6.6.3	Spill Containment Manhole Drain Valve.....	28
6.6.4	Drop Tube	28
6.6.5	Tank Gauge Stick.....	29
6.6.6	Check for Water	29
6.6.7	Tank Vents.....	30
6.7	Stage I Vapor Recovery.....	30
6.7.1	Two-Point (Dual-Point) Vapor Recovery.....	30
6.8	Observation and Monitoring Wells	31
6.8.1	Identification of Observation and Monitoring Wells.....	31
6.9	Corrosion Protection	32
6.9.1	Impressed-Current Cathodic Protection.....	32
6.10	Inspecting Unmonitored Dispensers and STPs.....	32
6.10.1	Accessing Dispenser Components.....	32
6.10.2	Accessing STPs.....	33
7.	Annual UST System Inspection Checklist.....	34
7.1	General	34
7.2	Purpose.....	34
7.3	Preparation.....	34
7.4	Verification and Review of Monthly Inspections	35

7.5	Initial Fuel Dispenser Inspection	35
7.6	Identifying the Steps Required for an Annual Dispenser, STP and Containment Sump Inspection.....	36
7.7	Identifying the Steps Required for a Leak Detection Device Inspection	41
7.8	Automatic Tank Gauge (ATG) Manhole.....	43
7.9	Fill Area.....	44
7.10	Overfill Prevention.....	45
	7.10.1 Drop Tube Shutoff	45
	7.10.2 Ball-Float Valve	45
	7.10.3 Overfill Alarm.....	45
7.11	Leak Detection	45
	7.11.1 ATG Console.....	46
	7.11.2 Electronic Leak Detection Monitoring	47
	7.11.3 Line Tightness Testing	47
	7.11.4 Safe Suction Systems.....	47
	7.11.5 Tank Tightness Testing.....	48
	7.11.6 Statistical Inventory Reconciliation (SIR).....	48
	7.11.7 Continuous Soil Vapor Monitoring (SVM)	48
	7.11.8 Continuous Groundwater Monitoring (GWM).....	48
7.12	Corrosion Protection	49
	7.12.1 Galvanic Cathodic Protection	49
	7.12.2 Impressed-Current Cathodic Protection.....	49
	7.12.3 Internal Tank Lining.....	49
7.13	Miscellaneous Inspection Items	50
	7.13.1 Condition of Tank Pad and Surrounding Pavement	50
	7.13.2 Stage II Liquid Collection Points	50
	7.13.3 Stage I Vapor Recovery Testing.....	50
	7.13.4 Stage II Vapor Recovery Testing	50
	7.13.5 Checking the Site Diagram	51

APPENDICES

Appendix A: Checklists.....	52
Appendix A-1: Monthly UST System Inspection Checklist.....	53
Appendix A-2: Annual UST System Inspection Checklist.....	55
Appendix A-3: Sample Site Diagram Form.....	65
Appendix A-4: Optional Periodic UST System Inspection Checklist.....	66
Appendix B: Water Management in Storage Systems	73
Appendix C: Publication Reference	76