Appendix A: Records Required to Use SHRIMP

Threat: External Corrosion

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
Leak Repair Records for the past 5 years of all leaks caused by external corrosion.	Must be able to sort leaks repaired by type of pipe where the leak occurred: 1. Steel a. coated, cathodically-protected (CP) b. coated, not CP c. bare, CP d. bare, not CP 2. Cast Iron/Ductile Iron/Wrought Iron 3. Isolated metal components on a plastic piping system 4. Other Within each of these subsets of pipe it will be valuable if the user can plot the geographic location of leaks repaired, to identify clusters of leak repairs, if such clusters exist.	Y
Pipe to Soil Cathodic Protection readings required by 192.465.	Must be able to sort CP readings by type of pipe where the reading occurred: 1. Steel a. coated, cathodically-protected (CP) b. bare, CP 2. Other Within each of these subsets of pipe it will be valuable if the user can plot the geographic location of CP readings or the CP section.	Y
Rectifier inspection reports required by 192.465	Must be able to sort rectifier readings by type of pipe where the reading occurred:	Y

	1. Steel a. coated, cathodically-protected (CP) b. bare, CP 2. Other Within each of these subsets of pipe it will be valuable if the user can plot the geographic location of rectifier readings or the CP section.	
Exposed Pipeline Inspection Reports required by 192.459.	Must be able to sort pipe inspections by type of pipe where it occurred, e.g. 1. Steel a. coated, cathodically-protected (CP) b. coated, no CP c. bare, CP d. bare, no CP 2. Cast Iron/Ductile Iron/Wrought Iron 3. Isolated metal components on a plastic piping system 4. Other Within each of these subsets of pipe it will be valuable if the user can plot the geographic location of pipe inspections, to identify clusters of pipe in poor condition, if such clusters exist.	Y
Leak Survey Records required by 192.723.	Same as above.	N

Threat: Atmospheric Corrosion

Record	**Is any sorting of the data required? If so describe:**	**Critical (Y/N)**
List of above-ground and indoor piping requiring monitoring for atmospheric corrosion		Y
Atmospheric corrosion monitoring records (192.481). This also includes records of patrols, meter set inspection, regulator	Sorted by geographic location on the system (to identify possible clusters of problem	Y

station inspections and any other records of inspections of above ground facilities where checking for atmospheric corrosion is conducted.	areas)	
Leak repair records for the past 5 years for leaks caused by atmospheric corrosion	Same as above	Y

Threat: Internal Corrosion

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
Internal corrosion monitoring records (192.477.	Sorted by geographic location on the system (to identify possible clusters of problem areas)	Y
Leak repair records for the past 5 years for leaks caused by internal corrosion	Same as above	Y
Records of any liquids removed from the distribution system	Same as above	Y
Gas composition for any gas received from local production	Same as above	Y

Threat: Equipment

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
Leak repair records associated with any leaks caused by equipment failure.	Sort equipment leak histories by type of equipment. The primary equipment categories are regulators/relief valves, valves, meters, controls, EFVs, odorizers, heaters, dehydrators, compressor, filters, other.	Y
Equipment failure and maintenance records for equipment which failed but did not result in a leak.	Sort equipment failures by type of equipment. The primary equipment categories are regulators/relief valves, valves, meters, controls, EFVs, odorizers, heaters, dehydrators, compressor, filters, other.	Y
Equipment inspection and maintenance records including but not limited to Regulator Station/Relief Valve records required by 192.739, Valve inspections required by 192.747.		Y
System MAOP in areas where equipment		Y

failure is occurring.		
Log of abnormal operations caused by equipment malfunction.		N
Manufacturer's installation and operating/maintenance procedures for failed equipment.		N

Threat: Excavation caused damage

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
One-call system ticket information for the past 5 years. This information may be available from the operator's one-call system.	Sort by geographic location to identify areas by degree of excavation activity	Y
Excavation caused damage reports for the past 5 years	Sort by geographic location to identify areas with higher probability of damage. Sort by excavator to identify excavators by number of damages Sort by type of facility damaged • Steel • Plastic • Cast iron • Other	Y
Maintenance, repair, replacement records relating to excavation caused damage	Sort by geographic location and excavator as above Sort by type of facility damaged • Steel • Plastic • Cast iron • Other	Y
Leak repair reports relating to excavation caused damage	Sort by geographic location, excavator, facility damaged as above. Sort by date to identify	Y

	damages that occurred in the past and were not reported to the operator. If possible match this with excavator information or type of project to identify possible areas where additional damage may not have been reported.	
Incident reports relating to excavation caused damage.	Sort by geographic location, excavator, facility damaged as above.	Y
Patrol or inspection reports identifying excavation caused damage.	Sort by geographic location, excavator, facility damaged as above.	Y
Blasting studies, inspections, reports	Sort by geographic location and facility type.	Y
Operator prepared reports or audits of company contractors identifying damage due to excavation or backfill activities.		Y
Exposed pipe reports related to excavation caused damage	Sort by geographic location, excavator, facility damaged as above.	N
Line marker replacement information to identify areas where line markers are damaged or destroyed by others.		N

Threat: Natural Forces

Record	**Is any sorting of the data required? If so describe:**	**Critical (Y/N)**
Maintenance or repair records including pipe replacements for facilities damaged by subsidence, landslide earthquakes, floods, washouts, temperature extremes (frost, ice build-up, high temperature), mudslide, ice falls	Sort by geographic location to identify areas with more than one damage or failure Sort by type of facility • Steel pipe • PE pipe • Meter sets • Regulator stations • Other above ground facilities	Y
Leak repairs due to the above causes	Sort by geographic location, type of facility as above	Y

Patrol or inspection reports indicating damage or failure due to above causes	Sort by geographic location, type of facility as above	Y
Incident reports as a result of failure from above causes	Sort by geographic location, type of facility as above	Y
Failure investigation reports as a result of above causes	Sort by geographic location, type of facility as above	Y
Environmental or geological records to identify flood plains, areas with potential for seismic activity (earthquakes). Topographic maps to identify areas prone to landslides, mudslides and to identify geographic features within the system (rivers, streams, ravines, tidal influence zones)	Identify facilities within these areas.	Y
Safety related condition reports, or evaluations for SRC as a result of above causes	Sort by geographic location, type of facility as above	N
Exposed pipe reports as a result of above causes	Sort by geographic location, type of facility as above	N

Threat: Other outside forces

Record	**Is any sorting of the data required? If so describe:**	**Critical (Y/N)**
Repair/replacement records for above ground facilities damaged by vehicles, vandalism	Sort records by type of facility: • Meter sets • Regulator/pressure limiting stations • Other above ground facilities Sort records by geographic location to identify areas with more than one damage or failure	Y
Repair/replacement of below grade facilities caused by external loading. Operator should identify cause of damage such as heavy vehicle traffic or dumping of material	Sort by: • Geographic location to identify areas with more than one damage • Facilities such as valves, valve boxes, vaults, meters or regulators in below grade	Y

	meter boxes/vaults Sort by type of facility • Steel • Plastic • Cast iron • Other	
Leak repair reports relating to vehicles, vandalism or external loading	Sort by geographic location, facility as above.	Y
Incident reports for incidents caused by vehicles or external loading.	Sort by geographic location, facility as above	Y
Patrol or inspection reports with indications of damage to facilities	Sort by geographic location, facility as above	Y
Reports to law enforcement officials regarding vandalism or unauthorized operation of facilities.	Sort records by: Type of facility Type of damage reported • Vehicle • Vandalism	Y
Failure investigation reports for failures related to vehicles, vandalism, external loading	Sort by geographic location, facility as above	Y
Safety related condition reports, or evaluations for SRC related to vehicles, vandalism, external loading	Sort by geographic location, facility as above	N
New construction records of facilities where additional barriers, bump guards or additional protection was included	Sort by geographic location, facility as above These records may indicate locations where damages have previously occurred and additional protection is required	N
Reports of gas theft	Identify situations where theft occurred as a result of system modification	N
Exposed pipe reports related to exposure of facilities as a result of vehicle damage or vandalism		N

Threat: Materials/Welds

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
Leak Repair history including the details of the materials involved (and installation procedures for workmanship leak failure) for any leaks caused by material failure or from poor workmanship.	Separate leak history by material failures and workmanship defects. Further separate material failures into steel pipe, PE pipe, CI/PI/WI Pipe, copper pipe, tapping tees, couplings, directional fittings, flanges, transition fittings, screwed fittings.	Y
Records of use of any material that have been recalled or been a topic of a PHMSA Advisory Bulletin.	Separate by: • Low ductile Aldyl A PE pipe manufactured by Dupont prior to 1973. • PE 3306. • Compression Coupling for PE pipe. • Delrin insert tap tees. • Plexco service tee Celcon (polyacetal) caps. • Other.	N
O&M and Construction Specifications for materials and installation procedures.		N
Leak Survey Records.		N
Pressure test records for failures associated with material/weld failures.		N

Threat: Inappropriate Operations

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
Records of failures due to poor workmanship, failure to follow procedures and/or inadequate procedures, if any	Sort by employee involved, by department, if applicable and by task	Y
Records of for cause revocation of operator qualification, if any		Y
Records of incident/accident investigations – Root cause analyses, if any		Y
Records of drug and alcohol tests		Y

Threat: Other Threats

Record	Is any sorting of the data required? If so describe:	Critical (Y/N)
None		