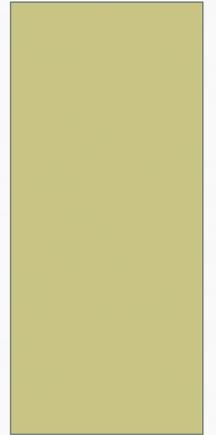


DIMP

WAAS' UP WIT DAT?



WHAT PRINCIPLES UNDERLIE DIMP?

- Requirements are high-level, performance-based
- DIMP requires operators to...
 - Know Your System*
 - Identify Threats*
 - Rank and Mitigate Risks*
- DIMP does not stipulate specific assessment or mitigation actions
- Allows the regulator to investigate internal operator risk management practices

OBJECTIVE OF DIMP PILOT INSPECTIONS

- Test the inspection form:
 - Are the inspection questions clear?
 - How did the operator interpret the question?
 - Did the documentation the operator provided demonstrate compliance with the regulation?
 - What level of detail was provided?
- Identify if additional FAQ's are needed.
- Develop a consensus for expectations among regulators.
- Collect material for PHMSA T&Q's inspector training.

OPERATOR SELECTION PROCESS

- Type of Plan Development Tool
 - SHRIMP
 - NGA/SGA Framework
 - MEA Preparation Aid
 - Operator Developed Plan
- Operator Characteristics
 - Size from 7,000 to 2 million customers
 - Multi-state and single state systems
- System Characteristics
 - Mix of materials (e.g. cast iron, copper, protected and unprotected/bare and coated steel, various vintages of plastic)
- Geography
 - Various states and environmental conditions (e.g. hurricanes, gophers, landslides, extreme cold/heat)

GENERAL OBSERVATIONS

- Large, serious effort - began 2007 to early 2010
- Few fully dedicated DIMP personnel; many teams
- Many operators are using GPTC and SHRIMP
- Modifying commercial plan development and risk model tools
- Multi-state and State specific plans
- Change from compliance to integrity management culture
 - Forces a structured approach to prioritize work.
 - Provides “compliance leverage” for funding system integrity projects.

GENERAL OBSERVATIONS

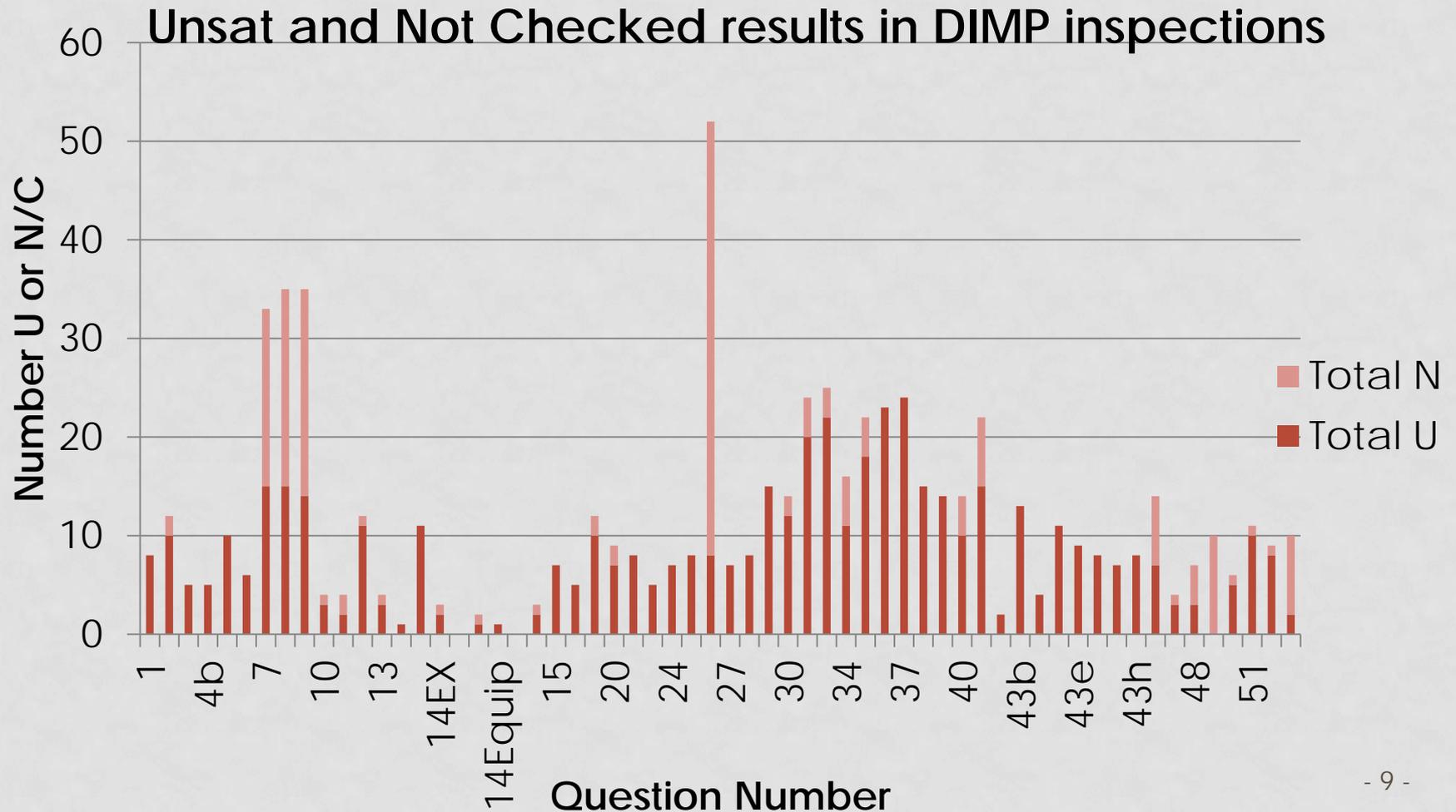
Operators are taking a deep look at data

- Modifying data collection procedures
- Improving/implementing computer applications and hardware (office and field)
- Scrubbing data
- Enhancing training on data collection
- Documenting reason for data anomalies
- Requires knowledge of the geographical relationship of data
- Using a minimum of 5-10 yrs, sometimes using much more to develop trend lines.





INSPECTION FINDINGS



OTHER DIMP PLAN COMMENTS

- The DIMP rules may require something that is already being done in another context – copy it over or link to it.
- The Plan should culminate in a ranked/prioritized list of threats, risk reduction measures, and performance measures.
- Treat DIMP as a tool to analyze needs and progress, not as a regulatory exercise.

KNOWLEDGE OF GAS DISTRIBUTION SYSTEM

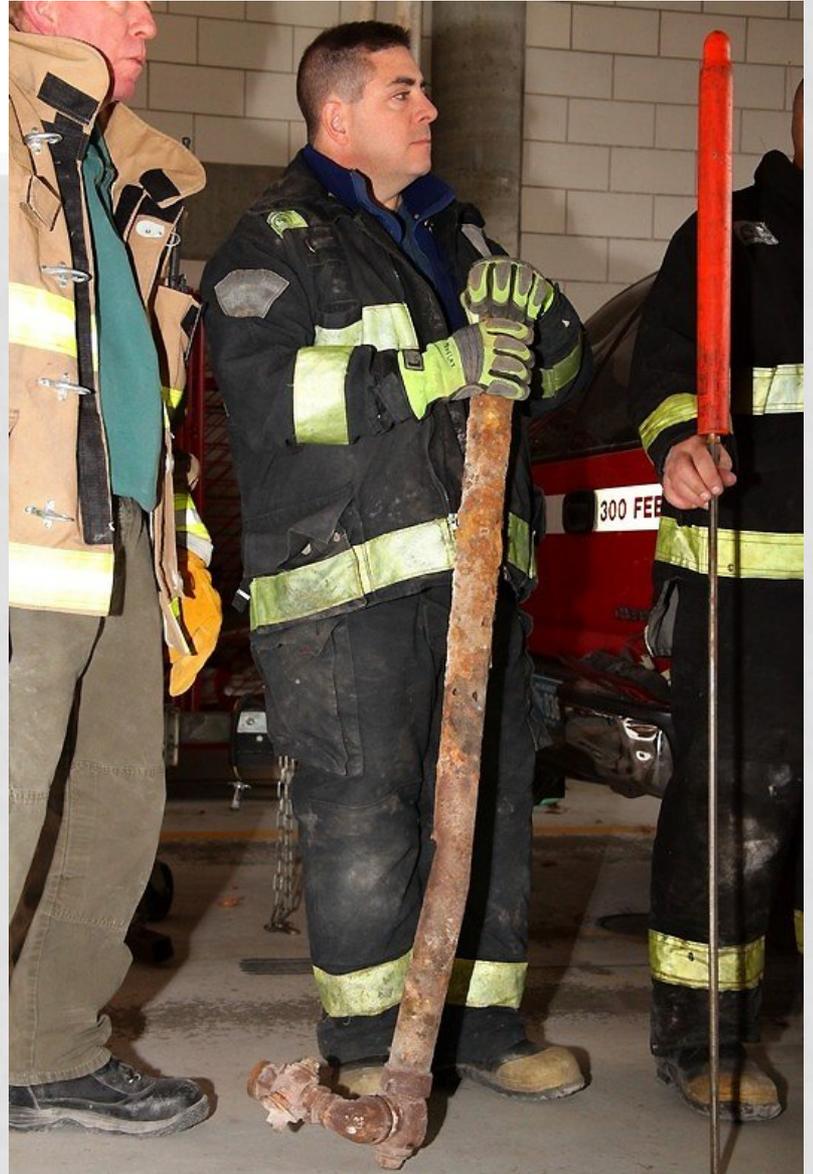
- Where DIMP relies upon subject matter expert (SME) input, the operator must be able to demonstrate why the SME is an expert.
- SME decisions and conclusions must be documented.
- Operators must specify how field information is to be relayed into DIMP. Some Operators have modified field data acquisition forms and internal processes to incorporate new information and correct inaccurate information.

KNOWLEDGE (CONTINUED)

- Procedure for collection of additional or missing information must be documented; and if there is no missing or unknown information, the DIMP must state this assumption.
- Plan must list data that the Operator has identified that is needed to fill gaps.
- Plan must include procedure for recording new pipe data, including location and materials used.

KNOWLEDGE (CONTINUED)

- Data quality is a common concern;
 - Outdated, incomplete, obvious errors.
 - Outdated data systems difficult to use or sort.
 - Data cleanup and scrubbing is often required.
- Reasonable balance between SME and hard data is important.
- Integration of data to identify existing and potential threats requires an appropriate level of resource allocation.



THREAT CATEGORIES FROM GPTC G-192-8

- External Corrosion
 - Bare Steel Pipe (CP or no CP)
 - cast iron pipe (graphitization)
 - coated and wrapped steel pipe (CP or no CP)
 - Other metallic materials
- Internal corrosion
- Natural Forces
 - Outside force/weather: steel pipe
 - Outside force/weather: plastic pipe
 - Outside force/weather: cast iron pipe
- Excavation Damage
 - Operator (or its contractor)
 - Third-party
- Other Outside Force Damage
 - Vehicular
 - Vandalism
 - Fire/Explosion (primary)
 - Leakage (previous damage)
 - Blasting
 - Mechanical damage: Steel pipe, Plastic pipe, Pipe components

THREAT CATEGORIES FROM GPTC G-192-8

- Material or Weld
 - Manufacturing defects
 - Materials/Plastic
 - Weld/Joint
- Equipment Failure
 - System Equipment
- Incorrect operation
 - Inadequate procedures
 - Inadequate safety practices
 - Failure to follow procedures
 - Construction/Workmanship defects
- Other Failure Causes that the Operator has experienced

WHAT ABOUT “CORNHUSKER STATE”?

- **Laws on the books**
 - It is illegal to fly a plane while drunk.
 - If a child burps during church, his parent may be arrested.
 - It is illegal to go whale fishing.

THREAT IDENTIFICATION

There is more to do than account for just Time Dependent and Time Independent Threats

- An Operator must look at “near misses”, known threats identified in Industry literature, PHMSA Advisory Bulletins, etc. and understand how threats interact with each other
- An Operator should also consider that Interactive Threats (interaction of multiple threats) can be a potential threat.



IDENTIFIED POTENTIAL THREATS

Examples of potential threats often not being considered:

- Over pressurization events
- Regulator malfunction or freeze-up
- Cross-bores into sewer lines
- Materials, Equipment, Practices, etc. with identified performance issues
- Vehicular or Industrial activities
- Incorrect maintenance procedures or faulty components
- Rodents, plastic eating bugs, tree roots
- Other potential threats specific to the operator's unique operating environment

RISK EVALUATION GUIDANCE

- Understand how your risk model works. Each current and potential threat requires a consequence and likelihood weighting
- Subdivide facilities by measures to reduce risk; balance enough granularity with too much granularity to identify problems
- “Reasonable result” – is the ranking logical, justified through quantitative data, in agreement with SME validation?
- Multi-state operators should have a risk ranking for each State (either separately or be able to filter by State)

PERFORMANCE MEASUREMENT

- Operators must develop and monitor performance measures from an established baseline to evaluate the effectiveness of its IM program.
- Some Operator's Plans identified “triggers” to initiate development of new performance measures depending on the program performance and the operating environment.
- Each Measure Implemented to Reduce Risk must have a Performance Measure established to monitor its effectiveness.

EXAMPLE MEASURES TO REDUCE RISK

- Measures to reduce risk operators selected:
 - Hurricane Plans to shut in systems
 - Pot Holing every locate
 - Patrol and leak survey at more frequent than code
 - Monthly rectifier readings
 - Riser replacement programs
 - Cast iron surveys after earthquakes
 - Pipe replacement program

“EFFECTIVE” LEAK MANAGEMENT GUIDANCE

Effective Leak Management Program includes:

- Locate the leaks in the distribution system;
- Evaluate the actual or potential hazards associated with these leaks;
- **A**ct appropriately to mitigate these hazards;
- **K**eep records; and
- **S**elf-assess to determine if additional actions are necessary to keep people and property safe.



PERIODIC EVALUATION & IMPROVEMENT GUIDANCE

What constitutes a program review?

- Review frequency of periodic evaluation, < 5 years
- Verify general information
- Incorporate new system information
- Re-evaluation of threats and risk
- Review the frequency of the measures to reduce risk
- Review the effectiveness of the measures to reduce risk
- Modify the measures to reduce risk and refine/improve as needed
- Review performance measures, refine/improve as needed

RECORD AND FIELD INSPECTION FORM

- Draft developed per NAPS Board request – In Review
- Intended for inspections after initial DIMP inspections

Question Number	Rule §	Description	S/Y	U/N	N/A	N/C
1	192.1007(a) .1007 (a)	Does the operator have records demonstrating a reasonable understanding of its system (e.g., pipe location, size, dates of installation, materials, operating conditions, operating environment)? List deficiencies below:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector Comments						
2	.1007 (a)(3)	Does the plan list the additional information needed to fill gaps due to missing, inaccurate, or incomplete records?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector Comments						
3	.1007 (a)	Is the operator making reasonable progress in filling identified knowledge gaps using	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector Comments						

WHAT ABOUT “CORNHUSKER STATE”?

- It is illegal for bar owners to sell beer unless they are simultaneously brewing a kettle of soup.
- It is illegal for a mother to give her daughter a perm without a state license.
- Lehigh - Doughnut holes may not be sold.

DISTRIBUTION ANNUAL REPORT REVISIONS

- Distribution Annual Report modifications to align leak causes with the Incident Report have initiated and should be completed in time for the 2012 Annual Report submittals.
- Other modifications are being discussed and solutions identified for their implementation, and these include:
 - Easier data input fields for mileages and services
 - Definition of the type of operator
 - Definition of the commodity transported.

DIMP ENFORCEMENT GUIDANCE

- DIMP Enforcement Guidance is being drafted.
- When completed, this guidance will be made publicly available and posted on PHMSA's website with the other Enforcement Guidance documents currently posted at

<http://www.phmsa.dot.gov/foia/e-reading-room>

- This posting will allow Operators to understand Regulators' expectations with regards to the DIMP Regulation

WHAT ABOUT “CORNHUSKER STATE”?

- Omaha - Sneezing or burping is illegal during a church service.
- Omaha - A man is not allowed to run around with a shaved chest.
- Waterloo - Barbers are forbidden from eating onions between 7 Am – 3 Pm



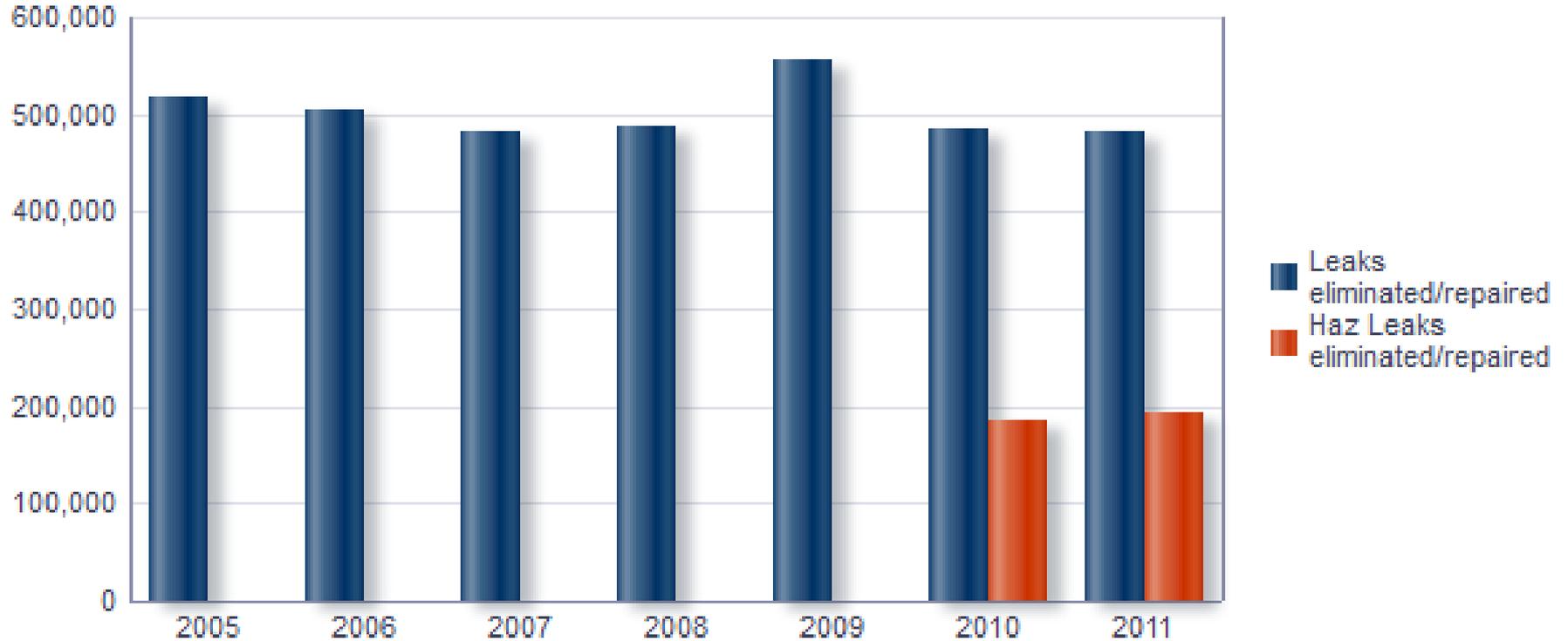
NATIONAL DATA

- Leaks and EFV's

	2005	2006	2007	2008	2009	2010	2011
Total Leaks eliminated/repaired	516,307	502,501	479,667	487,367	553,096	484,782	481,725
Hazardous Leaks eliminated/repaired						185,582	192,843
Excavation Damages per 1000 Excavation tickets						3.8	3.7
Total Number of EFVs on Single-Family Residential Services Installed During Year						504,860	597,582
Estimated Number of EFVs in System at End of Year						6,357,339	6,912,887

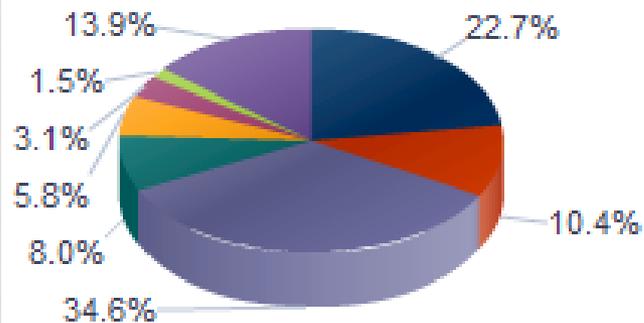
LEAKS

Geo Region: (All Column Values) Geo State: (All Column Values)

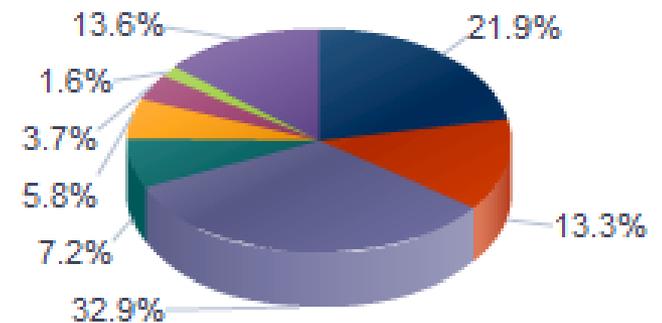


HAZARDOUS LEAKS BY CAUSE

	2010	2011
Leak Cause		
Corrosion	42,200	42,280
Natural Force	10,701	11,275
Equipment	19,330	25,560
Material or Weld	14,843	13,871
Excavation	64,159	63,465
Operations	2,727	3,010
Other Outside Force Damage	5,789	7,189
Other Cause	25,833	26,193



2010

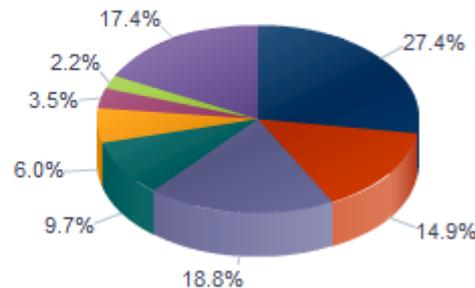


2011



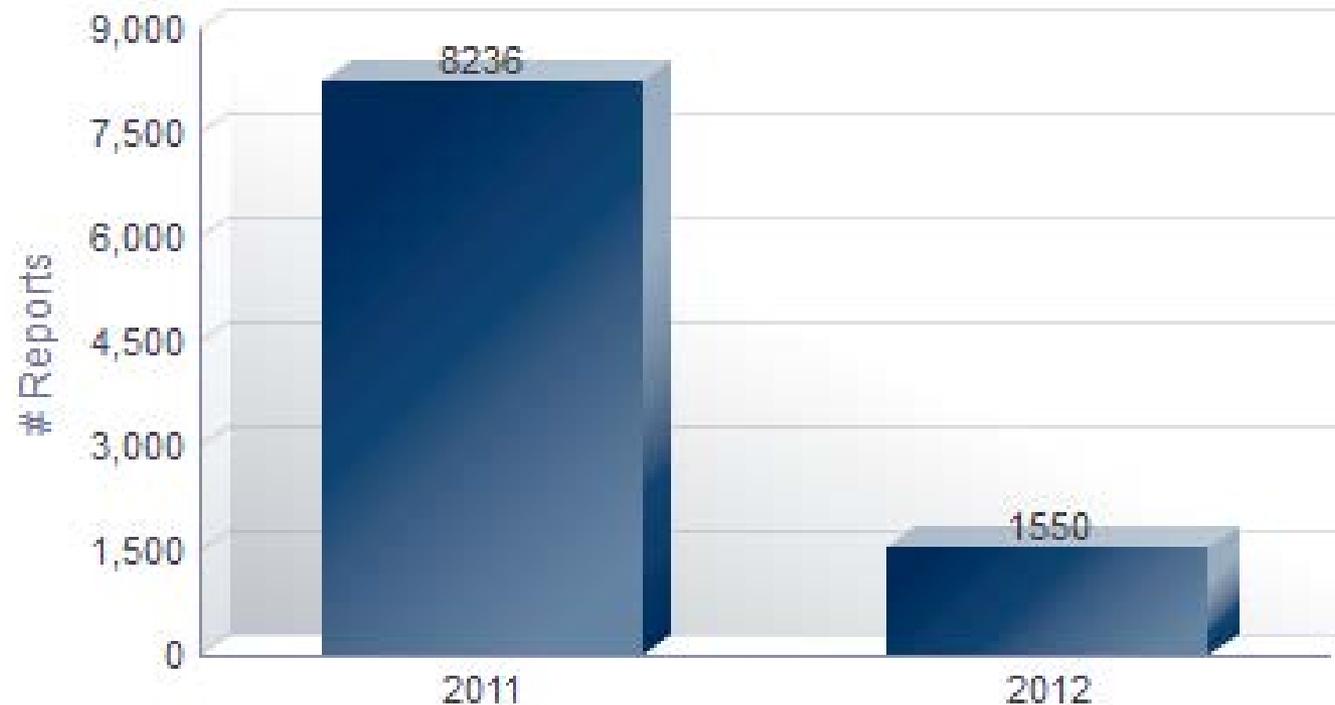
LEAKS BY CAUSE

	2005	2006	2007	2008	2009	2010	2011
Leak Cause							
Corrosion	139,160	133,753	126,053	128,423	147,490	140,056	132,072
Natural Force	27,184	27,993	23,944	27,026	27,447	27,124	28,831
Equipment	41,704	46,389	51,266	53,304	90,080	78,799	90,741
Material or Weld	53,213	49,949	47,698	49,811	72,909	54,503	46,685
Excavation	118,847	116,113	105,707	92,403	75,724	74,305	71,893
Operations	7,537	10,183	12,401	14,758	14,531	10,013	10,825
Other Outside Force Damage	10,567	11,726	15,974	11,361	10,878	9,483	16,764
Other Cause	118,095	106,395	96,624	110,281	114,037	90,499	83,914



MFFR

		# of Fitting Failures	
		2011	2012
Mechanical Fitting Involved	Total		
Bolted	904	780	124
Nut Follower	5595	4646	949
other	2335	1999	336
Stab	952	811	141
Grand Total		8236	1550



NB DATA - LEAKS AND EFV'S

	2005	2006	2007	2008	2009	2010	2011
Total Leaks eliminated/repaired	5,525	4,551	5,134	4,668	4,189	3,974	4,614
Hazardous Leaks eliminated/repaired						741	862
Excavation Damages per 1000 Excavation tickets						2.5	3.2
Total Number of EFVs on Single-Family Residential Services Installed During Year						4,796	5,219
Estimated Number of EFVs in System at End of Year						21,936	27,751

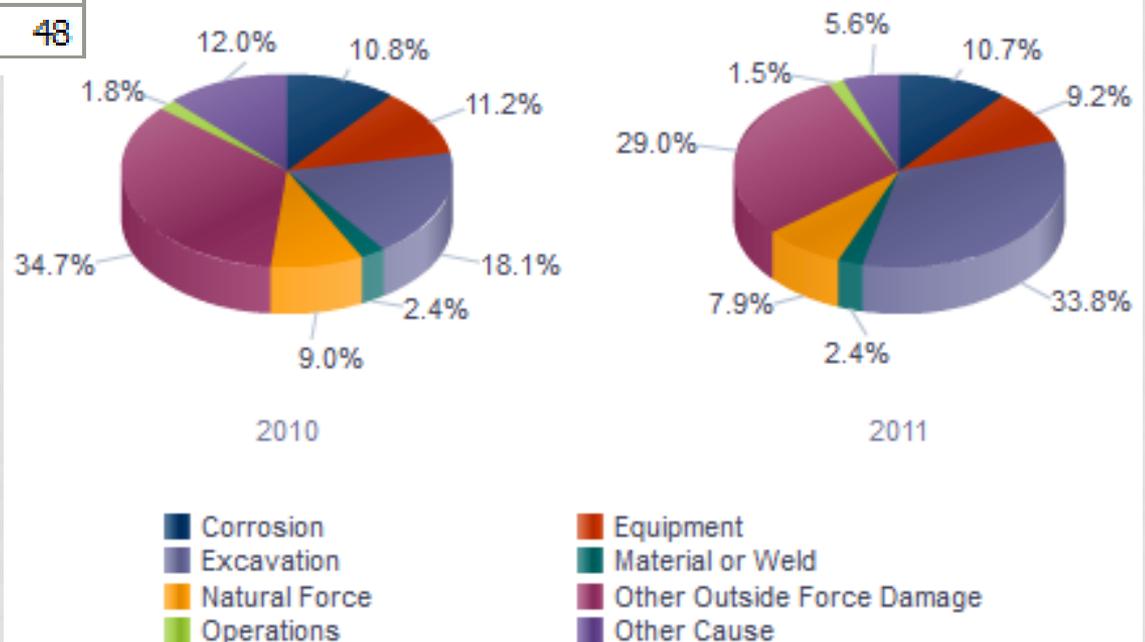
NB LEAKS



HAZARDOUS LEAKS BY CAUSE

	2010	2011
Leak Cause		
Corrosion	80	92
Natural Force	67	68
Equipment	83	79
Material or Weld	18	21
Excavation	134	291
Operations	13	13
Other Outside Force Damage	257	250
Other Cause	89	48

haz Leaks by Cause

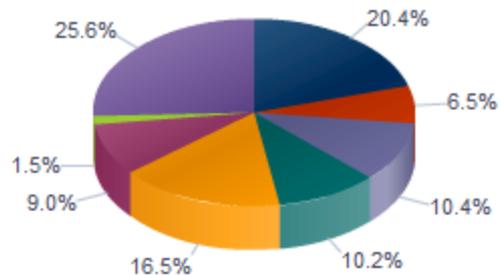


	2005	2006	2007	2008	2009	2010	2011
Leak Cause							
Corrosion	993	889	1,022	918	925	809	883
Natural Force	685	614	843	743	762	655	489
Equipment	445	551	290	557	492	412	784
Material or Weld	558	399	559	575	418	406	369
Excavation	625	408	360	353	246	259	416
Operations	21	20	347	72	114	59	59
Other Outside Force Damage	355	355	478	431	392	358	534
Other Cause	1,843	1,315	1,235	1,019	840	1,016	1,080

LEAKS BY CAUSE / YEAR

Leaks By Cause

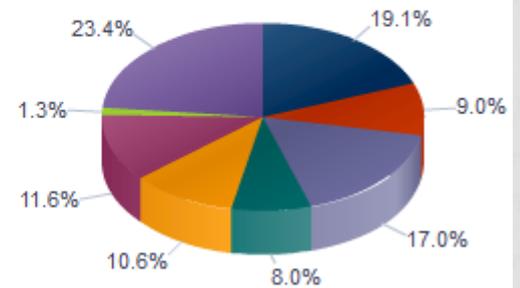
- Corrosion
- Excavation
- Equipment
- Material or Weld
- Natural Force
- Other Outside Force Damage
- Operations
- Other Cause



2010

Leaks By Cause

- Corrosion
- Excavation
- Equipment
- Material or Weld
- Natural Force
- Other Outside Force Damage
- Operations
- Other Cause



2011

BRILLIANT BUMPER STICKERS

- You can't drink all day long if you don't start first thing in the morning!
- Alcohol and calculus don't mix. Never drink and derive.
- Of course I'm out of my mind, it's dark and scary in there!
- Your just jealous because the voices talk to me.

