

ARIZONA CORPORATION COMMISSION
PIPELINE SAFETY SECTION



2014

Trends on Pipeline Damages
Caused by Excavation

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EXECUTIVE SUMMARY

This report examines and measures the trend on pipeline damages caused by excavation activities of all local companies that own and operate (Operator) a pipeline system in the state of Arizona.

The definition of “Operator” and “pipeline system” under R14-5-201 of the Arizona Administrative Code Title 14, Chapter 5 are as follows;

“Operator” means a person that owns or operates a pipeline system or master meter system.

“Pipeline system” means all parts of the physical facilities of a public service corporation or provider through which gas, LPG, LNG, or a hazardous liquid moves in transportation, including but not limited to pipes, compressor units, metering stations, regulator stations, delivery stations, holders, fabricated assemblies, and other equipment, buildings, and property so used.

In the year 2012, the Arizona Corporation Commissions, Office of Pipeline Safety (ACC) instructed the Operators to submit a quarterly report of pipeline damages (data) caused by excavation with the following information;

1. The total number of locate requests received by the Operators
2. The total number of excavation damages
3. The date, location, and name of the company or person responsible for the damage
4. The cause of each damage classified into four root causes;
 - No 811 ticket requested by excavator
 - Incorrect marking of pipeline facilities
 - Error by excavator
 - Error by operator or operator contractor.

The goal of this report is to identify the leading cause of “pipeline hits” and to suggest improvement of identification and tracking of areas that have more “pipeline hits” which will be critical to gas pipeline safety.

There are twenty two (22) operators included in this Damage Prevention Performance Report, they are the following:

◆ Abbott Laboratories	◆ Gila River Power LP
◆ Alliant Gas Arizona Propane LLC	◆ Graham County Utilities Incorporated
◆ APS Energy Services	◆ Havasu Spring Resorts.
◆ Calpine Energy Services LP	◆ NUCOR Steel
◆ City of Benson	◆ Pimalco Incorporated
◆ City of Mesa	◆ Plains LPG Services
◆ City of Safford	◆ Southwest Gas Corporation (SWG)
◆ City of Willcox	◆ Swissport Fueling Incorporated
◆ Colorado City	◆ Unisource Energy Services (Unisource)
◆ Copper Market Gas Incorporated	◆ Valley Airpark
◆ Duncan Valley Electric Cooperative	◆ Zapco Energy Tactics Corporation

These 22 Operators have a total combined pipeline length of 39,591 miles and 1,268,723 total number of gas services.

DATA ANALYSIS

DATA SUMMARY

Data shows that there is a 2% increase in 811 tickets generated for 2014. There were 455,156 - 811 tickets received in 2013 and 462,535 - 811 tickets received in 2014.

There was a 10% decrease of pipeline damages due to excavation from 804 pipeline damages in 2013 down to 720 pipeline damages in 2014.

Pipeline damages by excavation due to no 811 ticket increased 4%. There were 201 cases in 2013 and 210 cases in 2014.

Pipeline damages by excavation due to incorrect marking decreased 16%. There were 101 cases in 2013 and 85 cases in 2014.

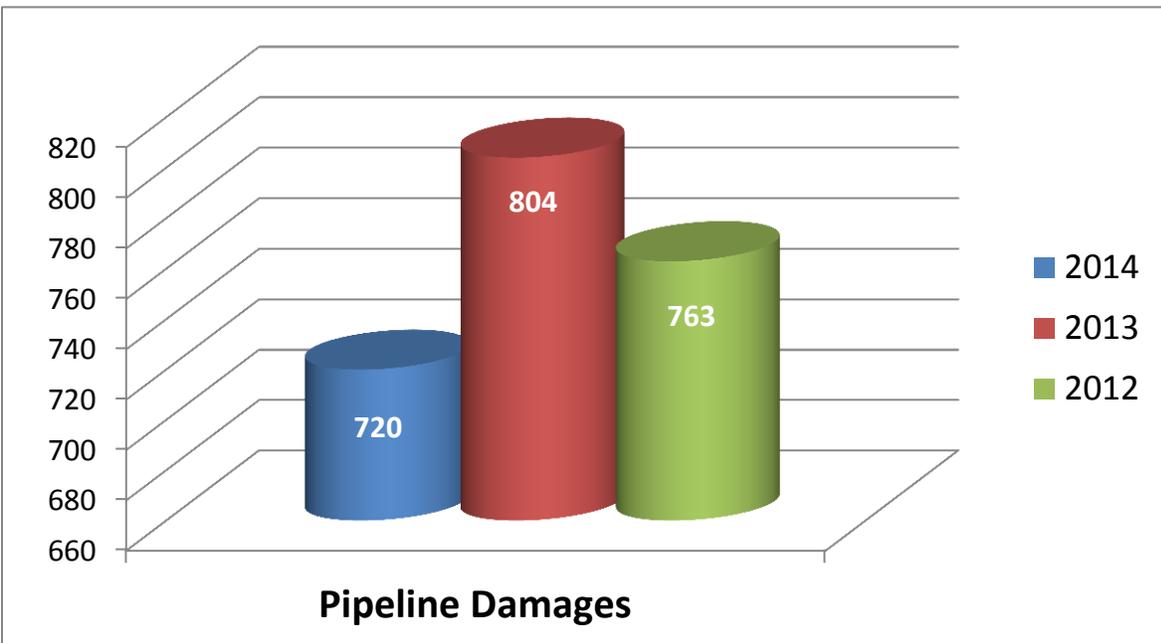
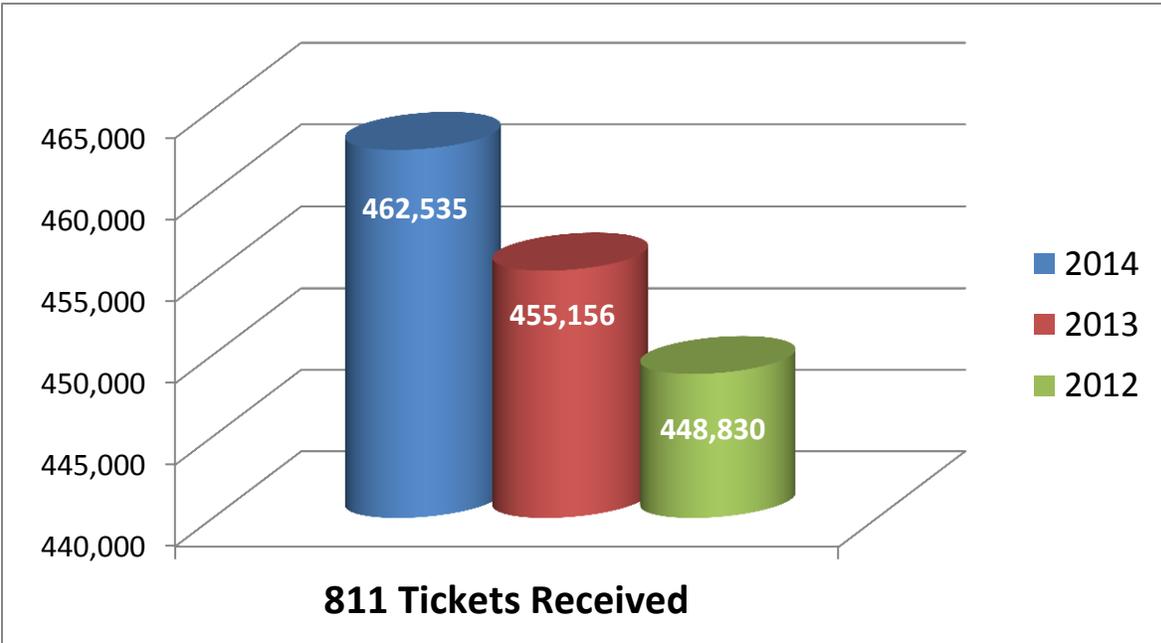
Pipeline damages by excavation due to 3rd party excavator error decreased 30%. There were 398 cases in 2013 and 279 cases in 2014.

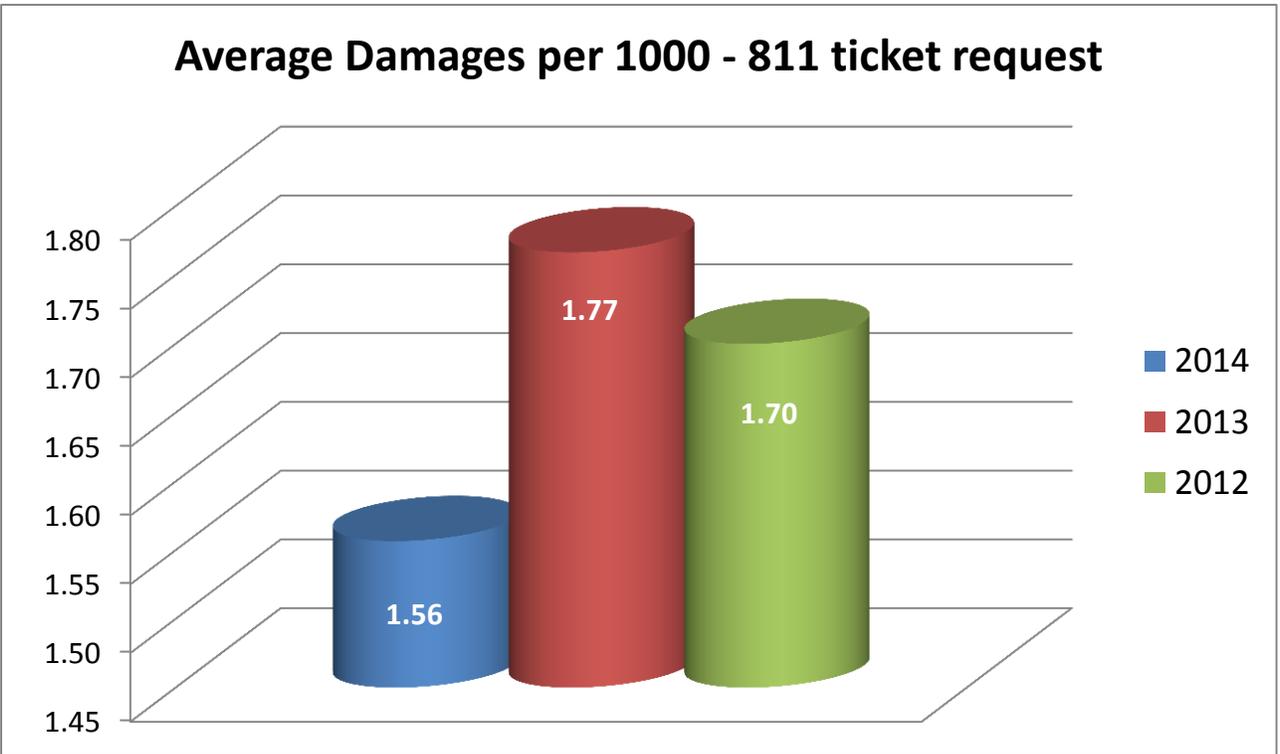
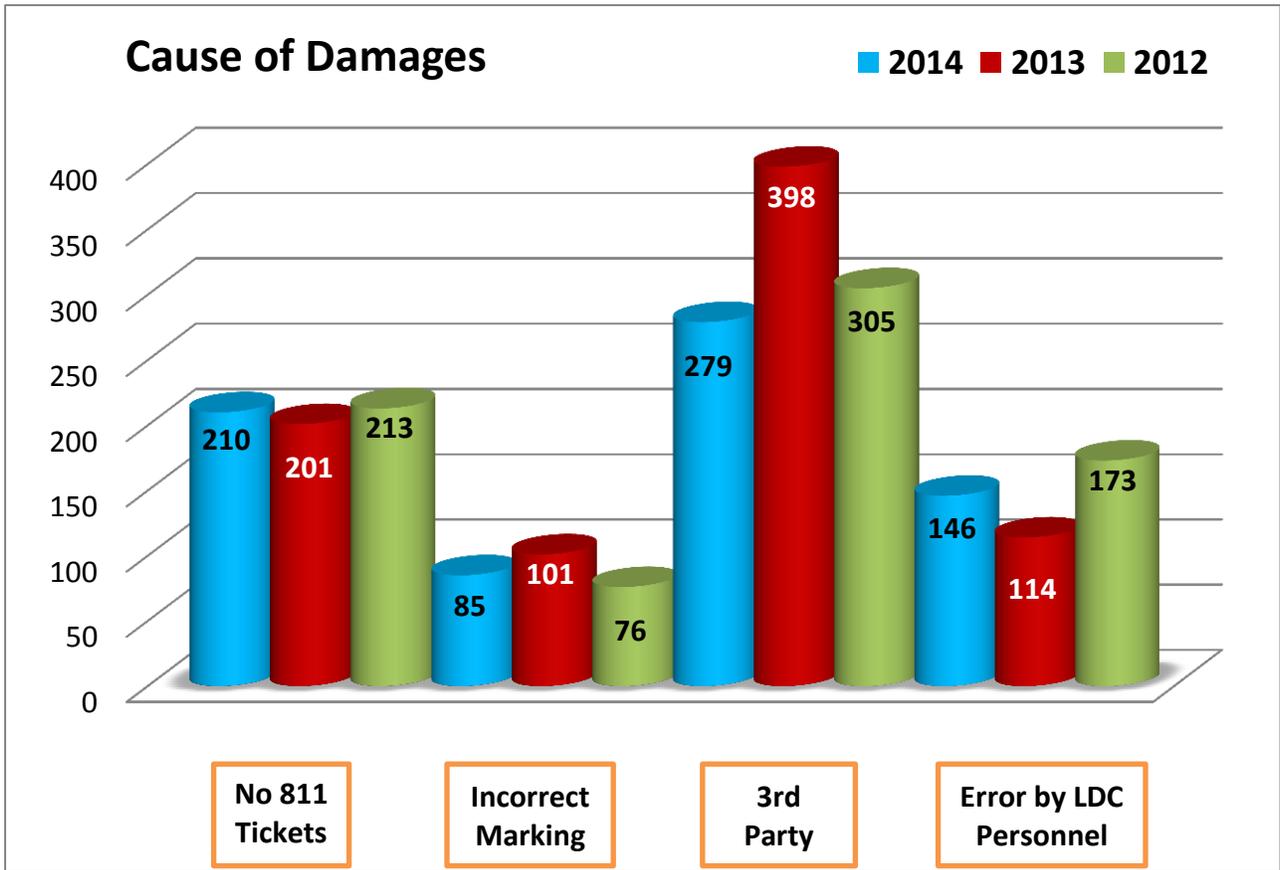
Pipeline damages by excavation due to operator or operator's contractor error increased 28%. There were 114 cases in 2013 and 146 cases in 2014.

Based on this data, the average number of pipeline damages due to excavation per 1000 locate tickets decreased from 1.77 in 2013 to 1.56 in 2014.

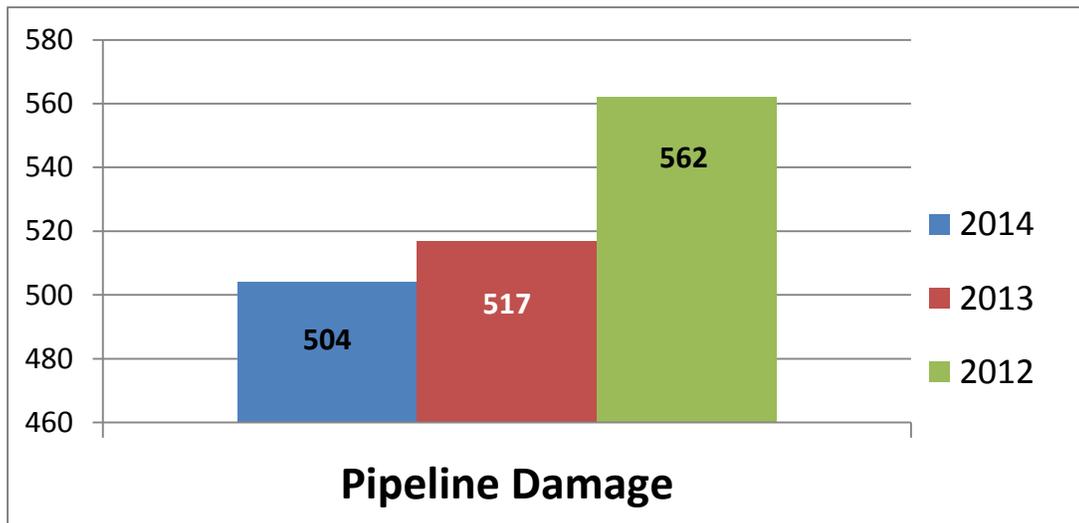
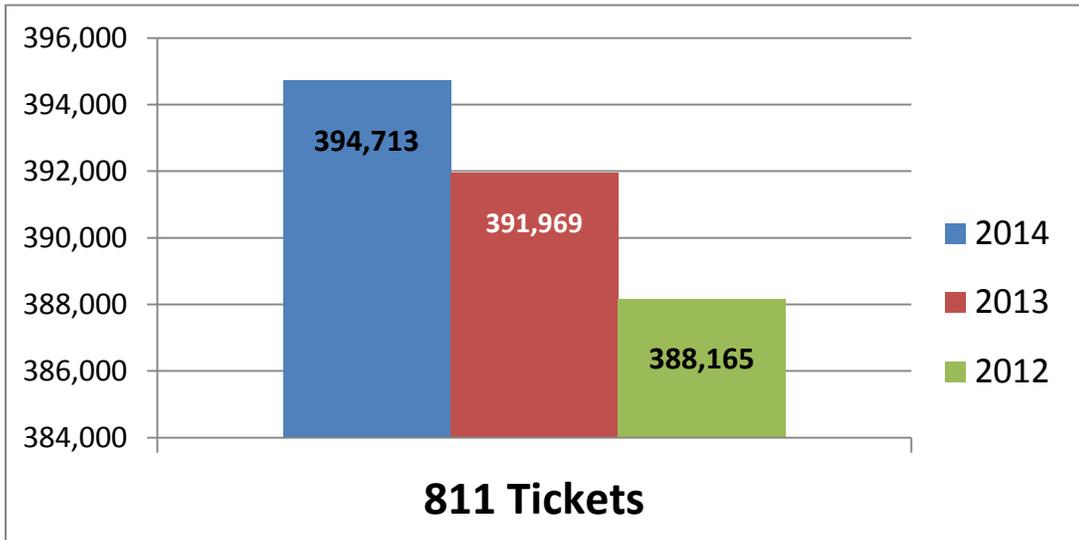
Based on the data that was gathered, the number one root cause of pipeline damages by excavation is due to 3rd party excavator error.

DATA SUMMARY FOR 22 OPERATORS

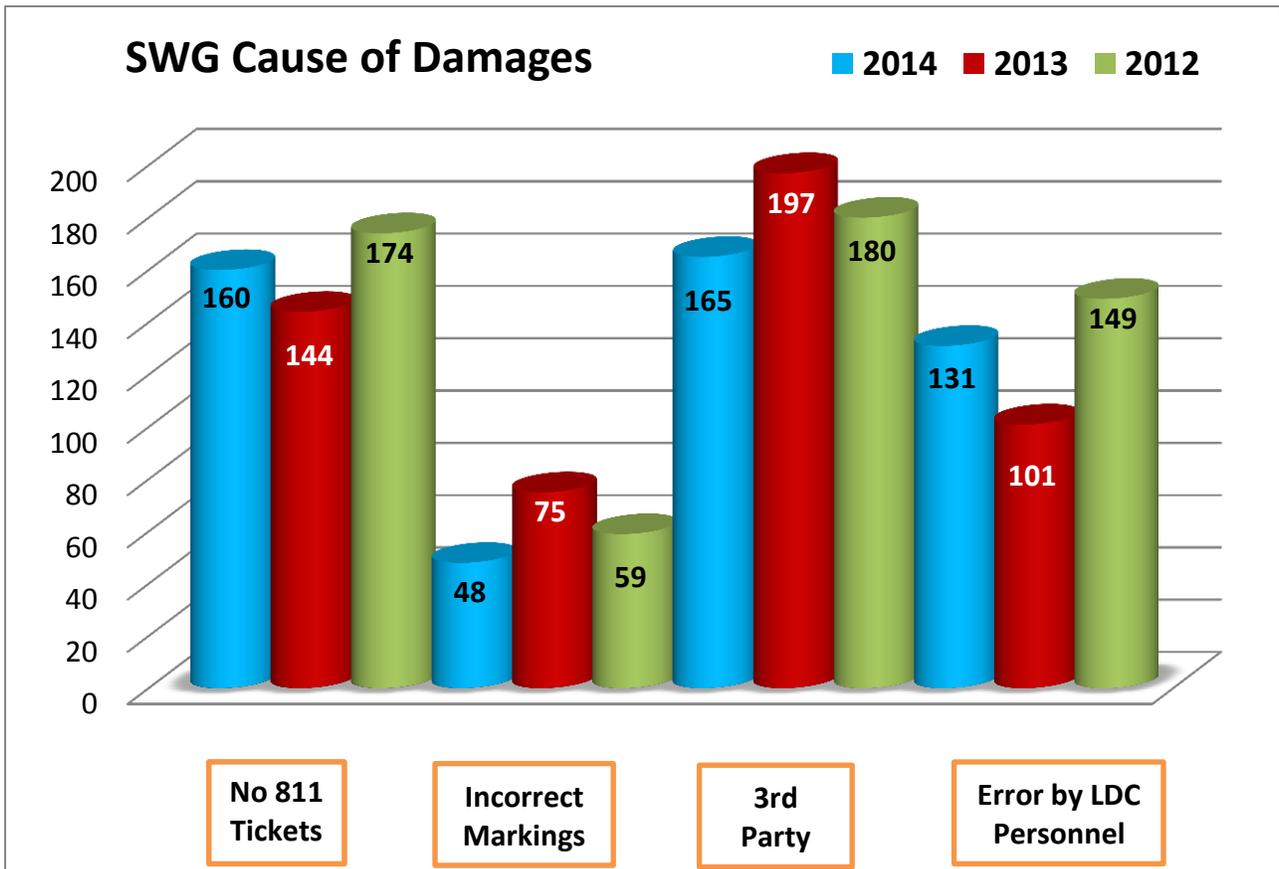




SOUTHWEST GAS

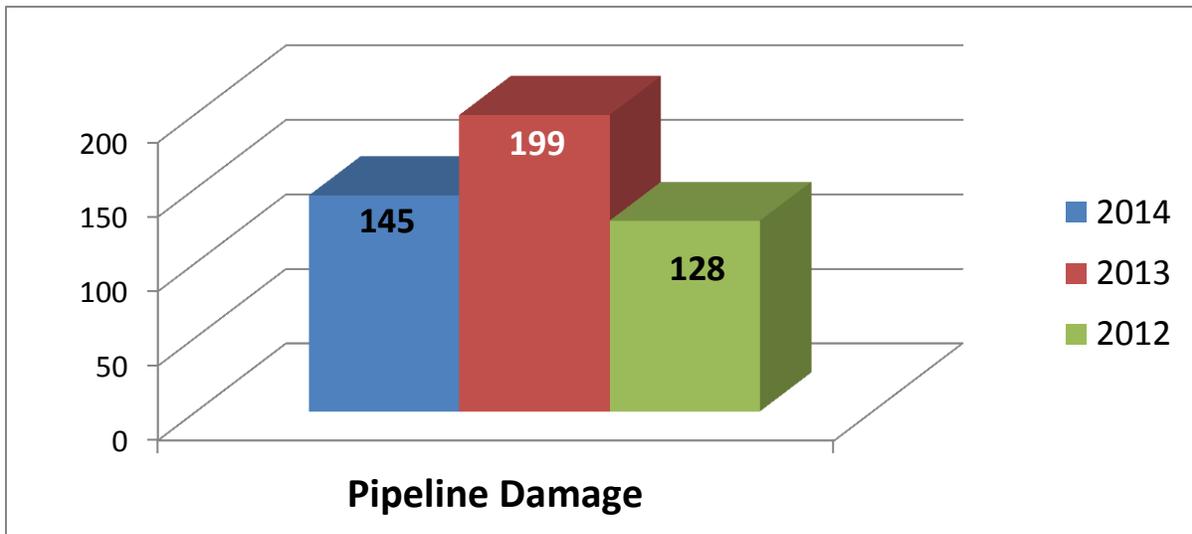
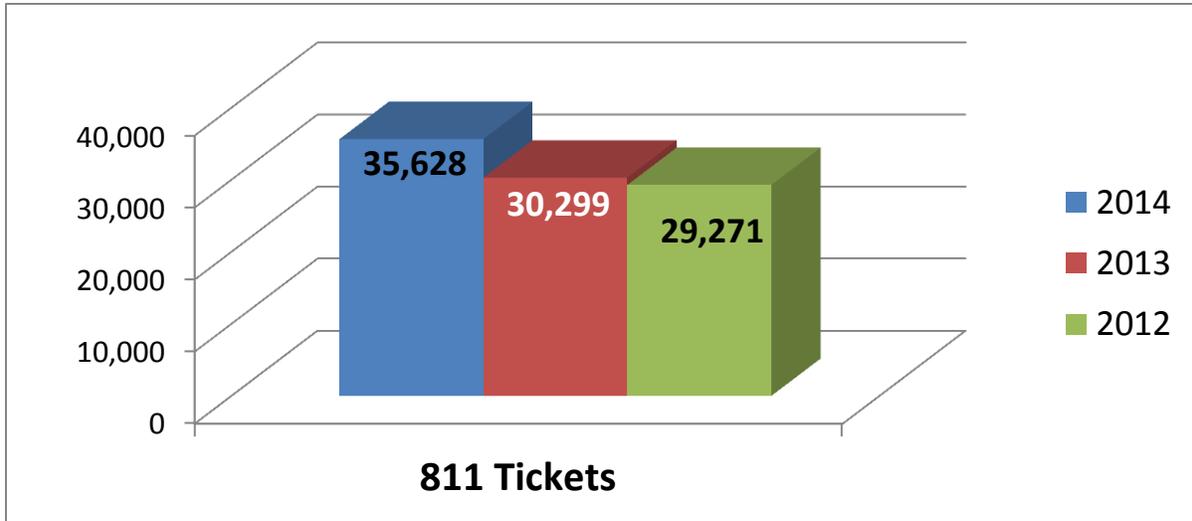


SWG - TOTAL								
Miles of Pipelines				32,101.78				
No. of Services				1,044,787.00				
				Year 2014				
				1st Q	2nd Q	3rd Q	4th Q	Total
811 Tickets Received				93,307	101,460	100,095	99,851	394,713
Pipeline Damage				132	129	119	124	504
Cause of Damage:								
	No 811 Tickets			44	39	34	43	160
	Incorrect Marking			13	12	10	13	48
	3rd Party Excavator Error			41	44	44	36	165
	Error by LDCs Personnel			34	34	31	32	131
Average Number of Pipeline Damaged								
Per 1000 - 811 Ticket Requested				1.41	1.27	1.19	1.24	1.28

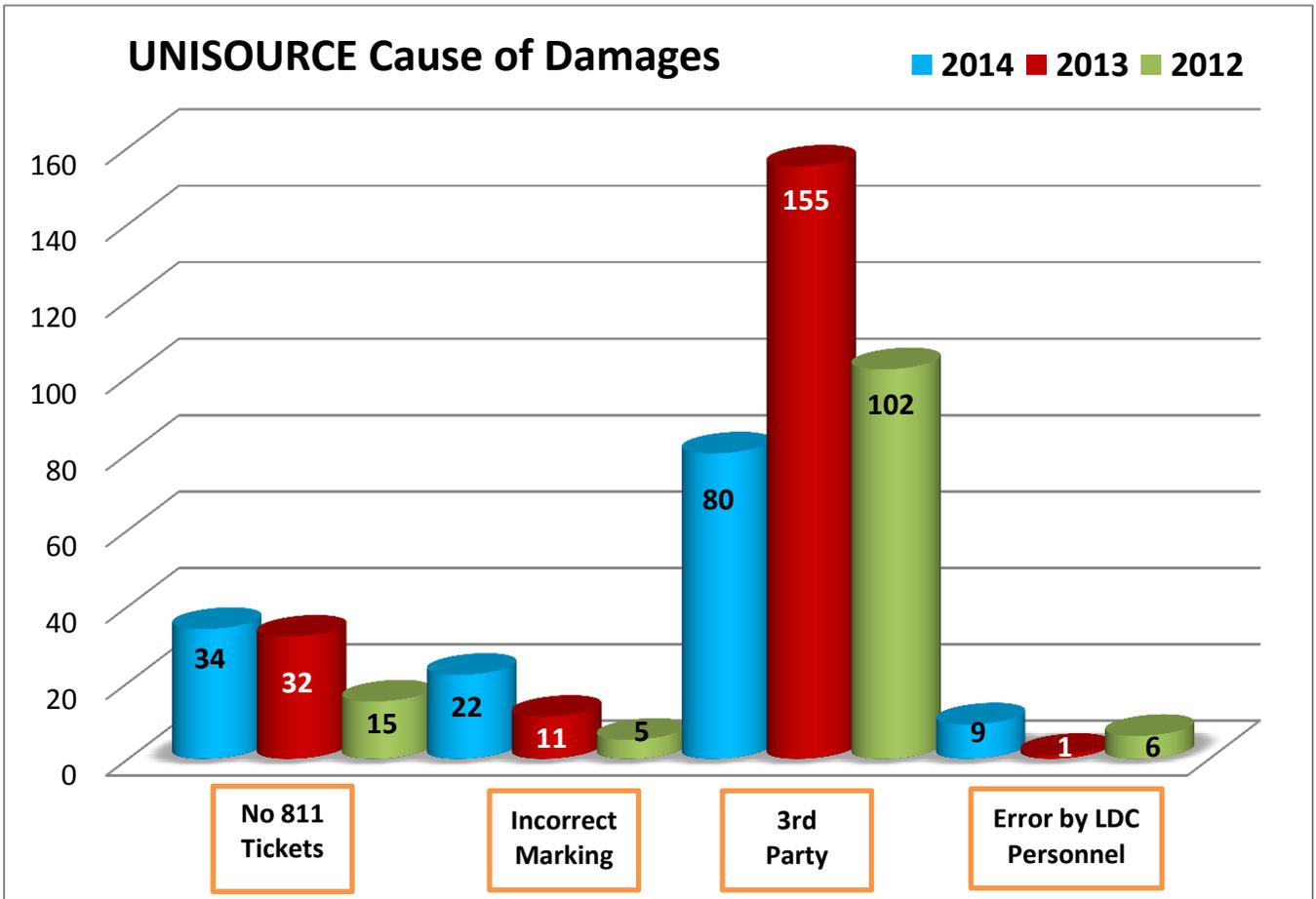


- There is a 1% increase in 811 tickets.
- There is a 3% decrease in pipeline damage due to excavation.
- There is an 11% increase in pipeline damage caused by no tickets.
- There is a 36% decrease in pipeline damage caused by incorrect markings.
- There is a 16% decrease in pipeline damage caused by 3rd party excavator.
- There is a 30% increase in pipeline damage caused by LDC personnel's error.
- **3rd Party excavator damage was the major root cause of pipe damage due to excavation.**

UNISOURCE ENERGY

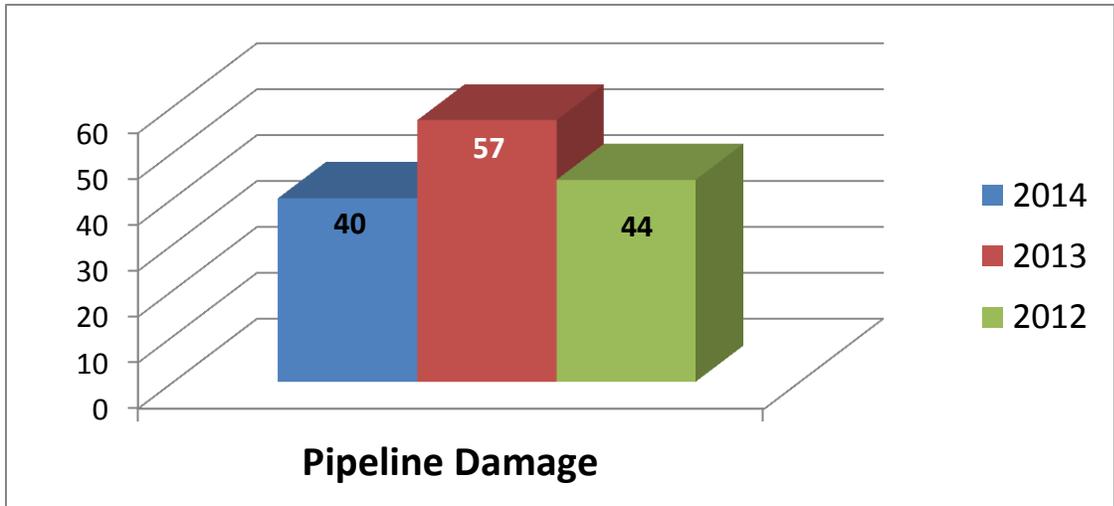
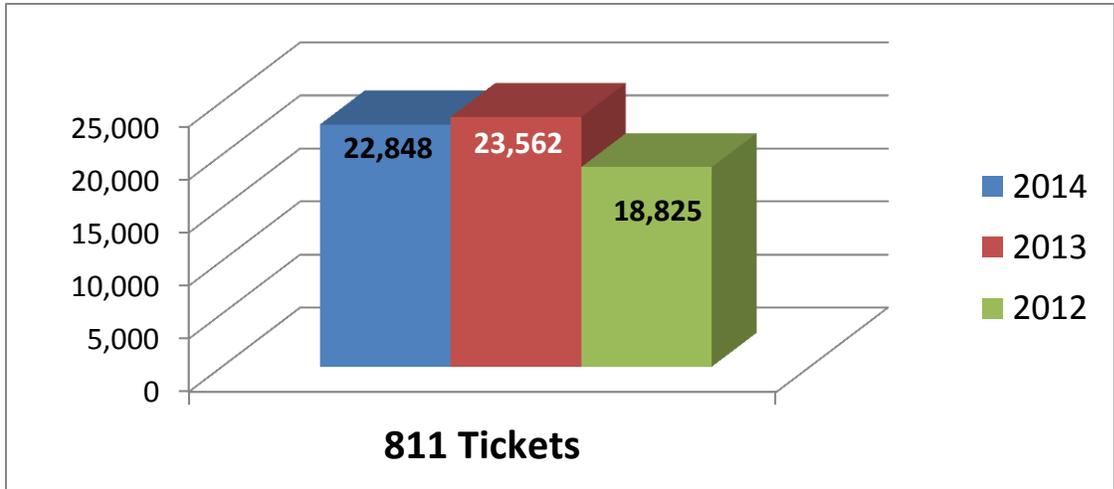


UNISOURCE ENERGY SERVICES							
Miles of Pipelines			4,240				
No. of Services			138,951				
			Year 2014				
			1st Q	2nd Q	3rd Q	4th Q	Total
811 Tickets Received			8,133	9,641	9,346	8,508	35,628
Pipeline Damage			35	41	43	26	145
Cause of Damage:							
	No 811 Ticket		5	10	10	9	34
	Incorrect Marking		4	6	8	4	22
	3rd Party Excavator Error		19	25	24	12	80
	Error by LDCs Personnel		7	0	1	1	9
Average Number of Pipeline Damaged							
Per 1000 - 811 Tickets Requested			4.30	4.25	4.60	3.06	4.05

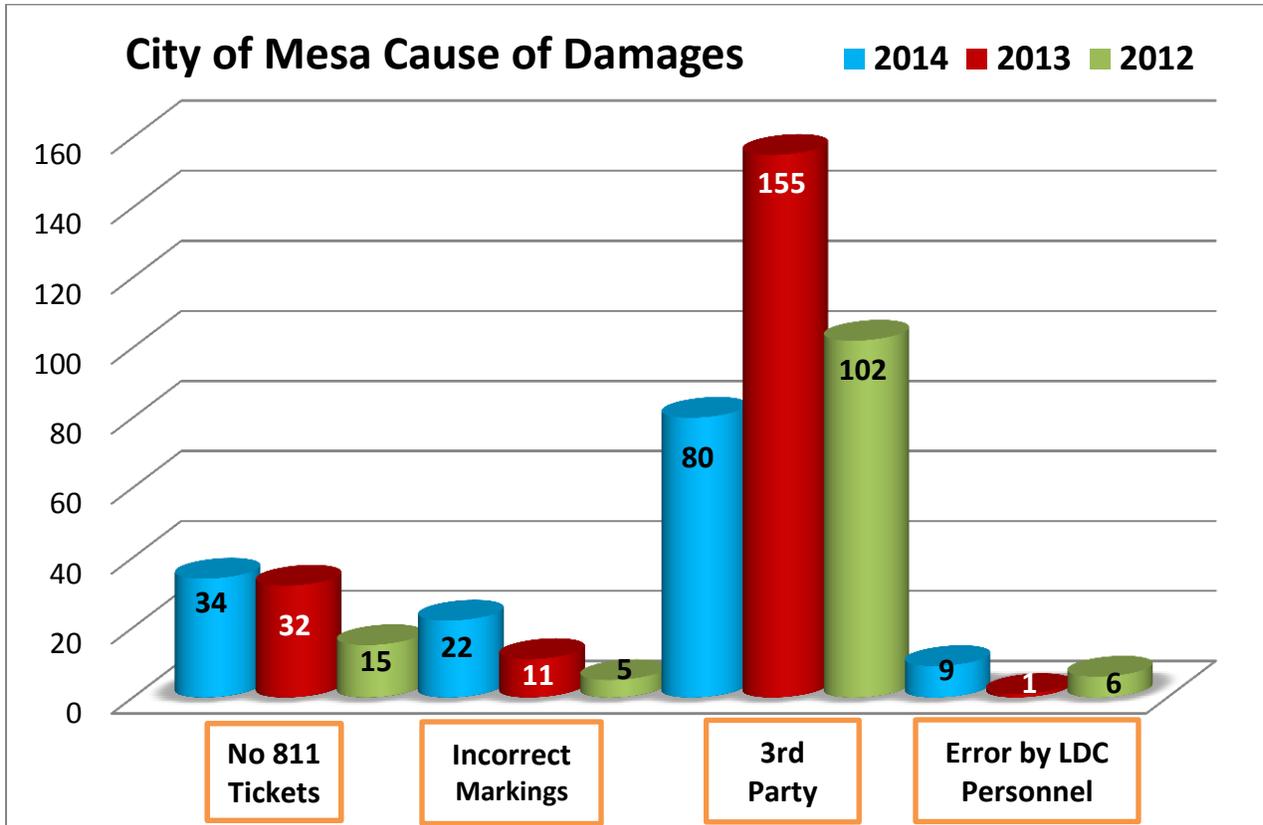


- There is an 18% increase in 811 tickets.
- There is a 27% decrease in pipeline damage due to excavation.
- There is a 6% increase in pipeline damage caused by no tickets.
- There is a 100% Increase in pipeline damage caused by incorrect markings.
- There is a 48% decrease in pipeline damage caused by 3rd party excavator.
- There is an 800% increase in pipeline damage caused by LDC personnel's error.
- **3rd Party excavator damage was the major root cause of pipe damage due to excavation.**

CITY OF MESA

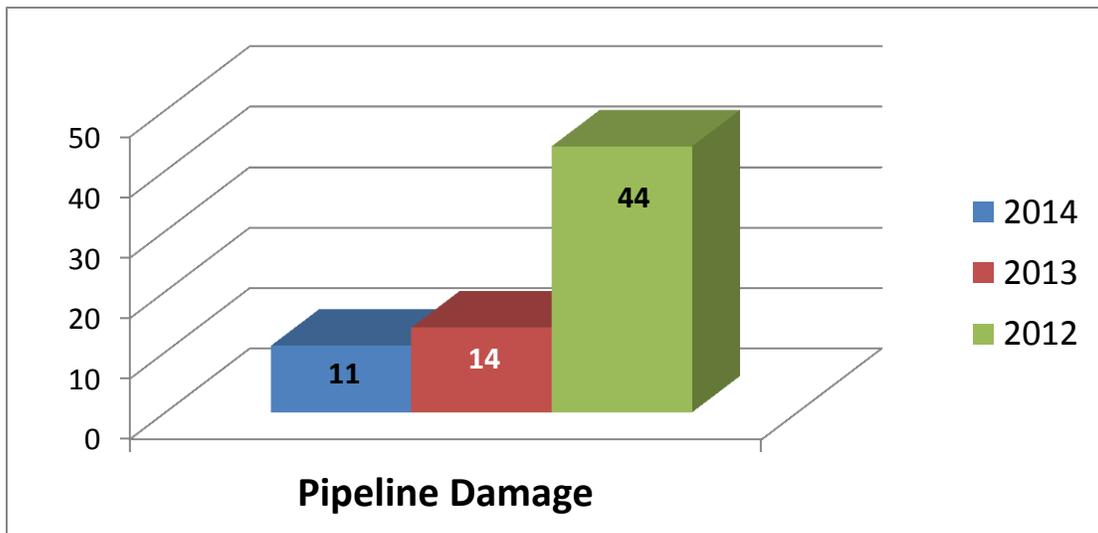
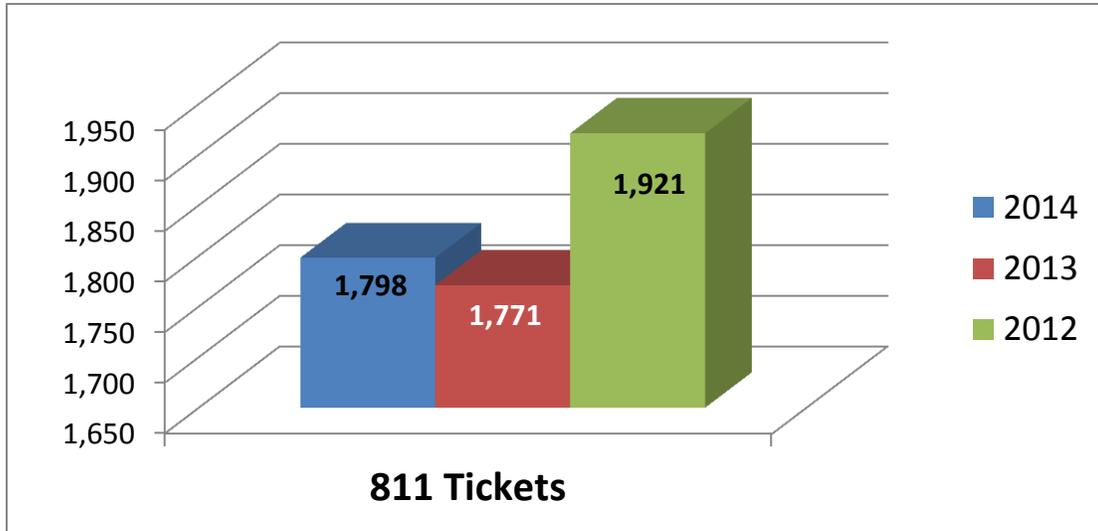


CITY OF MESA							
Miles of Pipelines				1,905.14			
No. of Services				60,433			
			Year 2014				
			1st Q	2nd Q	3rd Q	4th Q	Total
811 Tickets Received			5,066	5,456	6,180	6,146	22,848
Pipeline Damage			8	12	10	10	40
Cause of Damage:							
	No 811 Ticket		2	4	3	2	11
	Incorrect Marking		0	3	3	0	6
	3rd Party Excavator Error		5	5	4	7	21
	Error by LDCs Personnel		1	0	0	1	2
Average Number of Pipeline Damaged							
Per 1000 - 811 Tickets Requested			1.58	2.20	1.62	1.63	1.76



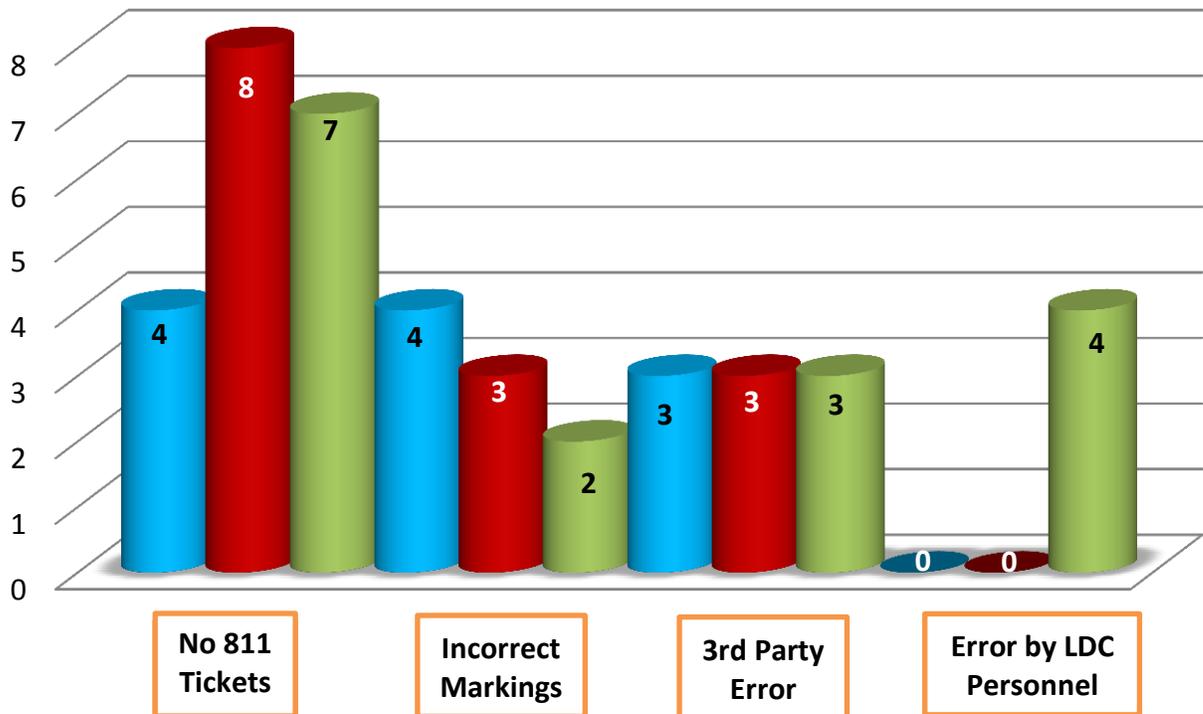
- There is a 3% decrease in 811 tickets.
- There is a 30% decrease in pipeline damage due to excavation.
- There is a 10% increase in pipeline damage caused by no tickets.
- There is a 50% decrease in pipeline damage caused by incorrect markings.
- There is a 46% decrease in pipeline damage caused by 3rd party excavator.
- There is a 50% decrease in pipeline damage caused by LDC personnel's error.
- **Error by 3rd party excavator was the major root cause of pipe damage due to excavation.**

ALLIANT GAS



ALLIANT GAS ARIZONA PROPANE LLC							
Miles of Pipelines			459.10				
No. of Services			9,525				
			Year 2014				
			1st Q	2nd Q	3rd Q	4th Q	Total
811 Tickets Received			499	422	474	403	1,798
Pipeline Damage			4	4	2	1	11
Cause of Damage:							
	No 811 Ticket		1	2	0	1	4
	Incorrect Marking		1	1	2	0	4
	3rd Party Excavator Error		2	1	0	0	3
	Error by LDCs Personnel		0	0	0	0	0
Average Number of Pipeline Damaged							
Per 1000 - 811 Tickets Requested			8.02	9.48	4.22	2.48	6.05

Alliant Gas AZ Propane Cause of Damages ■ 2014 ■ 2013 ■ 2012



- There is a 2% increase in 811 tickets.
- There is a 21% decrease in pipeline damage due to excavation.
- There is a 50% decrease in pipeline damage caused by no tickets.
- There is a 33% increase in pipeline damage caused by incorrect markings.
- There is a 0% change in pipeline damage caused by 3rd party excavator.
- There is a 0% change in pipeline damage caused by LDC personnel's error.
- **Incorrect marking of facilities and no 811 tickets were tied for the major root cause of pipe damage due to excavation.**

OTHER OPERATORS

Operator	2014	2013	2012	No. of Pipeline Damages in 2014
Abbot	2	0	1	0
APS	14	9	36	0
Calpine	4	0	0	0
City of Benson	561	684	909	0
City of Safford	802	815	695	4 (Error by LDC) 1 (incorect marking)
City of Willcox	389	397	601	0
Colorado City	0	157	147	0
Copper Market	835	1020	1147	0
Duncan Valley	436	433	253	0
Gila River	88	104	113	0
Graham County	2418	2360	4899	10 (3rd party damage) 4 (incorect marking) 1 (no 811 Ticket)
Havasu Springs	0	0	0	0
Nucor	5	0	0	0
Pimalco	71	59	57	0
Plains	146	180	149	0
Swissport	1490	1230	1529	0
Valley Air Park	0	0	1	0
Zapco	287	107	111	0

Conclusion:

For the year 2014, 3rd party excavator error was the number one root cause of pipeline damages. The number two root cause was no 811 tickets, followed by LDC personnel's error and incorrect marking of facilities.

Pipeline damage by excavation due to 3rd party excavator error continues to be the main cause even though there was a decrease of 30%. There were 398 cases in 2013 and 279 cases in 2014.

There are many reasons for the 30% drop of excavation damages due to 3rd party excavator error. This is a positive trend and may be attributed to the ACC's proactive approach to enforcing the Underground Facilities Law and to the operators engaging and implementing their damage prevention and public awareness programs.