



# Efficiencies Learned in Times of Budget Cuts... An Oklahoma Story

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EPA QA Conference  
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# Overview

- **How did we get here?**
- **Oklahoma Pesticide Laboratory**
- **What can we (not) live without?**
- **What actually affects turnaround time?**
- **What are the changes we made?**
- **How did those changes affect the section?**
- **What can be done to keep critical elements that affect efficiency?**
- **Conclusion**

# How did we get here?

- **State budget cuts began in 2009**
  - Decision was made by the Oklahoma Legislature in 2008 to no longer put excess oil revenue into the Oklahoma Rainy Day Fund.
  - Price of oil was near \$145 barrel
  - Oil related fees made up about 30% of state revenue

# How did we get here?

## ● Budget

- **First signs of a problem was seen in February 2009**
- **Price of oil fell from \$145 barrel in June 2008 to \$43 barrel in Feb 2009**
- **Plenty of money in Rainy Day Fund to cover shortfall but budgets were cut about 10% overall.**
- **Furloughs were required at most Agencies to cover the cut in allocation from the Capitol**

# How did we get here?

## ● Budget

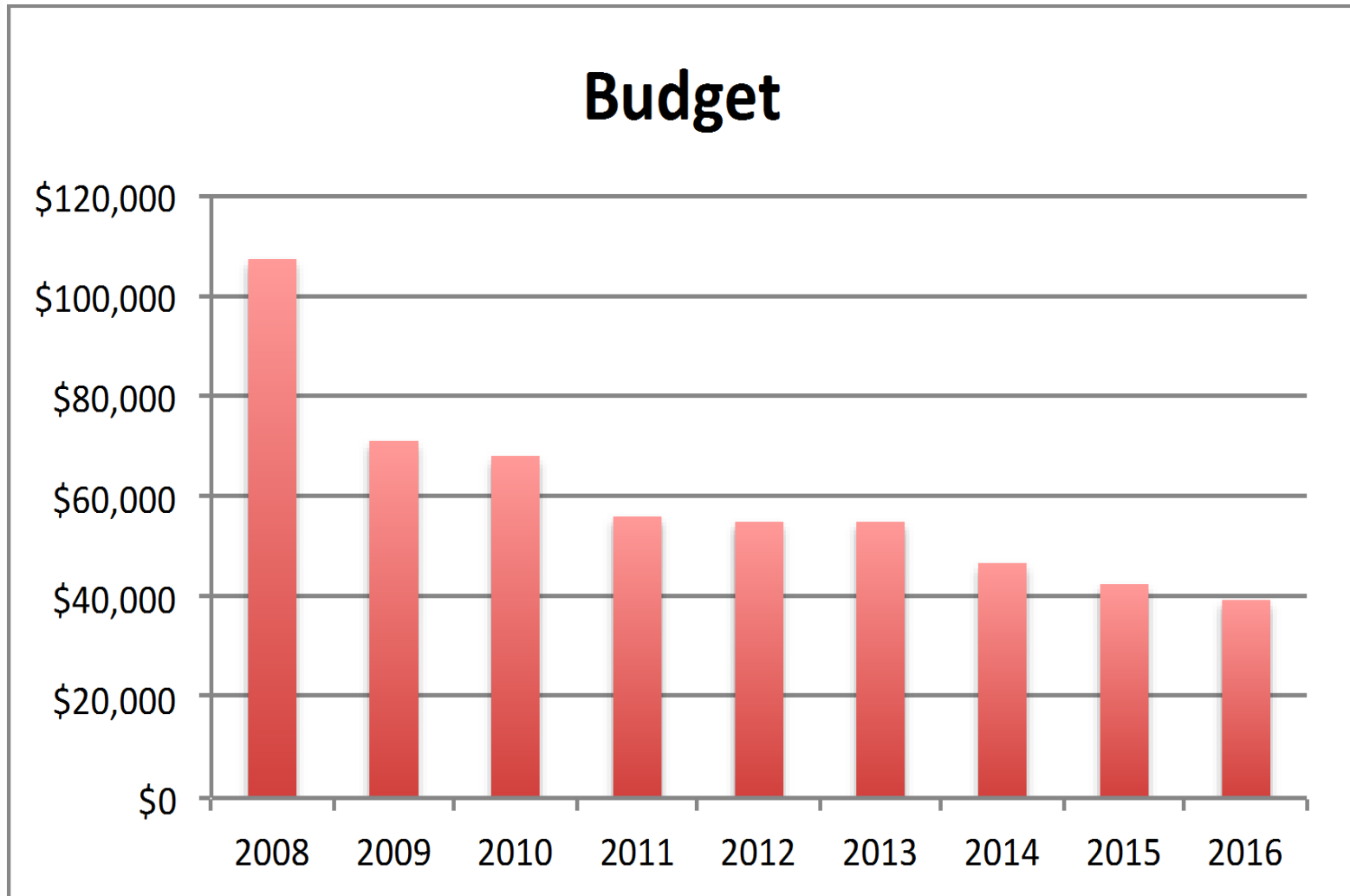
- Oil rebounded to over \$90 barrel by 2010 so revenue was back up and the Oklahoma Legislature decided to give tax cuts
- Tax cuts were phased in over 4 years as long as revenue met targets
- Each tax cut came with a budget cut to keep spending in line with revenue
- Because of the tax cuts, no extra revenue was going to Rainy Day Fund

# How did we get here?

## ● Budget

- Oil fell again to \$50 barrel in January 2015
- Already tight budgets were cut again
- Pesticide budget was hit hard from 2009 through 2016.

# How did we get here?



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# Oklahoma Pesticide Laboratory

- **FIFRA Laboratory**

- **Pesticide Misuse**
- **Formulation Regulation**
- **EPA 303d**
- **BUMP**
- **Health Related Samples**
- **EPA Pollution Samples**



# Oklahoma Pesticide Laboratory

- **USDA Organic Laboratory**
- **FERN Overflow Laboratory**
- **Monitoring Projects**
- **Not a PDP Laboratory**

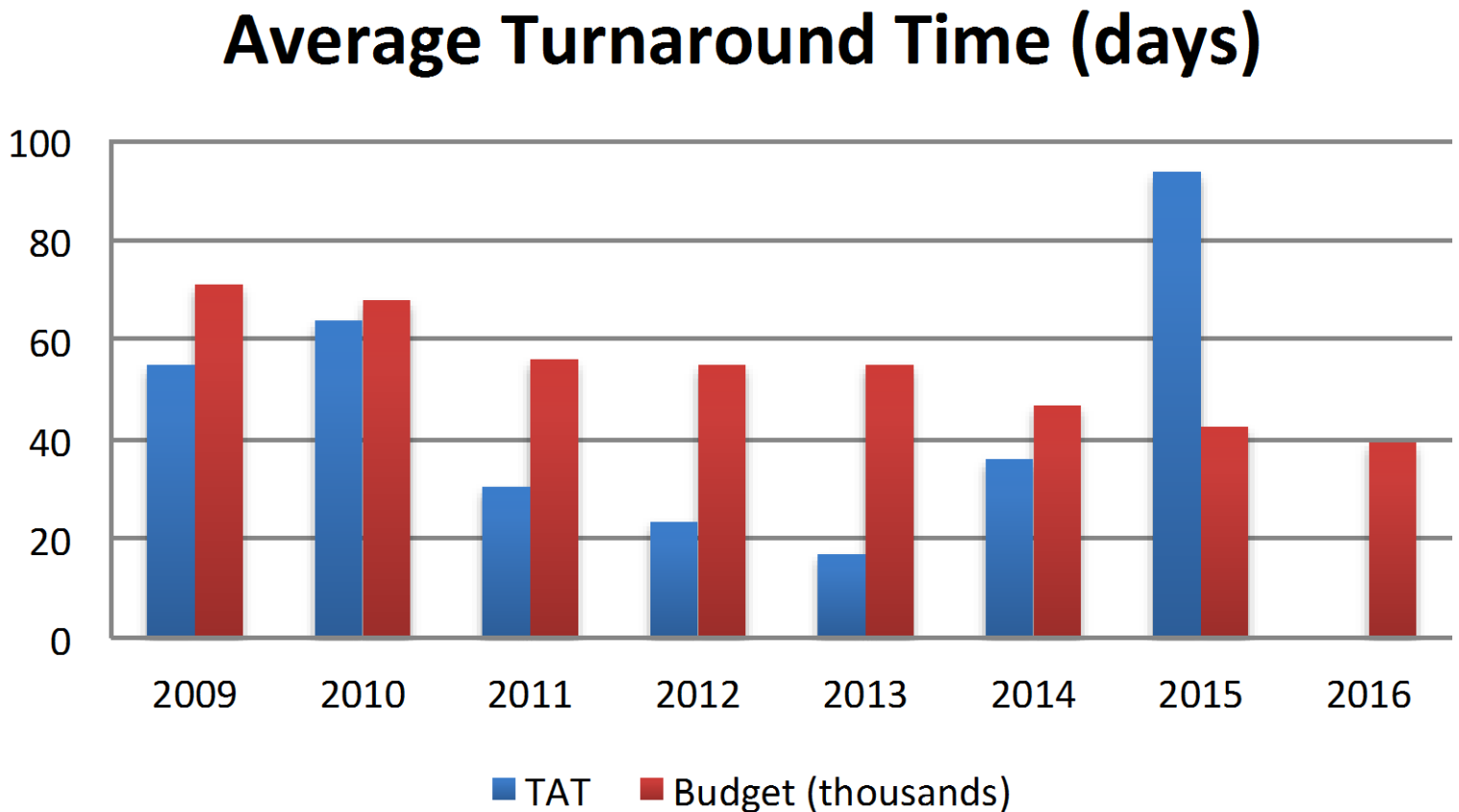
# What can we not live without?

- **Supplies**
- **Working instruments**
- **Minimum number of trained staff**

# What can we live without?

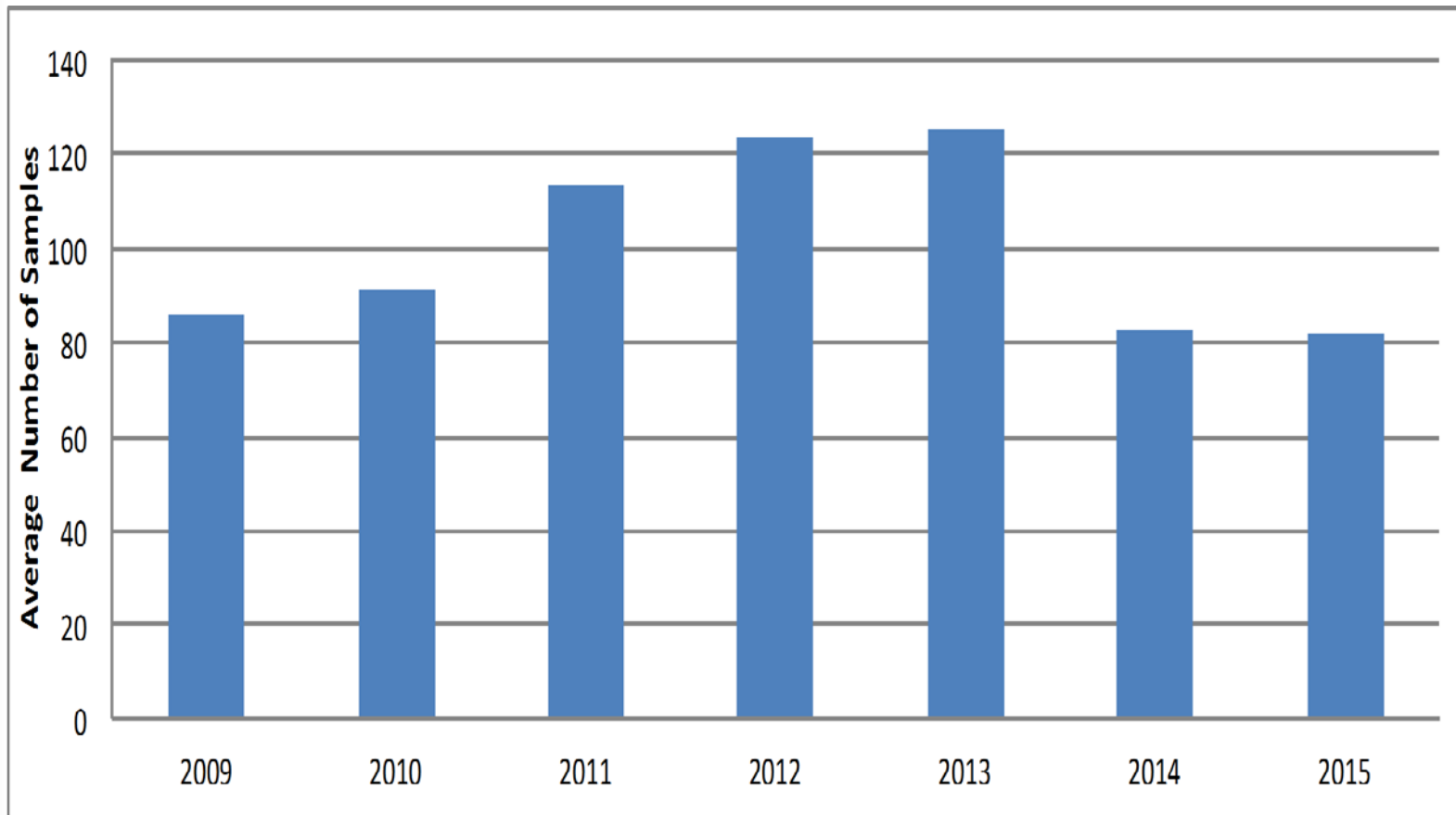
- **Agency Funded Travel**
- **Outside Training**
- **Service Contracts**
- **Preventive Maintenance performed by instrument manufacturer**
- **Laboratory Tech**
- **Support Staff**
  - **Administrative Assistant**

# What actually affects Turnaround time?



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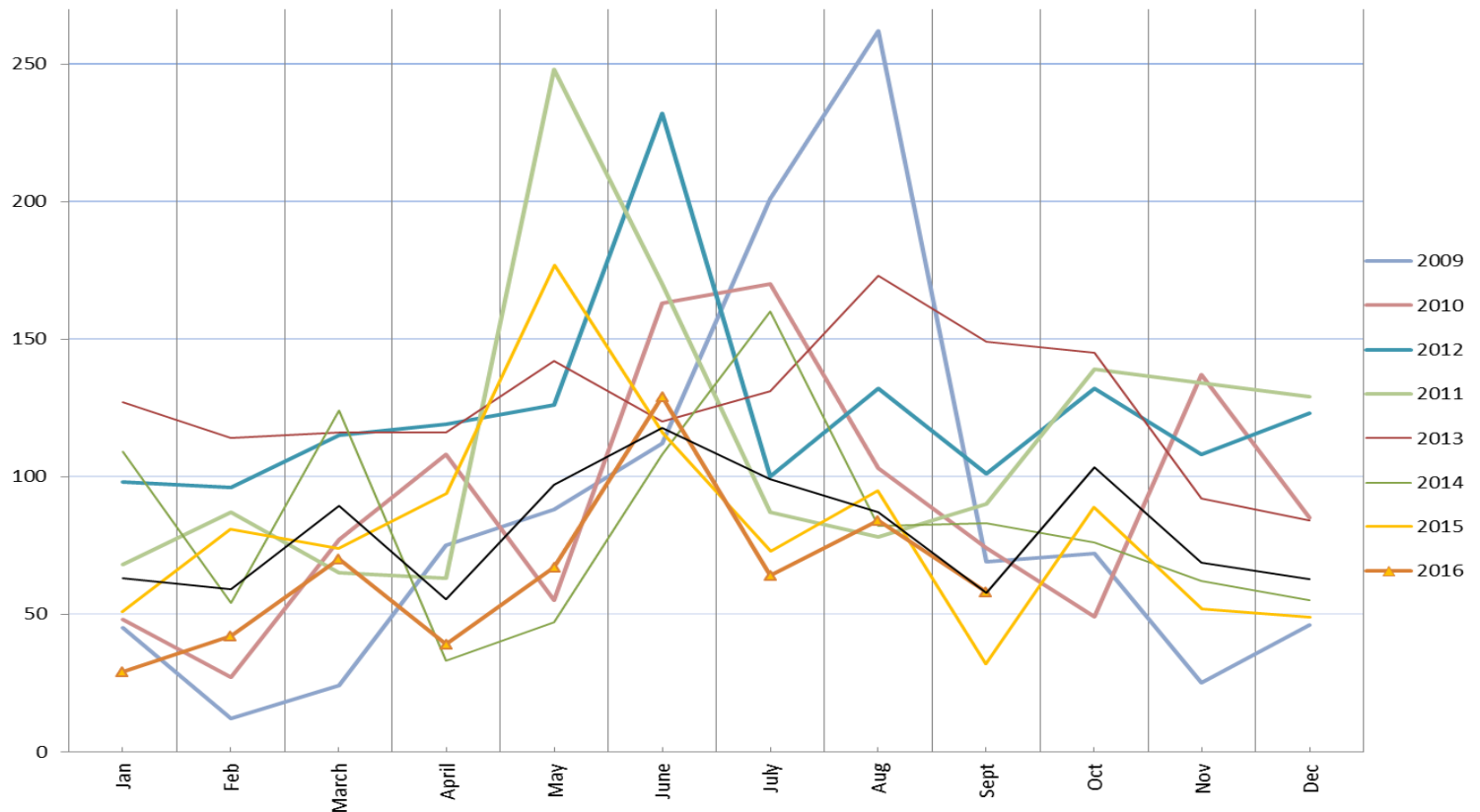
Average Number of Samples per Month each Year



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# What actually affects Turnaround time?

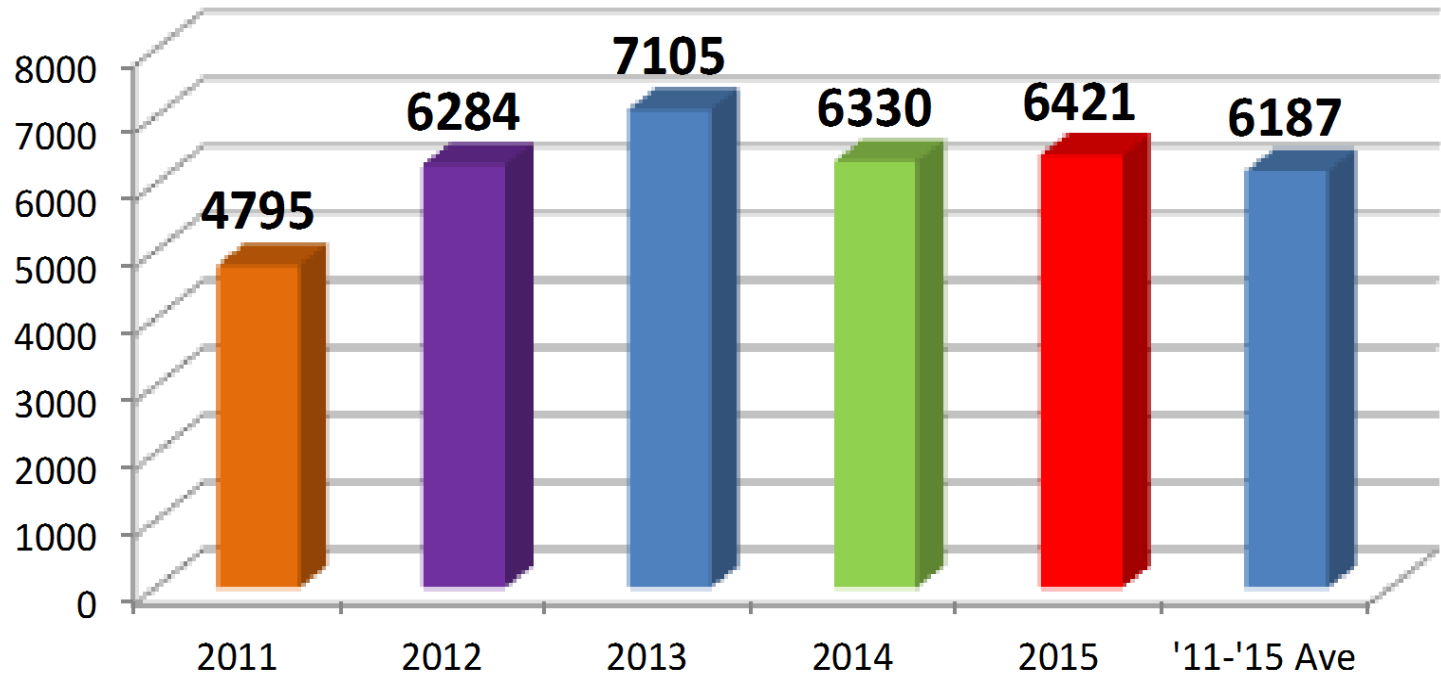
## Number of Samples per Month



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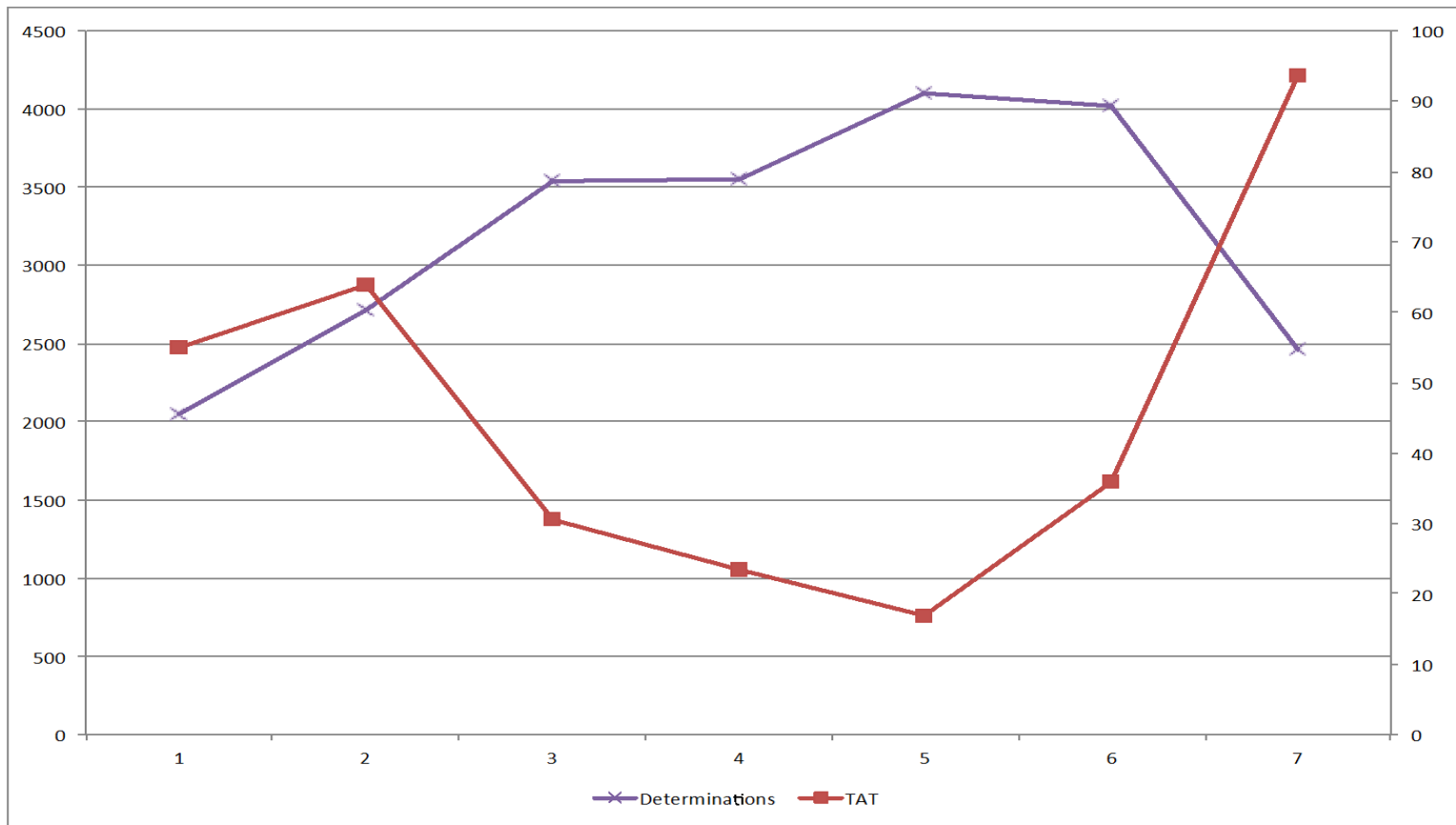
# What actually affects Turnaround time?

## Number of Tests per Year



# What actually affects Turnaround time?

## Determinations compared to TAT



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# What actually affects Turnaround time?

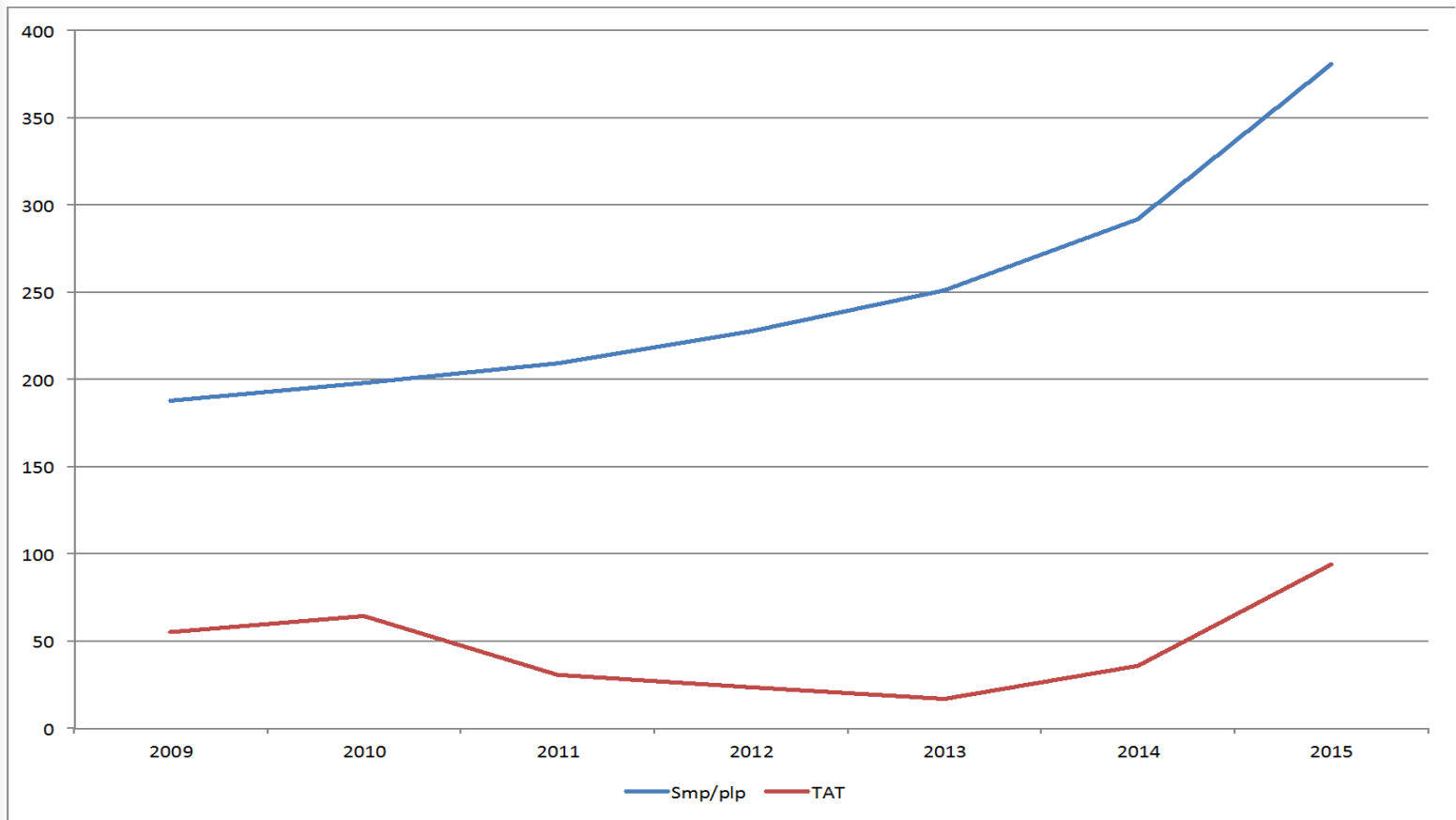
## Number of Samples Compared to TAT



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# What actually affects Turnaround time?

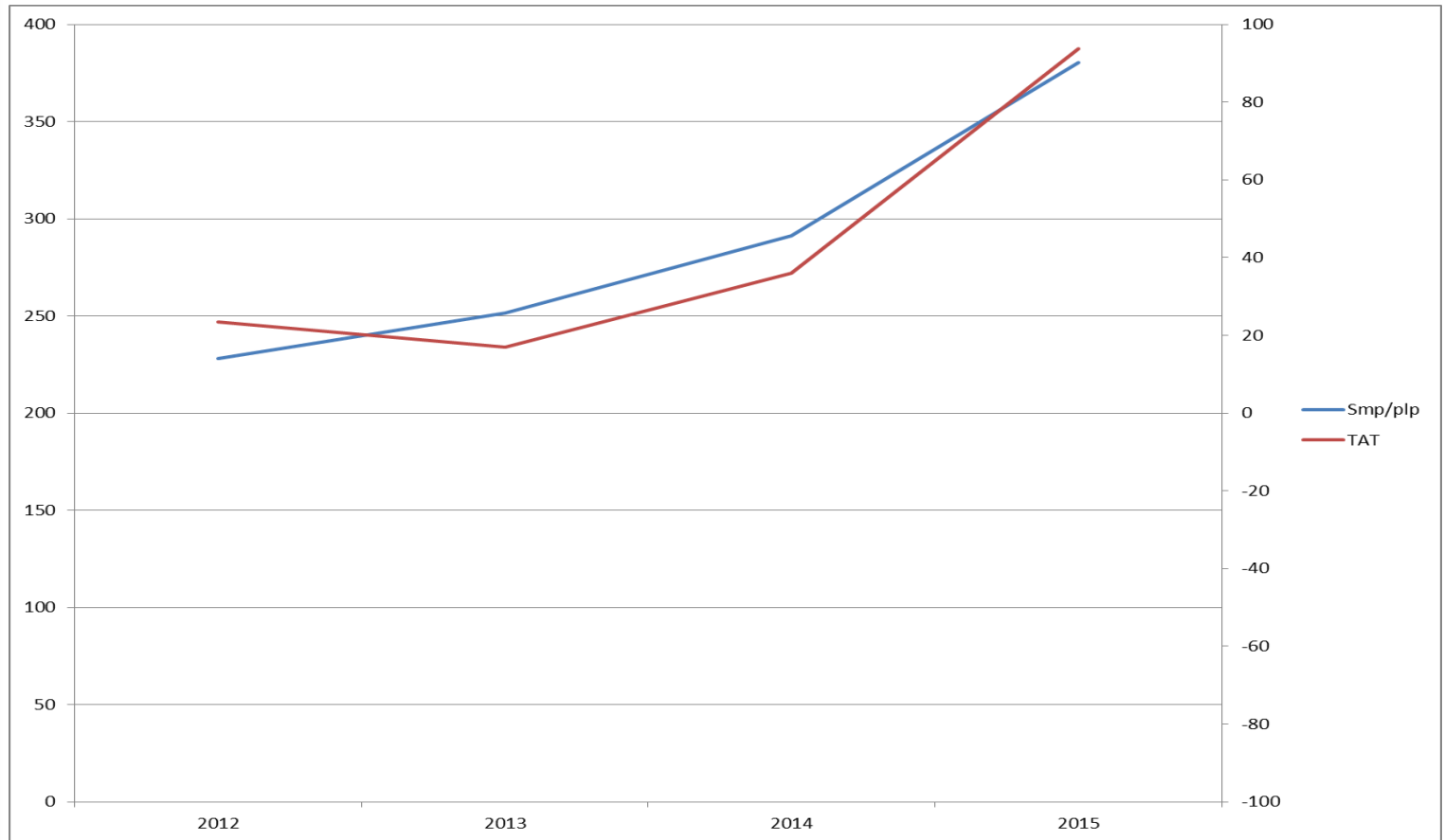
Samples/person vs TAT



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# What actually affects Turnaround time?

## Samples/person vs TAT



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# What changes have we made?

- **In 2009 we had 7 personnel working on samples**
  - 5 full time chemists
  - 1 laboratory tech
  - 1 part time chemist (retired former pesticide supervisor)
- **Three support staff**
  - 2 Administrator Assistants
  - 1 CPO purchasing agent

# What changes have we made?

- **By 2015 things have changed...**
  - **All positions except three chemist positions were eliminated one-by-one as budget was reduced**
  - **By 2015 we only had 1 chemist with more than a year of experience**
  - **Support staff was reduced to 1 shared administrative assistant to do LIMS login and paperwork filing**
  - **No cost of living raises since 2008**

# What changes have we made?

- **Laboratory process changes...**
  - **Formulations are now grouped by AI independant of type**
  - **We do our own PMs**
  - **We try to do quick cheap extraction on everything residue (modified QuEChERS)**
  - **No more paying for standards. All standards come from the repository or the manufacturer (this causes delays but it is necessary)**

# What changes have we made?

- **Laboratory process changes...**

- **Most training is in-house. Only allowed remote training is when it is 100% paid by someone else**
- **No method development time**
- **No more PAM Vol. I methods due to the cost**

# What changes have we made?

- **Laboratory process changes...**

- **We now assign tests to chemists instead of samples**

- **This allows them to maximize their output by doing larger groups of samples**

- **One LC/MSMS person**
- **One GC instruments person**
- **One Formulations person**



# How did these changes affect the section?

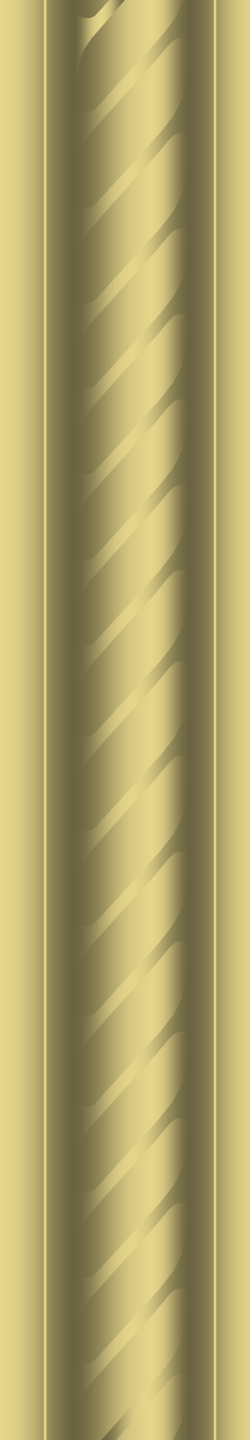
- **Without annual raises many new chemists left for other better paying jobs**
- **Experienced chemists took promotions when they came available**

# How did these changes affect the section?

- **Program office cannot ‘cut’ the number of samples to be in-line with budget cuts**
  - Only a few water projects could be reduced
  - 1400 samples in 2013
  - 1150 samples in 2015
- **Most samples are complaint based and therefore we cannot predict the number of samples**

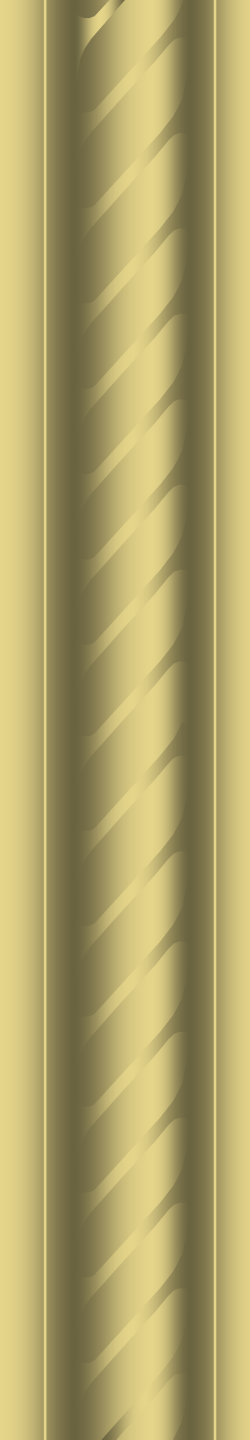
# How did these changes affect the section?

- **The actual number of samples per chemist per year has increased from 187 in 2009 to 380 in 2015**
- **Turnaround time during that same period has increased from 17 days to 121 days**



# So what can be done to keep critical elements that affect efficiency?

- **You can never compromise quality to gain efficiencies. It will always backfire**
- **Atmosphere is very important. Remove bad apples before they rot the whole bunch**
- **Performance reviews**



# So what can be done to keep critical elements that affect efficiency?

- **Yearly or bi-yearly cost of living raises is very important for retention of personnel**
- **Have reasonable goals**
- **Keep moral high by doing group projects and activities**

So what can be done to keep critical elements that affect efficiency?

- **Burnout will happen under these extreme conditions. Don't make it worse by pushing too hard all the time (Don't be a drill sergeant)**
- **When possible solicit help from other sections in the laboratory for processes that don't require much training**

So what can be done to keep critical elements that affect efficiency?

- **Have inspectors pull a full set of samples but only run the most likely to contain AI first**
- **Run formulation samples at lower levels**
  - **With less AI going through the system, less maintenance is required**

So what can be done to keep critical elements that affect efficiency?

- **Stopping as soon as you find an AI in the drift area is not usually available since the wind in Oklahoma can cause several applications from different directions drift onto damaged area. This forces us to look for multiple active ingredients all the time**



# So what can be done to keep critical elements that affect efficiency?

- **Once enough data is found to determine the application at fault (if any) testing is stopped**
- **Sometimes it takes 3 or 4 scans (30+ determinations) to resolve who was at fault**

# So what can be done to keep critical elements that affect efficiency?

- **Tank mixes are becoming more complex. It is not uncommon to find a Phenoxy, a Sulfonylurea, and Glyphosate all applied at once**
- **Sometimes we see 6 different chemicals applied which increases the amount of work per sample**

So what can be done to keep critical elements that affect efficiency?

- **Have personnel learn how to do the PM on instruments**
  - Most instrument manufacturers have PM kits you can buy at a fraction of the cost of a service personnel to come out
- **Get training on instrument repair so issues can be resolved quickly and affordably**

So what can be done to keep critical elements that affect efficiency?

- **Find creative ways to save money**
  - **Tongue depressors used as spatula**
  - **Wash residue standard bottles and use them in formulations**
  - **Since formulations are analyzed at lower levels, same stock solution of pesticides can be used in both residue and formulations**
  - **Have backup parts on site for parts that fail most often**

So what can be done to keep critical elements that affect efficiency?

- **Remember that if your turnaround time increases the number of samples you will have to store will increase so when you buy new freezers make sure you factor this extra capacity into your decision**

# Conclusion

- **Budget cuts will happen to everyone eventually**
- **Being prepared or having a plan of action can help reduce the impact**
- **If possible cut programs as the budget is cut**
- **Cross train others from different sections of the laboratory so when help is need it is ready**



● **Any Questions?**