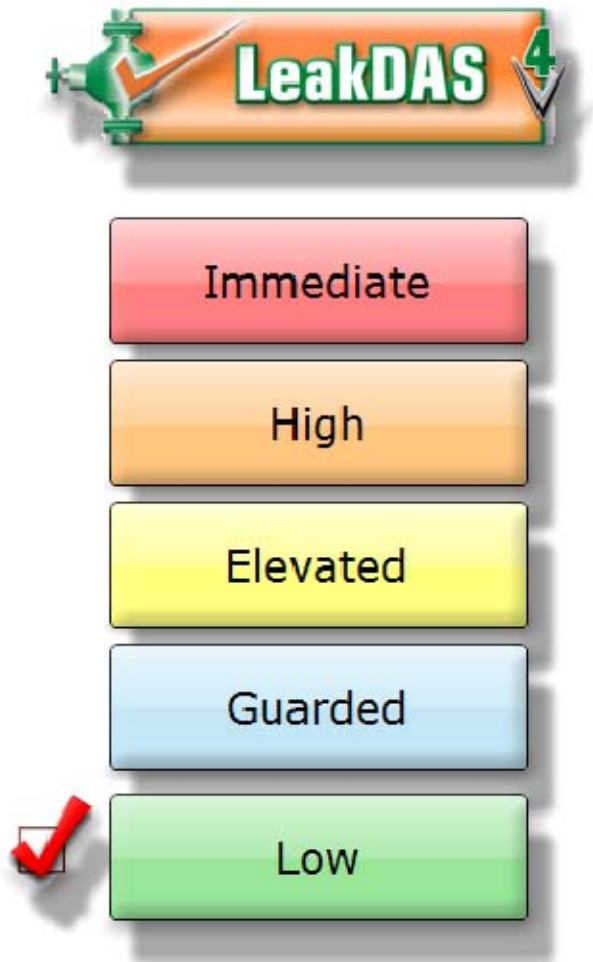# LeakDAS Version 4 – The Complete Guide

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SECTION 2 – COMPONENTS AND COMPONENT MANAGEMENT

Author - Chris Patterson
Technical Editor – Jennie Diaz

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In Section 1 of the guide we talked about regulations, rule definitions, compliance rules – basically the regulatory foundation of LeakDAS, why LeakDAS does what it does and how by using the regulations you can control what LeakDAS does. We spent a lot of time talking about how it is the regulation that determines what happens to a component as far as monitoring, and also what happens after a leak is found.

So, if you completed Section 1, you have a full understanding of rule definitions, or at least a good start to help you along that path to a full understanding. If you can understand the rule definitions and understand how they work, everything else falls into place, because everything is driven off those regulations.

COMPONENT OVERVIEW

The next big thing that we need to talk about is components and component management. Components – if we just define components – those are the individual things out in the field that make up your leak detection repair program. What components should be tagged? What components should be a part of your fugitive emissions program? The answer to that depends totally upon the regulations that govern your facilities.

The regulations themselves will specify which component classes they govern. For instance, a component class could be a valve, a pump, a compressor seal, an agitator, a flange, a connector – those are component classes. In other words, what does the regulation call the component? Not all regulations govern all components. You'll find that some regulations govern connectors and flanges and other regulations don't regulate connectors and flanges. So, based on the regulation that governs your facility, it tells you what needs to be a part of your leak detection and repair program.

So, you can spend some time looking at the regulations to determine if you've got everything correctly identified in your database or if you need to go do some additional identification out in the field. Now, when we talk about components, LeakDAS has a very robust form that we call the Smart Browse™ form that allows us to filter, search, group, and sort and to see our components in many, many different ways.

The form shown above in LeakDAS is what we call the component edit form, and I want to start with that component edit form so that we can just kind of go over what fields are available for you to store information and what those fields are actually meant to store.

Then after we cover the form itself, what an individual component looks like, then we'll spend some time with the smart-browse form filtering, grouping, and show you some different tricks that you can do there. We'll start with the component form. I have opened one of the three tags that I added into my database during the previous session. It's says, "Tag Number V4-001."

COMPONENT INFORMATION - "WHAT IT IS"

On this form, we've got a menu across the top and then we've got multiple fields. I'm just going to go through and give you a quick run-through of these different fields and what they are meant to contain. Then we'll go from there.

Component Tag

The first field we want to talk about is this tag field itself. That's the actual physical tag number that's hanging on the component out in the field or if you're doing virtual tags, it's the virtual tag number. For example, you may tag your valve, but you may do a 0.1 or a 0.2 off the valve to represent the flanges or an x and a y to represent the flanges. That's the identifier that you are assigning to the component out in the field.

Drawing Field

The next field is the drawing field. In this case, I've got a drawing of LDAR001. LeakDAS uses the tag and the drawing to make a unique component. What that means is that I could have multiple V4-001 tags as long as they all have unique drawings. So, I could have one for process unit A, process unit B, process unit C, but I can't have two of the V4-001s in process unit A if it applies to the same drawing. So, drawing is the tiebreaker. Drawing is not a required field unless you have duplicate tags, and then drawing becomes a required field. Drawing is kind of a neat one, too. Anybody who's doing a tag-less LDAR system, such as the company Proactive – the contractor Proactive provides – if you're doing a tag-less system, then using this drawing that's in the field, you can actually ask LeakDAS to show you the drawing just by coming up here to the documents menu, telling it "show drawing," and LeakDAS will go out and pull – in this case, I've got a copy of a Proactive drawing here.
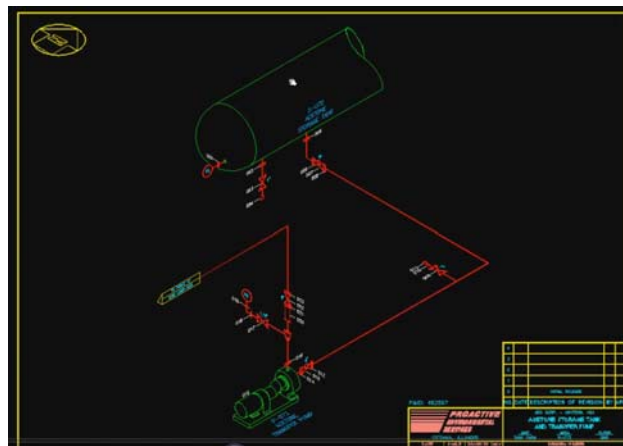
LeakDAS will go out and pull that drawing and show me the drawing that I've told it this component is on. So, let's say you're doing tag-less systems or if you've just got drawings that you want to associate LeakDAS with the drawings; all we need is the drawing number where the tag resides. There's just a tiny bit of setup to make this work. I'm using the Autodesk design review which is a free download – to open up the drawing. So, there's no additional expensive software required. LeakDAS just pulls the drawing as it's been told to pull.

Component Class

The next field we want to talk about is the component class itself, and that's what I just talked about. The component class is: What does the regulation call the component? The regulation doesn't care if it's a block valve, a bleed valve, a control valve, a chain valve – it just simply doesn't care. The regulation says, "If it's a valve, do this." So, the class is the regulatory class. The type is where we can be a little more descriptive. Maintenance does care if it's a block valve, a bleed valve or a control valve, so we can use the type field to further describe the component class.

Component Type

When in edit mode, the type fields are filtered. When you build your pick list, these are filtered based on the component class itself. So, let's say I change the component class to a pump, you'll see a different list of types than if I change the class back to a valve and then pull my type list. So, those are a couple fields that are tied together – valve – when you select a valve, it sets a filter into the type field so that you can choose the appropriate type off your types list.

Manufacturer

Also, filtered off of the component class is the manufacturer field. You get a list of different valve manufacturers that you can select from. If I select something else, such as a pump, then I get a list of pump manufacturers to select from. So, there are a few fields that are tied together and class is one of them. Class ties the type and also the manufacturer. So, what we're talking about in this upper section – this section called "component information" – I call that the "what it is" section. What is the component that we're dealing with here?
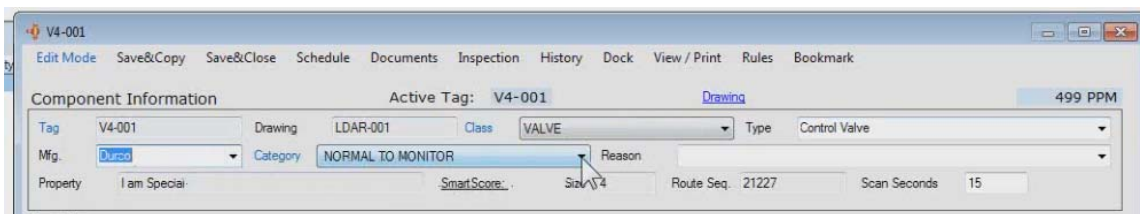
This is a valve. It's a control valve manufactured by Durco. The category – remember seeing that on the regulations that we've discussed, the rule definitions. The category is simply whether it's difficult to monitor, unsafe to monitor or normal to monitor. If it's either difficult to monitor or unsafe to monitor, you should also give it a reason why it's difficult or unsafe. So, if I choose difficult, then I get a list of difficult reasons and I can choose the appropriate difficult-to-monitor reason.

Component Category

The category field will change the monitoring frequency of the component if the rule definition allows for that. Some regulations say that if it's difficult to monitor, instead of doing it quarterly you'll do it annually. Some say if it's unsafe to monitor, instead of doing it quarterly, you may not have to do it at all. If the rule definitions support that, by changing the category from normal to difficult or from normal to unsafe, LeakDAS would then look to the rule definition to see what I need to do on this component.

Component Property and Pick Lists

If you will notice, the property field is not a pick list. All other fields that have the little drop arrows beside them – those are pick lists and those come from lists that you, the expert for your system, generate. So, you have full control over the pick lists in LeakDAS as far as what will show up on those drop lists.

Pick lists, drop lists, anything that has the drop arrow – those come from a validated list that you build inside LeakDAS. Only specified personnel will have access to these lists so that you have full control over the data within them. And that way, you don't get duplicated data due to misspellings or bad information. It helps keep your lists a bit cleaner. So, how do you, the expert, super users, of your database, how do you manage those pick lists?

That's all located underneath the help menu. I'll go help, and then pick lists, and then I get several different lists for all the different pick lists that are in the database. Component classes, component types, category reason, manufacturers, exemption reasons, out-of-service reasons, repair methods, condition codes – these two I should explain. Repair methods and condition codes – those go out to LeakDAS mobile so when you find a leak, you can document what the repair was, what the condition was. They're also used within LeakDAS, same purpose, if you're entering repair information on components.
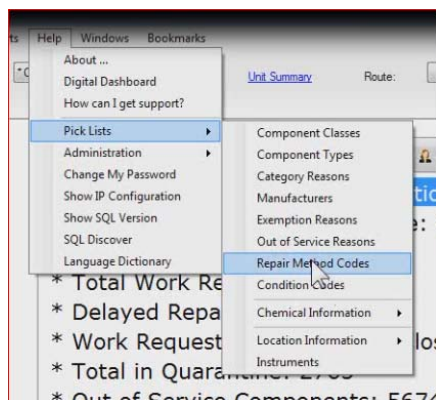
Chemical information has its own little sub-menu – chemical names, stream names, batch names, also a mobile calibration gas that gets downloaded out to LeakDAS mobile – location information – those five location fields – and then your instrument list where you can build your list of the different TVAs or OVAs or whatever you're using in your facility.

All of the pick lists are controlled from the pick list menu. There are only two pick lists that you can't edit. One is chemical state. The chemical state is locked – light liquid, gas vapor, heavy liquid – there aren't too many other chemical states. You can't add chemical states. Also, the category pick list is locked for normal-to-monitor, difficult-to-

monitor, unsafe-to-monitor. You can't add new component categories. But all of the other pick lists are available to you to add to.

It's important to note that if you try to delete something from the pick list that's in use, you're going to get a message that tells you that it's in use and can't be deleted. You may have to do some searching. What tends to happen is often you'll find it's in use on an inactive component, and that gives you a little bit of a headache because an inactive component can't be edited. You might be a little bit of help with that. What I have seen people do is instead of deleting them from the list, they just change the name. They'll put an x in front of it and that causes it to drive all the way to the bottom of the list – out of sight, out of mind. That way, people don't use them anymore. So, you've got full control over that.

Property, though, is not a pick list. It's a free-formed field. Property is meant to further describe this piece of equipment that we're trying to describe. Again, this component information section – again, I call that "what it is." So, in this case, it's a valve. It's a control valve. It's a Durco. We might want to log that there is something special about this specific Durco valve in the property field.

Smart Score

Smart score is a calculated value that LeakDAS calculates based on a component's history. We'll further explore this information later in the section. Right now, think of smart score kind of like a credit score, where we look at the history of a component. We look at how frequently it's been monitored. We look at leak definitions and whether it's seeded those leak definitions. We pull up a numeric value; we assign a numeric value. The higher the smart score, the worse the performance of the valve has been in the past or the more likely it is to become a leak in the future based off of past performance. Smart score is a very valuable tool for you to find your bad-performing components.

Component Size

Size is pretty self-explanatory. It's just the size of the component. That size is used on some validation screens in LeakDAS where we look at how much time was spent monitoring a component. We compare that to the size of the component to determine what we call scan speed. In other words, how fast was the technician moving when he monitored the component? So, size, if you can make that as accurate as possible, we can be more accurate when we calculate scan speed.

Route Sequence

Route sequence – I need to explain that. When you send a technician out to the field to do monitoring, you want him to monitor in the most productive route possible. You don't

want him jumping from one side of the unit to the other side of the unit and then back as he monitors his components. So, route sequence is literally the order that the technician would monitor the components; the order that the components would show up in his handset as he does the monitoring in the field. You have full control over route sequence and you can assign the sequence any way you want it to be so that things go in a nice productive order as the technician's doing the monitoring.

Scan seconds

Scan seconds – I should explain that as well. You get to decide and define at the component level in LeakDAS how much minimum time you want the technician to spend on a component when he does his monitoring. The scan seconds gets downloaded out to LeakDAS mobile. For example, if I assigned it a 15-second scan seconds, then that means the technician can't go faster than 15 seconds when he monitors this component. LeakDAS mobile will literally hold him on the component for 15 seconds before it would let him log the reading. That's very important. Now, scan seconds by default – if you don't define it manually, then LeakDAS automatically assigns a ten second scan time. So, if you just leave the fields empty, it will be a ten. What that means is that you only have to populate the ones that you want to be something higher than a ten or maybe less than a ten. What this does is it gives you the flexibility for you to decide, "I want all my valves that are two inches to be this much time. I want all my valves that are four inches to be this much time. I want all my connectors to be this much time."

There are several charts that have been developed by several different contractors and consultants, things such as the response time pyramid. I've heard them called different names. But I know of three different charts from three different companies, and those charts conflict with each other as far as how much minimum time you should spend on a component. What we decided to do is let you decide which of those charts you want to subscribe to and then you have the ability to tell LeakDAS at the component level how much minimum scan time.

Now, the good news is that you don't have to go and put this on each and every single component one-by-one-by-one. LeakDAS does have global tools where you can set a filter and say, "Give me all my valves. If they're greater than four inches, make this a 20-second scan time. If they're less than four inches, make it a ten-second scan time." It's pretty easy to do. Again, ten seconds is the default. If you're fine with ten seconds, just leave the field empty.

Now, when this information is sent out to LeakDAS mobile – we're going to cover LeakDAS mobile in depth later in the series – but when it does go out to LeakDAS mobile, the technician has to stay on it for that minimum time. If he gets needle deflection during that minimum time, then LeakDAS mobile adds in two times the response time of the analyzer that he's using.

So, this top section, again, what it is – we've covered all the fields in the "what it is" section. Let's move on to this location section which is what I call "where it is."

LOCATION – "WHERE IT IS"

We've talked about what the component is, and now we're going to talk about where it is. That's where we start using these location-based fields. The first one is plant. The second one is building. The third one is department. The fourth one is process unit, and then floor and then area. Then finally we've got this location description.

Now, not all of these fields are required fields. You can tell a required field on this form because the required fields are in a blue on their label, and the non-required fields are in black on their label. So, there's a little bit of color-coding there to help you. Again, the blue fields are the required fields; the black ones are the non-required fields. So, in this location description area, plant and process unit would be required. Then even though location isn't marked as a required field, you sure would want to have a location. Otherwise, how are you going find the component out in the field? So, that will help you there. Again, most of these are pick lists. Those come from the pick-list builder that I'll be showing you here in a few minutes. The floor is not a pick list. You can type anything in that you want there, and of course, the location is not a pick list either. The location is 100 characters long. That's much longer than most databases that you may have used before. That gives you a pretty extensive way to define where in the facility this component resides.

The next question is the process stream. This is where we talk about what's actually flowing through the line on this component. The three required fields here would be the process stream itself, which is a pick list, the chemical state of that process stream, which is, again, a pick list, and then the pressure service of that process stream and finally, a batch field. Process stream is used primarily when you do emissions calculations so that when you calculate your emissions you know how much of the 100 percent HCN you're emitting into the atmosphere. Chemical state is used in emissions calculations, but it's also used at a regulatory level. It's one that ties over to the rule definitions so that, for example, if you're a light-liquid, pressure release device, your requirement under HON is

different than a gas vapor pressure release device. So, we do use chemical state as part of that information to determine frequencies.

Below the process stream, we've got a place where we have the date added to a unit. That's the date this component was added to the LeakDAS database. So, that's helpful information.   Then, toward the bottom we have multiple tabs.   The first tab is the regulations tab. This is where we talked yesterday. These are what we call rule sets, and the rule sets are the regulatory-specific part of the component record. In other words, what regulation or regulations govern this component? Now, previously, we only added an EPAH regulation, but now I went ahead and added to the same component the EPAVV just so I could show you that we have two different frequencies based off of the two different regulations and LeakDAS would have me monitor it for the most stringent frequencies so that I will be always in compliance with most frequencies. I   also   have two different leak definitions in play now. One is a 10,000 PPM leak definition and the other is a 500 PPM leak definition. So, it's pretty important there that LeakDAS is always going to have me monitor at the lowest leak definition.

The user data tab has five different user fields. I've temporarily just them named in uno, dos, tres and so forth. It's kinda cool; you can name these five fields anything that you want to name them. There are five user-defined fields, so if you want to keep track of – for instance – the color of the tag on the component, you can name one of those fields "tag color," and then you can store your tag colors in there and you can filter by that information and view that information. Each of these five fields is 60 characters wide, so you can store quite a bit of additional information in there.
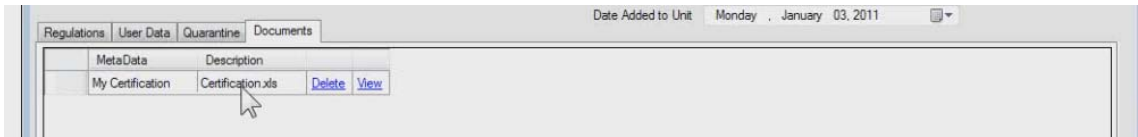
Finally, these last two – the quarantine just shows us if this record was currently in quarantine. It would show us information about this quarantine record. This last one is the documents tab, and this is kind of a cool tab if you've got some external document that you need to attach to your components. Maybe you replaced this component, you've got a copy of the invoice from when you bought the valve and you want to attach that to it. Or maybe some extraordinary repair had to be done to this valve, and you want to attach documentation to it. You have the ability to come up here to the documents, tell it to add a document and LeakDAS just opens up a standard Windows dialogue box where you can choose it. By choosing a file and telling it to open, I can type in a description of the document I'm attaching. Once attached, that document now is a part of this component record and is in the SQL server database. So, if I shut down my computer, went to the other side of the plant and opened up Joe's computer and opened this component, that record is attached to the component.

At any point here now, I can just click the view button and it's going to open up the documents that have been attached to it. So, these documents can be anything – anything that your operating system supports. It could be a Word document, an Excel document, an Adobe PDF file. It could be a picture. It can be a video file. If you're doing optical imaging on your components using one of the FLIR cameras and you want to take that video file that you've stored and attach it to a document, you can do so. If you want to take a camera out to the field and take pictures of your components and attach those to your components, you can do so and you just attach you just like we discussed. Any document that's attached – there's no limit to how many you can attach to each component. Any document you attach just shows up on the document tab.

COMPONENT FORM MENUS

All right, let's talk about the menus up at the top of the component form. We've talked about what's stored here. Notice that I've got a hot link here for drawing, too. That takes me to the drawing. I'd done it before by pulling the documents and then show drawing, but if you've got a drawing and you have your drawing set up, you don't have to pull the documents like I did – document, show drawing. You can just hit the drawing hot link or you can hit F2 on your keyboard like it says here on the hot key. So, that's just a little shortcut there.
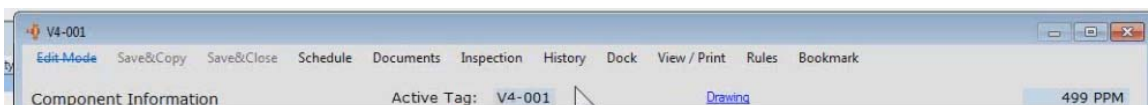
Whenever we open a component in LeakDAS that component is always in read-only mode. When viewing a component you'll notice edit mode is lined. What that means is I can't change anything in these fields while it's in read-only mode. That saves you from accidently changing a component. If I want to change a component, I have to click on the edit mode. That opens up the component in edit mode, and now any of these fields can be changed. Only authorized people can edit components. That's controlled by the security levels inside LeakDAS. So, you as an expert user – you can change everything. But I may have a technician who is relatively new, I've added him into LeakDAS as a restricted user. He'll be able to see components, he can look at components, but he's not going to be able to edit components. That just helps you control changes to your database so that unauthorized changes aren't being made.

You've got two different save buttons for saving a component, a "save and copy" and a "save and close." Save and close does exactly what it says. I'm going to save and close, and it's just going to save the record and shut it down. Save and copy is used if I want to do additional data entry. Let's say that ten brand new lines have been added right out in the middle of this process unit and I want to go out and verify those ten new tags that have been added. It's very easy with LeakDAS just to open up the existing tag that's closest to the new line and then using the save and copy button, I can make a copy of that tag. So, now I'm working with a copy here. I can say, "This is tag number four," and then I only have to edit what's different about the component. Instead of it being valve, it is actually going to be a connector. Again, I just go through and I edit what's different about the component. After I've finished editing what's different, then I will do save and copy. The next tag will be tag number five. It's also a connector. We'll save and copy. Tag number six is a pressure-release device that they've added, so we're going to tell LeakDAS that this is a pressure-release device. Again, I'm only editing what's different about the form and then doing the save and copy. So, it makes for very rapid data entry, because you don't have to fill out every single one of those forms and basically it's copying from one record to another everything about the component.

A few things don't copy. Specifically, documents wouldn't copy. When they actually go to quarantine and process through, the document that was on one will not be attached to the other. Once I've done all of my ten tags that I wanted to add – or however many tags that I wanted to add – then finally, I'll do a save and close and LeakDAS will save that record and close it down. Note that after closing the new component, there are no new tags on the screen, just the one I had opened originally. Anytime any new component, any edit to any existing component, those go to quarantine. They're sitting in quarantine waiting for me to review them and then once they're reviewed, I will process them through into my database. So, again, any new component, any edit to an existing component, goes to quarantine.

Let's finish off these menus across the top. The schedule menu simply shows me if the component is in the schedule or not. If the components still need to be monitored for the current period, I'd have the details of that monitoring requirement here on the screen.
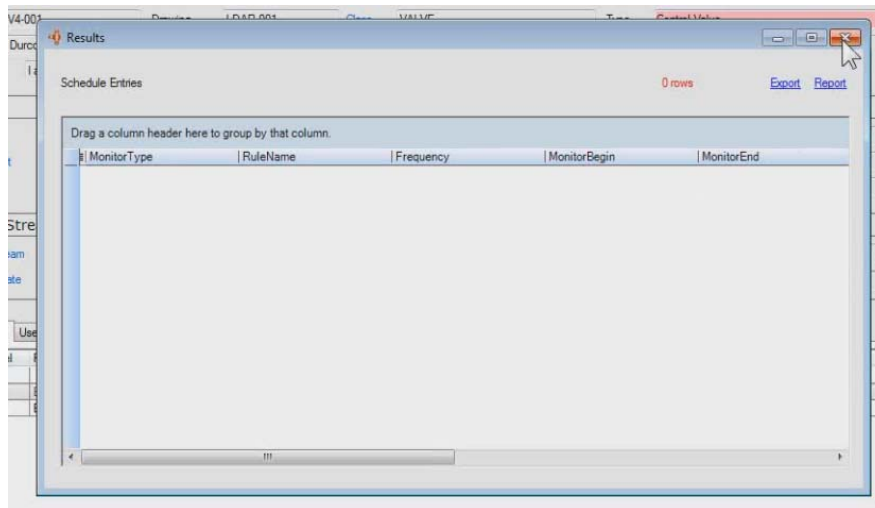
The documents tab we've talked about. The inspection menu – if I want to put an inspection on this component, I just want to do an inspection on one or maybe two components, all I have to do is open that component, hit the inspection menu and fill out this form. I can say the date, the inspector, the instrument, the reading information, save it, and now I've got an inspection in quarantine ready to process through.

This is not how you would normally do data entry on inspections. Usually you're using LeakDAS mobile out in the field to log them out in the field, but every once in a while, you might need to add an inspection on a single component. Let's say maintenance comes up to you and says, "Hey, we were walking through the field, we saw a drip on this thing so we monitored it. We got 150 PPM. Joe did it." You can open up this form, put those details in, save the record and you've saved that one inspection. So, from any

component, if you want to add an inspection you can just hit the inspection menu and do so.

The history menu gives us quite a bit of information. First off, let's talk about component history – this comp history will open up and show me the entire history on this component.
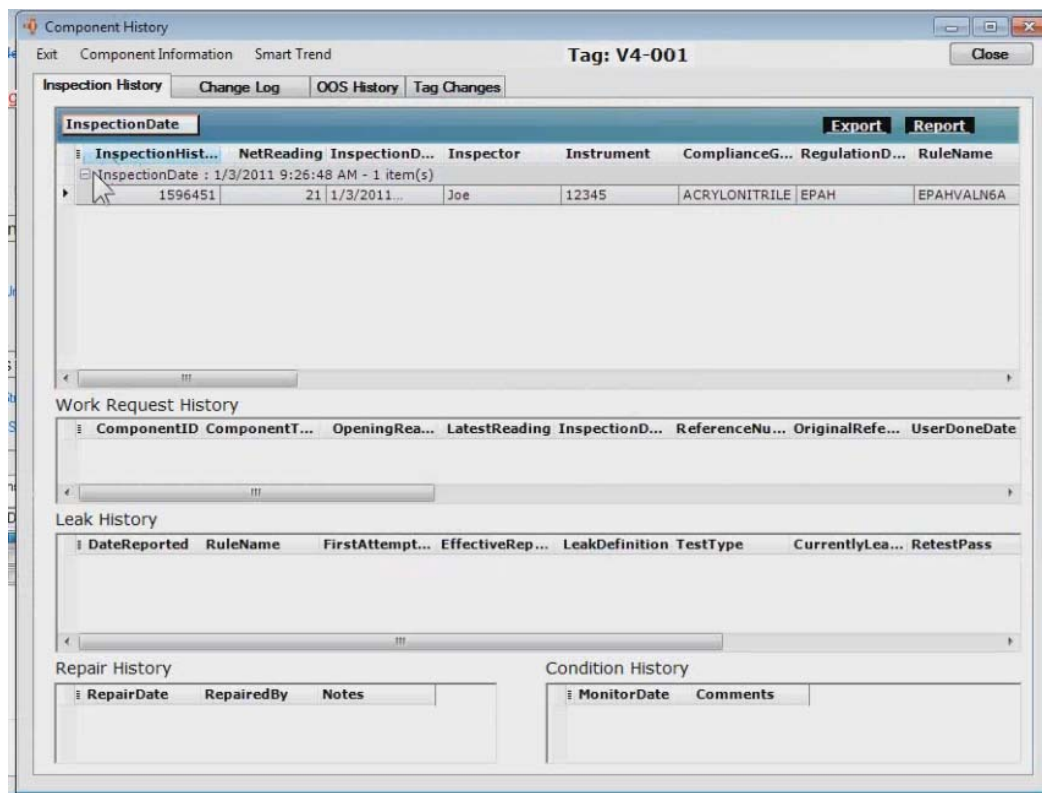
This first box is inspection history. I can see that this component was monitored 1/3/2011 by Joe using instrument 12345. It was the EPA H regulation that had Joe doing the monitoring. All the details about Joe's monitoring are here on that first record. If this component had ever been a leak, then these additional fields would be filled out so I could get the details of the leaks that were found and what was done to repair the leaks.

So, you get a component's complete history when you go to this history form. Importantly, you also get a change log that keeps track of every time this component was edited, or in other words, any time it was changed.
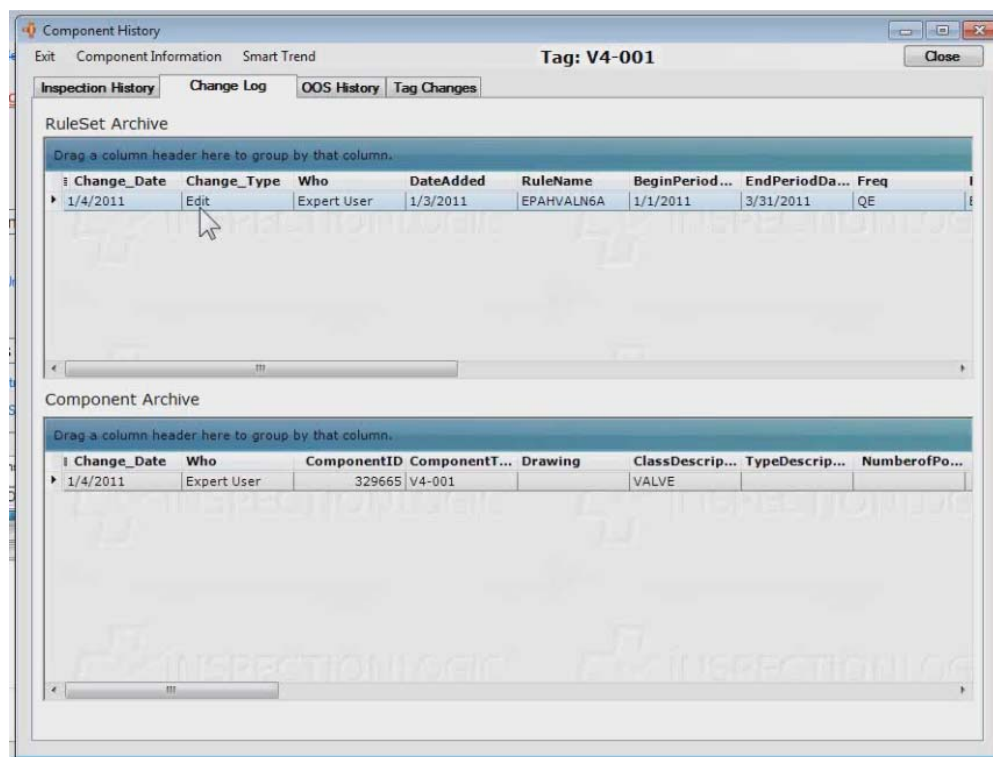
LeakDAS tracks, at the component level, if you change so much as a period in the location description, it tracks who made the change, the date they made the change and what field they changed.

That's very important if you have somebody making compliance changes. Let's say we changed it from a valve to a connector, and let's say it was misidentified as a valve originally. We change it to a connector. By changing it to a connector, that changes my reports coming up and I'd want to know who made that change, when they made the change and so forth. So, change log is a very useful field for taking a look at what has changed about a component.

In LeakDASv3, we tracked change logs based on who processed the change through lastins. However, In LeakDASv4, it's whoever edited the record and saved it into quarantine. In other words, who initiated the change? When that gets processed through quarantine, those changes get processed through, and then assigned into the change log would be who sent it to quarantine. It's not who processed it.

Also, we have an out-of-service history tab. So, if this component has ever been out of service, we can see when and why.
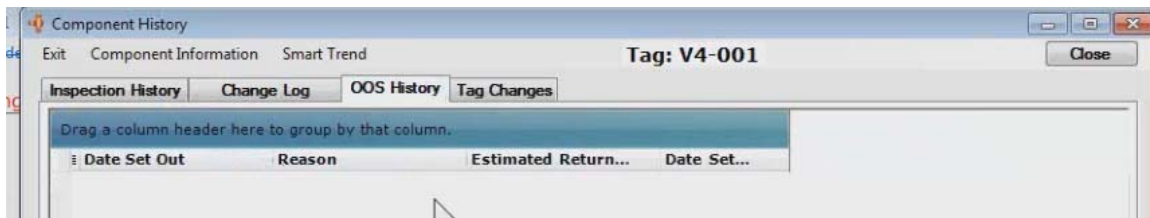
Then finally, tag changes, which are changes to the actual tag or drawing. Again, LeakDAS uses that tag and drawing to make a unique component.
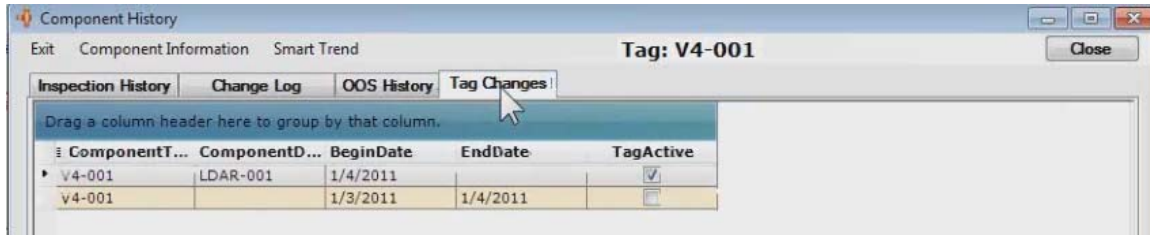
So, if that's changed I want to know about it. So, there's quite a bit of information there that you can get from the component history form. Also, on the history menu, we have a trend button which is kinda neat.
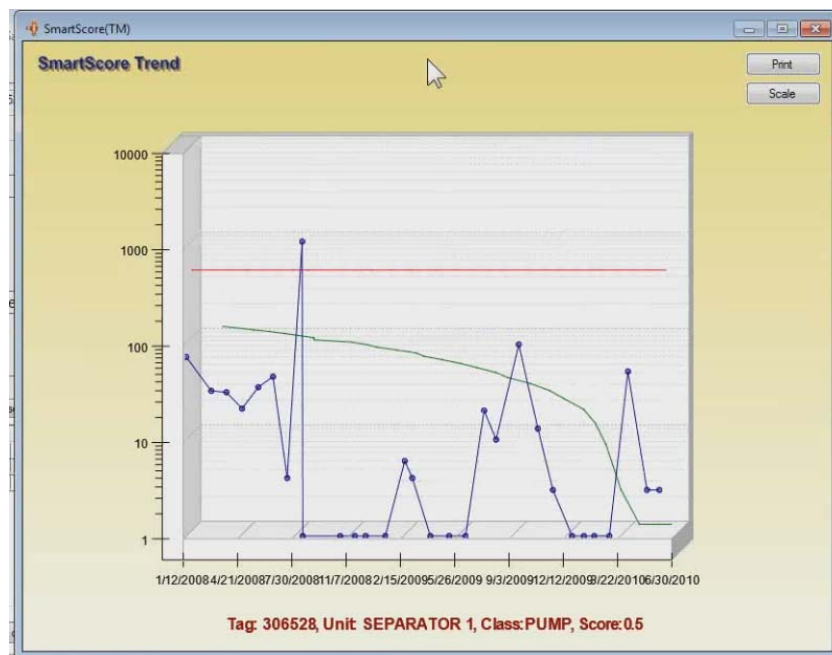
Let me explain what the trend chart does and why it's important. The little blue dots are each and every time this component has ever been inspected. So, those are the distinct PPM readings and the dates for the inspections. The red line is the leak definition on the component, and the green line is the trend that that component is currently on. In this case, it's on a positive trend, meaning that things are getting better for this component. It is this information that is used – all the information that you see here that is used to

calculate a component's score. You can see the score down here on the bottom right-hand corner for this. This has a score of 0.5, so half of a score. Let's find one with a high score. Let me come over here; I'm just going to include score, so I can purposely find a bad one.
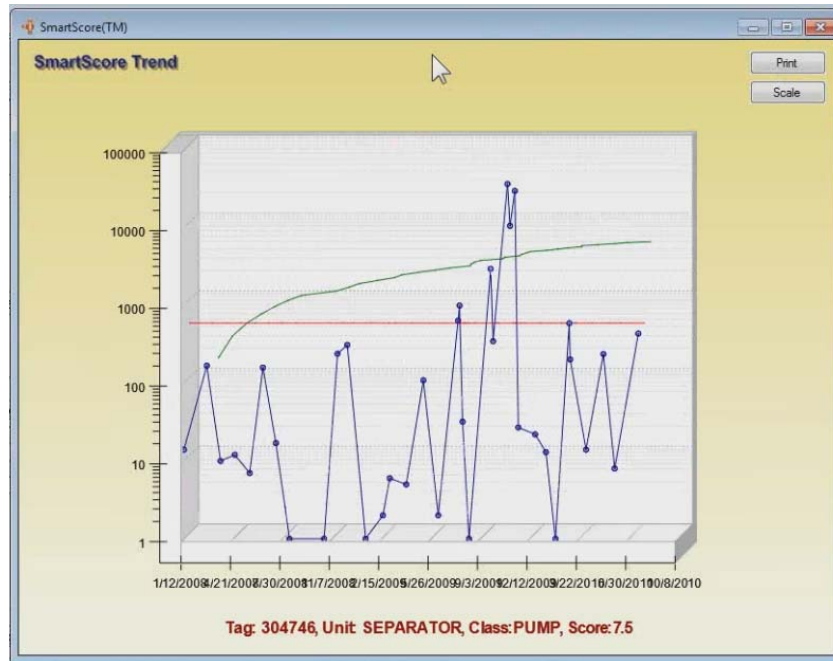
Okay, a little different story here. Again, the blue dots are the actual individual PPM readings. The red line is the leak definition. The green line is the trend. You'll notice that this is on a positive trend. In other words, it's been trending upwards, and it's had some significant amount of time to load the leak definition. So, this gets a score of 7.5. Based on score alone, I'd be able to find the bad performers. I'd be able to say – just based on score, I could set a filter and say, "Show me everything with a score greater than five," and I could be pretty sure that I'd get the bad offenders in my facility, the ones that are really contributing to my leak rates.

So, that's what the trend chart is about. This also has the ability to print it – the old adage that a picture is worth 1,000 words – you can go to your maintenance department and say, "Hey, we've got a repeat leaker. It's been bad in the past." They may or may not listen to you, but if you take a picture and show it to them, you might be able to open their eyes and say, "Hey, maintenance, if we do a permanent repair on this – if we do something really dramatic here – we can make this thing really go away." That's particularly helpful when you get these ones that look like mountain ranges like this.

Let's go back to history. We've talked about trend. We've talked about comp history. We've got another link here for out-of-service history.
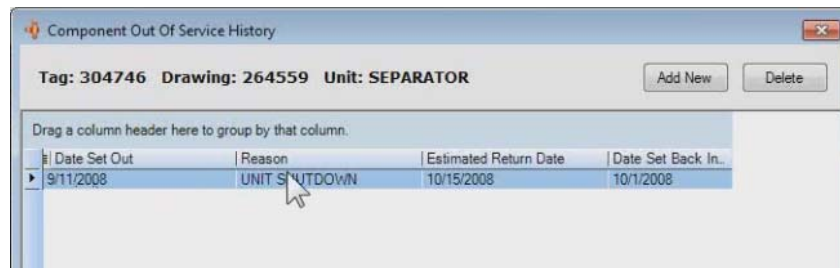
It went out of service on 9/11/2008 because of a unit shutdown. It was estimated to return on 10/15/2008, and it actually did return on 10/01/2008. So, we would know, based off this information, if the component didn't get monitored during the month of September, we might be able to explain why now, because it was out of service.

Work request allows me – if this component has ever been a leak, I can go and see its work requests and I can see that this component, in its history, has been a leak four separate times.
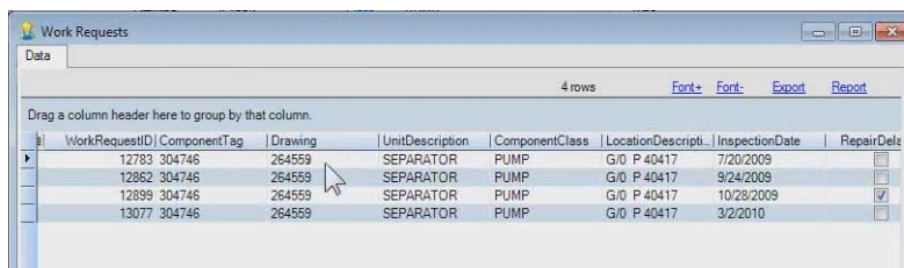
If I wanted to see details on that, I could just double-click on one of those and it would show me the details of that work request.
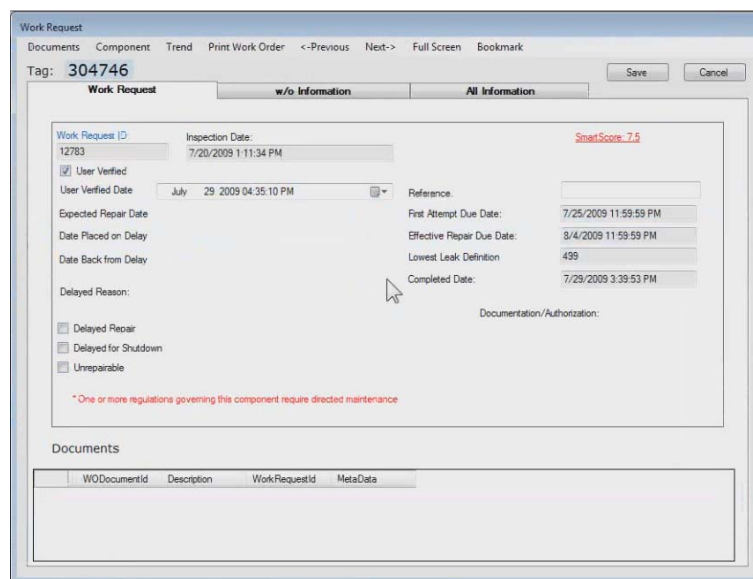
So, what I'm trying to show you here is how a component is tied throughout the whole system is tied to what has happened to that component. Finally, on the history button, is the ability to re-compute the smart score. We just click on that. It's just done a recalculation based off recent monitoring on that component. So, that's our history.

These next two buttons are self-explanatory: Previous tag and next tag. Clicking either will just let me roll through previous and next. That's quite nice if you're doing edits on multiple components, because once you've taken this into edit mode, I can change a component, hit next tag, it will ask me if I want to make a save. I'll say yes. Rolls to the next tag; I can make the change I want to make. So, it makes it really quite nice to be able to roll through multiple tags.

Notice that I will not get the "save this tag" pop-up when I'm not in edit mode. If I'm not in edit mode, it just rolls through. Certain components are color-coded. We might wonder why. A red color-coded form means the component is currently leaking.

A yellow color-coded form – if we go take a look at its history, we'll be able to see that it was a pretty substantial leak. This most recent reading was a 307, not above the leak definition but a substantial reading and LeakDAS is just letting me know it was more than just a one or a two or a three. That's what the yellow color-coding means – just to help you as you're moving through tags so you don't miss things.

Next to the tag and previous tag is the dock button. The dock button literally takes that component that I had open and docks it as a tab with the rest of the tabs across the top.
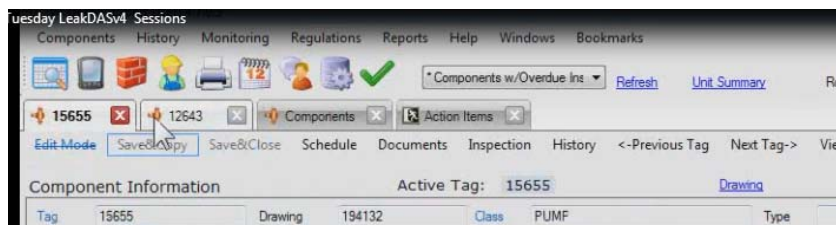
Now, why would I want to do that? You've all dealt with duplicate tags out in your system, so that's the best example I can give you. Maybe we suspect that we've got duplicate tags, so I'm going to dock the two suspected tags and then I can just flip-flop between the two to take a look at the two tags and say, "Okay, are they duplicates or are they not duplicates?" So, that's just one example of when you may want to dock a tag.
So, again, to dock a tag, all you have to do is open it up, you click the dock button – you'll notice that when a component is docked, the tab title itself becomes the tag ID so I know that matches so I can find it again.

The view print button – sometimes you've got a tag open on the screen and you say, "Wow, I'd like to print this out." View print will actually print everything about the tag and the last, I want to say three, maybe five, monitoring events that have taken place on the component. So, if maintenance says, "Give us the history of tag number 123," you can open it up, click the view print and it's going to give you the history of this component. The very first report you print when you log in to LeakDAS for the day takes longer because it has to load all of the customer report drivers. Okay, so this is the report I get.

It's the tag, the drawing and report date – everything about what it is, what rules govern the component, and then the last three monitoring events on the component – who did the monitoring, what the results were, if it was a leak then we're going to get work-request information and so forth – so, the complete history or a somewhat complete history on that one component.

There are two final menu items: Rules allows us to take a look at the details of these rules that are assigned to the bottom. I can see I've got a pump rule for EPAH and a pump rule for a permit. So, if I want to see the details, I can just go to rules and click on the one that I want and it opens up the rule definition form that we were looking at previously to show me the details about this. It gets monitored monthly at a 9999 PPM – so, just a quick link into the rules there.

Finally, bookmark. Let me explain that. You may have a tag that you want to keep track of. Maybe it's been a repeat leaker in the past. Maybe there's something special about this component and you want to be able to find it quickly without having to remember tag numbers and that kind of stuff. By assigning a bookmark, or putting a bookmark on a component, I can then rapidly at any time from anywhere in the software I can go to my bookmarks menu and say, "This one right here," and LeakDAS will take me right to that tag that I bookmarked.
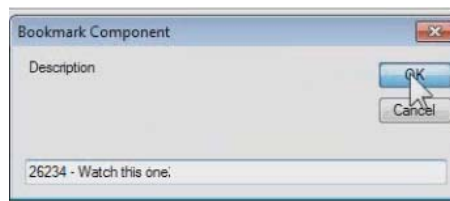
You can bookmark tags. You can also bookmark work requests. Those are the two places that you can assign a bookmark. Again, it's just so that you can keep track of something. If it's something special about the tag and you want to keep your eyes on it, if there's something special about the work request and you want to keep your eyes on it, LeakDAS allows you to do that bookmark. If you want to get rid of a bookmark, all you have to do is a right-mouse click on the bookmark you want to get rid of. You'll get prompted for deletion. You tell it okay, and that one's gone off the list. So, I can clean my bookmarks out really quick and easy just with a right-mouse click and I don't have any bookmarks. So, you'd want to keep that clean – just for the things that you want to keep track of.

SMART BROWSE

We've talked quite a bit about the component form itself, now I want to talk about Smart Browse form. At the top of the LeakDAS screen, we've got these icons across the top and these represent the things you use the most. The very top left one is what we call the "Smart Browse form."
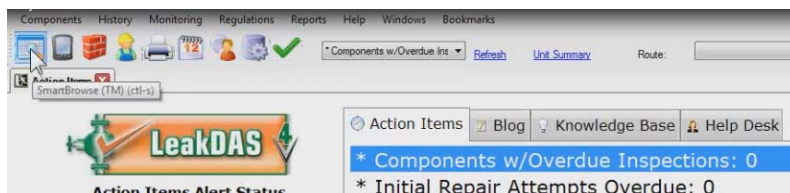
That's the easiest, quickest way; that's the way I always use to get to my components. I also have a components menu, and from the components menu, I can get to smart browse. I've got several other things I can do on the components menu, as well, but the one I'm going to use is this smart browse button. Three separate sections of this form that I want to talk about – first off, on the far left-hand side, this is the available field list. You'll notice that it lists all the different field names that we talked about when we looked at the component form, the unit, the area, the drawing; all of those fields that we just talked about, including my five user-group fields, are available here on the left-hand side.
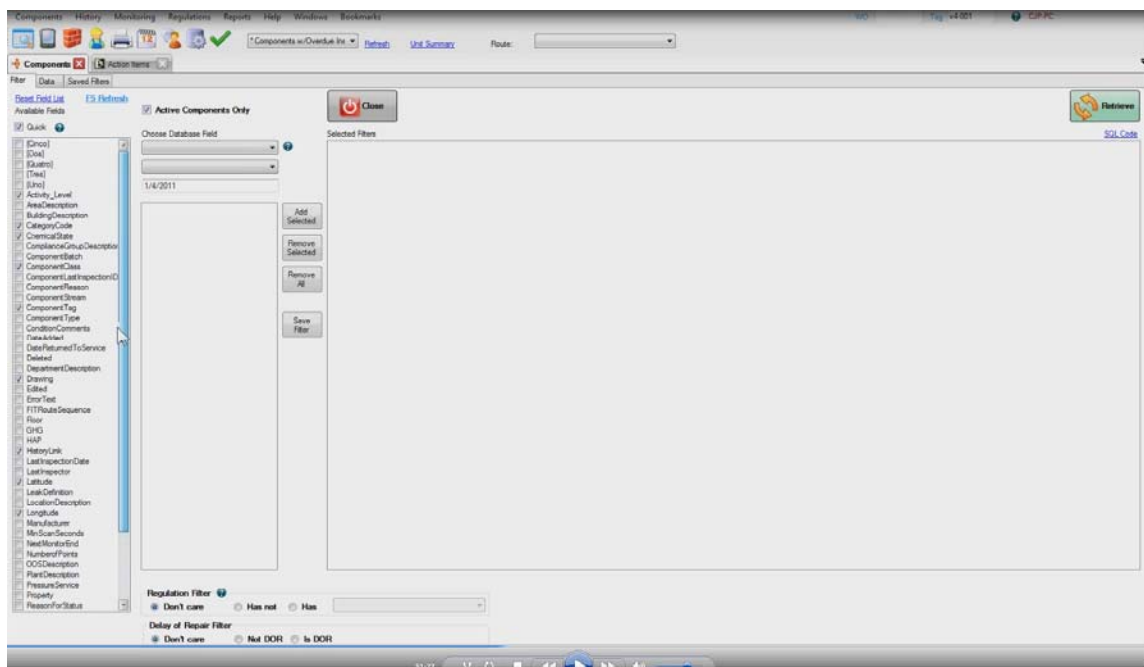
By default, these are set with what we call the "quick setting." You'll notice the little quick box is checked, and the quick box is based off of testing that we did to get the very fastest return even on a slow network. What this means is that these boxes that are checked, these fields that are checked using the quick settings, those are the fields that are going to come back when I ask for components. So, I'll get activity level, I'll get category code, chemical state, and so forth. So, left-hand side is the available fields. If I want more than just a quick setting, I can un-check the quick box and it gives me a few more.

If I wanted to pull back every single field, I could – it's going to take me a minute, because I'm going to have to check every single box – but if I did, everything I checked would come back on my filter return. Now, I can't imagine why you would ever want to do that. Typically, what you're trying to do is get components on the screen so you can see certain things. So, I almost always use the quick settings and every once in a while I'll add additional things like I did earlier with the smart score, where I asked for smart score. Maybe one time you want some information and one time you don't, you want something else, but by using the check boxes here, you control what's going to come back.

Setting a filter

In the center, we have the ability to set a filter. First and foremost is the first filter is active components only, and that's your default. I don't need to see inactive components. I can't do anything with an inactive component. So, by default, we're going to show you active components only. If for some reason you do want to see inactive components –

maybe you want to see what was deleted last month – un-check the box and then you can get inactive components as well.

I should describe that. An inactive component is one that has been removed from the field, is no longer there, and I don't need LeakDAS to do any tracking of that anymore. I don't want to throw the component away; I don't want to delete the component because I've got history. It was monitored last year, it was monitored the year before, and I need to be able to prove that on my reports. So, instead of throwing components away, LeakDAS just changes their status from "active" to "inactive."

When you change a component to inactive, we also store the date it got made inactive so that we know the date we had to stop worrying about it. That helps you on emissions calculations, because up until the day it got made inactive, there were emissions coming off of that component. After that date, there are no emissions. So, an inactive component is not an out-of-service component, it's a removed component. It's gone from the field. If, by mistake, a component was made inactive and you need to reactivate it, you certainly can do so. If it was not a mistake and it's been inactive for a substantial amount of time, then I would recommend that you don't reactivate it but that you actually use the "save and copy" to make a copy of it and let the copy go forward as the active tag. The reason I say that is let's say that we made a tag inactive back in 2007. At that point, when we made it inactive, LeakDAS no longer was scheduling that component for quarterly monitoring or annual monitoring or whatever its frequency was.

LeakDAS said, "I don't have to worry about that. It's an inactive tag." Then last month, somebody goes out and finds out that that tag is back in service, it didn't truly get removed – I've got a three-year gap there where no monitoring took place. If I just simply make it active again, I've got a pretty big gap that I've got to explain somehow. So rather than even open that door to have to explain that to a regulatory agency, if you make a copy of the inactive tag and let the copy go forward as the active tag, you don't have that gap to explain. You've got a tag that ended back in 2006 and a tag that began yesterday when we added it back into the system.

Depending on how long it's been out of service – if it was done last week and it was a mistake, sure, just reactivate it. No big deal. But if you've missed monitoring on that component, I would highly recommend that you start it as a copy and not a reactivated tag. Good question there, thanks for asking that. That was good.

In the center section of the Smart Browse, the filter builder allows me to choose a database field. This is the same field list that you can see over on the left-hand side. You can filter for any of those fields. Let's just stick with process unit. We'll choose unit description, because unit description is a pick list, this center section now populates with all of the units that are in the pick list. So, I double-click on the one I want; it adds it over to the right. or I can single-click and then use these buttons to add selected.
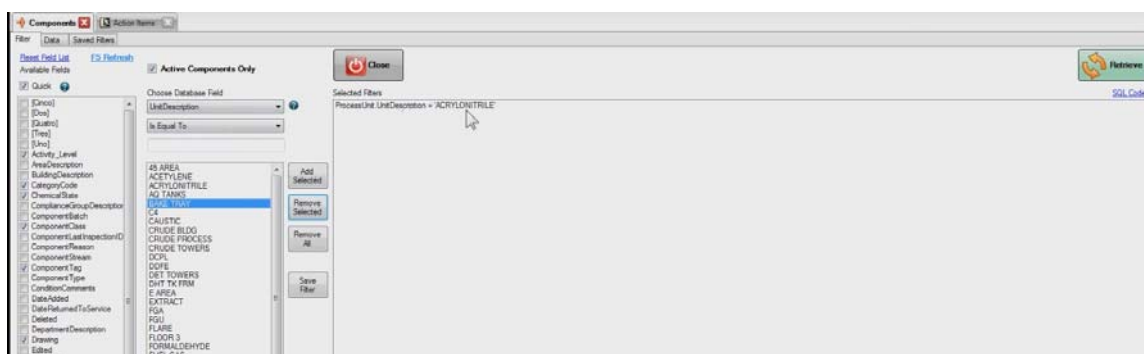
I can even do a remove selected. Basically, what I'm doing is using the filter builder to send to the right-hand side the filter that I want it to have. So, it's just a really simple filter there. I've asked for everything – all active components in the Acrylonitrile. If that's all I want, all I have to do is come over here to the right-hand upper side and click the big "retrieve" button and LeakDAS goes and finds all the components that meet the filter criteria.
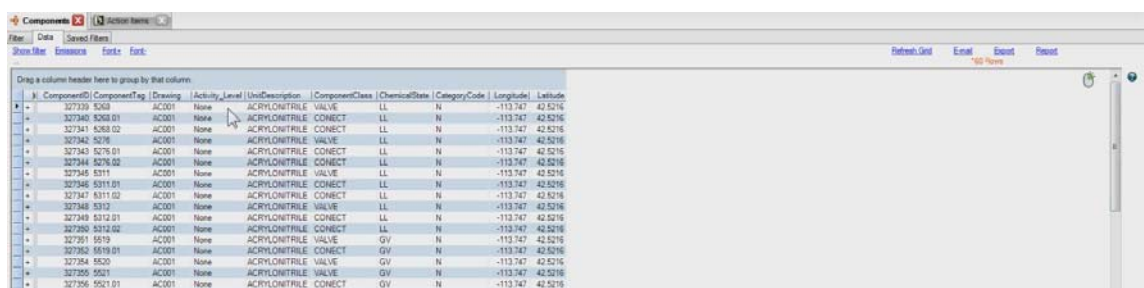

In this case, it's 160 rows of data, so 160 distinct records. Notice that only the fields that were checked on the select box actually returned. When I double-click on one, at that point, I get everything about the component – but not until I double-click on it. If I want additional fields, I don't have to come back and totally start over. Notice how I have a filter tab, a data tab and a save filter tab, kind of child tabs on the component tab – I just come back to the filter and I can add additional information. Let's say I need to have the stream information, so let's ask for stream. Maybe I'd like to also know the component type. So, I check the additional boxes. I then hit the retrieve button again. LeakDAS will refresh and now it's gotten the type that I asked for and it's also got the stream description that I asked for. So, it's very, very easy to go back and refine these filters, including not just the fields that are pulling back but the filter itself. Notice how fast those data retrieves are. Even with the most complex filter that I can think of, they all come back quickly. Let's show you some of the flexibility here. Everything I have done so far has been a pick list. I'm choosing a class or I'm choosing type – anything that comes from a pick list gives me the list off the values. If I choose something, say, "location description," location description is not a pick list, so notice how it doesn't give me selection values. At that point, I would actually type in the value that I want it to

have. So, we could say location description, let's say, is like, and then we'll type in the word "tank" and add that across.
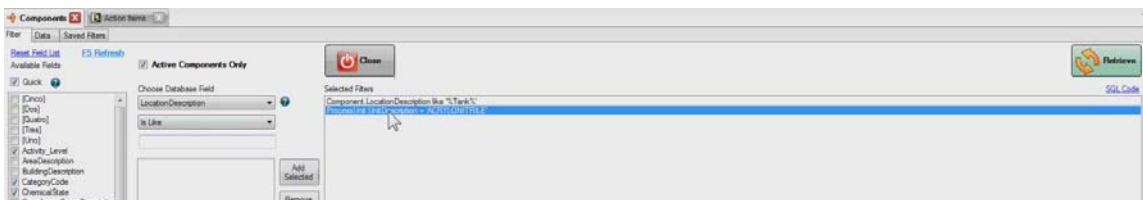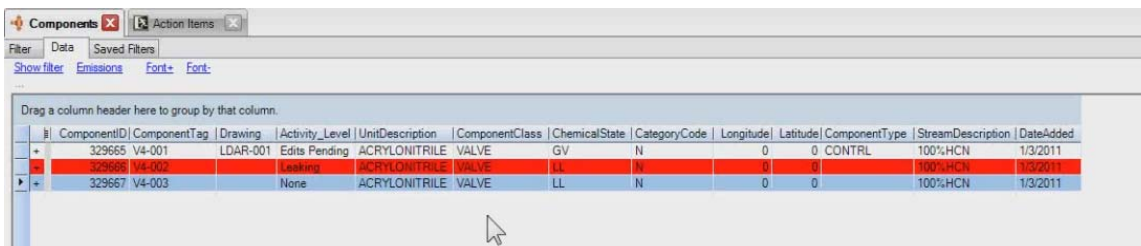
Basically, I'm asking for anything that has the word "tank" in its location description. So, this will come back and if I open one of these up, every single one of these is going to have the word "tank" inside its location description somewhere because that was my filter criteria. So, on the filter builder, you choose the field you want to filter by. This drop list below it is what we call "the operator," equal to, not equal to, like, greater than, greater than or equal to, less than, less than or equal to, is null, is not null, and is between.
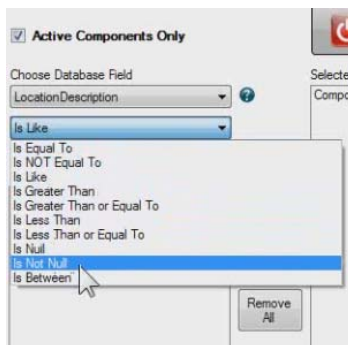
Let me explain those. Most often, you're going to use "like". I want to choose unit is equal to, and you pick the one you want, and I've been picking on this Acrylonitrile. I'll stay with it. Simple, nice and easy, unit is equal to Acrylonitrile – we can't get confused there – it's going to give me everything in Acrylonitrile. Maybe I want to try something different then and say "is not equal to" Acrylonitrile, and that gives me everything else in my database, everything except Acrylonitrile. That would get everything. That would pull back the whole facility in only a few seconds.

Our sample database is almost 100,000 components. My current filter just pulled back 96,757 records at about three seconds' time. So, it's very, very speedy – when I talk about this quick setting on the filter builder, that's always going to give you the fastest return. So, the operator is used to tell it – to be a little bit more specific about what you want. When you're using pick list type things like unit being a pick list, it's going to be usually is equal to. When would you use "greater than", "less than", "greater than or equal to", "less than or equal to"? That would make sense if you were looking for maybe the date something was added to the database.

Let's try that. We added some components previously, so let's include in our data retrieve, the date added field, so I can see date added. Let's say date added is "greater than" January 1st, 2011. We're going to add that over to the right-hand side. Make sure you always add them so the selected filter shows the filter you're building. Now, my date added – I'm looking for anything added since January 1st.
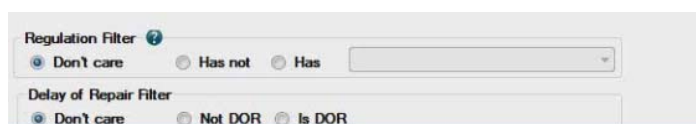
I hit retrieve, and it comes back with the three components that I added previously. So, date added – the date field is when I'd use the "greater than", "equal to", or "less than", also the "is between" works good for dates. If I'm looking for components that were added between January 1st of 2010 and then the way you do "is between" is a comma and then the second date, and we'll say 6/30/2010. That gives me all 3,105 components that were added in the first six months of 2010.

So, there are various filter builders you can do there, just a few rules that you need to know of and that's like the "is between" that I just used. If you're doing is between, that would be things like dates and that kind of stuff. So, it would be the first value, comma, second value, to filter that. "Is like" works good if you're looking for a specific word inside the location description or if you're looking for words inside any of the non-pick list type fields. The "greater than" works good for size, that kind of stuff. I use "greater than" if I'm looking at Smart Scores. If I want to say, "Show me all the Smart Scores greater than five," add that across, and that would show me all the things that have a smart score greater than five. I can be pretty sure that those have a pretty bad performance history.

You can mix and match. There is no limit really. If you wanted specific units with a smart score greater than five, and you only wanted them if they were valves – If this data comes back blank it's because nothing meets the filter criteria. So, you can mix and match. Think of these fields –the available fields, the operator. You either choose or type in the value you want, you add it to the right, and once you've got the filter built on the right, when you click the retrieve that's just applying that filter to the data.

Down at the bottom, I also have two additional filters down at the bottom. One is for regulation and one is for repair delay status.

We'll say Acrylonitrile valves and we only want to know the Acrylonitrile valves that are governed by the EPA**VV** regulation. So, I'm going to, "Has EPA VV," I'm going to pull it back and I should get one component. I have one VV component in that process unit.

Has not – let's say things in the Acrylonitrile unit that don't have VV. Let's pull them back – these are all the valves that don't have VV. Now, when is that valuable? You know by the name of your process unit what regulations govern that unit. Correct? You probably do. You probably also know by chemical stream which regulations apply as far as HON regulation because it's chemical-stream specific. What this means is that you can set filters, such as, "Show me all the components in process unit x that have stream y but don't have the HON regulation assigned to them," and you can quickly identify the components that need your attention.

You can also quickly find components that have the wrong regulation assigned to them. For instance, if I know there shouldn't be any VV components in Acrylonitrile and it comes up with this one, I know that I've got a problem. So, you can use the filter builder to look at your data in ways you never, ever thought possible. So, regulation has and has not, typically this is set for "don't care." But if you do care about regulation, just set it for "has" or "has not," and that is "does have the regulation" or "does not have the regulation."

The last one, repair delay, default is "don't care", but if you quickly want a list of all the components that are currently on delayed repair, I can come here and set the filter for plant equals my demo site and his DOR, hit retrieve, and all my delayed repair components now come up to the top of the list. Then very quickly, I have all my delayed repair components. If I wanted to send those out, say, have Joe go and monitor those today just to see how they're doing, I can send them into a route right from this form. That's one of the magic things that we're trying to do here is just anytime we show you information, we want you to be able to take action on that information.
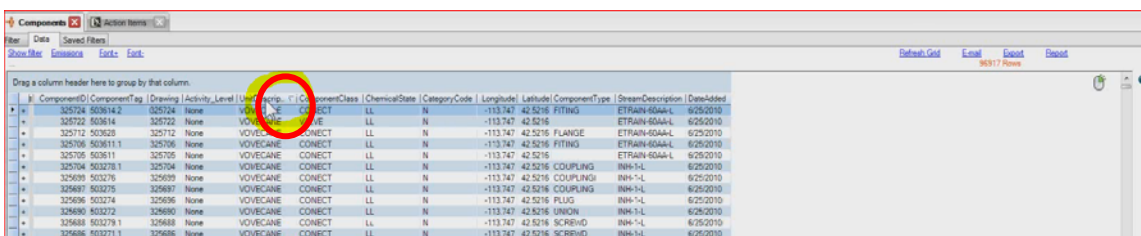
The filter builder on the component screen is the best example of the filter builders inside LeakDAS. All of the forms – or almost all of the forms – have the ability to set filters. This one is the most robust. If you can do this one, you can do all of the other ones. In fact, route manager uses the exact same filter builder. The emissions calculator uses the exact same filter builder to allow you to filter as tightly as you want to filter.

Saving filters

Let's talk about saving filters. On the filter builder, if you've built a filter that you feel would be worth saving, click on save, and give it a meaningful name. All saved filters will show up on my saved filters tab. By default I'm only going to see the filters that I have built myself, but if I check the box "show other users' filters", I can see others. Now, if I want to load this, I just highlight it, click the load, it loads it up. Click retrieve, and now I see the components.

SMART BROWSE GRID – SORTING AND GROUPING

The screen you see above is what we call the "smart browse grid." This is the actual grid. On the grid, all of the different fields that I asked for are here. Again, if I wanted additional fields, I'd go to my filter tab and check those additional fields. Any field that is here I can sort by just by clicking on the header. I click it once and it sorts it ascending; if I click it a second time it sorts it descending; if I click it a third time, it undoes the sort. When I sort them, I get the little triangle that shows me the way it's sorting.

If I want to sort multiple fields, I hold my shift key down, click on the first field, click on the second field and click, on the third. Now, I've got them sorted ascending by unit, class and then chemical state. So, they're all in ascending order. If I want to un-sort, with my shift key not held down, I just click on any one of them and it's going to throw the sorts away.

Grouping is a slightly different – grouping means that I want to actually see certain items lumped together in groups. To group, what I want to do is take the header and instead of just clicking it, I want to click and drag it up just a tiny bit onto this little gray band. Then when I let go of it, LeakDAS is going to group by that field.
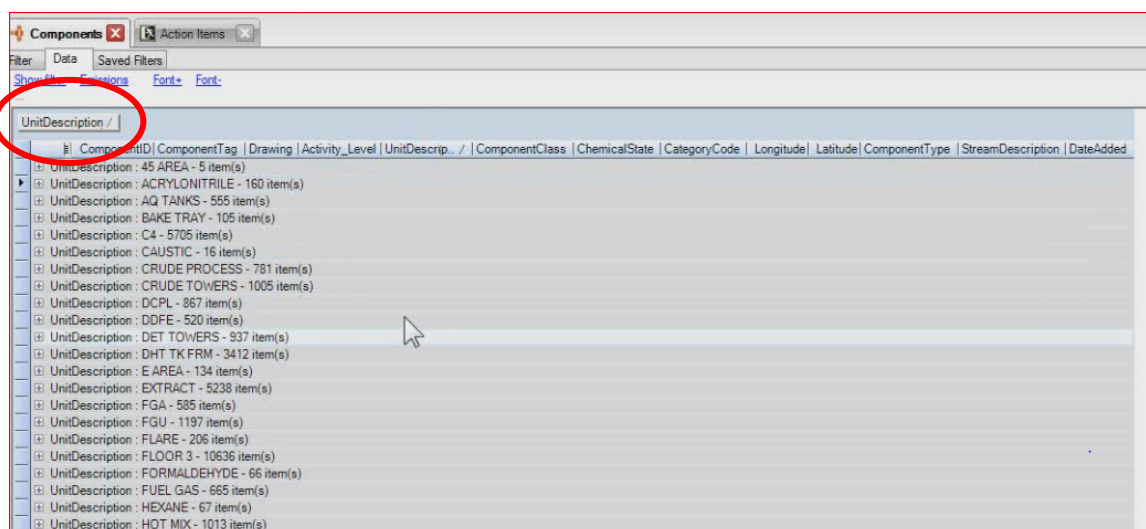
So, in this case above, I'm sorted by unit and I'm also grouped by unit. I can see that in my 45 area I've got five records, in Acrylonitrile I've got 160 records, AQ Tanks I have 555 records. So, grouping, when I group it, it assigns a count on the side with a little plus sign next to it. If I click on the plus sign, it opens up and now I can see the 555 records that belong to AQ Tanks. I may want to know by component class how many records belong to AQ Tanks, so to do this I just drag component class up as well. Now I have them grouped by unit and class, so when I open up AQ Tanks, I can see I have 413 connectors, 134 valves, three relief devices and so forth.
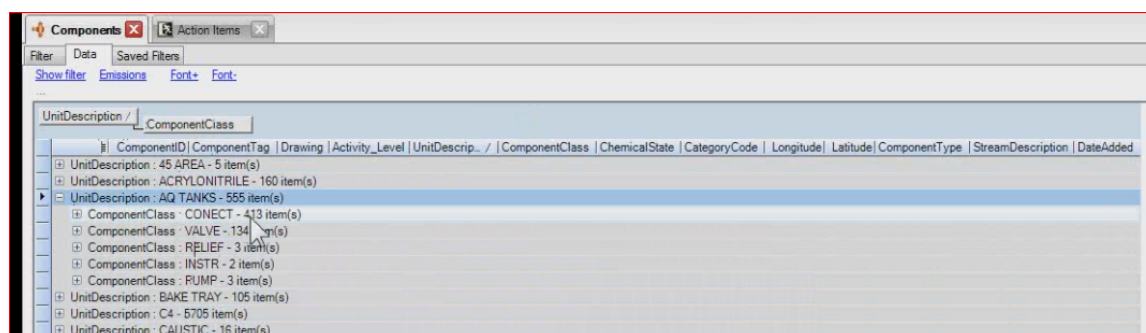
Why am I telling you this? Being able to sort and group allows you to see your data in ways you never thought you could see your data before. I've used this specific tool to find things such as gas vapor pumps in people's databases. I've used it to find all kinds of odd things like that – gas vapor agitators – just oddities that would hide from you if you didn't have the ability to sort and group and see your data in that way. So, that just helps you; being able to sort and group helps you find different things. I don't think there's any limit here to what we can sort and group by. If I want to un-sort, all I have to

do is click on the field, drag it down until I get the big, black x, drop it and it's unsorted at that point.

Let's retrieve a new filter set for a single unit because I want to show you a couple things you can do with the data grid now. We talked about route sequencing. There are a couple different tools we can do here. Also, I can drag these fields around and put them where I want to put them. You'll notice if I drag them, they just go where I tell them to go. They're going to stay that way until I close out of LeakDAS and come back in.

So, if I want my type to be next to my class, I can do so. There are just various things you can do there. All right, so let's say that my Acrylonitrile unit is not sorted very good at all and I want to put it into a better sort order, so that when my technician goes to Acrylonitrile he's not jumping all over the place. What I can do is just sort them really quickly by component tag, and that gets me pretty close to where I want them to be. I'll do a right-mouse click and select all. You'll notice that I get a right-mouse click menu that I can work with now.

RIGHT-MOUSE CLICK MENUS
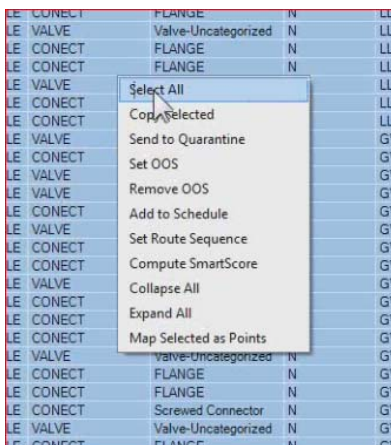
The right-mouse click allows me to select all. It allows me to make a copy of the selected, if I want to take those and paste them into a route or something like that. It allows me to do a "send to quarantine." Let me explain that one. If I wanted to make a bulk change to these components – they're all in Acrylonitrile, and let's say the process stream has changed. There are 160 records here, and I don't want to have to go through 160 records one-by-one-by-one changing the process stream. It would take me a little bit of time.

Instead what I can do is a bulk send to quarantine, and then I can go to quarantine – that again is my temporary holding area – I can go to quarantine and I can make a bulk change to those components over in quarantine. I'll show you that here in a minute. But I wanted to play with out-of-service here first. So, the next choice down is "set out of service." I also have a "remove out of service." I have an "add to schedule," if I want to force these into the schedule. I also have a "set route sequence." I can compute the smart score on that group, and the "collapse all" and the "expand all" allows me – if I have these grouped into – on my grouping header, I can collapse or expand the groups.

Finally, map selected as points – if I've got GPS coordinates on my components, then I can do mapping on my components. I can tell LeakDAS to show me where they are. We use Google Earth for that, so it's zooming in. These components are all in my backyard. So, it's opening up and it's showing me where those components are.

It's pretty nifty. The reason we use Google Earth – main reason is that it's free. The second reason is that it's a fantastically powerful tool for mapping. The third reason is that it's free. And the fourth reason is it's free. So, it's a great tool for doing any kind of mapping with – and what's really cool about it is that all we have to do is just feed out what we call an XML file and we can open these views. What this means is that if you've got GPS coordinates, or I should say latitude and longitude on your components,

then you could say, "Show me all my leaks for the past year," and LeakDAS would be able to show you on a map where all those leaks are on your own facility.

Your facility is on Google Earth; guaranteed it would be able to zoom right in on your facility. So, it's a neat little feature there. You can do map selected from a component form, you can also do map selected from inspections and what that allows you to do is see the route that a technician walked when he did his inspections. You can see where he was when he did the inspections.

Route Sequencing

What I've done is from the components screen, I've sorted these components by component. So, I'm going to tell it that I want to set the route sequence. It tells me it's going to set the route sequence for the 160 currently selected records in the grid and it confirms that I want to continue. Tell it "yes." It wants to know the starting number. In other words, do I want to start with one and run through 160, or do I want to start higher than that? I'll just let it start with 160. And then it wants to know increment by – in other words, how much space in between tags? I'm going to tell it to increment by ten. So, now it's done its sequencing. That's this very last column. So, I go one, eleven, twenty-one, thirty-one, forty-one.

These have a route sequence established now. Now, I added these three tags previously, V4-001, 002, and 003. Now, by sorting them by component tag, it put them down at the very bottom. But that's not really where they are in the facility. Those tags are actually right here next to this pump. They're next to pump 5528 which has a route sequence of 351. That's its current route sequence. I want to move those three tags up so that they're right next to this pump so they're in the right sequence for me. So, I'm going to go and highlight now just those three tags.

I can do just a few tags by using my mouse and my control key. I can one, two, three – I can also use my shift key to start and then end the block. I don't want to do a "select all," I've already routed all, so I need to just select just the three records and then I'm going to set route sequence on just those three. It confirms I'm doing the three. I want this to start with 351, so I want to start with 352, and I want to increment by one. Now, if I come up here to the top and look for those tags – let me sort by sequence now – now those three tags are right after that pump like I wanted them to be.

So, the sequence is 351, 352, 3, 4, and then 361.

So, this tool allows you to bulk into a certain order and then allows you to fine-tune that order by moving blocks of components around so that you can get them into a meaningful sequence so that the technician out in the field isn't having to jump all over the place when he does his monitoring. Notice I've done this right from the component form; I didn't have to take it to some other form. I was able to do it right from the component form.

Last Inspection Date

Now, if you have a unit that's routed really, really poorly, we have another tool that helps with that. That tool allows us to see the order, if we say "last inspection date" in our available fields, now I can see the last time the components were monitored and I can actually sort it by that order and I can re-sequence by that order. In other words, I could send a technician out to do the monitoring and I'm just going to say, "I realize it's a really bad route, but I want you to go and monitor them today in the order that you want all future monitoring to take place." Based off of his monitoring, I can re-sequence the route in the order that he did the monitoring so that the next guy gets them in that same order. That inspection can be either a method 21 inspection or that can be a visual inspection; LeakDAS doesn't care. It's just going to look at the last inspection and lets you put them back into that sequence. So, that's a pretty powerful tool there as far as sequencing my components and getting things into a good, meaningful sequence.

Let's talk about some of these other right-click menus. We talked about setting route sequence – very straight-forward. Setting and removing out-of-service is just as straight-forward.

Setting OOS

Let's say that these components – it's the beginning of the year and they need to be monitored this quarter, but they're actually out-of-service. All I have to do is right click on the components form, do a "select all," get them all highlighted, or I can select blocks if it's just pieces of them. I'm going to do blocks using my mouse and my shift key. So, where I want to start the block, hold the shift key down, and where I want to end the block – I can also use my mouse and my control key to get stragglers here. We'll say these ones. So, what I'm trying to do is highlight the ones that I'm trying to work with.

Once I've got the ones I want to work with highlighted, I can do a right-mouse click and take action on those. So, if I want to do route sequencing on just a group, it's the group that's highlighted that's going to happen now. So, in this case, we're going to set that group of highlighted components to out-of-service. LeakDAS wants to know the reason for the out-of-service.
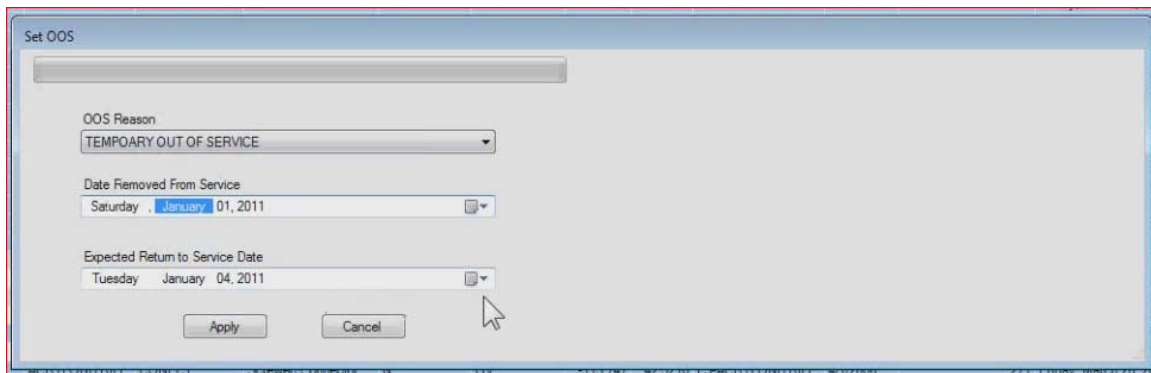
You've got full control over these pick lists. These come from LeakDAS. You get to edit them. We're just going to say that these are temporarily out-of-service. What's the date that they went out-of-service? We'll say that they went out on Saturday. What's the expected date? We don't expect them to come back until the end of February. By clicking the apply button, those components now are out-of-service components. If I open them up, I'll be able to see right here at the top – it tells me it's component information and then in parentheses it says out-of-service. So, at all times, I'll know those components are out-of-service.

Very importantly, LeakDAS does not remove them from the schedule. They're still in the schedule, but LeakDAS would not let me send them out to a data logger for

monitoring, because they're out of service. Route manager has some pre-filtering in place if it's out of service, or if it's an inactive component, if it's currently in another route – there are several pre-filters that are in place with route manager to keep me from monitoring things that don't need to be monitored. Again, we don't take them out of the schedule, because at the end of the period if they haven't yet come back into service and been monitored, they'll get written to the missed inspections table with the out-of-service reason as their documentation for why they didn't get monitored. That's very, very important.

Remove OOS

When I'm ready to return them back into service – let me set a filter here – I can include out-of-service description here so I'll be able to see just the ones that are out-of-service. So, when I'm ready to return them to service – let's say these are coming back but these other ones are not – I'll highlight them, tell it to remove the out of service, and that just confirms that I want to bring them back into service. I'll go ahead and apply and these components are now back in service as of today.
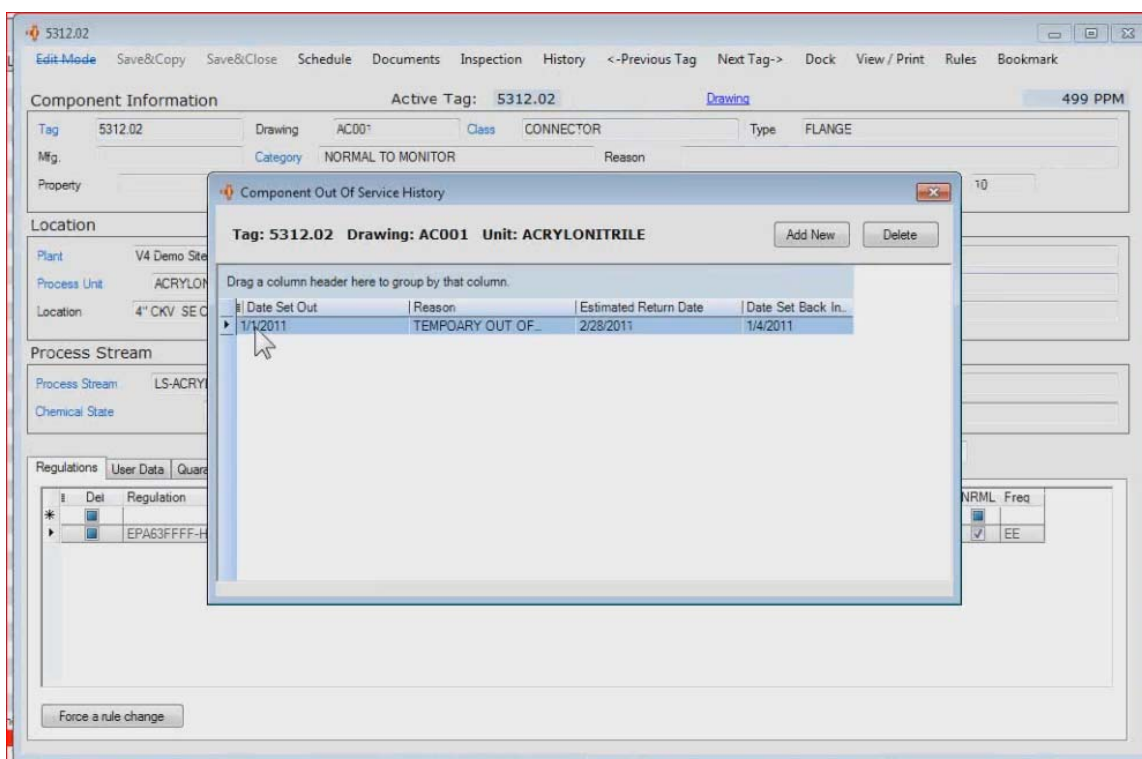
If I look at their history – the out of service history – I see they went out on the first, they

were estimated to come back on the 28th, but they actually came back on the fourth. So, all that history gets tied together to explain why something did or did not get monitored. Everything is tied back to the component record.

<u>Add to Schedule</u>

What else do we have on our right-mouse click menu? Let's take a look. We talked about out of service. We've talked about setting the route sequence. Let's talk about "add to schedule." There are a handful of regulations that have you do what's called "monitoring on disturbed connectors." The best example I can give you is the HON regulation where a HON connector with a good leak rate may only be monitored once every four years, but let's say that maintenance goes out there and they open up a line. They have to do some maintenance, so they open up a line and they open a bunch of connectors, they move some things around and then they reassemble everything back together.

The HON regulation requires that we go back and we monitor those disturbed connectors within a certain amount of time to make sure that they're not leaking. Their next monitoring event may still be two years down the road, and the EPA doesn't want us waiting two years down the road to see if the guy put them back together correctly. That's what's called a disturbed connector and that's the best time – the only time, really – that I would want to use this "add to schedule" option.

What this allows me to do is identify the components – I'll just pick a handful of connectors here, maybe a handful of valves – and I'm going to right-mouse click on them and tell them to add to schedule. LeakDAS then wants to know what the monitoring begin date and the monitoring end date is and also the test type, whether I want to do a method 21, a visual or an enhanced visual. So, by giving it a begin date and an end date that gives the period for this extra monitoring that I'm asking for. I can't monitor it before and I can't monitor after and meet the criteria.
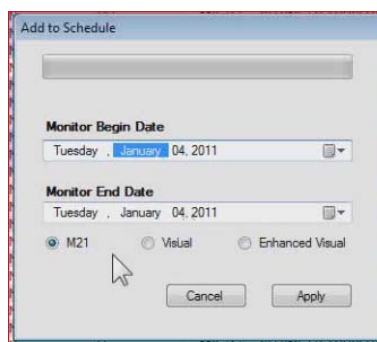
So, if my regulation says that if I disturb a component then I have to go back within 30 days, then I would roll the end date out 30 days out from today and I'd say – let's say just

by the end of the month I want to do a method 21 monitoring. I go ahead and apply that, and that puts those components into the schedule. If I take a look now at one of those components, look at its schedule, I can see that it's in the schedule.
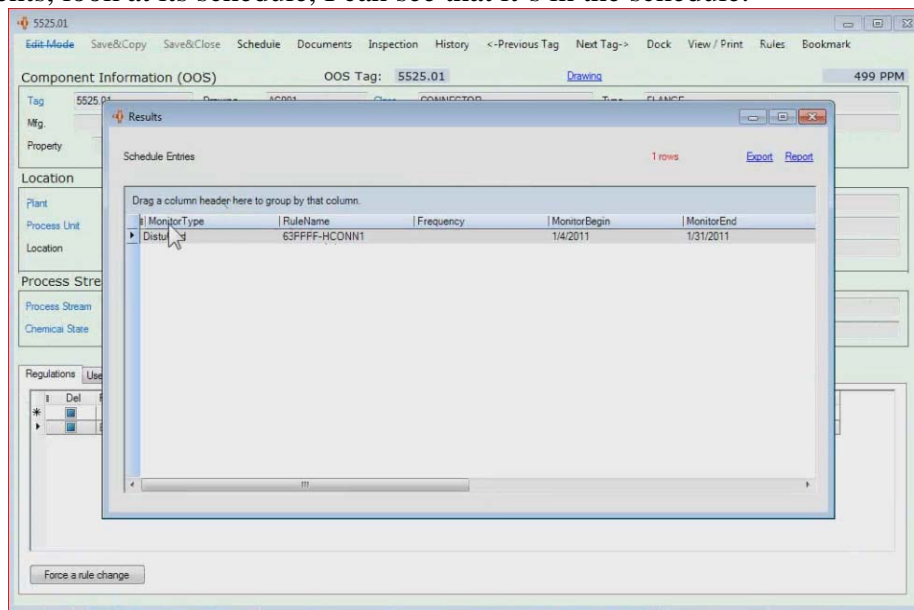
The monitor type is disturbed, that's why it's there. Monitor begin, monitor end, and LeakDAS is now waiting for me to go do a monitoring on that component. That's what this "add to schedule" button is used for. I do not recommend it being used for anything else. For normal scheduling, the regulations take care of that. This add to schedule is something above and beyond what your regulations say. So, be careful if you use it, because if you use it – if you say "add to schedule – you've got to monitor those now. If you don't monitor them, LeakDAS is going to say you missed those inspections and you do not want that.

Send to Quarantine

What do we have left? Let's show the collapse and expand – let's just group some components. I do the expand all and it just opens up all the different groups, those different classes that I've grouped. If I do collapse, it just closes the groups. It's pretty self-explanatory there. The only thing we have left to talk about is this "send to quarantine" now. Send to quarantine, the same thing, if I do a select all, it would be all the components. Or I can use my shift key, my control key, to select certain ones. Whatever is selected, when I say "send to quarantine," that is the group that's going to go. LeakDAS asks for confirmation. Are you sure you want to send all 160 to quarantine? We're going to tell it yes. It's going to send those across, and now you'll notice the activity level for these ones I'm looking at, they all changed to "edits pending."

They're edits pending because they're now all over in the quarantine table. The quarantine table is represented by this red brick wall up here – the icon that represents a red brick wall. I can also get to it through the components drop menu – components and then quarantine – but I really like using these icons, so I'm going to click on the quarantine.

If you have monitoring in quarantine, it always opens up to this monitoring summary to show you what's in quarantine. We'll be talking about that later in the series, so I'm not going to deal with it right now. I will simply set a filter for edits and go and retrieve it. Here are my 160 records sitting in the quarantine table. Now, I may want to make – the example I'm going to do here is, let's say the process stream on these 160 components has changed.

I don't want to have to open this up and go into edit mode and go here and change the process stream one at a time on 160 records. I could. It's going to take me some time. But in this case, maybe all 160 all changed. So, what I want to do is do a right-mouse click and select all, or I can just select groups. We'll just try it. Let's take this group. We'll say this group has changed. We're going to right-mouse click on that group and we're going to tell it to edit selected.

Edit Selected – Bulk Editing

This edit selected – this bulk edit selected – is only available to expert users: You, the people that are running your databases. The technician that you've assigned the role of "restricted" or "standard user" can edit individual components maybe if you've given him permission, but only an expert user – a super user – those two high-level users can do a bulk edit on components. It is a very powerful tool. Don't give authority to make global changes to somebody who should not have that authority. That's all controlled in the security settings inside LeakDAS. You can lock those settings down as tight as you want them to be locked. The way this works – it gives you some description right at the top – the values that you enter are going to be applied to all of the selected records in the last updated quarantine area.

What that means is only these records that I have highlighted with my mouse and my keyboard will get changed and nothing else. I only have to enter data into the field that I actually want to change. If I don't want to change the building, the department, I just leave those alone. In my example, I only want to change the chemical stream, then click apply changes to the selected records. LeakDAS has just made those changes. If I come back to the filter and include stream, I can see the stream on those just got changed.

Now, I've stressed this multiple times – any new components, any edits to existing components, all of that goes through quarantine. In this case, what I did was I sent a bulk amount of components back to quarantine. That puts them into the sandbox. I can then make whatever changes I want to make and once I'm done, I'll process those through in

bulk to make changes on these bulk records. It makes it a lot easier for you to do bulk changes to the database.

So what fields can be changed you might ask? We cannot do a bulk change to component tags. That doesn't make sense. We also can't do a bulk change to component classes. We can't change all of our valves to connectors. That would have to be done one at a time. That makes sense. You'd never have to do a bulk change to your classes. Process unit, that kind of stuff we can do bulk changes to. Basically anything on the form with the exception of tag and component class, including the ability to mark as inactive, a group of components. Most fields can be bulk changed. Again, bulk changes can only be made by expert level and super user level. They can't be made by normal level-type users. That's good. You don't want people making bulk changes to your database. You are the people that get to review quarantine. You're the expert level, super user level people, so you get to review quarantine before things get processed through.

A question I often get asked is: When I review edits, how do I know what was edited? If I just double-click on one of these records in quarantine, first off, it tells you who made the edit. It tells you, "This component was edited by expert user."
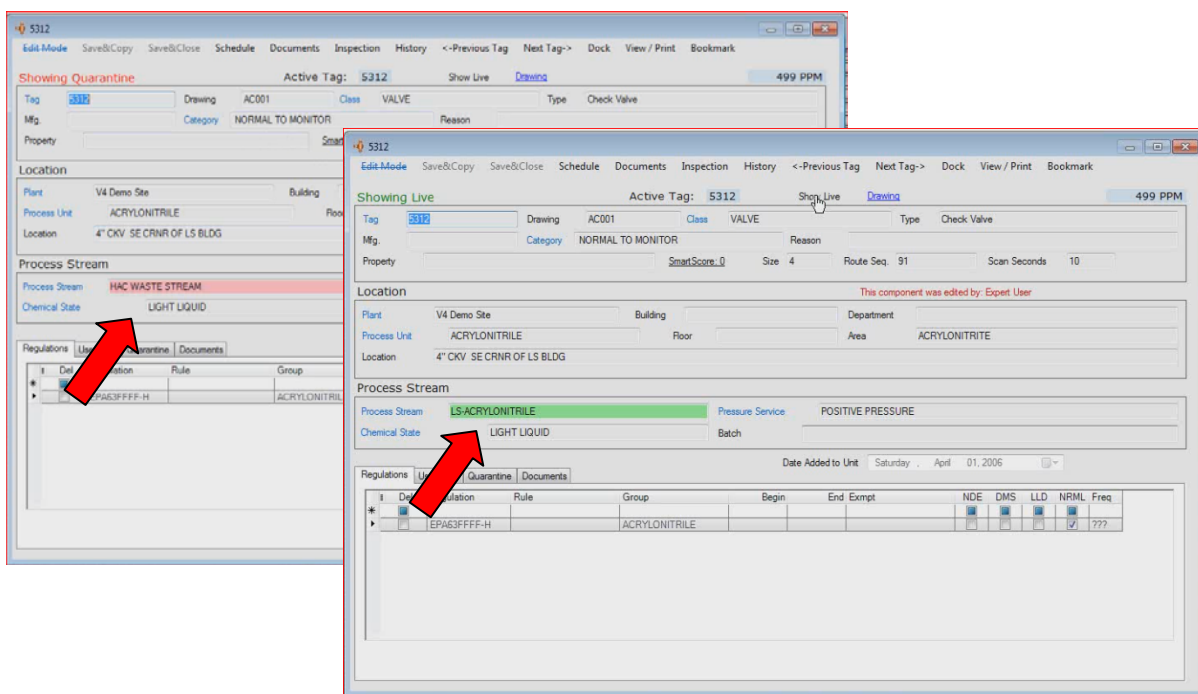
I'm actually logged in. My user name in this test database is expert user. But in yours, you'd actually have your name. It would say, "This component was edited by Joe," who made the change. Notice in pink, the stream is listed. It's the only field highlighted in pink. It lets me know that that's the field that changed. Up at the top of the form, there's

a little box that says "show live," and if I hover my mouse over that, you'll notice that the process stream changes to green and shows me what the component currently is. If I move my mouse off of that, it goes back to pink. That's to propose change.

So, the show live allows me to see what the component is right now. Move off of that and that's the proposed change coming through quarantine. The color-coding makes it cool. That allows you to see now just who made the change, but what field they changed so that you, the expert user of the database, can approve that and say, "Oh, yes, that is right."

If that's correct – once I'm ready to release those, I'm going to do a right-mouse click, select, right-mouse click, un-hold. It confirms that I want to un-hold those. Those records are now un-held. That means those are approved and if I process them, those changes are actually going to be processed through into the database. This process that you see above is called "quarantine processing." Only expert level, super level technicians or users are able to process quarantine.

So, those have already processed through. I've made note of that one tag because I wanted to be able to show you the tag change. So, I'm going to use the quick selection box up at the top to paste the tag number in. At the top, I can either search for a work order or a tag just by putting the tag number in and hitting enter. If the tag exists, it will go find it for me.
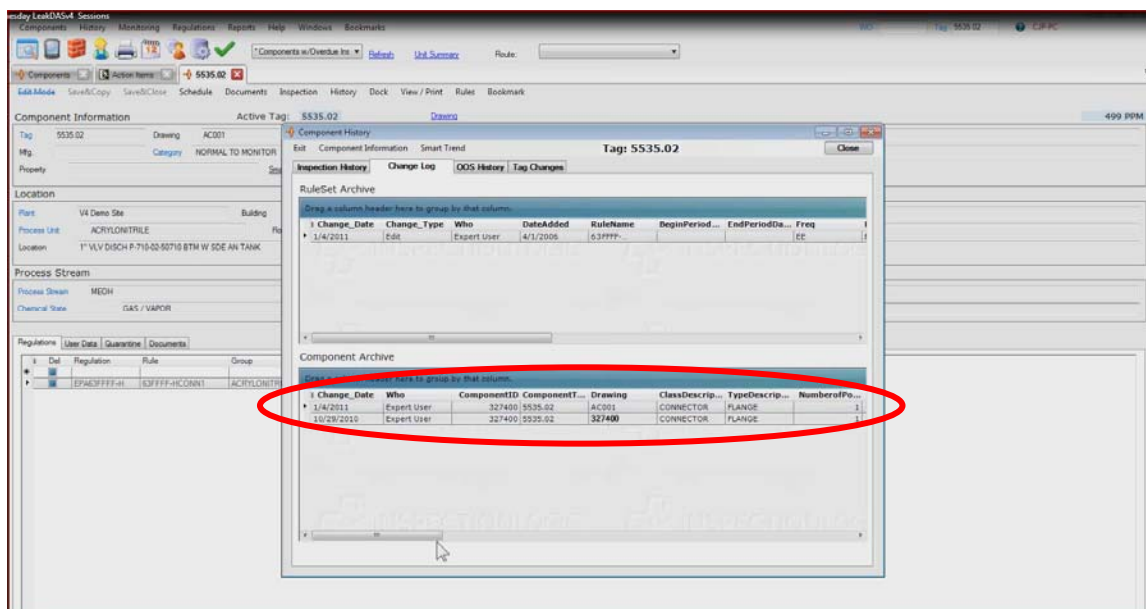
The reason I want to show you this is because I want to go to history, look at the component history and specifically at the change log, and I can see on January 4, 2011, expert user made some changes. If I scroll across to the right, I'll be able to see the changes that were made. The changes are the ones that are highlighted a little bit darker.

Hopefully, everybody's learned quite a bit about the component form and quite a bit about the filter builder. In our next session, we are going to take what we've learned so far about regulations and components and talk about managing our monitoring history. What gets stored, how it gets stored, how to tell LeakDAS what goes out to a field technician – basically the complete management of the monitoring side of things – then we'll be ready for next session where we talk about LeakDAS mobile, which is the tool that the technicians use out in the field.

That's it for this section. If you're stuck on a LeakDAS concept and still confused about something we covered here, why don't you send an e-mail to support@inspectionlogic.com. We'll get you the help you need right away. So, just send an e-mail, and a member of the support team will help you out.