New Mexico State University

Financial Systems Administration
Preventive Maintenance User Guide – Utilities Shop
All Systems

October 22, 2015

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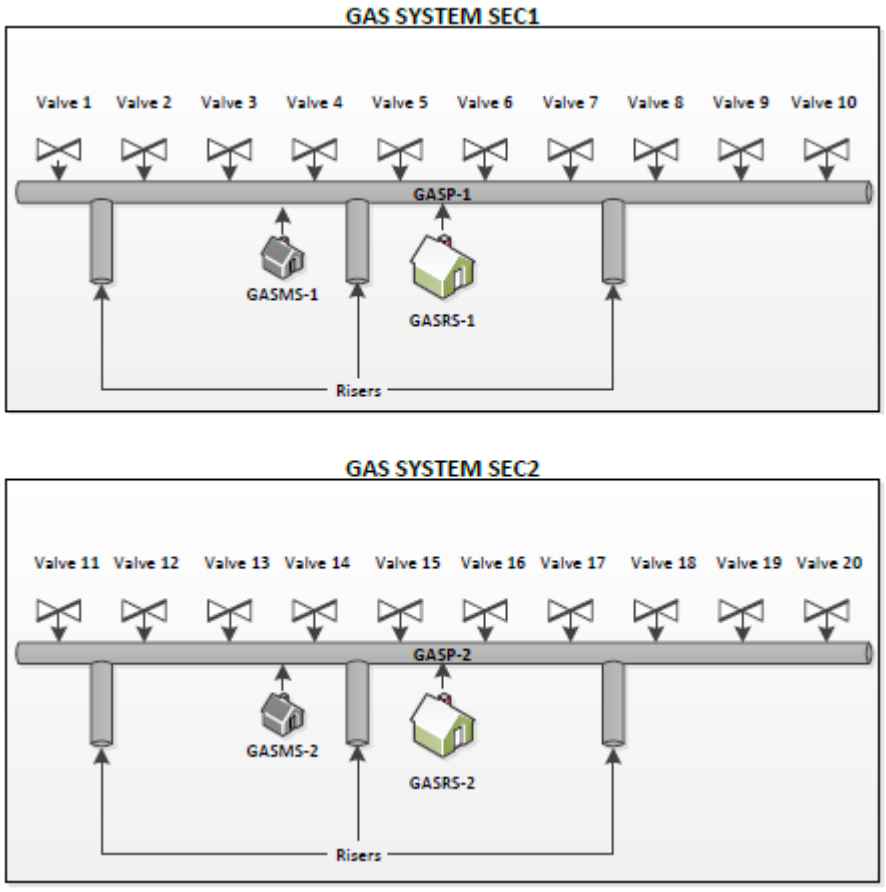
Introduction

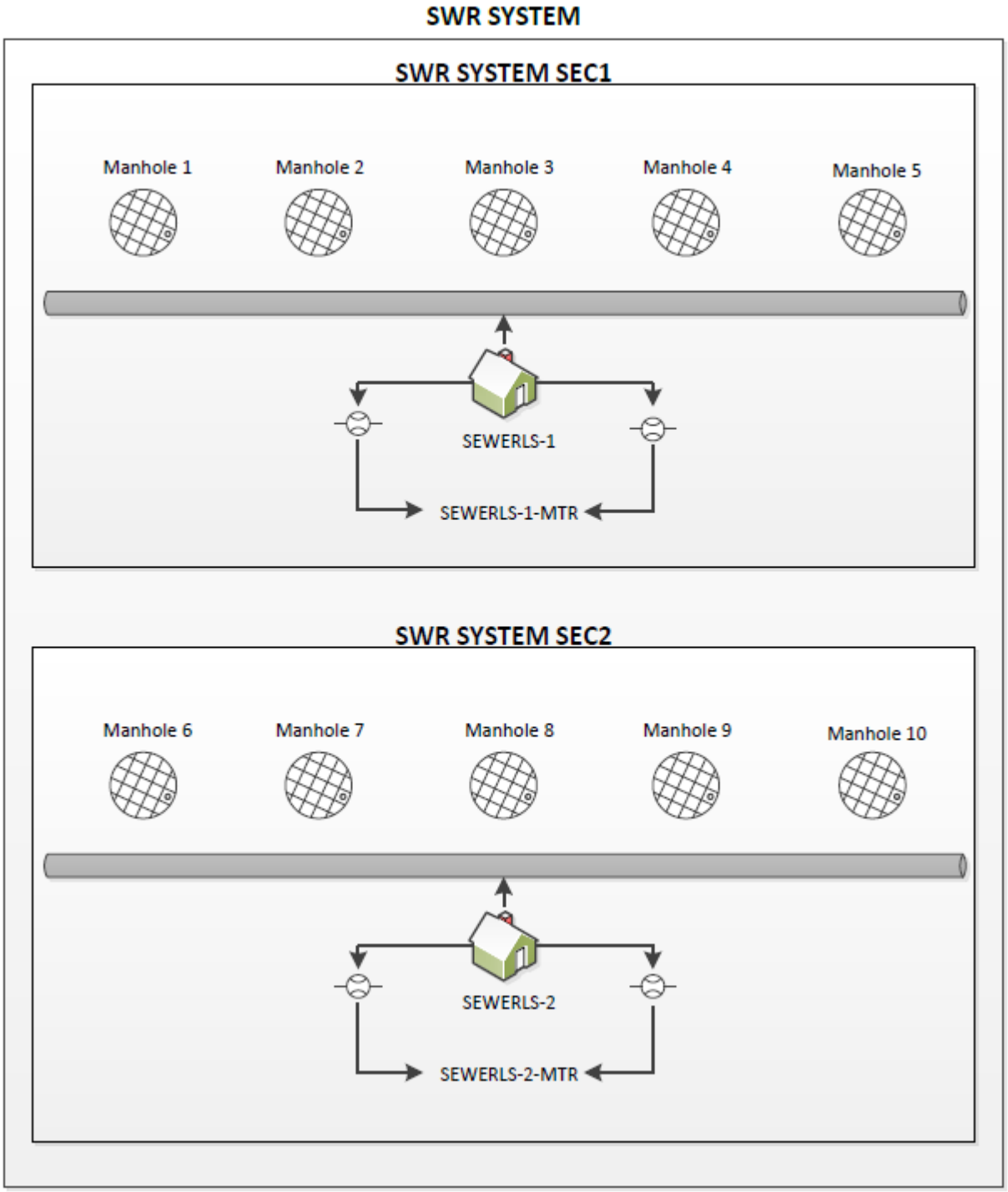
This manual serves as a guiding document for completing Preventive Maintenance Work Orders for the Plumbing Shop. Preventive Maintenance Work Orders are generated in AiM for Assets according to predefined schedules. These Work Orders will then be assigned to Shop Techs by the Shop Supervisors.

The diagram below details the type of gas assets which were identified as requiring preventive maintenance:



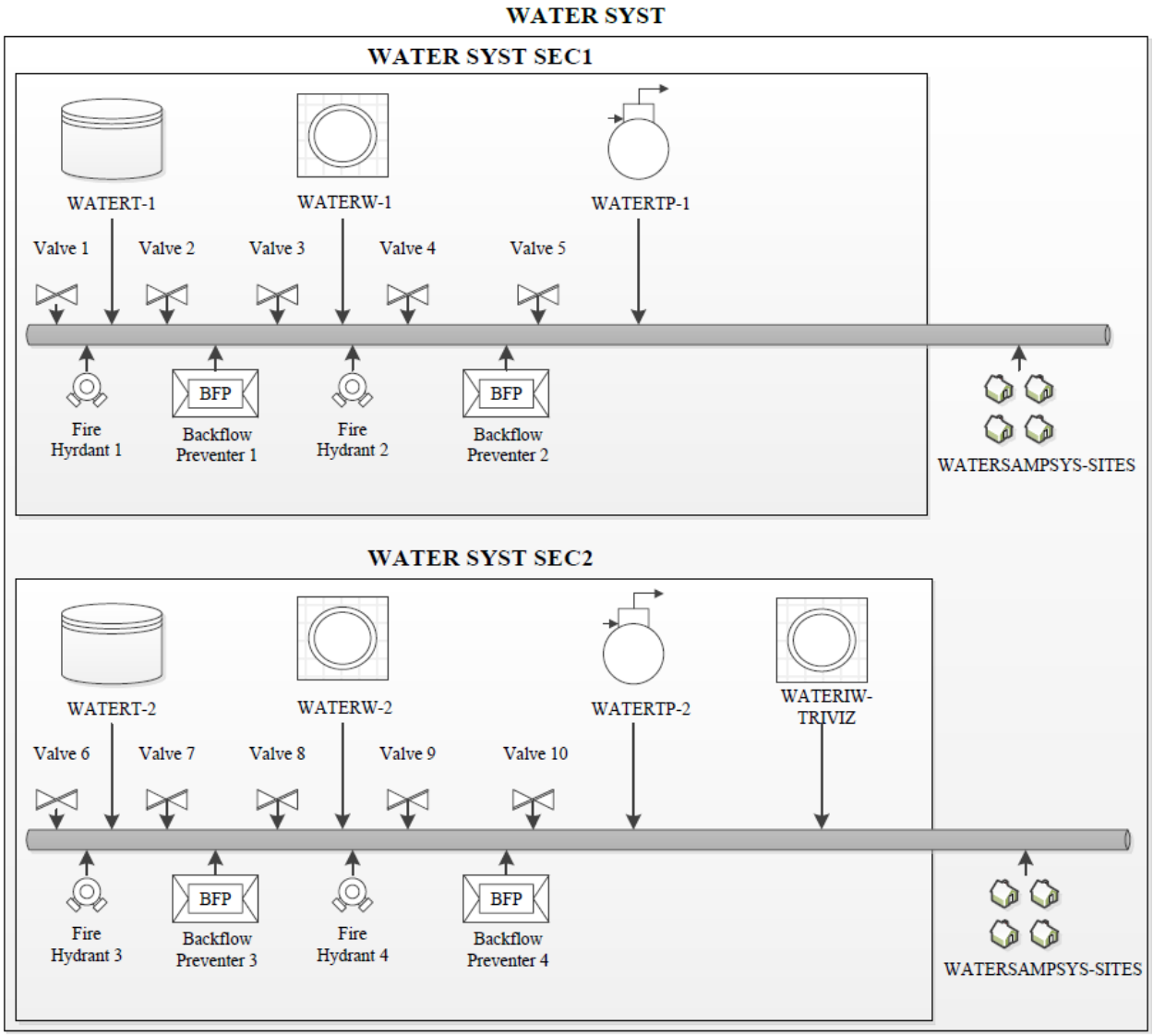
Gas valves (Valve 1 – 20), gas regulator stations (GASRS-1, GASRS-2), gas meter stations (GASMS-1, GASMS-2), gas piping (GASP-1, GASP-2), and risers are now grouped in Gas System Sections (GAS SYSTEM SEC1, GAS SYSTEM SEC2) as defined by the Plumbing Shop. The sections have been defined as Properties and Assets in AiM to allow for a logical grouping of the Gas System components.

The diagram below details the type of sewer assets which were identified as requiring preventive maintenance:



Sewer manholes (Manhole 1 – 10), sewer lift stations (SEWERLS-1, SEWERLS-2), and meters for sewer lift stations (SEWERLS-1-MTR, SEWERLS-2-MTR).

The diagram below details the type of water assets which were identified as requiring preventive maintenance:



Water valves (Valve 1 – 10), fire hydrants (Fire Hydrants 1-4), water tanks (WATERT-1, WATERT-2), domestic water wells (WATERW-1, WATERW-2), irrigation water wells (WATERIW-TRIVIZ), backflow preventers (Backflow Preventer 1-4), and water sampling sites (WATERSAMPSYS-SITES) .

Business Rules

- While performing preventive maintenance if a problem is found that requires corrective maintenance a new work order and phase will need to be created.

- When a corrective maintenance work order is created the asset from the PM work order must be attached to the corrective maintenance work order.

- All time spent and materials used on preventive maintenance should be charged against the preventive maintenance work order for which the work was done.

- The gas system on campus has been defined as six separate properties in AiM. This is necessary to better define the locations of gas assets and equipment in AiM. The following table describes the six gas properties:

Property	Description
GAS SYSTEM SEC1	Tom Fort / Cole Village / VDM, page 2 of gas maps, all gas valves that are on line with 4' along Williams Ave
GAS SYSTEM SEC2	Sutherland Village, all gas valves page 4 of gas maps feeding off Richard Lopez and Clifford Yayan, gas reg station on Wells between Williams / Espina going to PSL
GAS SYSTEM SEC3	All gas valves on Wells, page 8 / page 1 of gas maps, feeding FS shops, Greek, Wells Hall, Golf Club, page 10 of gas maps
GAS SYSTEM SEC4	All gas valves within Cervantes Housing, page 9 of gas maps, Genesis Center
GAS SYSTEM SEC5	All valves on Espina from George Huff reg station, page 6 of gas maps, feeding west of Espina south to DACC
GAS SYSTEM SEC6	All valves within campus buildings east of Espina up to Pan Am Center north to University, cover page

- The sewer system on campus has been defined as four separate properties in AiM. This is necessary to better define the locations of sewer assets and equipment in AiM. The following table describes the four sewer properties:

Property	Description
SWR SYSTEM SEC1	North of Stewart and East of Williams Ave
SWR SYSTEM SEC2	South of Stewart and East of Williams Ave
SWR SYSTEM SEC3	North of Stewart and West of Williams Ave
SWR SYSTEM SEC4	South of Stewart and West of Williams Ave
SWR SYSTEM	Entire sewer system

- Assets will be named utilizing existing FS standards.

✯ The water system on campus has been defined as four separate properties in AiM. This is necessary to better define the locations of water assets and equipment in AiM. The following table describes the four water properties:

Property	Description
WATER SYST SEC1	North of Stewart and East of Williams Ave
WATER SYST SEC2	South of Stewart and East of Williams Ave
WATER SYST SEC3	North of Stewart and West of Williams Ave
WATER SYST SEC4	South of Stewart and West of Williams Ave
WATER SYST	Entire water system

✯ If a PM Work Order is unable to be completed then it will be put in a status of **Unable to Perform**. A note will be added to the notes log of the work order as to why it was unable to be completed. DO NOT use the status of **Cancelled**. Note: The status of **Unable to Perform** will be defined as a **Preventive Maintenance** status only, and will be of type **Closed**. Conditions that allow **Unable to Perform** status to be used are:

- A new PM has already been generated and PM work is not completed.
- It is almost time for a new PM to be generated, and I can wait to do the work until the next PM work order is generated.

Note: This status should not be used without consulting with a supervisor in the case of regulatory requirements not being performed.

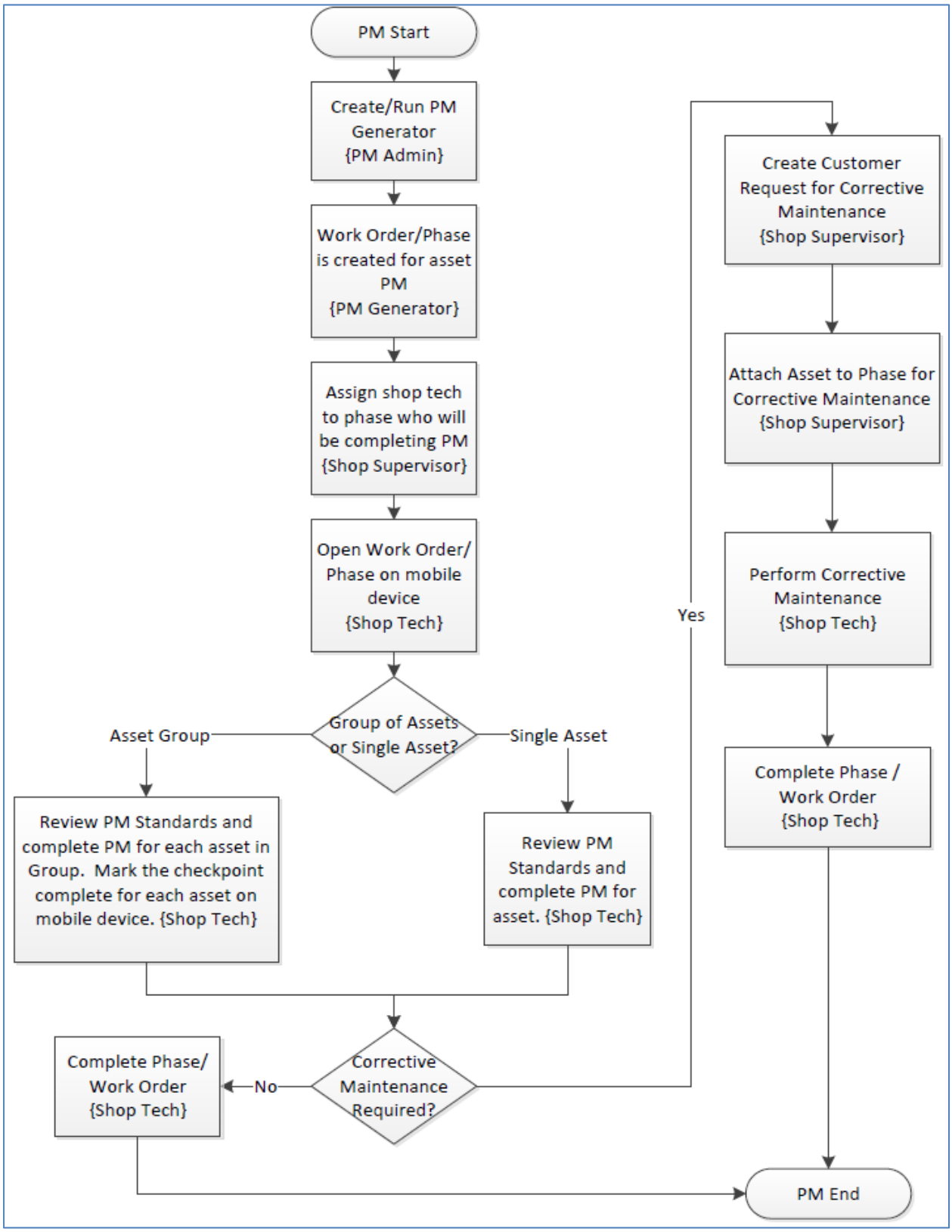
✯ If a shop other than the PM owner needs to be assigned the PM work, then the phase needs to be reassigned to the shop doing the work, so that the PM Checkpoints are available to the shop completing the work. DO NOT create a new phase on the work order because the PM Checkpoints will not be added to the new phase. **Exception**: If work has been started on the PM Phase by the PM owner and it is necessary to hand off the work to another shop, then the PM Owner can open a new phase to the shop who will be completing the work and print the PM Checkpoints to be completed and then returned to the PM Owner per the process.

✯ If outsourcing PM work, then the PM owner still needs to complete the PM checkpoints in AiM and attach all documents from the contractor as the related documents of the work order.

Naming Conventions

AiM Component	Convention	Example	Description
Property	Depends on need of the shop	GAS SYSTEM SEC1	The property has been created in AiM to encompass a logical grouping of gas assets decided upon by the Plumbing shop.
Asset Group	Combination of system with abbreviation of the type of asset	GASV	The system is gas and the type of asset is valves.
Individual Asset	Combination of Asset Group name to which the asset belongs and a sequential number to differentiate it from other assets.	GASRS-1	The asset group name is GASRS and the number dictates that this is Gas Regulator Station number 1.
Group of Assets	Combination of the Asset Group name to which the group of assets belongs and the abbreviated Property name at where the group of assets is located.	GASV-SEC1	The asset group name is GASV and the property name is GAS SYSTEM SEC1. The abbreviation SEC1 is being used in the property part of the name.
PM Template	Combination of the department, shop and a sequential number to differentiate Template from other Templates.	FS-PLMB-001	FS is the department Facilities and Services, PLMB is the shop Plumbing, and 001 is a sequential number
PM Template Phase	Type of Asset or Preventive Maintenance assigned to phase	GAS VALVES	The phase is named GAS VALVES because it is PM for gas valves.
PM Standards (individual asset)	Same name as Asset Group	GASRS	The PM Standards applies to all regulator stations and as such is named the same as the asset group for regulator stations.
PM Standards (group of assets)	Same name as asset (which is a group of assets)	GASV-SEC1	The PM Standards only applies to gas valves in GAS SYSTEM SEC1 and as such is named the same as the asset group for gas valves in GAS SYSTEM SEC1.

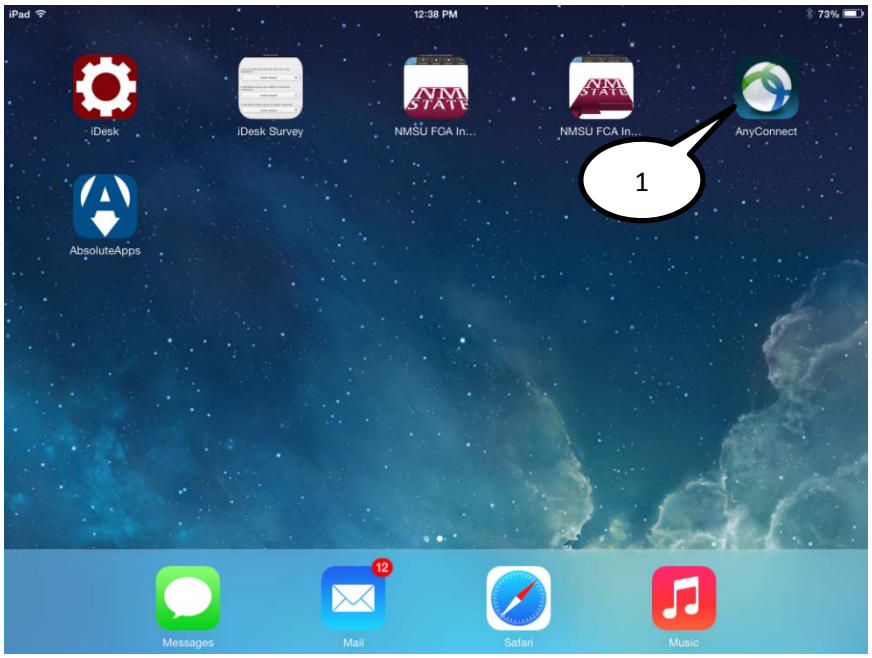
PM Work Order Process Flow



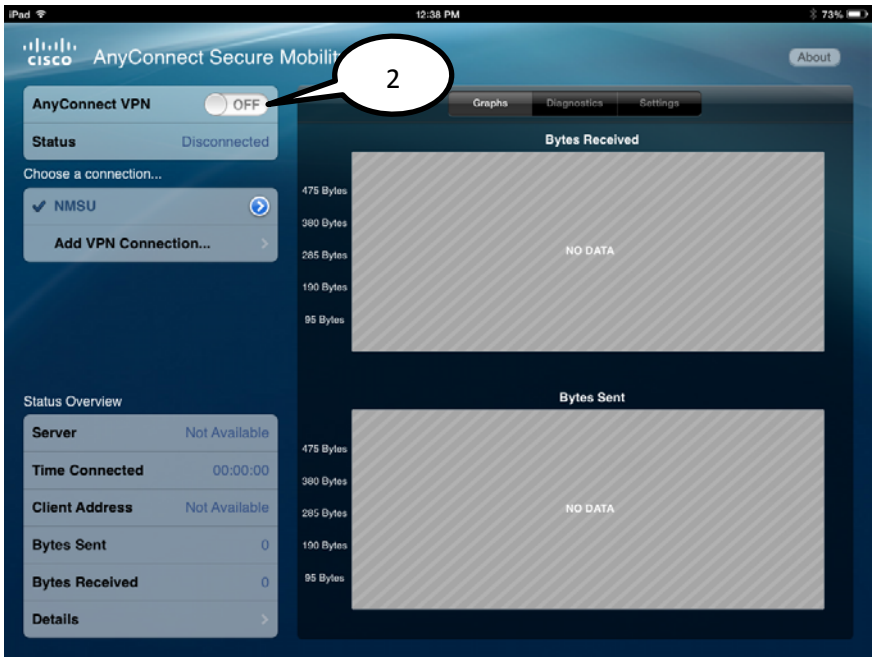
General PM Instructions

AnyConnect on iPad

AnyConnect needs to be turned on in order to access AiM with the iPad when connecting to the Internet using cellular service.

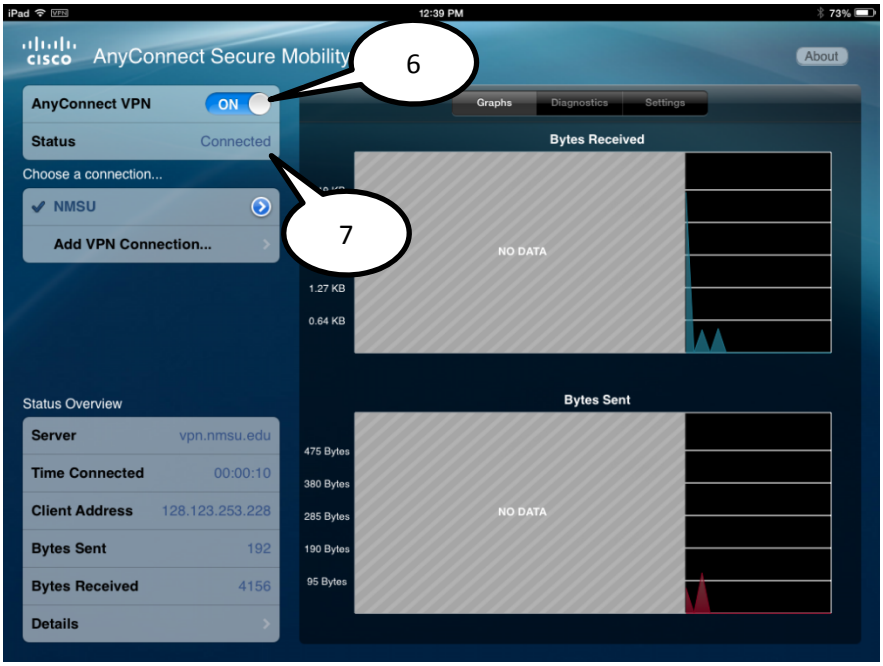


1. Select the ***AnyConnect*** icon from the home screen.



2. Slide the ***AnyConnect VPN*** from “OFF” to “ON”.

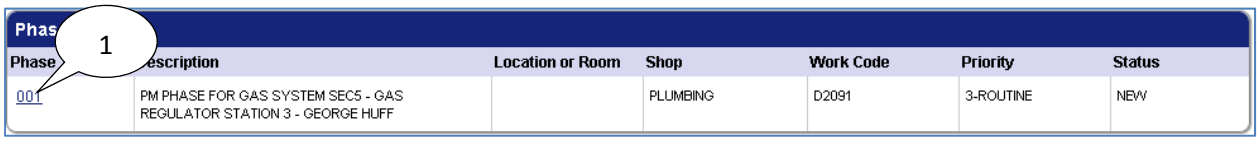
3. Enter Banner ***Username***.
4. Enter Banner ***Password***.
5. Select the ***Connect*** icon.



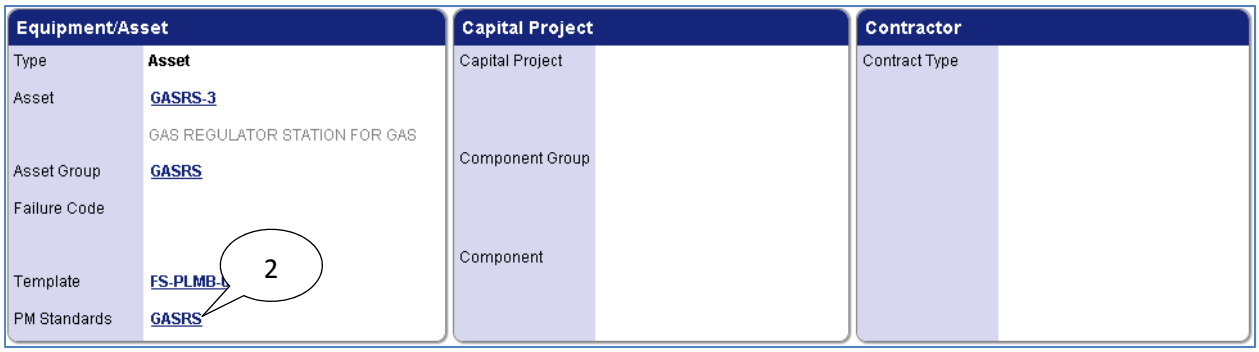
6. ***AnyConect VPN*** should now be set to “ON”.
7. ***Status*** should show “Connected”.

Viewing PM Standards

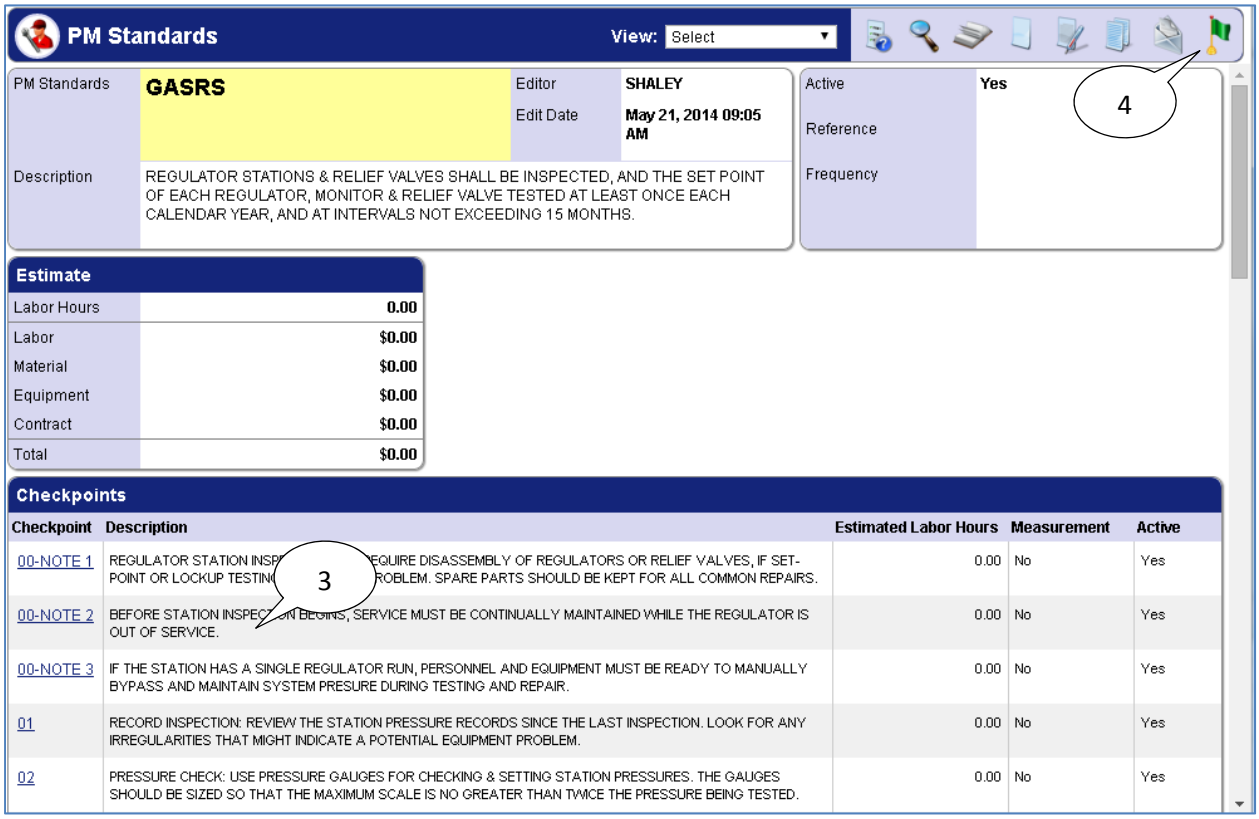
AiM *PM Standards* give the specific details for shop technicians to perform the Preventive Maintenance on the assets and/or systems. Every PM work order will have *PM Standards* to follow.



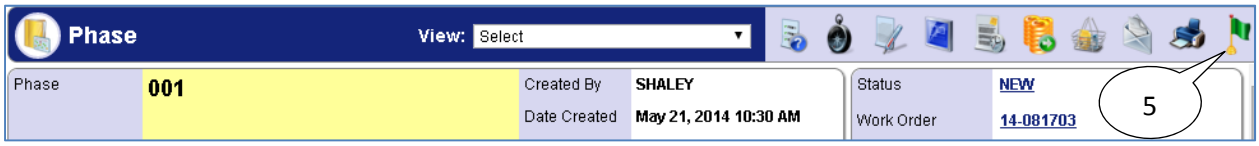
1. Bring up the work order and click on the **Phase**



2. Click on the **PM Standard** in the Equipment/Asset section



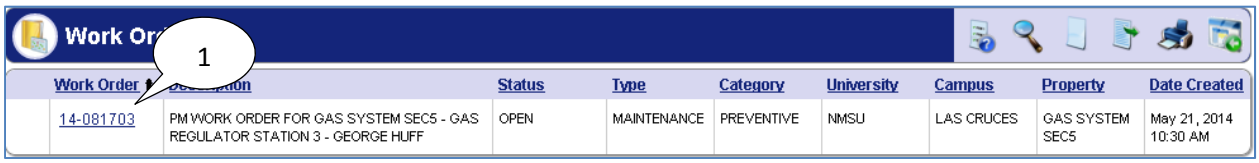
3. View the PM Standards **Checkpoints**
4. Click on the **Done** icon when you are finished viewing checkpoints



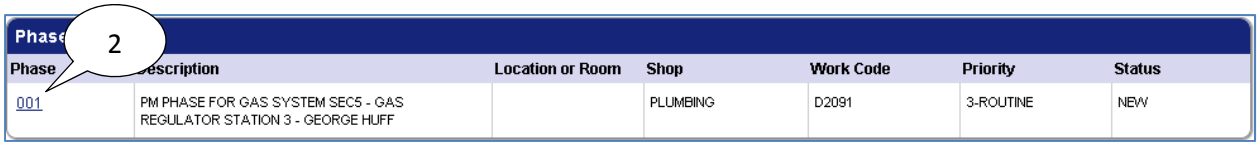
5. Click on the **Done** icon to close the Phase screen

Viewing Checkpoint Measurements

Some preventive maintenance work orders will require the shop technician to record values and/or record the steps for performing the preventive maintenance that have been completed. AiM *Checkpoint Measurements* will be used to record these values and/or steps which have been completed.

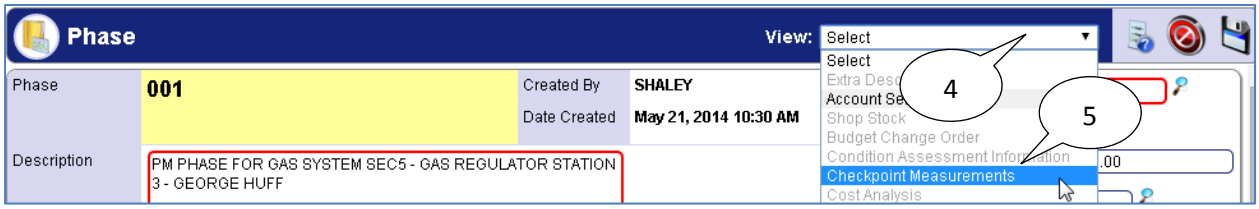


1. Open the work order

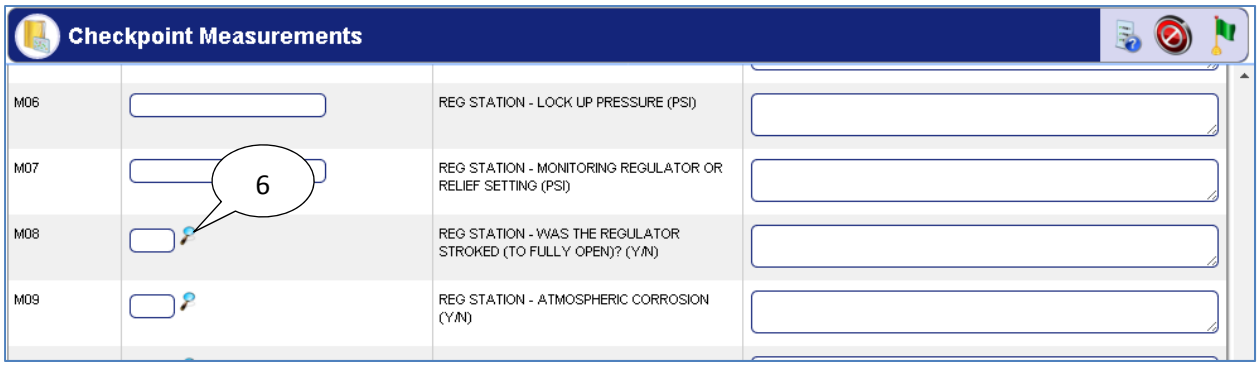


2. Click on the **Phase**

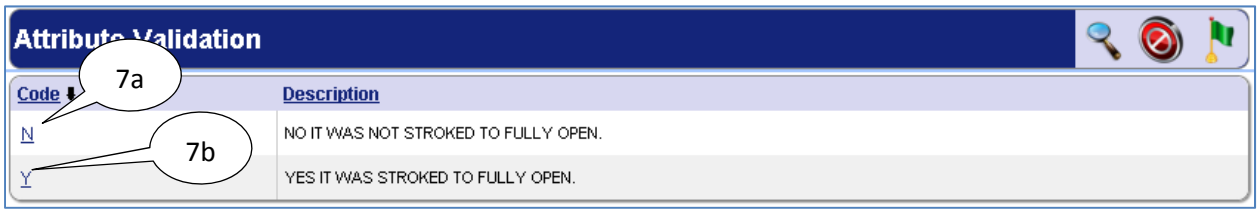
3. Click on the **Edit** icon



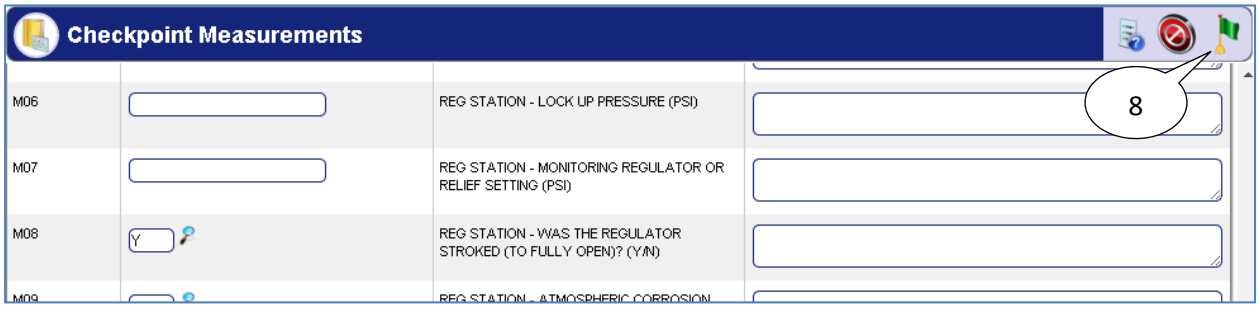
4. Click on the **View:Select** drop-down arrow
5. Click on **Checkpoint Measurements**



6. Click the Value **Search** icon or enter value directly into textbox next to **Search** icon (if **Search** icon is not present, then user can only enter values using textbox).

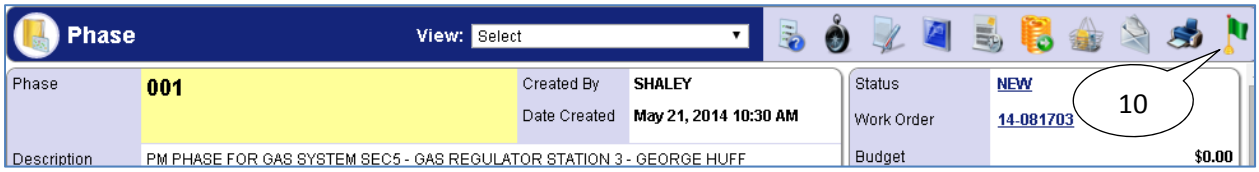


7. Click on the appropriate code (in this case the user has two options):
   a. **N**
   b. **Y**



8. Click on the **Done** icon (Extra Description is optional)

9. Click on the **Save** icon



10. Click on the **Done** icon

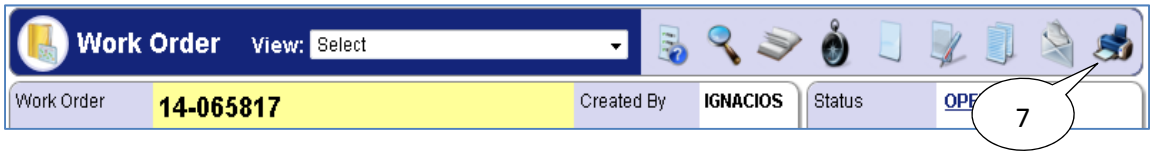
Print PM Work Order

It is possible to print out a Preventive Maintenance Work Order with the *PM Standards Checkpoints* listed. This can be used as a quick reference to view the steps for performing preventive maintenance as detailed in the *PM Standards Checkpoints*.

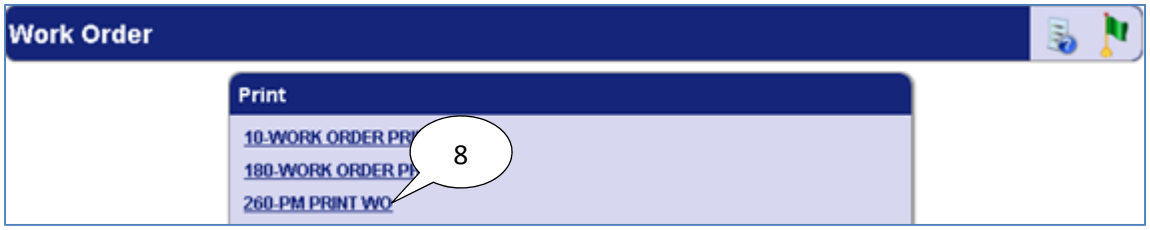
1. Logon to AiM
2. Click on **Work Management**
3. Click on the **Search** icon next to Work Order

4. Enter the Work Order number
5. Click on the **Search** icon

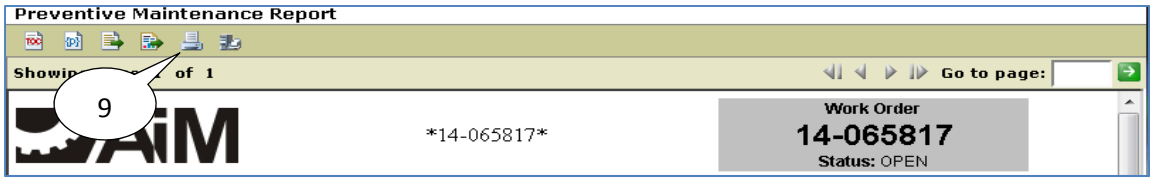
6. Click on the **Work Order**



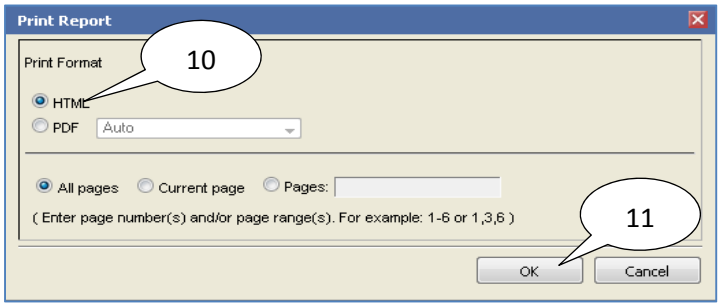
7. Click on the **Print** icon



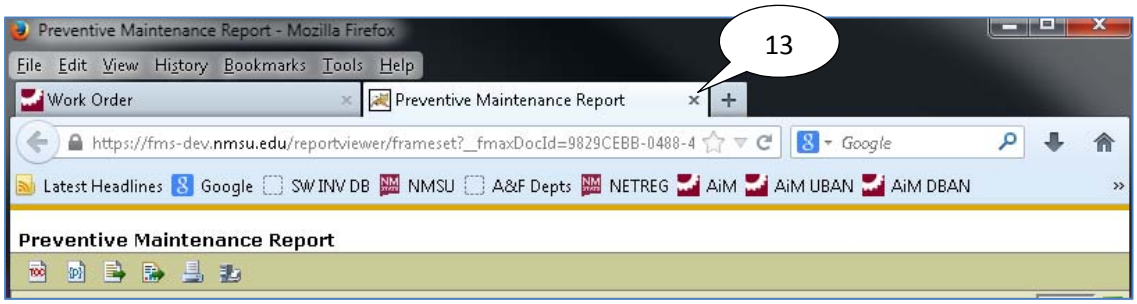
8. Click on **260-PM PRINT WO**



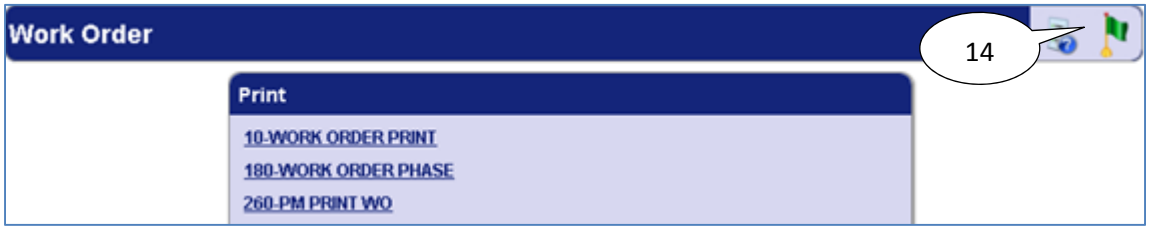
9. Click on the **Print** icon



10. Select the **HTML** radio button
11. Click **OK**
12. The Print window will appear → Click **OK**



13. Close the **Preventive Maintenance Report** tab by clicking on the **X**

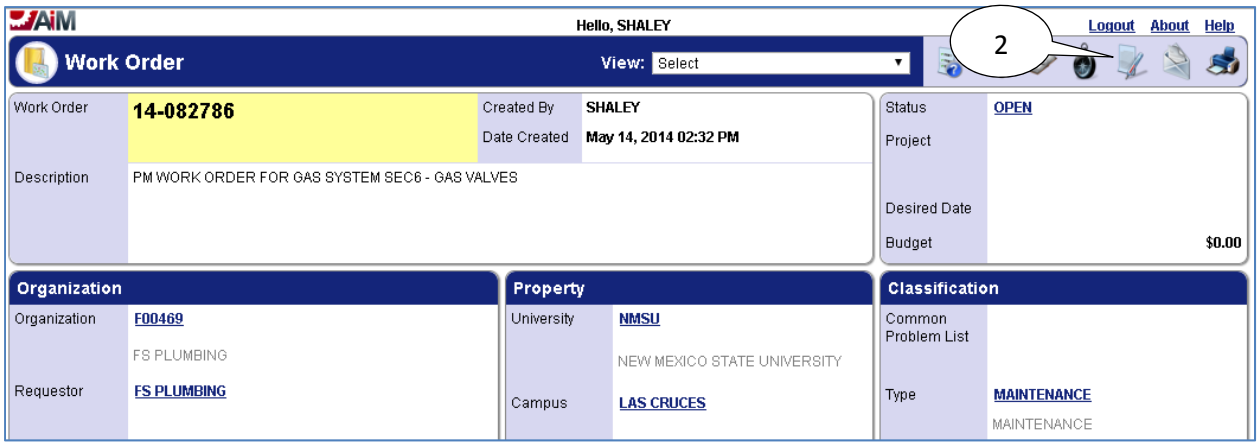


14. Click on the **Done** icon

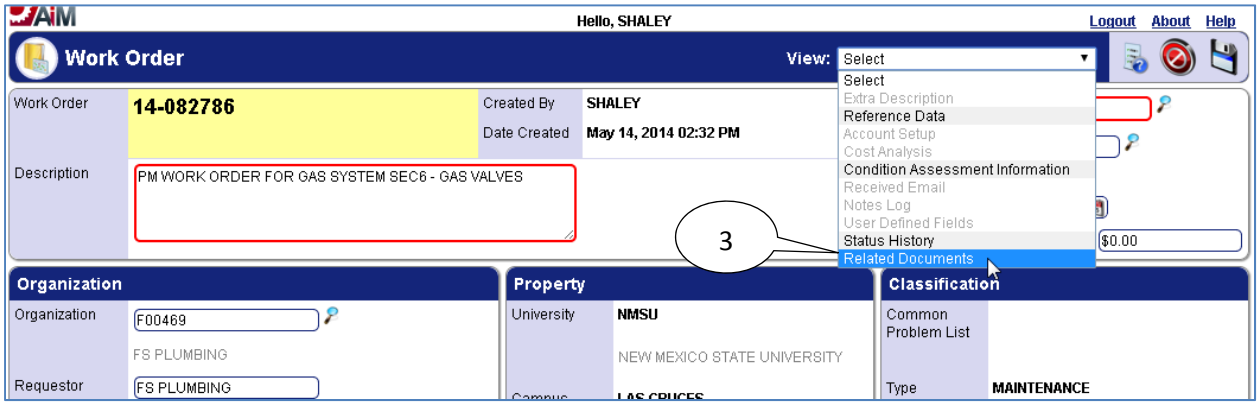
Attaching Related Documents

It is necessary to attach all contractor provided documents, invoices, or printouts of completed checkpoints as related documents. You may need to scan these documents in order to attach them.

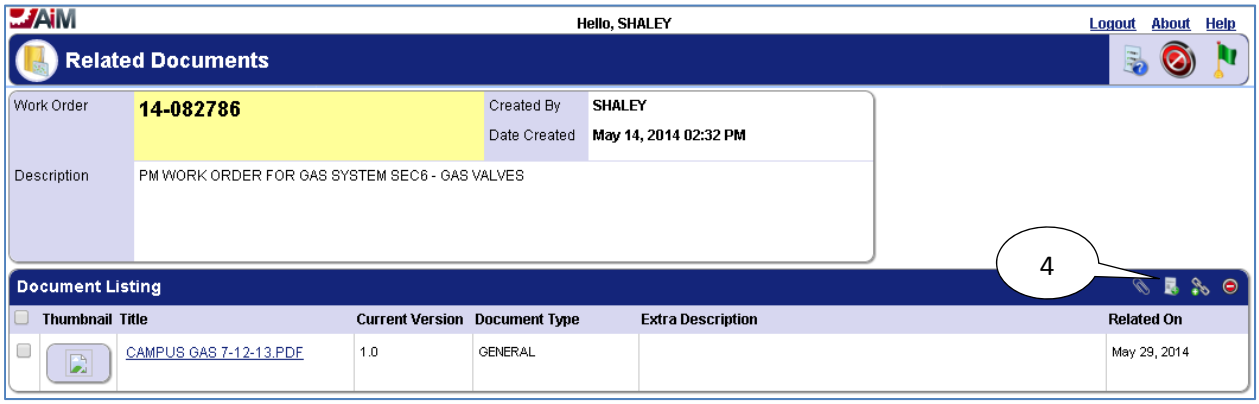
1. Navigate to the work order or phase for which the related document needs to be attached.



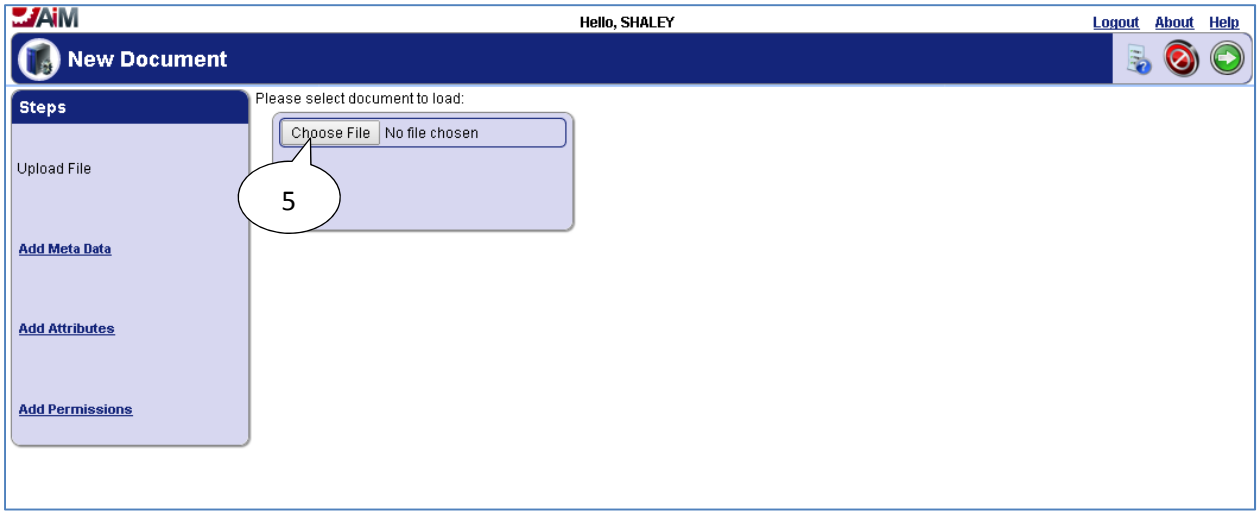
2. Select the **Edit** icon.



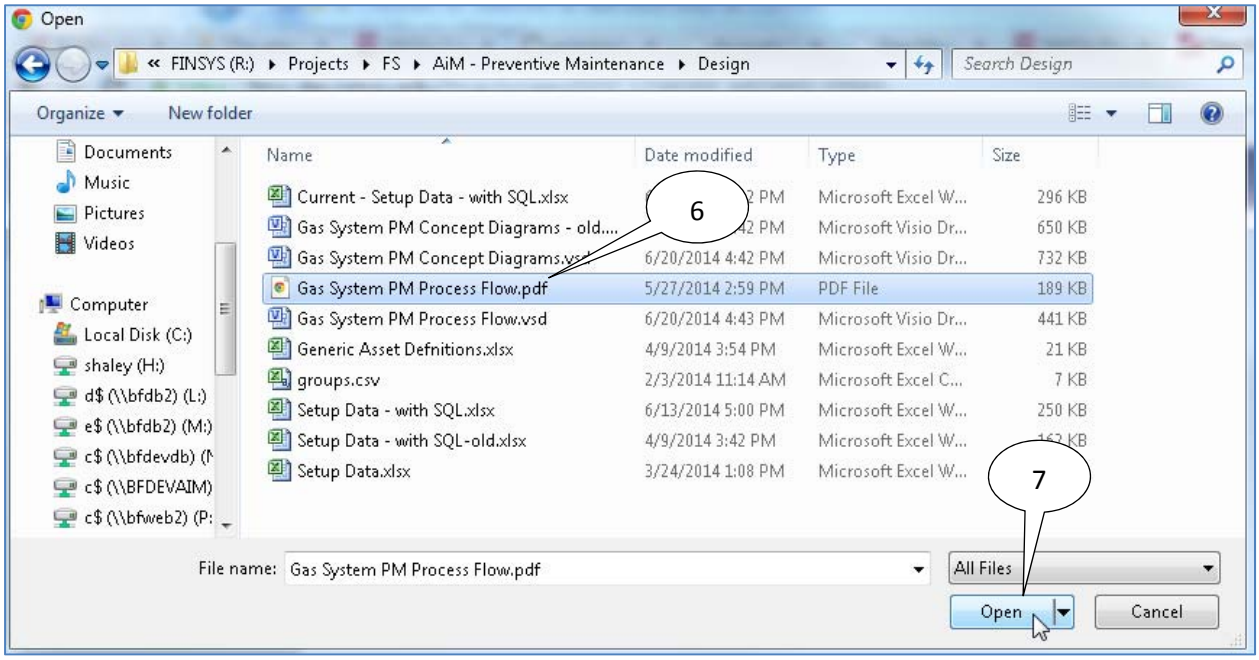
3. Select **Related Documents** form the **View** menu.



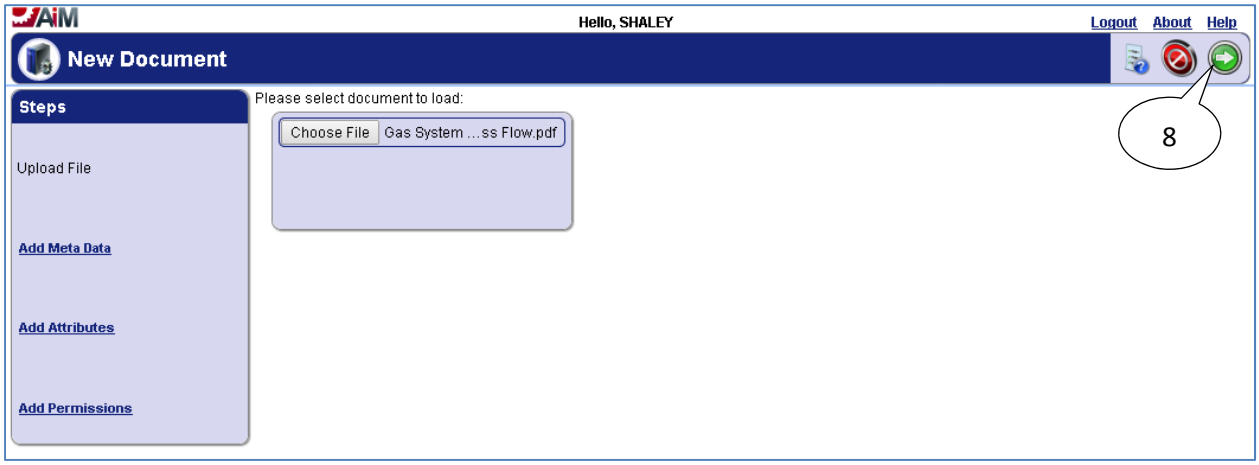
4. Select the **Add New Document** icon.



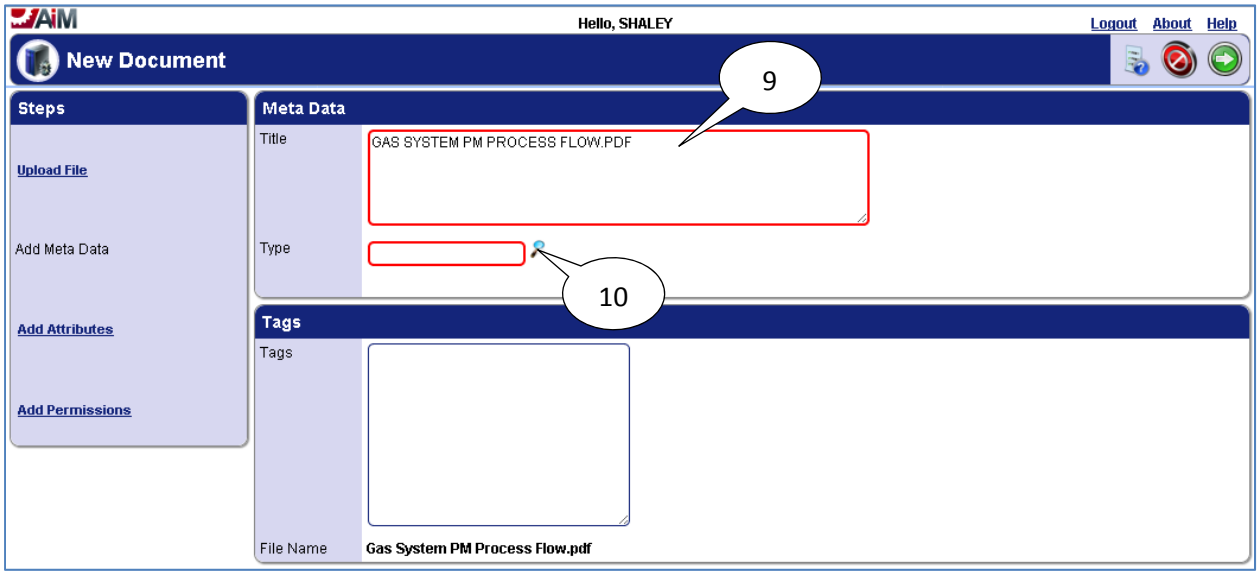
5. Select **Choose File**.



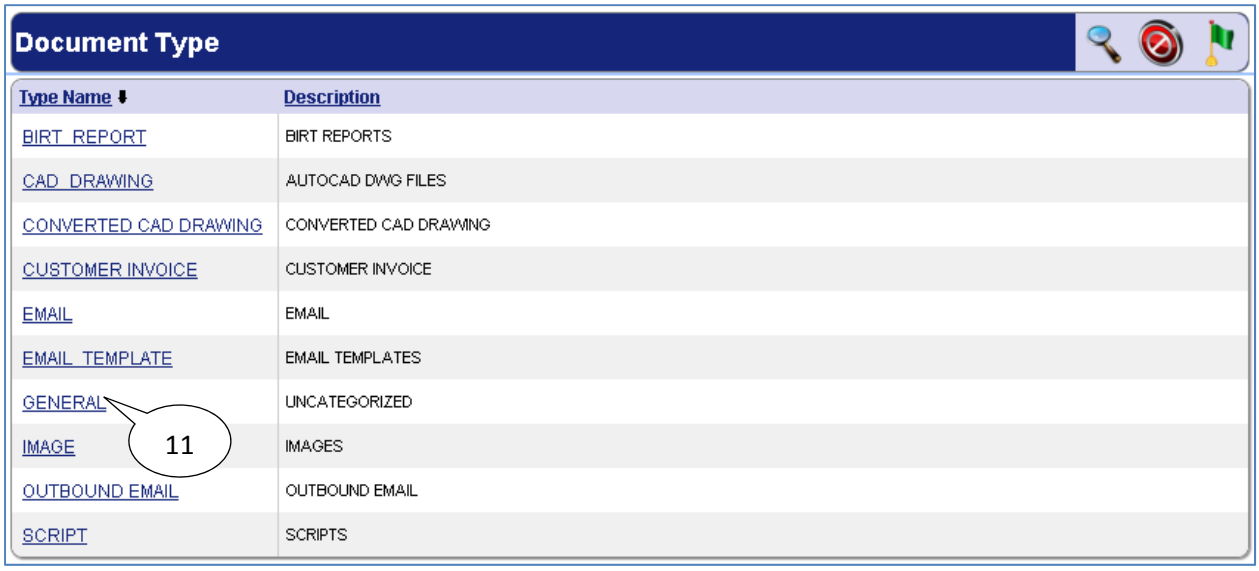
6. Navigate to the file which is to be uploaded and select it.
7. Select **Open**.



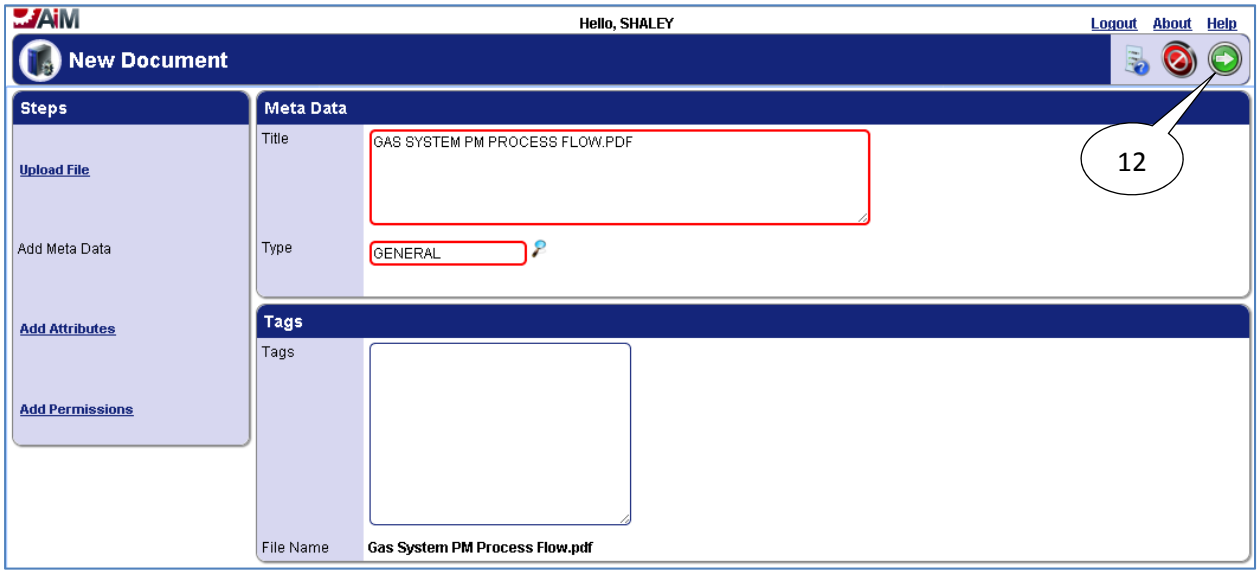
8. Select the **Next** icon.



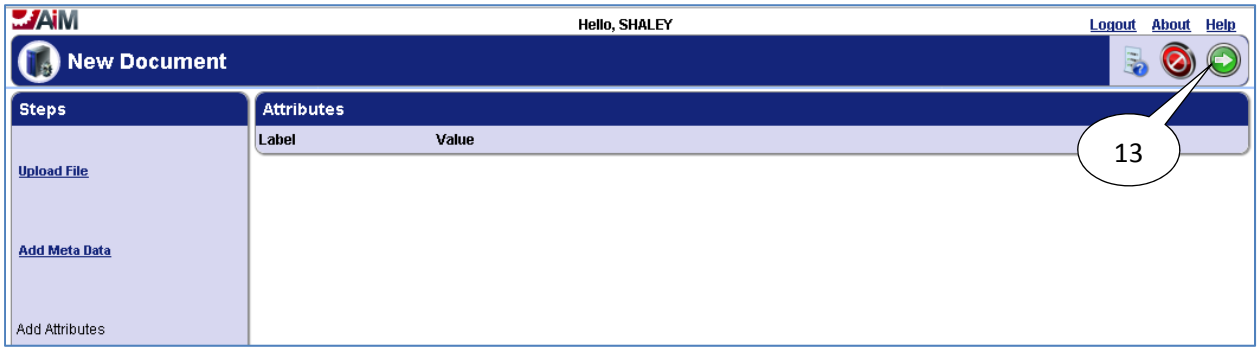
9. Enter **Title** if it needs to be different than the file name.
10. Select the **Search** icon.



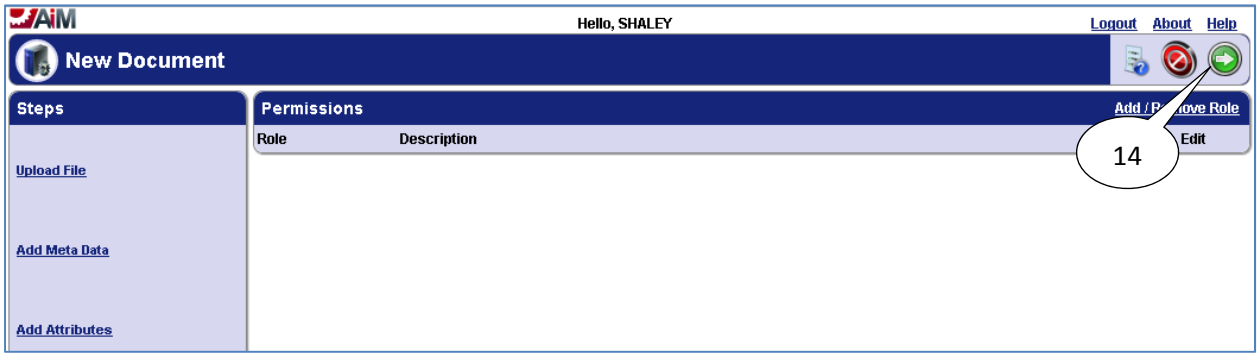
11. Select the **GENERAL** link.



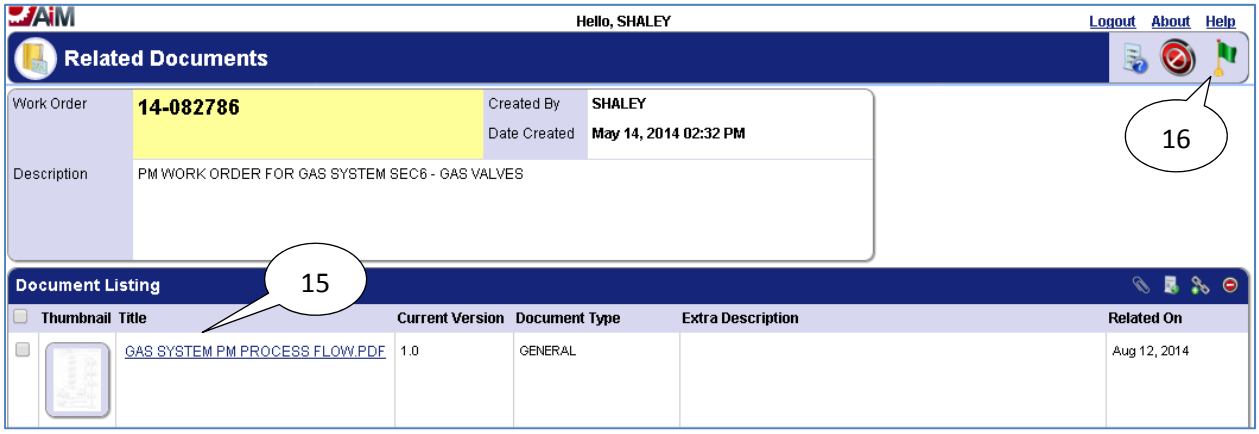
12. Select the **Next**  icon.



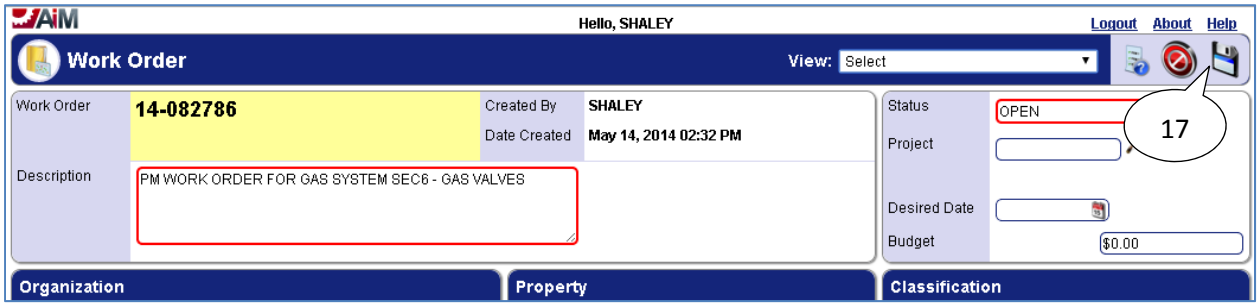
13. Select the **Next** icon.



14. Select the **Next** icon.



15. The file will now appear in the **Document Listing** pane.
16. Select the **Done** icon.



17. Select the **Save** icon.

Reassigning PM Phases

If a shop other than the PM owner will be completing a PM *Phase*, then the *Phase* needs to be reassigned to that shop which will be completing the *Phase*. This is to ensure the assigned shop has access to the defined *PM Checkpoints*. The following scenarios outline process of reassigning PM work.

Scenario 1: The PM Phase has been started already by the PM owner then do the following (completing these steps ensures initial work history is not lost):

1. The shop supervisor will create a new phase and assign it to the shop/shop tech who will be completing the PM work.
2. The shop supervisor will also print the *PM Checkpoints* from the original PM Phase and deliver them to the shop/shop tech who will be completing the phase.
3. The shop tech will then perform the preventive maintenance and mark the checkpoints as completed on the paper copy they received.
4. The shop tech will return the paper copy with their signature and date to the PM owner who will then enter the *PM Checkpoints* in AiM and attach the paper copy as a related document.
5. The PM Owner will then close the Phase.

Scenario 2: The PM will be performed by another shop, and they will not be using an iPad:

1. The shop supervisor will reassign the original PM Phase to the shop/shop tech who will be completing the PM work.
2. The shop supervisor will also print the *PM Checkpoints* from the original PM Phase and deliver them to the shop/shop tech who will be completing the phase.
3. The shop tech will then perform the preventive maintenance and mark the checkpoints as completed on the paper copy they received.

4. The shop tech will return the paper copy with their signature and date to the PM owner who will then enter the *PM Checkpoints* in AiM and attach the paper copy as a related document.
5. The PM Owner will then close the Phase.

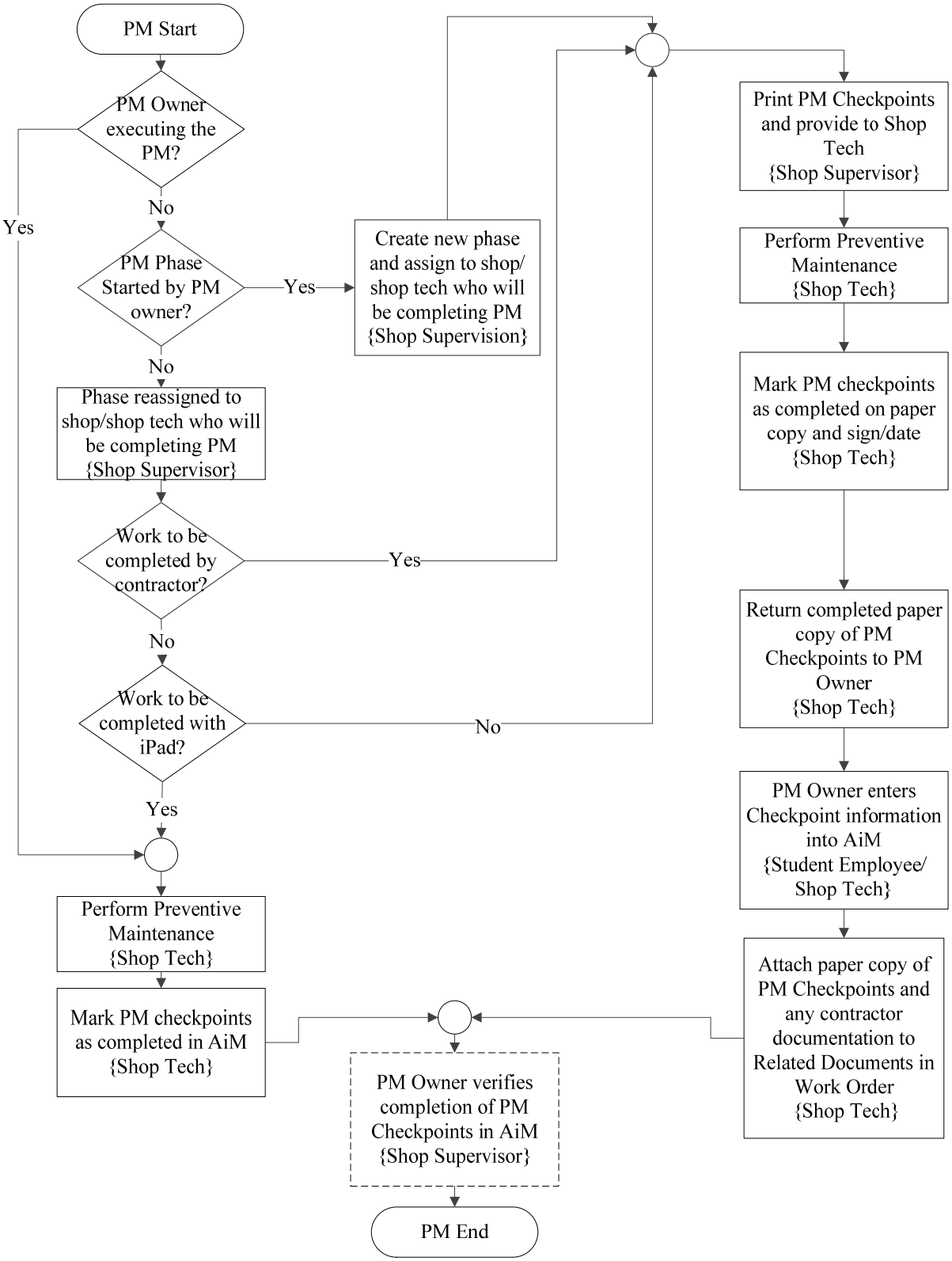
Scenario 3: The PM will be performed by a contractor:

1. The shop supervisor will reassign the original PM Phase to the shop/shop tech who will be working with the contractor completing the PM work.
2. The shop supervisor will also print the *PM Checkpoints* from the original PM Phase and deliver them to the shop/shop tech who will be working with the contractor. The shop tech will distribute the paper copy to the contractor.
3. The contractor will then perform the preventive maintenance and mark the checkpoints as completed on the paper copy they received.
4. The shop tech will return the paper copy with their signature and date to the PM owner who will then enter the *PM Checkpoints* in AiM and attach the paper copy along with any contractor documentation as related documents.
5. The PM Owner will then close the Phase.

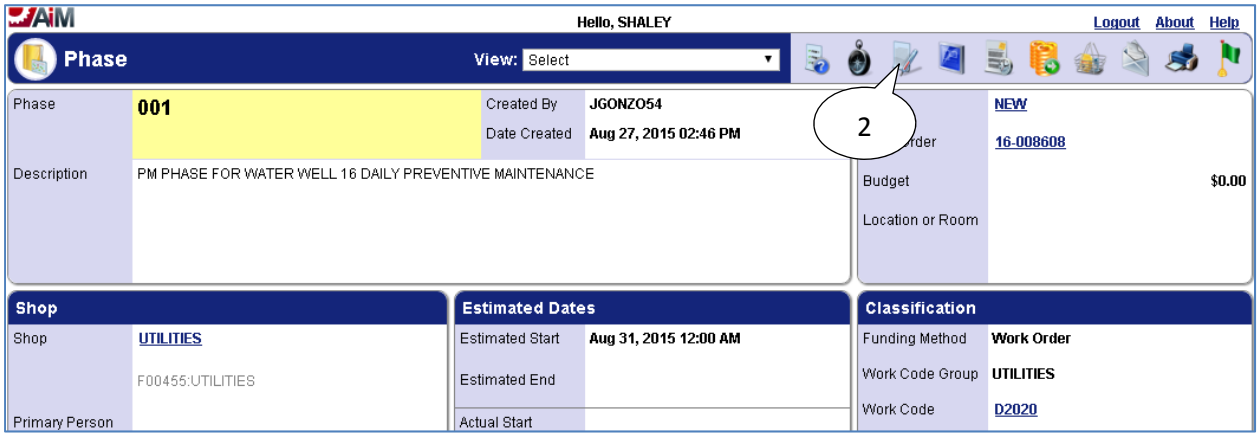
Scenario 4: The PM will be performed by another shop, and they will be using an iPad:

1. The shop supervisor will reassign the original PM Phase to the shop/shop tech who will be completing the PM work.
2. The shop tech will then perform the preventive maintenance and mark the checkpoints as completed in AiM using an iPad.
3. The shop tech completing the work will let the PM owner know that the work has been completed.
4. The PM Owner will verify that the *PM Checkpoints* have been completed in AiM.
5. The PM Owner will then close the Phase.

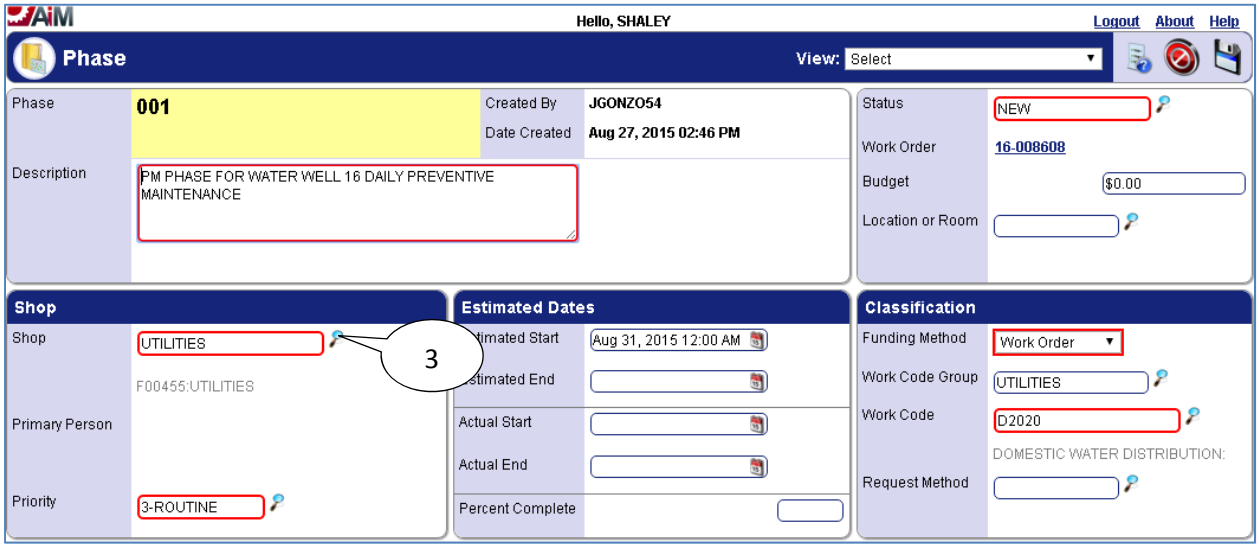
The following process flow outlines the steps for the process:



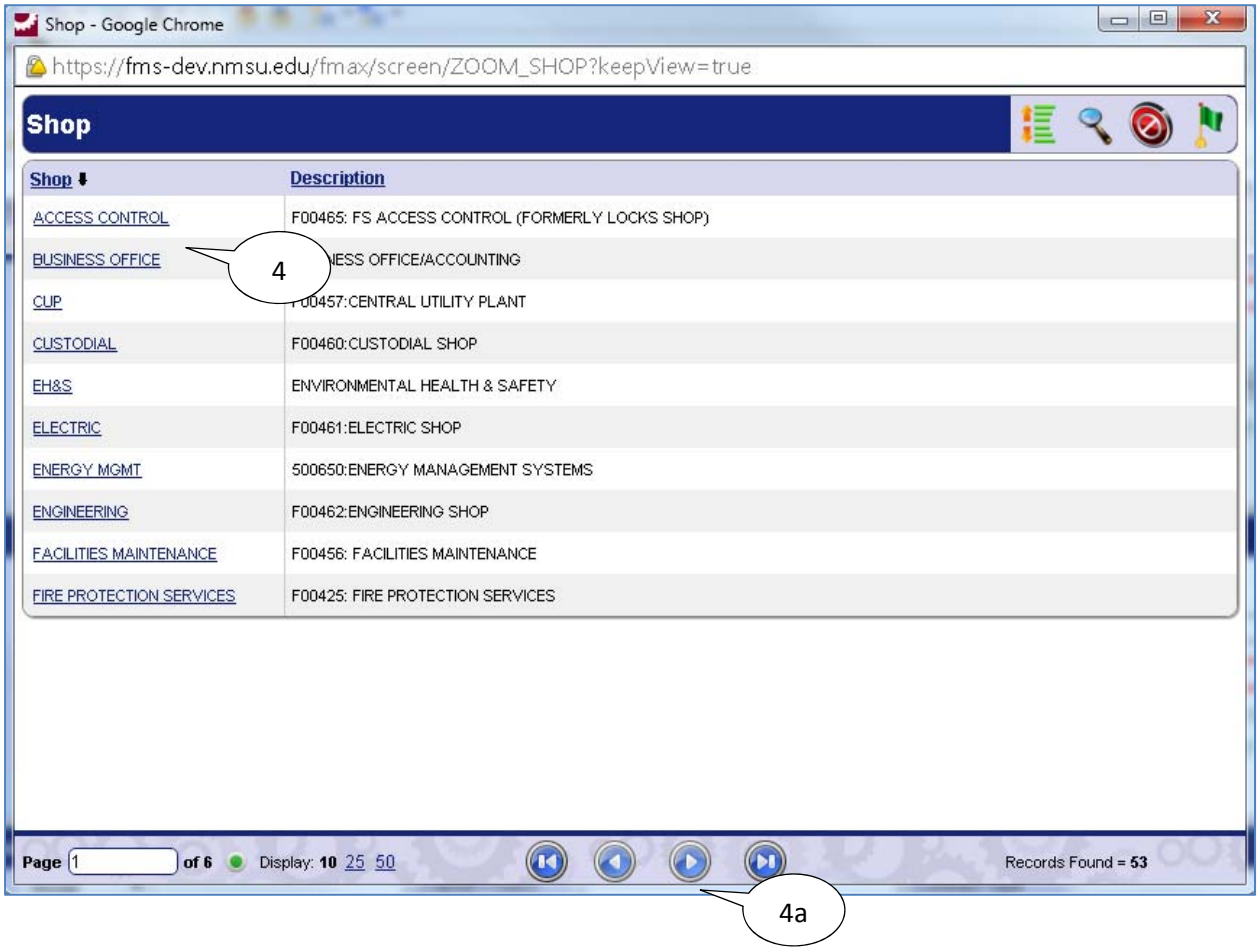
1. Navigate to the *Phase* on the PM *Work Order*.



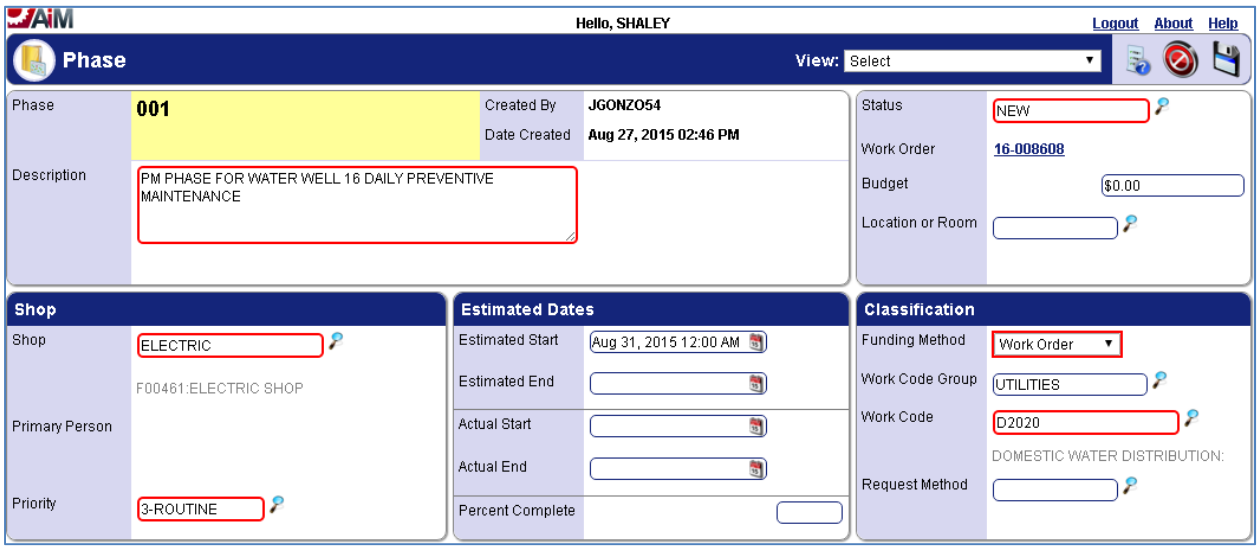
2. Select the **Edit** icon



3. Select the **Search** icon or enter the shop name directly into the **Shop** field if known.



4. Select the desired **Shop**
    a. Select the **next** to view next page for more shops).



5. Select **save** icon.

If work has already begun on the phase by the PM Owner and another shop has to step in to do part of the work, then the PM Checkpoints will need to be printed so that the shop doing part of the work can mark the checkpoints complete on a paper copy (see **Print PM Work Order** section). Once the shop has completed any PM work assigned to them, they will need to return a signed paper copy of the completed checkpoints to the PM owner, so that the PM owner can enter the checkpoints in AiM and attach the paper copy to the PM *Work Order* as a *Related Document* (see **Attaching Related Documents** section).

Unable to Perform PM Status

If a PM *Phase* is deemed unable to be performed based on the **Business Rules** located at the beginning of this guide (also detailed below), then the *Status* for the PM *Phase* may be set to *Unable to Perform*.

Business Rules for the *Unable to Perform Status*:

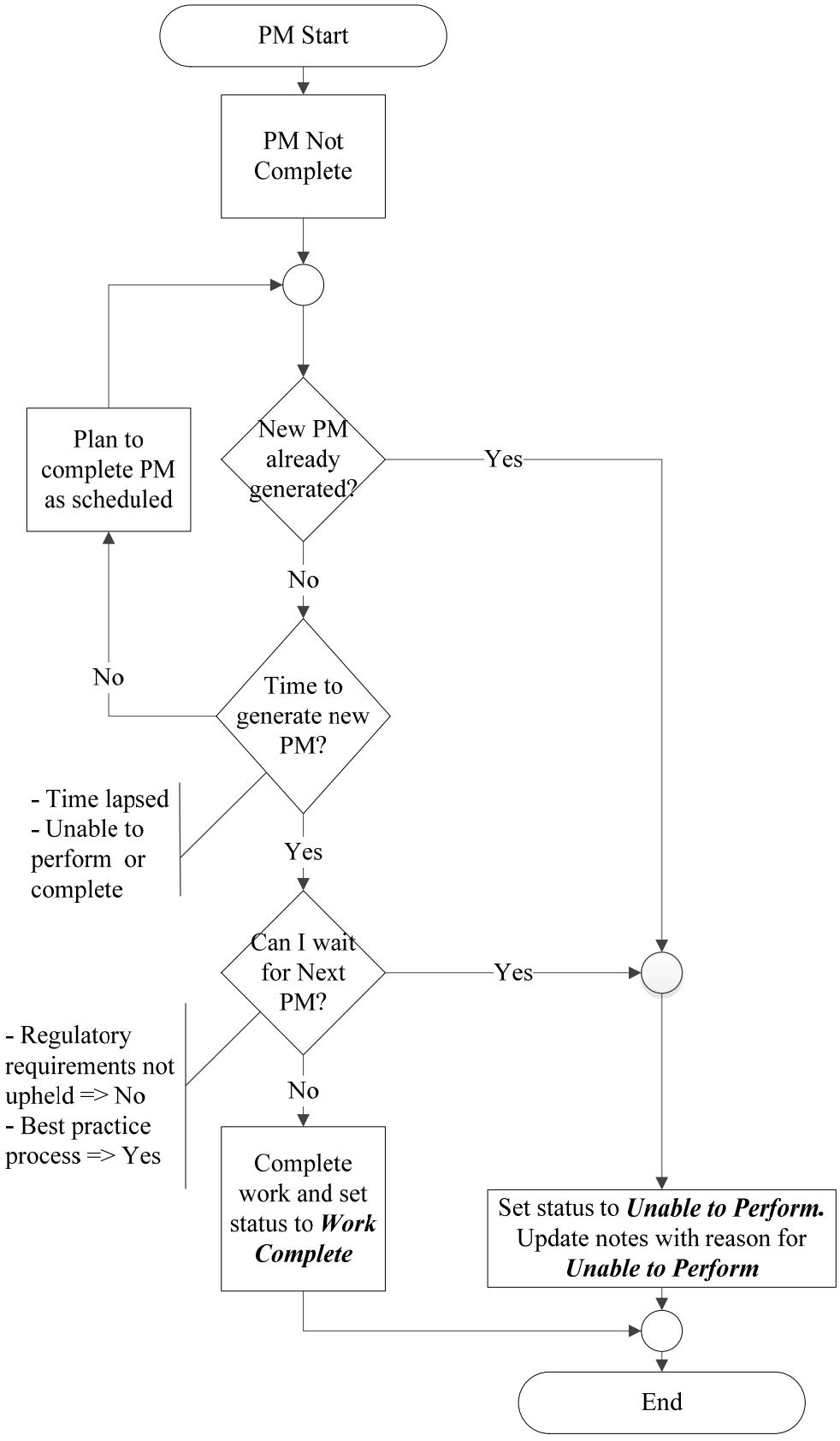
If a PM Work Order is unable to be completed then it will be put in a status of **Unable to Perform**. A note will be added to the notes log of the work order as to why it was unable to be completed. DO NOT use the status of **Cancelled**. Note: The status of **Unable to Perform** will be defined as a **Preventive Maintenance** status only, and will be of type **Closed**. Conditions that allow **Unable to Perform** status to be used are:

a. A new PM has already been generated and PM work is not completed.
b. It is almost time for a new PM to be generated, and I can wait to do the work until the next PM work order is generated.

Note: This status should not be used without consulting with a supervisor in the case of regulatory requirements not being performed.

It is recommended that any preventive maintenance work orders which have regulatory requirements be performed before the next scheduled work order is generated for that preventive maintenance. If however, the preventive maintenance work order is intended to be completed as a best practice, then the status of *Unable to Perform* is recommended to be used if the work order will not be completed before the next work order is generated for the preventive maintenance.

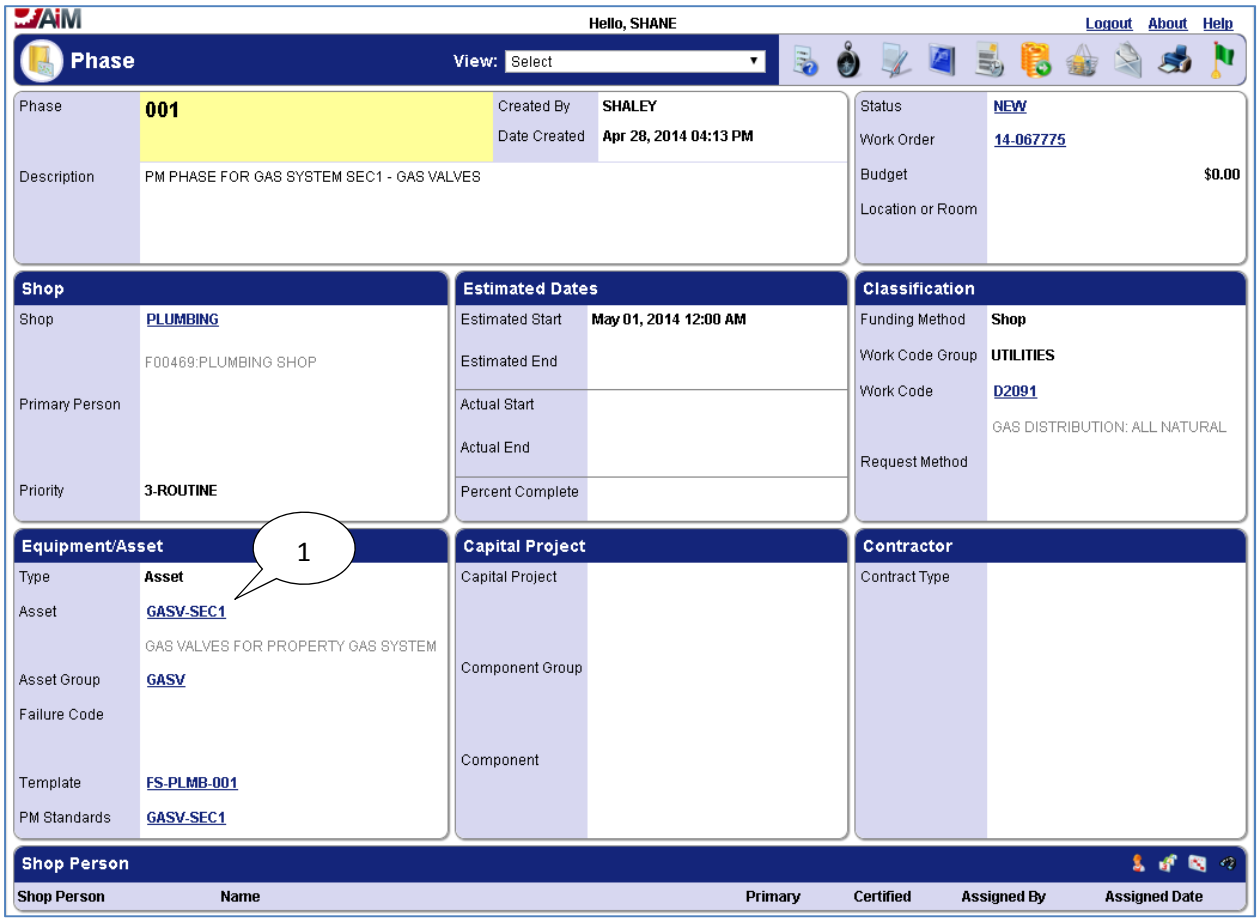
Please refer to the following process flow when setting this status:



Gas Valves

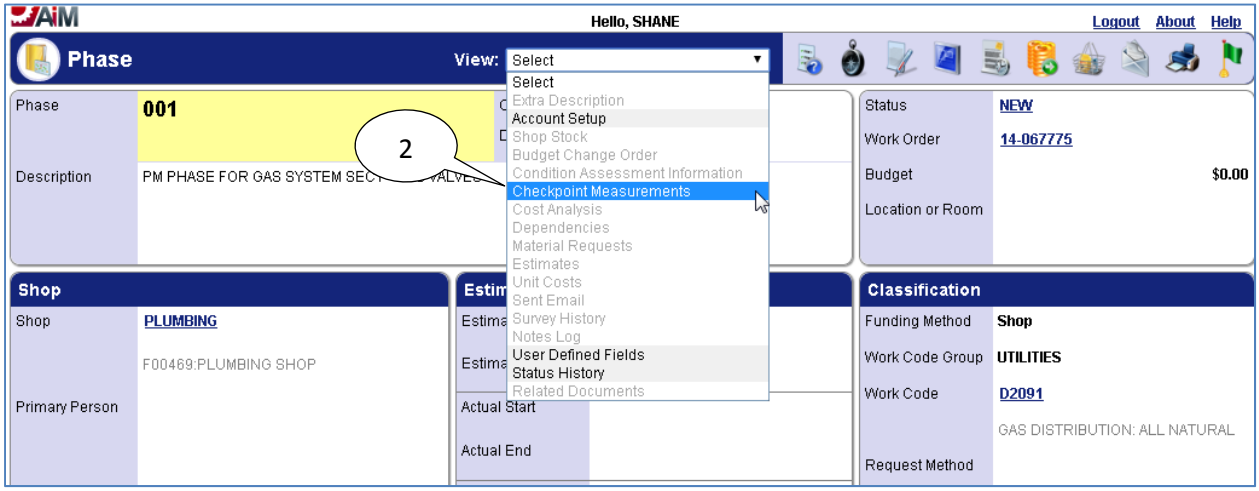
Preventive Maintenance for gas valves is performed annually. The Preventive Maintenance work orders for gas valves will be generated on May 1st of every year. Gas valves are grouped together by sections into a single asset. For example, all of the gas valves located in section GAS SYSTEM SEC1 are stored as asset GASV-SEC1 in AiM and each valve is represented by a checkpoint measurement in the phase of the work order.

Completing Individual Valve Checkpoint Measurements

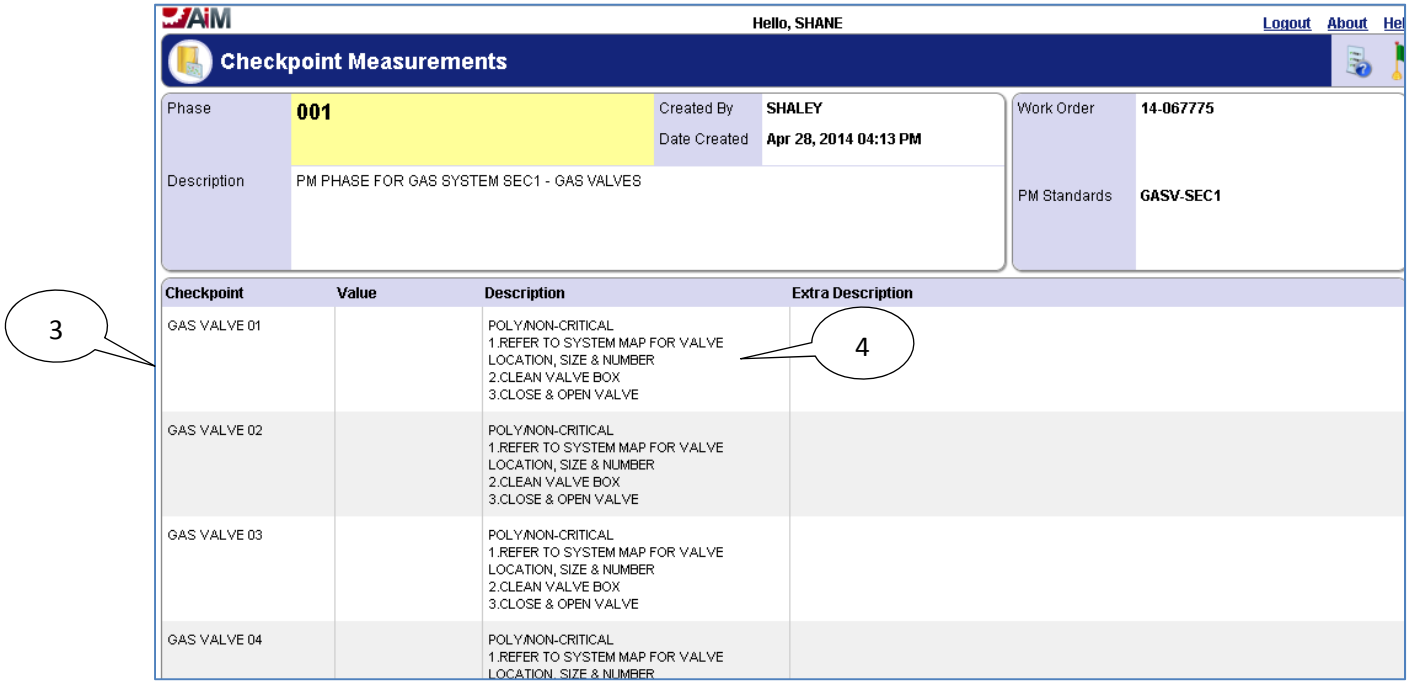


1. The phase on the work order for Gas Valves located in section GAS SYSTEM SEC1 has asset GASV-SEC1 assigned to it which represents all of the valves for section GAS SYSTEM SEC1.

The individual gas valves are tracked in the *PM Standard Checkpoint Measurements* for the phase:

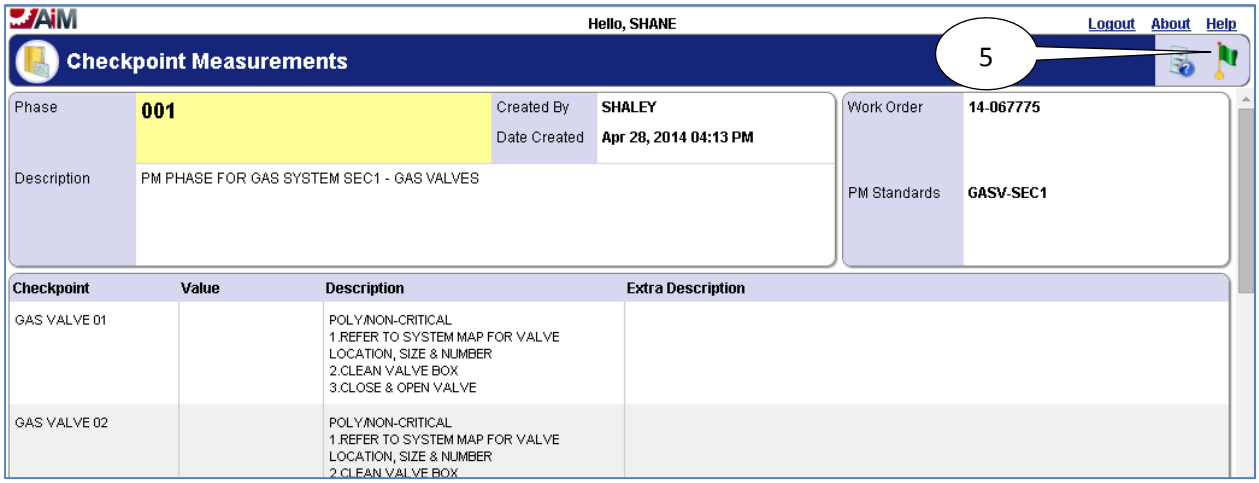


2. Select “Checkpoint Measurements” from the “View” menu.

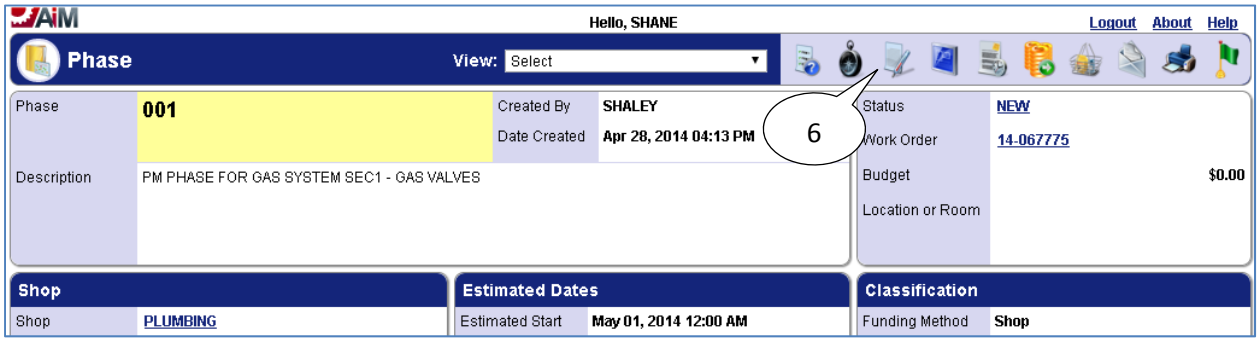


3. The individual valves are shown here as *Checkpoints*.
4. The “Description” field specifies the type of valve (Poly or Steel), if it is critical, and a shortened version of the steps to perform PM on the valve.

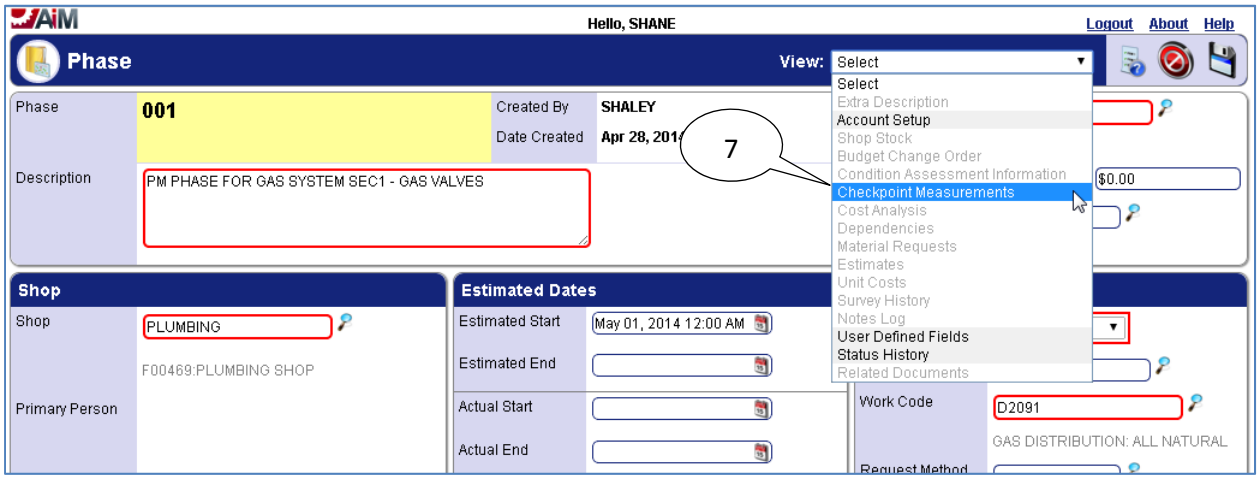
The phase has to be put into edit mode in order to edit the *PM Checkpoint Measurements*:



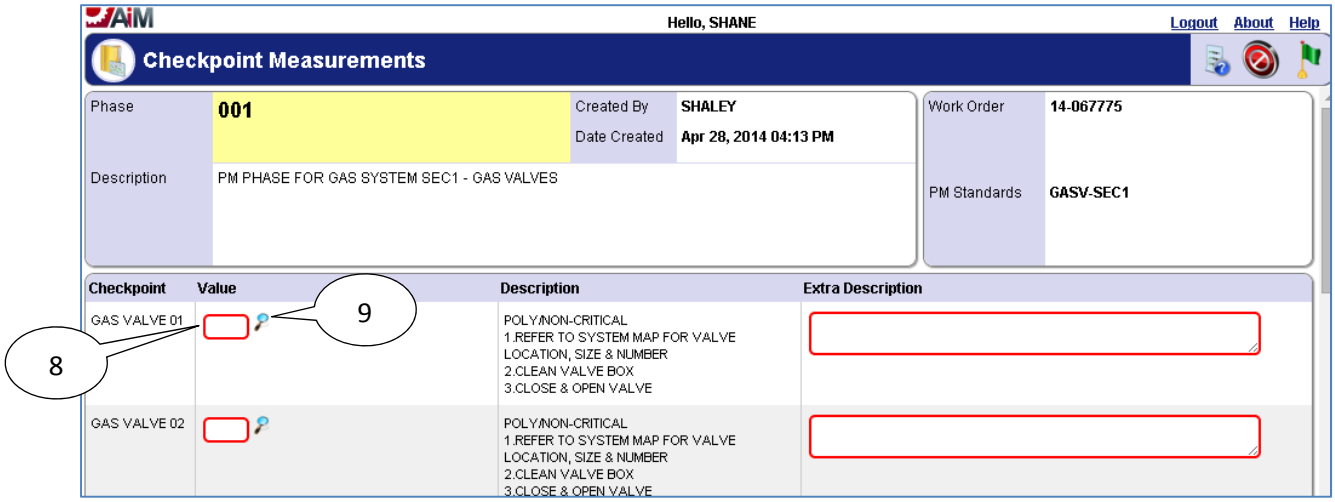
5. Select the **done** icon to navigate back to the phase.



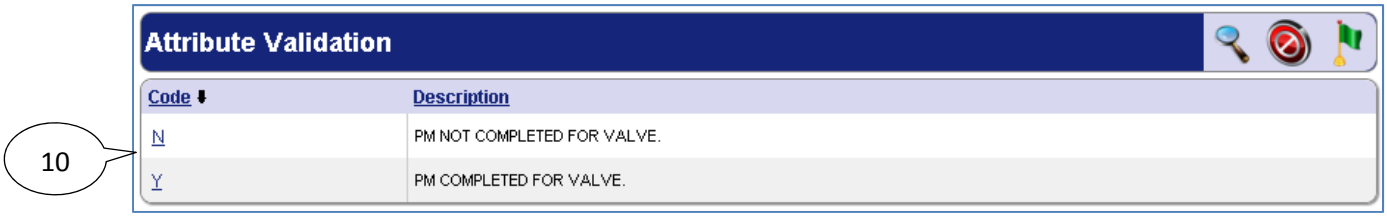
6. Select the **edit** icon.



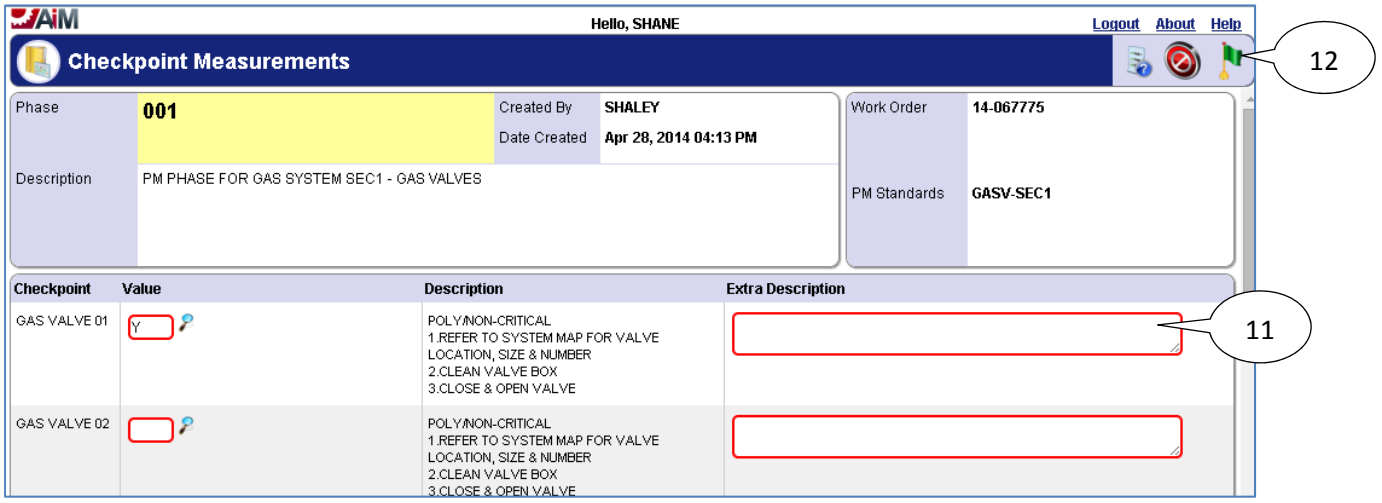
7. Select "*Checkpoint Measurements*" from the "*View*" menu.



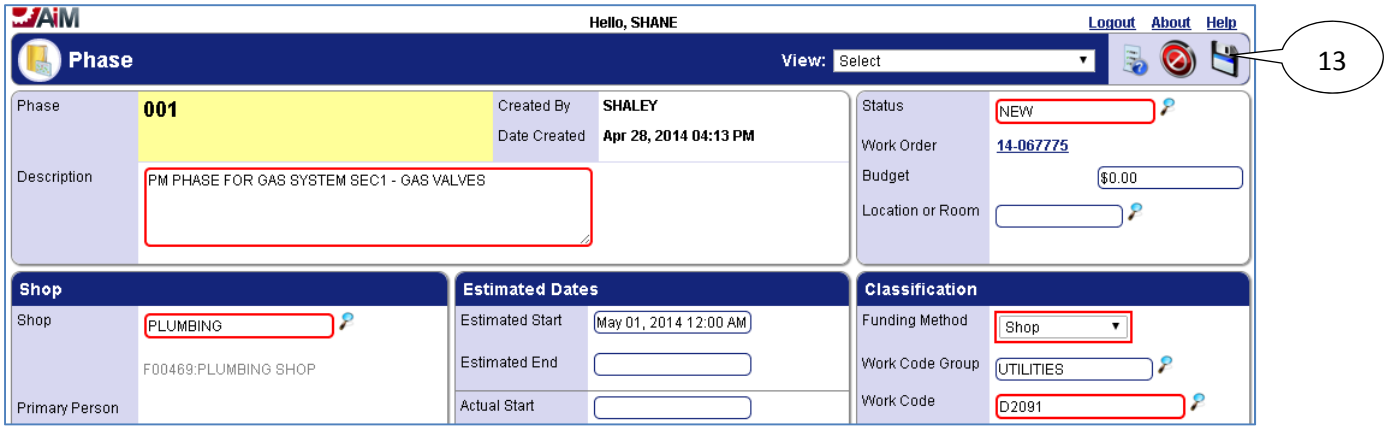
8. Enter "*Value*" for *Checkpoint Measurement*.
9. If **search** icon is present then select the **search** icon to view valid options for the "*Value*" field.



10. After selecting the **search** icon, select a **Code** from the pop up window for the **Value**.



11. Enter a Description if something needs to be noted about the valve.
12. Select the **done** icon to navigate back to the phase.



13. Select the **save** icon to save the Checkpoint changes and exit edit mode.

List of Checkpoints from PM Standards

Since Valves are tracked as checkpoints, and there are over a hundred valves only a portion of the *Checkpoints* for gas valves in GAS SYSTEM SEC1 are shown below:

Checkpoint	Description	Measurement
GAS VALVE 01	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	Yes
GAS VALVE 02	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	Yes
GAS VALVE 03	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	Yes
GAS VALVE 04	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	Yes
GAS VALVE 05	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	Yes
GAS VALVE 06	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	Yes
GAS VALVE 07	STEEL/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE, PERFORM STEPS 4-6 IF NEEDED 4.GREASE VALVE 5.EXERCISE VALVE 6.REPEAT STEPS 4 & 5	Yes
GAS VALVE 08	STEEL/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE, PERFORM STEPS 4-6 IF NEEDED 4.GREASE VALVE 5.EXERCISE VALVE 6.REPEAT STEPS 4 & 6	Yes
GAS VALVE 09	STEEL/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE, PERFORM STEPS 4-6 IF NEEDED 4.GREASE VALVE 5.EXERCISE VALVE 6.REPEAT STEPS 4 & 7	Yes
GAS VALVE 10	STEEL/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE, PERFORM STEPS 4-6 IF NEEDED 4.GREASE VALVE 5.EXERCISE VALVE 6.REPEAT STEPS 4 & 8	Yes

The *Checkpoint Measurements* for gas valves are replacing the following form:

New Mexico State University

Gas Valve Maintenance Record

Date:_____ **Qualified Technician(s):**_____

Valve Number:_____ **Valve Location:**_____

Valve Purpose:_____

Maintenance Performed:_____

_____

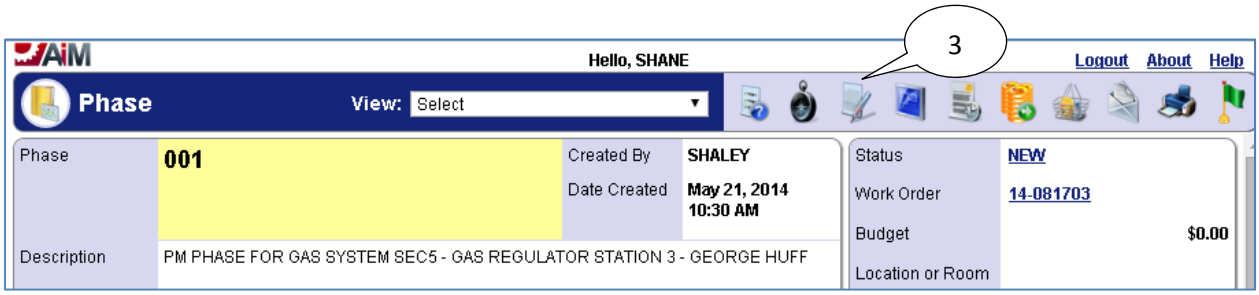
Maintenance Date	Next Maintenance Date	Remarks

Gas Regulator Stations

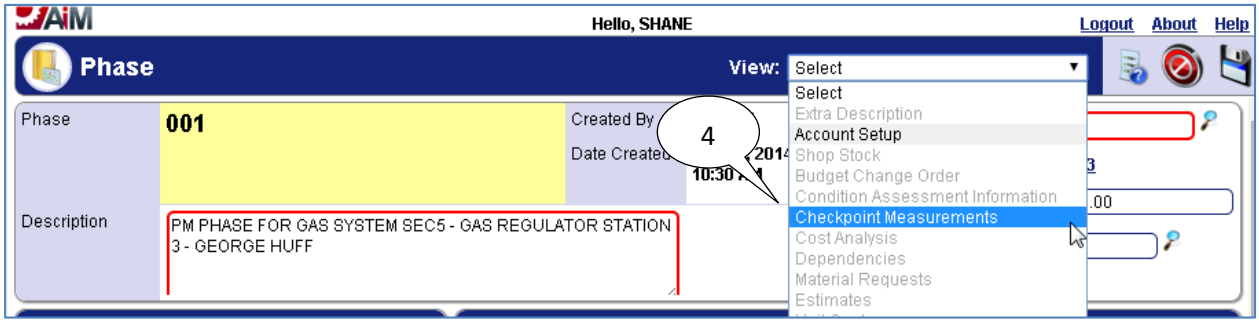
Preventive Maintenance for gas regulator stations is performed annually. The Preventive Maintenance work orders for gas regulator stations will be generated on May 1st of every year. Gas Regulator Stations have *Checkpoints* which detail how to complete the preventive maintenance as well as *Checkpoint Measurements* to record necessary values when completing preventive maintenance.

Viewing/Completing PM Standards Checkpoints

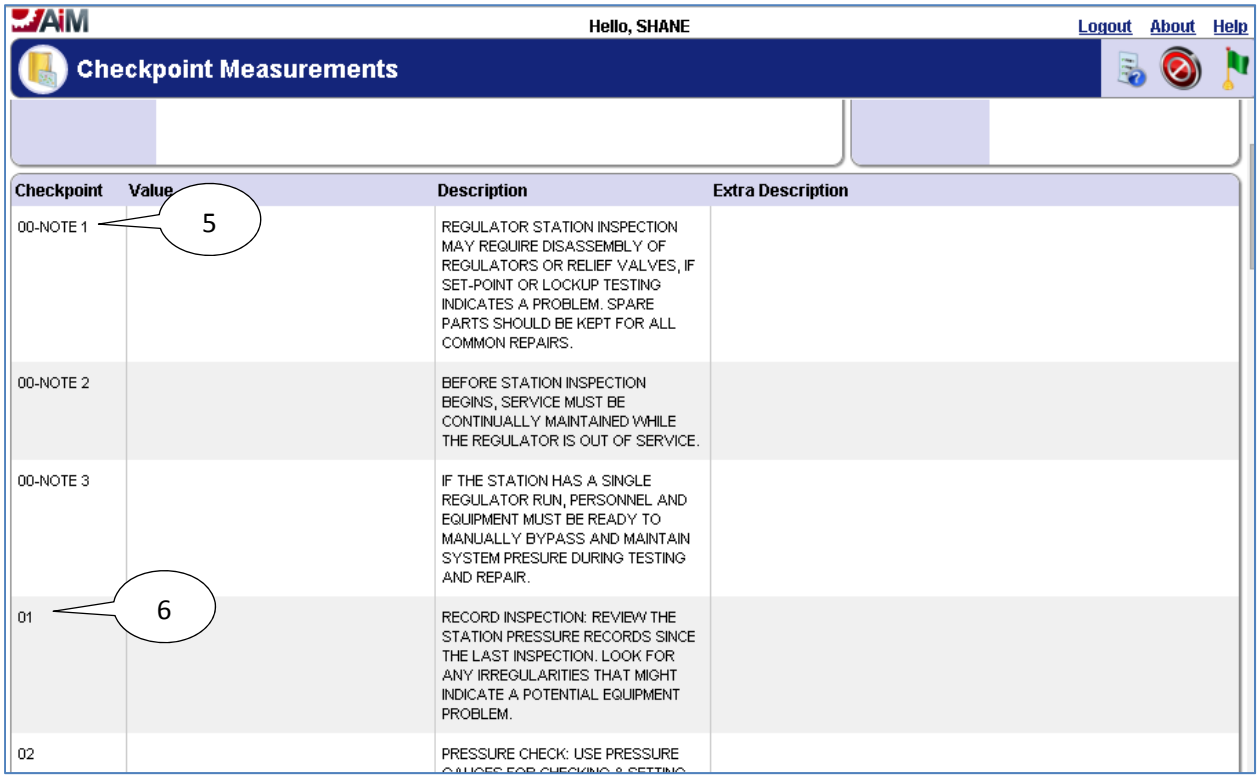
1. Navigate to the *Work Order* for the Gas Regulator Station.
2. Select the *Phase* from the *Work Order*.



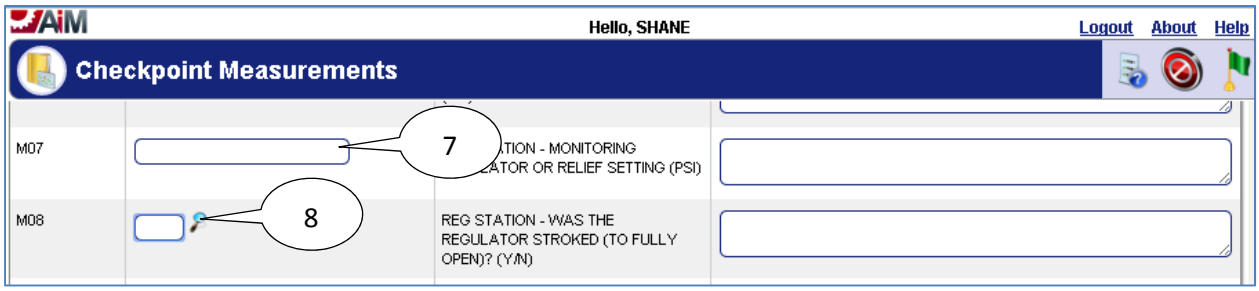
3. Select the **edit** icon.



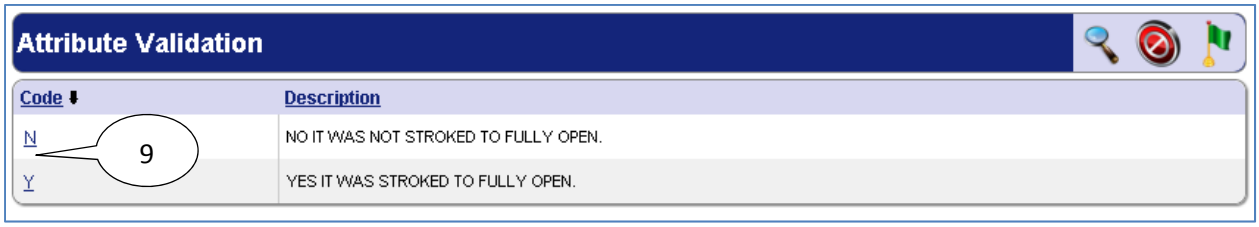
4. Select "**Checkpoint Measurements**" from the **View** menu.



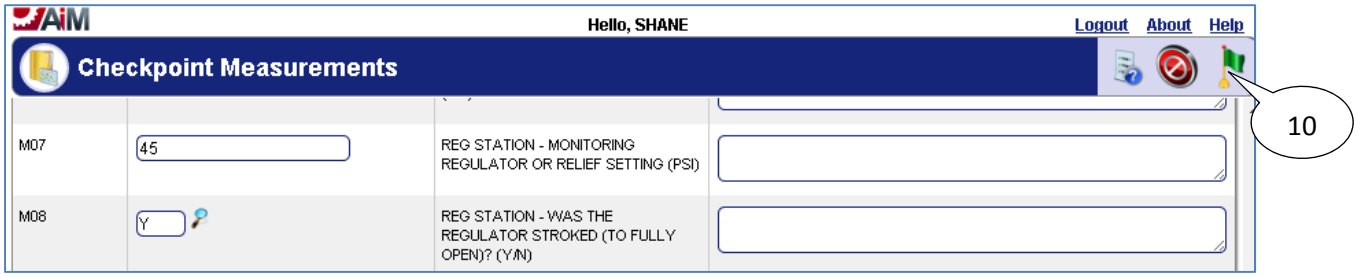
5. **Notes** need to be read and followed before starting other **Checkpoints**.
6. Numbered **Checkpoints** provide the steps in the **Description** for completing the preventive maintenance for the regulator station.



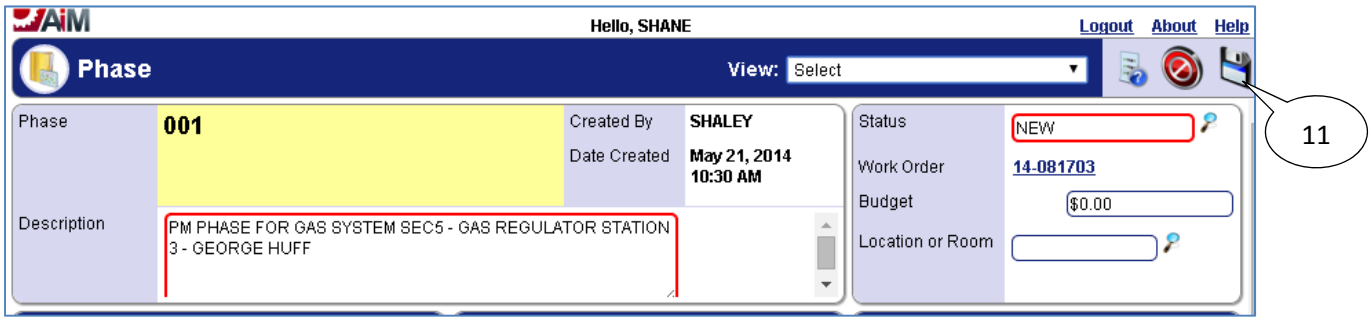
7. Enter value for **Checkpoint Measurement**.
8. If **search** icon is present, the icon may be selected to view available values, or the value can be entered directly into text box if options are already known.



9. Select desired **Code** for the **Checkpoint Measurement Value**.



10. Select the **done** icon once values have been entered for **Checkpoint Measurements**.



11. Select the **save** icon.

List of Checkpoints from PM Standards

The full list of *Checkpoints* for gas regulator stations is below (anything with a **Measurement** set to "No" is for reference only, anything with a **Measurement** set to "Yes" requires a value to be recorded for that *Checkpoint*):

Checkpoint	Description	Measurement
00-NOTE 1	REGULATOR STATION INSPECTION MAY REQUIRE DISASSEMBLY OF REGULATORS OR RELIEF VALVES, IF SET-POINT OR LOCKUP TESTING INDICATES A PROBLEM. SPARE PARTS SHOULD BE KEPT FOR ALL COMMON REPAIRS.	No
00-NOTE 2	BEFORE STATION INSPECTION BEGINS, SERVICE MUST BE CONTINUALLY MAINTAINED WHILE THE REGULATOR IS OUT OF SERVICE.	No
00-NOTE 3	IF THE STATION HAS A SINGLE REGULATOR RUN, PERSONNEL AND EQUIPMENT MUST BE READY TO MANUALLY BYPASS AND MAINTAIN SYSTEM PRESURE DURING TESTING AND REPAIR.	No
1	RECORD INSPECTION: REVIEW THE STATION PRESSURE RECORDS SINCE THE LAST INSPECTION. LOOK FOR ANY IRREGULARITIES THAT MIGHT INDICATE A POTENTIAL EQUIPMENT PROBLEM.	No
2	PRESSURE CHECK: USE PRESSURE GAUGES FOR CHECKING & SETTING STATION PRESSURES. THE GAUGES SHOULD BE SIZED SO THAT THE MAXIMUM SCALE IS NO GREATER THAN TWICE THE PRESSURE BEING TESTED.	No
03A	LOCK-UP TEST: THIS TEST IS USED TO DETERMINE A REGULATORS ABILITY TO PROVIDE A 100% SHUT-OFF TO PREVENT STATION OUTLET PRESSURE FROM INCREASING ABOVE REGULATOR SET POINT. WITH THE REGULATOR IN THE CLOSED POSITION, CLOSE THE DOWNSTREAM ISOLATION VALVE.	No
03B	OBSERVE IF A PRESSURE BUILD UP OCCURS. IF THE PRESSURE REMAINS CONSTANT, THE TEST INDICATES THE REGULATOR IS OPERATING PROPERLY.	No
03C	IF THE PRESSURE BEGINS TO BUILD UP, IT MEANS THERE ARE PROBLEMS AND THE REGULATOR MUST BE DISASSEMBLED, REPAIRED, REASSEMBLED, AND THE LOCK-UP TEST PERFORMED AGAIN TO ASSURE THE MALFUNCTION HAS BEEN ELIMINATED.	No
04A	REGULATOR OPERATION TEST: OPERATE THE REGULATOR SO THAT THE INNER VALVE IS STROKED FROM CLOSED TO THE FULL OPEN POSITION. PAY ATTENTION TO REGULATORS WHERE THE VALVE TRAVEL CAN BE CHANGED BY ADJUSTMENT.	No
04B	DETERMINE BY ACCURATE MEASUREMENT IF THE VALVE TRAVEL IS CORRECT FOR THE EXISTING STATION DESIGN AND FOR THE ASSOCIATED OVERPRESSURE PROTECTION EQUIPMENT.	No
05A	RELIEF VALVE INSPECTION: CHECK PRESSURE RECORDS SINCE THE LAST INSPECTION FOR ANY INDICATION OF EQUIPMENT PROBLEMS. OPERATE THE RELIEF IN A MANNER THAT WILL STROKE THE MAIN VALVE & ALSO THE PILOT.	No
05B	MAKE SURE THE RELIEF SET POINT IS CORRECT & THAT IT WILL PREVENT SYSTEM PRESSURE FROM EXCEEDING MAOP PLUS ALLOWED BUILD-UP.	No
06A	RETURNING SYSTEM TO NORMAL OPERATION: BEGINNING WITH THE REGULATOR INLET & OUTLET VALVES ARE IN THE CLOSED POSITION & NO PRESSURE IN THE PIPING. OPEN REGULATOR CONTROL LINE VALVES.	No
06B	SLOWLY OPEN THE REGULATOR INLET VALVE & MONITOR THE PRESSURE GAUGE TO CHECK FOR LOCK-UP. WHEN THE PRESSURE IS STABILIZED AT NORMAL LOCK-UP PRESSURE, SLOWLY OPEN THE DOWN-STREAM REGULATOR OUTLET VALVE.	No
06C	ADJUST REGULATOR SET PRESSURE TO DESIRED LEVEL. RECORD REGULATOR SET PRESSURE & MAINTENANCE DATE	No
07A	OTHER INSPECTION REQUIREMENTS: DURING THE INSPECTION, CHECK TO MAKE SURE: THE STATION IS PROTECTED ADEQUATELY FROM UNAUTHORIZED ENTRY, TAMPERING OR DAMAGED FROM HAZARDS.	No

07B	ALL CRITICAL VALVES ARE OPERATED AND (IF NEEDED) LUBRICATED. ALL REQUIRED WARNING SIGNS ARE IN PLACE. ALL ABOVE- GROUND PIPING IS ADEQUATELY PROTECTED FROM ATMOSPHERIC CORROSION.	No
07C	ALL VENTS ARE PROTECTED AND OR CLEAR FROM MOISTURE/ DEBRIS AND WILL PROVIDE UNRESTRICTED VENTING TO A SAFE AREA.	No
M01	REG STATION - PRESSURE RATING: INLET OPERATING PRESSURE (PSI)	Yes
M02	REG STATION - PREASSURE RATING: OUTLET OPERATING PRESSURE (PSI)	Yes
M03	REG STATION - M.A.O.P. OF SYSTEM TO WHICH IT IS CONNECTED (PSI)	Yes
M04	REG STATION - OPERATING PRESSURE: INLET OPERATING PRESSURE (PSI)	Yes
M05	REG STATION - OPERATING PRESSURE: OUTLET OPERATING PRESSURE	Yes
M06	REG STATION - LOCK UP PRESSURE (PSI)	Yes
M07	REG STATION - MONITORING REGULATOR OR RELIEF SETTING (PSI)	Yes
M08	REG STATION - WAS THE REGULATOR STROKED (TO FULLY OPEN)? (Y/N)	Yes
M09	REG STATION - ATMOSPHERIC CORROSION (Y/N)	Yes
M10	REG STATION - SUPPORTED PIPING RIGID (Y/N)	Yes
M11	REG STATION - STATION GUARDS (Y/N)	Yes
M12	REG STATION - AREA CLEAN OF WEEDS & GRASS (Y/N)	Yes
M13	REG STATION - CAPACITY AT INLET PRESSURE (PSI)	Yes
M14	REG STATION - CAPACITY AT OUTLET PRESSURE (PSI)	Yes
M15	REG STATION - CORRECTIONS MADE	Yes
M16	REG STATION - REMARKS	Yes
M17	REL VALVE - TYPE OF LOADINGS - SPRING (PSI)	Yes
M18	REL VALVE - TYPE OF LOADINGS - PILOT (PSI)	Yes
M19	REL VALVE - TYPE OF LOADINGS - OTHER (PSI)	Yes
M20	REL VALVE - TYPE OF LOADINGS - RANGE (PSI)	Yes
M21	REL VALVE - PRESSURE SETTING (PSI)	Yes
M22	REL VALVE - CONNECTION PIPE SIZE (INCHES)	Yes
M23	REL VALVE - VENT STACK SIZE (INCHES)	Yes
M24	REL VALVE - CAPACITY (PSI)	Yes
M25	REL VALVE - CONNECTION OF RELIEF VALVE	Yes
M26	REL VALVE - CONNECTION OF RECORDING GAUGE	Yes
M27	REL VALVE - CONNECTION OF SUPPORTING PIPING	Yes
M28	REL VALVE - CONNECTION OF STATION GUARD	Yes
M29	REL VALVE - CONNECTION OF GENERAL AREA	Yes
M30	REL VALVE - REPAIRS REQUIRED	Yes
M31	REL VALVE - REPAIRS MADE	Yes
M32	REL VALVE - REMARKS	Yes

Measurements M01 – M32 were created to take the place of the following two page form:

Note: Attr stands for Attribute. Anything labeled "Attr" means it is being stored as an Attribute in AiM for the Asset. Anything that starts with an "M" such as "M01" is a measurement. Anything identified as a measurement will be a checkpoint measurement in AiM when completing PM for the Asset.

Regulator Inspection Report

Location Stored in Asset Management Profile Date Stored in AiM when PM Work Order Completed

Name of Station Stored in Asset Management Profile Orifice Size Attr: REG STATION ORIFICE SIZE

Make Attr: REG STATION MAKE Type Attr: REG STATION TYPE Size Attr: REG STATION SIZE

Pressure Rating: Inlet M01 Outlet M02

M.A.O.P. of System to Which it is Connected M03

Operating Pressure: Inlet M04 Outlet M05

Lock up Pressure M06

Monitoring Regulator or Relief Setting M07

Was the Regulator Stroked (to fully open)? Yes M08 No M08

General Condition of Station

Atmospheric Corrosion:	Yes M09	No M09
Supported Piping Rigid:	Yes M10	No M10
Station Guards:	Yes M11	No M11
Area Clean of Weeds and Grass:	Yes M12	No M12

Capacity at Inlet and Outlet Pressure M13 / M14

Corrections Made M15

Remarks M16

Note: Attr stands for Attribute. Anything labeled "Attr" means it is being stored as an Attribute in AiM for the Asset. Anything that starts with an "M" such as "M01" is a measurement. Anything identified as a measurement will be a checkpoint measurement in AiM when completing PM for the Asset.

RELIEF VALVE INSPECTION REPORT

Owner Always NMSU (no need to notate in AiM) Date Stored in AiM when PM Work Order Completed

Location Stored in Asset Management Profile Name of Station Stored in Asset Management Profile

Make Attr: REL VALVE MAKE

Type Attr: REL VALVE TYPE

Size Attr: REL VALVE SIZE Orifice Size Attr: REL VALVE ORIFICE SIZE

Type of Loadings

Spring M17 Pilot M18 Other M19

Range M20

Pressure Setting M21

Connection Pipe Size M22

Vent Stack Size M23

Capacity M24

Connection of:

Relief Valve M25

Recording Gauge M26

Supporting Piping M27

Station Guard M28

General Area M29

Repairs Required M30

Repairs Made M31

Remarks M32

Inspector

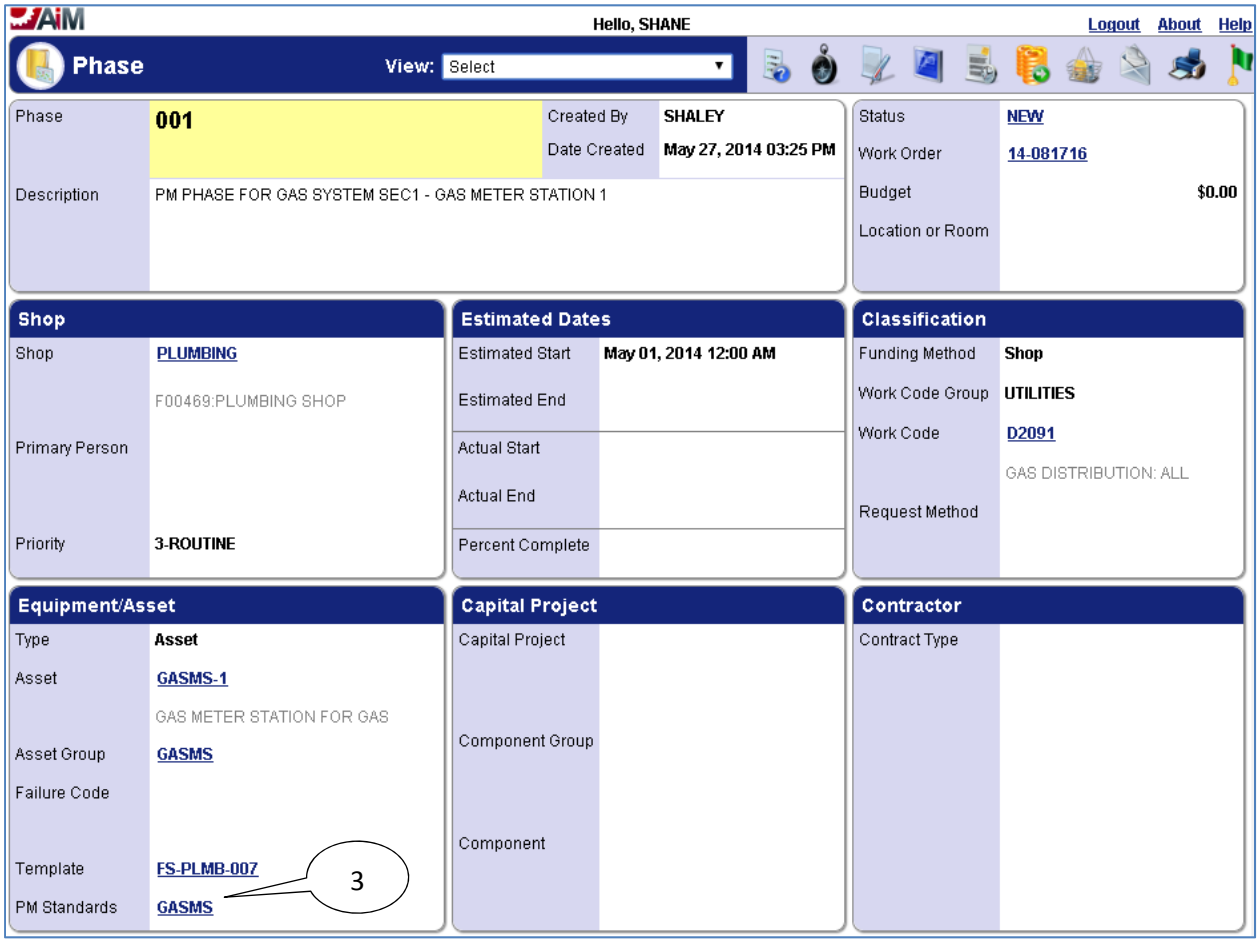
(Signed)

Gas Meter Stations

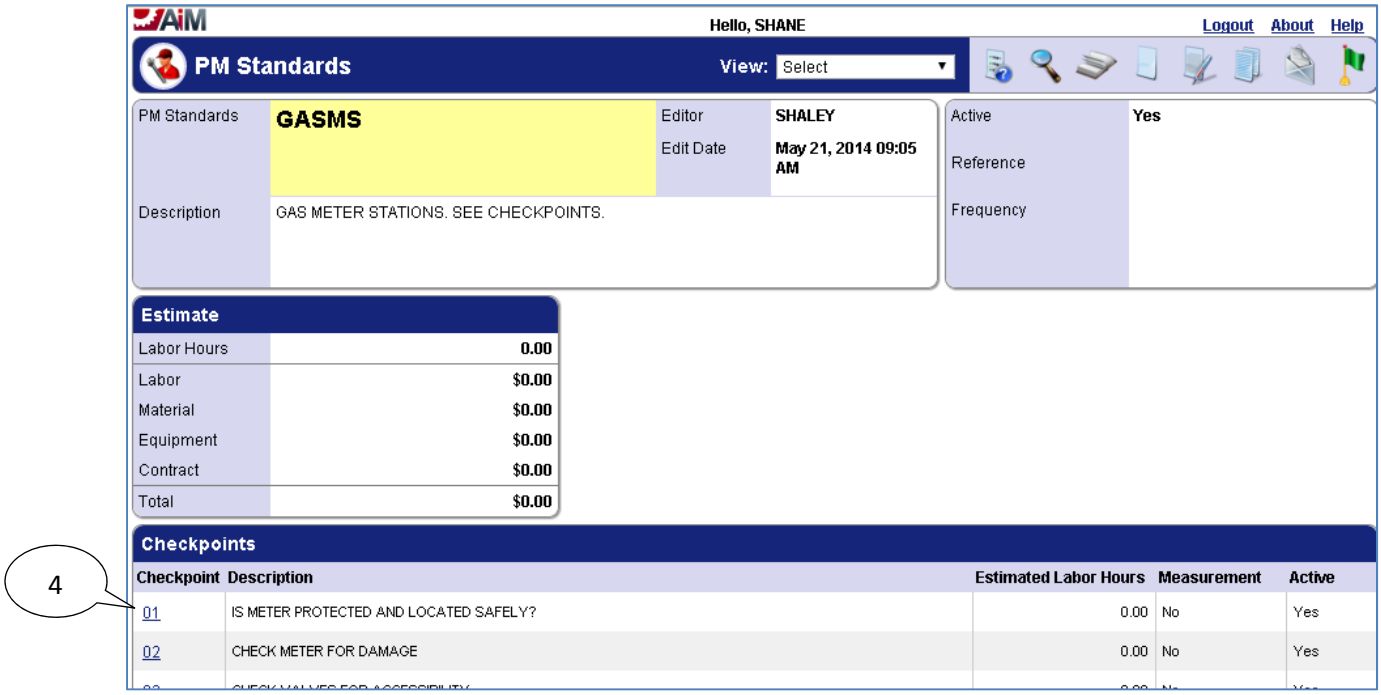
Preventive Maintenance for gas meter stations is performed monthly. The Preventive Maintenance work orders for gas meter stations will be generated on the 1st of every month. Gas Meter Stations have *Checkpoints* which detail how to complete the preventive maintenance.

Viewing PM Standards Checkpoints

1. Navigate to the *Work Order* for the Gas Regulator Station.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.



4. The **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the gas meter station.

List of Checkpoints from PM Standards

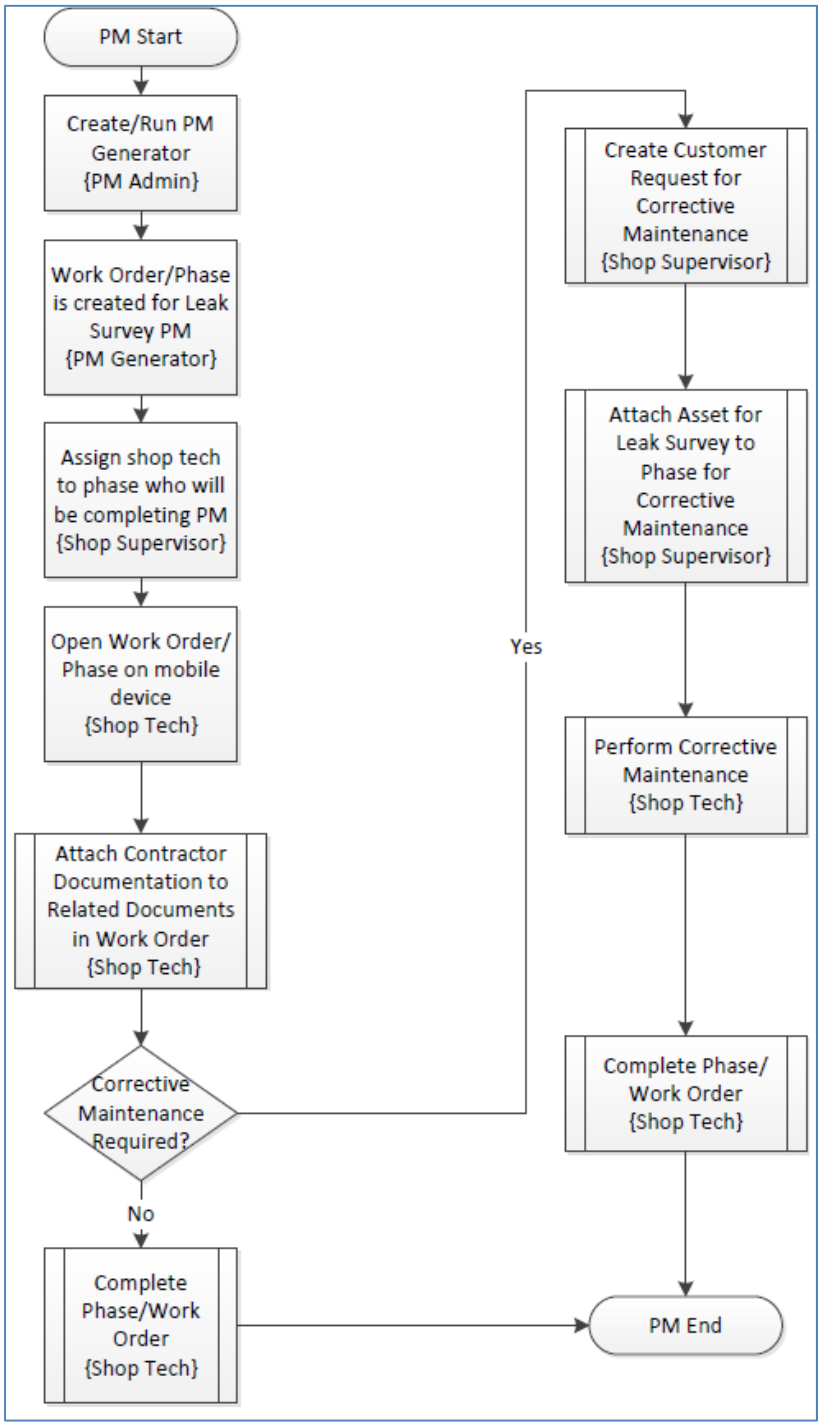
The full list of *Checkpoints* for gas meter stations is below (there are no *Checkpoints* which require values be entered into AiM, and as such all of the **Measurements** are set to "No" for the *Checkpoints* indicating the *Checkpoints* are for reference only):

Checkpoint	Description	Measurement
1	IS METER PROTECTED AND LOCATED SAFELY?	No
2	CHECK METER FOR DAMAGE	No
3	CHECK VALVES FOR ACCESSIBILITY	No
4	MAKE SURE METER IS LEVEL AND SQUARE WITH ATTACHED PIPING	No
5	MAKE SURE PIPING IS NOT BENT OR STRESSED	No
6	CHECK FOR SIGNS OF STRESS WHERE THERE IS UNDERGROUND PLASTIC PIPING	No
7	CHECK VENTS, ARE SCREENS IN PLACE?	No
8	CHECK FOR RUSTING OR PITTING	No
9	CHECK PAINT OR OTHER COATING	No
10	DOCUMENT AND REPORT UNSAFE CONDITIONS.	No

Gas Piping: Atmospheric Corrosion

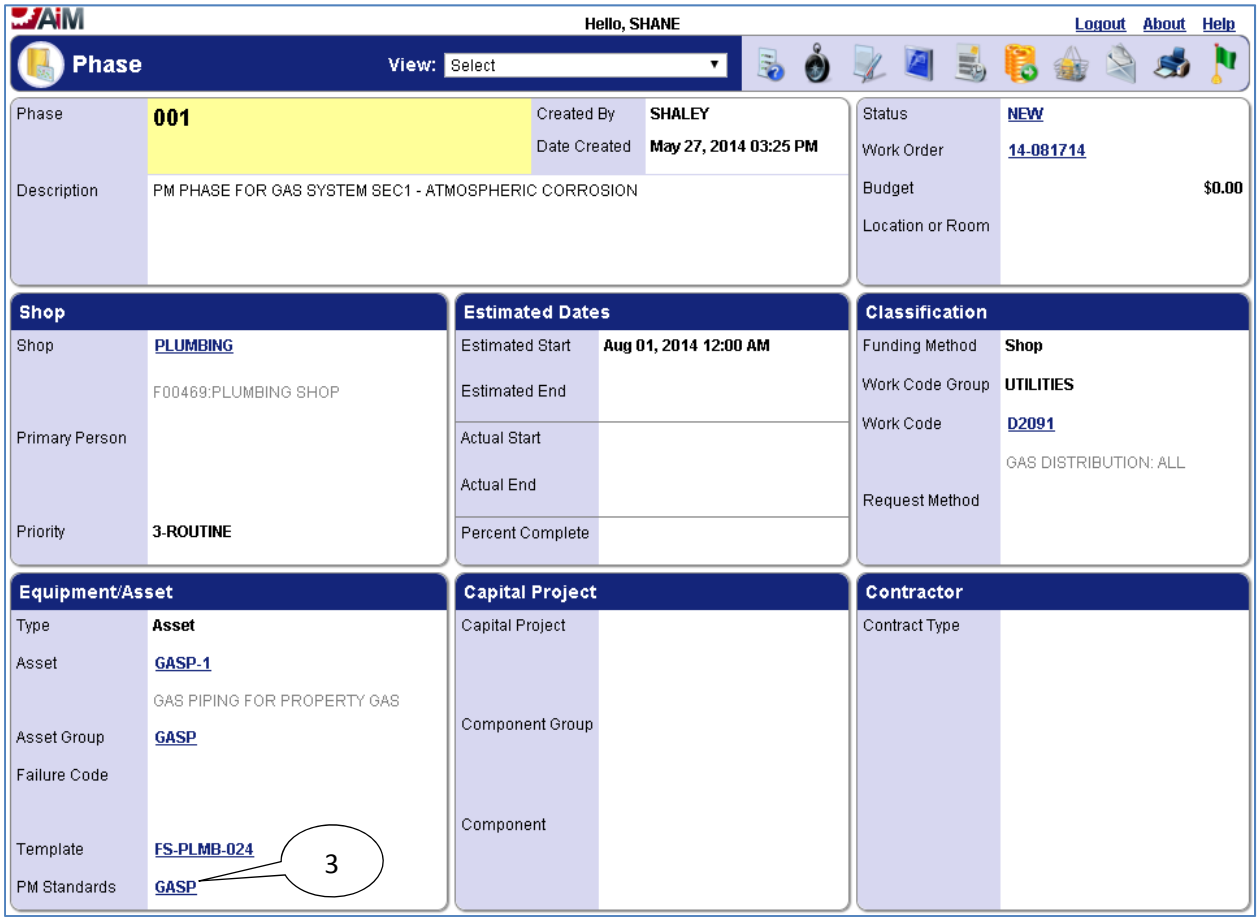
Preventive Maintenance for gas piping involving atmospheric corrosion is performed every 3 years. The Preventive Maintenance work orders for atmospheric corrosion will be generated on the 1st of August. The preventive maintenance for atmospheric corrosion will be completed on two sections of gas piping per year. Gas piping has *Checkpoints* for the atmospheric corrosion preventive maintenance which details how to complete the preventive maintenance.

Process Flow

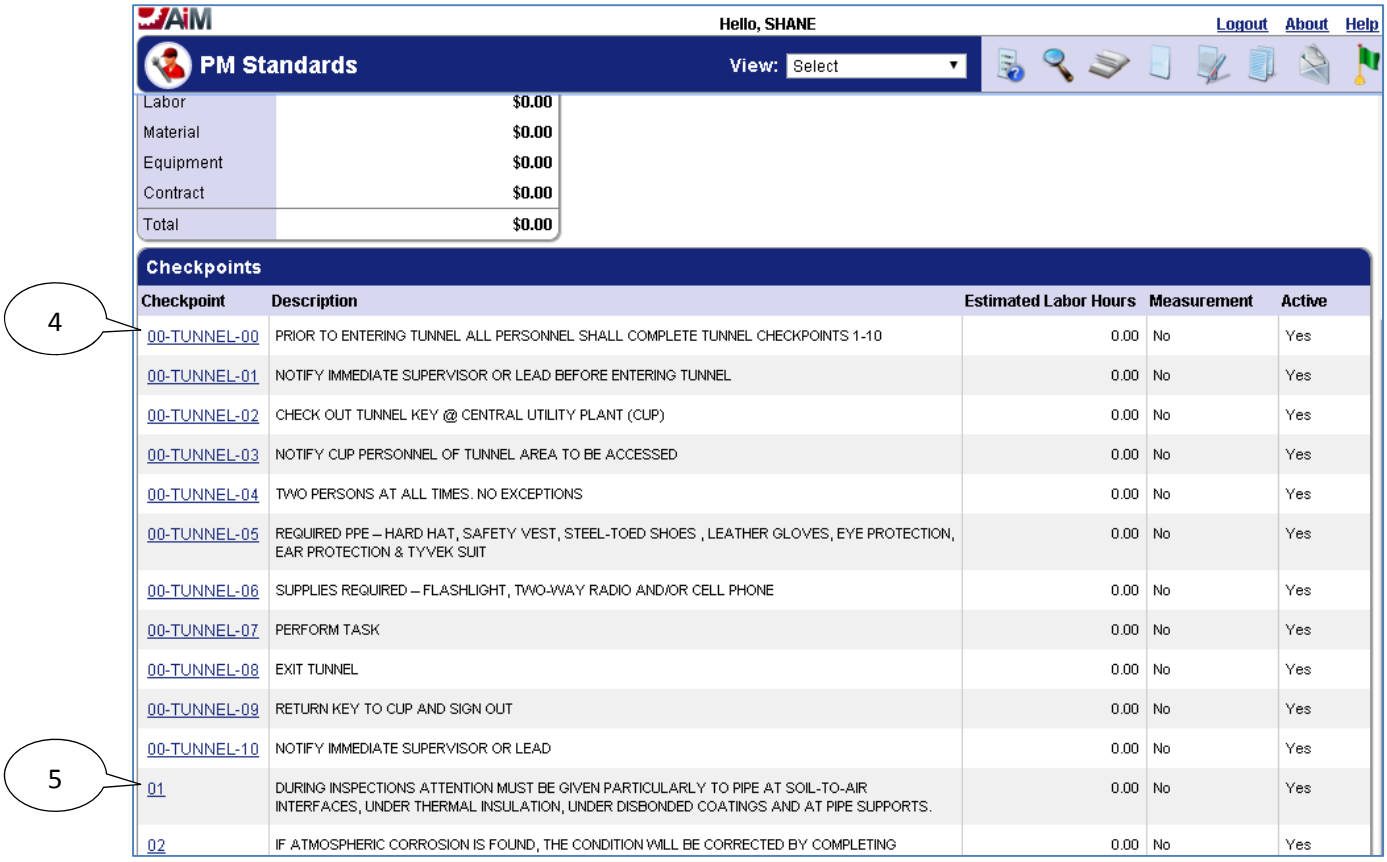


Viewing PM Standards Checkpoints

1. Navigate to the *Work Order* for the Gas Regulator Station.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.



4. Any **Checkpoints** containing "**TUNNEL**" in the name must be followed when performing preventive maintenance in the tunnels.
5. The numbered **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the gas meter station.

Corrective Maintenance

In addition to the steps in the **Completing Corrective Maintenance** section, corrective maintenance for **atmospheric corrosion** requires the completion of the following form which must be attached to the **related documents** of the work order (please see the **Attaching Related Documents** section for attaching related documents):

Atmospheric Corrosion & Continuing Surveillance.docx

NMSU FACILITIES & SERVICES
ATMOSPHERIC CORROSION

Date: _____ 20____

Location: _____

Name of Technician(s): _____

Designation of Line: Transmission: _____ **Distribution:** _____ **Service:** _____

Line Size: _____

Area of Corrosion: Pipe: ____ **Meter Set:** ____ **Fitting:** _____ **Regulator:** _____ **Riser:** _____

Vent: _____ **Other:** _____

Corrective Measures Taken: Painted: _____ **Coated:** _____ **Other:** _____

Type of Paint or Coating Used: _____

CONTINUING SURVEILLANCE

Reported By: _____

Location: _____

Nature of Conditions: _____

Repairs Made: _____

_____

Repairs Completed: _____ / _____ 20_____

Signature of Plumber: _____

List of Checkpoints from PM Standards

The full list of *Checkpoints* for atmospheric corrosion for gas piping is below (there are no *Checkpoints* which require values be entered into AiM, and as such all of the **Measurements** are set to "No" for the *Checkpoints* indicating the *Checkpoints* are for reference only):

Checkpoint	Description	Measurement
00-TUNNEL-00	PRIOR TO ENTERING TUNNEL ALL PERSONNEL SHALL COMPLETE TUNNEL CHECKPOINTS 1-10	No
00-TUNNEL-01	NOTIFY IMMEDIATE SUPERVISOR OR LEAD BEFORE ENTERING TUNNEL	No
00-TUNNEL-02	CHECK OUT TUNNEL KEY @ CENTRAL UTILITY PLANT (CUP)	No
00-TUNNEL-03	NOTIFY CUP PERSONNEL OF TUNNEL AREA TO BE ACCESSED	No
00-TUNNEL-04	TWO PERSONS AT ALL TIMES. NO EXCEPTIONS	No
00-TUNNEL-05	REQUIRED PPE – HARD HAT, SAFETY VEST, STEEL-TOED SHOES , LEATHER GLOVES, EYE PROTECTION, EAR PROTECTION & TYVEK SUIT	No
00-TUNNEL-06	SUPPLIES REQUIRED – FLASHLIGHT, TWO-WAY RADIO AND/OR CELL PHONE	No
00-TUNNEL-07	PERFORM TASK	No
00-TUNNEL-08	EXIT TUNNEL	No
00-TUNNEL-09	RETURN KEY TO CUP AND SIGN OUT	No
00-TUNNEL-10	NOTIFY IMMEDIATE SUPERVISOR OR LEAD	No
1	DURING INSPECTIONS ATTENTION MUST BE GIVEN PARTICULARLY TO PIPE AT SOIL-TO-AIR INTERFACES, UNDER THERMAL INSULATION, UNDER DISBONDED COATINGS AND AT PIPE SUPPORTS.	No
2	IF ATMOSPHERIC CORROSION IS FOUND, THE CONDITION WILL BE CORRECTED BY COMPLETING CHECKPOINTS 3, 4, AND 5:	No
3	USING WIRE BRUSH TO CLEAN PIPE	No
4	PAINT AREA WITH EXTERIOR PAINT (KRYLON)	No
5	RECORD ALL FINDINGS AND CORRECTIVE MEASURES TAKEN	No

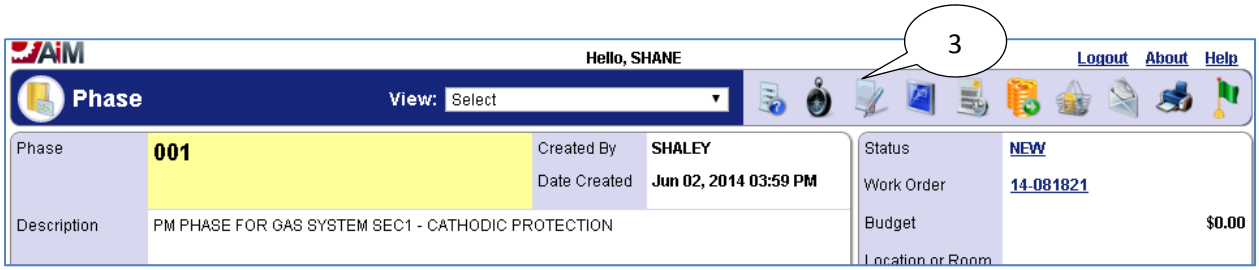
Gas Piping: Cathodic Protection

Preventive Maintenance for gas piping involving cathodic protection is performed annually. The Preventive Maintenance work orders for atmospheric corrosion will be generated on the 1st of November, December, January, February, and March (each section will be done on a different month). Gas piping has *Checkpoints* for the atmospheric corrosion preventive maintenance which details how to complete the preventive maintenance.

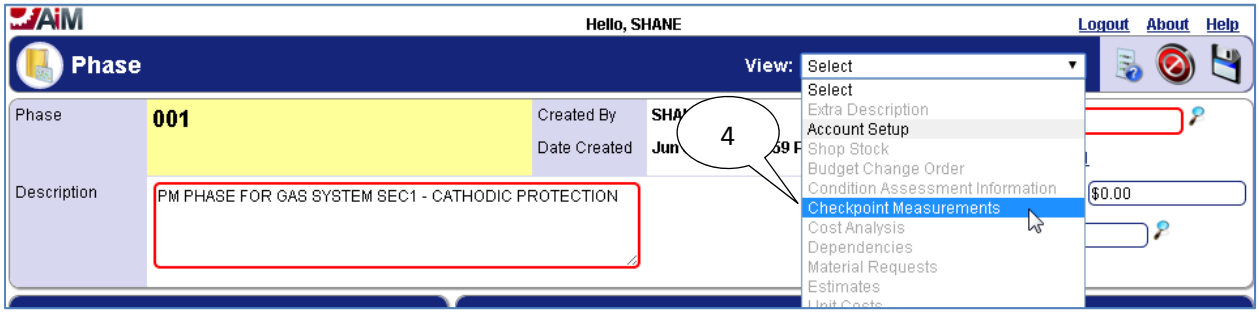
Gas piping has *Checkpoints* for cathodic protection which detail how to complete the preventive maintenance as well as *Checkpoint Measurements* to record pipe to soil readings for steel risers when completing preventive maintenance.

Viewing/Completing PM Standards Checkpoints

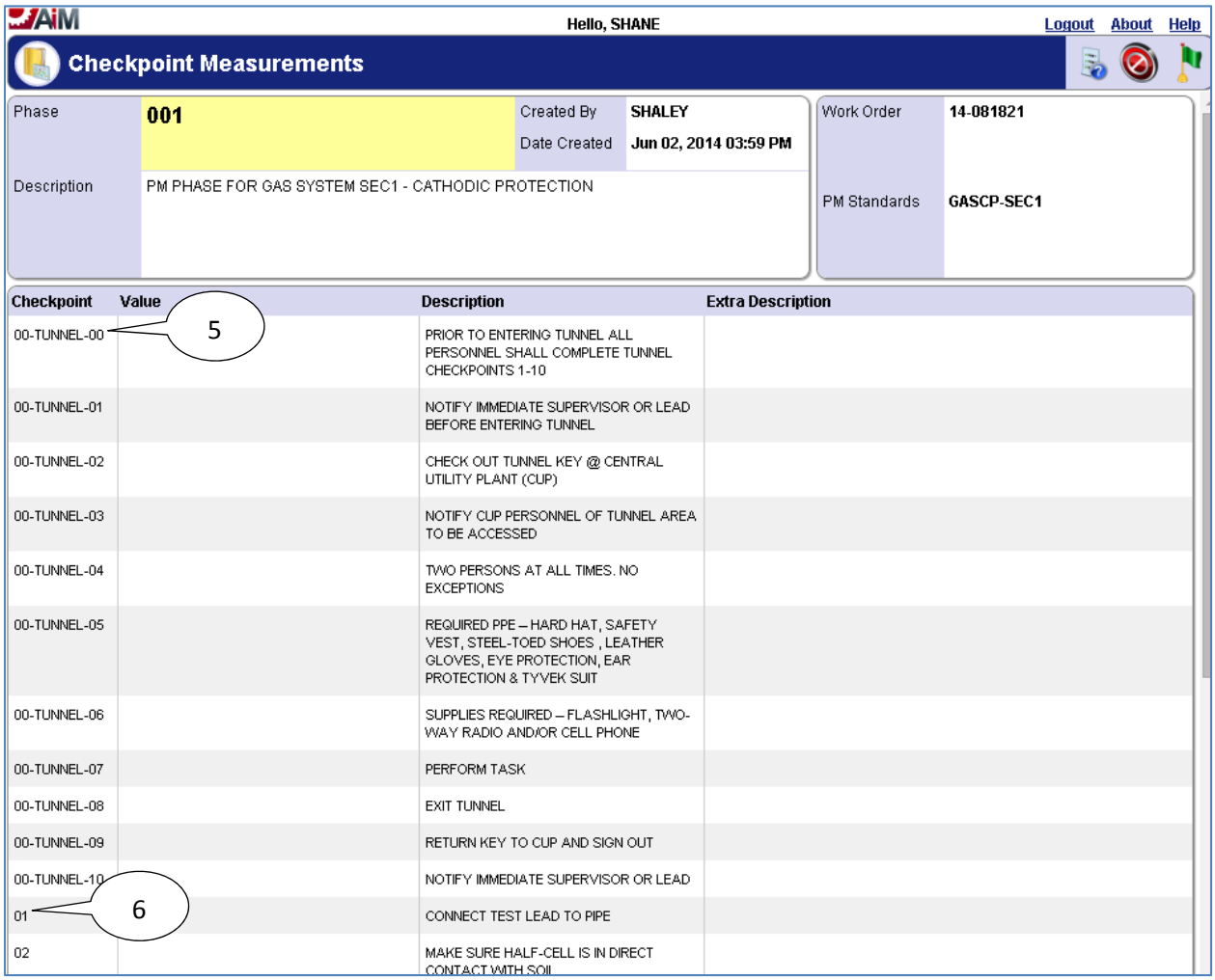
1. Navigate to the *Work Order* for the Gas Regulator Station.
2. Select the *Phase* from the *Work Order*.



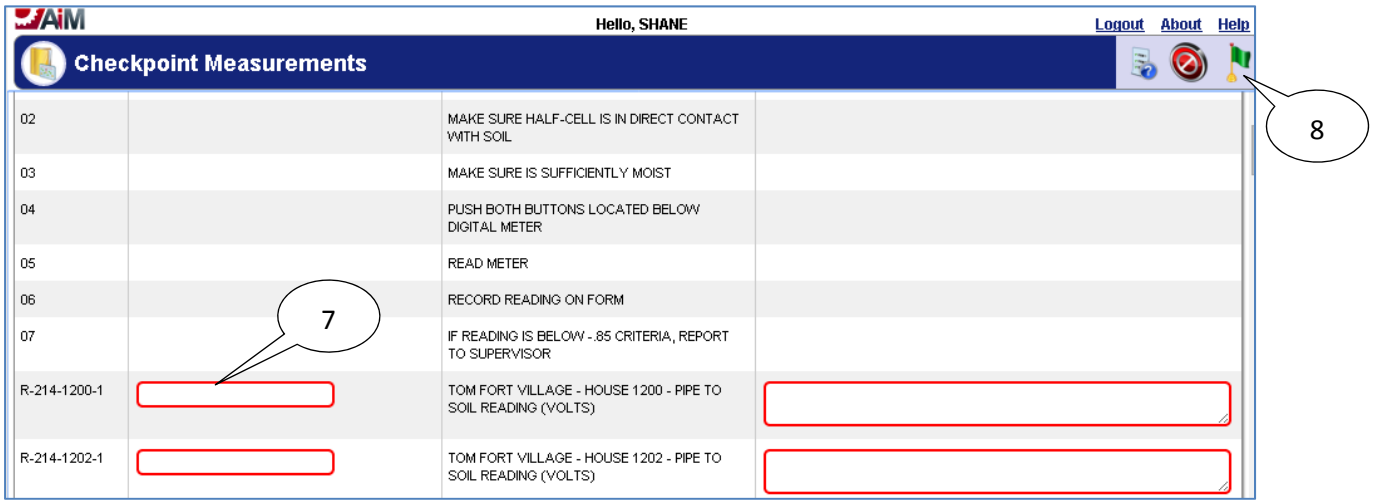
3. Select the **edit**  icon.



4. Select "**Checkpoint Measurements**" from the **View** menu.



5. Any **Checkpoints** containing "**TUNNEL**" in the name must be followed when performing preventive maintenance in the tunnels.
6. The numbered **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the cathodic protection.



7. Enter the pipe to soil reading for each riser.
8. Select the **done** icon once values have been entered for **Checkpoint Measurements**.

9. Select the **save** icon.

List of Checkpoints from PM Standards

The list of *Checkpoints* for cathodic protection for gas piping in GAS SYSTEM SEC1 is below (anything with a **Measurement** set to "No" is for reference only, anything with a **Measurement** set to "Yes" requires a value to be recorded for that *Checkpoint*):

Note: Only 10 Riser Checkpoints (Checkpoints beginning with "R-") such as "R-214-1200-1" are shown as there are too many to show here.

Checkpoint	Description	Measurement	Active
1	CONNECT TEST LEAD TO PIPE	No	Yes
2	MAKE SURE HALF-CELL IS IN DIRECT CONTACT WITH SOIL	No	Yes
3	MAKE SURE IS SUFFICIENTLY MOIST	No	Yes
4	PUSH BOTH BUTTONS LOCATED BELOW DIGITAL METER	No	Yes
5	READ METER	No	Yes
6	RECORD READING ON FORM	No	Yes
7	IF READING IS BELOW -.85 CRITERIA, REPORT TO SUPERVISOR	No	Yes
R-214-1200-1	TOM FORT VILLAGE - HOUSE 1200 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1202-1	TOM FORT VILLAGE - HOUSE 1202 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1204-1	TOM FORT VILLAGE - HOUSE 1204 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1206-1	TOM FORT VILLAGE - HOUSE 1206 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1208-1	TOM FORT VILLAGE - HOUSE 1208 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1300-1	TOM FORT VILLAGE - HOUSE 1300 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1301-1	TOM FORT VILLAGE - HOUSE 1301 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1302-1	TOM FORT VILLAGE - HOUSE 1302 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1303-1	TOM FORT VILLAGE - HOUSE 1303 - PIPE TO SOIL READING (VOLTS)	Yes	Yes
R-214-1304-1	TOM FORT VILLAGE - HOUSE 1304 - PIPE TO SOIL READING (VOLTS)	Yes	Yes

Pipe to soil readings are being tracked in the *Checkpoint Measurements* instead of the following form:

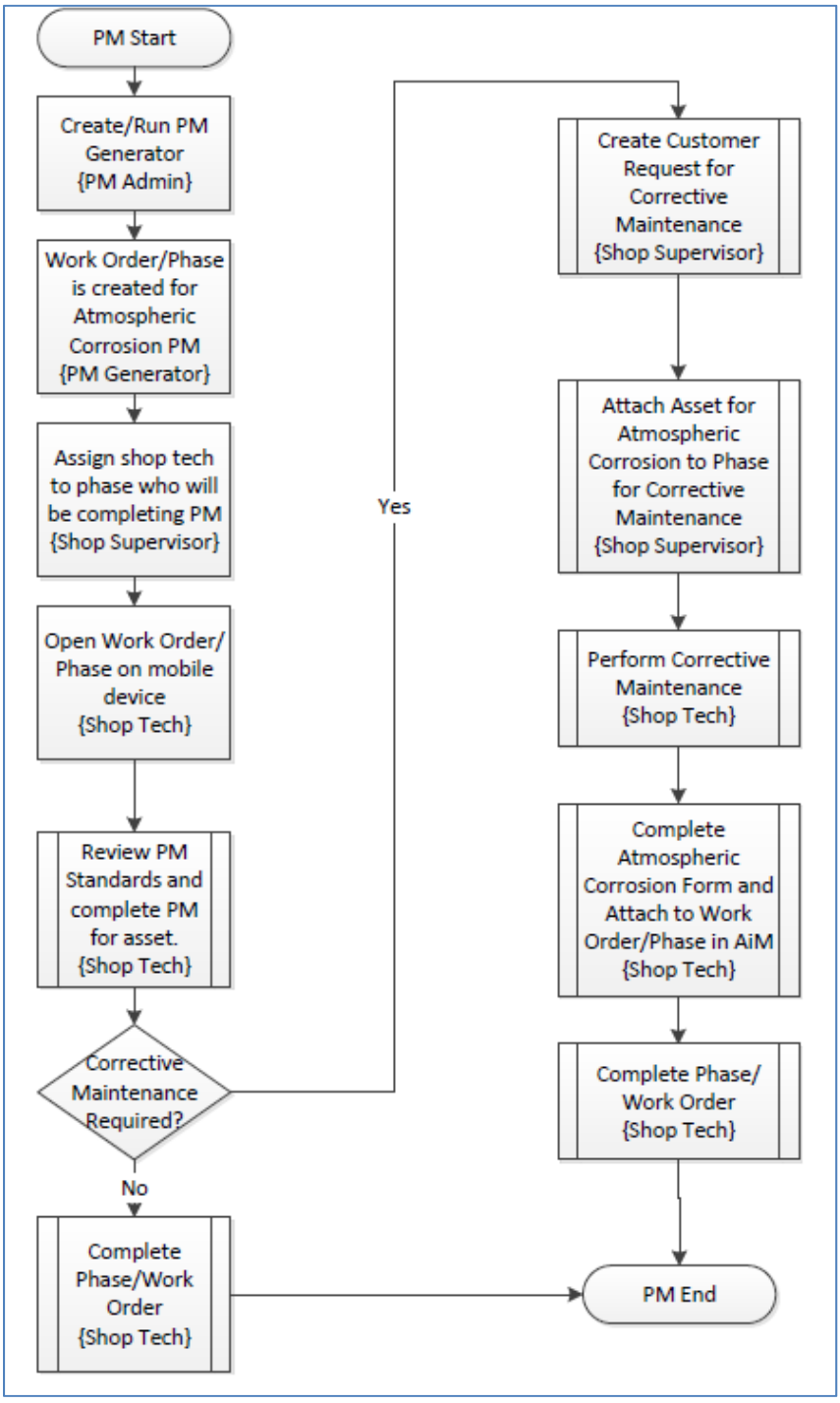
Cathodic Protection Readings

Location	Pipe to Soil Reading	Remarks	Date	Technician(s)

Gas Leak Survey

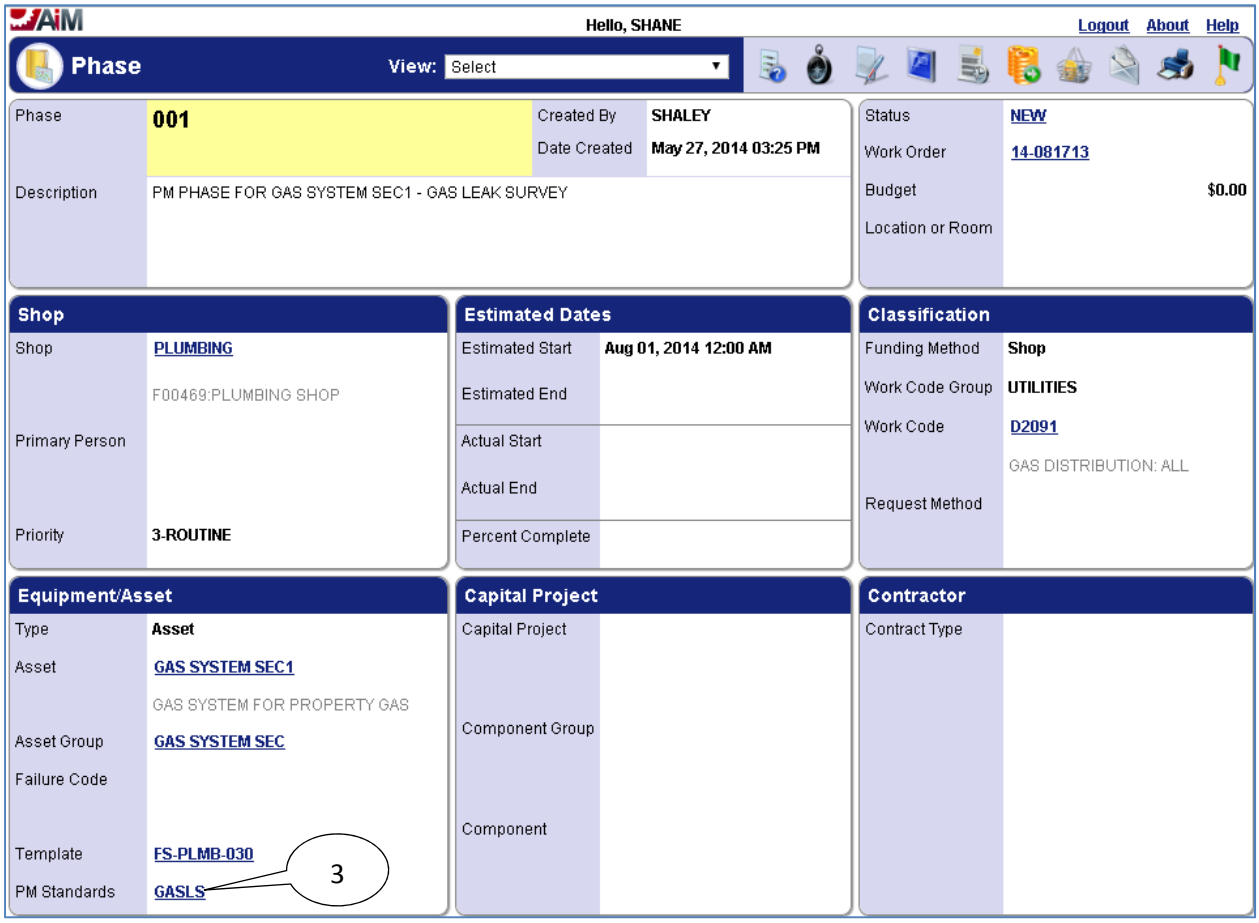
Gas Leak Surveys are preventive maintenance which are completed every 5 years. The Preventive Maintenance work orders for Gas Leak Surveys will be generated on the 1st of August. Two Gas System Sections will have the Gas Leak Survey completed in a single year (if there any Leak Surveys due). Gas Leak Surveys have *Checkpoints* which detail how to complete the preventive maintenance.

Process Flow

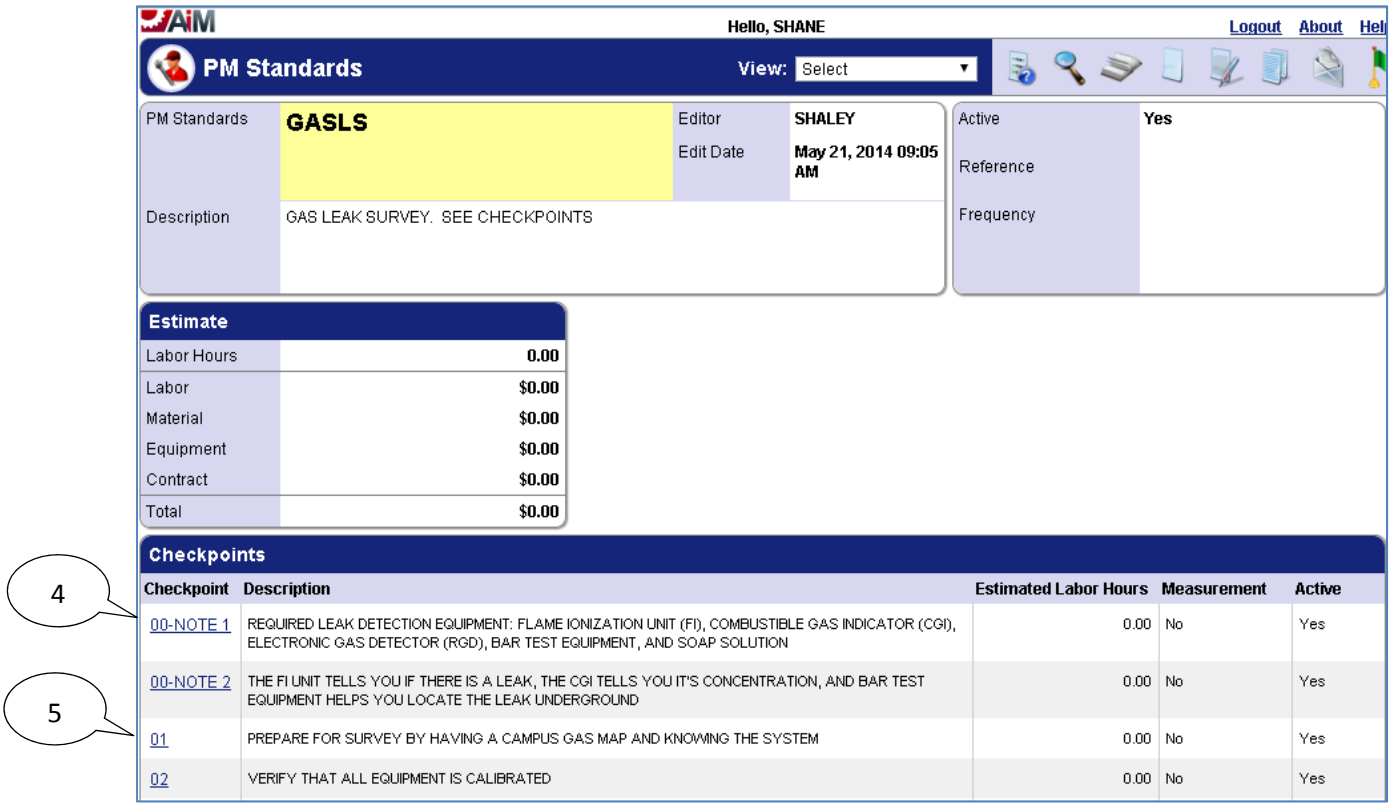


Viewing PM Standards Checkpoints

1. Navigate to the *Work Order* for the Gas Regulator Station.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.



4. **Notes** need to be read and followed before starting other **Checkpoints**.
5. The **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the gas meter station.

Corrective Maintenance

In addition to the steps in the **Completing Corrective Maintenance** section, corrective maintenance for **leak survey** requires the completion of the following form which must be attached to the **related documents** of the work order (please see the **Attaching Related Documents** section for attaching related documents):

Gas Leak and Repair Report.docx

Gas Leak and Repair Report

Report No._____

Date:_____ Time:_____ AM____ PM____

Location of Leak:_____

Description of Leak:_____

Leak Detected By: Odor_____ Noise_____ CGI_____ Other_____

Leak Reported By: Public____ Customer_____ Survey Crew_____ Other_____

Report Received By: _____

Dispatched

Date:_____ Time:_____ AM____ PM____

Investigation Assigned To:_____

Assigned As Immediate Action Required: Yes____ No____

Investigation

Date:_____ Time:_____ AM____ PM____

CGI Used: Yes____ No____ Grade Leak: 1____ 2____ 3____

Location of Leak:_____

Cause of Leak:_____

Condition Made Safe: Date_____ Time_____ AM____ PM____

Repair Report

Length of Pipe Exposed: _____Feet

Leak At: Threads____ Coupling____ Weld____ Valve____ Other_____

Pipe: Size_____ Steel____ Plastic____ Other____ Depth: _____ Ft. _____Inches

Coating: Wrapped Coal Tar____ Extru____ Bare____ Plastic____

Condition: Excellent____ Good____ Fair____ Poor____

Soil Condition: Sand____ Clay____ Loan____ Other_____

Moisture: Dry____ Damp____ Wet_____

Repair Made_____

Repair Coating Type: Mastic____ Hot Applied Tape____ Other_____

Anodes Installed: How Many_____ Anode Weight _____Lbs. Depth Installed_____

Repairs Made By:_____ Date:_____

Supervisor:_____ Date:_____

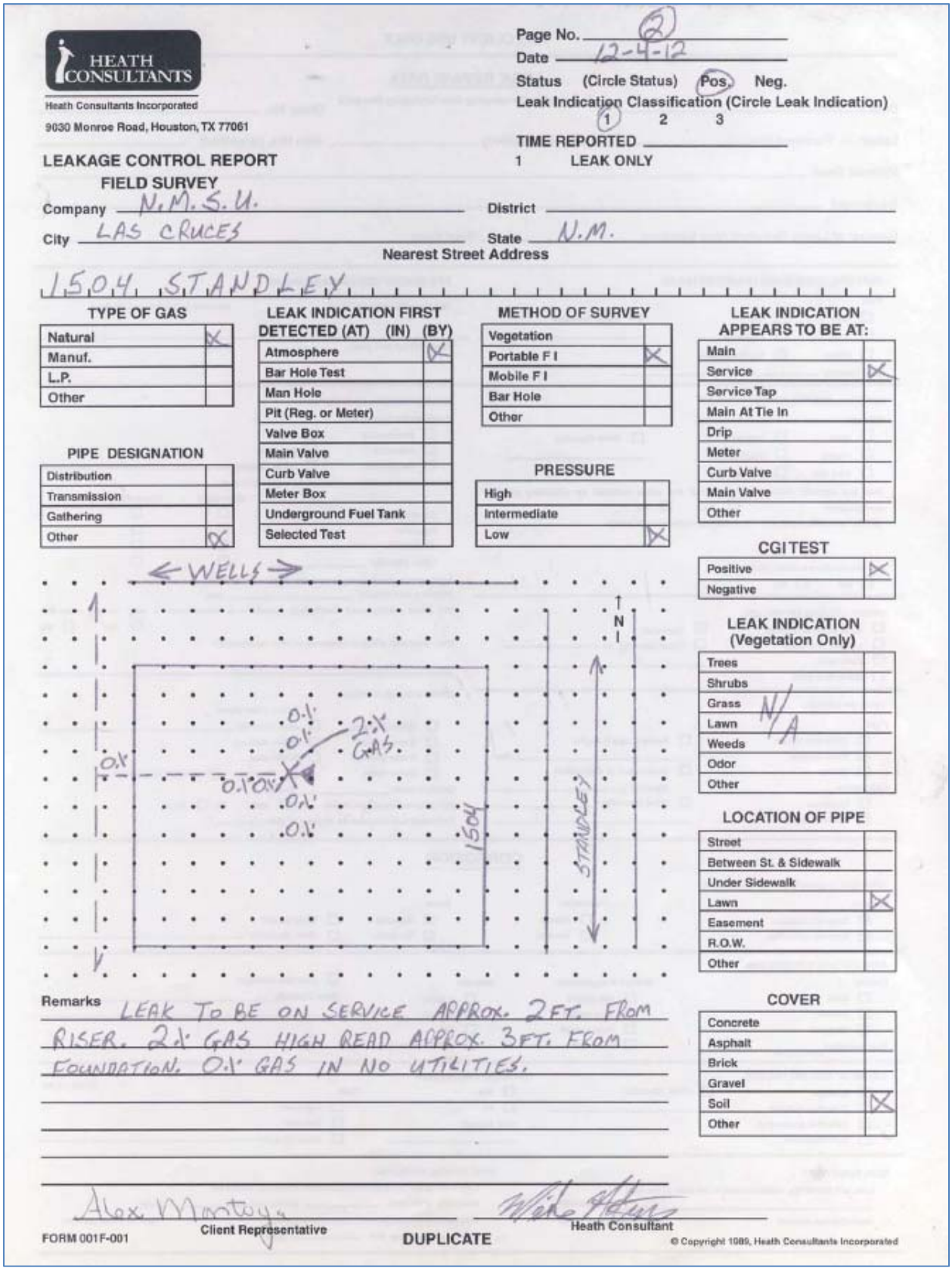
List of Checkpoints from PM Standards

The full list of *Checkpoints* for a leak survey for a gas system section is below (there are no *Checkpoints* which require values be entered into AiM, and as such all of the **Measurements** are set to "No" for the *Checkpoints* indicating the *Checkpoints* are for reference only):

Checkpoint	Description	Measurement
00-NOTE 1	REQUIRED LEAK DETECTION EQUIPMENT: FLAME IONIZATION UNIT (FI), COMBUSTIBLE GAS INDICATOR (CGI), ELECTRONIC GAS DETECTOR (RGD), BAR TEST EQUIPMENT, AND SOAP SOLUTION	No
00-NOTE 2	THE FI UNIT TELLS YOU IF THERE IS A LEAK, THE CGI TELLS YOU IT'S CONCENTRATION, AND BAR TEST EQUIPMENT HELPS YOU LOCATE THE LEAK UNDERGROUND	No
1	PREPARE FOR SURVEY BY HAVING A CAMPUS GAS MAP AND KNOWING THE SYSTEM	No
2	VERIFY THAT ALL EQUIPMENT IS CALIBRATED	No
3	ADJUST EQUIPMENT IN A GAS-FREE AREA	No
4	ALLOW UNIT TO WARM UP FOR 5 MINUTES	No
5	WEAR PPE	No
6	START THE SURVEY WITH THE FI UNIT SET TO SEARCH	No
07A	WALK PIPELINE	No
07B	WATCH INSTRUMENT; LISTEN FOR ALARM	No
07C	HOLD INTAKE CONE AS CLOSE AS POSSIBLE TO PIPE OR GROUND, BUT NO MORE THAN 2" FROM GROUND;	No
07D	SAMPLE BOTH SIDES OF THE STREET	No
07E	CHECK: MANHOLES, VALVES, JOINTS, CRACKS IN PAVEMENT CURB LINES AND OTHER AVAILABLE OPENINGS	No
07F	OTHER LOCATIONS THAT MAY PROVIDE OPPORTUNITY FOR LEAKING GAS TO VENT	No
8	LOOK, LISTEN, SMELL FOR OTHER INDICATIONS OF POSSIBLE LEAKS	No
9	IF YOU FIND INDICATIONS OF GAS LEAK, FOLLOW APPROPRIATE PROCEDURE	No
10	DOCUMENT SURVEY	No

The following form has been used in the past when the leak survey has been completed by contractors, which would need to be attached as a **related document** to the work order for the **preventive maintenance**:

Front Page



HEATH CONSULTANTS
Heath Consultants Incorporated
9030 Monroe Road, Houston, TX 77061

Page No. (2)
Date 12-4-12
Status (Circle Status) Pos. Neg.
Leak Indication Classification (Circle Leak Indication)
(1) 2 3
TIME REPORTED
1 LEAK ONLY

LEAKAGE CONTROL REPORT
FIELD SURVEY

Company N.M.S.U.
District
City LAS CRUCES
State N.M.
Nearest Street Address
1504 STANDLEY

TYPE OF GAS	
Natural	X
Manuf.	
L.P.	
Other	

LEAK INDICATION FIRST DETECTED (AT) (IN) (BY)	
Atmosphere	X
Bar Hole Test	
Man Hole	
Pit (Reg. or Meter)	
Valve Box	
Main Valve	
Curb Valve	
Meter Box	
Underground Fuel Tank	
Selected Test	

METHOD OF SURVEY	
Vegetation	
Portable F I	X
Mobile F I	
Bar Hole	
Other	

LEAK INDICATION APPEARS TO BE AT:	
Main	
Service	X
Service Tap	
Main At Tie In	
Drip	
Meter	
Curb Valve	
Main Valve	
Other	

PIPE DESIGNATION	
Distribution	
Transmission	
Gathering	
Other	X

PRESSURE	
High	
Intermediate	
Low	X

CGI TEST	
Positive	X
Negative	

LEAK INDICATION (Vegetation Only)	
Trees	
Shrubs	
Grass	N/A
Lawn	
Weeds	
Odor	
Other	

LOCATION OF PIPE	
Street	
Between St. & Sidewalk	
Under Sidewalk	
Lawn	X
Easement	
R.O.W.	
Other	

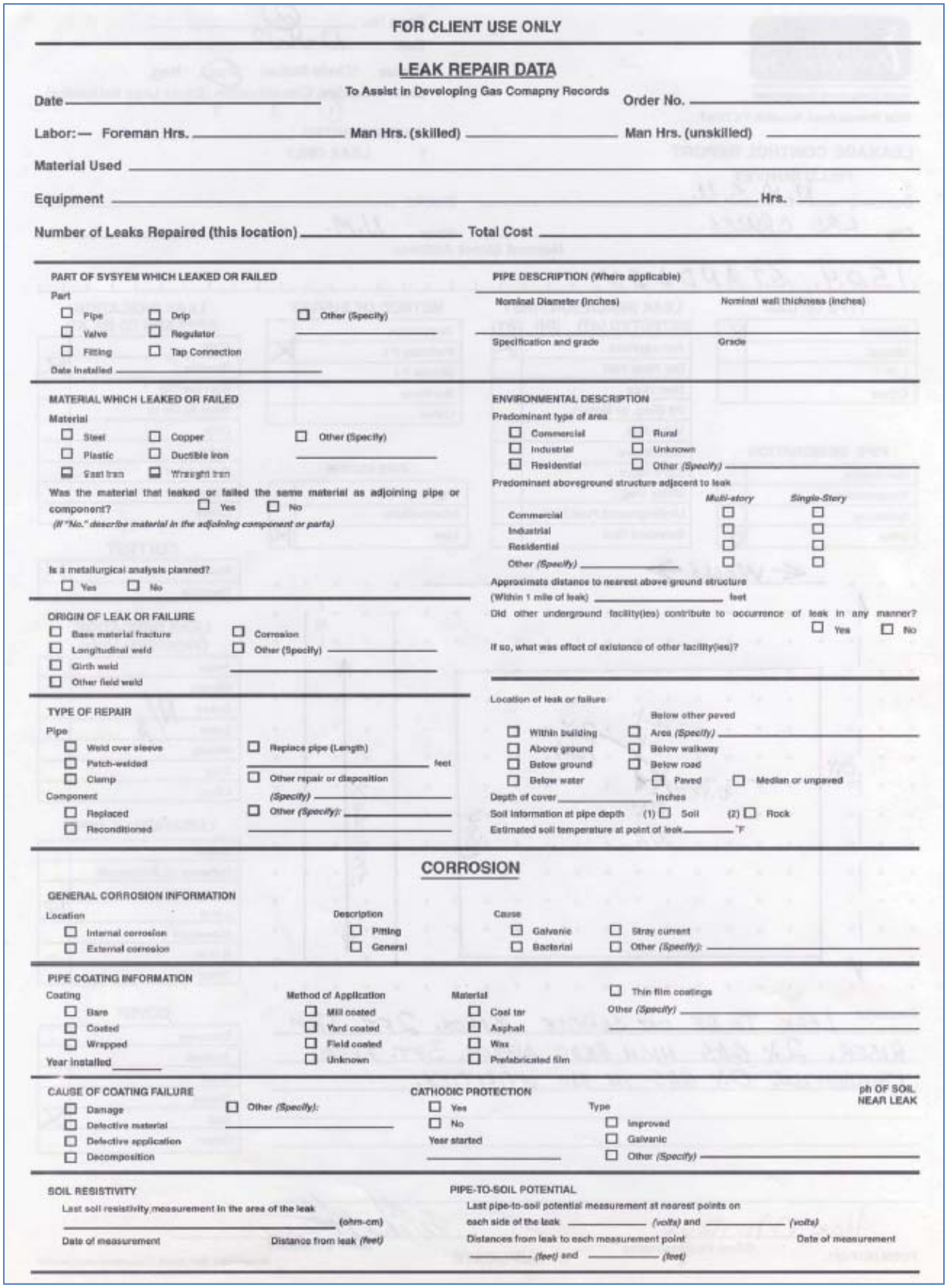
Remarks LEAK TO BE ON SERVICE APPROX. 2FT. FROM RISER. 2.1' GAS HIGH READ APPROX. 3FT. FROM FOUNDATION. 0.1' GAS IN NO UTILITIES.

COVER	
Concrete	
Asphalt	
Brick	
Gravel	
Soil	X
Other	

Alex Montoya
Client Representative
Heath Consultant

FORM 001F-001 DUPLICATE

Back Page



FOR CLIENT USE ONLY

LEAK REPAIR DATA

To Assist in Developing Gas Comapny Records

Date _____ Order No. _____

Labor:— Foreman Hrs. _____ Man Hrs. (skilled) _____ Man Hrs. (unskilled) _____

Material Used _____

Equipment _____ Hrs. _____

Number of Leaks Repaired (this location) _____ Total Cost _____

PART OF SYSYEM WHICH LEAKED OR FAILED

Part

☐ Pipe ☐ Drip ☐ Other (Specify) _____

☐ Valve ☐ Regulator

☐ Fitting ☐ Tap Connection

Date Installed _____

PIPE DESCRIPTION (Where applicable)

Nominal Diameter (Inches) Nominal wall thickness (inches)

Specification and grade Grade

MATERIAL WHICH LEAKED OR FAILED

Material

☐ Steel ☐ Copper ☐ Other (Specify) _____

☐ Plastic ☐ Ductile Iron

☐ Cast Iron ☐ Wrought Iron

Was the material that leaked or failed the same material as adjoining pipe or component? ☐ Yes ☐ No

(If "No." describe material in the adjoining component or parts)

Is a metallurgical analysis planned?

☐ Yes ☐ No

ENVIRONMENTAL DESCRIPTION

Predominant type of area

☐ Commercial ☐ Rural

☐ Industrial ☐ Unknown

☐ Residential ☐ Other *(Specify)* _____

Predominant aboveground structure adjacent to leak

	Multi-story	*Single-Story*
Commercial	☐	☐
Industrial	☐	☐
Residential	☐	☐
Other *(Specify)* _____	☐	☐

Approximate distance to nearest above ground structure

(Within 1 mile of leak) _____ feet

Did other underground facility(ies) contribute to occurrence of leak in any manner? ☐ Yes ☐ No

If so, what was effect of existence of other facility(ies)?

ORIGIN OF LEAK OR FAILURE

☐ Base material fracture ☐ Corrosion

☐ Longitudinal weld ☐ Other (Specify) _____

☐ Girth weld

☐ Other field weld

Location of leak or failure

☐ Within building ☐ Below other paved Area *(Specify)* _____

☐ Above ground ☐ Below walkway

☐ Below ground ☐ Below road

☐ Below water ☐ Paved ☐ Median or unpaved

Depth of cover _____ inches

Soil information at pipe depth (1) ☐ Soil (2) ☐ Rock

Estimated soil temperature at point of leak _____ °F

TYPE OF REPAIR

Pipe

☐ Weld over sleeve ☐ Replace pipe (Length)

☐ Patch-welded _____ feet

☐ Clamp ☐ Other repair or disposition *(Specify)* _____

Component ☐ Other *(Specify)*: _____

☐ Replaced

☐ Reconditioned

CORROSION

GENERAL CORROSION INFORMATION

Location

☐ Internal corrosion

☐ External corrosion

Description

☐ Pitting

☐ General

Cause

☐ Galvanic ☐ Stray current

☐ Bacterial ☐ Other *(Specify)*: _____

PIPE COATING INFORMATION

Coating

☐ Bare

☐ Coated

☐ Wrapped

Year installed _____

Method of Application

☐ Mill coated

☐ Yard coated

☐ Field coated

☐ Unknown

Material

☐ Coal tar

☐ Asphalt

☐ Wax

☐ Prefabricated film

☐ Thin film coatings

Other *(Specify)* _____

CAUSE OF COATING FAILURE

☐ Damage

☐ Defective material

☐ Defective application

☐ Decomposition

☐ Other *(Specify)*: _____

CATHODIC PROTECTION

☐ Yes

☐ No

Year started _____

Type

☐ Improved

☐ Galvanic

☐ Other *(Specify)* _____

ph OF SOIL NEAR LEAK

SOIL RESISTIVITY

Last soil resistivity measurement in the area of the leak _____ (ohm-cm)

Date of measurement Distance from leak *(feet)*

PIPE-TO-SOIL POTENTIAL

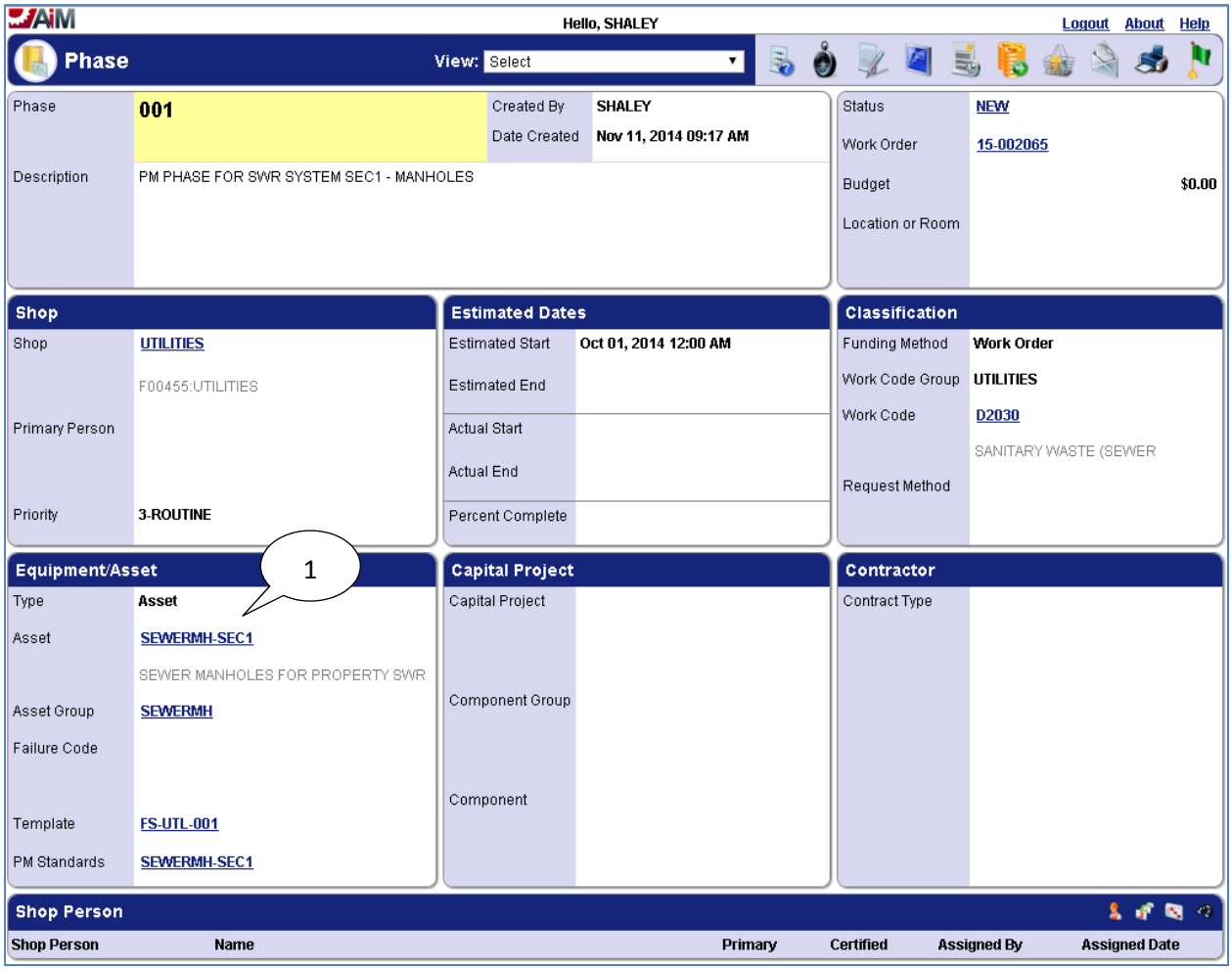
Last pipe-to-soil potential measurement at nearest points on each side of the leak _____ *(volts)* and _____ *(volts)*

Distances from leak to each measurement point _____ *(feet)* and _____ *(feet)* Date of measurement

Sewer Manholes

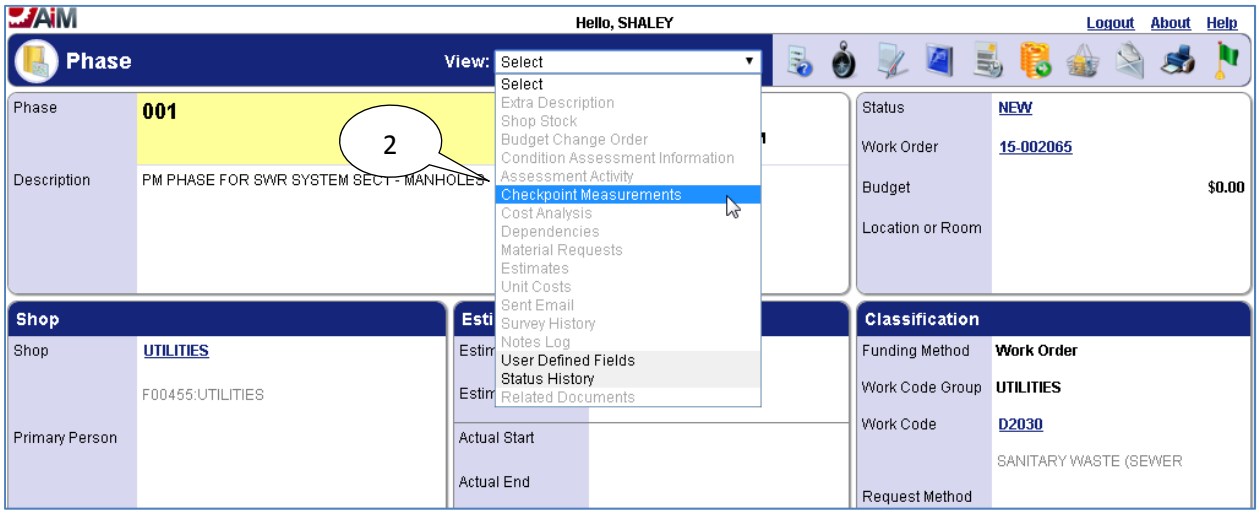
Preventive Maintenance for manholes is performed annually. The Preventive Maintenance work orders for manholes will be generated each quarter (SEWERMH-SEC1 on October 1st, SEWERMH-SEC2 on January 1st, SEWERMH-SEC3 on April 1st, and SEWERMH-SEC4 on July 1st). Manholes are grouped together by sections into a single asset. For example, all of the manholes located in section SWR SYSTEM SEC1 are stored as asset SEWERMH-SEC1 in AiM and each manhole is represented by a checkpoint measurement in the phase of the work order.

Completing Individual Manhole Checkpoint Measurements

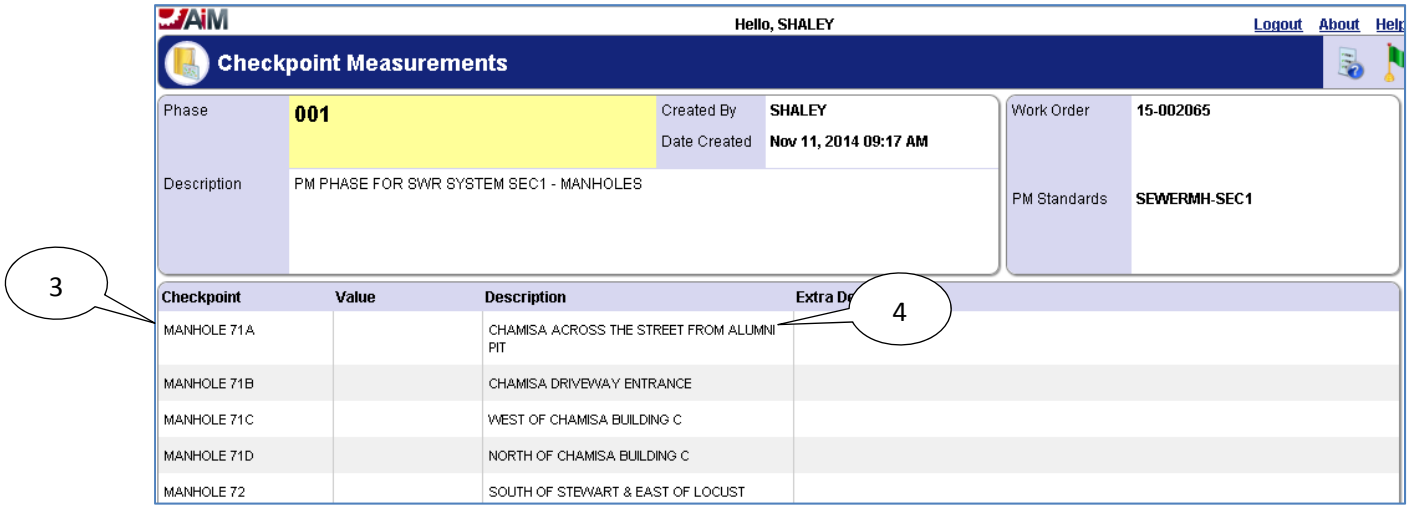


1. The phase on the work order for Manholes located in section SWR SYSTEM SEC1 has asset SEWERMH-SEC1 assigned to it which represents all of the manholes for section SWR SYSTEM SEC1.

The individual manholes are tracked in the *PM Standard Checkpoint Measurements* for the phase:

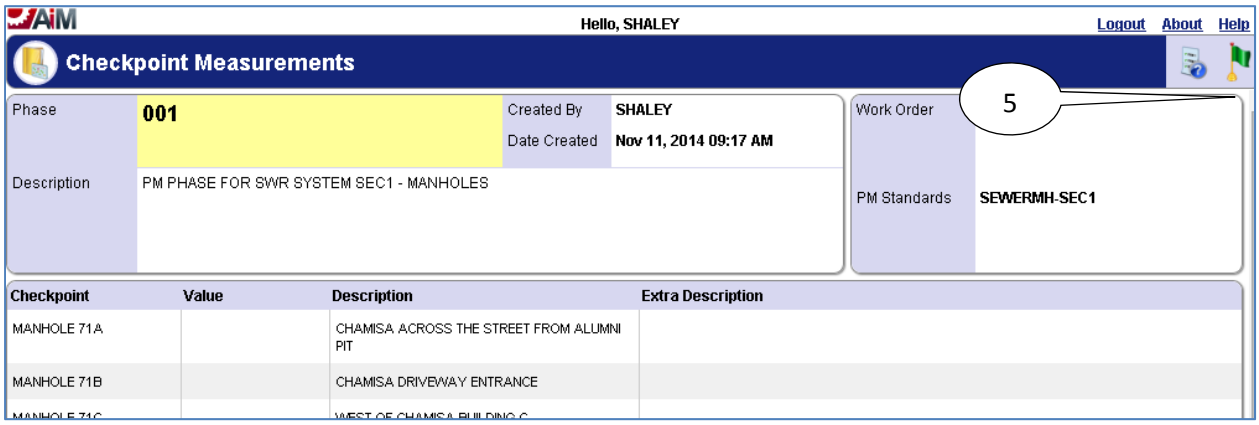


2. Select “Checkpoint Measurements” from the “View” menu.

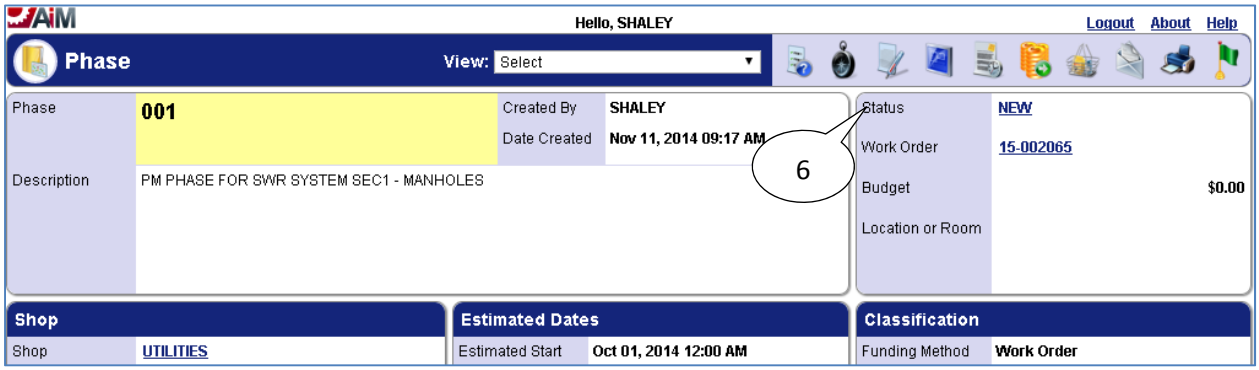


3. The individual manholes are shown here as *Checkpoints*.
4. The “Description” field specifies the location of the manhole.

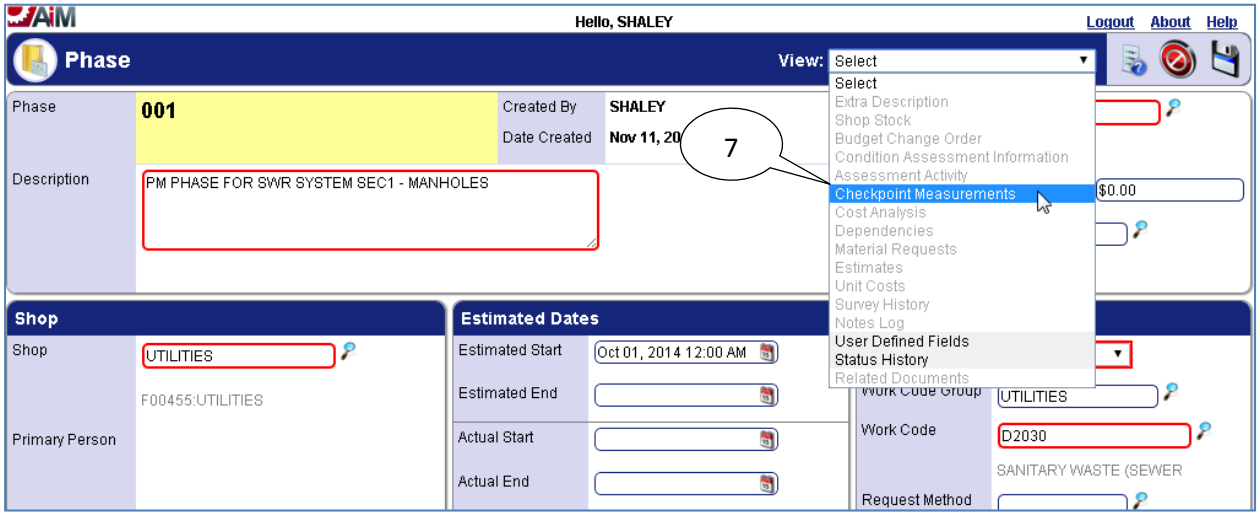
The phase has to be put into edit mode in order to edit the *PM Checkpoint Measurements*:



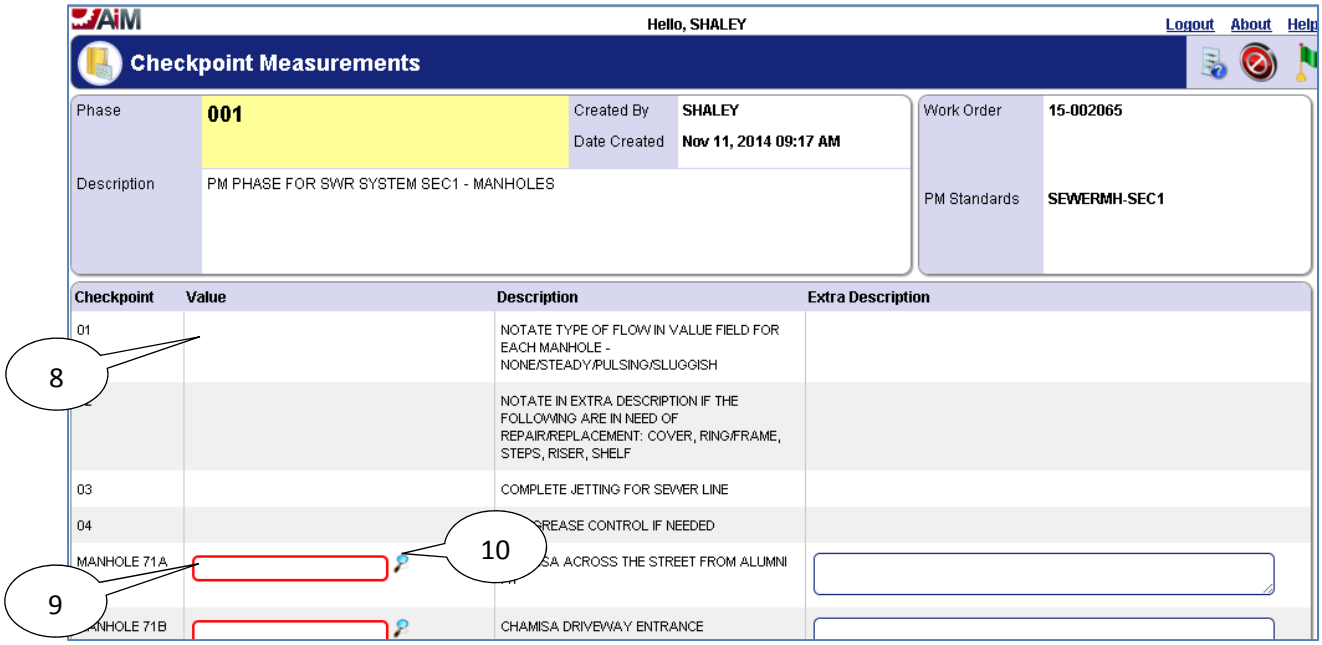
5. Select the **done** icon to navigate back to the phase.



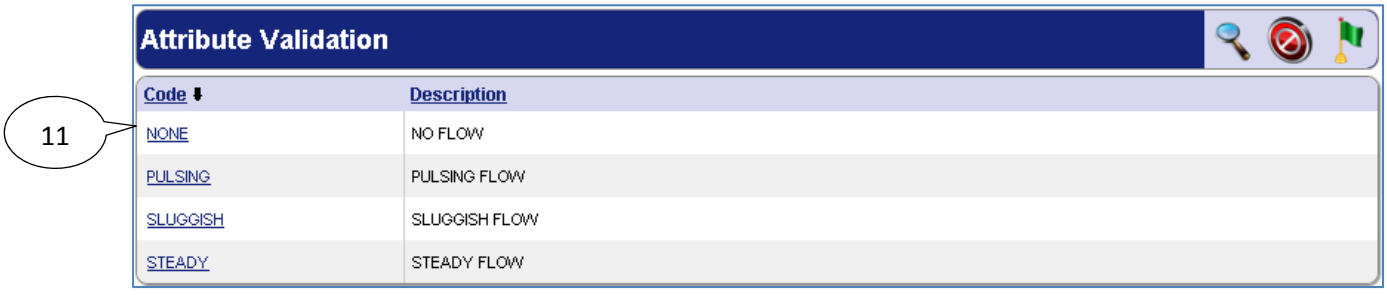
6. Select the **edit** icon.



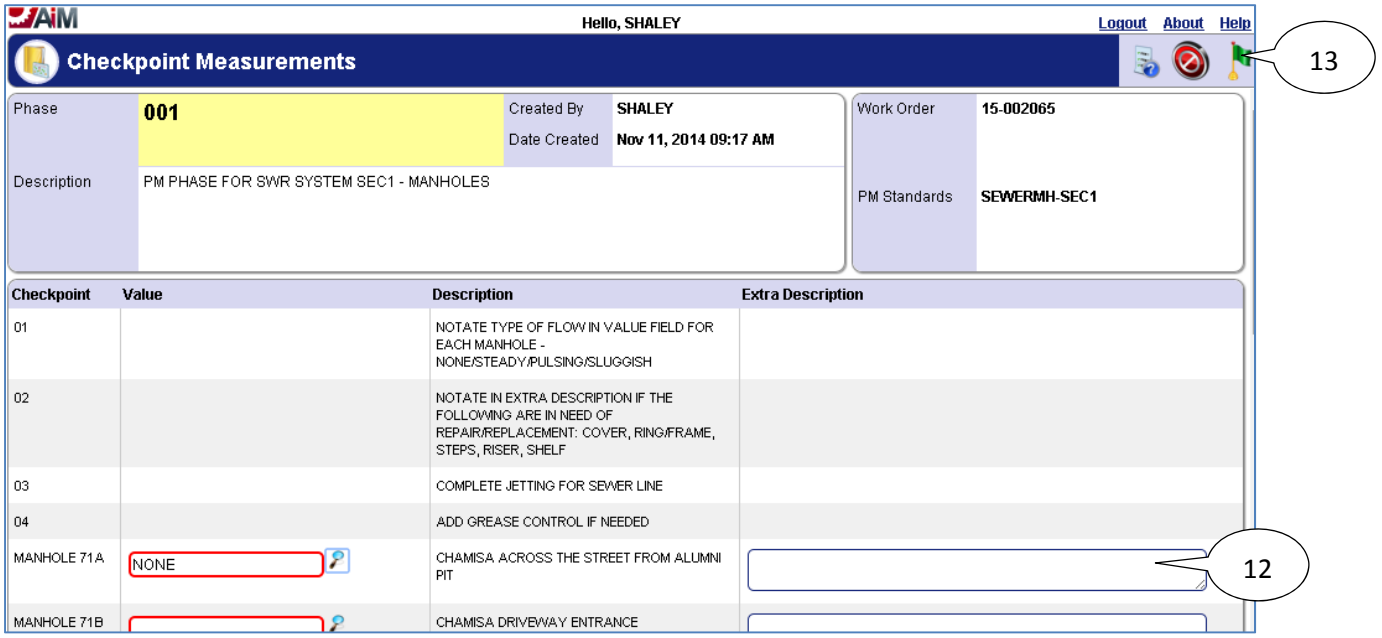
7. Select "*Checkpoint Measurements*" from the "*View*" menu.



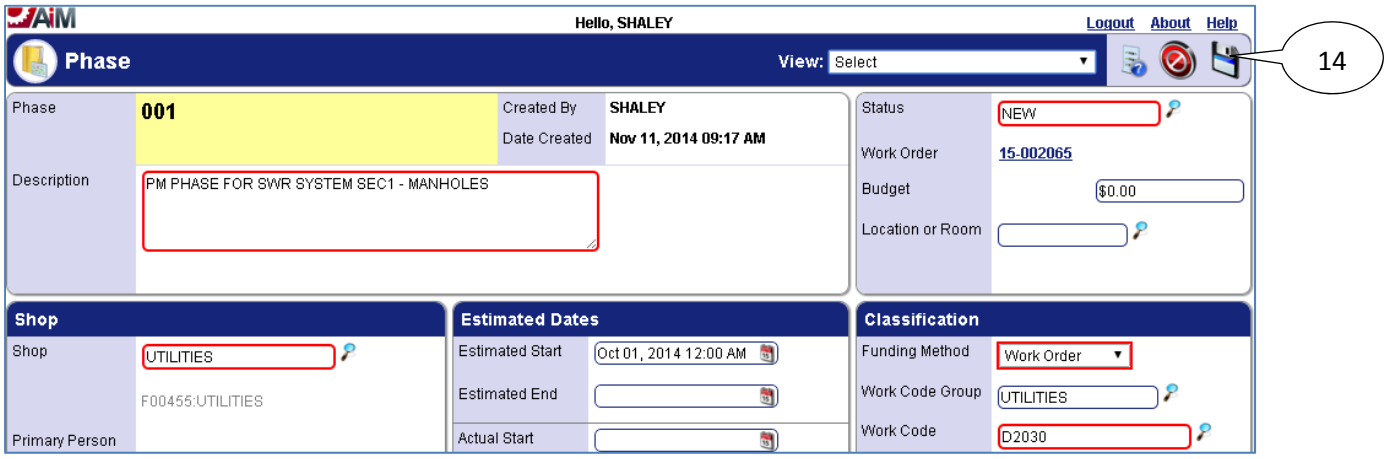
8. Any **Checkpoints** that do not have a value field where information can be entered are for instruction purposes only, and the **Description** of each of these **Checkpoints** should be read before starting **PM**.
9. Enter "*Value*" for *Checkpoint Measurement*.
10. If **search** icon is present then select the **search** icon to view valid options for the "*Value*" field.



11. After selecting the **search** icon, select a **Code** from the pop up window for the **Value**.



12. Enter a Description if something needs to be noted about the manhole.
13. Select the **done** icon to navigate back to the phase.



14. Select the **save** icon to save the Checkpoint changes and exit edit mode.

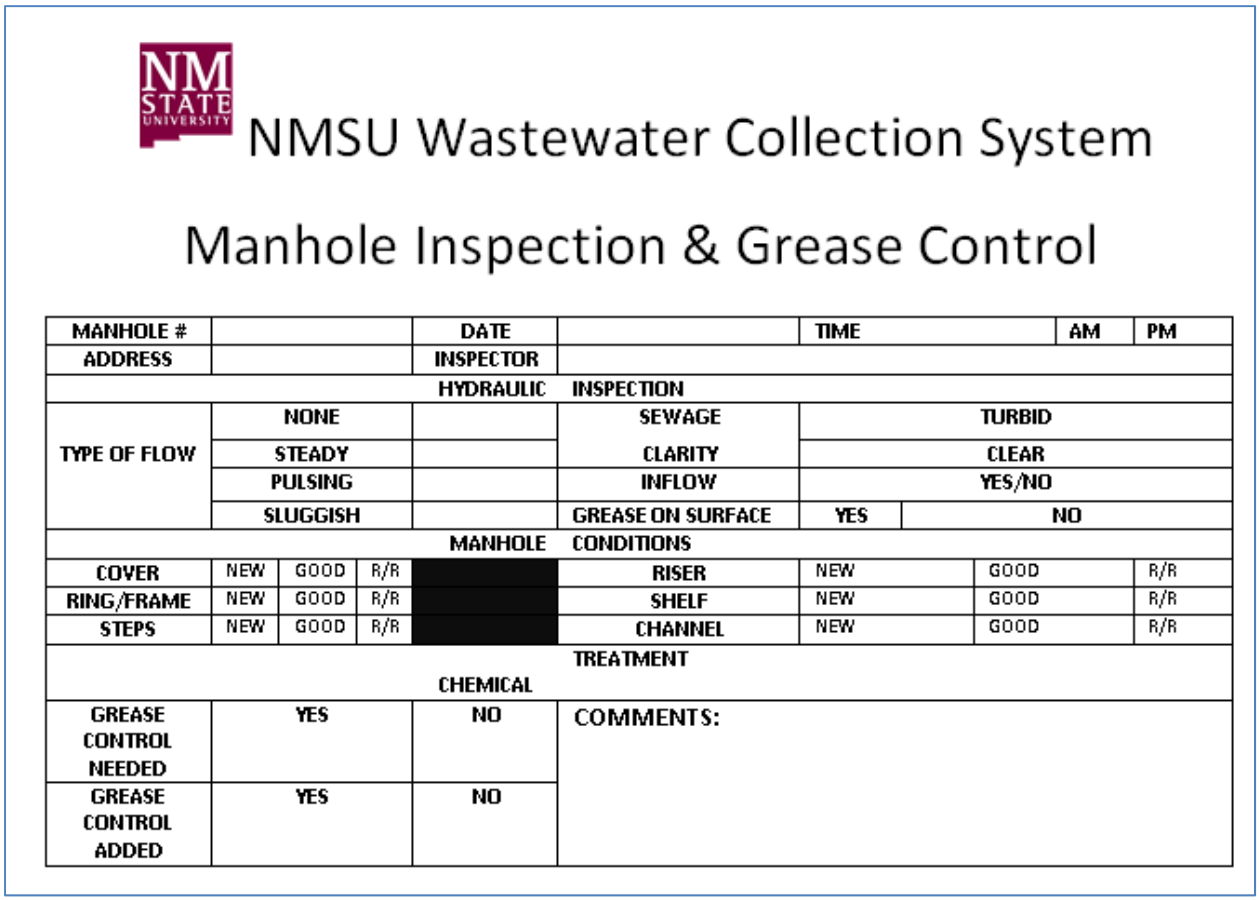
List of Checkpoints from PM Standards

Since Manholes are tracked as checkpoints, and there are over a hundred manholes only a portion of the *Checkpoints* for manholes in SWR SYSTEM SEC1 are shown below:

Checkpoint	Description	Measurement
MANHOLE 101	N.W. OF REGENTS ROW ON WILLIAMS AVE.	0.00

MANHOLE 118	S.E. CORNER OF WILLIAMS & INTERNATIONAL MALL	0.00
MANHOLE 119	SOUTH SIDE OF HERSHEL ZOHN BY SIDEWALK	0.00
MANHOLE 120	N.E. CORNER OF FOOD COURT ON INTERNATIONAL MALL	0.00
MANHOLE 121	WEST OF NEW LIBRARY ENTRANCE ON INTERNATIONAL MALL	0.00
MANHOLE 122	S.W. OF MILTON ENTRANCE ON INTERNATIONAL MALL	0.00
MANHOLE 123	SOUTH OF MILTON FRONT ENTRANCE ON INTERNATIONAL MALL	0.00
MANHOLE 123A	LOADING DOCK OF CORBETT CENTER	0.00
MANHOLE 124	N.W. CORNER OF CORBETT CENTER BY INTERNATIONAL MALL	0.00
MANHOLE 125	WEST SIDE OF GARCIA ANNEX BY ENTRANCE	0.00

The *Checkpoint Measurements* for manholes are replacing the following form:



NMSU Wastewater Collection System

Manhole Inspection & Grease Control

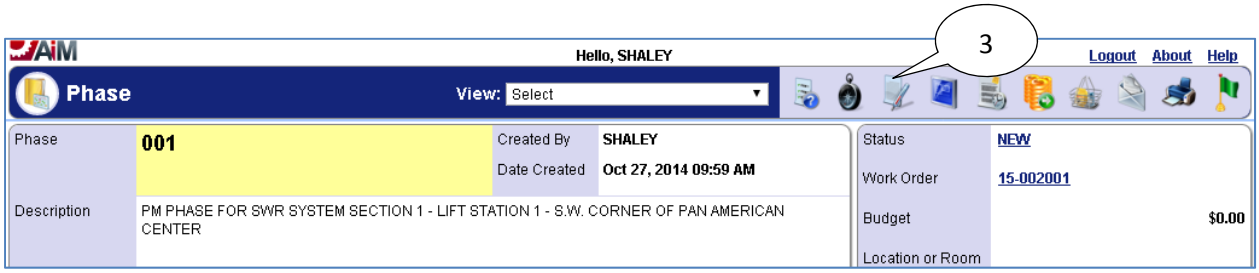
MANHOLE #				DATE		TIME	AM	PM
ADDRESS				INSPECTOR				
HYDRAULIC INSPECTION								
TYPE OF FLOW	NONE				SEWAGE	TURBID		
	STEADY				CLARITY	CLEAR		
	PULSING				INFLOW	YES/NO		
	SLUGGISH				GREASE ON SURFACE	YES	NO	
MANHOLE CONDITIONS								
COVER	NEW	GOOD	R/R		RISER	NEW	GOOD	R/R
RING/FRAME	NEW	GOOD	R/R		SHELF	NEW	GOOD	R/R
STEPS	NEW	GOOD	R/R		CHANNEL	NEW	GOOD	R/R
CHEMICAL TREATMENT								
GREASE CONTROL NEEDED	YES			NO	COMMENTS:			
GREASE CONTROL ADDED	YES			NO				

Sewer Lift Stations – Quarterly/Meter

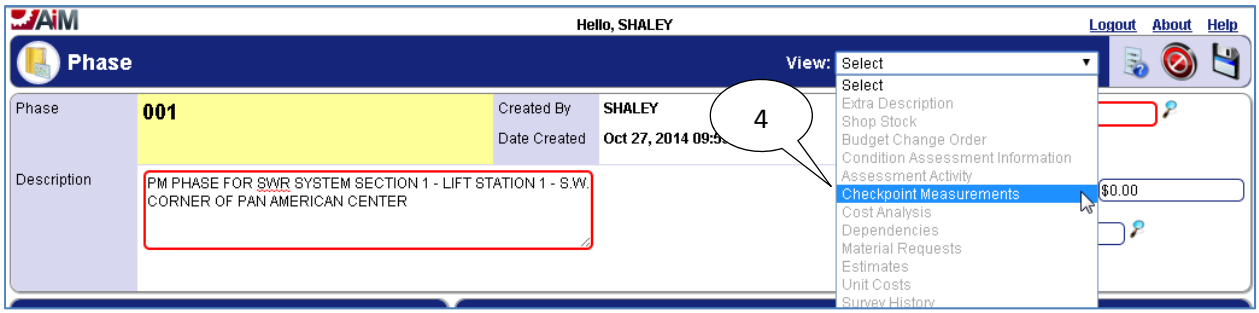
Preventive Maintenance for sewer lift stations is performed quarterly or after every 1000 hours of operation (runtime of pumps for lift station according to the meter for the pumps). The Preventive Maintenance work orders for sewer lift stations will be generated on October 1st, January 1st, April 1st, and July 1st of every year. Sewer lift stations have *Checkpoints* which detail how to complete the preventive maintenance as well as *Checkpoint Measurements* to record necessary values when completing preventive maintenance.

Viewing/Completing PM Standards Checkpoints

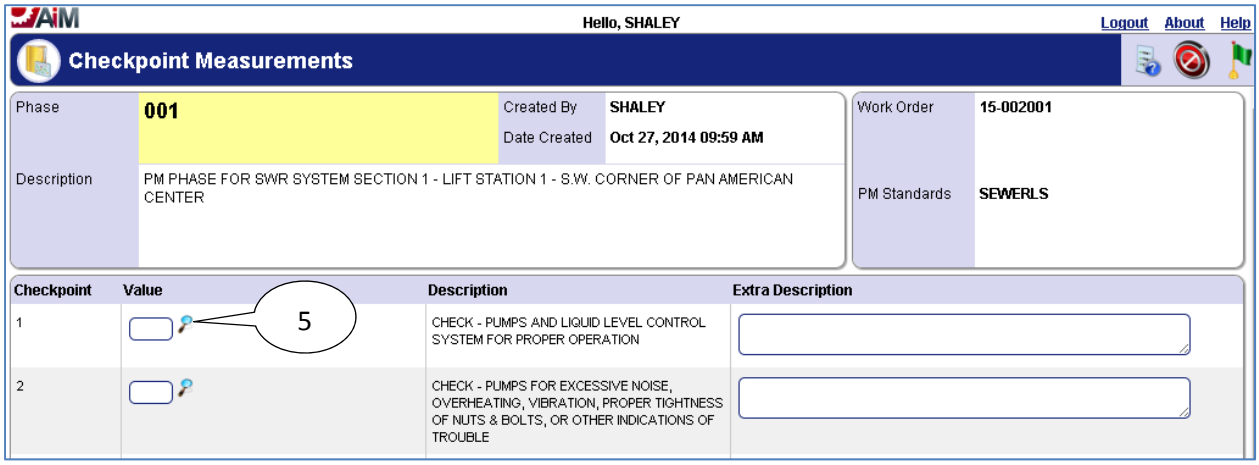
12. Navigate to the *Work Order* for the Lift Station Station.
13. Select the *Phase* from the *Work Order*.



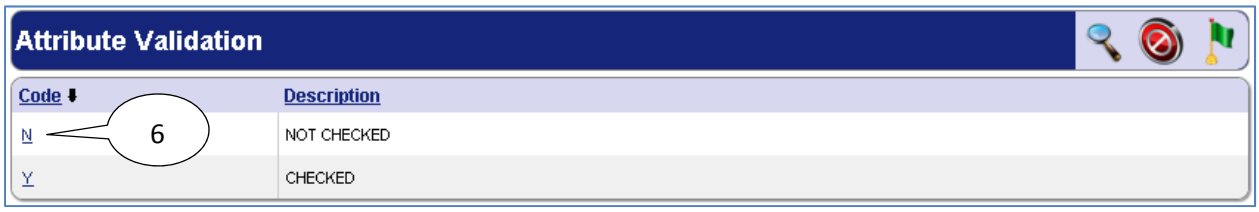
14. Select the **edit** icon.



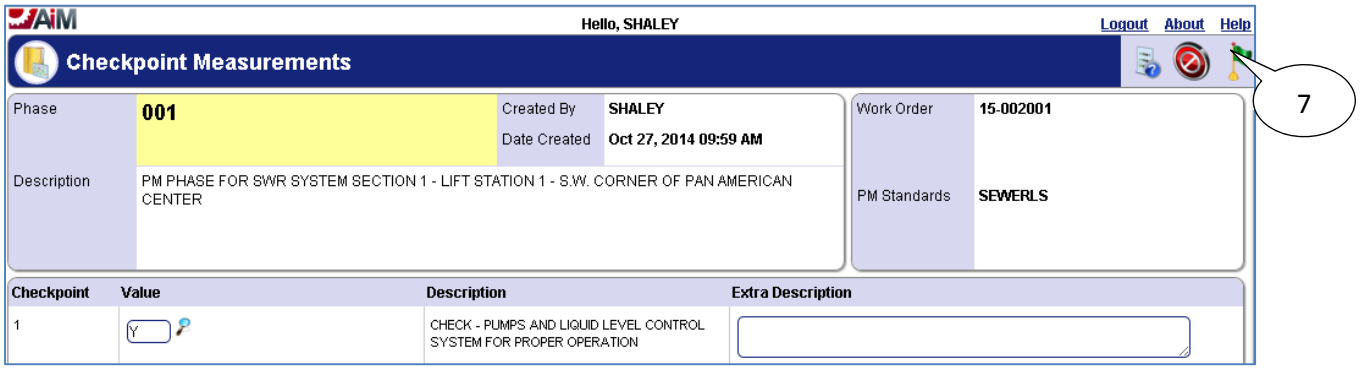
15. Select "**Checkpoint Measurements**" from the **View** menu.



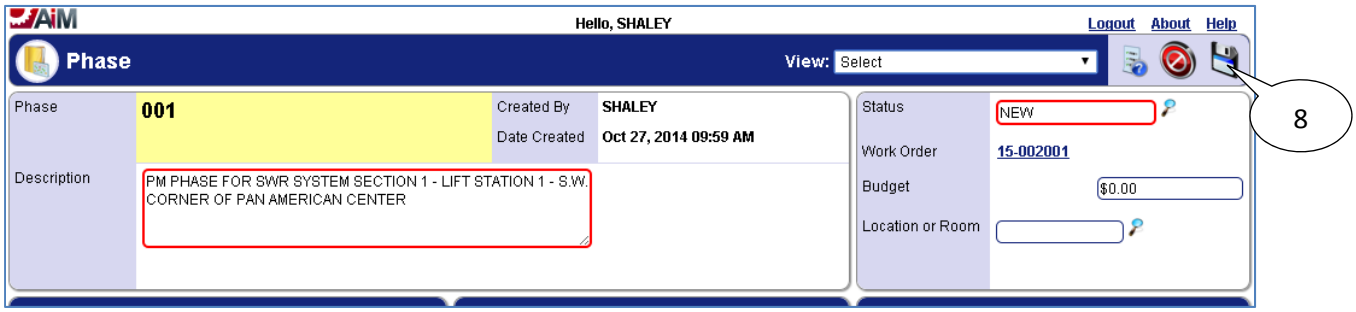
16. Select the **search** icon or enter value directly into textbox if already known.



17. Select desired **Code** for the **Checkpoint Measurement Value**.



18. Select the **done** icon once values have been entered for **Checkpoint Measurements**.



19. Select the **save** icon.

List of Checkpoints from PM Standards

The full list of *Checkpoints* for sewer lift stations is below (anything with a **Measurement** set to "No" is for reference only, anything with a **Measurement** set to "Yes" requires a value to be recorded for that *Checkpoint*):

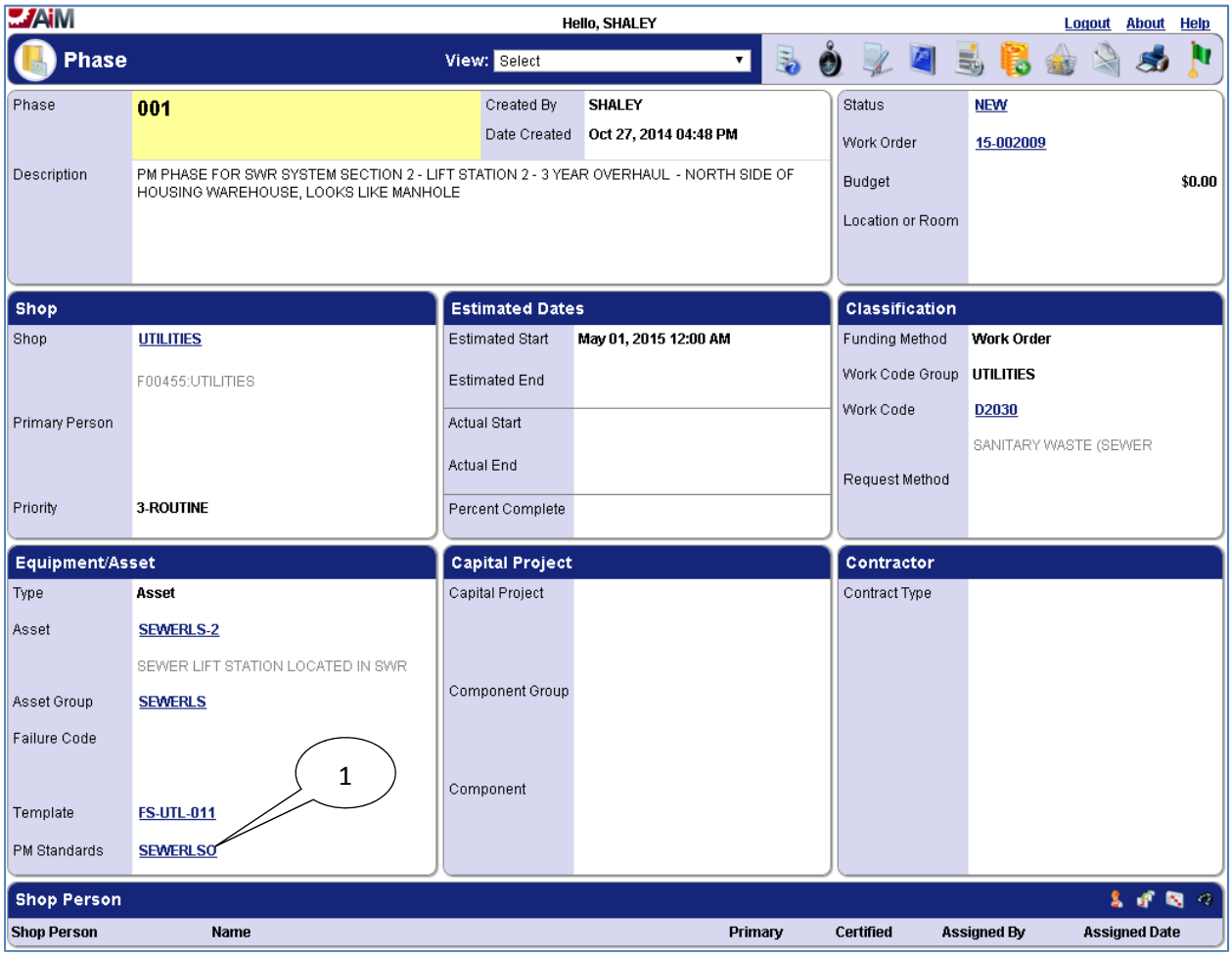
Checkpoint	Description	Measurement
1	CLEAN - WET WELL WALLS, PUMPS 1 AND 2, LIQUID LEVEL SENSOR & FLOATS TO PREVENT EXCESSIVE ACCUMULATIONS OF SCUM & GREASE	Yes
10	INSPECT PUMP 1 ELECTRICAL CONTROL CABLE OUTER JACKET FOR CRACKS, DAMAGE OR LEAKS. REPLACE OR TIGHTEN CABLE CLAMPS IF NECESSARY.	Yes
11	INSPECT PUMP 2 ELECTRICAL CONTROL CABLE OUTER JACKET FOR CRACKS, DAMAGE OR LEAKS. REPLACE OR TIGHTEN CABLE CLAMPS IF NECESSARY.	Yes
12	CHECK - CONNECTION BOX FOR LIQUID INSIDE. IF FOUND REPLACE CABLE SEALS (REFER TO O&M) CONTACT ELECTRICIAN TO PERFORM THIS STEP	Yes
13	CHECK - PUMP 1 INSULATION OF THE STATOR WINDINGS (REFER TO O&M) CONTACT ELECTRICIAN TO PERFORM THIS STEP	Yes
14	CHECK - PUMP 2 INSULATION OF THE STATOR WINDINGS (REFER TO O&M) CONTACT ELECTRICIAN TO PERFORM THIS STEP	Yes
15	LUBRICATE - PUMP 1 CHANGE OIL IN HOUSING	Yes
16	LUBRICATE - PUMP 2CHANGE OIL IN HOUSING	Yes
2	CHECK - PUMP 1 AND LIQUID LEVEL CONTROL SYSTEM FOR PROPER OPERATION	Yes
3	CHECK - PUMP 2 AND LIQUID LEVEL CONTROL SYSTEM FOR PROPER OPERATION	Yes
4	CHECK - PUMP 1 FOR EXCESSIVE NOISE, OVERHEATING, VIBRATION, PROPER TIGHTNESS OF NUTS & BOLTS, OR OTHER INDICATIONS OF TROUBLE	Yes
5	CHECK - PUMP 2 FOR EXCESSIVE NOISE, OVERHEATING, VIBRATION, PROPER TIGHTNESS OF NUTS & BOLTS, OR OTHER INDICATIONS OF TROUBLE	Yes

Checkpoint	Description	Measurement
6	CHECK - PUMP 1 ELECTRICAL CONTROL & EQUIPMENT FOR PROPER OPERATION	Yes
7	CHECK - PUMP 2 ELECTRICAL CONTROL & EQUIPMENT FOR PROPER OPERATION	Yes
8	CHECK - PUMP 1 OIL LEVEL AND WATER CONTAMINATION (INDICATED BY WHITISH COLOR) IF CONTAMINATED, CHECK SEALS FOR LEAKS & REPLACE IF NECESSARY, DRAIN OIL & REFILL. CHECK AGAIN IN 1 WEEK	Yes
9	CHECK - PUMP 2 OIL LEVEL AND WATER CONTAMINATION (INDICATED BY WHITISH COLOR) IF CONTAMINATED, CHECK SEALS FOR LEAKS & REPLACE IF NECESSARY, DRAIN OIL & REFILL. CHECK AGAIN IN 1 WEEK	Yes

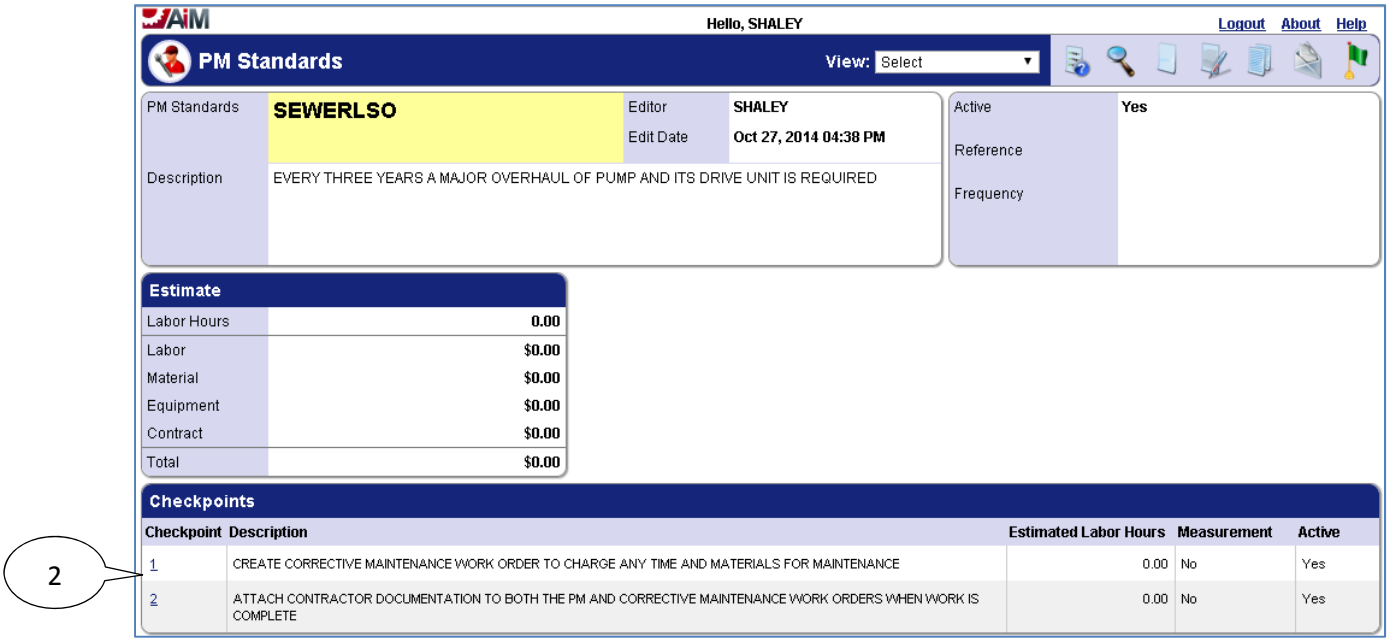
Sewer Lift Stations – 3 Year Overhaul

Every lift station should have a major overhaul completed every three years. A corrective maintenance work order should be created to charge any time and materials against. The overhaul is usually completed by a contractor, so the contractor documentation should be attached to the related documents of the PM Work Order and the Corrective Maintenance Work Order.

Viewing/Completing PM Standards Checkpoints



1. Select the **PM Standards** from the phase of the work order.



2. The checkpoints give the details of what needs to be completed for the preventive maintenance work order.

Corrective Maintenance

In addition to the steps in the **Completing Corrective Maintenance** section, corrective maintenance for the **3 year overhaul** of **lift stations** requires that any contractor documentation be attached to the **Corrective Maintenance** work order as well as the **PM** work order (please see the **Attaching Related Documents** section for attaching related documents).

List of Checkpoints from PM Standards

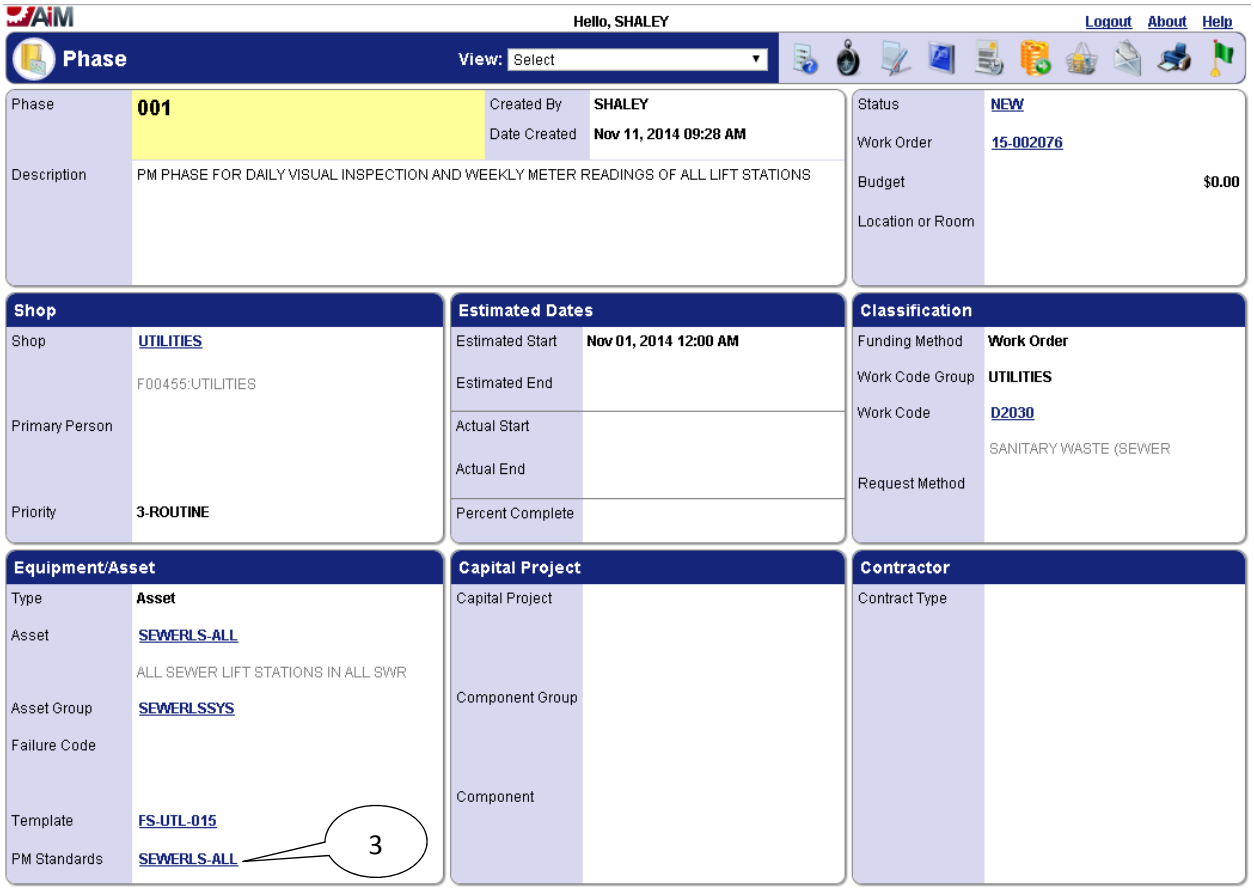
Checkpoint	Description	Measurement
1	CREATE CORRECTIVE MAINTENANCE WORK ORDER TO CHARGE ANY TIME AND MATERIALS FOR MAINTENANCE	No
2	ATTACH CONTRACTOR DOCUMENTATION TO BOTH THE PM AND CORRECTIVE MAINTENANCE WORK ORDERS WHEN WORK IS COMPLETE	No

Sewer Lift Stations – Monthly Open Work Order

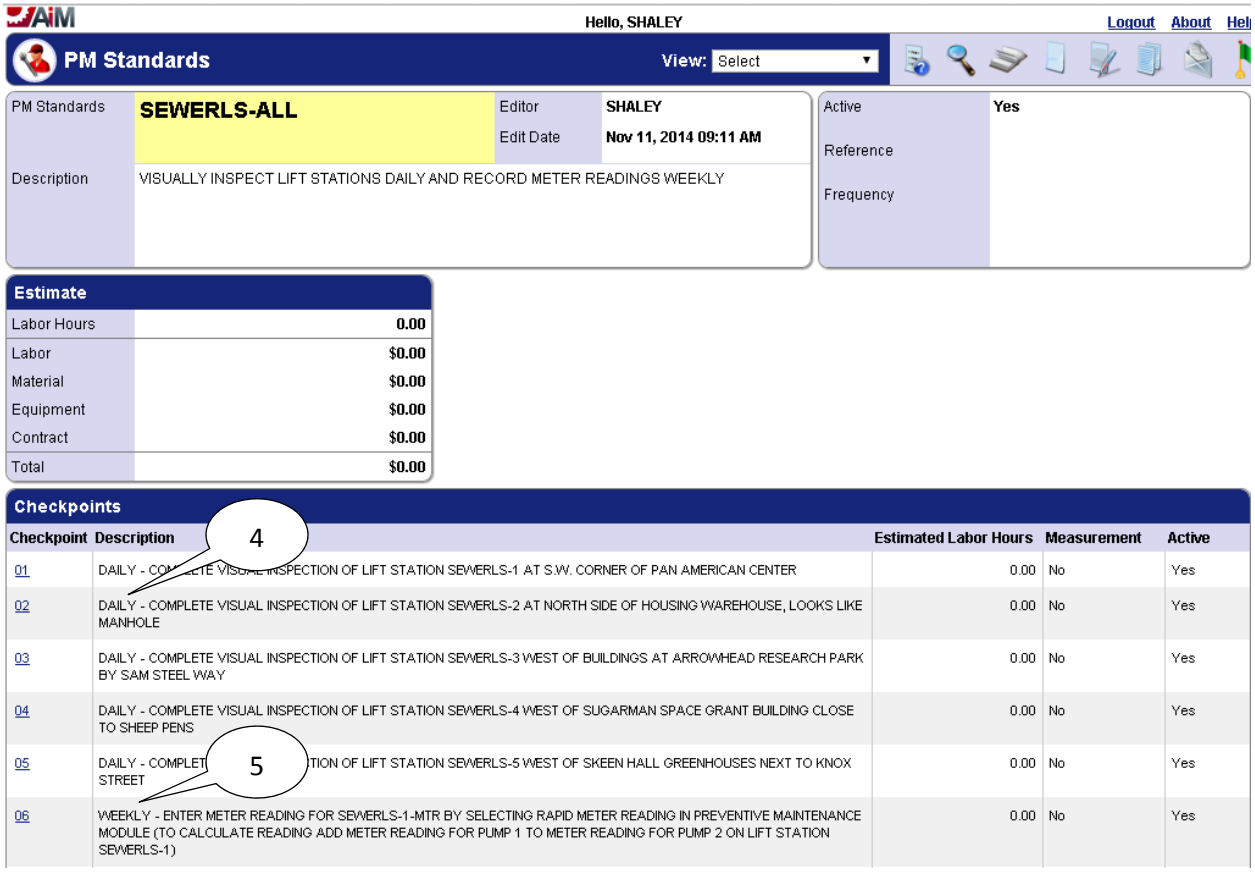
A monthly open work order will be generated for daily inspections of lift stations and to capture lift station meter readings weekly or as time allows.

Viewing/Completing PM Standards Checkpoints

1. Navigate to the monthly open *Work Order* for the Lift Stations.
2. Select the *Phase* from the *Work Order*.



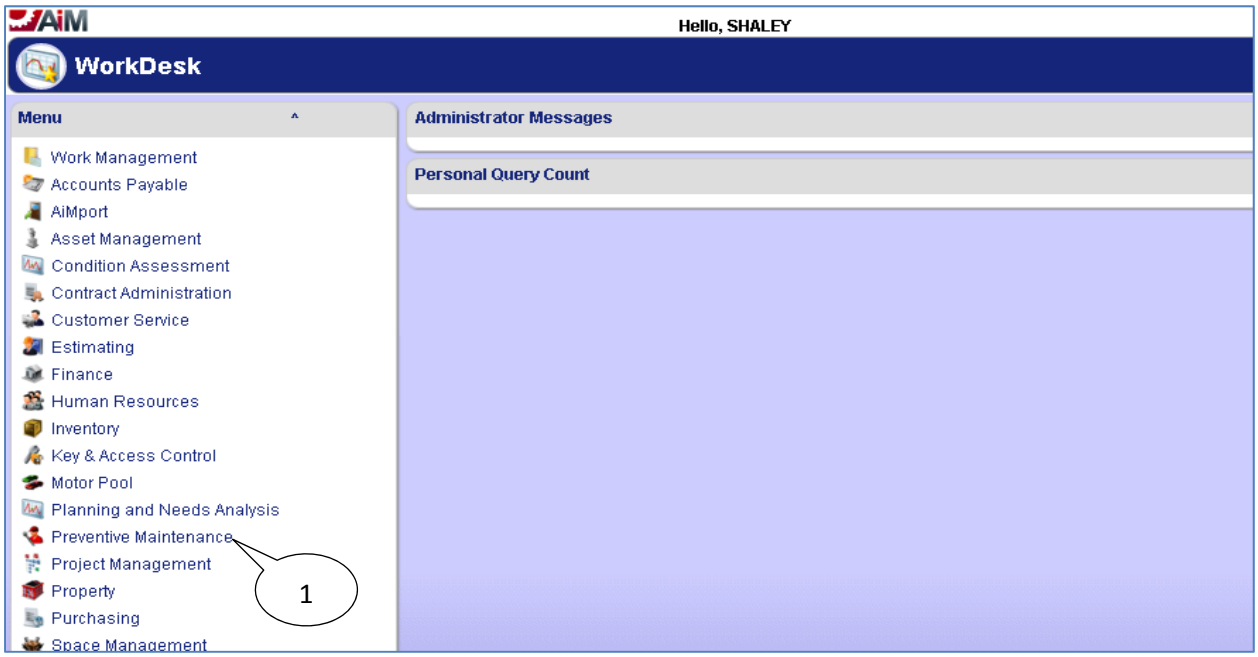
3. Select the link for the **PM Standards**.



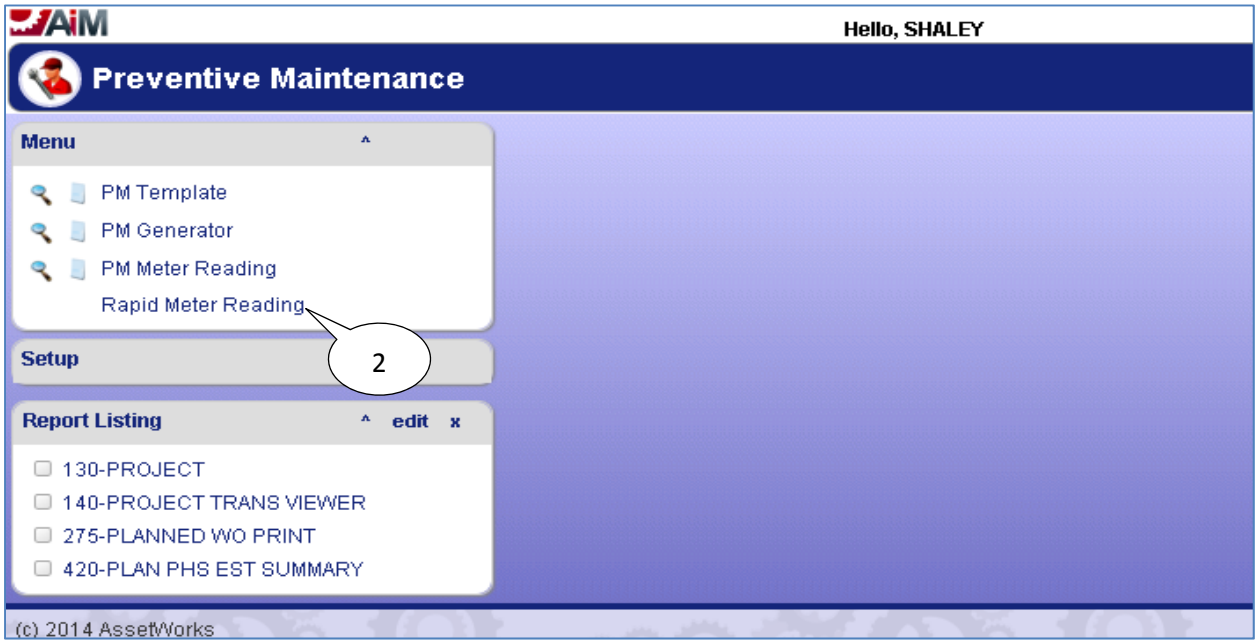
4. **Checkpoints** which are to be completed daily will start with the word "**DAILY**".
5. **Checkpoints** which are to be completed weekly will start with the word "**WEEKLY**".

Recording Meter Readings

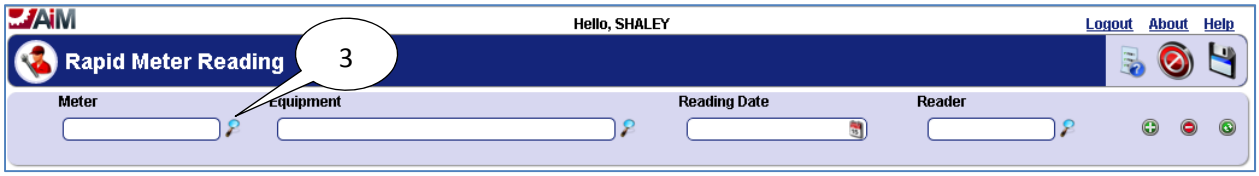
Meter readings can be recorded in AiM for the sewer lift stations to prompt a preventive maintenance work order to be generated every 1000 hours of operation according to the meter reading for the lift station (each lift station has two pumps and a meter that sums the runtime for both pumps). The work order that gets generated is identical to the quarterly preventive maintenance work order for the lift stations.



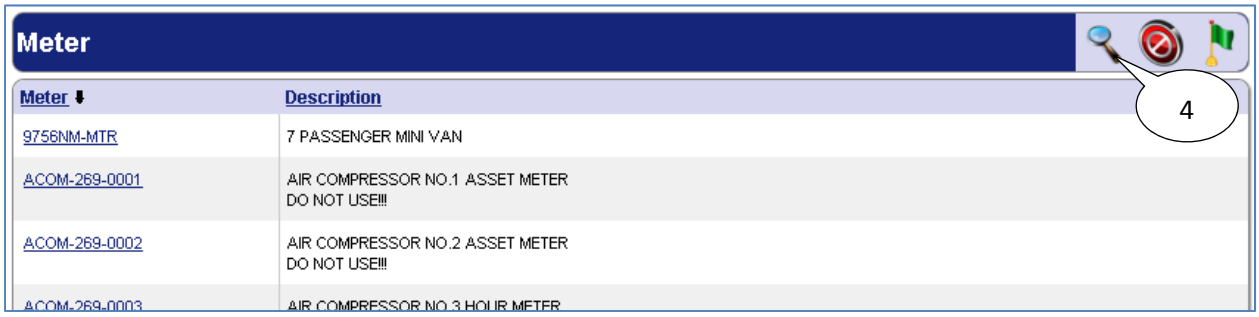
1. Select the **Preventive Maintenance** module



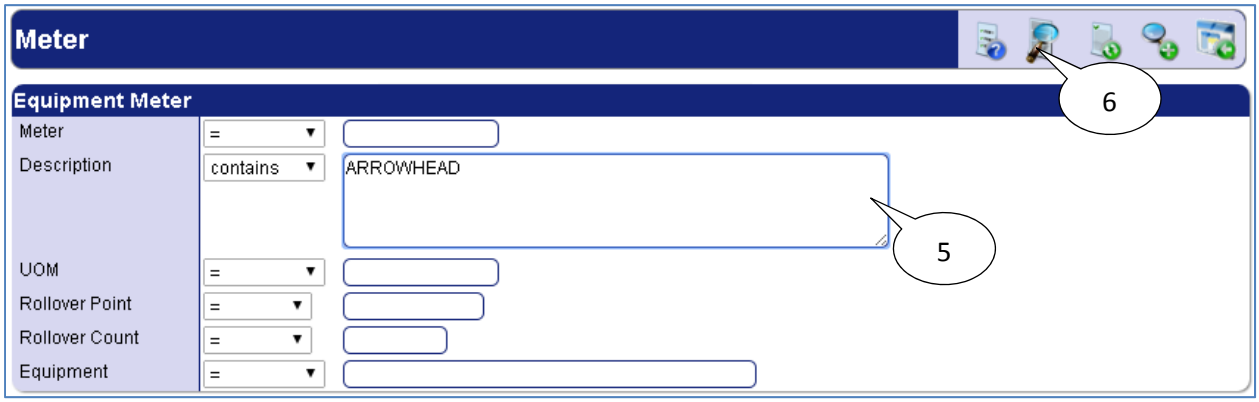
2. Select **Rapid Meter Reading**.



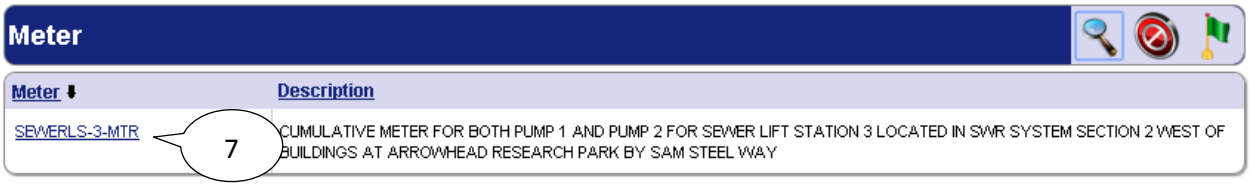
3. Select the **search** icon for the **Meter** or enter the meter name if already known.



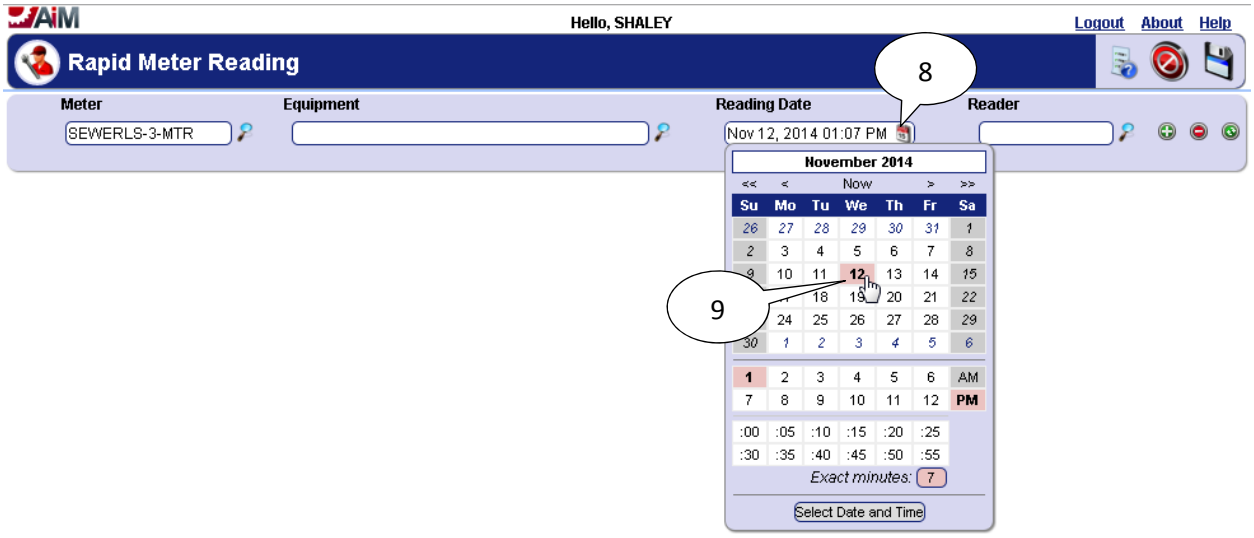
4. After selecting the **search** icon, select the **search** icon on the pop-up screen.



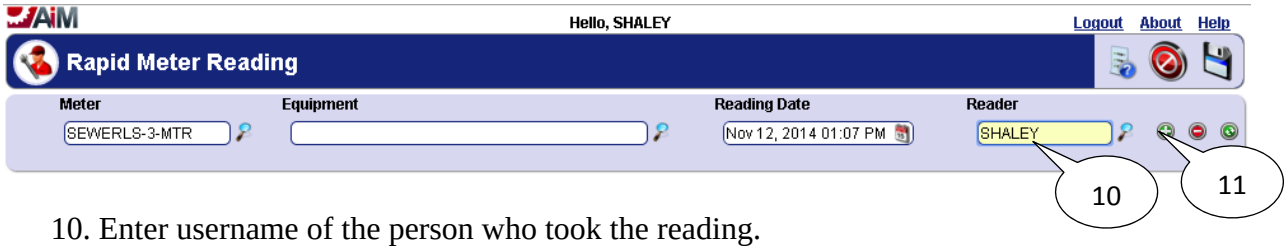
5. Enter search desired search criteria (such as location of meter in the description).
6. Select the **search** icon.



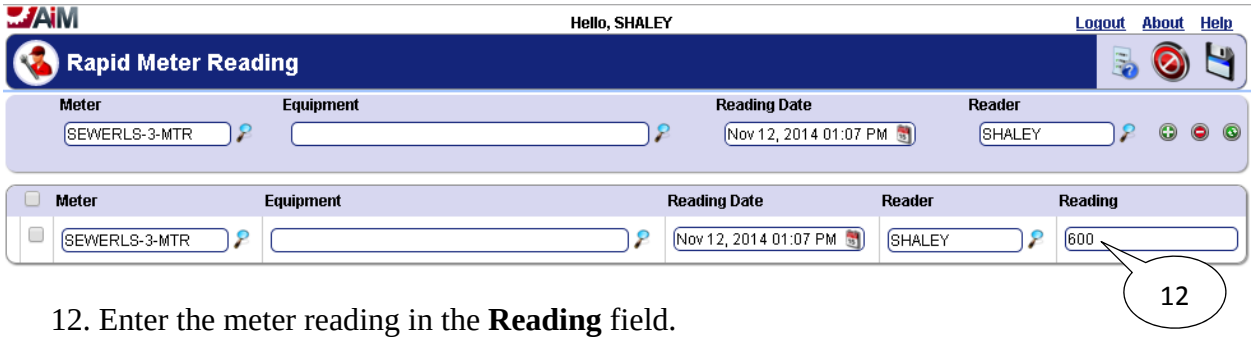
7. Select the meter.



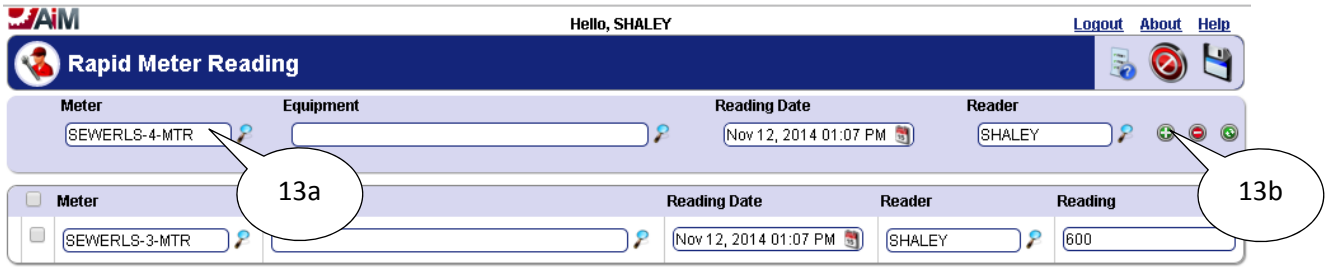
8. Select the **calendar** icon in the **Reading Date** field.
9. Select the reading date.



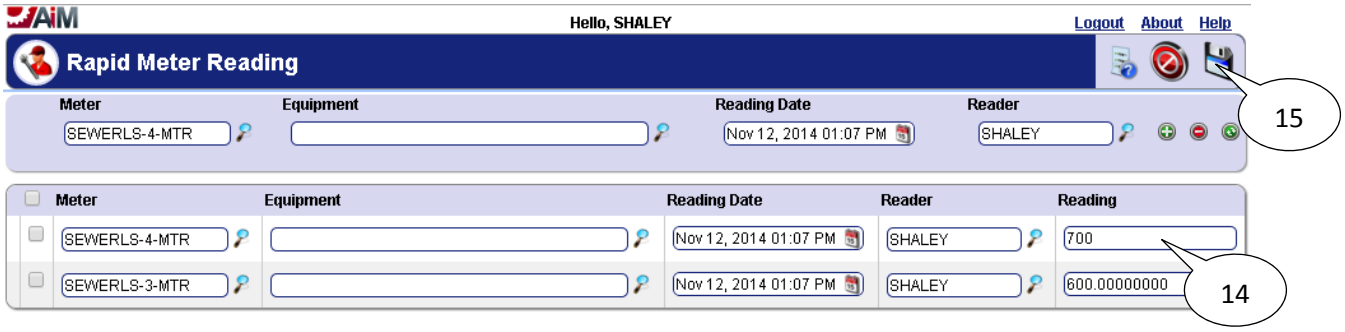
10. Enter username of the person who took the reading.
11. Select the **add** icon.



12. Enter the meter reading in the **Reading** field.



13. To add a reading for another meter do the following:
    a. Change the **Meter**.
    b. Select the **add** icon.



14. Enter the meter reading for the new meter in the **Reading** field.
15. When all meter readings have been entered select the **save** icon.

List of Checkpoints from PM Standards

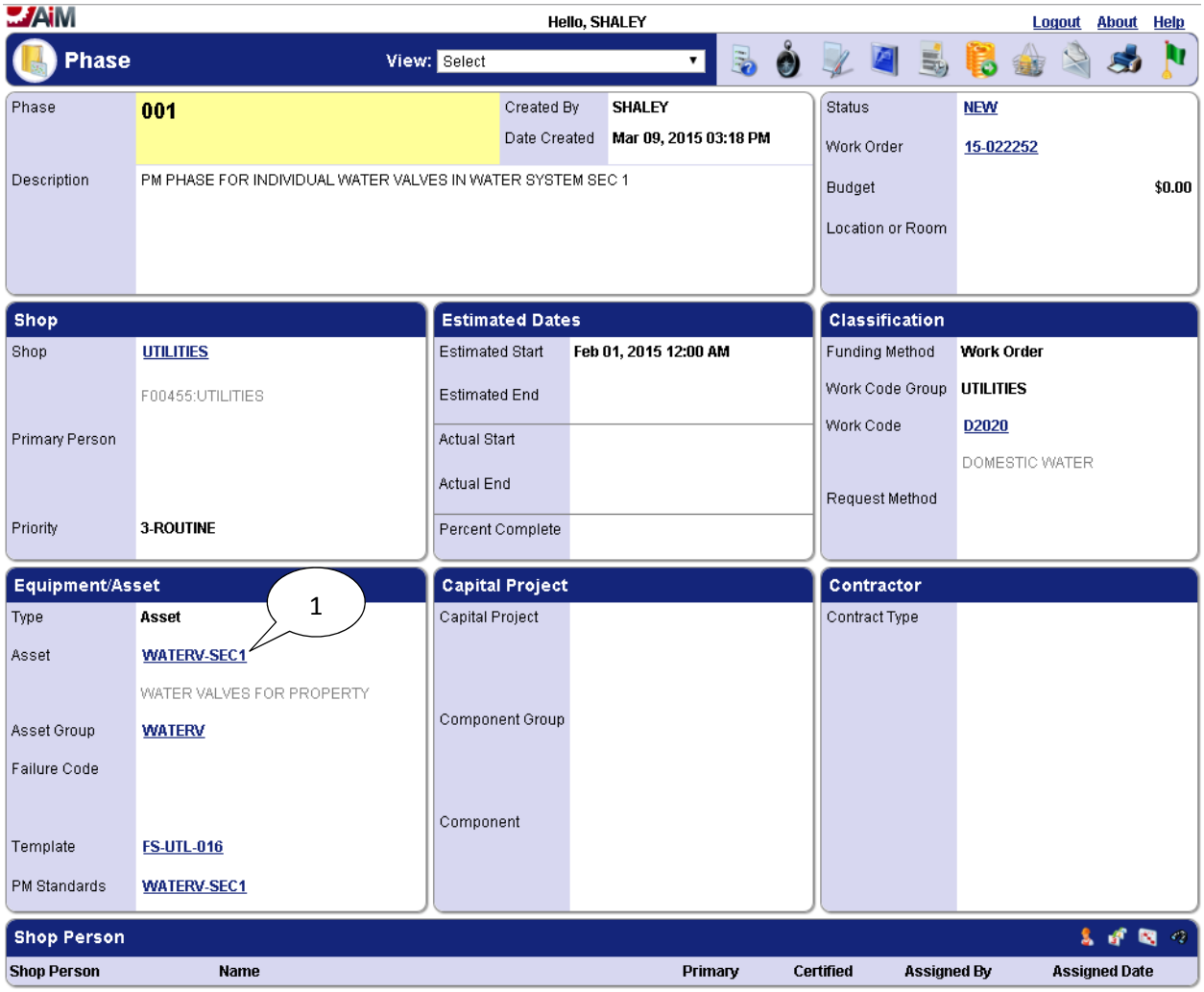
Checkpoint	Description	Measurement
1	DAILY - COMPLETE VISUAL INSPECTION OF LIFT STATION SEWERLS-1 AT S.W. CORNER OF PAN AMERICAN CENTER	No
2	DAILY - COMPLETE VISUAL INSPECTION OF LIFT STATION SEWERLS-2 AT NORTH SIDE OF HOUSING WAREHOUSE, LOOKS LIKE MANHOLE	No
3	DAILY - COMPLETE VISUAL INSPECTION OF LIFT STATION SEWERLS-3 WEST OF BUILDINGS AT ARROWHEAD RESEARCH PARK BY SAM STEEL WAY	No
4	DAILY - COMPLETE VISUAL INSPECTION OF LIFT STATION SEWERLS-4 WEST OF SUGARMAN SPACE GRANT BUILDING CLOSE TO SHEEP PENS	No
5	DAILY - COMPLETE VISUAL INSPECTION OF LIFT STATION SEWERLS-5 WEST OF SKEEN HALL GREENHOUSES NEXT TO KNOX STREET	No
6	WEEKLY - ENTER METER READING FOR SEWERLS-1-MTR BY SELECTING RAPID METER READING IN PREVENTIVE MAINTENANCE MODULE (TO CALCULATE READING ADD METER READING FOR PUMP 1 TO METER READING FOR PUMP 2 ON LIFT STATION SEWERLS-1)	No
7	WEEKLY - ENTER METER READING FOR SEWERLS-2-MTR BY SELECTING RAPID METER READING IN PREVENTIVE MAINTENANCE MODULE (TO CALCULATE READING ADD METER READING FOR PUMP 1 TO METER READING FOR PUMP 2 ON LIFT STATION SEWERLS-2)	No

8	WEEKLY - ENTER METER READING FOR SEWERLS-3-MTR BY SELECTING RAPID METER READING IN PREVENTIVE MAINTENANCE MODULE (TO CALCULATE READING ADD METER READING FOR PUMP 1 TO METER READING FOR PUMP 2 ON LIFT STATION SEWERLS-3)	No
9	WEEKLY - ENTER METER READING FOR SEWERLS-4-MTR BY SELECTING RAPID METER READING IN PREVENTIVE MAINTENANCE MODULE (TO CALCULATE READING ADD METER READING FOR PUMP 1 TO METER READING FOR PUMP 2 ON LIFT STATION SEWERLS-4)	No
10	WEEKLY - ENTER METER READING FOR SEWERLS-5-MTR BY SELECTING RAPID METER READING IN PREVENTIVE MAINTENANCE MODULE (TO CALCULATE READING ADD METER READING FOR PUMP 1 TO METER READING FOR PUMP 2 ON LIFT STATION SEWERLS-5)	No

Water Valves

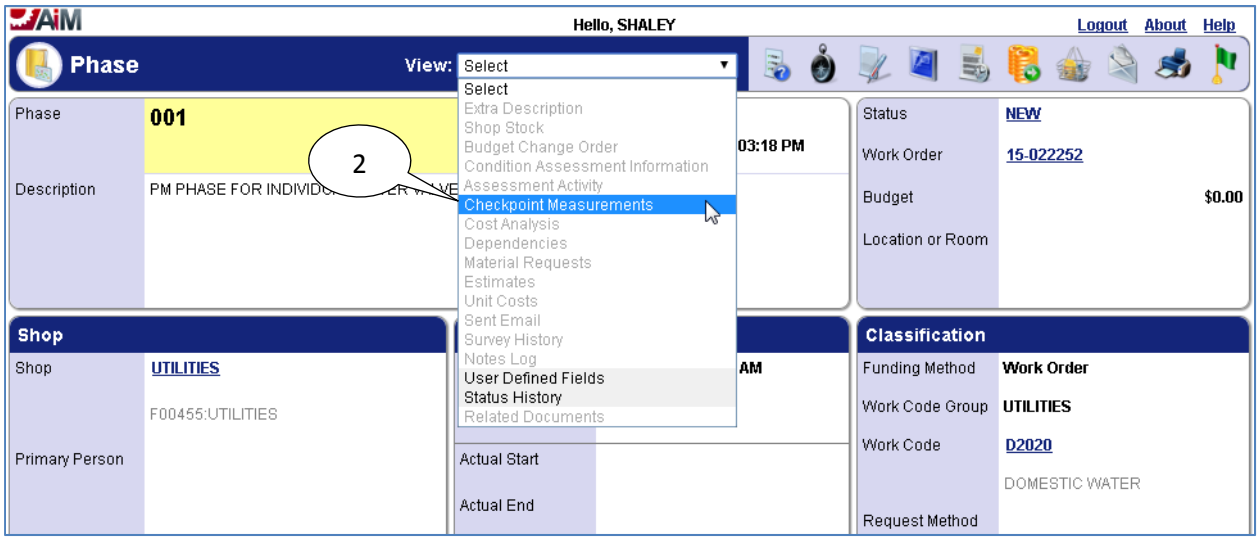
Preventive Maintenance for valves is performed annually. The Preventive Maintenance work orders for valves will be generated each year on February 1st for all water system sections. Valves are grouped together by sections into a single asset. For example, all of the Valves located in section WATER SYST SEC1 are stored as asset WATERV-SEC1 in AiM and each valve is represented by a checkpoint measurement in the phase of the work order.

Completing Individual Valve Checkpoint Measurements

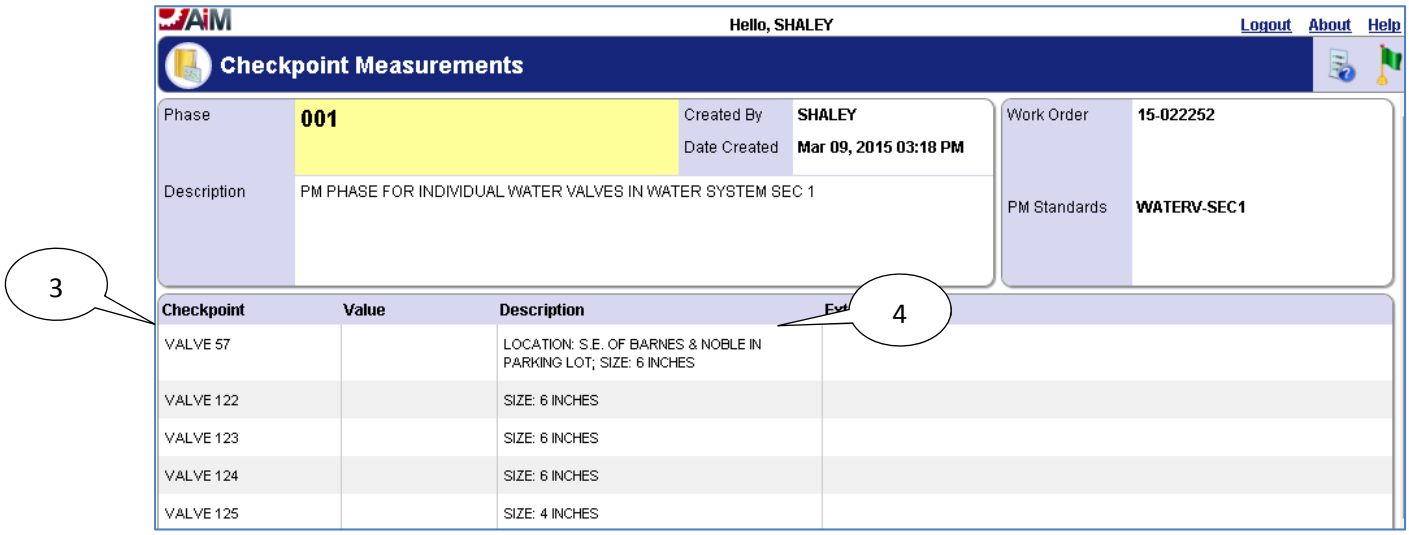


1. The phase on the work order for valves located in section WATER SYST SEC1 has asset WATERV-SEC1 assigned to it which represents all of the valves for section WATER SYST SEC1.

The individual valves are tracked in the *PM Standard Checkpoint Measurements* for the phase:

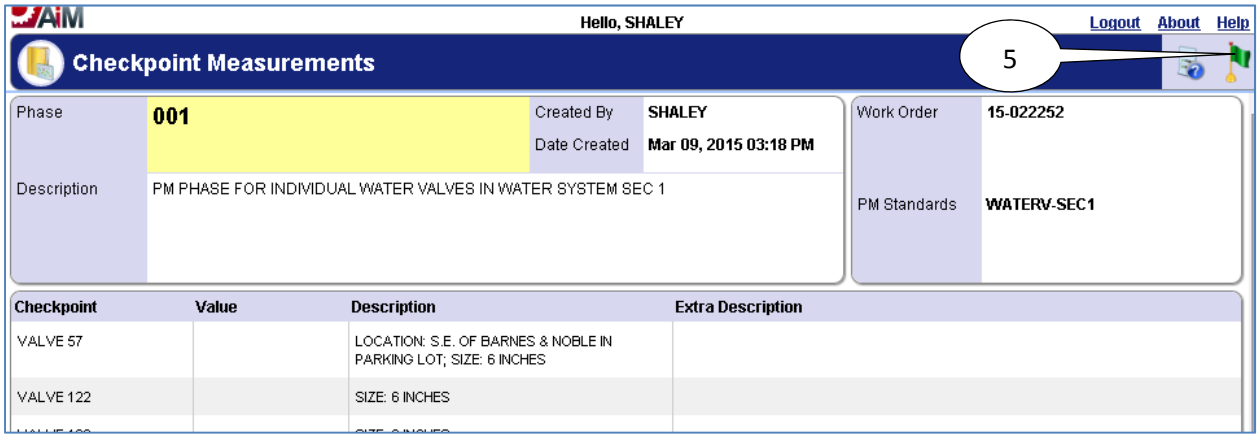


2. Select "Checkpoint Measurements" from the "View" menu.

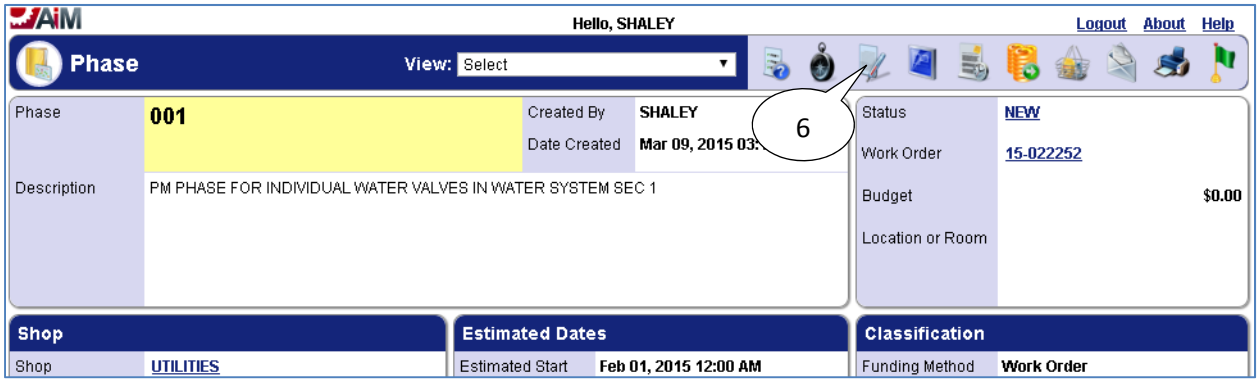


3. The individual valves are shown here as *Checkpoints*.
4. The "Description" field specifies the location of the valve and the size (if both are known).

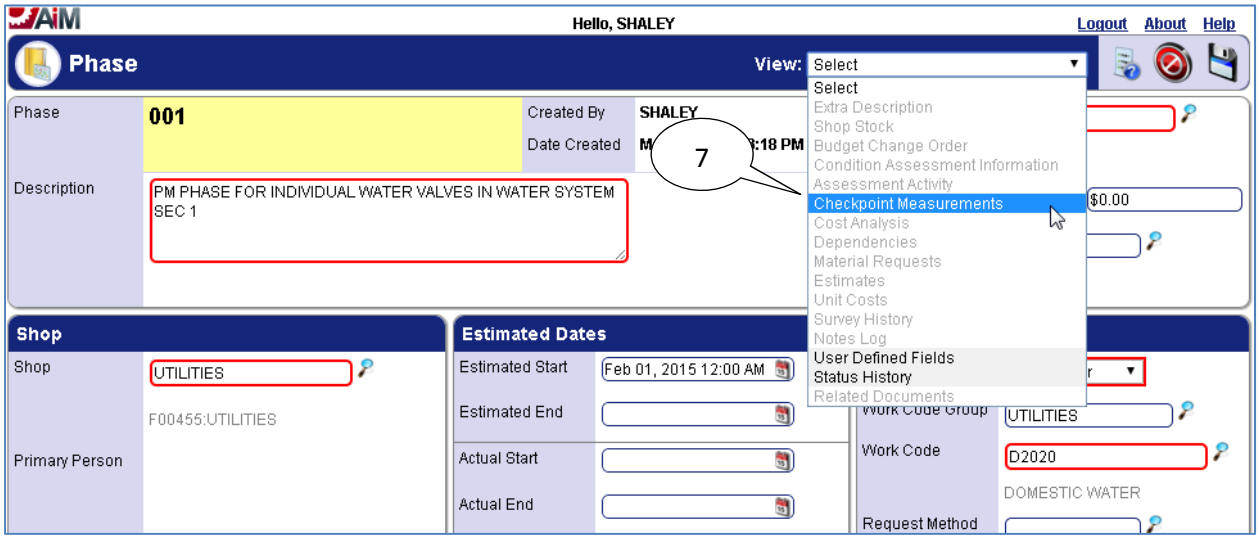
The phase has to be put into edit mode in order to edit the *PM Checkpoint Measurements*:



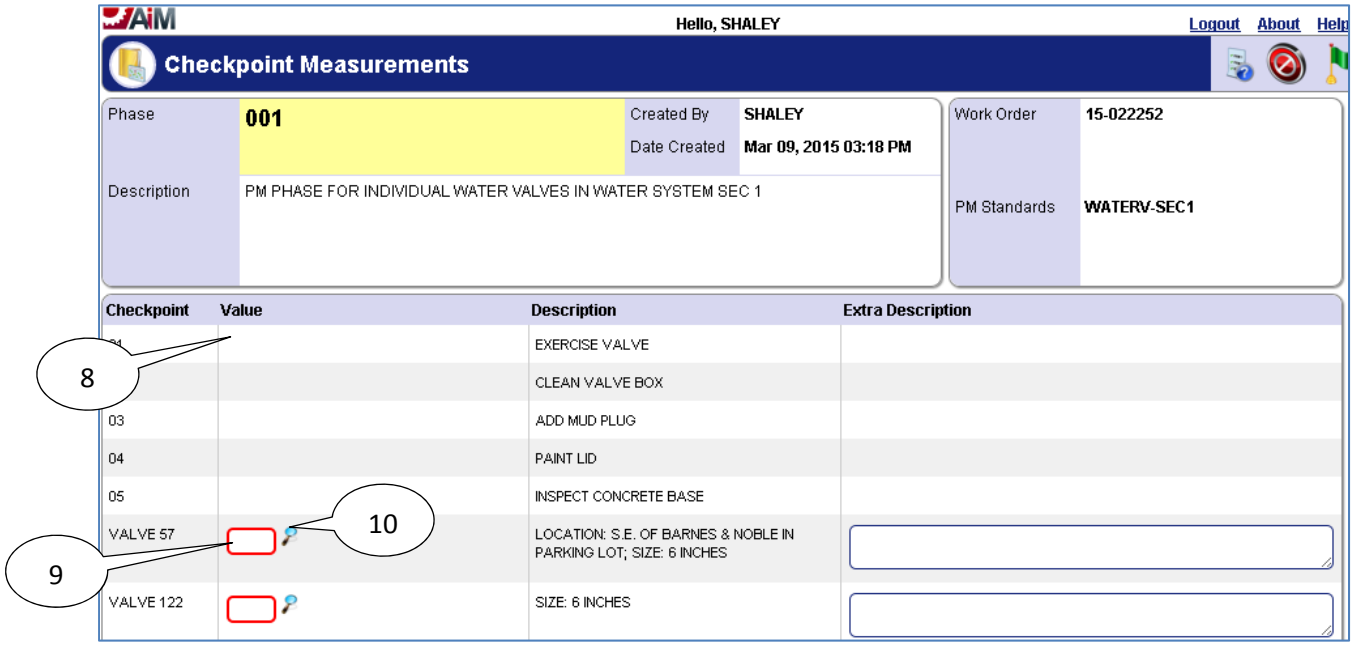
5. Select the **done** icon to navigate back to the phase.



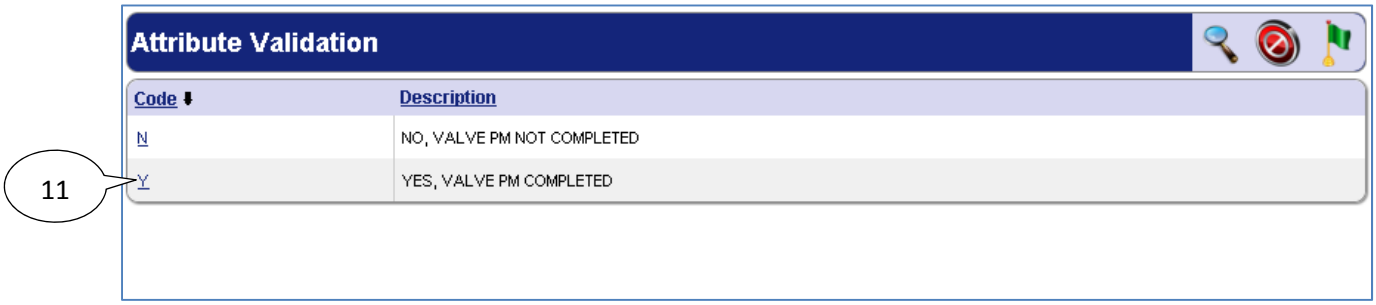
6. Select the **edit** icon.



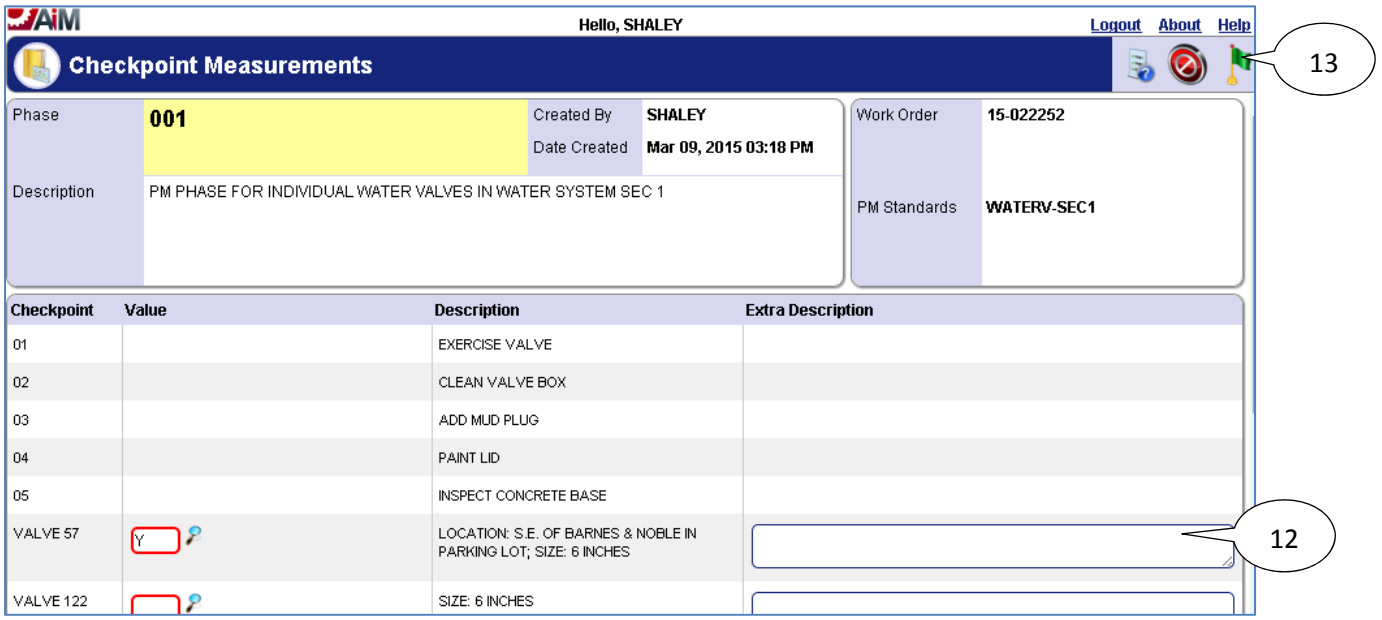
7. Select "*Checkpoint Measurements*" from the "*View*" menu.



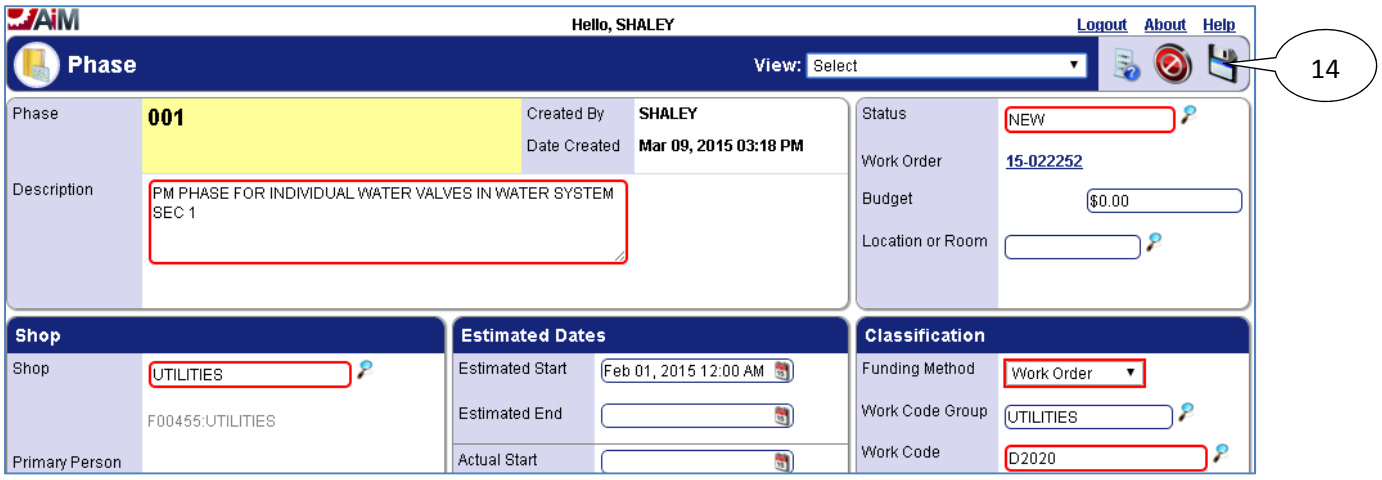
8. Any **Checkpoints** that do not have a value field where information can be entered are for instruction purposes only, and the **Description** of each of these **Checkpoints** should be read before starting **PM**.
9. Enter "*Value*" for *Checkpoint Measurement*.
10. If **search** icon is present then select the **search** icon to view valid options for the "*Value*" field.



11. After selecting the **search** icon, select a **Code** from the pop up window for the **Value**.



12. Enter a Description if something needs to be noted about the valve.
13. Select the **done** icon to navigate back to the phase.



14. Select the **save** icon to save the Checkpoint changes and exit edit mode.

List of Checkpoints from PM Standards

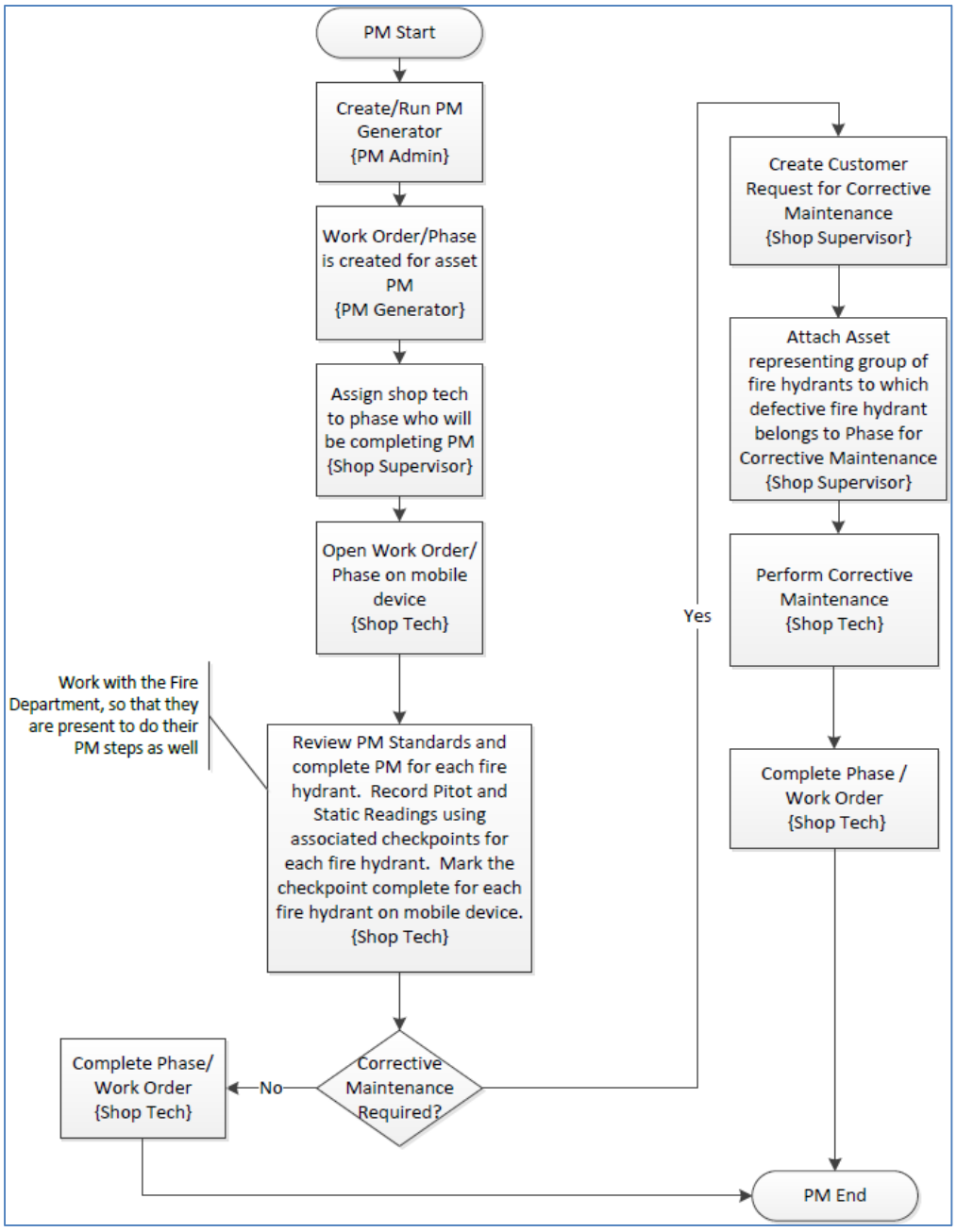
Since valves are tracked as checkpoints, and there are over a hundred valves only a portion of the *Checkpoints* for valves in WATER SYST SEC1 are shown below:

Checkpoint	Description	Measurement
VALVE 122	SIZE: 6 INCHES	Yes
VALVE 123	SIZE: 6 INCHES	Yes
VALVE 124	SIZE: 6 INCHES	Yes
VALVE 125	SIZE: 4 INCHES	Yes
VALVE 127	LOCATION: FEEDS ED SERVICES; SIZE: ?	Yes
VALVE 128	LOCATION: HYDRANT ON N.W. CORNER OF PAN AM; SIZE: 6 INCHES	Yes
VALVE 130	LOCATION: CENTER OF GARCIA HALL IN GRASS, FEEDS TOWARDS CORBETT; SIZE: 10 INCHES	Yes
VALVE 131	LOCATION: IN TUNNEL, ISOLATES CORBETT & TOWARDS GARCIA ANNEX; SIZE: 6 INCHES	Yes
VALVE 134	SIZE: 8 INCHES	Yes
VALVE 364	SIZE: 4 INCHES	Yes

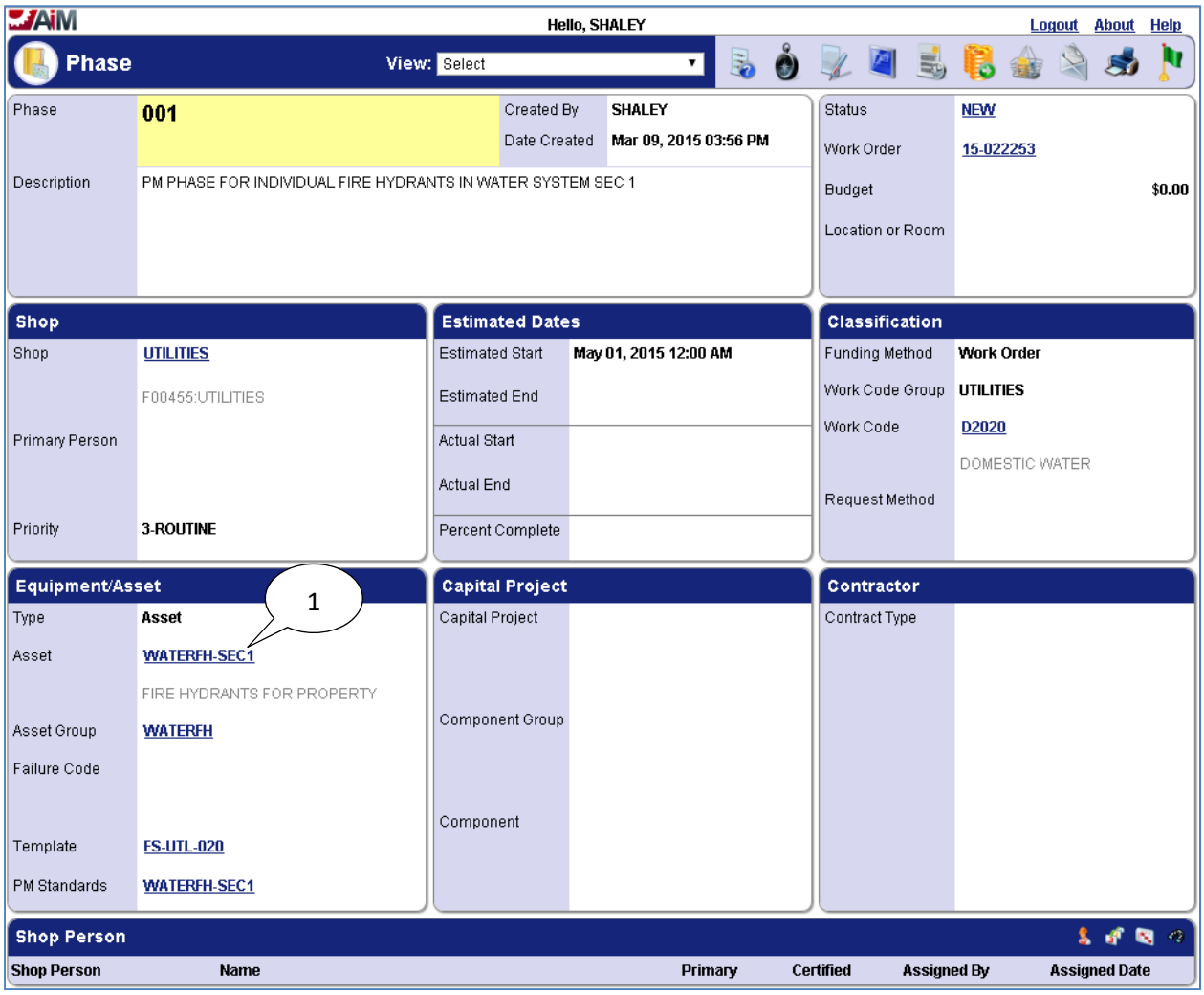
Fire Hydrants

Preventive Maintenance for fire hydrants is performed annually. The Preventive Maintenance work orders for fire hydrants will be generated each year on May 1st for all water system sections. Fire hydrants are grouped together by sections into a single asset. For example, all of the fire hydrants located in section WATER SYST SEC1 are stored as asset WATERFH-SEC1 in AiM, and each fire hydrant is represented by a checkpoint measurement in the phase of the work order.

Process Flow

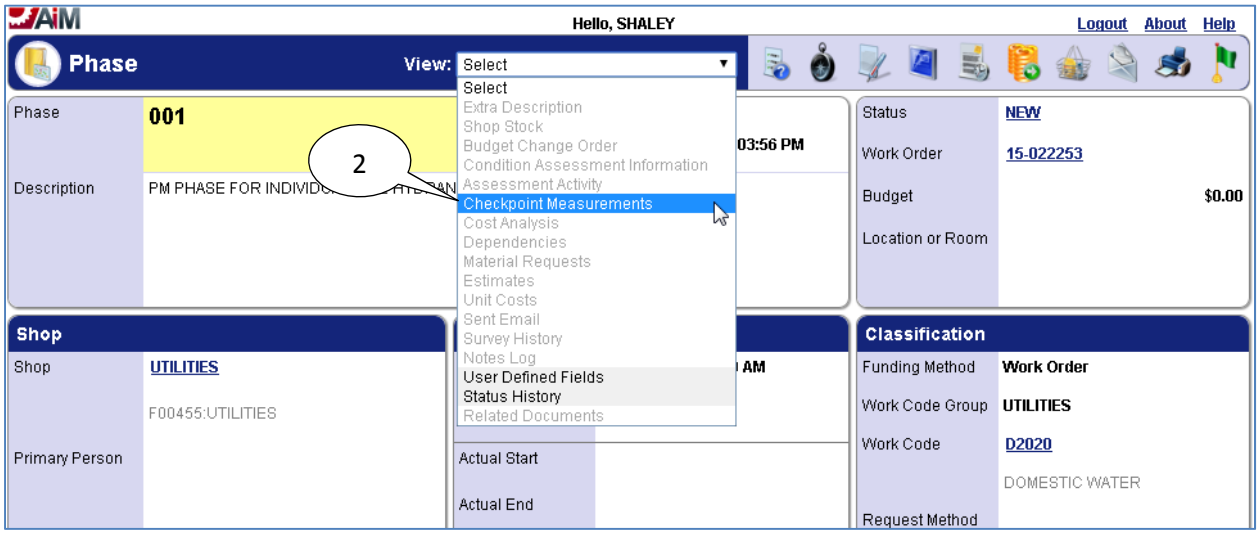


Completing Individual Fire Hydrant Checkpoint Measurements

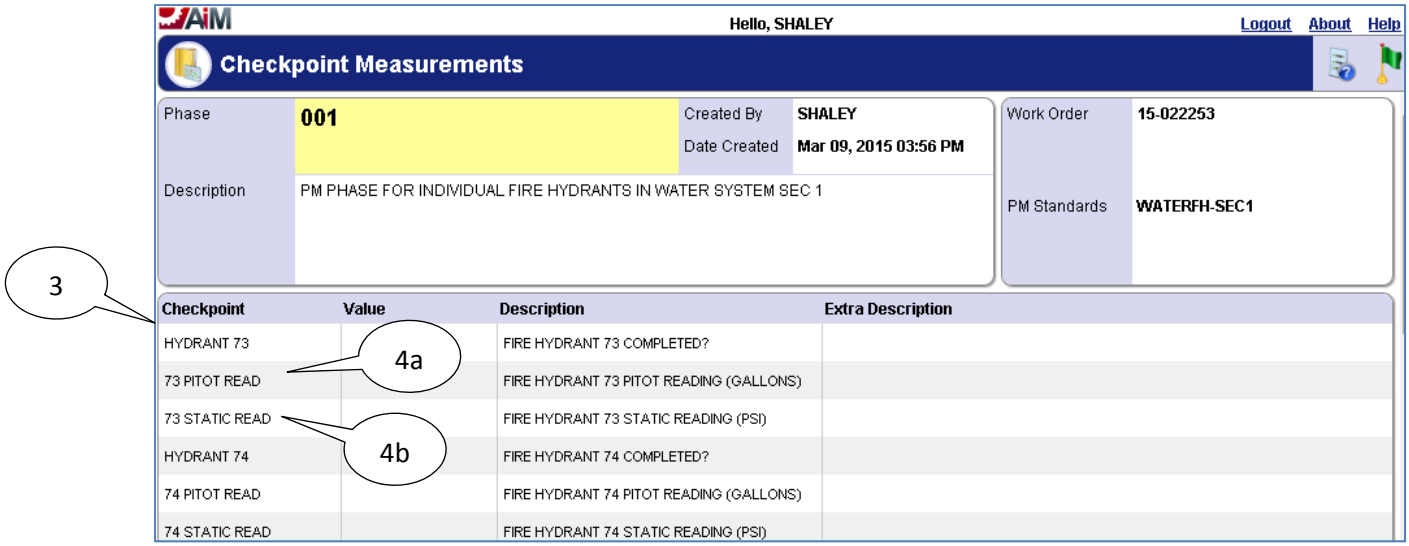


1. The phase on the work order for fire hydrants located in section WATER SYST SEC1 has asset WATERFH-SEC1 assigned to it which represents all of the fire hydrants for section WATER SYST SEC1.

The individual fire hydrants are tracked in the *PM Standard Checkpoint Measurements* for the phase:

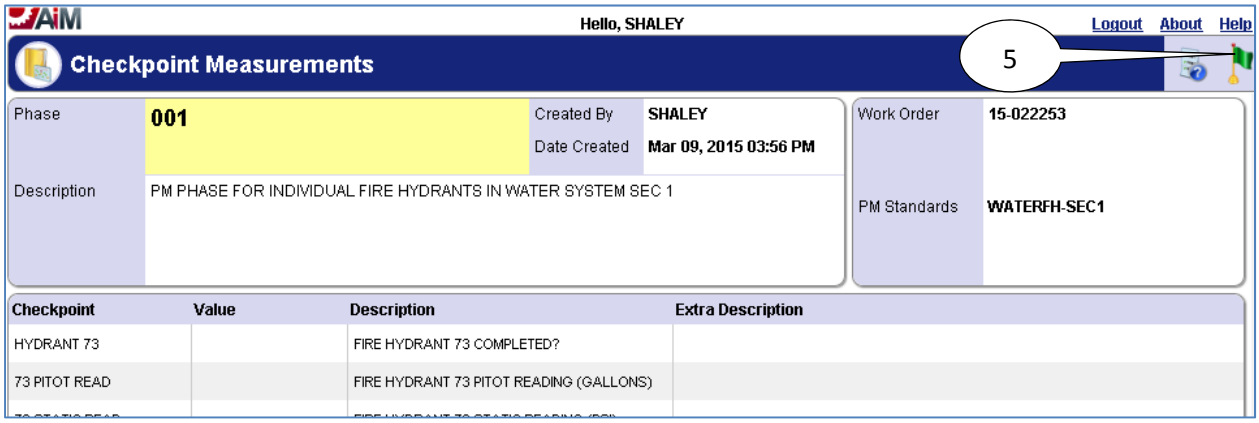


2. Select “Checkpoint Measurements” from the “View” menu.

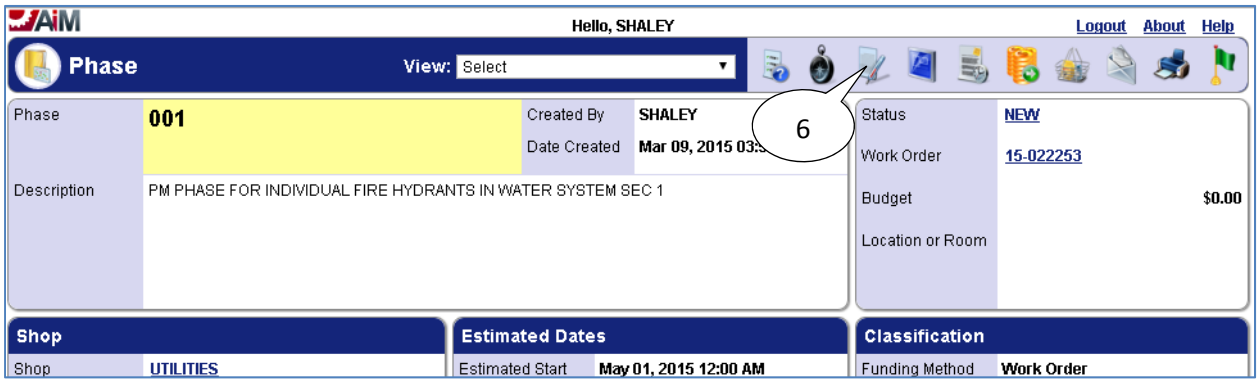


3. The individual fire hydrants are shown here as *Checkpoints*.
4. Along with the individual fire hydrants, there are also checkpoints to record readings for each fire hydrant:
    a. <Hydrant #> PITOT READ is used to record the pitot reading for the hydrant.
    b. <Hydrant #> STATIC READ is used to record the static reading for the hydrant.

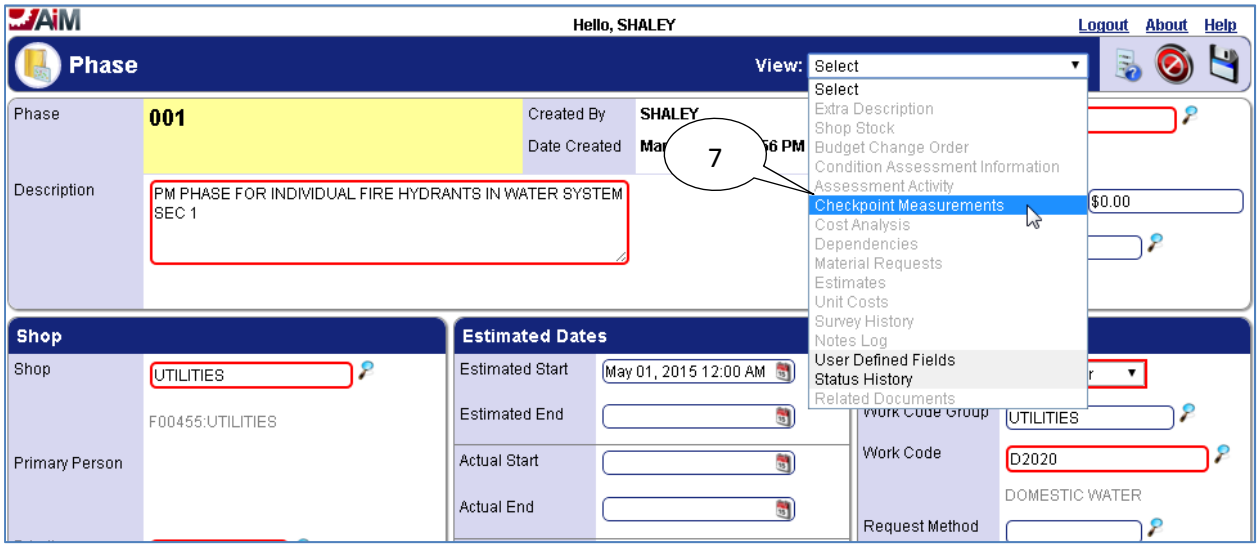
The phase has to be put into edit mode in order to edit the *PM Checkpoint Measurements*:



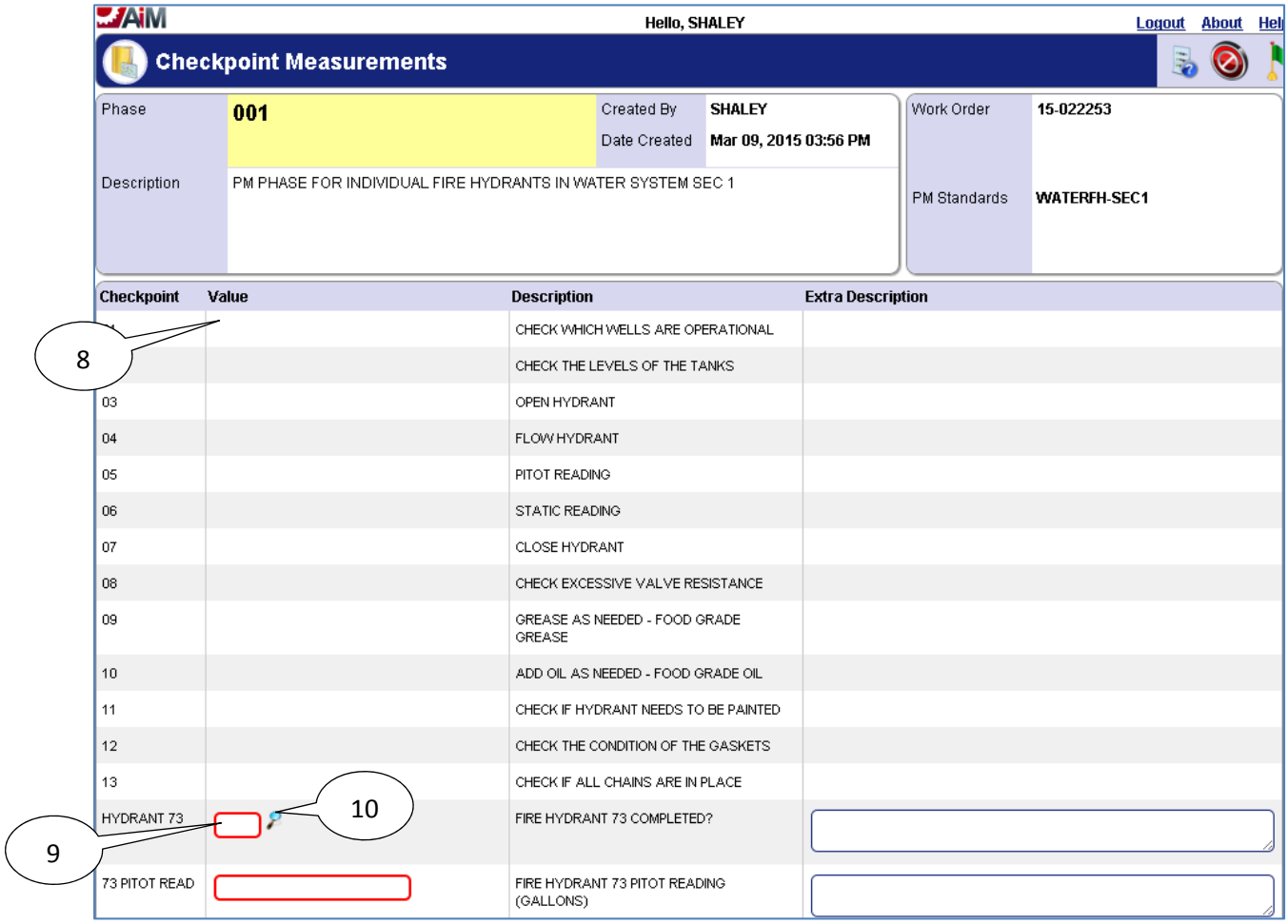
5. Select the **done** icon to navigate back to the phase.



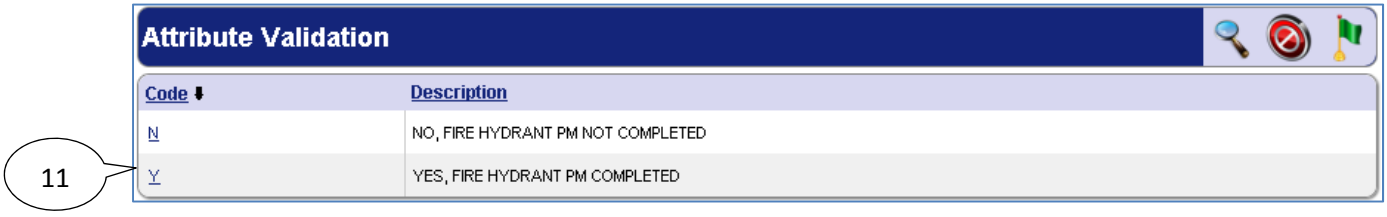
6. Select the **edit** icon.



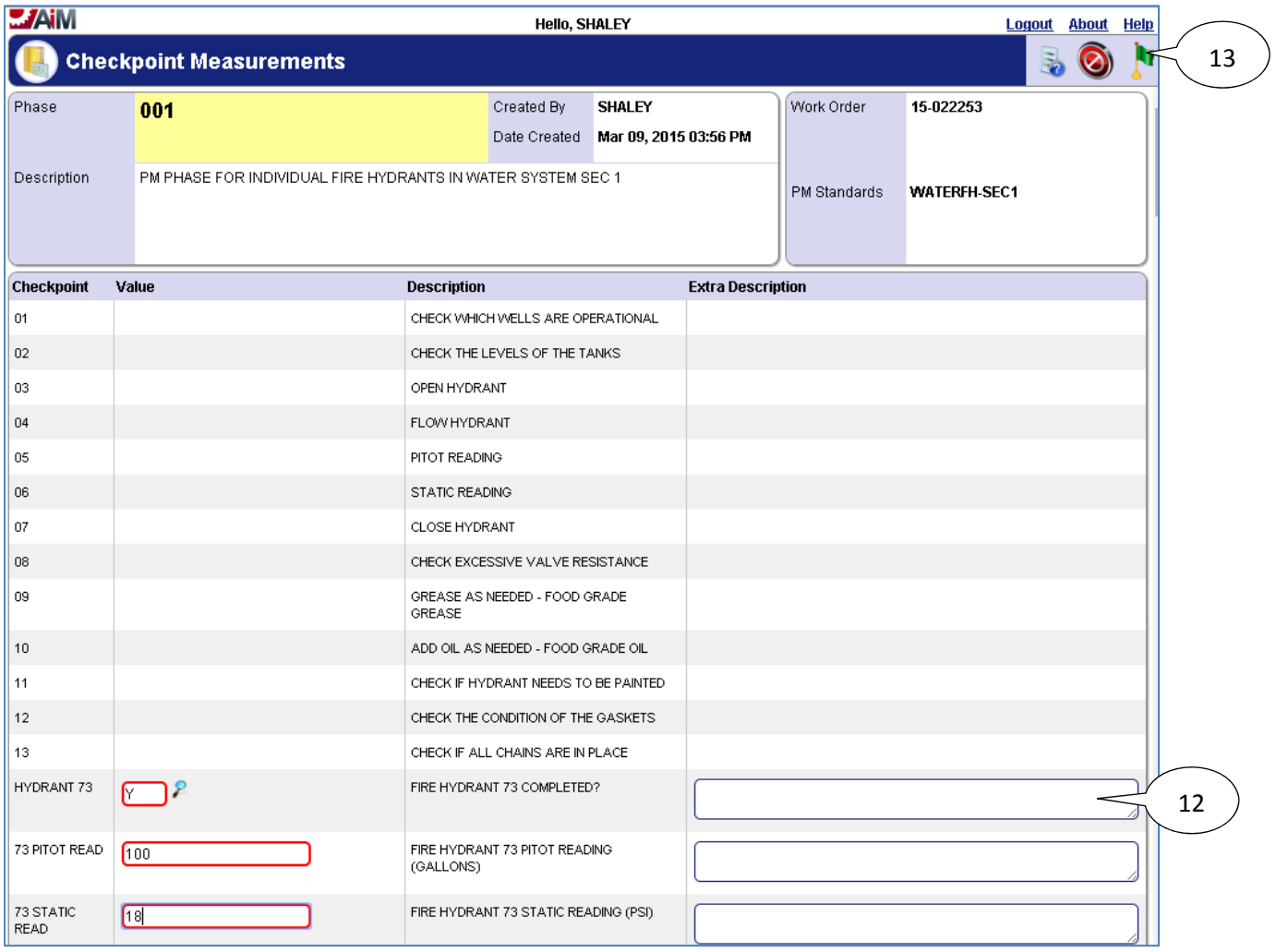
7. Select "*Checkpoint Measurements*" from the "*View*" menu.



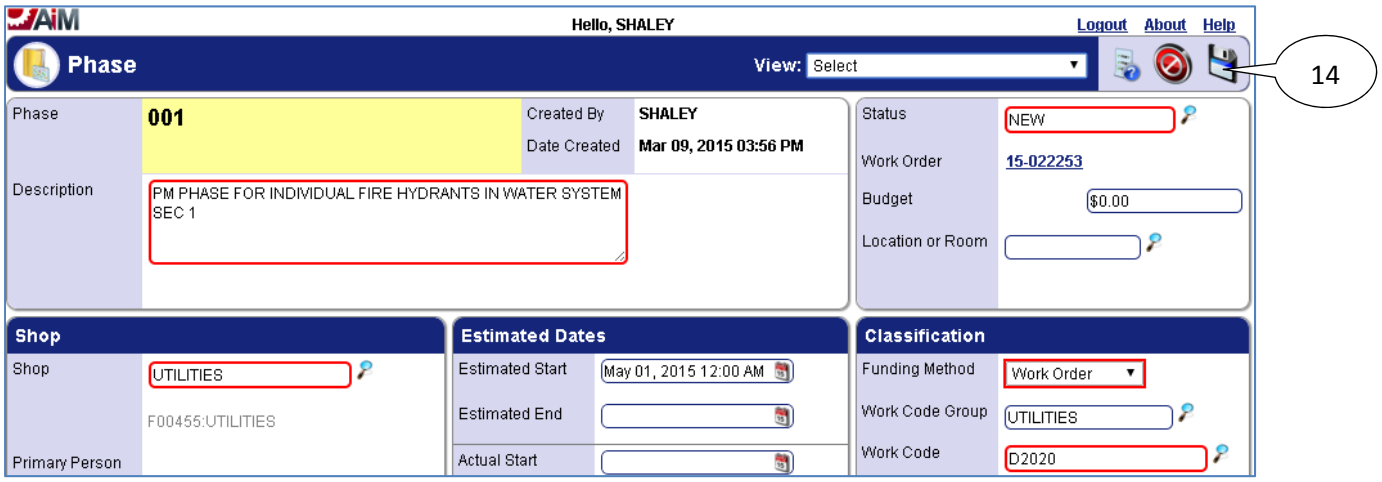
8. Any **Checkpoints** that do not have a value field where information can be entered are for instruction purposes only, and the **Description** of each of these **Checkpoints** should be read before starting **PM**.
9. Enter "*Value*" for *Checkpoint Measurement.*
10. If **search** icon is present then select the **search** icon to view valid options for the "*Value*" field. If **search** icon is not present then the value must be hand entered.



11. After selecting the **search** icon, select a **Code** from the pop up window for the **Value**.



12. Enter a Description if something needs to be noted about the valve.
13. Select the **done** icon to navigate back to the phase.



14. Select the **save** icon to save the Checkpoint changes and exit edit mode.

List of Checkpoints from PM Standards

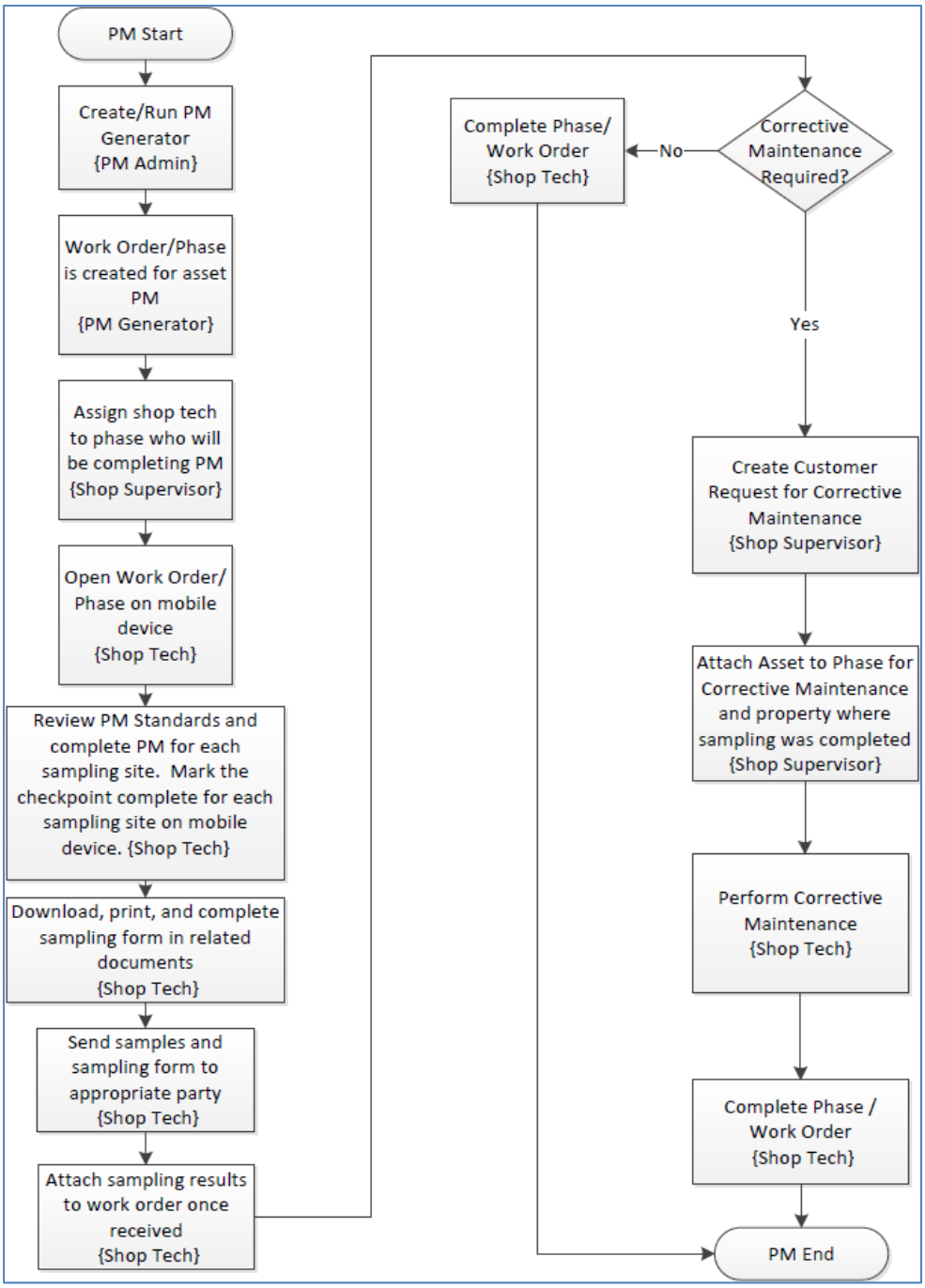
Since fire hydrants are tracked as checkpoints, and there are over a hundred fire hydrants only a portion of the *Checkpoints* for fire hydrants in WATER SYST SEC1 are shown below:

Checkpoint	Description	Measurement
01	CHECK WHICH WELLS ARE OPERATIONAL	No
02	CHECK THE LEVELS OF THE TANKS	No
03	OPEN HYDRANT	No
04	FLOW HYDRANT	No
05	PITOT READING	No
06	STATIC READING	No
07	CLOSE HYDRANT	No
08	CHECK EXCESSIVE VALVE RESISTANCE	No
09	GREASE AS NEEDED - FOOD GRADE GREASE	No
10	ADD OIL AS NEEDED - FOOD GRADE OIL	No
11	CHECK IF HYDRANT NEEDS TO BE PAINTED	No
12	CHECK THE CONDITION OF THE GASKETS	No
13	CHECK IF ALL CHAINS ARE IN PLACE	No
HYDRANT 73	FIRE HYDRANT 146 PITOT READING (GALLONS)	Yes
73 PITOT READ	FIRE HYDRANT 146 STATIC READING (PSI)	Yes
73 STATIC READ	FIRE HYDRANT 147 PITOT READING (GALLONS)	Yes
HYDRANT 74	FIRE HYDRANT 147 STATIC READING (PSI)	Yes
74 PITOT READ	FIRE HYDRANT 148 PITOT READING (GALLONS)	Yes
74 STATIC READ	FIRE HYDRANT 148 STATIC READING (PSI)	Yes

Water Sampling

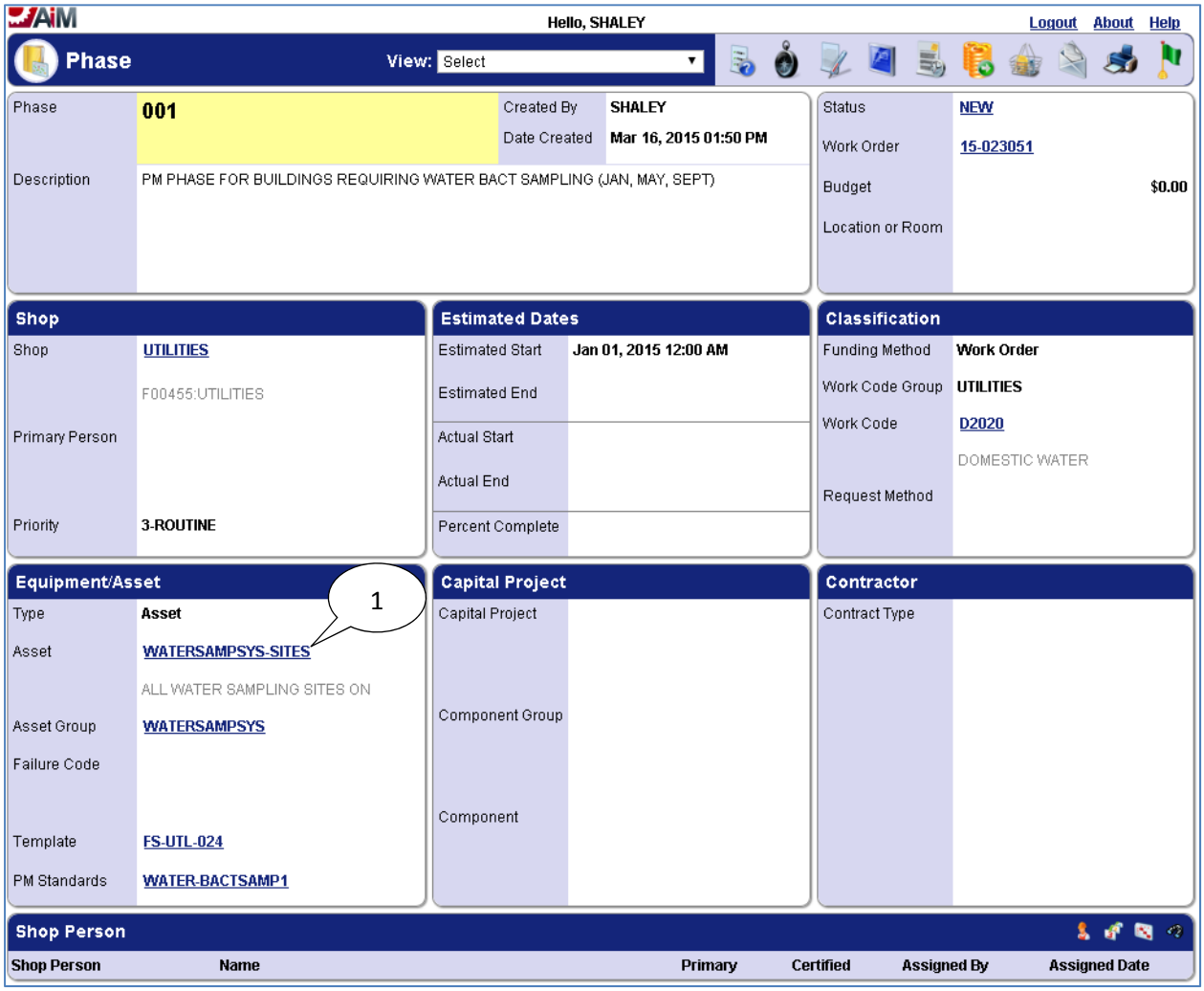
There are 4 types of water sampling: BAC-T (completed monthly), TTHM & HAA5 (completed quarterly starting in January), Asbestos (completed every 9 years in the month of December), and Lead & Copper (completed every 3 years in the month of May). Sampling sites for the entire water system are grouped into a single asset called WATERSAMPSYS-SITES in AiM, and each sampling site is represented by a checkpoint measurement in the phase of the work order.

Process Flow



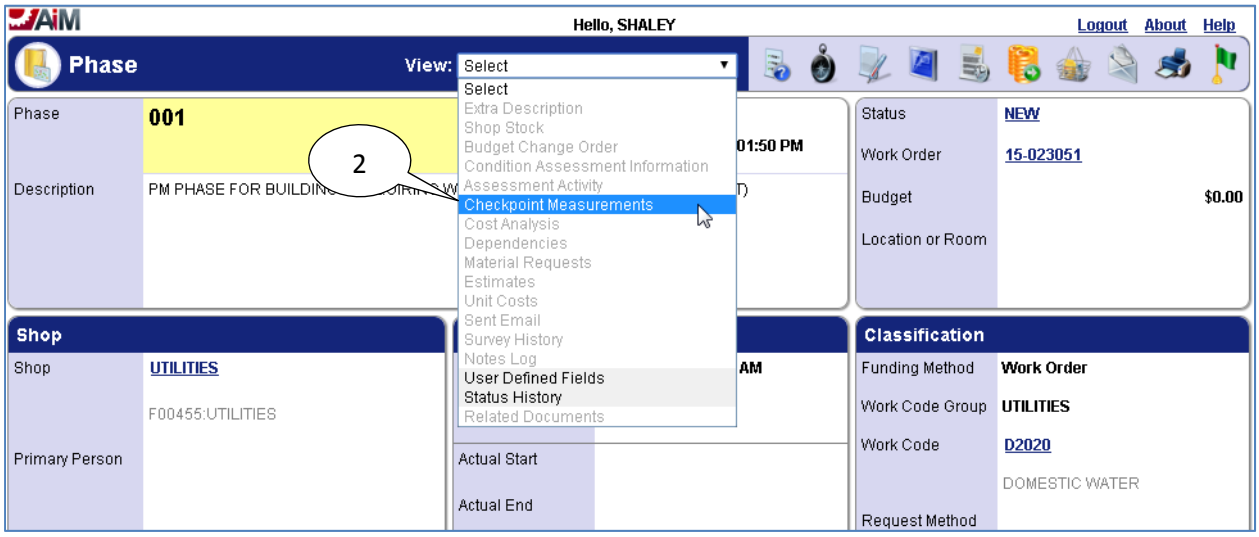
Completing Individual Sampling Site Checkpoint Measurements

The following steps were completed for Work Order created for BAC-T Sampling, but the same steps may be followed for any of the 4 water sampling types (BAC-T, TTHM & HAA5, Asbestos, Lead & Copper). The only difference between each type is that they will have different sampling sites listed in the checkpoints.

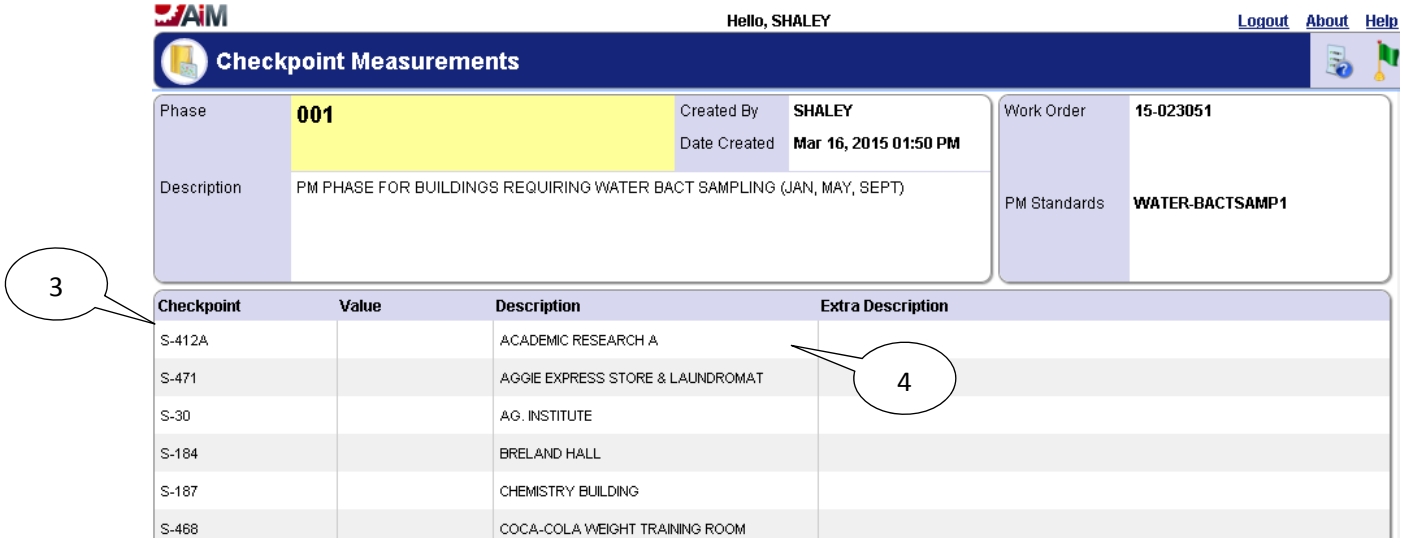


1. The phase on the work order for BAC-T water sampling located in section WATER SYST has asset WATERSAMPSYS-SITES assigned to it which represents all of the sampling sites for section WATER SYST (WATER SYST represents the entire water system).

The individual sampling sites are tracked in the *PM Standard Checkpoint Measurements* for the phase:

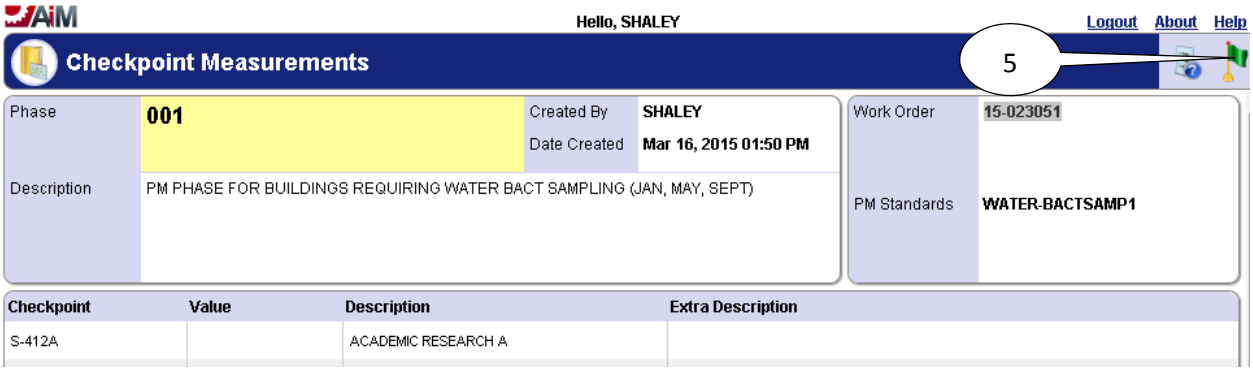


2. Select "Checkpoint Measurements" from the "View" menu.

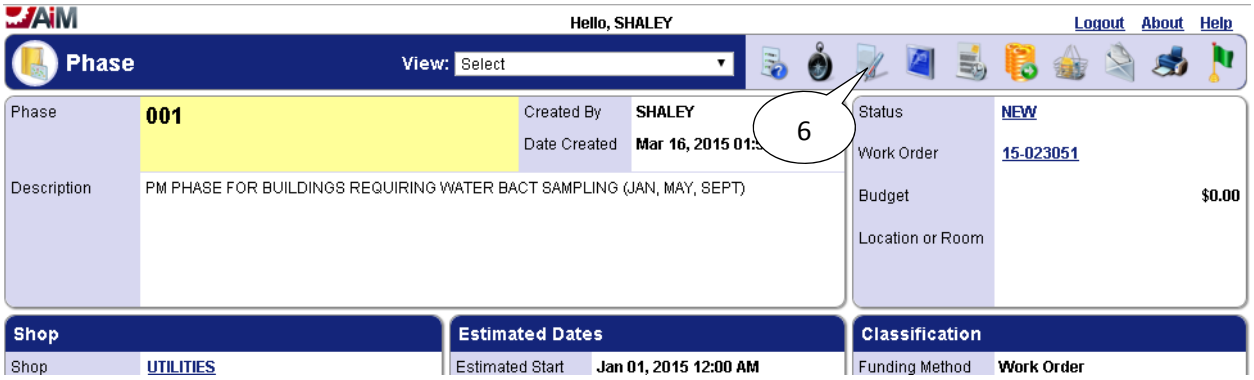


3. The individual sampling sites are shown here as *Checkpoints* (the "S" in the checkpoint stands for "Site" and the value after the dash such as "412A" pictured above is the building number of the sampling site).
4. The "Description" field specifies the location of the sampling site.

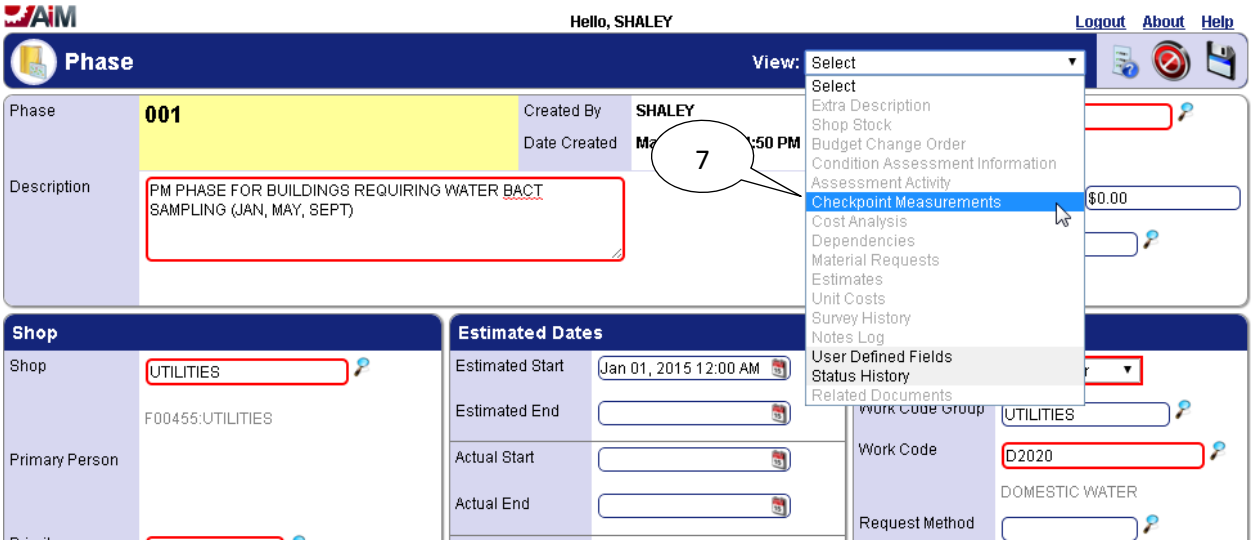
The phase has to be put into edit mode in order to edit the *PM Checkpoint Measurements*:



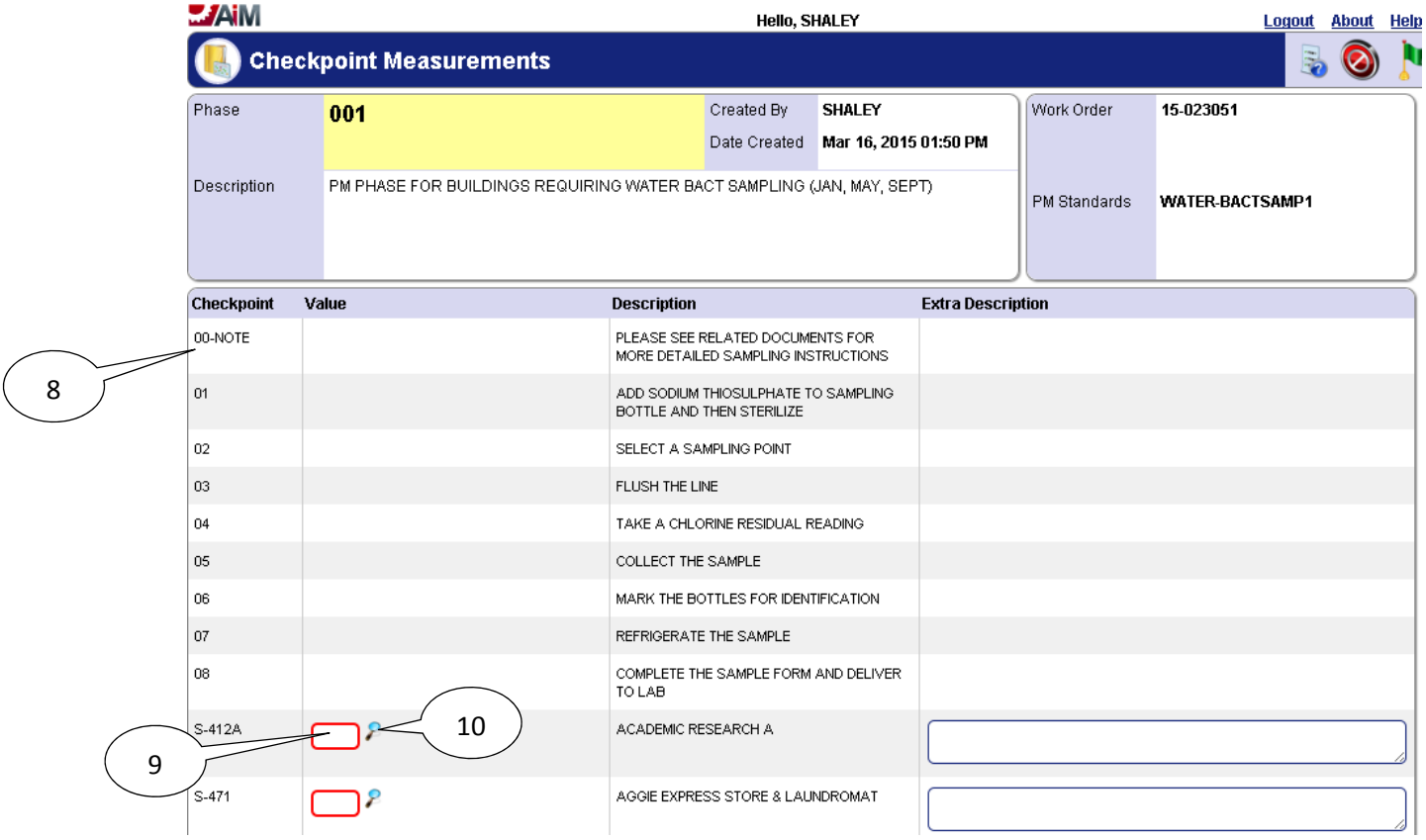
5. Select the **done** icon to navigate back to the phase.



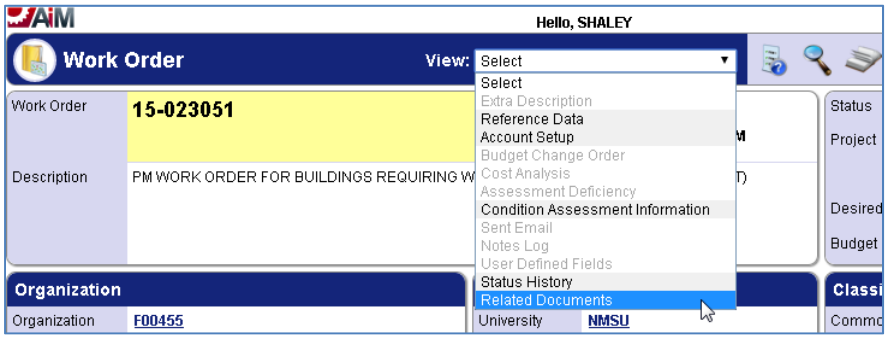
6. Select the **edit** icon.



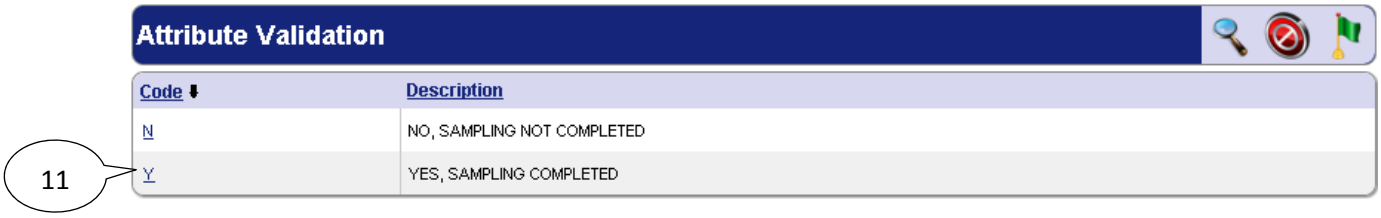
7. Select "*Checkpoint Measurements*" from the "*View*" menu.



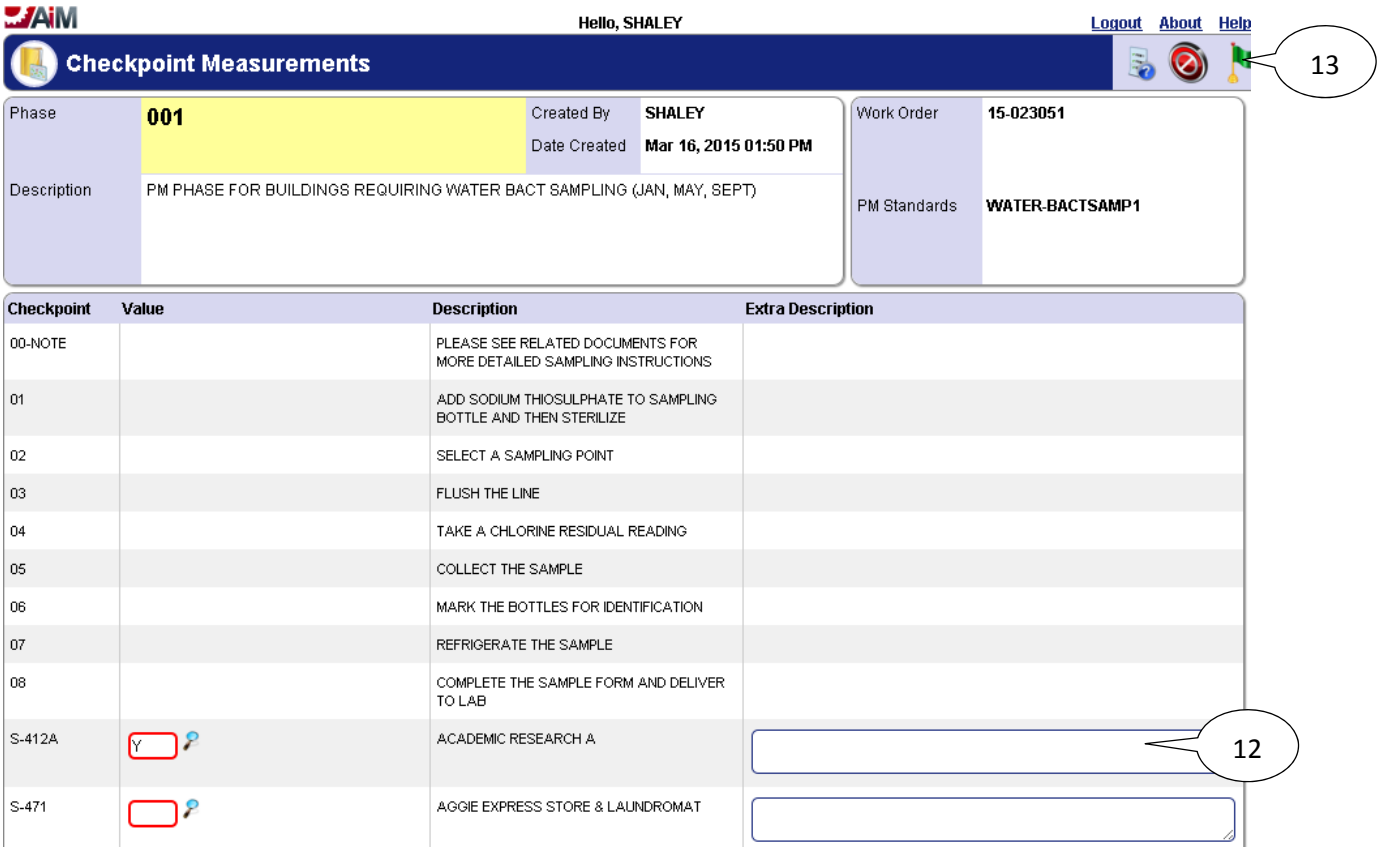
8. Any **Checkpoints** that do not have a value field where information can be entered are for instruction purposes only, and the **Description** of each of these **Checkpoints** should be read before starting **PM.** In the case of the first checkpoint shown above it states to view Related Documents for further instructions which can be found in the **View** menu of the Work Order (pictured below):



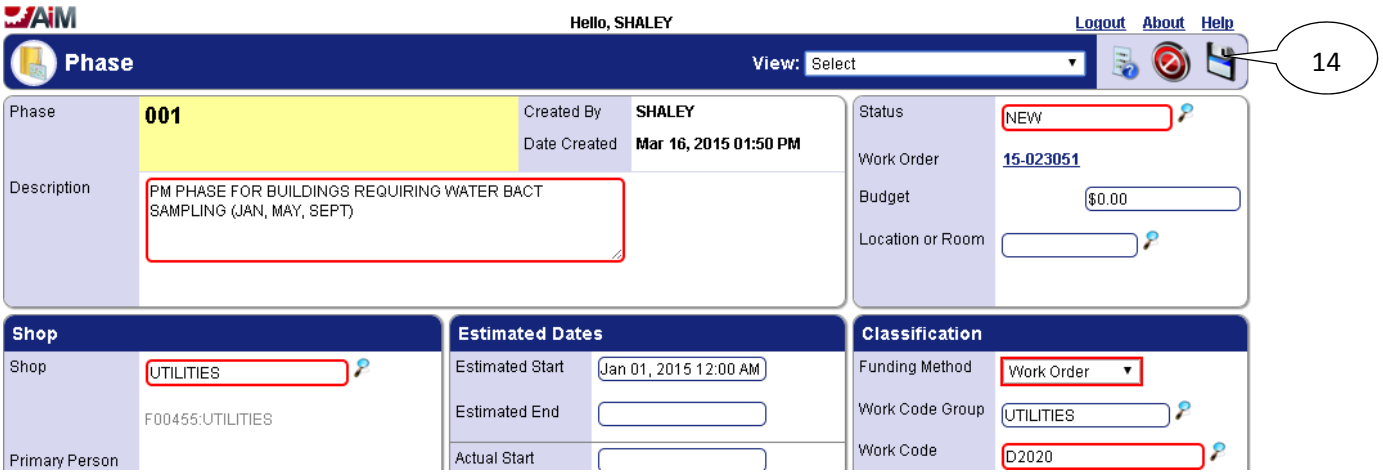
9. Enter "*Value*" for *Checkpoint Measurement.*
10. If **search** icon is present then select the **search** icon to view valid options for the "*Value*" field. If **search** icon is not present then the value must be hand entered.



11. After selecting the **search** icon, select a **Code** from the pop up window for the **Value**.



12. Enter a Description if something needs to be noted about the valve.
13. Select the **done** icon to navigate back to the phase.



14. Select the **save** icon to save the Checkpoint changes and exit edit mode.

List of Checkpoints from PM Standards

Below are the checkpoints for each type of water sampling starting with the first 9 checkpoints found in the PM Standards for all water sampling PM.

First 9 Checkpoints for each water sampling PM Standards:

Checkpoint	Description	Measurement
00-NOTE	PLEASE SEE RELATED DOCUMENTS FOR MORE DETAILED SAMPLING INSTRUCTIONS	No
01	ADD SODIUM THIOSULPHATE TO SAMPLING BOTTLE AND THEN STERILIZE	No
02	SELECT A SAMPLING POINT	No
03	FLUSH THE LINE	No
04	TAKE A CHLORINE RESIDUAL READING	No
05	COLLECT THE SAMPLE	No
06	MARK THE BOTTLES FOR IDENTIFICATION	No

Checkpoint	Description	Measurement
07	REFRIGERATE THE SAMPLE	No
08	COMPLETE THE SAMPLE FORM AND DELIVER TO LAB	No

Checkpoints for BAC-T water sampling completed in January, May, and September:

Checkpoint	Description	Measurement
S-184	BRELAND HALL	Yes
S-187	CHEMISTRY BUILDING	Yes
S-206-107	SUTHERLAND VILLAGE # 107	Yes
S-206-430	SUTHERLAND VILLAGE # 430	Yes
S-206-810	SUTHERLAND VILLAGE # 810	Yes
S-214-1415	TOM FORT VILLAGE # 1415	Yes
S-245	TEJADA BUILDING	Yes
S-246	SMALL ANIMAL LAB	Yes
S-267	FIRE STATION	Yes
S-270-1601	COLE VILLAGE # 1601	Yes
S-270-1800	COLE VILLAGE # 1800	Yes
S-30	AG. INSTITUTE	Yes
S-338	EDUCATIONAL SERVICES BUILDING	Yes

Checkpoint	Description	Measurement
S-357	DACC TRADES BUILDING	Yes
S-385	THEATRE SCENE SHOP	Yes
S-397	ENGINEERING COMPLEX II	Yes
S-412A	ACADEMIC RESEARCH A	Yes
S-465	EQUESTRIAN BUILDING	Yes
S-468	COCA-COLA WEIGHT TRAINING ROOM	Yes
S-471	AGGIE EXPRESS STORE & LAUNDROMAT	Yes
S-514	PHOTOVOLTAIC LAB	Yes
S-526H-37	VISTA DEL MONTE H-37	Yes
S-526U-2	VISTA DEL MONTE U-2	Yes
S-633	INDIAN CULTURAL CENTER	Yes
S-645	CHAMISA DORMS	Yes

Checkpoints for BAC-T water sampling completed in February, June, and October:

Checkpoint	Description	Measurement
S-10	GODDARD HALL	Yes
S-154	GARCIA ANNEX	Yes
S-172	HADLEY HALL	Yes

Checkpoint	Description	Measurement
S-185	HAMIEL HALL	Yes
S-188	GARDINER HALL	Yes
S-206-3401	SUTHERLAND VILLAGE # 3401	Yes
S-206-511	SUTHERLAND VILLAGE # 511	Yes
S-214-1208	TOM FORT VILLAGE # 1208	Yes
S-214-1429	TOM FORT VILLAGE # 1429	Yes
S-214-1500	TOM FORT VILLAGE # 1500	Yes
S-244	GERALD THOMAS HALL	Yes
S-251	AQUATIC CENTER	Yes
S-270-1679	COLE VILLAGE # 1679	Yes
S-270-1901	COLE VILLAGE # 1901	Yes
S-271	GREEK COMPLEX # 100	Yes
S-275	GARCIA HALL LOBBY	Yes
S-33	KENT HALL	Yes
S-388	VISTA DEL MONTE COMM. CENTER	Yes
S-394A	GENESIS CENTER A	Yes
S-462-E16	VISTA DEL MONTE E-16	Yes
S-462-F2	VISTA DEL MONTE F-2	Yes

Checkpoint	Description	Measurement
S-467	HOUSING & BOOKSTORE WAREHOUSE	Yes
S-479	DACC LEARNING RESOURCES	Yes
S-643	NMDA	Yes
S-N001	USDA COTTON GIN	Yes

Checkpoints for BAC-T water sampling completed in March, July, and November:

Checkpoint	Description	Measurement
S-206-1013	SUTHERLAND VILLAGE # 1013	Yes
S-206-3427	SUTHERLAND VILLAGE # 3427	Yes
S-206-726	SUTHERLAND VILLAGE # 726	Yes
S-211	RENTFROW GYM	Yes
S-214-1208	TOM FORT VILLAGE # 1208	Yes
S-214-1400	TOM FORT VILLAGE # 1400	Yes
S-214-1418	TOM FORT VILLAGE # 1418	Yes
S-248	REGENTS ROW LOBBY	Yes
S-254	FS PLUMBING SHOP/CONSTRUCTION SHOP	Yes
S-270-1632	COLE VILLAGE # 1632	Yes
S-270-1699	COLE VILLAGE # 1699	Yes

Checkpoint	Description	Measurement
S-270-3501	COLE VILLAGE # 3501	Yes
S-284	PAN AM CENTER	Yes
S-314	ATHLETIC FIELD RESTROOMS	Yes
S-365	SPEECH BUILDING	Yes
S-368	KNOX HALL	Yes
S-390	P.G.E.L.	Yes
S-461	ZUHL LIBRARY	Yes
S-462	VISTA DEL MONTE – CHILDREN'S VILLAGE	Yes
S-462-D	VISTA DEL MONTE D	Yes
S-462-J33	VISTA DEL MONTE J-33	Yes
S-540	DACC HEALTH & PUBLIC SERVICE	Yes
S-601	TENNIS CENTER	Yes
S-632	BARNES & NOBLE STORE	Yes
S-N001	USDA	Yes

Checkpoints for BAC-T water sampling completed in April, August, and December:

Checkpoint	Description	Measurement
S-152	FS CUSTODIAL QUONSET (HVAC)	Yes

Checkpoint	Description	Measurement
S-164	NEALE HALL	Yes
S-199	FARM MANAGERS RESIDENCE	Yes
S-206-319	SUTHERLAND VILLAGE #319	Yes
S-206-329	SUTHERLAND VILLAGE # 329	Yes
S-206-411	SUTHERLAND VILLAGE # 411	Yes
S-206-610	SUTHERLAND VILLAGE # 610	Yes
S-214-1523	TOM FORT VILLAGE # 1523	Yes
S-262	FRENGER FOOD COURT	Yes
S-270-1619	COLE VILLAGE # 1619	Yes
S-270-2501	COLE VILLAGE # 2501	Yes
S-273	GREEK 300	Yes
S-282	STUCKY HALL	Yes
S-285	CORBETT CENTER	Yes
S-290	FEEDING RESEARCH BUILDING	Yes
S-30	POLICE STATION	Yes
S-32	YOUNG HALL	Yes
S-321	ACTIVITY CENTER	Yes
S-394D	GENESIS D	Yes

Checkpoint	Description	Measurement
S-462-A	VISTA DEL MONTE A	Yes
S-462-J13	VISTA DEL MONTE J-13	Yes
S-526-X2	VISTA DEL MONTE X-2	Yes
S-605	CHAMISA	Yes
S-633	INDIAN CULTURAL CENTER	Yes
S-N213	DELTA ZETA HOUSE	Yes

Checkpoints for TTHM & HAA5 water sampling:

Checkpoint	Description	Measurement
S-244	GERALD THOMAS HALL	Yes
S-321	ACTIVITY CENTER	Yes
S-HYDRANT 127	HYDRANT 127	Yes
S-WELL 17	WELL 17	Yes

Checkpoints for Asbestos water sampling:

Checkpoint	Description	Measurement
S-172	NORTH SIDE OF HORSE SHOE HADLEY	Yes
S-206	SUTHERLAND VILLAGE 700 BLOCK	Yes

Checkpoint	Description	Measurement
S-214	TOM FORT 1500 BLOCK	Yes
S-221	FACILITIES AND SERVICES OFFICES	Yes
S-338	EDUCATIONAL SERVICES N SIDE OF BUILDING	Yes
S-363	ENGINEERING COMPLEX 1	Yes
S-605	CHAMESA BUILDING SOUTH SIDE	Yes

Checkpoints for Lead & Copper water sampling:

Checkpoint	Description	Measurement
S-10	GODDARD HALL	Yes
S-172	HADLEY HALL	Yes
S-187	CHEMISTRY	Yes
S-267	FIRE STATION	Yes
S-284	PAN AM	Yes
S-30	POLICE STATION	Yes
S-321	ACTIVITY CENTER	Yes
S-341	DACC	Yes
S-596	FULTON CENTER	Yes
S-83	MILTON HALL	Yes

Attaching Sampling Forms to Related Documents

Any forms completed and/or any results received from water sample testing need to be uploaded to the **Related Documents** for the **Work Order (**steps for attaching related documents can be found in the *General PM Instruction* section of this guide under *Attaching Related Documents).* Shown below are some, but not necessarily all forms which should be attached in the **Related Documents**.

BAC-T Water Report:

AQUA ENVIRONMENTAL TESTING LAB, LLC
12695 Leasburg St. Pk .Rd.
Las Cruces, NM 88007
aetlab1201@certurylink.net
Phone/Fax: 575.526.0871

BAC-T WATER REPORT
NMED Lab #1201
Drinking water analysis for Total Coliforms & E. coli using EPA approved MMO-MUG Method SM. 9233.B. –Colilert.
(Shaded areas are for lab use only)

Reason For Sampling: ☑ Routine ☐ Repeat (✓ ✧ box below) ☐ Special ☐ NMED Monitoring
Test Requested: ☑ Potability-P/A Colilert ☐ Potability-Enum. Quanti Tray

Water System Name: New Mexico State University
Company - Contact Person: Ralph Lucero
Phone Number: 575-649-1854
County: Dona Ana
DWB Field Office: District III
Mailing Address: P.O. Box 30001 MSC 3545
Fax Number: 575-646-1271
Sampler: David Avalos
Cert. No.: NM 02137
City: Las Cruces State: NM Zip: 88003
E-mail: ralpluce@nmsu.edu,davalos@nmsu.edu, jasanche@nmsu.edu, jjdelgad@nmsu.edu
Type of System: ☑ Community ☐ Non-Community ☐ Private Well ☐ < 1000 population
Water Source: ☑ Ground ☐ Surface ☐ Blended ☐ Other
Codes for Results: P = Present A = Absent

Sample Lab No.	Sample Date	Sample Time	PWS Number	Facility ID	Sample Point ID	Sample Location (Address, Sample Site, etc.)	✧Repeat Samples Only	Chlorinated ?	Residual Free Cl	Sample Condition	TC Results	*E. coli* Results
AETL-LC-400-15	2-9-15	09:07	NM3528707	28707000	N/A	Goddard Hall	☐ Original No.	☑Y ☐N	1.01	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-401-15	2-9-15	09:35	NM3528707	28707000	N/A	Kent Hall	☐ Downstream	☑Y ☐N	.58	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-402-15	2-9-15	09:48	NM3528707	28707000	N/A	Hamiel Hall	☐ Upstream	☑Y ☐N	.68	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-403-15	2-9-15	10:02	NM3528707	28707000	N/A	Garcia Annex	☐ Other	☑Y ☐N	1.33	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-404-15	2-9-15	10:31	NM3528707	28707000	N/A	Natatorium	☐ TS ☐ TSR (GWR)	☑Y ☐N	.97	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-405-15	2-9-15	11:10	NM3528707	28707000	N/A	Garcia Hall Lobby	☐ Original No.	☑Y ☐N	.93	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-406-15	2-9-15	11:33	NM3528707	28707000	N/A	Gerald Thomas	☐ Downstream	☑Y ☐N	.68	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-407-15	2-9-15	11:50	NM3528707	28707000	N/A	USDA Cotton Gin	☐ Upstream	☑Y ☐N	.36	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-408-15	2-9-15	1:10	NM3528707	28707000	N/A	Goddard Hall	☐ Other	☑Y ☐N	.81	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A
AETL-LC-409-15	2-9-15	1:37	NM3528707	28707000	N/A	Hanley Hall	☐ TS ☐ TSR (GWR)	☑Y ☐N	.90	☑ Accept ☐ Reject	☐P ☑A	☐P ☑A

Received By: (signature) **Date Received:** 2-9-15 **Time Received:** 1430 **Date Incubated** 2-9-15 **Time Incubated:** 1645 **Analyst: (signature)** **Analysis Date:** 2-10-15 **Analysis Time:** 1049

Chain of Custody for All PWWS Samples Must be Completed

	Name	Organization	Date / Time	Seal Intact
Released by:		NMSU	2-9-15 2:30	☑Y ☐N
Received by:				☐Y ☐N
Released by:				☐Y ☐N
Received by:				☐Y ☐N

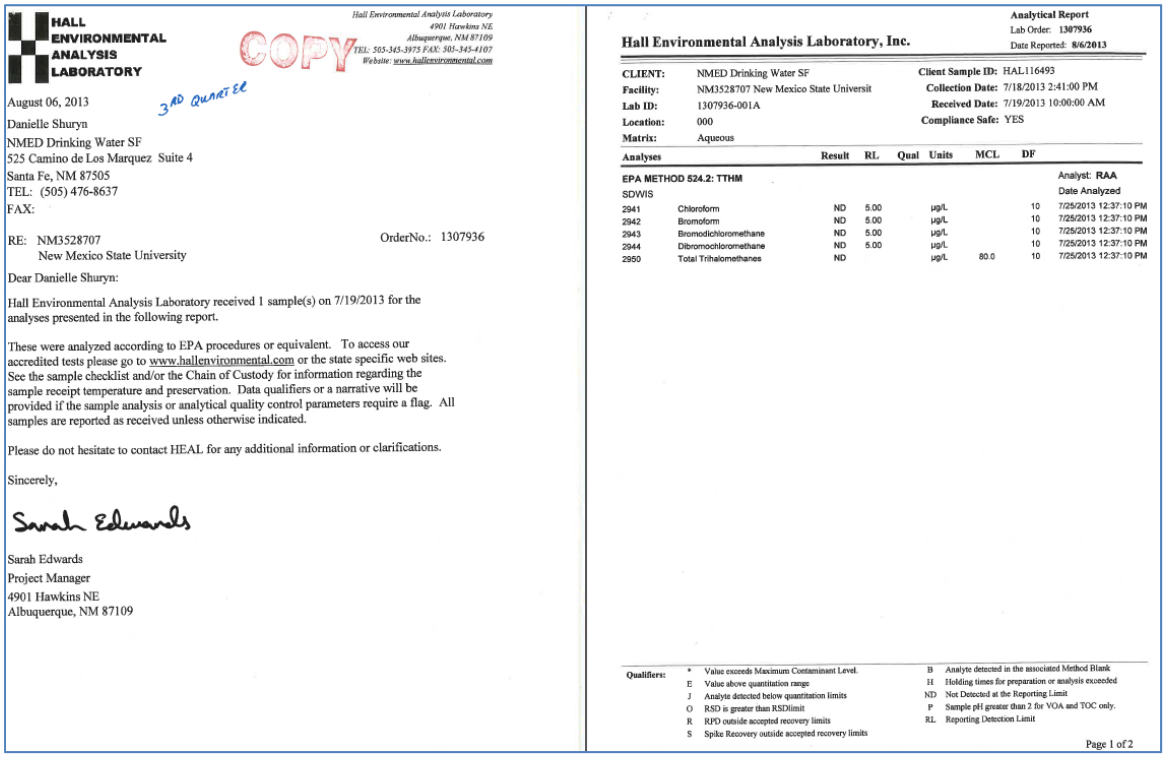
Comments:

Positive Sample Results
Positive Confirmed By: Date / Time
System Notified By: Date / Time
Contact:
District Notified By: Date / Time
Contact:

*Reason[s] Sample Rejected: Enter code number above next to reject box ____
1. Sample holding time is expired
2. Date discrepancy
3. Temperature violation > 10°C
4. Leaking sample vessel
5. Volume to great unable to mix
6. Volume insufficient for analysis
7. Form is incomplete
8. Other:_____

Form WML-02-01 Rev April 2012

TTHM & HAA5 Report:



HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

COPY

3RD QUARTER

August 06, 2013

Danielle Shuryn
NMED Drinking Water SF
525 Camino de Los Marquez Suite 4
Santa Fe, NM 87505
TEL: (505) 476-8637
FAX:

RE: NM3528707 OrderNo.: 1307936
New Mexico State University

Dear Danielle Shuryn:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/19/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Sarah Edwards

Sarah Edwards
Project Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

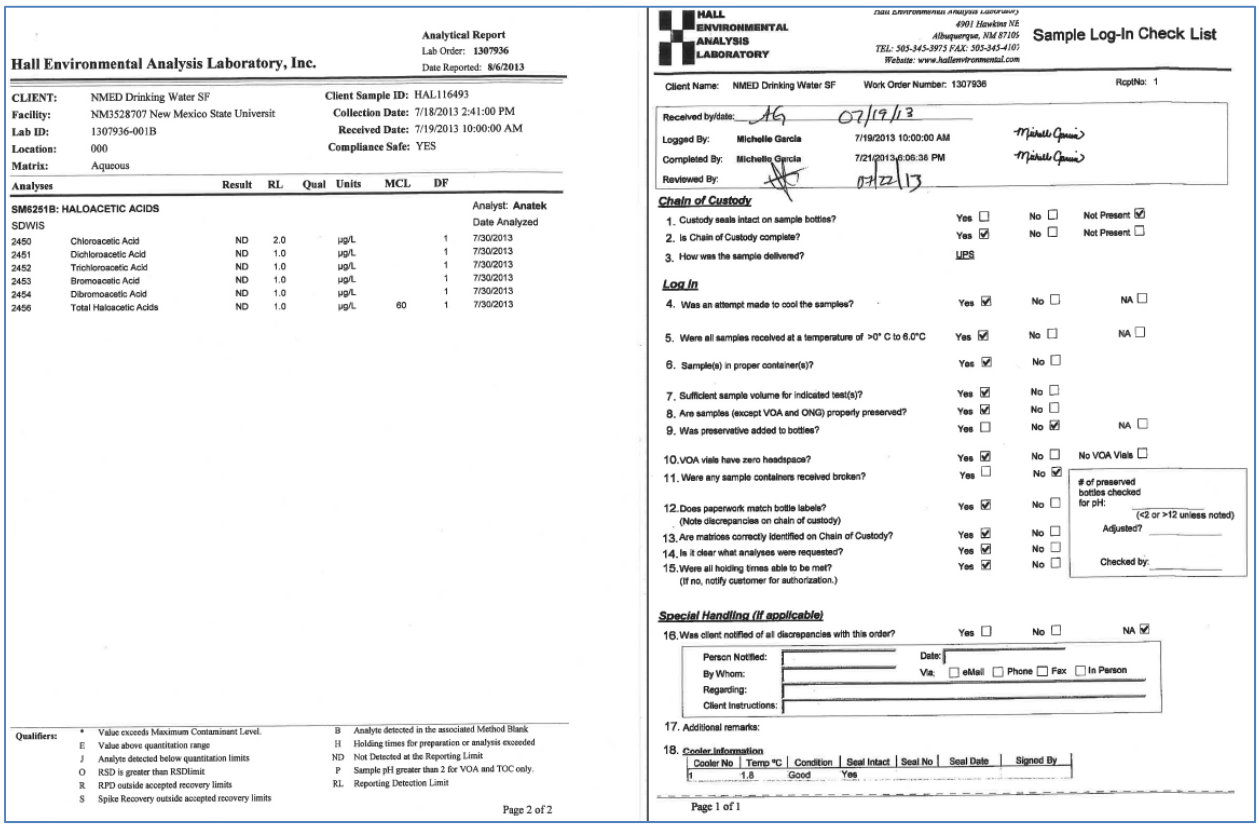
Analytical Report
Lab Order: **1307936**
Date Reported: **8/6/2013**

CLIENT:	NMED Drinking Water SF	**Client Sample ID:**	HAL116493
Facility:	NM3528707 New Mexico State Universit	**Collection Date:**	7/18/2013 2:41:00 PM
Lab ID:	1307936-001A	**Received Date:**	7/19/2013 10:00:00 AM
Location:	000	**Compliance Safe:**	YES
Matrix:	Aqueous		

Analyses		Result	RL	Qual	Units	MCL	DF	
EPA METHOD 524.2: TTHM								Analyst: **RAA**
SDWIS								Date Analyzed
2941	Chloroform	ND	5.00		µg/L		10	7/25/2013 12:37:10 PM
2942	Bromoform	ND	5.00		µg/L		10	7/25/2013 12:37:10 PM
2943	Bromodichloromethane	ND	5.00		µg/L		10	7/25/2013 12:37:10 PM
2944	Dibromochloromethane	ND	5.00		µg/L		10	7/25/2013 12:37:10 PM
2950	Total Trihalomethanes	ND			µg/L	80.0	10	7/25/2013 12:37:10 PM

Qualifiers:
* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH greater than 2 for VOA and TOC only.
RL Reporting Detection Limit

Page 1 of 2



Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order: **1307936**
Date Reported: **8/6/2013**

CLIENT:	NMED Drinking Water SF	**Client Sample ID:**	HAL116493
Facility:	NM3528707 New Mexico State Universit	**Collection Date:**	7/18/2013 2:41:00 PM
Lab ID:	1307936-001B	**Received Date:**	7/19/2013 10:00:00 AM
Location:	000	**Compliance Safe:**	YES
Matrix:	Aqueous		

Analyses		Result	RL	Qual	Units	MCL	DF	
SM6251B: HALOACETIC ACIDS								Analyst: **Anatek**
SDWIS								Date Analyzed
2450	Chloroacetic Acid	ND	2.0		µg/L		1	7/30/2013
2451	Dichloroacetic Acid	ND	1.0		µg/L		1	7/30/2013
2452	Trichloroacetic Acid	ND	1.0		µg/L		1	7/30/2013
2453	Bromoacetic Acid	ND	1.0		µg/L		1	7/30/2013
2454	Dibromoacetic Acid	ND	1.0		µg/L		1	7/30/2013
2456	Total Haloacetic Acids	ND	1.0		µg/L	60	1	7/30/2013

Qualifiers:
* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH greater than 2 for VOA and TOC only.
RL Reporting Detection Limit

Page 2 of 2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: NMED Drinking Water SF Work Order Number: 1307936 RcptNo: 1

Received by/date: AG 07/19/13
Logged By: Michelle Garcia 7/19/2013 10:00:00 AM Michelle Garcia
Completed By: Michelle Garcia 7/21/2013 6:06:36 PM Michelle Garcia
Reviewed By: 07/22/13

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? UPS

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

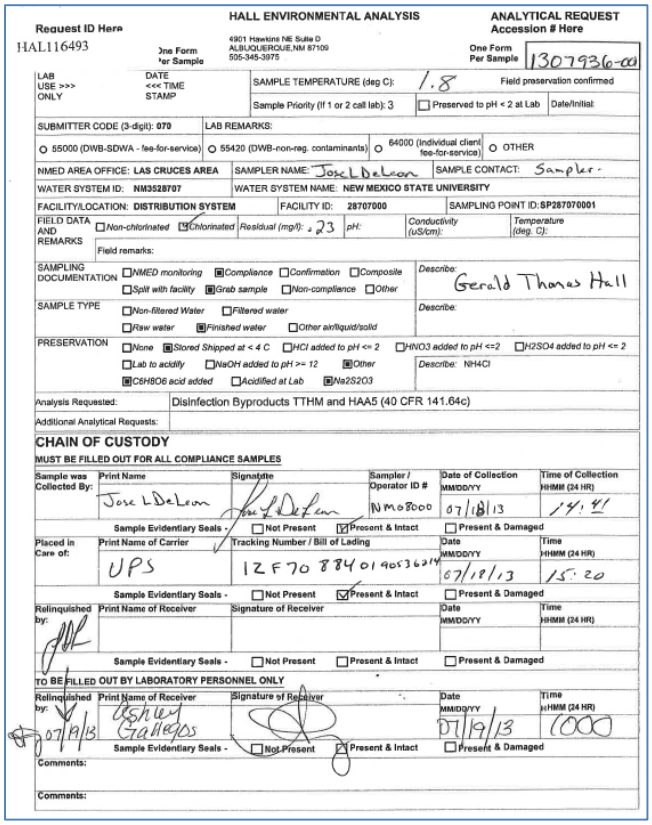
Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Page 1 of 1



HALL ENVIRONMENTAL ANALYSIS
4901 Hawkins NE Suite D
ALBUQUERQUE, NM 87109
505-345-3975

Request ID Here: HAL116493
ANALYTICAL REQUEST
Accession # Here: 1307936-001

SAMPLE TEMPERATURE (deg C): 1.8 — Field preservation confirmed
Sample Priority (If 1 or 2 call lab): 3 — Preserved to pH < 2 at Lab — Date/Initial

SUBMITTER CODE (3-digit): 070 — LAB REMARKS:
○ 55000 (DWB-SDWA - fee-for-service) ○ 55420 (DWB-non-reg. contaminants) ○ 64000 (Individual client fee-for-service) ○ OTHER

NMED AREA OFFICE: LAS CRUCES AREA — SAMPLER NAME: Jose L DeLeon — SAMPLE CONTACT: Sampler
WATER SYSTEM ID: NM3528707 — WATER SYSTEM NAME: NEW MEXICO STATE UNIVERSITY
FACILITY/LOCATION: DISTRIBUTION SYSTEM — FACILITY ID: 28707000 — SAMPLING POINT ID: SP287070001
FIELD DATA AND REMARKS: ☐ Non-chlorinated ☑ Chlorinated — Residual (mg/l): .23 — pH: — Conductivity (uS/cm): — Temperature (deg. C):
Field remarks:
SAMPLING DOCUMENTATION: ☐ NMED monitoring ■ Compliance ☐ Confirmation ☐ Composite ☐ Split with facility ■ Grab sample ☐ Non-compliance ☐ Other — Describe: Gerald Thomas Hall
SAMPLE TYPE: ☐ Non-filtered Water ☐ Filtered water ☐ Raw water ■ Finished water ☐ Other air/liquid/solid — Describe:
PRESERVATION: ☐ None ■ Stored Shipped at < 4 C ☐ HCl added to pH <= 2 ☐ HNO3 added to pH <=2 ☐ H2SO4 added to pH <= 2 ☐ Lab to acidify ☐ NaOH added to pH >= 12 ■ Other — Describe: NH4Cl ■ C6H8O6 acid added ☐ Acidified at Lab ■ Na2S2O3

Analysis Requested: Disinfection Byproducts TTHM and HAA5 (40 CFR 141.64c)
Additional Analytical Requests:

CHAIN OF CUSTODY
MUST BE FILLED OUT FOR ALL COMPLIANCE SAMPLES

	Print Name	Signature	Sampler / Operator ID #	Date of Collection MM/DD/YY	Time of Collection HHMM (24 HR)
Sample was Collected By:	Jose L DeLeon	Jose L DeLeon	NM08000	07/18/13	14:45

Sample Evidentiary Seals - ☐ Not Present ☑ Present & Intact ☐ Present & Damaged

	Print Name of Carrier	Tracking Number / Bill of Lading	Date MM/DD/YY	Time HHMM (24 HR)
Placed in Care of:	UPS	1ZF708840190536214	07/18/13	15:20

Sample Evidentiary Seals - ☐ Not Present ☑ Present & Intact ☐ Present & Damaged

	Print Name of Receiver	Signature of Receiver	Date MM/DD/YY	Time HHMM (24 HR)
Relinquished by:				

Sample Evidentiary Seals - ☐ Not Present ☐ Present & Intact ☐ Present & Damaged

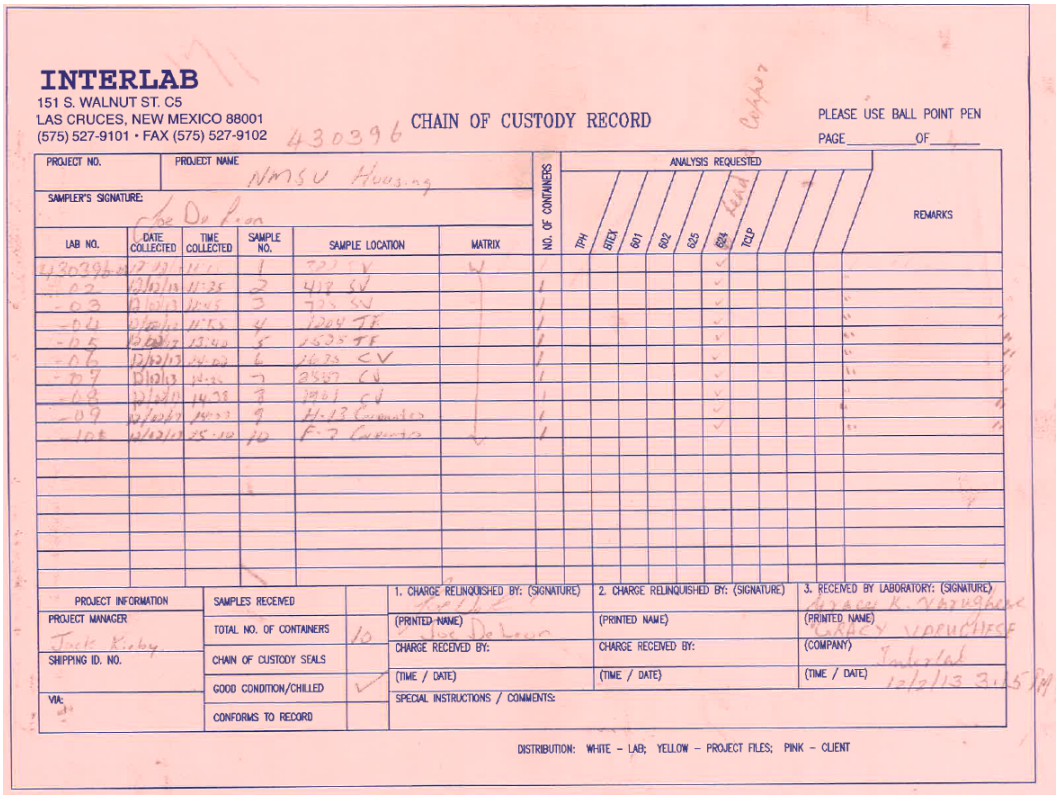
TO BE FILLED OUT BY LABORATORY PERSONNEL ONLY

	Print Name of Receiver	Signature of Receiver	Date MM/DD/YY	Time HHMM (24 HR)
Relinquished by:	Ashley Gallegos		07/19/13	1000

07/19/13
Sample Evidentiary Seals - ☐ Not Present ☑ Present & Intact ☐ Present & Damaged

Comments:
Comments:

Lead and Copper Report:



INTERLAB
151 S. WALNUT ST. C5
LAS CRUCES, NEW MEXICO 88001
(575) 527-9101 • FAX (575) 527-9102

CHAIN OF CUSTODY RECORD
430396

PLEASE USE BALL POINT PEN
PAGE ____ OF ____

PROJECT NO. — PROJECT NAME: NMSU Housing
SAMPLER'S SIGNATURE: Jose DeLeon

LAB NO.	DATE COLLECTED	TIME COLLECTED	SAMPLE NO.	SAMPLE LOCATION	MATRIX	NO. OF CONTAINERS	ANALYSIS REQUESTED: TPH	BTEX	601	602	625	8260	TCLP	REMARKS
430396-01	12/19/13	11:10	1	321 CV	W	1								
-02	12/12/13	11:25	2	418 CV		1								
-03	12/12/13	11:45	3	735 CV		1								
-04	12/12/13	11:55	4	1204 TF		1								
-05	12/12/13	12:40	5	1535 TF		1								
-06	12/12/13	13:00	6	1678 CV		1								
-07	12/12/13	14:25	7	2357 CV		1								
-08	12/12/13	14:38	8	2461 CV		1								
-09	12/12/13	14:53	9	H-12 Commons		1								
-10	12/12/13	15:10	10	F-2 Cummins		1								

PROJECT INFORMATION	SAMPLES RECEIVED		1. CHARGE RELINQUISHED BY: (SIGNATURE)	2. CHARGE RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LABORATORY: (SIGNATURE)
PROJECT MANAGER: Jack Kirby	TOTAL NO. OF CONTAINERS	10	(PRINTED NAME) Jose DeLeon	(PRINTED NAME)	(PRINTED NAME)
SHIPPING ID. NO.	CHAIN OF CUSTODY SEALS		CHARGE RECEIVED BY:	CHARGE RECEIVED BY:	(COMPANY) Interlab
VIA:	GOOD CONDITION/CHILLED	✓	(TIME / DATE)	(TIME / DATE)	(TIME / DATE) 12/20/13 3:45 PM
	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS:		

DISTRIBUTION: WHITE – LAB; YELLOW – PROJECT FILES; PINK – CLIENT

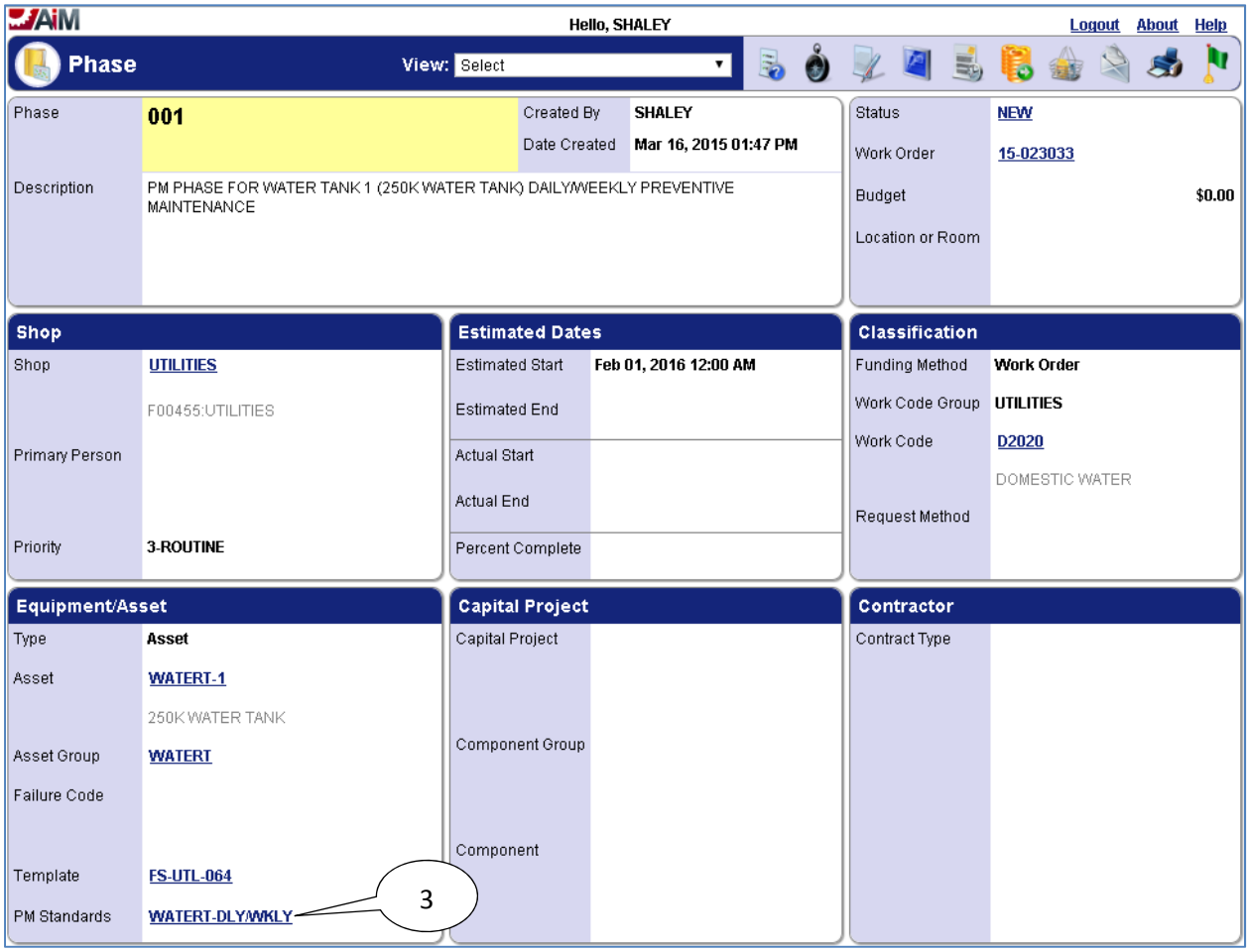
Water Tanks

Preventive Maintenance for water tanks is completed daily, weekly, monthly, semi-annually (250K tank only – WATERT-1), and annually. Water tanks have *Checkpoints* which detail how to complete the preventive maintenance for daily and weekly PM as well as *Checkpoint Measurements* to record necessary values when completing preventive maintenance for monthly and annually PM.

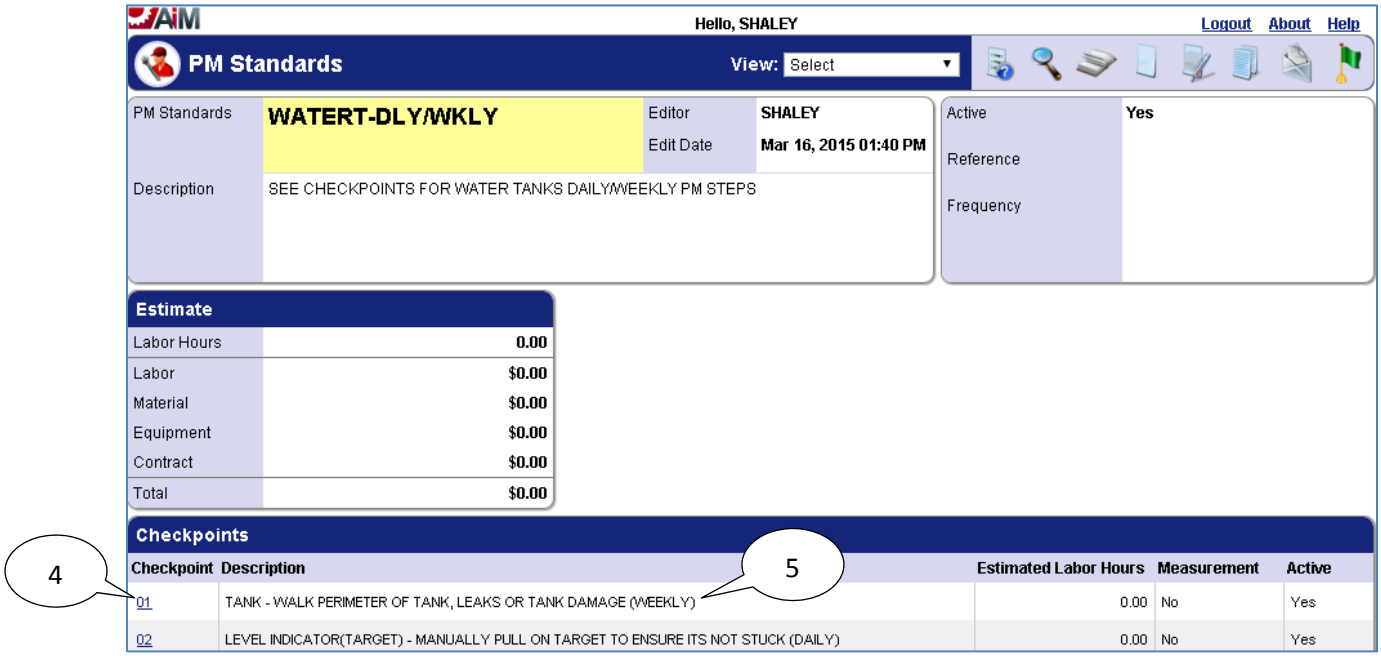
Viewing Daily/Weekly PM Standards Checkpoints

Daily/Weekly PM Standards Checkpoints are not measurements as they are completed daily/weekly for the same monthly open work order.

1. Navigate to the *Work Order* for the daily/weekly water tank PM.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.

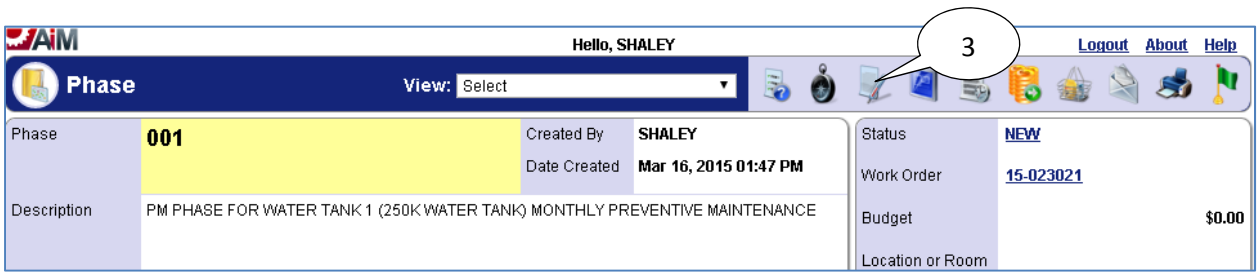


4. The **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the water tank daily/weekly PM.
5. At the end of each description it will be stated if the PM is to be completed daily or weekly in parenthesis.

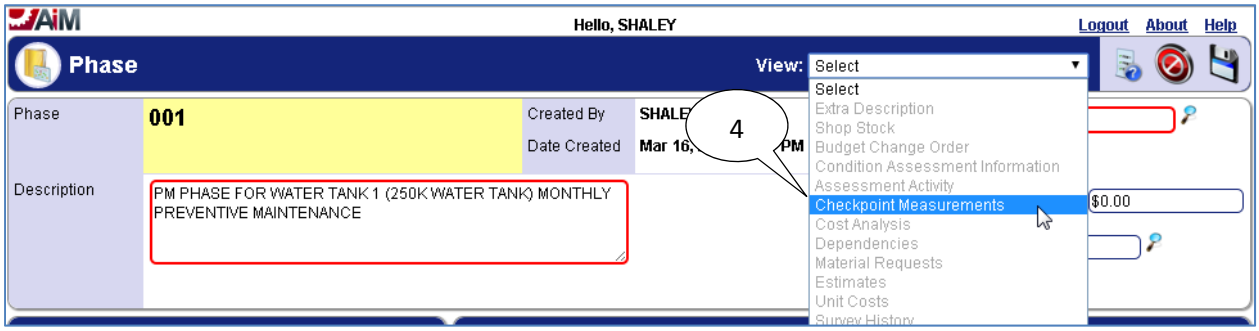
Viewing/Completing PM Standards Checkpoints

Monthly and Annual PM Standard Checkpoints for water tanks are both completed in the same manner, so the following steps for completing checkpoint measurements for a monthly water tank PM work order may be followed for completing checkpoint measurements for an annual water tank PM work order as well.

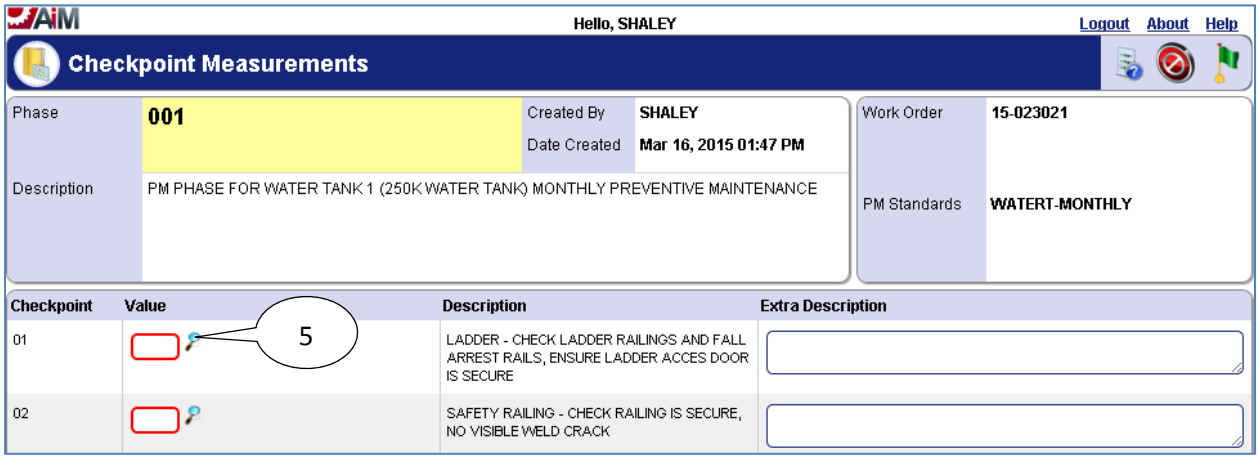
1. Navigate to the *Work Order* for the monthly water tank PM.
2. Select the *Phase* from the *Work Order*.



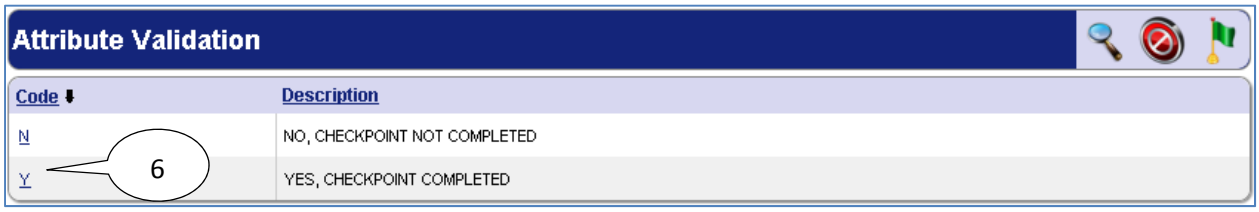
3. Select the **edit**  icon.



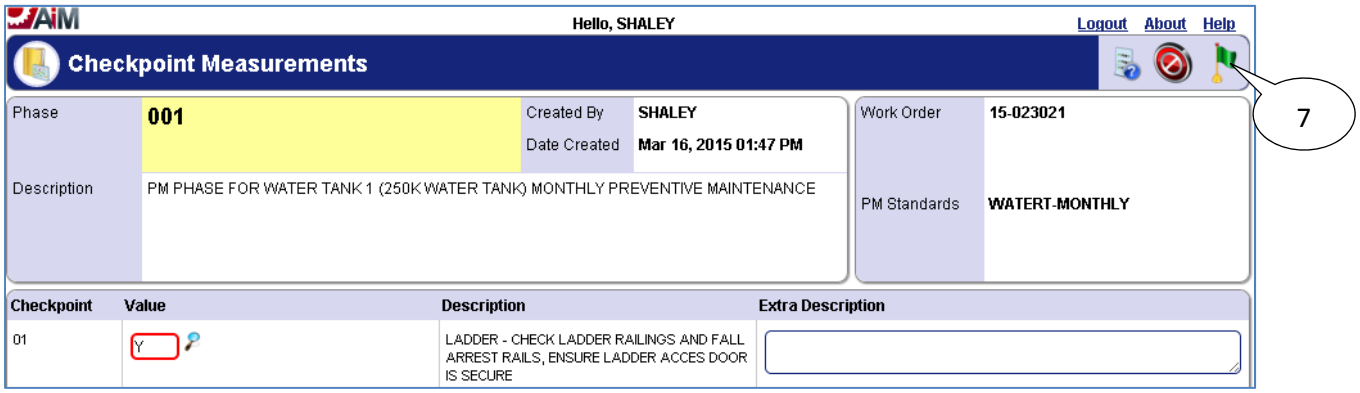
4. Select "**Checkpoint Measurements**" from the **View** menu.



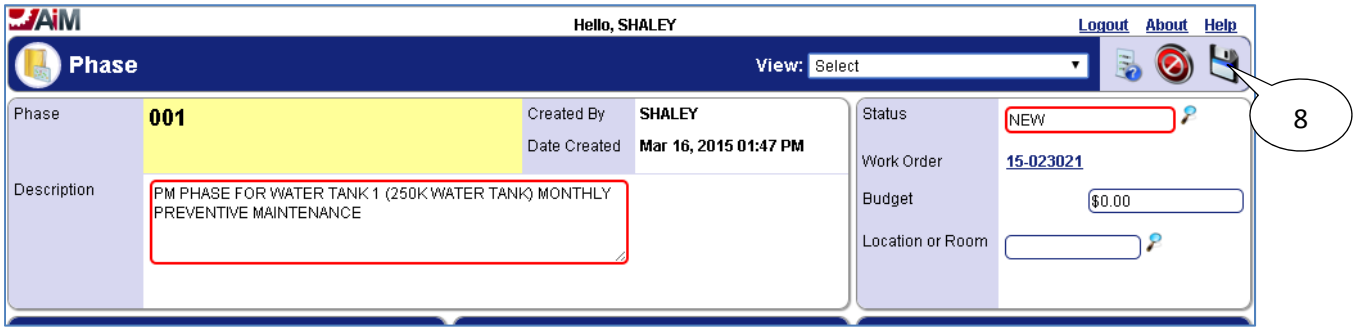
5. Select the **search** icon or enter value directly into textbox if already known.



6. Select desired **Code** for the **Checkpoint Measurement Value**.



7. Select the **done** icon once values have been entered for **Checkpoint Measurements**.



8. Select the **save** icon.

List of Checkpoints from PM Standards

Below are the checkpoints for each frequency (daily/weekly, monthly, annual) of PM completed for water tanks.

Checkpoints for daily/weekly water tank PM:

Checkpoint	Description	Measurement
01	TANK - WALK PERIMETER OF TANK, LEAKS OR TANK DAMAGE (WEEKLY)	No
02	LEVEL INDICATOR(TARGET) - MANUALLY PULL ON TARGET TO ENSURE ITS NOT STUCK (DAILY)	No
03	ELECTRIC LEVEL INDICATOR - VERIFY ACCURACY AND CALIBRATE AS NEEDED (SHOULD BE CLOSE TO LEVEL INDICATOR (TARGET) (DAILY)	No
04	CAMERAS - VERIFY CAMERAS ARE OPERATING PROPERLY (DAILY)	No

Checkpoints for monthly water tank PM:

Checkpoint	Description	Measurement
01	LADDER - CHECK LADDER RAILINGS AND FALL ARREST RAILS, ENSURE LADDER ACCES DOOR IS SECURE	Yes
02	SAFETY RAILING - CHECK RAILING IS SECURE, NO VISIBLE WELD CRACK	Yes

Checkpoint	Description	Measurement
03	ACCESS DOOR - CHECK OPERATION OF DOOR, ENSURE ITS PROPERLY LOCKED	Yes
04	AIRCRAFT WARNING LIGHT - MANUALLY TEST LIGHT OPERATION	Yes
05	CATHODIC PROTECTION - MEASURE THE POTENTIAL	Yes

Checkpoints for semi-annual water tank PM (250K Tank only – WATERT-1):

Checkpoint	Description	Measurement
01	CHECK THE CIRCUMFERENCE OF THE TANK	Yes
02	CHECK FOR ANY RUST SPOTS	Yes
03	TAKE A SPECIAL WATER SAMPLE FOR BACTERIA	Yes
04	INSPECT FOR PEELING PAINT ON THE TANK	Yes
05	MAKE SURE "CONFINED SPACE ENTRY" PLACARD IS ON TANK	Yes

Checkpoints for annual water tank PM:

Checkpoint	Description	Measurement
01	ISOLATION VALVES - EXERCISE THE ISOLATION VALVES FOR THE TANK	Yes

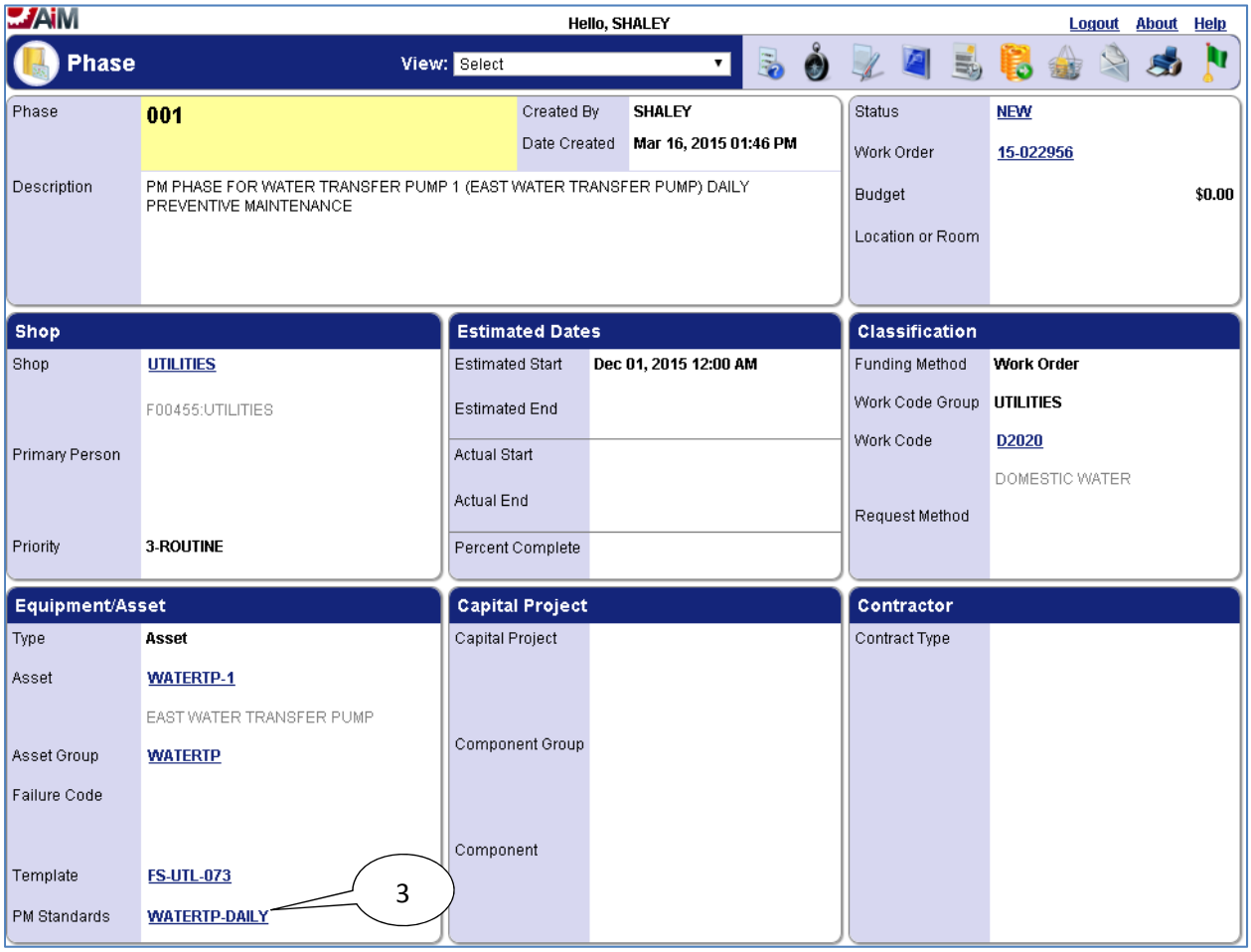
Water Transfer Pumps

Preventive Maintenance for water transfer pumps is completed daily, monthly, quarterly, semi-annually, and annually. Water transfer pumps have *Checkpoints* which detail how to complete the preventive maintenance for daily PM as well as *Checkpoint Measurements* to record necessary values when completing preventive maintenance for monthly, quarterly, semi-annual and annual PM.

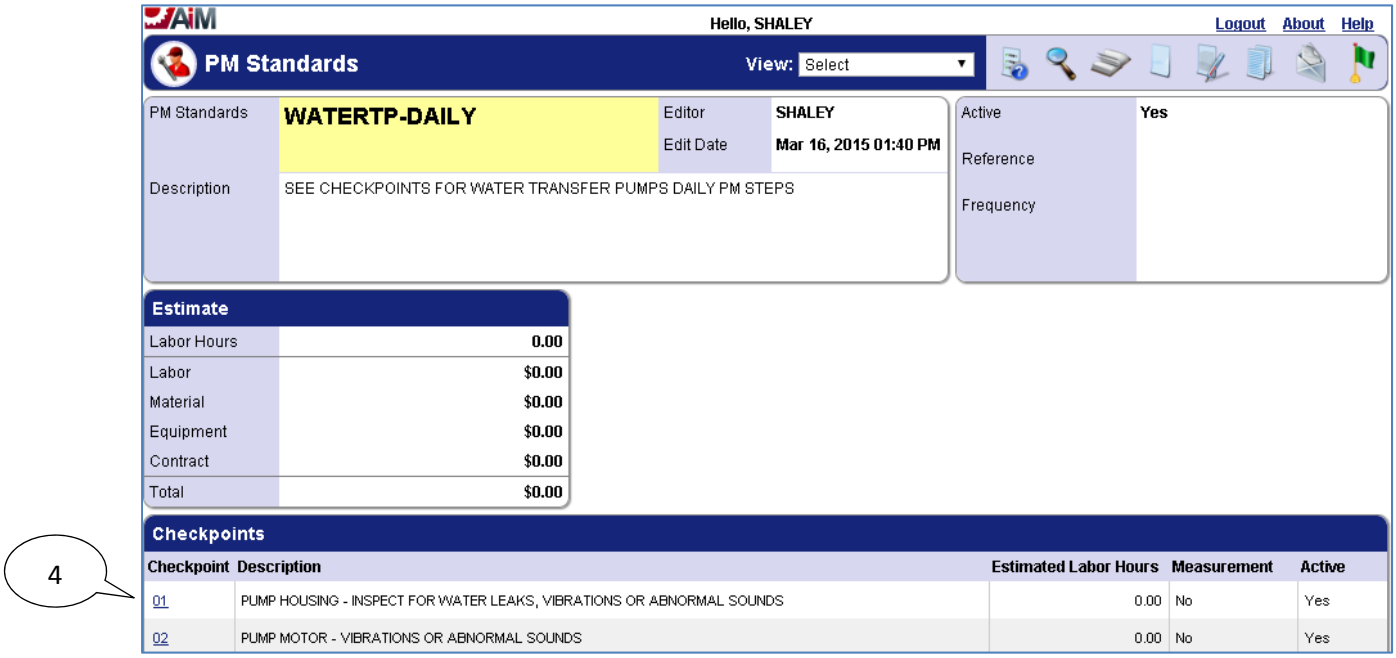
Viewing Daily/Weekly PM Standards Checkpoints

Daily PM Standards Checkpoints are not measurements as they are completed daily for the same monthly open work order.

1. Navigate to the *Work Order* for the daily water transfer pump PM.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.

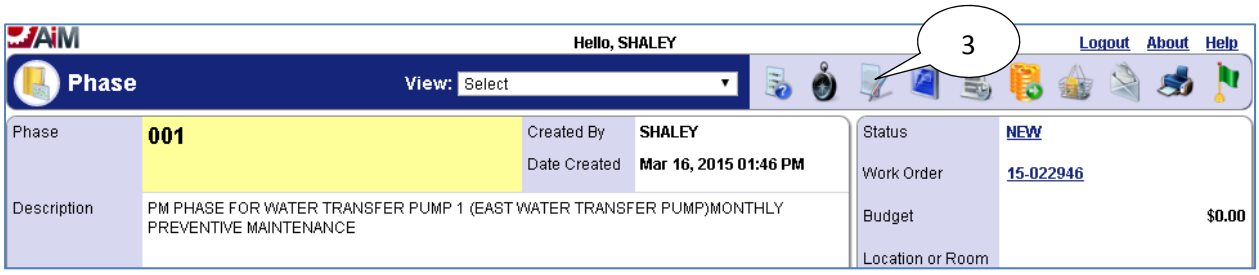


4. The **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the water transfer pump daily PM.

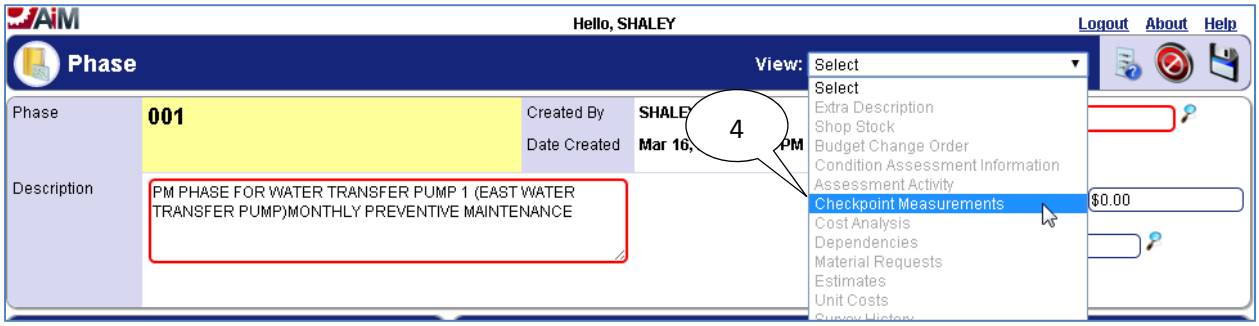
Viewing/Completing PM Standards Checkpoints

Monthly, quarterly, semi-annual, and annual PM Standard Checkpoints for water transfer pumps are all completed in the same manner, so the following steps for completing checkpoint measurements for a monthly water transfer pump PM work order may be followed for completing checkpoint measurements for a quarterly, semi-annual, or annual water transfer pump PM work order as well.

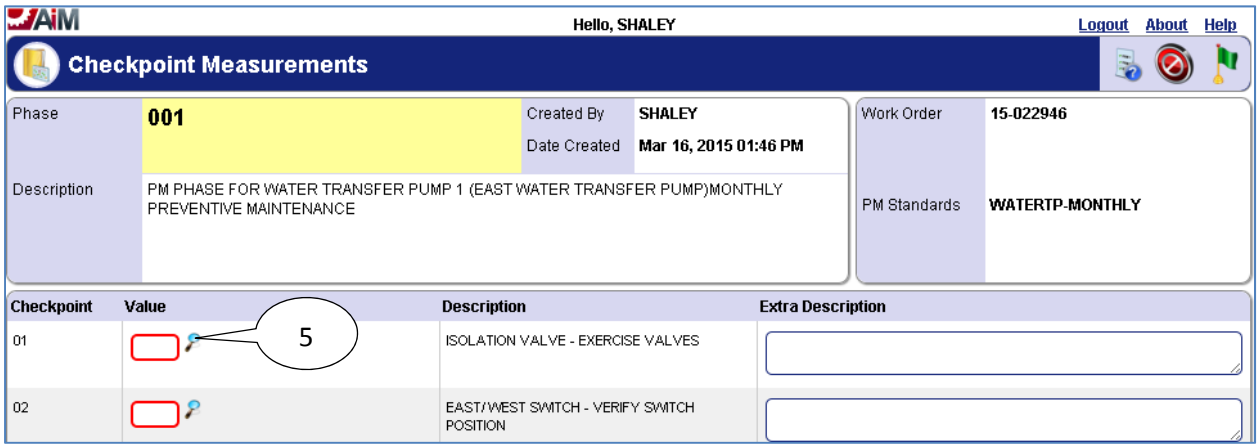
1. Navigate to the *Work Order* for the monthly water transfer pump PM.
2. Select the *Phase* from the *Work Order*.



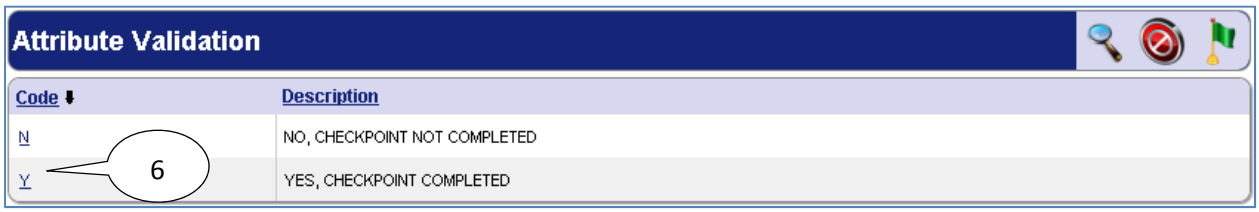
3. Select the **edit**  icon.



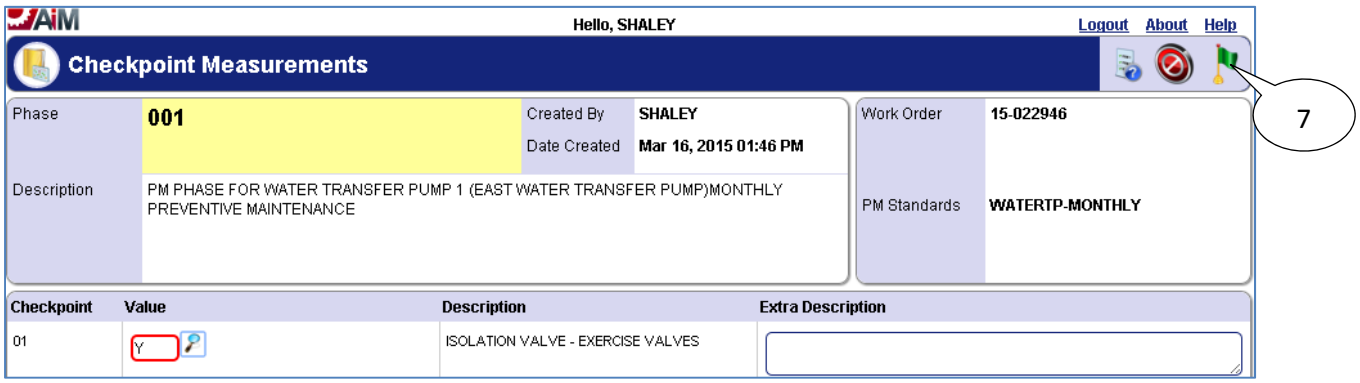
4. Select "**Checkpoint Measurements**" from the **View** menu.



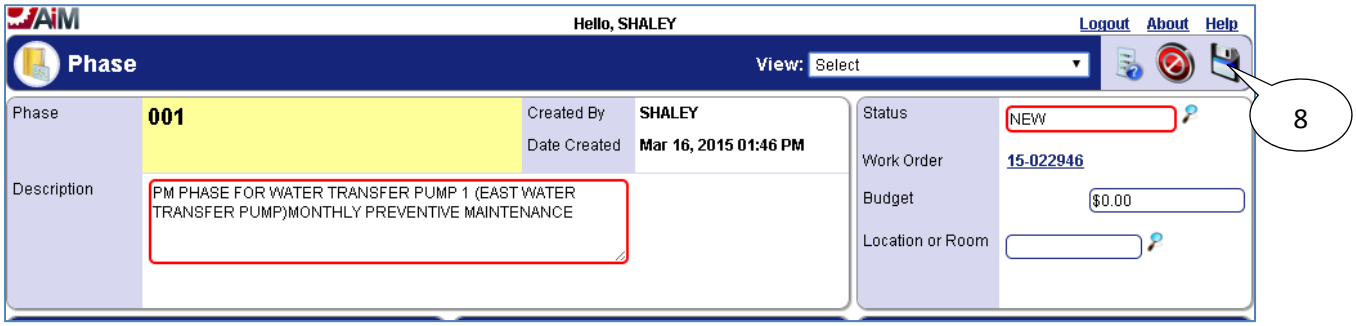
5. Select the **search** icon or enter value directly into textbox if already known.



6. Select desired **Code** for the **Checkpoint Measurement Value**.



7. Select the **done** icon once values have been entered for **Checkpoint Measurements**.



8. Select the **save** icon.

List of Checkpoints from PM Standards

Below are the checkpoints for each frequency (daily, monthly, quarterly, semi-annual, annual) of PM completed for water transfer pumps.

Checkpoints for daily water transfer pump PM:

Checkpoint	Description	Measurement
01	PUMP HOUSING - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS	No
02	PUMP MOTOR - VIBRATIONS OR ABNORMAL SOUNDS	No
03	CHECK VALVES - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS; CHECK FOR PROPER OPERATION.	No
04	GAUGES - VERIFY PRESSURE FLUCTUATION DURING OPERATION, RECORD READINGS	No
05	COUPLING - INSPECT	No
06	HEAT LAMP - VERIFY OPERATING PROPERLY	No
07	HEATING/COOLING SYSTEM - VERIFY OPERATING PROPERLY	No
08	CAMERAS - VERIFY CAMERAS ARE OPERATING PROPERLY	No

Checkpoints for monthly water transfer pump PM:

Checkpoint	Description	Measurement
01	ISOLATION VALVE - EXERCISE VALVES	Yes
02	EAST/ WEST SWITCH - VERIFY SWITCH POSITION	Yes
03	HOA SWITCH - VERIFY SWITCH POSITION	Yes
04	CLAY VALVES - VERIFY VALVES ARE OPERATING PROPERLY; CHECK FOR LEAKS	Yes

Checkpoints for quarterly water transfer pump PM:

Checkpoint	Description	Measurement
01	MOTOR BEARINGS - GREASE USING FOOD GRADE GREASE	Yes
02	PUMP BEARINGS - GREASE USING FOOD GRADE GREASE	Yes

Checkpoints for semi-annual water transfer pump PM:

Checkpoint	Description	Measurement
01	COUPLING - REPLACE	Yes

Checkpoints for annual water transfer pump PM:

Checkpoint	Description	Measurement
01	PUMP HOUSING - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS	Yes
02	EAST/ WEST SWITCH - VERIFY SWITCH POSITION	Yes

Checkpoint	Description	Measurement
03	HOA SWITCH - VERIFY SWITCH POSITION	Yes
04	CLAY VALVES - VERIFY VALVES ARE OPERATING PROPERLY; CHECK FOR LEAKS	Yes
05	THERMAL IMAGING - CHECK FOR HOT SPOTS IN THE ELECTRICAL GEAR	Yes

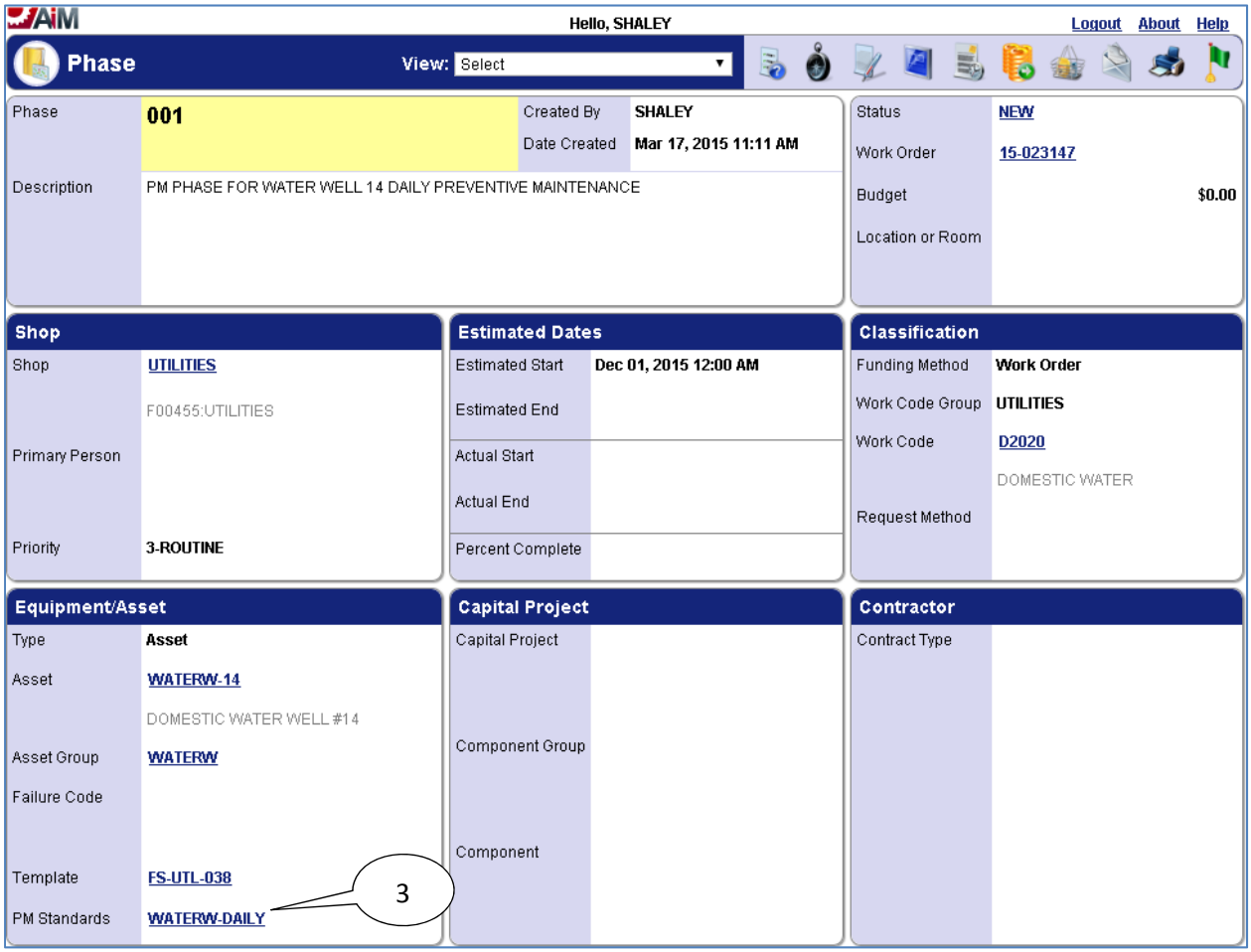
Domestic Water Wells

Preventive Maintenance for domestic water wells is completed daily, monthly, quarterly, seasonally (Spring, Fall), annually, and every 5 years. Domestic Water Wells have *Checkpoints* which detail how to complete the preventive maintenance for daily PM as well as *Checkpoint Measurements* to record necessary values when completing preventive maintenance for monthly, quarterly, seasonal (Spring, Fall), annual, and 5 year PM.

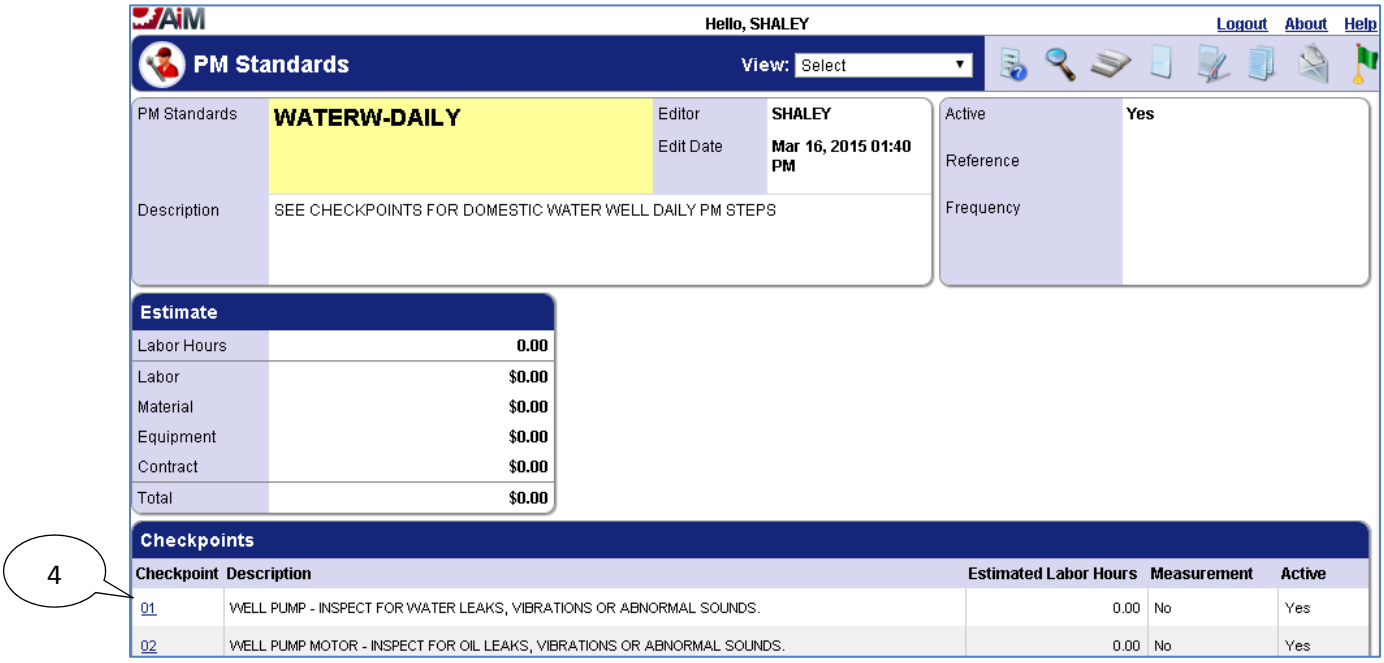
Viewing Daily/Weekly PM Standards Checkpoints

Daily PM Standards Checkpoints are not measurements as they are completed daily for the same monthly open work order.

1. Navigate to the *Work Order* for the daily water well PM.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.

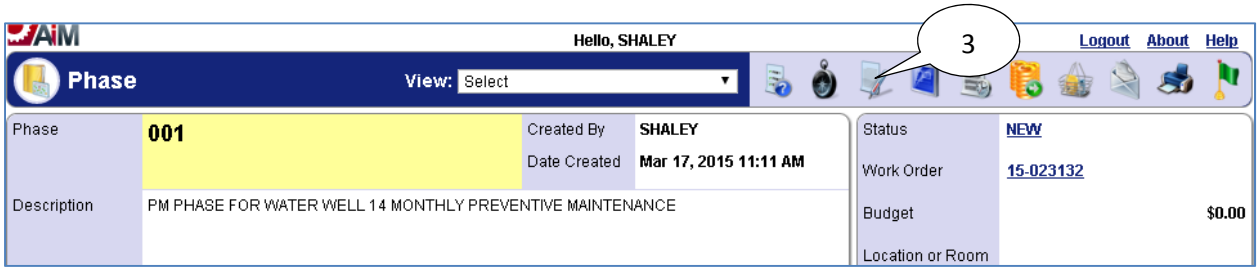


4. The **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the water well daily PM.

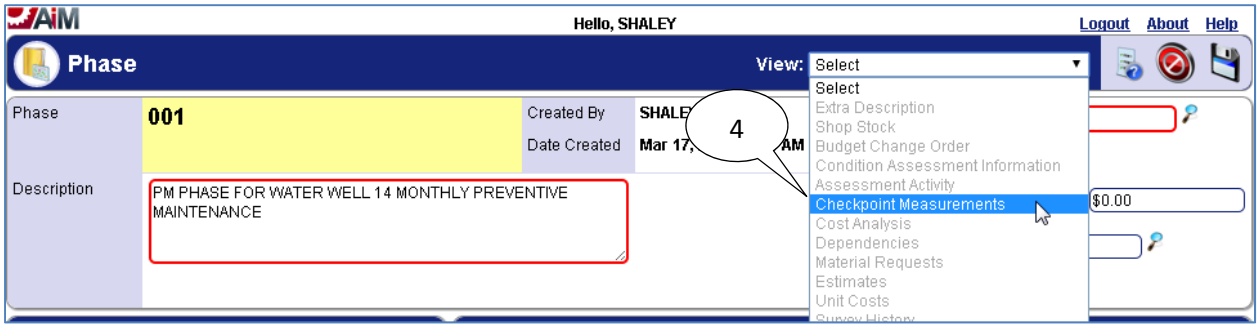
Viewing/Completing PM Standards Checkpoints

Monthly, quarterly, seasonal (Spring, Fall), annual, and 5 year PM Standard Checkpoints for domestic water wells are all completed in the same manner, so the following steps for completing checkpoint measurements for a monthly water well PM work order may be followed for completing checkpoint measurements for a quarterly, seasonal (Spring, Fall), annual, or 5 year water well PM work order as well.

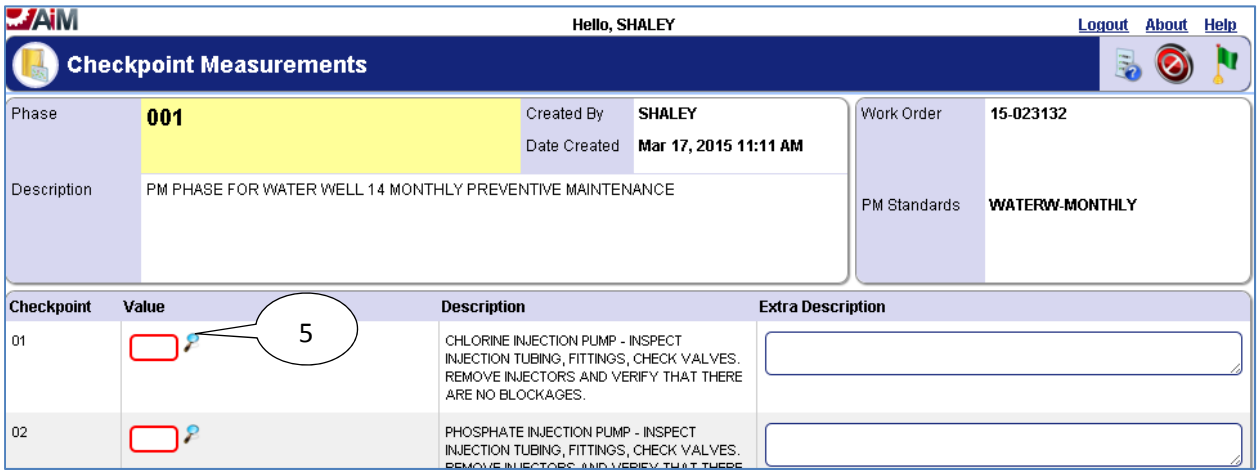
1. Navigate to the *Work Order* for the monthly water well PM.
2. Select the *Phase* from the *Work Order*.



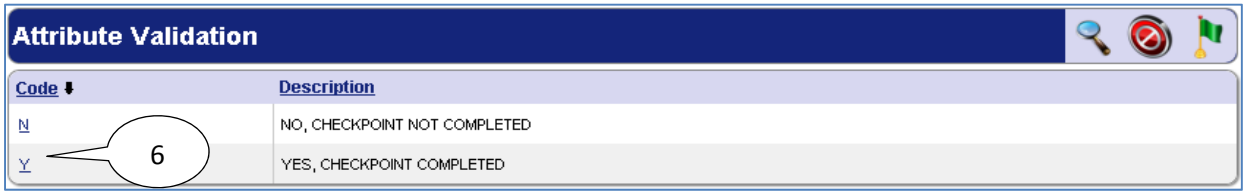
3. Select the **edit**  icon.



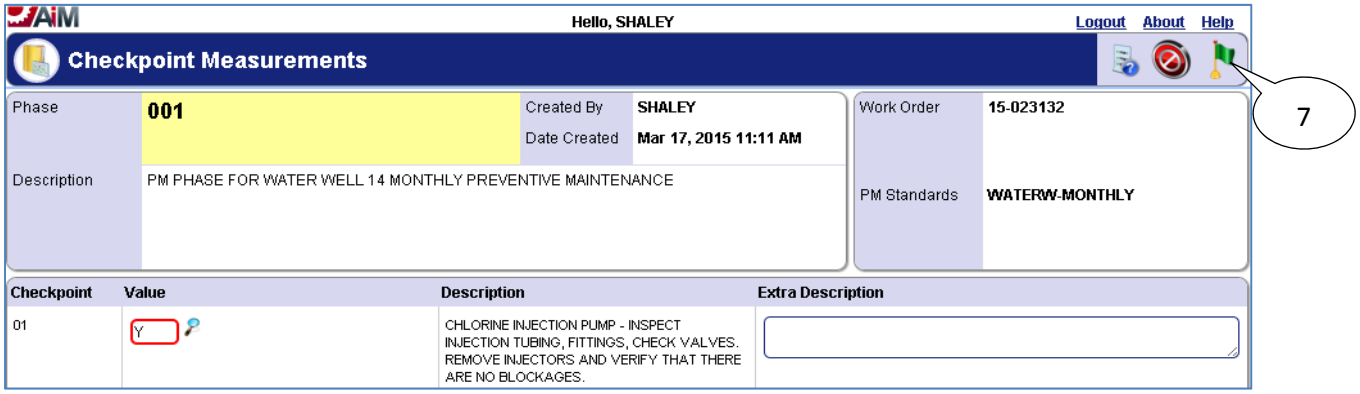
4. Select "**Checkpoint Measurements**" from the **View** menu.



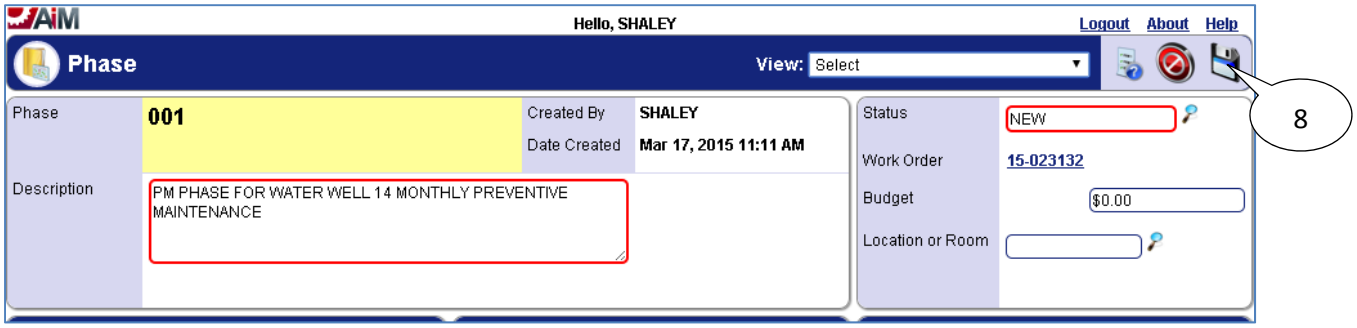
5. Select the **search** icon or enter value directly into textbox if already known.



6. Select desired **Code** for the **Checkpoint Measurement Value**.



7. Select the **done** icon once values have been entered for **Checkpoint Measurements**.



8. Select the **save** icon.

List of Checkpoints from PM Standards

Below are the checkpoints for each frequency (daily, monthly, quarterly, seasonal (Spring, Fall), annual, 5 year) of PM completed for domestic water wells.

Checkpoints for daily water well PM:

Checkpoint	Description	Measurement
01	WELL PUMP - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
02	WELL PUMP MOTOR - INSPECT FOR OIL LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
03	CHLORINE INJECTION PUMP - INSPECT FOR FLUID LEAKS, VIBRATIONS OR ABNORMAL SOUNDS. VERIFY CHEMICAL INJECTION RATE. TEST FOR RESIDUALS.	No
04	PHOSPHATE INJECTION PUMP - INSPECT FOR FLUID LEAKS, VIBRATIONS OR ABNORMAL SOUNDS. VERIFY CHEMICAL INJECTION RATE. TEST FOR RESIDUALS.	No
05	SOLENOID VALVES - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
06	CLA BLOWDOWN VALVE - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
07	CLA CHECK VALVE - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
08	ALTITUDE VALVE - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No

Checkpoint	Description	Measurement
09	EXHAUST FAN - INSPECT FOR VIBRATIONS OR ABNORMAL SOUNDS.	No
10	A/C UNIT - INSPECT FOR VIBRATIONS OR ABNORMAL SOUNDS.	No
11	HEATING UNIT - INSPECT FOR VIBRATIONS OR ABNORMAL SOUNDS.	No
12	HEAT LAMPS - INSPECT FOR OPERATION.	No
13	CHLORINE STORAGE UNIT - INSPECT FOR PROPER LEVEL AND LEAKS.	No
14	PHOSPHATE STORAGE UNIT - INSPECT FOR PROPER LEVEL AND LEAKS.	No
15	MOTOR CONTROL CENTER - VERIFY SWITCH POSITIONS FOR REMOTE CONTROL AND INSPECT FOR CONDENSATION BUILD UP. CHECK FOR THE PRESENCE OF FAULT CODES.	No
16	ELECTRICAL SERVICE DISCONNECT - VERIFY SWITCH POSITION.	No
17	AUTOMATION CONTROL PANEL - VERIFY COMMUNICATION CONNECTIVITY TO NIAGARA.	No
18	ELECTRIC CIRCUIT BREAKER PANEL - VERIFY NORMAL BREAKER POSITIONS.	No
19	WATER METER - VERIFY METER TOTALIZATION DURING OPERATION.	No
20	ELECTRIC METER - VERIFY METER TOTALIZATION DURING OPERATION.	No
21	PRESSURE TRANSMITTERS - VERIFY PRESSURE FLUCTUATION DURING OPERATION.	No
22	PRESSURE GAUGES - VERIFY PRESSURE FLUCTUATION DURING OPERATION.	No

Checkpoints for monthly water well PM:

Checkpoint	Description	Measurement
01	CHLORINE INJECTION PUMP - INSPECT INJECTION TUBING, FITTINGS, CHECK VALVES. REMOVE INJECTORS AND VERIFY THAT THERE ARE NO BLOCKAGES.	Yes
02	PHOSPHATE INJECTION PUMP - INSPECT INJECTION TUBING, FITTINGS, CHECK VALVES. REMOVE INJECTORS AND VERIFY THAT THERE ARE NO BLOCKAGES.	Yes
03	WATER METER - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes
04	ELECTRIC METER - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes

Checkpoints for quarterly water well PM:

Checkpoint	Description	Measurement
01	WELL PUMP - INSPECT SHAFT LUBRICATION, MOUNTING BOLTS.	Yes
02	WELL PUMP MOTOR - BEARING LUBRICATION,INSPECT MOUNTING BOLTS, CLEAN VENTILATION CAVITIES, WIPE DOWN. PRINT YEAR TO DATE ELECTRICAL AMPERAGE REPORT VIA NIAGARA.	Yes
03	CHLORINE INJECTION PUMP - VERIFY MANUAL AND REMOTE INJECTION RATE INCREASE AND DECREASE BY MODULATING PUMP FROM 0-100% IN 25% INCREMENTS.	Yes
04	PHOSPHATE INJECTION PUMP - VERIFY INJECTION RATE INCREASE AND DECREASE BY MODULATING PUMP FROM 0-100% IN 25% INCREMENTS.	Yes
05	SOLENOID VALVES - VERIFY OPEN AND CLOSE TIMING SEQUENCES AND POSITIVE CLOSE OFF WHEN DE-ENERGIZED.	Yes
06	CLA BLOWDOWN VALVE - VERIFY OPEN AND CLOSE TIMING SEQUENCES AND POSITIVE CLOSE OFF WHEN DE-ENERGIZED.	Yes
07	CLA CHECK VALVE - VERIFY POSITIVE CLOSE OFF.	Yes

Checkpoint	Description	Measurement
08	ALTITUDE VALVE - VERIFY POSITIVE CLOSE OFF DURING NORMAL PRESSURE CONDITIONS.	Yes
09	EXHAUST FAN - VERIFY DAMPER OPERATION, INSPECT FOR CORROSION, LUBRICATE BEARINGS AND WIPE DOWN.	Yes
10	CHLORINE STORAGE UNIT - CALIBRATE LEVEL MONITORS.	Yes
11	PHOSPHATE STORAGE UNIT - CALIBRATE LEVEL MONITORS.	Yes
12	MOTOR CONTROL CENTER - VERIFY ABILITY TO TRANSFER FROM LOCAL TO REMOTE CONTROL.	Yes
13	ELECTRICAL SERVICE DISCONNECT - VERIFY ABILITY TO OPEN AND CLOSE MAIN BREAKER.	Yes
14	AUTOMATION CONTROL PANEL - INPECT AUTOMATION ENCLOSURE FOR DUST, CONDENSATION AND LOOSE WIRING. TEST INTRUSION SWITCH AND WEB CAMERAS.	Yes
15	ELECTRIC CIRCUIT BREAKER PANEL - VERIFY ABILITY TO OPEN AND CLOSE BREAKERS. INSPECT FOR CORROSION AND CONDENSATION.	Yes
16	PRESSURE TRANSMITTERS - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes
17	PRESSURE GAUGES - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes
18	PACKING GLAND - REMOVE OLD PACKING AROUND WELL SHAFT. INSTALL NEW PACKING AROUND WELL SHAFT.	Yes

Checkpoints for seasonal (Spring) water well PM:

Checkpoint	Description	Measurement
01	A/C UNIT - INSPECT FOR CORROSION, LUBRICATE BEARINGS AND WIPE DOWN.	Yes

Checkpoints for seasonal (Fall) water well PM:

Checkpoint	Description	Measurement
01	HEATING UNIT - INSPECT FOR CORROSION, LUBRICATE BEARINGS AND WIPE DOWN.	Yes
02	HEAT LAMPS - VERIFY DAMPER OPERATION, INSPECT FOR CORROSION, LUBRICATE BEARINGS AND WIPE DOWN.	Yes

Checkpoints for annual water well PM:

Checkpoint	Description	Measurement
01	WELL PUMP - VIBRATION ANALYSIS, PROTECTIVE PAINT COATING.	Yes
02	WELL PUMP - REPLACE SHAFT SEAL PACKING.	Yes
03	WELL PUMP MOTOR - VIBRATION ANALYSIS,THERMAL IMAGING,INSPECT ELECTRICAL CONNECTIONS, PROTECTIVE PAINT COATING.	Yes
04	CHLORINE INJECTION PUMP - REPLACE PUMP DIAPHRAGM, INJECTOR, POLY TUBING AND CHECK VALVES.	Yes
05	PHOSPHATE INJECTION PUMP - REPLACE PUMP DIAPHRAGM, INJECTOR, POLY TUBING AND CHECK VALVES.	Yes
06	SOLENOID VALVES - INSPECT DIAPHRAGM AND SOLENOID COIL FOR WEAR.	Yes
07	CLA BLOWDOWN VALVE - INSPECT DIAPHRAGM, SOLENOID COILS AND END SWITCHES FOR WEAR.	Yes
08	CLA CHECK VALVE - INSPECT VALVE INTERNALLY FOR WEAR OR DAMAGE.	Yes
09	ALTITUDE VALVE - INSPECT DIAPHRAGM AND PILOT REGULATORS FOR WEAR. CALIBRATE OVERPRESSURE RELIEF SETTING.	Yes
10	CHLORINE STORAGE UNIT - INPECT POLY TANKS FOR DETERIORATION, CRACKS	Yes

Checkpoint	Description	Measurement
	AND WORN FITTINGS.	
11	PHOSPHATE STORAGE UNIT - INPECT POLY TANKS FOR DETERIORATION, CRACKS AND WORN FITTINGS.	Yes
12	MOTOR CONTROL CENTER - THERMAL IMAGE, BLOW DUST FROM CABINET AND TIGHTEN HIGH VOLTAGE CONNECTIONS.	Yes
13	ELECTRICAL SERVICE DISCONNECT - THERMAL IMAGE, BLOW DUST FROM CABINET AND TIGHTEN HIGH VOLTAGE CONNECTIONS.	Yes
14	AUTOMATION CONTROL PANEL - REPLACE BACKUP BATTERY ON JACE, CALIBRATE ROOM TEMPERATURE SENSOR, TEST DC POWER SUPPLY.	Yes
15	ELECTRIC CIRCUIT BREAKER PANEL - THERMAL IMAGE, BLOW DUST FROM CABINET AND TIGHTEN HIGH VOLTAGE CONNECTIONS.	Yes
16	WATER METER - CALIBRATE METER.	Yes
17	ELECTRIC METER - CALIBRATE METER.	Yes
18	PRESSURE TRANSMITTERS - CALIBRATE TRANSMITTER.	Yes
19	PRESSURE GAUGES - REMOVE AND VERIFY THAT ISOLATION VALVES AND GUAGES ARE NOT RESTRICTED.	Yes

Checkpoints for 5 year water well PM:

Checkpoint	Description	Measurement
01	WELL PUMP - PULL WELL FOR SHAFT AND IMPELLER INSPECTION.	Yes

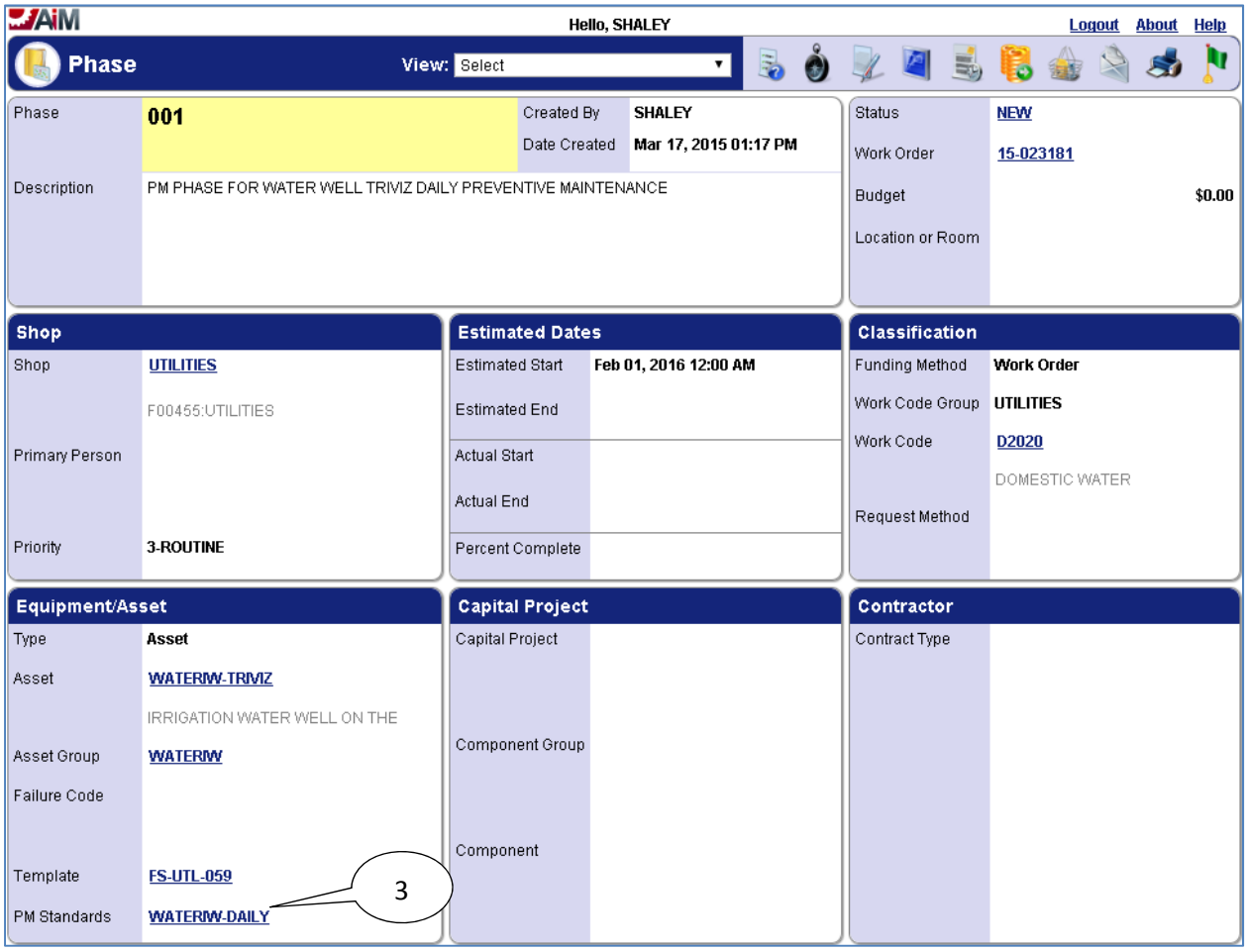
Irrigation Water Wells

Preventive Maintenance for irrigation water wells is completed daily, monthly, quarterly, annually, and every 5 years. Irrigation water wells have *Checkpoints* which detail how to complete the preventive maintenance for daily PM as well as *Checkpoint Measurements* to record necessary values when completing preventive maintenance for monthly, quarterly, annual, and 5 year PM.

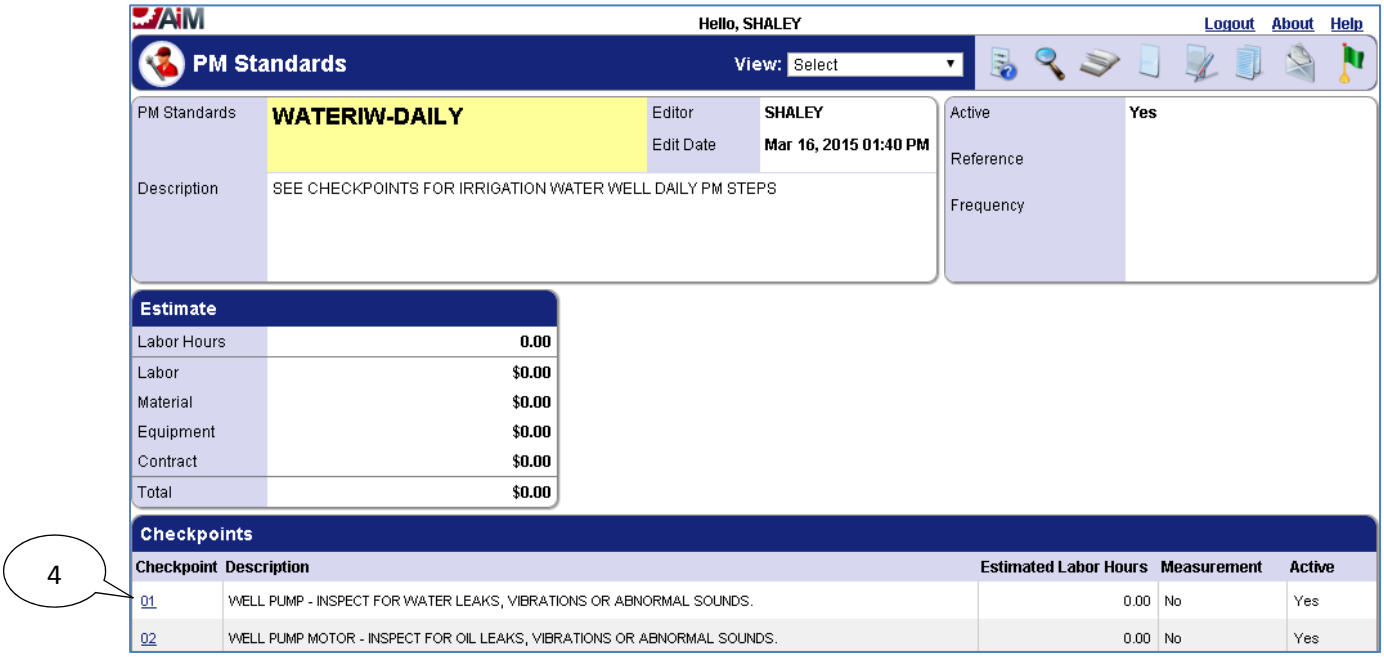
Viewing Daily/Weekly PM Standards Checkpoints

Daily PM Standards Checkpoints are not measurements as they are completed daily for the same monthly open work order.

1. Navigate to the *Work Order* for the daily water well PM.
2. Select the *Phase* from the *Work Order*.



3. Select the link for the **PM Standards**.

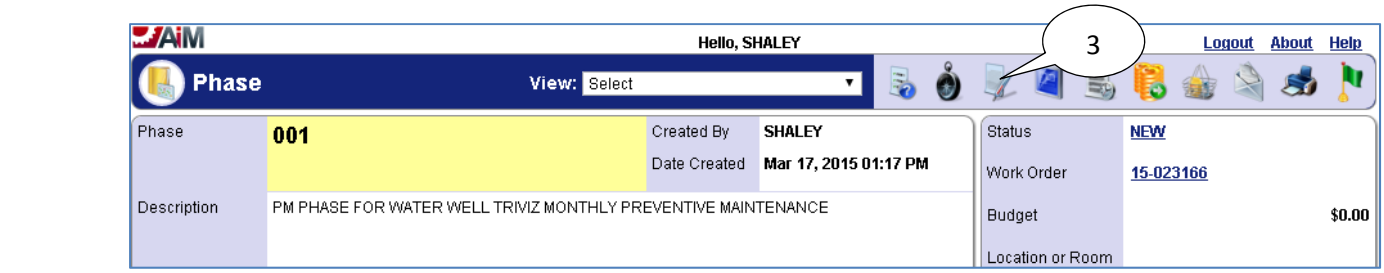


4. The **Checkpoints** are a reference for what needs to be done to complete preventive maintenance for the water well daily PM.

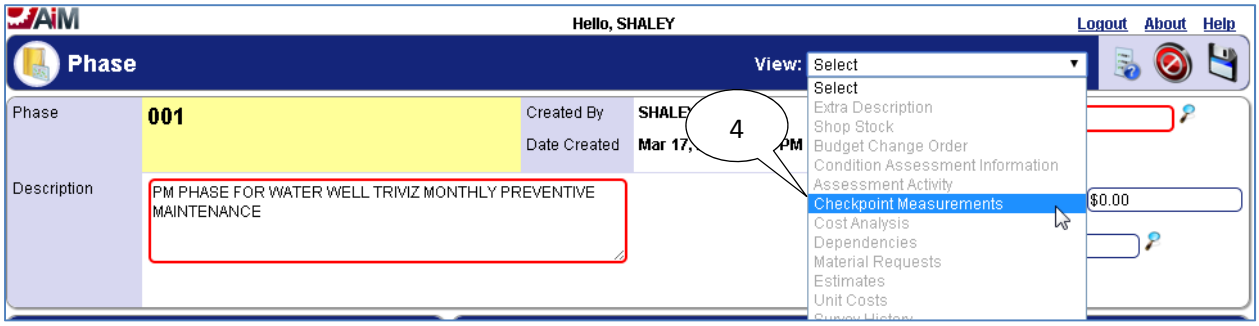
Viewing/Completing PM Standards Checkpoints

Monthly, quarterly, annual, and 5 year PM Standard Checkpoints for irrigation water wells are all completed in the same manner, so the following steps for completing checkpoint measurements for a monthly water well PM work order may be followed for completing checkpoint measurements for a quarterly, annual, or 5 year water well PM work order as well.

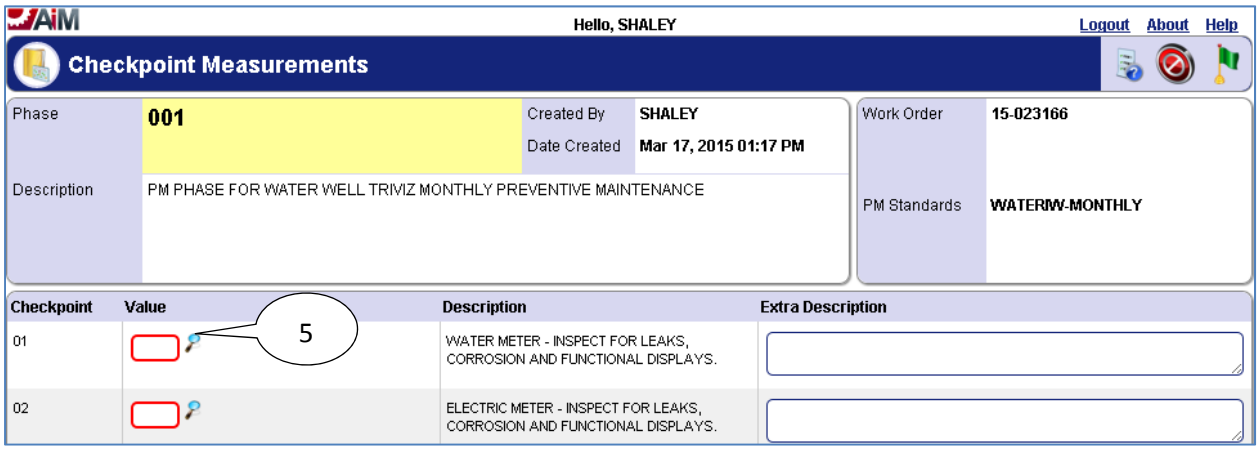
1. Navigate to the *Work Order* for the monthly water well PM.
2. Select the *Phase* from the *Work Order*.



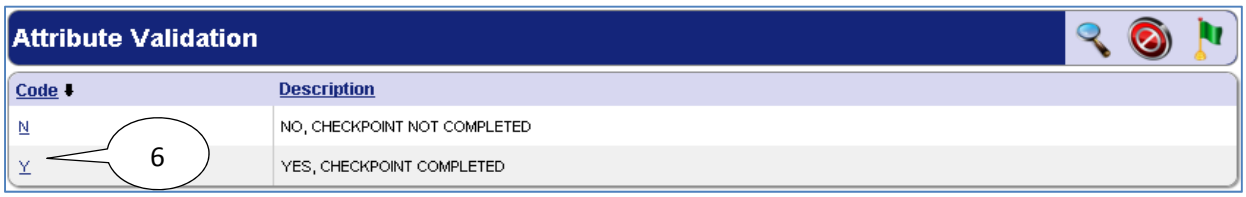
3. Select the **edit**  icon.



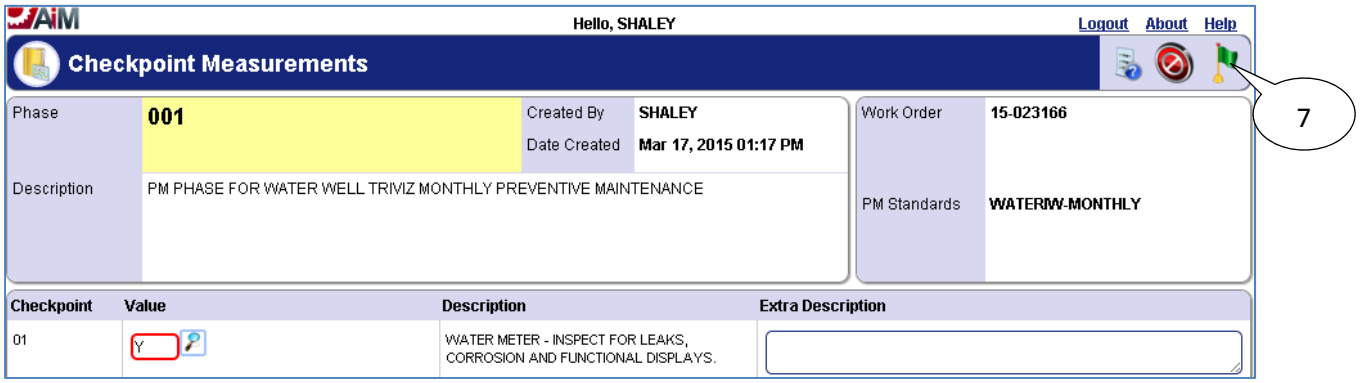
4. Select "**Checkpoint Measurements**" from the **View** menu.



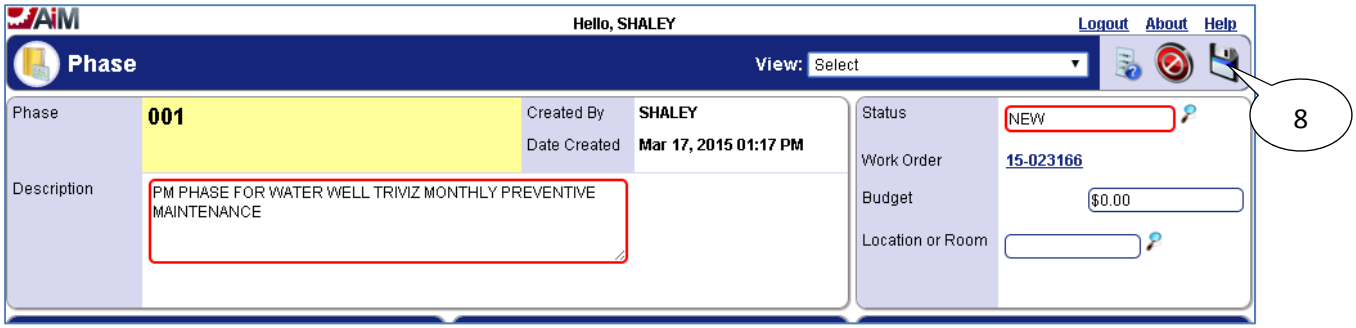
5. Select the **search** icon or enter value directly into textbox if already known.



6. Select desired **Code** for the **Checkpoint Measurement Value**.



7. Select the **done** icon once values have been entered for **Checkpoint Measurements**.



8. Select the **save** icon.

List of Checkpoints from PM Standards

Below are the checkpoints for each frequency (daily, monthly, quarterly, annual, 5 year) of PM completed for irrigation water wells.

Checkpoints for daily water well PM:

Checkpoint	Description	Measurement
01	WELL PUMP - INSPECT FOR WATER LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
02	WELL PUMP MOTOR - INSPECT FOR OIL LEAKS, VIBRATIONS OR ABNORMAL SOUNDS.	No
03	MOTOR CONTROL CENTER - VERIFY SWITCH POSITIONS FOR REMOTE CONTROL AND INSPECT FOR CONDENSATION BUILD UP. CHECK FOR THE PRESENCE OF FAULT CODES.	No
04	ELECTRICAL SERVICE DISCONNECT - VERIFY SWITCH POSITION.	No
05	AUTOMATION CONTROL PANEL - VERIFY COMMUNICATION CONNECTIVITY TO NIAGARA.	No
06	ELECTRIC CIRCUIT BREAKER PANEL - VERIFY NORMAL BREAKER POSITIONS.	No
07	WATER METER - VERIFY METER TOTALIZATION DURING OPERATION.	No
08	ELECTRIC METER - VERIFY METER TOTALIZATION DURING OPERATION.	No
09	PRESSURE TRANSMITTERS - VERIFY PRESSURE FLUCTUATION DURING OPERATION.	No
10	PRESSURE GAUGES - VERIFY PRESSURE FLUCTUATION DURING OPERATION.	No

Checkpoints for monthly water well PM:

Checkpoint	Description	Measurement
01	WATER METER - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes
02	ELECTRIC METER - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes

Checkpoints for quarterly water well PM:

Checkpoint	Description	Measurement
01	WELL PUMP - INSPECT SHAFT LUBRICATION, MOUNTING BOLTS.	Yes
02	WELL PUMP MOTOR - BEARING LUBRICATION,INSPECT MOUNTING BOLTS, CLEAN VENTILATION CAVITIES, WIPE DOWN. PRINT YEAR TO DATE ELECTRICAL AMPERAGE REPORT VIA NIAGARA.	Yes
03	MOTOR CONTROL CENTER - VERIFY ABILITY TO TRANSFER FROM LOCAL TO REMOTE CONTROL.	Yes
04	ELECTRICAL SERVICE DISCONNECT - VERIFY ABILITY TO OPEN AND CLOSE MAIN BREAKER.	Yes
05	AUTOMATION CONTROL PANEL - INPECT AUTOMATION ENCLOSURE FOR DUST, CONDENSATION AND LOOSE WIRING. TEST INTRUSION SWITCH AND WEB CAMERAS.	Yes
06	ELECTRIC CIRCUIT BREAKER PANEL - VERIFY ABILITY TO OPEN AND CLOSE BREAKERS. INSPECT FOR CORROSION AND CONDENSATION.	Yes
07	PRESSURE TRANSMITTERS - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes
08	PRESSURE GAUGES - INSPECT FOR LEAKS, CORROSION AND FUNCTIONAL DISPLAYS.	Yes
09	PACKING GLAND - REMOVE OLD PACKING AROUND WELL SHAFT. INSTALL NEW PACKING AROUND WELL SHAFT.	Yes

Checkpoints for annual water well PM:

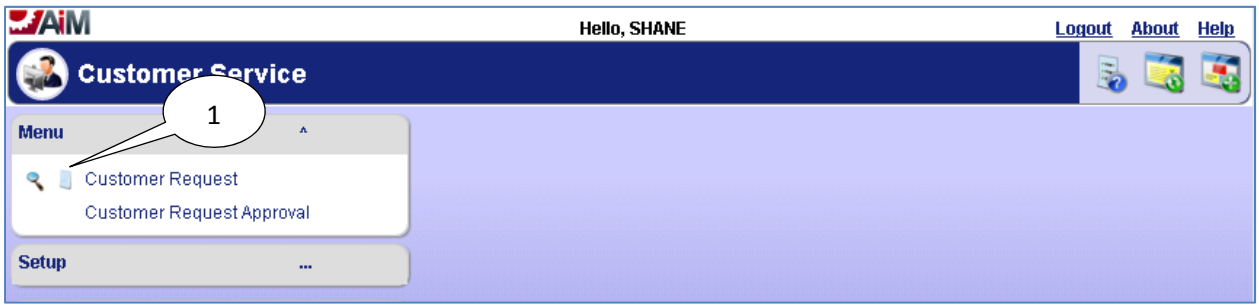
Checkpoint	Description	Measurement
01	WELL PUMP - VIBRATION ANALYSIS, PROTECTIVE PAINT COATING.	Yes
02	WELL PUMP - REPLACE SHAFT SEAL PACKING.	Yes
03	WELL PUMP MOTOR - VIBRATION ANALYSIS,THERMAL IMAGING,INSPECT ELECTRICAL CONNECTIONS, PROTECTIVE PAINT COATING.	Yes
04	MOTOR CONTROL CENTER - THERMAL IMAGE, BLOW DUST FROM CABINET AND TIGHTEN HIGH VOLTAGE CONNECTIONS.	Yes
05	ELECTRICAL SERVICE DISCONNECT - THERMAL IMAGE, BLOW DUST FROM CABINET AND TIGHTEN HIGH VOLTAGE CONNECTIONS.	Yes
06	AUTOMATION CONTROL PANEL - REPLACE BACKUP BATTERY ON JACE, CALIBRATE ROOM TEMPERATURE SENSOR, TEST DC POWER SUPPLY.	Yes
07	ELECTRIC CIRCUIT BREAKER PANEL - THERMAL IMAGE, BLOW DUST FROM CABINET AND TIGHTEN HIGH VOLTAGE CONNECTIONS.	Yes
08	WATER METER - CALIBRATE METER.	Yes
09	ELECTRIC METER - CALIBRATE METER.	Yes
10	PRESSURE TRANSMITTERS - CALIBRATE TRANSMITTER.	Yes
11	PRESSURE GAUGES - REMOVE AND VERIFY THAT ISOLATION VALVES AND GUAGES ARE NOT RESTRICTED.	Yes

Checkpoints for 5 year water well PM:

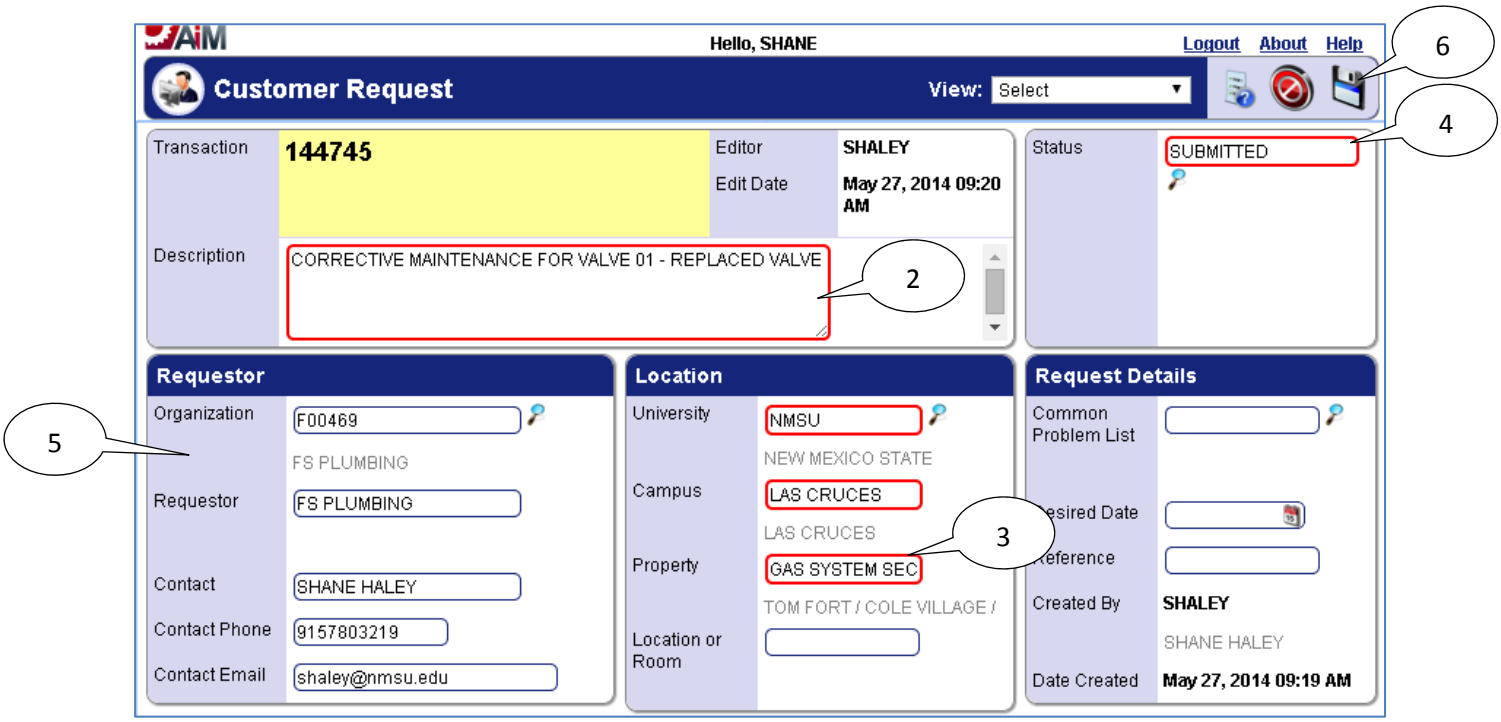
Checkpoint	Description	Measurement
01	WELL PUMP - PULL WELL FOR SHAFT AND IMPELLER INSPECTION.	Yes

Completing Corrective Maintenance

A *corrective maintenance work order* will be created by the shop supervisor for the shop technician that discovered the need while performing preventive maintenance on the asset/system. All time and materials for the corrective maintenance must be charged against the *corrective maintenance work order* and **NOT** the *preventive maintenance work order*. Please see steps below for creating a *corrective maintenance work order*:

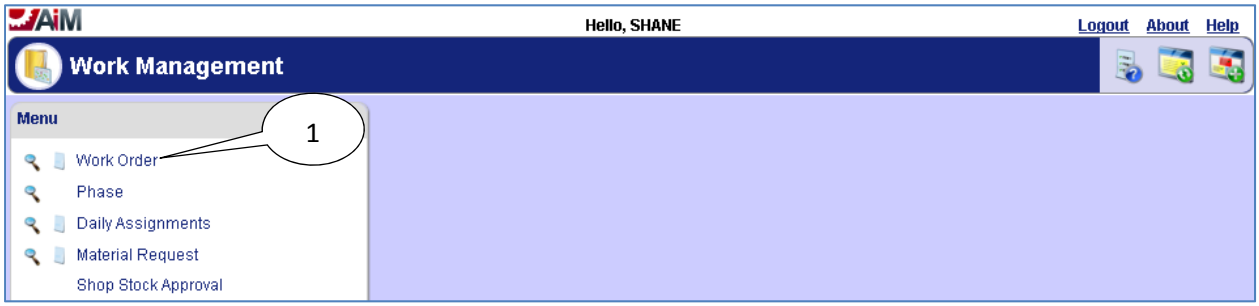


1. Create a new customer request by selecting the **new** icon.

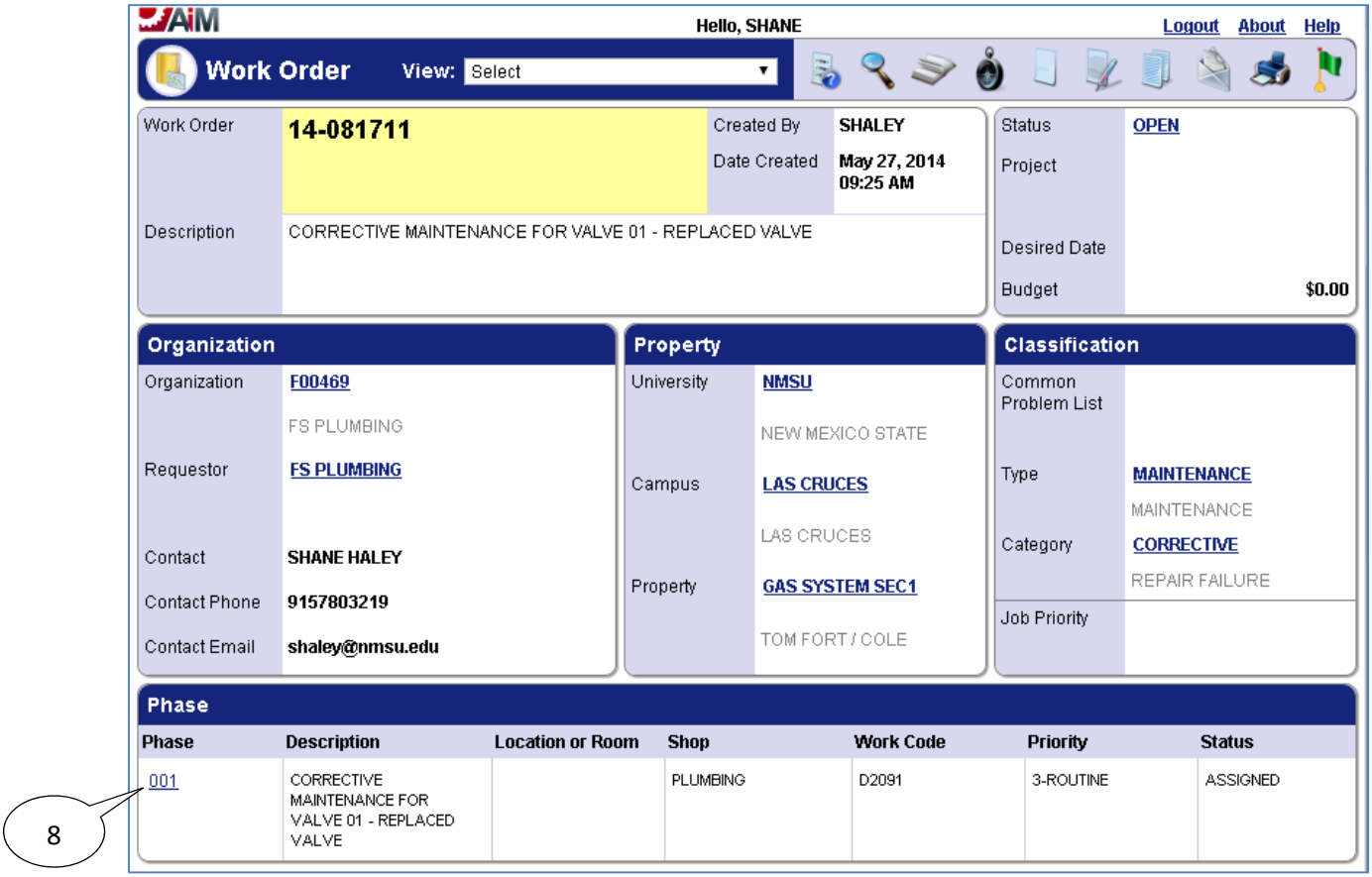


2. Enter **Description**.
3. Enter the section in the **Property** field of where the valve is located. This will be the Gas System Section.
4. Enter **Status** (should be auto-populated as "SUBMITTED").
5. Enter **Requestor** information.

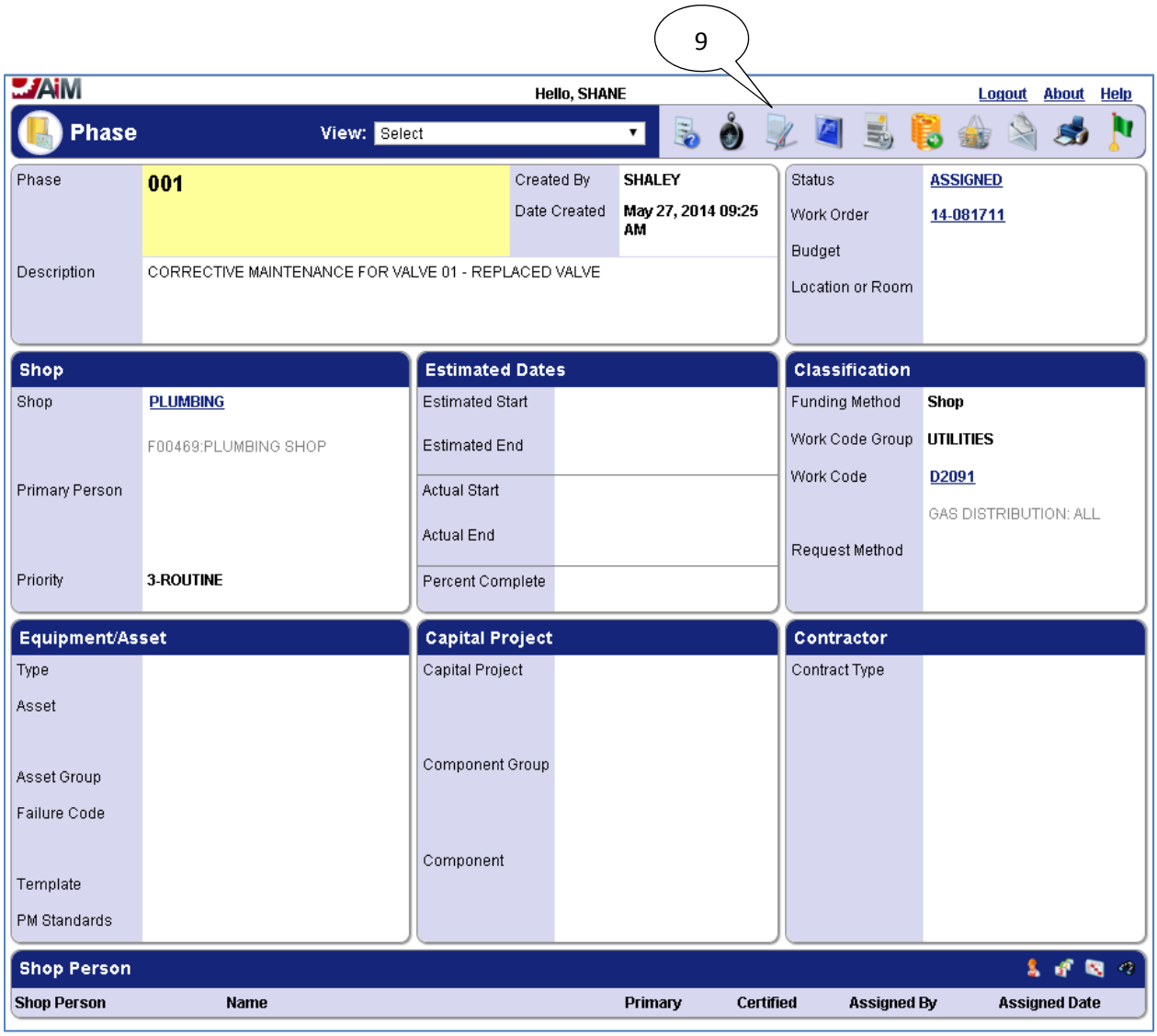
6. Click the **save** icon.



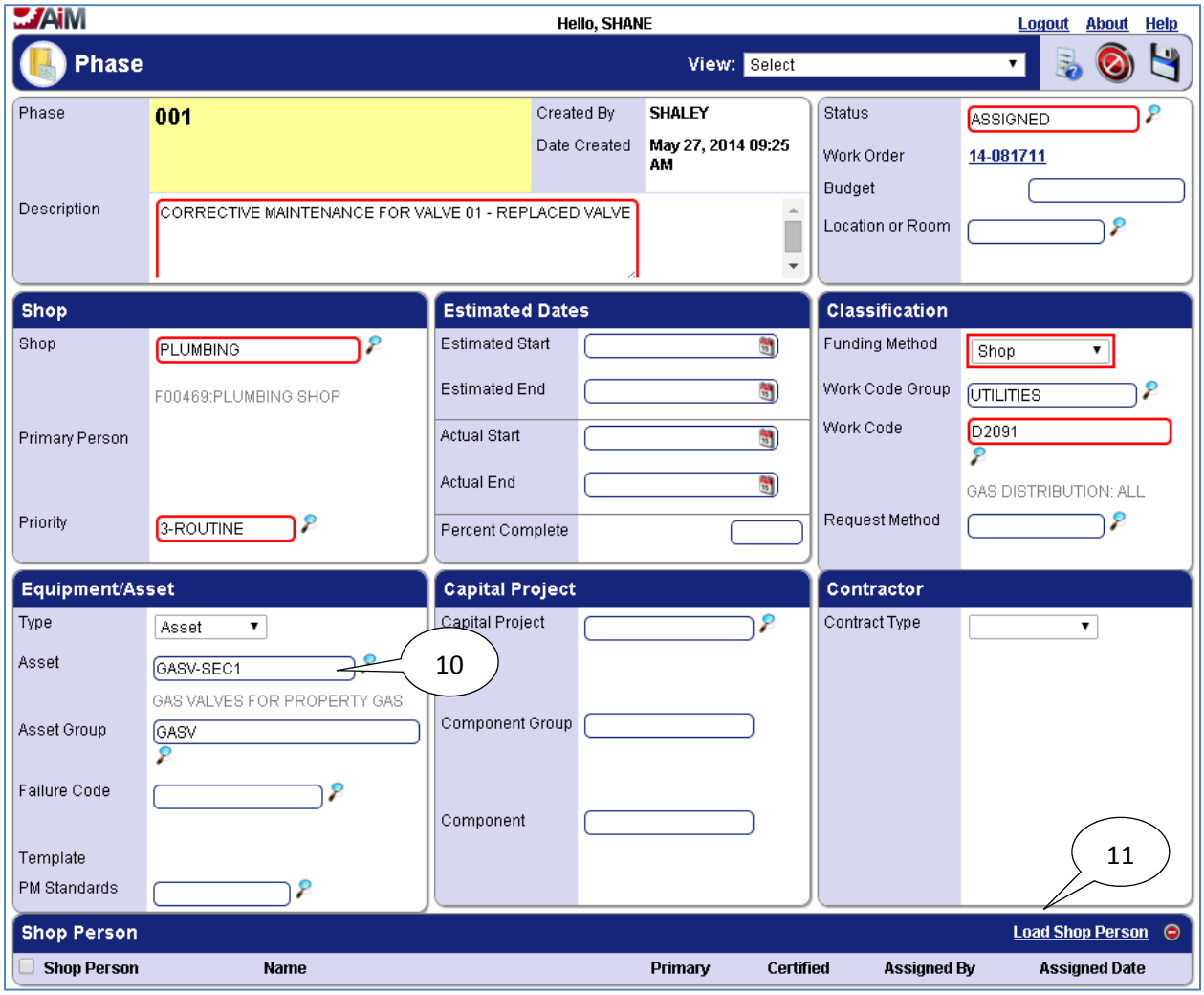
7. Once the **Work Order** has been created from the **Customer Request**, the shop supervisor will need to navigate to the **Work Order**.



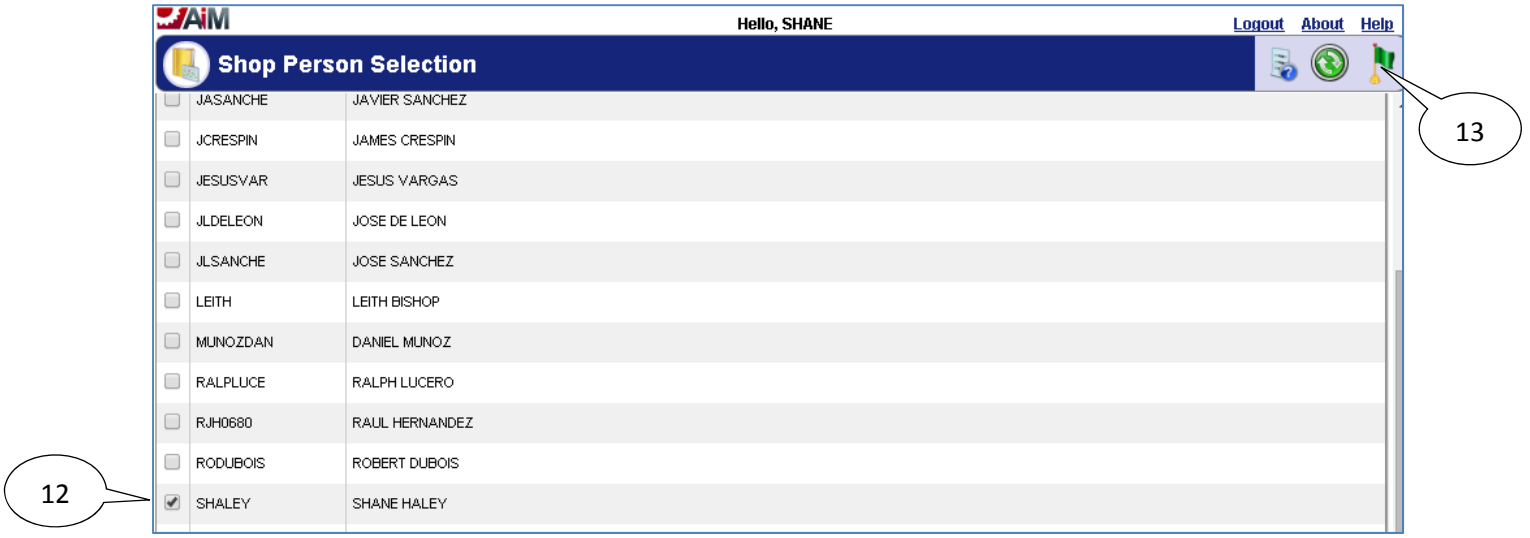
8. Select the **Phase** from the **Work Order**.



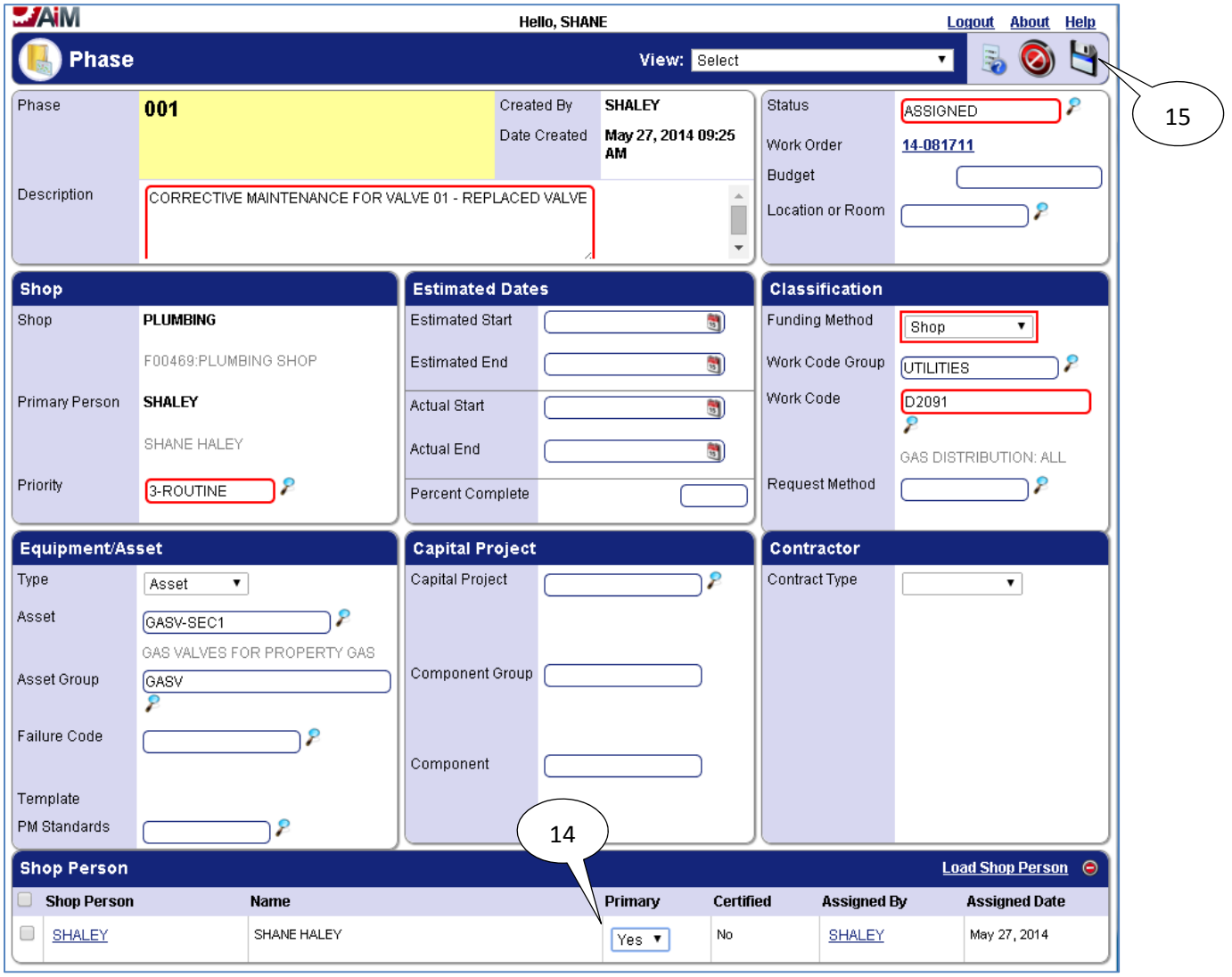
9. Select the **edit** icon.



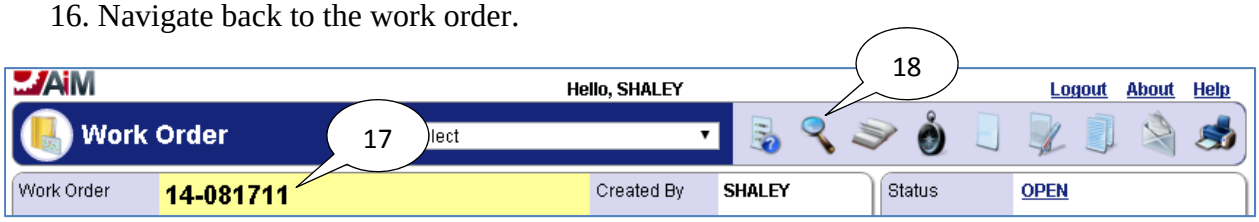
10. Enter the asset for which the preventive maintenance was being performed when it was identified that corrective maintenance was needed.
11. If no *Shop Person* is assigned to the **Phase**, then select **Load Shop Person**.



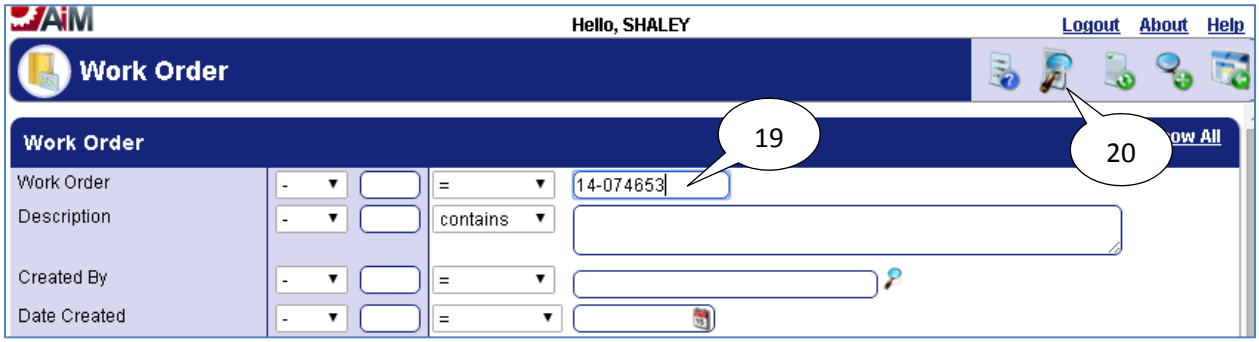
12. Select the shop tech who will be or who has performed the corrective maintenance.
13. Select the **done** icon.



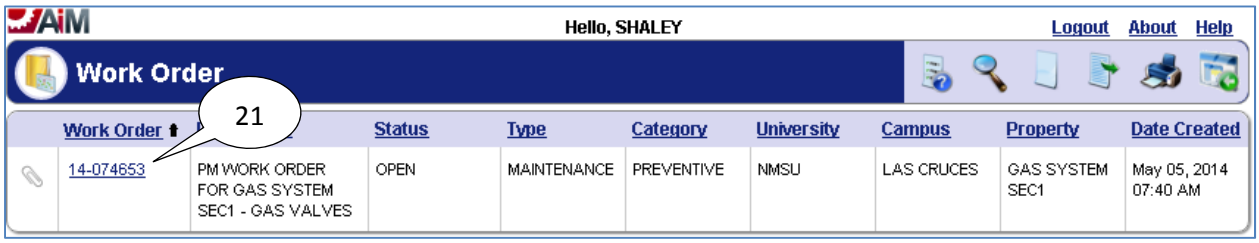
14. Set **Primary** option to "Yes" for the shop person assigned.
15. Select the **save** icon.
16. Navigate back to the work order.



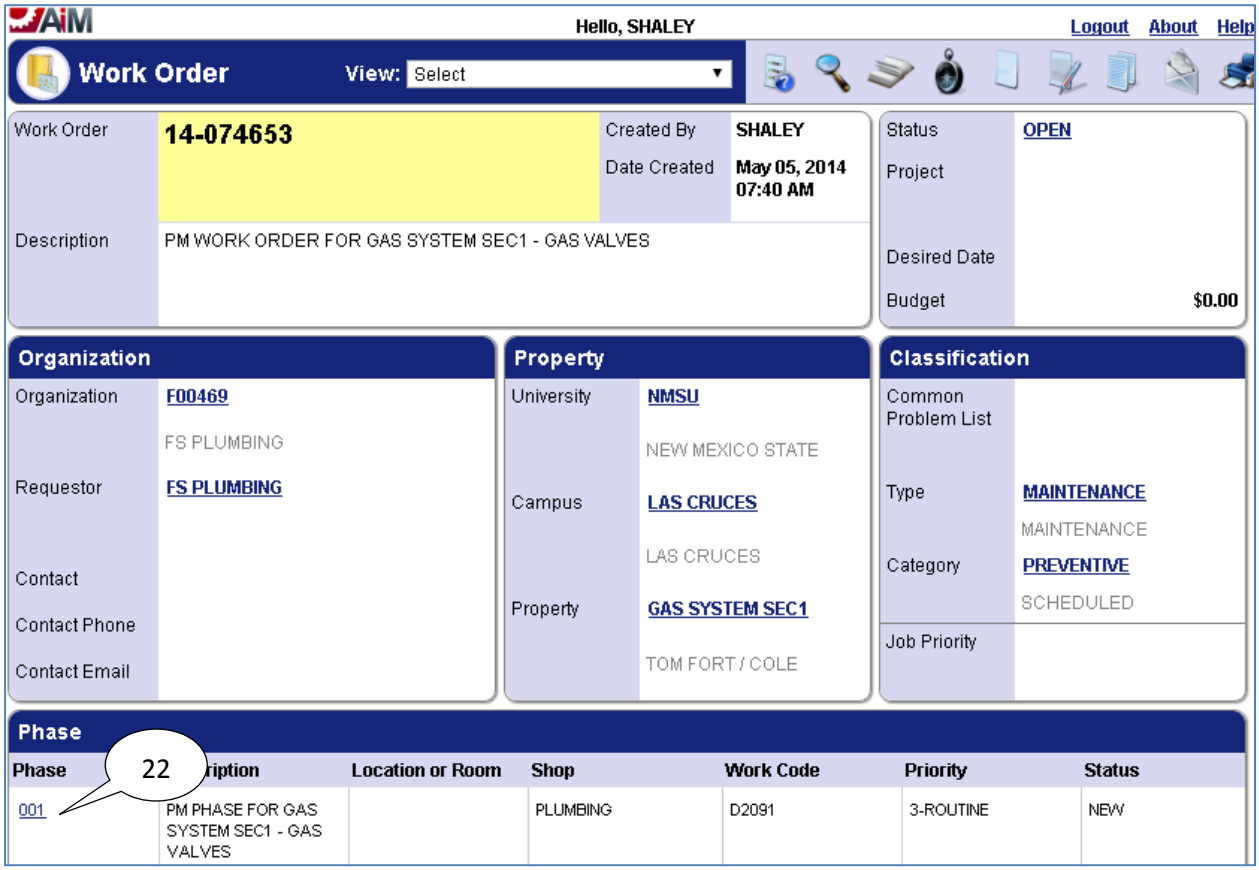
17. Copy the *Work Order* number.
18. Select the **Search** icon.



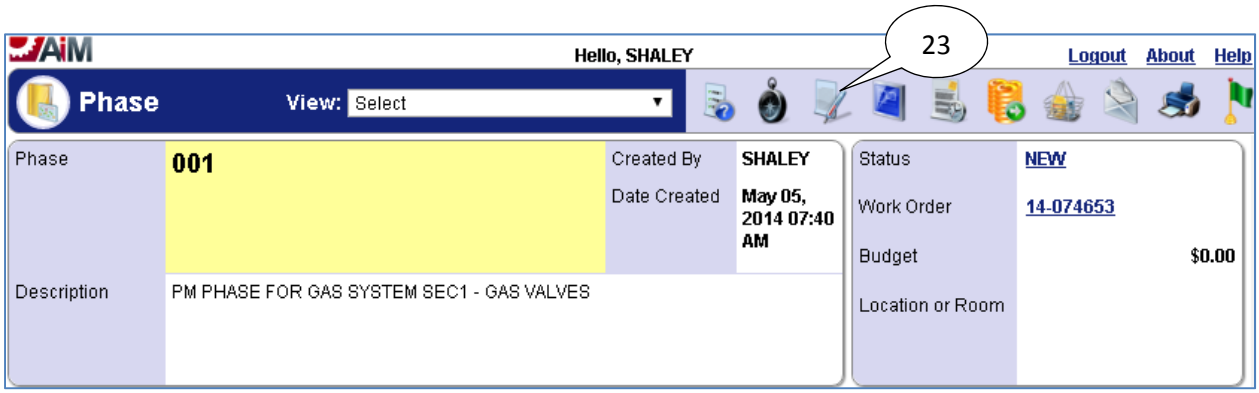
19. Enter the *Work Order* number for the Preventive Maintenance *Work Order* which was being completed when the need for Corrective Maintenance was discovered.
20. Select the **Search** icon



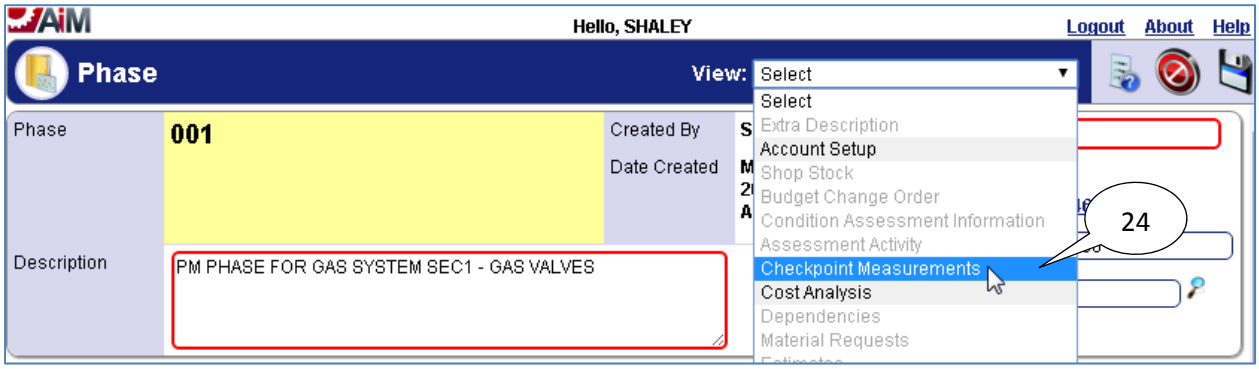
21. Select the *Work Order*.



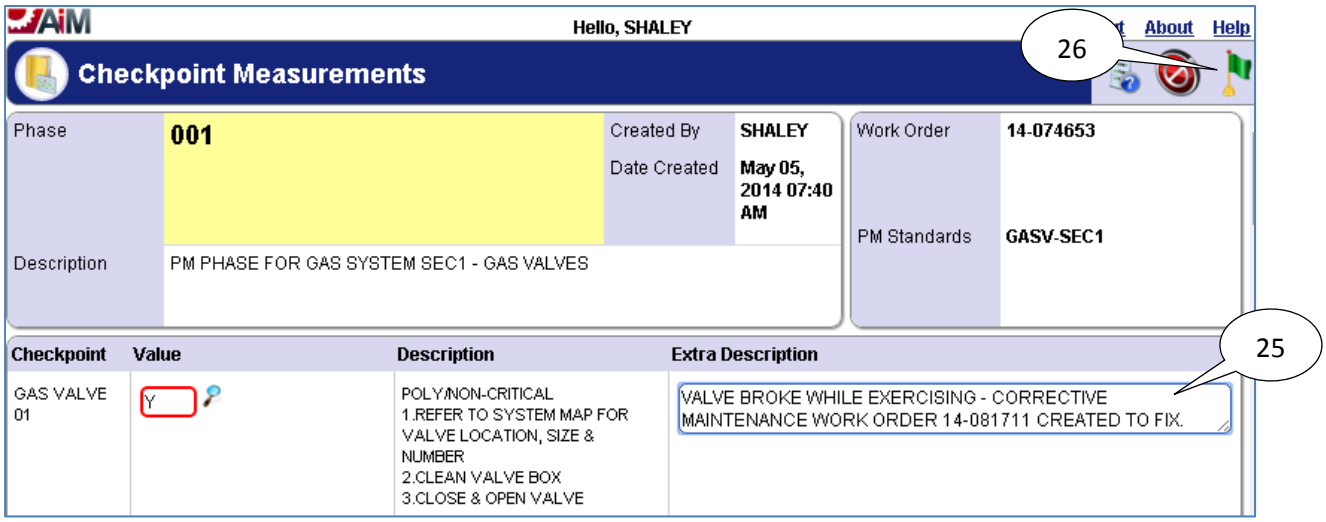
22. Select the *Phase*.



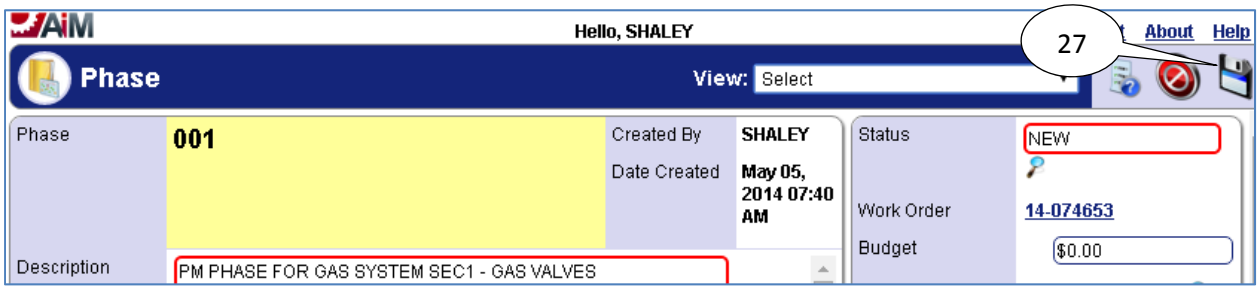
23. Select the **edit** icon.



24. Click on **Checkpoint Measurements**



25. Paste the corrective maintenance *Work Order* number which was copied earlier into the **Extra Description** field of the checkpoint which was being completed when the need for corrective maintenance was identified. Add any other relevant notes to this field as well.
26. Select the **done** icon when finished



27. Select the **save** icon.

Sign Off Memo

To: FS

From: FSA

Date: 03/20/2015

Sign Off For: AiM Preventive Maintenance for Water Components for the Utility Shop

---

Item/Items to be signed off:

- Water Components (Valves, Fire Hydrants, Wells, Tanks, Transfer Pumps, Sampling Sites)
- Water Well/Tank property and asset transition
- PM Template Design
- PM Generation
- Setup Data
- Water Component Data
- Work Orders and Phases

If you approve of the items presented for sign off, please sign below.

FS Functional Group:

Ralph S Lucero — Signature – Ralph Lucero — 3-20-15 — Date

David Avalos — Signature – David Avalos — 3-20-15 — Date

FS Management:

Glen Haubold — Signature – Glen Haubold — Date

Timothy P. Dobson — Signature – Tim Dobson — 03/20/2015 — Date

Pat Chavez — Signature – Pat Chavez — 3/20/15 — Date

Florarine Jones — Signature – Florarine Jones — 3/20/15 — Date

Lorraine Silva — Signature – Lorraine Silva — 3/20/15 — Date

Sign Off Memo

To: FS

From: FSA

Date: 06/019/2014

Sign Off For: AiM Preventive Maintenance for Gas Components for the Plumbing Shop

---

Item/Items to be signed off:

- Gas Components (Valves, Regulator Stations, Meter Stations, Piping)
- PM Template Design
- PM Generation
- Setup Data
- Gas Component Data
- Work Orders and Phases
- PM Process with Mobile Device Implementation

If you approve of the items presented for sign off, please sign below.

FS Functional Group:

Ralph S Lucero — Signature – Ralph Lucero — Date: 6/19/14

Signature – David Avalos — Date: 6/19/14

Alex Montoya — Signature – Alex Montoya — Date: 6/19/2014

FS Management:

Kelly Brooks — Signature – Kelly Brooks — Date: 6/19/14

Tim Dobson for ICR — Signature – Tim Dobson — Date: 6/19/14

Sign Off Memo

To: FS

From: FSA

Date: 11/13/2014

Sign Off For: AiM Preventive Maintenance for Sewer Components for the Utility Shop

---

Item/Items to be signed off:

- Sewer Components (Manholes, Lift Stations)
- PM Template Design
- PM Generation
- Setup Data
- Sewer Component Data
- Work Orders and Phases

If you approve of the items presented for sign off, please sign below.

FS Functional Group:

Ralph S Lucero — 11-13-14
Signature – Ralph Lucero — Date

[signature] — 11-13-14
Signature – David Avalos — Date

FS Management:

Timothy P. Dobson — 11/14/2014
Signature – Tim Dobson — Date

Pat Chavez — 11-13-14
Signature – Pat Chavez — Date

Florarine Jones — 11-13-14
Signature – Florarine Jones — Date

Lorraine Silva — 11-13-14
Signature – Lorraine Silva — Date

CAPPA 2014

Collaboration: Kick it up a notch!

Preventive Maintenance for Gas Systems

NM STATE UNIVERSITY

Project Team

- Diane Madrid, Director – Financial Systems Administration
- BJ Maestas, Assistant Director – Financial Systems Administration
- Shane Haley, Programmer Analyst – Financial Systems Administration
- Ralph Lucero, Supervisor – Facilities Operations & Utilities
- David Avalos, Supervisor – Facilities Operations & Utilities
- Alex Montoya, Supervisor – Facilities Operations & Utilities

Background

- Ensure regulatory compliance is achieved
- AiM Facility Management System (FMS) not being fully utilized
- Preventive Maintenance (PM) in Facilities was being handled in a variety of methods depending on shop, asset, and components

Development of Approach

- Gain an understanding of Utility shop Preventive Maintenance (PM) requirements and process
- Formalize into a repeatable approach to be used for all PM implementations
- Create a method of communication that bridged the shop team's business and the IT department's understanding of the PM Module in AiM (concept diagram)

Approach

- Discovery Process
  - Assets
  - Regulatory Requirements
- PM Process
- Devise Concept Diagram
- Evaluate Process
  - Changes?
  - Improvements?
- Obtain data for system use/implementation
- Signoff
- Training

Discovery Process

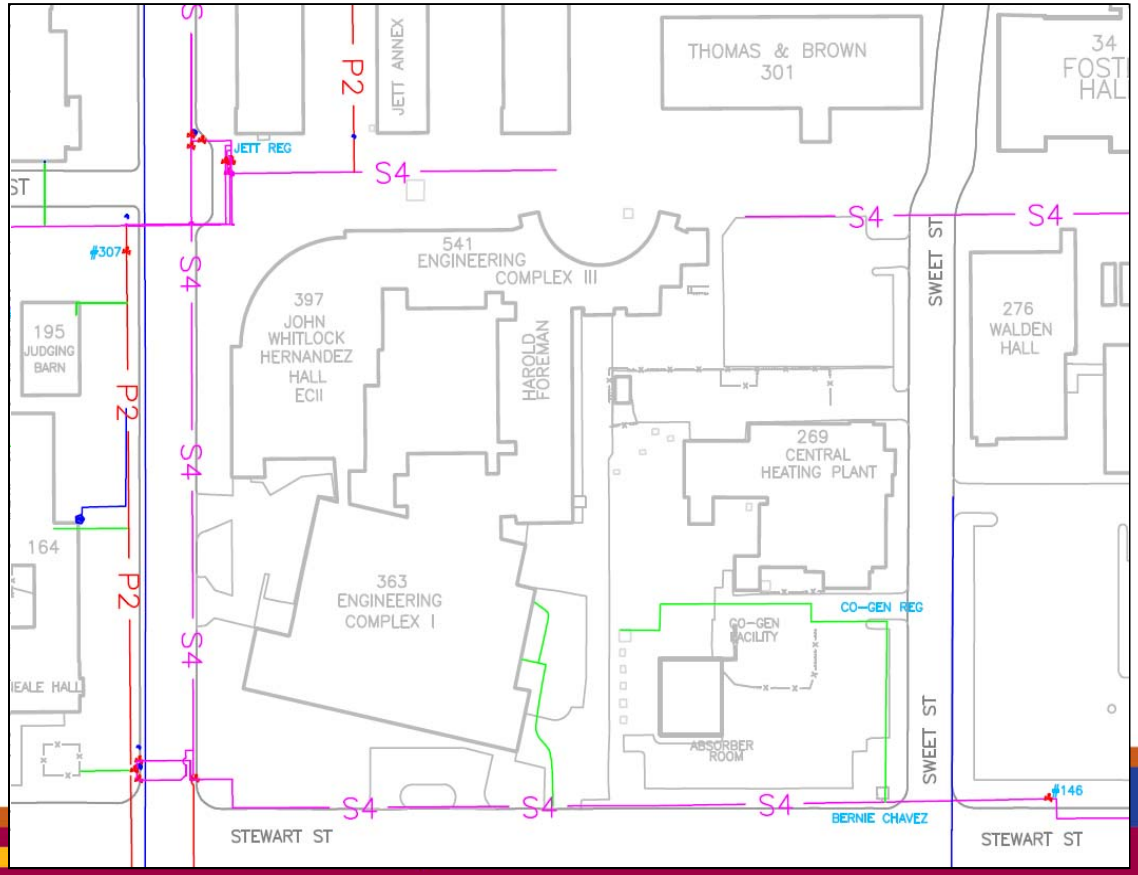
- Discuss assets and requirements for PM
  - Provide Asset Criteria Form
    - **Shop Name** (*Name of the shop to which the asset is assigned)*
    - **Asset** (*Generic name for asset such as valve, elevator, and meter)*
    - **Asset Name** (*Distinct name of the asset such as valve01, elevator01, and meter01)*
    - **Group** *(if there is already a group defined in AiM to which the asset would belong to)*
    - **Type** *(system, serialized, vehicle, property, property component).*
    - **Parent Asset** (*If asset is a component of another asset)*
    - **Property** *(Where the asset is located?), (Does the "property" exist?)*
    - **Estimated Monetary Value** *(dollar amount such as $50.00)*
    - Is this asset considered critical?
    - Are there regulatory requirements related to PM? If so, what are they?
    - Do you have PM Standards/Procedures defined? If so, what are they?
    - Are there special Break/Fix considerations or requirements for the asset?
    - Are there reporting requirements for the asset?

Discovery Process (Cont)

- Define the level of asset to utilize for PM
- Identify Properties, PM Standards / Checkpoints, and schedule of PM for assets

Discovery Process (Cont)

- The extensive knowledge of the Utility Shop Supervisors and maps of the gas system were instrumental in identifying assets and properties.



Discovery Process (Cont)

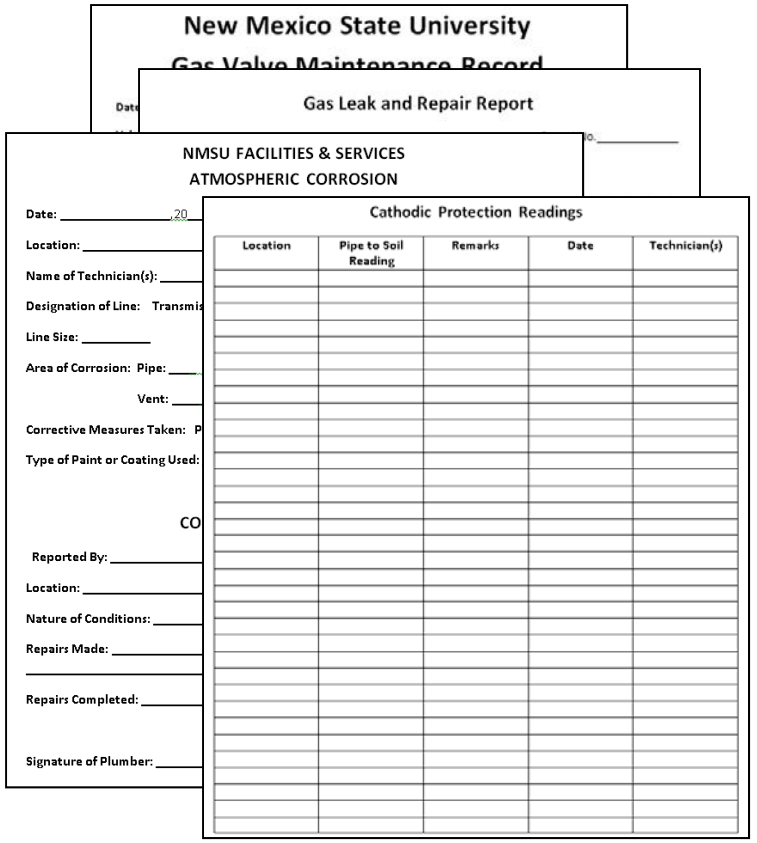
- Gas System Components
  - Valves (204)
  - Reg Stations (5)
  - Meter Stations (6)
  - Risers (223)
  - Piping

Discovery Process (Cont)

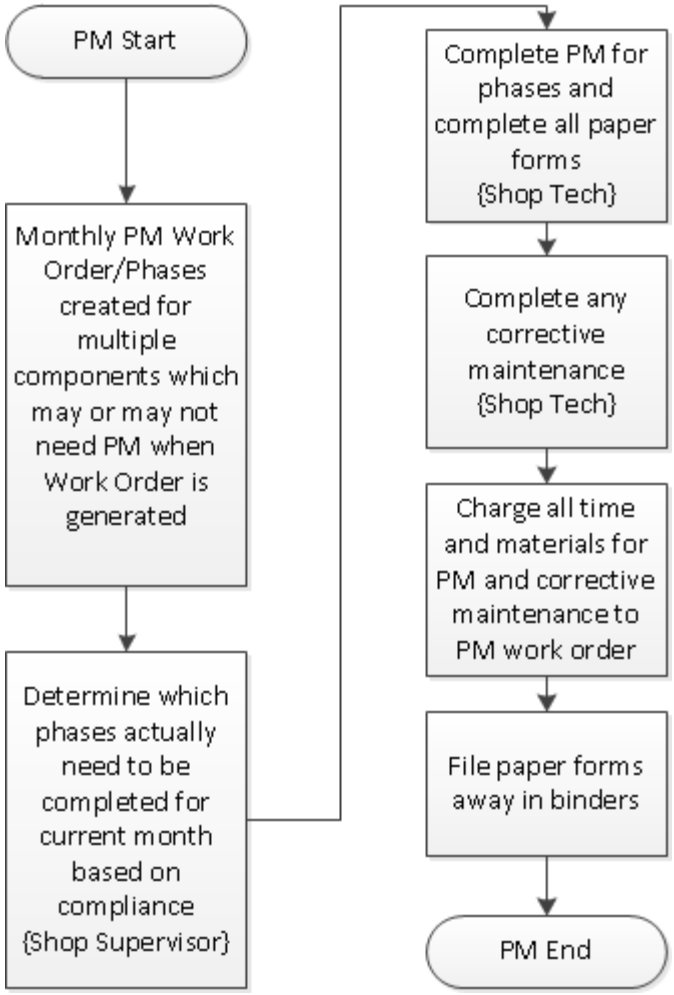
- Poly Gas Valve PM Steps
  - Refer to system map for valve location, size & number
  - Clean valve box
  - Close and open valve
- Additional steps for Steel valves
  - Grease valve
  - Exercise valve as needed
  - Repeat greasing and exercising of valve as needed.

Discovery Process (Cont)

- Request copies of all paper forms currently utilized

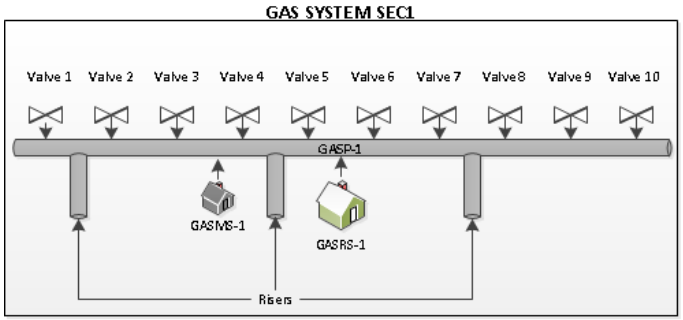


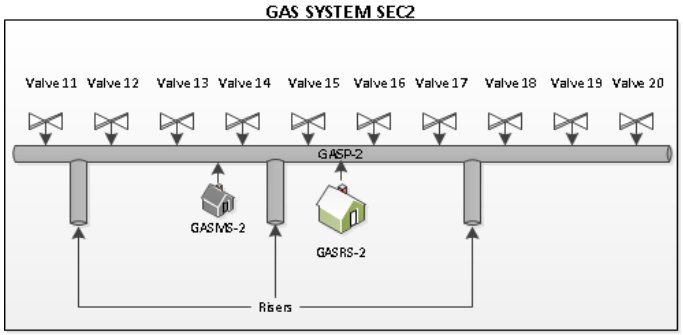
Current PM Process

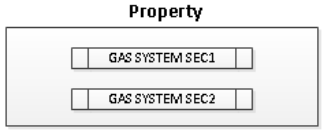


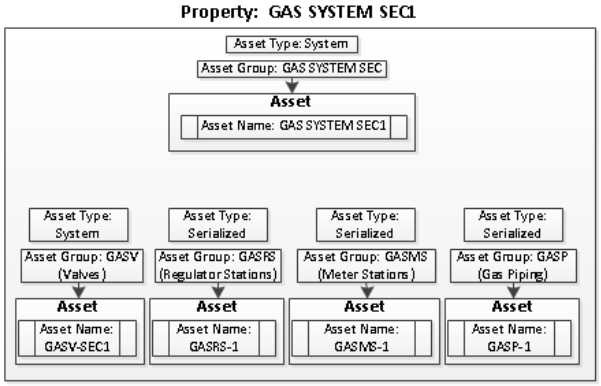
Concept Diagram

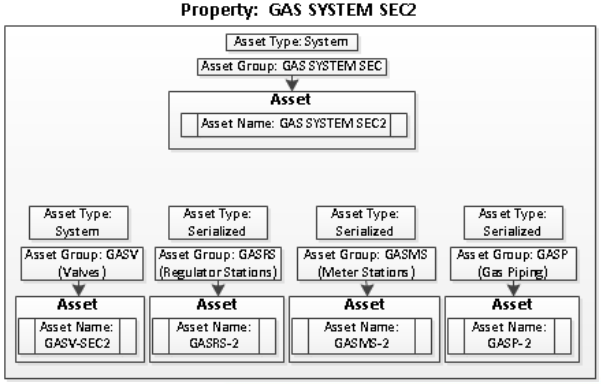
Preventive Maintenance Concept Diagram
(Gas Systems)











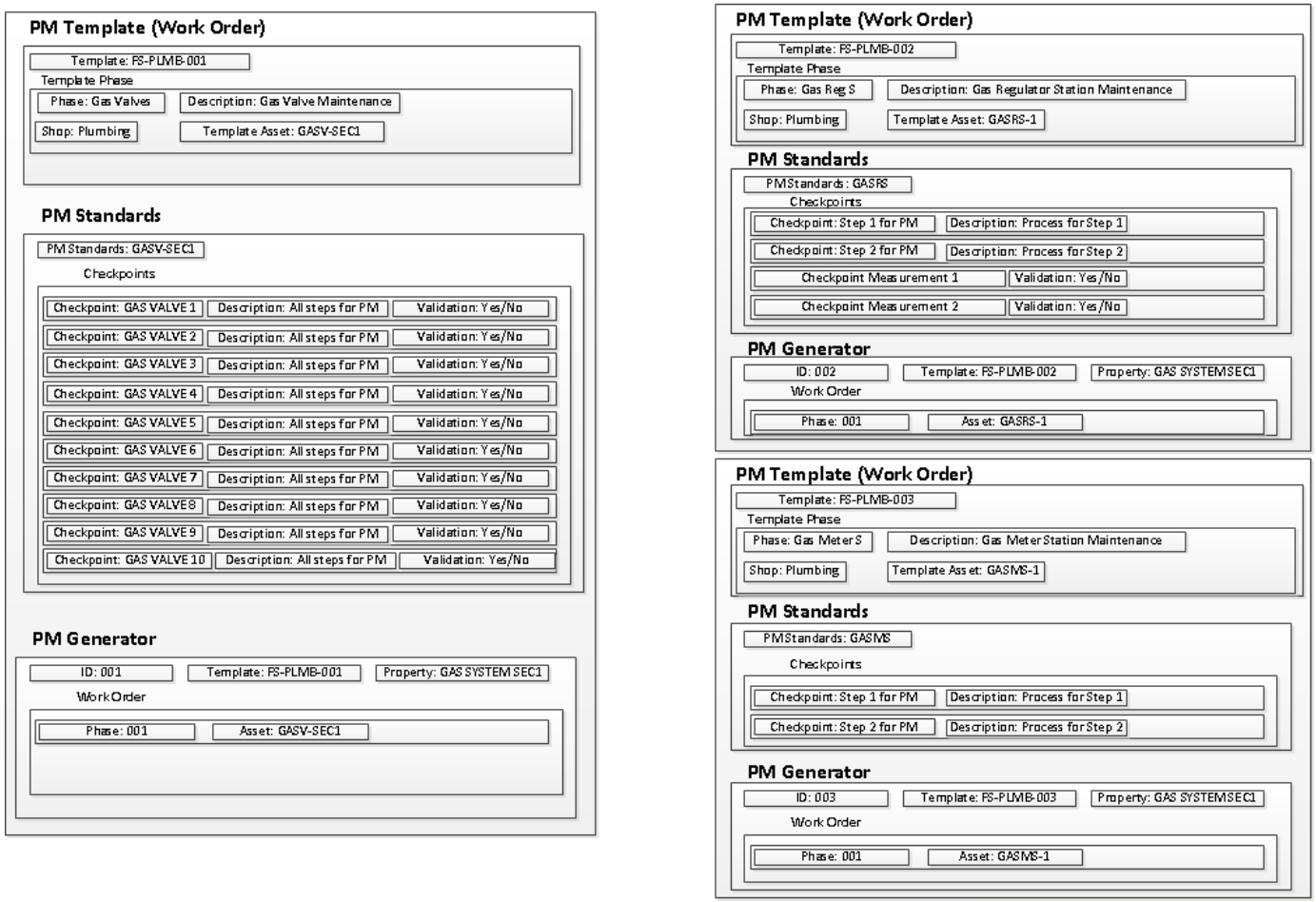
Naming Conventions

AiM Component	Format	Example	Description
Property Profile		GAS SYSTEM SEC1	The property has been created in AiM to encompass a logical grouping of gas assets decided upon by the Plumbing shop.
Asset Group	<SYSTEM><Asset Abbreviation>	GASV	The system is gas and the type of asset is valves.
Master Asset Profile (individual asset)	<Asset Group>-<Sequential Number>	GASRS-1	The asset group name is GASRS and the number dictates that this is Gas Regulator Station number 1.
Master Asset Profile (group of assets)	<Asset Group>-<Property Abbreviation>	GASV-SEC1	The asset group name is GASV and the property name is GAS SYSTEM SEC1. The abbreviation SEC1 is being used in the property part of the name.
PM Template	<Department>-<Shop>-<Sequential Number>	FS-PLMB-001	FS-PLMB-001 Where FS is the department Facilities and Services, PLMB is the shop Plumbing, and 001 is a sequential number
PM Template Phase	<Type of Asset>	GAS VALVES	The phase is named GAS VALVES because it is PM for gas valves.
PM Standards (individual asset)	<Asset Group>	GASRS	The PM Standards applies to all regulator stations and as such is named the same as the asset group for regulator stations.
PM Standards (group of assets)	<Asset Name>	GASV-SEC1	The PM Standards only applies to gas valves in GAS SYSTEM SEC1 and as such is named the same as the asset group for gas valves in GAS SYSTEM SEC1.

Map Concept to AiM

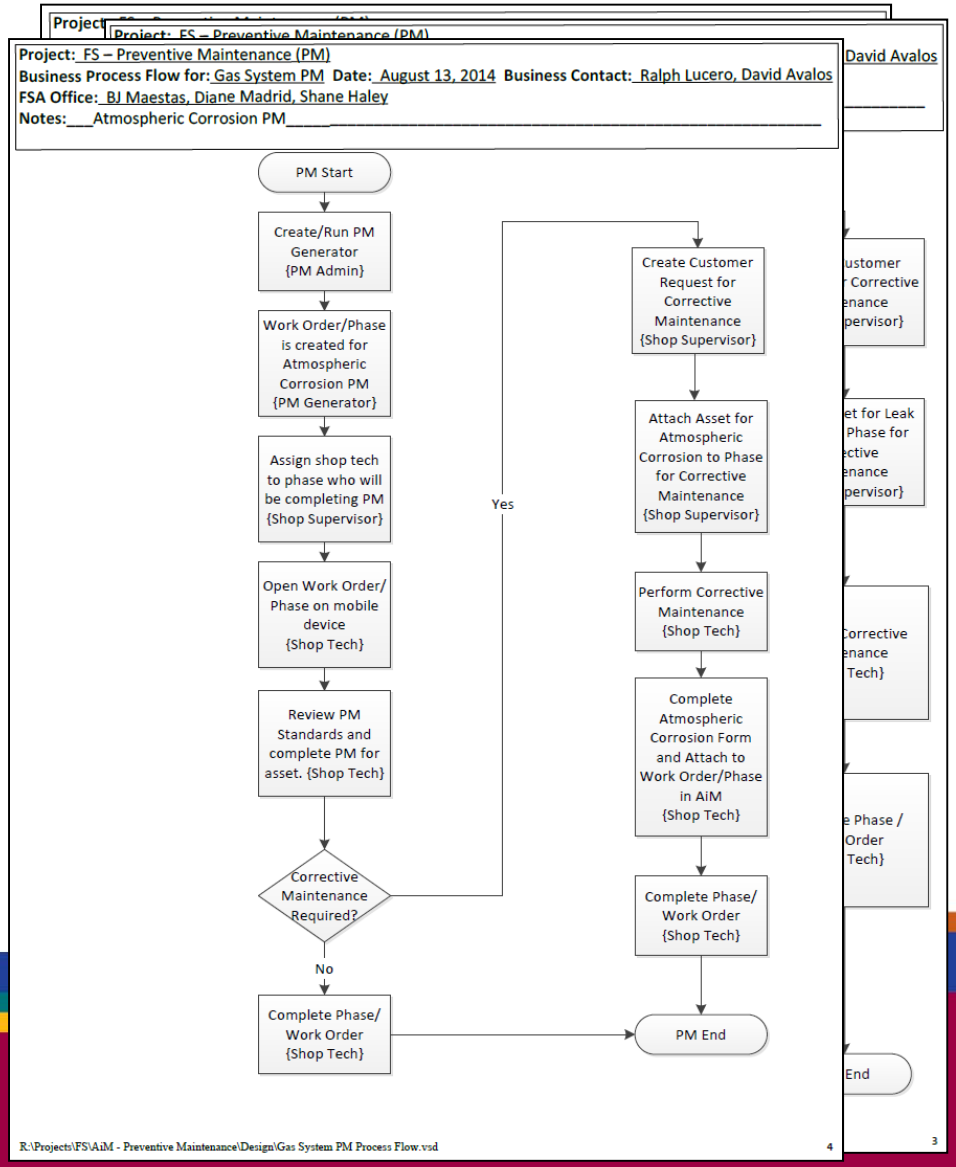
Preventive Maintenance – AiM Structure
(Gas Valves, Gas Regulator Stations, Gas Meter Stations)

Note: Assume PM Generation is by Template



Evaluate Current Process and Requirements

- Identify any needed improvements and document as proposed or future process



Evaluate Current Process and Requirements (Cont)

- Transitioned use of paper forms to use of AiM system on an iPad.

AiM — Hello, SHALEY — Logout About Help

Checkpoint Measurements

Phase	001	Created By	SHALEY
		Date Created	May 05, 2014 07:40 AM
Description	PM PHASE FOR GAS SYSTEM SEC1 - GAS VALVES		
Work Order	14-074653		
PM Standards	GASV-SEC1		

Checkpoint	Value	Description	Extra Description
GAS VALVE 01	Y	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	COMPLETE
GAS VALVE 02	Y	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	COMPLETE
GAS VALVE 03	Y	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	COMPLETE
GAS VALVE 04	Y	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	COMPLETE
GAS VALVE 05	Y	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	COMPLETE
GAS VALVE 06	Y	POLY/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE	COMPLETE
GAS VALVE 07	Y	STEEL/NON-CRITICAL 1.REFER TO SYSTEM MAP FOR VALVE LOCATION, SIZE & NUMBER 2.CLEAN VALVE BOX 3.CLOSE & OPEN VALVE, PERFORM STEPS 4-6 IF NEEDED 4.GREASE VALVE 5.EXERCISE VALVE 6.REPEAT STEPS 4 & 5	COMPLETE

Evaluate Current Process and Requirements (Cont)

- Evaluate existing PM and open work orders

Open Work Orders and Matching New PM Templates

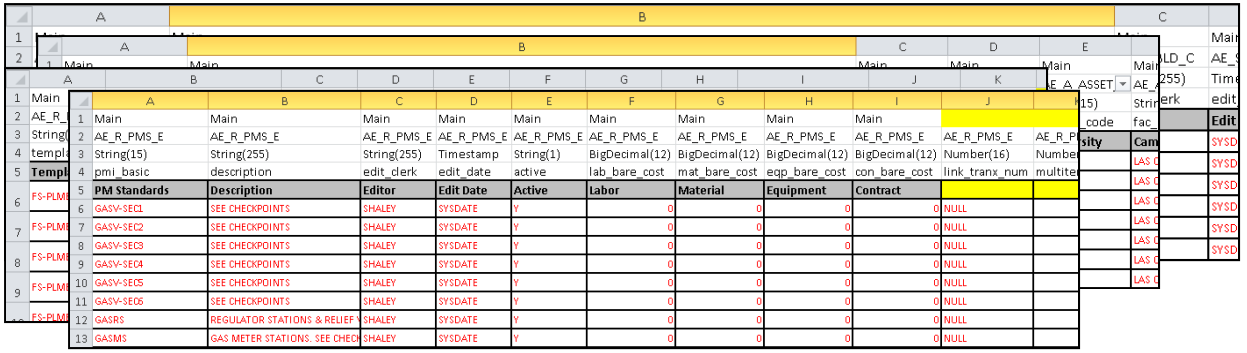
Open Work Order/PM	Phase	Asset	Schedule	Frequency	Keep/ Remove	New PM Template	New Phase	Asset	Schedule	Frequency
						FS-PLMB-019	CATHODIC	GASP-1	November 1st of every year starting 2014	Annual
						FS-PLMB-020	CATHODIC	GASP-3	December 1st of every year starting 2014	Annual
						FS-PLMB-021	CATHODIC	GASP-4	March 1st of every year starting 2015	Annual
						FS-PLMB-022	CATHODIC	GASP-5	January 1st of every year starting 2015	Annual
14-071045/ FS-1093	CATHODE INSP	FS-LC-GAS REG STATIONS	1st of every month	Monthly	Remove	FS-PLMB-023	CATHODIC	GASP-6	February 1st of every year starting 2015	Annual

Cleanup

- No longer need open work orders
- Disable obsolete PM and open work orders
  - Monthly Open Work Order for Regulator Stations
    - CATHODE INSP
    - VALVE MAINT
  - Monthly Open Work Order for Gas System
    - ATMOSPHERIC
    - CATHODE INSP
    - DIST INSP
    - ODOR TEST

Obtain Asset Data and Prep for Loading into AiM

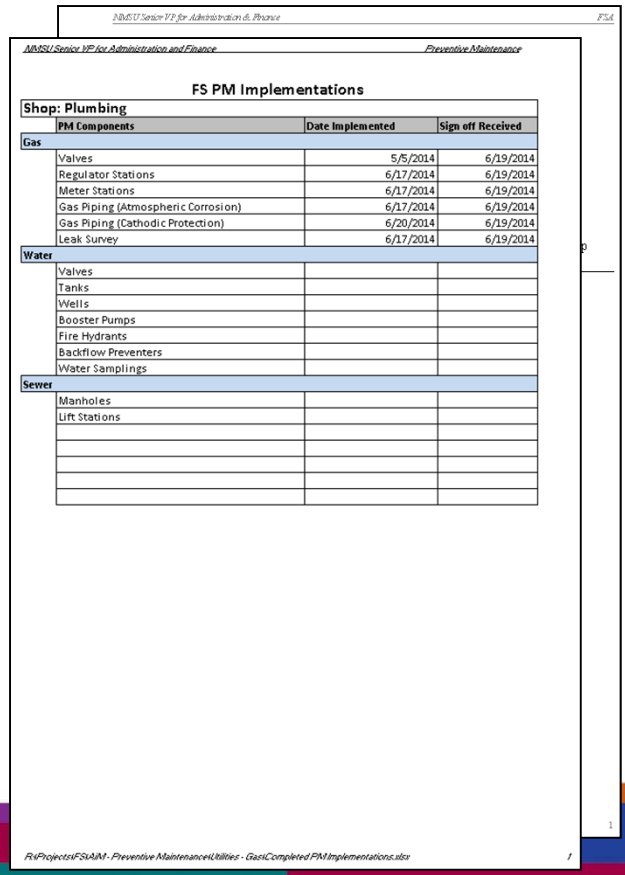
- Load files
  - Properties
  - Assets
  - PM Templates
  - PM Standards



	A	B	C	D	E	F	G	H	I	J	K
1	Main	Main	Main	Main	Main	Main	Main	Main	Main		
2	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_PMS_E	AE_R_P
3	String(15)	String(255)	String(255)	Timestamp	String(1)	BigDecimal(12)	BigDecimal(12)	BigDecimal(12)	BigDecimal(12)	Number(16)	Number
4	pmi_basic	description	edit_clerk	edit_date	active	lab_bare_cost	mat_bare_cost	eqp_bare_cost	con_bare_cost	link_tranx_num	multiter
5	**PM Standards**	**Description**	**Editor**	**Edit Date**	**Active**	**Labor**	**Material**	**Equipment**	**Contract**		
6	GASV-SEC1	SEE CHECKPOINTS	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
7	GASV-SEC2	SEE CHECKPOINTS	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
8	GASV-SEC3	SEE CHECKPOINTS	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
9	GASV-SEC4	SEE CHECKPOINTS	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
10	GASV-SEC5	SEE CHECKPOINTS	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
11	GASV-SEC6	SEE CHECKPOINTS	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
12	GASRS	REGULATOR STATIONS & RELIEF	SHALEY	SYSDATE	Y	0	0	0	0	NULL	
13	GASMS	GAS METER STATIONS. SEE CHEC	SHALEY	SYSDATE	Y	0	0	0	0	NULL	

Management Review/Signoff for AiM Production Implementation

- Prepare Signoff Memo and packet
- Prepare FS PM Implementation Matrix



NMSU Senior VP for Administration & Finance — FSA

NMSU Senior VP for Administration and Finance — Preventive Maintenance

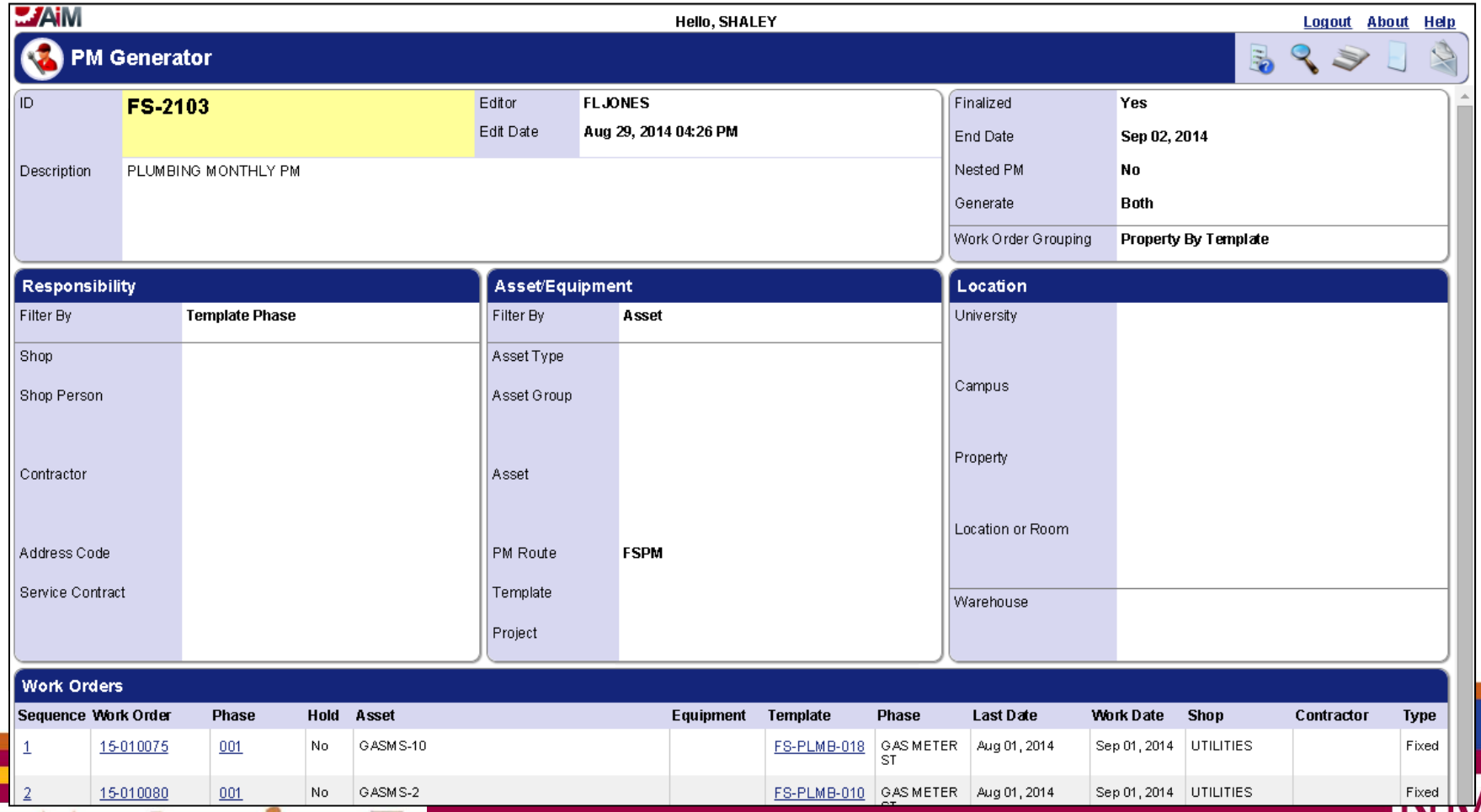
FS PM Implementations

Shop: Plumbing	PM Components	Date Implemented	Sign off Received
Gas			
	Valves	5/5/2014	6/19/2014
	Regulator Stations	6/17/2014	6/19/2014
	Meter Stations	6/17/2014	6/19/2014
	Gas Piping (Atmospheric Corrosion)	6/17/2014	6/19/2014
	Gas Piping (Cathodic Protection)	6/20/2014	6/19/2014
	Leak Survey	6/17/2014	6/19/2014
Water			
	Valves		
	Tanks		
	Wells		
	Booster Pumps		
	Fire Hydrants		
	Backflow Preventers		
	Water Samplings		
Sewer			
	Manholes		
	Lift Stations		

R:\Projects\FS\AiM - Preventive Maintenance\Utilities - Gas\Completed PM Implementations.xlsx

Take PM Live in AiM for Relevant Components

- Coordinate Building of PM Generators
- Facilitate Generation of Work Orders



AiM — Hello, SHALEY — Logout About Help

PM Generator

ID	FS-2103	Editor	FLJONES
		Edit Date	Aug 29, 2014 04:26 PM
Description	PLUMBING MONTHLY PM		

Finalized	Yes
End Date	Sep 02, 2014
Nested PM	No
Generate	Both
Work Order Grouping	Property By Template

Responsibility

Filter By	Template Phase
Shop	
Shop Person	
Contractor	
Address Code	
Service Contract	

Asset/Equipment

Filter By	Asset
Asset Type	
Asset Group	
Asset	
PM Route	FSPM
Template	
Project	

Location

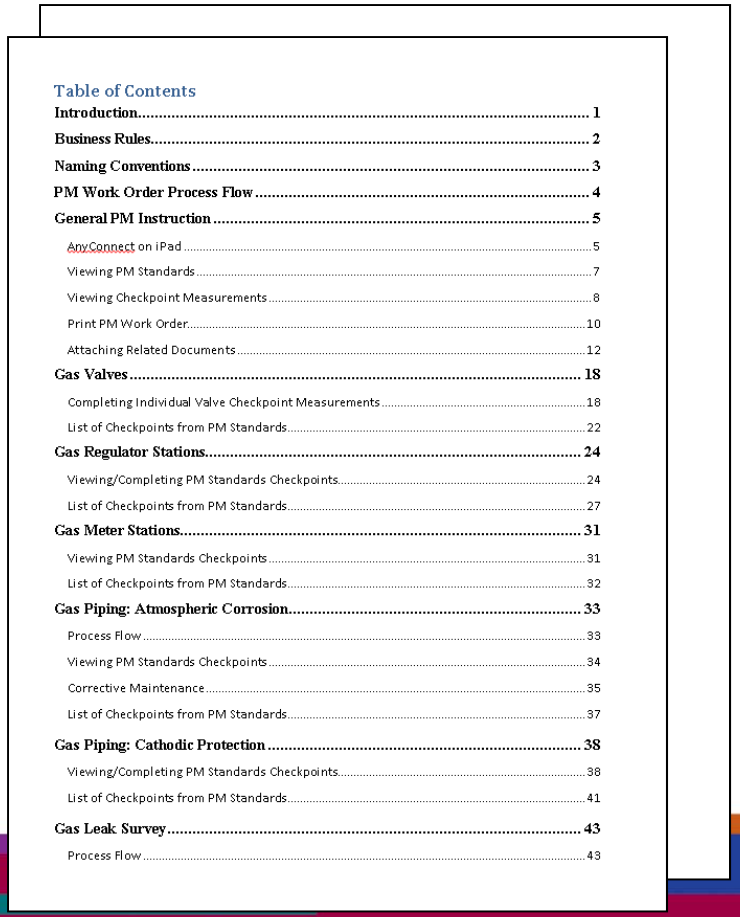
University	
Campus	
Property	
Location or Room	
Warehouse	

Work Orders

Sequence	Work Order	Phase	Hold	Asset	Equipment	Template	Phase	Last Date	Work Date	Shop	Contractor	Type
1	15-010075	001	No	GASMS-10		FS-PLMB-018	GAS METER ST	Aug 01, 2014	Sep 01, 2014	UTILITIES		Fixed
2	15-010080	001	No	GASMS-2		FS-PLMB-010	GAS METER ST	Aug 01, 2014	Sep 01, 2014	UTILITIES		Fixed

Train Users

- Prepare Documentation
- Coordinate training time and location
- Assist with first PM execution as necessary



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Questions?