

|  |                          |
|--|--------------------------|
| - If Other, Specify:   |                          |
| <b>- If Other Pipe, Weld, or Joint Failure:</b>  |                          |
| 23. Describe:  |                          |
| <b>Complete the following if any Pipe, Weld, or Joint Failure sub-cause is selected.</b>                     |                          |
| 24. Additional Factors ( <i>select all that apply</i> ):   |                          |
| - Dent   |                          |
| - Gouge  |                          |
| - Pipe Bend  |                          |
| - Arc Burn   |                          |
| - Crack  |                          |
| - Lack of Fusion   |                          |
| - Lamination   |                          |
| - Buckle   |                          |
| - Wrinkle  |                          |
| - Misalignment   |                          |
| - Burnt Steel  |                          |
| - Other  |                          |
| - If Other, Specify:   |                          |
| 25. Was the Incident a result of:  |                          |
| - Construction defect  |                          |
|  | Specify:                 |
| - Material defect  |                          |
|  | Specify:                 |
|  | - If Other, Specify:     |
| - Design defect  |                          |
| - Previous damage  |                          |
| 26. Has one or more pressure test been conducted since original construction at the point of the Incident?   |                          |
| - If Yes:  |                          |
|  | Most recent year tested: |
|  | Test pressure:           |
| <b>G6 - Equipment Failure</b> - only one <b>sub-cause</b> can be selected from the shaded left-hand column   |                          |
| <b>Equipment Failure – Sub-Cause:</b>  |                          |
| <b>- If Malfunction of Control/Relief Equipment:</b>   |                          |
| 1. Specify:  |                          |
| - Control Valve  |                          |
| - Instrumentation  |                          |
| - SCADA  |                          |
| - Communications   |                          |
| - Block Valve  |                          |
| - Check Valve  |                          |
| - Relief Valve   |                          |
| - Power Failure  |                          |
| - Stopple/Control Fitting  |                          |
| - Pressure Regulator   |                          |
| - Other  |                          |
| - If Other, Specify:   |                          |
| <b>- If Threaded Connection Failure:</b>   |                          |
| 2. Specify:  |                          |
| - If Other, Specify:   |                          |
| <b>- If Non-threaded Connection Failure:</b>   |                          |
| 3. Specify:  |                          |
| - If Other, Specify:   |                          |
| <b>- If Valve:</b>   |                          |
| 4. Specify:  |                          |
| - If Other, Specify:   |                          |
| 4a. Valve type:  |                          |
| 4b. Manufactured by:   |                          |
| 4c. Year manufactured:   |                          |
| <b>- If Other Equipment Failure:</b>   |                          |
| 5. Describe:   |                          |
| <b>G7 - Incorrect Operation</b> - only one <b>sub-cause</b> can be selected from the shaded left-hand column |                          |

|  |   |
|--|---|
| <b>Incorrect Operation Sub-Cause:</b>  |   |
| <b>- If Other Incorrect Operation:</b>   |   |
| 1. Describe:   |   |
| <b>Complete the following if any Incorrect Operation sub-cause is selected.</b>  |   |
| 2. Was this Incident related to: (select all that apply)   |   |
| - Inadequate procedure   |   |
| - No procedure established   |   |
| - Failure to follow procedure  |   |
| - Other  |   |
| - If Other, Describe:  |   |
| 3. What category type was the activity that caused the Incident:   |   |
| 4. Was the task(s) that led to the Incident identified as a covered task in your Operator Qualification Program?   |   |
| 4a. If Yes, were the individuals performing the task(s) qualified for the task(s)?   |   |
| <b>G8 - Other Incident Cause</b> - only one <b>sub-cause</b> can be selected from the shaded left-hand column  |   |
| <b>Other Incident Cause – Sub-Cause:</b>   | Unknown   |
| <b>- If Miscellaneous:</b>   |   |
| 1. Describe:   |   |
| <b>- If Unknown:</b>   |   |
| 2. Specify:  | Still under investigation, cause of Incident to be determined*<br>(*Supplemental Report required) |
| <b>PART H - NARRATIVE DESCRIPTION OF THE INCIDENT</b>  |   |
| <p>On 11-15-19 Dominion was notified by the local fire department at 1:01 am of a fire on or near the operator's pipeline. DEO confirmed that the fire was occurring on its facilities at approximately 1:37 am. The line was isolated and fire extinguished at 3:30 am. There were no injuries, fatalities or structure damages. The 30" steel main had been recently installed, and the location of the release was at a road crossing augured under the road installed at approximately 14.5ft. deep on the south end to approximately 21ft. deep on the north end. On 11-24-19 the failed section was removed and confirmed that the release of gas had occurred at a girth weld failure. The cause of the girth weld failure is currently under investigation (see G8(2)). In cooperation with the PUCO, the failed section of the pipeline (along with additional sections immediately upstream and downstream of the section containing additional welds for testing) were extracted and retained by DNV for metallurgical analysis. The protocols for the analysis have been approved by DEO and the PUCO. A copy of the Metallurgical Work Scope document and the final analysis report will be provided separately by email upon completion.</p> |   |
| <b>PART I - PREPARER AND AUTHORIZED SIGNATURE</b>  |   |
| Preparer's Name  | Jeffery Burdette  |
| Preparer's Title   | Engineering Technical Consultant  |
| Preparer's Telephone Number  | 3307545524  |
| Preparer's E-mail Address  | jeffery.l.burdette@dominionenergy.com   |
| Preparer's Facsimile Number  |   |
| Authorize Signature's Name   | Terry Glidden   |
| Authorized Signature's Title   | Manager Gas Operations Ohio Pipeline Safety   |
| Authorized Signature's Email Address   | terry.l.glidden@dominionenergy.com  |

**Exhibit 5**

**Pepper Pike PUCO Data Request (1) 12-09-19**

## Questions

## Answer

## Attachments

1. SCADA Log indicating pressure at time of failure or pressure chart from regulator station feeding pipeline (provide documentation).
2. Copy of SEA information from incident site and reports
3. Who reported NRC from Dominion?
4. M.P. at failure site or GPS coordinates.
5. Time Detected
6. Time Located
7. Time of Failure
8. Estimated Property Damage
9. Copy for Ohio – 2018 7100 report
10. Owner; Address; Company Official; Contact Number; and Fax Number
11. Map of system
12. Copy of Hydro test; MAOP; OP; and what type of OPP
13. Elevation profile of Hydro test
14. Soil condition at failure site
15. Construction Report – Ex: Photos, Visual inspections of welds, Radiography, back-fill, coating, testing and etc.
16. Information on External Pipeline Examination
17. Describe failure isolation, what valves were shut, valve number, time shut, whom performed the closure of valves and OQ
18. Weather report day of incident
19. Gas migration survey
20. Environmental Sensitivity Impact Study
21. Class location
22. Sniff testing report post incident, location and individuals OQ
23. Leakage survey reports post incident, any leaks, location and individuals OQ
24. Pressure Testing History – test date; test medium; pressure; duration; and SMYS at pressure test
25. SMYS pipeline
26. Any know conditions or actions at failure site?
27. Any pipeline history - SRC, unaccounted for gas, or repairs at failure site?
28. Timeline of Events (including emergency response, gas control actions).
29. Copy of the welding procedures used and a copy of the PQR (procedure dated).

Emailed by Jeff Burdette 11/25/19. BG Showed to Chris on 11/15/19.

Not yet available

Jeff Burdette called in and sent report to Chris 11/17/19

GPS coordinates 41.479437 -81.483215

1:04 AM Dispatch Notified of Possible Incident and 1:28

AM DEO had employee on site

1:35 AM DEO Determined the fire was located on and being fed by HP Line

1:04 AM Dispatch Notified of Possible Incident

Preliminary estimate: \$850,000 (as of 12-5-19)

Emailed to Mike and Chris 11-26-19

Dominion Energy Ohio 1201 East 55th Street, Cleveland, OH 800-535-3000

See attached Map

Hydrotest given in field to Chris November 19th. See attached for MAOP OP OPP Station Index Card

12/4/19 Zach and Corey building profile. Max-Min Elevation was considered and documented on the attached pressure test sheet.

12/4/19 discussion on multiple soil conditions. Jason Harris requesting from S&ME. Waiting for report

Given in field to Chris November 19th at 3:37 PM

Not yet available

Jorge Rodriguez and James Watkins - Valve 1335 was isolated between 2:40 AM and 2:45AM. Valve 24171 was checked to be open and valve 24170 and 24169 was closed between 3:08AM and 3:12AM. Valve 28865 was closed between 3:25AM and 3:30AM. Valve 15181 Well Feed was closed at 4:39AM. OQ Reports Attached

NA Chris stated we don't need this

See attached leak survey reports

Waiting on requested studies

Class 3

See attached Odor and OQ Reports

See attached leak survey report at provided in question 19 and OQ reports

In project packet provided on site 11/19/19  
Percent SMYS on the 30" at MAOP (shown on the hydro test sheet) is 15.32%

There were no safety concerns, otherwise the line would not have been put into service.

This was a newly installed pipeline with no historical SRC, unaccounted for gas or repairs.

A timeline meeting was held with all responding groups. To ensure accuracy of times, the results of the meeting is being compared with GPS and Cell Phone records. Waiting for the results to share final report.

Jeff Burdette provided via email 11/21/19





30. Copy of the boring (tunneling and HDD) procedures for the equipment used for construction (procedure dated).

31. Copy of the Accidental Prevention of Ignition procedures (procedure dated).

32. Copy of the Application of Coating procedures (procedure dated).

33. Copy of the Pipeline Depth procedure for distribution (procedure dated).

34. Copy of Welding Inspectors duties at job site

35. Elevation of incident site.

36. Regulator station(s) information feeding damaged pipeline and elevation.

37. Copy of individuals at site post incident.

38. Names of contractors performing work during this construction process.

39. Copy of inspectors, job title, phone number whom worked on the construction of the pipeline.

40. Copy of contractor(s) OQ and what tasks the contractor performed during the construction process.

41. Copy of each Dominion employee who performed work during this construction process, title, OQ task and phone number.

42. Any type of soil study performed prior to boring and installation of pipeline? If so, who performed the study and a copy of the study.

43. Copy of the hot tap procedures used and a copy of the PQR (procedure dated).

44. Copy of the Dominion incident report.

45. Dominions call log from the control center from the day of the incident.

46. Call log from the dispatch center.

47. GPS information from the inspectors that were overseeing the PIR project involved with the incident.

48. SAMS map used by the first responders from the day of the incident.

49. Actions taken by the gas controller during the incident.

50. Copy of the Gas Control procedures.

51. Work schedule and timecard information for controller on duty at the time of the incident.

52. Drug and alcohol information for all DRS employees involved with the initial construction project for the involved pipeline. List of DRS employees in the consortium during the time of construction, random rates, and MIS report.

DOT code compliant SOP Sections as it relates to Boring was provided via email 11/21/19. DEO utilizes DOT OQ'd contractors to perform boring and relies on the procedures and equipment provided by the contract service.

11/26/19 emailed to Chris and Mike SOP 360-20

See attached SOP and associated procedures

Jeff Provided SOP via email 11/26/19

Weld inspections duties are detailed under SOP 400-03.

1142ft - 1110ft range from test sheet. Waiting for elevation profile report.

See attached station reports

See attached site log from 11-15-19

Waiting for names, companies and OQ lists/reports

Waiting for names, companies and OQ lists/reports

Waiting for names, companies and OQ lists/reports

Waiting for names, companies and OQ lists/reports

The original plan was to lift and lay, when we got out there we discovered something very different with box culvert and the city instructed to go under. Nothing lead us to suspect at that point in time there were any soil condition issues.

See attached procedures and PQR for 6"Spherical tap (only 1 performed on this project)

DOT report will be filed by 12/13/19

11/26/19 Jeff requested control room timeline

See attached report

Waiting for GPS reports

11/26/19 Requested from David Cercone and David Kane

Gas control lowered the line pressure as documented in the call log attached in question 45

See attached procedures

Kirby Gank and Cody Barrett were on duty, they started Nov 14th at 17:30 and shift ended Nov 15th 05:30 ( schedule attached )

Waiting on list and reports

53. Can someone please provide the welding procedure checklist and documentation required by the checklist for the welding that occurred on PIR project 019- Brainard Rd. This is in response to the PNC issued in 2017 (See attached PNC under 192.241).

Emailed and discussed effort after PNC to streamline list and process by combining procedures (11-27-19)

54. Did all of the welders involved with the project in Pepper Pike have the Acuren Welding Inspection certification class as required by your PNC response dated April 24, 2017 (See below)? Please provide the certifications of training from Acuren for all of the welders involved with the PIR-019 Brainard Rd. project, along with Acuren's training program.

Confirmed with Acuren 11-27-19, but waiting on documentation

55. Mike P called Jeff and asked: Is there a refresh interval that welders are required to take Acuren Welding Inspection Certification

11-27-19 Jeff B provided to PUCO via email

56. Could please provide the name of auger machine used at the failure site (Brainard Circle), copy of the manufacturer procedure to operator, type of auger bore and the size of the cutting head? Some common names for auger bores are Horizontal Earth boring or Jack and Bore.

Working with contractor to obtain the requested information

57. Also were the individuals OQ qualified to operate this auger machine (New Construction – Excavation)?

Waiting for OQ reports (in conjunction with previous contractor OQ requests)

58. Can someone take photo documentation of the lowering to confirm the proper depth.

12/2/19 Jeff B provided to PUCO via email

59. Can someone please provide a map with the current stationing for all of the welds that were involved with the NDT. I know in a previous email you stated Jason Harris would provide this (November 26,2019).

Provided via email 12-5-19 showing existing welds. After install of replacement sections, an updated map will be provided.

**Exhibit 6**

**Pepper Pike PUCO Data Request (2) 1-16-2020**

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## Questions (Data Request #2)

### Answer

### Attachments

1. The complete project folder for PIR-019 (The original project folder). Several items were missing from what was originally provided during the incident.

DEO is still in the process of gathering the responsive files, which are voluminous. Due to their size, the files cannot be emailed. DEO intends to provide the documents in person the week of January 21st.

NA

2. Installation information for valve # 24171 located at Fairmount & Brainard Rd. that was installed without proper coating

Installation records for valve #24171 are attached. As explained in the attachment, DEO does not believe that the valve was improperly coated.

See question 2 email attachment

3. Please provide the OQ Qualifications of the controllers that were on duty at the time of the incident.

OQ reports (summary and sign in sheets) attached to the email for this question.

See question 3 email attachments

4. The Gas Control Log from 11/14/19 – 12/11/19.

Log reports attached to the email for this question.

See question 4 email attachments

5. What steel projects has the Dominion inspector (Jonas Troyer) been involved with for the previous two years? Please provide a list of projects.

A spreadsheet showing 2018-2019 steel projects involving Jonas Troyer is attached to the email for this question.

See question 5 email attachment

6. What steel projects has DRS installed in Dominion facilities in the previous two years? Please provide a list of projects and locations?

The worksheet attached to the email for this question has a tab for 2018 and a tab for 2019 projects. Projects that had welding activities are included on the lists. This includes projects where only weld fittings were identified, as well as projects with quantities of pipe were installed.

See question 6 email attachment

7. What was the estimated gas loss for the incident?

Based on currently available information: 13,179 MCF

NA

8. Please provide the OQ training module for Task 0871 Installation of Steel Pipe in a Bore

DEO personnel do not use boring machines, so DEO does not have training material to provide. Documents pertaining to contractor training are not in DEO's possession. To obtain the OQ in Veriforce, a written or oral test and a performance evaluation are required. Every contractor in Veriforce is evaluated to that standard. The evaluation guide that is provided by Veriforce is attached for reference to the email for this question.

See question 8 email attachment

9. The latest class location study for the incident area

Please see the study results [screenshots follow]. The last study relating to the area of this line is from 2007. DEO would clarify its understanding that class location studies are not required for distribution pipelines. This was recently re-iterated by PHMSA in their December 2019 response to the Petition for Reconsideration from joint industry associations.

See below

The class location record and associated analysis record are below.

| Field name           | Value                                 |
|----------------------|---------------------------------------|
| Integration Id       | 682191                                |
| Class Rating         | Class 3                               |
| Company              | Unknown                               |
| Auto Stationing Type | Keep Absolute Position Adjust Stat... |
| Start Linepost       | 32999.934 usfeet                      |
| End Linepost         | 49621.341 usfeet                      |
| Start Station        | 32998.000 usfeet                      |
| Start Station String | 329+98                                |
| End Station          | 49620.025 usfeet                      |
| End Station String   | 496+20                                |
| Last Survey Date     | 01/23/2006                            |
| Actual Length        | 16622.025 usfeet                      |
| Length               | 16622.025 usfeet                      |
| Calculated Length    | 0.000 usfeet                          |
| Stationed Length     | 16622.025 usfeet                      |
| Number of Buildings  |                                       |

| Field name     | Value                      |
|----------------|----------------------------|
| Integration Id | 682180                     |
| Name           | 2007 Initial Migration-DEO |
| Type           | Sliding Mile               |
| Status         | Obsolete                   |
| Date           | 11/30/2007 18:09:37        |

## Questions (Data Request #2)

| Questions (Data Request #2)   | Answer  | Attachments/Notes             |
|---|---|-------------------------------|
| 1. Were these American Auger procedure in your O & M plan prior to the installation of the 30" pipe at Pepper Pike?   | It is possible DEO may have misunderstood the prior request. The procedure document is not a component of DEO's standard operating procedures (SOPs). The document is an operating manual provided by the manufacturer. Model-specific procedures would not be part of DEO's SOPs. Per DEO's SOPs, DOT OQ-qualified contractors are required to comply with all applicable OQ requirements related to project tasks, which in this case included "Task 0871 Installation of Steel Pipe in a Bore. | NA                            |
| 2. What size American Auger machine was used on this project?   | Model Number: 36/42 600D  | NA                            |
| 3. In the American Auger manual, it requires in Appendix D, when boring in hard/solid rock to contact the engineer for American Auger for usage of the machine. Did the contractor or gas company contact American Auger engineering prior to installation of the 30" pipeline? If so, please provide this documentation. | DEO forwarded this request to DRS, and was informed in response, "They referred back to the geological condition and owner's manual with no information."   | PER DRS (Contractor) Response |
| 4. What size Hex Shanks were used when the 30" pipeline was installed?  | DEO forwarded this request to DRS, and was informed in response, "3" and 4."  | PER DRS (Contractor) Response |
| 5. The manufactures specifications require a cutting head a least 1.5" greater than the 30" pipe. What was the cutting head size?   | The size was included in the last update on the spreadsheet. DRS reported using Flat face rockhead 32"  | NA                            |
| 6. In Appendix B of the American Auger manual, what was the maximum force applied to the pipe, when boring into solid rock?   | DEO forwarded this request to DRS, and was informed in response, "The PSI was 500 to 700 which was a pushing force of 63,000 to 85,000 using Appendix B 36/42-440NG Force Chart."   | PER DRS (Contractor) Response |

**Exhibit 7**

**Pepper Pike PUCO Data Request (3) 2-10-2020**

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| Question# | Questions (Data Request #3)  | Answer   | Attachments   |
|-----------|--|--|---|
| 1         | Per our phone conversation yesterday, could you please provide the original 10% NDT (Pepper Pike) timeline from the completed weld to when the weld was NDT?   | DEO does not generally document the time between the completion of the weld and the NDT. The NDT dates have been provided on the NDT weld examination reports but we do not have a way to determine the time and date that each weld was completed. Based on discussions with Acuren, DEO would also clarify its understanding that X-ray would not be the preferred method for positive determination of hydrogen cracking. DEO would note that the hydrogen cracks preliminarily reported by DNV were not discovered via X-ray, but through the use of microscopy processes. |   |
| 2         | Can you please provide the Welding Procedure Checklist referred to in this response. This was previously requested in the initial information request and the response talks about combining procedures and not a checklist. | The previous response explained the reasons for the checklist not being utilized. The procedure indexes are utilized along with the weld verification report as the checklist.   | See checklist documents attached to the emailed response. Also see previous email response screen shot below. |
| 3         | After reviewing the project folder for PIR-019 Brainard Rd., I do not see an in-service date for the 30" main. Can someone please provide the date the main was placed in-service.   | The SAP in service date is 11/7/2019   | See SAP screen shot below   |
| 4         | Once a section of pipe is welded during the auger process at the road bore, what is the amount of cooling time to the weld, prior to installing the coating?   | Cooling times prior to coating and continued pipe installation would generally vary based on the materials and manufacturer specifications. OQ qualifications and training require personnel to be able to select the appropriate procedures (manufacturer specifications) for surface temperature and curing time.  |   |
| 5         | Once the coating is applied to each weld at the road bore, what is the amount of cooling time before the pipe is pushed and the next section of pipe is lowered into the hole?   | See response to part 4 above.  |   |
| 6         | Were these times documented during the auguring process?   | DEO does not generally document cure times.  |   |
| 7         | Does Dominion Gas have procedures for this process?  | DEO has both standard operating procedures and design/construction guidance for corrosion protection (these are attached for reference). Processes specific to the coating application are included in embedded links that point to the coating manufacturer's specifications for the application procedure.   | See SOP & Guidance materials attached to the emailed response.  |
| 8         | How many side booms were used to lower and align the pipe during the welding process at the auger bore in Pepper Pike?   | The inspector stated that no side booms were used. The contractor used a large excavator to perform the work.  |   |

SAP SCREEN SHOT FOR IN SERVICE DATE:

Change PM Notification: PIR Major

Notification: 400008321 G7 OLD BRAINARD RD-PIR 019 P400005321

Notific. Status: NOPR ACTI A010 A020 A030 A

Order:

Header Data Address Attachments Capital Request Information

Reference object

Functional loc. SHORGD-DEO-RAND Eastern Warehouse (Randal)

Subject

Coding EO P01 PIR Major

Description OLD BRAINARD RD-PIR 019 P400005321

PAID DRP \$190,887.95 FOR COA 60566  
11/07/2019 12:22:19 EST Roberts R Bradach (ROBR400)  
IN SERVICE 11/7/19 CHARLES TUCKER WITH DRG ENTERPRISES  
12/10/2019 07:05:07 EST Immanuel Jarius Jansz (JEDAR11)  
GIS INITIAL REC'D & SCANNED  
12/13/2019 10:22:17 EST Mari Ellen Cynlon (MARI003)  
GIS-L, EIPAK QA-P-LINDERMAN  
03/28/2020 12:12:11 EST Jansz, R. Bradach (ROBR400)

Start/End Dates:

EMAIL SCREEN SHOT REGARDING PROCEDURE CHECKLIST:

From: Jeffrey L. Runkette (GasInfrastructure - 5)  
Sent: Wednesday, November 27, 2019 10:52 AM  
To: Christopher.Chen@acuren.com; michael.purcell@acuren.com  
Cc: Brianwyn G Sullivan (GasInfrastructure - 5) | Brianwyn.G.Sullivan@dominionenergy.com; <Brianwyn.G.Sullivan@dominionenergy.com>  
Subject: FW: DEO Generic Welding Procedures

Chris/Mike,

This email is in regards to questions around the use of our procedure checklist.

After the 2017 PNC, DEO held a meeting with Dave Price and Pete Chase regarding further issues with procedure availability and understanding.

In an effort to address the issues, DEO proposed combining procedures and review the attached documentation which is also summarized in the emails below.

There is still a checklist, but it is not utilized on NDI projects (even if not 100%), and the idea was to eliminate reliance on the listing of all procedures by using the simplified & combined procedures attached.

Welding inspectors have those electronically and produced the procedure onsite using an iPhone.

Also, I confirmed with Acuren (through Maidel) that the inspectors and welders did take the training course questions from that PNC as well, and they are sending over documentation of that. I will forward that as soon as I receive it.





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### Questions (Data Request #3)

Answer

\*\*THERE ARE NO ATTACHMENTS FOR THESE RESPONSES

|  |   |
|--|---|
| 1. Number of mainline (26" and 30") welds completed during the original construction project | There were 2 26" welds and 117 30" welds.   |
| 2. Number of mainline welds that failed visual inspection during construction                | DEO is not aware of any visually failed welds.  |
| 3. Number of mainline welds that underwent NDT during construction                           | There were 16 initial mainline NDT evaluations and 19 evaluations in total during construction. X-16 initially failed NDT; there was an attempted repair and the NDT failed a second time. X-16 was subsequently cut out. X-16 CO1 and X-16 CO2 replaced the failed weld and were also subject to NDT. Counting the second test of X-16, and the tests of CO1 and CO2, there were 19 NDT evaluations. |
| 4. Number of mainline welds that passed NDT during construction                              | 17 (including X-16 CO1 and X-16 CO2)  |
| 5. Number of mainline welds that failed NDT during construction                              | 1 (X-16 failed twice)   |
| 6. Number of mainline welds placed in service  | 136   |
| 7. Number of mainline welds that underwent NDT post incident                                 | DEO evaluated all 136 welds placed into service (17 evaluations occurred during initial construction, and 119 evaluations occurred post incident). In addition, DEO evaluated 16 welds (including the weld at or near where the failure occurred) that were removed following the incident for additional data points.  |
| 8. Number of mainline welds that passed NDT post incident                                    | All 119 welds that were placed into service eventually passed NDT; see part 7.  |
| 9. Number of mainline welds that failed NDT post incident                                    | 11 welds initially failed NDT; these welds were cut out and the new segments passed NDT.  |
| 10. Number of mainline welds abandoned in place and not tested                               | 6   |

**Exhibit 8**

**Weld counts 2-11-2020**

| ORIGINAL STATIONING | Weld -Xray # | Item                | Description                   | status |
|---------------------|--------------|---------------------|-------------------------------|--------|
| 0                   |              | C/L Fairmount Blvd  |                               |        |
| 79.5                |              | C/L 30" Gate# 24169 |                               |        |
| 95                  |              | 30" FLG WN 300#     |                               |        |
| 95.7                | xc-2         | Weld                | Original Weld - Recent Xray   | passed |
| 112.6               | x-16co2      | orig                | Original Weld - Original Xray | passed |
| 116.1               | x-16co1      | orig                | Original Weld - Original Xray | passed |
| 155.8               | xc-3         | weld                | Original Weld - Recent Xray   | passed |
| 196                 | xc-4         | weld                | Original Weld - Recent Xray   | passed |
| 236.3               | x-6          | orig                | Original Weld - Original Xray | passed |
| 277                 | x-5          | orig                | Original Weld - Original Xray | passed |
| 317.7               | xc-1         | weld                | Original Weld - Recent Xray   | passed |
| 358.3               | x-4          | orig                | Original Weld - Original Xray | passed |
| 398.9               | xf-1         | weld                | Original Weld - Recent Xray   | passed |
| 439.6               | x-2          | orig                | Original Weld - Original Xray | passed |
| 480.3               | x-1          | orig                | Original Weld - Original Xray | passed |
| 521                 | xe-1         | weld                | Original Weld - Recent Xray   | passed |
| 560.2               | x-3          | orig                | Original Weld - Original Xray | passed |
| 560.3               |              | C/L Drv#2812        |                               |        |
| 598.9               | xb-3c-1      | weld                | New Weld - New Xray           | passed |
| 603.9               | xb-3c-2r     | weld                | New Weld - New Xray           | passed |
| 640.5               | x-10         | orig                | Original Weld - Original Xray | passed |
| 681.2               | x-9          | orig                | Original Weld - Original Xray | passed |
| 721.5               | xb-4         | weld                | Original Weld - Recent Xray   | passed |
| 761.7               | x-7          | orig                | Original Weld - Original Xray | passed |
| 799.9               | x-8          | orig                | Original Weld - Original Xray | passed |
| 840.1               | xf-7         | weld                | Original Weld - Recent Xray   | passed |
| 880.5               | x-13         | orig                | Original Weld - Original Xray | passed |
| 921.2               | xf-2         | weld                | Original Weld - Recent Xray   | passed |
| 961.9               | x-12         | orig                | Original Weld - Original Xray | passed |
| 1001.7              | xf-4         | weld                | Original Weld - Recent Xray   | passed |
| 1041.9              | x-11         | orig                | Original Weld - Original Xray | passed |
| 1081.2              | xf-5         | weld                | Original Weld - Recent Xray   | passed |
| 1121.6              | xd-20        | weld                | Original Weld - Recent Xray   | passed |
| 1128.8              | xb-18        | weld                | New Weld - New Xray           | passed |
| 1132.8              | xa-5         | weld                | New Weld - New Xray           | passed |
| 1135.4              | xd-22        | weld                | New Weld - New Xray           | passed |
| 1138.2              | xd-23        | weld                | New Weld - New Xray           | passed |
| 1141                | xd-24        | weld                | New Weld - New Xray           | passed |
| 1170.8              |              | C/L Belgrave Rd     |                               |        |
| 1181                | xb-10        | weld                | New Weld - New Xray           | passed |
| 1191.3              | XB-9         | weld                | New Weld - New Xray           | passed |
| 1193.9              | xb-8         | weld                | New Weld - New Xray           | passed |
| 1196.7              | xb-17        | weld                | New Weld - New Xray           | passed |
| 1199.5              | xb-16r       | weld                | New Weld - New Xray           | passed |
| 1217                | xg-6         | weld                | New Weld - New Xray           | passed |
| 1234.6              | xd-25        | weld                | New Weld - New Xray           | passed |
| 1238.6              | xd-26        | weld                | New Weld - New Xray           | passed |
| 1253                | xg-1         | weld                | Original Weld - Recent Xray   | passed |
| 1293.1              | xc-5         | weld                | Original Weld - Recent Xray   | passed |
| 1332.6              | xd-17        | weld                | Original Weld - Recent Xray   | passed |
| 1373.3              | xc-6         | weld                | Original Weld - Recent Xray   | passed |
| 1413.9              | xg-2         | weld                | Original Weld - Recent Xray   | passed |
| 1453.8              | xc-7         | weld                | Original Weld - Recent Xray   | passed |
| 1485.6              | xf-8         | weld                | Original Weld - Recent Xray   | passed |
| 1525.8              | xc-11        | weld                | Original Weld - Recent Xray   | passed |
| 1553                |              | C/L Drv#2864        |                               |        |
| 1566.5              | xd-7         | weld                | Original Weld - Recent Xray   | passed |
| 1605.9              | xc-8         | weld                | Original Weld - Recent Xray   | passed |
| 1646.6              | xb-7         | weld                | Original Weld - Recent Xray   | passed |
| 1687.3              | xa-3         | weld                | Original Weld - Recent Xray   | passed |
| 1727.5              | xa-4         | weld                | Original Weld - Recent Xray   | passed |
| 1768.2              | xc-10        | weld                | Original Weld - Recent Xray   | passed |
| 1808.9              | xd-19        | weld                | Original Weld - Recent Xray   | passed |
| 1848.4              | xd-18        | weld                | Original Weld - Recent Xray   | passed |
| 1876.3              | xf-6         | weld                | Original Weld - Recent Xray   | passed |
| 1917                | xc-9         | weld                | Original Weld - Recent Xray   | passed |
| 1957.7              | xd-8         | weld                | Original Weld - Recent Xray   | passed |
| 1997.5              | xd-10        | weld                | Original Weld - Recent Xray   | passed |
| 2037.7              | xd-9         | weld                | Original Weld - Recent Xray   | passed |
| 2078.3              | xd-11        | weld                | Original Weld - Recent Xray   | passed |

|        |        |                            |                               |        |
|--------|--------|----------------------------|-------------------------------|--------|
| 2118.3 | xd-12  | weld                       | Original Weld - Recent Xray   | passed |
| 2159   | xd-21  | weld                       | Original Weld - Recent Xray   | passed |
| 2198.7 | xd-13  | weld                       | Original Weld - Recent Xray   | passed |
| 2239.4 | xb-6   | weld                       | Original Weld - Recent Xray   | passed |
| 2278.7 | xb-15  | weld                       | New Weld - New Xray           | passed |
| 2319.4 | xd-15  | weld                       | Original Weld - Recent Xray   | passed |
| 2358.8 | xd-53  | weld                       | new Weld - New Xray           | passed |
| 2371.5 | xd-54  | weld                       | new Weld - New Xray           | passed |
| 2401.4 | xb-12  | weld                       | Original Weld - Recent Xray   | passed |
| 2405   | xb-13  | weld                       | Original Weld - Recent Xray   | passed |
| 2406.5 | xe-18  | weld                       | new Weld - New Xray           | passed |
| 2412   | xa-6r  | weld                       | new Weld - New Xray           | passed |
| 1414.5 | xd-6   | weld                       | new Weld - New Xray           | passed |
| 2417.5 | xd-5   | weld                       | new Weld - New Xray           | passed |
| 2425.8 | xd-4   | weld                       | New Weld - New Xray           | passed |
| 2429   | xa-1   | weld                       | New Weld - New Xray           | passed |
| TBS    |        | N Curb Shaker Blvd (North) |                               |        |
| 2459.2 | xd-29  | weld                       | New Weld - New Xray           | passed |
| 2477.3 | xe-15  | weld                       | New Weld - New Xray           | passed |
| 2480.5 | xb-2   | weld                       | New Weld - New Xray           | passed |
| 2488.7 | xd-27  | weld                       | New Weld - New Xray           | passed |
| 2491.1 | xa-2   | weld                       | New Weld - New Xray           | passed |
| 2496.9 | xd-31  | weld                       | New Weld - New Xray           | passed |
| 2518.9 | xg-3   | weld                       | New Weld - New Xray           | passed |
| 2522.1 | xd-30  | weld                       | New Weld - New Xray           | passed |
| 2523.5 | xb-1   | weld                       | New Weld - New Xray           | passed |
| 2526.7 | xd-28  | weld                       | New Weld - New Xray           | passed |
| 2543.7 |        | S Curb Shaker Blvd (North) |                               |        |
| 2555.9 | xd-32  | weld                       | New Weld - New Xray           | passed |
| 2595   | xd-38  | weld                       | New Weld - New Xray           | passed |
| 2605.1 | xd-39  | weld                       | New Weld - New Xray           | passed |
| 2605.5 | xd-40  | weld                       | New Weld - New Xray           | passed |
| 2619.5 | xd-41  | weld                       | New Weld - New Xray           | passed |
| 2647.5 | xc-17  | weld                       | Original Weld - Recent Xray   | passed |
| 2667.2 | xc-16  | weld                       | Original Weld - Recent Xray   | passed |
| 2707.2 | xe-6   | weld                       | Original Weld - Recent Xray   | passed |
| 2747.2 | xd-36  | weld                       | New Weld - New Xray           | passed |
| 2785.9 | xc-28r | weld                       | New Weld - New Xray           | passed |
| 2822.7 | xc-29  | weld                       | New Weld - New Xray           | passed |
| 2824.6 | xe-14  | weld                       | New Weld - New Xray           | passed |
| 2830.6 | xe-13  | weld                       | New Weld - New Xray           | passed |
| 2836.4 | xh-1   | weld                       | New Weld - New Xray           | passed |
| 2839.6 | xc-30  | weld                       | New Weld - New Xray           | passed |
| 2842.1 | xc-31  | weld                       | New Weld - New Xray           | passed |
| 2872.1 |        | C/L Creek                  |                               |        |
| 2880   | xb-5   | weld                       | New Weld - New Xray           | passed |
| 2913   | xc-18  | weld                       | Original Weld - Recent Xray   | passed |
| 2917   | xe-11  | weld                       | Original Weld - Recent Xray   | passed |
| 2923.9 | xe-10  | weld                       | Original Weld - Recent Xray   | passed |
| 2927.1 | xe-9   | weld                       | Original Weld - Recent Xray   | passed |
| 2936.5 | xe-8   | weld                       | Original Weld - Recent Xray   | passed |
| 2976.2 | xc-35  | weld                       | New Weld - New Xray           | passed |
| 2980.5 | xc-34  | weld                       | New Weld - New Xray           | passed |
| 3013.8 | xc-33  | weld                       | New Weld - New Xray           | passed |
| 3036.8 |        | N Curb Shaker Blvd (South) |                               |        |
| 3052.8 | xc-32  | weld                       | New Weld - New Xray           | passed |
| 3058.7 | xc-26  | weld                       | Original Weld - Recent Xray   | passed |
| 3061.9 | xc-27  | weld                       | Original Weld - Recent Xray   | passed |
| 3063.6 | xg-4   | weld                       | Original Weld - Recent Xray   | passed |
| 3066.8 | xg-5   | weld                       | Original Weld - Recent Xray   | passed |
|        |        |                            |                               |        |
| 3078.8 | xg-7   | weld                       | Original Weld - Recent Xray   | passed |
| 3103.5 | xd-37  | weld                       | New Weld - New Xray           | passed |
| 3105.5 | xd-35  | weld                       | New Weld - New Xray           | passed |
| 3107.9 | xd-34  | weld                       | New Weld - New Xray           | passed |
| 3110.3 | xd-33  | weld                       | New Weld - New Xray           | passed |
| 3115.3 | xd-55  | weld                       | New Weld - New Xray           | passed |
| 3123.3 | xd-52  | weld                       | New Weld - New Xray           | passed |
| 3129.3 | x-14   | weld                       | Original Weld - Original Xray | passed |
| 3131.9 | xc-19  | weld                       | Original Weld - Recent Xray   | passed |
| 3135.5 | xd-42r | weld                       | New Weld - New Xray           | passed |
| 3137.5 | xd-43  | weld                       | New Weld - New Xray           | passed |

| Sequential Number | Original Station | welder# | DEO Weld # | x-ray # | date   | status             | Location |
|-------------------|------------------|---------|------------|---------|--------|--------------------|----------|
| 1                 | 95.7             | 2+3     | 0          | x-c2    | 23-Nov | passed NDT         |          |
| 2                 | 112.6            | 1+2     | orig       | x16co2  | 10-Jun | passed NDT         |          |
| 3                 | 116.1            | 1+2     | orig       | x16co1  | 10-Jun | passed NDT         |          |
| 4                 | 155.8            | 1+2     | 1          | x-c3    | 23-Nov | passed NDT         |          |
| 5                 | 196              | 1+2     | 2          | x-c4    | 23-Nov | passed NDT         |          |
| 6                 | 236.3            | 1+2     | orig       | x6      | 10-Jun | passed NDT         |          |
| 7                 | 277              | 1+2     | orig       | x5      |        | passed NDT         |          |
| 8                 | 317.7            | 1+3     | 3          | x-c1    | 22-Nov | passed NDT         |          |
| 9                 | 358.3            | 1+2     | orig       | x4      | 10-Jun | passed NDT         |          |
| 10                | 398.9            | 1+3     | 4          | x-f1    | 23-Nov | passed NDT         |          |
| 11                | 439.6            | 1+2     | orig       | x2      | 10-Jun | passed NDT         |          |
| 12                | 480.3            | 1+2     | orig       | x1      | 10-Jun | passed NDT         |          |
| 13                | 521              | 1+3     | 5          | x-e1    | 23-Nov | passed NDT         |          |
| 14                | 560.2            | 1+2     | orig       | x3      | 10-Jun | passed NDT         |          |
| 15                | 600.4            | 1+3     | 6          | x-b3    | 22-Nov | Failed NDT/cut out | DNV      |
| 16                | 640.5            | 1+3     | orig       | x10     | 10-Jun | passed NDT         |          |
| 17                | 681.2            | 1+3     | orig       | x9      | 10-Jun | passed NDT         |          |
| 18                | 721.5            | 1+3     | 7          | x-b4    | 22-Nov | passed NDT         |          |
| 19                | 761.7            | 1+3     | orig       | x7      | 10-Jun | passed NDT         |          |
| 20                | 799.9            | 1+3     | orig       | x8      | 10-Jun | passed NDT         |          |
| 21                | 840.1            | 1+3     | 8          | x-f7    | 24-Nov | passed NDT         |          |
| 22                | 880.5            | 1+3     | orig       | x13     | 10-Jun | passed NDT         |          |
| 23                | 921.2            | 1+2     | 9          | x-f2    | 23-Nov | passed NDT         |          |
| 24                | 961.9            | 1+3     | orig       | x12     | 10-Jun | passed NDT         |          |
| 25                | 1001.7           | 1+3     | 10         | x-f4    | 23-Nov | passed NDT         |          |
| 26                | 1041.9           | 1+3     | orig       | x11     | 10-Jun | passed NDT         |          |
| 27                | 1081.2           | 1+3     | 11         | x-f5    | 24-Nov | passed NDT         |          |
| 28                | 1121.6           | 1+3     | 12         | xd-20   |        | passed NDT         |          |
| 29                | 1134.2           | 1+2     | 13         | xe-16   |        | passed NDT         |          |
| 30                | 1173.8           | 1+3     | 14         | x-f3    | 23-Nov | passed NDT         |          |
| 31                | 1212.4           | 1+3     | 15         | xe-17   |        | passed NDT         |          |
| 32                | 1253             | 1+3     | 16         | x-g1    | 24-Nov | passed NDT         |          |
| 33                | 1293.1           | 1+3     | 17         | x-c5    | 24-Nov | passed NDT         |          |
| 34                | 1332.6           | 1+3     | 18         | xd-17   | 26-Nov | passed NDT         |          |
| 35                | 1373.3           | 1+3     | 19         | x-c6    | 24-Nov | passed NDT         |          |
| 36                | 1413.9           | 1+3     | 20         | x-g2    | 24-Nov | passed NDT         |          |
| 37                | 1453.8           | 1+2     | 21         | x-c7    | 24-Nov | passed NDT         |          |
| 38                | 1485.6           | 1+3     | 22         | x-f8    | 24-Nov | passed NDT         |          |
| 39                | 1525.8           | 2+3     | 23         | x-c11   | 25-Nov | passed NDT         |          |
| 40                | 1566.5           | 1+3     | 24         | x-d7    | 25-Nov | passed NDT         |          |
| 41                | 1605.9           | 2+3     | 25         | x-c8    | 24-Nov | passed NDT         |          |
| 42                | 1646.6           | 1+3     | 26         | xb-7    | 26-Nov | passed NDT         |          |
| 43                | 1687.3           | 2+3     | 27         | x-a3    | 25-Nov | passed NDT         |          |

|    |        |     |    |            |        |                    |         |
|----|--------|-----|----|------------|--------|--------------------|---------|
| 44 | 1727.5 | 1+3 | 28 | x-a4       | 25-Nov | passed NDT         |         |
| 45 | 1768.2 | 2+3 | 29 | x-c10      | 25-Nov | passed NDT         |         |
| 46 | 1808.9 | 1+3 | 30 | xd-19      | 26-Nov | passed NDT         |         |
| 47 | 1848.4 | 2+3 | 31 | xd-18      | 26-Nov | passed NDT         |         |
| 48 | 1876.3 | 2+3 | 32 | x-f6       | 24-Nov | passed NDT         |         |
| 49 | 1917   | 1+3 | 33 | x-c9       | 25-Nov | passed NDT         |         |
| 50 | 1957.7 | 2+3 | 34 | xd-8       | 25-Nov | passed NDT         |         |
| 51 | 1997.5 | 1+3 | 35 | xd-10      | 25-Nov | passed NDT         |         |
| 52 | 2037.7 | 2+4 | 36 | xd-9 (gus) | 26-Nov | passed NDT         |         |
| 53 | 2078.3 | 1+3 | 37 | xd-11      | 25-Nov | passed NDT         |         |
| 54 | 2118.3 | 2+4 | 38 | xd-12      | 25-Nov | passed NDT         |         |
| 55 | 2159   | 2+3 | 39 | xd-21      | 26-Nov | passed NDT         |         |
| 56 | 2198.7 | 2+4 | 40 | xd-13      | 23-Nov | passed NDT         |         |
| 57 | 2239.4 | 2+3 | 41 | xb-6       | 26-Nov | passed NDT         |         |
| 58 | 2280.1 | 2+4 | 42 | xd-14      | 26-Nov | Failed NDT/cut out |         |
| 59 | 2320.8 | 2+4 | 43 | xd-15      | 26-Nov | passed NDT         |         |
| 60 | 2360.9 | 1+4 | 44 | xd-16      | 26-Nov | Failed NDT/cut out |         |
| 61 | 2392.1 | 2+4 |    | Xb-12      |        | passed NDT         |         |
| 62 | 2395.8 | 2+4 |    | xb-13      |        | passed NDT         |         |
| 63 | 2401.4 | 1+4 |    | xa-7       |        | Failed NDT/cut out |         |
| 64 | 2417.4 | 1+4 |    | xh-3       |        | removed/passed NDT | E. 55th |
| 65 | 2420.5 | 1+4 |    | xh-2       |        | removed/passed NDT | E. 55th |
| 66 | 2425.7 | 1+2 |    | xh-6       |        | removed/failed NDT | E. 55th |
| 67 | 2428.8 | 1+4 |    | xh-5       |        | removed/failed NDT | E. 55th |
| 68 | 2431.9 | 1+2 |    | xh-4       |        | removed/failed NDT | E. 55th |
| 69 | 2443.7 | 1+4 |    | n/a        |        | abandon in place   |         |
| 70 | 2446.8 | 1+3 |    | n/a        |        | abandon in place   |         |
| 71 | 2449.9 | 1+4 |    | n/a        |        | abandon in place   |         |
| 72 | 2470.3 | 2+3 |    | n/a        |        | abandon in place   |         |
| 73 | 2490.3 | 2+3 |    | co-1       |        | Removed/failed NDT | DNV     |
| 74 | 2510   | 2+3 |    | n/a        |        | Removed/No NDT     | DNV     |
| 75 | 2529.5 | 2+3 |    | co-3       |        | Removed/failed NDT | DNV     |
| 76 | 2549.3 | 2+3 |    | n/a        |        | abandon in place   |         |
| 77 | 2569.3 | 2+3 |    | n/a        |        | abandon in place   |         |
| 78 | 2589.2 | 3+6 |    | xd-46      |        | removed/failed NDT |         |
| 79 | 2601.2 | 3+4 |    | xd-47      |        | removed/failed NDT |         |
| 80 | 2604.3 | 3+4 |    | xd-48      |        | removed/passed NDT |         |
| 81 | 2609.8 | 3+6 |    | xd-49      |        | removed/passed NDT |         |
| 82 | 2612.9 | 3+6 |    | xd-50      |        | removed/failed NDT |         |
| 83 | 2616.4 | ?   |    | xd-51      |        | removed/failed NDT |         |
| 84 | 2656.7 | 2+3 |    | xc-17      | 26-Nov | passed NDT         |         |
| 85 | 2676.4 | 3+6 |    | xc-16      | 26-Nov | passed NDT         |         |
| 86 | 2716.4 | 2+5 |    | xe-6       | 26-Nov | passed NDT         |         |
| 87 | 2757.1 | 2+3 |    | xe-7       | 26-Nov | Failed NDT/cut out |         |
| 88 | 2796.5 | 2+3 |    | xc-15      | 26-Nov | passed NDT         |         |
| 89 | 2836.8 | 2+3 |    | xd-45      |        | removed/failed NDT |         |
| 90 | 2841.8 | 2+3 |    | xd-44      |        | removed/passed NDT |         |
| 91 | 2844.9 | 2+3 |    | x-c14      | 25-Nov | Failed NDT/cut out |         |

|     |        |     |      |       |        |                    |  |
|-----|--------|-----|------|-------|--------|--------------------|--|
| 92  | 2847.4 | 2+3 |      | x-c13 | 25-Nov | Failed NDT/cut out |  |
| 93  | 2850.5 | 2+3 |      | x-c12 | 25-Nov | passed NDT         |  |
| 94  | 2890.3 | 2+3 |      | x-b5  | 24-Nov | passed NDT         |  |
| 95  | 2924.2 | 2+3 |      | xc-18 | 26-Nov | passed NDT         |  |
| 96  | 2927.3 | 2+3 |      | xe-11 | 26-Nov | passed NDT         |  |
| 97  | 2934.1 | 2+3 |      | xe-10 | 26-Nov | passed NDT         |  |
| 98  | 2937.2 | 2+3 |      | xe-9  | 26-Nov | passed NDT         |  |
| 99  | 2946.6 | 2+3 |      | xe-8  | 26-Nov | passed NDT         |  |
| 100 | 2986.9 | 2+5 |      | xc-24 |        | Failed NDT/cut out |  |
| 101 | 3022.3 | 2+3 |      | xc-23 |        | Failed NDT/cut out |  |
| 102 | 3063   | 2+5 |      | xc-25 |        | Failed NDT/cut out |  |
| 103 | 3069.3 | 2+3 |      | xc-26 |        | passed NDT         |  |
| 104 | 3072.4 | 2+3 |      | xc-27 |        | passed NDT         |  |
| 105 | 3074.1 | 2+3 |      | xg-4  |        | passed NDT         |  |
| 106 | 3077.2 | 2+3 |      | xg-5  |        | passed NDT         |  |
| 107 | 3089.2 | 2+3 |      | xg-7  |        | passed NDT         |  |
| 108 | 3129.1 | 3+6 |      | xd-1  | 22-Nov | passed NDT         |  |
| 109 | 3130.7 | 3+6 |      | xd-2  | 22-Nov | passed NDT         |  |
| 110 | 3132.3 | 3+6 |      | xd-3  | 22-Nov | passed NDT         |  |
| 111 | 3136   | 1+2 | orig | x-14  | 10-Jun | passed NDT         |  |
| 112 | 3138.6 | 2+3 |      | xc-19 |        | passed NDT         |  |
| 113 | 3142.3 | 1+2 |      | xc-20 |        | Failed NDT/cut out |  |
| 114 | 3144.3 | 1+2 |      | xe-5  | 24-Nov | passed NDT         |  |
| 115 | 3151.3 | 2+3 |      | xc-21 |        | passed NDT         |  |
| 116 | 3155   | 2+3 |      | xc-22 |        | passed NDT         |  |
| 117 | 3160   | 2+3 |      | xe-4  | 24-Nov | passed NDT         |  |
| 118 | 3162   | 2+3 |      | xe-3  | 24-Nov | passed NDT         |  |
| 119 | 3163.2 | 1+2 | orig | x15   | 10-Jun | passed NDT         |  |

Final Construction

| Count of status   |        | Column Labels |             |
|-------------------|--------|---------------|-------------|
| Row Labels        | passed | (blank)       | Grand Total |
| New Weld - New    |        | 60            | 60          |
| Original Weld - C |        | 17            | 17          |
| Original Weld - R |        | 59            | 59          |
| (blank)           |        |               |             |
| Grand Total       |        | 136           | 136         |

Original Construction

| Count of status |                  | Column Labels |                    |                    |                    |                |             |
|-----------------|------------------|---------------|--------------------|--------------------|--------------------|----------------|-------------|
| Row Labels      | abandon in place | passed NDT    | removed/failed NDT | removed/passed NDT | Failed NDT/cut out | Removed/No NDT | Grand Total |
| ?               |                  |               |                    | 1                  |                    |                | 1           |
| 1+2             |                  | 16            | 2                  |                    | 1                  |                | 19          |
| 1+3             | 1                | 30            |                    |                    | 1                  |                | 32          |
| 1+4             | 2                |               | 1                  | 2                  | 2                  |                | 7           |
| 2+3             | 3                | 29            | 3                  | 1                  | 4                  | 1              | 41          |
| 2+4             |                  | 6             |                    |                    | 1                  |                | 7           |
| 2+5             |                  | 1             |                    |                    | 2                  |                | 3           |
| 3+4             |                  |               | 1                  | 1                  |                    |                | 2           |
| 3+6             |                  | 4             | 2                  | 1                  |                    |                | 7           |
| Grand Total     | 6                | 86            | 10                 | 5                  | 11                 | 1              | 119         |



**Exhibit 9**

**SOP 400-03 Inspection and Test of Weld**

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## Standard Operating Procedure

**SECTION:** 400 / Welding  
**SOP:** 400-03 / Inspection and Test of Weld

**EFFECTIVE DATE:** 4/1/2000  
**REVISION DATE:** 2/22/2017  
**PREVIOUS REVIEW DATE:** 6/18/2018

### I. SCOPE

This procedure provides requirements for the inspection and testing of welds performed on distribution, transmission, storage and regulated gathering pipelines.

### II. GENERAL

A. Asset Operations/Pipeline Safety is responsible for contracting nondestructive testing personnel and ensuring these personnel are properly qualified. The operating location is responsible for scheduling nondestructive testing personnel for specific projects.

### III. INSPECTION AND TEST OF WELDS

A. Each weld on Company pipelines shall be visually inspected by a qualified welding inspector. This inspection includes each butt, fillet and socket weld on pipelines operating under or over 20 percent of the specified minimum yield strength (SMYS). **Visual inspections ensure that each weld is performed in accordance with qualified welding procedures and meets the requirements of API 1104, latest edition approved by DOT.**

**NOTE: A qualified welding inspector may be a Qualified welder with a current welder qualification or an individual that passes a Company-approved weld inspection program. In either case, visual inspection must be conducted by an individual qualified by appropriate training and experience.**

B. In addition to a visual inspection, welds on a pipeline to be operated at a pressure producing a hoop stress of 20 percent or more of SMYS shall be nondestructively tested in accordance with the **Nondestructive Testing** chart. Each weld on natural gas piping in compressor stations operating above 100 psig, other than the compressor itself, should also be nondestructively tested. Nondestructive testing shall be performed by a qualified technician in accordance with written procedures and API 1104, Section 9, latest edition approved by DOT. Each technician shall be qualified in accordance with ASNT SNT-TC-1A.

**NOTE: The Company reserves the right to test a contractor's nondestructive testing personnel prior to the start of any work on Company facilities.**

C. Nondestructive testing of welds shall be performed by any process, other than trepanning, that will clearly indicate defects which may affect the integrity of the weld.

D. When nondestructive testing is required, a sample of each welder's work for each day shall be tested, except for a welder whose work is isolated from the principle welding activity.

E. For pipelines operating below 20 percent of SMYS, if there is any reason to believe that a weld is defective, it shall be tested in accordance with Section 6 or 9 of API 1104, latest edition approved by DOT.

### IV. WELD INSPECTION PERSONNEL AND SAFETY PRACTICES

A. Nondestructive testing personnel shall be qualified by experience and training for the specified inspection task performed. Documents of these qualifications shall be retained by the Company and shall include, but is not limited to, the following:

1. Education and experience.
2. Training.
3. Results of qualification examinations.

B. Interpretation of nondestructive test results shall be performed by a Level II or higher technician. The nondestructive testing contractor is responsible for forwarding documentation on all certified personnel. This documentation shall include the following:

1. Education and experience.
2. Training.
3. Results of qualification examinations.
4. Agency or person granting certification and date of certification.

C. External NDE Certification Requirements - Level II Technicians shall be recertified at least every three (3) years. Level III Technicians shall be recertified at least every five (5) years. Technicians may be required to recertify at the Company's option if any question arises concerning their ability.

**NOTE: Each technician should have current qualification documentation in his/her possession.**

D. When radiography is performed at a remote location (remote from NDT facility), the radiographer should be accompanied by another qualified radiographer (Level I, II, or III) or an individual that has met, at a minimum, the requirements of a radiographer's assistant.

E. Safety practices pertaining to nondestructive testing are the responsibility of the NDT technician and should be in conformance with applicable codes, regulations and Company Standard Operating Procedures.

F. Nondestructive testing personnel are also subject to the Company's "Operator Qualification" and "Drug and Alcohol Misuse Prevention Plans."

## V. RECORDS

A. Nondestructive testing records for welds on pipelines operating at or above 20 percent of SMYS shall be retained for the life of the pipeline. The record, in conjunction with the as-constructed drawing or sketch, shall show by milepost, engineering station, or by geographic feature, the number of girth welds made, the number nondestructively tested, the number rejected, and the disposition of the rejects. Records of visual inspections for welds on pipelines operating at or above 20 percent of SMYS that are not nondestructively tested should also be retained for the life of the pipeline and should meet the same criteria as nondestructive testing records.

B. Radiographic film related to a pipeline facility should be retained as follows:

1. API 1104 Related - One (1) year.
2. ASME Related - Five (5) years.

**NOTE: The Company may arrange for film disposal after these dates; however, the test record shall be retained for the life of the pipeline.**

C. All radiographic film should be clearly marked and identified as required by the Company's Nondestructive Testing Specifications or, if not specified, by the following method:

1. Weld number and location.
2. Film position numbers.
3. Month and year.

D. Radiographic film should be processed, handled, and stored to ensure images are interpretable for at least the retention

periods in Section V.B., above.

### **Exceptions**

N/A

### **Environmental**

### **Safety**

360-07 Portable Fire Extinguishers

360-13 Hot Work Permit - Cutting and Welding

360-19 Personal Protective Equipment

360-20 Prevention of Accidental Ignition of Natural Gas

360-25 Excavation Safety

360-26 Work Zone Traffic Control

### **Work Procedures**

### **Charts, Graphs & Drawing, Lists**

Nondestructive Testing

### **Forms**

### **Regulations**

DOT 49 CFR 192.241

DOT 49 CFR 192.243

DOT 49 CFR Part 199

API 1104 Welding Standard

ASME Boiler and Pressure Vessel Code Section IX

ASNT SNT-TC-1A

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**Exhibit 10**  
**SMAW-Butt 51 WPS**

- A. PROCESS:** Manual Shielded Metal Arc Welding (SMAW)
- B. MATERIAL:** Material equivalent to X60 and less.
- C. DIAMETER AND WALL THICKNESS:** Outside diameter from 2.375" to/including 12.750" and wall thickness less than 0.188"
- D. JOINT DESIGN:** Bevel angle 35° (-5°, + 2-1/2°) with 1/16" ± 1/32" root gap (see sketch A).
- E. FILLER METAL AND NUMBER OF BEADS:** Shall be API Group 1 and Group 2 electrodes (see table #1). Filler or Cap passes can be stripper beads or weave beads.
- F. ELECTRICAL CHARACTERISTICS:** Direct current, reverse polarity (DCRP) (see table #2)
- G. FLAME CHARACTERISTICS:** N/A
- H. POSITION:** Fixed. See sketch (B) for horizontal or sketch (C) for vertical
- I. DIRECTION OF WELDING:** Shall be downhill [sketch (B)] or horizontal [sketch (c)]
- J. TIME LAPSE BETWEEN PASSES:** Time between completion of first pass and start of second pass shall be 5 minutes maximum. Time between completion of second pass and start of the third pass should be 15 minutes maximum. Each pass must be completed in its entirety (on both sides of pipe) before the subsequent pass is initiated.
- K. COMPLETION TIME:** No incomplete weld shall be left overnight, or longer, until the third pass has been completed. Each weld started must be completed within 72 hours, while adhering to the preheat temperature requirements.
- L. TYPE OF LINE-UP CLAMPS:** Internal or external clamps are permitted.
- M. REMOVAL OF LINE-UP CLAMPS:** When using internal clamps, the clamps shall remain in place for 100% completion of the first bead. When using external clamps, the clamps shall remain in place for 50% completion of the first bead. The pipe shall not be moved during the welding of the first bead.
- N. CLEANING:** Power cleaning and grinding tools shall be used. Grind all starts, stops and windows before restringing. All passes shall be dirt and slag free by brushing before next pass. Cap shall be brushed before leaving weld.
- O. PREHEAT and POST-HEAT:** Preheat to a minimum 250°F if ambient temperature is below 50°F for material above X52, AND below 32°F for material X52 and below. A torch equipped with a preheating tip or other suitable equipment may be used. Post-heat for stress relief not allowed. A temperature indicating device shall be used to verify preheat temperature.
- P. SHIELDING GAS AND FLOW RATE:** N/A
- Q. SHIELDING FLUX:** N/A
- R. SPEED OF TRAVEL:** See table #2
- S. NUMBER OF WELDERS:** One welder

**TABLE 1**  
Electrode Size

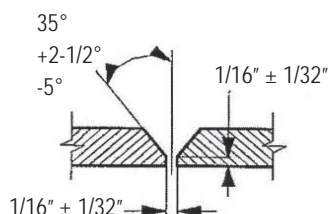


| Wall Thick.      | AWS Class. A5.1 E-6010                                 | AWS Class. A5.5 E-8010G | AWS Class. A5.5 E-8010G | AWS Class. A5.5 E-8010G | Minimum Number of Beads |
|------------------|--|-------------------------|-------------------------|-------------------------|-------------------------|
| Less than 0.188" | 3/32"-5/32"  | 1/8"-3/16"              | 1/8"-3/16"              | 1/8"-3/16"              | 3                       |
| Note:            | E-8010G electrodes are Lincoln Electric Shield-Arc 70+ |                         |                         |                         |                         |

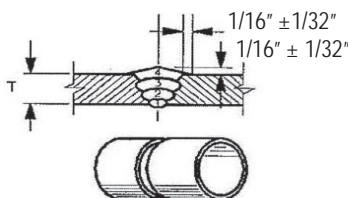
**TABLE 2**  
Electrical Characteristics and Travel Speed

| Electrode Size | Ampere Range | Voltage Range | Travel Speed (IPM) |
|----------------|--------------|---------------|--------------------|
| 3/32"          | 32 - 102     | 18 - 38       | 3 - 13             |
| 1/8"           | 60 - 156     | 18 - 38       | 3 - 13             |
| 5/32"          | 72 - 222     | 18 - 38       | 3 - 14             |
| 3/16"          | 112 - 270    | 18 - 38       | 3 - 14             |

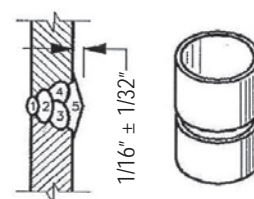
**SKETCH A**  
STANDARD "V" BEVEL  
BUTT JOINT DESIGN



**SKETCH B**  
SEQUENCE OF BEADS  
AXIS OF PIPE HORIZONTAL



**SKETCH C**  
SEQUENCE OF BEADS  
AXIS OF PIPE VERTICAL



**Exhibit 11**

**Field Photo of Odor level sheet**

Location

Address of Test: Shaker & Brainard  
 Date/Time of Test: 11/15/19 1:57 pm

Instrument Data

Instrument Used: Oronik Odorometer  
 Instrument Serial Number: 6150 B  
 Instrument Calibration Date: 1-7-2019 to 1-7-2020

Personnel Performing Test

Name:

Brian Kestranick  
Tom Revay  
Scott Macintosh  
Matt Drews

Representative Of:

DEO  
DEO  
DEO  
DEO

Test Results

Faint: .1 % gas in air  
 Tester: Revay  
Kestranick (CJC)  
 Faint: .05 % gas in air  
 Tester: Drews

Strong: .23 % gas in air  
 Tester: Revay  
 Strong: .15 % gas in air  
 Tester: Drews

Prepared by: Eric Sadnier

Date: 11/15/19



**Exhibit 12**  
**DEO Odorant Level Test Report**

# ODORANT LEVEL TEST REPORT

## Location

Location of Test SHAKER / BRAINARD STATION - PEPPER P. KE

Date/Time of Test 11/15/19 @ 2:00 PM

## Instrument Data

Instrument Used ORONITE ODOROMETER

Instrument Serial Number # 6150 B

Instrument Calibration Date 1/7/19

## Personnel Performing Odorant Test

### Name

THOMAS REYAY

MATTHEW DREWS

### Representative Of

WEO - FMS

WEO - FMS / ERT

## Test Results

Faint .05 % gas in air

Strong .15 % gas in air

## Witnesses

### Name

JORGE RODRIGUEZ

ERIC SAVANIER

BRIAN KESTRANEK

MATRYAL GREEN

### Representative Of

WEO - GMIR

WEO - ERT

WEO - FMS

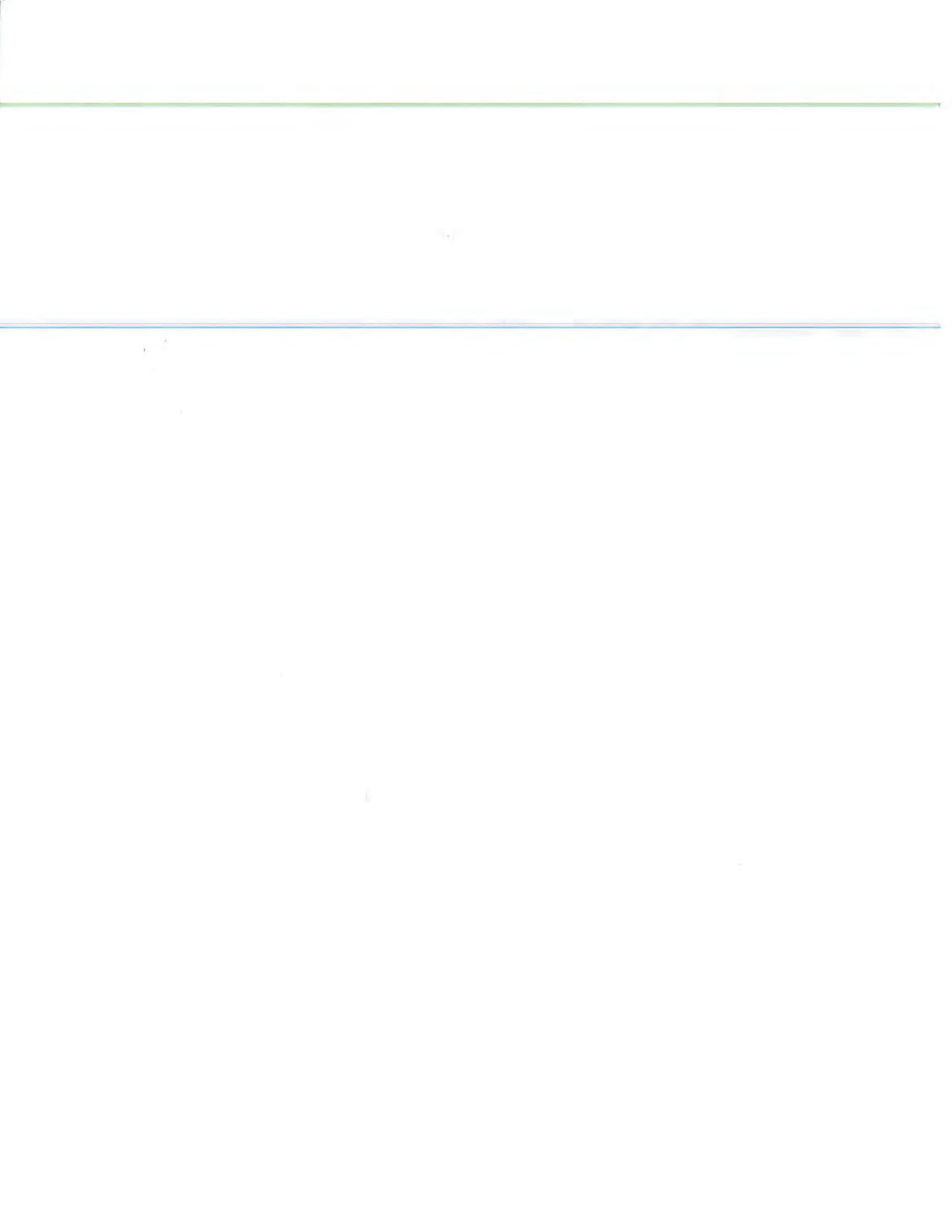
WEO - FMS

Prepared by

Matryal G

Date

11/15/19



**Exhibit 13**

**FW\_ Pepper Pike Odor Level Question 12-30-2019**

**From:** [Jeffery L Burdette](#)  
**To:** [Domonkos, Christopher](#)  
**Cc:** [Dragovich, Joseph](#); [Chace, Peter](#); [Purcell, Michael](#); [Fadley, Robert](#); [Bronwyn G Sullivan](#)  
**Subject:** FW: Pepper Pike Odor Level Question  
**Date:** Monday, December 30, 2019 3:33:50 PM  
**Attachments:** [Odor level test report provided by DEO.pdf](#)  
[20191127090041898.pdf](#)

---

Chris,

The attached (pdf file 20191127090041898) odorant report was emailed to me on 11/27 and reflects the one Eric Saulnier completed in the field. (The one you photographed) Matryal Green completed another odorant report and sent me that one as well. Eric's contains two tests and Matryal's contains only one (completed by Matt Drews). It appears there were two contemporaneous documents completed on site.

Both documents reflect the test witnessed by the PUCO on 11/15/2019. To ensure clarity, we will identify the document containing two tests, and completed by Saulnier, as our responsive document.

Sorry for any confusion this might have caused.

Thanks.

Jeff Burdette  
Engineering Technical Consultant  
Dominion Energy Ohio  
Office: (330) 478-3783  
Cell: (330) 754-5524  
Email: [Jeffery.L.Burdette@dominionenergy.com](mailto:Jeffery.L.Burdette@dominionenergy.com)  
<image005.png>

---

**From:** [Christopher.Domonkos@puco.ohio.gov](mailto:Christopher.Domonkos@puco.ohio.gov) <[Christopher.Domonkos@puco.ohio.gov](mailto:Christopher.Domonkos@puco.ohio.gov)>  
**Sent:** Friday, December 27, 2019 1:14 PM  
**To:** Jeffery L Burdette (GasInfrastructure - 5) <[Jeffery.L.Burdette@dominionenergy.com](mailto:Jeffery.L.Burdette@dominionenergy.com)>  
**Cc:** [Joseph.Dragovich@puco.ohio.gov](mailto:Joseph.Dragovich@puco.ohio.gov); [michael.purcell@puco.ohio.gov](mailto:michael.purcell@puco.ohio.gov); [peter.chace@puco.ohio.gov](mailto:peter.chace@puco.ohio.gov); [robert.fadley@puco.ohio.gov](mailto:robert.fadley@puco.ohio.gov)  
**Subject:** [External] Pepper Pike Odor Level Question

Jeff,

Can someone explain why the odor level sheet provided with your response does not match the one that was filled out on site on November 15, 2019? Please see the attached documents. The second attachment is the photo I took while on site of the completed form. SEA has the same photo, along with the investigator from DRS.

Chris D. Domonkos  
Utility Specialist 2

Public Utilities Commission of Ohio  
Service Monitoring and Enforcement Division  
(330) 603-5684  
[Christopher.domonkos@puco.ohio.gov](mailto:Christopher.domonkos@puco.ohio.gov)

[PUCO.ohio.gov](http://PUCO.ohio.gov)

[!\[\]\(5eb1325dfdc3f1cad8426726c0db51cd\_img.jpg\)](#) [!\[\]\(312638b5686dbc3f6ff8424fd17b3fb2\_img.jpg\)](#) [!\[\]\(88e39a015d99d67943a7ca963c140a17\_img.jpg\)](#)

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**Exhibit 14**

**PIR-019 As Built Documents 1-21-2020**



|                                   |          |  |  |                   |  |                          |
|-----------------------------------|----------|--|--|-------------------|--|--------------------------|
| Street<br><i>Brainard St</i>      |          | Side<br><i>W</i>   | F.B.   | Sheet<br><i>1</i> | Installation Method<br>(Circle all that apply) |                          |
| Line No.<br><i>9517</i>           |          | Operating Press (Circle all that apply)<br>LP MP IP <u>HP</u> TP GP SP |  |                   | PL   | Insert <u>Open</u> Bored |
| CWO<br><i>63683179</i>            |          | Started<br><i>6-10-19</i>  |  | Completed         | Tax District Name                              |                          |
| Investment Div. No.<br><i>500</i> |          | Municipality<br><i>Pepper Pike</i>                                     |  |                   | Tax District No.<br><i>OH11260</i>             |                          |
| Contractor<br><i>DAS</i>          |          | Foreman<br><i>D. Schmoldt</i>  |  | Inspector(s)      |  |                          |
| Direction<br><i>N 70 S</i>        | Baseline |  | Description of Work<br><i>Replace 26" Bare Pipe w/ 30" FBE</i> |                   |  |                          |

| Station      | Offset                          | Notes                             | Dep.        | SAH<br>Jt # | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|--------------|---------------------------------|-----------------------------------|-------------|-------------|---------------------------|---------------------|
| <i>00.0</i>  | <i>COASTER #</i><br><i>seam</i> | <i>Φ Fairmount Blvd.</i>          |             |             | <i>Ht #</i>               | <i>Welder #</i>     |
| <i>79.5</i>  |                                 | <i>31' W-Φ Brainard Rd</i>        |             |             |                           |                     |
| <i>95.0</i>  |                                 | <i>Φ 30" Gt# 24169</i>            |             |             |                           |                     |
|              |                                 | <i>Req. New - Face Of Flg</i>     |             |             |                           |                     |
|              |                                 | <i>30" W W Flg 300 ANSI</i>       | <i>0.7</i>  | <i>3.0</i>  | <i>1181867</i>            |                     |
| <i>95.7</i>  |                                 | <i>30" Weld</i>                   |             |             |                           | <i>243</i>          |
|              |                                 | <i>Test Sta</i>                   |             |             |                           |                     |
|              |                                 | <i>Anode</i>                      |             |             |                           |                     |
|              | <i>10</i>                       | <i>30" Pipe .375W X 60 FBE</i>    | <i>16.9</i> | <i>67</i>   | <i>801C06720</i>          |                     |
| <i>112.6</i> |                                 | <i>30" Weld X16C02</i>            |             |             |                           | <i>142</i>          |
|              | <i>2</i>                        | <i>30" Pipe .375W X 60 FBE</i>    | <i>3.5</i>  | <i>67</i>   | <i>801C06720</i>          |                     |
| <i>116.1</i> |                                 | <i>30" Weld X16C01</i>            |             |             |                           | <i>142</i>          |
|              | <i>10</i>                       | <i>30" Pipe .375W X 60 FBE</i>    | <i>39.7</i> | <i>3</i>    | <i>802C36270</i>          |                     |
| <i>155.8</i> | <i>1</i>                        | <i>30" Weld</i>                   |             |             |                           | <i>142</i>          |
|              | <i>2</i>                        | <i>30" pipe .375W X 60 FBE</i>    | <i>40.2</i> | <i>2</i>    | <i>802C36260</i>          |                     |
| <i>196.0</i> | <i>1</i>                        | <i>30" Weld</i>                   | <i>3.0</i>  |             |                           | <i>142</i>          |
| <i>227.0</i> |                                 | <i>31' Φ Driveway House# 2804</i> |             |             |                           |                     |
|              | <i>10</i>                       | <i>30" Pipe .375W X 60 FBE</i>    | <i>40.3</i> | <i>7</i>    | <i>802C36270</i>          |                     |
| <i>236.3</i> | <i>1</i>                        | <i>30" Weld X6 17" ANODE</i>      |             |             |                           | <i>142</i>          |
| <i>238.8</i> |                                 | <i>25' Driveway House# 2808</i>   |             |             |                           |                     |
|              | <i>2</i>                        | <i>30" Pipe .375W X 60 FBE</i>    | <i>40.7</i> | <i>8</i>    | <i>802C36270</i>          |                     |
| <i>277.0</i> | <i>1</i>                        | <i>30" Weld x 5</i>               |             |             |                           | <i>142</i>          |
|              | <i>10</i>                       | <i>30" Pipe .375W X 60 FBE</i>    | <i>40.7</i> | <i>9</i>    | <i>802C36260</i>          |                     |



|       |          |       |       |   |
|-------|----------|-------|-------|---|
| CWO # | 63683179 | F. B. | Sheet | 2 |
|-------|----------|-------|-------|---|

| Station | Offset           |      | Notes  | Dep. | S/H<br>Jt # | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|---------|------------------|------|--|------|-------------|---------------------------|---------------------|
| 317.7   | coater<br>60' #1 | seam | 30" Weld   |      |             | Ht #                      | Welder #<br>173     |
|         |                  | 2    | 30" Pipe .375W X 60 FBE 40.6                                       |      | 11          | 802C36270                 |                     |
| 358.3   | 2                |      | 30" Weld X4  | 3'   |             |                           | 172                 |
|         |                  | 10   | 30" Pipe .375W X 60 FBE 40.6                                       |      | 1           | 802C36270                 |                     |
| 398.9   | 2                |      | 30" Weld 17# Anode   |      |             |                           | 173                 |
|         |                  | 2    | 30" Pipe .375W X 60 FBE 40.7                                       |      | 5           | 802C36270                 |                     |
| 439.6   | 2                |      | 30" Weld X2<br>14' WWC   |      |             |                           | 172                 |
|         |                  | 10   | 30" Pipe .375W X 60 FBE 40.7                                       | 3'   | 10          | 802C36270                 |                     |
| 480.3   | 3                |      | 30" Weld X1  |      |             |                           | 172                 |
|         |                  | 2    | 39" Plastic Gas Service - Above US<br>30" Pipe .375W X 60 FBE 40.7 | 12   |             | 802C36260                 |                     |
| 521.0   | 3                |      | 30" Weld   |      |             |                           | 173                 |
|         |                  | 10   | 30" Pipe .375W X 60 FBE 39.2                                       |      | 4           | 802C36260                 |                     |
| 560.2   | 3                |      | 30" Weld X3  |      |             |                           | 172                 |
|         |                  | 2    | 30" Pipe .375W X 60 FBE 40.2                                       |      | 6           | 802C36260                 |                     |
| 600.4   | 3                |      | 30" Weld 17# Anode   | 3'   |             |                           | 173                 |
|         |                  | 10   | 30" Pipe .375W X 60 FBE 40.1                                       |      | 13          | 801C06770                 |                     |
| 640.5   | 3                |      | 30" Weld X10   |      |             |                           | 173                 |
|         |                  | 2    | 30" Pipe .375W X 60 FBE 40.7                                       |      | 14          | 802C36260                 |                     |
| 681.2   | 3                |      | 511 - Gas Service - Above US @ Weld<br>30" Weld X9<br>15' WWC      |      |             |                           | 173                 |
|         |                  | 10   | 30" Pipe .375W X 60 FBE 40.3                                       |      | 15          | 801C06770                 |                     |
| 706.2   |                  |      | 25' Driveway H# 2822   |      |             |                           |                     |
| 721.5   | 3                |      | 30" Weld   | 3.4' |             |                           | 173                 |
|         |                  | 2    | 30" Pipe .375W X 60 FBE 40.2                                       |      | 18          | 802C36270                 |                     |
| 761.7   | 3                |      | 30" Weld X9 17# Anode  |      |             |                           | 173                 |
|         |                  | 10   | 30" Pipe .375W X 60 FBE 38.2                                       |      | 17          | 802C36270                 |                     |

|          |        |       |       |
|----------|--------|-------|-------|
| CWO #    | Line # | F. B. | Sheet |
| 63683179 | 9517   |       | 3     |

| Station | Offset | Notes                           | Dep. | S/H | Stock Code, CU or P. O. | Mfg. & Mfg. Date |
|---------|--------|---------------------------------|------|-----|-------------------------|------------------|
| 799.9   | 3      | Seam 30" Weld x 8               |      | J#  | H#                      | Welder# 1#3      |
|         | 2      | 30" Pipe .375W X 60 FBE 40.2    |      | 16  | 802C36270               |                  |
| 840.1   | 3      | 30" Weld                        | 3'   |     |                         | 1#3              |
|         | 10     | 30" Pipe .375W X 60 FBE 40.4    |      | 19  | 802C36260               |                  |
| 880.5   | 3      | 30" Weld x 13                   |      |     |                         | 1#3              |
|         | 2      | 30" Pipe .375W X 60 FBE 40.3    | 3.4' | 20  | 802C36270               |                  |
| 915.5   |        | 35 Gas Service Above US         |      |     |                         |                  |
| 921.2   | 3      | 13.5' WWC<br>30" weld 17# Anode |      |     |                         | 1#2              |
|         | 10     | 30" Pipe .375W X 60 FBE 40.7    |      | 22  | 801C06770               |                  |
| 9060.2  |        | 1/2 Drive way H# 2832           |      |     |                         |                  |
| 961.9   | 3      | 30" Weld x 12                   |      |     |                         | 1#3              |
|         | 2      | 30" Pipe .375W X 60 FBE 39.8    | 3.2' | 23  | 802C36270               |                  |
| 1001.7  | 3      | 30" Weld                        |      |     |                         | 1#3              |
|         | 10     | 30" Pipe .375W X 60 FBE 40.2    |      | 24  | 802C36270               |                  |
| 1041.9  | 3      | 30" weld x 11                   |      |     |                         | 1#3              |
|         | 2      | 30" Pipe .375W X 60 FBE 39.3    |      | 21  | 801C06770               |                  |
| 1081.2  | 2      | 30" weld 17# Anode              |      |     |                         | 1#3              |
|         | 10     | 30" Pipe .375W X 60 FBE 40.4    | 3.4  | 35  | 802C36270               |                  |
| 1121.6  | 3      | 30" weld                        |      |     |                         | 1#3              |
|         | 2      | 30" Pipe .375W X 60 FBE 12.6    |      | 36  | 802C36260               |                  |
| 1124.6  |        | 3.0<br>ST1 LP Main 3" Above US  |      |     |                         |                  |
| 1134.2  | 1      | 30" weld - Test Wire Sta.       |      |     |                         | 1#2              |
|         | 10     | 30" Pipe .375W X 60 FBE 39.6    | 3.2  | 27  | 802C36270               |                  |
| 1148.6  |        | 14.4<br>8" Water Main Below US  |      |     |                         |                  |



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|---------|----------|------|-------------------------------|------|-----|---------------------------|---------------------|
| 1170.8  | corner # | seam | 36.6 E Belgrave Rd            |      | Jt# | Ht#                       | Welder #            |
| 1173.8  | 3        |      | 30" Weld                      |      |     |                           | 1#3                 |
|         |          | 2    | 30" Pipe. 375W X 60 FBE 38.6  |      | 28  | 801C06770                 |                     |
| 1212.4  | 3        |      | 30" Weld                      |      |     |                           | 1#3                 |
|         |          | 10   | 30" Pipe. 375W X 60 FBE 40.6  | 3.2' | 30  | 802C36270                 |                     |
| 1253.0  | 2        |      | 30" Weld 17" Anode            |      |     |                           | 1#3                 |
|         |          | 2    | 30" Pipe. 375W X 60 FBE 40.1  |      | 25  | 802C36270                 |                     |
| 1293.1  | 2        |      | 30" Weld                      |      |     |                           | 1#3                 |
|         |          | 10   | 30" Pipe. 375W X 60 FBE 39.5  | 3.1' | 26  | 802C36260                 |                     |
| 1296.1  |          |      | 3"<br>2" Plastic Gas Service  |      |     |                           |                     |
| 1324.1  |          |      | 31"<br>E Driveway House# 2850 |      |     |                           |                     |
| 1332.6  | 1        |      | 30" Weld                      |      |     |                           | 1#3                 |
|         |          | 2    | 30" Pipe. 375W X 60 FBE 40.7  |      | 29  | 802C36270                 |                     |
| 1373.3  | 2        |      | 30" Weld 17" Anode            | 3.2' |     |                           | 1#3                 |
|         |          | 10   | 30" Pipe. 375W X 60 FBE 40.6  |      | 33  | 802C36270                 |                     |
|         |          | 39   | Gas Service Above vs          |      |     |                           |                     |
| 1413.9  | 1        |      | 30" Weld                      |      |     |                           | 1#3                 |
|         |          | 2    | 30" Pipe. 375W X 60 FBE 39.9  | 3.5  | 32  | 802C36270                 |                     |
|         |          | 10   | Water Service Below vs        |      |     |                           |                     |
| 1453.8  | 1        |      | 30" Weld                      |      |     |                           | 1#2                 |
|         |          | 10   | 30" Pipe. 375W X 60 FBE 31.8  |      | 31  | 802C36270                 |                     |
| 1485.6  |          |      | 30" Weld                      |      |     |                           | 1#3                 |
|         |          |      | 30" Pipe. 375W X 60 FBE 40.2  | 3.2' | 34  | 801C06770                 |                     |
|         |          | 27   | E Driveway House# 2858        |      |     |                           |                     |

352.0

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|---------|---------------|--------------------------------------|------|------|----------------------------|---------------------|
| 1525.8  | coater #<br>1 | 30" weld 17" Anode                   |      | Jt # | Ht #                       | Welder #<br>243     |
|         | 10            | 30" Pipe, 375W X 60 FBE 40.7         | 3.2  | 37   | 802C36260                  |                     |
| 1553.1  |               | 27.3 & Driveway House #2864 North    |      |      |                            |                     |
| 1566.5  | 2             | 30" Weld                             |      |      |                            | 143                 |
|         | 2             | 30" Pipe, 375W X 60 FBE 39.4         |      | 38   | 802C36270                  |                     |
| 1605.9  | 3             | 30" weld                             | 3.5  |      |                            | 243                 |
|         | 10            | 30" Pipe, 375W X 60 FBE 40.7         |      | 45   | 802C36260                  |                     |
| 1646.6  | 2             | 30" weld                             |      |      |                            | 143                 |
|         | 2             | 30" Pipe, 375W X 60 FBE 40.7         |      | 39   | 802C36260                  |                     |
| 1655.4  |               | 8.8 & Driveway House #2864 South     |      |      |                            |                     |
| 1665.9  |               | 19.3 Water Service Below US          |      |      |                            |                     |
| 1687.3  | 3             | 30" weld 17" Anode                   | 3.5  |      |                            | 243                 |
|         | 10            | 30" Pipe, 375W X 60 FBE 40.2         |      | 60   | 802C36270                  |                     |
| 1702.7  |               | 15.4 & Driveway House #2870 North    |      |      |                            |                     |
| 1727.5  | 3             | 30" weld                             |      |      |                            | 143                 |
|         | 2             | 3" Pipe, 375W X 60 FBE 40.7          |      | 55   | 802C36270                  |                     |
| 1768.2  | 1             | 30" weld                             | 3.5  |      |                            | 243                 |
|         | 10            | 30" Pipe, 375W X 60 40.7             |      | 47   | 802C36270                  |                     |
| 1773.2  |               | 5.0 Water Service Below US           |      |      |                            |                     |
| 1808.9  | 1             | 30" weld                             |      |      |                            | 143                 |
|         | 2             | 30" Pipe, 375W X 60 FBE 39.5         | 3.5  | 40   | 802C36260                  |                     |
| 1842.4  |               | 33.5 8" LP LF7495 Crossover Above US |      |      |                            |                     |
| 1848.4  | 3             | 30" weld                             |      |      |                            | 243                 |
|         | 12            | 30" Pipe, 375W X 60 FBE 27.9         |      | 36   | 802C36260                  |                     |
| 1850.4  |               | 2' & Drive Way House #2870 South     |      |      |                            |                     |

350.5



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| 1876.3  | 2      | 30" Weld 17" Anode             |      | Jt # | Ht #                    | welder # 273     |
|         | 10     | 30" Pipe, 375W X 60 FBE 40.7   |      | 48   | 802C36270               |                  |
| 1917.0  | 3      | 30" Weld                       | 3.5  |      |                         | 173              |
|         | 2      | 30" Pipe, 375W X 60 FBE 40.7   |      | 44   | 802C36270               |                  |
| 1957.7  | 3      | 30" Weld                       |      |      |                         | 273              |
|         | 10     | 30" Pipe, 375W X 60 FBE 39.8   |      | 41   | 802C36260               |                  |
| 1997.5  | 3      | 30" Weld                       |      |      |                         | 173              |
|         | 2      | 30" Pipe, 375W X 60 FBE 40.2   | 4.0  | 42   | 802C36260               |                  |
| 2018.1  |        | 20.6 Driveway House #2886      |      |      |                         |                  |
| 2037.7  | 2      | 30" Weld 17" Anode             |      |      |                         | 274              |
|         | 10     | 30" Pipe, 375W X 60 FBE 40.6   |      | 46   | 802C36270               |                  |
| 2078.2  | 2      | 30" Weld                       | 4.0  |      |                         | 173              |
|         | 2      | 30" Pipe, 375W X 60 FBE 40.0   |      | 43   | 802C36260               |                  |
| 2118.3  | 2      | 30" Weld                       |      |      |                         | 274              |
|         | 10     | 30" Pipe, 375W X 60 FBE 40.7   |      | 58   | 802C36260               |                  |
| 2128.3  |        | 10 Begine wetland              | 3.0  |      |                         |                  |
| 2159.0  | 3      | 30" Weld                       |      |      |                         | 273              |
|         | 2      | 30" Pipe, 375W X 60 FBE 39.7   |      | 57   | 802C36270               |                  |
| 2198.7  | 3      | 17" Anode 30" Weld End Wetland |      |      |                         | 274              |
|         | 10     | 30" Pipe, 375W X 60 FBE 40.7   |      | 59   | 802C36260               |                  |
| 2239.4  | 3      | 30" Weld                       |      |      |                         | 273              |
|         | 2      | 30" Pipe, 375W X 60 FBE 40.7   |      | 56   | 802C36270               |                  |
| 2280.1  | 2      | 30" Weld                       |      |      |                         | 274              |
|         | 10     | 30" Pipe, 375W X 60 FBE 40.7   |      | 63   | 802C36260               |                  |

444.5

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|---------|------------------------|---|------|------|---------------------------|---------------------|
| 2340.8  | 2 <sup>1st</sup><br>82 | seam<br>30" Weld                                      |      | J+ = | H+ =                      | Welder #<br>2441    |
|         | 2                      | 30" Pipe, 375W X 60 FBE 40.1                          |      | 62   | 802C36270                 |                     |
| 2360.9  | 1                      | 30" Weld 17" Anode                                    |      |      |                           | 144                 |
|         | 10                     | 30" Pipe, 375W X 60 FBE 31.2                          |      | 61   | 801C06770                 |                     |
| 2392.1  | 1                      | 30" Weld  |      |      |                           | 244                 |
|         | 1                      | Producer Well Tie in<br>30" 6" Tee - 2" G+ #15181 3.7 |      |      | INJ 648                   |                     |
| 2395.8  | 1                      | 30" Weld Test Sta.                                    |      |      |                           | 244                 |
|         | 2                      | 30" Pipe, 375W X 60 FBE 51.6                          |      | 31   | 802C36270                 |                     |
| 2401.4  | 1                      | 30" Weld  |      |      |                           | 144                 |
|         | 10                     | 30" Pipe, 375W X 60 FBE 16.0                          |      | 74   | 801C06770                 |                     |
| 2417.4  | 1                      | 30" Weld  |      |      |                           | 144                 |
|         |                        | N 45 E<br>30" Ell 45°, 375W X 60 3.1                  |      |      | T854A                     |                     |
| 2420.5  | 1                      | 30" Weld  |      |      |                           | 144                 |
|         | 2                      | 30" Pipe, 375W X 60 FBE 5.2                           |      | 64   | 802C36270                 |                     |
| 2425.7  | 1                      | 30" Weld  |      |      |                           | 142                 |
|         |                        | 30" Ell 45°, 375W X 60 3.1                            |      |      | 962974                    |                     |
| 2428.8  | 1                      | 30" Weld 90° Ell NW 1/4 Down                          |      |      |                           | 144                 |
|         |                        | 30" Ell 45°, 375W X 60 3.1                            |      |      | 962974                    |                     |
| 2431.9  | 1                      | 30" Weld Anode  |      |      |                           | 142                 |
|         | 10                     | Riser<br>30" Pipe, 375W X 60 FBE 11.8                 |      | 70   | 802C36270                 |                     |
| 2443.7  | 4                      | 30" Weld  |      |      |                           | 144                 |
|         | 4                      | 30" Ell 45°, 375W X 60 3.1                            |      |      | RMMP                      |                     |
| 2446.8  | 4                      | 30" Weld - 90° Ell UP 1/4 S                           |      |      |                           | 143                 |
|         | 4                      | 30" Ell 45°, 375W X 60 3.1                            |      |      | T854A                     |                     |



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|---------|-------------|--------------------------------------|------|-----|---------------------------|---------------------|
| 2449.9  | coater<br>1 | Seam<br>30" Weld Beg Rd Bore         |      | J#  | H#                        | Welder #<br>1 #4    |
|         | 10          | 30" Pipe .375W X 60 PC 20.4          | 21.0 | 82  | 801L04760/<br>3040        |                     |
| 2461.9  |             | 12'<br>N. curb N. Brainard Crk.      |      |     |                           |                     |
| 2470.3  | 1           | 30" Weld                             |      |     |                           | 2 #3                |
|         | 2           | 30" Pipe .375W X 60 PC 20.0          |      | 82  | 801L04760/<br>3040        |                     |
| 2490.3  | 1           | 30" Weld                             |      |     |                           | 2 #3                |
|         | 10          | 30" Pipe .375W X 65 PC 19.7          |      | 79  | 802C36270                 |                     |
| 2510.0  | 1           | 30" Weld                             |      |     |                           | 2 #3                |
|         | 2           | 30" Pipe .375W X 65 PC 19.5          | 17.0 | 79  | 802C36270                 |                     |
| 2529.5  | 1           | 30" Weld                             |      |     |                           | 2 #3                |
|         | 10          | 30" Pipe .375W X 65 PC 19.8          |      | 80  | 802C36270                 |                     |
| 2542.0  |             | S. Curb N. Brainard Crk              |      |     |                           |                     |
| 2549.3  | 1           | 30" Weld                             |      |     |                           | 2 #3                |
|         | 2           | 30" Pipe .375W X 65 PC 20.0          |      | 80  | 802C36270                 |                     |
| 2569.3  | 1           | 30" Weld                             |      |     |                           | 2 #3                |
|         | 10          | 30" Pipe .375W X 65 PC 19.9          | 14.5 | 81  | 802C36270                 |                     |
| 2589.2  | 1           | 30" Weld Anode                       |      |     |                           | 3 #6                |
|         | 2           | 30" Pipe .375W X 65 PC 12.0          |      | 81  | 802C36270                 |                     |
| 2601.2  | 4           | 30" Weld                             |      |     |                           | 3 #4                |
|         | 4           | N # UP<br>30" Ell 45° .375W Y6 3.1   |      |     | RMMS                      |                     |
| 2604.3  | 4           | 30" Weld                             |      |     |                           | 3 #4                |
|         | 12          | 30" Pipe .375W X 65 PC 5.5           |      | 81  | 802C36270                 |                     |
| 2609.8  | 1           | 30" Weld                             |      |     |                           | 3 #6                |
|         |             | DOWN #5<br>30" Ell 45° .375W Y60 3.1 |      |     | RMML                      |                     |
| 2612.9  |             | 30" Weld Beg Rockshield 7.0          |      |     |                           | 3 #6                |

156.8 PC

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|---------|-----------------------|--|------|------------|---------------------------------|---------------------------------|
|         | Cutter #<br>Seam<br>2 | 30" Pipe .375W X 60 FBE 3.5                              |      | 64         | 802C36270                       |                                 |
| 2616.4  |                       | 30" weld 6.5   |      |            |                                 |                                 |
|         | 10                    | 30" Pipe .375W X 60 FBE 40.3                             |      | 71         | 802C36270                       |                                 |
| 2656.7  | 1                     | 30" weld 2+3   |      |            |                                 |                                 |
|         | 2                     | 30" Pipe .375W X 60 FBE 19.7                             |      | 64         | 802C36270                       |                                 |
| 2676.4  | 1                     | 30" weld End Rockshield Anode 6.6                        |      |            |                                 | 3+6                             |
|         | 10                    | 30" Pipe .375W X 60 FBE 40.0                             |      | 68         | 802C36270                       |                                 |
| 2716.4  | 2                     | 30" weld 2+5   |      |            |                                 |                                 |
|         | 2                     | 30" Pipe .375W X 60 FBE 40.7                             |      | 63         | 802C36260                       |                                 |
| 2757.1  | 2                     | 30" weld 5.5   |      |            |                                 | 2+3                             |
| 2786.9  | 10                    | 29.8: 6" HP Gas Above US<br>30" pipe .375W X 60 FBE 39.4 |      | 51         | 802C36260                       |                                 |
| 2796.5  | 3                     | 30" weld 2+3   |      |            |                                 |                                 |
|         | 2                     | 30" Pipe .375W X 60 FBE 40.3                             |      | 53         | 802C36270                       |                                 |
| 2836.8  | 3                     | 30" weld Anode 4.3                                       |      |            |                                 | 2+3                             |
|         | 10                    | 30" Pipe .375W X 60 FBE 5.0                              |      | 50         | 802C36270                       |                                 |
| 2841.8  | 3                     | 30" weld B29, Rockshield 2+3                             |      |            |                                 |                                 |
|         |                       | N+ Down<br>30" E/1 45°.375W Y60 3.1                      |      |            | RMMT                            |                                 |
| 2844.9  | 3                     | 30" weld 2+3   |      |            |                                 |                                 |
|         | 2                     | 30" Pipe .375W X 60 FBE 2.5                              |      | 50         | 802C36270                       |                                 |
| 2847.4  | 3                     | 30" weld 2+3   |      |            |                                 |                                 |
|         | 10                    | Up +5<br>30" E/1 45°.375W Y60 3.1                        |      |            | RMM L                           |                                 |
| 2850.5  | 3                     | 30" weld 2+3   |      |            |                                 |                                 |
|         |                       | 30" Pipe .375W X 60 FBE 39.8                             |      | 54         | 802C36260                       |                                 |
| 2882.3  |                       | 31.8<br># Creek 4.0                                      |      |            |                                 |                                 |



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| 2890.3  | Center#<br>3 | Seam<br>30" Weld                         |      |            | Ht#                        | Welder#<br>2 1/3    |
|         | 2            | 30" Pipe, 375W X 60 FBE 33.9             |      | 52         | 802C36260                  |                     |
| 2924.2  | 1            | 30" Weld                                 | 6.0  |            |                            | 2 1/3               |
|         |              | N 1/2 UP<br>30" Ell 45°, 375W X 60 3.1   |      |            | RMM S                      |                     |
| 2927.3  | 1            | 30" Weld                                 |      |            |                            | 2 1/3               |
|         | 10           | 30" Pipe, 375W X 60 FBE 6.8              |      | 52         | 802C36260                  |                     |
| 2934.1  | 1            | 30" Weld                                 |      |            |                            | 2 1/3               |
|         |              | Down 1/8<br>30" Ell 45°, 375W X 60 3.1   |      |            | RMM P                      |                     |
| 2937.2  | 1            | End Rockshield<br>30" Weld               |      |            |                            | 2 1/3               |
|         | 2            | 30" Pipe, 375W X 60 FBE 9.4              |      | 61         | 801C06770                  |                     |
| 2946.6  | 3            | 30" Weld Anode                           |      |            |                            | 2 1/3               |
|         | 10           | 30" Pipe 375W X 60 FBE 40.3              | 6.0  | 77         | 802C36270                  |                     |
| 2986.9  | 3            | 30" Weld                                 |      |            |                            | 2 1/5               |
|         | 2            | 30" Pipe, 375W X 60 FBE 35.4             | 5.0  | 75         | 801C06770                  |                     |
| 3022.3  | 1            | 30" Weld                                 |      |            |                            | 2 1/3               |
|         | 10           | 30" Pipe, 375W X 60 FBE 40.7             | 6.0  | 73         | 801C06770                  |                     |
| 3033.0  |              | 10.7<br>Electric Conduct 3" Above Us 3.4 |      |            |                            |                     |
| 3038.9  |              | 16.6<br>4" Gas IP Above Us 3.4           |      |            |                            |                     |
| 3046.8  |              | 24.5<br>N. Curb S. Shaker Circle 6.0     |      |            |                            |                     |
| 3067.0  | 3            | 30" Weld Anode                           |      |            |                            | 2 1/5               |
|         | 2            | 30" Pipe, 375W X 60 FBE 6.3              |      | 74         | 801C06770                  |                     |
| 3069.3  | 3            | 30" Weld                                 |      |            |                            | 2 1/3               |
|         |              | N 1/2 UP<br>30" Ell 45°, 375W X 60 3.1   |      |            | RMM T                      |                     |
| 3072.4  |              | 30" Weld                                 |      |            |                            | 2 1/3               |

172.8

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|         | coater# 12 | 30" Pipe .375W X 60 FBE 1.7                  |      | 74         | 801C06770                  | Welder #            |
| 3074.1  | 3          | 30" weld                                     |      |            |                            | 2 & 3               |
|         | 1          | Down 1/2 S<br>30" Ell 45°. 375W X 60 3.1     |      |            | RMMS                       |                     |
| 3077.2  | 1          | 30" weld                                     |      |            |                            | 2 & 3               |
|         | 2          | 30" Pipe .375W X 60 FBE 12.0                 | 3.0  | 74         | 801C06770                  |                     |
| 3078.7  |            | 1.5<br>S. curb S. Shaker Circle              |      |            |                            |                     |
| 3089.2  | 1          | 30" weld                                     |      |            |                            | 2 & 3               |
|         | 10         | 30" Pipe .375W X 60 FBE 39.9                 |      | 76         | 801C06770                  |                     |
| 3129.1  | 1          | 30" weld                                     |      |            |                            | 3 & 6               |
|         | 1          | 30" Ell 25° N 1/2 Down 1.6                   |      |            | 962974                     |                     |
| 3130.7  | 1          | 30" weld                                     |      |            |                            | 3 & 6               |
|         | 1          | 30" Ell 25° UP 1/2 S 1.6                     |      |            | 962974                     |                     |
| 3132.3  | 1          | 30" weld                                     |      |            |                            | 3 & 6               |
|         | 11         | 30" Pipe .375W X 60 FBE 3.7                  |      | 64         | 802C36270                  |                     |
| 3136.0  | 1          | 30" weld X 14                                |      |            |                            | 1 & 2               |
|         | 1          | 30" Pipe .375W X 60 FBE 2.6                  |      | 50         | 802C36270                  |                     |
| 3138.6  | 4          | 30" weld                                     |      |            |                            | 2 & 3               |
|         | 4          | N-S 1/2 W<br>Tee 30X6 .375W X .280W X 60 3.7 |      |            | INS 648                    |                     |
| 3142.3  |            | 30" weld                                     |      |            |                            | 1 & 2               |
|         | 12         | 30" Pipe .375W X 60 FBE 2.0                  |      | 64         | 802C36270                  |                     |
| 3144.3  | 4          | 30" weld                                     |      |            |                            | 1 & 2               |
|         | 1          | 30" WN Flg. 600#. 375W X 60 0.8              |      |            | TL10015050                 |                     |
|         |            | 30" Ball Valve 600# 5.4                      |      |            |                            |                     |
|         | 1          | 30" WN Flg. 600#. 375W X 60 0.8              |      |            | TL10014918                 |                     |





**Exhibit 15**  
**Engineering Notes 1-31-2020**

|                                   |   |  |                   |   |
|-----------------------------------|---|--|-------------------|---|
| Street<br><i>Brainard Rd</i>      | Side<br><i>W</i>  | F.B.   | Sheet<br><i>1</i> | Installation Method<br>(Circle all that apply)<br>Insert <input checked="" type="radio"/> <i>Open</i> Bored |
| Line No.<br><i>9517</i>           | Operating Press (Circle all that apply)<br>LP MP IP <input checked="" type="radio"/> <i>HP</i> TP GP SP |  |                   | PL  |
| CWO<br><i>63683179</i>            | Started<br><i>6-10-19</i>   |  | Completed         | Tax District Name   |
| Investment Div. No.<br><i>500</i> | Municipality<br><i>Pepper Pike</i>  |  |                   | Tax District No.<br><i>OH11260</i>  |
| Contractor<br><i>DRS</i>          | Foreman<br><i>D. Schmoldt</i>   |  | Inspector(s)      |   |
| Direction<br><i>N 70 S</i>        | Baseline  | Description of Work<br><i>Replace 26" Bare Pipe w/ 30" FBE</i> |                   |   |

| Station      | Offset               | Notes                           | Dep.        | S/H<br>Jt # | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|--------------|----------------------|---------------------------------|-------------|-------------|---------------------------|---------------------|
| <i>00.0</i>  | <i>coater # seam</i> | <i>Φ Fairmount Blvd.</i>        |             |             | <i>Ht #</i>               | <i>Welder #</i>     |
| <i>79.5</i>  |                      | <i>31' W- Brainard Rd</i>       |             |             |                           |                     |
| <i>95.0</i>  |                      | <i>Φ 30" Gt# 24169</i>          |             |             |                           |                     |
|              |                      | <i>Reg. New - Face Of Flg</i>   |             |             |                           |                     |
|              |                      | <i>30" Wv Flg 300 ANSI</i>      | <i>0.7</i>  | <i>3.0</i>  | <i>1181867</i>            |                     |
| <i>95.7</i>  |                      | <i>30" weld Test Sta Anode</i>  |             |             |                           | <i>243</i>          |
|              | <i>10</i>            | <i>30" Pipe .375W X 65 FBE</i>  | <i>16.9</i> | <i>67</i>   | <i>801C06770</i>          |                     |
| <i>112.6</i> |                      | <i>30" Weld X16C02</i>          |             |             |                           | <i>1 1/2</i>        |
|              | <i>2</i>             | <i>30" Pipe .375W X 65 FBE</i>  | <i>3.5</i>  | <i>67</i>   | <i>801C06770</i>          |                     |
| <i>116.1</i> |                      | <i>30" Weld X16C01</i>          |             |             |                           | <i>1 1/2</i>        |
|              | <i>10</i>            | <i>30" Pipe .375W X 65 FBE</i>  | <i>39.7</i> | <i>3</i>    | <i>802C36270</i>          |                     |
| <i>155.8</i> | <i>1</i>             | <i>30" Weld</i>                 |             |             |                           | <i>1 1/2</i>        |
|              | <i>2</i>             | <i>30" pipe .375W X 65 FBE</i>  | <i>40.2</i> | <i>2</i>    | <i>802C36260</i>          |                     |
| <i>196.0</i> | <i>1</i>             | <i>30" Weld</i>                 | <i>3.0</i>  |             |                           | <i>1 1/2</i>        |
| <i>227.0</i> |                      | <i>31' Driveway House# 2804</i> |             |             |                           |                     |
|              | <i>10</i>            | <i>30" Pipe .375W X 65 FBE</i>  | <i>40.3</i> | <i>7</i>    | <i>802C36270</i>          |                     |
| <i>236.3</i> | <i>1</i>             | <i>30" Weld X6 17" ANODE</i>    |             |             |                           | <i>1 1/2</i>        |
| <i>238.8</i> |                      | <i>25' Driveway House# 2808</i> |             |             |                           |                     |
|              | <i>2</i>             | <i>30" Pipe .375W X 65 FBE</i>  | <i>40.7</i> | <i>8</i>    | <i>802C36270</i>          |                     |
| <i>277.0</i> | <i>1</i>             | <i>30" Weld x 5</i>             |             |             |                           | <i>1 1/2</i>        |
|              | <i>10</i>            | <i>30" Pipe .375W X 65 FBE</i>  | <i>40.7</i> | <i>9</i>    | <i>802C36260</i>          |                     |



| CWO #    |           | F. B. |  |        | Sheet                   |                              |                     |
|----------|-----------|-------|--|--------|-------------------------|------------------------------|---------------------|
| 63683179 |           |       |  |        | 2                       |                              |                     |
| Station  | Offset    |       | Notes  | Dep.   | S/H<br>Jy <sup>th</sup> | Stock-Code,<br>CU or P.O.    | Mfg- &<br>Mfg. Date |
| 317.7    | Coater #1 | Seam  | 30" Weld   |        |                         | H <sub>2</sub> <sup>th</sup> | Welder #<br>1 1/3   |
|          |           | 2     | 30" Pipe .375W X 65 FBE 40.6                                       |        | 11                      | 802C36270                    |                     |
| 358.3    | 2         |       | 30" Weld X 4   | 3"     |                         |                              | 1 1/2               |
|          |           | 10    | 30" Pipe .375W X 65 FBE 40.6                                       |        | 1                       | 802C36270                    |                     |
| 398.9    | 2         |       | 30" Weld 17" Anode   |        |                         |                              | 1 1/3               |
|          |           | 2     | 30" Pipe .375W X 65 FBE 40.7                                       |        | 5                       | 802C36270                    |                     |
| 439.6    | 2         |       | 30" Weld X 2<br>14" WWC  |        |                         |                              | 1 1/2               |
|          |           | 10    | 30" Pipe .375W X 65 FBE 40.7                                       | 3"     | 10                      | 802C36270                    |                     |
| 480.3    | 3         |       | 30" Weld X 1   |        |                         |                              | 1 1/2               |
|          |           | 2     | 39" Plastic Gas Service - Above US<br>30" Pipe .375W X 65 FBE 40.7 |        | 12                      | 802C36260                    |                     |
| 521.0    | 3         |       | 30" Weld   |        |                         |                              | 1 1/3               |
|          |           | 10    | 30" Pipe .375W X 65 FBE 39.2                                       |        | 4                       | 802C36260                    |                     |
| 560.2    | 3         |       | 30" Weld X 3   |        |                         |                              | 1 1/2               |
|          |           | 2     | 30" Pipe .375W X 65 FBE 40.2                                       |        | 6                       | 802C36260                    |                     |
| 600.4    | 3         |       | 30" Weld 17" Anode   | 3"     |                         |                              | 1 1/3               |
|          |           | 10    | 30" Pipe .375W X 65 FBE 40.1                                       |        | 13                      | 801C06770                    |                     |
| 640.5    | 3         |       | 30" Weld X 10  |        |                         |                              | 1 1/3               |
|          |           | 2     | 30" Pipe .375W X 65 FBE 40.7                                       |        | 14                      | 802C36260                    |                     |
| 681.2    | 3         |       | Stl - Gas Service - Above US @ Weld<br>30" Weld X 8<br>15" WWC     |        |                         |                              | 1 1/3               |
|          |           | 10    | 30" Pipe .375W X 65 FBE 40.3                                       |        | 15                      | 801C06770                    |                     |
| 706.2    |           |       | 25' Driveway H <sup>th</sup> 2822                                  |        |                         |                              |                     |
| 721.5    | 3         |       | 30" Weld   | 3 1/4" |                         |                              | 1 1/3               |
|          |           | 2     | 30" Pipe .375W X 65 FBE 40.2                                       |        | 18                      | 802C36270                    |                     |
| 761.7    | 3         |       | 30" Weld X 17" Anode   |        |                         |                              | 1 1/3               |
|          |           | 10    | 30" Pipe .375W X 65 FBE 38.2                                       |        | 17                      | 802C36270                    |                     |



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| CWO #    | Line # | F. B. | Sheet |
| 63683179 | 9517   |       | 3     |

| Station | Offset | Notes                         | Dep. | S/H | Stock Code, CU or P. O. | Mfg. & Mfg. Date |
|---------|--------|-------------------------------|------|-----|-------------------------|------------------|
| 799.9   | 3      | Seam 30" Weld x 8             |      | 17  | H4                      | Welder # 1/3     |
|         | 2      | 30" Pipe .375W X 6.5 FBE 40.2 |      | 16  | 802C36270               |                  |
| 840.1   | 3      | 30" Weld                      | 3'   |     |                         | 1/3              |
|         | 10     | 30" Pipe .375W X 6.5 FBE 40.4 |      | 19  | 802C36260               |                  |
| 880.5   | 3      | 30" Weld x 13                 |      |     |                         | 1/3              |
|         | 2      | 30" Pipe .375W X 6.5 FBE 40.7 | 3.4' | 20  | 802C36270               |                  |
| 915.5   |        | 35 Gas Service Above US       |      |     |                         |                  |
| 921.2   | 3      | 13.5" WWC 30" Weld 17" Anode  |      |     |                         | 1/2              |
|         | 10     | 30" Pipe .375W X 6.5 FBE 40.7 |      | 22  | 801C06770               |                  |
| 9060.2  |        | 1/2 Drive way H# 2832         |      |     |                         |                  |
| 961.9   | 3      | 30" Weld x 12                 |      |     |                         | 1/3              |
|         | 2      | 30" Pipe .375W X 6.5 FBE 39.8 | 3.2' | 23  | 802C36270               |                  |
| 1001.7  | 3      | 30" Weld                      |      |     |                         | 1/3              |
|         | 10     | 30" Pipe .375W X 6.5 FBE 40.2 |      | 24  | 802C36270               |                  |
| 1041.9  | 3      | 30" Weld x 11                 |      |     |                         | 1/3              |
|         | 2      | 30" Pipe .375W X 6.5 FBE 39.3 |      | 21  | 801C06770               |                  |
| 1081.2  | 2      | 30" Weld 17" Anode            |      |     |                         | 1/3              |
|         | 10     | 30" Pipe .375W X 6.5 FBE 40.4 | 3.4' | 35  | 802C36270               |                  |
| 1121.6  | 3      | 30" Weld                      |      |     |                         | 1/3              |
|         | 2      | 30" Pipe .375W X 6.5 FBE 12.6 |      | 36  | 802C36260               |                  |
| 1124.6  |        | 3.0 5" LP Main 3" Above US    |      |     |                         |                  |
| 1134.2  | 1      | 30" Weld - Test Wire Sta.     |      |     |                         | 1/2              |
|         | 10     | 30" Pipe .375W X 6.5 FBE 39.6 | 3.2' | 27  | 802C36270               |                  |
| 1148.6  |        | 14.4 8" Water Main Below US   |      |     |                         |                  |

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| CWO #    | CONFIDENTIAL | Line # | F. B. | Sheet |
| 63683179 |              | 9517   |       | 4     |

| Station | Offset         | Notes                        | Dep. | S/H  | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|---------|----------------|------------------------------|------|------|---------------------------|---------------------|
| 1170.8  | corner of seam | 36.6 E Belgrave Rd           |      | J+ # | H+ #                      | Welder #            |
| 1173.8  | 3              | 30" Weld                     |      |      |                           | 1 f3                |
|         | 2              | 30" Pipe .375W X 65 FBE 38.6 |      | 28   | 801C06770                 |                     |
| 1212.4  | 3              | 30" Weld                     |      |      |                           | 1 f3                |
|         | 10             | 30" Pipe .375W X 65 FBE 40.6 | 3.2' | 30   | 802C36270                 |                     |
| 1253.0  | 2              | 30" Weld 17" Anode           |      |      |                           | 1 f3                |
|         | 2              | 30" Pipe .375W X 65 FBE 40.1 |      | 25   | 802C36270                 |                     |
| 1293.1  | 2              | 30" Weld                     |      |      |                           | 1 f3                |
|         | 10             | 30" Pipe .375W X 65 FBE 39.5 | 3.1' | 26   | 802C36260                 |                     |
| 1296.1  |                | 3' 2" Plastic Gas Service    |      |      |                           |                     |
| 1324.1  |                | 31' E Driveway House# 2858   |      |      |                           |                     |
| 1332.6  | 2              | 30" Weld                     |      |      |                           | 1 f3                |
|         | 2              | 30" Pipe .375W X 65 FBE 40.7 |      | 29   | 802C36270                 |                     |
| 1373.3  | 2              | 30" Weld 17" Anode           | 3.2' |      |                           | 1 f3                |
|         | 10             | 30" Pipe .375W X 65 FBE 40.6 |      | 33   | 802C36270                 |                     |
|         |                | 39' Gas Service Above vs     |      |      |                           |                     |
| 1413.9  | 1              | 30" Weld                     |      |      |                           | 1 f3                |
|         | 2              | 30" Pipe .375W X 65 FBE 39.9 | 3.5  | 32   | 802C36270                 |                     |
|         | 10             | Water Service Below vs       |      |      |                           |                     |
| 1453.8  | 1              | 30" Weld                     |      |      |                           | 1 f2                |
|         | 10             | 30" Pipe .375W X 65 FBE 31.8 |      | 31   | 802C36270                 |                     |
| 1485.6  |                | 30" Weld                     |      |      |                           | 1 f3                |
|         |                | 30" Pipe .375W X 65 FBE 40.2 | 3.2' | 34   | 801C06770                 |                     |
|         |                | 27' E Driveway House# 2858   |      |      |                           |                     |

352.0



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| CWO #    | Line # | F. B. | Sheet |
| 63683179 | 9517   |       | 5     |

| Station | Offset             | Notes                                | Dep. | S/H | Stock-Code,<br>CU or P. O. | Mfg. &<br>Mfg. Date |
|---------|--------------------|--------------------------------------|------|-----|----------------------------|---------------------|
| 1525.8  | center #<br>1 seam | 30" weld 17" Anode                   |      | 41" | Ht #                       | Welder #<br>2 1/3   |
|         | 10                 | 30" Pipe, 375W X 65 FBE 40.7         | 3.2  | 37  | 802C36260                  |                     |
| 1553.1  |                    | 27.3 4-Drive way House #2864 North   |      |     |                            |                     |
| 1566.5  | 2                  | 30" weld                             |      |     |                            | 1 1/3               |
|         | 2                  | 30" Pipe, 375W X 65 FBE 39.4         |      | 38  | 802C36270                  |                     |
| 1605.9  | 3                  | 30" weld                             | 3.5  |     |                            | 2 1/3               |
|         | 10                 | 30" Pipe, 375W X 65 FBE 40.7         |      | 45  | 802C36260                  |                     |
| 1646.6  | 2                  | 30" weld                             |      |     |                            | 1 1/3               |
|         | 2                  | 30" Pipe, 375W X 65 FBE 40.7         |      | 39  | 802C36260                  |                     |
| 1655.4  |                    | 8.8 4-Drive way House #2864 South    |      |     |                            |                     |
| 1665.9  |                    | 19.3 Water Service Below US          |      |     |                            |                     |
| 1687.3  | 3                  | 30" weld 17" Anode                   | 3.5  |     |                            | 2 1/3               |
|         | 10                 | 30" Pipe, 375W X 65 FBE 40.2         |      | 60  | 802C36270                  |                     |
| 1702.7  |                    | 15.4 4-Drive way House #2870 North   |      |     |                            |                     |
| 1727.5  | 3                  | 30" weld                             |      |     |                            | 1 1/3               |
|         | 2                  | 3" Pipe, 375W X 65 FBE 40.7          |      | 55  | 802C36270                  |                     |
| 1768.2  | 1                  | 30" weld                             | 3.5  |     |                            | 2 1/3               |
|         | 10                 | 30" Pipe, 375W X 65 40.7             |      | 47  | 802C36270                  |                     |
| 1773.2  |                    | 5.0 Water Service Below US           |      |     |                            |                     |
| 1808.9  | 1                  | 30" weld                             |      |     |                            | 1 1/3               |
|         | 2                  | 30" Pipe, 375W X 65 FBE 39.5         | 3.5  | 40  | 802C36260                  |                     |
| 1842.4  |                    | 33.5 8" LP LF7495 Crossover Above US |      |     |                            |                     |
| 1848.4  | 3                  | 30" weld                             |      |     |                            | 2 1/3               |
|         | 12                 | 30" Pipe, 375W X 65 FBE 27.9         |      | 36  | 802C36260                  |                     |
| 1850.4  |                    | 2" 4-Drive way House #2870 South     |      |     |                            |                     |

350.5

|          |              |        |       |       |
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| CWO #    | CONFIDENTIAL | Line # | F. B. | Sheet |
| 63683179 |              | 9517   |       | 6     |

| Station | Offset | Notes                             | Dep. | S/H  | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|---------|--------|-----------------------------------|------|------|---------------------------|---------------------|
| 1876.3  | 2      | 30" Weld 17" Anode                |      | Jt # | Ht #                      | Welder #            |
|         | 10     | 30" Pipe, 375W X 65 FBE 40.7      |      | 48   | 802C36270                 | 2 #3                |
| 1917.0  | 3      | 30" Weld                          | 3.5  |      |                           | 1 #3                |
|         | 2      | 30" Pipe, 375W X 65 FBE 40.7      |      | 44   | 802C36270                 |                     |
| 1957.7  | 3      | 30" Weld                          |      |      |                           | 2 #3                |
|         | 10     | 30" Pipe, 375W X 65 FBE 39.8      |      | 41   | 802C36260                 |                     |
| 1997.5  | 3      | 30" Weld                          |      |      |                           | 1 #3                |
|         | 2      | 30" Pipe, 375W X 65 FBE 40.2      | 4.0  | 42   | 802C36260                 |                     |
| 2018.1  |        | 20.6<br>"Driveway House" 2886     |      |      |                           |                     |
| 2037.7  | 2      | 30" Weld 17" Anode                |      |      |                           | 2 #4                |
|         | 10     | 30" Pipe, 375W X 65 FBE 40.6      |      | 46   | 802C36270                 |                     |
| 2078.3  | 2      | 30" Weld                          | 4.0  |      |                           | 1 #3                |
|         | 2      | 30" Pipe, 375W X 65 FBE 40.0      |      | 43   | 802C36260                 |                     |
| 2118.3  | 2      | 30" Weld                          |      |      |                           | 2 #4                |
|         | 10     | 30" Pipe, 375W X 65 FBE 40.7      |      | 58   | 802C36260                 |                     |
| 2128.3  |        | 10<br>Begin wetland               | 3.0  |      |                           |                     |
| 2159.0  | 3      | 30" Weld                          |      |      |                           | 2 #3                |
|         | 2      | 30" Pipe, 375W X 65 FBE 39.7      |      | 57   | 802C36270                 |                     |
| 2198.7  | 3      | 17" Anode<br>30" Weld End Wetland |      |      |                           | 2 #4                |
|         | 10     | 30" Pipe, 375W X 65 FBE 40.7      |      | 59   | 802C36260                 |                     |
| 2239.4  | 3      | 30" Weld                          |      |      |                           | 2 #3                |
|         | 2      | 30" Pipe, 375W X 65 FBE 40.7      |      | 56   | 802C36270                 |                     |
| 2280.1  | 2      | 30" Weld                          |      |      |                           | 2 #4                |
|         | 10     | 30" Pipe, 375W X 65 FBE 40.7      |      | 63   | 802C36260                 |                     |

444.5



|          |        |       |       |
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| CWO #    | Line # | F. B. | Sheet |
| 63683179 | 9517   |       | 7     |

| Station | Offset | Notes  | Dep. | S/H | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|---------|--------|--|------|-----|---------------------------|---------------------|
| 2320.8  | 2      | seam<br>30" Weld                                   |      | Jt# | Jt#                       | Welder #<br>274     |
|         | 2      | 30" Pipe, 375w x 65 FBE 40.1                       |      | 62  | 802C36270                 |                     |
| 2360.9  | 1      | 30" Weld 17" Anode                                 |      |     |                           | 174                 |
|         | 10     | 30" Pipe, 375w x 65 FBE 31.2                       |      | 61  | 801C06770                 |                     |
| 2392.1  | 1      | 30" Weld   |      |     |                           | 244                 |
|         | 1      | Producer Well Ticin<br>30x6" Tee - 2" G+ 15181 3.7 |      |     | INJ 648                   |                     |
| 2395.8  | 1      | 30" Weld Test Sta.                                 |      |     |                           | 274                 |
|         | 2      | 30" Pipe, 375w x 65 FBE 5.6                        |      | 31  | 802C36270                 |                     |
| 2401.4  | 1      | 30" Weld   |      |     |                           | 174                 |
|         | 10     | 30" Pipe, 375w x 65 FBE 16.0                       |      | 74  | 801C06770                 |                     |
| 2417.4  | 1      | 30" Weld   |      |     |                           | 174                 |
|         |        | N 45E<br>30" E 11 45°, 375w Y60 3.1                |      |     | T854A                     |                     |
| 2420.5  | 1      | 30" Weld   |      |     |                           | 174                 |
|         | 2      | 30" Pipe, 375w x 65 FBE 5.2                        |      | 64  | 802C36270                 |                     |
| 2425.7  | 1      | 30" Weld   |      |     |                           | 172                 |
|         |        | 30" E 11 45°, 375w Y60 3.1                         |      |     | 962974                    |                     |
| 2428.8  | 1      | 30" Weld 90° E 11 } NW 1/2 Down                    |      |     |                           | 174                 |
|         |        | 30" E 11 45°, 375w Y60 3.1                         |      |     | 962974                    |                     |
| 2431.9  | 1      | 30" Weld Anode                                     |      |     |                           | 172                 |
|         | 10     | Riser<br>30" Pipe, 375w x 65 FBE 11.8              |      | 70  | 802C36270                 |                     |
| 2443.7  | 4      | 30" Weld   |      |     |                           | 174                 |
|         | 4      | 30" E 11 45°, 375w Y60 3.1                         |      |     | RMMP                      |                     |
| 2446.8  | 4      | 30" Weld - 90° E 11 } UP 1/2 S                     |      |     |                           | 173                 |
|         | 4      | 30" E 11 45°, 375w Y60 3.1                         |      |     | T854A                     |                     |

|          |              |        |       |       |
|----------|--------------|--------|-------|-------|
| CWO #    | CONFIDENTIAL | Line # | F. B. | Sheet |
| 63683179 |              | 9517   |       | 8     |

| Station          | Offset      |      | Notes                                 | Dep. | S/H | Stock Code,<br>CU or P.O. | Mfg. &<br>Mfg. Date |
|------------------|-------------|------|---------------------------------------|------|-----|---------------------------|---------------------|
| 2449.9           | coated<br>1 | Seam | 30" Weld Beg Rd Base                  |      | J7# | Hf 1F                     | Welder F<br>1 14    |
|                  |             | 10   | 30" Pipe .375w x 60 PC 20.4           | 21.0 | 82  | 801L04760/<br>3040        |                     |
| 2461.9           |             | 12'  | N. curb N. Brainard Cnle              |      |     |                           |                     |
| 2470.3           | 1           |      | 30" Weld                              |      |     |                           | 2 13                |
|                  |             | 2    | 30" Pipe .375w x 60 PC 20.0           |      | 82  | 801L04760/<br>3040        |                     |
| 2490.3           | 1           |      | 30" Weld                              |      |     |                           | 2 13                |
|                  |             | 10   | 30" Pipe .375w x 65 PC 19.7           |      | 79  | 802C36270                 |                     |
| 2510.0           | 1           |      | 30" Weld                              |      |     |                           | 2 13                |
|                  |             | 2    | 30" Pipe .375w x 65 PC 19.5           | 17.0 | 79  | 802C36270                 |                     |
| 2529.5           | 1           |      | 30" Weld                              |      |     |                           | 2 13                |
|                  |             | 10   | 30" Pipe .375w x 65 PC 19.8           |      | 80  | 802C36270                 |                     |
| 2542.0<br>2549.3 | 1           |      | S. Curb N. Brainard Cnle<br>30" Weld  |      |     |                           | 2 13                |
|                  |             | 2    | 30" Pipe .375w x 65 PC 20.0           |      | 80  | 802C36270                 |                     |
| 2569.3           | 1           |      | 30" Weld                              |      |     |                           | 2 13                |
|                  |             | 10   | 30" Pipe .375w x 65 PC 19.9           | 14.5 | 81  | 802C36270                 |                     |
| 2589.2           | 1           |      | 30" Weld Abade                        |      |     |                           | 3 16                |
|                  |             | 2    | 30" Pipe .375w x 65 PC 12.0           |      | 81  | 802C36270                 |                     |
| 2601.2           | 4           |      | 30" Weld                              |      |     |                           | 3 14                |
|                  | 4           |      | N 1/4 UP<br>30" Ell 45° .375w Y60 3.1 |      |     | RMMS                      |                     |
| 2604.3           | 4           |      | 30" Weld                              |      |     |                           | 3 14                |
|                  |             | 12   | 30" Pipe .375w x 65 PC 5.5            |      | 81  | 802C36270                 |                     |
| 2609.8           | 1           |      | 30" Weld                              |      |     |                           | 3 16                |
|                  |             |      | DOWN 1/5<br>30" Ell 45° .375w Y60 3.1 |      |     | RMML                      |                     |
| 2612.9           |             |      | 30" Weld Beg Rockshield 7.0           |      |     |                           | 3 16                |

156.8 PC



|          |        |       |       |
|----------|--------|-------|-------|
| CWO #    | Line # | F. B. | Sheet |
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| Station | Offset                | Notes                         | Dep. | S/H<br>Jt# | Stock Code,<br>-CU or P.O.<br>H# | Mfg. &<br>Mfg. Date<br>Welder # |
|---------|-----------------------|-------------------------------|------|------------|----------------------------------|---------------------------------|
|         | Coatop #<br>Seam<br>2 | 30" Pipe .375w x 65 FBE 3.5   |      | 69         | 802C36270                        |                                 |
| 2616.4  |                       | 30" weld                      | 6.5  |            |                                  |                                 |
|         | 1a                    | 30" Pipe .375w x 65 FBE 40.3  |      | 71         | 802C36270                        |                                 |
| 2656.7  | 1                     | 30" weld                      |      |            |                                  | 2 1/3                           |
|         | 2                     | 30" Pipe .375w x 65 FBE 19.7  |      | 64         | 802C36270                        |                                 |
| 2676.4  | 1                     | 30" weld End Rockshield Anode | 6.0  |            |                                  | 3 1/6                           |
|         | 10                    | 30" Pipe .375w x 65 FBE 40.0  |      | 68         | 802C36270                        |                                 |
| 2716.4  | 2                     | 30" weld                      |      |            |                                  | 2 1/5                           |
|         | 2                     | 30" Pipe .375w x 65 FBE 40.7  |      | 63         | 802C36260                        |                                 |
| 2757.1  | 2                     | 30" weld                      | 5.5  |            |                                  | 2 1/3                           |
|         |                       | 29.8: 6" HP Gas Above 12s     |      |            |                                  |                                 |
| 2786.9  | 10                    | 30" Pipe .375w x 65 FBE 39.4  |      | 51         | 802C36260                        |                                 |
| 2796.5  | 3                     | 30" weld                      |      |            |                                  | 2 1/3                           |
|         | 2                     | 30" Pipe .375w x 65 FBE 40.3  |      | 53         | 802C36270                        |                                 |
| 2836.8  | 3                     | 30" weld Anode                | 4.3  |            |                                  | 2 1/3                           |
|         | 10                    | 30" Pipe .375w x 65 FBE 5.0   |      | 50         | 802C36270                        |                                 |
| 2841.8  | 3                     | 30" weld Beg. Rockshield      |      |            |                                  | 2 1/3                           |
|         |                       | N 1/2 Down                    |      |            |                                  |                                 |
|         |                       | 30" E/I 45°. 375w x 60 3.1    |      |            | RMM T                            |                                 |
| 2844.9  | 3                     | 30" weld                      |      |            |                                  | 2 1/3                           |
|         | 2                     | 30" Pipe .375w x 65 FBE 2.5   |      | 50         | 802C36270                        |                                 |
| 2847.4  | 3                     | 30" weld                      |      |            |                                  | 2 1/3                           |
|         | 10                    | 30" E/I 45°. 375w x 60 3.1    |      |            | RMM L                            |                                 |
| 2850.5  | 3                     | 30" weld                      |      |            |                                  | 2 1/3                           |
|         |                       | 30" Pipe .375w x 65 FBE 39.8  |      | 54         | 802C36260                        |                                 |
| 2882.3  |                       | 31.8<br>¢ Creek               | 4.0  |            |                                  |                                 |

|          |              |        |       |       |
|----------|--------------|--------|-------|-------|
| CWO #    | CONFIDENTIAL | Line # | F. B. | Sheet |
| 63683179 |              | 9517   |       | 10    |

| Station | Offset          |      | Notes                                    | Dep. | S/H<br>Jt # | Stock Code,<br>CU or P. O. | Mfg. &<br>Mfg. Date |
|---------|-----------------|------|--|------|-------------|----------------------------|---------------------|
| 2890.3  | Centerline<br>3 | Seam | 30" Weld                                 |      | 1           | Ht #                       | Welder #            |
|         |                 | 2    | 30" Pipe, 375W X 65 FBE 33.9             |      | 52          | 802C36260                  | 2 1/3               |
| 2924.2  | 1               |      | 30" Weld                                 | 6.0  |             |                            | 2 1/3               |
|         |                 |      | N 1/2 UP<br>30" Ell 45°, 375W X 60 3.1   |      |             | RMM S                      |                     |
| 2927.3  | 1               |      | 30" Weld                                 |      |             |                            | 2 1/3               |
|         |                 | 10   | 30" Pipe, 375W X 65 FBE 6.8              |      | 52          | 802C36260                  |                     |
| 2934.1  | 1               |      | 30" Weld                                 |      |             |                            | 2 1/3               |
|         |                 |      | Down 1/2 S<br>30" Ell 45°, 375W X 60 3.1 |      |             | RMM P                      |                     |
| 2937.2  | 1               |      | End Rockshield<br>30" Weld               |      |             |                            | 2 1/3               |
|         |                 | 2    | 30" Pipe, 375W X 65 FBE 9.4              |      | 61          | 801C06770                  |                     |
| 2946.6  | 3               |      | 30" Weld Anode                           |      |             |                            | 2 1/3               |
|         |                 | 10   | 30" Pipe, 375W X 65 FBE 40.3             | 6.0  | 77          | 802C36270                  |                     |
| 2986.9  | 3               |      | 30" Weld                                 |      |             |                            | 2 1/5               |
|         |                 | 2    | 30" Pipe, 375W X 65 FBE 35.4             | 5.0  | 75          | 801C06770                  |                     |
| 3022.3  | 1               |      | 30" Weld                                 |      |             |                            | 2 1/3               |
|         |                 | 10   | 30" Pipe, 375W X 65 FBE 40.7             | 6.0  | 73          | 801C06770                  |                     |
| 3033.0  |                 |      | 10.7<br>Electric Conductor 13" Above Us  | 3.4  |             |                            |                     |
| 3038.9  |                 |      | 16.6<br>4" Gas IP Above Us               | 3.4  |             |                            |                     |
| 3046.8  |                 |      | 24.5<br>N. curb S. Shaker Circle         | 6.0  |             |                            |                     |
| 3063.0  | 3               |      | 30" Weld Anode                           |      |             |                            | 2 1/5               |
|         |                 | 2    | 30" Pipe, 375W X 65 FBE 6.3              |      | 74          | 801C06770                  |                     |
| 3069.3  | 3               |      | 30" Weld                                 |      |             |                            | 2 1/3               |
|         |                 |      | N 1/2 UP<br>30" Ell 45°, 375W X 60 3.1   |      |             | RMM T                      |                     |
| 3072.4  |                 |      | 30" Weld                                 |      |             |                            | 2 1/3               |

172.8



|          |        |       |       |
|----------|--------|-------|-------|
| CWO #    | Line # | F. B. | Sheet |
| 63683179 | 9517   |       | 11    |

| Station | Offset                      | Notes  | Dep. | S/H<br>d <sub>1</sub> # | Stock Code,<br>CU or P. O. | Mfg. &<br>Mfg. Date |
|---------|-----------------------------|--|------|-------------------------|----------------------------|---------------------|
|         | water <sup>seam</sup><br>12 | 30" Pipe .375W X 65 FBE 1.7                  |      | 74                      | 801C06770                  | Welder #            |
| 3074.1  | 3                           | 30" Weld                                     |      |                         |                            | 2 1/3               |
|         | 1                           | Down 1/2 S<br>30" Ell 45°. 375W X 60 3.1     |      |                         | RMMS                       |                     |
| 3077.2  | 1                           | 30" Weld                                     |      |                         |                            | 2 1/3               |
|         | 2                           | 30" Pipe .375W X 65 FBE 12.0                 | 3.0  | 74                      | 801C06770                  |                     |
| 3078.7  |                             | 1.5<br>S. curb S. Shaker Circle              |      |                         |                            |                     |
| 3089.2  | 1                           | 30" Weld                                     |      |                         |                            | 2 1/3               |
|         | 10                          | 30" Pipe .375W X 65 FBE 39.9                 |      | 76                      | 801C06770                  |                     |
| 3129.1  | 1                           | 30" Weld                                     |      |                         |                            | 3 1/6               |
|         | 1                           | 30" Ell 25° N 1/2 Down 1.6                   |      |                         | 962974                     |                     |
| 3130.7  | 1                           | 30" Weld                                     |      |                         |                            | 3 1/6               |
|         | 1                           | 30" Ell 25° up 1/2 1.6                       |      |                         | 962974                     |                     |
| 3132.3  | 1                           | 30" Weld                                     |      |                         |                            | 3 1/6               |
|         | 11                          | 30" Pipe .375W X 65 FBE 3.7                  |      | 64                      | 802C36270                  |                     |
| 3136.0  | 1                           | 30" Weld X 14                                |      |                         |                            | 1 1/2               |
|         | 1                           | 30" Pipe .375W X 65 FBE 2.6                  |      | 50                      | 802C36270                  |                     |
| 3138.6  | 4                           | 30" Weld                                     |      |                         |                            | 2 1/3               |
|         | 4                           | N-S 1/2 W<br>Tee 30X6 .375W X .280W X 60 3.7 |      |                         | INJ 648                    |                     |
| 3142.3  |                             | 30" Weld                                     |      |                         |                            | 1 1/2               |
|         | 12                          | 30" Pipe .375W X 65 FBE 2.0                  |      | 64                      | 802C36270                  |                     |
| 3144.3  | 4                           | 30" Weld                                     |      |                         |                            | 1 1/2               |
|         | 1                           | 30" WN Flg. 600#. 375W X 60 0.8              |      |                         | TL10015050                 |                     |
|         |                             | 30" Ball Valve 600# 5.4                      |      |                         |                            |                     |
|         | 1                           | 30" WN Flg. 600#. 375W X 60 0.8              |      |                         | TL10014918                 |                     |





**Exhibit 16**

**FW\_PIR - 019 Pepper Pike Records Update and Clarification 1-31-2020**

**From:** [Domonkos, Christopher](#)  
**To:** [Dragovich, Joseph](#); [Chace, Peter](#)  
**Subject:** FW: PIR - 019 Pepper Pike Records Update and Clarification  
**Date:** Saturday, February 1, 2020 10:15:53 AM  
**Attachments:** [image001.png](#)  
[PIR-019 Construction File - Listing of Reference Documents.docx](#)  
[Pipe Joining - Plastic Fusion.pdf](#)  
[Engineering Notes.pdf](#)  
[Misc Documents.pdf](#)

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**From:** Jeffery L Burdette <[Jeffery.L.Burdette@dominionenergy.com](mailto:Jeffery.L.Burdette@dominionenergy.com)>  
**Sent:** Friday, January 31, 2020 3:52 PM  
**To:** Domonkos, Christopher <[Christopher.Domonkos@puco.ohio.gov](mailto:Christopher.Domonkos@puco.ohio.gov)>  
**Cc:** Bronwyn G Sullivan <[Bronwyn.G.Sullivan@dominionenergy.com](mailto:Bronwyn.G.Sullivan@dominionenergy.com)>  
**Subject:** PIR - 019 Pepper Pike Records Update and Clarification

Chris,

As previously advised, we have determined that it is necessary to update and clarify some of the records we provided on January 21. The scanned images previously provided electronically to the Commission are copies of the construction file maintained in conjunction with the original pipe installation for PIR-019. The following clarifications were discussed with you on the 21st and are confirmed below for reference and for clarity:

- As part of our records review process, we identified that the material test reports show a pipe grade of X65 whereas the field notes, pipe tally logs, project management worksheets, and daily material reports showed X60. Accurate records, including pipe grade information, are important to our system, therefore we revised the field notes, pipe tally log and daily material reports to reflect the actual pipe grade (X65) installed. There is one small section of X60 near the south end of the project that is properly reflected in the documents.
- The EH1 System MAOP of 265 psi, displayed on the project drawings and on the PUCO notifications for PIR-019, is actually the pipe segment MAOP, not the System MAOP. The actual EH1 System MAOP is 249 psi. We've confirmed that the EH1 System MAOP of 249 psi was used during the design and construction of PIR-019.

In addition to these changes, we also need to provide certain documents in correction or supplementation of the file previously provided, as well as clarify certain documents that have not been provided.

Upon further review of the scanned images provided on the 21st, we have determined that certain change-order documents were not included in the original scan; these are now attached. Additionally, some two-sided documents did not scan correctly and others were inadvertently missed during the scanning process. Those documents are also attached. We

believe this captures the full contents of the construction file.

There were also a number of documents, included in the construction files, that have not been provided. We have itemized these documents in the attached list. This primarily includes historical reference documents that did not pertain directly to construction, copies of easements or similar agreements, as well as documents or media that were difficult to scan or reproduce. Other documents had been incorporated into materials already provided to the Commission. Further detail is provided in the itemized list. If the Commission would like to review of any of this information, copies or access can be provided as well.

**Jeff Burdette**

Engineering Technical Consultant

Dominion Energy Ohio

Office: (330) 478-3783

Cell: (330) 754-5524

Email: [Jeffery.L.Burdette@dominionenergy.com](mailto:Jeffery.L.Burdette@dominionenergy.com)



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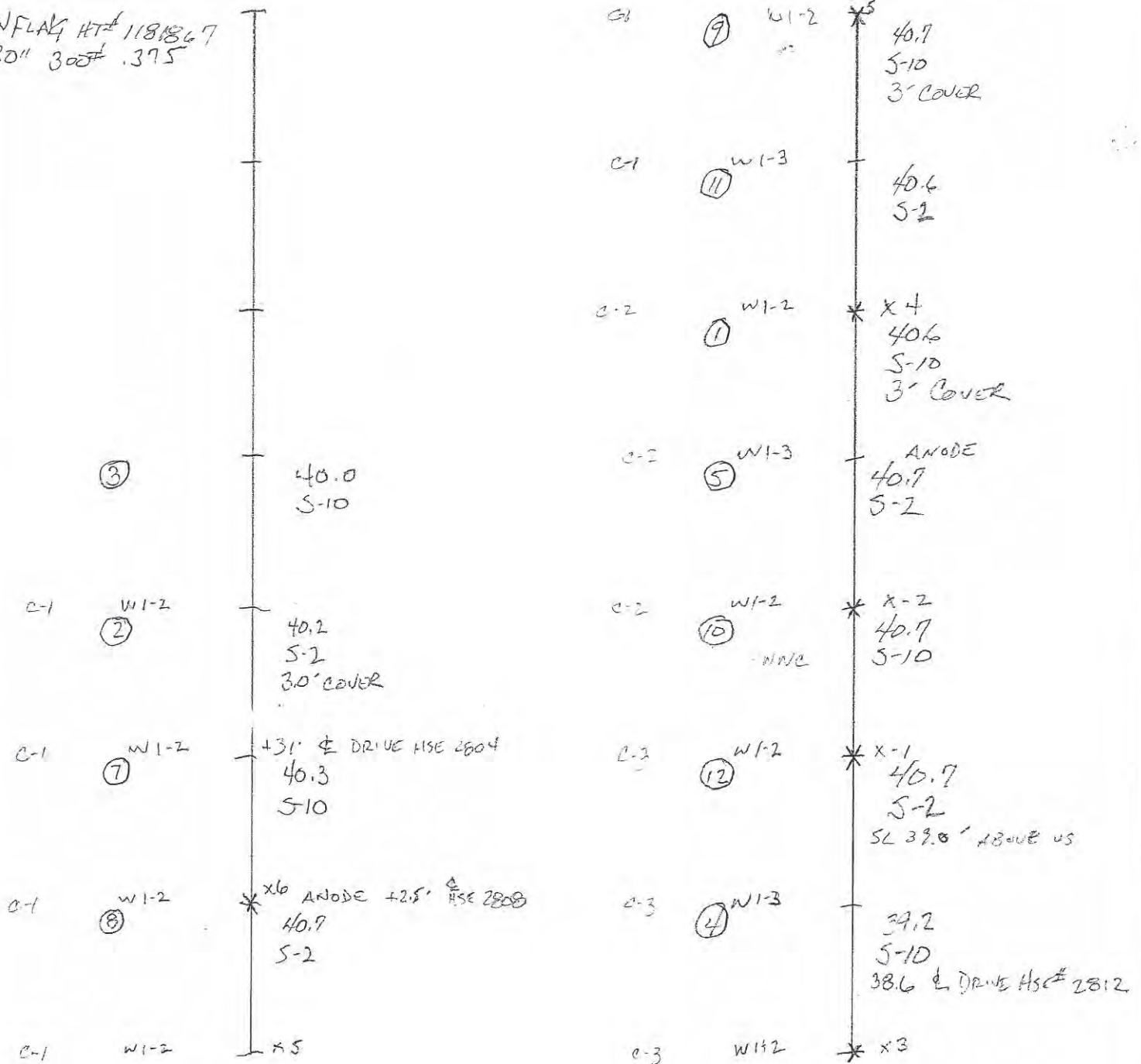
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**Exhibit 17**  
**Alignment Sheets**



|   |             |                        |                            |  |
|---|-------------|------------------------|----------------------------|--|
| Document type<br><i>Straight line Drawing</i> |             | Engineering Work Sheet |                            |  |
| Project<br><i>CWO 63683179</i>                | Doc. No.    | Rev. No.               | Sheet No.<br><i>1 of 9</i> |  |
| Subject<br><i>LF 9517</i>                     | Prepared By |                        | Date                       |  |
| System<br><i>HP Distribution</i>              | Checked By  |                        | Date                       |  |

WNFLAG HT# 1181867  
30" 300# 375





Dominion  
Energy

Document type

STRAIGHTLINE DRAWING

# Engineering Work Sheet

Project

CWO 62683179

Doc. No.

Rev. No.

Sheet No.

2 of 9

Subject

L# 9517

Prepared By

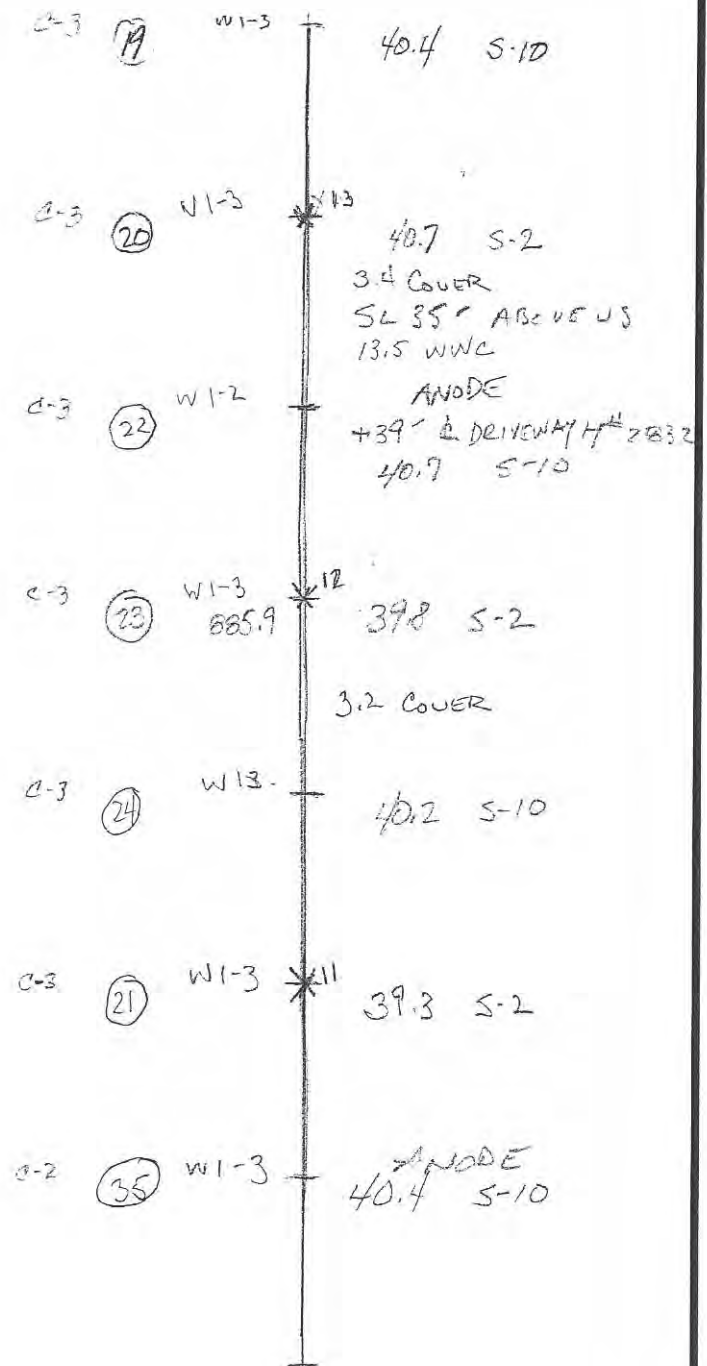
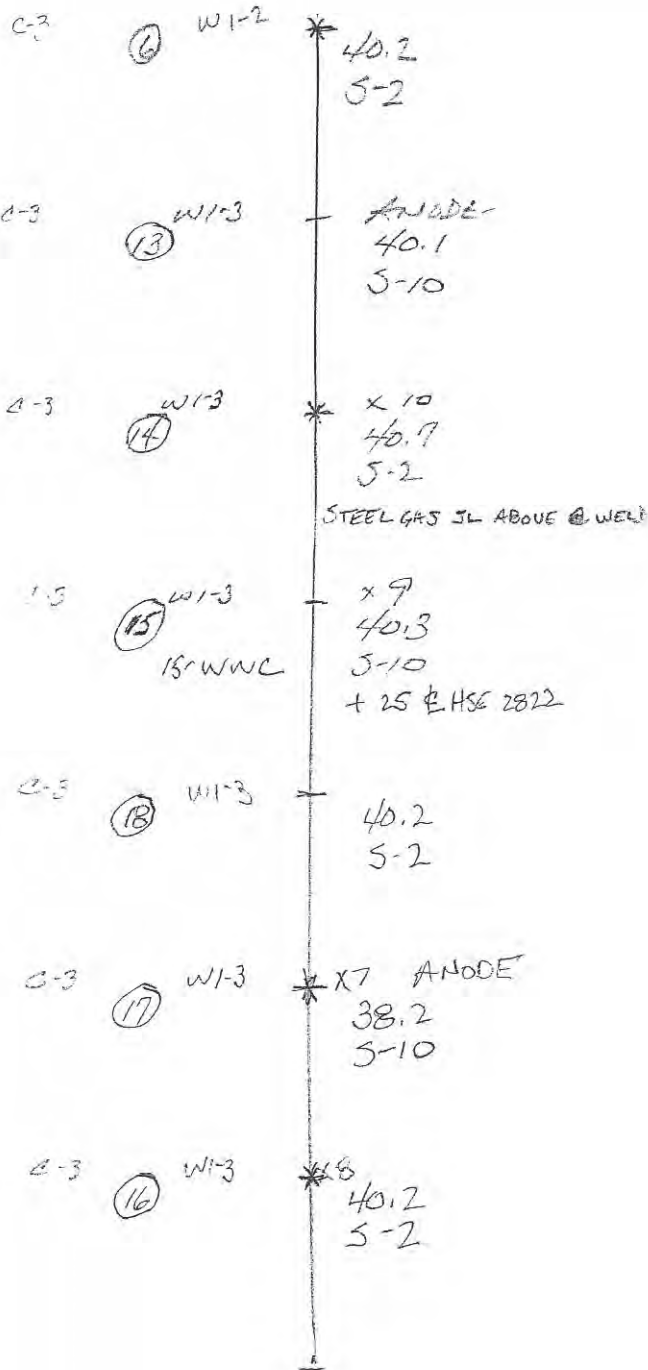
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## Engineering Work Sheet

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CWO 63683179

Doc. No.

Rev. No.

Sheet No.

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Subject

L # 9517

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Date

C-3 (36) W1-3  
12.6  
S-2  
3" GAS MAIN XOVER  
LP 1" FST WELD  
TEST WIRE STATION  
39.6 S-10  
14.4 WATER MAIN BELOW  
36.6 to E BELGRAVE

C-1 (27) W1-2  
38.4 S-2

C-3 (28) W1-3  
40.6 S-10  
3' 2" COVER

C-2 (25) W1-3  
ANODE  
40.1 S-2

C-2 (26) W1-3  
39.5 S-10  
+ 3' 2" PL SERVICE  
BELOW  
+ 31' E DRIVE 2850

C-2 (29) W1-3  
40.7 S-2  
3' 2" COVER

C-2 W1-3  
ANODE

C-2 (33) W1-3  
40.6 S-10  
+ 39 GAS SL ABOVE

C-1 (32) W1-3  
39.9 S-2  
3' 6" COVER  
+ 10 WATER SL BELOW

C-1 (31) W1-2  
31.8 S-10

(34) W1-3  
40.2 S-2  
3' 2" COVER  
+ 27' E HOUSE 2858

C-1 (39) W2-3  
ANODE  
40.7 S-10  
27.3 E DRIVE HOUSE 2864

C-2 (38) W1-3  
39.4 S-2  
3' 5" COVER

C-3 (45) W2-3  
40.7 S-10

C-2 W1-3



Document type  
**STRAIGHTLINE DRAWING**

Project  
**CWO 63683179**

Subject  
**L # 9517**

System  
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# Engineering Work Sheet

|             |          |                            |
|-------------|----------|----------------------------|
| Doc. No.    | Rev. No. | Sheet No.<br><b>4 of 9</b> |
| Prepared By |          | Date                       |
| Checked By  |          | Date                       |

C-2 (29) W1-3  
40.7 S-2  
+8.8 to N. DRIVE  
+2.8 to  
Water Service  
10.3 Below us  
3.5 COVER  
ANODE

C-3 (30) W2-3  
40.2 S-10  
15.4 E DRIVE 2870

C-3 (35) W1-2  
40.7 S-2

C-1 (41) W2-3  
40.7 S-10  
+5' Water serv below

C-3 (40) W1-3  
39.5 S-2

C-3 (36) W2-3  
29.9 S-12

C-2 (48) W2-3  
ANODE  
40.7 S-10

C-3 (41-3)

C-3 (44) W1-3  
40.7 S-2

C-3 (41) W2-3  
39.2 S-10  
4' COVER

C-3 (42) W1-3  
40.2 S-2  
+20.6 E DRIVE WEL 2886

C-2 (46) W2-4  
ANODE  
40.6 S-10  
4' COVER

(43) W1-3  
40.0 S-2  
3.5 COVER

C-2 (58) W2-4  
40.7 S-10

C-3 (51) W2-3  
39.7 S-2  
END WETLAND

C-3 (42-4)  
ANODE





Document type

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## Engineering Work Sheet

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Subject

L # 9517

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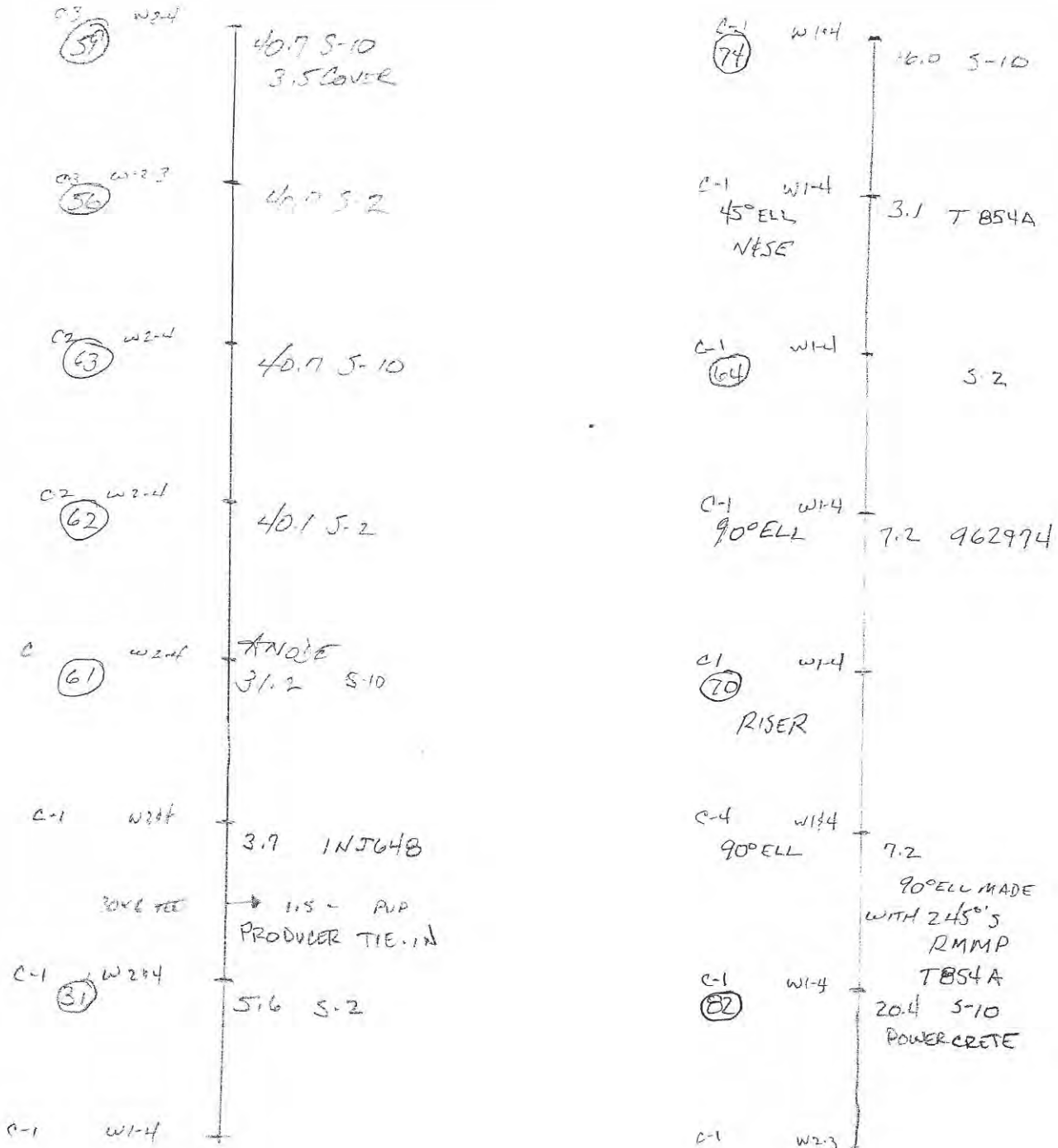
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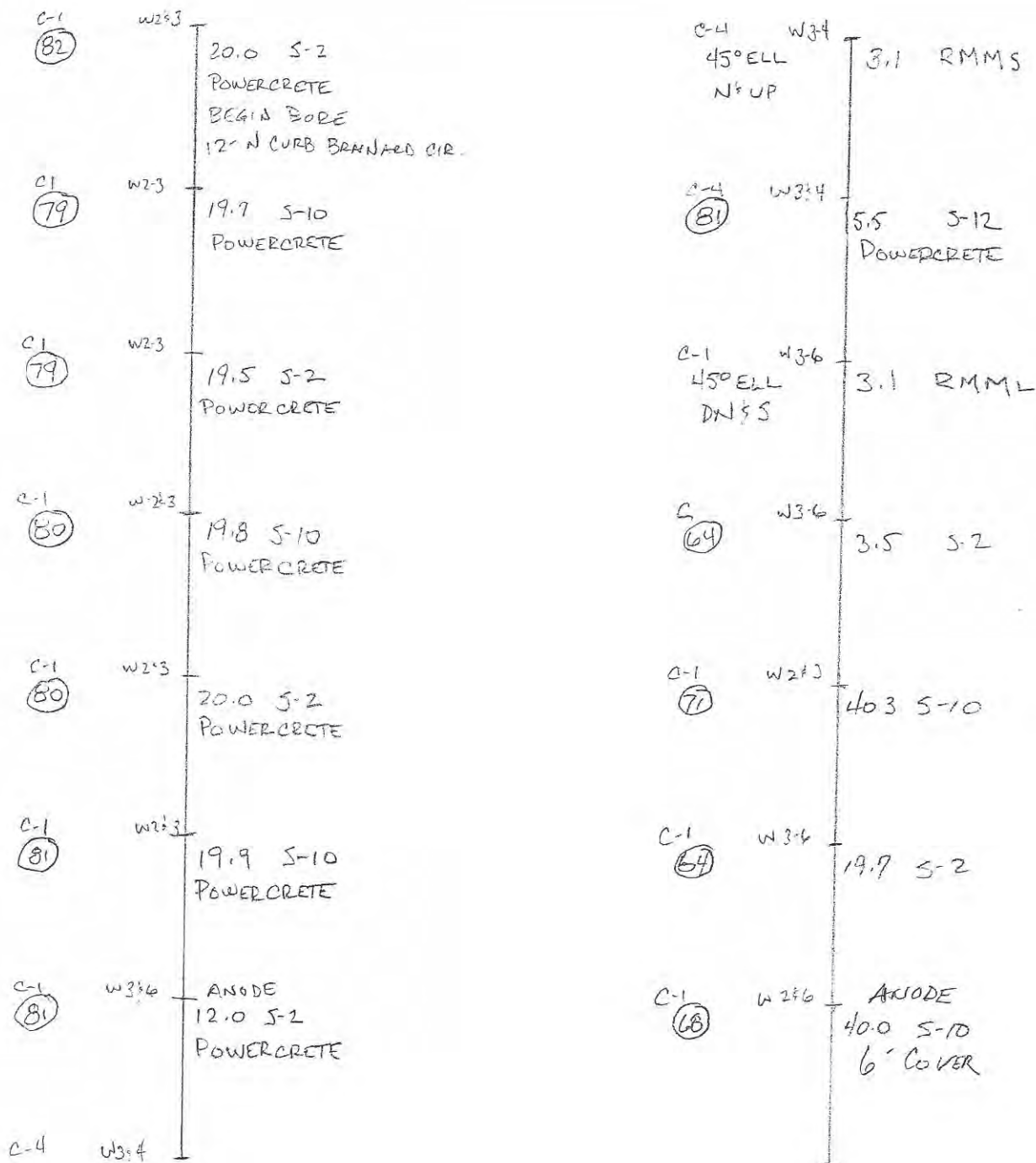
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| Document type<br><i>STRAIGHTLINE DRAWING</i> |             | Engineering Work Sheet |                            |  |
| Project<br><i>CNO 63683179</i>               | Doc. No.    | Rev. No.               | Sheet No.<br><i>6 of 9</i> |  |
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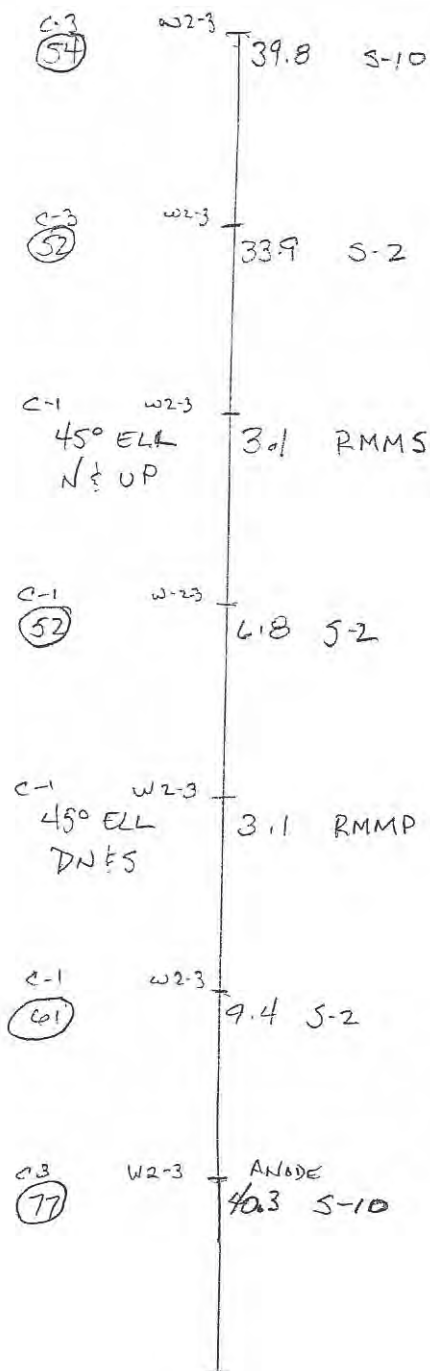
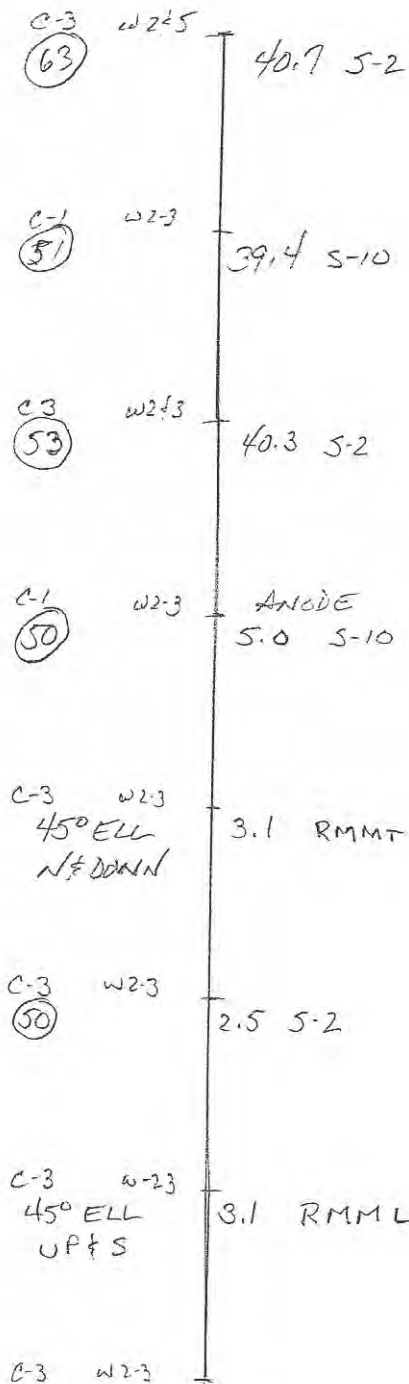
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Subject

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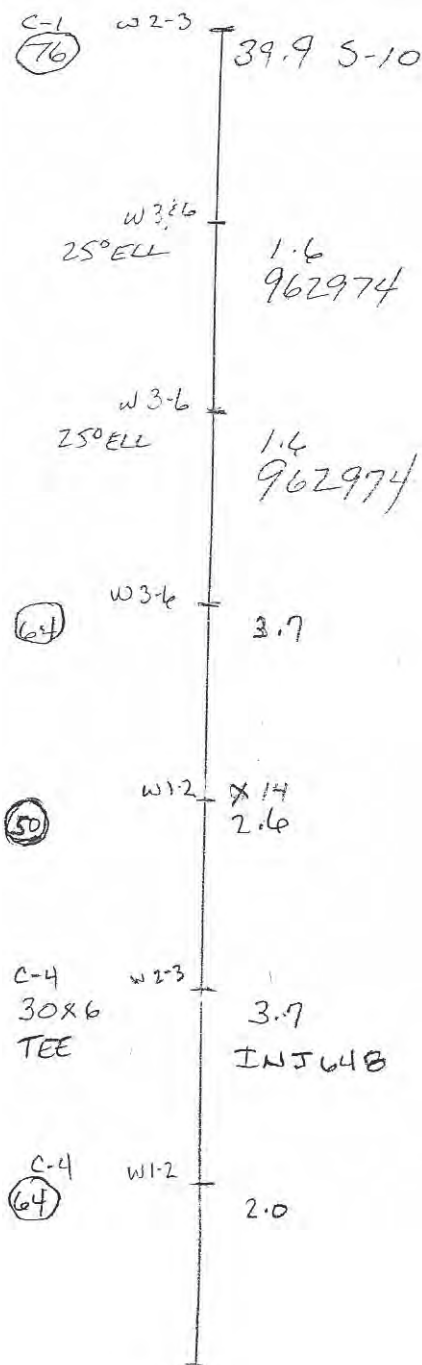
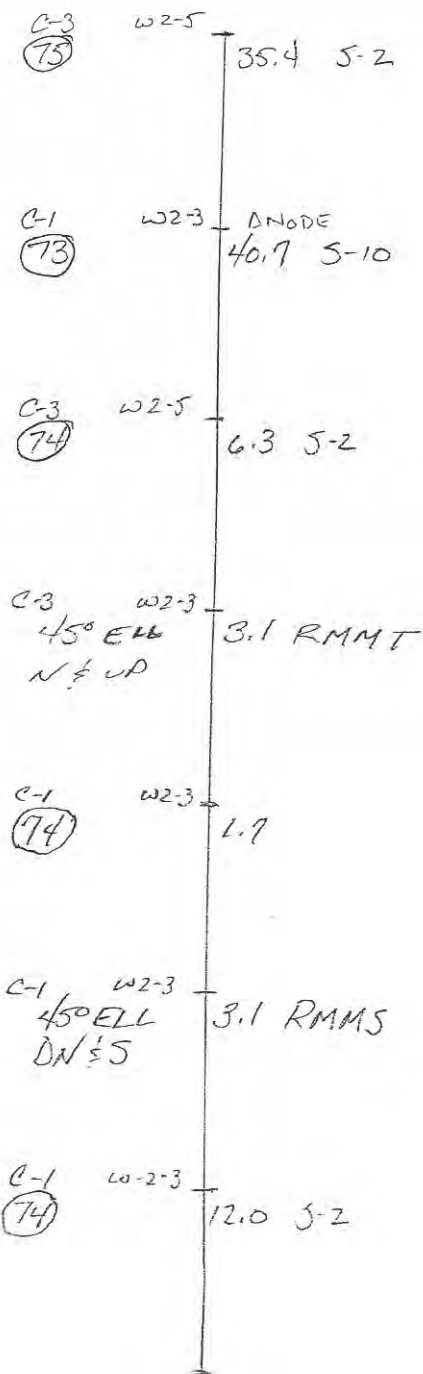
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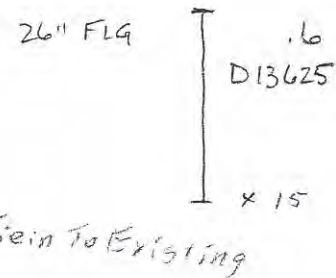
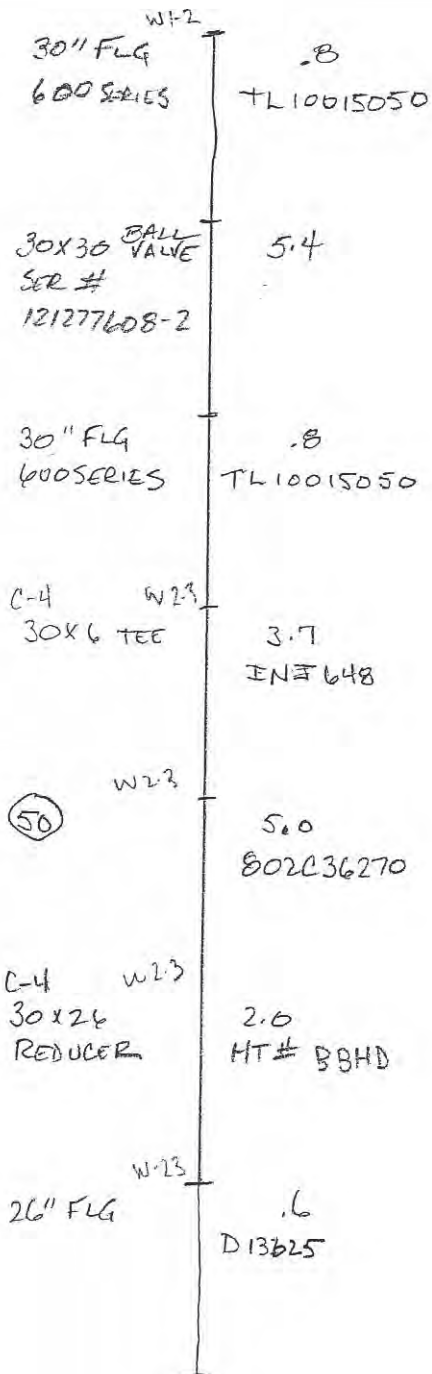
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**Exhibit 18**

**DomSafetyPol0836 - Use of Grinder Guards**

## Proper Handling of Incidents

### Employee Responsibility

Immediately report all company-related incidents to a member of management. This would include work related personal injuries, property damage and vehicle incidents.

### Management Responsibility

When an employee is injured, management is responsible for the following:

| Step | Action   |
|------|--|
| 1    | Ensuring the incident is investigated and that preliminary information is submitted before the end of the shift or as soon as practical.   |
| 2    | Accompanying the injured employee on the initial doctor and/or hospital visit resulting from a company-related incident. Accompany employees on subsequent visits as required.   |
| 3    | Notifying the local safety department of all employee injuries involving a doctor visit.   |
| 4    | Notifying the local safety department for all serious non-employee or public property damage incidents. The local safety department must notify the Dominion Corporate Safety Department, the Health and Productivity Department, and Corporate Risk Management. |
| 5    | Ensuring a Medical Care Authorization (Dominion Form No. 720152) is completed and submitted to the local safety department for each employee doctor visit.   |
| 6    | Ensuring that all information is submitted to the Worker's Compensation Third Party Administrator within three working days. (Those business units utilizing the RiskMaster system can accomplish this by entering the incident information into RiskMaster.)    |

### General Requirements

- A. Machine guards must remain in place except when removed for the purpose of inspection or repair. Guards must be reinstalled immediately following such inspection and repair.
- B. Mechanically secure items being drilled when using power drills or drill presses.
- C. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

### Grinding, Wire and Buffing Wheels

- A. Adjust tool rests to within 1/8 inch of the wheel.
- B. Upper protecting guards shall be adjusted to 1/4 inch of wheel on bench and pedestal grinders.
- C. No wheel adjustment shall be made when the wheel is in motion.
- D. Do not operate grinding wheels beyond their rated speed.
- E. Do not use the side of the wheel unless the wheel is designed for this type of grinding.
- F. Never leave grinding wheels running when not in use.
- G. Store grinding wheels, when removed from mounting, in a dry and temperature controlled location.
- H. Do not operate portable grinders with wheel diameters exceeding two inches without approved guards.

**Exhibit 19**

**Field Photos of Grinders Without Guards**



DB CPS 3M 4-16-19..14-16

DB CPS 3M 4-16-19..14-16

DB CPS 3M 4-16-19..14-16

MILS..PO-45

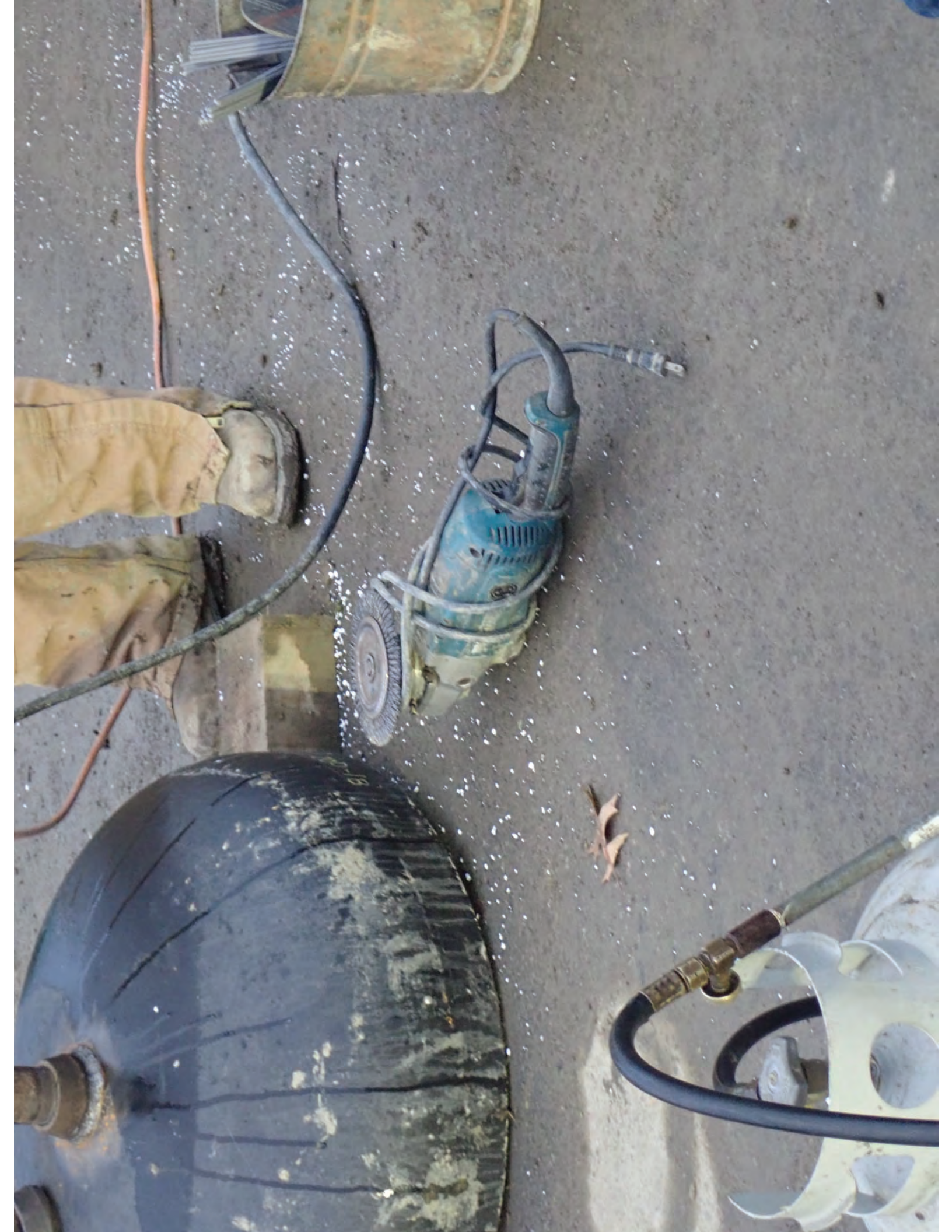
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**Exhibit 20**

**SOP 360-20 Prevention of Accidental Ignition of Natural Gas**

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## Standard Operating Procedure

**SECTION:** 360 / safety  
**SOP:** 360-20 / Prevention of Accidental Ignition of Natural Gas

**EFFECTIVE DATE:** 4/1/2000  
**REVISION DATE:** 12/9/2014  
**PREVIOUS REVIEW DATE:** 6/19/2018

### I. SCOPE

This procedure establishes the requirements for Company and regulatory compliance with the applicable pipeline safety regulations for the prevention of the accidental ignition of natural gas and outlines the measures to be taken to prevent such occurrences.

### II. PRECAUTIONARY MEASURES

#### A. Construction Activities

1. The atmosphere shall be tested for combustible gas before entering an excavation where there has been an incident involving blowing or venting gas. In the absence of testing, the excavation will always be assumed to contain a combustible mixture of natural gas.
2. No source of ignition shall be introduced into the work area where there is a potential for ignition prior to conducting atmospheric testing to assure that a combustible mixture of gas and air does not exist.
3. When natural gas is being vented into the open air, each potential source of ignition must be removed from the area, and a fire extinguisher, ready for immediate use, shall be positioned adjacent to and upwind from the work area. **Use vent stacks when necessary to divert natural gas away from the work area.** (Refer to **Safety SOP 360-07 Portable Fire Extinguishers.**)
4. Warning signs, barricades, guards or flaggers should be positioned where appropriate to protect workers and the public in areas where accidental ignition of natural gas is a possibility.
5. Safe work practices shall be employed to prevent arcing from static electricity on plastic pipelines when squeezing off or separating pipe. (Refer to the **Design and Construction Manual, Section 10, Installation of Plastic Pipe, 10.3 - Static Electricity/Squeeze Off.**)
6. Safe work practices should be employed to prevent arcing caused by cathodic protection systems on steel pipelines when separating pipe. (Refer to **Corrosion Control SOP 70-13 Test Lead Installation.**)
7. Secure in the closed position valves and controls that could accidentally introduce natural gas into a work area, and install locks to prevent accidental gas discharge. Tags are acceptable if equipment will not accept locking devices. (Refer to **Safety SOP 360-16 Lockout/Tagout.**)

#### B. Operation and Maintenance

1. During operating and maintenance procedures involving the venting or blowing of natural gas, or if the potential for these conditions exists, operating personnel shall take the appropriate steps necessary to minimize the danger of accidental ignition in any structure or area where the presence of gas constitutes a hazard of fire or explosion.
2. During operating and maintenance procedures inside structures designated as Class I., Div. I. or II., hazardous locations (including compressor station pumphouses and M&R buildings), the atmosphere shall be continuously monitored for presence of combustible gas when operating portable electric devices and tools not approved for hazardous locations. This includes (but is

not limited to) laptop computers, instrumentation and analysis equipment, cell phones, and electric-powered hand tools.

### C. General

1. No matches, lighters, equipment not approved for hazardous locations, or other sources of ignition are permitted in any areas where escaping gas might be expected. Smoking is strictly prohibited in designated "NO SMOKING" areas or anyplace where gas may be escaping or combustible mixtures are likely to accumulate. In situations where it is necessary to operate excavating equipment (backhoe), work should not begin before the atmosphere has been tested for combustible gas, and a fire watch is immediately available. Other potential sources of ignition include, but are not limited to:

- a. Internal combustion engines such as trucks, cars, non-essential digging equipment, pumps, generators, and welding equipment;
- b. Electrical equipment such as traffic light control boxes or other electrical switches and relays, hand tools, and plastic fusion apparatus; and
- c. Electrical devices, unless approved for Class I, Div. I. or II. hazardous locations, including cell phones, laptop computers, instrumentation and analysis equipment or non-intrinsically safe pagers. All Company personnel must carry intrinsically safe pagers. Cell phones must be turned off in blowing gas situations.

2. Operating personnel should use recognized industry safety practices and precautions when performing tasks that have the potential for unintended ignition of natural gas.

3. Whenever possible, reduce the pressure of the pipeline to minimize gas exposure when certain activities are being performed, such as hot tapping, stopper operations, blowdowns and high-pressure tie-ins.

4. Exercise extreme care and diligence to contain flammable liquids and heavier-than-air vapors blown from wells and main line drips.

5. Electrical tools, portable electric-powered devices, and lights should not be used where there is a hazard of combustible mixtures, gases, or dusts, unless approved for such hazards. Use only flashlights or instruments approved for combustible mixtures.

## III. WELDING

A. Gas or electric welding or cutting shall not be performed on pipe or pipe components that contain a combustible mixture of natural gas and air in the area of work.

1. The appropriate safety procedures shall be taken to evacuate the pipe or pipe components of any combustible mixtures.
2. Prior to cutting with flame or arc, grinding, and/or welding in or around gas-containing pipeline facilities, a thorough check shall be conducted with a combustible gas indicator (CGI) meter to determine the presence of a combustible gas mixture.
3. During work producing sparks or flames, an observer with a combustible gas indicator and fire extinguisher shall be present as a fire watch.
4. The combustible gas indicator shall be the type that displays the percent LEL (lower explosive limit).
5. Cutting or welding with flame or arc and grinding should begin only when the test results indicate a flammable vapor/gas concentration of less than 10 percent LEL.
6. Fire extinguishers shall be readily available during all cutting or welding operations.
7. A Hot Work Permit and associated guidelines shall be initiated prior to cutting or welding with flame or arc and grinding inside structures designated as Class I, Div. I. or II. hazardous locations (including compressor station pumphouses and M&R buildings).

(Refer to [Safety SOP 360-13 Hot Work Permit - Cutting and Welding](#).)

### B. Thermowelding

1. Thermoweld equipment should only be used in accordance with manufacturer's instructions.

2. Care should be taken to keep all persons and flammables away from the side of the mold in case of molten metal running out.
3. Before entering a trench or excavation to use thermoweld equipment on piping containing natural gas, a test should be conducted with a CGI.

#### **IV. PUMPING DRIPS**

- A. Open flames and other sources of ignition shall be kept away while drips are being pumped.
- B. Drip fluids containing flammable liquid shall be transported **only** in a DOT-approved container.
- C. Drip fluids shall be stored in a DOT-approved container and provided with overfill protection and spill containment.

(Refer to [Environmental SOP 120-21 Pipeline Fluids Collection](#) and [SOP 360-28 Transportation of Hazardous Materials](#).)

#### **Exceptions**

N/A

#### **Environmental**

#### **SOP 120-21 Pipeline Fluids Collection**

#### **Hazardous Materials Transportation Guide**

#### **Safety**

#### **360-07 Portable Fire Extinguishers**

#### **360-13 Hot Work Permit - Cutting and Welding**

#### **360-16 Lockout/Tagout**

#### **Life Saving Rule #1**

#### **Work Procedures**

#### **Future: Plastic Pipe Squeeze Offs**

#### **Future: Gas Blowdown**

#### **Future: Gas Siphoning**

#### **Charts, Graphs & Drawing, Lists**

#### **Forms**

## **Regulations**

49 CFR 192.751

29 CFR 1910

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**Exhibit 21**

**SOP 290-05 Safety Precautions and Environmental Protection**

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## Standard Operating Procedure

**SECTION:** 290 / Pressure Testing  
**SOP:** 290-05 / Safety Precautions and Environmental Protection

**EFFECTIVE DATE:** 4/1/2000  
**REVISION DATE:** 10/24/2011  
**PREVIOUS REVIEW DATE:** 6/22/2018

### I. SCOPE

This procedure provides precautionary measures for protecting employees, the general public, and the environment during pressure testing of pipelines and service lines.

### II. SAFETY PRECAUTIONS

A. Adequate safety precautions shall be taken during pressure testing to ensure safety for employees and the general public. The following are factors which may be considered in the interest of safety:

1. Locate personnel operating test equipment at a safe distance from the pipeline facilities under test.
2. Visually inspect temporary piping, closures and other equipment used in connection with the test, both prior to the application of the test pressure and at appropriate intervals during the test, to ensure soundness.
3. Provide supports or anchors, as required, to prevent excessive stress levels in the test piping and the piping under test.
4. Ensure all couplings, pipe and fittings used for the test are properly selected for their application and can withstand the pressures involved (test fittings/piping must be rated at or exceeds pressure rating for application). All connections and fittings shall be inspected and shall be in proper working condition.
5. Locate blowdown devices in a manner which will divert the gas and the test medium away from overhead electrical conductors.
6. Fill and purge facilities in a manner consistent with good purging principles, taking into consideration the following:
  - a. Compliance with the requirements set forth in **Purging Facilities SOP 330-01 Purging Pipelines**.
  - b. Minimizing entrapment of air or gas in the pipeline segment to be subjected to hydrostatic test by inserting a sphere or other suitable device ahead of the test medium while filling or by installing vents at high spots.
  - c. Wind velocity and direction.
  - d. Prevention of accidental ignition. (Refer to **Safety SOP 360-20 Prevention of Accidental Ignition of Natural Gas**.)
  - e. Consider notifying Dominion's dispatch, call center and/or gas control, as required for the particular project, as they may receive odor/excessive noise calls.
7. Maintaining communications between the supervisor in charge, pressure control and monitor stations, blowdown points and other stations or personnel responsible for various aspects of the work.
8. Maintaining ready availability of fire extinguishers, eye protection, ear protection devices, combustible gas indicators (CGI), oxygen deficiency indicators and other necessary equipment/PPE in the work area, as required.

B. Whenever test pressures result in a hoop stress that exceeds 50 percent of SMYS, all necessary steps shall be taken to remove unnecessary personnel from the work site until the pressure is reduced to or below the proposed maximum allowable operating

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Summary: Staff Report of Investigation Part 2 electronically filed by Mr. Thomas E Stikeleather on behalf of PUCO Staff.