



## Operation



### Check Alignment of Pipe

Bring the pipe ends together under sufficient force to overcome any pipe drag or friction in the system. Check for alignment and proper face off. If high/low (misalignment) exists, adjust by tightening the clamp on the high side and reface the pipe.

**NOTICE:** When clamping, do not over-tighten the clamp knobs because machine damage can result. Check to see if there is space between the upper and lower jaws. If the two jaws are touching, do not continue to tighten. Bring the pipe ends together under fusion pressure plus drag to check for slippage. If slippage occurs, return to **Loading Pipe into Machine**.

TX02477-3-30-05



PH01848-7-25-00

### Check Heater Temperature

**NOTICE:** Incorrect heating temperature can result in questionable fusion joints. Check heater plates periodically with a pyrometer and make necessary adjustments.

Check heater surface temperature.

Refer to the pipe manufacturer's recommendations for proper heater temperature.

**IMPORTANT:** The dial thermometer on the heater indicates internal temperature which varies from the actual surface temperature.

The dial thermometer can be used as reference once the surface temperature has been verified.



WR00077-4-16-93



PH02325-4-29-02

TX00375-6-12-13



## Inserting Heater



**DANGER** Heater is not explosion proof. Operation of heater in an explosive atmosphere without necessary safety precautions will result in serious injury or death.

If operating in an explosive atmosphere, heater should be brought up to temperature in a safe environment, then unplugged before entering the explosive atmosphere for fusion.

Use a clean dry lint free non-synthetic cloth to clean the butt fusion heater surfaces.

Verify heater temperature by noting the reading on the dial thermometer.

Insert heater between the pipe ends.

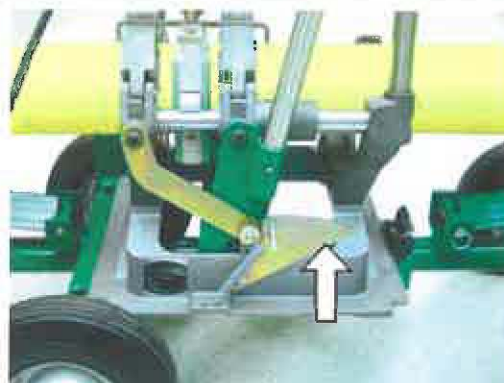


PH02331-4-29-02

TX00377-06-03-16

## Heating the Pipe

With heater in position between the pipe ends, snap pipe ends sharply against the heater to ensure alignment. Follow the pipe manufacturer's recommendations for heating time and pressure. Raise the locking cam into the engaged position while in the heating cycle.



PH01892-5-05-00

TX00842-1-8-96

## Fusing the Pipe

After the heating cycle is completed, remove the heater and quickly apply fusion force with the lever handle in accordance with the pipe manufacturer's recommended fusion procedure or appropriate joining standard. A torque wrench can be used when a specified Interfacial Pressure is required. Hold this force for at least 10 seconds.

After 10 seconds, the locking cams will assist by holding the jaw position during the cooling cycle.

**NOTICE:** Failure to follow pipe manufacturer's heating time, pressure and cooling time may result in a bad joint.



PH02327-4-29-02

TX04597-06-03-16



## Optional Use of Torque Wrench

When a specified Interfacial Pressure is required in the fusion procedure, a torque wrench can be used.

**IMPORTANT:** Use a torque wrench with the Pit Bull 14 place an adapter in the lever socket (Part # 410802). A 1/2" drive 100 ft-lb 15.0" torque wrench is required when using the torque wrench adapter. Using a torque wrench of a different length will result in different forces from the torque reading.

To calculate the proper torque reading see Section "Determine Fusion Force."

Add the torque required to overcome Drag (the force required to move the pipe at or near the point of fusion) to the torque reading to assure the proper joining force. This should be determined prior to inserting the heater.

**NOTICE:** Failure to follow pipe manufacturer's heating time, pressure and cooling time may result in a bad joint.



PH01805-7/25-00

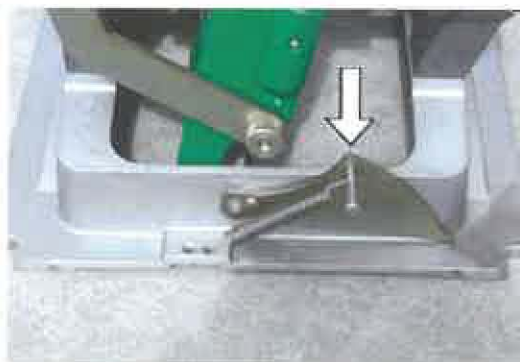


PH01805-7/25-00

TX02479-6-12-13

## Removing Pipe

After pipe has cooled sufficiently, apply closing force on the lever handle and push the locking cams down into the unlocked position. Unscrew the clamp knobs enough that they can be swiveled outward.



PH01805-7/25-00

TX00844-1-8-96



# Maintenance



## Preventative Maintenance

To insure optimum performance, the machine must be kept clean and well maintained.

With reasonable care, this machine will give years of service. Therefore, it is important that a regular schedule of preventive maintenance be kept.

Store machine inside, out of the weather, whenever possible.

TX00428-8-10-95



CD00142-11-2-94

## Cleaning the Machine

Clean the machine with a soap and water wash as needed. Remove the heater and facer from the spray area before cleaning.

TX00862-1-30-96



CD00178-5-3-96

## Clean and Lubricate Guide Rods

Remove oily dirt buildup from guide rods using WD-40® or similar solvent and wipe guide rods clean. Do not leave the cleaning agent on the guide rods.

Remove the 1/16" pipe plugs on each side of the moveable jaw. Lubricate guide rod bushings with SAE 10W-40 motor oil through the oil holes on the movable jaw. Replace the pipe plugs.

TX00863-1-30-96

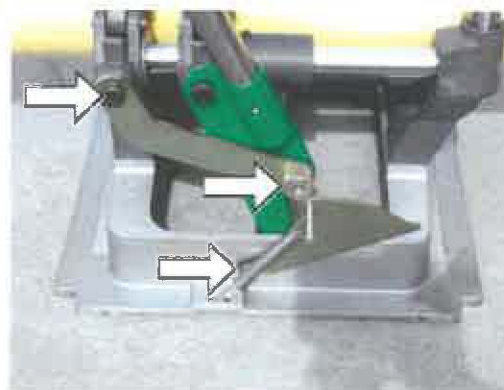


PH01865-7-25-00

## Pivot Pins and Shafts

Occasionally add a drop of oil to pivot pins and shafts.

TX00864-1-30-96



PH01864-7-25-00



# Maintenance



## Remove Dirt

Remove dirt from jaw and insert serrations and clamp knob eyebolts.

TX00865-1-30-96



PH01858-725-00

## Clean and Lubricate Bearings

All clamp knobs are equipped with thrust bearings to reduce friction and improve efficiency of the clamping screw. Keep these bearings clean by washing in kerosene or solvent. They should be lubricated with light machine oil. These bearings must be replaced if they become inoperative.

TX00866-1-30-96



PH01859-725-00

## Clean Eyebolt Threads

Keep the clamp knob eyebolt threads brushed clean with a soft bristle brush. The threads are coated with a black dry lubricant and do not require oiling.

TX01849-725-00



PH001859-725-00

## Fasteners Must Be Tight

Check all nuts, bolts, and snap rings to make certain they are secure and in place.

TX00437-9-13-94



PH01846-725-00



# Maintenance



## Installing Butt Fusion Heater Plates

The heater body of this assembly is not coated. Coated butt fusion heater plates are available for all butt fusion applications.

Butt fusion heater plates are installed with eight stainless steel cap screws.

Care should be taken to assure that the butt fusion heater plates are seated on the heater body, and that there is no foreign matter trapped between these surfaces.

**IMPORTANT:** Do not over tighten the screws.

The surface of the butt fusion heater plates are coated with an antistick coating.

TX00443-6-12-13



PH02323-4-29-07

## Clean Heater Surfaces



The heater is hot and will burn clothing and skin. Keep the heater in its insulated heater stand or frame when not in use, and use care when heating the pipe.

The butt fusion heater plate faces must be kept clean and free of any plastic build up or contamination. Plastic build up is best removed when the heater surfaces are at fusion temperature using a clean dry non-synthetic cloth. Synthetic cloths may melt to the heater surfaces under fusion temperature.

The surface of the butt fusion heater plates are coated with an antistick coating.

Before each fusion joint the heater surfaces must be wiped with a dry clean non-synthetic cloth.

**NOTICE:** Do not use any abrasive materials to clean heater surfaces. Use only a non-synthetic cloth that won't damage heater surfaces.

TX00440-04-18-16



PH02323-4-29-07

## Adjusting Heater Temperature

Turn knob to desired temperature. Measure the heater surface temperature with a pyrometer. Any variance must be corrected to the pyrometer reading.

Loosen setscrew in the knob. Turn knob to point to the same temperature as the pyrometer. Tighten setscrew in the knob.

Turn knob to desired temperature. Allow heater to stabilize at the new temperature (5 to 10 minutes) after adjusting.

The thermometer on the heater body indicates internal temperature and should be used as a reference only.

TX02005-3-13-02



PH02314-4-29-07



# Maintenance



## Heater Indicator Light

The heater has a green indicator light which will flash on and off. This indicates that the controller is operating normally. If the green indicator is not flashing then the controller may not be operating properly. If this occurs, disconnect power and have the heater repaired by a McElroy Authorized Service Center.

The heater has a red indicator light on the handle at the bottom of the temperature scale. When the heater is plugged in and preheating the light glows steadily until the set temperature is reached. The light then goes off and on slowly as the heater maintains temperature.

If the heater is not operating properly, the control will attempt to turn the heater off and the indicator light will flash rapidly. If this occurs, disconnect the power and take it to a McElroy Authorized Service Center for repair.



PH02314-4-29-02



PH02317-11-05-03

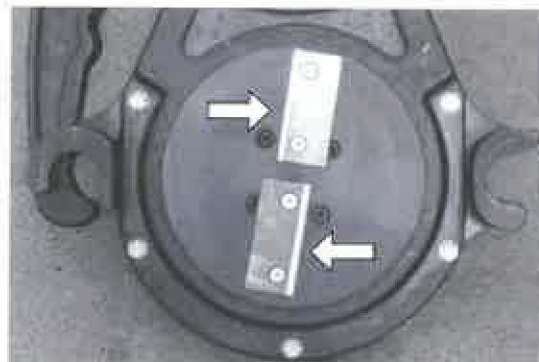
TX02213-09-16-03

## Facer and Blades

The facers are packed with a high temperature grease at assembly. The facer does not require repacking of grease.

Inspect the facer blades for damage and sharpness. If dullness or damage appears on one section of the blade, installing the blade on the opposite side of the blade holder will normally position a sharp edge in the facing zone. Chipped or dull blades must be replaced.

**NOTICE:** Never extend the blade beyond the inner or outer circumference of the facer.



PH01660-525-00

TX02473-3-29-05

## Facer Guides

To minimize friction on the guide rods, keep the guides clean using a clean dry cloth to wipe away debris.



PH01660-725-00

TX02480-3-30-05



## Removable Cam Locks

Should the cam locks become worn or damaged they can be replaced. The cams are attached to the shaft by a keyhole joint and are held by springs.

TX02728-6-5-07



PH01883-725-00



# Maintenance Checklist



## 2LC and Pit Bull 14 Fusion Machine Checklist

Item to Check	OK
<b>UNIT</b>	
Machine is clean	
Clamp knob bearings lubricated and move freely	
Movable jaw lubricated and moves freely	
Locking cam works properly	
Guide rods are not damaged	
Clamping jaw and insert grooves are clean	
Spring clips work properly	
All nuts and bolts are tight	
Lever handles are with unit	
<b>CHASSIS</b>	
Brake and unit lockdown clamps are adjusted properly	
Outrigger adjusting screws work freely	
All nuts and bolts are tight	
<b>FACER</b>	
Check cord, plug and switch	
Check for play in blade holder	
Facer does not wobble when trapped between jaws	
Blades are in good condition	
Latch handle locks onto guide rod freely	
Facer moves on guide rods without excessive force	
Facer is clean and free of grease on blade holder surface	
<b>HEATER</b>	
Cord and plug are in good condition	
Heater surface is clean and in good condition	
Thermometer is in good working order	
Surface temperature checked with pyrometer	

TX00875-6-12-13



# Determining Fusion Force



## Variable Definitions

O.D. = Outside Diameter  
 t = Wall Thickness  
 $\Pi$  = 3.1416  
 SDR = Standard Dimensional Ratio  
 IFP = Manufacturer's Recommended Interfacial Pressure

## Formulas

$$t = \frac{\text{O.D.}}{\text{SDR}}$$

$$\text{AREA} = (\text{O.D.} - t) \times t \times \Pi$$

$$\text{FORCE} = \text{AREA} \times \text{IFP}$$

$$\text{REQUIRED FORCE} = (\text{O.D.} - t) \times t \times \Pi \times \text{IFP} + \text{DRAG}$$

## Example

Pipe Size = 4" SDR 11

O.D. of Pipe = 4.5"

SDR of Pipe = 11

Recommended Interfacial Pressure = 75 PSI

Using a Model Pit Bull 14 Fusion Unit

$$t = \frac{\text{O.D.}}{\text{SDR}} = \frac{4.5}{11} = 0.409$$

$$\text{REQUIRED FORCE} = (\text{O.D.} - t) \times t \times \Pi \times \text{IFP} + \text{DRAG}$$

$$\text{REQUIRED FORCE} = (4.5 - .409) \times .409 \times 3.1416 \times 75 + \text{DRAG} = 394 + \text{DRAG}$$

### From Table:

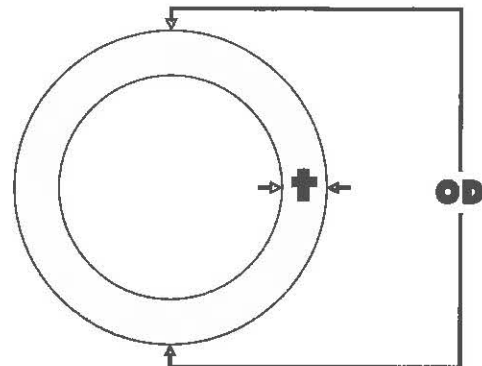
30 ft/lbs of Torque = 330 lbs Force

and

40 ft/lbs of Torque = 435 lbs Force

Interpolating between these two values give approximately 36 ft/ lbs Torque.

FUSION FORCE = 36 ft/lbs + Drag (measured in ft/lbs)



PH01885-725-00

This table is only valid when using a torque wrench and adapter used as shown in the picture above. A 1/2" drive 100 ft-lb 15.0" torque wrench with the torque wrench adapter. Using a torque wrench of a different length will result in different forces from the torque reading.

Torque Wrench Reading (Ft Lb)	2LC Jaw Axial Force (Lb)	Pit Bull 14 Jaw Axial Force (Lb)
10	70	115
20	135	215
30	200	330
40	260	435
50	320	545
60	400	660
70	480	780
80	550	915
90	635	1025
100	690	1140



# Specifications



## 2LC

### Specification:

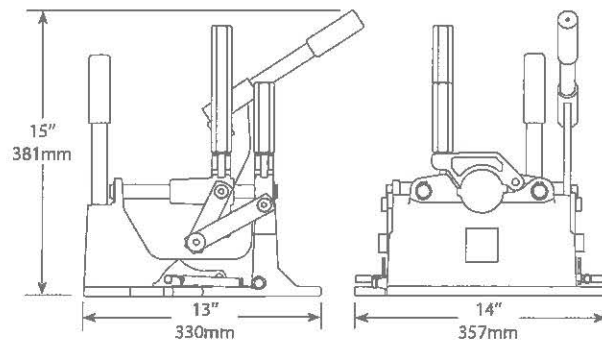
Designed for 1/2" CTS to 2" IPS pipe  
(20mm to 60mm)

### Dimensions:

Width: 14" (357mm)  
Length: 13" (330mm)  
Height: 15" (381mm)

Weight: 23 lbs. (10.4Kg)

Heater: 800 W, 120 VAC, 60 Hz  
(220 V, 50 Hz)



## Pit Bull 14

### Specifications:

Designed for 1" IPS to 4" DIPS pipe  
(32mm to 122mm)

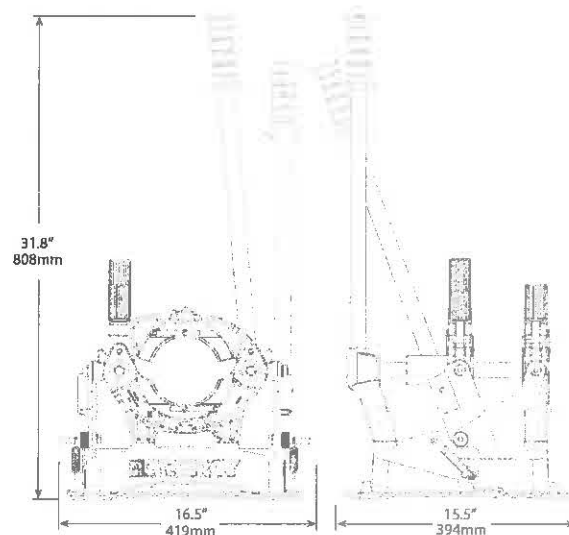
### Dimensions:

Width: 16.5" (419mm)  
Length: 15.5" (394mm)  
Height: 31.8" (808mm)

Weight: 37 lbs. (16.8Kg)

Heater: 1200 W, 120 VAC, 60 Hz  
(220 V, 50 Hz)

Facer: 7 Amps @ 120 VAC (Running)  
22 Amps @ 120 VAC (Stall)



## Pit Bull 14 Cart

### Dimensions:

Width: 23" (584mm)  
Length: 45" (1143mm)  
Height: 15" (381mm)

Weight: 76 lbs. (34.4Kg)



# Optional Accessories

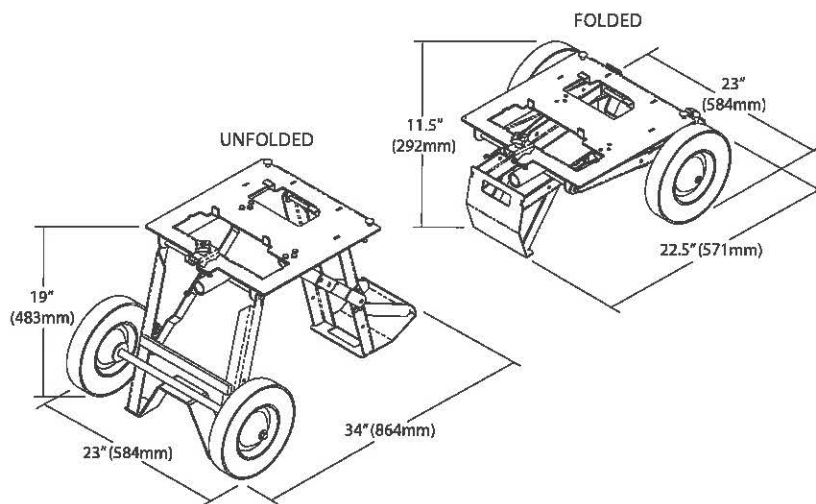


## Manual Fusion Machine Stand

The Manual Fusion Machine Stand makes working with the Pit Bull 14 and 2LC much easier. This stand expands to a comfortable operator level. The height corresponds to the McElroy pipe stands, PolyPorter® and PolyHorse® for easy pipe loading into the machine. When you are finished, it folds for easy storage and has wheels for transporting your machine to the next site.

### Features:

- Designed for use with the Pit Bull 14 & 2LC fusion machines
- Compatible with McElroy pipe stands, PolyHorse & PolyPorter
- Locks in both folded and open positions
- More comfortable working height
- Wheels for easy transportation
- Folds for easy storage



PHQ36276-8-08



PHQ36276-8-08

For more information, contact your distributor or visit [www.mcelroy.com](http://www.mcelroy.com).

TX02809-6-12-13

CD00768-7-8-08



## About this manual . . .

McElroy Manufacturing continually strives to give customers the best quality products available. This manual is printed with materials made for durable applications and harsh environments.

This manual is waterproof, tear resistant, grease resistant, abrasion resistant and the bonding quality of the printing ensures a readable, durable product.

The material does not contain any cellulose based materials and does not contribute to the harvesting of our forests, or ozone-depleting constituents. This manual can be safely disposed of in a landfill and will not leach into ground water.

TX001660-8-19-99



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**The leader by design.**

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P.O. Box 580550 Tulsa, Oklahoma 74158-0550, USA  
**[www.mcelroy.com](http://www.mcelroy.com)**



Paint and cleaning rags can be used for multiple painting, staining, cleaning and wiping tasks. Cut from all new white cotton knit to be absorbent and low lint.  
Los trapos para pintar y limpiar pueden utilizarse para múltiples tareas de limpieza, pintura, secado y tenido. Cortados de tejidos de algodón blanco nuevos para ser absorbentes y tener poca pelusa.

Washable and reusable. Machine wash and dry with like colors. Do not wash if used with paint or harsh cleaning solutions or chemicals. In case of use with harmful solutions, paint or chemicals, please dispose of properly.

Lavables y reutilizables. Lave en lavamapas y seque con colores similares. No lave si se utilizan con pintura, con químicos o con soluciones agresivas para limpieza. En caso de utilizarse con soluciones perjudiciales, pinturas o químicos, deseche adecuadamente.



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0 19736 99767 6





## Leak Survey Map

- Flame Ionization Survey
- Available Opening Survey
- Vegetation Survey

System: ORNG S3-001  
Leak record # 0  
Date: 2-5-16 Time: \_\_\_\_\_  
Performed by: steele

Remarks:

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# OHIO RURAL NATURAL GAS TEST REPORT

System Name: ELSWORTH RD <sup>ORNGS.</sup> System No: 3-001 Job Name: ELSWORTH RD  
Phase 1 W.O. #: 2015-301

Description of Area Tested: START AT 41°03'16"N, 80°55'19"W END: 41°02'44"N, 80°54'22"W

NORTH SIDE OF ELSWORTH RD 94' FROM C/L of Weaver Rd & ELSWORTH RD (EAST)

SOUTH/EAST 5473' ALONG ELSWORTH RD.

[PARCEL #22-005-0-034.00-0 STATION] [VALVE: #PIN 22012-0-001.03-0]

County: Monroe Twp: Berlin Date Installed(Begin): 2015 (End): 12-09-2015

Mainline Size(s) 4" OD: 4.5 Wall Thickness & Grade(Steel) NA

SDR(Plastic) 11 PE 3408 Total Feet 5473

Services Tested With Main (addresses) NA

Service Line Size(s) 1" Total Service Line Feet

Service Line Wall Thickness & Grade(Steel) SDR(Plastic) PE

Appurtenances: No. of valves 0 Type of valves 0 Lowest Pressure Rating NA

No. of flanges 0 Lowest Pressure Rating NA

No. of drips/filters 0 Lowest Pressure Rating NA

No. of fittings Lowest Pressure Rating

☐ Gauge ☒ Chart Recorder 0 to 500 PSIG Pressure Range ☐ Dead Weight

Instrumentation:

☐ Other Gauge/Recorder S.N. & Calib. Date:

Test Medium: ☐ Nitrogen ☒ Air ☐ Natural Gas ☐ Water ☐ Other

Test Date/Time Started: 12-09-2015 1:05 PM Test Type: ☒ Initial ☐ Retest

Test Date/Time Stopped: 12-10-2015 1:15 PM Duration: 24 HRS 10 MIN.

Test Pressure Start: 130 PSIG Test Pressure Stop: 130 PSIG

Reason for Line Loss: NA Corrective Measures Taken: NA

Was The Line Pigged? ☒ Y ☐ N

Comments:

Tested By: Jack McCormick Test Witnessed By: DAVE STANISH

Test Approved: ☒ Yes ☐ No By(manager or supervisor): John Cessna

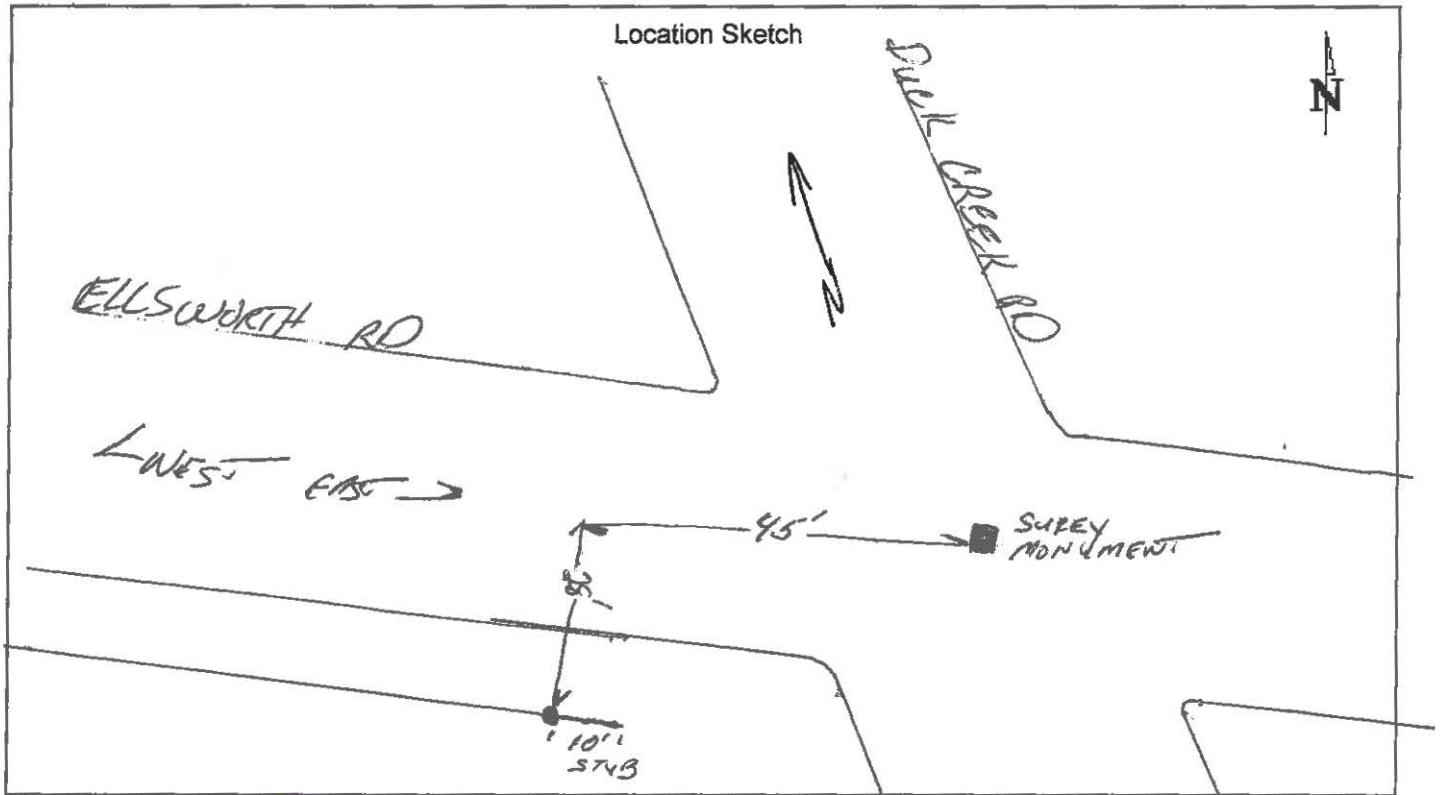
Required attachments to Test Report: ☐ Inventory List Copies ☐ As-Built/GPS note Copies

OD: 4.5  
Large sweeping

## Ohio Rural Natural Gas, Co-Op

## In-Line Valve Description

System: ORNG S-3-001 Installed Under WO #: 2015-301  
Location: ELLSWORTH RD MAHONING County Date Valve Installed: 12-9-2015  
Valve No.: \_\_\_\_\_ Valve Manufacturer: KENOTEST Valve Model: 4710  
Key Valve: ☐ Yes ☐ No Size: 4" Full Port Valve Type: (Ball) Plug Gate  
Designated Building? ☐ Yes ☐ No  
Valve Material: Plastic Iron Steel Other: \_\_\_\_\_  
Operator Type: Slotted 2" Square Wheel Gear Other: \_\_\_\_\_  
Connection: Fused Welded Compression Flanged Other: \_\_\_\_\_  
Installation: Above Ground Buried Vaulted Other: \_\_\_\_\_  
Valve Stationing from Nearest Intersection CL: 45'  
Valve Distance Off Road from Road CL: 28'  
Comments (offset from house wall, etc.) \_\_\_\_\_



Additional Comments: H.O. SDR 11 / PE 3408/4710 100MAOP  
OPERABLE JACK MCCORMICK

DAVE STANISH

By: \_\_\_\_\_

Date: 12-9-2015

## Critical Valve Inspection Report (§192.747, §192.181)

System Name Ellsworth Rd

[illegible]

Comments:

## Cobra Material Movement

Please fill in **ALL** of the **BOLD** area. If you don't know, ask your supervisor

WO # CPL 2013-04  
System # CPL 101-V-341  
Date \_\_\_\_\_  
Prepared By 500 MAOP  
Invoice # \_\_\_\_\_  
Date \_\_\_\_\_  
Vendor \_\_\_\_\_  
Entered By \_\_\_\_\_

County MAHONING Township BERLIN  
Location 14400 ELLSWORTH ROAD  
PIN# 22 005 0034 000

- **Material from Cobra Inventory 154-0**
- **Material to Cobra Inventory 154-0**
- **From WO to WO**

#22 WESTERN RESERVE  
SCHOOL DISTRICT

[illegible]

## Ohio Rural Natural Gas, Co-Op

## In-Line Valve Description

System: SYS-ORNG-3-001Installed Under WO #: 2015-301Location: ELLSWORTH RDDate Valve Installed: 12-9-2015Valve No.: "Valve Manufacturer: HERO TEST FULLPORT

Valve Model: \_\_\_\_\_

Key Valve: ☐ Yes ☐ No

Size: \_\_\_\_\_

Valve Type:

Ball

Plug

Gate

Designated

Building? ☐ Yes ☐ No

Valve Material:

☒ Plastic

Iron

Steel

Other: \_\_\_\_\_

Operator Type:

Slotted

☒ 2" Square

Wheel Gear

Other: \_\_\_\_\_

Connection:

☒ Fused

Welded

Compression

Flanged

Other: \_\_\_\_\_

Installation:

Above Ground

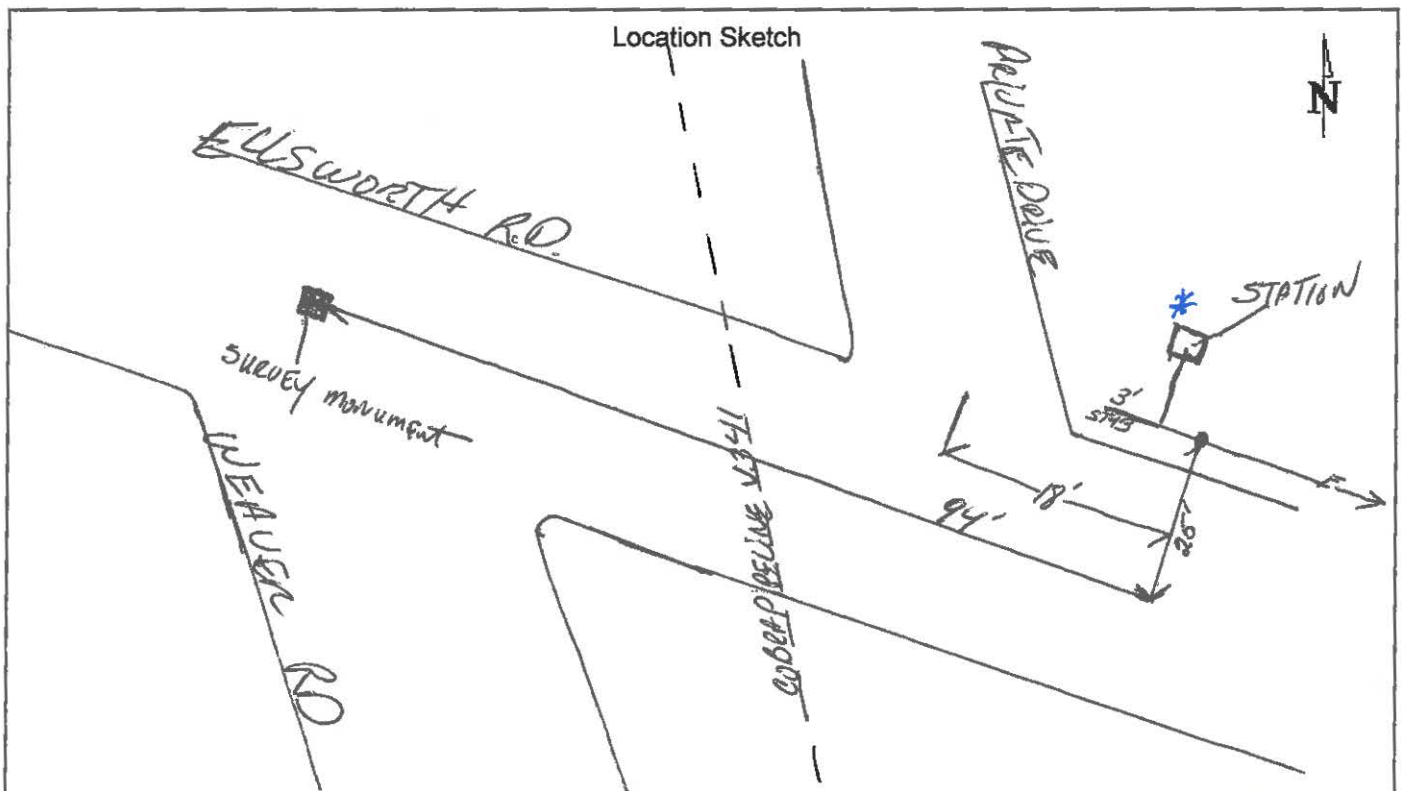
☒ Buried

Vaulted

Other: \_\_\_\_\_

Valve Stationing from Nearest Intersection CL: 94'Valve Distance Off Road from Road CL: 25'

Comments (offset from house wall, etc.) \_\_\_\_\_



Additional Comments

\*41°03'16"N, 80°55'19"WLINE V341, 10" STEEL, MADE 500'

By: \_\_\_\_\_

Date: 12-9-2015

CVS3-001

## Valve Inspection Record

Location of Inspection:	99'E 1/2 of WEAVER RD + ELLSWORTH RD	
Address:	14400 ELLSWORTH RD PERLIN CENTER Oh 44406	
Inspection Conducted By:	JACK MCCORMICK DAVE STANISH	
Date:	12/9/15	

CV 53-601-1

### Valve Information

Type Valve: 4" BALL VALVE	Critical Valve (Y/N): YES	Does Valve Operate (Y/N): YES
REMARKS: 4" KEROTEST VALVE 99044013 # 6192815		

Draw sketch of valve location, show distances to bldg walls, etc.,

[illegible]

UTILITY TECHNOLOGIES INTERNATIONAL CORPORATION

# OHIO RURAL NATURAL GAS SYSTEM TURN-ON REPORT

System Name: Ellsworth Rd

System No: ORNG

County: Mahoning

Township: Berlin

## Jurisdictional Telephone Numbers

Fire Department: BERLIN TWP.

Emergency: \_\_\_\_\_

Address: 5801 W. AKRON-CANFIELD

Business No: 330-547-2222

Law Enforcement: MAHONING COUNTY SHERIFF

Emergency: \_\_\_\_\_

Address: \_\_\_\_\_

Business No: 330-480-5000

## Turn-On Data

Date of Turn-On: 11/7/16

By: \_\_\_\_\_

Odorant Level: \_\_\_\_\_ %

By: \_\_\_\_\_

CGI Reading: 96% % Gas

By: Jack McCormick

Comments: CGI unit # 508050 / model 500 CALIBRATION MAY 20, 2015

ELLSWORTH Fire Dept. 6030 S. SALEM RD - WARREN RD  
330-538-2321

Berlin Twp. Fire Chief Rick Peppel 330-547-4887

3:00 Thursday Late Gup took off Early  
5473' of 4" LINE Purged

\*Attach maps or drawings of new facilities along with any other pertinent information

\*Comments should include purging details (e.g. Pipe Size, Time of Purge, Location(s) of Purge, Total CF Purged)

# TEST REPORT

Company: Cobra

System Name: V341 System No: \_\_\_\_\_ Job Name: \_\_\_\_\_ W.O. #: \_\_\_\_\_

Description of Area Tested: \_\_\_\_\_

Elsworth + weaver

County: M3 Haring Twp: Berlin Date Installed(Begin): 2-10-15 (End): 2-11-15

Mainline Size(s) \_\_\_\_\_ Wall Thickness & Grade(Steel) \_\_\_\_\_

SDR(Plastic) \_\_\_\_\_ PE \_\_\_\_\_ Total Feet \_\_\_\_\_

Services Tested With Main (addresses) \_\_\_\_\_

Service Line Size(s) \_\_\_\_\_ Total Service Line Feet \_\_\_\_\_

Service Line Wall Thickness & Grade(Steel) \_\_\_\_\_ SDR(Plastic) \_\_\_\_\_ PE \_\_\_\_\_

Appurtenances: No. of valves 1 Type of valves Ball Lowest Pressure Rating \_\_\_\_\_

No. of flanges \_\_\_\_\_ Lowest Pressure Rating \_\_\_\_\_

No. of drips/filters \_\_\_\_\_ Lowest Pressure Rating \_\_\_\_\_

No. of fittings \_\_\_\_\_ Lowest Pressure Rating \_\_\_\_\_

Instrumentation: ☐ Gauge ☒ Chart Recorder 0 to 1500 PSIG Pressure Range ☐ Dead Weight

☐ Other \_\_\_\_\_ Gauge/Recorder S.N.& Calib.Date: 8402028

Test Medium: ☒ Nitrogen ☐ Air ☐ Natural Gas ☐ Water ☐ Other

Test Date/Time Started: 2-10 Test Type: ☐ Initial ☐ Retest

Test Date/Time Stopped: 2-11 Duration: 16 hrs

Test Pressure Start: 825 PSIG Test Pressure Stop: 825 PSIG

Reason for Line Loss: \_\_\_\_\_ Corrective Measures Taken: \_\_\_\_\_

Was The Line Pigged? ☐ Y ☒ N

Comments: \_\_\_\_\_

Tested By: Strickland Test Witnessed By: Rodriguez

Test Approved: ☐ Yes ☐ No By(manager or supervisor): [Signature]

Required attachments to Test Report: ☐ Inventory List Copies ☐ As-Built/GPS note Copies

# Valve Inspection Record

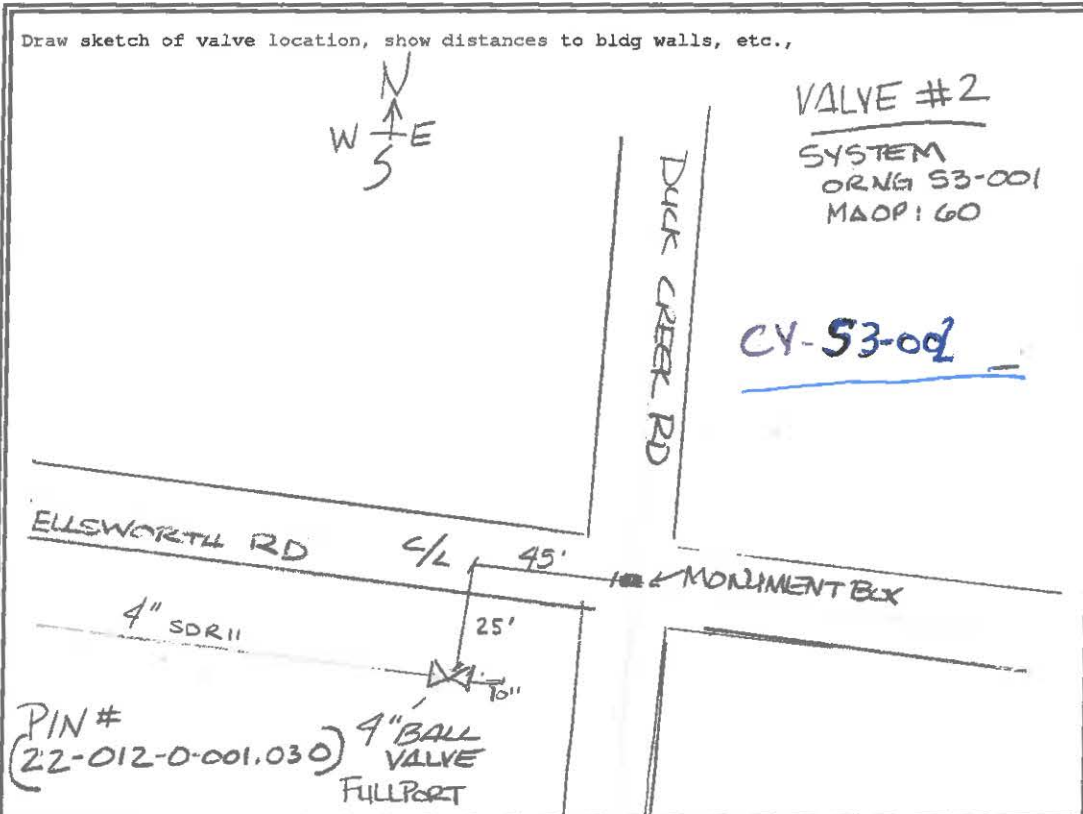
CV53-002

Location of Inspection:	45' W from C/L of DUCK CREEK ROAD + Ellsworth Rd
Address:	5150 S. DUCK CREEK ROAD, BERLIN CENTER OH 44601
Inspection Conducted By:	JACK MCCORMICK Dave Stanish
Date:	12/9/15

CV 53-001-2

## Valve Information

Type Valve:	4" BALL VALVE	Critical Valve (Y/N):	YES	Does Valve Operate (Y/N):	YES
REMARKS: 4" KEROTEST VALVE 99054011					



DATE REINSPECTED:	BY WHOM:	CONDITION OF VALVE:
12/9/15	MCCORMICK STANISH	GOOD 12-9-2015
02/15/16	D. STANISH	FEB 05/2016 Good



UTILITY TECHNOLOGIES INTERNATIONAL CORPORATION

# OHIO RURAL NATURAL GAS LINE PATROL REPORT (§192.721)

System Name: ELSWORTH Rd System No: ORUG153-001

Area covered: From: ELSWORTH  
To: S. OCKOBER Rd

System type: ☒ Distribution ☐ Transmission

Class location: ☐ 1 ☐ 2 ☒ 3 ☐ 4

Patrol frequency: ☒ 4 Times/yr ☐ 2 Times/yr ☐ Annual  
☐ 5 years ☐ Other \_\_\_\_\_

Method used to patrol: ☐ Truck ☒ Walk ☐ Other: \_\_\_\_\_

Were any leaks found: ☐ yes ☒ no

If yes, gas leak and repair report no: \_\_\_\_\_

Was there any construction along or near the pipeline system: ☐ yes ☒ no

If yes, give reference to nearest line marker or address: \_\_\_\_\_

Were there any unusual conditions found at any of the following places:

- |                                     |   |                                    |
|-------------------------------------|---|------------------------------------|
| <input type="checkbox"/> None Found | <input checked="" type="checkbox"/> Steams/Rivers | <input type="checkbox"/> Railroad  |
| <input type="checkbox"/> Highway    | <input type="checkbox"/> Foreign Pipeline         | <input type="checkbox"/> Buildings |

Other: \_\_\_\_\_

Are there any factors that could affect the present or future safety of this system: ☐ yes ☒ no

If yes, explain: \_\_\_\_\_

Are there missing line markers anywhere in the system?: ☐ yes ☒ no

If yes, give location: \_\_\_\_\_

If yes to any above question, to whom was it reported: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Performed By: D. Stenish Date: 2-5-16

# Completion Sketches

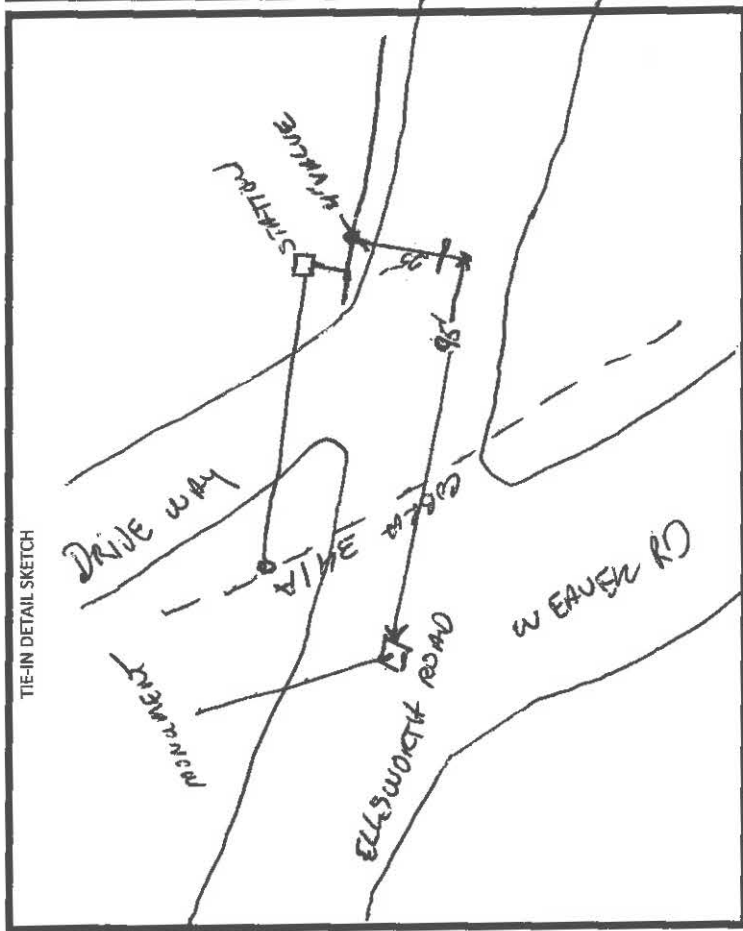
Project Name

0

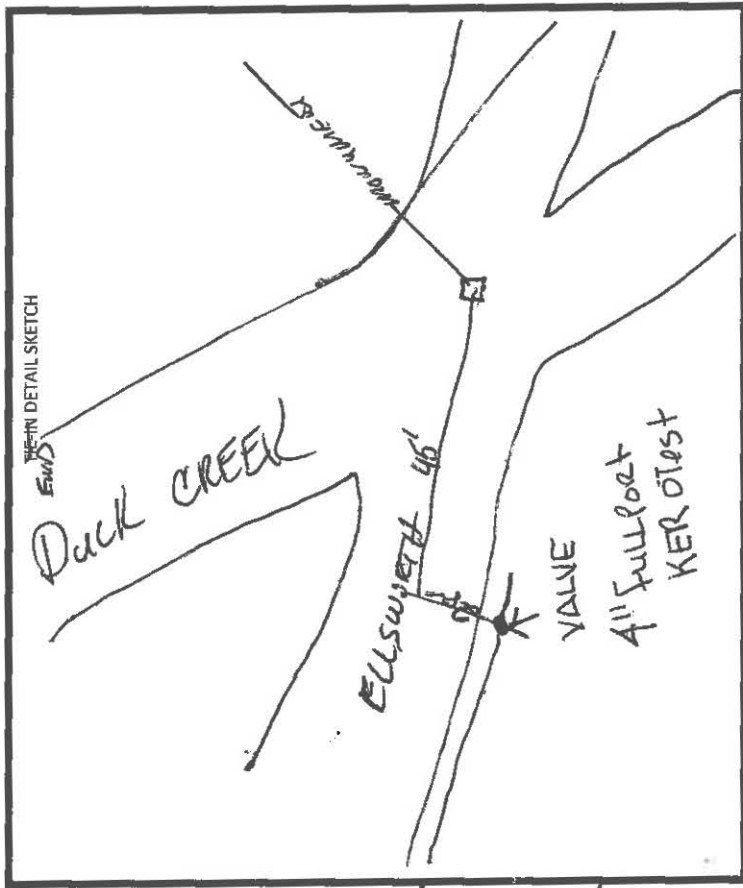
WO Number

0

TIE-IN DETAIL SKETCH



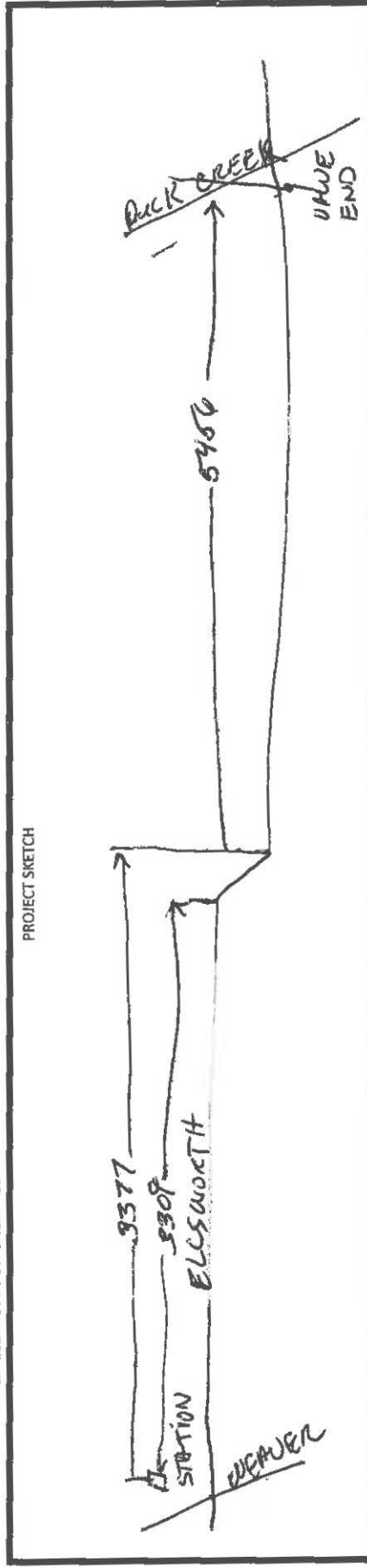
WAVE DETAIL SKETCH



Indicate North on Sketches

Date

PROJECT SKETCH



F35

Page 2

Keith,

In response to your questions dated March 18, 2016.

Ellsworth Road System: ORNG3-001 System turn on: 01/07/2016

Material: 4" HDSDR 11 Dura-Line Wall Thickness .409; Density.960

MAOP: 60#

- 1) Ellsworth TBS M&R Station: I do not have a chart for the presser test on the station. *No welds were x-rayed from line V-341 to Plastic pipe.*  
Extension: 02/11/15 Steel line was pressure tested to Bottle: 16 Hrs.  
pressure start: 825 PSIG/ Stop 825PSIG. Test Medium: Nitrogen
- 2) Employees who worked on the M&R Station & Steel line (extension)  
Thomas Roland, Dale Strickland. 02/2015
- 3) The Pressure of line V341 : MAOP 500 # 10" Steel
- 4) No Pressure test records for the M&R station. Station was built in shop.
- 5) Pressure test on the 4" HDPE SDR11 Dura-Line: Start 12/09/2015@ 1:05 PM  
– 12/10/2015 @ 1:15 PM Test Pressure: 130 PSIG / Stop 130 PSIG. Test  
Medium: Air.
- 6) Regulator Station inventory record card included.
- 7) System turn on date: 01/07/16 Time: 3:00 Thursday CGI Reading 96% CGI  
Unit: #502050.
- 8) MAOP 60#: paperwork included.

ASTM Grade  
A307 = B

# Material Movement

Please fill in ALL of the BOLD area. If you don't know, ask your supervisor

WO # M1-2015  
System # S3-001  
Date FEB 11 2015  
Prepared By \_\_\_\_\_  
Invoice # REG. Station  
Date \_\_\_\_\_  
Vendor \_\_\_\_\_  
Entered By \_\_\_\_\_

County Trumbull Township Newton  
Location ELLSWORTH Rd

- ☐ ORNG  
☐ 7001 CENTER ST.  
☐

Estimated	Installed	Returned	ID#	Detailed Item Description	PSIG
1	1			REG 627	2000#
1	1			REG 289 H	2000#
				FLANGE BOLTS PK 2"	
				NIPPLE 4x2 STEEL sch 80	
				FLANGE 4" KLEERBAND	
				Steel Pipe 4" sch 40 BK	
11A (2)	(2)			7" Mx 2-3/8" Tubing Head	1500#
				WELD ELBOW 2" 90° sch 80	
				Union 2" Threaded A-105	3000#
				BALON 2" VALVE	1500#
				PLUG Steel sch 80	
				NIPPLE 1x3 sch 80 BLK	
				WELD ELBOW 45° 4" sch 80	
				ELBOW 4" MAL 90°	
				Weld Reducer 3x2	
				Weld Reducer 4x3	
				FLANGE 4" WELD	300#
				FLANGE 2" WELD	300#
				NIPPLE 2x3-1/2 sch 80	3655#
				NIPPLE 2"x 4-1/5" sch 80	3655#

1" sch 80 weld end 1790 psi  
threaded 950

## REGULATOR STATION INVENTORY RECORD CARD

Ohio Rural Natural Gas Co-Op

REGULATOR STATION NO. 3-001PAGE 1 OF 1STATION NAME: EllsworthSTATION TYPE P.O.D

(Rev 3/15)

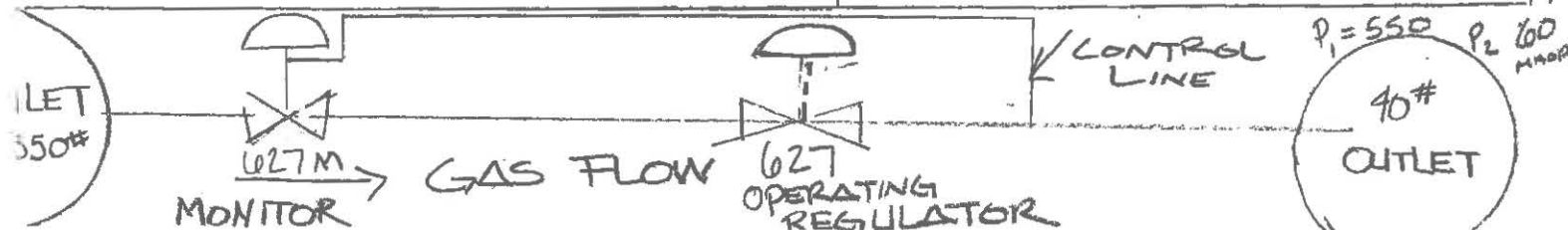
STATE Ohio COUNTY MAHoning MUNICIPALITY/TOWNSHIP BERLIN MAP NO (S).LOCATION PJ22-0050-034.00-0 GPS: 41° 03' 16" N, 80° 55' 19" WPROPERTY INFO: ☐ FENCED ☐ NO ENCLOSURE ☐ BUILDING

REGULATORS		REGULATOR IDENT 1	REGULATOR IDENT 2	REGULATOR IDENT 3	REGULATOR IDENT 4
	Manufacturer & Type	Fisher <sup>627</sup>	Fisher <sup>627</sup>		
	Regulator Serial number	R053363140	R053409460		
	Function of Regulator	MONITOR	CONTROL		
	Design Pressure of Body	1500 PSIG	1500 PSIG		
	Design Pressure as Assembled	45 PSIG	40 PSIG		
	Screw or Flange: ANSI Class	CL 600	CL 600		
	Size	2"	2"		
	Size of Valves (orifices)	3/8"	3/8"		
	Type Valves				
CONTROL SYSTEM	Type Seals: Hard or Soft	NITRILE (NBR)	NITRILE (NBR)		
	Diaphragm Case Size	7.62/194			
	Type Controls	SPRING BLOCKING THROAT STEM SEAL	PITOT TUBE		
	Spring color & Range	BLUE	BLUE		
OPER. PRESS RANGES	Loading Pressure Range				
	Control Line tap: Location	1/4 NPT DOWN STREAM	NA		
	Inlet Maximum	1000	1000		
	Inlet Minimum				
SAFETY DEVICES	Outlet Maximum	80 PSIG	80 PSIG		
	Outlet Minimum (Normal)	35 PSIG	35 PSIG		
	Type: Excluding monitors				
SAFETY DEVICES	Size				
	Relief Pressure				

BY-PASS Size:

## PIPING SYSTEM

	MAOP	MOP	
Station Inlet Line	500#		4" STEEL 188 wt x 42 DuraBand 2" STEEL 154 wt x 42 DuraBand
Station Outlet Line	40#		4" IPS SDR11 - DURA-LINE 60850 PE4710
Heater: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	MAKE: - NA -		TYPE: - NA - BTU INPUT RATING: NA-
Gas cleaner: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MAKE: PARKER JNBE		TYPE: Coalescing FILTER VESSEL RATING: 5000 PSIG
COMPILED BY:			DATE:



# STEEL WELDER QUALIFICATION

Company: COBRA

Welder's Name: THOMAS ROWLAND

Social Security No: NA

Company: BIG OATS

Date Welded: \_\_\_\_\_

Qualification Type ☐ New Qualification ☒ Requalification ☒ Six Month Verification

## Procedure

- |   |  |
|---|--|
| <input type="checkbox"/> Horizontal Fixed Position Butt Weld              | <input type="checkbox"/> Branch Connection/Fillet Weld |
| <input type="checkbox"/> Horizontal to 45-degree fixed position Butt Weld | <input type="checkbox"/> Hot Tap                       |
| <input type="checkbox"/> Vertical fixed position Butt Weld                | <input type="checkbox"/> Other _____                   |

## Pipe Data

Size: 2" - 12"

Type: STEEL PIPE

Grade: X65

Wall Thickness: 0.188 to 0.750 INCH

## Testing Data

Test Type (attach test results): ☐ Non Destructive ☐ Destructive

Tested By: UTI

Date Tested: \_\_\_\_/\_\_\_\_/\_\_\_\_

Test Weld: ☒ Approved ☒ Card Issued - Valid Through

05/16/06

☐ Not Approved

## Approved Qualification

Class: ☐ A ☐ B ☐ Hot Tap

Restrictions: \_\_\_\_\_

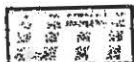
Comments: \_\_\_\_\_

Approved: \_\_\_\_\_

CARDHOLDER IS QUALIFIED TO WELD STEEL PIPE AS FOLLOWS:

Process SMAW  
Position 6G  
Diameter Range 2 to 12 inch  
Wall Thickness Range 0.188 to 0.750 inch  
Maximum Grade X65  
Further Qualification

WELDING INSPECTOR	DATE OF LAST 6 MONTH TEST	TYPE OF TEST
John Lucas	2-25-15	



### WELDING / OPERATOR QUALIFICATION

Soc. Sec. No. N/A

Name Thomas Rowland

Co. Name Big Oats

Issue Date 5/16/06 Issued By Steve Cremean

This card certifies that this individual has been tested and qualified according to the requirements of D.O.T. 49 CFR Part 192.227 and Part 192.229 and applicable UT welding procedures. In addition, individual has reviewed abnormal operating conditions and how to properly react.

Bearer may not weld unless one acceptable test has been made within the preceding six months for each process listed.

System#: ORNG-3-001Work Order Number 2015.301

Date \_\_\_\_\_

Project Name or Address ETISWORTH RD.

## Material List-DIMP



Starting Point: \_\_\_\_\_

(Distance from  
nearest intersection) \_\_\_\_\_

Soil Type

Sand

Loam

Clay

Rock

Slurry

Main Line or Service Line

Install Method

Trench

Bore

Insert

HDD

(Circle)

(Circle)

(Circle)

WFI? - Withdrawl From Inventory?

Item	Station Start at 0+00	C/L Distance	Item Number	Pipe Footage	WFI?	Manufacturer	Part#	Type/Size	Mfg Date	Lot Number	SDR	PE Type
1						CENTRAL	316204	4" coupling ✓	1-14	006791		3408
2				269		DURALINE	GDB50	4" PIPE	1-10-15	D0334024231B	DR11	3408
3				209		KRISTECH		8 GA TRACER WIRE				
4						CENTRAL	316204	4" Coupling ✓	11-17-15	006704		3408
5				205		DURALINE	GDB50	4" PIPE	1-10-15	D0334024231B	DR11	3408
6				205		KRISTECH		8 GA TRACER WIRE				
7						CENTRAL	848711	4" Coupling ✓	1-5-15	09032		3408
8				80		DURALINE	GDB50	4" PIPE	1-10-15	D0334024231B	DR11	3408
9				80		KRISTECH		8 GA TRACER WIRE				
10						CENTRAL	848711	4" Coupling ✓		09088		3408
11				120		DURALINE	GDB50	4" PIPE	1-10-15	D0334024231B	DR11	3408
12				306		DURALINE	GDB50	4" PIPE	11-2-15	D34Y36-EB	DR11	3408
13				424		KRISTECH		8 GA TRACER WIRE				
14						CENTRAL	316204	4" Coupling ✓	1-14	006787		3408
15				414		DURALINE	GDB50	4" PIPE	11-2-15	D34Y36-EB	DR11	3408
16				414		KRISTECH		8 GA TRACER WIRE				
17						CENTRAL	316204	4" Coupling ✓	1-14	006788		3408
18				417		DURALINE	GDB50	4" PIPE	11-2-15	D34Y36-EB		3408
19				417		KRISTECH		8 GA TRACER WIRE				
20						CENTRAL	316204	4" Coupling ✓	1-14	006789		3408
21				575		DURALINE	GDB50	4" PIPE	11-2-15	D34Y36-EA		3408
22				575		KRISTECH		8 GA TRACER WIRE				
23						CENTRAL	316204	4" Coupling ✓	1-14	006889		3408
24				217		DURALINE	GDB50	4" PIPE	11-2-15	D34Y36-EA		3408

Note: Footage Column is for wire and pipe only. Since each item could have a unique Mfg Date and Lot Number, each item MUST have its own entry line

F35

502" 64 PSI

BAD RADIUS  
50

OD 4.5

11x4.5 49.5

8 Couplings

102

**Inventory Ticket No.**

**Odor/Gas L&R Reference No.**

**Project Name or Address**

Date 2/10-2/11-2025 WO Number

**Starting Point:**

**(Distance from  
nearest intersection)**

Elsworth + Wadner

**Soil Type**

## Sand

## Loam

## Clay

## Rock

### Slurry

**Main Line or Service Line**

### Install Method

**Trench**

**Bore**

**Insert**

HDD

**(Circle)**

**(Circle)**

**(Circle)**

**WFI? - Withdrawl From Inventory?**

[illegible]

**Note: Footage Column is for wire and pipe only. Since each item could have a unique Mfg Date and Lot Number, each item MUST have its own entry line**

System#: \_\_\_\_\_  
 Work Order Number \_\_\_\_\_  
 Date \_\_\_\_\_  
 Project Name or Address \_\_\_\_\_

# Material List-DIMP



Starting Point: \_\_\_\_\_  
 (Distance from  
 nearest intersection) \_\_\_\_\_

Soil Type Sand Loam Clay Rock Slurry Main Line or Service Line Install Method Trench Bore Insert HDD  
 (Circle) (Circle) (Circle) WFI? - Withdrawl From Inventory?

Item	Station Start at 0+00	C/L Distance	Item Number	Pipe Footage	WFI?	Manufacturer	Part#	Type/Size	Mfg Date	Lot Number	SDR	PE Type
1						ELSTER	75905	2" RISEX	10-6-15	ELM061076-FBR13LP	11	2708
2				14'		DRISCOPEX		2" PIPE	11-17-13	<del>811</del> 902-15-L-50211		2406
3				14'		KRISTEL		86" TRACE WIRE				
4						CENTRAL	6910625	2x4 REPAIR	10-15	358055	11	2708
5						CENTRAL	6911524	45° ELBOW	7-15	353644	13.5	2708
6						CENTRAL	09028	4" CI	5-15	343711		3408
7						CENTRAL	6912160	4" TEE	12-08	147431	11.5	2406
8				18"		DRISCOPEX		4" PIPE 6500	11-17-13	B2-019	11	2404
9				"		CENTRAL	6910624	CAP 4"	10-14	336378	13.5	2406
10				18"		DRISCOPEX		PIPE " 6500	11-17-13	B2-014	11	2406
11						KRISTEL	99044013	VALVE		55046192815	13.5	2708
12						CENTRAL	10000340	CALLOR 4"	5-15	848711		3407
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												

Note: Footage Column is for wire and pipe only. Since each item could have a unique Mfg Date and Lot Number, each item MUST have its own entry line  
 F35

System#: ORNG.3-001Work Order Number 2015.301Date 12-23-2015Project Name or Address ELLSWORTH RD

## Material List-DIMP



Starting Point: \_\_\_\_\_

(Distance from

nearest intersection) \_\_\_\_\_

Soil Type

Sand

Loam

Clay

Rock

Slurry

Main Line or Service Line

Install Method

Trench

Bore

Insert

HDD

(Circle)

(Circle)

(Circle)

WFI? - Withdrawl From Inventory?

Item	Station Start at 0+00	C/L Distance	Item Number	Pipe Footage	WFI?	Manufacturer	Part#	Type/Size	Mfg Date	Lot Number	SDR	PE Type
1				217		KRISTECH		8" A TRACEWIRE				
2						KENOTEST	99654011	4" FULLPORT	<del>5-15</del>	<del>848711</del>	<del>4710</del>	4710
3						CENTRAL		4" Coupling	5-15	848711		3408
4												
5												
6												
7												
8												
9												
10												
11												
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23												
24												

ELLSworth

Note: Footage Column is for wire and pipe only. Since each item could have a unique Mfg Date and Lot Number, each item MUST have its own entry line

F35

MAOP 100 VALVE  
MAOP 200 COUPLING  
MAOP P.PE

1 comp

2042

# Ellsworth / Duck Creek Road

2" Threaded 100#  
Coalescing Filter  
(Capacity 20 MCFH@45 PSIG)

~~1" Methanol Drip Port  
Rotate behind setting~~

2" Fisher 627 with 3/8" Orifice  
35-80# Blue Spring set at 40#

2" Fisher 627M with 3/8" Orifice  
35-80 Red Spring set at 45#

Regulator Heater Box

41"

2" Baylon locking  
bypass valve

2" Flange Insulating Kit

2" topworks

Spool for 2" 3M  
175 Meter

4x2" Reducer

4" ANSI 150  
Outlet Flange

4"

MAOP  
Blow Off

All Buried fittings  
must be welded. Test  
pressure is 1080  
PSIG. Use .218  
Heavy Wall 2" Pipe

Rotate Blow Off  
to avoid conflict  
with bypass valve

ANSI 300  
Drip

Orwell Trumbull Pipeline  
3511 Lost Nations Rd Suite 201  
Willoughby, OH 44094  
(440) 255-1945

Standard 2" Spelman TBS

720# Inlet MAOP  
60# Outlet MAOP

13 MCFH Capacity  
At 125# Inlet

Date 3/27/12  
S.W. 1000

# OHIO RURAL NATURAL GAS, CO-OP

## MAOP CALCULATION

### SHEET

System Name: ELLSWORTH ROAD Phase 1

System No: ORNG S3-001

Description Of Area Under Consideration: FARM TAP ON North Side of ELLSWORTH Rd  
94' FROM <sup>(SE)</sup> SURVEY Monument C/ WEAVER + ELLSWORTH Rd - 5500'  
SE ALONG ELLSWORTH Rd. to South Duck Creek Rd.

Class Location Design: 3

Design Factor: .5

Pipe Used (describe)	Design Pressure (PSIG)
4" PE SDR 11 3408/4710	100
2" STEEL P.I.P.E SCH 40	650#
4" PE SDR 13.5 2406/2708	64
4" STEEL PIPE SCH 40 Working Pressure	660#
SERVICE LINE 1" SDR 11.5 PE 2406	64

Test Pressure (lowest) (750# STEEL) (90# PE)

Valves (lowest rated) 100#

Flanges (lowest rated) 300#

Fittings (lowest rated) 80#

Separator (lowest rated) 5000#

Drip (lowest rated) 5000#

Filter (lowest rated) 1500#

Regulator (lowest rated) 1500#

Relief Valve (lowest rated) 2500#

Meter (lowest rated) 85#

Other Appurtenances (describe)	Design Pressure (PSIG)
REGULATOR 1027m + 1027 FISHER	1500#
PARKER Coalescing FILTER JUBE	5000#
FLANGE 4" KLEER BAND	2000#

Steel Welding: ☐ API 1104 ☐ Appendix C ☒ Section IX ☐ n/a

Comments: POSITIVE shut-off drip / ELSTER RISER 125#

1" Locking VALVES 1050# MULLER

4"x1" TAP TEE 80# WITH EFV

MAOP OF TRANSMISSION SYSTEM 500#

Approved MAOP: 60# By: John Cessna Date: DEC 14, 2015

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**8/30/2016 5:29:09 PM**

**in**

**Case No(s). 16-1578-GA-COI**

Summary: Testimony of Darryl Knight on behalf of Ohio Rural Natural Gas Co-op (Part 10-Exhibits Continued) electronically filed by Mr. Richard R Parsons on behalf of Ohio Rural Natural Gas Co-op