

August 31, 2018

SENT VIA FEDERAL EXPRESS

Mr. Chip Crockett Chief, Industrial Hazardous Waste Branch Land Division, ADEM 1400 Coliseum Blvd. Montgomery, Alabama 36110

RE: Construction Completion Report for Upgrades to WMA II and SWMU 1

Groundwater Extraction Systems Solutia Inc., Anniston, Alabama EPA RCRA ID #ALD004019048

Dear Mr. Crockett:

On behalf of Solutia Inc. (Solutia), please find enclosed three copies (one hard copy and two electronic copies) of the Construction Completion Report for Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems for the plant site in Anniston, Alabama. Solutia appreciates the Alabama Department of Environmental Management's efforts to support our post-closure permit management activities. Please feel free to contact me at 256-231-8404 or egmaco@eastman.com with any comments or questions you may have regarding this document.

Sincerely,

E. Gayle Macolly Harris Manager, Remedial Projects

Solutia Inc.

Attachments: Construction Completion Report for Upgrades to WMA II and SWMU 1

Groundwater Extraction Systems

CONSTRUCTION COMPLETION REPORT FOR UPGRADES TO WMA II AND SWMU 1 GROUNDWATER EXTRACTION SYSTEMS

Operable Unit 3, Anniston PCB Site Solutia Inc., Anniston, Alabama



Issued: 31 August 2018

Prepared for: Solutia Inc.

702 Clydesdale Ave. Anniston, AL 36201

Prepared by: GSI Environmental Inc.

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Houston, TX 77098





CONSTRUCTION COMPLETION REPORT FOR UPGRADES TO WMA II AND SWMU 1 GROUNDWATER EXTRACTION SYSTEMS

Operable Unit 3, Anniston PCB Site Solutia Inc., Anniston, Alabama

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Operable Unit 3, Anniston PCB Site Solutia Inc., Anniston, Alabama

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ABBREVIATIONS

ADEM Alabama Department of Environmental Management

ALDOT Alabama Department of Transportation
AWWSB Anniston Water Works & Sewer Board

BMP Best Management Practice
CAP Corrective Action Plan
CD Consent Decree

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CQA Construction Quality Assurance
CTS Carbon Treatment System

EPA United States Environmental Protection Agency

GAC Granular Activated Carbon

GPM Gallons Per Minute
GSI GSI Environmental Inc.
HDPE High Density Polyethylene
IROD Interim Record of Decision

IW Interceptor Well

O&M Operation and Maintenance

OU Operable Unit OU-3 Operable Unit 3

psi pounds per square inch PCB Polychlorinated Biphenyl

PNP 4-Nitrophenol, Para-Nitrophenol POTW Publicly Owned Treatment Works

PVC Polyvinyl Chloride RA Remedial Action

RCRA Resource Conservation and Recovery Act

RD Remedial Design

SDR Standard Dimension Ratio
SID State Indirect Discharge
Site Anniston PCB Site

Solutia Solutia Inc.

SOW Statement of Work

SWMU Solid Waste Management Unit

Taylor Corporation

TSCA Toxic Substances Control Act



CONSTRUCTION COMPLETION REPORT FOR UPGRADES TO WMA II AND SWMU 1 GROUNDWATER EXTRACTION SYSTEMS

Operable Unit 3, Anniston PCB Site Solutia Inc., Anniston, Alabama

ENGINEERING CERTIFICATION

GSI Environmental Inc. (GSI) was retained by Solutia Inc. (Solutia) to provide Construction Quality Assurance (CQA) services for implementation of construction activities that were performed concurrently with, but beyond the scope of, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Remedial Action (RA) for Operable Unit 3 (OU-3) of the Anniston PCB Site in Anniston, Alabama. The construction activities included upgrades to existing groundwater extraction system components operating at units regulated under a Resource Conservation and Recovery Act (RCRA) Post-Closure Permit (Permit No. ALD 004019048). These activities are collectively referred to herein as "Non-RA" work. The CQA services included the quality assurance monitoring, documentation, and/or testing of the Non-RA components listed below:

- Upgrades to the Waste Management Area (WMA) II groundwater extraction system; and
- Upgrades to the Solid Waste Management Unit (SWMU) 1 groundwater extraction system.

Based on field observations, field reports, documentation provided by the construction contractor, field testing results, and the data presented herein, it is the professional opinion of GSI that these Non-RA construction activities were performed in substantial conformance with the design documents and technical specifications. Modifications that were made during construction are discussed in Section 5 of this Construction Completion Report along with the basis for the modifications.

No. 37043

PROFESSIONAL

GSI ENVIRONMENTAL INC.

Michal Rysz, Ph.D., P.E.

Certifying Engineer

Travis McGuire, P.E.

Principal



1.0 INTRODUCTION

1.1 Overview

GSI Environmental Inc. (GSI) prepared this Construction Completion Report on behalf of Solutia Inc. (Solutia). Solutia and the U.S. Environmental Protection Agency (EPA) entered into a Consent Decree (CD; Docket No. 1:02-cv-0749-KOB) in the U.S. District Court for the Northern District of Alabama (the Court) on April 17, 2013. The CD and the associated Statement of Work (SOW) required Solutia to implement a remedial action (RA) for Operable Unit-3 (OU-3) of the Anniston Polychlorinated Biphenyl (PCB) Site (the "Site") in accordance with the Interim Record of Decision (IROD), dated September 29, 2011 (EPA, 2011). Concurrently with completion of RA construction activities, Solutia elected to perform upgrades to existing groundwater extraction systems at OU-3 for purposes of optimizing system performance and standardizing equipment, where possible, across the various groundwater extraction systems operated at the Site. These upgrades are collectively referred to herein as "Non-RA" work.

This Construction Completion Report addresses the completion of Non-RA components associated with existing RCRA groundwater extraction systems at WMA II and SWMU 1 of OU-3. These upgrades were completed outside of the scope specified by the IROD and RA. Completion of the RA components specified in the IROD was documented in the Construction Completion Report submitted to EPA and the Alabama Department of Environmental Management (ADEM) on January 22, 2018 (Solutia, 2018a) and the Construction Completion Report Addendum submitted to EPA and ADEM on July 27, 2018 (Solutia, 2018b). These completed RA components are not addressed further in this Construction Completion Report for Non-RA work.

While the work described herein relates to RCRA groundwater extraction systems at WMA II and SWMU 1 of OU-3, this Construction Completion Report was developed in general accordance with the requirements for the CERCLA RA construction as specified in the SOW, which states that a Final Construction Report shall be prepared following completion and shall include, at a minimum, the following:

- Brief description of how outstanding items noted in the Prefinal Inspection were resolved (not applicable as further described below);
- Explanation of modifications made during construction to the original design and why these changes were made (see Section 5.0);
- As-built drawings (see Appendix A); and
- Synopsis of the construction work defined in the SOW and certification that the construction work has been completed (see Section 4.0; as previously noted, the construction work described herein was not defined in the SOW).

Because the Non-RA work addressed by this report was performed at the discretion of Solutia and was not part of the RA scope, Prefinal and Final Inspections with regulatory agencies were not required or performed. Rather, the construction management team and CQA consultant inspected the components following construction for consistency with the design documents and technical specifications.



1.2 Report Organization

This Construction Completion Report is organized as follows:

Section 1.0 – Introduction: Introductory section with an overview and basis for submittal of the Construction Completion Report for Non-RA components.

Section 2.0 – Summary of Design: Describes the design basis for the Non-RA system upgrades and their relation to the selected remedy for the Site.

Section 3.0 – Project Organization: Provides the project organizational chart and personnel involved with construction.

Section 4.0 – Construction Completion: Provides a description of the construction activities and materials that were implemented to complete the Non-RA work, the CQA services provided to assure proper completion of these activities, waste management and disposal, and the various construction documents and records that were maintained as part of routine construction management tasks.

Section 5.0 – Construction Modifications: This section describes modifications that were made to the design during construction and provides justification for the changes.

Section 6.0 – Additional Considerations: Provides a summary of health and safety issues related to the construction effort, as well as an overview of the Operations and Maintenance (O&M) Plan for OU-3.

Section 7.0 – References: Provides a list of the references cited in this report.



2.0 SUMMARY OF DESIGN

As shown on Figure 1, OU-3 at the Anniston PCB site encompasses the manufacturing facility (Facility) and two closed landfills, the West End Landfill and the South Landfill. In addition to the two closed landfills, OU-3 contains two Waste Management Areas (WMA I and WMA II) and 18 Solid Waste Management Units (SWMUs) that are regulated under a RCRA Post-Closure Permit (ADEM Permit No. ALD 004019048). Groundwater extraction systems are operated at WMA II and SWMU 1 pursuant to the Corrective Action Plan (CAP) of the RCRA Post-Closure Permit.

Groundwater extraction operations began at SWMU 1 in 1983 with six interceptor wells (IW-1 through IW-6). The system was expanded in 1988 with the addition of nine interceptor wells (IW-7 through IW-15). The extraction well network at SWMU 1 has been fine-tuned over time, based on observed hydraulic performance of the recovery wells and the effectiveness of contaminant recovery. Currently, the system extracts groundwater from nine wells at the South Landfill (IW-02, IW-05, IW-06, IW-07, IW-08, IW-10, IW-11, IW-12, and IW-13) and one well within the plant site area (IW-14A). At WMA II, groundwater extraction began in 1989 with six interceptor wells (IW-16 through IW-21). The WMA II extraction system was expanded in 1991 with the addition of four interceptor wells (IW-22 through IW-25). All 10 interceptor wells are currently in operation at WMA II. Figure 2 provides the locations of all active interceptor wells at SWMU 1 and WMA II.

In addition to the RCRA corrective actions, remedial action is also being conducted at OU-3 under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) pursuant to the IROD and CD. The selected remedy for OU-3, as presented in the IROD, included: i) the construction of soil cover systems in select areas, ii) an expanded groundwater extraction system around the eastern and northern portions of the Facility, iii) the installation of additional perimeter fencing, and iv) implementation of additional institutional controls. In conjunction with construction activities being implemented pursuant to the CERCLA RA, Solutia proposed upgrades to the WMA II and SWMU 1 groundwater extraction systems and associated components. These modifications were proposed to optimize system performance and replace aging equipment with comparable materials being used in the newer systems for more efficient operation and maintenance.

Upgrades associated with the existing groundwater extraction systems were proposed in a Technical Memorandum submitted to Solutia on December 4, 2013 (Golder, 2013). The final design drawings for the WMA II upgrades were included as part of a larger set of engineering plans dated May 22, 2015, which also included several RA components (Golder, 2015). The design documents for the SWMU 1 upgrades were submitted to EPA and ADEM on May 13, 2016 (Solutia, 2016a). A final set of design drawings and technical specifications were provided to EPA and ADEM on September 19, 2017 (Revision 2.0; Solutia, 2017). The design drawings and technical specifications provided as Revision 2.0 of the SWMU 1 Design Modifications were used to implement the Non-RA work described herein.



3.0 PROJECT ORGANIZATION

Personnel involved in the design, construction, and oversight of the WMA II and SWMU 1 upgrades described in this report included:

- Owner (Solutia)
 - o Ms. E. Gayle Macolly Harris, Remedial Project Manager
- Golder Associates Inc., Design Engineer and CQA Consultant for upgrades completed prior to October 2017
 - o Mr. Steven Moeller, P.E., Lead Design Engineer and Certifying Engineer
 - o Mr. Patrick Callahan, P.E., Design Engineer and CQA Field Leader
 - o Mr. Kevin Killoran, P.E., Design Engineer and CQA Field Member
 - Mr. Shawn Casey, CQA Field Member
- GSI Environmental Inc., Certifying Engineer, Design Engineer, and CQA Consultant for upgrades completed during and after October 2017
 - o Mr. Michal Rysz, P.E., Design Engineer, Certifying Engineer, and CQA Leader
 - o Mr. Travis McGuire, P.E., Design Engineer and CQA Field Member
 - o Ms. Elaine Higgins, P.E., Design Engineer
- Taylor Corporation, Construction Contractor
 - o Mr. Lance Taylor, Owner
 - o Mr. Ellis Bennett, Project Manager



4.0 CONSTRUCTION COMPLETION

The following provides a description of the construction activities that were performed to complete the WMA II and SWMU 1 system upgrades and the CQA activities that were conducted to properly document these activities and demonstrate the work was completed in compliance with the design specifications. The activities completed during the Non-RA work included:

- Upgrades to the WMA II groundwater extraction system; and
- Upgrades to the SWMU 1 groundwater extraction system.

Construction of the majority of WMA II upgrades was conducted from December 2015 through April 2016, with a few additional upgrades completed in February and March 2018. Construction of the SWMU 1 upgrades was primarily conducted from October 2017 through February 2018. Details of the completed construction are documented in the Construction Record Drawings provided in Appendix A. Construction photographs depicting the various stages of construction are included in Appendix B. Waste manifests associated with the project are in Appendix C.

4.1 WMA II Groundwater Extraction System Upgrades

The WMA II groundwater extraction system upgrades included the following key elements as proposed in the design drawings (Golder, 2015) and shown on the Construction Record Drawings in Appendix A:

- Ladder tray pipe rack system;
- Wellhead modifications at the 24-inch diameter IWs;
- Flowmeter for storage tank T-100 effluent;
- Level sensor for storage tank T-100 secondary containment;
- Replacement vault at IW-24; and
- Inlet valve modifications at Basins 5 and 6.

Construction details and CQA activities associated with this portion of the project are described in the following sections. Equipment specifications for the system components are included in Appendix D.1. Note that design and the majority of the CQA activities (those activities conducted between December 2015 and April 2016) for the WMA II upgrades were performed by Golder Associates Inc. CQA activities for installation of check valves at the WMA II wells and the replacement vault at IW-24 in February and March 2018 were performed by GSI. For purposes of certifying the completion of all upgrade work, GSI has reviewed the design drawings, reviewed the available CQA and construction documentation, and inspected the upgrades to confirm the constructed components are consistent with the design specifications.

4.1.1 Construction Details

The WMA II groundwater extraction system upgrades were constructed as described below.



- Ladder Tray Pipe Rack System: the new pipe rack consists of 1023 linear feet (see Sheet 2 of Appendix A) of aluminum ladder cable tray system. The tray consists of two 4-inch high outside rails with interior rungs spaced 9 inches apart and grounding cables spaced 20 feet apart. The outside rails are 36 inches apart. The tray system is rated to support 85 pounds per linear foot per 20-foot span. The tray system was fastened with Type 316 stainless steel fasteners and was supported on the existing pipe supports. The existing dual wall high density polyethylene (HDPE) piping was snaked within the tray system to allow for thermal expansion and contraction of the piping. The piping was secured using a combination of restraints and anchor points per the design drawings. Additional details of the metal ladder tray pipe rack system are provided in Appendix D.1.
- Wellhead Modifications at IWs: modifications were completed at the 24-inch diameter extraction wells (IW-16 through IW-21) to standardize equipment and improve efficiency and safety of well maintenance activities. Modifications included replacement of the Magnetrol pump switches with tethered mechanical float switches (identical to those installed as part of the SWMU 1 upgrades described in Section 4.2 of this report), addition of butterfly valves and check valves to the pump discharge piping, and replacement of the carbon steel pump support brackets with stainless steel brackets. Additional details of the float switches, butterfly valves, and check valves are provided in Appendix D.1.
- Flowmeter at Tank T-100 Effluent: the flowmeter located on the effluent piping of storage tank T-100, which collects extracted groundwater from the IWs, was replaced with a Neptune T-10 disc meter. An expansion joint was fabricated by plant maintenance personnel and used to connect the flowmeter to the existing HDPE piping to better compensate for thermal expansion and contraction of the piping system. Additional details of the flowmeter are provided in Appendix D.1.
- Level Sensor at Tank T-100 Secondary Containment: a level sensor was installed within the secondary containment of Tank T-100. When activated, the sensor alerts plant operators of a release from the tank into the secondary containment area. The level sensor is the same model in use within the Carbon Treatment System (CTS) buildings, which are described in further detail in the Remedial Construction Completion Report (Solutia, 2018a) and the Construction Completion Report Addendum (Solutia, 2018b). Additional details of the level sensor are provided in Appendix D.1.
- Replacement Vault at IW-24: a corroded well vault at IW-24 was replaced with a new concrete vault with a water-tight aluminum lid. Additional details of the well vault are provided in Appendix D.1.
- Discharge Valve Modifications at Basins 5 and 6: extracted groundwater from the WMA II system is discharged to Basins 5 and 6 at the plant. Modifications to the discharge valve system were completed to improve safety associated with operating the valves. The modifications included a new flange, butterfly valve, and polyvinyl chloride (PVC) piping downstream of the butterfly valve (see Sheet 2 of Appendix A). The butterfly valve includes a valve stem that extends above the existing handrail for safer operation of the valve. Additional details of the new inlet valve materials are provided in Appendix D.1.



4.1.2 CQA Activities

CQA field services were performed by Golder Associates Inc for components of the WMA II system upgrades completed prior to September 2017 and by GSI for components of the WMA II system upgrades completed after September 2017. As previously noted, GSI personnel inspected all Non-RA upgrades after installation to confirm the constructed components are consistent with the design specifications and intended function of the equipment.

4.2 SWMU 1 Groundwater Extraction System Upgrades

A major component of the Non-RA work associated with the SWMU 1 groundwater extraction system included connection of the nine active interceptor wells to the new CTS#3 for treatment of extracted groundwater by granular activated carbon (GAC). Previously, only groundwater extracted from a single interceptor well (IW-10) was treated by carbon filtration. The SWMU 1 groundwater extraction system upgrades included the following key components as proposed in the final design (Solutia, 2017) and shown on the Construction Record Drawings in Appendix A:

- Submersible pumps at the nine active IWs;
- Wellhead modifications at the nine active IWs;
- Conveyance piping from the nine active IWs to CTS#3; and
- Removal of the carbon treatment equipment at IW-10.

Site preparation, construction details, and CQA activities associated with this portion of the project are described in the following sections. Equipment specifications for the system components are included in Appendix D.2.

4.2.1 Site Preparations

The contractor began work on the SWMU 1 upgrades the week of October 23, 2017. Initial site preparation work consisted of installing stormwater erosion and sedimentation control features in the areas where trenching would be performed for the conveyance piping.

4.2.2 Construction Details

The SWMU 1 groundwater extraction system upgrades were constructed as described below and shown on the Construction Record Drawings in Appendix A (see Sheet 3).

Submersible Pumps: the existing sump style pumps in the nine active IWs were replaced with vertical submersible pumps of the same model in use at the CTS#1 and CTS#2 systems. The pumps are Grundfos model 5 SQ05-90 rated for 4.4 gallons per minute (GPM) at 112 feet of head. The pumps are 3-inch diameter, constructed of stainless steel, and are equipped with an integral check valve. The pumps were installed with new 1-inch diameter HDPE piping and electrical cable. The pumps are supported at the wellheads by new stainless steel support brackets. The pumps are operated by new electrical equipment installed at each wellhead, with wiring from each IW to the CTS#3 control panel for control and interlocking of the submersible pumps with the CTS#3 system. Run time meters were added to the electrical enclosure at each wellhead to track the operation of



each pump. Additional details of the submersible pumps and associated electrical components are provided in Appendix D.2.

- Wellhead Modifications: modifications were completed at the nine active IWs to standardize equipment and improve efficiency and safety of well maintenance activities. Modifications included installation of tethered mechanical float switches to control operation of the submersible pumps, check valves, gate valves, pressure gauges, and drain valves. Additional details of the float switches, butterfly valves, and check valves are provided in Appendix D.1.
- Conveyance Piping: groundwater extracted by the submersible pumps is conveyed to CTS#3 via 2-inch diameter standard dimension ratio (SDR) 11 HDPE pipe. Pipe segments were butt fusion welded. The piping was placed within the same trench as the 3-inch diameter effluent conveyance piping for CTS#3. Additional details of the HDPE piping are provided in Appendix D.2.

4.2.3 CQA Activities

CQA services provided by GSI for construction of the SWMU 1 upgrades included the following:

- Review of the materials proposed for use by the Contractor for conformance with the design drawings and technical specifications;
- Oversight of key elements of system construction;
- Oversight of startup and flow balancing of the submersible pumps; and
- Oversight of pressure testing of the conveyance piping.

Table 1 provides a summary of hydrostatic pressure test results, and Appendix E includes copies of the hydrostatic test field forms.

4.4 Waste Management and Disposal

Limited surface soil excavation was required for installation of the conveyance piping at SWMU 1, which was conducted in conjunction with RA construction activities. A listing of the waste manifests for the time period of Non-RA work is included in Appendix C along with a copy of each manifest. A complete listing of all waste manifests for both the RA and Non-RA activities was included with the Construction Completion Report Addendum for the Remedial Action (Solutia, 2018a). Existing data and generator knowledge were used to determine the disposal procedures for the excavated materials. All soils excavated were contained in lined roll-off containers, staged, and transported to the Chemical Waste Management Facility in Emelle, Alabama, which is a Toxic Substances Control Act (TSCA) and an EPA-approved facility.

4.5 Construction Documentation

4.5.1 Daily Reports

Contractor daily reports are provided in Appendix F. Reports include the safety topics discussed at the daily safety meetings, a summary of work completed, equipment and personnel on-Site, and materials delivered to the Site.



4.5.2 Weekly Meetings

Weekly progress meetings were held with Solutia, the CQA Consultant, and the Contractor to discuss health and safety, work completed during the previous week, work in-progress for the current week, and anticipated work to be completed over the upcoming two-week period following the meeting. Problems encountered and opportunities to address these problems were discussed. Weekly meeting reports are provided in Appendix F.

4.5.3 Stormwater Inspections and BMP Maintenance

Stormwater inspection and best management practice (BMP) maintenance reports are provided in Appendix G. These reports provide a weekly summary of the weather conditions encountered at the Site, including rain events, summaries of the findings of the BMP inspections, and any maintenance or corrective actions that were conducted based upon the inspections.

4.5.4 Equipment Inspections

Equipment inspection reports are provided in Appendix G. These reports provide a weekly summary of the heavy equipment used at the Site, the findings of the inspections, and any maintenance or corrective actions that were conducted based upon the inspections.

4.5.5 Construction Material Quantities

Appendix I provides a summary of the final construction material quantities used to complete the Non-RA work.

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5.0 CONSTRUCTION MODIFICATIONS

This section describes modifications that were made during construction to the design and provides justification for the changes. These modifications have been incorporated into the construction record drawings provided in Appendix A, where applicable.

5.1 WMA II Groundwater Extraction System Upgrades

The wellhead discharge piping at the six 24-inch diameter IWs was reconfigured to accommodate placement of the butterfly valves. This modification included removal of the existing tees and blind flanges and replacement with 90-degree elbow connections.

5.2 SWMU 1 Groundwater Extraction System Upgrades

- Run time meters were added to the electrical control panels of the nine active IWs at the South Landfill, as well as to IW-28 and IW-29 at CTS#2. The run time meters record the operating time for each submersible pump, which allows calculation of the extracted groundwater volume for each well based on the flow rate. Flow rates for each of the nine IWs at the South Landfill were set to approximately 3 GPM. Flow rates at IW-28 and IW-29 were measured at approximately 6 GPM.
- Additional control logic was added for operation of the nine IWs at the South Landfill following activation of a high-level warning on the CTS#3 equalization (EQ) tank. The high-level warning may be triggered during periods of high seep flow. Upon a high-level warning at the EQ tank, the submersible well pumps are shut down. When the water level in the EQ tank is pumped down to the low-level set point, the submersible pumps are restarted in groups of three wells at a time, with a one-hour delay between each group. The wells are grouped as follows: IW-2, IW-5, and IW-7 (Group 1); IW-10, IW-11, IW-12 (Group 2); and IW-6, IW-8, and IW-13 (Group 3).



6.0 ADDITIONAL CONSIDERATIONS

6.1 Health and Safety

No health and safety incidents were reported during the Non-RA work.

6.2 Operations and Maintenance

Solutia has prepared a comprehensive O&M Plan to monitor and maintain the effectiveness of the engineering controls implemented at OU-3 (Solutia, 2018c). The O&M Plan is intended to be a stand-alone reference document to be used by those responsible for the OU-3 O&M activities. The O&M Plan addresses the following major components:

- Responsibilities for administering the O&M activities;
- Documentation requirements for the O&M activities;
- Description of the engineered caps and cover systems installed for OU-3;
- Description of the control systems used to manage stormwater within OU-3;
- Description of the groundwater extraction systems;
- Inspection requirements for covers, surface water management systems, and corrective action systems;
- Maintenance and repair requirements; and
- Requirements for groundwater monitoring.

The groundwater extraction systems at SWMU 1 and WMA II are described in Sections 7.1 and 7.2 of the O&M Plan, respectively. Section 8.7 of the O&M Plan provides the inspection requirements for both groundwater extraction systems. Inspections are documented on Log 6.1.1 for the SWMU 1 groundwater extraction system and Log 6.2.1 for the WMA II groundwater extraction system. Inspection forms are located in Appendix D of the O&M Plan. Section 9.6 of the O&M Plan describes maintenance and repair tasks relevant to both groundwater extraction systems. Any maintenance or repair tasks are documented on a Repair/Maintenance Log (Log 5.10.1 in Appendix C of the O&M Plan).



7.0 REFERENCES

- ADEM, 2016. Approval of OU-3 Remedial Action SWMU 1 Design Modifications (Revision 1.0). Email from Metz Duites (ADEM) to Steve Moeller, Gayle Macolly, Pamela Scully, Austin Pierce, and Tom Huett. October 7, 2016.
- EPA, 2011. Interim Record of Decision: Summary of Remedial Alternative Selection, Operable Unit 3, Anniston PCB Site. U.S Environmental Protection Agency, Region 4, Atlanta, Georgia. September 29, 2011.
- EPA, 2016. Operable Unit 3 Remedial Action SWMU 1 Design Change and Seep Capture, Anniston PCB Site. Letter from Pamela Langston Scully to E. Gayle Macolly. U.S. Environmental Protection Agency, Region 4, Atlanta, Georgia. August 28, 2016.
- Golder, 2013. Assessment of Groundwater Interceptor Well Systems. Technical Memorandum from Golder Associates Inc. to E. Gayle Macolly. December 4, 2013.
- Golder, 2015. Solutia Inc. Operable Unit 3 Remedial Action Groundwater Components, Anniston PCB Site, Alabama (Engineering Plans), Prepared by Golder Associates Inc., Atlanta Georgia. Released for Construction May 22, 2015.
- Solutia, 2017. Operable Unit 3 Remedial Action SWMU 1 Design Modifications (Revision 2.0), Anniston PCB Site. September 19, 2017.
- Solutia, 2018a. Construction Completion Report Rev 0, OU-3 Remedial Action Anniston PCB Site. Prepared for Solutia Inc., Anniston, Alabama. Prepared by Golder Associates Inc. Atlanta, Georgia. January 22, 2018.
- Solutia, 2018b. Construction Completion Report Addendum, OU-3 Remedial Action, Anniston PCB Site. Prepared for Solutia Inc., Anniston, Alabama. Prepared by GSI Environmental Inc., Houston, Texas. July 27, 2018.
- Solutia, 2018c. Operable Unit 3 Operations and Maintenance Plan for Remedial/Corrective Action Projects: Revision 1.0, Anniston PCB Site. August 2018.



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Tables

Table 1: Hydrostatic Pressure Test Results Summary

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TABLE 1 HYDROSTATIC PRESSURE TEST RESULTS SUMMARY

Construction Completion Report

WMA II and SWMU 1 Groundwater Extraction System Upgrades Solutia Inc., Anniston, Alabama

Pipe Segment	Pipe Diameter and Material	Flow Conditions	Test Date	Target Test Pressure	Test Result	Notes
CTS#3 Influent Conveyance Pipe from South Landfill Interceptor Wells	2-inch SDR-11 HDPE	Force	21-Feb-18	95 psi	PASS	 Hydrostatic test conducted on pipe segments between frac tank valve located near IW-13 and CTS#3 influent; Starting pressure: 94 psi Final pressure: 91 psi 60 minute test duration

Notes:

CTS = Carbon Treatment System; psi = pounds per square inch; SDR = standard dimension ratio; HDPE = high density polyethylene; " = inches; IW = interceptor well



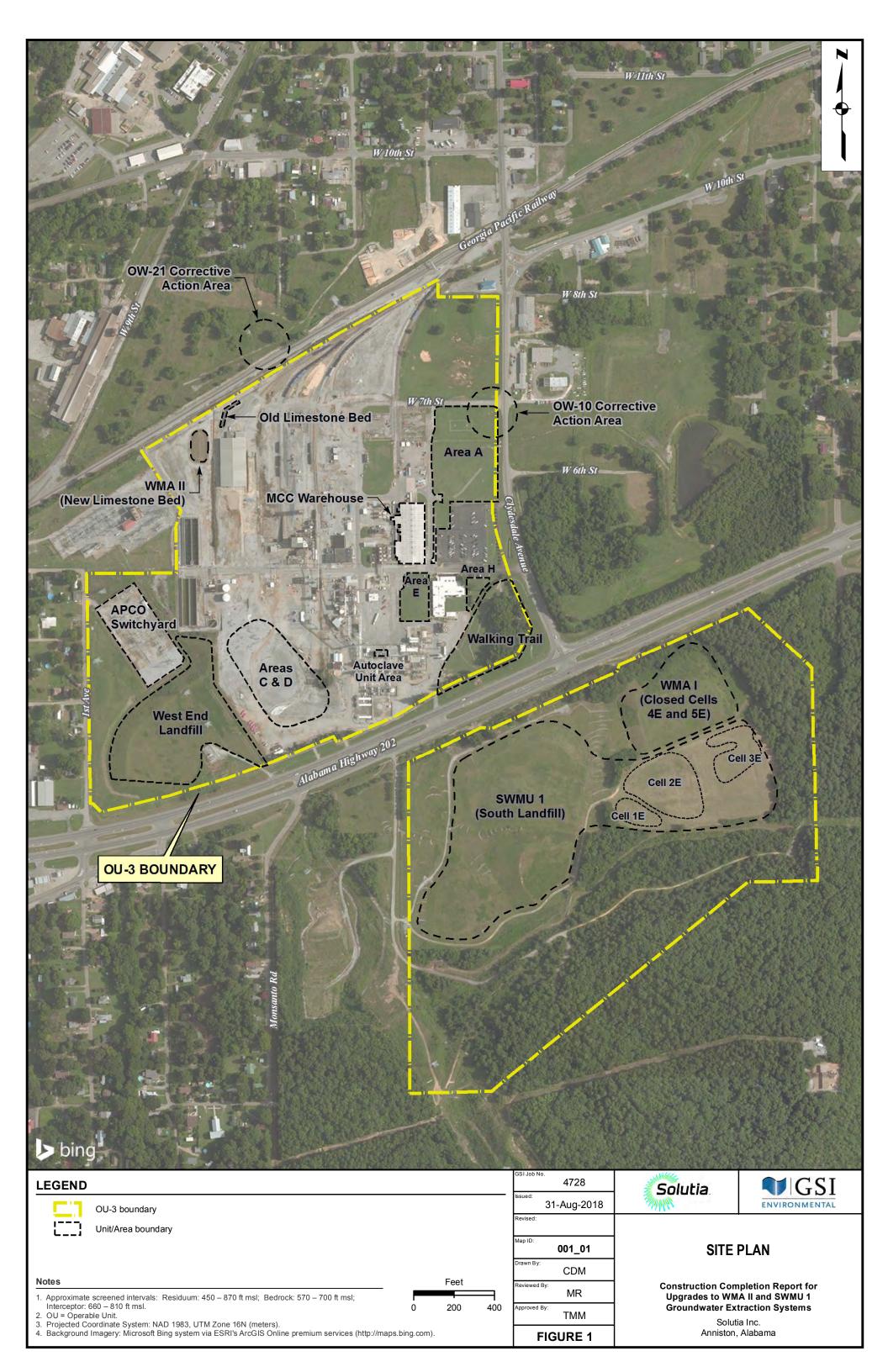
Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

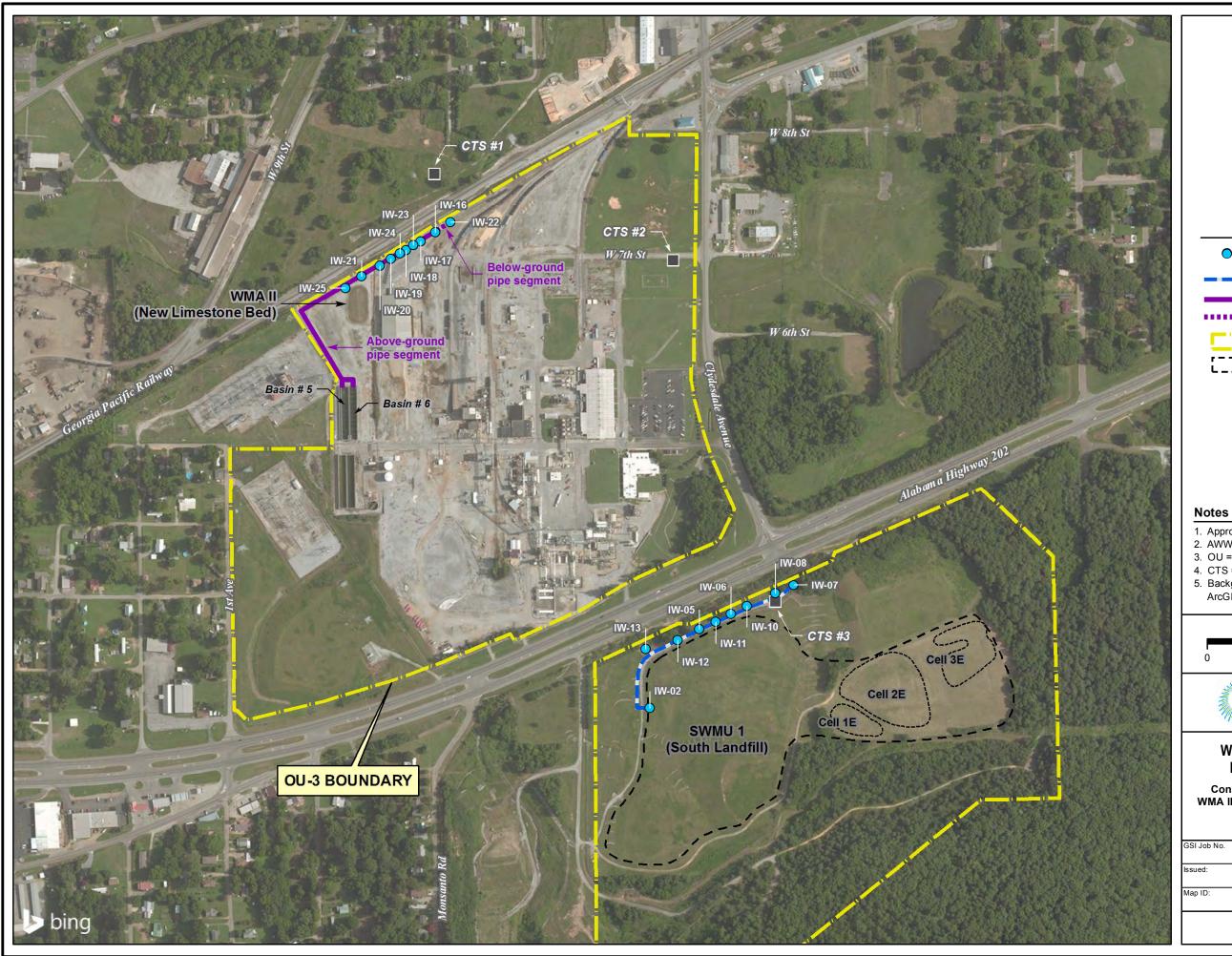
Anniston PCB Site Anniston, Alabama

Figures

Figure 1: Site Plan

Figure 2: WMA II and SWMU 1 Groundwater Extraction System Upgrades







LEGEND

Interceptor well

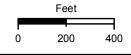
2-inch HDPE SDR-11 Pipe

Above-ground pipe Below-ground pipe

OU-3 boundary

Unit/Area boundary

- 1. Approximate locations of site features shown.
- 2. AWWSB = Anniston Water Works & Sewer Board.
- 3. OU = Operable Unit.
- 4. CTS = Carbon Treatment System.
- 5. Background Imagery: Microsoft Bing system via ESRI's ArcGIS Online premium services (http://maps.bing.com).



Projected Coordinate System Datum: NAD 1983 UTM: Zone 16N (meters)





WMA II AND SWMU 1 GROUNDWATER **EXTRACTION SYSTEM UPGRADES**

Construction Completion Report for Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Solutia Inc. Anniston, Alabama

Map ID:	001_02	Appv'd By:	TMM	
Issued:	31-Aug-2018	Chk'd By:	MR	
GSI Job No.	4728	Drawn By:	CDM	

FIGURE 2



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendices

adA	endix A	Construction	Record	Drawings

Appendix B Photologs

Appendix C Waste Manifests

Appendix D Non-RA Equipment Information

Appendix E Hydrostatic Pressure Test Form

Appendix F Daily Construction Reports and Weekly Meeting Reports

Appendix G Stormwater BMP and Equipment Inspection Forms

Appendix H Air Monitoring Data Reports

Appendix I Construction Material Quantities



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

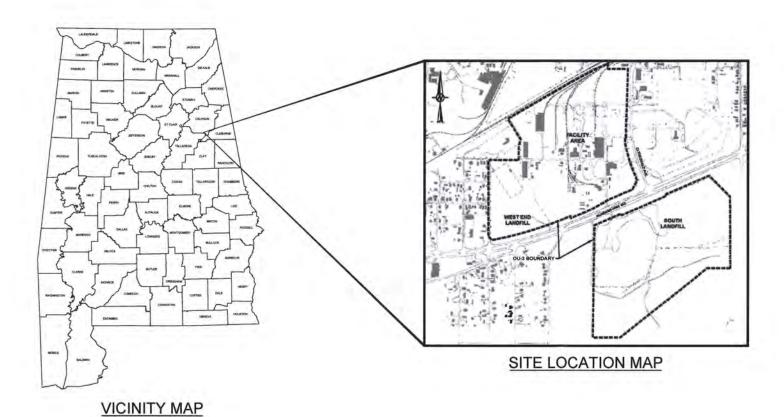
Appendix A

Construction Record Drawings



SOLUTIA, INC. WMA II AND SWMU 1 GROUNDWATER EXTRACTION SYSTEMS UPGRADES ANNISTON PCB SITE, ALABAMA

CONSTRUCTION RECORD DRAWINGS



INDEX OF SHEETS			
DESCRIPTION			
TITLE SHEET			
WMA II GROUNDWATER EXTRACTION SYSTEM UPGRADES			
SWMU 1 GROUNDWATER EXTRACTION SYSTEM UPGRADES			
	DESCRIPTION TITLE SHEET WMA II GROUNDWATER EXTRACTION SYSTEM UPGRADES		

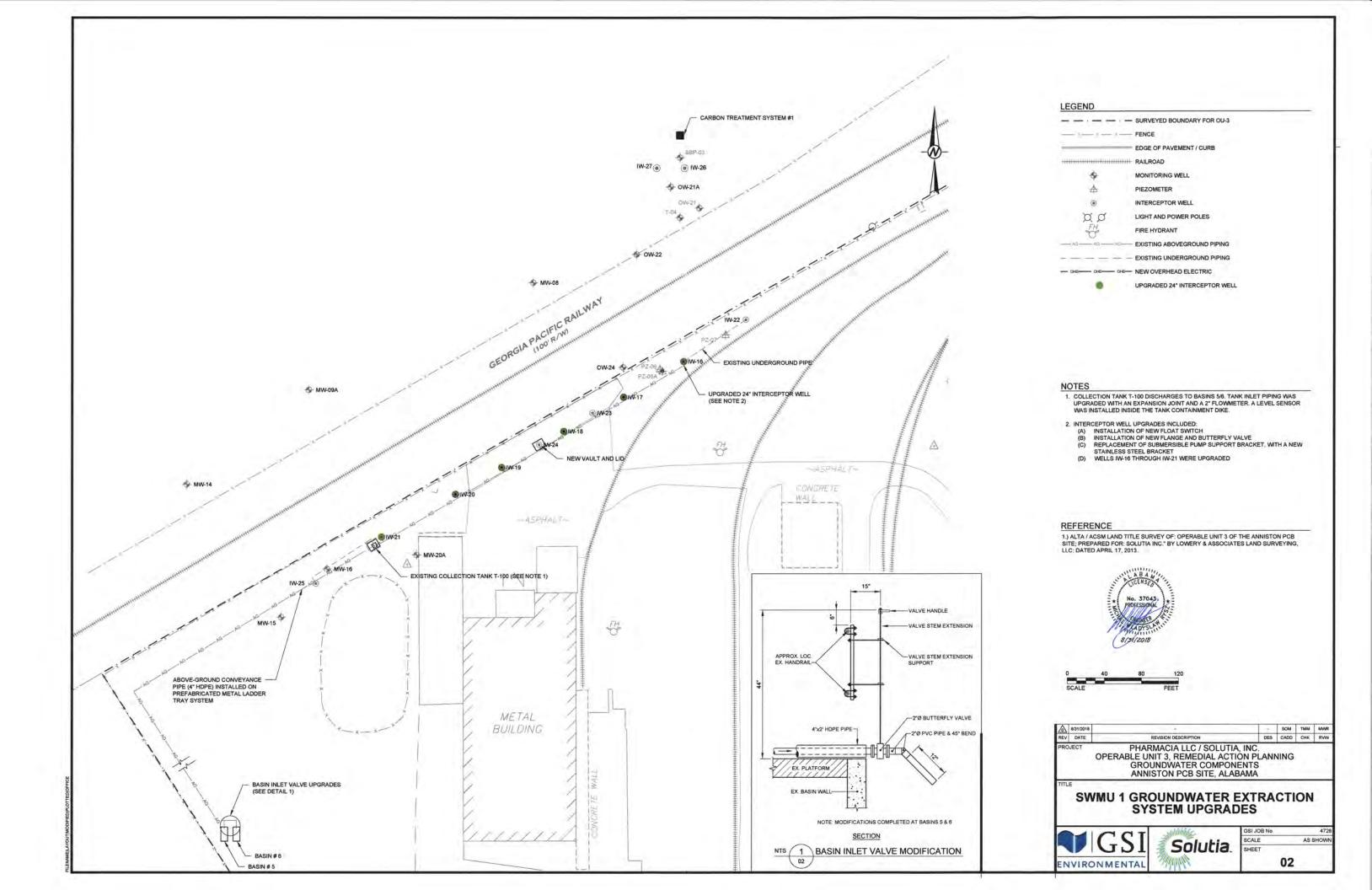


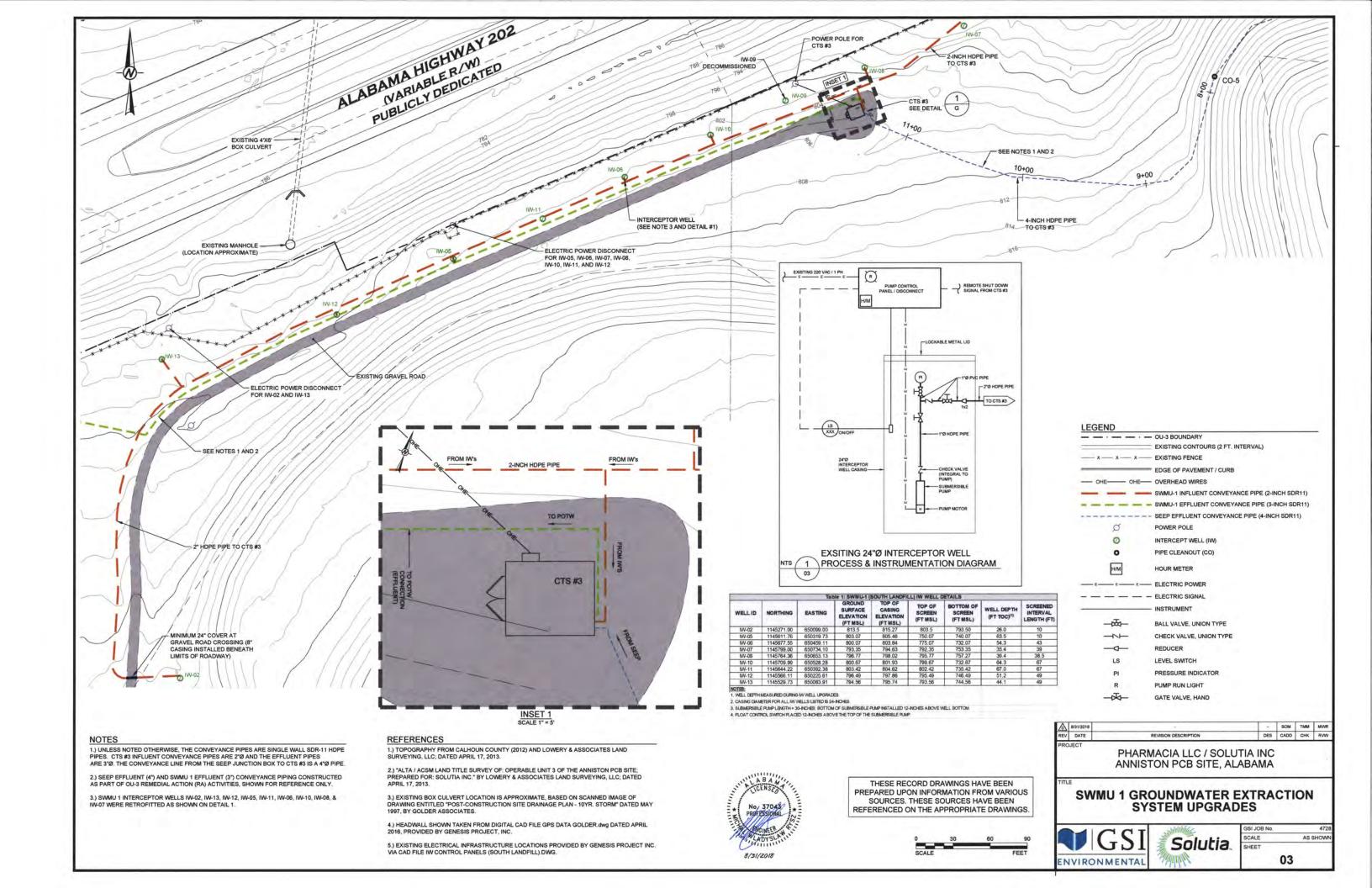
THESE RECORD DRAWINGS HAVE BEEN
PREPARED UPON INFORMATION FROM VARIOUS
SOURCES. THESE SOURCES HAVE BEEN
REFERENCED ON THE APPROPRIATE DRAWINGS.



OWNER SOLUTIA INC. 702 CLYDESDALE AVE ANNISTON, AL 36201 PLANS PREPARED BY
GSI ENVIROMENTAL, INC.
2211 NORFOLK ST., SUITE 1000
HOUSTON, TX 77098

DESIGN ENGINEER CONTACT GSI ENVIROMENTAL, INC. MICHAL WLADYSLAW RYSZ ALABAMA P.E. REGISTRATION No. 37043







Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix B

Photologs

GSI Job No. G-4728 Issued: 30 November 2017 Page 1 of 3



SOLUTIA ANNISTON OU-3 NON-RA ACTIVITES

Intercept Wells and Carbon Treatment System No. 3 Conveyance Piping Installation (October - November 2017)



(1) Installation of conveyance piping (2" diameter SDR 11 HDPE) for intercept (IW) wells, and Carbon System No. 3 (CTS#3) effluent piping (3" diameter SDR 11 HDPE) began on 19 October 2017.



(2) Combination air valves were installed on CTS#3 effluent piping (3" diameter SDR 11 HDPE) at high system locations as indicated in the design specifications.







- (3) Trunk lines of the IW and CTS#3 conveyance piping were installed in a common trench (looking W/SW).
- (4) IW and CTS#3 conveyance piping trench (looking E/NE).





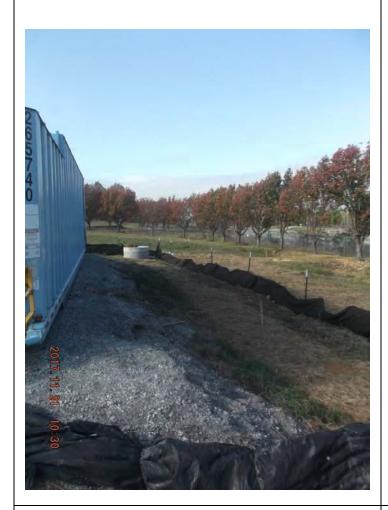


- (5) Junction boxes were installed in the pipe trenches to facilitate future electrical connections for IW wells and CTS #3 components.
- (6) Portions of the trench where the installation of conveyance piping and junction boxes was completed were backfilled to grade.



SOLUTIA ANNISTON OU-3 NON-RA ACTIVITES

Carbon Treatment System No. 3 Conveyance Piping Installation (November - December 2017)





- (1) Installation of SWMU-1 effluent conveyance piping (3" diameter SDR 11 HDPE) from Carbon Treatment System #3 (CTS#3) to the junction box located south of Alabama Highway 202, including backfilling and revegetation, was completed by November 11, 2017. Conveyance pipe installation underneath Highway 202 was previously completed in August 2017.
- (2) Installation of SWMU-1 effluent conveyance piping (3" diameter SDR 11 HDPE) continued on the north side of Highway 202, starting on November 27, 2017.







- (3) Shallow trenches were excavated and lined with geotextile filter fabric (10 oz) prior to installation of the SMWU-1 effluent conveyance piping (3" diameter SDR 11 HDPE) within the trenches.
- (4) Double-walled pipe (3"x6" HDPE) was installed within an existing reinforced cement concrete (RCC) pipe underlying the facility driveway #1.







- (5) All trenches were backfilled to grade with clean soil and revegetated after installation of the SMWU-1 conveyance piping.
- (6) At locations where SWMU-1 conveyance piping trenches intersected material other than soil, the appropriate material (i.e. asphalt or concrete) was used to restore the surfaces after pipe installation.



SOLUTIA ANNISTON OU-3 NON-RA ACTIVITES

IW Wells Upgrades and Pressure Testing (January-February 2018)





(1) IW well upgrades, including installation of new downhole pumps (Grundfos), and extraction system piping, were completed between January and February 2018. New electrical control boxes and instrumentation were installed at the IW wells.







(2) IW influent piping (2" HDPE) to CTS#3 was pressure tested prior to system startup. Test pressures were maintained for the duration of the 60-minute tests. No leaks were detected during pressure testing.



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix C

Waste Manifests

Waste Management Emelle Soil Disposal N fests

Roll off Number	Date In	Date out	Manifest #	Disposal Date	COD (Y,N)	Weight (tons)
25239	9/29/2017	9/29/2017	003451473gbf	10/3/2017	Υ	11.94
25121	9/14/2017	9/29/2017	003451474 gbf	10/3/2017	Υ	15.37
0-2505	9/14/2017	10/9/2017	003451478gbf	10/11/2017	Υ	13.66
439	9/14/2017	10/9/2017	003451479gbf	10/13/2017	Υ	17.59
25205	9/14/2017	10/9/2017	003451480gbf	10/10/2017	Υ	13.57
25147	9/29/2017	10/13/2017	003451481gbf	10/16/2017	Υ	15.34
909	10/9/2017	10/16/2017	003451943gbf	10/19/2017	Υ	16.00
2105	10/9/2017	10/16/2017	003451944gbf	10/17/2017	Υ	12.75
25229	10/16/2017	10/18/2017	003451945gbf	10/24/2017	Υ	16.55
25152	10/16/2017	10/26/2017	003451946gbf	10/26/2017	Υ	15.50
382	9/29/2017	10/26/2017	003451947gbf	10/27/2017	Υ	15.61
2609	10/16/2017	10/20/2017	003451950gbf	10/24/2017	Υ	15.51

Manifest Document Number:

Site Information

SOLUTIA 702 CLYDESDALE AVENUE

ANNISTON PCB SITE

O PARKWIN

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451946GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 03, 2017

 OSD
 Unique ID
 Cont #
 Profile
 Disposed
 Description

 10/26/17
 003451946GBF-01
 1
 CM9879
 10/26/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451946GBF-1

10

36011

Truck (137

Bev 25152

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039 UNIFORM HAZARDOUS 1. Generator ID Number 4. Manifest Tracking Number 2. Page 1 of 3. Emergency Response Phone GBF003451946 WASTE MANIFEST (801)807-1167 EXEMPT 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIAING ANNISTON POBSITE ANNISTON PCB SITE 702 CLYDESDALE AVE SEEPSTREET Generator's Phone: Generator's Phone: ANNISTON AL 36261 6. Transporter 1 Company Name U.S. EPA ID Number ROBBIE D WOOD, INC. ALINWY 133894 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL VINSTE MANAGEMENT, INC. HIGHWAY 17 NORTH, MILE MARKER 163 ALEMONOUS2464 EMELLE AL 35459 Facility's Phone Of VIST 10721 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers 11. Total 12 Unit 13. Waste Codes and Packing Group (if any)) HM Quantity No. Wt. No! Type UN3432.KO.FOLYCHLORINATED BIPHENYLS GENERATOR PCBB (MI) COM SOLID.O.UH3432.13 CM8870 Bex 25125 14. Special Handling Instructions and Additional Information PC# 48434188 43516075 1 CM9878 ERG#171 (150): 4%许0联举头为行 eriprovider: Chemireo (Contract Con24117) 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. Learlify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small grantity generator) is true. Generator's/Offeror's Printed/Typed Name Month Day Year DONN WILLIAMS SOT-807-1187 16. International Shipments INT Import to U.S. Export from U.S. Port of entry/exit: Transporter signature (for exports only): Date leaving U.S. TR ANSPORTER 17. Transporter Acknowledgment of Receipt of Materials 1 Printed Typed Name Month Year ransporter 2 Printed/Typed Name Signature 18. Discrepancy 18a. Discrepancy Indication Space Partial Rejection Full Rejection Filte (civil hel fi 18b. Alternate Facility (or Generator) U.S. EPA ID Number Facility's Phone: DESIGNATED 18c. Signature of Alternate Facility (or Generator) Month Day Year 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Month Day MEDIA

MOCKETCA EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.



Waste Management

462171

#

WEIGHED ON CARDINAL SCALES **Emelle Facility**

74040 lb

11:17AM 10/26/2017

43040 JB 8858

TARE

GROSS

13:02PM 10/26/2017

NET

21,000 LI

25125

Trailer #:

Manifest #: OO34519463BF

DIGITAL WEIGHT INDICATOR & PRINTER

528597

Receipt #:

WEIGHED BY_

510-EMELLE

p.11

(Annisto)

Customer: _

Ron

Transporter: _

437

Truck #:



SOLUTIA 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

ANNISTON, AL 36201

O PARKWIN

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451946GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 03, 2017

Manifest Document Number:

Site Information

SOLUTIA 702 CLYDESDALE AVENUE

ANNISTON PCB SITE O PARKWIN

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

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Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 03, 2017

 OSD
 Unique ID
 Cont #
 Profile
 Disposed
 Description

 10/26/17
 003451947GBF-01
 1
 CM9879
 10/27/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451947GBF-1

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7. Transporter 2 Company Name U.S. EPA ID Number									
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WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

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Customer:

21,240 14,170 Kg

-Manifest #: (003451947168F

Receipt #: 538433

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DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

510-EMELLE

10.27

SOLUTIA 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE O PARKWIN

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451947GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management, (RCRA)

Al Talbott Safety Manager

November 03, 2017

Roll off Number	Date In	Date out	Manifest #	Disposal Date	COD (Y,N)	Weight (tons)
1019	10/9/2017	10/30/2017	003451954gbf	11/3/2017	Υ	15.1
2140	10/20/2017	10/31/2017	003451955gbf	11/3/2017	Υ.	15.33
916	10/27/2017	10/31/2017	003451956gbf	11/6/2017	Υ	19.38
2102	10/20/2017	10/31/2017	003451957gbf	11/3/2017	Y	14.61
2136	11/2/2017	10/31/2017	003451958gbf	11/9/2017	Υ	12.68
716	11/1/2017	10/31/2017	003451959gbf	11/10/2017	Υ	16.58
6038	10/9/2017	11/1/2017	003451951gbf	11/1/2017	Υ	12.24
2142	10/16/2017	11/1/2017	003451953gbf	11/2/2017	Y	15.95
1019	10/9/2017	11/2/2017	003451954gbf	11/3/2017	Υ	15.1
455	11/2/2017	11/16/2017	003451952gbf	11/20/2017	Y	17.54
2027	11/2/2017	11/16/2018	003451948gbf	11/20/2017	Υ	11.03
918	11/9/2017	11/14/2017	003451960gbf	11/16/2017	Υ	15.37
744	10/27/2017	11/14/2017	003451961gbf	11/16/2017	Υ	16.34
25268	11/1/2017	11/17/2017	003451962gbf	11/20/2017	Y	15.51
25171	11/9/2017	11/17/2017	003451963gbf	11/20/2017	Υ	14.18
2140	10/20/2017	10/31/2017	003451955gbf	11/3/2017	Υ	15.33
916	10/27/2017	10/31/2017	003451956gbf	11/6/2017	Υ	19.38
2102	10/20/2017	10/31/2017	003451967gbf	11/3/2017	Υ	14.61
2136	11/2/2017	10/31/2017	003451958gbf	11/9/2017	Y	12.68
716	11/1/2017	10/31/2017	003451959gbf	11/10/2017	Y	16.58

 $\mathbf{W}\mathbf{M}$

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451954GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 09, 2017

 OSD
 Unique ID
 Cont #
 Profile
 Disposed
 Description

 10/30/17
 003451954GBF-01
 1
 CM9879
 11/3/17
 ANNISTON PCB SITE CONSENT DECR

Manifest: 003451954GBF-1

Page 1 of 1

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1	W	ASTE MANIFEST	erator ID Number	٥.	2. Page 1 of 3.	Emergency Respons	se Phone	4. Manifest	Tracking	Number 5195	4 GBI
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		gnated Facility Owner or Operator. Typed Name	Certification of receipt of hazar	dous materials covered	by the manifest exc Signature	ept as noted in Item 1	8a	1100		Month	Day Year
AF	orm 0	700-22 (Rev 3-05) Previous 6	diffions are obsolute)		YWILL	101	TYTA	X.J		0011

Waste Management

Emelle Facility

461841 #

WEIGHED ON CARDINAL SCALES

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Trailer #: 1019

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Receipt #: 538830

Transporter:

Truck #:

Customer:

DIGITAL WEIGHT INDICATOR & PRINTER

WEIGHED BY_

510-EMELLE

L.1-L1-11 L1-E0-11



Site Infomation

ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451954GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 09, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451955GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbett Safatu Manager

November 09, 2017

OSD Unique ID 10/31/17 003451955GBF-01 Cont # Profile 1 CM9879

Disposed 11/3/17

Description

ANNISTON PCB SITE CONSENT DECR

DESIGNATED FACILITY TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039 UNIFORM HAZARDOUS 1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone 4. Manifest Tracking Number GBF WASTE MANIFEST EXEMPT (BOTTON-1187 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIA INC ANNISTON FOR RITE ANNISTON PCG SITE 702 CLYDESDALE AVE SEEP STREET Generator's Phone: Generator's P AMMISTON AL 38200 6. Transporter 1 Company Name U.S. EPA ID Number ROBBIE D WOOD, ESS ALTROCKIORISA 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number Chemical maste management, inc. HMATAMY 17 MONTOL MALE BANKBER 160 ALDMM922434 EMELLE AL 35450 Facility's Phone: US/032-0720 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers ga. 11. Total 13. Waste Codes and Packing Group (if any)) HM No. Quantity Wt./Vol. Type UN3492,RQ,POLYCHLORMATED BIPHEWYLS GENERATOR Pare 锁 CM HHUO K SOLID,0,UN3432,III 13916 CMBB70 ROLLUP ZIHO 14. Special Handling Instructions and Additional Information POP 49488282 OSD: OCTOBERG, 2017 31 ENI PROVIDER: CHEMTREC (CONTRACT CON24117) GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true Generator's/Offeror's Printed/Typed Name Day Month DOWN WILLIAMS WILSOT-1487 16. International Shipments INTL Import to U.S. Export from U.S. Port of entry/exit: Transporter signature (for exports only): Date leaving U.S.: 17. Transporter Acknowledgment of Receipt of Materials Transporter,1 Printed/Typed-Name Signature Fredd/e 30 Transporter 2 Printed/Typed Name R 18. Discrepancy 18a. Discrepancy Indication Space Partial Rejection Full Rejection COUNCIFUE Manifest Reference Number: 18b. Alternate Facility (or Generator) DESIGNATED FACILITY U.S. EPA ID Number Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 14/32 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Month Day 3. W CY EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

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WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

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Receipt #: 538817

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Transporter: 4セル

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

510-EMELLE



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451955GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 09, 2017

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451956GBF-1
Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

all Jallett / am

Al Talbott, Safety Manager

November 09, 2017

 OSD
 Unique ID
 Cont #
 Profile
 Disposed
 Description

 10/31/17
 003451956GBF-01
 1
 CM9879
 11/6/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1

Manifest: 003451956GBF-1

Signature.

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Printed/Typed Name

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

DESIGNATED FACILITY TO GENERATOR

Month



Waste Management

461894

#

WEIGHED ON CARDINAL SCALES **Emelle Facility**

GROSS

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88089

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NET 位551階 11/06/2017

(11,540rg)

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528864 Manifest #: 003451956 618F Trailer #:

Receipt #:

Transporter: 14

Customer:

Truck #: 004

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY WEIGHED BY_

510-EMELLE



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451956GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 09, 2017

(205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451957GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 09, 2017

OSD Unique ID 10/31/17 003451957GBF-01 Cont # Profile 1 CM9879

Disposed I

Description
ANNISTON PCB SITE CONSENT DECR

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	ROBBIE DV	1000.01C.				U.S. EPA ID		(157655)	98/1
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8. Des	signated Facility Name and Si	ite Address		-		U.S. EPA ID I			
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WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

461848 #

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12:04FM 11/05/2017

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GROSS

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NET

Trailer #: 2102

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OHO'BZ

ADO

Transporter: _

Customer:_

435

Truck #:

SREY Manifest #: 003451957

Receipt #: 528826

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

510-EMELLE



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451957GBF

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Al Talbott Safety Manager

November 09, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451958GBF-1
Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

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al Jallett /cm

Al Talbott, Safety Manager November 14, 2017

OSD Unique ID 10/31/17 003451958GBF-01

Cont # Profile 1 CM9879

Manifest: 003451958GBF-1

Disposed 11/9/17 Description

ANNISTON PCB SITE CONSENT DECR

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2136

CMD

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Waste Management

464243

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Emelle Facility
WEIGHED ON CARDINAL SCALES

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510-EMELLE

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY WEIGHED BY



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451958GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 14, 2017

 $\mathbf{W}\mathbf{M}$

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451959GBF-I Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

al Jallett / Cr

Al Talbott, Safety Manager

November 14, 2017

 OSD
 Unique ID
 Cont #
 Profile
 Disposed
 Description

 10/31/17
 003451959GBF-01
 1
 CM9879
 11/10/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1

Manifest: 003451959GBF-1

WEIGHED ON CARDINAL SCALES

Waste Management **Emelle Facility**

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Site Infomation

ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451959GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 14, 2017

 $\mathbf{W}\mathbf{M}$

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE VENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201-

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451951GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott Safety Manager

November 03, 2017

 OSD
 Unique ID
 Cont # Profile
 Disposed
 Description

 11/1/17
 003451951GBF-01
 1 CM9879
 11/1/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451951GBF-1

Jox#6038

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Form Approved. OMB No. 2050-0039 Please print or type. (Form designed for use on elite (12-pitch) typewriter.) UNIFORM HAZARDOUS 1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone 4. Manifest Tracking Number WASTE MANIFEST (801W17-1197 EXEMPT 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIAING ANNISTON PCH SITE ANNISTON FOR SITE 702 CLYDEGDALE AVE SEEPSTREET Generator's Phone:
6. Transporter 1 Company Name ANNISTON AL 36201 U.S. EPA ID Number ALDMAY 130091 ROBBIE D WOOD, INC. U.S. EPA ID Number 7 Transporter 2 Company Name 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL WASTE MANAGEMENT, INC. HIGHWAY 17 HORTH, MILE MARKER 163 VED006055484 EMELLE AL 35/1570 Facility's Phone (1997) 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers 11. Total 12 Unit 9a 13. Waste Codes and Packing Group (if any)) Quantity Wt /Vol HM No. Type UM3432 NO POLYCHLORINATED HIPMENYLS GENERATOR FCB'S 18(UK) 001 CM SOLID.9.UN3492.III CM9870 14. Special Handling Instructions and Additional Information POM 42498202 43516075 D3D; (XX)3333334-0; 2017 1.CM9879 ERG#171 EM PROVIDER: CHEMTRES (CONTRACT CONSAIT) 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true. Day Generator's/Offeror's Printed/Typed Name DONN WILLIAMS COLEDY-1187 16. International Shipments Import to U.S. Export from U.S. Port of entry/exit Date leaving U.S. Transporter signature (for exports only): 17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name William by trooper Na Transporter 2 Printed/Typed Name R 18. Discrepancy Type Residue Residue 18a. Discrepancy Indication Space Full Rejection Partial Rejection levite to find . U.S. EPA ID Number 18b. Alternate Facility (or Generator) Facility's Phone: Month Year 18c. Signature of Alternate Facility (or Generator) 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name

WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

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510-EMELLE

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SOLUTIA INC 702 CLYDESDALE VENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEPST

ANNISTON, AL 36201-

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451951GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 03, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE VENUE ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ANNISTON, AL 36201-

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451953GBF-I Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

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Al Talbott, Safety Manager

November 03, 2017

 OSD
 Unique ID
 Cont #
 Profile
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 10/30/17
 003451953GBF-01
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 11/2/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451953GBF-1

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

124599

CVA

Form Approved. OMB No. 2050-0039 Please print or type. (Form designed for use on elite (12-pitch) typewriter.) UNIFORM HAZARDOUS 1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone 4. Manifest Tracking Number WASTE MANIFEST EXEMPT (601)807-1107 5. Generator's Name and Mailing Address Site Address (if different than mailing address) SOLUTIAING ANNISTON POBESITE ANNISTON PCB SITE Generator's Phone:
6. Transporter 1 Company Name SEEPSTREET ANNISTYDMAL 36201 U.S. EPA ID Number ROBBIE D WOOD, INC. ALDON7136691 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number Chemical umste management, inc. HIGHWAY IT NORTH, MILE MARKER 163 ALLXION022484 Facility's Phone (10) 65 a - 072 EMELLE AL SEASO 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers 9a 11. Total 12. Unit 13. Waste Codes and Packing Group (if any)) HM Quantily Wt Not Type una 432.FO.POLYCHI ORIMAYED BIFREMYLG GENERATOR PCLE 16000 1 CMB Cal K SOLID.O.MN3432.III CAMBRID ROLLOFF 21112 14. Special Handling Instructions and Additional Information POS 450000000 43516015 OSD: OCTOBER#, 2017 ERI PROVIDER: CHEMIREC (COMPRACT CONSAITS) 15. GENERATOR'S/ÓFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. Locatify that the waste minimization statement identified in 40 CFR 262 27(a) (if I am a large quantity generator) or (b) (if I arin a small quantity generator) is true Generator's/Offeror's Printed/Typed Name Signature Month Day Year DONN WILLIAMS SOI-SOV-1167 immig 16. International Shipments Import to U.S. Port of entry/exit: Export from U.S. ż Date leaving U.S. Transporter signature (for exports only): 17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Month Day Year K 18. Discrepancy 18a. Discrepancy Indication Space Quantity Partial Rejection Full Rejection Corrected 18b. Alternate Facility (or Generator) U.S. EPA ID Number Facility's Phone DESIGNATED 18c. Signature of Alternate Facility (or Generator) Month Year Day 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Signature Printed/Typed Name



WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

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510-EMELLE

LI-8-11 -X



SOLUTIA INC 702 CLYDESDALE VENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201-

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451953GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

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Al Talbott Safety Manager

November 03, 2017

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451954GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

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Al Talbott, Safety Manager

November 09, 2017

OSD Unique ID Cont # Profile Disposed Description

10/30/17 003451954GBF-01 1 CM9879 11/3/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451954GBF-1

Please	print or type. (Form design	ned for use on elite (12-,) 1. Generator ID Number	typewriter.) '						rm Approved. OMB	No. 2050	
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COUNTY



Waste Management Emelle Facility

461841

WEIGHED ON CARDINAL SCALES

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Receipt #: 538830

- Manifest #: 003/45/95/46BF

Trailer #: 1010

510-EMELLE

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

L.1-L1-11 L1-80-11

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451954GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 09, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451952GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 27, 2017

OSD Unique ID Cont # Profile Disposed Description

11/4/17 003451952GBF-01 1 CM9879 11/20/17 ANNISTON PCB SITE CONSENT DECR

Manifest: 003451952GBF-1

Page 1 of 1

lease pri	nt or type. (Form desig	ned for use on e	lite (12-pitch) typewriter.)		i	BOX	455			m Approved. OMI	B No. 2050-003
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WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

460920 #

75540 15 250%

11:16AM 11/20/2017

GROSS

TARE

RET

4(540 1b 8888

OS14PH 11/20/2017

35100

12921

Trailer #: 455

Manifest #: 003451953695

510-EMELLE

Customer: Mnnistan RB Site

Transporter: KDL

Truck #: 005

Receipt #: 5343 33

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY WEIGHED BY



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451952GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

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Al Talbott Safety Manager

November 27, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201 Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451948GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 27, 2017

OSD Unique ID Cont # Profile Disposed Description

11/5/17 003451948GBF-01 1 CM9879 11/20/17 ANNISTON PCB SITE CONSENT DECR

Manifest: 003451948GBF-1

Page 1 of 1

	igned for use on elite (12-pitch) typewriter.)	BOXA			1		n Approved. OMB	No. 2050-00
UNIFORM HAZARDOUS WASTE MANIFEST		90	3. Emergency Response		4. Manifest	Tracking N	1948	GBF
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	D WOOD, INC.						67138891	
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8. Designated Facility Name a					U.S. EPA ID N	lumber		
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Waste Management

460922

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WEIGHED ON CARDINAL SCALES **Emelle Facility**

63620 lb

880%

11540例 11/20/2017

41540 15 35035

GROSS

01:38PM 11/20/2017

64 C/O C/O TARE NET

Trailer #: customer: Annishan PCB SHE

Transporter: 200

Truck #: 305

2037

Manifest #: 003451948 GBF

Receipt #: 599,394

510-EMELLE

DIGITAL WEIGHT INDICATOR & PRINTER (F) WEIGHED BY_

-11-81



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451948GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

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Al Talbott Safety Manager

November 27, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451960GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

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Al Talbott, Safety Manager

allett

November 27, 2017

OSD Unique ID Cont # Profile Disposed Description

11/4/17 003451960GBF-01 1 CM9879 11/16/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451960GBF-1

916

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1	_		1. Generator ID Number		2. Page 1 of	3. Emerge	ncy Response	Phone	4. Manifest 1			GBF		
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Waste Management **Emelle Facility**

463836

WEIGHED ON CARDINAL SCALES

55860 lb SEC.53 10:278M 11/16/2017

35125 JA 380%

GROSS

0:28PM 11/15/2917

TARE

NET

Trailer #:

130,448

5301EG

Receipt #:_

40%

Truck #:_

Transporter:

Customer:

Manifest #: 00345191

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY WEIGHED BY

510-EMELLE

L1-08-11 L1-01-11 K-



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEPST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451960GBF

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Al Talbott Safety Manager

November 27, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451961GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

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Al Talbott, Safety Manager

November 27, 2017

OSD Unique ID Cont # Profile Disposed Description

11/4/17 003451961GBF-01 1 CM9879 11/16/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451961GBF-1

CWA Boy 1)4(88 \\
Form Approved, OMB No. 2050-0039 Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 1. Generator ID Number 4. Manifest Tracking Number 2. Page 1 of 3. Emergency Response Phone **UNIFORM HAZARDOUS** GBF **WASTE MANIFEST** EXEMPT (601)807-1187 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIAING ANNISTON PCB SITE AMNISTON PCB SITE 702 CLYDESDALE AVE SEEP STREET Generator's Phone: **ANNISTON AL 35201** 6. Transporter 1 Company Name U.S. EPA ID Number ALD067138891 ROBBIE D WOOD, INC. 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL WASTE MANAGEMENT, INC. HIGHWAY 17 NORTH, MILE MARKER 163 ALD000622464 EMELLE AL 35450 Facility's Phone 05) 32-3721 10. Containers 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 11. Total 12. Unit 9a 13. Waste Codes and Packing Group (if any)) Quantity Wt./Vol. HM No. Туре UN3432,RQ,POLYCHLORINATED BIPHENYLS GENERATOR PCB'8 001 CM 14000 K SOLID, 9, UN3432, III 14774 MIL CM9870

	14. Special Handling Instructions and Additional Information 1. CMUSTO ERGN171 POS 43490292 435 16077	OSD: OCTOBER 9, 2017
	ERI PROVIDER: CHEMTREC (CONTRACT CCN24117)	Nout
	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accur marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Cons I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I a	and national governmental regulations. If export shipment and I am the Primary ent.
	Generator's/Offeror's Printed/Typed Name Signature	Month Day Year
+	DONN WILLIAMS 601-807-1187	11 11 11 11 11 11 11 11 11 11 11 11 11
INL	16. International Shipments Import to U.S. Export from U.S. P	ort of entry/exit:
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ER	17. Transporter Acknowledgment of Receipt of Materials	All Do
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FACILITY	18b. Alternate Facility (or Generator) Facility's Phone:	U.S. EPA ID Number

Signature

1 B

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

uandria

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

18c. Signature of Alternate Facility (or Generator)

Printed/Typed Name

Month

Month

11

Day

Day

101

Year

Year

Waste Management

WEIGHED ON CARDINAL SCALES **Emelle Facility**

463824 #

SSONS

08:32AM 11/16/2017

THE PROPERTY 2015

GROSS

TARE 700/5/11 MIDIZ

NET

200 to 100 to 10

Solution RDW Customer: _

707

Transporter:

Truck #:

TH1958 Receipt #:

Manifest#: 003451961 光路F

エナー

Trailer #:__

DIGITAL WEIGHT INDICATOR & PRINTER

WEIGHED BY_

510-EMELLE



Site Information

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451961GBF

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Al Talbott Safety Manager

November 27, 2017

 $\mathbf{W}\mathbf{M}$

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201 ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451962GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 27, 2017

OSDUnique IDCont #ProfileDisposedDescription11/10/17003451962GBF-011CM987911/20/17ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451962GBF-1

Load#1247110

BOX#25268	CWA
BOX 25268 Form Approved: OMB No.	2050-00

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	5. Generator's Name arid Mailing Address SOLUTTA INC ANNISTON PCB SITE 702 CLYDESDALE AVE Generator's Phone: Generator's Phone:	SE	dress (f different the NETON PEPSTREENSTON AL	CB SITE 1' . 38201		75	·	
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	8. Designated Facility Name and Site Address CHEMICAL WASTE MANY HIGHWAY 17 NORTH, MILE Facility's Photococcustors and Site Address	AGEMENT, INC. LE MARKER 16	3	U.S. EPA ID N		008224	84	
	9a. HM 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. C No.	Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. V	Vaste Codes	
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÷	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consign marked and labeled/placarded, and are in all respects in proper condition for transport according to Exporter, I certify that the contents of this consignment conform to the terms of the attached EPAA I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quant	o applicable international ar Acknowledgment of Consen	d national governm	nental regulations.				
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DESIGNATED FACILITY	18c. Signature of Alternate Facility (or Generator)					Mor	nth Day	Year
55	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, d	lisposal, and recycling syste	ims)				•	
- DES	1. H(32	3.		4.				
П	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by th	e manifest except as noted	in Item 18a					
1	Printed/Typed Name 08510a+1ay115	Signature	201 18	th-		Mon	th Day	Year
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Waste Management **Emelle Facility**

WEIGHED ON CARDINAL SCALES

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Receipt #:_

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510-EMELLE



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451962GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 27, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451963GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 27, 2017

OSD Unique ID Cont # Profile Disposed Description

11/9/17 003451963GBF-01 1 CM9879 11/20/17 ANNISTON PCB SITE CONSENT DECR

Manifest: 003451963GBF-1

Page 1 of 1

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EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

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1247109

Form Approved. OMB No. 2050-0039 Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 2. Page 1 of 3. Emergency Response Phone . Manifest Tracking Number 1. Generator ID Number UNIFORM HAZARDOUS GBF WASTE MANIFEST 16011807-4187 EXEMPT 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIAING ANNISTON PCB SITE ANNISTON PCB SITE 702 CLYDESDALE AVE SEEP STREET ANNISTON AL 36201 Generator's Phone: 6. Transporter 1 Company Name U.S. EPA ID Number ALD087138891 ROBBLE D WOOD, INC. U.S. EPA ID Number 7. Transporter 2 Company Name 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL WASTE MANAGEMENT, INC. HIGHWAY 17 NORTH, MILE MARKER 163 ALD000622464 Facility's Phone (a) 152-9721 EMELLE AL 35459 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers 11. Total 12. Unit 13. Waste Codes and Packing Group (if any)) Quantity Wt./Vol. HM No. -Type LM3432.RO.POLYCHLORMATED BIPHENYLS PCBS GENERATOR 19009 001 CM W. SOLID.9.UN3432.III 1.1 CM0079 14. Special Handling Instructions and Additional Information OSD: OCTOBER 9, 2017 NOV. 9, 2017 PO# 43406292 1.CM9879 ERG#171 ERIPROVIDER: CHEMTREC (CONTRACT CCN24117) 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true Month Day Year Generator's/Offeror's Printed/Typed Name DONN WILLIAMS 601-807-1187 16. International Shipments Export from U.S. Port of entry/exit: Import to U.S. Date leaving U.S.: Transporter signature (for exports only): 17. Transporter Acknowledgment of Receipt of Materials Month Day Year Trapsporter 1 Printed/Typed Name **IR ANS** Transporter 2 Printed/Typed Name 18. Discrepancy 18a. Discrepancy Indication Space Туре Residue __ Partial Rejection Full Rejection Quantity Williams hin 16 CVH of Henry Continued Manifest Reference Number: U.S. EPA ID Number 18b. Alternate Facility (or Generator) Facility's Phone: Month Day Year 18c. Signature of Alternate Facility (or Generator) GNATED 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) DESI 4. 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Month Year Printed/Typed Name Signature Day

463911 GS:59PH 11/20/2017 09:424# 11/20/2017 63860 lb # WEIGHED ON CARDINAL SCALES 888 Waste Management Trailer #: 05171 **Emelle Facility** Customer: Mnishan PR Transporter: ADV 304 Truck #:

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510-EMELLE

Manifest #: 003451910369F

Receipt #: 539334

DIGITAL WEIGHT INDICATOR & PRINTER

WEIGHED BY_



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEPST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451963GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 27, 2017

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451955GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

November 09, 2017

OSD Unique ID Cont # Profile Disposed Description

10/31/17 003451955GBF-01 1 CM9879 11/3/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451955GBF-1

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WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

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510-EMELLE

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SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451955GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

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Al Talbott Safety Manager

November 09, 2017

(205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE

7.45.75.55.55.55.55

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

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Al Talbott, Safety Manager

November 09, 2017

OSD Unique ID 10/31/17 003451956GBF-01 Cont # Profile 1 CM9879 Disposed

Description

ANNISTON PCB SITE CONSENT DECR

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	15. GENERATOR'S/OFFEROR marked and labeled/placard Exporter, I certify that the co	CRIENTINES (CONTINAS) 'S CERTIFICATION: I hereby declare that the ed, and are in all respects in proper condition nitents of this consignment conform to the term.	e contents of this consignment for transport according to applic	are fully and accurately de cable international and nat ledoment of Consent	scribed above ional governme	ntal regulations. If	ning name	and are classified	oackaged, Primary
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Waste Management **Emelle Facility** WEIGHED ON CARDINAL SCALES

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528869 Manifest #: 003451956 618F Trailer #:

510-EMELLE

Truck #: 304 Transporter: Customer: _

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WEIGHED BY



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

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Al Talbott Safety Manager

November 09, 2017

(205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

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Al Talbott, Safety Manager

November 09, 2017

Unique ID Cont # Profile Disposed Description 10/31/17 003451957GBF-01 CM9879 11/3/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451957GBF-1



Waste Management

WEIGHED ON CARDINAL SCALES **Emelle Facility**

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	18. Discrepancy											
	18a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection Full Rejection										ction	
18	18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number											
	cility's Phone:					1						
180	: Signature of Alternate Facility (or	Generator)							Month	Day	Year	
	Hazardous Waste Report Manager	nent Method Codes (i.e., codes for hazardo	us waste treatment, disposal, an	recyc	ling systems)					L		
1.	H1.32	2.	3.				4.					
	Designated Facility Owner or Opera	ator: Certification of receipt of hazardous ma	Signatu		as noted in Item 18a	90	up-p3,		Month	Day	Year	

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451957GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 09, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451958GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

allett/cn

Al Talbott, Safety Manager November 14, 2017

020 11-1-- 10

 OSD
 Unique ID
 Cont # Profile
 Disposed
 Description

 10/31/17
 003451958GBF-01
 1 CM9879
 11/9/17
 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1

Manifest: 003451958GBF-1

Walter

Please print or type. (Form designed for use on elite (12-L. , typewriter.) Form Approved. OMB No. 2050-0039 UNIFORM HAZARDOUS 1. Generator ID Number 4. Manifest Tracking Number 2. Page 1 of 3. Emergency Response Phone WASTE MANIFEST GBF EXEMPT esnamby a 187 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIA INC ANNISTON POBSITE annistich poe effe 702 CLYDESDALE AVE SEEP STREET Generator's Phone: Generator's P ANNISTON M. 30200 6. Transporter 1 Company Name U.S. EPA ID Number MEREPASTORIA LE 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL WASTE MANAGEMENT, INC. BUCHUUT IZ NORTH, BILLE MARKER 100 ALDOUBLERGE 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 9a. 11. Total 12. Unit and Packing Group (if any)) HM 13. Waste Codes Quantity No. Wt. Nol. Type UNS432,RO,POLYCHLORINGTED EIPHENYLS / GENERATOR 11511 1116 Min a CM PHILIP IN penu. SOLID, 0, 1, 118432, 111 65 CHEBRATO 14. Special Handling Instructions and Additional Information 1.CM8079 ERG9171 POS 404999999 435*160 7 OSD: OCTOBER 0.2017 31 ERI PROVIDER: CHEMTREC (CONTRACT COMMIT) 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true. Generator's/Offeror's Printed/Typed Name Year DOMN WALLIAMS COLEDY-1987 16. International Shipments Import to U.S. Export from U.S. Port of entry/exit: Transporter signature (for exports only): Date leaving U.S. 17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name TR ANSPORT Month Year CM Cyo Transporter 2 Printed/Typed Name 18. Discrepancy 18a. Discrepancy Indication Space **Quantity** Type Residue Partial Rejection Full Rejection 18b. Alternate Facility (or Generator) U.S. EPA ID Number Facility's Phone: DESIGNATED 18c. Signature of Alternate Facility (or Generator) Month Day 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Signature Day. Year EPA Form 8700-22 (Rev. 3-05) Previous editions are obsoléte

Waste Management

WEIGHED ON CARDINAL SCALES **Emelle Facility**

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313b

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Trailer #:

Manifest #: 00345/958GBF

53000

Receipt #:

Truck #:

Transporter:

Customer:

510-EMELLE

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

WEIGHED BY



P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451958GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 14, 2017

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451959GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

al Jallett /cm

Al Talbott, Safety Manager

November 14, 2017

OSD Unique ID Cont # Profile Disposed Description

10/31/17 003451959GBF-01 1 CM9879 11/10/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1

Manifest: 003451959GBF-1

WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

464283

12:50PM 11/10/2017 75040 1b GEDSS

42860 lb 25036

GROSS

TARE

G3:09PM 11/10/2017

15050 kg PET

Trailer #:

539033

Receipt #:

Truck #:_

Transporter:

Customer:

Manifest #: 003451959

DIGITAL WEIGHT INDICATOR & PRINTER
WEIGHED BY

510-EMELLE

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SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE

SEEPST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451959GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

November 14, 2017

Roll off Number	Date In	Date out	Manifest #	Disposal Date	COD (Y,N)	Weight (tons)
382	11/2/2017	11/30/2017	003451964gbf	12/11/2017	Υ	15.66
25228	11/17/2017	12/1/2017	003451965gbf	12/14/2017	Y	13.6
25273	11/14/2017	12/5/2017	003451966gbf	12/13/2017	Υ	13.16
5002	11/14/2017	12/5/2017	003451968gbf	12/19/2017	Υ	10.81
2527	12/7/2017	12/5/2017	003451969gbf	12/18/2017	Υ	9.41
25112	12/6/2017	12/5/2017	003451970gbf	12/13/2017	Υ	14.5
25278		12/10/2017	003451971gbf	12/27/2017	Υ	13.08
2148		12/10/2017	003541972gbf	12/28/2017	Y	11.66
916		12/10/2017	003541973gbf	12/28/2017	Υ	17.55

 $\mathbf{W}\mathbf{M}$

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE SEEP ST

2.43.5.230.40**3**4613.600...

ANNISTON, AL 36201

ANNISTON, AL 36201 Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

Manifest: 003451964GBF-1

as described on Hazardous Waste Manifest Number 003451964GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

allett /cm

December 14, 2017

OSD Unique ID Cont # Profile Disposed Description
11/30/17 003451964GBF-01 1 CM9879 12/11/17 ANNISTON PCB SITE CONSENT DECR

Bx 382

Form Approved. OMB No. 2050-0039 Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 4. Manifest Tracking Number UNIFORM HAZARDOUS 1. Generator ID Number 2. Page 1 of 1.3. Emergency Response Phone WASTE MANIFEST EXEMPT (601)607-1187 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIA INC ANNISTON PCB SITE **ANNISTON PCB SITE** 702 CLYDESDALE AVE SEEPSTREET Generator's Phone: ANNISTON AL 36201 U.S. EPA ID Number ROBBIE D WOOD, INC ALD067136891 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL WASTE MANAGEMENT, INC. HIGHWAY 17 NORTH, MILE MARKER 163 ALD000622484 EMELLE AL 35459 Facility's Phone 05 652-972 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 9a 10. Containers 11. Total 12 Unit 13. Waste Codes and Packing Group (if any)) HM Туре Quantity Wt./Vol UN3432, RQ.POLYCHLORINATED BIPHENYLS GENERATOR POSTS DOT CM 18000 K SOLID.0.UN3432.III 14207 CM9379 14. Special Handling Instructions and Additional Information OSD: OGTOBER 9, 2017 Nov. 30 / 12 - 1 1.CM9879 ERG#171 PO# 43406292 ERI PROVIDER: CHEMTREC (CONTRACT CCN24117) 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true. Generator's/Offeror's Printed/Typed Name Month DOWN WILLIAMS 601-807-1187 16. International Shipments Import to U.S. Export from U.S. Port of entry/exit: ż Transporter signature (for exports only): Date leaving U.S.: 17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Month Day Year Lleva Transporter 2 Printed Typed Name K 18. Discrepancy 18a. Discrepancy Indication Space Quantity Residue Partial Rejection

A Mahifest Reference Number: Full Rejection FACILITY Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Signature



Waste Management **Emelle Facility**

460888 #

WEIGHED ON CARDINAL SCALES

67040 1b GEOES 104416K 12/11/2017

35720 JB GROSS

GROSS

TARE

NET

OI:40FM 12/11/2017

31.300 48

Trailer #:

NOTION

Receipt #:

Truck #:_

Transporter: 2DW

Customer:

Manifest #: DD344519(0468F

510-EMELLE

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

WEIGHED BY

L1-11-81-7



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEP ST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451964GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

December 14, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451966GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

M Jallett / Cin
Al Talbott, Safety Manager

December 20, 2017

OSD Unique ID Cont # Profile Disposed Description

12/5/17 003451966GBF-01 1 CM9879 12/13/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451966GBF-1

25279 25273

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039 4. Manifest Tracking Number UNIFORM HAZARDOUS 1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone 00345 GBF WASTE MANIFEST (601 WO7-1187 5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address) SOLUTIAINC ANNISTON PCB SITE **ANNISTON PCB SITE** 702 CLYDESDALE AVE SEEPSTREET Generator's Phone: ANNISTON AL 38201 U.S. EPA ID Number ROBBIE D WOOD, INC ALD057138891 7. Transporter 2 Company Name U.S. EPA ID Number 8. Designated Facility Name and Site Address U.S. EPA ID Number CHEMICAL YASTE MANAGEMENT, INC. HIGHWAY 17 NORTH, MILE MARKER 163 ALD000822464 EMELLE AL 35459 Facility's Phone: U.5) 652-972 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers 11 Total 12 Unit 9a , 13. Waste Codes and Packing Group (if any)) HM Туре Quantity Wt. Nol. UN3432.RQ.POLYCHLORINATED BIPHENYLS GENERATOR PCDS Out CM 18000 N. 60LID,0,UN3432.III CM9876 14. Special Handling Instructions and Additional Information OSD; GENERAL VINCAT 1.CM9879 ERG#171 12-5-17 ERI PROVIDER: CHEMTREC (CONTRACT CCM24117) 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true Generator's/Offeror's Printed/Typed Name Month Day DOWN WILLIAMS 801-807-1187 16. International Shipments Import to U.S. Export from U.S. Port of entry/exit: Transporter signature (for exports only): Date leaving U.S.: 17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Signature Month Day Year MATHURY 08 Transporter 2 Printed/Typed Name Signature Month K 18. Discrepancy Partial Rejection Per Michael Reference Number: 12/14 18a. Discrepancy Indication Space Full Rejection 18b. Alternate Facility (or Generator) FACILITY Facility's Phone: DESIGNATED 18c. Signature of Alternate Facility (or Generator) Month Day Year 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Signature



Waste Management **Emelle Facility**

460383 #

WEIGHED ON CARDINAL SCALES

8888

11:15AM 12/13/2017

35480 lb 88088

GROSS

TARE

02:17PM 12/13/2017

NET

(MASQ FB)

201200

Manifest #: 0034519100 GBF

510-EMELLE

customer: AnniStan PCB SHE

Transporter: KDW

Tac Truck #:

Receipt #: 53979

DIGITAL WEIGHT INDICATOR & PRINTER

WEIGHED BY



SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

Site Infomation

ANNISTON PCB SITE SEEPST

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451966GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

December 20, 2017

WM

Chemical Waste Managment P.O. Box 55 36964 Alabama Hwy 17 Emelle, AL 35459-0055 (205)652-9721

Manifest Document Number:

Site Information

SOLUTIA INC 702 CLYDESDALE AVENUE ANNISTON PCB SITE

SEEP ST

ANNISTON, AL 36201

ANNISTON, AL 36201

Attn: DONN WILLIAMS

CERTIFICATE OF DISPOSAL

Chemical Waste Management, Inc. (ALD000622464) has received PCB material from ANNISTON PCB SITE

as described on Hazardous Waste Manifest Number 003451968GBF-1 Waste Management, Inc. hereby certifies that the above described material (excluding PCB liquids, if applicable) was landfilled on the dates shown below, in compliance with State and Federal Regulations.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representation (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Al Talbott, Safety Manager

December 20, 2017

OSD Unique ID Cont # Profile Disposed Description
12/5/17 003451968GBF-01 1 CM9879 12/19/17 ANNISTON PCB SITE CONSENT DECR

Page 1 of 1 Manifest: 003451968GBF-1

1271 11 13 48 705 CVM
Form Approved. OMB No. 2050-0039

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П		702 CLYDESDALE AVE General SPRONE General SPRONE ANMISTON AL 36201											
П	Gene 6. Tra	Generator's Phone: 6. Transporter 1 Company Name U.S. EPA ID Number											
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	7. Tra	ROBBIE D WOOD, INC. AL D067138891 7. Transporter 2 Company Name U.S. EPA ID Number											
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П	8. Designated Facility Name and Site Address U.S. EPA ID Number												
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	1.0	14. Special Handling Instructions and Additional Information 1. CMS879 ERG#171 PO# 43406202 OSD: OCTOBER 9: 2617 12-5-17 ERI PROVIDER: CHEMTREC (CONTRACT CCN24117)											
	15. C	GENERATOR'S/OFFEROR narked and labeled/placard exporter, I certify that the co	R'S CERTIFICATION: I hereby declare that the contents of this ded, and are in all respects in proper condition for transport accondents of this consignment conform to the terms of the attached mization statement identified in 40 CFR 262.27(a) (if I am a large	consignment are ording to applical d EPA Acknowled	ole internation	nal and natio	nal governm	nental regulations. I					
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INT	16. Inte	ernational Shipments		Export from U.S		Port of entr	-						
_		porter signature (for export	ts only):			Date leavin							
TER		ensporter Acknowledgment orter 1 Printed/Typed Nam	7 - 2 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /	Ciohal				/		11-11		V -	
TR ANSPORTER	Transp	ONU MI		Signal	1111	Trely	11/1	co li		Monti	h Day	Year	
(NSI	Transp	porter 2 Printed/Typed Nam	ne // Con	Signa	ure /	in cir	1010			Monti	h Day	Year	
TR/											1	1	
1	18. Dis	screpancy	1			: ₁₄ ,				-			
П	18a. D	iscrepancy Indication Space	ce Quantity Type		Re	sidue	Note	Partial Rejec	tion		Full Rej	ection	
	0	101	1	AA.	Last	Price	B	W 121	wh	7	7100.000		
۲.	18b Al	Hernate Facility for Genera	foreceived weight to	MIC	(Manifest	Reference	Vumber:	LIS EPA ID NIII	mhor mhor				
5	185. Allernate Facility (or Generator) U.S. EPA ID Number												
FAC	Facility	's Phone:						1					
		ignature of Alternate Facilit	y (or Generator)							Mont	th Day	Year	
NA													
DESIGNATED FACILITY	19. Ha	zardous Waste Report Mar	nagement Method Codes (i.e., codes for hazardous waste treatment		nd recycling	systems)							
ă	le ·	H130	2.	3.				4.					
	20 De		Operator: Certification of receipt of hazardous materials covered	d by the manifes	excent se n	ded in Itom	18a	**					
		B/Typed Name	25 M + Mills	Signat		ALL 1	116	nd la	1.1	Mont	h Day	Year	
:DA	Ганта	9700 22 (Pov. 3 05) Dr	rouisus aditions are shoolets		1	The state of	1	1 HA	V				



WEIGHED ON CARDINAL SCALES Waste Management **Emelle Facility**

445329 #

57240 Ib

8588 8588

09:359M 12/19/2017

35520 Ib 88088

GROSS

Q:35FM 12/19/2017

TARE

STORING. NET

FORM 510

Manifest #: 0034519u8GBF 5002 Trailer #: 539903 Transporter: ΔM Truck #: 304

Receipt #:

DIGITAL WEIGHT INDICATOR & PRINTER WEIGHED BY

11. P1.51 11. P1.51

PRIORITY PRINTING - (601) 934-9001

Customer. Annishin RB Sit



Site Infomation

ANNISTON PCB SITE

SEEPST

SOLUTIA INC 702 CLYDESDALE AVENUE

ANNISTON, AL 36201

Attn: DONN WILLIAMS

ANNISTON, AL 36201

ACKNOWLEDGEMENT OF RECEIPT OF WASTE SHIPMENT

Generator Name: ANNISTON PCB SITE

Enclosed is/are your Generator Number Two copy / copies for Alabama Manifest Numbers:

003451968GBF

This copy is to acknowledge that Chemical Waste Management, Inc., of Emelle, Alabama has received your shipment. As a requirement of 40 CFR 264.12 (b), this letter serves to inform you that this facility has the proper permits and will accept your shipment upon completion of waste analysis procedures specified in the facility's Waste Analysis Plan and as determined in the approval waste profile submitted for this/these wastes.

As of September 26, 1997, Chemical Waste Management, Inc., Emelle Alabama (ALD000622464) is operating under a AHWMMA Permit, issued by the Alabama Department of Environmental Management. (RCRA)

Al Talbott Safety Manager

December 20, 2017



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix D

Non-RA Equipment Information

Appendix D.1 WMA II Upgrades Equipment Appendix D.2 SWMU 1 Upgrades Equipment



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix D

Appendix D.1 WMA II Upgrade Equipment



±0.009 ±0.011

±0.015

±0.015

3.000

4.000

12 14 16

4.000

5.000 6.000

10

6.614 8.610

10.735 12.735

4.518

6.647

8.655

Sizes Available

SUBMITTAL FOR CHARLOTTE PIPE® PVC SCHEDULE 80 PRESSURE PIPE AND FITTING SYSTEM

Da	ite: 10-8	-15							
Jo	b Name:	Socuma	- GROUNDWATE	RA	Location:				
En	gineer:	OLDER	ASSOCIATES		Contractor:_	TAYLOR	CORPO	RATIO	2
	Scope: This specific pressure ap	cation covers l	PVC Schedule 80 re the operating to	pipe and fitling emperature wi	gs for pressure Il not exceed 1	applications. T	his system	is intend	ed for
	Specification Pipe and fitt 12454 as ide		manufactured from M D 1784.	ı virgin rigid P\	VC (polyvinyi c	hloride) vinyl co	ompounds v	vith a cel	l class of
	80 fittings shand fittings s manufacture	nall conform to shall be manu	all be Iron Pipe Si ASTM D 2467. P factured as a syste d States. Pipe and ndard 14.	VC Schedule em and be the	80 threaded fit product of one	tings shall conf e manufacturer.	orm to ASTI All pipe and	M D 2464 d fittinas	1. Pipe shall be
	conform to a with ASTM I manufacture protected fro chemical ag WARNING!	shall comply wall applicable part 1668 and AS and for thermoporn chemical a ents not comp	ith the latest insta dumbing, fire, and TM D 2774. Solve lastic piping syste gents, fire-stoppin atible with PVC co h or transport/stor se severe injury o	building code ent cement joir ms and solver ig materials, thompounds. The e compressed	requirements. Ints shall be ma Int cement conforead sealant, personal in the system shall	Buried pipe shade in a two-step orming to ASTN plasticized-vinylable by drostatical	all be install p process w 1 D 2564. The products of ally tested a	ed in acc vith prime he syster r other ag fter insta	cordance er n shall be ggressive llation.
	ASTM D 1784 ASTM D 1785	: PVC Plast or D 2467: PVC : PVC Sock	I Compounds ic Pipe, Schedule 80 Threaded Filtings, S et Filtings, Schedule ements for PVC Pipe	Schedule 80 A	ASTM D 2774: ASTM F 1668: NSF Standard 14: NSF Standard 61:	Underground Ins Thermoplastic P Procedures for E Plastic Piping Co Drinking Water S	ressure Piping Buried Plastic Emponents & .	Pipe Related M	aterials ealth Effects
Qi	uarter Bend	Eighth Bend	Cross	Street Quarter Bend	Tap:	e A B	2467	C(Kalaza)	Schedole 40 Societ length C[K'Alexin]
M	ale Adapter	Bushing	Female Adapter	Cap	1 11/2 11/2 11/2 11/2 11/2 11/2 11/2 11	1 1.058 1.04 1.325 1.31 4 1.670 1.65 2 1.912 1.89	6 ±0.004 0 ±0.005 5 ±0.005 4 ±0.006	0.875 1.000 1.125 1.250 1.375 1.500	0.688 0.719 0.875 0.938 1.094
	garagement cons		1	Not all fitting	21/3			1.750 1.875	1.750 1.875

Charlotte Pipe and Foundry Company • P.O. Box 35430 Charlotte, NC 28235 • (800) 438-6091 • www.charlottepipe.com

patterns shown

Coupling

PVC Schedule 80

Product

PIPE REFERENCE GUIDE

Plug

Van Stone Flange

Tee



This is to certify that all Plastic Pipe and Fittings manufactured by Charlotte Pipe and Foundry Company are manufactured in the United States and conform to the following standards:

PVC SCH. 40 SOLID WALL PIPE ASTM D 1784, ASTM D 1785, ASTM D 2665

FHA UM 79a FEDERAL SPECIFICATION L-P-320a NSF STANDARD NO. 14 AND 61

PVC SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 4396, ASTM F 891 NSF STANDARD NO. 14

RePVC® SCH. 40 DWV PIPE

ASTM D 4396, ASTM F 1760 NSF STANDARD NO. 14

PVC SCH. 40 DWV FITTINGS

ASTM D 1784, ASTM D 2665, ASTM D 3311. **ASTM F 1866** FHA UM 79a FEDERAL SPECIFICATION L-P-320a NSF STANDARD NO. 14

PVC SDR-21 AND SDR-26 PRESSURE PIPE

ASTM D 1784, ASTM D 2241 NSF STANDARD NO. 14 AND 61

PVC SCH. 40 PRESSURE FITTINGS

ASTM D 1784, ASTM D 2466 NSF STANDARD NO. 14 AND 61

PVC SCH. 40 WELL CASING PIPE

ASTM D 1784, ASTM F 480 NSF STANDARD NO. 14 AND 61

PVC SCH. 80 PIPE

ASTM D 1784, ASTM D 1785, PVC 1120 NSF STANDARD NO. 14 AND 61

PVC SCH. 80 FITTINGS

ASTM D 1784, ASTM D 2467, ASTM D 2464, **ASTM F 1970** NSF STANDARD NO. 14 AND 61

PVC SDR 35 SEWER MAIN PIPE

ASTM D 1784, ASTM D 3034 SDR 35

ASTM D 3212, ASTM F 477

PVC SEWER AND DRAIN PIPE

ASTM D 1784, ASTM D 2729

PVC THIN WALL PIPE & FITTINGS

ASTM D 1784, ASTM D 2949 NSF STANDARD NO. 14

CPVC FLOWGUARD GOLD® CTS PIPE & FITTINGS

ASTM D 1784, ASTM D 2846 FHA UM-61a

NSF STANDARD NO. 14. AND 61 **CSA LISTED ON SPECIFIED ITEMS**

CPVC REUZE® CTS PIPE

ASTM D 1784, ASTM D 2846 NSF STANDARD NO. 14

CPVC CHEMDRAIN® SCH. 40 PIPE & FITTINGS

ASTM D 1784, ASTM F 2618 NSF STANDARD NO. 14

ABS SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 3965, ASTM F 628 NSF STANDARD NO. 14

ABS PLUS® SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 3965, ASTM D 4396, ASTM F 1488 NSF STANDARD NO. 14

ABS SCH. 40 DWV FITTINGS

ASTM D 3965, ASTM D 2661, ASTM D 3311 FHA UM 79a FEDERAL SPECIFICATION L-P-322b NSF STANDARD NO. 14

Very truly yours,

Hooper Hardison, President

Jerie L. Wilson

Notary Public

My commission expires July 02, 2017

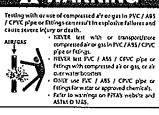
TERRI L. WILSON NOTARY PUBLIC Union County, North Carolina My Commission Expires July 2, 2017

PVC Schedule 80 Pipe, Type 1, Grade 1 - Piain End

(NSF.)

PVC SCHED	PVC SCHEOULE 80 (GRAY) PLAIN END PVC 1120								
PARTA R.	319.571	170 s 6)1512	ell'itte	AIS.69 CU	KXL XULL (10)	B.C.C.D.A. HESSHEDI ATLAHK	MI FEE 100 FEQUES		
PVC 10002	1/4" x 20'	04920	15140	0.540	.119	1130 PSI	10.0		
PVC 10003	3/e" x 20'	04917	9360'	0.675	.126	920 PSI	13.8		
PVC 10005	1/2" x 20'	03968	6880	0.840	.147	850 PSI	20.3		
PVC 10007	3/4" x 20'	03969	4200'	1.050	.154	690 PSI	27.5		
PVC 10010	1" x 20"	03970	3540′	1.315	.179	630 PSI	40.5		
PVC 10012	11/4" x 20'	03973	4240′	1.660	.191	520 PSI	55.9		
PVC 10015	1½" x 20"	03976	3300'	1.900	.200	470 PSI	67.7		
PVC 10020	2" x 20'	03977	1980'	2.375	.218	400 PSI	93.6		
PVC 10025	2½" x 20'	03978	1360'	2.875	.276	420 PSI	142.8		
PVC 10030	3" x 20'	03979	960'	3.500	.300	370 PSI	194.2		
PVC 10040	4" x 20'	03980	1080'	4.500	.337	320 PSI	279.3		
PVC 10060	6" x 20'	03981	480'	6.625	.432	280 PSI	532.7		
PVC 10080	8" x 20'	04175	300'	8,625	.500	250 PSI	808.9		
PVC 10100	10" x 20'	04768	160'	10.750	.593	230 PSI	1199.3		
PVC 10120	12" x 20'	04770	120′	12.750	.687	230 PSI	1650.1		
PVC 10140	14" x 20'	04816	60'	14.000	.750	220 PSI	1930.0		
PVC 10160	16" x 20'	04919	60'	16.000	.843	220 PSI	2544.1		

Note: Pull pallets are polyethylene wrapped for cleanliness and UV protection. HSF Listed. Heats All Requirements of ASTH D 1784 and ASTH D 1785.





PYC Schedule 80 Pipe, Type 1, Grade 1 - Belled End



PVC SCHEOU	PVC SCHEOULE 80 (GRAY) BELLED END PVC 1120									
MIN	TIN PATE	ensu.	tur ffs \$©9	he es (CL)	econt (C)	B.CETALI EIERRIETI AYEMER	PLICE BLICE			
PVC 10005B	1/2" x 20'	04924	6880'	0.840	.147	850 PSI	20.3			
PVC 10007B	3/4" x 20'	04925	4200'	1.050	.154	690 PSI	27.0			
PVC 10010B	1" x 20'	04926	3540'	1.315	.179	630 PSI	40.5			
PVC 10012B	11/4" x 20'	04927	4240'	1,660	.191	520 PSI	55.9			
PVC 10015B	11/2" x 20"	04928	3300′	1.900	.200	470 PSI	67.7			
PVC 10020B	2" x 20'	04764	1980'	2.375	.218	400 PSI	93.6			
PVC 10025B	21/2" x 20	04875	1360′	2.875	.276	420 PSI	142.8			
PVC 10030B	3" x 20'	04776	960'	3.500	.300	370 PSI	191.1			
PVC 10040B	4" x 20'	04774	1080′	4.500	.337	320 PSI	279.3			
PVC 10060B	6" x 20'	04763	480′	6.625	.432	280 PSI	532.7			
PVC 10080B	8" x 20'	04766	300'	8.625	.500	250 PSI	808.9			
PVC 10100B	10" x 20'	04769	160′	10.750	.593	230 PSI	1199.3			
PVC 10120B	12" x 20'	04771	120′	12.750	.687	230 PSI	1650.1			
PVC 10140B	14" x 20'	04832	60′	14.000	.750	220 PSI	1930.0			
PVC 10160B	16" x 20'	09372	60′	16.000	.843	220 PSI	2544.1			

Hote: Full pallets are polyathylene wrapped for cleanliness and Uf protection.

HSF Listed. Meets All Requirements of ASIM D 1784 and ASIM D 1785.

Testing with or use of compressed after gas in PVC / ABS
CPVC pipe or fittings can result in explosive failures and
cause severe injury or death.

IRVRR test with or transpectation
compressed at or gass in PVC / ABS / CPVC
pipe or fatings.

IRVRR test With / ABS / CPVC pipe or
fatings with compressed at or gas, or air
one with boostes.

ONLY use PVC / ABS / CPVC pipe or
fatings for water or approved chumicals.

Refer to warnings on FFFA's webrits and
ASTM D 1785.

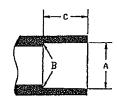




Schedule 80 Fittings

Schedule 80 and Schedule 40 Tapered Socket Dimensions

PVC SCHEDULE 80 - ASTM D 2467 PVC SCHEDULE 40 - ASTM D 2466

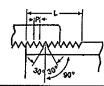


SCHECTLE CAL

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· ·	Schedule 80 a	ind Schedule 40 S	ocket Diameter	Schedule 80	Schedule 40
Kominal	Entrance	Botto.m	Tolerance	Socket Length	Socket Length
Size		В		C (Hinhoum)	C(Hinizum)
1/2	0.848	0.836	±0.004	0.875	0.688
3/4	1.058	1.046	±0.004	1.000	0.719
1	1.325	1.310	±0.005	1.125	0.875
11/4	1.670	1.655	±0.005	1.250	0.938
11/2	1.912	1.894	±0,006	1.375	1.094
2	2.387	2.369	±0.006	1.500	1.156
21/2	2.889	2.868	±0,007	1.750	1.750
3	3.516	3.492	±0.008	1.875	1.875
4	4.518	4.491	±0.009	2.250	2.000
6	6.647	6.614	±0.011	3.000	3.000
8	8.655	8.610	±0.015	4.000	4.000
10	10.780	10.735	±0.015	5.000	5.000
12	12,780	12.735	±0.015	6.000	6.000

American National Standard Taper Pipe Threads (NPT) ANSI/ASME B1.20.1, ASTM D 2464, ASTM F 1498



Kominal Size	Effective Thread Length (L)	Threads Perioch	Pitch of Thread (P)
1/2	0.5337	14.0	.07143
3/4	0.5457	14.0	.07143
1	0.6828	11.5	.08696
11/4	0.7068	11.5	.08696
11/2	0.7235	11.5	.08696
2	0.7565	11.5	.08696
21/2	1.1375	8.0	.12500
3	1,2000	8.0	.12500
4	1,3000	8.0	.12500

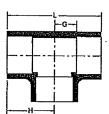


- S = SOCKET, SPG = SPIGOT, MPT = MALE PIPE THREAD, FPT = FEMALE PIPE THREAD
- · ALL DIMENSIONS ARE IN INCHES.

TOLERANCES

- S = (SOCKET LENGTH) MINIMUM
- G = (LAYING LENGTH) INTERSECTION OF CENTER LINES TO BOTTOM OF SOCKET/ THREAD, 90° ELBOWS, TEES, CROSSES, + 1/32"
- H = INTERSECTION OF CENTER LINES TO FACE OF FITTINGS; 90° ELBOWS, TEES, CROSSES, + 1/72"
- J \sim (Laying Length) intersection of center lines to bottom of socket/ thread; 45° elbows, \pm 1/32"
- L \rightarrow Overall length of fittings, (including caps), \pm 1/16"
- $\rm M~=~00TSIDE$ diameter of socket/thread hub, $\pm\,1/16''$
- II = SOCKET/THREAD BOTTOM TO SOCKET/THREAD BOTTOM; COUPLINGS, ± 1/16"
- · DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTIFICATION.

Tee sxsxs PVC PART NO. 8400



Size	Universal Part Number	Ł	н	6	Approx Wt. (Lbs.)
1/2	801-005	2 ¹⁵ /18	115/32	19/32	0.11
3/4	801-007	37/16	123/32	11/16	0.17
1	801-010	4	2	27/32	0.29
11/4	801-012	49/16	2%2	. 1	0.42
11/2	801-015	47/8	27/16	11/32	0.51
2	801-020	53/4	27/s	15/16	0.84
21/2	801-025	6 ¹⁵ /18	315/32	121/32	1.49
3	801-030	71/2	33/4	127/32	2.38
4	801-040	93/8	411/18	27/16	3.76
6	801-060	141/8	71/16	41/32	10.75
8	801-080	1719/32	813/16	43/4	20.13

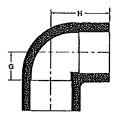
Schedule 80 Fittings

CHARLOTTE PIPE AND FOUNDRY COMPANYS

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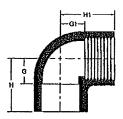
90 Degree Elbow sxs

PVC PART NO. 8300



Site	Universal Part Number	н	G	Approx. Wt. (Lbs.)
1/2	806-005	115/32	19/32	0.08
3/4	806-007	111/16	11/16	0.13
1	806-010	2	27/32	0.19
11/4	806-012	2 ⁹ /32	1	0.32
11/2	806-015	27/16	11/32	0.42
2	806-020	2 ²⁷ /32	15/16	0.63
21/2	806-025	37/16	121/32	1.13
3	806-030	33/4	127/32	1.60
4	806-040	411/16	27/16	2.85
6	806-060	611/18	311/1e	8.27
8	806-080	819/32	419/32	15.46

90 Degree Elbow s x FPT PVC PART NO. 8301

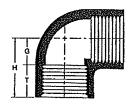


Stre	Universal Fart Kumber	Н	G	н	61	Approx. WL (lbs.)
1/2	807-005	13/8	1/2	113/32	22/32	.138
3/4	807-007	121/32	5/8	15/8	13/16	.173
1	807-010	127/32	23/32	125/32	27/32	.265
11/4	807-012	21/4	11/4	2	1	.434
11/2	807-015	2³/8	1	21/8	11/16	.562
2	807-020	23/4	11/4	27/16	17/16	.802



90 Degree Elbow FPT x FPT

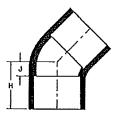
PVC PART NO. 8302



Şize	Universal Part Number	T	6	Н	Approx. Wr. [lbs.]
1/2	808-005	3/4	21/32	113/32	0.11
3/4	808-007	²⁵ /32	27/32	15%	0.18
_1	808-010	31/32	3/4	123/32	0.26
11/4	808-012	1	31/32	131/32	0.42
11/2	808-015	11/16	15/32	27/32	0.54
2	808-020	13/32	113/32	21/2	0.82
3	808-030	15/8	115/16	39/16	2.30
4	808-040	111/16	21/2	43/16	3.62

45 Degree Elbow sxs

PVC PART NO. 8309

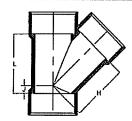


Size	Unhiersal Part Kumber	Н	J	Approx. Vil (Lbs.)
1/2	817-005	15/32	1/4	0.07
3/4	817-007	111/32	5/16	0.10
1	817-010	115/32	5/1e	0.16
11/4	817-012	113/16	13/32	0.22
11/2	817-015	17/8	1/2	0.30
2	817-020	25/32	21/32	0.48
21/2	817-025	21/2	²³ /32	0.83
3	817-030	2¹1/ ₁₈	²⁵ /32	1.16
4	817-040	39/16	1%2	2.21
6	817-060	5	2	5.50
8	817-080	61/4	21/4	10.42

Schedule 80 Fittings



Wye sxsxs PVC PART NO. 8600

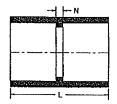


Size	Uriversal Part Kumber	ι	J	н	Appiox. Wt. [Lbs]
4**	875-040	63/16	13/16	53/8	4.42
6**	875-060	93/8	113/32	731/32	11,95

^{**}Maximum pressure rating is 150 psi at 73°F.

Coupling sxs

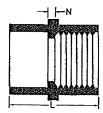
PVC PART NO. 8100



Síze	Universal Fast Rumber	Ĺ	н	Approx. Wt. [Lbs.]
1/2	829-005	115/16	1/8	0.05
3/4	829-007	2³/ ₁₆	1/8	0.08
1	829-010	27/16	1/8	0.12
11/4	829-012	211/16	1/8	0.17
11/2	829-015	2 ¹⁵ / ₁₆	1/8	0.23
2	829-020	33/16	1/8	0.33
21/2	829-025	33/4	3/16	0.57
3	829-030	4	3/16	0.84
4	829-040	43/4	3/16	1.35
6	829-060	6%2	1/4	3.46
8	829-080	81/4	1/4	6,61

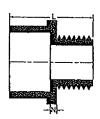


Female Adapter sxFPT PVC PART NO. 8101



Size	Universal Part Kumber	L	H	Approx. Wr. (Lbs.)
1/2	835-005	1 ²⁵ / ₃₂	3/32	0.07
3/4	835-007	115/18	3/32	0.10
1	835-010	2 ⁹ /32	3/32	0.16
11/4	835-012	2³/ ₈	1/8	0.22
11/2	835-015	29/16	1/8	0.27
2	835-020	223/32	3/32	0.39
21/2	835-025	319/32	7/32	0.73
3	835-030	33/4	7/32	0.96
4	835-040	41/4	1/4	1.52

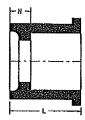
Male Adapter \$xMPT PVC PART NO. 8109



Size	Universal Part Number	L	Н	Approx. We. (Lbs.)
1/2	836-005	113/16	3/ ₁₆	0.05
3/4	836-007	2³/s	1/4	0.06
1	836-010	2	3/16	0.10
11/4	836-012	21/2	1/4	0.15
11/2	836-015	25/a	1/4	0.19
2	836-020	27/8	9/32	0.27
21/2	836-025	311/16	11/32	0.50
3	836-030	37/8	3/8	0.73
4	836-040	41/2	7/16	1.40

Reducer Bushing, Flush Style segxs

PVC PART NO. 8107



Size	Universal Part Number	L	ĸ	Approx. Wil (Les.)
3/4 X 1/2	837-101	1%2	13/32	0.02
1x½	837-130	113/32	17/32	0.07
_1x3/4	837-131	113/32	13/32	0.04
11/4×1/2	837-166	11/2	5/8	0.11
<u> 1¼x¾</u>	837-167	11/2	1/2	0.11
_1¼x1	837-168	119/32	15/32	0.08
11/2×1/2	837-209	123/32	27/32	0.15
11/2 X 3/4	837-210	1 ²³ /32	23/32	0.20
_1½x1	837-211	1 ²³ /32	19/32	0.14
11/2×11/4	837-212	1 ²³ /32	15/32	0.08
2x½	837-247	17/8	1	0.21
2x3/4	837-248	17/8	7/8	0.22
2x1	837-249	17/a	3/4	0.24
2x11/4	837-250	17/s	5/8	0.24
2x1½	837-251	1 ²⁹ /32	17/32	0.17
2½x1	837-289	25/32	1	0.46
21/2×11/4	837-290	25/32	29/32	0.48
21/2×11/2	837-291	25/32	²⁵ / ₃₂	0.39
21/2x2	837-292	25/32	21/32	0.28
3x1	837-335	21/4	11/8	0.67
3x11/4	837-336	21/4	1	0.66
3x11/2	837-337	21/4	7/8	0.64
_3x2	837-338	21/4	3/4	0.59
3x21/2	837-339	21/4	1/2	0.42
4x2	837-420	2 ²⁵ /32	%32	1.10
4x3	837-422	2 ²⁵ /32	²⁹ /32	0.76
6x3	837-530	317/32	111/32	2.60
6x4	837-532	317/32	19/32	2.50
8x6	837-585	4 ¹⁵ / ₁₆	17/8	5.52

8

Union, with Viton® O-Ring Seal*

PVC PART NO. 8700

Union, with EPDM O-Ring Seal*

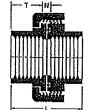
PVC PART NO. 8710

	Universal	Part Kumber				
Size	with Viton O-Ring Seat	with EPOH O-Ring Seal	ι	N	\$	Approx. WL [Lbs.]
1/2	857-005	897-005	21/8	5/18	28/32	0.18
3/4	857-007	897-007	27/16	7/16	1	0.26
1	857-010	897-010	25/8	3/8	11/8	0.36
11/4	857-012	897-012	215/16	7/16	11/4	0.52
11/2	857-015	897-015	33/16	7/16	13/8	0.57
2	857-020	897-020	321/32	21/32	11/2	0.90
3	857-030	897-030	51/8	15/16	129/32	2.22

^{*} THE MAXIMUM WORKING PRESSURE IS 235 PSI AT 73°F.

Union, with Viton® O-Ring Seal*

PVC PART NO. 8800



Union, with EPDM O-Ring Seal*

PVC PART NO. 8810

	Universa	Part Humber				
Size	with Viton O-Ring Seal	with EPDH O-Ring Seal	Ĺ	Я	ī	Approx. Wt. [Lbs.]
1/2	858-005	898-005	23/16	1/2	15/16	0.19
3/4	858-007	898-007	213/32	9/16	13/32	0.27
1	858-010	898-010	25/8	9/16	13/32	0.40
11/4	858-012	898-012	231/32	23/32	11/4	0.58
11/2	858-015	898-015	31/6	23/32	111/32	0.67
2"	858-020	898-020	35/8	27/32	119/32	1.03
31	858-030	898-030	51/8	13/4	111/18	2.49

^{*} THE MAXIMUM WORKING PRESSURE IS 235 PSI AT 73°F.
** THE MAXIMUM WORKING PRESSURE IS 200 PSI AT 73°F.

† THE MAXIMUM WORKING PRESSURE IS 185 PSI AT 73°F.



Heavy Duty Gray PVC Cement

Description

- Heavy-bodied grey cement for use on all schedules and classes PVC pipe and fitting up to 12" diameter with interference fit, up to 18" for non-pressure.
- Lo-V.O.C. Solvent Cement meets California South Coast Air Quality Management District (SCAQMD) 1168/316A or BAAQMD Method 40 and various environmental requirements.
- Thick formula fills gaps in large diameter pipe and loose fitting joints.
- Recommended for potable water, pressure pipe, conduit and DWV.
- Recommended application temperature 40°F to 110°F / 4°C to 43°C.
- Meets ASTM D2564.



<u>Listings</u>



NSF Standard 61 for PW, DWV and Sewer Waste



IAPMO Listed

Maximum VOC per SCAQMD 1168/316A or BAAQMD Method 40: 510 g/L

INGREDIENTS (CAS Number)

Acetone (67-64-1), Amorphous Silica (112945-52-5), Cyclohexanone (108-94-4), Methyl Ethyl Ketone (78-93-3), PVC Resin (9002-86-2), Tetrahydrofuran (109-99-9)

MSDS Number: 1102E

Product Number	Size	Qty	Wgt	Product Number	Slze	Qty	Wgt
31093	4 oz.	24	9 lbs.	31118	Gallon	6	54 lbs.
31094	8 oz.	24	16 lbs.				- , , , , , ,
31095	16 oz.	24	31 lbs.				
311105	32 oz.	12	29 lbs.				

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Heavy Duty Gray PVC Cement

	CHEMICAL PROPERTIES	PHYSIC	AL PROPERTIES
Appearance	Gray Liquid	Lap Shear Strength	(min. ASTM Standards)
Viscosity	Min. 1600 cps @73° F ± 2° F	2 hours	250 psi
Density	7.86 ± 0.2 lbs/gallon	16 hours	500 psi
Shelf Life	3 years from manufacture	72 hours	900 psi
	date	Set Up Time	
		30° F to 50° F	4 – 5 minutes
		50° F to 70° F	2 – 3 minutes
		70° F to 90° F	1 – 2 minutes

Precautions

Read all information carefully before using this product.

DANGERI: CAUSES SERIOUS EYE IRRITATION. HARMFUL IF INHALED. MAY CAUSE DROWSINESS OR DIZZINESS. MAY CAUSE RESPIRATORY IRRITATION. REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING. Long term overexposure to solvents may cause damage to the brain, nervous system, reproductive system, respiratory system, mucous membranes, liver and kidneys. Contains a chemical classified by the US EPA as a suspected possible carcinogen. KEEP OUT OF REACH OF CHILDREN.

PRECAUTIONS: Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear a NIOSH-approved respirator for organic solvents. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Vapors may accumulate in low places and may ignite explosively. Keep container tightly closed and cool. Wear protective gloves and eye protection. Wash thoroughly after handling. Do not eat or drink while using this product.

EMERGENCY/FIRST AID: CALL 1-877-740-5015 FOR INSTRUCTIONS.

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth. This product may be aspirated into the lungs and cause chemical pneumonitis, a potentially fatal condition. If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention. If ON SKIN: Rinse skin with water/shower. Take off immediately all contaminated clothing. If INHALED: Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER/doctor if you feel unwell. If medical advice is needed, have product container or label at hand. FIRE: Use dry chemical, foam, or carbon dioxide extinguisher. Water spray may be applied to reduce potential vapors or for cooling. Burning liquid extinguished with water will _oat and may re-ignite on surface of water. SPILLS: Remove all sources of ignition and ventilate area. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with absorbent material. Put absorbent material in covered, labeled metal containers. Dispose of contents/ container in accordance with local regulations. Store in a well-ventilated space. Store locked up.

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Heavy Duty Gray PVC Cement

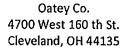
Directions for Use

Store and use at temperatures between 40°F and 110°F. At temperatures outside of this range, special care must be taken to prepare good joints and prevent exposure to solvents. Stir or shake before using; if jelly-like, don't use. Do not thin.

- 1. Cut pipe ends square, chamfer and clean pipe ends.
- 2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way into the fitting. If pipe bottoms, it should be snug.
- 3. Use a suitable applicator at least 1/2 the size of the pipe diameter. For larger size pipe systems use a natural bristle brush or roller.
- 4. Clean pipe and fitting with a listed primer.
- 5. Apply liberal coat of cement to pipe to the depth of the socket, leave no uncoated surface.
- 6. Apply a thin coat of cement to inside of fitting, avoid puddling of cement. Puddling can cause weakening and premature failure of pipe or fitting. Apply a second coat of cement to the pipe.
- 7. Assemble parts QUICKLY. Cement must be fluid. If cement surface has dried, recoat both parts.
- 8. Push pipe FULLY into fitting using a ¼ turning motion until pipe bottoms.
- 9. Hold pipe and fitting together for 30 seconds to prevent pipe push-out longer at low temperatures. Wipe off excess.
- 10. Allow 15 minutes for good handling strength and 2 hours cure time at temperatures above 60°F before pressure testing up to 180 psi. Longer cure times may be required at temperatures below 60°F or with pipe above 3".

DO NOT TEST WITH AIR,

Revision Date: 3/15/2013



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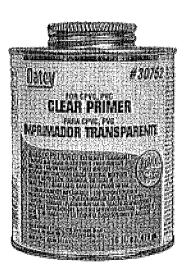


Technical Specification

Clear Primer

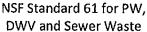
Description

- Clear aggressive primer for use on PVC and CPVC pipe and fittings.
- Lo-V.O.C. Solvent Cement meets California South Coast Air Quality Management District (SCAQMD) 1168/316A or BAAQMD Method 40 and various environmental requirements.
- Removes surface dirt, grease and grime as well as softens the pipe surface to allow a fast, secure solvent weld.
- N SF Listed.
- Meets ASTM F656.



Listings







IAPMO Listed

Maximum VOC per SCAQMD 1168/316A or BAAQMD Method 40: 550 g/L

INGREDIENTS (CAS Number)

Acetone (67-64-1), Cyclohexanone (108-94-4), Methyl Ethyl Ketone (78-93-3), Tetrahydrofuran (109-99-9)

MSDS Number: 1402E

<u>Product Number</u>	<u>Size</u>	Qty	Wgt	<u>Product Number</u> 30753 30754	<u>Size</u>	Oty	<u>Wgt</u>
30750	4 oz.	24	8 lbs.		32 oz.	12	24 lbs.
30751	8 oz.	24	14 lbs.		Gallon	6	46 lbs.
30752	16 oz.	24	25 lbs.				

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Page 1 of 3



Clear Primer

CHEMICAL PROPERTIES

Appearance

Clear Primer

Density

6.97 ± 0.2 lbs/gallon

Shelf Life

3 Years from Mfg. Date

Precautions

Read all information carefully before using this product.

DANGERI: CAUSES SERIOUS EYE IRRITATION. HARMFUL IF INHALED. MAY CAUSE DROWSINESS OR DIZZINESS. MAY CAUSE RESPIRATORY IRRITATION. REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING. Long term overexposure to solvents may cause damage to the brain, nervous system, reproductive system, respiratory system, mucous membranes, liver and kidneys. Contains a chemical classified by the US EPA as a suspected possible carcinogen. KEEP OUT OF REACH OF CHILDREN.

PRECAUTIONS: Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear a NIOSH-approved respirator for organic solvents. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Vapors may accumulate in low places and may ignite explosively. Keep container tightly closed and cool. Wear protective gloves and eye protection. Wash thoroughly after handling. Do not eat or drink while using this product.

EMERGENCY/FIRST AID: CALL 1-877-740-5015 FOR INSTRUCTIONS.

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth. This product may be aspirated into the lungs and cause chemical pneumonitis, a potentially fatal condition. If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention. If ON SKIN: Rinse skin with water/shower. Take off immediately all contaminated clothing. If iNHALED: Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER/doctor if you feel unwell. If medical advice is needed, have product container or label at hand. FIRE: Use dry chemical, foam, or carbon dioxide extinguisher. Water spray may be applied to reduce potential vapors or for cooling. Burning liquid extinguished with water will _oat and may re-ignite on surface of water. SPILLS: Remove all sources of ignition and ventilate area. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with absorbent material. Put absorbent material in covered, labeled metal containers. Dispose of contents/ container in accordance with local regulations. Store in a well-ventilated space. Store locked up.

Directions for Use

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Clear Primer

Store and use at temperatures between -15°F and 110°F. At temperatures outside of this range, special care must be taken to prepare good joints and prevent exposure to solvents. Stir or shake before using; if jelly-like, don't use. Do not thin.

- 1. Cut pipe ends square, chamfer and clean pipe ends.
- 2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way into the fitting. If pipe bottoms, it should be snug.
- 3. Use a suitable applicator at least 1/2 the size of the pipe diameter. For larger size pipe systems use a natural bristle brush or roller.
- 4. Apply thoroughly to inside of the fitting socket and to the outside surface of the pipe to the depth of the fitting. Apply a second coat of primer to fitting socket.
- 5. While primer is still wet use an appropriate solvent cement for the pipe being joined. Follow application instructions from cement can.

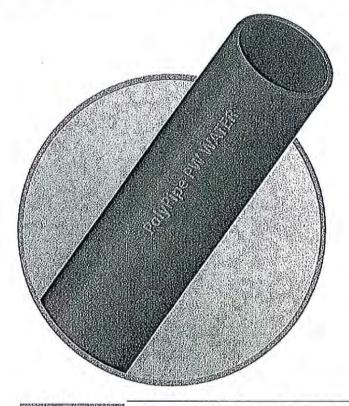
DO NOT TEST WITH AIR.

Revision Date: 3/15/2013

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PolyPipe for POTABLE WATER



PW PE3408/PE4710

High Performance Pipe for Potable Water Service

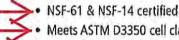
FEATURES:



· Suitable applications include Potable Water, Reclaim Water, Intake Water, Raw Water and Waste Water



- Heat-fused, fully restrained, leak proof joints
- Maintains optimum flow rates due to resistance to corrosion & biological growth
- Fatigue resistant



- Meets ASTM D3350 cell classification PE445574C
- Material grades PE3408/PE4710/PE100 per PPI TR-4
- AWWA C901 / ASTM D3035 & AWWA C906 / ASTM F714



12 " IPS - SDR 11 - DURALINE-POLYPIPE®PW - PE3408 - AWWA C906-PC160-PE4710-ASTM F714-200PSI -(Resin Code)(Color Code) - 1GA - (ddmmmyy) - NSF-61



Potable Water Service & applications such as Mining, Landfill, Dredging, Water Reclamation or Wastewater



1/2" - 65" IPS 3"-30" DIPS



Solid black, or with Stripes: blue, green, purple



PolyPipe is manufactured with high performance resins engineered with outstanding resistance to Slow Crack Growth (SCG) and Rapid Crack Propagation (RCP). The fatigue resistance of these resins improves design life in water systems where cyclic pressure surges exist.

Dura-Line is ISO 9001 certified and PolyPipe is qualified using exacting laboratory procedures and test methods, and a consistent uncompromised quest for design and manufacturing excellence.



Pipe for POTABLE WATER



PW PE3408/PE4710

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES
Density, Natural	D1505	0.949 gm/cc
Density, Black	D1505	0.960 gm/cc
Melt Index (190°C/2.16 kg)	D1238	0.08 gm/10 min.
Flow Rate (190°C/21.6 kg)	D1238	7,5 gm/10 min,
Tensile Strength @ Yield	D638	3,500 psi
Ultimate Elongation	D638	>500%
Flexural Modulus	D790	150,000 psi
2% Secant		•
Environmental Stress Crack Resistance (ESCR)		
F _o , Condition C	D1693	
PENT	F1473	>500 hrs.
Brittleness Temperature	D746	<-180°F
Hardness, Shore D	D2240	64
Vicat Softening Temperature	D1525	255°F
izod impact Strength (Notched)	D256	8 ft – lb/in
Volume Resistivity	D991	>10 ¹⁵ ohm-cm
Thermal Expansion Coefficient		1.0x10 ⁻⁴ in/in/°F
CELL CLASSIFICATION:	D3350	445574C
		445576C
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	1,600 psi @ 73.4°F
(As listed in PPI TR-4)		1,000 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		1,000 psi @ 73.4°F

^{*}Nominal values are intended to be guides only, and not as specification limit.





^{*}Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens,

PolyPipe PE4710 - Pile Data and Pressure Ratings - IPS

									ن د		
	ninal Acival			9 2 55 psi	11 200 psi	13.5 160 psi	Dimension Rat 15.5 140 psi	io 177. 125 psi	21 (100 ps)	26 [80 psi	32,5 (65,ps)
1/2 3/4	0.840 1.050	min wall (in) weight (#/ft) min wall (in)	0.120 0.119 0.150	0.093 0.096 0.117	0.076 0.080 0.095				U.S. 201204		
1	1.315	weight (#/fr) min wall (in)	0.185 0.188 0.291	0.150 0.146	.=0.126 0.120						
117		weight (#/ft) //min viall (in) //weight (#/ft)	0.237 0.463	0,235 0,184 0,374	0.197 0:151 0:314	0.123 0,261					
1 1/3 > 2	2 1.900 2.375	min wall (in) weight (#/ft) Zmin wall (in)	0.271 0.607 0.339	0.211 0.490 0.264	0.173 0.411 0.216	0.141 0.342 0.176	0.123 0.301 0.153	0.140			
3	3.500	weight (#/it) min wall (in) weight (#/it)	0.948 0.500 2.058	0.766 0.389 1.664	0.642 0.318 1.395	0,534 0.259 1.159	0.470 0.226 1.020	0.431 0.206 0.936	0.167 0.768	0,135 0,626	
4	4,500	min wall (in) yyeight (#/ft)	0.643 3.402	0,500 2,751	0.409 2.306	0.333 1.916	0.290 1,687	0.265 1,548	0.214 1.269	0.173 1.035	0.138 0.835
6 8	6.625 8.625	min wall (in) weight (#/ft) min wall (in)	0.946 7.374 1/232	0.736 5.963 0.958	0.602 4.997 0.784	0.491 4.152 0.639	0,427 3,656 0,556	0.390 3.355 0.507	0.315 2.750 0.411	0.255 2.244 0.332	0.204 1.811 0.265
10	10.750	*Eweight (#/ft) min wall (in) weight (#/ft)	12,498 1.536 19.416	10:106 1.194 15.700	8.470 0.977 13.157	7,037 0.796 10.932	6:197 0.694 9.626	5.687 0.632 8.834	4,662 0.512 7.242	3.804 0.413 5.909	3.069 0.331 4.767
12 14	12.750 14.000	min wall (in) weight (#/tt) min wall (in)	1.821 27.312 2.000	1,417 22,085 1.556	1,159 18,508 1,273	0.944 15:379 1.037	0.823 13,541	0750 12.427	0.607 10:187	0.490 8.312	0.392 6.706
16	16,000	weight (#/ft) min vall (in)	32,930 2,286	26.628 1.778	22.315 1.455	18.542 1.185	0.903 16.327 44 1.032	0,824 14,983 0,941	0.667 12.282 0.762	0.538 10.022 0.615	0.431 8.086 0.492
18	18.000	weight (#/ff) min wall (in) weight (#/ft)	43.010 2.571 54.435	34 <i>77</i> 79 2,000 44,017	29.146 1.636 36.888	24.218 1.333 30.651	21.325 1.161 26.989	19.569 1.059 24.767	16.042 0.857 20.304	13.090 0.692 16.567	10.561 0.554 13.366
20. 22	20,000 22,000	min wall (in) weight (#/fr) min wall (in)	2.857 67,203	2,222 54,342 2,444	1.818 45.541 2.000	1,481 37,840 1.630	1,290 33,320 1,419	1.176 30,577 1.294	0.952 25,066 1.048	0.769 20:453 0.846	0.615 16.501 0.677
24	24,000	weight (#/ft) min wall (m) weight (#/ft)		65.754 2.667 78.253	55.105 2:182 65:579	45.787 17,778 54.490	40.317 1.548 47.981	36.998 1.412 44.031	30.330 1:143 36,095	24.748 0.923 29.452	19.967 0.738 23.762
26 28	26.000	min wall (in) welght (#/ft)		2.889 91.838	2,364 76.964	1.926 63.950	1.677 56.311	1.529 51.675	1.238 42.362	1.000 34.565	0.800 27.887
30	7.28.000 30.000	min Wall(in) Weight (W/I) min wall (in)		3.111 106.511 3.333	2/545 89,260 2,727	2.074 74.167 2.222	1.806 65.307 1.935	1.647 59.931 1.765	1,333 49,130 1,429	1.077 40.087 1.154	0.862 32.342 0.923
32.	32,000	weight (#/ft) *min wall (in) *Vyeight (#/ft)		122.270 3.556 139.116	102.467 2.909 116:585	85.141 2:370 96.871	74.970 27065 857299	68.798 1.882 78.277	56.399 1.524 64.169	46.019 1.231 52.359	37.128 0.985 42.243
34 367	34.000 36.000	min wall (in) weight (#/ft) min.wall(in)		3.778 157.049 4.000	3.091 131.613 3.273	2.519 109.358 2.667	2.194 96.295 2.323	2,000 88,367 2,118	1.619 72.441 21.7.14	1.308 59.108 1.385	1.046 47.689 21.108
42	42.000	weight (#/fi) min wall (in) weight (#/ft)		176.069	147.553	122,602 3,111 166,876	107.957 2.710 146.941	99.069 2.471 134.844	81,214 2,000 110,542	66;267 1.615 90.197	53.464 1.292 72.771
48 54	48,000	/ min wall (in) weight (#//t)				100.070	170,541	i 2.824 176.122	2,286 144.381	1,846 117,808	11.47 <i>7</i> 95.047
63	54.000 63,000	min wall (in) weight (#/ft) min wall (in)						3.176 222.905 3.706	2.571 182.732 3.000	2.077 149.100 2.423	1.662 120.294 1.938
6 5	65.000	veight (#/fi) min wall (in) weight (#/ft)						303,398 3.824 322,967	248.719 3.095 264.761	202,942 2,500 216.032	163,734 2.000 174,295
							i				





OO PE47/10 - Pipe Data and Pressure Ratings - DIPS

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Dec 20	

RESTROYERS	775-255-255-2577-25	Unidakomanen arenaken	******************	+517 +1140 AGAINS (SANT) +1515	Maria de Principa			T2012-1			2339
OD)							Umension Rati		21		
1/37/17/22/2017	al Actual		335 psi	255 mil	11 200 psi	18/5	15.5	17.		70	32.5
			1	1-2,000	1	160 psl z		1	100 ps	1	65 psis 1
3	3.960	min wall (in)	0.566	0.440	0.360	0.293	0.255	0.233	0.189	0.152	0.122
		weight (#/ft)	2.635	2.130	1.785	1.483	1.306	1.199	0.983	0.802	0.647
B12755372756	TITOTOTOTOTO SECURED.	nom. ID (in)	2.76	3.03	3.20	3.34	3.42	3.47	3.56	3.64	3.70
4	4:800	minyvali (ń)	0.686	0.533	0.436	0.356	0.310	0.282	0,229	0.185	0.148
		= weight (#/fr) <	3,871	3.130	2,623	2 180	1.919	1.761	1:444	1.178	0.950
		nom ID (In)	3.35	3,67	3.87	4.05	4,14	4.20	4.32	4.41	4.49
6	6.900	min wall (in)	0.986	0.767	0.627	0.511	0.445	0.406	0.329	0.265	0.212
		weight (#/ft)	7.999	6.468	5.421	4.504	3.966	3.639	2.984	2.434	1.964
MANAGEMENT CONTROL	n ne contractor	nom. ID (in)	4.81	5.27	5.57	5.82	5.96	6.04	6.20	6.34	6.45
8	9.050	min yyall (in)	1,293	1.006	0.823	0.670	0.584	0.532	0.431	0.348	0.278
		weight (#/fi)	19.760	11.127	9.325	7.748	6.822	6.261	5.132	4.188	3.379
41.076		nom ID (in)	6.31	6.92	731	7.63	7.81	7,92	8.14	8.31	8.46
10	11.100	min wall (in)	1.586	1.233	1.009	0.822	0.716	0.653	0.529	0.427	0.342
		weight (#/ft)	20.700	16.739	14.028	11.656	10.263	9.418	7.721	6.300	5.083
Fact stores as one		nom. ID (in)	7.74	8.49	8.96	9.36	9,58	9.72	9.98	10.19	10.38
12	13.200	min Vall (in)	1.886	1.467	1.200	0.978	0.852	0.776	0.629	0.508	0.406
		(veight (#/fi)	29.274	23.671	19.838	16.483	14,514	13,319	10,919	8.909	7.188
		nom:ID (in)	9.20	10.09	10.66	11.13	11.39	11.55	11.87	12:12	12,34
14	15,300	min wall (in)	2.186	1.700	1.391	1.133	0.987	0.900	0.729	0.588	0.471
		weight (#/ft)	39.329	31.802	26.652	22.145	19.500	17.894	14.669	11.969	9.657
Kinda Chus ware		nom. ID (in)	10.67	11.70	12.35	12.90	13.21	13.39	13.76	14.05	14.30
16	17.400	min wall (in)	2,486	1,933	1.582	1.289	1123	1.024	0.829	0.669	0.535
		- (weight (#/ft)	50.866	41:132	34.470	28.641	25.220	23.144	18.973	15:481	12,490
		nom, ID (in)?	. 12,13	13,30	14.05	14.67	15.02	15:23	15.64	15,98	16.26
18	19.500	min wall (in)	2.786	2.167	1.773	1.444	1.258	1.147	0.929	0.750	0.600
		weight (#/ft)	63.885	51,659	43.292	35.972	31.675	29.067	23.829	19.443	15.687
		nom. ID (in)	13.59	14.91	15.74	16.44	16.83	17.07	17.53	17.91	18,23
20	21.600	min yvall (in)	3,086	2.400	1.964	1/600	1394	1,271	1:029	£200.83T	0.665
		yyeight (#/fr)	78.386	63.385	53,119	44,137	38.864	-35,665	29,237	23.856	19,247
		nom.(D(in)	15.06	[6,5]	17,44	18.21	18.65	18.91	19.42	19.84	20.19
24	25.800	min wall (in)		2.867	2.345	1.911	1.665	1.518	1.229	0,992	0.794
		weight (#/ft)		90.431	75.785	62.970	55.448	50.883	41.713	34.035	27.460
Morrowallocary	* A	nom. ID (in)		19.72	20.83	21.75	22.27	22,58	23.20	23,70	24.12
30	32,000	min vall (in)			2,909	2.370	2,065	J!882	1.524	1231	0.985
		. vyeight (#/ft)			116,585	96,871	85,299	78,277	64 169	52.359	42.243
		nom ID (lp)			. 25.83	26.97	27.62	28.01	28.77	29,39	29.91

RelyPipe® Potable Water PE4710 Pipe is manufactured in accordance with the following standards:

- For sizes 1/2" IPS through 3" IPS products are manufactured in accordance with ASTM D3035 & AWWA C901.
- For sizes 4" IPS through 60" DIPS products are manufactured in accordance with ASTM F714 & AWWA C906.
- · Metric sizes also available.
- Colled pipe available through 6" OD and straight lengths available in 40' and 50' lengths.
- For custom lengths, contact a Customer Service Representative.
- Pressures are based on water at 23°C (73.4°F) and are determined by use of the Hydrostatic Design Stress (HDS) as established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI).
- The above weights for IPS and DIPS sizes are calculated in accordance with Plastics Pipe Institute (PPI) TR-7, using a value of 0.960 for density.
- · Available with color-coded striping.







GEORG FISCHER

GEORG FISCHER CENTRAL PLASTICS

39605 Independence, Shawnee, OK, 74804 | 1.800.654.3872 | www.gfcp.com



PRODUCT SPECIFICATIONS SHEET

BUTT FUSION FITTINGS (IPS) PE3408 / PE4710 HDPE BLACK



SCOPE:

This document describes the standard specifications and features related to Georg Fischer Central Plastics' injection molded PE4710 (formerlyPE3408) Butt Fusion Fittings for pressure piping systems.

SIZES:

1/2" CTS through 2" CTS.

TEE, 90 DEGREE ELBOW, REDUCER, CAP,

1/2" IPS through 12" IPS.

TEE, 90 DEGREE ELBOW, 45 DEGREE ELBOW, REDUCER, CAP, PURGE FITTING,

REQUIREMENTS:

ASTM D2513

Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings

ASTM D3350

Specification for Polyethylene Plastic Pipes and Fittings Materials

ASTM D3261

Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastics Pipe

and Tubing

REFERENCE DOCUMENTS:

PPI TR-19

Thermoplastics Piping for the Transport of Chemicals

PPI TR-31

<u>Underground Installation of Polyolefin Pipe</u> Generic Butt Fusion Procedure for Polyethylene Gas Pipe

PPI TR-33 ASTM D2657

Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings

CERTIFICATIONS/LISTINGS:

FM 1613

Approval Standard: Plastic Pipe and Fittings for Underground Fire Protection Service

AWWA C906

Standard for Polyethylene Pressure Pipe and Fittings, 4 in. Through 63 in., for Water Distribution

FM 1613

Approval Standard: Plastic Pipe and Fittings for Underground Fire Protection Service

ANSI/NSF 14 Plastic Piping System Components and Related Materials

MATERIALS:

PE Resin:

Pre-blended black high density virgin resin. Recognized by the Plastic Pipe Institute as having a

PE3408 / PE4710 / PE100 rating and a Hydrostatic Design Basis of 1600 psi @ 73°F. This resin has a

cell classification of 445574C* in accordance with ASTM D3350.

Note*

Previous editions of ASTM D3350 resulted in cell classifications of 345464C and 345564C.

TEST METHODS:

ASTM D1598

Time-to-Failure of Plastic Pipe Under Constant Internal Pressure.

Must exceed 170 hours in 80°C bath @ 670psi Hoop Stress, or Must exceed 1000 hours in 80°C bath @ 580psi Hoop Stress, or Must exceed 1000 hours in 23°C bath @ 1600psi Hoop Stress.

(All methods are considered equivalent)

ASTM D1599

Short-Term Hydraulic Pressure Failure of Plastics Pipe, Tubing, and Fittings.

Uniform pressurization until failure between 60 and 70 seconds from start of test. Most result in ductile failure at

a pressure great enough to create a 2520psi Hoop Stress.

ASTM D2122

Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

Determination of diameter, wall thickness, and length dimensions including procedures for dimensioning molded

thermoplastic pipe fittings.

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FEATURES:

Made in USA from pre-blended virgin materials. These fittings are available in various configurations and DR and are primarily intended for use in pressure piping applications. These fittings are compatible for heat fusion to any PE material made from a like or similar resin. Select sizes can be supplied with AWWA or FM marking. Designed for use on pipe conforming to ASTM F714, D2513, and D3035.

PRESSURE RATING:

PE4710 Butt Fusion Fittings are pressure rated in accordance with industry and regulatory guidelines for natural gas or water @73°F. Pressure ratings are subject to change depending on ambient temperatures. Pressure ratings vary according to wall thickness and the design factor for the intended application, see below for ratings:

Fitting		Press	ure Rating (PSI) @ 73° F (23° C)	
SDR	SDR Water (.63 DSF)	Water (.5 DSF)	Natural Gas (.32 DSF) US	Natural Gas (.4 DSF) Canada
7	335	265	170*	215*
9	250	200	125*	160*
11	200	160	100	125
13.5	160	125	80	100
17	125	100	65	80
21	100	80	50	65
26	80	65	40	50
32.5	65	50	30	40

^{*} Subject to maximum operating pressure limits of regulatory requirements.

Minimum wall thickness for plastic piping gas distribution systems is limited to .062".

Above listed pressure ratings based on 73°F ambient temperature. Pressure ratings subject to derating depending on temperature.

PRESSURE TESTING:

Pressure testing can be conducted in accordance with the recommendations of the pipe manufacturer, or as described in ASTM F2164 STANDARD PRACTICE FOR FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE, typically 1.5 x's the rated working pressure not exceeding 8 hours in duration for a single test.

MAXIMUM OPERATING TEMPERATURE:

The maximium operating temperature of PE4710 Butt Fusion Fittings is 140°F. Pressure de-rating factors should be considered when operating systems above the 73°F stated pressure rating, to maintain the 50 year substantiated long-term hydrostatic strength of the polyethylene material.

STORAGE/SHELF LIFE:

Black high density polyethylene resin contains a minimum of 2% of a finely dispersed concentration of carbon black which provides protection from UV effects. Even so, it is recommended that fittings which are stored for extended periods (two years or greater) be stored indoors in their original packaging. Fittings stored indoors in their original packaging have a virtually unlimited shelf-life.

CHEMICAL RESISTANCE

Polyethylene generally exhibits strong resistance to many chemical compounds. Known chemical resistance characteristics at specified temperatures can be found in PPI Technical Report TR-19.

INSTALLATION:

These fittings are compatible for heat fusion by butt, socket, or electrofusion joining products. They can be heat fusion joined to pipe or fittings manufactured from like or similar resin. Qualified mechanical joining products can be used to join these fittings, consult the manufacturer for recommendations. Fusion jointing should only be attempted by persons who have been trained and have qualified joints through destructive testing.

Note: This Specification supercedes all previous Product Specifications and is subject to change without notice. Approved By:

Jeff Whistor

Jeff Wright

Director of Product Management

RP01/2013

Product Specifications Sheet



1101 McKinley Street Anoka, MN 55303 Phone (763) 786-6682 Fax (763) 786-2167

Part Name: Male thread HDPE Transition Fitting

Series 710 Carbon Steel, T304, T316, Stainless Steel

Threaded Transitions

The POLY-CAM Threaded Transition Adaptors is a multi-level mechanical transition fitting, protected under patent number 5,211,429, which is hydraulically compressed unto the polyethylene or pipe quality copolymer material.

Design

The relaxation creates a seal to prevent leakage. Under pressure, the internal pressure within the pipe increases the sealing surface area on the barb. Under zero internal pressure, the compression strain and tensional strain created by the compression of the multi-level barbs is greater then the stress created by relaxation and/or thero expansion and contraction. As the internal pressure increases the joining of the polyethylene or copolymer and the coupling increases.

Sizes range from .5" to 12" NPT. All National Pipe Threads are made to ANSI/ASME B1.20-1983 R 1992.

System Performance

The transition fitting is designed to handle the pressure rating of the HDPE pipe with a 2:1 safety factor at 73.40 degrees Fahrenheit with a minimum 50 year design life.

Quality Assurance

The transition fitting shall be manufactured by Poly-Cam, Inc. Poly-Cam, Inc. shall provide quality assurance with regards to proper installation, compatibility, performance, and acceptance. Transition joint meets or exceeds the requirements of ASTM D2513 Category 3. Upon request Poly-cam can install a stainless steel insert to meet ASTM 2513 Category 1. All Fittings meet ARRA requirements. Manufactured in the United States.

Installation

HDPE pipe end: Install transition fitting so as to comply with the pipe manufacturer's recommended procedures. All field welds shall be accomplished in accordance with Plastic Pipe Institute's welding procedure for butt fusion.

Threaded Fitting: When installing the transition fitting one should always use pipe joint sealant or Teflon tape. Always use strap wrenches. Do not use pipe wrench. Always use 2 wrenches when connecting, Over tighten may cause ovality or damage. Always pressure test for leaks before backfilling. Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.

Material

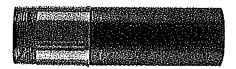
The POLY-CAM Threaded Transition is manufactured of Carbon Steel (A53 or A106 grade) Type 304 or Type 316 (ASTM A249 or ASTM A269) and or ERW pipe (ASTM SA-312) and incorporated with the transition manufactured of HDPE (cell class 345454c) or pipe quality Copolymer material. (pe3408, pe3608 and pe4710). All pipe meets ASTM 3035 and ASTM 714. It complies AWWA C-901, C906 and NSF 61. All certification will be submitted upon request.

The epoxy coating (IF 194T Red Iron Oxide) is fusion bonded to the metal. It has approvals NSF 61, FDA 175.300, AWWA C116-01,C213-01, UL 262 and FM 1120/1130 The carbon steel epoxy POLY-CAM threaded transition fitting complies with AWWA and NSF 61 material requirements.

Warranty

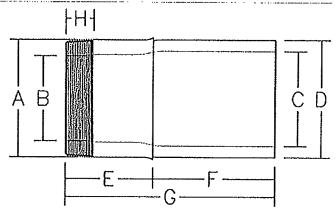
Warranty period is one year after date of substantial completion of installation.

Series 710 Transition with Male NPT



POLY-CAM Male Threaded Transition Adaptors (710 Series) is a multi-level mechanical transition fitting, patent number 5,211,429. The POLY-CAM Threaded Transition is manufactured to the following;
Carbon Steel Epoxy Coated, 304 and 316 Stainless Steel
Other steel materials can be made depending on availability.
Sizes range from .5 to 12" NPT
Meets ANSI/ASME B1.20-1983 R 1992
All materials comply with AWWA and NSF 61 Meets ASTM 2513 Category 3. Upon request Poly-cam can install a stainless steel insert to meet ASTM 2513 Category 1

SDR 7	SDR 9	SDR 11	SDR 17						
NOMINA SIZE INCHES	O.D. "			EXPOSED SDR7 PE PIPE I.D. "C"			EXPOSED PE PIPE LENGTH "F"	OVERALL LENGTH "G"	THREAD LENGTH
0.5	1.00	0			0.840	1.6	6.4	8	0.64
0.75	1.25	0	~0.70	0.75	1.050	1.8	6.2	8	0.7
1	1.31	5	~0.72	0.94	0.315	2	6	8	0.99
1.25	1.66	0	~0.90	1.18	1,660	2.6	5.4	8	1.01
1.5	1.90	D	~1.10	1.35	19.000	2.6	5.4	8	1.03
2	2.37	5	~1.44	1.69	2.375	3	5	8	1.06
2.5	2.87	5			2.875	3.5	4.5	8	1.25
3	3.50)	~2.08	2.49	3,500	4	4	8	1.26
4	4.50)	~2.79	3.19	4.500	4	8	12	1.48
5	5.56	3	~3.4	3,95	5.563	5	7	12	1.5
6	6.62	5	~4.2	4.7	6.625	5	8	13	1.56
8	8.62	5	~5.5	6.12	8.625	7	8	15	1.75
10	10.75	0	~6.9	7.63	10.750	8	8	16	1.85
12	12.75		~8.2	9.05	12.750	9	9	18	2.27



11/00 ⊗ Registered Trademark Poly-Cam, Inc. - US Patent # 5,211,429

Figure 711 & 712 **BUTTERFLY VALVES**



RESILIENT SEATED BUTTERFLY VALVE

FNW cartridge style resilient seated butterfly valves are designed to meet the rigorous requirements of Industrial applications such as pulp and paper, water purification, power and utilities, chemical/petrochemical, food and beverage, OEM and HVAC. Each valve is manufactured in accordance with independent standards specifications and is 100% tested in both directions of operation to assure bubble-tight service for many years.

Features:

- · Designed for 125/150 lbs flanges
- Standard aluminum-bronze disc
- Mounting pad with square shaft permits direct mount actuation that reduces hysteresis and cost (2" TO 12")

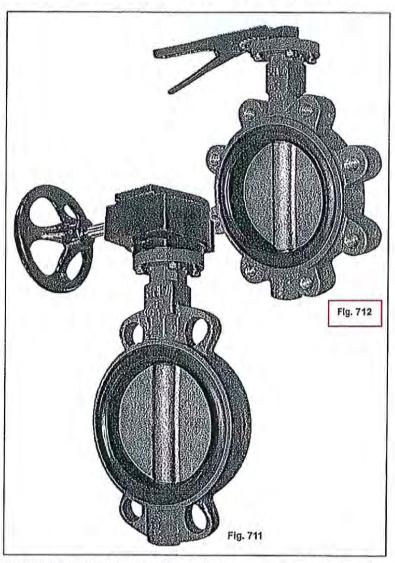
 • Secured stem retainer plate for blowout-
- proof protection and also allows operator removal with valve in line
- High strength two-piece stem eliminates taper pins and disc screws from flow path
- Rated to 200 PSI (2"-12"), 150 PSI (14"-
- · Cartridge style seat permits easy change without special tools
- Molded o-ring eliminates the need for flange gasket*
- Lockable Handles (up to 8") Shell tested to 150% and seat tested to 110% of maximum working pressure
- Lug bodies for dead-end service rated at 150 PSI" (2"-12"), 100 PSI" (14"-24")
- Dual PTFE shaft bearings for reduced torque and improved stem alignment
- Vacuum rated to 29.9196 Hg (0.01 Torr)†
- · Epoxy coaled body
- · Low maintenance design

Standards:

- Design: API 609A and MSS SP-67
- · Shell and Seat Tested to: API 598 and MSS SP-61
- Top Flange to: ISO 5211

Options:

FNW offers many options and modifications for valves. These include, but are not limited to: Actuation including chain wheels, square drive nuts, worm-gear operators, and pneumatic and electric operators, control accessories, stem extensions, and custom mounting hardware. Contact FNW with your specific application needs.

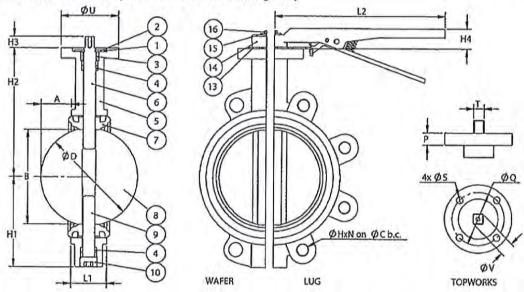


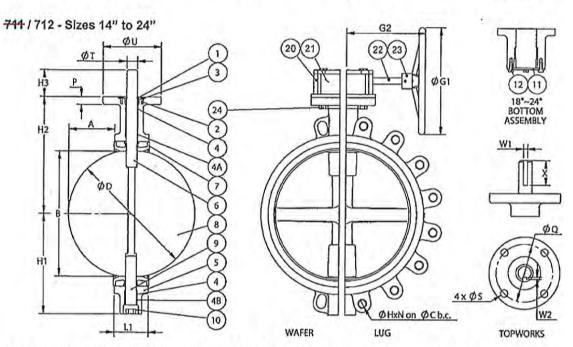
- Pressed collar style angle face rings (typically sizes 2' to 6') are not recommended due to the large radius of the inner diameter. Cast type angle face rings or stub ends should be used with light wall stainless steel piping. Prior to Installation, always verify that the connecting piping flange face fully engages the valve seat
- "Lugged valve for dead-end service and no downstream flange, may only be used with weld neck or socket flanges, for closed position only (no cycling). Not recommended for dead-end service of gas/air lines.
- † Vacuum measurements are often made in inches of mercury below almospheric pressure. The values calculated here assume standard atmospheric pressure of 29.92 inches of mercury.

EMW

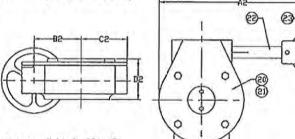
Figure 711 & 712 BUTTERFLY VALVES

711 / 712 - Sizes 2" to 12" (10" & 12" standard with gears)





Additional Gear Operator Dimensions for 6" to 24" Valves* (Gears for 10" & up are standard)



Gear operators are available for 2" to 5" valves upon request.

Dimensions (inches)

Size	A2	B2	C2	D2
6"	8.35	1.77	2.13	2.83
8"	11.00	2.60	2.99	3.31
10"	11.00	2.60	2.99	3.31
12'	11.59	2.60	2.99	3.31
14'	11.59	3.05	3.09	3.49
16"	12.30	3.05	3.09	3.49
18*	12.30	3.05	3.09	3.49
20.	15.14	5.31	5.12	4.33
24"	15.14	5.31	5.12	4.33





Dimensions (Inches) Sizes 2 to 12

Size	A	В	ØD	H1	H	2	H4	14	10	04	00	an	701	.,		- CII		~~	~~		
3126	^	ь	20	nı	731	732	п4	L1	L2	G1	G2	øc	ØH	N	Н3	Øυ	Р	ØQ	ØS	1	Ø۷
2'	0.18	1.93	2.05	2.77	5.06	4.94	1.06	1.69	11.37	/	/	4.75	5/8*-11	4	0.60	3.54	0.55	2.76	0.35	0.43	0.55
2-1/2"	0.41	2.52	2.64	2.95	5.36	5.20	1.06	1.81	11.37		/	5.49	5/8*-11	4	0.60	3.54	0.55	2.76	0.35	0.43	0.55
3*	0.67	3.03	3.15	3,67	5.64	6.07	1.06	1.81	11.37	/	/	6.00	5/8"-11	4	0.60	3,54	0.55	2.76	0.35	0.43	0.55
4"	0.94	3.82	3.94	4.18	6.41	6.54	1.06	2.05	11.37	1	/	7.50	5/8*-11	8	0.70	3.54	0.63	2.76	0.35	0.55	0.63
5*	1.36	4.80	4.92	4.69	7.34	7.13	1.06	2.20	11.37	1	/	8.50	3/4"-10	8	0.70	3.54	0.63	2.76	0.35	0.55	0.71
6*	1.86	5.83	5.93	5.48	7.98	7.84	1.06	2.20	11.37	5.79	6.22	9.51	3/4*-10	8	0.70	3.54	0.63	2.76	0.35	0.55	0.71
8.	2.69	7.62	7.74	6.51	9,34	9.26	1.06	2.36	17.83	11.81	8.07	11.75	3/4*-10	8	0.81	3.54	0.67	2.76	0.35	0.67	0.87
101	3.52	9.62	9.72	7.86	11.13	10.50	/	2,68	/	11.81	8.07	14.25	7/8'-9	12	0.81	4.92	0.79	4.02	0.43	0.87	1.00
12"	4.28	11.54	11.63	9.47	12.27	12.15	/	3.07	/	11.81	8.46	17.00	7/8"-9	12	0.95	4.92	0.79	4.02	0.43	0.87	1.10

Dimensions (Inches) Sizes 14 to 24

Size	Α	В	ØD	H1	H2	G1	G2	1.1	ØC	ØH	N	НЗ	Øυ	Р	ØQ	øs	ØT	W1	W2	X
14"	4.96	12.83	12.99	10.41	13.60	11.81	8.46	3.07	18.75	1'-8	12	2.81	4.92	0.79	4.02	0.47	1.10	0.39	0.20	2.36
16*	5.45	14.82	14.92	11.75	13.76	11.81	8.86	4.02	21,25	1'-8	16	3.15	6.89	0.91	5.51	0.71	1.26	0.39	0.20	2.36
18°	6.36	17.09	17.20	13.78	15.75	15.55	8.86	4.49	22.75	1-1/8"-7	16	3.15	6.89	0.91	5.51	0.71	1.50	0.47	0.20	2.36
20°	7.15	19.13	19.29	14.96	17.32	15.55	10.12	5.00	25.00	1-1/8*-7	20	3,54	8.27	0.91	6.50	0.87	1.77	0.47	0.20	2.76
24"	8.28	22.46	22.62	17.32	20.08	15.55	10.12	6.06	29.50	1-1/4*-7	20	3.74	8.27	0.91	6.50	0.87	2.17	0.55	0.20	2.76

Standard Materials

Ref. No.	Description	Material	Qty	Remarks
1	Retaining Plate	ASTM A283D-A36 STEEL	1	Galvanized
	Datalalas Dista Cassos	ACTIV ACCOR ACCOTES	2	
2	Retaining Plate Screw	ASTM A283D-A36 STEEL	3	Galvanized
3	Ingress Stem Seal	SAME AS SEAT MATERIAL	1	
4	Stem Bushing	PTFE	2	1 Upper, 1 Lower, Sizes 2"~3", 14"~24"
7	Stelli Busining	FIFE	4	2 Upper, 2 Lower, Sizes 4"~12"
4A	Upper Hard Bushing	ASTM B584 C83600 BRONZE	1	Sizes 14"~24"
4B	Lower Hard Bushing	ASTM B584 C83600 BRONZE	1	Sizes 14"~24"
5	Body	ASTM A126 CAST IRON		Fig 711, Sizes 2'~10"
3	Body	ASTM A536 65-45-12 DUCTILE IRON	i	Fig 711, Sizes 12" & Up, Fig 712 All
6	Upper Stem	416SS STAINLESS STEEL	1	
7	Seat	EPDM or BUNA	1	
8	Disc	JIS H 5114 ALUMINUM BRONZE	1	333.00
9	Lower Stem	416SS STAINLESS STEEL	1	
10	Plug	ASTM A283D-A36 STEEL	1	Sizes 2"~16"
11	Bottom Plate	ASTM A283D-A36 STEEL	1	Zinc Plated, Sizes 18"~24"
12	Bottom Plate Screw	ASTM A283D-A36 STEEL	4	Zinc Plated, Sizes 18"~24"
13	Lever Stop Plate	ASTM A283D-A36 STEEL	1	Nickel Plated, Sizes 2"~8"
14	Lever	ASTM A47 Gr 32510 MALLEABLE IRON	1	Sizes 2*~8°
15	Lever Washer	ASTM A283D-A36 STEEL	1	Zinc Plated, Sizes 2"~8"
16	Lever Bolt	ASTM A283D-A36 STEEL	1	Zinc Plated, Sizes 2"~8"
20	Gear Housing	ASTM A126 CAST IRON	1	Sizes 10"~24" Standard
21	Gear Drive	ASTM A536 65-45-12 DUCTILE IRON	1	Sizes 10"~24" Standard, Not Shown
22	Gear Input Shaft	STEEL	1	Nickel Plated, Sizes 10"~24"
23	Hand Wheel	ASTM A126 CAST IRON	1	Sizes 10"~24"
24	Gear Mounting Bolt	ASTM A283D-A36 STEEL	4	Zinc Plated, Sizes 10"~24"

Standard configurations are with levers up to 8" and gear operators 6" to 24". Gear operators for valves 5" and smaller are available upon request.



Figure 711 & 712 **BUTTERFLY VALVES**

Weight (Lbs)

SIZE	WAFER / LEVER	WAFER / GEAR	LUG / LEVER	LUG / GEAR
2*	8.1		10.6	
2-1/2	9.4		10.5	
3.	9.6		11.2	
4.	11.8		16.4	
5'	16.0		21.1	
6,	20.1	30.5	23.5	33.9
8.	34.1	46.5	38.0	50.4
10"		72.4		77.5
12"		87.9	55 K	106.8
14"		165.5		188.5
16"		260.5		336.5
18*		330.7		407.7
20°		507.7	•	614.7
24°		659.7		767.7

Torque (In-Lbs)

Size	EPDM & BUNA Seat
2'	367
2-1/2"	367
3,	480
4*	593
5"	649
6"	971
8*	1,896
10"	4,006
12"	4,627
14"	13,385
16°	17,506
18*	23,542
20°	29,076
24°	46,847

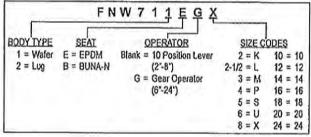
1. Torque for each value size includes 30% as key factor.
2. Mar Working Prossure Sizes 2-12: 225 PS 15 izes 14-24*; 188 PS 1
3. All unsealing lorques based on non-corroliva dearly, well or horizontal service at artificial temperatures.
4. For the velocities greater than 15 PS 8, directio torque must be taken into consideration.

Cv (Flow Coefficient)

SIZE			Almon	DEGREES of	DISC OPENING		- 100	
	20°	30°	40°	50°	60°	70°	80°	90°
2"	8	9	18	28	55	72	110	135
2-1/2*	10	15	27	44	85	110	168	210
3'	15	23	39	65	130	165	250	310
4"	27	41	71	115	230	300	465	540
5*	58	86	150	245	480	610	980	1,100
6'	96	140	245	400	785	1,010	1,615	1,910
8.	165	245	410	685	1,275	1,715	2,670	3,185
10"	255	380	650	1,130	2,100	2,700	4,250	4,900
12"	370	540	950	1,570	3,050	3,950	5,950	7,350
14"	450	750	1,300	2,210	4,080	5,610	8,078	11,200
16*	640	900	1,720	2,790	5,000	7,650	10,770	12,900
18"	730	1,250	2,295	3,700	7,050	9,180	13,900	17,500
20"	910	1,595	2,850	4,630	8,600	11,500	17,540	22,400
24"	1,250	2,290	4,000	6,090	12,500	16,500	23,590	28,300

Cv is the volume of water in U.S. gallons per minute that passes through the valve at a pressure drop of 1 PSI at 68°F.

Figure Number Matrix



Seat Temperatures

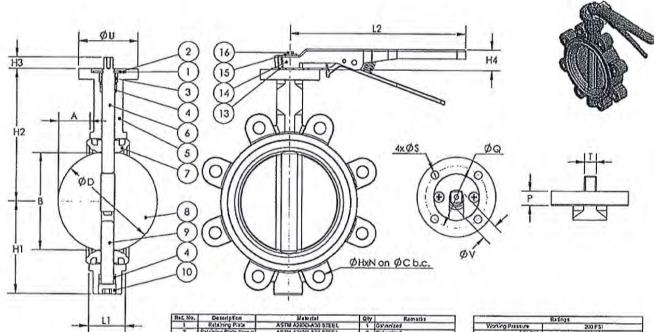
Seat Material	Working Temperature
EPDM	-22° to 230°F (-30°C to 110°C)
Buna-N	-4° to 194°F (-20°C to 90°C)

DOC: FNW711-712V10 Ver. 07/2012

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- NOTE:

 1. Valve design in accordance with API 609A, MSS SP-67

 2. Testing in accordance with API 598, MSS SP-61

 3. The laying length of valve conforms to ISO 5752 PH 10/16

 SHORT

 4. Ownersions for topworks conform to SO 511

 5. Ownersions for mounting flange conform to AMSI B16.1 150

 PSI

2	Retaining Plate Screw	ASTM A2NNO-ASS STEEL	2	Galarized
3	Ingress Steen Seal	SAVE AS SEAT MATERIAL	1	
4	Stem Bushing	PIFE	2	1 Upper, I Lover, Sizes 2'-3'
1	difficult by a	- Fare	4	2 Upper, 2 Loase, Sizes 4'-B'
5	814/	ASTU A128 CAST ROH	1	
6	Upper Stem	41655 STATALESS SIEEL	T	
7	Sent	EPOM or BURIA	1	
å.	Disc	JS H 5114 ALUVANU BROADE	1	
9	Lower Stem	41655 STAPA ESS STEEL	1	
10	Pin	ASTN A2330-A33 STEEL	1	
13	LVAY STOPALE	ASTU A2630-A36 STEEL	1	
14	Leac	ASTU A47 Gr 22310 MALLEAGLE HON	1	
15	Lever Washer	ASTM A2830-A58 STEEL	1	
16	LoweBot	ASTM A233D-A38 STEEL	1	

difference to the kink ear

		ings
Visiting Pill		200 PSI
Test Pressure	SHELL	300 P&I
	SEAT	220 51
Working	IMR	-4 °F to 191 °F
Temperature	EPDU	-22 'F to 230 'F

TILE/DESCRIPTION

Resitent Cartridge Seat 2' to 8' Lever Operated

DAF	7-5-2012	ATAD KMC	MARK		
, IEV.	0	AND		712	2-8

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W 10		of cold and	6.00	214 1	 	Section 2	A STATE OF THE REAL PROPERTY.

Sizo	Α	В	ØD	HI	112	H4	LI	1.2	НЭ	שמ	Р	aq	øs	T	øv
2	0.18	1.93	2.05	277	5 05	1.06	1.69	11.37	0.00	3.54	0.55	276	0.35	0.43	0.55
2-1/2	0.41	2.62	2 64	2.95	5.33	1.06	1.61	11.37	0.60	3.54	0.55	2.76	0.35	0.43	0.55
3	0.67	3.03	3.15	3.67	5.64	1.06	1.81	11.37	0.60	3.54	0.55	2.78	0.55	0.43	0.55
4	0.94	3 82	3.94	4.18	6.41	1.05	2.05	11.37	070	3.54	0.63	2.76	0.35	0.55	0.63
5	1.36	4.50	4.92	4.69	7.34	1.06	2.20	11.37	0.70	3.54	063	276	0.35	0.55	0.71
6	1.60	5.83	5.93	5.43	7.53	1.06	2.20	11.37	0.70	3 54	063	2.76	035	0.55	0.71
8	2.69	7.62	7.74	651	9.34	1.06	2.36	17.63	0.51	3.54	067	276	0.35	0.67	0.87

Figure LBB PIPING PRODUCTS



LUGGED BUTTERFLY VALVE BOLT PACKS

Features

- · For 150# Flanges
- Pack Quantity for Two Flanges (One Butterfly Valve)
- · Material: Carbon Steel
- · Finish: Zinc Plated
- · Sizes: 2" to 24"

Standards

- · Material: ASTM A307A Grade A
- · Dimensions: ASME B18.2.1
- · Thread: Class 2A

Specifications

- · Tensile: 60 KSI Minimum
- · Elongation: 18% Minimum
- · Hardness: 69 100 Rb



Figure Number Matrix

	FNW LBI	3 Z 1 Size	
FINISH	FLANGE	SIZE	CODE
Zinc = Z	150# = 1	2 = K	10 = 10
		2-1/2 = L	12 = 12
		3 = M	14 = 14
		4 = P	16 = 16
		5 = S	18 = 18
		6 = U	20 = 20
		8 = X	24 = 24

Pack Quantities & Bolt Sizes (inches)

Size	Bolt Qty	Diameter	Bolt Length
> 2	8	5/8-11	1-1/2
2-1/2	8	5/8-11	1-3/4
3	8	5/8-11	1-3/4
4	16	5/8-11	1-3/4
5	16	3/4-10	2
6	16	3/4-10	2
8	16	3/4-10	2-1/4
10	24	7/8-9	2-1/2
12	24	7/8-9	2-3/4
14	24	1-8	2-3/4
16	32	1-8	3-1/4
18	32	1-1/8-7	3-1/2
20	40	1-1/8-7	4
24	40	1-1/4-7	4-3/4

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Figure 345 & 355

THERMOPLASTIC VALVES



TRUE-UNION BALL CHECK VALVE

→ Figure 345 - PVC with NPT and SW Ends

Figure 355 - CPVC with NPT and SW Ends

Valve Features

- · Pressure Rating: 150 PSI
- . 5 PSI Minimum Shut Off
- · Temperature Range:
 - o PVC: 41°F to 122°F (5°C to 50°C)
 - o CPVC: 32°F to 194°F (0°C to 90°C)
- EPDM & FPM (Viton®) Seals
- · Both NPT & Sweat Ends Included
- For Vertical & Horizontal Installation*
- With Flow Direction Arrow
- Machined & Tumbled Ball for Hermetic Seal
- Easy Maintenance
- * For vertical up flow only, not down flow. In horizontal installations, standard line drop typically will not allow the ball to seat (a back pressure differential of 5 PSI minimum is needed for shut off).

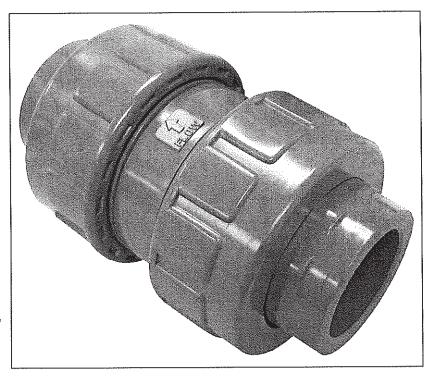
Standards

Connections:

- Threaded: ASTM D-2464, ref. ANSI B1.20.1
- · Socket: ASTM D-2467

Materials:

- PVC: Cell Classification 12454 per ASTM D1784 (formerly Type I, Grade 1)
- CPVC: Cell Classification 23447 per ASTM D1784 (formerly Type IV, Grade 1)



Pressure/Temperature

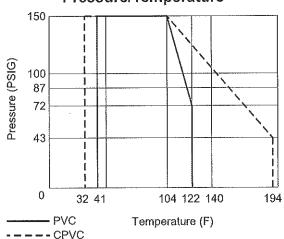
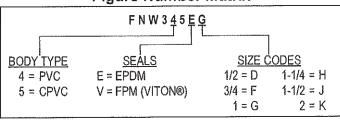


Figure Number Matrix



Cv & Weights

			•
	Size	Cv	Wt. (Lbs.)
	1/2	10	0.37
	3/4	26	0.55
	1	37	0.83
	1-1/4	40	1.52
	1-1/2	80	2.11
_	→ 2	152	3.86



Figure 345 & 355 THERMOPLASTIC VALVES

TRUE-UNION BALL CHECK VALVE

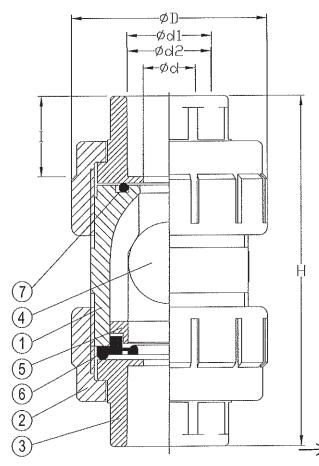
About PVC

Unplasticised Polyvinyl Chloride, or PVC, is the most widely used of all plastics and commonly used for pressure pipes, fittings, and valves. It is rigid, suitable for above and below ground applications. PVC has good chemical resistance and is odorless and tasteless. It is for use with liquids and gasses with temperatures +32°F to +140°F* (for higher temperatures see CPVC) at a wide range of operating pressures. Some poorer quality PVC can leach chemicals into water which can build up in recirculation systems, however most modern pipe is built to specific standards (e.g. BS3505/6, ASTM D 1785, ASTM D2241, DIN 8061/2, KIWA 49, BS4346 PART 1, DIN 8063) to control this. ASTM D1784 controls the compounds for rigid PVC and CPVC.

About CPVC

Chlorinated Polyvinyl Chloride, or CPVC, has been offering the process industry superior corrosion resistance, mechanical strength, and excellent life-cycle economics in a single package. Conceptually, CPVC is a PVC homopolymer that has been subjected to a chlorination reaction. It is generally inert to most mineral acids, bases, salts, and paraffinic hydrocarbon solutions. CPVC is not recommended for use with chlorinated or aromatic hydrocarbons, esters, or ketones. The upper temperature limit on CPVC and the material will withstand pressure. However, at very cold temperatures, the material will become brittle and the impact strength will decline.

* Note: Other materials within valves besides PVC and CPVC can have an affect on the temperature limits of the valve. Temperatures noted above are for the thermoplastic material alone.



Standard Materials

		Material					
Ref.	Description	3	45 🗸	3	Qty		
No.	2000 , p. 1000	EPDM Seals	Viton Seals	EPDM Seals	Viton Seals		
1	Body	PVC		CPVC		1	
2	Union Nut	PVC		CPVC		2	
3	End Connector	PVC		CI	1		
4	Ball	PVC		CPVC		1	
5	Gland	PVC		PVC CPVC		1	
6	Seat	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	1	
7	O-ring	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	1	

Dimensions (inches)

Size	Ød2	Ød1		d	D	Н	Thd./In (NPT)
1/2	0.84	0.85	0.875	0.63	1.97	3.52	14
3/4	1.05	1.06	1.000	0.79	2.44	4.39	14
1	1.31	1.33	1.125	0.98	2.84	5.09	11.5
1-1/4	1.66	1.67	1.250	0.98	3,82	6.16	11.5
1-1/2	1.89	1.91	1.375	1.58	3,82	6.60	11.5
> 2	2.37	2.39	1.500	1.97	4.21	7.54	11.5



(4)

NON-MERCURY FLOAT SWITCH - CONTROL DUTY

2900 MECHANICAL SERIES - NARROW ANGLE FLOAT SWITCH

GENERAL

DESIGNED FOR ACCURATE LIQUID LEVEL CONTROL IN MANY APPLICATIONS INCLUDING POTABLE WATER OR SEWAGE ENVIRONMENTS. THE FLOAT SWITCH CAN BE UTILIZED TO SIGNIFY SPECIFIC WATER LEVELS OR FOR DIRECT ALARM ACTUATION.

SWITCH VARIATIONS

NORMALLY OPEN (N/O) - GREEN SHELL

THE CONTACTS ARE OPEN (OR OFF) IN THE HANGING POSITION. AS THE FLOAT RISES 1" (5°) ABOVE HORIZONTAL, THE CONTACTS BECOME CLOSED AND ACTUATE (TURN ON) THE SWITCH. THIS FLOAT IS GENERALLY USED IN PUMP DOWN APPLICATIONS.

NORMALLY CLOSED (N/C) - GREEN/RED SHELL

THE CONTACTS ARE CLOSED (OR ON) IN THE HANGING POSITION. AS THE FLOAT RISES 1" (5°) ABOVE HORIZONTAL, THE CONTACTS BECOME OPEN AND ACTUATE (TURN OFF) THE SWITCH. THIS FLOAT IS GENERALLY USED IN PUMP UP APPLICATIONS.

SINGLE POLE, DOUBLE THROW (SPDT) - GREEN/BLUE SHELL

A VARIATION OF THE PREVIOUSLY LISTED SWITCHES. THIS FLOAT SWITCH CAN BE WIRED TO OPERATE AS EITHER (BUT NOT BOTH) A NORMALLY OPEN OR NORMALLY CLOSED SWITCH BASED ON THE USER'S NEED.

SWITCH SPECIFICATIONS

2900 SERIES MECHANICAL FLOAT SWITCHES ARE DESIGNED TO OPERATE UNDER THE FOLLOWING PARAMETERS.

MINIMUM OPERATING TEMPERATURE

32 DEGREES F.

MAXIMUM OPERATING TEMPERATURE

170 DEGREES F.

ELECTRICAL RATING

10 AMP-120 VAC, 5 AMP-240 VAC

ACTUATION POINT

1" ABOVE / BELOW HORIZONTAL.

POWER CORD SPECIFICATIONS

CONDUCTOR CORD - PHYSICAL ELECTRICAL FOR N/O OR N/C SWITCH

CHLORINATED POLY ETHYLENE. 18 AWG 2, TYPE SJOOW - 300 V.

ELECTRICAL FOR SPDT SWITCH

18 AWG 3, TYPE SJOOW - 300 V.

FLOAT SPECIFICATIONS

DURABLE POLYPROPYLENE MATERIAL CONSTRUCTION.
SOLID POLYURETHANE FOAM INTERIOR.
LEAK PROOF, SHOCK PROOF, AND IMPACT RESISTANT.
RESISTANT TO SEWAGE AND WASTEWATER APPLICATIONS.

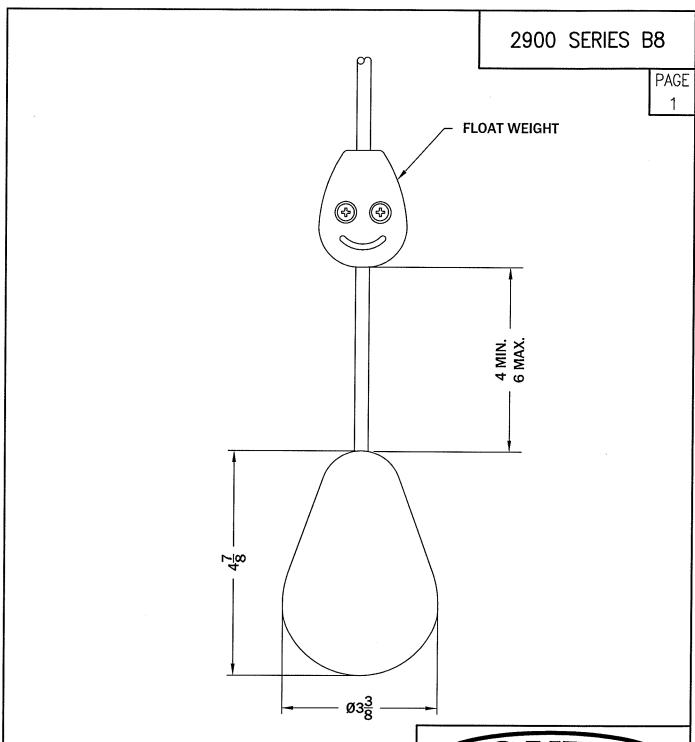
CORD WEIGHT

ZINC PLATED CAST IRON - 1.22 LBS.
SPLIT WEIGHT DESIGN ALLOWS FOR EASY ADJUSTMENT.
DESIGN ALLOWS FOR SECURE AND PERMANENT ATTACHMENT TO CORD.



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CHANGES	TOLERANCES	DRAWN BY	DATE
F	DECIMALS .xxx = ±.005	D. MIDDLETON	07/30/09
E D	$.XX = \pm .010$ FRACTIONAL	MATERIAL SPECIFICATI	ON:
С	$X/X = \pm .1/64$		
В	ANGLES		
Α	$X^* = \pm 1/2^*$	ĺ	



SPECIFICATION SHEET MECHANICAL FLOAT

SCALE: HALF

2900 SERIES B8 NON-MERCURY NOTE: ALL ELECTRICAL DIAGRAMS SHOWN ARE EXAMPLES ONLY, CONSULT WITH LOCAL ELECTRICAL AUTHORITIES AND CODES. DO NOT USE THESE PRODUCTS IN GASOLINE, VOLATILES, OTHER COMBUSTIBLES.

2900 SERIES B8

PAGE 2

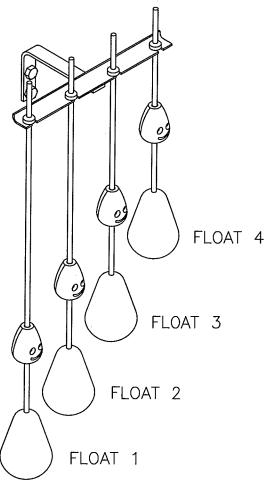
FOR PUMP DOWN USE (NORMALLY OPEN FLOATS)

FOR PUMP UP USE (NORMALLY CLOSED FLOATS)

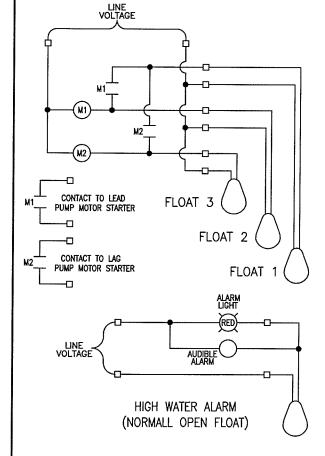
FOR SPDT FLOATS GREEN - N/O WHITE - COMMON BLACK - N/C



TYPICAL MOUNTING



TYPICAL 2 PUMP USES



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	CHANGES	TOLERANCES	DRAWN BY	DATE
F		DECIMALS .xxx = ±.005	D. MIDDLETON	07/30/09
느		$.XX = \pm .005$ $.XX = \pm .010$	MATERIAL SPECIFICATI	ON.
		FRACTIONAL	MATERIAL SI LOTTOATI	ON.
C		$X/X = \pm .1/64$		
В		ANGLES		
A		$X^* = \pm 1/2^*$		



SPECIFICATION SHEET MECHANICAL FLOAT

SCALE:	
NONE	

2900 SERIES B8 NON-MERCURY





SIZES: 11/2" and 2"









Every T-10 water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle has been time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.

The T-10 water meter consists of three major assemblies: a register, a lead free high copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant lead free high copper alloy maincase will withstand most service conditions: internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element protects the chamber from frost damage while the unique chamber seal extends the low flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

Neptune provides a limited warranty with respect to its T-10 water meters for performance, materials, and workmanship.

When desired, maintenance is easily accomplished either by replacement of major assemblies or individual components.

Register

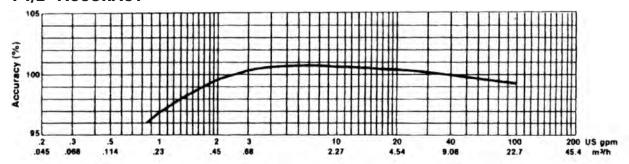
(EY FEATURES

- Magnetic drive, low torque registration ensures accuracy
- Impact-resistant register
- High resolution, low flow leak detection
- Bayonet style register mount allows in-line serviceability
- Tamperproof seal pin deters theft
- Date of manufacture, size, and model stamped on dial face
- Lead Free Maincase
 - Made from lead free high copper alloy
 - NSF/ANSI 61 Certified, Annex G and Annex F compliant
 - Lifetime guarantee
 - Resists internal pressure stresses and external damage
 - Handles in-line piping variations and stresses
 - Lead free high copper alloy provides residual value vs. plastic
 - Electrical grounding continuity
- Nutating Disc Measuring Chamber
 - · Positive displacement
 - Widest effective flow range for maximum revenue
 - Proprietary polymer materials maximize long term accuracy
 - Floating chamber design is unaffected by meter position or inline piping stresses

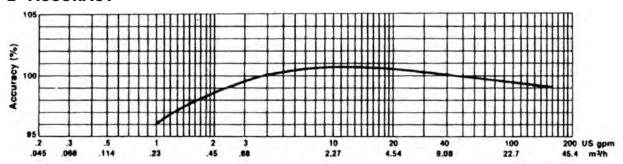
Adaptability to all present and future systems for flexibility is available only with Neptune's ARB® Utility Management Systems™.



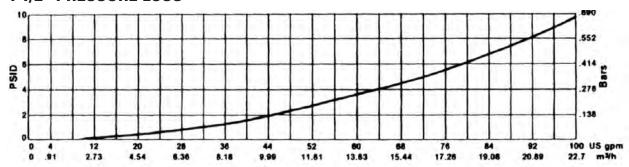
1 1/2" ACCURACY



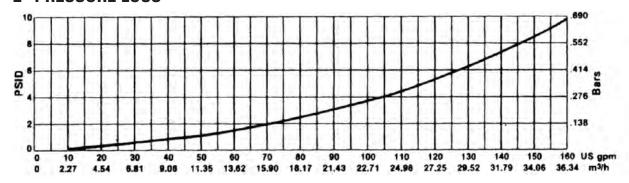
2" ACCURACY



1 1/2" PRESSURE LOSS



2" PRESSURE LOSS



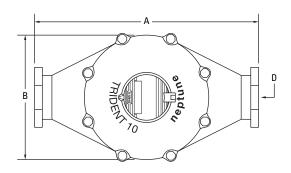
OPERATING CHARACTERISTICS

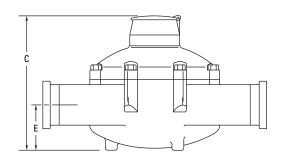
Meter	Normal Operating Range	AWWA	Low Flow	
Size	@100% Accuracy (±1.5%)	Standard	@ 95% Accuracy	
1 1/2"	2 to 100 US gpm	5 to 100 US gpm	3/4 US gpm	
	0.46 to 22.73 m ³ /h	1.1 to 22.7 m ³ /h	0.17 m³/h	
2"	2 1/2 to 160 US gpm	8 to 160 US gpm	1 US gpm	
	0.57 to 36.36 m³/h	1.8 to 36.3 m³/h	0.23 m³/h	

DIMENSIONS

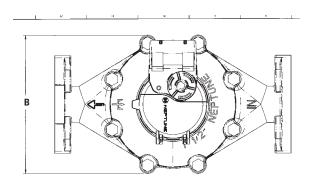
Meter	Α	В	C-Std.	C-ARB	C-E-Coder)	D-Threads	D-Thread	E	Weight
Size	in/mm	in/mm	in/mm	in/mm	R900 <i>i</i> ™	per inch	Туре	in/mm	lbs/kg
1 ½"	12 %	8 1/16	8 1/8	8 13/16	10 1/16	11 ½	1 ½	2 %	31
Screw End	321	205	206	220.3	225.4		NPT	65	14.1
1 ½"	13	8 1/16	8 1/8	8 13/16	10 1/16	_	_	2 %	35
Flanged End	330	205	206	220.3	225.4			65	15.9
2"	15 1/4	9 1/16	9 1/16	9 15/16	11 %	11 ½	2"	3 1/4	40
Screw End	387	240	237	248.4	289		NPT	79	18.1
2"	17	9 1/16	9 1/16	9 15/16	11 %	_	_	3 1/4	44
Flanged End	432	240	237	248.4	289			79	20.0

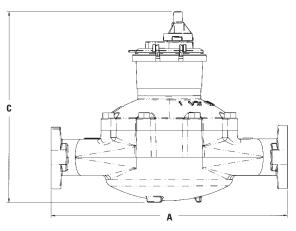
T-10 WITH STANDARD REGISTER





T-10 WITH E-CODER)R900*i* PIT REGISTER





GUARANTEED SYSTEMS COMPATIBILITY

All T-10 meters are guaranteed adaptable to our ARB®V, ProRead™ (ARB VI), E-Coder® (ARB VII), E-Coder)R900*i*™, TRICON®/S, TRICON/E®3, and Neptune ARB Utility Systems without removing the meter from service.

REGISTRATION

ProRead Reg	jistration		
(per sweep l	nand revolution)	1 1/2"	2"
100	US Gallons	✓	1
100	Imperial Gallons	/	1
10	Cubic Feet	✓	✓
1	Cubic Metre		✓
0.1	Cubic Metre	✓	
Register Cap	acity		
ProRead & E	-Coder	1 1/2"	2"
100,000,000	US Gallons	✓	1
100,000,000	Imperial Gallons	✓	1
10,000,000	Cubic Feet	✓	✓
100,000	Cubic Metres	✓	✓
E-Coder Higl	n Resolution		
(8-digit read	ing)	1 1/2"	2"
1	US Gallons	✓	1
1	Imperial Gallons	✓	1
.01	Cubic Feet	✓	✓
0.001	Cubic Metres	1	✓

ECIFICATIONS

- Certification: NSF/ANSI 61, Annex G and Annex F
- Application: cold water measurement of flow in one direction
- Maximum operating water pressure:
 150 psi (1034 kPa)
- Maximum operating water temperature: 80°F
- Measuring chamber: nutating disc technology design made from proprietary synthetic polymer

NOIL

- Sizes:
 - 1½" flanged or threaded end
 - 2" flanged or threaded end
- Units of measure: U.S. gallons, imperial gallons, cubic feet, cubic metres
- Register types:
 - Direct reading: Bronze box and cover (standard)
 - Remote reading: ProRead Absolute Encoder, E-Coder, E-Coder)R900i, TRICON/S, TRICON/E3
 - Reclaim
- Measuring chamber: synthetic polymer
- Companion flanges: cast iron or lead free high copper alloy
- Environmental Conditions:
 - Operating temperature:
 33°F to 149°F (0°C to 65°C)
 - Storage temperature:
 33°F to 158°F (0°C to 70°C)
- Test Ports: 1"

Neptune engages in ongoing research and development to improve and enhance its products. Therefore, Neptune reserves the right to change product or system specifications without notice.

Neptune Technology Group Inc.

1600 Alabama Highway 229 Tallassee, AL 36078 USA Tel: (800) 645-1892

Fax: (334) 283-7293

Neptune Technology Group (Canada) Ltd.

7275 West Credit Avenue Mississauga, Ontario L5N 5M9 Canada Tel: (905) 858-4211

Fax: (905) 858-0428

Neptune Technology Group Inc.

Ejército Nacional No. 418 Piso 12, Desp. 1201-1202 Col. Chapultepec Morales Delegación Miguel Hidalgo 11570 México, Distrito Federal Tel: (525) 55203 5294 / (525) 55203 5708 Fax: (525) 55203 6503

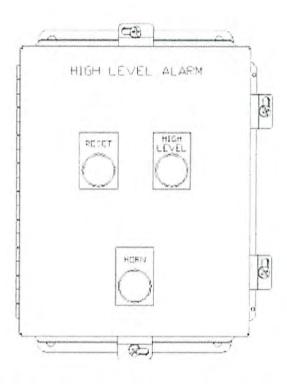


neptunetg.com

TANK ALARM SYSTEM

Protect tanks from an overflow condition with MEC Tank Alarm System. This unit can detect a high level alarm with our Tank High level switch (THLS-*-*) or a tank leak alarm with our Containment High Level Switch (CHLS-*). Customers can also use their own dry contact device.

Need more tanks to protect in a single controller? MEC offers digital systems that provide level and alarming information.



SYSTEM FEATURES

- 120 VAC or 24 VDC
- · Pilot light on until alarm is cleared
- Horn Silence
- Enclosure Steel, Stainless Steel or Fiberglass
- · optional Horn for remote fill station location.
- · Optional duel channel for two tanks or tank and containment.
- Dry contact for customers PLC or Plant alarm



- Our wall mount level switch will provide leak detection for your tank containments or high level alarming with one of ours or your controls.
- Optional mounting brackets are available upon request.
- · Custom lengths are available.
- · Wetted material CPVC, TEFLON or PVDF (Kyner), TEFLON.
- Also available with tank adapter to install on top of tank for high high alarm.



Large Size - Engineered Plastics

Select from these Engineered Plastics for Aggressive or Ultra-Pure Liquids

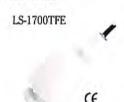
Each of these series offers unique features. Choose from this selection when all-plastic material is desirable and tank space is not restricted.



Particularly well suited for rough service. Ideal for use in chemical and plating applications.

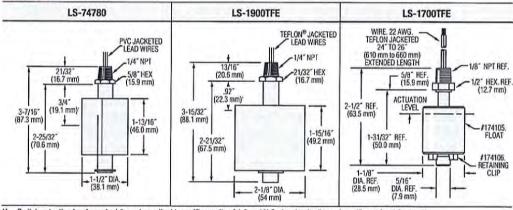


Resists build-up of foreign material or sticky media. Float travel remains uninhibited in viscous or corrosive liquids, SPDT switch.



A medium-size solution for ultra-pure liquid level sensing. Made of corrosion resistant PTFE for low particle generation.

Dimensions



†L,=Switch actuation level, nominal (based on a liquid specific gravity of 1.0 and N.O. dry circuit-dimension will vary for N.C. circuit).

Common Specifications

Electrical Termination: No. 18 AWG, 24"L., Lead Wires (Jacket material is indicated on dimensional drawings, above).

How To Order - Select Part Number based on specifications required.

Carles	Materials		No. Charles		Pressure,		Part Nu	mber	
Series Number	Stem, Mounting Float		Min. Liquid Sp. Gr.	Operating Temperature	PSI,	Switch*	Mounting Size		
	and Other Wetted	rivat	op. di.	The second second	Max.		1/4" NPT	1/8" NPT	
LS-74780	CPVC		.85	-40°F to +180°F (-40°C to +82.2°C)	15	SPST, 20 VA	74780** #	_	
LS-1900TFE	Teflon®		.80	-40°F to +300°F (-40°C to +148.9°C)	30	SPDT, 20 VA	133299 #	-	
LS-1700TFE	PTFE		.86	+32°F to +212°F (0°C to +100°C)	25	SPST, 20 VA, N.O.		174100 #	
L3-170011L	FIFE		.00 +32 7 10 +212 7 (0 0 10 +100		20	SPST, 20 VA, N.C.		174200 #	

^{*} See "Electrical Data" on Page X-5 for more information.

← Stock Items.

^{**} Switch operation is selectable, N.O. or N.C., by inverting the float on the unit stem. Units are shipped N.O. unless otherwise specified.

^{†† 100} VA switches are not U.L. Recognized.

TECHNICAL SUBMITTAL DRAWINGS

ALUMINUM CABLE TRAY SYSTEMS

PROJECT: Taylor Corporation

BID PACKAGE: Quotation 212630

SUBMITTED TO: Gorin Hopper McCoy

DATE: September 9, 2015

PREPARED BY: Donna Young

Manufacturer:

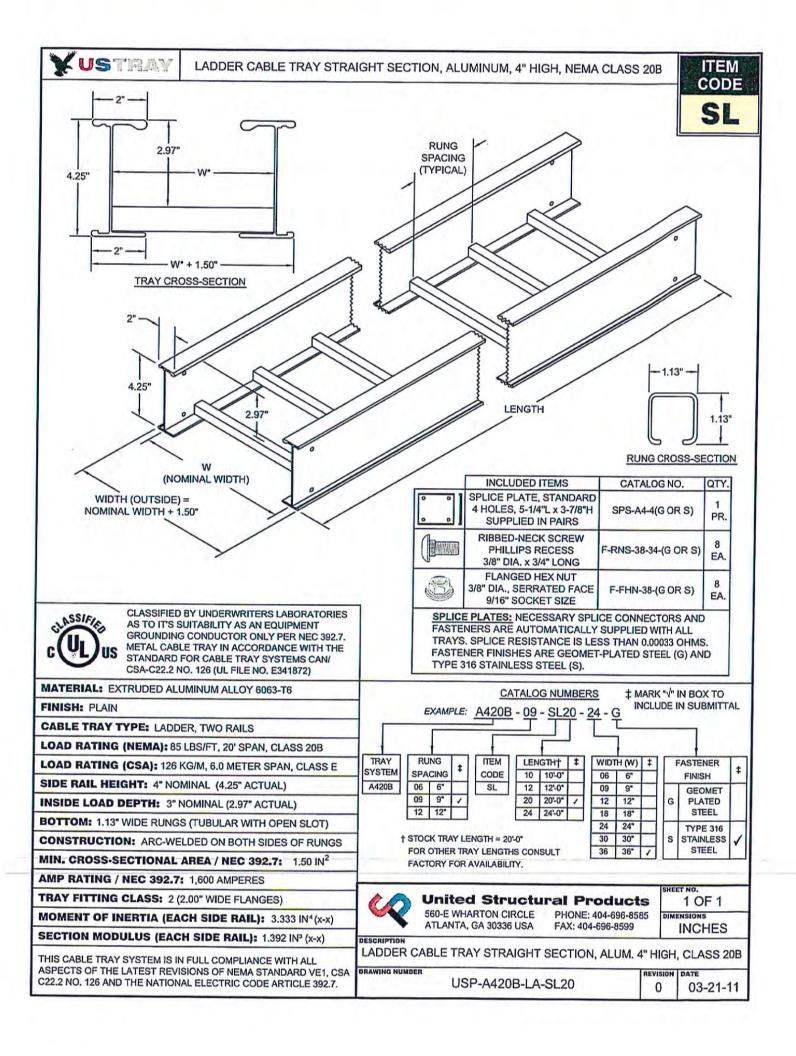


United Structural Products, LLC 560-E Wharton Circle Atlanta, GA 30336

Phone: 404-696-8585 Fax: 404-696-8599

ustray.com



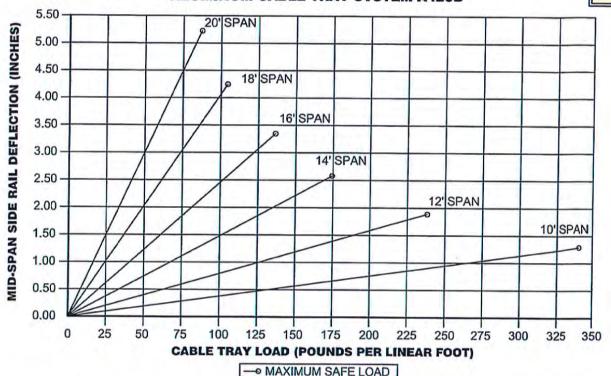




ITEM CODE

SL

SAFE LOAD AND DEFLECTION OF CABLE TRAY SIDE RAILS ALUMINUM CABLE TRAY SYSTEM A420B



TRAY	SAFETY	TRAY SAFE LOAD DATA			SUPPORT	SPAN (FEET)		
SYSTEM	FACTOR	TESTED PER NEMA VE-1	10	12	14	16	18	20
	1.5	MAX. SAFE LOAD (LBS/FT)	340	236	173	132	105	85
A420B	1.5	DEFLECTION (INCHES)	1.30	1.88	2.55	3.33	4.22	5.21
	DEF	LECTION MULTIPLIER	0.00383	0.00796	0.01476	0.02520	0.04019	0.06129

SAFETY	RUNG SAFE LOAD LIMITS, TESTED PER NEMA			TRAY	VIDTH (II	NCHES)		
FACTOR	VE-1 SECTION 5.4	6	9	12	18	24	30	36
1.5	MAX. SAFE LOAD (LBS, UNIFORM)	2400	1600	1200	800	600	778	649
	MAX. SAFE LOAD (LBS, CONCENTRATED)	1200	800	600	400	300	389	324

- 1. THIS DATA APPLIES TO ALL LADDER, VENTED/TROUGH, AND FLAT-SHEET SOLID BOTTOM CABLE TRAYS THAT EMPLOY SIDE RAIL SYSTEM A420B. ALL OF THESE TRAY TYPES ARE CONSTRUCTED WITH RUNGS.
- 2. DATA IS BASED ON SIMPLE-BEAM TYPE SUPPORTS WITH EVENLY DISTRIBUTED LOADS.
- 3. MAXIMUM SAFE LOAD IS BASED ON A SAFETY FACTOR OF 1.5 APPLIED TO COLLAPSE.
- 4. WHEN SUPPORTED ON MULTIPLE-SPAN ARRANGEMENTS, ACTUAL DEFLECTION WILL BE UP TO 60% LESS THAN THE SIMPLE-BEAM DEFLECTION SHOWN.
- ALL LOAD TESTS WERE CONDUCTED IN ACCORDANCE WITH SECTION 5 OF NEMA STD. VE1, CSA C22.2 NO. 126.
 DETAILED TEST REPORTS ARE AVAILABLE UPON REQUEST; CONTACT ENGINEERING DEPT.
- 6. MULTIPLY THE DEFLECTION MULTIPLIER BY THE ACTUAL LOAD (LBS/FT) TO CALCULATE THE DEFLECTION (INCHES) AT LOADS LESS THAN THE MAXIMUM SAFE LOAD.
- 7. THIS TRAY SYSTEM WILL SUPPORT A 200 POUND CONCENTRATED STATIC LOAD APPLIED AT THE CENTER OF ANY RUNG, IN ADDITION TO THE FULL SAFE CABLE LOAD, WITHOUT FAILURE OF THE RUNG OR THE SIDE RAILS.



THE LOAD AND DEFLECTION DATA OF THIS CABLE TRAY SYSTEM IS BASED ON DESTRUCTION LOAD TESTS PER NEMA VE1, CSA C22.2 NO. 126 THAT WERE WITNESSED AND CERTIFIED ACCURATE BY UNDERWRITERS LABORATORIES, INC. (UL FILE NO. E341872)



United Structural Products 560-E WHARTON CIRCLE PHONE: 404-696-8585

ATLANTA, GA 30336 USA FAX: 404-696-8599

1 OF 1 DIMENSIONS INCHES

DESCRIPTION

LOADING DATA FOR CABLE TRAY SYSTEMS A420B

DRAWING NUMBER

USP-A420B-LDATA15-20

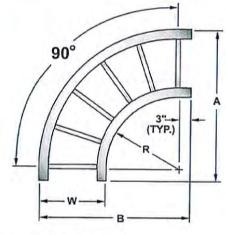
REVISION DATE

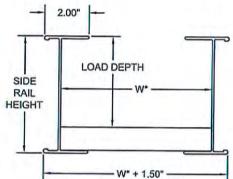
03-21-11



90 DEGREE HORIZONTAL ELBOW FITTING, LADDER CABLE TRAY, CLASS 2







TRAY CROSS-SECTION

	INCLUDED ITEMS	CATALOG NO.*	QTY.
0 0	SPLICE PLATE, STANDARD 4 HOLES, 5-1/4"L SUPPLIED IN PAIRS	SPS-A(H*)-4(G OR S)	1 PR.
	RIBBED-NECK SCREW PHILLIPS RECESS 3/8" DIA. x 3/4" LONG	F-RNS-38-34-(G OR S)	8 EA.
	FLANGED HEX NUT 3/8" DIA., SERRATED FACE 9/16" SOCKET SIZE	F-FHN-38-(G OR S)	8 EA.

(H*) = NOMINAL SIDE RAIL HEIGHT (4, 5, 6, OR 7)

SPLICE PLATES: NECESSARY SPLICE CONNECTORS AND FASTENERS ARE AUTOMATICALLY SUPPLIED WITH ALL TRAYS. SPLICE RESISTANCE IS LESS THAN 0.00033 OHMS. FASTENER FINISHES ARE GEOMET-PLATED STEEL (G) AND TYPE 316 STAINLESS STEEL (S).



CLASSIFIED BY UNDERWRITERS LABORATORIES AS TO IT'S SUITABILITY AS AN EQUIPMENT GROUNDING CONDUCTOR ONLY PER NEC 392.7. METAL CABLE TRAY IN ACCORDANCE WITH THE STANDARD FOR CABLE TRAY SYSTEMS CAN/ CSA-C22.2 NO. 126 (UL FILE NO. E341872)

MATERIAL: EXTRUDED ALUMINUM ALLOY 6063

FINISH: PLAIN

TRAY TYPE: LADDER, TWO RAILS

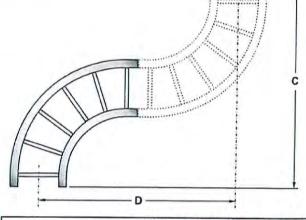
BOTTOM: 1.13" WIDE RUNGS (TUBULAR WITH OPEN SLOT)

CONSTRUCTION: ARC-WELDED ON BOTH SIDES OF RUNGS

FITTING CLASS: 2 (2.00" FLANGES)

TANGENTS: 3" (FLAT SIDE RAIL BEYOND CURVATURE)

THIS CABLE TRAY SYSTEM IS IN FULL COMPLIANCE WITH ALL ASPECTS OF THE LATEST REVISIONS OF NEMA STANDARD VE1, CSA C22.2 NO. 126 AND THE NATIONAL ELECTRIC CODE ARTICLE 392.7.



	ALUMINU	_	_		ALOG NUM		09 -	IN	ICLU	DE IN	BOX TO SUBMITT	AL
SIDE RAIL	L HEIGHT		‡		FITTING	#		NG CING	‡		FASTENER	‡
4	4.25"	3"	1	-	2.00"		06	6"		\vdash	GEOMET	-
5	5.25"	4"	Ť	2	FLANGES	1	09	9"	7	G	PLATED	
6	6.25"	5"				_	12	12"	·		STEEL	
7	7.25"	6"							_		TYPE 316	
,			_							s	STAINLESS STEEL	1

+	ITEM	FITTING DIMENSIONS (INCHES)							
#	CODE RADIUS -WIDTH	R	W	Α	В	C	D		
	90H12 - 06	12	6	21	21	36	36		
	90H12 - 09	12	9	24	24	39	39		
	90H12 - 12	12	12	27	27	42	42		
	90H12 - 18	12	18	33	33	48	48		
	90H12 - 24	12	24	39	39	54	54		
	90H12 - 30	12	30	45	45	60	60		
	90H12 - 36	12	36	51	51	66	66		
	90H24 - 06	24	6	33	33	60	60		
	90H24 - 09	24	9	36	36	63	63		
	90H24 - 12	24	12	39	39	66	66		
	90H24 - 18	24	18	45	45	72	72		
	90H24 - 24	24	24	51	51	78	78		
	90H24 - 30	24	30	57	57	84	84		
/	90H24 - 36	24	36	63	63	90	90		
	90H36 - 06	36	6	45	45	84	84		
	90H36 - 09	36	9	48	48	87	87		
	90H36 - 12	36	12	51	51	90	90		
	90H36 - 18	36	18	57	57	96	96		
	90H36 - 24	36	24	63	63	102	102		
	90H36 - 30	36	30	69	69	108	108		
	90H36 - 36	36	36	75	75	114	114		



United Structural Products 560-E WHARTON CIRCLE PHONE: 404-696-8585 ATLANTA, GA 30336 USA

FAX: 404-696-8599

SHEET NO. 1 OF 1 INCHES

90 DEGREE HORIZONTAL ELBOW, LADDER TRAY, CLASS 2

DRAWING NUMBER USP-90H-LA-2

0 3-28-11



VERTICAL TEE DOWN FITTING, LADDER CABLE TRAY, CLASS 2

MATERIAL

SIDE RAIL HEIGHT LOAD

4.25"

5.25"

6.25"

7.25"

ITEM CODE

DEPTH

4"

5"

6"

NOMINAL ACTUAL

5

6

7

ALUMINUM

EXAMPLE:

2

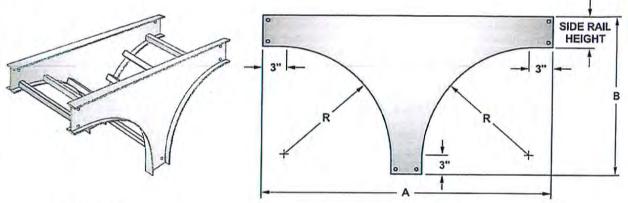
FITTING

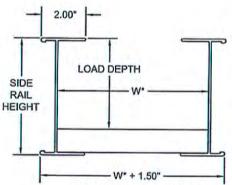
CLASS

2.00"

FLANGES







TRAY CROSS-SECTION	NC
TRAY CROSS-SECTION	NC

	INCLUDED ITEMS	CATALOG NO.*	QTY.
0 0	SPLICE PLATE, STANDARD 4 HOLES, 5-1/4"L SUPPLIED IN PAIRS	SPS-A(H*)-4(G OR S)	2 PR.
	RIBBED-NECK SCREW PHILLIPS RECESS 3/8" DIA. x 3/4" LONG	F-RNS-38-34-(G OR S)	16 EA.
	FLANGED HEX NUT 3/8" DIA., SERRATED FACE 9/16" SOCKET SIZE	F-FHN-38-(G OR S)	16 EA.

(H*) = NOMINAL SIDE RAIL HEIGHT (4, 5, 6, OR 7)

SPLICE PLATES: NECESSARY SPLICE CONNECTORS AND FASTENERS ARE AUTOMATICALLY SUPPLIED WITH ALL TRAYS. SPLICE RESISTANCE IS LESS THAN 0.00033 OHMS. FASTENER FINISHES ARE GEOMET-PLATED STEEL (G) AND TYPE 316 STAINLESS STEEL (S).



CLASSIFIED BY UNDERWRITERS LABORATORIES AS TO IT'S SUITABILITY AS AN EQUIPMENT GROUNDING CONDUCTOR ONLY PER NEC 392.7. METAL CABLE TRAY IN ACCORDANCE WITH THE STANDARD FOR CABLE TRAY SYSTEMS CAN/ CSA-C22.2 NO. 126 (UL FILE NO. E341872)

MATERIAL: ALUMINUM ALLOYS 6063 & 5052

FINISH: PLAIN

TRAY TYPE: LADDER, TWO RAILS

BOTTOM: 1.13" WIDE RUNGS (TUBULAR WITH OPEN SLOT)

CONSTRUCTION: ARC-WELDED ON BOTH SIDES OF RUNGS

FITTING CLASS: 2 (2.00" FLANGES)

TANGENTS: 3" (FLAT SIDE RAIL BEYOND CURVATURE)

THIS CABLE TRAY SYSTEM IS IN FULL COMPLIANCE WITH ALL ASPECTS OF THE LATEST REVISIONS OF NEMA STANDARD VE1, CSA C22.2 NO. 126 AND THE NATIONAL ELECTRIC CODE ARTICLE 392.7.

VTD36 - 36

United Structural Products 560-E WHARTON CIRCLE PHONE: 404-696-8585

ATLANTA, GA 30336 USA FAX: 404-696-8599

1 OF 1

DESCRIPTION

VERTICAL TEE DOWN FITTING, LADDER CABLE TRAY, CLASS 2

DRAWING NUMBER
USP-VTD-LA-2

0 03-28-11

	TILM CODE	_	_	_				- huse			
#	RADIUS	R	w	Н*	= 4"	H*	= 5"	H*	= 6"	H*	= 7"
	- WIDTH	"	"	A	В	A	В	Α	В	A	В
	VTD12 - 06	12	6	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD12 - 09	12	9	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD12 - 12	12	12	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD12 - 18	12	18	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD12 - 24	12	24	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD12 - 30	12	30	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD12 - 36	12	36	34-1/4	19-1/4	35-1/4	20-1/4	36-1/4	21-1/4	37-1/4	22-1/4
	VTD24 - 06	24	6	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
	VTD24 - 09	24	9	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
	VTD24 - 12	24	12	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
	VTD24 - 18	24	18	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
	VTD24 - 24	24	24	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
	VTD24 - 30	24	30	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
1	VTD24 - 36	24	36	58-1/4	31-1/4	59-1/4	32-1/4	60-1/4	33-1/4	61-1/4	34-1/4
	VTD36 - 06	36	6	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4	85-1/4	46-1/4
	VTD36 - 09	36	9	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4	85-1/4	46-1/4
	VTD36 - 12	36	12	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4	85-1/4	46-1/4
	VTD36 - 18	36	18	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4	85-1/4	46-1/4
	VTD36 - 24	36	24	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4	85-1/4	46-1/4
	VTD36 - 30	36	30	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4.	85-1/4	46-1/4
	VTD36 - 36	36	36	82-1/4	43-1/4	83-1/4	44-1/4	84-1/4	45-1/4	85-1/4	46-1/4

RUNG

SPACING

06 6"

12 12"

FITTING DIMENSIONS (INCHES)

09 9"

A62 - 09 - VTD12 - 18 - G

INCLUDE IN SUBMITTAL

FASTENER

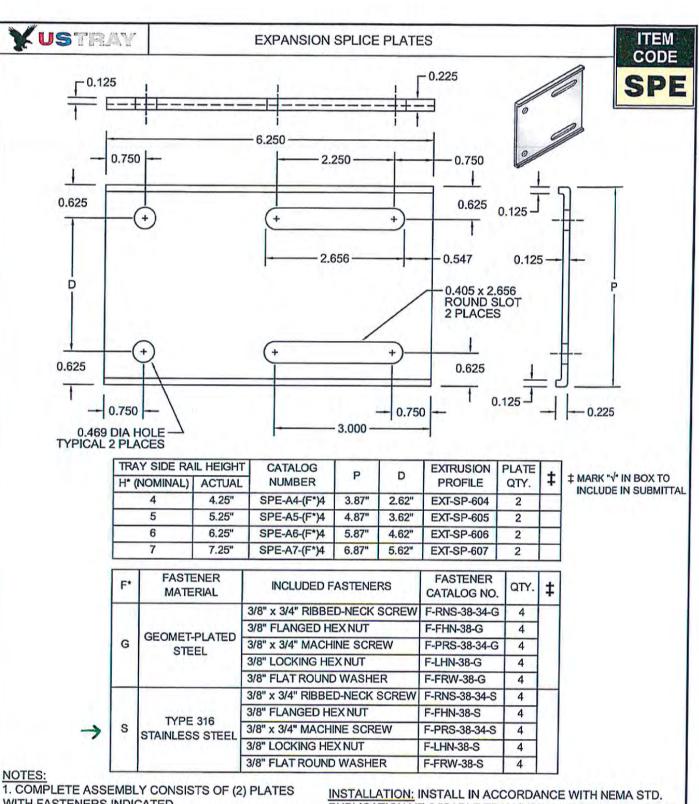
FINISH

GEOMET

PLATED

STEEL

TYPE 316 STAINLESS STEEL #



WITH FASTENERS INDICATED.

2. TRAYS CONNECTED WITH THIS SPLICE DO REQUIRE THE USE OF A BONDING JUMPER TO MAINTAIN GROUND PATH INTEGRITY, JUMPERS SIZES ARE DICTATED BY THE RATING OF THE TRAY SYSTEM.

3. RIBBED-NECK SCREWS AND FLANGED HEX NUTS ARE TO BE INSTALLED IN THE ROUND HOLES. MACHINE SCREWS, LOCKING HEX NUTS AND ROUND WASHERS ARE TO BE INSTALLED IN THE SLOTS.

MATERIAL: EXTRUDED ALUMINUM

ALLOY - TEMPER: 6063-T6 PUBLICATION VE-2 "CABLE TRAY INSTALLATION GUIDELINES".

1	United Structur	ral Produ	ıcts	1 OF 1
V	560-E WHARTON CIRCLE ATLANTA, GA 30336 USA	PHONE: 404-69 FAX: 404-696-8	6-8585	INCHES
EXPAN	, SION SPLICE PLATES -	4 SCREWS	REVISION 1	12-30-10
CATALOG NU	MBER	ATALOG NUMBER VAL	DIADIES	

SPE-A(H*)-(F*)4

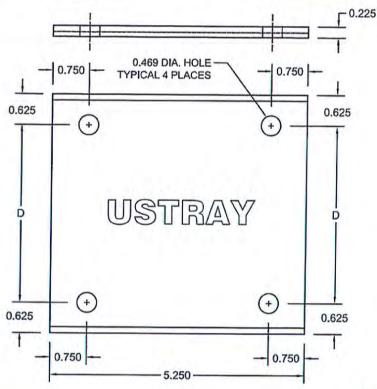
H* = NOMINAL TRAY SIDE RAIL HEIGHT IN INCHES (4, 5, 6, 7)

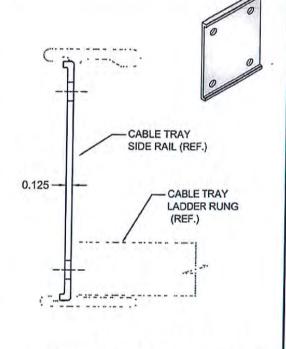
F* = FASTENER MATERIAL (G OR S)



NO.	REVISION	BY	DATE
0	APPROVED	TM	01-04-11
1	ADDED U.L. INFO, ISO CERTIFICATION, REV. LAYOUT	TM	07-22-15

MATERIAL I.D. SPS





NOTES:

- 1. COMPLETE ASSEMBLY CONSISTS OF (2) PLATES WITH FASTENERS INDICATED.
- 2. INSTALL IN ACCORDANCE WITH NEMA STANDARD VE-2 CABLE TRAY INSTALLATION GUIDELINES AND THE INSTRUCTIONS SHOWN ON SHEET 2 OF 2.
- 3. NECESSARY STRAIGHT SPLICE PLATES WITH FASTENERS ARE AUTOMATICALLY SUPPLIED WITH ALL CABLE TRAY STRAIGHT SECTIONS AND FITTINGS AT NO EXTRA CHARGE. EXTRAS FOR FIELD CUTS OR SPARES SHOULD BE ORDERED SEPARATELY.
- 4. THESE ARE THE STANDARD SPLICE PLATE CONNECTORS FOR USE WITH ALL STANDARD CLASS 1 AND 2 CABLE TRAY SYSTEMS.

‡	CATALOG	0.000	AY SIDE L HEIGHT	The Party of the P	ATE ISIONS	PLATE
	NUMBER	H*	ACTUAL	Р	D	QTY.
	SPS-A4-(F*)4	4	4.25"	3.87"	2.62"	2
	SPS-A5-(F*)4	5	5.25"	4.87"	3.62"	2
	SPS-A6-(F*)4	6	6.25"	5.87"	4.62"	2
	SPS-A7-(F*)4	7	7.25"	6.87"	5.62"	2

#	F*	FASTENER MATERIAL	INCLUDED FASTENERS	FASTENER CATALOG NO.	QTY.
	G	GEOMET- PLATED	3/8" x 3/4" RIBBED-NECK SCREW	F-RNS-38-34-G	8
		STEEL	3/8" FLANGED HEX NUT	F-FHN-38-G	8
→	s	TYPE 316 STAINLESS	3/8" x 3/4" RIBBED-NECK SCREW	F-RNS-38-34-S	8
-		STEEL	3/8" FLANGED HEX NUT	F-FHN-38-S	8

MARK "√" IN BOX TO INCLUDE IN SUBMITTAL



CABLE TRAYS EMPLOYING THESE CONNECTORS ARE CLASSIFIED BY UNDERWRITERS LABORATORIES TO BE SUITABLE FOR USE AS EQUIPMENT GROUNDING CONDUCTORS. BONDING JUMPERS ARE NOT REQUIRED TO MAINTAIN GROUND PATH INTEGRITY. RESISTANCE ACROSS COUPLING IS LESS THAN UL FILE E341872 0.00033 OHMS. CERTIFIED BY U.L. TO MEET NEC. 392 AND NEMA STD. VE1, CSA-C22.2 NO. 126.1.

MATERIAL: EXTRUDED ALUMINUM ALLOY 6063-T6

NOTE: ALL DIMENSIONS ARE SUBJECT TO THE MANUFACTURING TOLERANCE SPECIFICATIONS IN DOCUMENT USP-QA-05-02.



United Structural Products, LLC 560 WHARTON CIRCLE, SUITE E PHONE: 404-696-8585

1 OF 2 DIMENSIONS INCHES

DESCRIPTION

STRAIGHT SPLICE PLATE CONNECTORS - 4 HOLES

SPS-A(H*)-(F*)4

CATALOG NUMBER VARIABLES

FAX: 404-696-8599

= NOMINAL TRAY SIDE RAIL HEIGHT IN INCHES (4, 5, 6, 7) F* = FASTENER MATERIAL (G OR S)



STRAIGHT SPLICE PLATE INSTALLATION



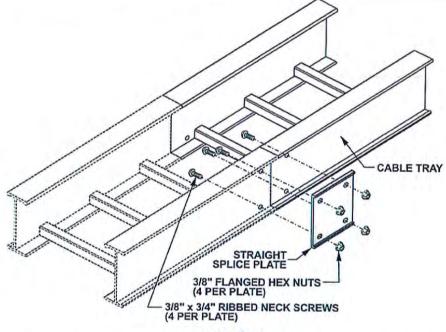
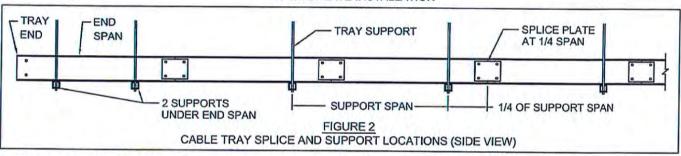


FIGURE 1
SPLICE PLATE INSTALLATION



SPLICE PLATE INSTALLATION:

- 1. INSTALL PLATES ON THE OUTSIDE OF BOTH TRAY SIDE RAILS WITH THE PLATE FLANGES FACING OUTWARD.
- 2. INSTALL SCREWS WITH HEADS ON THE INSIDE OF THE TRAY AND HEX NUTS ON THE OUTSIDE OF THE TRAY.
- 3. TO ENSURE PROPER ALIGNMENT, FINGER-TIGHTEN ALL NUTS FIRST. THEN TURN EACH NUT $\frac{1}{2}$ TURN WITH A WRENCH. THEN TIGHTEN THE NUTS WITH ENOUGH TORQUE TO PULL THE UNDERSIDE OF THE SCREW HEADS INTO CONTACT WITH THE TRAY SIDE RAIL.
- 4. THE RIBBED NECK OF THE SCREW IS DESIGNED TO GRIP THE SIDE RAIL AND PREVENT ROTATION WHILE TIGHTENING. IF ROTATION DOES OCCUR, USE A PHILLIPS DRIVER TO SECURE THE SCREW HEAD WHILE TIGHTENING THE NUT.
- 5. IDEAL LOCATION OF SPLICE COUPLING IS AT THE QUARTER POINT OF THE SUPPORT SPAN AS SHOWN IN FIGURE 2. AVOID PLACING SPLICES AT THE MIDDLE OF THE SPAN OR DIRECTLY OVER THE SUPPORTS.
- 6. THE SUPPORT SPAN SHOULD BE LESS THAN OR EQUAL TO THE STRAIGHT SECTION LENGTH.
- 7. NO MORE THAN ONE SPLICE COUPLING SHOULD BE LOCATED BETWEEN SUPPORTS.
- 8. TRAYS CONNECTED PROPERLY WITH STRAIGHT SPLICE PLATES DO NOT REQUIRE THE USE OF BONDING JUMPERS TO MAINTAIN GROUND PATH INTEGRITY. ELECTRICAL RESISTANCE ACROSS COUPLING IS LESS THAN 0.00033 OHMS PER NEMA STANDARD PUB. VE1 SECTION 5.1.
- 9. USE 7/16" BIT TO DRILL NEW HOLES IN SIDE RAILS WHEN MAKING FIELD MODIFICATIONS.
- 10. REFER TO NEMA STANDARD PUB. VE2 "CABLE TRAY INSTALLATION GUIDELINES" FOR MORE INFORMATION.

NECESSARY STRAIGHT SPLICE PLATES WITH FASTENERS ARE AUTOMATICALLY SUPPLIED WITH ALL STRAIGHT TRAY SECTIONS AND FITTINGS AT NO EXTRA CHARGE. EXTRAS FOR FIELD CUTS OR SPARES SHOULD BE ORDERED SEPARATELY.

1	United Structu	ıral Produ	ıcts	2 OF 2
-	560-E WHARTON CIRCLE ATLANTA, GA 30336 USA	PHONE: 404-69 FAX: 404-696-8		INCHES
STRA	N IGHT SPLICE PLATE IN	ISTALLATION	REVISION 1	01-04-11
CATALOG NU	MBER	CATALOG NUMBER VA	RIABLES	

MATERIAL: EXTRUDED ALUMINUM

ALLOY - TEMPER: 6063-T6

SPS-A(H*)-(F*)4

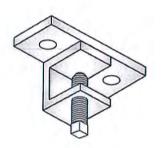
* = NOMINAL TRAY SIDE RAIL HEIGHT IN INCHES (4, 5, 6, 7)

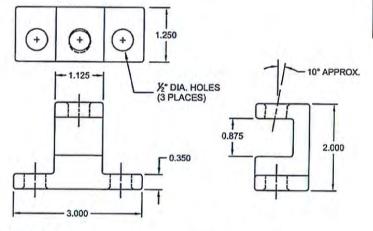
F* = FASTENER MATERIAL (G OR S)

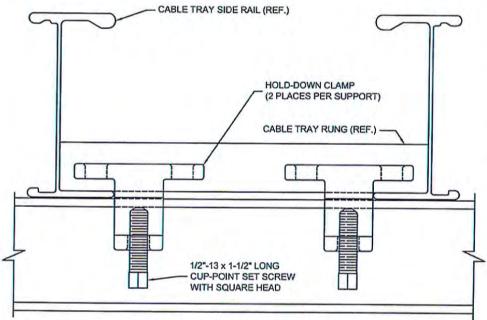


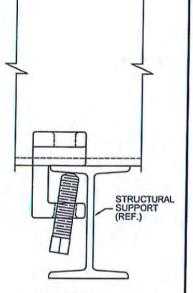
EXPANSION GUIDE CLAMP, I-BEAM











CROSS-SECTION OF CABLE TRAY AT SUPPORT

SIDE VIEW OF CABLE TRAY AT SUPPORT

	F*	FASTENER MATERIAL	INCLUDED FASTENERS	FASTENER CATALOG NO.	QTY.	‡
	G	GEOMET-PLATED STEEL	1/2" x 1-1/2" CUP-POINT SET SCREW	F-CSS-12-15-G	1	
>	s	STAINLESS STEEL TYPE 18-8	1/2" x 1-1/2" CUP-POINT SET SCREW	F-CSS-12-15-S	1	

NOTES:

- 1. COMPLETE ASSEMBLY CONSISTS OF (1) CLAMP AND FASTENERS INDICATED.
- 2. INSTALL CLAMP BY FASTENING TO STRUCTURAL SUPPORT FIRST, THEN TIGHTEN SCREWS TO SECURE CABLE TRAY.
- 3. REFER TO NEMA STD. PUB. VE2 "CABLE TRAY INSTALLATION GUIDELINES" FOR DETAILED PLACEMENT INSTRUCTIONS.

MATERIAL: MALLEABLE CAST IRON

FINISH: HOT-DIP GALV. AFTER FAB. / ASTM A123



United Structural Products 560-E WHARTON CIRCLE PHONE: 404-696-8585 ATLANTA, GA 30336 USA

FAX: 404-696-8599

1 OF 1 DIMENSIONS INCHES

EXPANSION GUIDE CLAMP, I-BEAM

06-18-12 1

CATALOG NUMBER

HEB-H-(F*)

F*= FASTENER FINISH (G OR S)



14670 Highway 82 West Post Office Box 26 Coker, Alabama 35452

Phoné: 205.333.0736

Fax: 205.333.8492

SPECIFICATIONS FOR FAB-CON, L.L.C. CONCRETE PRODUCTS

A. Scope

This specification covers the material and applicable design criteria used in the manufacturing of Pre-Cast reinforced concrete units produced in accordance with the plans and specifications.

B. Reference Documents (Standards)

Reference is made throughout this specification with various standards used in the underground utility structures industry. These standards are:

American Society for testing materials standards specifications (ASTM)

C858	Underground pre-cast concrete utility structures
C890	"Practice for Minimum Structural Design Loading for Monolithic or
	Sectional Pre-Cast Concrete Water and Wastewater Structures"
C913	"Pre-Cast Concrete Water and Wastewater Structures"
C478	"Pre-Cast Reinforced Concrete Manholes Section"
C15	Deformed and Plain Fillet-Steel Cards for Concrete Reinforcement
C31	Making and Curing Concrete Test Specimens in the Field
C33	Concrete Aggregates
C39	Compressive Strength of Cylindrical Specimens
C150	Portland Cement
C260	Air-Entraining Admixture for Concrete
C494	Chemical Admixtures for Concrete

American Concrete Institute (ACI)

ACI318 "Building Code Requirements for Reinforced Concrete"

American Association of State Highway and Transportation Officials (AASHTO)

C. Design Loads

Design loads shall consist of dead load, live load, and impact load, water table hydrostatic load, and any other special loads that may be imposed upon structure. Live loads are designed for pedestrian loads (350 psf), H-10 traffic loads (8,000 lb wheel load), H-20 and/or H-20-44 traffic loads (16,000 lb wheel load) the governing live load that produces the maximum shears and bending moment in given structure. The dead load is considered to be the worse condition with the water table located at 3'-0" below the grade.

D. Forms

Forms shall be accurately constructed and strong enough to maintain the structures dimensions within required tolerances.

E. Concrete

E.1: Cement - Portland cement shall conform to ASTM C150

E.2: <u>Aggregate</u> – Fine and coarse aggregate conforming to ASTM C33 and lightweight aggregate conforming to ASTM C330.

E.3: Admixtures – May be used provided such admixtures are not injurious to other products used in the cement.

A: Chemical admixtures shall conform to specification C494.

B: Fly Ash Admixtures shall conform to specification C618.

C: Air Entraining Admixtures shall conform to specification C260.

E.4: Water - Potable

E.5: <u>Steel Reinforcement</u> – Shall be of the size and located per plans and tied to withstand displacement during pouring operation.

A: Bar Reinforcement - Conforming to specifications A184 / A184M / A615 / A615M / A616 / A617 or A706 / A706M.

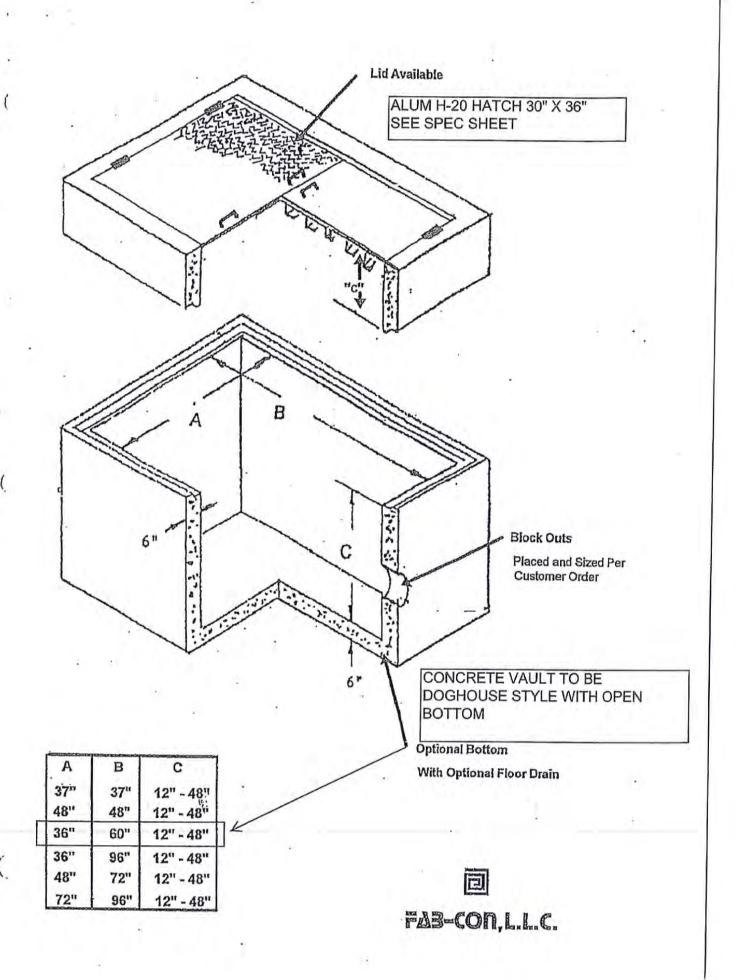
E.6: <u>Inserts and Embedded Metal</u> – Shall be of the type required for the intended task and meet the following standards:

A. Structural steel plates, angles, etc. ASTM A36

B. Welded studs AWS D1.1

F. Concrete Mixes

F.1: Mix Preparations – Concrete shall be of uniform mix of quality materials listed in Section "E – Concrete". Mix proportions shall be determined by following the standards in ACI319 Chapter 5.



Angle frame, Heavy duty, Single door

ALUMINUM

The heavy duty angle type floor access doors are designed for interior and exterior applications where watertightness is not required. They are intended for off street locations that may occasionally receive AASHTO H-20 wheel loads.

SPECIFICATIONS: The floor access door shall be Model AHS as manufactured by U.S.F. Fabrication, Inc., Hialeah, Florida, with the size being specified on the plans. Door leaf shall be 1/4 inch thick aluminum diamond plate reinforced to an AASHTO H-20 wheel load. (Floor access doors are designed for off street locations that may occasionally receive AASHTO H-20 wheel loads.) The frame shall be extruded aluminum with an integral anchor flange and door seat. The entire frame including the seat on which the reinforcing rest shall be supported by concrete or other material designed to support the cover loading. The floor access door shall be equipped with a flush aluminum drop handle that does not protrude above the cover, and a stainless steel automatic hold open arm with a red vinyl grip to lock the cover in the open position. The door shall have stainless steel hinges with stainless steel tamper proof bolts and nuts. The door shall have a watertight stainless steel slam lock operated by a removable key from the outside and by a fixed handle inside. All parts of the frame and cover shall be aluminum or stainless steel. Installation shall be in accordance with the manufacturer's attached instructions. Manufacturer shall guarantee against defects in materials and workmanship for a period of ten (10) years.

OPTIONAL FEATURES

Staple and other locking devices, see page 60
Stainless steel compression springs for easy opening, see page 61

Bituminous coating on surface in contact with concrete Frame skirts for easy casting into a concrete top slab, see page 62

> 2" fiberglass insulation with metal liner

Nut rails with stainless steel sliding nuts for attaching hardware, see page 65

> Custom lettering, see page 62

Anodized finish

> Stainless steel safety chains and posts, see page 63

Hatch Net to prevent persons from falling through opening, see page 63

WATER TITE

FOUR VAULTS AT WELL HEAD AND METER ASSY WITH OUT ANTI SIPHON VALVE

100 Mg/1 - 100 - 60 Mg/1 - 100 Mg/1 - 100 Mg			H-20	LOAE	NING*			
	MAT'LTHK	CONCRET	E OPENING	CLEAR	OPENING	OVERA	ALL SIZE	WEIGHT
MODEL	/In. (mm)	A in. (mm)	B in. (mm)	C in (mm)	D in (mm)	E in. (mm)	F in. (mm)	Lbs. (KG)
AHS	1/4 (6)	24 (609)	24 (609)	22 (558)	23 (584)	34 (863)	30 (761)	60 (27)
AHS	1/4 (6)	24 (609)	36 (914)	22 (558)	35 (888)	34 (863)	42 (1066)	85 (39)
- AHS	1/4 (6)	24		22	47	34	54	85 (39)
AHS	1/4 (6)	30 (761)	36 (914)	27 (685)	35 (888)	40 (1015)	42 (1066)	100 (45)
AHS	1/4 (6)	30 (761)	48 (1218)	27 (685)	47 (1193)	40 (1015)	54 (1371)	130 (59)
AHS	1)(4 (6)	36 (914)	36 (914)	33 (838)	35 (888)	46 (1168)	42 (1066)	115 (52)

*AHS Aluminum floor access doors are intended for off street locations that may occasionally receive AASHTO H-20 wheel loads (16,000 lbs. over 8" x 20" area).

See page 59 for direct traffic applications.

CUSTOM SIZES READILY AVAILABLE

100 personal francisco de la constanta de la c

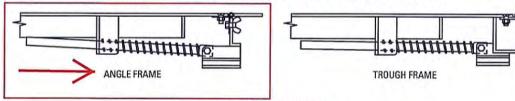
24 X 48 ACCESS FOR METER VAULTS THAT HAVE ANTI-SIPHON VALVE

Available Options: Lift Assist

USF Fabrication's lift assist systems are computer designed to deliver the optimum lift assist for each door. Our standard stainless steel open spring design allows for quick continual inspection and easy maintenance. We also offer gas shocks as an option if required. **USF Fabrication can design lift assist to meet your specific requirements**.

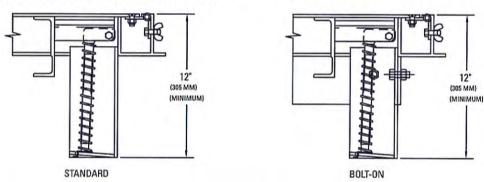
OPEN HORIZONTAL SPRINGS

The horizontal arrangement is the standard design for pedestrian hatches and heavy duty single door hatches. They eliminate the casting problems caused by the spring assembly hanging below the slab.



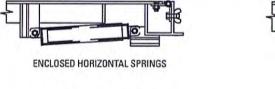
OPEN VERTICAL SPRINGS

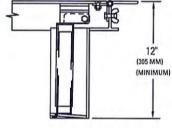
The vertical arrangement of springs is standard for heavy duty double door hatches, and can be used on our other hatch designs. Vertical springs can be either welded or bolted to the door's frame. Bolt-on vertical springs can be removed to facilitate casting the door into concrete where the springs' housings extend below the top-slab. The springs are bolted back in place after the concrete has cured. (Bolt-on springs have proven to be both a labor and material cost saver to precasters)



ENCLOSED SPRINGS

We can supply stainless steel enclosures on horizontal and vertical springs if you wish to enclose the springs.





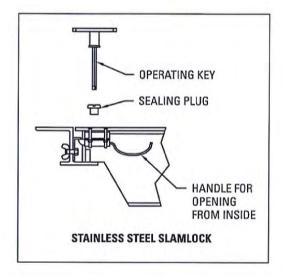
ENCLOSED VERTICAL SPRINGS

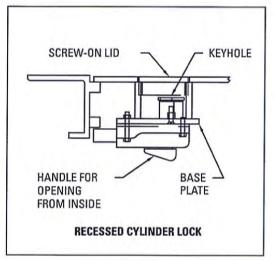


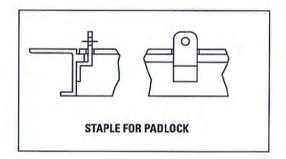
GAS SHOCKS

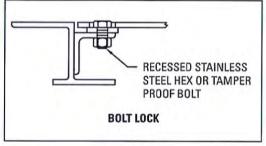


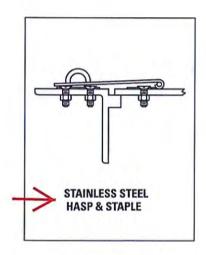
Available Options: Locking/Latching

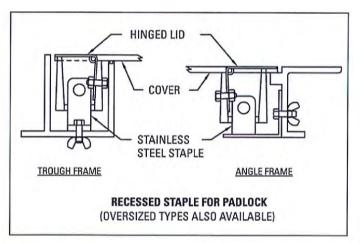








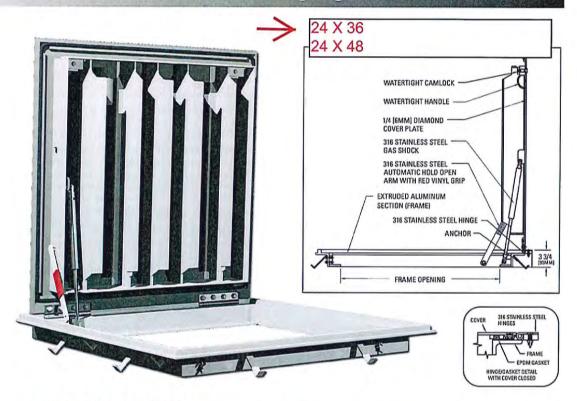




USF FABRICATION CAN PROVIDE OTHER SPECIFIED LOCKING AND LATCHING DEVICES



Water Tight Angle Frame H-20 Loading Single Leaf



General Description

The watertight (floodtight/gastight) angle frame floor access door is designed for interior and exterior applications where water and gas-tightness are required. Designed for off-street locations that may occasionally receive AASHTO H-20-44 wheel loads.

Standard Features/Specifications

Material: Aluminum, steel or stainless steel available

Frame: Angle type with strap anchors

Covers: 1/4" diamond plate reinforced for AASHTO H-20-44 wheel loads

(capable of holding up to 25 ft head of water)

Gasket: EPDM Gasket

Hardware: All 316 SS nuts, bolts, and washers

Hold-Open Device: 316 SS Hold-open arm with secondary latch mechanism

Lift Assist: Stainless steel springs or gas shocks

Lock Device: SS flood tight cam locks

Lift handle: Flush and floodtight lift handle

Warranty: Ten (10) years on aluminum, five (5) years on steel and stainless steel

AVAILABLE OPTIONS ARE LISTED ON PAGES 23-25



Heavy Duty

Off-Street occasional traffic areas or pedestrian areas





Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix D

Appendix D.2 SWMU 1 Upgrade Equipment



This is to certify that all Plastic Pipe and Fittings manufactured by Charlotte Pipe and Foundry Company are manufactured in the United States and conform to the following standards:

PVC SCH. 40 SOLID WALL PIPE
ASTM D 1784, ASTM D 1785, ASTM D 2665
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14 AND 61

PVC SCH. 40 DWV CELLULAR CORE PIPE ASTM D 4396, ASTM F 891 NSF STANDARD NO. 14

RePVC® SCH. 40 DWV PIPE ASTM D 4396, ASTM F 1760 NSF STANDARD NO. 14

PVC SCH. 40 DWV FITTINGS
ASTM D 1784, ASTM D 2665, ASTM D 3311,
ASTM F 1866
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14

PVC SDR-21 AND SDR-26 PRESSURE PIPE ASTM D 1784, ASTM D 2241 NSF STANDARD NO. 14 AND 61

<u>PVC SCH. 40 PRESSURE FITTINGS</u> ASTM D 1784, ASTM D 2466 NSF STANDARD NO. 14 AND 61

PVC SCH, 40 WELL CASING PIPE ASTM D 1784, ASTM F 480 . NSF STANDARD NO. 14 AND 61

<u>PVC SCH. 80 PIPE</u> ASTM D 1784, ASTM D 1785, PVC 1120 NSF STANDARD NO. 14 AND 61

PVC SCH, 80 FITTINGS ASTM D 1784, ASTM D 2467, ASTM D 2464, ASTM F 1970 NSF STANDARD NO. 14 AND 61

PVC SDR 35 SEWER MAIN PIPE ASTM D 1784, ASTM D 3034 SDR 36 ASTM D 3212, ASTM F 477

PVC SEWER AND DRAIN PIPE ASTM D 1784, ASTM D 2729 <u>PVC THIN WALL PIPE & FITTINGS</u> ASTM D 1784, ASTM D 2949 NSF STANDARD NO. 14

CPVC FLOWGUARD GOLD® CTS PIPE & FITTINGS ASTM D 1784, ASTM D 2846 FHA UM-61a NSF STANDARD NO. 14. AND 61 CSA LISTED ON SPECIFIED ITEMS

CPVC REUZE® CTS PIPE ASTM D 1784, ASTM D 2846 NSF STANDARD NO. 14

CPVC CHEMDRAIN® SCH. 40 PIPE & FITTINGS ASTM D 1784, ASTM F 2618 NSF STANDARD NO. 14

ABS SCH. 40 DWV CELLULAR CORE PIPE ASTM D 3965, ASTM F 628 NSF STANDARD NO. 14

ABS PLUS® SCH. 40 DWV CELLULAR CORE PIPE ASTM D 3965, ASTM D 4396, ASTM F 1488 NSF STANDARD NO. 14

ABS SCH. 40 DWV FITTINGS
ASTM D 3965, ASTM D 2661, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-322b
NSF STANDARD NO. 14

Very truly yours,

Hooper Hardison, President

Jerie L. Wilson

Notary Public My commission expires July 02, 2017

TERRI L. WILSON
NOTARY PUBLIC
Union County, North Carolina
My Commission Expires July 2, 2017

LC-PL (1-27-14)

PVC Schedule 80 Pipe, Type 1, Grade 1 · Plain End



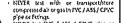
PVC SCHEO	PVC SCHEOULE SO (GRAY) PLAIN END PVC 1120										
PARTAK	F15.231	ENG#	en in	418.13 (41)	Nai Xait	PACHIK HESHEDI PERDI	Parties)				
PVC 10002	1/4" x 20'	04920	15140'	0.540	.119	1130 PSI	10.0				
PVC 10003	3/6" X 20"	04917	9360'	0.675	.126	920 PSI	13.8				
PVC 10005	1/2" x 20"	03968	6880'	0.840	.147	850 PSI	20.3				
PVC 10007	%" x 20"	03969	42001	1,050	.154	690 PSI	27.5				
PVC 10010	1" x 20'	03970	3540'	1.315	.179	630 PSI	40.5				
PVC 10012	11/4" x 20'	03973	4240'	1.660	.191	520 PSI	55.9				
PVC 10015	11/2" x 20"	03976	3300'	1.900	.200	470 PSI	67.7				
PVC 10020	2" x 20'	03977	1980'	2.375	.218	400 PSI	93.6				
PVC 10025	21/2" x 20'	03978	13601	2.875	.276	420 PSI	142.8				
PVC 10030	3" x 20'	03979	960'	3.500	.300	370 PSI	194.2				
PVC 10040	4" x 20'	03980	1080'	4,500	.337	320 PSI	279.3				
PVC 10060	6" x 20'	03981	480′	6,625	.432	280 P\$I	532.7				
PVC 10080	8" x 20'	04175	300′	8,625	.500	250 PSI	808.9				
PVC 10100	10" x 20'	04768	160'	10.750	.593	230 P\$I	1199.3				
PVC 10120	12" x 20'	04770	1201	12.750	.687	230 PSI	1650.1				
PVC 10140	14" x 20'	04816	601	14.000	.750	220 PS1	1930.0				
PVC 10160	16" x 20"	04919	601	16.000	.843	220 PSI	2544.1				

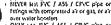
liote: Full pallate are polyathylana wrapped for cleanlinese and UV protection. HSF Listed. Heats All Requirements of ASTH D 1784 and ASIH D 1785.

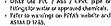
Testing without one of compensated aftr or grain PVC /A95
CPVC pipe or fillings can restrict in explosive Falloures and
cause severe bijury or death.

NEVER lest with or transpectations
(INEVER lest with or transpectations
(INEVER lest with or transpectations)
(INEVER lest PVC / ASS / CPVC pipe or
fittings with compensated after grain
ONLY USE PVC / ASS / CPVC pipe or
fittings with compensated after grain
ONLY USE PVC / ASS / CPVC pipe or
fittings to write or approved chamical.

Pitter to marrings on Pitting in orbitals in obsite and
ASIMA D PAS.









PVC Schedule 80 Pipe

PVC Schedule 80 Pipe, Type 1, Grade 1 · Belled End



PVC SCHEOU	LE 80 (GRAY)	-		ELLED EN	0		VC 1120
#1F51.	tin kat	CAC # OHOS	सारम्स इंडो	Ne es	(tt) VX 1011	Section Reserve Ayorum	inicuis) arici
PVC 10005B	1/2" x 20"	04924	6880'	0,840	.147	850 PSI	20.3
PVC 10007B	3/4" x 20"	04925	4200 ¹	1.050	.154	690 PSI	27,0
PVC 10010B	1" x 20'	04926	3540¹	1.315	,179	630 PSI	40.5
PVC 100128	1¼" x 20°	04927	4240¹	1,660	.191	520 PSI	55.9
PVC 100158	11/2" x 20"	04928	3300′	1.900	.200	470 PSI	67.7
PVC 10020B	2" x 20'	04764	1980'	2.375	.218	400 PSI	93.6
PVC 10025B	21/2" x 20	04875	1360'	2.875	.276	420 PSI	142.8
PVC 10030B	3" x 20'	04776	980'	3.500	.300	370 PSI	191.1
PVC 10040B	4" x 20'	04774	1080'	4.500	.337	320 PSI	279.3
PVC 100608	6" x 20'	04763	480′	6.625	.432	280 PS1	532.7
PVC 10080B	8" x 20'	04766	300'	8.625	.500	250 P\$I	808.9
PVC 10100B	10" x 20'	04769	160'	10.750	.593	230 PSI	1199.3
PVC 10120B	12" x 20"	04771	120'	12.750	.687	230 PSI	1650.1
PVC 10140B	14" x 20'	04832	60'	14.000	.750	220 PSI	1930.0
PVC 10160B	16" x 20"	09372	60'	16,000	.843	220 PSI	2544.1

itute: Full pellate are polyethylene wrapped for cleantinese and \boldsymbol{W}_{i} protection.

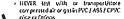
HSF Eisted. Heets All Regulrements of ASTH II 1784 and ASIH II 1785.

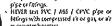


Testing with or use of compressed also engast in PVC / ABS

TeNC pipe of fillings can searly in explosive failures and
cause severa bijusy of death.

ARYGAS



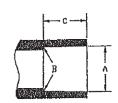




Schedule 80 Flaings

Schedule 80 and Schedule 40 Tapered Socket Dimensions

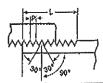
PVC SCHEDULE 80 - ASTM D 2467 PVC SCHEDULE 40 - ASTM D 2466



	Schedule 80 4	nd Schedule 40 Sq	ekat Dlameter	Schadule 80	Schedule 40
Kominal Size	Entrance A	Bettom B	Toterance	Socket Length C(Hinhmum)	Socket Length C (Hinthum)
1/2	0.848	0.836	±0.004	0.875	0.688
3/4	1.058	1,046	±0.004	1.000	0.719
1	1.325	1.310	±0.005	1.125	0,875
11/4	1,670	1.655	±0,005	1.250	0.938
11/2	1.912	1.894	±0,006	1.375	1.094
2	2.387	2.369	±0.008	1.500	1.156
21/2	2.889	2,868	±0.007	1.750	1,750
3	3.516	3,492	±0.008	1.875	1.875
4	4.518	4.491	±0.009	2.250	2.000
6	6.647	6.614	±0,011	3.000	3.000
8	8.655	8.610	±0.015	4.000	4,000
10	10.780	10.735	±0.015	5.000	5.000
12	12.780	12.735	±0.015	6,000	6.000

American National Standard Yaper Pipe Throads (NPT)

ANSI/ASME 81.20.1, ASTM D 2464, ASTM F 1498



Hominal Site	Effective Thread Length (L)	Threads Perlach	Pitch of Thread (P)
1/2	0.5337	14.0	.07143
9/4	0.5457	14.0	.07143
1	0.6828	11.5	.08696
11/4	0.7068	11.5	.08696
11/2	0.7235	11.5	.08696
2	0.7565	11.5	.08696
21/2	1.1375	8.0	,12500
3	1,2000	8.0	.12500
4	1.3000	8,0	,12500



- * \$ = SOCKET, SPG \sim SPIGOT, MPT = MALE PIPE THREAD, FPT \sim FEMALE PIPE THREAD
- · ALL DIMENSIONS ARE IN INCHES.

TOLERANCES

- \$ = (SOCKET LERGTH) MINUMUM
- G = (LAYING LENGTH) INTERSECTION OF CENTER LINES TO BOTTOM OF SOCKET/ THREAD, 90° ELBOWS, TEES, CROSSES, + 3/32"
- H = INTERSECTION OF CENTER LINES TO FACE OF FITTINGS; 90° ELBOWS, TEES, CROSSES, + 1/32"
- J ~ (LAYING LENGTH) INTERSECTION OF CENTER LINES TO BOTTOM OF SOCKET/ THREAD; 45' ELBOWS, ± 1/32"
- L OVERALL LENGTH OF FITTINGS, (INCLUDING CAPS), ± 106"
- $\ensuremath{\mathrm{M}} \rightarrow -$ outside diameter of socket/thread hub, + 1/16"
- # SOCKET/THREAD BOTTOM TO SOCKET/THREAD BOTTOM; COUPLINGS, ± 1/16"
- Dimensions are subject to change without notification.

Too sxsxs PYC PART HO. 8400



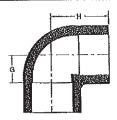
Size	Universal Part Number	į.	Ħ	6	Approx NL (lbs.)
1/2	801-005	215/16	15/32	19/02	0.11
3/4	801-007	37/16	23/32	11/18	0.17
1	801-010	4	2	27/32	0.29
11/4	801-012	4%18	2%2	1	0.42
11/2	801-015	47/8	27/16	11/32	0.51
2	801-020	53/4	27/в	15/16	0.84
21/2	801-025	6 ¹⁵ /16	315/32	1 ²¹ /32	1,49
3	801-030	71/2	33/4	1 ²⁷ /sa	2.38
4	801-040	93/8	411/10	27/16	3.76
6	801-060	141/8	71/18	41/az	10.75
8	801-080	1719/92	819/16	43/4	20.13

Schedule 80 Fittings

CHARLOTTE PIPE AND FOUNDRY COMPANYS

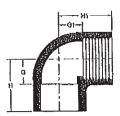
SCHEDULE 80 FITT-NGS

90 Degree Elbow sxs PVC PART HO. 8300



Site	Universal Part Number	н	G	Appior. Vit. (Lbs.)
1/2	806-005	115/32	19/32	0.08
3/4	806-007	111/1e	13/16	0.13
1	806-010	2	27/32	0.19
11/4	806-012	29/32	1	0.32
11/2	806-015	27/10	11/32	0.42
2	806-020	227/32	1 ⁵ /16	0.63
21/2	806-025	37/10	121/32	1.13
3	808-030	33/4	127/32	1.60
4	806-040	411/1e	27/16	2.85
6	806-060	611/16	311/16	8.27
8	806-080	819/32	419/32	15.46

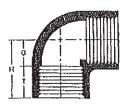
90 Degree Elbow s x FPI PVC PART NO. 8301



\$1ze	Univareal Past Humber	H	G	К1	61	Appiox. WL (lbs.)
1/2	807-005	1%	1/2	113/32	22/32	.138
3/4	807-007	121/32	5/8	15/e	13/18	.173
1	807-010	127/32	23/32	125/32	27/32	.265
11/4	807-012	21/4	11/4	2	1	.434
11/2	807-015	23/8	1	21/s	11/10	.562
2	807-020	23/4	11/4	27/18	17/18	.802

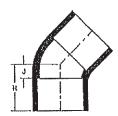


90 Degree Elbaw FPT×FPT PVC PART NO. 8302



Şize	Universal Part Number	1	G	Н	Approx. Vil. (Lbs.)
1/2	808-005	3/4	21/32	113/32	0.11
3/4	808-007	25/32	27/32	15%	0.18
1	808-010	31/32	3/4	129/32	0.26
11/4	808-012	1	31/32	191/32	0,42
11/2	808-015	11/16	15/02	27/32	0.54
2	808-020	13/32	113/32	21/2	0.82
3	808-030	16/8	115/16	3%16	2,30
4	808-040	111/16	21/2	43/16	3.62

45 Degree Elbow sxs PVC PART NO, 8309

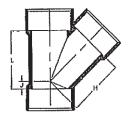


Stre	Universal Part Number	11	1	Appiox. WL [Lbs.]
1/2	817-005	15/32	1/4	0.07
3/4	817-007	111/32	9/16	0,10
1	817-010	115/32	5/16	0,16
11/4	817-012	111/16	13/32	0,22
11/2	817-015	17/8	1/2	0.30
2	817-020	25/32	21/32	0,48
21/2	817-025	21/2	23/02	0.83
3	817-030	211/16	²⁵ /32	1,16
4	817-040	3 ⁹ /16	1%2	2.21
В	817-060	5	2	5,50
8	817-080	61/4	21/4	10.42

Schedule 80 Fittings

CHARLOTTE PIPE AND FOUNDRY COMPANY

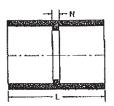
Wyo sxsxs PVC PART NO. 8600



Size	Urivessi Pari Kumber	l	j	Я	Approx. Wr. (Lbs)
411	875-040	63∕te	13/18	5¾	4,42
6**	875-060	93/8	113/32	731/32	11.95

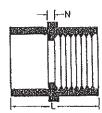
^{**}Maximum pressure rating is 150 psi at 73°F.

Coupling sxs PYC PART HO. 8100



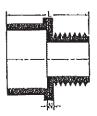
Size	Universal Ferl Kumber	L	H	Appiox. Wil (Lbs.)
1/2	829-005	115/16	1/8	0.05
3/4	829-007	23/1e	1/8	0.08
ſ	829-010	27/1a	1/8	0,12
11/4	829-012	211/18	1/α	0.17
1 1/2	829-015	215/16	1/8	0.23
2	829-020	33/16	1/0	0,33
21/2	829-025	33/4	3/16	0.57
3	829-030	4	⁶ /1¢	0.84
4	829-040	43/4	3/16	1.35
6	829-060	6%2	1/4	3,46
8	829-080	81/4	1/4	6.61

Female Adapter sxFPT PYC PART NO. 8101



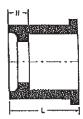
Stre	Urdversal Part Number	L	Н	åppior. We (lbs.)
1/2	835-005	125/32	%32	0.07
3/4	835-007	1 ¹⁵ /10	3/32	0.10
1	835-010	29/32	3/32	0.16
11/4	835-012	23/8	1/8	0.22
11/2	835-015	2%16	1/8	0.27
2	835-020	223/32	3/32	0.39
21/2	835-025	319/32	7/02	0.73
3	835-030	33/4	7/32	0.96
4	835-040	41/4	1/4	1.52

Male Adapter sxHPT PVC PART HO. 8109



Size	Universal Part Number	L	H	Approx. Wt. (Lbs.)
1/2	836-005	118/16	3/18	0.05
3/4	836-007	2³/e	1/4	0.06
1	836-010	2	3/16	0.10
11/4	836-012	21/2	1/4	0,15
11/2	836-015	25/8	1/4	0.19
2	836-020	27/8	9/32	0.27
21/2	836-025	311/16	11/32	0.50
3	836-030	37/8	3/8	0,73
4	836-040	41/2	7/16	1.40

Reducer Bushing, Flush Style SPGxS PVC PART NO. 8107



	Volversal			Approx. Wt. [ibs.]
Size	Part Number	L	R	
3/4 X 1/2	837-101	1%2	13/32	0.02
1 x 1/2	837-130	113/32	17/32	0.07
1 x 3/4	837-131	113/32	13/32	0.04
11/4×1/2	837-166	11/2	5/8	0.11
11/4×3/4	837-167	11/2	1/2	0.11
11/4×1	837-168	119/32	15/32	0.08
11/2 X 1/2	837-209	123/32	27/32	0,15
11/2X ³ /4	837-210	123/32	23/32	0.20
11/2×1	837-211	123/32	19/32	0.14
11/2×11/4	837-212	1 ²³ /32	15/32	0.08
2x1/2	837-247	17/a	1	0.21
2x3/4	837-248	17/8	7/8	0,22
2x1	837-249	17/8	3/4	0.24
2x11/4	837-250	17/s	5/a	0.24
2x11/2	837-251	129/32	17/32	0,17
21/2X1	837-289	25/32	1	0,46
21/2×11/4	837-290	25/32	²⁰ /32	0,48
21/2×11/2	837-291	25/32	25/32	0.39
21/2×2	837-292	25/32	21/32	0.28
3x1	837-335	21/4	11/a	0.67
3x1¼	837-336	21/4	1	0.66
3x11/2	837-337	21/4	7/8	0.64
3x2	837-338	21/4	3/4	0.59
3x21/2	837-339	21/4	1/2	0.42
4x2	837-420	2 ²⁵ /32	%2	1,10
4x3	837:422	225/32	29/32	0.76
6x3	837-530	317/32	111/32	2,60
8x4	837-532	317/32	19/32	2.50
8x6	837-585	415/10	17/8	5.52

80 FITTI

Union, with Viton® O-Ring Seal*

PVC PART NO. 8700

Union, with EPDM O-Ring Soal*

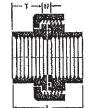
PYC PART NO. 8710

		Pari Kumber					
Şitê	with titon D-Alog Seel	with EPOH O-Ring Seal	ι	н	\$	Approx. Wil [Lbs.]	
1/2	857-005	897-005	21/8	5/18	²⁸ /32	0.18	
3/4	857-007	897-007	27/16	7/16	1	0.26	
1	857-010	897-010	25/8	°/8	11/8	0.36	
11/4	857-012	897-012	215/16	7/16	11/4	0.52	
11/2	857-015	897-015	33/16	7/16	13/8	0.57	
2	857-020	897-020	321/32	21/32	11/2	0.90	
3	857-030	897-030	51/8	15/16	129/32	2,22	

^{*} THE MAXIMUM WORKING PRESSURE IS 235 PSI AT 73°F.

Union, with Viton® O-Ring Seal*

PYC PART NO. 8800



Union, with EPDM O-Ring Seal*

PYC PART NO. 8810

			Part Number				
	Size	mîthYiton O:8ing\$esi	with EPDH O-Ring Seal		Я	ī	Approx. Wr. [Lbs.]
٠	1/2	858-005	898-005	23/16	1/2	15/18	0.19
٠	3/4	858-007	898-007	213/32	%16	13/32	0.27
•	1	858-010	898-010	2 ⁵ /8	%10	19/32	0.40
•	11/4	858-012	898-012	231/32	23/32	11/4	0.58
•	11/2	858-015	898-015	31/e	23/32	111/32	0.67
	2"	858-020	898-020	35/e	27/32	119/32	1.03
	31	858-030	898-030	51/a	13/4	111/18	2,49

^{*} THE MAXIMUM WORKING PRESSURE IS 235 PSI AT 73°F.

THE MAXIMUM WORKING PRESSURE IS 200 PSI AT 73°F.

THE MAXIMUM WORKING PRESSURE IS 185 PSI AT 73°F.



Technical Specification

→ Heavy Duty Gray PVC Cement

Description

- Heavy-bodied grey cement for use on all schedules and classes PVC pipe and fitting up to 12" diameter with interference fit, up to 18" for non-pressure.
- Lo-V.O.C. Solvent Cement meets California South Coast Air Quality Management District (SCAQMD) 1168/316A or BAAQMD Method 40 and various environmental requirements.
- Thick formula fills gaps in large diameter pipe and loose fitting joints.
- Recommended for potable water, pressure pipe, conduit and DWV.
- Recommended application temperature 40°F to 110°F / 4°C to 43°C.
- Meets ASTM D2564.



Listings



NSF Standard 61 for PW, DWV and Sewer Waste



IAPMO Listed

Maximum VOC per SCAQMD 1168/316A or BAAQMD Method 40: 510 g/L

INGREDIENTS (CAS Number)

Acetone (67-64-1), Amorphous Silica (112945-52-5), Cyclohexanone (108-94-4), Methyl Ethyl Ketone (78-93-3), PVC Resin (9002-86-2), Tetrahydrofuran (109-99-9)

MSDS Number: 1102E

Product Number 31093 31094	<u>Size</u> 4 oz. 8 oz.	<u>Qtv</u> 24 24	<u>Wgt</u> 9 lbs. 16 lbs.	Product Number 31118	<u>Slze</u> Gallon	Qty 6	<u>Wgt</u> 54 lbs.
31095	16 oz.	24	31 lbs.				
311105	32 oz.	12	29 lbs.				

Oatey Co. 4700 West 160 th St. Cleveland, OH 44135 Phone: 1-800-321-9532 Phone: 1-800-321-9535 Visit <u>www.oatey.com</u> for Update



Page 1 of 3



Technical Specification

Heavy Duty Gray PVC Cement

CHEMICA	LOR	OPER	PAITS
UMBIVITUA	LPK	OPER	/IIE2

Appearance Gray Liquid
Viscosity Min. 1600 cps @73° F ± 2° F
Density 7.86 ± 0.2 lbs/gallon

3 years from manufacture date

PHYSICAL PROPERTIES

Lap Shear Strength (min. ASTM Standards)
2 hours 250 psi
16 hours 500 psi
72 hours 900 psl

Set Up Time

30° F to 50° F 50° F to 70° F 70° F to 90° F 4 - 5 minutes 2 - 3 minutes 1 - 2 minutes

Precautions

Shelf Life

Read all information carefully before using this product.

DANGERI: CAUSES SERIOUS EYE IRRITATION. HARMFUL IF INHALED. MAY CAUSE DROWSINESS OR DIZZINESS. MAY CAUSE RESPIRATORY IRRITATION. REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING. Long term overexposure to solvents may cause damage to the brain, nervous system, reproductive system, respiratory system, mucous membranes, liver and kidneys. Contains a chemical classified by the US EPA as a suspected possible carcinogen. KEEP OUT OF REACH OF CHILDREN.

PRECAUTIONS: Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear a NIOSH-approved respirator for organic solvents. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Vapors may accumulate in low places and may ignite explosively. Keep container tightly closed and cool. Wear protective gloves and eye protection. Wash thoroughly after handling. Do not eat or drink while using this product.

EMERGENCY/FIRST AID: CALL 1-877-740-5015 FOR INSTRUCTIONS.

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth. This product may be aspirated into the lungs and cause chemical pneumonitis, a potentially fatal condition. If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention. If ON SKIN: Rinse skin with water/shower. Take off immediately all contaminated clothing. If INHALED: Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER/doctor if you feel unwell. If medical advice is needed, have product container or label at hand. FIRE: Use dry chemical, foam, or carbon dioxide extinguisher. Water spray may be applied to reduce potential vapors or for cooling. Burning liquid extinguished with water will _oat and may re-ignite on surface of water. SPILLS: Remove all sources of ignition and ventilate area. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with absorbent material. Put absorbent material in covered, labeled metal containers. Dispose of contents/ container in accordance with local regulations. Store in a well-ventilated space. Store locked up.

Oatey Co. 4700 West 160 th St. Cleveland, OH 44135 Phone: 1-800-321-9532 Phone: 1-800-321-9535 Visit <u>www.oatey.com</u> for Update





Heavy Duty Gray PVC Cement

Directions for Use

Store and use at temperatures between 40°F and 110°F. At temperatures outside of this range, special care must be taken to prepare good joints and prevent exposure to solvents. Stir or shake before using; if jelly-like, don't use. Do not thin.

- 1. Cut pipe ends square, chamfer and clean pipe ends.
- 2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way into the fitting. If pipe bottoms, it should be snug.
- 3. Use a suitable applicator at least 1/2 the size of the pipe diameter. For larger size pipe systems use a natural bristle brush or roller.
- 4. Clean pipe and fitting with a listed primer.
- 5. Apply liberal coat of cement to pipe to the depth of the socket, leave no uncoated surface.
- 6. Apply a thin coat of cement to inside of fitting, avoid puddling of cement. Puddling can cause weakening and premature failure of pipe or fitting. Apply a second coat of cement to the pipe.
- 7. Assemble parts QUICKLY. Cement must be fluid. If cement surface has dried, recoat both parts.
- 8. Push pipe FULLY into fitting using a ¼ turning motion until pipe bottoms.
- 9. Hold pipe and fitting together for 30 seconds to prevent pipe push-out longer at low temperatures. Wipe off excess.
- 10. Allow 15 minutes for good handling strength and 2 hours cure time at temperatures above 60°F before pressure testing up to 180 psi. Longer cure times may be required at temperatures below 60°F or with pipe above 3".

DO NOT TEST WITH AIR.

Revision Date: 3/15/2013





Technical Specification

Clear Primer

Description

- Clear aggressive primer for use on PVC and CPVC pipe and fittings.
- Lo-V.O.C. Solvent Cement meets California South Coast Air Quality Management District (SCAQMD) 1168/316A or BAAQMD Method 40 and various environmental requirements.
- Removes surface dirt, grease and grime as well as softens the pipe surface to allow a fast, secure solvent weld.
- N SF Listed.
- Meets ASTM F656.



Listings



NSF Standard 61 for PW, DWV and Sewer Waste



IAPMO Listed

Maximum VOC per SCAQMD 1168/316A or BAAQMD Method 40: 550 g/L

INGREDIENTS (CAS Number)

Acetone (67-64-1), Cyclohexanone (108-94-4), Methyl Ethyl Ketone (78-93-3), Tetrahydrofuran (109-99-9)

MSDS Number: 1402E

Product Number	<u>Size</u>	<u>Qty</u>	<u>Wgt</u>	Product Number	<u>Size</u>	<u>Qty</u>	<u>Wgt</u>
30750	4 oz.	24	8 lbs.	30753	32 oz.	12	24 lbs.
30751	8 oz.	24	14 lbs.	30754	Gallon	6	46 lbs.
30752	16 oz.	24	25 lbs.				

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Page 1 of 3



Technical Specification

Clear Primer

CHEMICAL PROPERTIES

Appearance

Clear Primer

Density

6.97 ± 0.2 lbs/gallon

Shelf Life

3 Years from Mfg. Date

Precautions

Read all information carefully before using this product.

DANGERI: CAUSES SERIOUS EYE IRRITATION. HARMFUL IF INHALED. MAY CAUSE DROWSINESS OR DIZZINESS. MAY CAUSE RESPIRATORY IRRITATION. REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING. Long term overexposure to solvents may cause damage to the brain, nervous system, reproductive system, respiratory system, mucous membranes, liver and kidneys. Contains a chemical classified by the US EPA as a suspected possible carcinogen. KEEP OUT OF REACH OF CHILDREN.

PRECAUTIONS: Avoid breathing vapors. Use only outdoors or in a welf-ventilated area. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear a NIOSH-approved respirator for organic solvents. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Vapors may accumulate in low places and may ignite explosively. Keep container tightly closed and cool. Wear protective gloves and eye protection. Wash thoroughly after handling. Do not eat or drink while using this product.

EMERGENCY/FIRST AID: CALL 1-877-740-5015 FOR INSTRUCTIONS.

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth. This product may be aspirated into the lungs and cause chemical pneumonitis, a potentially fatal condition. If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention. If ON SKIN: Rinse skin with water/shower. Take off immediately all contaminated clothing. If INHALED: Remove person to fresh air and keep comfortable for breathing. Call POISON CENTER/doctor if you feel unwell. If medical advice is needed, have product container or label at hand. FIRE: Use dry chemical, foam, or carbon dioxide extinguisher. Water spray may be applied to reduce potential vapors or for cooling. Burning liquid extinguished with water will __oat and may re-ignite on surface of water. SPILLS: Remove all sources of ignition and ventilate area. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with absorbent material. Put absorbent material in covered, labeled metal containers. Dispose of contents/ container in accordance with local regulations. Store in a well-ventilated space. Store locked up.

Directions for Use

Oatey Co. 4700 West 160 th St. Cleveland, OH 44135 Phone: 1-800-321-9532 Phone: 1-800-321-9535 VIsit <u>www.oatey.com</u> for Update





Clear Primer

Store and use at temperatures between -15°F and 110°F. At temperatures outside of this range, special care must be taken to prepare good joints and prevent exposure to solvents. Stir or shake before using; if jelly-like, don't use. Do not thin.

- 1. Cut pipe ends square, chamfer and clean pipe ends.
- 2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way into the fitting. If pipe bottoms, it should be snug.
- 3. Use a suitable applicator at least 1/2 the size of the pipe diameter. For larger size pipe systems use a natural bristle brush or roller.
- 4. Apply thoroughly to inside of the fitting socket and to the outside surface of the pipe to the depth of the fitting. Apply a second coat of primer to fitting socket.
- 5. While primer is still wet use an appropriate solvent cement for the pipe being joined. Follow application instructions from cement can.

DO NOT TEST WITH AIR.

Revision Date: 3/15/2013

Oatey Co. 4700 West 160 th St. Cleveland, OH 44135 Phone: 1-800-321-9532 Phone: 1-800-321-9535 Visit <u>www.oatey.com</u> for Update





POLYETHYLENE WATER & SEWER



SUBMITTAL AND DATA SHEET

REFERENCE STANDARDS

Note: Pending availability at time order is placed, after receipt of approved submittals, PFF might need to use a different manufacture that is equal to JM Eagle pipe.

ASTM D638	Standard Test Method for Tensile Properties of Plastics								
ASTM D746	Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact								
ASTM D790	Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulation Materials								
ASTM D1238	Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer								
ASTM D1505	Standard Test Method for Density of Plastics by the Density-Gradient Technique								
ASTM D2239	Standard Specification for Polyethylene (PE) Plastic Pipe (S.I.D.RPR) Based on Controlled Inside Diameter								
ASTM D2657	tandard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings								
ASTM D2737	Standard Specification for Polyethylene (PE) Plastic Tubing								
ASTM D2774	Standard Practice for Underground Installation of Thermoplastic Pressure Piping								
ASTM D2837	Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials								
ASTM D3035	Standard Specifications for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter								
ASTM D3350	Standard Specification for Polyethylene Plastic Pipe and Fittings Material								
ASTM F412	Standard Terminology Relating to Plastic Piping Systems								
ASTM F714	Standard Specification for Polyethylene (PE) Plastic Pipe (S.D.RPR) Based on Outside Diameter								
ASTM F1473	Standard Test Method for Notch Tensile to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins								
AWWA C901	Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in. Through 3 in. For Water Service								
AWWA C906	Polyethylene (PE) Pressure Pipe and Fittings, 4 in. Through 63 in., For Water Distribution and Transmission								
NSF Standard 14	Plastics Piping System Components and Related Materials								
NSF Standard 61	Drinking Water System Components - Health Effects								
FM	Factory Mutual Approval for Fire Protection Systems								



POLYETHYLENE WATER & SEWER



SUBMITTAL AND DATA SHEET

2"- 4" Pipe

HDPE IRON PIPE SIZE (I.P.S.) PRESSURE PIPE

ANSI/NSF-61, 14 LISTED

		, ,	TILOGOTIL	-	ANSI/NSF-01, 14 LISTEL					
PE 4	4710		R 7 (333 ps	i)		OR 9 (250 ps	si)	D	R 11 (200 p	si)
PIPE SIZE	AVG. O.D.	MIN. T.	AVG. I.D.	WEIGHT LB/FT	MIN. T.	AVG. I.D.	WEIGHT LB/FT	MIN. T.	AVG. I.D.	WEIGHT LB/FT
1/2	0.840	0.120	0.586	0.12	0.093	0.643	0.10	0.076	0.679	0.08
3/4	1.050	0.150	0.732	0.19	0.117	0.802	0.15	0.095	0.849	0.12
1	1.315	0.188	0.916	0.29	0.146	1.005	0.23	0.120	1.061	0.20
1-1/4	1.660	0.237	1.158	0.46	0.184	1.270	0.37	0.151	1.340	0.31
1-1/2	1.900	0.271	1.325	0.61	0.211	1.453	0.49	0.173	1.533	0.41
2	2.375	0.339	1.656	0.95	0.264	1.815	0.77	0.216	1.917	0.64
3	3.500	0.500	2.440	2.06	0.389	2.675	1.66	0.318	2.826	1.39
4	4.500	0.643	3.137	3.40	0.500	3.440	2.75	0.409	3.633	2.30
5-3/8	5.375	0.768	3.747	4.85	0.597	4.109	3.92	0.489	4.338	3.29
5	5.563	0.795	3.878	5.20	0.618	4.253	4.20	0.506	4.490	3.52
6	6.625	0.946	4.619	7.36	0.736	5.065	5.96	0.602	5.349	4.99
7	7.125	0.976	5.056	8.52	0.792	5.446	6.89	0.648	5.751	5.78
8	8.625	1.232	6.013	12.48	0.958	6.594	10.09	0.784	6.963	8.46
10	10.750	1.536	7.494	19.40	1.194	8.219	15.68	0.977	8.679	13.14
12	12.750	1.821	8.889	27.28	1.417	9.746	22.07	1.159	10.293	18.49
14	14.000	2.000	9.760	32.90	1.556	10.107	26.61	1.273	11.301	22.30
16	16.000	2.286	11.154	42.97	1.778	12.231	34.75	1.455	12.915	29.12
18	18.000	2.571	12.549	54.37	2.000	13.760	43.97	1.636	14.532	36.84
20	20.000	2.857	13.943	67.13	2.222	15.289	54.28	1.818	16.146	45.49
22	22.000	3.143	15.337	81.23	2.444	16.819	65.68	2.000	17.76	55.05
24	24.000	3.429	16.732	96.67	2.667	18.346	78.18	2.182	19.374	65.52
26	26.000	_	_	_	2.889	19.875	91.75	2.364	20.988	76.90
28	28.000	_	_	_	3.111	21.405	106.40	2.545	22.605	89.15
30	30.000	_	_	_	3.333	22.934	122.13	2.727	24.219	102.35
32	32.000	_	_	_	_	_	_	2.909	25.833	116.46
34	34.000	_	_	_	_	_	_	3.091	27.447	131.48
36	36.000	_	_	_	_	_	_	3.273	29.061	147.41

I.D.: Inside Diameter O.D.: Outside Diameter T.: Wall Thickness

^{*} For data, sizes, or classes not reflected in these charts, please contact JM Eagle™ for assistance.





6" & 8" Containment Pipe

HDPE IRON PIPE SIZE (I.P.S.) PRESSURE PIPE (continued)

ANSI/NSF-61, 14 LISTED

								ANOMINO TOT, 14 LIGIED					
PE	4710	DI	R 13.5 (160 p	si)		OR 17 (125 ps	si)		OR 19 (111 ps	si)			
PIPE SIZE	AVG. O.D.	MIN. T.	AVG. I.D.	WEIGHT LB/FT	MIN. T.	AVG. I.D.	WEIGHT LB/FT	MIN. T.	AVG. I.D.	WEIGHT LB/FT			
1/2	0.840	_	_	_	_	_	_	_	_	_			
3/4	1.050	0.078	0.885	0.10	_	_	_	1	_	_			
1	1.315	0.097	1.109	0.16	_	_	_	_	_	_			
1-1/4	1.660	0.123	1.399	0.26	_	_	_	_	_	_			
1-1/2	1.900	0.141	1.601	0.34	_	_	_	_	_	_			
2	2.375	0.176	2.002	0.53	0.140	2.078	0.43	_	_	_			
3	3.500	0.259	2.951	1.16	0.206	3.063	0.94	0.184	3.110	0.84			
4	4.500	0.333	3.794	1.91	0.265	3.938	1.55	0.237	3.998	1.39			
5-3/8	5.375	0.398	4.531	2.73	0.316	4.705	2.21	0.283	4.775	1.99			
5	5.563	0.412	4.690	2.92	0.327	4.870	2.36	0.293	4.942	2.13			
6	6.625	0.491	5.584	4.15	0.390	5.798	3.35	0.349	5.885	3.02			
7	7.125	0.528	6.006	4.80	0.419	6.237	3.88	0.375	6.330	3.49			
8	8.625	0.639	7.270	7.03	0.507	7.550	5.68	0.454	7.663	5.12			
10	10.750	0.796	9.062	10.92	0.632	9.410	8.82	0.566	9.550	7.95			
12	12.750	0.944	10.749	15.36	0.750	11.160	12.41	0.671	11.327	11.19			
14	14.000	1.037	11.802	18.52	0.824	12.253	14.98	0.737	12.438	13.49			
16	16.000	1.185	13.488	24.19	0.941	14.005	19.55	0.842	14.215	17.61			
18	18.000	1.333	15.174	30.61	1.059	15.755	24.75	0.947	15.992	22.29			
20	20.000	1.481	16.860	37.79	1.176	17.507	30.53	1.053	17.768	27.52			
22	22.000	1.630	18.544	45.75	1.294	19.257	36.86	1.158	19.545	33.30			
24	24.000	1.778	20.231	54.44	1.412	21.007	43.99	1.263	21.322	39.63			
26	26.000	1.926	21.917	63.89	1.529	22.759	51.61	1.368	23.100	46.51			
28	28.000	2.074	23.603	74.09	1.647	24.508	59.87	1.474	24.875	53.94			
30	30.000	2.222	25.289	85.04	1.765	26.258	68.74	1.579	26.653	61.92			
32	32.000	2.370	26.976	96.76	1.882	28.010	78.18	1.684	28.430	70.45			
34	34.000	2.519	28.660	109.26	2.000	29.760	88.28	1.790	30.205	79.54			
36	36.000	2.667	30.346	122.49	2.118	31.510	98.98	1.895	31.983	89.17			
42	42.000	3.111	35.404	166.70	2.471	36.761	134.72	2.211	37.314	121.37			
48	48.000	3.556	40.462	217.76	2.824	42.013	175.97	2.526	42.644	158.52			
54	54.000	_	_	_	3.177	47.265	222.67	2.842	47.975	200.63			

^{*} For data, sizes, or classes not reflected in these charts, please contact JM Eagle™ for assistance.





42"Ø Structure

HDPE IRON PIPE SIZE (I.P.S.) PRESSURE PIPE (continued)

ANSI/NSF-61, 14 LISTED

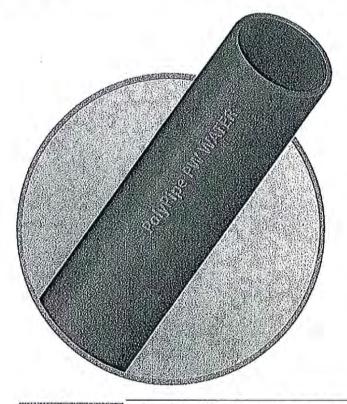
PE ·	4710	D	PR 21 (100 ps	i)	ı	DR 26 (80 psi	i)	D	R 32.5 (63 ps	si)
PIPE SIZE	AVG. O.D.	MIN. T.	AVG. I.D.	WEIGHT LB/FT	MIN. T.	AVG. I.D.	WEIGHT LB/FT	MIN. T.	AVG. I.D.	WEIGHT LB/FT
3	3.500	0.167	3.146	0.77	0.135	3.214	0.63	0.108	3.271	0.51
4	4.500	0.214	4.046	1.27	0.173	4.133	1.03	0.138	4.207	0.83
5-3/8	5.375	0.256	4.832	1.81	0.207	4.936	1.48	0.165	5.025	1.19
5	5.563	0.265	5.001	1.94	0.214	5.109	1.58	0.171	5.200	1.27
6	6.625	0.315	5.957	2.74	0.255	6.084	2.24	0.204	6.193	1.81
7	7.125	0.339	6.406	3.18	0.274	6.544	2.59	0.219	6.661	2.09
8	8.625	0.411	7.754	4.66	0.332	7.921	3.80	0.265	8.063	3.06
10	10.750	0.512	9.665	7.24	0.413	9.874	5.90	0.331	10.048	4.77
12	12.750	0.607	11.463	10.17	0.490	11.711	8.30	0.392	11.919	6.69
14	14.000	0.667	12.586	12.28	0.538	12.859	10.00	0.431	13.086	8.08
16	16.000	0.762	14.385	16.03	0.615	14.696	13.07	0.492	14.957	10.54
18	18.000	0.857	16.183	20.28	0.692	16.533	16.54	0.554	16.826	13.36
20	20.000	0.952	17.982	25.03	0.769	18.370	20.43	0.615	18.696	16.48
22	22.000	1.048	19.778	30.31	0.846	20.206	24.72	0.677	20.565	19.95
24	24.000	1.143	21.577	36.06	0.923	22.043	29.42	0.738	22.435	23.72
26	26.000	1.238	23.375	42.32	1.000	23.880	34.53	0.800	24.304	27.86
28	28.000	1.333	25.174	49.07	1.077	25.717	40.05	0.862	26.173	32.33
30	30.000	1.429	26.971	56.36	1.154	27.554	45.98	0.923	28.043	37.09
32	32.000	1.542	28.730	64.11	1.231	29.390	52.31	0.985	29.912	42.22
34	34.000	1.619	30.568	72.36	1.308	31.227	59.06	1.046	31.782	47.63
36	36.000	1.714	32.366	81.12	1.385	33.064	66.22	1.108	33.651	53.42
42	42.000	2.000	37.760	110.43	1.615	38.576	90.08	1.292	39.261	72.68
48	48.000	2.286	43.154	144.25	1.846	44.086	117.68	1.477	44.869	94.95
54	54.000	2.571	48.549	182.51	2.077	49.597	148.95	1.662	50.477	120.20
63	63.000	3.000	56.640	248.46	2.423	57.863	202.73	1.938	58.891	163.53

^{*} For custom DR, perforated pipe, please contact JM Eagle™ PE sales at (800) 621-4404 for availability.

I.D.: Inside Diameter O.D.: Outside Diameter T.: Wall Thickness

^{*} All dimensions are in inches unless noted otherwise.

PolyPipe for POTABLE WATER



PW PE3408/PE4710

High Performance Pipe for Potable Water Service

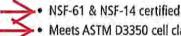
FEATURES:



· Suitable applications include Potable Water, Reclaim Water, Intake Water, Raw Water and Waste Water



- Heat-fused, fully restrained, leak proof joints
- Maintains optimum flow rates due to resistance to corrosion & biological growth
- Fatigue resistant



- Meets ASTM D3350 cell classification PE445574C
- Material grades PE3408/PE4710/PE100 per PPI TR-4
- AWWA C901 / ASTM D3035 & AWWA C906 / ASTM F714



12 " IPS - SDR 11 - DURALINE-POLYPIPE®PW - PE3408 - AWWA C906-PC160-PE4710-ASTM F714-200PSI -(Resin Code)(Color Code) - 1GA - (ddmmmyy) - NSF-61



Potable Water Service & applications such as Mining, Landfill, Dredging, Water Reclamation or Wastewater



1/2" - 65" IPS 3"-30" DIPS



Solid black, or with Stripes: blue, green, purple









PolyPipe is manufactured with high performance resins engineered with outstanding resistance to Slow Crack Growth (SCG) and Rapid Crack Propagation (RCP). The fatigue resistance of these resins improves design life in water systems where cyclic pressure surges exist.

Dura-Line is ISO 9001 certified and PolyPipe is qualified using exacting laboratory procedures and test methods, and a consistent uncompromised quest for design and manufacturing excellence.



Pipe for POTABLE WATER



PW PE3408/PE4710

TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES
Density, Natural	D1505	0.949 gm/cc
Density, Black	D1505	0.960 gm/cc
Melt Index (190°C/2.16 kg)	D1238	0.08 gm/10 min.
Flow Rate (190°C/21.6 kg)	D1238	7,5 gm/10 min,
Tensile Strength @ Yield	D638	3,500 psi
Ultimate Elongation	D638	>500%
Flexural Modulus	D790	150,000 psi
2% Secant		•
Environmental Stress Crack Resistance (ESCR)		
F _o , Condition C	D1693	
PENT	F1473	>500 hrs.
Brittleness Temperature	D746	<-180°F
Hardness, Shore D	D2240	64
Vicat Softening Temperature	D1525	255°F
izod impact Strength (Notched)	D256	8 ft – lb/in
Volume Resistivity	D991	>10 ¹⁵ ohm-cm
Thermal Expansion Coefficient		1.0x10 ⁻⁴ in/in/°F
CELL CLASSIFICATION:	D3350	445574C
		445576C
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	1,600 psi @ 73.4°F
(As listed in PPI TR-4)		1,000 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		1,000 psi @ 73.4°F

^{*}Nominal values are intended to be guides only, and not as specification limit.





^{*}Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens,

PolyPipe PE4710 - Pile Data and Pressure Ratings - IPS

									ن د		
	ninal Acival			9 2 55 psi	11 200 psi	13.5 160 psi	Dimension Rat 15.5 140 psi	io 177. 125 psi	21 (100 ps)	26 [80 psi	32,5 (65,ps)
1/2 3/4	0.840 1.050	min wall (in) weight (#/ft) min wall (in)	0.120 0.119 0.150	0.093 0.096 0.117	0.076 0.080 0.095				U.S. 201204		
1	1.315	weight (#/fr) min wall (in)	0.185 0.188 0.291	0.150 0.146	.=0.126 0.120						
117		weight (#/ft) //min viall (in) //weight (#/ft)	0.237 0.463	0,235 0,184 0,374	0.197 0:151 0:314	0.123 0,261					
1 1/3 > }}	2 1.900 2.375	min wall (in) weight (#/ft) Zmin wall (in)	0.271 0.607 0.339	0.211 0.490 0.264	0.173 0.411 0.216	0.141 0.342 0.176	0.123 0.301 0.153	0.140			
3	3.500	weight (#/it) min wall (in) weight (#/it)	0.948 0.500 2.058	0.766 0.389 1.664	0.642 0.318 1.395	0,534 0.259 1.159	0.470 0.226 1.020	0.431 0.206 0.936	0.167 0.768	0,135 0,626	
4	4,500	min wall (in) yyeight (#/ft)	0.643 3.402	0,500 2,751	0.409 2.306	0.333 1.916	0.290 1,687	0.265 1,548	0.214 1.269	0.173 1.035	0.138 0.835
6 8	6.625 8.625	min wall (in) weight (#/ft) min wall (in)	0.946 7.374 1/232	0.736 5.963 0.958	0.602 4.997 0.784	0.491 4.152 0.639	0,427 3,656 0,556	0.390 3.355 0.507	0.315 2.750 0.411	0.255 2.244 0.332	0.204 1.811 0.265
10	10.750	*Eweight (#/ft) min wall (in) weight (#/ft)	12,498 1.536 19.416	10:106 1.194 15.700	8.470 0.977 13.157	7,037 0.796 10.932	6:197 0.694 9.626	5.687 0.632 8.834	4,662 0.512 7.242	3.804 0.413 5.909	3.069 0.331 4.767
12 14	12.750 14.000	min wall (in) weight (#/tt) min wall (in)	1.821 27.312 2.000	1,417 22,085 1.556	1,159 18,508 1,273	0.944 15:379 1.037	0.823 13,541	0750 12.427	0.607 10:187	0.490 8.312	0.392 6.706
16	16,000	weight (#/ft) min vall (in)	32,930 2,286	26.628 1.778	22.315 1.455	18.542 1.185	0.903 16.327 44 1.032	0,824 14,983 0,941	0.667 12.282 0.762	0.538 10.022 0.615	0.431 8.086 0.492
18	18.000	weight (#/ff) min wall (in) weight (#/ft)	43.010 2.571 54.435	34 <i>77</i> 79 2,000 44,017	29.146 1.636 36.888	24.218 1.333 30.651	21.325 1.161 26.989	19.569 1.059 24.767	16.042 0.857 20.304	13.090 0.692 16.567	10.561 0.554 13.366
20. 22	20,000 22,000	min wall (in) weight (#/fr) min wall (in)	2.857 67,203	2,222 54,342 2,444	1.818 45.541 2.000	1,481 37,840 1.630	1,290 33,320 1,419	1.176 30,577 1.294	0.952 25,066 1.048	0.769 20:453 0.846	0.615 16.501 0.677
24	24,000	weight (#/ft) min wall (m) weight (#/ft)		65.754 2.667 78.253	55.105 2:182 65:579	45.787 17,778 54.490	40.317 1.548 47.981	36.998 1.412 44.031	30.330 1:143 36,095	24.748 0.923 29.452	19.967 0.738 23.762
26 28	26.000	min wall (in) welght (#/ft)		2.889 91.838	2,364 76.964	1.926 63.950	1.677 56.311	1.529 51.675	1.238 42.362	1.000 34.565	0.800 27.887
30	7.28.000 30.000	min Wall(in) Weight (W/I) min wall (in)		3.111 106.511 3.333	2/545 89,260 2,727	2.074 74.167 2.222	1.806 65.307 1.935	1,647 59,931 1,765	1,333 49,130 1,429	1.077 40.087 1.154	0.862 32.342 0.923
32.	32,000	weight (#/ft) *min wall (in) *Vyeight (#/ft)		122.270 3.556 139.116	102.467 2.909 116:585	85.141 2:370 96.871	74.970 27065 857299	68.798 1.882 78.277	56.399 1.524 64.169	46.019 1.231 52.359	37.128 0.985 42.243
34 367	34.000 36.000	min wall (in) weight (#/ft) min.wall(in)		3.778 157.049 4.000	3.091 131.613 3.273	2.519 109.358 2.667	2.194 96.295 2.323	2,000 88,367 2,118	1.619 72.441 21.7.14	1.308 59.108 1.385	1.046 47.689 21.108
42	42.000	weight (#/fi) min wall (in) weight (#/ft)		176.069	147.553	122,602 3,111 166,876	107.957 2.710 146.941	99.069 2.471 134.844	81,214 2,000 110,542	66;267 1.615 90.197	53.464 1.292 72.771
48 54	48,000	/ min wall (in) weight (#//t)				100.070	170,541	i 2.824 176.122	2,286 144.381	1,846 117,808	11.47 <i>7</i> 95.047
63	54.000 63,000	min wall (in) weight (#/ft) min wall (in)						3.176 222.905 3.706	2.571 182.732 3.000	2.077 149.100 2.423	1.662 120.294 1.938
6 5	65.000	veight (#/fi) min wall (in) weight (#/ft)						303,398 3.824 322,967	248.719 3.095 264.761	202,942 2,500 216.032	163,734 2.000 174,295
						:	i				





OO PE47/10 - Pipe Data and Pressure Ratings - DIPS

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RESTROYERS	775-255-255-2577-25	United and an arrangement of the second	******************	+517 +1140 AGG (14 +15)	Maria and a service of the service o			T2012-1			2339
OD)							Umension Rati		21		
1.53717692650722	al Actual		335 psi	255 mil	11 200 psi	18/5	15.5	17.		70	32.5
			1	1-2,000	1	160 psl z		1	100 ps	1	65 psis 1
3	3.960	min wall (in)	0.566	0.440	0.360	0.293	0.255	0.233	0.189	0.152	0.122
		weight (#/ft)	2.635	2.130	1.785	1.483	1.306	1.199	0.983	0.802	0.647
B12755372756	TITOTOTOTOTO SECURED.	nom. ID (in)	2.76	3.03	3.20	3.34	3.42	3.47	3.56	3.64	3.70
4	4:800	minyvali (ń)	0.686	0.533	0.436	0.356	0.310	0.282	0,229	0.185	0.148
		= weight (#/fr) <	3,871	3.130	2,623	2 180	1.919	1.761	1:444	1.178	0.950
		nom ID (In)	3.35	3,67	3.87	4.05	4,14	4.20	4.32	4.41	4.49
6	6.900	min wall (in)	0.986	0.767	0.627	0.511	0.445	0.406	0.329	0.265	0.212
		weight (#/ft)	7.999	6.468	5.421	4.504	3.966	3.639	2.984	2.434	1.964
MANAGEMENT CONTROL	n ne contractor	nom. ID (in)	4.81	5.27	5.57	5.82	5.96	6.04	6.20	6.34	6.45
8	9.050	min yyall (in)	1,293	1.006	0.823	0.670	0.584	0.532	0.431	0.348	0.278
		weight (#/fi)	19.760	11,127	9.325	7.748	6.822	6.261	5.132	4.188	3.379
41.076		nom ID (in)	6.31	6.92	731	7.63	7.81	7,92	8.14	8.31	8.46
10	11.100	min wall (in)	1.586	1.233	1.009	0.822	0.716	0.653	0.529	0.427	0.342
		weight (#/ft)	20.700	16.739	14.028	11.656	10.263	9.418	7.721	6.300	5.083
Fact stores as one		nom. ID (in)	7.74	8.49	8.96	9.36	9,58	9.72	9.98	10.19	10.38
12	13.200	min Vall (in)	1.886	1.467	1.200	0.978	0.852	0.776	0.629	0.508	0.406
		(veight (#/fi)	29.274	23.671	19.838	16.483	14,514	13,319	10,919	8.909	7.188
		nom:ID (in)	9.20	10.09	10.66	11.13	11.39	11.55	11.87	12:12	12,34
14	15,300	min wall (in)	2.186	1.700	1.391	1.133	0.987	0.900	0.729	0.588	0.471
		weight (#/ft)	39.329	31.802	26.652	22.145	19.500	17.894	14.669	11.969	9.657
Kinda Chus ware		nom. ID (in)	10.67	11.70	12.35	12.90	13.21	13.39	13.76	14.05	14.30
16	17.400	min wall (in)	2,486	1,933	1.582	1.289	1123	1.024	0.829	0.669	0.535
		- (weight (#/ft)	50.866	41:132	34.470	28.641	25.220	23.144	18.973	15:481	12,490
		nom, ID (in)?	. 12,13	13,30	14.05	14.67	15.02	15:23	15.64	15,98	16.26
18	19.500	min wall (in)	2.786	2.167	1.773	1.444	1.258	1.147	0.929	0.750	0.600
		weight (#/ft)	63.885	51,659	43.292	35.972	31.675	29.067	23.829	19.443	15.687
		nom. ID (in)	13.59	14.91	15.74	16.44	16.83	17.07	17.53	17.91	18,23
20	21.600	min yvall (in)	3,086	2.400	1.964	1/600	1394	1,271	1:029	£200.83T	0.665
		yyeight (#/fr)	78.386	63.385	53,119	44,137	38.864	-35,665	29,237	23.856	19,247
		nom (D (in)	15.06	[6,5]	17,44	18.21	18.65	18.91	19.42	19.84	20.19
24	25.800	min wall (in)		2.867	2.345	1.911	1.665	1.518	1.229	0,992	0.794
		weight (#/ft)		90.431	75.785	62.970	55.448	50.883	41.713	34.035	27.460
Morrowallocary	* A	nom. ID (in)		19.72	20.83	21.75	22.27	22,58	23.20	23,70	24.12
30	32,000	min vall (in)			2,909	2.370	2,065	J!882	1.524	1231	0.985
		. vyeight (#/ft)			116,585	96,871	85,299	78,277	64 169	52.359	42.243
		nom ID (lp)			. 25.83	26.97	27.62	28.01	28.77	29,39	29.91

RelyPipe® Potable Water PE4710 Pipe is manufactured in accordance with the following standards:

- For sizes 1/2" IPS through 3" IPS products are manufactured in accordance with ASTM D3035 & AWWA C901.
- For sizes 4" IPS through 60" DIPS products are manufactured in accordance with ASTM F714 & AWWA C906.
- · Metric sizes also available.
- Colled pipe available through 6" OD and straight lengths available in 40' and 50' lengths.
- For custom lengths, contact a Customer Service Representative.
- Pressures are based on water at 23°C (73.4°F) and are determined by use of the Hydrostatic Design Stress (HDS) as established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI).
- The above weights for IPS and DIPS sizes are calculated in accordance with Plastics Pipe Institute (PPI) TR-7, using a value of 0.960 for density.
- · Available with color-coded striping.







GEORG FISCHER

GEORG FISCHER CENTRAL PLASTICS

39605 Independence, Shawnee, OK, 74804 | 1.800.654.3872 | www.gfcp.com



PRODUCT SPECIFICATIONS SHEET

BUTT FUSION FITTINGS (IPS) PE3408 / PE4710 HDPE BLACK



SCOPE:

This document describes the standard specifications and features related to Georg Fischer Central Plastics' injection molded PE4710 (formerlyPE3408) Butt Fusion Fittings for pressure piping systems.

SIZES:

1/2" CTS through 2" CTS.

TEE, 90 DEGREE ELBOW, REDUCER, CAP,

1/2" IPS through 12" IPS.

TEE, 90 DEGREE ELBOW, 45 DEGREE ELBOW, REDUCER, CAP, PURGE FITTING,

REQUIREMENTS:

ASTM D2513

Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings

ASTM D3350

Specification for Polyethylene Plastic Pipes and Fittings Materials

ASTM D3261

Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastics Pipe

and Tubing

REFERENCE DOCUMENTS:

PPI TR-19

Thermoplastics Piping for the Transport of Chemicals

PPI TR-31

<u>Underground Installation of Polyolefin Pipe</u> Generic Butt Fusion Procedure for Polyethylene Gas Pipe

PPI TR-33 ASTM D2657

Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings

CERTIFICATIONS/LISTINGS:

FM 1613

Approval Standard: Plastic Pipe and Fittings for Underground Fire Protection Service

AWWA C906

Standard for Polyethylene Pressure Pipe and Fittings, 4 in. Through 63 in., for Water Distribution

FM 1613

Approval Standard: Plastic Pipe and Fittings for Underground Fire Protection Service

ANSI/NSF 14 Plastic Piping System Components and Related Materials

MATERIALS:

PE Resin:

Pre-blended black high density virgin resin. Recognized by the Plastic Pipe Institute as having a

PE3408 / PE4710 / PE100 rating and a Hydrostatic Design Basis of 1600 psi @ 73°F. This resin has a

cell classification of 445574C* in accordance with ASTM D3350.

Note*

Previous editions of ASTM D3350 resulted in cell classifications of 345464C and 345564C.

TEST METHODS:

ASTM D1598

Time-to-Failure of Plastic Pipe Under Constant Internal Pressure.

Must exceed 170 hours in 80°C bath @ 670psi Hoop Stress, or Must exceed 1000 hours in 80°C bath @ 580psi Hoop Stress, or Must exceed 1000 hours in 23°C bath @ 1600psi Hoop Stress.

(All methods are considered equivalent)

ASTM D1599

Short-Term Hydraulic Pressure Failure of Plastics Pipe, Tubing, and Fittings.

Uniform pressurization until failure between 60 and 70 seconds from start of test. Most result in ductile failure at

a pressure great enough to create a 2520psi Hoop Stress.

ASTM D2122

Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

Determination of diameter, wall thickness, and length dimensions including procedures for dimensioning molded

thermoplastic pipe fittings.

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FEATURES:

Made in USA from pre-blended virgin materials. These fittings are available in various configurations and DR and are primarily intended for use in pressure piping applications. These fittings are compatible for heat fusion to any PE material made from a like or similar resin. Select sizes can be supplied with AWWA or FM marking. Designed for use on pipe conforming to ASTM F714, D2513, and D3035.

PRESSURE RATING:

PE4710 Butt Fusion Fittings are pressure rated in accordance with industry and regulatory guidelines for natural gas or water @73°F. Pressure ratings are subject to change depending on ambient temperatures. Pressure ratings vary according to wall thickness and the design factor for the intended application, see below for ratings:

Fitting		Press	ure Rating (PSI) @ 73° F (23° C)	
SDR	Water (.63 DSF)	Water (.5 DSF)	Natural Gas (.32 DSF) US	Natural Gas (.4 DSF) Canada
7	335	265	170*	215*
9	250	200	125*	160*
11	200	160	100	125
13.5	160	125	80	100
17	125	100	65	80
21	100	80	50	65
26	80	65	40	50
32.5	65	50	30	40

^{*} Subject to maximum operating pressure limits of regulatory requirements.

Minimum wall thickness for plastic piping gas distribution systems is limited to .062".

Above listed pressure ratings based on 73°F ambient temperature. Pressure ratings subject to derating depending on temperature.

PRESSURE TESTING:

Pressure testing can be conducted in accordance with the recommendations of the pipe manufacturer, or as described in ASTM F2164 STANDARD PRACTICE FOR FIELD LEAK TESTING OF POLYETHYLENE (PE) PRESSURE PIPING SYSTEMS USING HYDROSTATIC PRESSURE, typically 1.5 x's the rated working pressure not exceeding 8 hours in duration for a single test.

MAXIMUM OPERATING TEMPERATURE:

The maximium operating temperature of PE4710 Butt Fusion Fittings is 140°F. Pressure de-rating factors should be considered when operating systems above the 73°F stated pressure rating, to maintain the 50 year substantiated long-term hydrostatic strength of the polyethylene material.

STORAGE/SHELF LIFE:

Black high density polyethylene resin contains a minimum of 2% of a finely dispersed concentration of carbon black which provides protection from UV effects. Even so, it is recommended that fittings which are stored for extended periods (two years or greater) be stored indoors in their original packaging. Fittings stored indoors in their original packaging have a virtually unlimited shelf-life.

CHEMICAL RESISTANCE

Polyethylene generally exhibits strong resistance to many chemical compounds. Known chemical resistance characteristics at specified temperatures can be found in PPI Technical Report TR-19.

INSTALLATION:

These fittings are compatible for heat fusion by butt, socket, or electrofusion joining products. They can be heat fusion joined to pipe or fittings manufactured from like or similar resin. Qualified mechanical joining products can be used to join these fittings, consult the manufacturer for recommendations. Fusion jointing should only be attempted by persons who have been trained and have qualified joints through destructive testing.

Note: This Specification supercedes all previous Product Specifications and is subject to change without notice. Approved By:

Jeff Whistor

Jeff Wright

Director of Product Management

RP01/2013

Product Specifications Sheet



1101 McKinley Street Anoka, MN 55303 Phone (763) 786-6682 Fax (763) 786-2167

Part Name: Male thread HDPE Transition Fitting

Series 710 Carbon Steel, T304, T316, Stainless Steel

Threaded Transitions

The POLY-CAM Threaded Transition Adaptors is a multi-level mechanical transition fitting, protected under patent number 5,211,429, which is hydraulically compressed unto the polyethylene or pipe quality copolymer material.

Design

The relaxation creates a seal to prevent leakage. Under pressure, the internal pressure within the pipe increases the sealing surface area on the barb. Under zero internal pressure, the compression strain and tensional strain created by the compression of the multi-level barbs is greater then the stress created by relaxation and/or thero expansion and contraction. As the internal pressure increases the joining of the polyethylene or copolymer and the coupling increases.

Sizes range from .5" to 12" NPT. All National Pipe Threads are made to ANSI/ASME B1.20-1983 R 1992.

System Performance

The transition fitting is designed to handle the pressure rating of the HDPE pipe with a 2:1 safety factor at 73.40 degrees Fahrenheit with a minimum 50 year design life.

Quality Assurance

The transition fitting shall be manufactured by Poly-Cam, Inc. Poly-Cam, Inc. shall provide quality assurance with regards to proper installation, compatibility, performance, and acceptance. Transition joint meets or exceeds the requirements of ASTM D2513 Category 3. Upon request Poly-cam can install a stainless steel insert to meet ASTM 2513 Category 1. All Fittings meet ARRA requirements. Manufactured in the United States.

Installation

HDPE pipe end: Install transition fitting so as to comply with the pipe manufacturer's recommended procedures. All field welds shall be accomplished in accordance with Plastic Pipe Institute's welding procedure for butt fusion.

Threaded Fitting: When installing the transition fitting one should always use pipe joint sealant or Teflon tape. Always use strap wrenches. Do not use pipe wrench. Always use 2 wrenches when connecting, Over tighten may cause ovality or damage. Always pressure test for leaks before backfilling. Backfill and compact carefully around transition and service line to prevent ground shifts which could damage the valve and/or transition fitting.

Material

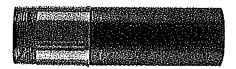
The POLY-CAM Threaded Transition is manufactured of Carbon Steel (A53 or A106 grade) Type 304 or Type 316 (ASTM A249 or ASTM A269) and or ERW pipe (ASTM SA-312) and incorporated with the transition manufactured of HDPE (cell class 345454c) or pipe quality Copolymer material. (pe3408, pe3608 and pe4710). All pipe meets ASTM 3035 and ASTM 714. It complies AWWA C-901, C906 and NSF 61. All certification will be submitted upon request.

The epoxy coating (IF 194T Red Iron Oxide) is fusion bonded to the metal. It has approvals NSF 61, FDA 175.300, AWWA C116-01,C213-01, UL 262 and FM 1120/1130 The carbon steel epoxy POLY-CAM threaded transition fitting complies with AWWA and NSF 61 material requirements.

Warranty

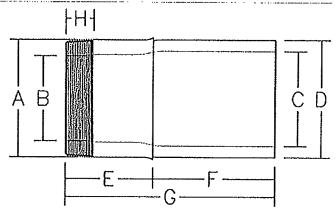
Warranty period is one year after date of substantial completion of installation.

Series 710 Transition with Male NPT



POLY-CAM Male Threaded Transition Adaptors (710 Series) is a multi-level mechanical transition fitting, patent number 5,211,429. The POLY-CAM Threaded Transition is manufactured to the following;
Carbon Steel Epoxy Coated, 304 and 316 Stainless Steel
Other steel materials can be made depending on availability.
Sizes range from .5 to 12" NPT
Meets ANSI/ASME B1.20-1983 R 1992
All materials comply with AWWA and NSF 61 Meets ASTM 2513 Category 3. Upon request Poly-cam can install a stainless steel insert to meet ASTM 2513 Category 1

SDR 7	SDR 9	SDR 11	SDR 17						
NOMINA SIZE INCHES	O.D. "			EXPOSED SDR7 PE PIPE I.D. "C"			EXPOSED PE PIPE LENGTH "F"	OVERALL LENGTH "G"	THREAD LENGTH
0.5	1.00	0			0.840	1.6	6.4	8	0.64
0.75	1.25	0	~0.70	0.75	1.050	1.8	6.2	8	0.7
1	1.31	5	~0.72	0.94	0.315	2	6	8	0.99
1.25	1.66	0	~0.90	1.18	1,660	2.6	5.4	8	1.01
1.5	1.90	D	~1.10	1.35	19.000	2.6	5.4	8	1.03
2	2.37	5	~1.44	1.69	2.375	3	5	8	1.06
2.5	2.87	5			2.875	3.5	4.5	8	1.25
3	3.50)	~2.08	2.49	3,500	4	4	8	1.26
4	4.50)	~2.79	3.19	4.500	4	8	12	1.48
5	5.56	3	~3.4	3,95	5.563	5	7	12	1.5
6	6.62	5	~4.2	4.7	6.625	5	8	13	1.56
8	8.62	5	~5.5	6.12	8.625	7	8	15	1.75
10	10.75	0	~6.9	7.63	10.750	8	8	16	1.85
12	12.75		~8.2	9.05	12.750	9	9	18	2.27



11/00 ⊗ Registered Trademark Poly-Cam, Inc. - US Patent # 5,211,429

Figure 340N, 340NF, and 350N

THERMOPLASTIC VALVES



FULL PORT TRUE-UNION BALL VALVE



Figure 340N - PVC with NPT and SW Ends* 1/2" - 2"

Figure 340NF - PVC with 150# Flanges 3" & 4"

Figure 350N - CPVC with NPT and SW Ends*

SW only on sizes over 2". NPT is available upon request.

Valve Features

- · Full Port Design
- · Pressure Rating: 150 PSI
- · Temperature Range:
 - PVC: 41°F to 122°F (5°C to 50°C)
 - CPVC: 32°F to 194°F (0°C to 90°C)
- · Certified to NSF 61 Annex G
- •-EPDM or FPM (Viton®) Seals
- . O-ring Energized Seats (up to 2")
- Bidirectional Flow *
- · Adjustable Seat Tightness
- · Easy Disassembly with Handle
- · Easy Replacement Reduces Down Time
- Can Be Modified for Actuator Installation
- Note that the valve has a preferred flow direction indicated by the embossed arrow on the body. The preferred flow direction orients the carrier upstream so that downstream piping can be removed with valve

Standards

Figure 340N Connections:

- Threaded: ASTM D-2464, ref. ANSI B1.20.1
- Socket: ASTM D-2467

Figure 340NF Connections:

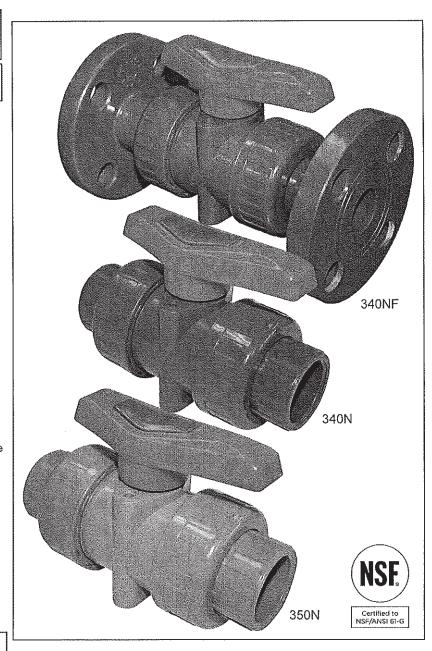
• Flanged: ANSI B16.5, Class 150

Figure 350N Connections:

- Threaded: ASTM F437
- Socket: ASTM F439

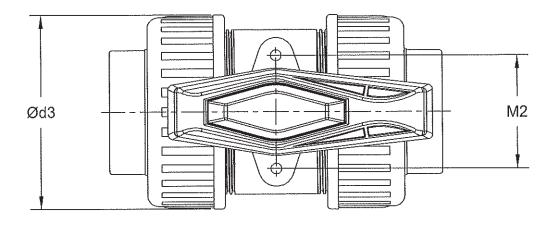
Materials:

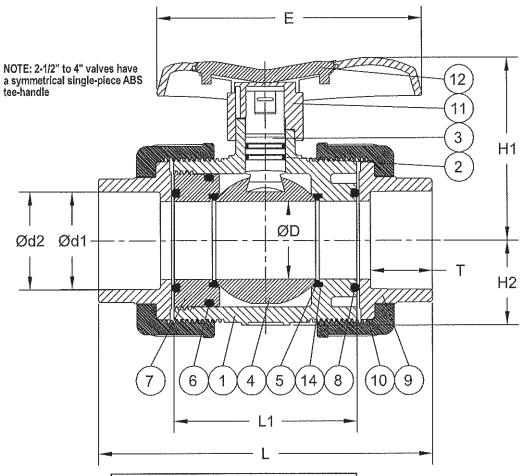
- PVC: Cell Classification 12454 per ASTM D1784 (formerly Type I, Grade 1)
- CPVC: Cell Classification 23447 per ASTM D1784 (formerly Type IV, Grade 1)



Options

FNW offers many options and modifications for valves. These include, but are not limited to: Actuation including chain wheels, worm gear operators, pneumatic and electric operators, control accessories, stem extensions, and custom mounting hardware. Contact FNW with your specific application needs.

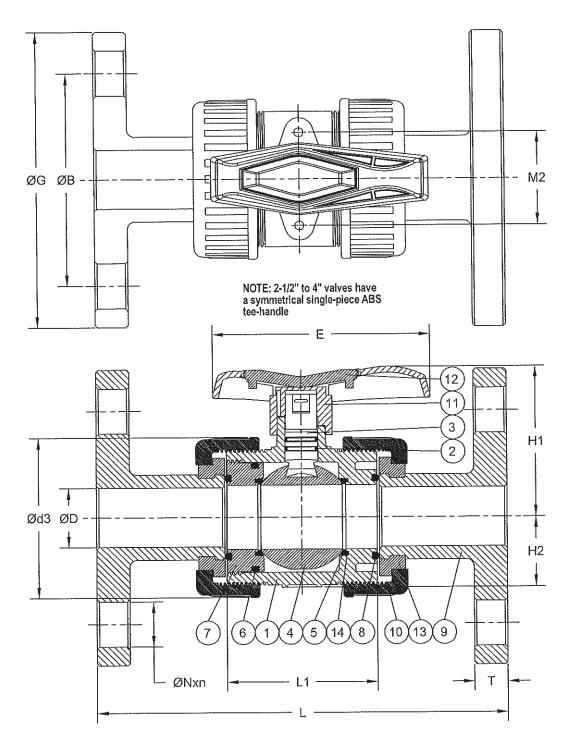




Dimensions (inches) Figure 340N and 350N

	Size	ØD	E	L.	L1	Ød1	Ød2	Ød3	Т	H1	H2	M2
\rightarrow	1/2	0.512	3.03	4.49	2.36	0.84	0.85	1.82	0.87	1.81	0.83	1.18
\rightarrow	3/4	0.709	3.74	5.31	2.87	1.05	1.06	2.19	1.00	2.24	1.02	1,30
<u></u>	1	0.906	4.33	5.87	3.11	1.31	1.32	2.62	1.13	2.76	1,30	1.57
	1-1/4	1.181	5.00	6.69	3.46	1.66	1.67	3.23	1.25	2.95	1.54	1.85
	1-1/2	1.496	5.63	6.93	3.74	1.89	1.91	3.88	1.38	3.70	1.61	2.05
\rightarrow	2	1.890	6.46	8.15	4.49	2.37	2.39	4.72	1.50	4.45	2.09	2.76
	2-1/2	2.402	7.09	10.83	5.35	2.87	2.89	5.51	1.75	4.57	*	*
\rightarrow	3	2.717	8.82	11.97	6.22	3.49	3.52	6.30	1.88	5.12	*	*
>	4	3.898	10.94	13.07	6.93	4.49	4.52	8.86	2.25	7.01	*	*

^{* 2-1/2*} to 4" valves do not have bosses for mounting pad. Saddle mounts, sold separately, are available for actuation purposes.



Dimensions (inches) Figure 340NF

					0.0.0	11110110	۰, ۱ نوم						
Size	ØD	E	L	L1	Ød1	Ød2	Ød3	Т	H1	H2	M2	ØN	n
1/2	0,512	3.03	5.63	2.36	2,40	3.50	1.82	0.51	1.81	0,83	1.18	0.63	4
3/4	0.709	3.74	6.77	2.87	2.76	3.86	2.19	0.55	2.24	1.02	1.30	0.63	4
1	0.906	4.33	7.36	3.11	3.11	4.25	2.62	0.55	2.76	1.30	1.57	0.63	4
1-1/4	1.181	5.00	7.48	3.46	3,50	4.61	3.23	0.63	2.95	1.54	1.85	0.63	4
1-1/2	1.496	5.63	8.35	3.74	3.90	5.00	3.88	0.63	3.70	1.61	2.05	0.63	4
2	1.890	6.46	9.21	4,49	4.76	5.98	4.72	0.63	4.45	2.09	2.76	0.75	4
2-1/2	2,402	7.09	10.20	5,35	5.51	7.01	5.51	0.71	4.57	*	*	0.75	4
3	2,717	8.82	11.97	6.22	5.98	7,52	6.30	0.71	5.12	*	*	0.75	4
4	3.898	10.94	14.65	6.93	7.52	9.02	8.86	0.71	7.01	*	*	0.75	8

^{* 2-1/2&}quot; to 4" valves do not have bosses for mounting pad. Saddle mounts, sold separately, are available for actuation purposes.

About PVC

Unplasticised Polyvinyl Chloride, or PVC, is the most widely used of all plastics and commonly used for pressure pipes, fittings, and valves. It is rigid, suitable for above and below ground applications. PVC has good chemical resistance and is odorless and tasteless. It is for use with liquids and gasses with temperatures +32°F to +140°F* (for higher temperatures see CPVC) at a wide range of operating pressures. Some poorer quality PVC can leach chemicals into water which can build up in recirculation systems, however most modern pipe is built to specific standards (e.g. BS3505/6, ASTM D 1785, ASTM D2241, DIN 8061/2, KIWA 49, BS4346 PART 1, DIN 8063) to control this. ASTM D1784 controls the compounds for rigid PVC and CPVC.

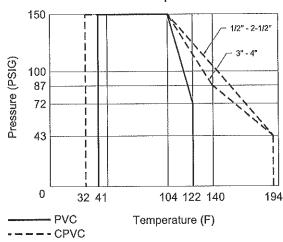
About CPVC

Chlorinated Polyvinyl Chloride, or CPVC, has been offering the process industry superior corrosion resistance, mechanical strength, and excellent life-cycle economics in a single package. Conceptually, CPVC is a PVC homopolymer that has been subjected to a chlorination reaction. It is generally inert to most mineral acids, bases, salts, and paraffinic hydrocarbon solutions. CPVC is not recommended for use with chlorinated or aromatic hydrocarbons, esters, or ketones. The upper temperature limit on CPVC is 200°F*. There is no lower temperature limit on CPVC and the material will withstand pressure. However, at very cold temperatures, the material will become brittle and the impact strength will decline.

Standard Materials

		andary	a iviater	1010		
			Mate	erial		
Ref.	Description	340N &	340NF	35	ON	Qty
No.	Dosomption	EPDM Seals	Viton Seals	EPDM Seals	Viton Seals	
1	Body	P۱	/C	CP	VC	1
2	Stem O-ring	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	2
3	Stem	P\	/C	CP	VC	1
4	Bali	Þ١	/C	CP	VC	1
5	Seat		PT	FE		2
6	Carrier O-ring	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	1
7	Carrier	P۱	/C	CP	VC	1
8	Union O-ring	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	2
9	End Connector/ Flange	P\	vc	CP	VC	2
10	Union Nut	P۱	VC	CF	VC	2
11	Handle		Al	38		1
12	Handle Insert		Al	38		1
13	Set Ring (340F only)	PVC		CF	VC	2
14	Seat O-ring (up to 2" only)	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	2

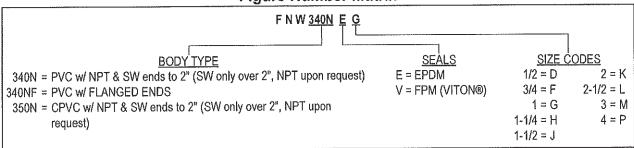
Pressure/Temperature



Torques, Cv & Weights

Size	Torque (in-lbs)	Cv	Wt. (Lbs.)
1/2	18	12.5	0.48
3/4	27	28	0.73
1	36	50.9	0.99
1-1/4	54	81	1.39
1-1/2	71	150	2.27
2	106	230	3.41
2-1/2	178	360	7.13
3	230	485	11.97
4	371	768	11.97

Figure Number Matrix



^{*} Note: Other materials within valves besides PVC and CPVC can have an affect on the temperature limits of the valve. Temperatures noted above are for the thermoplastic material alone.

Figure 345 & 355

THERMOPLASTIC VALVES



TRUE-UNION BALL CHECK VALVE

→ Figure 345 - PVC with NPT and SW Ends

Figure 355 - CPVC with NPT and SW Ends

Valve Features

- · Pressure Rating: 150 PSI
- . 5 PSI Minimum Shut Off
- · Temperature Range:
 - o PVC: 41°F to 122°F (5°C to 50°C)
 - o CPVC: 32°F to 194°F (0°C to 90°C)
- EPDM & FPM (Viton®) Seals
- · Both NPT & Sweat Ends Included
- For Vertical & Horizontal Installation*
- With Flow Direction Arrow
- Machined & Tumbled Ball for Hermetic Seal
- Easy Maintenance
- * For vertical up flow only, not down flow. In horizontal installations, standard line drop typically will not allow the ball to seat (a back pressure differential of 5 PSI minimum is needed for shut off).

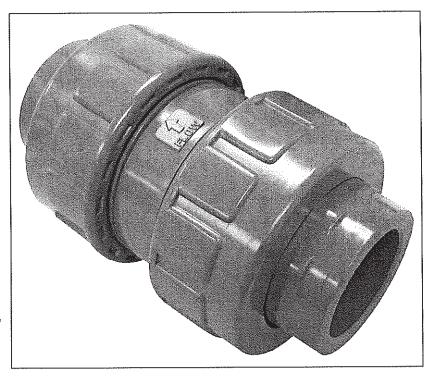
Standards

Connections:

- Threaded: ASTM D-2464, ref. ANSI B1.20.1
- · Socket: ASTM D-2467

Materials:

- PVC: Cell Classification 12454 per ASTM D1784 (formerly Type I, Grade 1)
- CPVC: Cell Classification 23447 per ASTM D1784 (formerly Type IV, Grade 1)



Pressure/Temperature

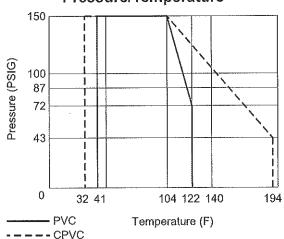
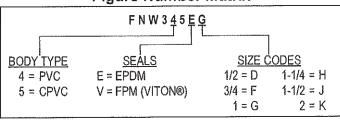


Figure Number Matrix



Cv & Weights

			•
	Size	Cv	Wt. (Lbs.)
	1/2	10	0.37
	3/4	26	0.55
	1	37	0.83
	1-1/4	40	1.52
	1-1/2	80	2.11
_	→ 2	152	3.86



Figure 345 & 355 THERMOPLASTIC VALVES

TRUE-UNION BALL CHECK VALVE

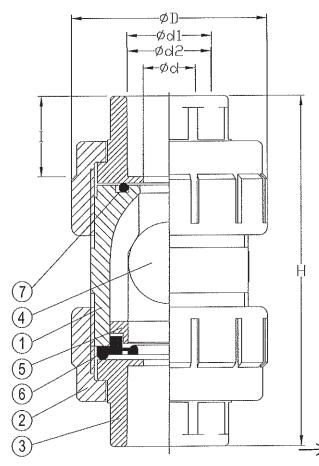
About PVC

Unplasticised Polyvinyl Chloride, or PVC, is the most widely used of all plastics and commonly used for pressure pipes, fittings, and valves. It is rigid, suitable for above and below ground applications. PVC has good chemical resistance and is odorless and tasteless. It is for use with liquids and gasses with temperatures +32°F to +140°F* (for higher temperatures see CPVC) at a wide range of operating pressures. Some poorer quality PVC can leach chemicals into water which can build up in recirculation systems, however most modern pipe is built to specific standards (e.g. BS3505/6, ASTM D 1785, ASTM D2241, DIN 8061/2, KIWA 49, BS4346 PART 1, DIN 8063) to control this. ASTM D1784 controls the compounds for rigid PVC and CPVC.

About CPVC

Chlorinated Polyvinyl Chloride, or CPVC, has been offering the process industry superior corrosion resistance, mechanical strength, and excellent life-cycle economics in a single package. Conceptually, CPVC is a PVC homopolymer that has been subjected to a chlorination reaction. It is generally inert to most mineral acids, bases, salts, and paraffinic hydrocarbon solutions. CPVC is not recommended for use with chlorinated or aromatic hydrocarbons, esters, or ketones. The upper temperature limit on CPVC and the material will withstand pressure. However, at very cold temperatures, the material will become brittle and the impact strength will decline.

* Note: Other materials within valves besides PVC and CPVC can have an affect on the temperature limits of the valve. Temperatures noted above are for the thermoplastic material alone.



Standard Materials

			Mat	erial		
Ref.	Description	3	45 🗸	3	Qty	
No.	2000 , p. 1000	EPDM Seals	Viton Seals	EPDM Seals	Viton Seals	
1	Body	Р	VC	CI	PVC	1
2	Union Nut	Р	VC	CI	PVC	2
3	End Connector	Р	VC	CI	PVC	1
4	Ball	Р	VC	CI	PVC	1
5	Gland	Р	VC	CI	PVC	1
6	Seat	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	1
7	O-ring	EPDM	FPM (Viton®)	EPDM	FPM (Viton®)	1

Dimensions (inches)

Size	Ød2	Ød1		d	D	Н	Thd./In (NPT)
1/2	0.84	0.85	0.875	0.63	1.97	3.52	14
3/4	1.05	1.06	1.000	0.79	2.44	4.39	14
1	1.31	1.33	1.125	0.98	2.84	5.09	11.5
1-1/4	1.66	1.67	1.250	0.98	3,82	6.16	11.5
1-1/2	1.89	1.91	1.375	1.58	3,82	6.60	11.5
> 2	2.37	2.39	1.500	1.97	4.21	7.54	11.5

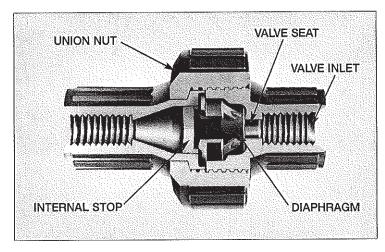


CATALOG CKL (Series CKM & CK)

Self-Closing Thermoplastic Check Valves...

Patented Diaphragm Design Assures Dependable, Repetitive, Bubble-Tight Sealing... and They Can Be Mounted in Any Position!

Sizes: 1/2", 3/4" and 1"



Features/Benefits:

- Patented Design: Self-sealing are not dependent upon gravity, mounting position or reverse flow, a significant improvement over ball check valves.
- Silent Operation: No internal sliding or loose parts to slam or vibrate - chattering is eliminated!
- Dependability: Leak-free sealing protects against the potential hazards created by reverse flow of corrosive liquids such as acids, caustics and chlorine solutions.
- Repetitive Long Term Sealing: Diaphragm automatically positions itself against seat in the identical location. Superior to ball check valves which often leak at lower pressures.
- Convenience: Union nut on Series CKM simplifies valve inspection/removal with minimum piping breakdown.
- Minimal Cracking Pressure: Diaphragm begins to open at approximately 1.0 to 1.5 PSI.
- Cost Efficient: Designed to improve system performance and competitively priced.

Materials of Construction:

Plast-O-Matic Series CKM Check Valves are molded of Type 1, Grade 1, PVC (Polyvinyl Chloride), Glass-filled Polypropylene, Corzan® CPVC, and Kynar® PVDF in sizes 1/2", 3/4" and 1". A machined version, Series CK is available in PTFE in sizes 3/4" and 1". Diaphragms are of EPDM or FKM (Viton®). Threaded connections are standard on all models. Socket end connectors are available on all Series CKM models.

Note: For information on 11/2", 2" and 3" models, refer to Catalog CKS.

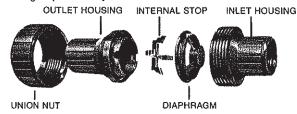


Series CKM CK Diaphragm Check Valves 1/2", 3/4" & 1"

Design

Series CKM & CK Check Valves, normally closed in design, feature a patented diaphragm seal that will neither stick nor chatter and is automatic in action. The valves are not dependent upon gravity so they can be mounted in any position. Even in the absence of reverse flow or pressure, the diaphragm will automatically reposition itself to seal against the valve seat. This is achieved with or without the presence of reverse flow. The unique and patented diaphragm will seal in the identical location every time producing a more reliable and repetitive seal.

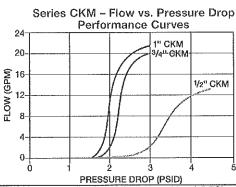
The molded Series CKM models have only one moving part - the diaphragm. This provides both design simplicity and maximum operating dependability.



Operation

Flow entering the valve inlet will open the valve by pushing the diaphragm off the valve seat until it comes to rest on the internal stop. This supports the diaphragm and eliminates force or stress under high flow condition. In this position both the diaphragm and valve seat are kept clean by the flushing action of the internal flow, keeping the entire sealing area free of particles which could cause leakage.

If the inlet flow is either stopped, or if a backflow of a higher pressure is sensed, the diaphragm will automatically reposition itself, closing off the valve seat. Reverse flow or pressure is not required to close the valve when the inlet flow stops. If reverse pressure is present it simply creates a tighter seal.



Series CKM is a normally-closed design requiring 1.5 PSI or less to open

Installation

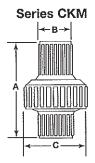
Because of its normally closed design the Plast-O-Matic CKM and CK Check Valves can be installed in any position; concern over the valve seat closing due to gravity (as with ball check designs) is of no consequence. Caution should be exercised to make certain that the direction of flow is correct. Threaded connections should never be made to metal piping and should always be wrapped with PTFE or other acceptable pipe sealant to effect a seal. The assembly need only be made hand tight followed by a one-quarter turn more with a strap wrench. DO NOT overtighten and DO NOT use a pipe wrench as a future valve fracture could result.

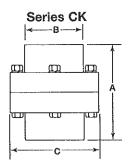
Dimensions and Material Availability

Series CKM - Molded Models: PVC, CPVC, GPP & PVDF

Pipe Size		A	111111	В	С		
Pipe Size (NPT)	in.	mm	in.	mm	in.	mm	
1/2"	3.8	97	1.3	33	2.4	62	
3/4"	4.1	105	1.6	39	2.8	72	
1"	4.7	120	1.9	48	2.8	72	

	Series	CK	Macl		Mode	ls: P	TFE
	3/4"	3.6	92	1.9	48	3.0	76
\rightarrow	1"	4.3	110	1.9	48	3.0	76





Pressure Temperature Ratings

Series CKM - Molded Models: PVC, CPVC, GPP & PVDF

Valve	Valve	Ive Maximum Working Pressure					- 5	- 4, 144	
Body	Diaphragm	77°F	(25°C)	140°F	(60°C)	180°F	(82°C)	280°F	(138°C)
Material	Material	Inlet	Back	Inlet	Back	Inlet	Back	Inlet	Back
D) (O	EPDM	150	100	150	100	NR	NR	NR	NR
PVC	FKM	150	100	150	100	NR	NR	NR	NR
GPP	EPDM	100	100	100	100	100	100	NR	NR
20% Glass Filled	FKM	100	100	100	100	100	100	NR	NR
D. D.C	EPDM	150	100	150	100	150	100	NR	NR
PVDF	FKM	150	100	150	100	150	100	60	60
ODUO	EPDM	150	100	150	100	150	100	NR	NR
CPVC	FKM	150	100	150	100	150	100	NR	NR

Series CK - Machined PTFE Models

DIE	EPDM	40	40	40	40	40	40	5	5
FIFE		40	40	40	40	40	40	5	5

Ordering Information For Series CKM & CK

		, .,			
Pipe	CKM - PVC FKM Seals	CKM - PP FKM Seals	CKM-PF FKM Seals	CKM-CPVC FKM Seals	CK-TF FKM Seals
Size	FKM Sears	LVM Seals	LVIN Seats	PRIVE Seals	FRIN Seals
1/2"	CKM050V-PV	CKM050V-PP	CKM050V-PF	CKM050V-CP	N.A.
3/4"	CKM075V-PV	CKM075V-PP	CKM075V-PF	CKM075V-CP	CK075V-TF
1"	CKM100V-PV	CKM100V-PP	CKM100V-PF	CKM100V-CP	CK100V-TF

Note: Threads are standard. For socket ends add "S" after seal material. (ex. CKM050VS-PV). For other body materials consult factory. Above shown with FKM (Viton®) Seals. For EPDM seals change "V" to "EP". N.A. = Not Available.

AUTHORIZED PLAST-O-MATIC DISTRIBUTOR



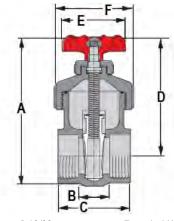
Part No: 2031-010 Valves Gate Valve

Desc: 1 PVC GATE VALVE THD FKM

MSRP: 47.11 **Part Code:** 200

Weight(lbs): 0.675 Weight(kg): 0.306 Weight(gm): 306
Size: 1" Color: GRAY Material: PVC

Connection Fipt **O-Ring** FKM



 $\mathbf{A} = 5-13/32$ $\mathbf{F} = 2-15/16$ $\mathbf{B} = 1 - 1/4$

 $\mathbf{C}\mathbf{v} = 44$

 $\mathbf{C} = 3-1/4$

 $\mathbf{D} = 4-9/16$

E = 2-5/8

Injection Molded Dimension References:

Values

G = (LAYING LENGTH) intersection of center lines to bottom of socket/thread; 90° elbows, tees, crosses; $\pm 1/32$ inch.

H = Intersection of center lines to face of fitting; 90° elbows tees, crosses; $\pm 1/32$ inch.

J = Intersection of center lines to bottom of socket/thread; 45° elbows; $\pm 1/32$ inch

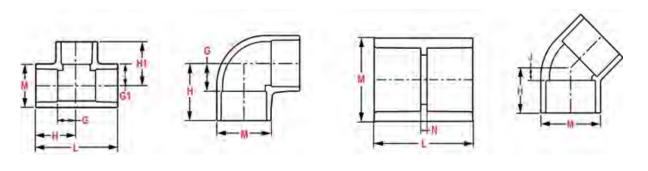
L = Overall length of fittings; $\pm 1/16$ inch.

M = Outside diameter of socket/thread hub; $\pm 1/16$ inch.

N = Socket bottom to socket bottom; couplings; $\pm 1/16$ inch.

 $W = \text{Height of cap}; \pm 1/16 \text{ inch}$

Typical Molded Dimension References



The information printed here is based on current information & product design at the time of publication and is subject to change without notification. Spears® ongoing commitment to product improvement may result in some variation. No representation, guarantees or warranties of any kind are as to its accuracy, suitability for particular application or results to be obtained thereform. For verification of technical data or additional information, please contact Spears® Technical Service Department :: WEST COAST : (818) 364-1611 - EAST COAST : (717) 938-9006

Figure LFG GAUGES & THERMOMETERS

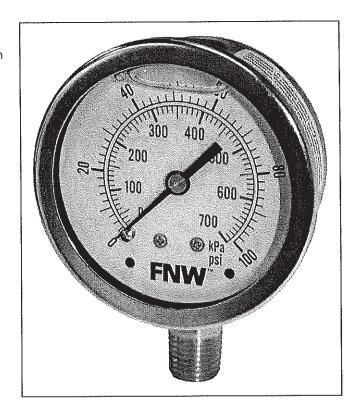


2-1/2" LIQUID FILLED GAUGE

Liquid-filled pressure gauges provide users with a number of advantages in certain measurement applications. They are ideally suited for uses on equipment where excessive vibration and pulsation are encountered, such as pumps, compressors, and machine tools.

Features:

- · Dual Scale (PSI and kPa)
- · +/- 1.5% of Full Scale Accuracy
- · 304SS Case and Crimp-On Bezel Ring
- · Glycerin Filled
- · Phosphor Bronze C-Shaped Bourdon Tube
- 1/4" OT 58 Brass MNPT Connection
- · OT 59 Brass Movement
- · Black Anodized Aluminum Pointer
- · White Aluminum Dial with Black and Red Markings
- · Tin/Copper Alloy Welding
- · Polycarbonate Lens
- · Buna N Socket Gasket and Fill Plug
- · Silicone Gasket at Lens (Non-wetted Part)
- · 75% of Full Scale Working Pressure
- · 25% Over-Pressure Limit
- -4°F to 150°F (-20°C to 65°C) Process and Ambient Temperature Limit
- IP65 Enclosure Rating

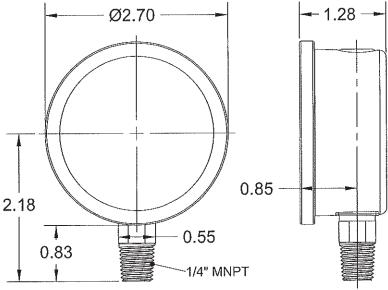


Dial Resolution

Range (PSI)	PSI Per Mark
0 to 30	0.5
0 to 60	1
-> 0 to 100	2
0 to 160, 200, 300	5

Part Numbers

Range (PSI)	Part Number
0 to 30	FNWLFG030L
0 to 60	FNWLFG060L
-> 0 to 100	FNWLFG0100L
0 to 160	FNWLFG0160L
0 to 200	FNWLFG0200L
0 to 300	FNWLFG0300L



DOC: FNWLFG09 Ver. 12/2012

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Enclosed Control (NEMA)



Detail Bill of Material

Negotiation No:

Change to R63/C, FLA=4-20

Project Name: General Order No:

SOLUCIA - NEW PUMP CONTROLS Alternate No:

Item No. Qty 9

Product **Enclosed Controls** Description

ECN18A4BHB-R63/BC12L3P67S29T11, NEMA - Freedom, NEMA 4X - Stainless Steel (304 Grade), 1 HP, 240V, Size 00, 120V/60 110V/50 Coil, Disconnect Switch - 30A 250v Class R, Drawing Number: 84-28786, LIST OF MATERIAL:, ECN18A4BHB - FVNR Combo Starter, Disc. Switch, STD-SSOL OLR w/CPT

ECN18A4BHB-R63/BC12L3P67S Catalog No

List of Materials

-R63/B-Solid State Overload, FLA 1-5-

S29-Covert Freedom Series Starter From 3 Phase to 1PH C1-Standard Size CPT, 120V/60HZ,110V 50HZ secondary w/2 primary & 1 secondary fuse

S3-HAND-OFF-AUTO Selector Switch

C12-2 Pole Interposing Relay, (Unwired without diagram) 120V(2NO/2NC)

Service Entrance Rating (Ground and Neutral)

L3-Lightning Arrestor Installed on Panel

P67-Green Run lights 1

T11-w/6 Terminal Points, (Unwired without diagram)

Item No. Qty Product

Description

Safety Switches

Safety Switches

DH224NWK Catalog No

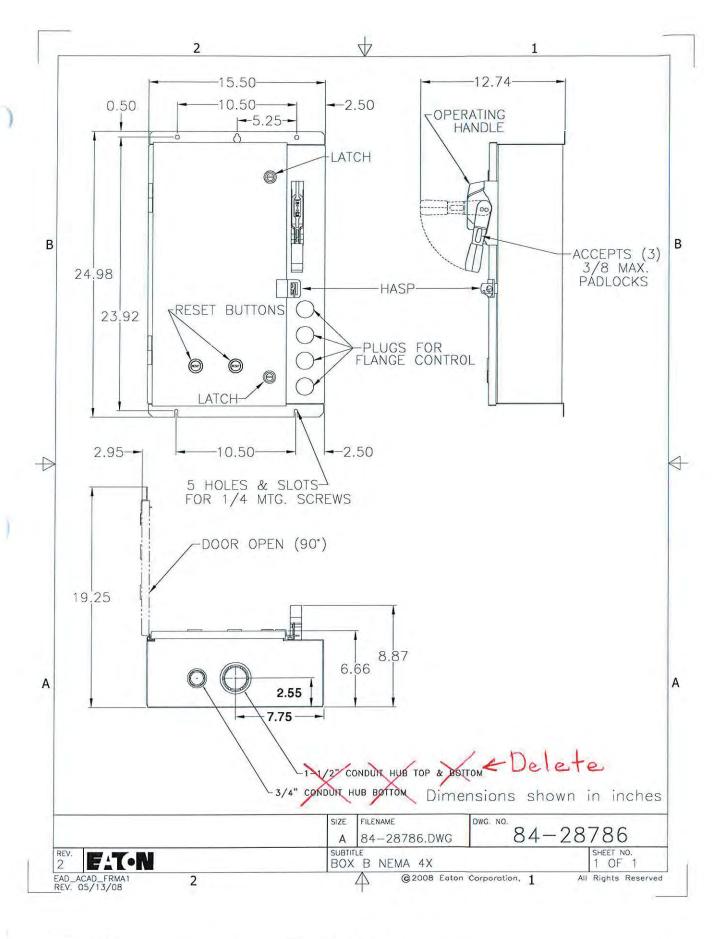
Qty

List of Materials

Heavy Duty Switch - Fusible, 3-Wire, 240 VAC, 200 A, NEMA 4X (304 Stainless)

Eaton Selling Policy 25-000 applies.

All orders must be released for manufacture within 90 days of date of order entry. If approval drawings are required, drawings must be returned approved for release within 60 days of mailing. If drawings are not returned accordingly, and/or if shipment is delayed for any reason, the price of the order will increase by 1.0% per month or fraction there of for the time the shipment is delayed.



GO/NEG-Alt-Date	:	Job Name:	
M4670622X7	K1-0000-8/4/2017	SOLUCIA - NEW PUMP CONTROLS	
Item Number:	Catalog Number: ECN18A4BHB-R63/BC12L3P67S	Designation:	







Product Description

Eaton's Freedom Series™ starters and contactors feature a compact, space-saving design, high strength, impact and temperature resistant insulating materials.

Features

- C440 solid-state electronic overload providing reliable, accurate and value-driven protection, including communication capabilities, while reducing inventory carrying costs with wide FLA adjustment (5:1) and selectable trip class
- Adjustable bimetallic ambient compensated overload relays with interchangeable heater packs—available in three basic sizes, covering applications up to 900 hp
- Fixed heater overloads optional
- A full line of snap-on accessories—top and side mounted auxiliary contacts, solid-state and pneumatic timers, and so on
- Straight-through wiring line lugs at top, load lugs at bottom
- Horizontal or vertical mounting on upright panel for application freedom

- Screw type power terminals have captive, backed-out self-lifting pressure plates with ± screws—reduced wiring time
- Accessible terminals for easy wiring. Optional fingerproof shields available to prevent electrical shock
- Top located coil terminals convenient and readily accessible. 45 mm contactor magnet coils have three terminals, permitting either top or diagonal wiring—easy to replace European or U.S. style starters or contactors without changing wiring layout
- Encapsulated dual voltage/ frequency magnet coils permanently marked with voltage, frequency and part number
- Designed to meet or exceed UL, CSA®, IEC, VDE, BS and other international standards and listings

Standards and Certifications

Note: See Tab 17 for additional information on standards and certifications that apply to all enclosed control products.

- UL Listed
- cUL® Listed (indicates appropriate CSA Standard investigation)
- · ABS Type Approved
- OSHPD Certified (OSP-0015-10)

Certified Type 2 Coordination

Eaton's Freedom Series NEMA starters are UL Certified to achieve IEC 947 Type 2 coordination against 100,000 A short-circuit fault currents. Any brand of properly selected fuse can be used. Type 2 coordination means that the starter will be suitable for further use following a short-circuit fault.

ISO 9001 Certification

When you turn to Eaton's products, you turn to quality. The International Standards Organization (ISO®) has established a series of standards acknowledged by 91 industrialized nations to bring harmony to the international quest for quality. The ISO certification process covers 20 quality system elements in design, production and installation that must conform to achieve registration. The enclosed control is manufactured in our Fayetteville, NC plant, and this facility is registered ISO 9001. This commitment to quality results in increased product reliability and total customer satisfaction.

Freedom NEMA contactors and starters are extremely rugged products built for any application. Their long electrical/mechanical life is extended through easy maintainability.

- Meets and exceeds all UL and CSA standards
- Sized based on standard NEMA size classifications
- Designed and built for a variety of demanding applications
- Easy coil change and inspectable/replaceable contacts
- Available open and in Type 1, 3R, 4, 4X, 7/9 and 12 enclosures

Short-Circuit Protection

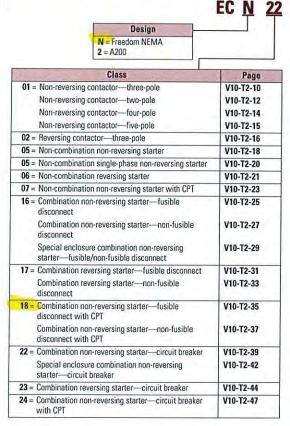
Fuses and inverse-time circuit breakers may be selected per Article 430, Part D of the National Electrical Code to protect motor branch circuits from fault conditions. If higher ratings or settings are required to start the motor, do not exceed the maximum as listed in Exception No. 2, Article 430-52.

Additional Reference

Other Magnet Coils	V10-T2-4
Cover Control	V10-T2-6
Dimensions	Tab 14
Accessories and Modifications	Tab 15
Renewal Parts	Tab 16
Technical Data and Specifications	Tab 17

Catalog Number Selection

NEMA Freedom Line Enclosed Control



		NE	MA Size		24.4	
A=	Size 00	3=	Size 3	7=	Size 7	ī
0 =	Size 0	4=	Size 4	8 =	Size 8	
1=	Size 1	5 =	Size 5	9 =	Size 9	
2 =	Size 2	6 =	Size 6	3		

Magnetic Coil Codes (System Voltage) ®

Code	Magnet Coil	Code	Magnet Coil	Code	Magnet Coil
A	120/60-110/50	К	240/50	U	24/50
В	240/60-220/50	L	380/50	V	32/50
C	460/60-440/50	M	415/50	W	48/60
D	575/60-550/50	P	12 Vdc	X	104-120/60
E	208/60	Q	24 Vdc	Y	48/50
G	550/50	R	48 Vdc	Z	By description
Н	277/60	S	125 Vdc		
J	208-240/60	T	24/60	_	

Notes

- ① Use for 0-3, HMCP 600 V applications only.
- When control power transformer modification codes (C1-C11) are used or when starter class includes CPT (that is ECN07, 18) see the table at right for system voltage code.

TTT		Modification/Overload	Codes
		ation codes, see Tab 15.	
	For solid-si	tate overload codes, Pag	e V10-T2-5
	Dis	sconnect Fuse Clip Rat	tings
	A = None	G = 100 A/600 V R	N = 600 A/600 V f
	B = 30 A/250 V R	H = 200 A/250 V R	P = 800 A/600 V I
	C = 30 A/600 V R	J = 200 A/600 V R	Q = 1200 A/600 V
	D = 60 A/250 V R	K = 400 A/250 V R	R = 1600 A/600 V
10.0	E = 60 A/600 V R	L = 400 A/600 V R	S = 2000 A/600 V
11 1	F = 100 A/250 V R	M = 600 A/250 V R	T = By description
		Circuit Breaker Rating	js –
	A = None	H = 150 A	R = 3000 A
	B = 3 A	J = 250 A	T = By description
	C = 7 A	K = 400 A	5 = 3 A ①
	D = 15A	L = 600 A	6 = 7 A ①
	E = 30 A	M = 800 A	7 = 15 A ①
	F = 50 A	N = 1000 A	8 = 30 A ①
10 11	W = 70 A	P = 1200 A	9 = 50 A ①
	G = 100 A	Q = 2000 A	I = 100 A ①
1 1	Cover Co	entrol	
10 1	Type 1 non-comb. (NEW BOX		
	Type 1 non-comb., Page V10- All others, Page V10-T2-8		
	Contact	tors	
	3 = Three poles	2.0	
			_1
	Coil Voltage and/or Control 1	Transformers	
Sei	code tables below		
Will be the second	Enclosure Type		
	eral purpose		
2 = Type 1—Ger 2 = Type 3R—Ra		UL .	
	tertight (painted steel)	010	
	atertight (304-Grade stainless stee	n l	
1VDE 4AVV	rrosion (non-metallic)	7	
 Type 4X—Co 	olted hazardous location		
Type 4X—Co Type 7/9—B Type 7/9—Ti	olted hazardous location nreaded hazardous location		
Type 4X—Co Type 7/9—B Type 7/9—T Type 12—Du	olted hazardous location nreaded hazardous location		

Control Power Transformer Codes (System Voltage)

Code	Primary	Secondary	
В	240/480-220/440 wired for 240 V	120/60-110/50	
C	240/480-220/440 wired for 480 V	120/60-110/50	
D	600/60-550/50	120/60-110/50	
E	208/60	120/60	
Н	277/60	120/60	
L	380/50	110/50	
М	415/50	110/50	
Q	208/60	24	
R	240/480-220/440 wired for 240 V	24	
S	240/480-220/440 wired for 480 V	24	
T	600/60	24	
U	277/60	24	
٧	380/50	24	
W	415/50	24	
Х	240/480/600 wired for 480 V	120	
Υ	240/480/600 wired for 480 V	24	
Z	By description	-	

C440 Solid-State Overload Modifications

Reliability and Improved Uptime

- · C440 provides the users with peace of mind knowing that their assets are protected with the highest level of motor protection and communication capability in its class
- Extends the life of plant assets with selectable motor protection features such as trip class, phase unbalance and ground fault
- · Protects against unnecessary downtime by discovering changes in your system (line/load) with remote monitoring capabilities
- Status LED provides added assurance that valuable assets are protected by indicating the overload operational status

Flexibility

- · Improves return on investment by reducing inventory carrying costs with wide FLA adjustment (5:1) and selectable trip
- · Design incorporates built-in ground fault protection thus eliminating the need for separate CTs and modules
- Flexible communication with optional I/O enables easy integration into plant management systems for remote monitoring and control

Monitoring Capabilities

- Individual phase currents **RMS**
- Average three-phase current RMS
- Thermal memory
- Fault indication (overload, phase loss, phase unbalance, ground fault)

5 1

Safety

- IP20 rated terminal blocks
- · Available in Eaton's industry leading FlashGard MCCs
- Tested to the highest industry standards such as UL, CSA, CE and IEC
- · RoHS compliant

For solid-state overload enclosed control, add R63 or R64 modification code after the base Catalog Number. (Example, ECN0501AAA-R63/B).

Modification	IEC Size	NEMA Size	Full Load Current Adjustment Range (A)	Three-Phase without Ground Fault Auto/Manual Reset Overload Selectable Class 10/20/30	Three-Phase with Ground Fault Auto/Manual Reset Overload Selectable Class 10/20/30
Solid-state electronic overload relay ①	B and C	00	0.33-1.65 @	R63/A	R64/A
			1–5	R63/B	R64/B
			4–20	R63/C	R64/C
	C and D	0 and 1	0.33-1.65 @	R63/A	R64/A
			1–5	R63/B	R64/B
			4-20	R63/C	R64/C
			9–45	R63/D	R64/D
	D	2	9-45	R63/D	R64/D
	D, F and G	3	20-100	R63/E	R64/E
	G	4	28-140	R63/F	R64/F
	N/A	5	60-300	R63/G	R64/G
	N/A	6	120-600	R63/H	R64/H

Notes

- ① Features:
 - · Self-powered
 - Phase loss protection
 - Current adjustment knob
 - ±1% repeat accuracy
 - 1NO and 1NC isolated contacts
- Not UL Listed.

Type 1 Combination and All Type 3R, 4X and 12 Cover Control

- Cover control for combination starters uses 10250T style devices as standard
- · Selector switches are maintained with lever operators
- Pushbuttons are momentary type with extended pushbutton
- · The kit includes hardware and connecting wires (where possible)
- · For factory installed control devices other than shown below, refer to modification codes, Tab 15

10250T Cover Control Kits

Type 1 Combination and All Type 3R, 4X and 12 Cover Control 0







Description	Factory Installed Flange Control Position 9 Cover Control Code	Field Installation Kits Catalog Number	
Non-Reversing			
No cover mounted pilot devices	A	-	
START/STOP pushbuttons	В	C400T1	
With red RUN pilot light	C	-	
With red RUN/green OFF lights	D	-	
ON/OFF pushbuttons	E	C400T2	
With red RUN pilot light	F	-	
With red RUN/green OFF lights	G	1 <u>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 </u>	
HAND/OFF/AUTO selector switch	H	C400T12	
With red RUN pilot light	J		
With red RUN/green OFF lights	K	-	
START pushbutton	L	C400T3	
ON pushbutton	M	C400T4	
OFF pushbutton	N	C400T5	
Red RUN pilot light	P	C400T9 @	
Green OFF	Q	C400T10 @	
Red RUN/green OFF pilot lights	R	C400T11 @	
START/STOP selector switch	S	C400T13	
With red RUN pilot light	T	9/1	
With red RUN/green OFF lights	U	_	
ON/OFF selector switch	V	C400T14	
With red RUN pilot light	W	-	
With red RUN/green OFF lights	X	-	
Reversing			
No cover mounted pilot devices	A	-	
FOR/REV/STOP pushbuttons	В	C400T6	
With two red pilot lights	C	(-)	
With two red/one green pilot lights	D	-	
UP/STOP/DOWN pushbuttons	E	-	
With two red pilot lights	F	-	
FOR/OFF/REV selector switch	н	C400T15	
With two red pilot lights	J	-	
With two red/one green pilot lights	К	-	
Two red pilot lights	P	3	
One green pilot light	Q	C400T10@	
Two red/one green pilot lights	R	·	
OPEN/OFF/CLOSE selector switch	V	C400T16	
With two red pilot lights	W	-	
With two red/one green pilot lights	X	-	

- ① For Type 1 non-combination filed installation kits, see Page V10-T2-7.
- Add code letter from the table below to catalog number for voltage—kits only. Example: C400T9B.

Rating	Code Letter	Rating	Code Letter	Rating	Code Letter
120 V 60 Hz	A	277 V 60 Hz	н	480 V 60 Hz	C
208V 60 Hz	E	380 V 50 Hz	L	600 V 60 Hz	D
240 V 60 Hz	В				

³ Order quantity (2) of C400T10.

Product Selection

When Ordering Supply

- Catalog number
- Heater pack number (see selection table, Pages V5-T2-40 to V5-T2-42) or full load current

Type AN16/AN56 NEMA—Manual or Automatic Reset Overload Relay—Non-Reversing and Reversing 0







			Maxin	num UL H	orsepow	er ②			Three-Pole	Three-Pole	Vertical
	Continuous	Service-Limit	Single	-Phase	Three-	Phase			Non-Reversing ®	Reversing ^③	Reversing ③
NEMA Size	Ampere Rating	Current Rating (Amperes) ⁽⁴⁾	115V	230V	208V	240V	480V	600V	Catalog Number	Catalog Number	Catalog Number
00	9	11	1/3	1	1-1/2	1-1/2	2	2	AN16AN0_C	AN56AN0_C	_
0	18	21	1	2	3	3	5	5	AN16BN0_C	AN56BN0_C	AN56BNV0_
1	27	32	2	3	7-1/2	7-1/2	10	10	AN16DN0_B	AN56DN0_B	AN56DNV0_
2	45	52	3	7-1/2	10	15	25	25	AN16GNO_B	AN56GN0_B	AN56GNV0_
3	90	104	-	-	25	30	50	50	AN16KNO_	AN56KNO_	AN56KNV0_
4	135	156	-	-	40	50	100	100	AN16NNO_	AN56NNO_	AN56NNV0_
5	270	311	-	-	75	100	200	200	AN16SN0_B	AN56SN0_B	-
6	540	621	-	-	150	200	400	400	AN16TNO_C	AN56TNO_C	-
7	810	932	-	-	200	300	600	600	AN16UN0_B	AN56UN0_B	_
8 6	1215	1400	-	-	400	450	900	900	AN16VN0_B	AN56VNO_B	-

Magnet Coils-AC or DC

Starter coils listed in this section also have a 50 Hz rating as shown in the adjacent table. Select required starter by catalog number and replace the magnet coil alpha designation

in the catalog number (_) with the proper code suffix from the table.

For Sizes 00–2 and 5–8, the magnet coil alpha designation will be the next to last digit of the listed catalog number.

EXAMPLE: For a 380V, 50 Hz coil, change AN16BN0_C to AN16BN0LC. For all other sizes, the magnet coil alpha designation will be the last digit of the listed catalog number.

For DC Magnet Coils, see Accessories, Pages V5-T2-28 and V5-T2-29.

AC Suffix

Coil Volts and Hertz	Code Suffix	
120/60 or 110/50	A	
240/60 or 220/50	В	
480/60 or 440/50	C	
600/60 or 550/50	D	
208/60	E	-00
277/60	Н	
208-240/60 ®	J.	
240/50	К	

Coil Volts and Hertz	Code Suffix	
380-415/50	L	
550/50	N	
24/60, 24/50 ②	T	
24/50	U	
32/50	V	
48/60	w	
48/50	Y	
48/50	Y	

Notes

- ① Starter catalog numbers do not include heater packs. Select one carton of three heater packs. Heater pack selection, Pages V5-T2-40 to V5-T2-42.
- Maximum horsepower rating of starters for 380V 50 Hz applications:

NEMA Size	00	0	1	2	3	4	5	6	7	8	
Horsepower	1-1/2	5	10	25	50	75	150	300	600	900	

- 3 Underscore (_) indicates coil suffix required, see AC Suffix table.
- The service-limit current ratings represent the maximum rms current, in amperes, which the controller shall be permitted to carry for protracted periods in normal service. At service-limit current ratings, temperature rises shall be permitted to exceed those obtained by testing the controller at its continuous current rating. The current rating of overload relays or trip current of other motor protective devices used shall not exceed the service-limit current rating of the controller.
- © Common control. For separate 120V control, insert letter **D** in 7th position of listed catalog number. Example: AN56VN**D**0CB.
- NEMA Sizes 00 and 0 only.
- NEMA Sizes 00 and 0 only. Sizes 1-8 are 24/60 only.

September 2011 Sheet 30017

Freedom Line-General Description

Motor Starters and Contactors—Low Voltage

Motor Starters—Electromechanical

NEMA Motor Starters Freedom Series



NEMA AN16DNOAB **NEMA Size 1**

General Description

The Freedom Series starters and contactors listed in this catalog feature a compact, space-saving design and high strength, impact and temperature-resistant insulating materials. Starters and contactors are available in the NEMA (National Electrical Manufacturers' Association) style. The NEMA devices are sized based on traditional NEMA classifications.

Features

Freedom NEMA

- Adjustable bimetallic ambient compensated overload relays with interchangeable heater packs-available in three basic sizes, covering applications up to 900 hp-reducing the number of different contactor/overload relay combinations that have to be stocked. Fixed heater overloads are optional
- Electronic overload relay (C440) available as a stand-alone unit and assembled with a Freedom contactor
- A full line of snap-on accessoriestop and side mounted auxiliary contacts, solid-state and pneumatic timers, etc.
- Straight-through wiring-line lugs at top, load lugs at bottom
- Horizontal or vertical mounting on upright panel for application freedom
- Screw type power terminals have captive, backed-out self-lifting pressure plates with ± screwsreduced wiring time
- Accessible terminals for easy wiring. Optional fingerproof shields available to prevent electrical shock
- Top located coil terminals convenient and readily accessible. 45 mm contactor magnet coils have three terminals, permitting either top or diagonal wiring—easy to replace European or U.S. style starters or contactors without changing wiring layout
- Designed to meet or exceed NEMA, UL, CSA, VDE, BS and other international standards and listings
- American engineering-built by Eaton, using the latest in statistical process control methods to produce high quality, reliable products
- Sized based on standard NEMA classifications
- Easy coil change and inspectable/ replaceable contacts
- Available in open and NEMA Type 1, 3R, 4/4X and 12 enclosures

Standards and Certifications

- Standard: Designed to meet or exceed UL, NEMA and CSA
- UL listed: UL File #E1491, Guide #NLDX—Open; UL File #E176513-**Enclosed Combination Motor Con**trollers; UL File #E19224—Enclosed Non-Combination Motor Controllers; UL File #E195239—Enclosed Power Conversion Equipment
- CSA certified: CSA File #LR353, Class #321104 Open and NEMA 1 Enclosed

Certified Type 2 Coordination

Eaton's Freedom Series NEMA starters are now UL certified to achieve IEC 947 Type 2 coordination against 100,000A short-circuit fault currents. Any brand of properly selected fuse can be used. Type 2 coordination means that the starter will be suitable for further use following a short-circuit fault.

Short-Circuit Protection

Fuses and inverse-time circuit breakers may be selected per Article 430, Part D of the National Electrical Code® to protect motor branch circuits from fault conditions. If higher ratings or settings are required to start the motor, do not exceed the maximum as listed in Exception No. 2, Article 430.52.

Motor Starters and Contactors—Low Voltage Motor Starters—Electromechanical

Freedom Line—Technical Data—NEMA Contactors and Starters

FAT.N

September 2011 Sheet 30018

NEMA Sizes 00-8

Table 30.3-1. AC Coil Data

NEMA		Maximum	P.U. V	olts	P.U.			Seale	i		D.O. \	/olts	Maximum Operation	P.U.	D.O.
Sizes	Voltage	hp Rating	Cold	Hot	VAR	VA	Watts	VAR	VA	Watts	Cold	Hot	Rate Operations/Hour	Time ms	Time ms
00	200 230 460 575	1-1/2 1-1/2 2 2	74%	78%	64	80	49	7.1	7.5	2.4	45%	46%	12,000	12	12
0	200 230 460 575	3 3 5 5	74%	78%	78	100	65	9.2	10	3.1	45%	46%	12,000	12	12
1	200 230 460 575	7-1/2 7-1/2 10 10	74%	78%	210	230	95	27	28	7.8	49%	50%	12,000	20	14
2	200 230 460 575	10 15 25 25	74%	78%	210	230	95	27	28	7.8	49%	50%	12,000	20	14
3	200 230 460 575	25 30 50 50	72%	76%	374	390	112	48	49.8	13	50%	52%	7200	14	11
4	200 230 460 575	40 50 100 100	73%	76%	1132	1158	240	96	100	27.2	54%	56%	2400	28	14
5	200 230 460 575	75 100 200 200	75%	77%	1132	1158	240	96	100	27.2	63%	64%	2400	25	13

General Coil Data

- Coil Offering—tape wound:
 - □ NEMA Sizes 00-0
 - □ UL insulation rating: Class 130 (B)
- Coil Offering—encapsulated:
 - □ NEMA Sizes 1-3
 - □ UL insulation rating: Class 130 (A)
- Coil Offering—encapsulated:
 - □ NEMA Sizes 4-5
 - □ UL insulation rating: Class 155 (F)
- **■** Operational Limits:
 - □ 85% to 110% of rated voltage—AC
 - □ 80% to 110% of rated voltage—DC

Table 30.3-2. Coil Data Notes

P.U.	Pickup time is the average time taken from closing of the coil circuit to main contact touch.
D.O.	Dropout time is the average time taken from opening of the coil circuit to main contact separation.
Cold	Coil data with a cold coil.
Hot	Coil data with a hot coil.

All data is based on a standard contactor with no auxiliary devices and a 120 Vac or 24 Vdc magnet coil. Coil data has a ±5% range depending on the application, therefore specific data may vary.

C—Control Power Transformer, Power Supplies, Control Relays, Cover Control (not elsewhere defined), Current Transformers, Compelling Relay, Control Wiring, Control Circuit Breaker, Separate Control, Customer-Supplied Components, Contactors, Counter, E-Stop Relay, DC/AC Interface, Separate Source Disconnect, Bypass Contactors

Modification	Description	Catalog Number Suffix		
Control power transformers	Standard size control transformer, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C1	K	
Make sure eighth character specifies orimary/secondary voltage	Standard size control transformer, 24V/60 Hz secondary with two primary and one secondary fuse	C2		
	50 VA extra capacity CPT 120V/60 Hz, 110V/50 Hz with two primary and one secondary	C42		
	100 VA extra capacity CPT, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C3		
	100 VA extra capacity CPT, 24V/60 Hz secondary with two primary and one secondary fuse	C4		
	200 VA extra capacity CPT, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C5		
	200 VA extra capacity CPT, 24V/60 Hz secondary with two primary and one secondary fuse	C6		
	300 VA extra capacity CPT, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C7		
	400VA extra capacity CPT, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C8		
	1kVA extra capacity CPT, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C9		
	2kVA extra capacity CPT, 120V/60 Hz, 110V/50 Hz secondary with two primary and one secondary fuse	C10		
	Control transformer—order by description	C11		
	CPT with power supply for XT	C34		
ower supplies (XT only)	Separate control 120 Vac to 24 Vdc	C27		
	Power supply with extra capacity—order by description	C28		
Control relays	Four-pole interposing relay, 600V (2NO/2NC)	C12 <		
	Four-pole, unwired, A600 rtg.—2NO-2NC	C14		
	Eight-pole, unwired, A600 rtg.—4NO-4NC	C15		
	Control relay—order by description	C16		
	Three-wire control module (C30 lighting)	C18 ①		
	Two-wire control relay for mechanical/magnetic lighting contactors	C20 ①		
over control	Convert position seven to E30 type cover control	C17		
	Lock-off attachment added on cover control	C19		
	Change to M22 (22 mm) cover controls	C29		
urrent transformer(s)	In phase 1	C21		
	In phases 1 and 2	C22		
	In 3 phases	C23		
ompelling relay	<u></u>	C25		
ontrol wiring	Omit control wiring	C26		
opressore Stiffing	With separate control wiring and two 250V fuses in holder	C30		
	With common control wiring and two 600V (Class C) fuses in holder	C31		
	Control wiring type—order by description	C33		
ontrol circuit breaker	Order by description	C32		
eparate control	Wired for separate control (reduced voltage)	C35		
ustomer supplied components	Customer supplied components to be installed	C36		
addition ouppilou components	Systems. Supplies somponents to so metallias	A 1944		

Note

1 Not available for XT starters.

E—Enclosure Modifications, Elapsed Time Meter, Duplex Outlet, Enclosure for Starter, Enclosure Clear Cover, Enclosure Material

Modification	Description	Catalog Number Suffix
Enclosure modifications	Oversize enclosure	E3
	Enclosure—order by description	E4
	Enclosure with pole mounting hardware	E5
	Removable end plates	E6
	Service entrance rating (ground/neutral banding SE labels)	E7 -
	Service entrance rating with ground bar	E8
	Safety door interlock	E11
Elapsed time meter	Wired across coil, Type 1, 12	E9
	Wired across coil, Type 3R, 4X	
	Elapsed time meter—order by description	E10
Duplex outlet	Convenience duplex outlet mounted in side of enclosure	E12
Enclosure for starter ①	Horizontal combination starter, Size 0–2	E13
	Narrow combination starter, Size 0-2	E14
Enclosure clear cover for XT	Clear cover for Halyester enclosure non-metallic	E19
Enclosure material	Convert to 316 stainless steel	E16
	Convert from Type 3R to stainless steel	E21
rrigation pump panel	Bottom entry	E17

F-Fuse Clips, Fuse Blocks, Fungus Protection, Fingerproof Covers, EMI Filter

Modification	Description	Catalog Number Suffix
Fuse clips ®	Change fuse clips in position eight to Class J	F1
	Change fuse clips in position eight to Class H and K (30A and 60A only)	F2
Fuse blocks	Power fuses included—order by description	F4
	30A control circuit fuseholder (KTK) mounted on panel (unwired), fuse not supplied	F5
	30A control circuit fuseholder mounted on panel (unwired), FNOR fuse supplied	F6
	Three-pole power fuseholder mounted on front contactor	F7
	Separate fusing of control power supply—IT.	F8
	Blown fuse indicator (not for PFC)	F10
	Class CC fuses	F21

G-Ground Fault Relay, Grounding

lodification Description	
Ground fault relay (wired)	G1
Ground fault relay (unwired)	G3
Special grounding—order by description	G 5
Ground fault protection and monitoring panel	G 7
	Ground fault relay (wired) Ground fault relay (unwired) Special grounding—order by description

Note

Not available for XT starters.

L-Labels and Lighting Contactors

odification Description		Catalog Number Suffix
Lighting arrestor	Lighting arrestor installed in enclosure on panel	L3
Lugs	Special lugs (order by description)	L9
Carton label	Customer marking—specify	L10
Lighting contactors	1 NC pole	L21
	2 NC pole	L22
	3 NC pole	L23
	4 NC pole	L24
	5 NC pole	L25
	6 NC pole	L26
	7 NC pole	L27
	8 NC pole	L28
	Three-wire 120 Vac	L29A
	Three-wire 240 Vac	L29B
	Three-wire 24 Vac	L29C
	Three-wire 24 Vdc	L29D
	Two-wire 120 Vac	L29E
	Two-wire 240 Vac	L29F
	Two-wire 24 Vac	L29G

N-Nameplates

Modification Description		Catalog Number Suffix
Nameplates	Enclosure nameplates	N1

.

Accessories and Modification Codes

Modification Codes

P—Pilot Lights, Pushbuttons, Phase Relays, Potential Transformers, Power Factor Correction Capacitors, Program Timer, Percentage Timer, Photocell

Modification	Description	Catalog Number Suffix
Push-to-test pilot lights	Push-to-test pilot light (red RUN) wired to coil	P1
	Push-to-test pilot light (green OFF) wired in series with auxiliary contact	P2
	Combination of P1 and P2 above	P3
	Push-to-test pilot light (amber RUN) wired to coil	P4
	Push-to-test pilot light—green RUN	P49
	Push-to-test pilot light—green STOP	P57
Pushbuttons	EMERGENCY STOP—mushroom head	P5
	Pushbutton omitted	P6
	START/STOP	P7
	ON/OFF	P8
	START	P9
	ON	P10
	OFF	P11
	FORWARD/REVERSE/STOP	P12
	FAST/SLOW/STOP	P13
	FAST/OFF/SLOW	P14
	HIGH/LOW/STOP	P15
	HIGH/LOW	P16
	SLOW/FAST	P17
	Pushbutton with legend plate	P18
	UP/STOP/DOWN	P52
	OPEN/STOP/CLOSE	P53
	Red STOP pushbutton	P72
	START/STOP pushbuttons (located in top two holes)	P73
	Green START pushbutton	P74
ilot lights	With one amber pilot light marked POWER AVAILABLE wired to load side of two fuses or circuit breaker	P19
	Pilot light (amber RUN) wired to coil	P20
	With one red pilot light marked RUN wired thru NO auxiliary contact	P21
	With one push-to-test red light marked RUN Wired thru NO auxiliary contact	P22
	Pilot light—red RUN	P23
	Pilot light—red ON	P24
	Pilot light—green OFF	P25
	Pilot light—order by description	P26
	Pilot light—red STOP	P29
	Pilot light—green STOP	P61
	FORWARD/REVERSE red pilot lights	P62
	UP/DOWN red pilot lights	P63
	OPEN/CLOSE red pilot lights	P64
	HIGH/LOW red pilot lights	P65
	FAST/SLOW red pilot lights	P66
	Green RUN light	P67
	LED bulbs	P68
	Blue OVERLOAD light	P69
	Amber fault pilot light	P71

Accessories and Modification Codes

Modification Codes

R—Ramp, Relays, Solid-State Electronic Overload Relays, Resets, Overload Relay Modifications, Reversing, DeviceNet Interface, continued

neversing, DeviceMet inte			Full Load Current	Three-Phase without Ground Fault Auto/Manual Reset Overload	Three-Phase with Ground Fault Auto/Manual Reset Overload	
Modification	IEC Size	NEMA Size	Adjustment Range (A)	Selectable Class 10/20/30	Selectable Class 10/20/30	
Solid-state electronic overload relay ①	B and C	00	0.33-1.65 ②	R63/A	R64/A	
$\rightarrow \times \times \rightarrow$	X	XX	15 X X	R63/B	R64/B	
-		\rightarrow	4-20	R63/C	R64/C	
	C and D	0 and 1	0.33-1.65 ②	R63/A	R64/A	
			1–5	R63/B	R64/B	
			4-20	R63/C	R64/C	
			9-45	R63/D	R64/D	
	D	2	9–45	R63/D	R64/D	
	D, F and G	3	20–100	R63/E	R64/E	
	G	4	28-140	R63/F	R64/F	
	N/A	5	60-300 ③	R63/G	R64/G	
	N/A	6	120-600 @	R63/H	R64/H	
Modification	Description				Catalog Number Suffix	
Resets ®	Change extern	R5				
	Internal reset-	R6				
	Overload reset	R7				
	Manual reset	R44				
	Auto reset onl	R45				
	Internal trip in	R47				
	External reset	R48				
	External reset	R49				
	N3R reset boo	R71				
Reversing ®	Reversing contactor/starter				R54	
Overload relay mods	Anti plug-in	R53				
DeviceNet interface	DeviceNet into	R69				
	Standard rese		R65			
	Lighted reset f	R66				
	Trip indicator f	or DeviceNet			R67	

Notes

- ① Features:
 - · Self-powered,
 - · Phase loss protection
 - Current adjustment knob
 ±1% repeat accuracy
 - 1NO and 1NC isolated contacts
- Not UL Listed
- NEMA Size 5 starter available with 60–300A panel mounted CTs. Starter as an assembled unit with 1–5A C440 overload relay (C440A1A005SELAX or C440A2A005SELAX).
- NEMA Size 6 starter available with 120-600A panel mounted CTs. Starter as an assembled unit with 1-5A C440 overload relay (C440A1A005SELAX or C440A2A005SELAX).
- S Not available for XT starters.

S—System Voltage, Selector Switches, Suppressor, Incomplete Sequence Protection, Single-Phase Jumper, Surge Capacitor, Speed Potentiometer

Modification	Description	Catalog Number Suffix
System voltage selection	System voltage selection for internal components	S1
	/H1 208V 60 Hz	
	/H2 240V 60 Hz	
	/H3 277V 60 Hz, single-phase	
	/H4 480V 60 Hz	
	/H5 600V 60 Hz	
	/H6 796V 60 Hz	
	/H7 220V 50 Hz	
	/H8 380V 50 Hz	
	/H9 415V 50 Hz	
	/H10 550V 50 Hz	
	/H11 660V 50 Hz	
	/H12 380V 60 Hz	
	/H13 1500V 60 Hz	
	System voltage selection—specify on order	S2
Selector switches ①	HAND/OFF/AUTO	S3 <
	HAND/AUTO	S4
	HAND/OFF/AUTO selector switch with one red RUN pilot light	S5
	RUN/OFF/AUTO	S6
	AUTO/OFF/TEST	S7
	AUTO/OFF/TEST selector switch with one red RUN pilot light	S8
	AUTO/OFF/TEST selector switch with one red RUN pilot light and one green pilot light	S9
	OFF/AUTO	S10
	START/STOP	S11
	OFF/ON	S12
	HIGH/LOW	S13
	FAST/OFF/SLOW	S14
	SLOW/FAST	S15
	FORWARD/REVERSE	S16
	HIGH/OFF/LOW	S17
	HIGH/LOW/OFF/AUTO	S18
	Selector switch omitted (pumps only)	S19
	HAND/OFF/AUTO spring return from left	S21
	OPEN/OFF/CLOSE	S41
	FORWARD/OFF/REVERSE	S42
	FAST/OFF/SLOW/AUTO	S43
	Selector switch omitted (pump panels only)	S19
	Selector switch—order by description	S40
	RVSS/BYPASS (soft starters only)	S44
	LOCAL/REMOTE selector switch	S45
	RUN/OFF selector switch	S46
Suppressor	Transient suppressor mounted on magnet coil	S24
Surge suppression	MOV (IT.)	S20
Sequence timer	Sequence timer (pump panels)	S26
Sequence protection	Incomplete sequence protection	S27
ump	480V BP9000 pump	S28
Single-phase	Convert contactor or starter from three-phase to single-phase— install jumper	S29 -
	Single-phase rev. 120V	S30
	Single-phase rev. 240V	S31
Surge capacitor	Surge capacitor wired to disconnect line side	S37

Note

⁽ECL04, ECL13, ECL15).

15.2

Accessories and Modification Codes

Modification Codes

T-Timers, Time Delay Relays, Terminal Blocks, Terminal Points, Ring Lug Connections

Modification	dification Description		
Timers	Pneumatic timer installed on contactor, unwired, 30 seconds maximum	T1	
	Pneumatic timer installed on contactor, unwired, 180 seconds maximum	T2	
	Pneumatic timer mounted in enclosure, unwired, 180 seconds maximum	T3	
	Solid-state ON delay timer (1–30 seconds)	T4	
	Solid-state ON delay timer (30–300 seconds)	T5	
	Timer—order by description	T25	
Time delay relays	Time delay relay, 3 minutes maximum, unwired, ON DELAY	T6	
	Time delay relay, 3 minutes maximum, unwired, OFF DELAY	T7	
	Time delay low voltage release relay	T8	
Terminal blocks	With one single circuit terminal block, unwired	Т9	
	With two single circuit terminal block, unwired	T10	
Terminal points	With 6 terminal points, unwired	T11	
	With 12 terminal points, unwired	T12	
	With 18 terminal points, unwired	T13	
	Terminal point per customer specification, unwired (price each)	T14	
	Terminal point per customer specification, wired (unwired without customer diagra	m) T15	
	Three terminals mounted between contactor and overload for power factor capacitors—Sizes 0–2	T21	
	Three terminals mounted between contactor and overload for power factor capacitors—Sizes 3–4	T22	
	Quick-connect terminals added to DP contactor/starter	T23	
Ring lug connections	Ring lug connections on power wires	T16 ①	
	Ring lug connections on control wires		



U-Undervoltage Relay, Time Delay Undervoltage Relay

odification Description	
Undervoltage relay, non-adjustable	U1
Undervoltage relay, adjustable	U2
Time delay undervoltage relay, non-adjustable	U4
Time delay undervoltage relay, adjustable	U5
Under- and overvoltage relay	U7
	Undervoltage relay, non-adjustable Undervoltage relay, adjustable Time delay undervoltage relay, non-adjustable Time delay undervoltage relay, adjustable

Note

Not available for XT starters.

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Home > All Products > Cushloning, Peanuts and Foam > VCI Products > VCI Emitter Disks

VCI Emitter Disks - 5 Cu. Ft.

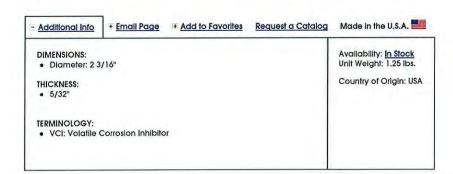


Efficient like mothballs. Provide continuous corrosion protection for exposed metals in closed areas.

- For shipping containers, electrical boxes and telecommunications equipment.
- · Works well in polluted or humid environments.
- · Easy to install Just peel off adhesive strip and apply to any flat surface.
- Non-toxic and safe to handle. Last up to 2



MODEL	DISK COVERAGE	QTY./	./ LBS./	PRICE PER CARTON		RTON	ADD TO
NO.	DISK COVERAGE	CTN.	CTN.	1	3	6+	CART
S-15843	5 Cubic Feet	50	1	\$159	\$149	\$139	1 ADD





Powering Business Worldwide

Safety Switches

Safety Switch General Information

Global Specifications

System Voltage 240 VAC

Switch Type Single Throw - Heavy Duty

Poles/Blades 2-Pole Amperage 200

Protection Fusible with Neutral

Enclosure Type NEMA 4X (304 Stainless)

Special Paint No Paint
Fuse Clips Standard
Switch Lugs Standard

Fungus Proof Treatment N
Lock-On Provision N
Trapped Key Interlock None
Upper Viewing Window None
Fuse Pullers N
Control Pole N

Ground Lugs Standard

Stainless Mechanism N
Mill Duty N

Cover Controls

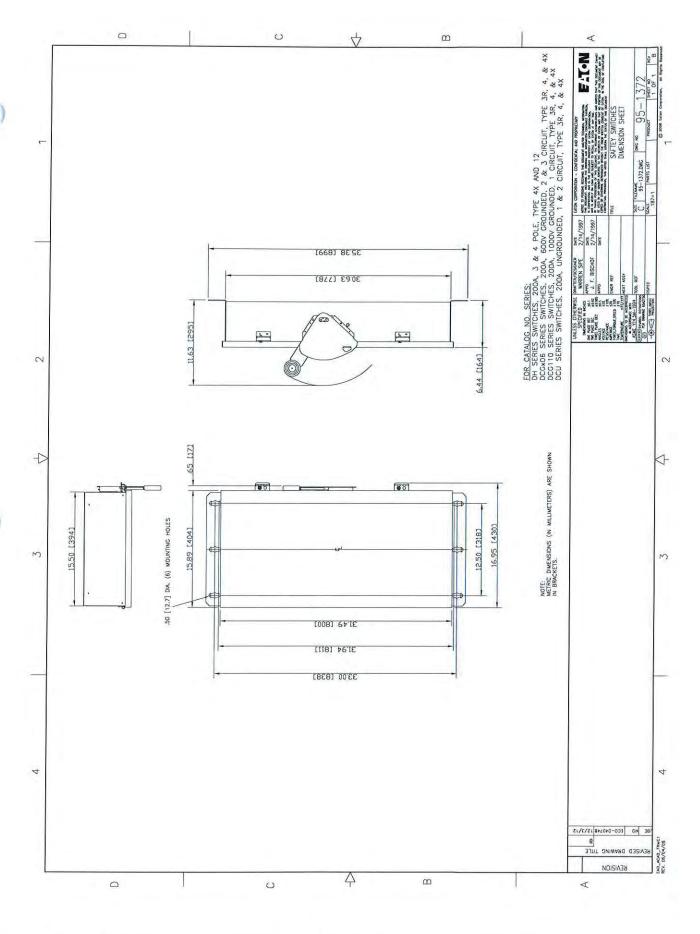
QUANTITY DESCRIPTION

Nameplate

Safety Switch Catalog No.

DH224NWK

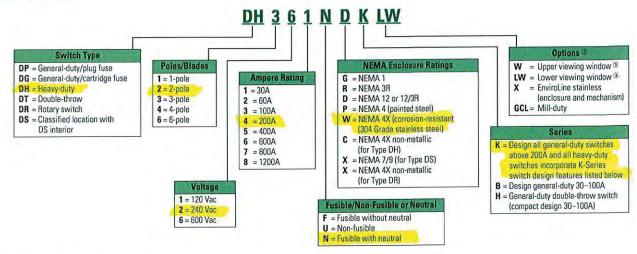
The information on this document is created by Eaton Corporation. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.	PREPARED BY MIKE KIMBROUGH	DATE 8/4/2017			
	APPROVED BY	DATE	JOB NAME SOLUCIA DESIGNATION	A - NEW PUMP CONTROLS	3
	VE	RSION	TYPE	DRAWING TYPE	
	1.	0.0.1	Safety Switch General Information	Customer Appr.	
NEG-ALT Number	REVISION	DWG SIZE	G.O.	ITEM	SHEET
M4670622X7K1-0000	0	A		41	1 of 1



GO/NEG-Alt-Date	:	Job Name:	
M4670622X7	K1-0000-8/4/2017	SOLUCIA - NEW PUMP CONTROLS	
Item Number:	Catalog Number: DH224NWK	Designation:	

Catalog Number Selection

Safety Switch

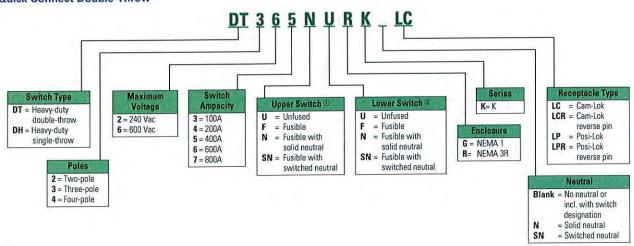


Notes

- Always verify the number of poles and wires required since catalog numbers may appear in multiple tables.
- See Pages V2-T1-17 through V2-T1-20 for additional Flex Center options.
- Effective August 2003, 30—100A window switches are replaced by a full view window that allows blade position verification and blown fuse indication. See Page V2-T1-37 for catalog numbers. This table is intended for use in breaking down existing catalog numbers. It is not intended for building new catalog numbers.

A factory-installed ground lug is supplied on all NEMA 4, 4X and 12 safety switches, as well as all 400A and higher NEMA 1 and 3R safety switches. A factory-installed ground lug is also supplied on all heavy-duty NEMA 1 and 3R 30-200A switches that do NOT have a factory-installed neutral.

Quick Connect Double-Throw



Notes

- When upper and lower switches are the same, the switch configuration is consolidated in one letter (e.g., "U" not "UU"). Also, a switch with a neutral will have either a solid neutral or a switched neutral, not both. Lastly, a switched neutral pole is never fused.
- This field is only used when a switch is completely non-fused.
 This table is intended for use in breaking down existing catalog numbers. It is not intended for building new catalog numbers.

Safety Switches

Heavy-Duty Safety Switch



Heavy-Duty

Product Description

- 30–1200A
- 600 Vac, 600 Vdc maximum
- Horsepower rated
- Fusible and non-fusible switches are 100% load break and 100% load make rated
- The continuous load current of fusible switches is not to exceed 80% of the rating of fuses employed in other than motor circuits. Non-fusible switches are 100% fully rated
- Suitable for service entrance applications unless otherwise noted
- For factory modifications, refer to Pages V2-T1-16 through V2-T1-19

Application Description

For heavy commercial and industrial applications where reliable performance and service continuity are critical.

For the toughest heavy commercial and industrial applications, refer to Page V2-T1-73 for catalog information on our mill-duty safety switch

Features, Benefits and Functions

- Deionizing arc chutes; arc chutes confine and suppress the arcs produced by opening contacts under load
- Mechanically interlocked cover to prevent easy access when the switch is in the ON position
- Clearly visible palm fitting red handle
- Complete accessory and renewal parts data shown on inner door label.
- 30–800A NEMA 12 designs convertible to NEMA 3R by opening factory-installed drain hole
- 30–1200A switches are seismic qualified and exceed the requirements of the Uniform Building Code® (UBC) and California Code Title 24
- Tri-lingual nameplates



Visible Double-Break Rotary Blade Mechanism

 Two points of contact provide a positive open and close, easier operation, and also help prevent contact burning for longer contact life



Clear Line Shield

 Protects against accidental contact with energized parts. Probe holes enable the user to test if the line side is energized without removing the shield. Not typically provided on general-duty switches, but available as a field kit or factory installed



Built-In Fuse Pullers (NEMA 12 and 4X 30-200A Only)

 Provide easy removal of fuses



Clearly Visible Handle

 The position (ON or OFF) can be clearly seen from a distance and the length provides for easy operation



Triple Padlocking Capability

 Personnel safety feature because the large hasp can accommodate up to three 3/8-inch (9.5 mm) shank locks





Additional Locking Capability

 Cabinet door can be further padlocked at the top and bottom as applicable



Interlocking Mechanism

 Door cannot be opened when the handle is in the ON position. Front and side operable defeater mechanism provides for user access when necessary on singlethrow switches



Tangential Knockouts

 An ample number are provided on the top, bottom and sides of both NEMA Types 1 and 3R enclosures through 200A



Bolt-On Hub Kits

 For switches in a NEMA Type 3R, 30–200A. Use a Myers type hub for all others

Standards and Certifications

- · UL listed File No. E5239
- Meets UL 98 for enclosed switches and NEMA Std. KS-1



Technical Data and Specifications

Standard Lug Capacities

Description	Minimum Wire Size	Maximum Wire Size	Wire Type	
30A DP	#14 #12	#10 #10	Cu or [⊙] Al	
30A DG	#14	#6	Cu/Al	
30A DH, DT	#14	#2	Cu/Al	
60A DG	#14	#1/0	Cu/AI	
60A DH, DT	#14	#2	Cu/Al	
100A DG ②	#14	#1/0	Cu/AI	
100A DH, DT	#14	#1/0	Cu/AI	
200A DG, DT	#6	250 kcmil	Cu/AI	
200A DH Type 1 and 3R	#6	250 kcmil	Cu/AI	
200A DH Type 4 and 12	#6	300 kcmil	Cu/AI	
400A DG, DH, DT	(2) #1/0 (1) #1/0	(2) 300 kcmil (1) 750 kcmil	Cu/Al or [⊙] Cu/Al	
600A DG, DH	(1) #2 (1) #1/0	(1) 600 kcmil (1) 750 kcmil	Cu/Al and ^⑨ Cu/Al	
600A non-fusible DT	(2) #250	(2) 500 kcmil	Cu/Al	
800A DH	(4) #1/0	(4) 750 kcmil	Cu/Al	
800A DT, 600A fusible DT	(3) #250	(3) 500 kcmil	Cu/Al	
1200A DH, DT	(4) #1/0	(4) 750 kcmil	Cu/Al	
Copper-Bodied Lugs				
30A Cu	#14	#6	Cu	
60A Cu	#14	#4	Cu	
100A Cu	#6	#1/0	Cu	
200A Cu	#6	250 kcmil	Cu	
400A Cu	#1/0	500 kcmil	Cu	
600-800A Cu	(2) #1/0	(2) 500 kcmil	Cu	

Notes

① Single barrel lug that accepts one or two cables per phase as detailed above.

Although certain lug capacities are larger than required, only minimum wire bending space is provided per the requirements noted in NEC $^{\odot}$ Tables 373.6 (a) and (b) for respective ampere ratings.

A factory-installed ground lug is supplied on all NEMA 4, 4X and 12 safety switches, as well as all 400A and higher NEMA 1 and 3R safety switches. A factory-installed ground lug is also supplied on all heavy-duty NEMA 1 and 3R 30–200A switches that do NOT have a factory-installed neutral.

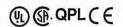
The maximum size aluminum or copper-clad aluminum wire allowable for applications where the conductor enters or leaves the enclosure through the wall opposite its terminal is #1 gauge.

³ Double barrel lug that accepts two cables per phase as detailed above.



CLASS RK5 - FLNR_ID • FLSR_ID SERIES INDICATOR® FUSES

250/600 Vac • Dual Element • Time Delay • 1/10-600 A







Description

Available in both Indicating and Non-Indicating versions, the FLNR/FLSR series of fuses set the standard for general purpose fuses. The dual-element design provides advanced short circuit and overload protection. FLSR series fuses provide excellent protection for all types of circuits especially those containing motors.

Applications

- · Service entrance switches
- Transformers
- Switchboard mains and feeders
- Motor control central mains and motor branch circuits
- All general purpose circuits

Features/Benefits

- Indication
- Dual-element design
- Available without indication
- Current limiting

Specifications

Voltage Ratings

AC: 250 V (FLNR_ID); 600 V (FLSR_ID)

DC: 125 V (FLNR 1/10 – 30 A); 125 V (FLNR ID 35 – 600 A);

300 V (FLSR ID)

Interrupting Ratings

AC: 200 kA rms symmetrical 300 kA rms symmetrical (Littelfuse self-certified)

DC: 20 kA

Ampere Range Approvals

1/10-600 A

Standard 248-12, Class RK5 UL Listed (File: E81895)

CSA Certified (File: LR29862) Federal Specification WF-1814

(QPL- W-F-1814)

Dimensions

Please refer to the Class R dimensions page 2.

Ordering Information

	10 /60		AMPERE	RATINGS			
1/10	6/10	1 8/10	4	8	30	80	225
1/8*	8/10	2	4 1/2	9	35	90	250
15/100	1	21/4	5	10	40	100	300
2/10	1 1/8	21/2	5 6/10	12	45	110	350
1/4	1 1/4	2 8/10	6	15	50	125	400
3/10t	1 4/10	3	61/4	17 1/2	60	150	450
4/10	1 1/2	3 2/10	7	20	70	175	500
1/2	1 6/10	3 1/2	7 1/2	25	75**	200	600

*FLNR only. †FLNR, FLSR, FLSR_ID only. **FLNR, FLSR, FLSR_ID only. Note: For 1/10 - 30A 250 volt fuses, order non-indicating FLNR series fuses.

TYPE	VOLT	SERIES	AMP	CATALOG NUMBER	ORDERING NUMBER
NON-INDICATING	600	FLSR	15	FLSR015	FLSR015.T
INDICATING	600	FLSR_ID	15	FLSR015ID	FLSR015.TXID
NON-INDICATING	250	FLNR	60	FLNR060	FLNR060.T
INDICATING	250	FLNR_ID	60	FLNR060ID	FLNR060.TXID

Web Resources

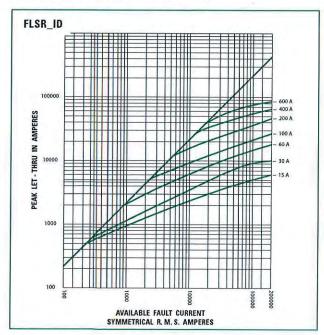
Download TC Curves, CAD drawings and other technical information: littelfuse.com/flsr

littelfuse.com/flnr

Recommended Fuse Holders

LFR60 Series • LFR25 Series

Peak Let-Thru Curve (600 V)



Note: For more information, see Peak Let-Thru Table



CLASS RK5 - FLNR_ID • FLSR_ID SERIES INDICATOR® FUSES

Current-Limiting Effects of FLSR and FLSR_ID (600 V) Fuses

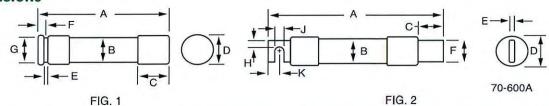
SHORT-CIRCUIT CURRENT*	APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS						
OHOM OMOON COMEN	30 A	60 A	100 A	200 A	400 A	600 A	
5,000	1,250	2,100	3,200	5,000	5,000	5,000	
10,000	1,600	2,850	4,300	7,250	10,000	10,000	
15,000	1,800	3,400	5,000	8,500	13,500	15,000	
20,000	2,250	3,800	5,500	9,500	15,750	19,000	
25,000	2,450	4,100	5,700	10,250	17,000	21,000	
30,000	2,700	4,500	6,400	10,750	18,000	23,000	
35,000	2,900	4,800	6,700	11,500	19,000	24,250	
40,000	3,000	5,000	7,250	12,000	19,500	27,000	
50,000	3,400	5,250	7,750	13,000	21,000	29,000	
60,000	3,600	5,750	8,100	14,000	22,000	30,500	
80,000	3,900	6,250	9,000	15,000	24,000	33,000	
100,000	4,300	6,750	9,750	16,500	26,000	35,000	
150,000	4,500	7,600	11,100	19,000	28,000	38,000	
200,000	4,600	8,400	12,250	21,500	30,000	40,000	

Current-Limiting Effects of FLNR and FLNR_ID (250V) Fuses

SHORT-CIRCUIT CURRENT*		AFFARENT KINS	STIVING I RICAL CO	RRENT FOR VARIOU	2 LOSE WALLINGS	
	30 A	60 A	100 A	200 A	400 A	600 A
5,000	1,400	2,100	3,100	5,000	5,000	5,000
10,000	1,550	2,500	3,900	6,500	9,500	10,000
15,000	2,000	3,150	4,400	7,250	10,500	14,000
20,000	2,250	3,400	5,000	8,250	12,000	16,000
25,000	2,400	3,750	5,250	9,000	12,500	16,500
30,000	2,550	4,100	5,600	9,500	13,500	18,000
35,000	2,650	4,300	5,800	9,750	14,000	19,000
40,000	2,800	4,400	6,250	10,250	15,000	20,000
50,000	3,000	5,000	6,500	10,500	16,000	21,000
60,000	3,200	5,250	7,000	11,500	17,000	23,000
80,000	3,400	5,750	7,500	12,500	19,000	25,500
100,000	3,850	6,000	8,000	13,500	21,000	27,500
150,000	4,100	7,000	9,000	15,200	24,000	31,500
200,000	4,300	7,500	9,750	16,500	26,000	34,000

^{*}Prospective RMS Symmetrical Amperes Short-Circuit Current Note: Data Derived from Peak Let-Thru Curves

Dimensions



41400	FIGURE	050150				D	IMENSIONS	INCHES (mr	m)			
AMPS	NUMBER	SERIES	A	В	C	D	E	F	G	Н	J	K
1/ 00	1	FLNR	2 (50.8)	1/2 (12.7)	1/2 (12.7)	9/16 (14.3)	5/64 (2.0)	5/32 (4.0)	3/8 (9.5)	_	_	_
1/10-30	-30	FLSR	5 (127.0)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	3/32 (2.4)	3/15 (4.8)	5/8 (15.9)	_	-	_
25 60		FLNR	3 (76.2)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	3/32 (2.4)	3/16 (4.8)	5/8 (15.9)		<u> </u>	-11
35-60	35-60 1	FLSR	5½ (139.7)	1 (25.4)	5/8 (15.9)	11/16 (27.0)	3/32 (2.4)	1/4 (6.4)	1/8 (22.2)		_	N
70 100	0	FLNR	5% (149.2)	1 (25.4)	11/16 (27.0)	11/16 (27.0)	1/8 (3.2)	3/4 (19.1)		1/4 (6.4)	9/32 (7.1)	1/2 (12.7)
70 – 100	70 – 100 2	FLSR	71/8 (200.0)	11/4 (31.8)	11/16 (27.0)	15/16 (33.3)	1/8 (3.2)	3/4 (19.1)	-	1/4 (6.4)	9/32 (7.1)	1/2 (12.7)
110 200		FLNR	71/8 (181.0)	1½ (38.1)	115/32 (37.3)	119/32 (40.5)	3/16 (4.8)	11/6 (28.6)	-	1/16 (11.1)	9/32 (7.1)	11/16 (17.5)
110 - 200	2	FLSR	95/8 (244.5)	13/4 (44.5)	115/32 (37.3)	127/32 (46.8)	3/16 (4.8)	11/8 (28.6)		1/16 (11.1)	9/32 (7.1)	11/16 (17.5)
225 400	2	FLNR	85/8 (219.1)	2 (50.8)	115/16 (49.2)	23/32 (53.2)	1/4 (6.4)	15/8 (41.3)		5/8 (15.9)	13/32 (10.3)	15/16 (23.8)
225-400	2	FLSR	115/8 (295.3)	21/2 (63.5)	2 (50.8)	219/32 (65.9)	1/4 (6.4)	15/8 (41.3)	-	5/8 (15.9)	13/32 (10.3)	15/16 (23.8)
450 000	0	FLNR	103/8 (263.5)	21/2 (63.5)	23/8 (60.3)	219/32 (65.9)	1/4 (6.4)	2 (50.8)		3/4 (19.1)	17/32 (13.5)	11/8 (28.6)
450 – 600	2	FLSR	133/8 (339.7)	3 (76.2)	213/32 (61.1)	33/32 (78.6)	1/4 (6.4)	2 (50.8)		3/4 (19.1)	17/32 (13.5)	11/8 (28.6)

MASTIN'S, INC. MISCELLANEOUS MATERIAL SUBMITTAL ANNISTON SOLUCIA PLANT – CTS NO. 3

Listed below are the commodity items we plan to use on this project.

Item (Spec. Sect. Reference)	Material To Be Used (As specified)
Conduit Fittings (26 00 00 – 2.1)	Galvanized steel or malleable iron as specified All bushings will be insulated
Junction & pull boxes (26 00 00 – 2.3)	NEMA 4 painted steel inside the CTS buildings Quazite boxes for outdoor in ground applications
Hangers & supports (26 00 00 – 2.4)	Galvanized steel
600 Volt Wire (26 00 00 – 2.5A)	Wire smaller than #4 to be copper, THHN/THWN insulation Wire #4 and larger to be copper, XHHW insulation Minimum wire size to be #12
Instrumentation Cable (26 00 00 – 2.5B	Anixter 2MR-1601POS for analog controls (Cut sheet attached) #14 copper, THHN/THWN insulation for discrete controls
Grounding (26 00 00 – 2.6)	3/4" x 10' copper clad steel ground rods as required Grounding electrode conductors to be bare copper as per NEC
Raceways (26 00 00 – 2.9)	Galvanized rigid steel for all exposed conduit Galvanized rigid steel where underground conduit exits ground Schedule 40 PVC conduit for underground conduit Schedule 80 PVC conduit under roadways
Flexible Conduit & Fittings (26 00 00 – 2.12)	"Sealtight" or equal for flexible conduit Galvanized steel or malleable iron fittings with insulated throat

Note:

The commodity items listed above with no manufacturer will be made by one of the manufacturers listed in the specifications. The material will be new and of the quality required by the specifications.

Product Data Sheet | Anixter Catalog Page



EPR/CPE Shielded Multipair



Product Description FR-EPR insulation

CPE jacket 90°C, 600 V

Applications

For use indoors or outdoors and for installation in trays, troughs, channels, ducts and direct burial. Designed for telemetering, signals, relays and communication.

Specifications

- CONDUCTORS: Annealed, tinned copper in accordance with ASTM B-3 and B-33, concentric stranded, Class B per ASTM B-8
 - INSULATION: Ethylene Propylene Rubber (EPR), UL Rated VW-1 conductors
- PAIRS/TRIADS: Each pair/triad is twisted and color coded: pairs black/white, triads black/white/red with alphanumeric designation (1-0NE)
- ASSEMBLY: The individually shielded pairs are cabled together with non-hygroscopic and flame-retardant fillers as necessary to form a circular cross section of
 - the assembly, a binding tape, when required, shall be applied over cable core SHIELDING: The entire cable assembly is shielded with polyester backed/aluminum tape and tinned copper drain wire
 - OVERALL JACKET: Flame-retardant thermoplastic Chlorinated Polyethylene (CPE)
- STANDARDS: UL listed as Type TC UL 1277. Cable passes UL 1685 70,000 Btu/hr, ICEA T-29-520, 210,000 Btu/hr and flame test FT4/IEEE 1202/383. Sunlight resistant and rated for direct burial
 - TEMPERATURE: 90°C
 - VOLTAGE: 600 V

Electrical and Electronic Wire & Cable • Enterprise Cabling & Security Solutions • Fasteners

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Product Data Sheet | Anixter Catalog Page



cturers. POS-Pai

rari No.	Conductor Size AWG	No. of Pairs	No. of Triads	Insulation	Overall Jacket	Nom. O.D. (in.)	Approx. Wt.
2MR-1601POS	16	-		0.025	0.045	0.318	10.7 1,000 nt.
2MR-1601TOS	16		-	0.025	0.045	0.336	75
2MR-1602POS	16	2		0.025	0.045	0.506	92
2MR-1604POS	16	4		0.025	0.060	0.627	220
2MR-1602SPOS	16	2		0.025	0.060	0.583	166
2MR-1603SPOS	16	က		0.025	0.060	0.591	189
2MR-1604SPOS	16	4		0.025	0.060	0.638	231
2MR-1606SPOS	16	9		0.025	0.080	0.775	295
2MR-1608SPOS	16	00		0.025	0.080	0.865	416
2MR-1612SPOS	16	12		0.025	0.080	1.047	581
2MR-1624SPOS	16	24		0.025	0.080	1.393	1,067
2MR-1636SPOS	16	36		0.025	0.110	1.735	1,419

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FWZ Series AC Hour Meters

FWZ Series AC Hour Meters

The FWZ Series AC Hour Meters are non-resetable and flush-panel mounted with watertight/dusttight sealed bezels. All models are black plastic (except FWZ72B which is blue-silver on colorless frosted polycarbonate) with white numerals on black background. Tenths and hundreths numerals are yellow.

Ratings FWZ53 Series

Bezel: 2.09" x 1.02" (36 mm x 24 mm)

Capacity: 99,999.99 hours
Digits: 0.16" high numerals

Voltage: 24, 120, 220 VAC, 50 or 60 Hz models

Operating Temperature: -40°F to 160°F (-40°C to 72°C)

Termination: Combination 1/4" spade and screw clamp

Weight: 1.2 oz

Mounting: Flush-panel retainer mounted (2) 0.150"

holes for #6 screws

Panel Opening: 1.50" x 1.00" rectangular (38 x 25 mm)

Ordering Information: FWZ53 - voltage/frequency

FWZ55 Series

Bezel: 2.36" x 1.36" (60 mm x 34.5 mm)

Capacity: 99,999.99 Hours

Voltage: 24, 120, 220 VAC, 50 or 60 Hz

Digits: 0.16" high numerals

Operating Temperature: -40°F to 160°F (-40°C to 72°C)

Termination: Combination 1/4" spade and screw clamp

Rear access screw terminals available

(model "K")

Weight: 1.8 oz

Mounting: Flush-panel retainer mounted with

slip-on plastic retaining bracket

Panel Opening: 2.06" x 1.08" rectangular

(52 mm x 27.5 mm)

Ordering Information: 1.) FWZ55 - voltage/frequency

2.) FWZ55K* - voltage/frequency

*Rear access screw terminals

Project: Anniston Solucia

Location: CTS3 IW Pumps

Product Type: AC, Haur Meters

Contact/Phone:

Model #: FWZ 53-120V-60Hz











#E22587

#151753



({}

NON-MERCURY FLOAT SWITCH - CONTROL DUTY 2900 MECHANICAL SERIES - NARROW ANGLE FLOAT SWITCH

GENERAL

DESIGNED FOR ACCURATE LIQUID LEVEL CONTROL IN MANY APPLICATIONS INCLUDING POTABLE WATER OR SEWAGE ENVIRONMENTS. THE FLOAT SWITCH CAN BE UTILIZED TO SIGNIFY SPECIFIC WATER LEVELS OR FOR DIRECT ALARM ACTUATION.

SWITCH VARIATIONS

NORMALLY OPEN (N/O) - GREEN SHELL

THE CONTACTS ARE OPEN (OR OFF) IN THE HANGING POSITION. AS THE FLOAT RISES 1" (5°) ABOVE HORIZONTAL, THE CONTACTS BECOME CLOSED AND ACTUATE (TURN ON) THE SWITCH. THIS FLOAT IS GENERALLY USED IN PUMP DOWN APPLICATIONS.

NORMALLY CLOSED (N/C) - GREEN/RED SHELL

THE CONTACTS ARE CLOSED (OR ON) IN THE HANGING POSITION. AS THE FLOAT RISES 1" (5°) ABOVE HORIZONTAL, THE CONTACTS BECOME OPEN AND ACTUATE (TURN OFF) THE SWITCH. THIS FLOAT IS GENERALLY USED IN PUMP UP APPLICATIONS.

SINGLE POLE, DOUBLE THROW (SPDT) - GREEN/BLUE SHELL

A VARIATION OF THE PREVIOUSLY LISTED SWITCHES. THIS FLOAT SWITCH CAN BE WIRED TO OPERATE AS EITHER (BUT NOT BOTH) A NORMALLY OPEN OR NORMALLY CLOSED SWITCH BASED ON THE USER'S NEED.

SWITCH SPECIFICATIONS

2900 SERIES MECHANICAL FLOAT SWITCHES ARE DESIGNED TO OPERATE UNDER THE FOLLOWING PARAMETERS.

MINIMUM OPERATING TEMPERATURE - 32 DEGREES F.
MAXIMUM OPERATING TEMPERATURE - 170 DEGREES F.

ELECTRICAL RATING - 10 AMP-120 VAC, 5 AMP-240 VAC ACTUATION POINT - 1" ABOVE / BELOW HORIZONTAL.

POWER CORD SPECIFICATIONS

CONDUCTOR CORD - PHYSICAL - CHLORINATED POLY ETHYLENE.
ELECTRICAL FOR N/O OR N/C SWITCH - 18 AWG 2, TYPE SJOOW - 300 V.
ELECTRICAL FOR SPDT SWITCH - 18 AWG 3, TYPE SJOOW - 300 V.

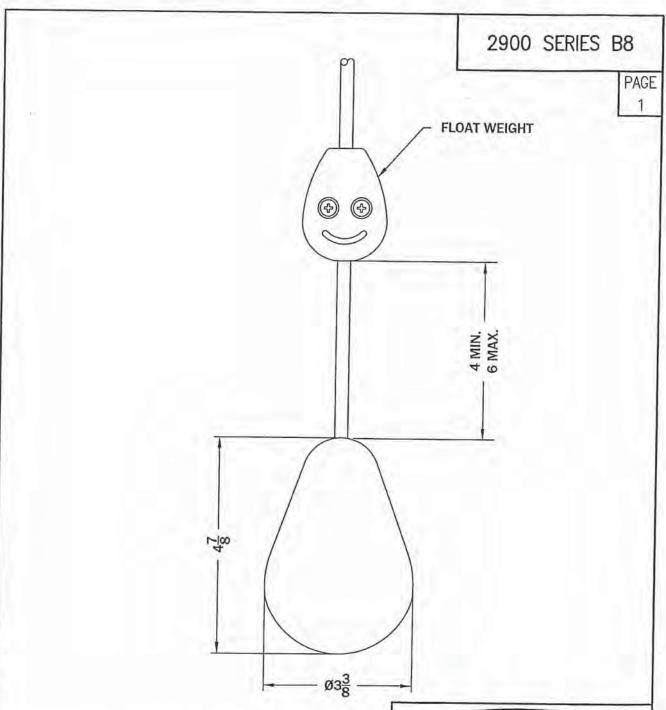
FLOAT SPECIFICATIONS

DURABLE POLYPROPYLENE MATERIAL CONSTRUCTION. SOLID POLYURETHANE FOAM INTERIOR. LEAK PROOF, SHOCK PROOF, AND IMPACT RESISTANT. RESISTANT TO SEWAGE AND WASTEWATER APPLICATIONS.

CORD WEIGHT

ZINC PLATED CAST IRON - 1.22 LBS.
SPLIT WEIGHT DESIGN ALLOWS FOR EASY ADJUSTMENT.
DESIGN ALLOWS FOR SECURE AND PERMANENT ATTACHMENT TO CORD.





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CHANGES	TOLERANCES	DRAWN BY	DATE	Ī
F	DECIMALS .XXX = ±.005	D. MIDDLETON	07/30/09	
D C	.XX = ±.010 FRACTIONAL X/X = ±.1/64	MATERIAL SPECIFICA	ATION:	
B	ANGLES X' = ±1/2'			t



SPECIFICATION SHEET MECHANICAL FLOAT

L	SCALE:
	HALF
ľ	IIALI

2900 SERIES B8 NON-MERCURY NOTE: ALL ELECTRICAL DIAGRAMS SHOWN ARE EXAMPLES ONLY, CONSULT WITH LOCAL ELECTRICAL AUTHORITIES AND CODES. DO NOT USE THESE PRODUCTS IN GASOLINE, VOLATILES, OTHER COMBUSTIBLES.

2900 SERIES B8

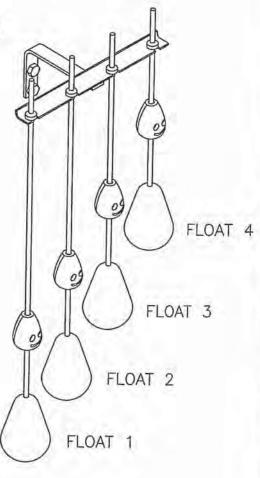
PAGE 2

FOR PUMP DOWN USE (NORMALLY OPEN FLOATS)

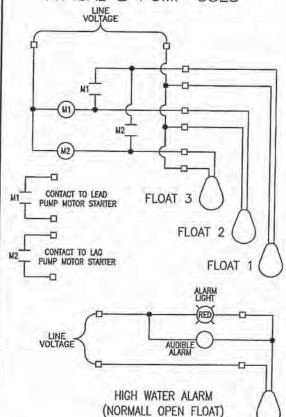
FOR PUMP UP USE (NORMALLY CLOSED FLOATS)

FOR SPDT FLOATS GREEN - N/O WHITE - COMMON BLACK - N/C C UL US

TYPICAL MOUNTING



TYPICAL 2 PUMP USES



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CHANGES	TOLERANCES	DRAWN BY	DATE
F	DECIMALS .xxx = ±.005	D. MIDDLETON	07/30/09
D C B	.XX = ±.010 FRACTIONAL X/X = ±.1/64 ANGLES X' = ±1/2'	MATERIAL SPECIFICA	ATION:



SPECIFICATION SHEET

MECHANICAL FLOAT

SCALE: NONE

2900 SERIES B8 NON-MERCURY



Date: 11/16/2015

Position Count

ount Description

1 5 SQ05-90



Product photo could vary from the actual product

Product No.: 96160130

3" multi-stage, submersible pump designed for domestic water supply, liquid transfer in tanks, irrigation and environmental applications. The pump has "floating" impellers, each with its own tungsten carbide/ceramic bearing.

The pump features soft starting and protection against dry-running, upthrust, overvoltage, undervoltage, overload and overtemperature.

The motor is a one-phase motor of the permanent magnet rotor type ensuring optimum efficiency within a wide load range.

The motor is fitted with a replaceable cable plug.

Liquid:

Pumped liquid: Water
Maximum liquid temperature: 95 °F
Max liquid temperature at 0.15 m/sec: 95 °F
Liquid temp: 68 °F
Density: 62.29 lb/ft³

Technical:

Speed for pump data: 10700 rpm
Rated flow: 4.4 US gpm
Rated head: 111.6 ft
Approvals on nameplate: UL, cUL
Approvals on motor nameplate: CE,UL,CUL
Curve tolerance: ISO9906:2012 3B

Materials:

Pump: Polyethylene / Stainless steel

DIN W.-Nr. 1.4301

Motor: Stainless steel

DIN W.-Nr. 1.4301

AISI 304

Installation:

Pump outlet: NPT 1
Minimum borehole diameter: 2.99 in

Electrical data:

Motor type: MS3
Power input - P1: 1.02 kW
Rated power - P2: 0.939 HP
Main frequency: 60 Hz
Rated voltage: 1 x 200-240 V
Start. method: direct-on-line

Service factor: 1,85
Rated current: 5.2 A
Power factor: 1,00
Rated speed: 10700 rpm

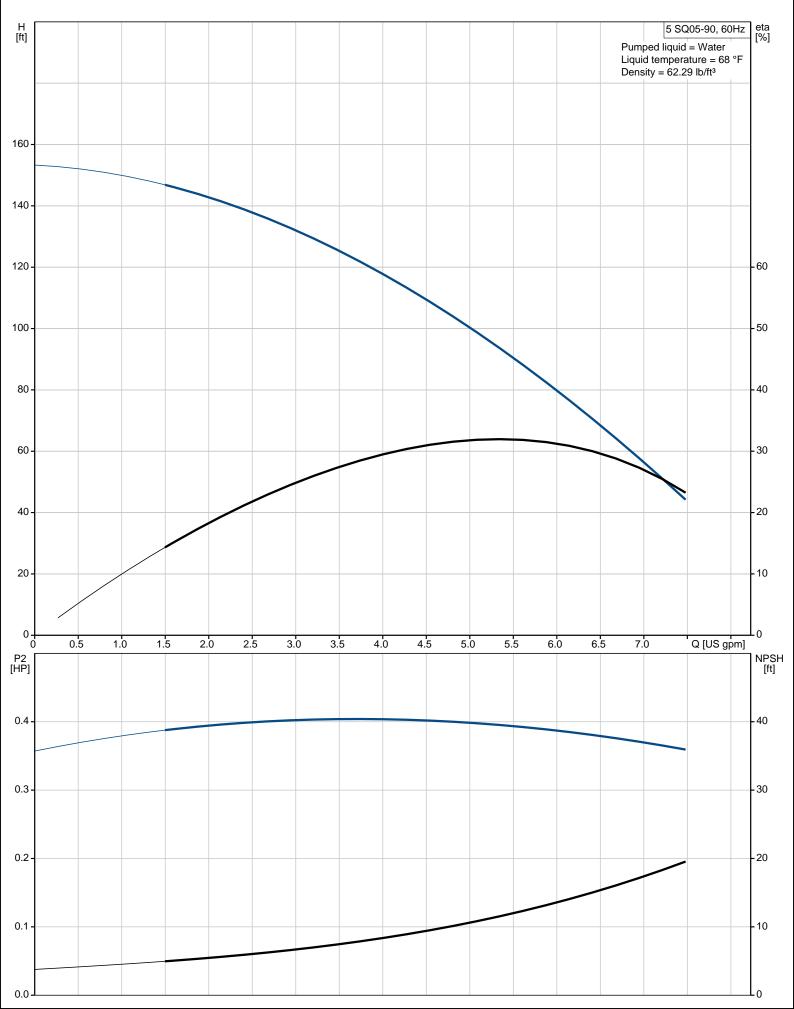


		JNDFOS		Date:	11/16/2015	
Position	Count	Description				
		Enclosure class (IEC 34-5): Insulation class (IEC 85): Length of cable:	IP68 F			
		Length of cable:	4.922 ft			



Date: 11/16/2015

96160130 5 SQ05-90 60 Hz





Date:	11/16/2015
Date:	11/10/2015

Description	Value	
General information:		
Product name:	5 SQ05-90	
Product No.:	96160130	
Position		
EAN:	5700398684503	
Price:	On request	
1 1100.	On request	
Technical:		
Speed for pump data:	10700 rpm	
Rated flow:	4.4 US gpm	
Rated head:	111.6 ft	
Approvals on nameplate:	UL, cUL	
	· · · · · · · · · · · · · · · · · · ·	
Approvals on motor nameplate:	CE,UL,CUL	
Curve tolerance:	ISO9906:2012 3B	
Pump Number:	96397360	
Stages:	2	
Model:	В	
Valve:	pump with built-in non-return valve	
••		
Materials:	Debugthed and / Otalinda and add	
Pump:	Polyethylene / Stainless steel	
	DIN WNr. 1.4301	
Motor:	Stainless steel	
	DIN WNr. 1.4301	
	AISI 304	
Installation:		
Pump outlet:	NPT 1	
Minimum borehole diameter:	2.99 in	
Limital		
Liquid:	10/-1	
Pumped liquid:	Water	
Maximum liquid temperature:	95 °F	
Max liquid temperature at 0.15 m/sec:	95 °F	
Liquid temp:	68 °F	
Density:	62.29 lb/ft ³	
Floatrical data:		
Electrical data:	MCO	
Motor type:	MS3	
Power input - P1:	1.02 kW	
Rated power - P2:	0.939 HP	
Main frequency:	60 Hz	
Rated voltage:	1 x 200-240 V	
Start. method:	direct-on-line	
Service factor:	1,85	
Rated current:	5.2 A	
Power factor:	1,00	
Rated speed:	10700 rpm	
Enclosure class (IEC 34-5):	IP68	
Insulation class (IEC 85):	F	
Motor protection:	Υ	
Thermal protec:	internal	
Length of cable:	4.922 ft	
Motor Number:	96160535	
Controls:		
CU 300/CU 301:	no communication possible	
	·	

Namreg

Others: Sales region:

H [ft]			5 SQ05-90, 60Hz Pumped liquid = Water Liquid temperature = 68 °F Density = 62.29 lb/ft³	eta [%]
160 -				
140 -				
120 -				- 60
100 -				- 50
80 -				- 40
60 -				- 30
40 -				- 20
20 -				- 10
0 -	0.5 1.0 1.5 2.0 2.5 3.0 3.	5 4.0 4.5 5.0 5.5	6.0 6.5 Q [US gpm]	0
P2 [HP]	0.0 1.0 1.3 2.0 2.3 3.0 3.	3 4.0 4.3 3.0 3.3	0.0 0.3 Q [00 gpm]	NPSI [ft]
0.4 -				- 40
0.3 -				- 30
0.2 -				- 20
0.1 -				- 10
0.0				0



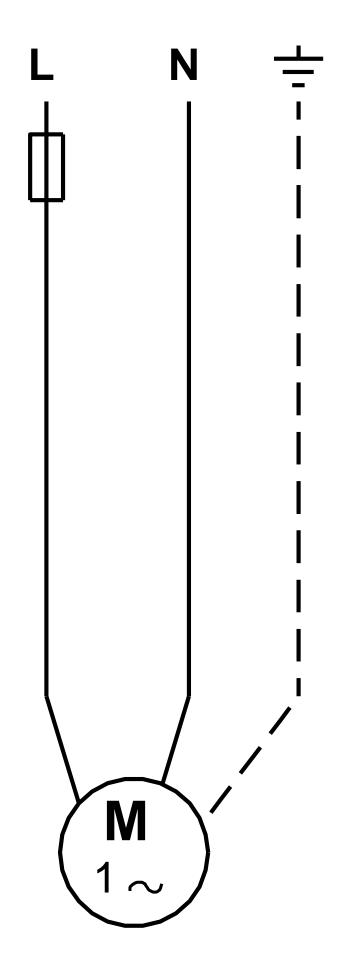


Date: 11/16/2015



Date: 11/16/2015

96160130 5 SQ05-90 60 Hz





Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix E

Hydrostatic Pressure Test Form



PRESSURE TEST REPORT FORM

PROJECT INFORMATIO	N		1
Project Name:	SCRUTIA ANNISTON	Project Location:	Anniston, LL
Client:	SOLUTIA	GSI Job. No:	4727
SYSTEM INFORMATION			
Pipe Diameter:	2"	Length of Line:	~ 1,000 A
Pipe Material:	HIBPE (SDR-11)	Other:	2 " influent had to CTSES
TEST INFORMATION			
Type of Test:	Нуа	rostatic	Pneumatic
Test Standard(s):	ASM	Test Fluid:	WATER
Design Working Pressure:	"63,051 (pump capacity)	Required Test Pressure	max 95 psi
TEST RESULTS			
Test Start Date:	2/21/18	Test End Date:	2/21/18
Test Start Time:	13:00	Test End Time:	14:00
Test Pressure (Start):	94psig	Test Pressure (End):	91 psig
	10		D - ::
Test Results:	Pas	s (W/M 5/. WHE)	Fail
Corrective Actions Taken if	Test Failed: IN PAID ON SUPER AUD TO CHE	ed valve lengure	yalle separed of
201/10/20	and puring	111119	y ·
- 2 nd fost = 12	22/	I.	
Remarks:	10 to CTS#3 from Production	6 CTS#3	
- 0 10 pwent /11	te 10 01 - C FIOTH FRECHUME	_ /0 0/0"0	
TEST CERTIFICATION	٨		
Technician Performing Test:	4.1.	Engineer Witnessing Te	est:
1.55	< All Main	Name:	Macado Parz
Name:	Einmin / Solution	Company:	GSI Environmental, Inc.
Company:	CHAMMAN TOTAL		2/21/18
Date:	WITT -	Date:	Marin /
Signature	121/VIVIV	Signature	11111



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix F

Daily Construction Reports and Weekly Meeting Reports

Weekly Update Meeting December 16, 2015

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 261 safe hours worked on site through Saturday 12/12/2015

Work completed week of December 7, 2015

• Taylor excavated several locations to locate existing piping for vault tie ins.

Work in progress for the week of December 14, 2015

- Taylor plans to determine depth of current piping at the South Landfill flow meter vaults.
- Golder has currently submitted all construction submittals with the exception of electrical materials.

Work anticipated for the next two weeks

- Mobilize to the site over the next week; set up for initial field activities.
- Initiate work on non-RA groundwater system upgrades. Installation of ladder tray and flow meter vaults.

Opportunities

• Submitted connection information to Anniston Sewer and Water Board to finalize connection permit for treated groundwater discharge.

Construction Daily W	ork Report		Day #	5
Project Number/Name:	OU-3 ground water			
Safety Meeting Topic:				
Date:	12-18-15. Friday			
Activities/ Deliveries Specific task working and or ac GROUND WATER: removed 240'	ccomplished today: of old pipe trays and installed 240' of new pip	e trays.		
	lucus	Голираятыт		Lugung
EQUIPMENT	HOURS	EQUIPMENT		HOURS
	<u> </u>			
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy crew	Foreman	6:30		HOURS 1
Jason	Safety	6:30		
Bryan M	Culcty	6:30		11
Deon		6:30		11
Chris		6:30		10
Kevin		6:30		11
		To	otal Crew Hours for Today:	5:
		Tota	al Crew Hours Cumulative:	
Details of Hauling/ Wei	ght ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Weather Report				

Construction Daily W	ork Report	Day # 6		
Project Number/Name:	OU-3. Ground water			
Safety Meeting Topic:	Ppe			
Date:	12-19-15. Saturday			
Activities/ Deliveries Specific task working and or a GROUND WATER:installed 192'	accomplished today: of the pipe tray system and removed 192' of th	ne old tray went back started putting	in the grounding cables on the	tray.
EQUIPMENT	HOURS	EQUIPMENT		HOURS
EQUIT WENT	noons	EQUI IIIEII		HOOKS
LABOR	<u>'</u>	,		
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy crew	Foreman	6:30	3:00	8.
Jason	Safety	2:30	3:00	0.
Deon		6:30	3:00	8.
Chris		6:30	3:00	8.
Kevin		6:30	3:00	8.
Bryan		6:30	3:00	8.
		То	tal Crew Hours for Today:	4
		Tota	l Crew Hours Cumulative:	24
Details of Hauling/ We	ight ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Weather Report				

Weekly Update Meeting December 22, 2015

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 340 safe hours worked on site through Saturday 12/19/2015

Work completed week of December 14, 2015

- The aluminum pipe rack was delivered to site on Dec 17; installation began on Dec 18.
- Location of existing groundwater piping system initiated.

Work in progress for the week of December 21, 2015

- Taylor continues to install pipe rack.
- Golder is coordinating with Taylor for the order and delivery of pumps, controllers, and carbon treatment system.

Work anticipated for the next two weeks upon return

 Continue work on non-RA groundwater system upgrades – pipe rack system.

Opportunities

- Mechanical work for the Groundwater Project is not severely affected by rain events so will continue to work on these components as weather delays are expected.
- Will be off after December 22 in observation of Christmas Holidays and will resume on January 4.

Construction Daily Work Report			Day # 7		
Project Number/Name:	OU-3. Ground water				
Safety Meeting Topic:	Over head grilling				
Date:	12-21-15. Monday				
Activities/ Deliveries Specific task working and or ac GROUND WATER:installed 264'of	ccomplished today: pipe trays and removed 264' of old tray				
EQUIPMENT	HOURS	EQUIPMENT		HOURS	
LABOR					
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS	
Randy crew	Foreman	6:30	4:30	10	
Jason	Safety	3:30	4:30	1	
Deon		6:30	4:30		
Kevin		6:30	4:30		
Chris		6:30	4:30		
Bryan		6:30			
Reginald Boyd	Temp worker	6:30	11:30		
D'Andre Bonds	Temp worker	6:30	11:30	5	
		То	tal Crew Hours for Today:	61	
		Tota	l Crew Hours Cumulative:	302	
Details of Hauling/ Weig	ght ticket # and tons				
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION	
Weather Report					
Rain showers. High	60. Low 48				
	Rundy Do	odui			

Construction Daily Work Report			Day #	8		
Project Number/Name:	OU-3. Ground water					
Safety Meeting Topic:	Be safe					
Date:	12-22-15. Tuesday	12-22-15. Tuesday				
Activities/ Deliveries Specific task working and or GROUND WATER:put in 216' o	accomplished today: f the new pipe tray's and removed 216' of old tra	ay's				
EQUIPMENT	HOURS	EQUIPMENT		HOURS		
LABOR	I	I				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS		
Randy	Foreman	6:3				
Deon		6:3	0 4:00	9.5		
Kevin		6:3	0 4:00	9.5		
Chris		6:3	4:00	9.5		
Bryan		6:3	4:00	9.5		
Jason	Safety	6:3	7:30	,		
		Т	otal Crew Hours for Today:	48.5		
		Tot	al Crew Hours Cumulative:	350.5		
Details of Hauling/ Wo	eight ticket # and tons					
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION		
Weather Report						
	storms. High 71. Low 60	والمنافرة والمنا				

Construction Daily W	ork Report		Day #	9
Project Number/Name:	OU-3. Ground water			
Safety Meeting Topic:	Equipment			
Date:	1-4-16. Monday			
Activities/ Deliveries	6 pipe trays,90,tee			
Specific task working and or ac	ccomplished today:	col	C. C. L. Labour and	l lan af the hill
Mobilization: moved in a man lift th	f old pipe tray and installed 31' of new tray an ne get the part down in the ditch.	nd the 90 dend on the north west sid	e. Loaded up old trays ariu wo	ood moved to top of the filli
EQUIPMENT	Hours	EQUIPMENT		HOURS
EQUIT MILIT	1100113	Edon Me.c.		noons
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy crew	Foreman 5 guys	11:30		
Jason	Safety	3:30		
			<u> </u>	
		To	otal Crew Hours for Today:	2
	_	Tota	al Crew Hours Cumulative:	376.
Details of Hauling/ Weig	ght ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Weather Report				
	Rundys	Toodwin		

Construction Daily W	lork Report		ļ	Day # <u>10</u>	
Project Number/Name:	OU-3 ground water				
Safety Meeting Topic:					
Date:	1-5-16. Tuesday				
Activities/ Deliveries Specific task working and or a GROUNG WATER:finished up pip	accomplished today: be trays on north side heading back west to el	lectric panel 80' and put in one	e tray tee.Cleaned up old tra	ays hauled to top of the hill	
EQUIPMENT	HOURS	EQUIPMENT		HOURS	
LABOR					
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS	
Randy crew	Foreman 5 guys		6:30	4:00	47.
Jason	Safety		6:30	7:30	,
			Total Crew Hours for	r Today:	48.
			Total Crew Hours Cum	nulative:	42
B-4-lle of Heuling/ Wei				I	42
Details of Hauling/ Wei	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION	
Weather Report					

Construction Daily	Work Report		Day #	11
Project Number/Name:	OU-3 ground water			
Safety Meeting Topic:			-	
Date:	1-8-16. Friday			
	•			
Activities/ Deliveries				
Specific task working and or GROUND WATER:drilled holes	r accomplished today: in the plates for the I bolts or the tray system,th	en started putting on the pipe.		
EQUIPMENT	HOURS	EQUIPMENT		HOURS
1				1
				<u> </u>
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy			6:30 2:30	
Jason	Safety		5:30 3:30	9
Deon		f	6:30 4:30	10
Chris		6	6:30 4:30	10
Kevin		6	6:30 1:30	7
Bryan		6	6:30 1:30	7
			Total Crew Hours for Today:	51
			Total Crew Hours Cumulative:	476
Details of Hauling/ W	eight ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
			<u> </u>	
				<u> </u>
Weather Report				
	Rounday Doaden			

Construction Daily V	Vork Report			Day #	12	
Project Number/Name:	OU-3 ground water					
Safety Meeting Topic:						
Date:	1-11-16. Monday	1-11-16. Monday				
Activities/ Deliveries Specific task working and or a GROUND WATER:continued wor	accomplished today: king on the u bolts to hold poly pipe on the new	ν later trays.				
EQUIPMENT	HOURS	EQUIPMENT			HOURS	
	, , , , , , , , , , , , , , , , , , ,					
LABOR						
NAME	OCCUPATION	START TIME:	9	STOP TIME:	HOURS	
Randy crew	Foreman		7:30	4:30		
Jason	Safety		3:30	4:30		
Deon			7:30	4:30		
Chris			7:30	4:30		
Kevin			7:30	4:30		
	L		Tota	al Crew Hours for Today:		;
				Crew Hours Cumulative:		5
Details of Hauling/ We	ight ticket # and tone				<u> </u>	
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT		ORIGIN	DESTINATION	
	+					
	+		+			
						_
Woother Bowert	L					_
Weather Report						
	Rundy Goodni					

Weekly Update Meeting January 13, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 660 safe hours worked on site through Saturday 1/9/2016

Work completed week of January 4, 2016

• Installation of aluminum pipe rack.

• Pipe was secured to pipe rack using U-bolt clamps.

Work in progress for the week of January 11, 2016

• Finish securing of pipe with U-bolts.

• Delivery of prefabricated enclosure for carbon treatment drums is scheduled for 1/15.

Work anticipated for the next two weeks

- Delivery and installation of carbon treatment enclosures.
- Dig trench and assemble well-head for conveyance piping.

Weekly Update Meeting March 2, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 1,860 safe hours worked on site through Saturday 2/27/2016

Work completed week of February 22, 2016

- The interceptor well system with temporary frac tanks was brought online for storage of groundwater at SWMU 1 (non-RA work);
- Assembled pumps and well-heads at IW-26 and IW-27

Work in progress for the week of February 29, 2016

- Conduct pressure test of conveyance piping at IW-26 and IW-27;
- Install outlet valves at Basins 5 and 6 (non-RA work);
- Install flow control valves and brackets in 24-inch wells at WMA II (non-RA work);

Work anticipated for the next two weeks

- Connect conveyance pipe to POTW tie-in at IW-26 and IW-27;
- Construct well modifications in Area A and E to allow for cover construction;

		Tremediation / terre		
Construction Daily Wo	ork Report		Day #	
Project Number/Name:	Solutia OU-3 Groundwater			
Safety Meeting Topic:	Crossing Highway			
Date:	Monday 2/29/2016		-	
	<u> </u>			
Activities/ Deliveries				
Specific task working and or ac	complished today:		-	
	Got IW26 and IW27 ready for testing.			
· 				
	lucure	FOLUDATENT		
EQUIPMENT	HOURS	EQUIPMENT		HOURS
F250 Pickup		9		
		- 		
		- 		
				<u> </u>
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Sonny Patat	Foreman	6:30	4:00	9
James Ford	Laborer	6:30	4:00	9
Brian Fleming	Laborer	6:30	4:00	9
Lane Parson	Laborer	6:30	4:00	9
D'Andre Bonds	Temp Laborer	6:30	4:00	9
		To	tal Crew Hours for Today:	45
		Tota	l Crew Hours Cumulative:	834
S. Jalla af Hauding/ Wais	The Wallack Warrand Appear			
Details of Hauling/ Weig		LOAD COUNT	22.011	
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION

Weather Report

Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia OU-3 Groundwater			
Safety Meeting Topic:	Traffic Route			
Date:	Tuesday 3/1/2016	Tuesday 3/1/2016		
Activities/ Deliveries				
Specific task working and or ac	ccomplished today:			
Installed new valves and piping in	well numbers 17 & 18			
EQUIPMENT	HOURS	EQUIPMENT		HOURS
F250 Pickup		9		
·				
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Sonny Patat	Foreman	6:30	4:00	
James Ford	Laborer	6:30	4:00	
		6:30	4:00	
Brian Fleming	Laborer			
Lane Parson	Laborer	6:30	4:00	
D'Andre Bonds	Temp Laborer	6:30	4:00	
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	8
Details of Hauling/ Wei	ght ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Weather Report				
-				

Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia OU-3 Groundwater			
Safety Meeting Topic:	Overhead and Underground Utilities	i		
Date:	Wednesday 3/2/2016			
Activities/ Deliveries				
Specific task working and or act Hot Work - O.K. Working on Well:				
lot work - O.K. Working on Wells	s to tillough 21			
QUIPMENT	HOURS	EQUIPMENT		HOURS
F250 Pickup		9		
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Sonny Patat	Foreman	6:30	4:00	
James Ford	Laborer	6:30		
Brian Fleming	Laborer	6:30		
Lane Parson	Laborer	6:30	4:00	
D'Andre Bonds	Temp Laborer	6:30	4:00	
		То	tal Crew Hours for Today:	4
		Tota	I Crew Hours Cumulative:	
		1000	Crew riours cumulative.	92
Details of Hauling/ Weig	uht ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Weather Report				

Construction Daily W	ork Report			Day #		
Project Number/Name:	Solutia OU-3 Groundwater					
Safety Meeting Topic:	Dust Control					
Date:	Thursday 3/3/2016					
Activities/ Deliveries						
Specific task working and or ac Worked on Wells 16-21	complished today:					
					1	
EQUIPMENT	HOURS	EQUIPMENT			HOURS	
F250 Pickup		5.5				
LABOR						
NAME	OCCUPATION	START TIME:	STO	P TIME:	HOURS	
Sonny Patat	Foreman	STAINT HIVIE.	6:30	12:00		5.
James Ford	Laborer		6:30	12:00		5.
			6:30	12:00		5.
Brian Fleming Lane Parson	Laborer		6:30	12:00	1	5.
D'Andre Bonds	Laborer Tomp Laborer		6:30	12:00		5.
D'Allule Dollus	Temp Laborer		0.30	12.00		J.
			Total Cr	ew Hours for Today:		27.
			Total Crev	w Hours Cumulative:		
			Total cic	Trouis camalactic.		951.
Details of Hauling/ Weig	ght ticket # and tons					
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIG	SIN	DESTINATION	
Weather Report						

Construction Daily W	ork Report			Day #	
Project Number/Name:	Solutia OU-3 Groundwater				
Safety Meeting Topic:	Flood Preparedness				
Date:	Friday 3/4/2016				
Activities/ Deliveries					
Specific task working and or ac Worked on Wells IW16- IW21	complished today:				
EQUIPMENT	HOURS	EQUIPMENT			HOURS
F250 Pickup	noons	7.5			1100113
1 200 1 lokup		1.5			
LABOR					
NAME	OCCUPATION	START TIME:		STOP TIME:	HOURS
Sonny Patat	Foreman		6:30	2:00	
James Ford	Laborer		6:30	2:00	
Brian Fleming	Laborer		6:30	2:00	
Lane Parson	Laborer		6:30	2:00	
D'Andre Bonds	Temp Laborer		6:30	2:00	
	•	•	To	tal Crew Hours for Today:	
			10	tal crew hours for roday.	3
			Tota	l Crew Hours Cumulative:	
D-4-11 6 1111/ 14-1					
Details of Hauling/ Wei g TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT		ORIGIN	DESTINATION
Weather Report	•	•			
weather Report					

Weekly Update Meeting March 9, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

2,090 safe hours worked on site through Saturday 2/27/2016

Work completed week of February 29, 2016

- Installed flow control valves and brackets in 24-inch wells at WMA II (non-RA work);
- Installed outlet valves at Basins 5 and 6 (non-RA work);

Work in progress for the week of March 7, 2016

- Completed and passed pressure test of conveyance piping at IW-26 and IW-27 (test was conducted on system of lines connecting pumps, running inside carbon treatment system, and discharging to POTW tie-in);
- Construct well modifications on 2-inch wells in Area A and Area E to allow for geomembrane and soil cover placement;

Work anticipated for the next two weeks

Connect conveyance pipe to POTW tie-in at IW-26 and IW-27;

Project Number/Name: Safety Meeting Topic: Date: Activities/ Deliveries Specific task working and or acco				
Date: Activities/ Deliveries Specific task working and or acco	Monday 3/7/2016 omplished today:			
Activities/ Deliveries Specific task working and or acco	omplished today:			
Specific task working and or acco				
Specific task working and or acco				
	Clean up in pump area. Repaired leaks at w	vell house for IW-26 & IW-27 getting	ready to test lines on new we	lls.
EQUIPMENT	Hours	EQUIPMENT		HOURS
	HOURS	9		HOURS
F250 Pickup		9		
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Sonny Patat	Foreman	6:30	4:00	
James Ford	Laborer	6:30	4:00	
Brian Fleming	Laborer	0:00	0:00	
Lane Parson	Laborer	6:30	4:00	
D'Andre Bonds	Temp Laborer	6:30	4:00	
		To	tal Crew Hours for Today:	
			,	,
		Tota	l Crew Hours Cumulative:	102
Details of Hauling/ Weigh	ht ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Waathan Banant				
Weather Report				

Construction Daily W	ork Report		Day #	<u> </u>
Project Number/Name:	Solutia OU-3 Groundwater			
Safety Meeting Topic:	Dust Control			
Date:	Wednesday 3/9/2016			
Activities/ Deliveries				
Specific task working and or ac Changed out piping in Well # 16. C				
EQUIPMENT	Hours	EQUIPMENT		HOURS
F250 Pickup	HOURS	8.5		HOOKS
LABOR				T
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Sonny Patat	Foreman		6:30 3:3	
James Ford	Laborer		6:30 3:3	
Lane Parson	Laborer		6:30 3:3	
D'Andre Bonds	Temp Laborer		0:00 0:0	0 0
			Total Crew Hours for Today	25.5
			Total Crew Hours Cumulative	1084.5
Details of Hauling/ Weig	ght ticket # and tons			
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Weather Report				
-				

Weekly Update Meeting March 23, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 2,231.5 safe hours worked on site through Saturday 3/19/2016

Work completed week of March 14, 2016

- Completed new wiring for IW wells IW-16 through IW-21 (non-RA work);
 and
- Installed inlet valve on existing piping adjacent to Tank T-100 (non-RA work).

Work in progress for the week of March 21, 2016

• Prepare design for submittal to the EPA regarding plans to address the seep area.

Work anticipated for the next two weeks

- Connect power to the carbon treatment system at IW-26 and IW-27;
- Startup and commissioning of CTS at IW-26 and IW-27; and
- Prepare design for submittal to the EPA regarding plans to address the seep area.

Construction Daily W	ork Report			Day #	
Project Number/Name:	Ground water				
Safety Meeting Topic:	Emergency prepareness				
Date:	3/25/16 Friday				
Activities/ Deliveries					
Specific task working and or ac					
Pulled pump out of pump # 19 ar	nd replaced it with a new pump.				
EQUIPMENT	HOURS	EQUIPMENT			HOURS
Sheet foot roller			Scr	reen	
270 track hoe			31 c	dozer	
200 track hoe		Loader			
Rock truck		Smooth drum			
LABOR				•	
NAME	OCCUPATION	START TIME:		STOP TIME:	HOURS
Tyler Hollis	Forman		6:30		
Jonathan Tenney	Labor		6:30		
Statlin Ponder	Labor		6:30	2:30	8
Ethan Howle	Labor			<u> </u>	
Jeremy Hurst	Labor		6:30	2:30	8
Matt Owen	Forman				
Littleton 2 guys			8:00	12:00	8
PFF 7 guys					
			То	otal Crew Hours for Today:	40
			Tota	al Crew Hours Cumulative:	
					50
Details of Hauling/ Weig	aht ticket # and tons				
TRUCK	WEIGHT TICKET # / TONS	LOAD COUNT		Origin	DESTINATION
TC truck					523
TC truck				 	
TC truck					
Jerry truck				†	
Jerry truck				†	
Teague truck				1	1
Teague truck				<u> </u>	
Benchmark truck				<u> </u>	
Weather Report					
	Broken Addition				

Weekly Update Meeting March 30, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 2,231.5 safe hours worked on site through Saturday 3/26/2016

Work completed week of March 21, 2016

• Started design for submittal to the EPA regarding plans to address the seep area.

Work in progress for the week of March 28, 2016

• Continue design for submittal to the EPA regarding plans to address the seep area.

Work anticipated for the next two weeks

- Connect power to the carbon treatment system (CTS) at IW-26 and IW-27;
 and
- Startup and commissioning of CTS at IW-26 and IW-27;

Weekly Update Meeting April 13th, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 2,376.5 safe hours worked on site through Friday 4/8/2016

Work completed week of Aril 4th, 2016

- Continued design for submittal to the EPA regarding plans to address the seep area.
- Startup and commissioning of CTS at IW-26 and IW-27.

Work in progress for the week of April 11th, 2016

• Continue design for submittal to the EPA regarding plans to address the seep area.

Work anticipated for the next two weeks

• Submit design of the seep area to the EPA for review and approval.

Construction Daily V	Nork Report		Day #	
Project Number/Name:	Ground water			
Safety Meeting Topic:	Fall protection			
Date:	4/13/16 Wednesday			
Activities/ Deliveries Specific task working and or Threaded 8" bore with 3" poly	accomplished today: pipe in area A. Put valve extensions on 2 va	alves on top of the basins (by the	pipe tray)	
EQUIPMENT	HOURS	EQUIPMENT		HOURS
Bobcat	Hooks		creen	HOOKS
			dozer	
270 track hoe		Loader	uozei	
200 track hoe				
Rock truck		D 61 dozer		
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Tyler Hollis	Forman	6:30	11:00	12:00
Jonathan Tenney	Labor	6:30	11:00	4.5
Statlin Ponder	Labor	6:30	11:00	4.5
Ethan Howle	Labor	6:30	11:00	4.5
Daniel DeJesus	Labor	6:30	11:00	4.5
Matt Owen	Forman			
		To	otal Crew Hours for Today:	22.5
		Tot	al Crew Hours Cumulative:	2399
TRUCK	eight ticket # and tons	LOAD COUNT	Origin	DESTINATION
TC truck	WEIGHT TICKET # / TONS	LOAD COONT	Origin	DESTINATION
TC truck				
TC truck				
Jerry truck				
Jerry truck				
Toogue truck			Ī	I
Teague truck Teague truck				

Jyler Hollis

Weekly Update Meeting April 20th, 2016

Project: OU-3 Remediation – Groundwater Components

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Golder Associates

Health and Safety

• 2,399 safe hours worked on site through Sunday 4/17/2016

Work completed week of Aril 11th, 2016

- Installed 3-inch groundwater pipe at north end of Area A.
- Continued design for submittal to the EPA regarding plans to address the seep area.

Work in progress for the week of April 18th, 2016

 Continue design for submittal to the EPA regarding plans to address the seep area.

Work anticipated for the next two weeks

- Submit design of the seep area to the EPA for review and approval.
- Install groundwater pipe along eastern section of Area A.

Weekly Update Meeting October 25, 2017

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, October 21, 2017 were 1095 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

10/16 Slips, Trips, & Falls

10/17 Developing Safe Habits

10/18 Controlling Stress at Work

10/19 Horseplay at Work

10/20 Safe Work Habits

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 2 rain events over ¾ of an inch through Saturday, October 21. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of October 16, 2017

- Finish installing gravity line
- Grass and mulch behind the pipe operation, as the areas are backfilled
- Installed pneumatic plugs into the seep sump to contain seep water
- Temporarily plumb the seep gravity line into a water trailer to capture seep water during construction
- Pulled pneumatic plugs to allow flow into the water trailer

Work in Progress for week of October 23, 2017

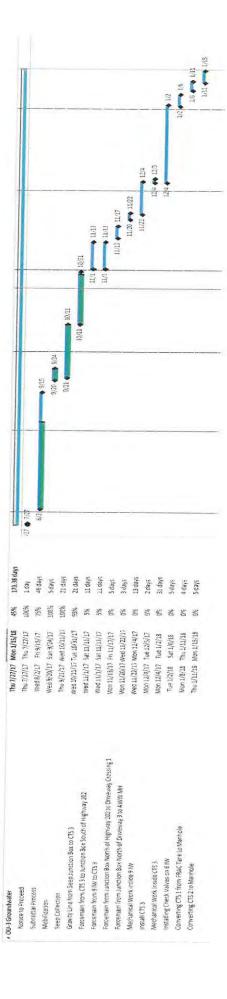
- Gather all fittings required to temporarily plumb seep into carbon vessels located at IW-5.
- Temporarily plumb seep into carbon vessels located at IW-5
- Uncover existing lines so that route for the 2" and 3" force mains can be determined
- Shoot As-Builts for the 4" gravity line
- Begin installing 2" and 3" force mains
- Begin installing electrical conduits for IWs

2 Week Look Ahead

- · Continue installing 2" force main
- Continue installing 3" force main
- Continue installing electrical conduits for IWs
- CTS 3 enclosure will be delivered

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.



Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:				
Date:	10-23-17. Monday			
Activities/ Deliveries Specific task working and or a Got the pump set up in the tank for power conduits in 3 spots	ccomplished today: r the seep and ran 400' of hose pipe down to	where we had to tie in,and ran 300°	extension cords. Spot dug	up existing poly line
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	
eon		6:30	4:00	
nris		6:30	4:00	
ian		6:30	4:00	
cob	Safety	6:30	1:30	
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
	Till and the second			
	1			
eather Report				

Project Number/Name:				
	Solutia. 1703			
Safety Meeting Topic:				
Date:	10-24-17. Tuesday			
Activities/ Deliveries Specific task working and or ac Dug up existing power and poly line one can and filled up 1 hole roll off.	in 4 other different spot. Layed out our ne	ew poly line and got it approved.	Dug out 103' of ditch line,start	ed at well #7,finished
QUIPMENT	Hours	EQUIPMENT		HOURS
30 track hoe		9		
10 skid steer		9		
12 skid steer		9		
1 dozer				4
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		
hris		6:30	4:00	
ian		6:30	4:00	
acob	Safety	6:30	4:00	
			tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weigl	weight ticket # and tons	LOAD COUNT	ORIGIN	DESTINATION
OCK	WEIGHT TICKET # / TONS	LOAD COONT	ORIGIN	DESTINATION
	3			
eather Report				

Construction Daily W	тогк керогт		Day #				
Project Number/Name:	Solutia. 1703						
Safety Meeting Topic:	Electrical hazards	Electrical hazards					
Date:	10-25-17. Wednesday						
Activities/ Deliveries Specific task working and or act Dug out 200' of ditch and filled up 2	ccomplished today: 2 roll offs. Used 305' x5' wide of 10oz fab	oric. Mastins came and started drop	oping in conduit for control wir	es.			
EQUIPMENT	Hours	EQUIPMENT		HOURS			
78 track hoe				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
/10 skid steer							
/12 skid steer							
11 dozer							
ABOR							
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS			
andy		6:30	4:00				
eon		6:30	4:00				
nris		6:30	4:00				
ian		6:30	4:00				
cob	Safety	6:30	2:00				
astins	2 guys	7:00	1:30				
		Tol	tal Crew Hours for Today:				
		Total	Crew Hours Cumulative:				
etails of Hauling/ Weig	ht ticket # and tons						
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION			
	.1						
	4						

During Musels - /st	Calulia 4702							
Project Number/Name:	Solutia. 1703	Solutia. 1705						
Safety Meeting Topic:	10-26-17. Thursday							
Date:	10-26-17. Thursday							
Activities/ Deliveries								
pecific task working and or a	ccomplished today: I in ditch and the bypass pump sent back up	in the teals and beats beats up						
used 500 of 2 life up and Layer	in dich and the bypass pump sent back up	in the tank and nook back up						
	luana	Inches and		Louis				
QUIPMENT	HOURS	EQUIPMENT		HOURS				
8 track hoe	-4							
10 skid steer								
12 skid steer								
1 dozer								
ABOR								
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS				
andy	OCCOPATION		30 Off	HOURS				
eon								
			30 4:00	_				
nris			30 4:00	_				
an		6:						
cob	Safety	6;						
astins	2 guys	6:	30 4:00					
				P				
		1	Total Crew Hours for Today:					
		To	tal Crew Hours Cumulative:					
		10	tal crew Hours cultulative.					
Action of Manifest (Water	DA 42-1							
etails of Hauling/ Weig	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DECTINATION				
OCK	WEIGHT TICKET # / TONS	LOAD COONT	ORIGIN	DESTINATION				
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anthor Bonest								
eather Report								

NOVEMBER MONTHLY CONSTRUCTION REPORT: (covered period 10/15 through 11/30)

SAFETY: Taylor safe hours for this project <u>TO DATE IS 2,100</u> no near misses and or recordable. Subcontractors Hours TO DATE IS 366. Total hours are around 2500.

WEATHER: Has been great: very little rain and it is cooling off some. Average highs and lows; 3 rain events of under ¾" each and no bad weather.

CONSTRUCTION: after completion of Seep trenches and sump tank:

Taylor Corporation started on 10/15 with installation of the 1,156 linear feet to the location of the CTS#3 building. During stake out we started and completed fusing spool piece in 300 linear feet joint to facility locations of clean out. GSI agreed with addition clean out located at the sump and one after the circle around the swale area at the sump. 4" gravity line with 6 clean outs and concrete 2' X 2' pad completed by 10/20. Taylor started conveyance line trench which includes 1" electrical conduit, 2" HDPE line from IW Wells (9) to CTS #3 and 3" HDPE LINE to the manhole on south side of Hwy 202 tie in. We agreed to place 4ounce marker layer in all conveyance line trenches throughout entire excavation and line placement. In addition, we placed locator wire in the top of trench. This task has taken most of all of November with the CTS bldg. CTS #3 building placed on 11/21. Building pad was expanded a little and re-leveled on the day prior to placement. Mobed equipment to plant northside on 11/27 and started with 3" line placement. Parkwin road cut required concrete breaking and crossing over a storm drain line and a fiber optic line under the open cut. We poured 4000 psi concrete (plant approved mix design used by Robbie Brown) back on top of the 3" HDPE conveyance pipe on fabric and 8910 limestone backfilled and compacted. These tasks were completed on 12/1. Mastin Electrical contractor working electrical install in CTS #3. Nema 3R disconnect boxes approved to install. As of the close of business 12/1 Mastin was pulling electrical wires in 1" conduit to CTS #3. Inclusive of electrical to each well.

Look ahead to December 2017:

- 1. Continued 3" HDPE line install up to the 18" cmp. All installation does have a detector wire in the trenches.
- 2. 4"X2" double contained pipe installed through CMP.

PAGE 2 OF 2

- 3. Continued 3" HDPE install up to well 14A.
- 4. Completed line installations to some point then pressure test the entire system.

Look ahead to January 2018:

- 1. <u>Install all SWMU-1 well submersible pumps, valves (gate and ball) and check valves. In addition, lowering 3 manholes well casings to make it easier to work on the inside.</u>
- 2. Install all equipment in CTS #3 Eq.tank, carbon filters and pumps.
- 3. Complete electrical and test CTS #3.

Donn Williams: December 3, 2017

Weekly Update Meeting November 1, 2017

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, October 28, 2017 were 1340 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

10/23 Incident Reporting

10/24 Horse Playing

10/25 Electricity in Construction

10/26 Electrical Power Tools

10/27 Preparing for Work in Winter Weather

BMPs are being inspected daily and after each rain event exceeding % of an inch. There have been 3 rain events over % of an inch through Saturday, October 28. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of October 23, 2017

- Temporarily plumbed seep into carbon vessels located at IW-5
- Surveyed as-builts for the 4" gravity line
- Uncovered existing lines so that route for the 2" and 3" force mains can be determined
- Began installing 2" and 3" force mains
- Began installing electrical conduits for IWs

Work in Progress for week of October 30, 2017

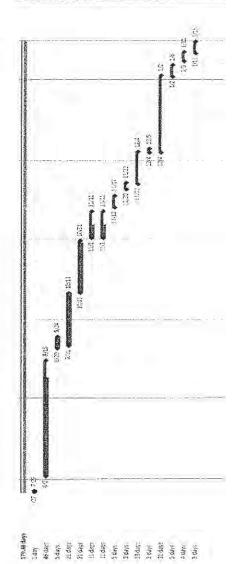
Continue installing 2" and 3" force mains

- Continue installing electrical conduits for IWs
- Backfill, grass, & mulch behind pipe installation
- Install DGB for building pad

2 Week Look Ahead

- Continue installing 2" force main
- Continue installing 3" force main
- Continue installing electrical conduits for IWs
- CTS 3 enclosure will be delivered

Opportunities



# QU 3 Grounthwater	1/51/1 noon 1/15/17 with
Notize to Procedo	thutthin thutton
Suprintal Process	Weds2/27 STR/SS/77
Modifusion.	Track Trackbett
Sept Collection	Thu 9/2/07 Wes 10/11/
Gravity Line from Segovination Box to CTS 3	Asciditi Tellini
Forcement from CTS is to Janthon Box South of Alghanay 202.	1/13/11 NS 21/3/11 PRIN
Porcement from 5 NA to USS 3	STATES STATES
Exception from Approach Box Affects of Highway 202 to Chwaway Cossing 2	WONTERS TO SELECTIVE
Excembla from Junction Box North of Orneyway I to Amily we	1,00 11/20/17 West 12/20/
Mechanical Work Inside 5 Wu	(Wed 13/22/21 Non 12/4/1
tossall,CTS s	3/0/12/4/17 Tue 12/5/17
Mechanical Work Inside CTS 1	250 10/4/17 Tue (12/8)
Installing Check Valves on 6 tW	Sue 1/2/18 Set 7/6/18
Conversing CTS 1 from PRACTank to Wanhole	11.11.11.11.11.11.11.11.11.11.11.11.11.
つっかをないはくてき よっち やるわりがき	Thu (M) (85 Mora (154)

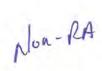


Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:				
Date:	10-30-17. Monday			
Activities/ Deliveries Specific task working and or ac Dug out 133' of ditch line and filled 2"90. Fused together 272' of 3"	ccomplished today: up one roll off. Fused 101' of 2" pipe, and pipe and 3-3"90 and got put in ditch line.	fused 3-2x1" couplings and 3-1" thr	ead adapters to go inside the	wells and 4-4" tees an
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe	nooks	EQUI III.II		1100113
/10 skid steer		11		
12 skid steer				
1 dozer				
ABOR	OCCUPATION	START TIME:	STOP TIME:	HOURS
	OCCUPATION	6:30		HOURS
eon		6:30		
hris		6:30		
ian		6:30	4:00	
acob	Safety	6:30		
3000	Colicty	0.00	2.00	
		To	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
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eather Report				

Construction Daily W	lork Report		Day	#
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:	Hand tool safety			
Date:	10-31-17. Tuesday			
Activities/ Deliveries Specific task working and or as Got 3 wells drilled and got 3-1" line hayed	ccomplished today: tied into wells. Dug out up to 3 power pol	les for control conduit. Backfilled a	nd dressed up around 350° of	ditch line and got
EQUIPMENT	HOURS	EQUIPMENT		HOURS
78 track hoe	The one	EQUI INEM		nooks
V10 skid steer				
V12 skid steer				
31 dozer				
ABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy		6:30		
leon		Vacation		
hris		6:30	4:00	
rian		6:30		
cob	Safety	6:30		
lastins	2-guys	6:30		
				/
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		10	31	
	L.			
leather Report				



Construction Daily V	Vork Report		Day #	
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:	Extension cords safety			
Date:	11-1-17. Wednesday			
Activities/ Deliveries Specific task working and or a Layed the 4" drain pipe to where to up with 6" of base and got graded	ccomplished today: he building sits,38' of 4" pipe,1-4"45,1-4"90. and tamped in. Refused the 2" line and got	Backfilled ditch line with base and gran back into the holding tank.	got tamped in: Dug down but 2",3",4" and conduit stubbed	uilding pad 3" and cam up in 12x12" hole
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
10 skid steer				
12 skid steer				E
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:30	
eon	- ())	6:30	4:30	
nris		6:30	4:30	
ian		6:30	4:30	
cob	Safety	6:30		
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
			t	
	27			
eather Report				



Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:	Cutting gloves			
Date:	11-2-17. Thursday			
Activities/ Deliveries Specific task working and or ac Dug out 60' of ditch line,dug out an and up slope and out in the field.	d graded with base for the air release valve.	Got 1" pipe tied into m.h 7 and bac	kfilled and dressed up. Grass	sed and hayed around
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				1
10 skid steer				
12 skid steer		11		
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	
eon		6:30	4:00	
hris		6:30	4:00	
rian		6:30	4:00	
acob	Safety	6:30	1:30	
		To	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig				
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
			4	
		- 1 9		
eather Report				



Construction Daily Work Report Day #			f	
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:	Bad habits in work place			
Date:	11-3-17. Friday			
Activities/ Deliveries Specific task working and or a Dug out 150' of ditch line. Fuse and 4 flat tops for the air release w	d 170' of 2" pipe,2-2x2" tees going to 2 wells,	fused 1-2"90 and 1x2" reducer.	Fused 170' of 3" line and 1-3x.	<u>2" tee</u> . Unloaded 4-3
QUIPMENT	HOURS	EQUIPMENT		luana.
3 track hoe	HOURS	EQUIPMENT		HOURS
track noe				
2 skid steer				
dozer		-		
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
ndy		6:30	4:00	
on		6:30	4:00	
ris		6:30	4:00	
an	1	6:30	4:00	
cob	Safety	6:30	1:30	
		Tot	tal Crew Hours for Today:	
Total Crew Hours Cumulative:				
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		4		
	7			

Weekly Update Meeting November 8, 2017

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, November 4, 2017 were 1610 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

10/30 Ladder Safety

10/31 Working with Hand Tools

11/1 Extension Cords

11/2 Proper Cutting PPE

11/3 Bad Habits in the Workplace

BMPs are being inspected daily and after each rain event exceeding % of an inch. There have been 3 rain events over % of an inch through Saturday, November 4. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of October 30, 2017

- Began installing 2" and 3" force mains
- Began installing electrical conduits for IWs
- Backfilled, Grass, & Mulched Behind Pipe Installation
- Installed DGB for Building Pad

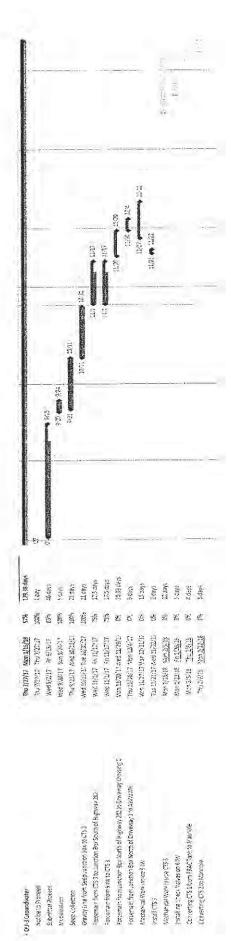
Work in Progress for week of November 6, 2017

- Continue installing 2" and 3" force mains
- Continue installing electrical conduits
- Backfilled, Grassed, and Mulched as piping is complete

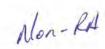
2 Week Look Ahead

- Finish 2" and 3" force mains
- Finish grassing and mulching behind pipe operation
- CTS 3 enclosure will be delivered
- Begin installing 3" force main North of Highway 202

Opportunities



Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:	Cell phone use on the job			
Date:	11-6-17. Monday			
Activities/ Deliveries Specific task working and or activities out and put up 130' of sil 1"line into it and got waterplugged of 3" pipe. Got both full roll offs m	t fence. Put down 3 waddles. Got both bup. Busted out concrete around another we	ollards cut off and both concreted in. ell. Fused up 91' of 2" pipe 1-2x2 te	Dug out 76' of ditch line. ee. 2-2x1" reducers and 3-1"	Grilled out one well and male adapotors. Fuse
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	
eon		6:30	4:00	
nris		6:30	4:00	
ian		6:30	4:00	
cob	Safety	6:30	2:00	
		To	tal Crew Hours for Today:	
		Tota	Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
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Construction Daily W	ork Report		Day #	#
Project Number/Name:	Solutia. 1703			
Safety Meeting Topic:	Accidents			
Date:	11-7-17. Tuesday			
Activities/ Deliveries Specific task working and or activities of the second of the second working and grassed and hayed.	ccomplished today: rell 5&12,got both well drilled out and tied or Got m.h cut out and set for the air release va	nto our 2" line. Got around 100' alve.	of ditch line backfilled and dre	ssed up up to air rele
QUIPMENT	Hours	EQUIPMENT		HOURS
8 track hoe	HOURS	EQUIPMENT		HOURS
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	
eon		6:30	4:00	
nris		6:30	4:00	
ian		6:30	4:00	
cob	Safety	6:30	3:30	
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
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	3			
eather Report				

Weekly Update Meeting November 15, 2017

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, November 11, 2017 were 1845 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

11/6 Preventable Accidents

11/7 Cellphone Usage

11/8 Working Impaired

11/9 Workplace Stress

11/10 First Aid

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 3 rain events over ¾ of an inch through Saturday, November 11. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of November 6, 2017

- Continue installing 2" and 3" force mains
- Continue installing electrical conduits
- Backfilled, Grassed, and Mulched as piping is complete

Work in Progress for week of November 11, 2017

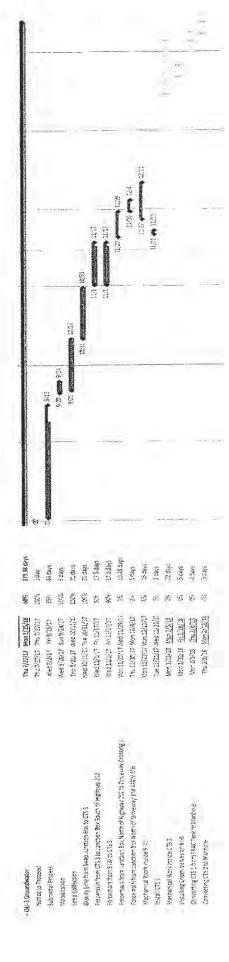
- Finish installing 2" and 3" force mains
- Finish installing electrical conduits
- Backfilled, Grassed, and Mulched as piping is complete

• Temporarily tying 2" and 3" lines into FRAC Tank

2 Week Look Ahead

- Finish grassing and mulching south of Highway 202
- CTS 3 enclosure will be delivered
- Begin installing 3" force main North of Highway 202

Opportunities



Construction Daily V	Vork Report		Day	#
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	11-13-17. Monday			
Activities/ Deliveries Specific task working and or a Put in 200'x6' of 4oz fabric. Got going to well 13 and 2x2" tee and	accomplished today: our pipe put in hole and backfilled around 10 2°90 and 1" threaded nipple and got concret	00'. Poured back concrete in the delete busted out and got pipe tied to we	litch line used 10 bags of con II. Got 3x3 tee fused on and	crete. Fused 40' of 2" 13" threaded nipple fus
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe		Egon ment		HOOKS
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		+
ris		7:00		
an		6:30		
cob	Safety	6:30		-
astin	1 guy		10:30a.m	
		0.00	10.000.111	
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		Aft Land		
			- 1	
eather Report				



Part of the same o				
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:	Who is responsible for safety?			
Date:	11-14-17. Tuesday			
Activities/ Deliveries				
Specific task working and or a Dug and loaded out 256' of ditch li	ccomplished today: ne. 256'x6' of 4 oz fabric. Dug out road	crossing and installed 8" hdpe pipe f	or casein 16' long and backfill	ed with base and tamp
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				Hooks
/10 skid steer				
12 skid steer				-
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		
nris		6:30		
ian		6:30		
cob	Safety	6:30		
	odicty	0.30	4:00	
		To	tal Crew Hours for Today:	
		A7.	I Crew Hours Cumulative:	
		Tota	r Crew Hours Cumulative:	
etails of Hauling/ Weig				
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
eather Report				
A CONTRACTOR OF THE STREET				

Construction Daily W	ork Report		Day i	#
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	11-15-17. Wednesday			
Activities/ Deliveries specific task working and or a sused 256'of 2" pipe,2-2"90,1-2x1' onduit to and dug out where we g	ccomplished today: "reducer,1-1" threaded nipple. Fused 40' o ot to hook up the 2" and 3" line to the tanks.	f 3" pipe and 2-3"45,1-3"90. Installe	ed 1-3" ball valve. Dug out fro	om well 2to power pole
QUIPMENT	HOURS	EQUIPMENT		HOURS
3 track hoe				
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:30)
on		Vacation		
ris		6:30	4:30	
an		6:30	4:30	
cob	Safety	6:30	1:30	
estins	1guy	6:30	1:30	
				/
		To	tal Crew Hours for Today:	
		Tota	Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
eather Report				

Mon-RA

Construction Daily W	fork Report		Day #	
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:	Holiday safety			
Date:	11-16-17. Thursday			
Activities/ Deliveries Specific task working and or as Backfilled and graded around 350' poly line and 3" valve off the 3" pol	ccomplished today: of ditch line and got it grassed and hayed. y line where we got to tie to existing line that	Put in 6' of 2" pvc pipe 3-2"90,2-2" runs to the tanks	check valves and valve made	together,1-2" valve off
EQUIPMENT	HOURS	EQUIPMENT		HOURS
78 track hoe	noons			
V10 skid steer				
V12 skid steer				
31 dozer				
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy		6:3		
Deon		6:3	4:00	
Chris		6:3	4:00	
Irian		6:3	4:00	
acob	Safety	6:30	4:00	
		To	otal Crew Hours for Today:	
		Tota	al Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
Veather Report				

Weekly Update Meeting November 29, 2017

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, November 25, 2017 were 2220 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

11/13 Ladder Safety

11/14 Who is Responsible for Safety

11/15 Flammable Liquids

11/16 Slips, Trips, & Falls

11/17 5 Senses Safety

11/20 Crane Safety

11/21 Proper Rigging Techniques

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 3 rain events over ¾ of an inch through Saturday, November 25. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of November 13, 2017

- Finished Installing 2" and 3" Force Mains on the South side of Highway 202
- Finished Installing Electrical Conduits on the South Side of Highway
 202
- Backfilled, Grassed, and Mulched as piping was completed
- Temporarily Tied 2" and 3" lines into FRAC Tank

Work Completed November 20, 2017

- Finished Backfilling and Grassing behind the Pipe Operation
- Finished Final Preparations for CTS 3 Delivery
- Installed CTS 3 Building
- Reconnected Seep Effluent Line to Water Trailer
- Took off Thursday and Friday for Thanksgiving Holidays

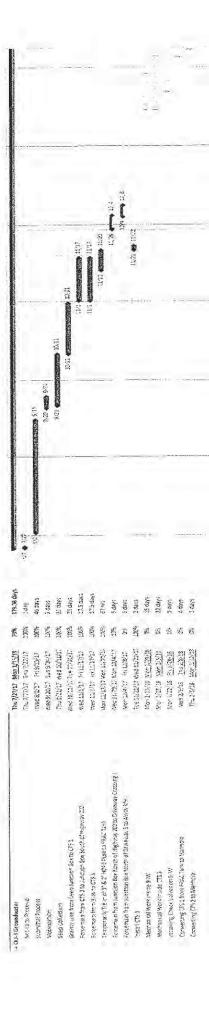
Work in Progress for Week of November 27, 2017

- Installed Valve Boxes for the Valves associated with temporarily tying in IW and Seep into the FRAC Tank
- Moved Equipment and Material across Highway 202 to begin installing 3" HDPE Pipe
- Began Installing Pipe
- Electrical Work began inside of CTS 3

2 Week Look Ahead

- Finish all Underground Pipe Installation
- Finish Grassing and Mulching behind Pipe Installation
- Continue Electrical and Controls inside CTS 3

Opportunities



Weekly Update Meeting January 31, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, January 27, 2018 were 3006 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

1/22 Avoiding Electrical Accidents

1/23 Potable Fire Extinguishers

1/24 House Keeping

1/25 Keeping your Peers Safe

1/26 Cutting Tool PPE

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 6 rain events over ¾ of an inch through Saturday, January 27, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of January 15, 2018

- Continued Electrical Work Inside of CTS 3
- Began Electrical Upgrades on the South Landfill

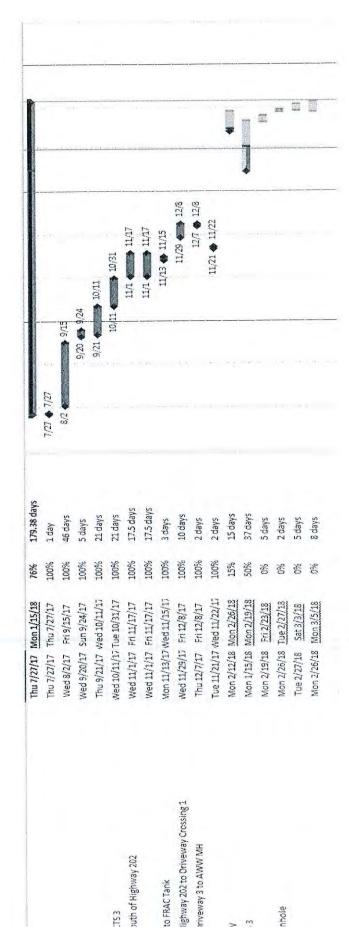
Work in Progress for Week of January 22, 2018

- Continue Electrical & Control Work Inside of CTS 3
- Began Plumbing Components inside CTS 3

2 Week Look Ahead

- Finish Mechanical, Electrical, & Plumbing inside CTS 3.
- Begin Changing Pumps out at Interceptor wells on the South Landfill.

Opportunities



riveway 3 to AWW MH

nhole

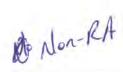
outh of Highway 202

TS3

to FRAC Tank



Construction Daily W	ork Report		Day	#
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	1-25-18. Thursday			
Activities/ Deliveries Specific task working and or ac Done some piping out of the pump valves 2" 90. Got the 1 1/4 45 in	ccomplished today: used 2-1" gate valves,1" check valve,and p and installed it comeing out of the tank tow	out on 1/2" drain line with 1/2 ball val vards the pump	ve. Started the piping come	e up out for iws line,2-
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				HOOKS
/10 skid steer				
12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	1,000
eon	1	6:30	4:00	
nris		6:30	4:00	
ian		6:30	4:00	
cob	Safety	6:30	2:00	
astins	2 guys	6:30	1:30	
		Tot	al Crew Hours for Today:	
		Total	Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
)	
eather Report				



Randy 6:30 Deon 6:30 Chris 6:30 Brian 6:30 Jacob Safety 6:30 Mastins 2-guys 6:30 Total Crew Ho	Construction Daily Work Report Day #				
Activities/ Deliveries Specific task working and or accomplished today: Painted both bollards. Got pipe finished from pump to filter bagGot pipe finished from iw to tank and got the 2" flow meter bypass piping around filter bag to outlet side of filter bag EQUIPMENT HOURS EQUIPMENT 78 track hoe V10 skid steer V12 skid steer V12 skid steer V12 skid steer V13 dozer LABOR NAME OCCUPATION START TIME: STOP TIME Randy 6:30 Deon 6:30 Deon 6:30 Drins Brian 6:30 Brian					
Activities/ Deliveries Specific task working and or accomplished today: Painted both bollards. Got pipe finished from pump to filter bagGot pipe finished from iw to tank and got the 2" flow meter bypass piping around filter bag to outlet side of filter bag EQUIPMENT HOURS EQUIPMENT 78 track hoe 10 Strack hoe 11 dozer LABOR NAME OCCUPATION START TIME: STOP TIME Randy 6:30 Chris 6:30 Chris 6:30 Acob Safety 6:30 Mastins 2-guys 6:30 Total Crew Hour Total Crew Hour					
Specific task working and or accomplished today: Painted both bollards. Got pipe finished from pump to filter bagGot pipe finished from iw to tank and got the 2° flow meter bypass piping around filter bag to outlet side of filter bag EQUIPMENT HOURS EQUIPMENT 78 track hoe /10 skid steer /12 skid steer 81 dozer LABOR NAME OCCUPATION START TIME: STOP TIME Randy Geon Grian Grian Grian Grian Grian Grian Groups For a first steer For a first st					
## ## ## ## ## ## ## ## ## ## ## ## ##	flow meter installed and	pipe supports in. Starte			
## ## ## ## ## ## ## ## ## ## ## ## ##		HOURS			
### ### ##############################		HOOKS			
### ABOR #### ABOR #### ABOR #### ABOR #### ABOR #### ABOR #### ABOR ##### ABOR ##### ABOR ###################################		-			
ABOR IAME OCCUPATION START TIME: STOP TIME Iandy 6:30 Ieon 6:30 Irian 6:30 Iacob Safety 6:30 Iastins 2-guys 6:30 Total Crew Hour Total Crew Hour etails of Hauling/ Weight ticket # and tons					
ABOR AME					
NAME OCCUPATION START TIME: STOP TIME Randy 6:30 Deon 6:30 Chris 6:30 Arian 6:30 Total Crew Hour Retails of Hauling/ Weight ticket # and tons					
Randy 6:30 Deon 6:30 Chris 6:30 Chris 6:30 Irian 6:30 Racob Safety 6:30 Rastins 2-guys 6:30 Total Crew Hour Retails of Hauling/ Weight ticket # and tons					
leon 6:30 chris 6:30 rian 6:30 acob Safety 6:30 lastins 2-guys 6:30 Total Crew Hour leetails of Hauling/ Weight ticket # and tons	STOP TIME:	HOURS			
hris 6.30 rian 6.30 acob Safety 6.30 astins 2-guys 6.30 Total Crew Hour Total Crew Hour		:00			
rian 6:30 acob Safety 6:30 astins 2-guys 6:30 Total Crew Hour Total Crew Hour etails of Hauling/ Weight ticket # and tons		:00			
Safety 6:30 astins 2-guys 6:30 Total Crew Hour Total Crew Hour etails of Hauling/ Weight ticket # and tons	4	:00			
astins 2-guys 6:30 Total Crew Hour Total Crew Hour etails of Hauling/ Weight ticket # and tons	4	:00			
Total Crew Hour Total Crew Hour etails of Hauling/ Weight ticket # and tons	4	00			
Total Crew Hour	2	00			
etails of Hauling/ Weight ticket # and tons	l Crew Hours for Toda	ıy;			
	Crew Hours Cumulativ	e:			
RUCK WEIGHT TICKET # / TONS LOAD COUNT ORIGIN					
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eather Report					
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Weekly Update Meeting February 7, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, February 3, 2018 were 3336 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

1/29 Bad Work Habits

1/30 Horseplay

1/31 Safety Awareness

2/1 Near Misses

2/2 Rainy Day Safety

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 7 rain events over ¾ of an inch through Saturday, February 3, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of January 29, 2018

- Continued Electrical Work Inside of CTS 3
- Continued Electrical Upgrades on the South Landfill
- Installed Carbon vessels inside CTS 3
- Completed Plumbing inside CTS 3

Work in Progress for Week of February 5, 2018

- Continue Electrical & Control Work Inside of CTS 3
- Began Replacing the 9 Interceptor Wells
- Fill Carbon Vessels with the Granular Carbon

2 Week Look Ahead

- Finish Mechanical, Electrical, & Plumbing inside CTS 3.
- Finish Changing Pumps out at Interceptor Wells on the South Landfill.
- Pressure Test the system and prepare for start-up.

Opportunities

* OU-3 Groundwater	Thu 7/27/17 Mon 1/15/18	82%	179.38 days		
Notice to Proceed	Thu 7/27/17 Thu 7/27/17	100%	1 day	727 4 7/27	
Submittal Process	Ned 8/2/17 Fr 9/15/17	100%	46 0875	3/2	
Weblitzanen	Wed 9/20/17 Sun 9/24/17	100%	5 4285	9.20	
Seep Collection	Thu 9/21/17 Wed 10/11/15	100%	210975	9721	
Gravity Line from Seep Junction Box to CTS 3	Wed 10/11/15 Tue 10/31/17	100%	21 days	1011	
Forcemain from CTS 3 to Junction Box South of Highway 202.	Wed 11/1/17 Fit 11/17/17	3001	17.5 days	12.0	
Forcemain from \$1W to CTS 3	Wed 11/1/17 Fri 11/17/17	100%	17.5 days		
Temporarily Re in of 3" & 2" HOPE Place to FRACTARK	Mon 11/13/17 Wed 11/15/17	190%	3 days	25.1 M 25.25	
Forcemain from Junction Box North of Highway 202 to Driveway Crossing 1.	Wed 11/29/17 Ft 12/8/17	190%	10 cays	0.00 mm 00.00	1-
Forcemain from Junction Box North of Driveway 3 to AVNY MH	TEN 12/7/17 Ft 12:8/17	36261	2 devs	5. c. 7. C.c.	
Install CTS 3	Tue 11/23/17 Wed 11/22/11	100%	7 Haye	0 12 m 16 17 14 17 14 17 14 17 14 17 17 14 17 17 17 17 17 17 17 17 17 17 17 17 17	
Electrical & Mechanical Work Inside 9 NV	MODEL STATES AND STATES	7553	18 0 345	77/27	
Electrical & Mechanical Work Inside CTS 3	Mor 1/15/18 Non 2/19/18	888	37 Cays		
Installing Check Valves on £ IW	Mon 2/19/18 Fr 2/23/18	36	SAEES		-
Converting CTS I from FRAC Tank to Manhole	Mon 2/26/18 Tue 2/27/18	38	2 days		
Converting CTS 2 to Marhole	Tue 2/27/18 Sat 3/18	8	S 200 10		
Start up and Commissioning of CTS3	Mor 2/26/13 Mon 3/5/18	350	B days		



	Ork Report Day #				
Project Number/Name:	Solutia 1504				
Safety Meeting Topic: Date:	25.40				
Pate:	2-5-18. Monday				
Activities/ Deliveries Specific task working and or ac Removed all old piping and wires o	ecomplished today: out of well #11 and replaced with new pipin	g and pump and bracket. Put 1" ba	all valves for in all the other w	elis	
EQUIPMENT	HOURS	EQUIPMENT		lucius	
8 track hoe	HOOKS	EQUIPMENT		HOURS	
10 skid steer					
12 skid steer					
1 dozer				_	
1 00261					
ABOR					
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS	
andy		6:30			
eon	Vacation	0:00			
nris		6:30			
ian		6:30			
cob	Safety	6:30			
astins	2-guys	6:30			
	- 3-/-	0.50	2.00		
		*			
		То	tal Crew Hours for Today:		
		Tota	Crew Hours Cumulative:		
etails of Hauling/ Weigl	ht ticket # and tons				
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION	
			- 1		

Construction Daily W	ork Report		Day #	
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:	Pulling pumps			
Date:	2-6-18. Tuesday			
Bracket and pipes inside well #8 w	ccomplished today: d 6. Installed new brackets in both wells there to low inside the well so with jerry,don s also so we don't have to cut the other well	and gsi made the decision to raise t	Didn't install pump or the star the piping up with a 90 and ins	nd pipe for the pump ye stall them higher up an
EQUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe	HOURS	EQUIPMENT		HOURS
10 skid steer				
/12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	The state of
eon	Vacation	0:00		
hris		6:30	4:00	
rian		6:30	4:00	
acob	Safety	6:30	2:00	
astins	2-guys	6:30	2:00	
		То	tal Crew Hours for Today:	
			l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
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		1 1		
		7		
eather Report				



Construction Daily W	on Report		Day #	
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-7-18. Wednesday			
Activities/ Deliveries Specific task working and or ac Worked in the building when we co	ould until the ran stopped. Mounted on the	wall the differentjøl pressure switch	and the pressure switch. Ir	istalled the level elen
inside the eq tank. After rain stop	ped we installed piping and pump and brack	ket into well #8.7		
EQUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
/10 skid steer				
/12 skid steer		7 1 -		
31 dozer				
LABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30	4:00	
eon	Vacation	0:00		
hris		6:30	4:00	
rian		6:30		
acob	Safety	6:30		
Mastins	2-guys	6:30		
NO OTTO	3-7-			
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
Details of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		A A		
100				
Veather Report				

Construction Daily W	3000000			
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-8-18. Thursday			
Activities/ Deliveries Specific task working and or a	ccomplished today:			
oipe and pump and got it finished.	shed. Set new piping and pump and float Pulled old pump out of well 13	t in well 6 and got it finished." Pulle	ed old piping and pump in we	Il 12 and installed the n
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			noons.
/10 skid steer				
12 skid steer				
1 dozer				
LABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy	occornion .	6:30		
eon	Vacation	0:00		
hris	Vacation	9:00		
rian		6:30		
acob	Safety	7:00		
astins	2-guys	6:30		
	- 0-7-		2.00	
		To	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	1
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		- 1		
eather Report				

Weekly Update Meeting February 14, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, February 10, 2018 were 3711 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

2/5 Face Shields

2/6 First Aid Awareness

2/7 Review of Inside the Plant Rules

2/8 Hot Work Permits

2/9 Golden Rule of Confined Spaces

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 9 rain events over ¾ of an inch through Saturday, February 10, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of February 5, 2018

- Continued Electrical Work Inside of CTS 3
- Continued Electrical Upgrades on the South Landfill
- Continue Electrical & Control Work Inside of CTS 3
- Began Replacing the 9 Interceptor Wells
- Fill Carbon Vessels with the Granular Carbon

Work in Progress for Week of February 12, 2018

Continue Replacing the 9 Interceptor Wells

• Cut to 4" above grade, the three IW that are too high to access piping

2 Week Look Ahead

- Finish Changing Pumps out at Interceptor Wells on the South Landfill.
- Pressure Test the system and prepare for start-up.
- Finish Installing Check Valves at WMA 2

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.

	Thu 7/27/17 Mon 1/15/18	87%	179.38 days	
Notice to Proceed	Thu 7/27/17 Thu 1/27/17	100%	1 day	727 4 727
Submittal Process	Wed 8/2/17 Fri 9/15/17	100%	45 pays	8/2
Mabilization	Wed 9,20,17 Sun 3/24/17	1005	sáep s	472/6 🗫 32/6
Seeb Collection	Thu 9/21/17 wed 15/11/17	100%	23 days	11/01
Gravity Line from Seep Junction Box to CTS 3	Med 10/11/11 Tue 10/31/17	190%	21 cays	16/11
Foresmain from CTS 3 to Junction Box South of Highway 202	Wed 11/1/17 Fn 11/17/17	100%	17.5 Cays	101 6 101
Forcement from 9 NV to CTS 3	Wed 11/1/17 Fr 11/1/17	100%	17.5 Cays	ERIT WILL
Temporarily Tie In of 31 8.2" MDPE Pipe to FRAC Tank	Vion 11/13/17 Aed 13/13/17	MK	3 days	11/13
Forcemain from Junction Box North of Highway 202 to Universay Lrossing 1	Med 11/29/17 - 11/21/8/17	100%	10 days	11/25
Forcemen from junction Box North of Driveway 3 to AW M AN	Thu 12/7/17 Fr 12/9/17	10001	2 days	127 6 1.78
nstall CTS 3.	Tue 11/21/17 Wed 11/23/17	100%	2 days	1211
Electrical & Mechanical Work Inside 9 fW	Mon 2/12/18 Mon 2/26/13	75%	15 days	
Electrical & Mechanical Mork Inside (TS3)	Mon 1/15/18 Mon 2/15/18	80%	37 Cay5	
installing check Values on 5 IW	Man 2/25/18 Frt3/2/13	35	5 days	
Converting CTS 1 from FRAC Tank to Manhole	Mon 2/25/18 Tue 2/27/18	25	2 days	To America
Conversibg CTS.2 to Markole	Tue 2/27/18 Sat 3/3/18	8	5 days	
Start Up and Consmissioning of CTS 3	Wed 2/21/18 Wed 2/38/18	E	SAep 8	

Non-RA

Construction Daily W	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			-
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-12-18. Monday			
Activities/ Deliveries				
Specific task working and or ac Finished removing bracket and old equipment inside the plant for valve	l line out of well 13. Installed new pipe an	d bracket and pump inside well 13./	Put valve and pipe together	and moved and unloa
EQUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		
nris		6:30		
ian		6:30		
cob	Safety	6:30		
astins	2-guys	6:30		
	-1	Tot	tal Crew Hours for Today:	
		Total	Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		- 4		
eather Report				

Mon-RA

Construction Daily W	TOTA REPORT		Day i	
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-15-18. Thursday			
Activities/ Deliveries Specific task working and or a Matt burned off well #2 and #5 to a n both wells and installed all new	ccomplished today: make them lower and welded brackets insid pipe and pumps and floats in both wells	e well and welded brackets back on	to put the locks back on. Re	moved old pumps and
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon	Vacation day	0:00		
nris		6:30		
ian		6:30		
cob	Safety	6:30	2:00	
astins	2-guys	6:30	2:00	
		3 7		
		To	tal Crew Hours for Today:	
		Tota	Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
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Sub-Sub-Sub-Sub-Sub-Sub-Sub-Sub-Sub-Sub-				
eather Report				

Klon-RA

Project Number/Name:	0.1.0.4504			
	Solutia 1504			
Safety Meeting Topic:				
Date:	2-16-18. Friday			
Activities/ Deliveries				
Removed old pipe and pump out of nside building so that we could hoo	complished today: f well #7. Saw cut well down lower to the ok up seep pumps into the 3" line and send	ground. Installed new bracket,pip I it to the frat tanks. Went to cpr tra	es,and pump and float in wel aining class	Installed pipe fitting
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe	IIIONS	EQUIFINENT		HOURS
10 skid steer				
12 skid steer				
1 dozer				
ABOR	Lucione	Talauz 1885	Leaven	
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		U
hris		6:30	11:00	
rian		6:30	12:00	
acob	Safety	6:30	12:00	
astins	2-guys	6:30	2:00	
		Tot	tal Crew Hours for Today:	
		Total	Crew Hours Cumulative:	
etails of Hauling/ Weigh	nt ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
eather Report				

Weekly Update Meeting February 21, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, February 17, 2018 were 4071 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

2/12 Being Accountable

2/13 Silica PPE

2/14 Spreading Sickness in the Workplace

2/15 7 Ladder Dont's

2/16 Proper Lifting

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 9 rain events over ¾ of an inch through Saturday, February 17, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of February 12, 2018

- Continued Electrical Work Inside of CTS 3
- Continued Electrical Upgrades on the South Landfill
- Continue Electrical & Control Work Inside of CTS 3
- Continue Replacing the 9 Interceptor Wells
- Cut to 4" above grade, the three IW that are too high to access piping

Work in Progress for Week of February 19, 2018

Back Flush Carbon Vessels

- Raised the Transfer Pump inside CTS 3
- Pressure Test the System
- Conduct Start Up of CTS 3

2 Week Look Ahead

- Replace Pumps and Hardware inside IW-10
- Finish Installing Check Valves at WMA 2
- Remove Existing Manifold and Carbon Vessels at IW-10
- Remove Existing BMPs

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.

* OU-3 Groundwater	Thu 7/27/17 Mon 1/15/18	93%	179.38 days	
NOTICE TO PLOCE BY	Thu 7/27/17 Thu 7/27/17	100%	1 day	7.27 🔷 7.27
Submittal Profess	Wed 8/2/17 Fri 9/15/17	100%	46 days	8/2
Modifization	Wed 9/20/17 Sun 9/24/17	100%	5 days	9/2C \$\\\ \\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Seep Collection	Thu 9/21/17 Wed 10/11/17	100%	21 days	11/01
Gravity Line from Seep Junction Box to CTS 3	Wed 10/11/17 Tue 10/31/17	100%	21 days	19/11
Forcemain from CTS 3 to Junction Box South of Highway 202	Wed11/1/17 FH11/17/17	100%	17.5 days	11/1 • 11/17
orceman from 9 IV to CTS 3	Wed11/1/17 Fn11/17/17	100%	17.5 days	11/2 4
Temporarily Tie In of 3" & 2" HDPE Pipe to FRAC Tank	Mon 11/13/17 Wed 11/15/17	100%	3 days	11/13
Forcernain from Junction Box North of Highway 202 to Driveway Crossing 1	Wed 11/29/17 Fri 12/8/17	100%	10 days	11/29
Forcemain from Junction Box North of Driveway 3 to AWW MH	Thu 12/7/17 Fr 12/5/17	100%	Zdays	127 - 12/8
Install Cross	Tue 11/21/17 wed 11/22/17	100%	2 days	11/21 11/22
Electrical & Mechanical Work Inside 9 tw	Mon 2/12/18 Mon 2/26/18	%06	35 days	
Electrical & Mechanical Work Inside CTS 3	Man 1/15/18 Mon 2/19/18	100%	37 days	
Installing Check Valves on 6 IW	Mon 2/26/18 Frt 3/2/18	950	S days	
Converting CTS 1 from FRAC Tank to Manhole	Mon 2/26/18 Tue 2/27/18	%0	2 days	
Converting CTS 2 to Manhole	Tue 2/27/18 Frt 3/2/18	0%	4 days	
Start Up and Commissioning of CTS 3	Thu 2/22/18 Fri 2/23/18	2696	2 days	



Construction Daily W	ork Report		Day	#
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-19-18. Monday			
Activities/ Deliveries Specific task working and or and Got pump that was under water ba	ccomplished today: aked out and got it raised up in the floor,and	piged back together. Dug tree	nch out at well 13to run new p	ower conduit and core
hole inside well. Put on 4" vent or	ut of eq tank that goes inside the building.	Put 3/8 tubeing on inside building.		ower conduct and core
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
/10 skid steer				
12 skid steer				
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		
nris		6:30		-
ian		6:30		
cob	Safety	6:30		
astins	2-guys	6:30		
		0.00	2.00	
				2
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
eather Report				

Construction Daily W	ork Report		Day #	#
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-20-18. Tuesday			
Activities/ Deliveries				
Specific task working and or ac Put 4" vent on from eq tank running Pumped up pvc lines in building to	complished today: goutside building. Back washed both ca see if it would hold had ball valve leaking,a	rbon tanks. Put tee and 2" valve on nd tee leaking got those fixed. C	n 2" force main at the frat tank ontrol guys where in the build	ks to test and fill water ling working on the cor
EQUIPMENT	HOURS	EQUIPMENT		HOURS
78 track hoe	110010	EQUI INEITI		HOURS
/10 skid steer				
/12 skid steer				
31 dozer				
LABOR	lacourumou.			
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy		6:30		
leon		6:30		
hris		6:30		
rian		6:30		
acob	Safety	6:30		
lastins	2-guys	6:30	2:00	
		-	10 11 1 2 1	
			tal Crew Hours for Today:	1
		lota	Crew Hours Cumulative:	
etails of Hauling/ Weig		Language		
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
eather Report				

Project Number/Name:	Tara 10 10 10 10 10 10 10 10 10 10 10 10 10			
	Solutia 1504			
Safety Meeting Topic:				
Date:	2-21-18. Wednesday			
Activities/ Deliveries Specific task working and or acc Got test inside building off and passe and passed. Help cut all wells back	ed. Moved test header to the 2" poly line	and got that test off and passed.	Cut in another tee and 2" val	ve to test the 3" line go
EQUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe				
110 skid steer				
12 skid steer				
1 dozer				
ABOR				
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30	5:00	
hris		6:30	5:00	
ian		6:30	5:00	
acob	Safety	6:30	3:00	
		Tot	al Crew Hours for Today:	
		Tota	Crew Hours Cumulative:	
etails of Hauling/ Weigh				
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
		1 11111		
anther Paus 4				
eather Report				

Non-RA

Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	2-23-18. Friday			
Activities/ Deliveries Specific task working and or acc Got test off and passed on 4" seep I was still leaking had to take them of	complished today: ine. Pulled old pump out of well #10 and f and get new hoses made. Got building	d installed new pipe and pump and up and going after that.	put new bracket in. Started	d up inside build,flex ho
QUIPMENT	HOURS	EQUIPMENT		HOURS
8 track hoe	THE STATE OF THE S	EQUI MENT		HOURS
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		
nris		6:30		
ian		6:30		
cob	Safety	6:30		
		12:30		
astins	2-guys	6:30		
			2.00	
		То	tal Crew Hours for Today:	
		Tota	l Crew Hours Cumulative:	
etails of Hauling/ Weigh	t ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION

Weekly Update Meeting February 28, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, February 24, 2018 were 4471 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

2/19 slips, trips, and falls

2/20 Safety at Home and at Work

2/21 Hazard Analysis

2/22 Hardhat Inspections

2/23 House Keeping Review

BMPs are being inspected daily and after each rain event exceeding ¾ of an inch. There have been 9 rain events over ¾ of an inch through Saturday, February 24, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of February 19, 2018

- Continued Electrical Upgrades on the South Landfill
- Continue Electrical & Control Work Inside of CTS 3
- Finished Replacing the 9 Interceptor Wells
- Back Flush Carbon Vessels
- Raised the Transfer Pump inside CTS 3
- Pressure Test the System
- Conduct Start Up of CTS 3

Work in Progress for Week of February 26, 2018

- Replace Pumps and Hardware inside IW-10
- Began Installing Check Valves at WMA 2
- Remove BMPs
- Dispose of Old Pumps and Discharge Piping from Interceptor Wells
- Reline IW 24 Vault

2 Week Look Ahead

- Remove Existing Manifold and Carbon Vessels at IW-10
- Tie into AWWSB Manholes

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.



Mon-RA

Project Number/Name:	Solutia 1504			
Safety Meeting Topic:	S010108 1504			
Date:	2-26-18. Monday			
ate.	2-20-10. Worlday			
Activities/ Deliveries				
pecific task working and or a ixed few drips that's was on the fi utting into a roll off. Put both bi n flow meters on the 2" and 1".	ccomplished today: ifter bag. Cut up old pipes that came out ord screens on building one on each side.	of all the wells and pumps loaded in Waterplugged up hole in building wl	to a roll off. Started on pick here the vent from eq tank ran	king up old silt fence a n outside. Swapped
QUIPMENT	HOURS	EQUIPMENT		HOURS
B track hoe				1100113
10 skid steer				
12 skid steer				
1 dozer				
ABOR				
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6:30		
eon		6:30		
ris		6:30	6:00	
ian		6:30	6:00	
cob	Safety	6:30	4:00	
stins	2-guys	6:30	2:00	
			2.00	
		Tot	al Crew Hours for Today:	
		Total	Crew Hours Cumulative:	
etails of Hauling/ Weig	ht ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
	21/2			
		7		
eather Report				

Non-RA

Construction Daily W	ork Report		Day	#	
Project Number/Name:	Solutia 1504				
Safety Meeting Topic:					
Date:	2-27-18. Tuesday				
Activities/ Deliveries Specific task working and or ac	and the second second				
Finished getting up rest of the silt for	ence and got up the well section we cut off flow meters. Moved inside the plant and	Backfilled at well 13 where we distarted on replacing check valves in	dug out for new conduit line ar a side wells done 3 of them	nd waterplugged the	
QUIPMENT	HOURS	EQUIPMENT		lugues	
8 track hoe	incons	EQUIPMENT		HOURS	
/10 skid steer					
12 skid steer					
11 dozer					
ABOR					
IAME	OCCUPATION	START TIME:	STOP TIME:	HOURS	
andy		6:30			
eon		6:30			
hris		6:30			
ian		6:30			
cob	Safety	6:30			
astins	2-guys	8:00			
	-	0.00	(1.00		
		То	tal Crew Hours for Today:		
Total Crew Hours Cumulative					
etails of Hauling/ Weigh	nt ticket # and tons				
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION	
				DESTINATION	
	LUI				
			X ===		
		7 7			
- 11					



Project Number/Name:	Solutia 1504			
Safety Meeting Topic:	301dtid 1304			
Date:	2-28-18. Wednesday			
Activities/ Deliveries Specific task working and or ac Finished up the last 3 check valves and dug out around cts 1 m.h and	inside the plant. Dug out road and insta	lled riprap and 57 stone going or ne in cts 2 m.h	nto pcb cell. Moved mini h	ioe and skid steer across
QUIPMENT	HOURS	EQUIPMENT		Inches
8 track hoe	HOURS	EQUIPMENT		HOURS
10 skid steer				
12 skid steer				
1 dozer				-
ABOR				4
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS
andy		6	5:30	4:00
eon		(0:00	Sick
nris		6	:30	4:00
ian		6	:30	1:00
cob	Safety	6	:30	1:00
	i i			
			10	
			Total Crew Hours for Tod	ay:
		To	otal Crew Hours Cumulati	ve:
etails of Hauling/ Weigl	nt ticket # and tons			
UCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
			1	
			1.	
		Market State of the State of th		9
		_		-

Weekly Update Meeting March 7, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, March 3, 2018 were 4752hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

2/26 Ladder Safety

2/27 Horseplay at Work

2/28 Confined Space Review

3/1 Housekeeping

3/2 Using Common Sense

BMPs have been removed due to sustained vegetation growth. There have been 10 rain events over ¾ of an inch through Saturday, March 3, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of February 26, 2018

- Replace Pumps and Hardware inside IW-10
- Finished Installing Check Valves at WMA 2
- Remove BMPs
- Dispose of Old Pumps and Discharge Piping from Interceptor Wells
- Tied Discharge Piping from CTS 1 into AWWSB Manhole
- Installed Valves so that FRAC Tank for CTS 1 could remain in use

Work in Progress for Week of March 5, 2018

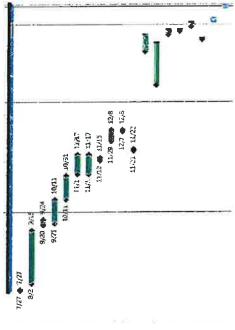
- Tied Discharge from CTS 2 and CTS 3 into AWWSB Manhole
- Reline IW 24 Vault
- Install Air Release Valves
- Install Man Gate North of CTS 2

2 Week Look Ahead

- Remove Existing Manifold and Carbon Vessels at IW-10
- Install the Flowmeter Transmitter Register
- Install the added Flowmeter and pH Vault

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.



										ALCOHOL:	•	•	•	
	***	10/11	16/01	That we tall	11A () 14:D	13/12 🔷 13/12	11,79 (88) 12,41	12,7 🖝 12,5	1153 • 11/22					
7/27 \$ 7/27 3/2 \$	9/20 (1)	977 G	r/o1											

S days

21 days

22 days

2 days

2 days

2 days

2 days

3 deys

3 deys

5 days

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6 days

6 days

6 days

8 days

The Pizzita Meesatissis The Pizzita Weedstran Freshastra Weedstrand Freshastra Weedstrand Freshastra Weedstrand Freshastra Weedstrand Freshastra Weedstrand Freshastra Meesatistra Mees

179.38 days I tiby 48 days

Construction Daily W	югк керогt		Day #	
Project Number/Name:	Solutia 1504			
Safety Meeting Topic:				
Date:	3-8-18. Thursday			
the old carbon vessels and graded	ccomplished today: terplugged up vault inside the plant that had I some dirt over it and grassed and hayed. brackets for the digital meter read outs in ct	Cleaned up trash around cts 3 an		
EQUIPMENT	Hours	EQUIPMENT		HOURS
78 track hoe	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-	III OND
V10 skid steer				
V12 skid steer				
31 dozer			-	
LABOR				
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS
Randy		6:30		
Deon		6:30	7	
Chris		6:30	4:30	
Brlan		6:30	4:30	
Jacob	Safety	6:30	2:00	
		То	tal Crew Hours for Today:	47
		Tota	l Crew Hours Cumulative:	
Details of Hauling/ Weig	ht ticket # and tons			
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION
				V
Veather Report				

Weekly Update Meeting March 14, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, March 10, 2018 were 5027 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

3/5 Bad Habits in the Workplace

3/6 Avoiding Electrical Accidents

3/7 Overhead and Underground Utilities

3/8 Proper PPE

3/9 No Taylor Corporation Employees on site

BMPs have been removed due to sustained vegetation growth. There have been 11 rain events over ¾ of an inch through Saturday, March 10, 2018. There has been no damage to any BMPs during these rain events. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of March 5, 2018

- Tied Discharge from CTS 2 and CTS 3 into AWWSB Manhole
- Reline IW 24 Vault
- Install Air Release Valves
- Install Man Gate North of CTS 2

Work in Progress for Week of March 12, 2018

- Completed IW 10 Carbon Drum and Cleanup
- Re-Establish Drainage Pathway at the Toe-Drain Outlets

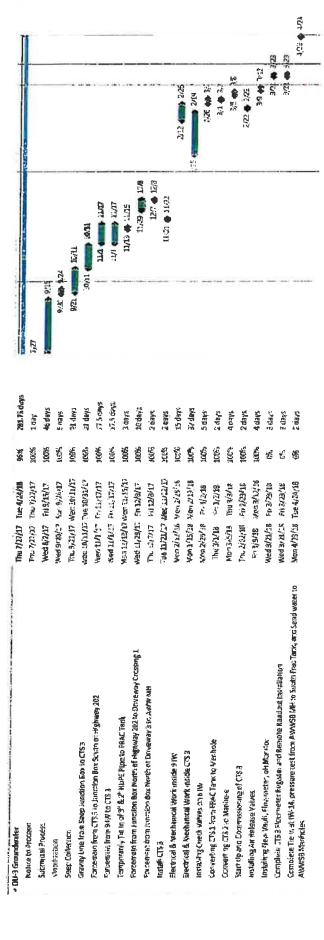
 Removal of Excess Material and Debris Including Electrical Components

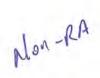
2 Week Look Ahead

- Install the Flowmeter Transmitter Register for 1" Seep Flowmeter
- Install the added Flowmeter and pH Vault

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.





Construction Daily W	74.14		Day	"	
Project Number/Name:	Solutia 1504				
Safety Meeting Topic:					
Date:	3-12-18. Monday				
Activities/ Deliveries Specific task working and or at Graded the road way with load of trunning in because wasn't draining	ccomplished today: base. Went through all the wells and cut g good. Took out old carbon vessels buil	off old pipe lines and waterplugged lding and both carbon vessels,smasl	the holes up. Dug out ditched the drums up and loaded	ch that the toe drains into a roll off	was
EQUIPMENT	HOURS	EQUIPMENT		Luciano	
78 track hoe	HOOKS	EQUIPMENT		HOURS	
V10 skid steer					
V12 skid steer					
31 dozer		4			
71 GOZGI					
LABOR					
NAME	OCCUPATION	START TIME:	STOP TIME:	HOURS	
Randy		6:30			1
Deon		6:30			1
Chris		6:30			10
rian		6:30			
acob	Safety	6:30			10
		0.00	1.50		
					_
					_
		101	tal Crew Hours for Today:		47
		Total	Crew Hours Cumulative:		
etails of Hauling/ Weigl	nt ticket # and tons				
RUCK	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION	-
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eather Report					

Weekly Update Meeting March 21, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, March 17, 2018 were 5105 hours. Daily safety meetings are being held each morning for all construction employees on site. Safety topics at the daily safety meetings last week included the following:

3/12 Proper Lifting Techniques

3/13 Ladder Safety

3/14 No Taylor Corporation Employees on Site

3/15 No Taylor Corporation Employees on Site

3/16 Safety around Electrical Components

BMPs have been removed due to sustained vegetation growth. There have been 12 rain events over ¾ of an inch through Saturday, March 17, 2018. BMPs have been removed due to sustained vegetation in disturbed areas. Employees sign in with the guard every morning and sign out when they leave the site.

Work completed week of March 12, 2018

- Complete IW-10 Carbon Drum Removal and Cleanup
- Re-Established Drainage Pathway at toe-drain outlets
- Removal of Excess Material and Debris Including Electrical Components
- Installed Pressure Transmitters Upstream and Downstream of Bag Filter

Work in Progress for Week of March 19, 2018

- Infiltration Test on Gravity Line between Sump and CTS 3
- Install Remote Readout for the 2" Flowmeter inside CTS 3

2 Week Look Ahead

- Install the Flowmeter Transmitter Register for 1" Seep Flowmeter
- Install the added Flowmeter Vault

Opportunities

Taylor Corporation Hours are 6:30 to 4:30 M-F.



Weekly Update Meeting May 2, 2018

Project: SWMU 1 Modifications

Owner: Pharmacia LLC/ Solutia Inc.

Contractor: Taylor Corporation

Health and Safety

Safe hours worked through Saturday, May 2, 2018 were 5215 hours. Taylor Corporations crews have not been on site consistently in the last week.

BMPs have been removed due to sustained vegetation in disturbed areas. Employees sign in with the guard when on site and sign out when they leave the site.

Work completed week of April 23, 2018

Backflush Carbon Vessel 1 inside CTS 3

Work in Progress for Week of April 30, 2018

No Activities Scheduled

2 Week Look Ahead

- Tie in pipe at IW 14
- Pressure Test the line from AWWSB Manhole to FRAC Tanks on South Landfill



	Day							
Project Number/Name:	Solutia 1703							
Safety Meeting Topic:								
Date:	5-7-18. Monday	5-7-18. Monday						
Activities/ Deliveries Specific task working and or acc Finally got the line filled up with wate soump turned back on at cts 3. For	complished today: er at the end of the day,found couple of ai und the couplin leaking inside where we to	ir release valves leaking through th esting from.	e air release itself. Got all th	e wells cut on and seep				
QUIPMENT	HOURS	EQUIPMENT		luaves				
8 track hoe	HOURS	EQUIPMENT		HOURS				
10 skid steer								
12 skid steer								
1 dozer				_				
ABOR								
AME	OCCUPATION	START TIME:	STOP TIME:	HOURS				
andy		6:3						
eon		6:3						
nris		6:3						
ian		6:3						
		0.0	4:30					
		T	Lotal Crew Hours for Today:					
		Tot	al Crew Hours Cumulative:					
etails of Hauling/ Weigh	t ticket # and tons							
ИСК	WEIGHT TICKET # / TONS	LOAD COUNT	ORIGIN	DESTINATION				
		3343.35-74		DESTINATION				
eather Report								



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix G

Stormwater BMP and Equipment Inspection Forms

Climatological Data for ANNISTON METRO AP, AL - October 2017

D		Temper	rature		HDD	CDD	Precipitation	New Snow	Snow Dept
Date	Maximum	Minimum	Average	Departure	прр	CDD		THEM SHOW	
2017-10-01	76	60	68.0	-0.1	0	3	T	0.0	0
2017-10-02	75	63	69.0	1.3	0	4	T	0.0	0
2017-10-03	82	60	71.0	3.7	0	6	0.00	0.0	0
2017-10-04	82	58	70.0	3.0	0	5	0.00	0.0	0
2017-10-05	83	56	69.5	2.9	0	5	0.00	0.0	0
2017-10-06	84	58	71.0	4.7	0	6	0.00	0.0	0
2017-10-07	84	67	75.5	9.6	0	11	0.10	0.0	0
2017-10-08	78	73	75.5	9.9	0	11	2.09	0.0	0
2017-10-09	85	72	78.5	13.3	0	14	0.00	0.0	0
2017-10-10	86	70	78.0	13.1	0	13	0.00	0.0	0
2017-10-11	88	67	77.5	12.9	0	13	0.00	0.0	0
2017-10-12	85	62	73.5	9.3	0	9	0.00	0.0	0
2017-10-13	88	60	74.0	10.1	0	9	0.00	0.0	0
2017-10-14	75	66	70.5	6.9	0	6	0.00	0.0	0
2017-10-15	84	66	75.0	11.7	0	10	2,33	0.0	0
2017-10-16	69	52	60.5	-2.4	4	0	0.52	0.0	0
2017-10-17	71	47	59.0	-3.6	6	0	0.00	0.0	0
2017-10-18	73	47	60.0	-2.3	5	0	0.00	0.0	0
2017-10-19	77	47	62.0	0.0	3	0	0.00	0.0	0
2017-10-20	79	45	62.0	0.3	3	0	0.00	0.0	0
2017-10-21	79	52	65.5	4.1	0	1	0.00	0.0	0
2017-10-22	79	58	68.5	7.4	0	4	0.17	0.0	0
2017-10-23	71	48	59.5	-1.3	5	0	0.96	0.0	0
2017-10-24	66	43	54.5	-6.0	10	0	0.00	0.0	0
2017-10-25	61	39	50.0	-10.2	15	0	0.00	0.0	0
2017-10-26	71	37	54.0	-5.9	11	0	0.00	0.0	0
2017-10-27	73	44	58.5	-1.1	6	0	T	0.0	0
2017-10-28	66	41	53.5	-5.8	11	0	0.68	0.0	0
2017-10-29	51	35	43.0	-16.0	22	0	0.00	0.0	0
2017-10-30	68	32	50.0	-8.7	15	0	0.00	0.0	0
2017-10-31	71	39	55.0	-3.4	10	0	0.00	0.0	0
Sum	2360	1664	-	-	126	130	6.85	0.0	-
Average	76.1	53.7	64.9	1.9	-	-		/ - 1	0.0
Normal	74.8	51.3	63.0	-	131	71	3.12	0.0	(+)

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).

Max Temperature : midnight

Min Temperature : midnight

Precipitation: midnight

Snowfall: midnight Snow Depth: 6am

STORMWATER INSPECITON AND MAINTENANCE REPORT FORM

Site Name: Anniston PCB Site, OU-3 Remedial Action Cover Systems

Site Location: Anniston, Calhoun County, Alabama

NPDES Permit Number: Not Applicable

Weekly Rainfall Summary

Day:	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Date:	10/22	10/23	10/04	10/25	10/26	10/27	10/28
Rainfall:	0.17"	1.08% "	0.0"	0.0"	0.0"	7	0.68'

Come	lina	In favor	4:
Sami	ning	Informa	tion:

- Sample Type: 50mL test tubes taken for comparison
- · Location: Fluint on 202 while water from worksite diains.

 2nd sample taken as control from TDO 64.

 Analysis: Both samples showed equal amounts of clarity.

 Inspection Results: turbidity/signs of erosion present

Deficiencies or Required Maintenance: No deficiencies or maintenance required

· Planned Corrective Action:

NIA

Corrective Action Schedule:

NIA

Other Comments:

5:1t Fence in good condition upon inspection

STORMWATER INSPECTION AND MAINTENANCE REPORT FORM

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	10/29	10/30	10/31	11/1	11/2	11/3	11/4
RAINFALL:	.2"	0"	0"	0"	0"	0"	0"

SAMPLING INFORMATION:

- SAMPLE TYPE: Test tube samples taken for visual comparison and analysis
- LOCATION: Flume on highway 202/ Toe Drain Outlet
- ANALYSIS: Samples showed no signs of turbidity and no difference in clarity

INSPECTION RESULTS:

- DEFICIENCIES OR REQUIRED MAINTENANCE: No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

SIGNATURE: // auth Pape DATE: // 14/17

Climatological Data for	NNISTON METROPOLITAN AP, AL - November 2017
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D		Temper	ature		HDD	CDD	Precipitation	New Snow	Snow Deptl
Date	Maximum	Minimum	Average	Departure	пов	CDD	Treapitation	Trem Show	S.10 11 21 11 11
2017-11-01	69	45	57.0	-1.1	8	0	0.06	0.0	0
2017-11-02	74	58	66.0	8.2	0	1	T	0.0	0
2017-11-03	79	55	67.0	9.5	0	2	0.00	0.0	0
2017-11-04	79	59	69.0	11.8	0	4	0.00	0.0	0
2017-11-05	80	57	68.5	11.6	0	4	0.00	0.0	0
2017-11-06	72	56	64.0	7.4	1	0	0.02	0.0	0
2017-11-07	74	61	67.5	11.2	0	3	0.08	0.0	0
2017-11-08	63	53	58.0	2.1	7	0	0.34	0.0	0
2017-11-09	57	43	50.0	-5.6	15	0	0.41	0.0	0
2017-11-10	63	35	49.0	-6.3	16	0	0.00	0.0	0
2017-11-11	62	38	50.0	-5.0	15	0	0.00	0.0	0
2017-11-12	57	47	52.0	-2.7	13	0	0.01	0.0	0
2017-11-13	66	42	54.0	-0.4	11	0	0.00	0.0	0
2017-11-14	66	39	52.5	-1.5	12	0	0.00	0.0	0
2017-11-15	64	43	53.5	-0.2	11	0	T	0.0	0
2017-11-16	68	39	53.5	0.1	11	0	0.00	0.0	0
2017-11-17	70	34	52.0	-1.1	13	0	0.00	0.0	0
2017-11-18	73	44	58.5	5.8	6	0	0.30	М	0
2017-11-19	54	32	43.0	-9.4	22	0	0.00	0.0	0
2017-11-20	60	29	44.5	-7.6	20	0	0.00	0.0	0
2017-11-21	65	40	52.5	0.7	12	0	0.00	0.0	0
2017-11-22	61	35	48.0	-3.5	17	0	0.00	0.0	0
2017-11-23	63	30	46.5	-4.7	18	0	0.00	0.0	0
2017-11-24	65	36	50.5	-0.3	14	0	0.00	0.0	0
2017-11-25	63	37	50.0	-0.5	15	0	T	0.0	0
2017-11-26	64	32	48.0	-2.2	17	0	0.00	0.0	0
2017-11-27	64	28	46.0	-3.9	19	0	0.00	0.0	0
2017-11-28	68	35	51.5	1.9	13	0	0.00	0.0	0
2017-11-29	71	42	56.5	7.2	8	0	0.00	0.0	0
2017-11-30	65	51	58.0	9.0	7	0	0.10	0.0	0
Sum	1999	1275	-	-	321	14	1.32	0.0	-
Average	66.6	42.5	54.6	1.1	-		T -	-	0.0
Normal	65.2	41.9	53.5		355	11	4.58	0.0	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).

Max Temperature : midnight
Min Temperature : midnight
Precipitation : midnight

Snowfall : midnight

Snow Depth: 6am

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	10/29	10/30	10/31	11/1	11/2	11/3	11/4
DAINEALL:	2"	0"	0"	0"	0"	0"	0"

SAMPLING INFORMATION:

- SAMPLE TYPE: Test tube samples taken for visual comparison and analysis
- LOCATION: Flume on highway 202/ Toe Drain Outlet
- ANALYSIS: Samples showed no signs of turbidity and no difference in clarity

INSPECTION RESULTS:

- **DEFICIENCIES OR REQUIRED MAINTENANCE:** No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

SIGNATURE: / Jan Pape DATE: //4/17

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	11/5	11/6	11/7	11/8	11/9	11/10	11/11
RAINFALL:	0"	0,,	0"	0"	0"	0"	0"

SAMPLING INFORMATION: No Precipitation for the week of 11/5-11/11 so no sampling performed

- SAMPLE TYPE:
- LOCATION:
- ANALYSIS:

INSPECTION RESULTS:

- **DEFICIENCIES OR REQUIRED MAINTENANCE:** No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

SIGNATURE: // 12/17

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY DAINEALL SUMMARY.

VEEKLY RAII DAY:	SUNDAY		TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	11/12	11/13	11/14	11/15	11/16	11/17	11/18
RAINFALL:	.1"	0	0	.4"	0	0	0

SAMPLING INFORMATION:

- SAMPLE TYPE: Water samples taken in test tube for comparison and analysis
- LOCATION: Flume on Highway 202/ TDO at
- ANALYSIS: Samples show no signs of turbidity or difference in clarity

INSPECTION RESULTS:

- **DEFICIENCIES OR REQUIRED MAINTENANCE:** No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

SIGNATURE: [] audit Pazie

DATE: [] 117/2017

Date		Temperature						:		
Date	Maximum	Minimum	Average	Departure	HDD	CDD	Precipitation	New Snow	Snow Dept	.h
2018-01-01	29	17	23.0	-20.4	42	0	0.00	0.0	0	
2018-01-02	35	М	М	М	М	 М	0.00	0.0		
2018-01-03	40	23	31.5	-11.8	33	0	0.00	0.0		
2018-01-04	34	21	27.5	-15.7	37	0	0.00	0.0		
2018-01-05	40	16	28.0	-15.2	37	0	0.00	0.0	0	
2018-01-06	42	18	30.0	-13.1	35	0	0.00	0.0	0	
2018-01-07	45	24	34.5	-8.6	30	0	0,00	0.0	0	
2018-01-08	50	33	41.5	-1.6	23	0	0.40	0.0	0	
2018-01-09	61	43	52.0	8.9	13	0	0.00	0.0		;
2018-01-10	68	52	60.0	17.0	5	0 .	Т	0.0		:
2018-01-11	71	59	65.0	22.0	0	0	0.12	0.0		
2018-01-12	65	27	46.0	3.0	19	0	0.27	0.0	 0	
2018-01-13	32	21	26,5	-16.5	38	0	0.00	0.0		
2018-01-14	42	18	30.0	-13.0	35	0 .	0.00	0.0	0	
2018-01-15	52	25	38.5	-4.6	26	0	0.00	0.0	0	
2018-01-16	42	21	31.5	-11.6	33	0	0.01	M.	0	
2018-01-17	28	9	18.5	-24.6	46	0 :	0.02		0	
2018-01-18	41	13	27.0	-16.2	38	0	0.02	M	M	
2018-01-19	51	15	33.0	-10.2	32	0	0.00	0.0	0	
2018-01-20	63	25	44.0	0.7	21	0	0.00	0.0	0	
2018-01-21	71	32	51.5	8.2	13	0	0.00	0.0	0	
2018-01-22	64	44	54.0	10.6	11	0 :	0.10	0.0	0	
2018-01-23	58	36	47.0	3.6	18	0	0.00	0.0		
2018-01-24	55	27	41.0	-2.5	24	0	er como e communicación de la compania de la compa	0.0	0	
2018-01-25	60	22	41.0	-2.6	24	0	0.00	0.0	0	
018-01-26	59	33	46.0	2.3	19		0.00	0,0	0	
018-01-27	59	51	55.0	11.2	10		0.00	0.0	0	
018-01-28	59	53	56.0	12.1	9		0.16	0.0	. 0	
018-01-29	60	38	49.0	5.0	16	0 :	0.81	0.0	0	
018-01-30	47	27	37.0	-7.2	28	U; O	0.00	0.0		
018-01-31	57	25	41.0	-3.3			0.00	0.0	0	
Sum	1580	868	71.0	<i>-</i>	24	0 :	0.00	0.0	. 0	
Average	51.0	28.9	40.2	3.3	739	:	1.89	0.0	<u> </u>	
	53.7	33.0	40.2	-3.2	-	- :	·	-	0.0	

 Max Temperature : midnight
 Min Temperature: midnight
 Precipitation : midnight
 Snowfall: midnight

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	1/21	1/22	1/23	1/24	1/25	1/26	1/27
RAINFALL:	0"	.4"	0,,	0	0,,	0.,	.8"

SAMPLING INFORMATION:

- SAMPLE TYPE: Test tube samples taken for visual comparison and analysis
- LOCATION: Flume on highway 202/ Toe Drain Outlet
- ANALYSIS: Samples showed no signs of turbidity and no difference in clarity

INSPECTION RESULTS:

- DEFICIENCIES OR REQUIRED MAINTENANCE: No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

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DATE: 129/18

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	1/28	1/29	1/30	1/31	2/1	2/2	2/3
RAINFALL:	34"	0"	0"	0"	0,,	0	0

SAMPLING INFORMATION:

- SAMPLE TYPE: Test tube samples taken for visual comparison and analysis
- LOCATION: Flume on highway 202/ Toe Drain Outlet
- ANALYSIS: Samples showed no signs of turbidity and no difference in clarity

INSPECTION RESULTS:

- DEFICIENCIES OR REQUIRED MAINTENANCE: No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

SIGNATURE: JOHN Payre

Climatological Data for ANNISTON METROPOLITAN AP, AL - February 2018

Date		Temper	ature		HDD	CDD	Precipitation	New Snow	6 n
Date	Maximum	Minimum	Average	Departure	нов	CDD	Precipitation	New Snow	Snow Dept
2018-02-01	66	42	54.0	9.6	11	0	0.11	0.0	0
2018-02-02	44	30	37.0	-7.6	28	0	0.01	0.0	0
2018-02-03	55	31	43.0	-1.7	22	0	0.00	0.0	0
2018-02-04	51	34	42.5	-2.4	22	0	2.01	0.0	0
2018-02-05	53	33	43.0	-2.1	22	0	0.00	0.0	0
2018-02-06	72	40	56.0	10.8	9	0	0.05	0.0	0
2018-02-07	64	38	51.0	5.6	14	0	1.88	0.0	0
2018-02-08	57	33	45.0	-0.6	20	0	0.00	0.0	0
2018-02-09	68	34	51.0	5.2	14	0	0.26	М	0
2018-02-10	68	53	60.5	14.5	4	0	0.12	0.0	0
2018-02-11	69	59	64.0	17.8	1	0	1.55	0.0	0
2018-02-12	59	44	51.5	5.0	13	0	0.04	M	0
2018-02-13	60	47	53.5	6.8	11	0	0.00	0.0	0
2018-02-14	65	50	57.5	10.6	7	0	0.07	0.0	0
2018-02-15	72	59	65.5	18.3	0	1	0.00	0.0	0
2018-02-16	69	54	61.5	14.1	3	0	0.02	0.0	0
2018-02-17	75	52	63.5	15.9	- 1	0	0.15	0.0	0
2018-02-18	65	50	57.5	9.6	7	0	0.07	0.0	0
2018-02-19	78	58	68.0	19.9	0	3	0.00	0.0	0
2018-02-20	77	60	68.5	20.1	0	4	0.00	0.0	0
2018-02-21	80	66	73.0	24.3	0	8	0,00	0.0	0
2018-02-22	82	58	70.0	21.1	0	5	0.00	0.0	0
2018-02-23	81	59	70.0	20.8	0	5	0.02	0.0	0
2018-02-24	77	64	70.5	21.0	0	6	0.00	0.0	0
2018-02-25	70	54	62.0	12.3	3	0	0.83	0.0	0
2018-02-26	67	47	57.0	7.0	8	0	0.38	0.0	0
2018-02-27	69	42	55.5	5.2	9	0	0.00	0.0	0
2018-02-28	70	53	61.5	11.0	3	0	0.39	0.0	0
Sum	1883	1344	-	-	232	32	7.96	0.0	-
Average	67.3	48.0	57.6	10.4	-	-	-		0.0
Normal	58.1	36.3	47.2	-	499	1	5.08	0.4	-

Observations for each day cover the 24 hours ending at the time given below (Local Standard Time).

Max Temperature : midnight

Min Temperature : midnight Precipitation : midnight

recipitation : intumgni

Snowfall: midnight Snow Depth: 6am

of 1

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	2/4	2/5	2/6	2/7	2/8	2/9	2/10
RAINFALL:	0"	.2"	0"	1.75"	0"	0"	.3"

SAMPLING INFORMATION:

SAMPLE TYPE: Test tube samples taken for visual comparison and analysis

LOCATION: Flume on highway 202/ Toe Drain Outlet

ANALYSIS: Samples showed no signs of turbidity and no difference in clarity

INSPECTION RESULTS:

DEFICIENCIES OR REQUIRED MAINTENANCE: No deficiencies or required maintenance

PLANNED CORRECTIVE ACTION: N/A

CORRECTIVE ACTION SCHEDULE: N/A

ADDITIONAL COMMENTS: All previously excavated vegetation has returned

C	IC	N	A	TI	IR	E.

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	2/11	2/12	2/13	2/14	2/15	2/16	2/17
RAINFALL:	0"	0"	0"	0"	0"	0"	0,,

SAMPLING INFORMATION: No Precipitation for the week of 2/11-2/17 so no sampling performed

- SAMPLE TYPE:
- LOCATION:
- ANALYSIS:

INSPECTION RESULTS:

- DEFICIENCIES OR REQUIRED MAINTENANCE: No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

SI	GN	A	TI	R	F

SITE NAME: Eastman Chemical/Solutia

SITE LOCATION: Calhoun County—Anniston, Alabama

NPDES PERMIT NUMBER: N/A

WEEKLY RAINFALL SUMMARY:

DAY:	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE:	2/18	2/19	2/20	2/21	2/22	2/23	2/24
RAINFALL:	0"	0"	0"	0"	0"	0"	0"

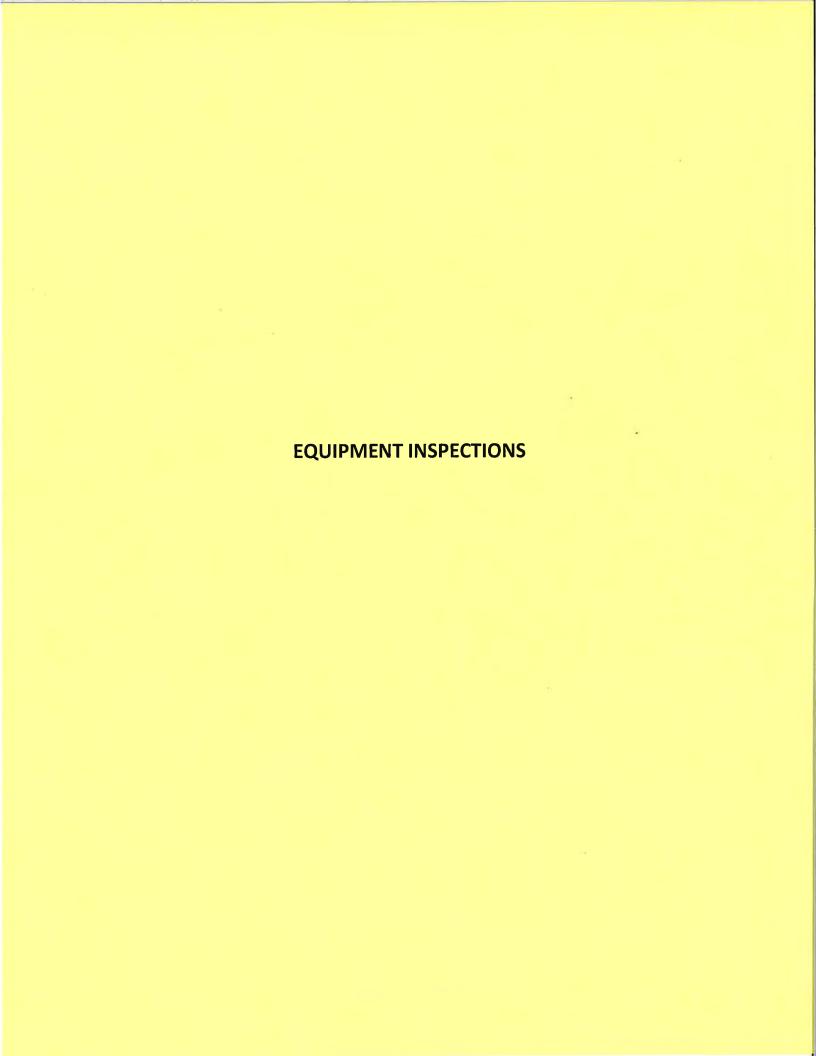
SAMPLING INFORMATION: No Precipitation for the week of 2/18-2/24 so no sampling performed

- SAMPLE TYPE:
- LOCATION:
- ANALYSIS:

INSPECTION RESULTS:

- DEFICIENCIES OR REQUIRED MAINTENANCE: No deficiencies or required maintenance
- PLANNED CORRECTIVE ACTION: N/A
- CORRECTIVE ACTION SCHEDULE: N/A
- ADDITIONAL COMMENTS:

CI	CN	4	TI	ID	F.





10-27-17

Project Name or # swmu MODIFICATIONS Equipment Type TB 230 packing			Location Anniston, AL Equipment #					
Equipment Type 78 230 /	vacklo	2		Eq	luipme	ent #		
EQUIPMENT	S u n d a	M o n d a y	T u e s d a	W e d n e s d a	T h u r s d a	F r i d a y	S a t u r d a	COMMENTS / ACTIONS TAKEN
Foot Brakes		1	V	V	1	V		
Reverse Signal Alarm			V	V	1	V		
Horn/Air Horn			1	V		V		
Tires/Tracks			V.	V		V		
Steering			V	V		V		
Seat Belt			V	V		V		
Operating Controls			1	V		V	50	
Access Ladders/Steps			V.	V^		V		
Fire Extinguisher			V.	V		V		
Lights			¥	V		V		
Mirrors			X	X		*		no moras Doesn't come equipped w/ micross
Instruments			1	V		1		V IF
Coupling Devices			V	V		V	55	
Air Filter			V	V		V		
Radiator Coolant Level			V	V				
Windshield Wipers			V	V		V		
Windshield/Window Glass			V	V	1	V		
Exhaust System			V	V		V		
Hydraulic Lines/Air Hoses			V	V		1		
Ingine Oil Level			V	V	1	1		
Belts		П	V	V		V		
lydraulic Oil Level			V	V		V		
Rollover Equipment			V	V		V		
leanliness		1	V	V		V		
Open and Check Inside Each Door	Π	1	V	1/	11	V		

- 1) Each day prior to operating equipment, the operator should check all boxes that apply
- 2) If anything requires maintenance identify the mechanic and supervisor
- 3) Inspection Sheets will be picked up Weekly

		Mechical Work Required Y/N			Mechical Work Requ	uired Y/N
Sunday Inspector	Rent	Yes (No)	Thursday Inspector	Reco	Yes (No.)	5
Monday Inspector	Ans.	Yes (No	Friday Inspector	Dec	Yes (o	,
Tuesday Inspector	Rough	Yes (No	Saturday Inspector		Yes No	
Wednesday Insepctor	Robot	Yes (No)				



Date	Range			
	10-2	3/	10-28	
Time		-		

Project Name or # SWMU MODIFICATIONS		Location Anniston, AL	
Equipment Type Takeuch, TL1	122	Equipment #	
EQUIPMENT	S M o n n d d a a y y	TehFa udhFa enrt serius sodr dsdaday yyy	COMMENTS / ACTIONS TAKEN
Foot Brakes	X	YXXX	
Reverse Signal Alarm		11/1/	
Horn/Air Horn		111,1	
Tires/Tracks		11/1/1	
Steering		1111	
Seat Belt		11111	
Operating Controls	V	1/1//	77300
Access Ladders/Steps		1. 1. 1. 1.	
ire Extinguisher		7111	
ights		1111	
Mirrors		1.1.1/1	
nstruments		11111	
oupling Devices	1	1, 1, 1, 1,	
ir Filter	1	1000	
adiator Coolant Level			
/indshield Wipers	1		
/indshield/Window Glass		/////	
haust System			
draulic Lines/Air Hoses		7777	
gine Oil Level		VIVI	
lts	IV.	0000	
draulic Oil Level		1221	
Nover Equipment	1		
eanliness			
en and Check Inside Each Door		1777	

- 1) Each day prior to operating equipment, the operator should check all boxes that apply
- 2) If anything requires maintenance identify the mechanic and supervisor
- 3) Inspection Sheets will be picked up Weekly

	Mechical Work Required Y/N		Mechical Work Required Y/N
Sunday Inspector	Yes No	Thursday Inspector 70	Yes (No)
Monday Inspector)[) res (No.)	Friday Inspector	Yes No
Tuesday Inspector	D Yes No	Saturday Inspector	Yes No
Wednesday Insepctor ()	Yes No		





Date Range				
1:-30	17	-	11-3-17	
Time				

Project Name or # SWMU MODIFICATIONS Sclutic					Locati			
		1	-		nisto			
Equipment Type 18 230	xuel	. lug			4 dipini			0-0
EQUIPMENT	S u n d a y	M o n d a y	T U e s d a y	W e d n e s d a y	T h u r s d a	F r i d a y	S a t u r d a y	COMMENTS / ACTIONS TAKEN
Foot Brakes		V	V	V	V	V	1	
Reverse Signal Alarm		1	V	V	V	V		
Horn/Air Horn		V	V	1	V	~		
Tires/Tracks		V	V	V	V	V		
Steering		V	V	V	V	1		
Seat Belt		V	1	V	V	V		
Operating Controls	Π	V	V	V	V	V.		
Access Ladders/Steps		V	V	V	V	1		
Fire Extinguisher		1/	V	V	V	V	1	
Lights		V	V	V	1	V		
Mirrors		K	i	X	1	٨		no mysis Does + come equipped w/m
nstruments		1	V	1	V	V		v (l
Coupling Devices		1	V	1	V	V		
Air Filter		V	V	V	V	V		
Radiator Coofant Level		V	V	V	V	/		
Windshield Wipers		X	Y	X	X	1	Ш	no wight SAANH
Windshield/Window Glass		X	1	X	1	K.		no mes girls san sit
xhaust System		1/	V	V	1	1		
fydraulic Lines/Air Hoses		1	V	V	V	V		
ngine Oil Level		V	V	V	V	1		
Belts		V	V	V	V	V		4.00
lydraulic Oil Level			V	V	V	V	\perp	
tollover Equipment		V	V	~	V	V		
Cleanliness		V	V	V	V	V		
open and Check Inside Each Door		V	V	V	V	1	1	

- 1) Each day prior to operating equipment, the operator should check all boxes that apply
- 2) If anything requires maintenance identify the mechanic and supervisor
- 3) Inspection Sheets will be picked up Weekly

		Mechical Work Required Y/N		Mechical Work Required Y/N
Sunday Inspector	Rends	ves (No)	Thursday Inspector King	Yes Mg?
Monday Inspector	Bench	Yes (No	Friday Inspector	Yes (No
Tuesday Inspector	Sout	Yes (No	Saturday Inspector	Yes
Wednesday insepctor	1 Red	Yes No		-



Date Ran	ge			
	1050	/	11-3	
Time				

Project Name or # SWMU MODIFICATIONS Equipment Type Take JCh, TL12R2					Location			
				Ed	quipme	ent#		
EQUIPMENT	S u n d a y	M o n d a y	T u e s d a y	W e d n e s d a y	T h u r s d a	F r i d a	S a t u r d a y	COMMENTS / ACTIONS TAKEN
Foot Brakes		X	7	X	X	X,		
Reverse Signal Alarm		-	1	1	N	1		
Horn/Air Horn		/	V	V	11	1		
Tires/Tracks		/	1/	1	V	1		
Steering		/	V	1	V	1		
Seat Belt		V	V	V	VI	1		
Operating Controls		/	1	/	V	11		
Access Ladders/Steps		/	V.	V	1	V.		
Fire Extinguisher		/	1	1	N	1		+
Lights		/	1	1	V	1	1	
Mirrors		1	N	1	1	V		
Instruments		/	V	V	N,	11		
Coupling Devices		/	V,	1	V	1	1	
Air Filter		V	V	V	V	1		
Radiator Coolant Level		/	V	V	1	1		
Windshield Wipers		1	V	V	1	1		
Windshield/Window Glass		~	V	/	1/	1		
Exhaust System		/	V	N	d	1		
Hydraulic Lines/Air Hoses		/	1	1	1	1		
Engine Oil Level		1	V	1	1	/		
Belts		V	·V	1	1	V		
Hydraulic Oil Level		/	1	1	1	/		
Rollover Equipment		V	1	1	V	1		
Cleanliness		/	V	J	-	1		
Open and Check Inside Each Door		1	1	V	V	1		

- 1) Each day prior to operating equipment, the operator should check all boxes that apply
- 2) If anything requires maintenance identify the mechanic and supervisor
- 3) Inspection Sheets will be picked up Weekly

	M	echical Work Required	Y/N		Mechical Work Required Y/N
Sunday Inspector		Yes No	Thursday Inspector	70	Yes (No)
Monday Inspector	DO	Yes (No	Friday Inspector	29	Yes No
Tuesday Inspector	20	Yes No	Saturday Inspector		Yes No
Wednesday Insepctor	00	Yes No)		



Date Ra	inge		
1	11/6-	11 /10	
Time	7:0	1 A.M	

								7.00 FILE.
Project Name or #					Locatio			
SWMU MODIFICATIONS				_Anı	nistor	ı.AL		
Equipment Type TL - 10 5Kio	1 ste	11		Eq	uipme	ent#		
EQUIPMENT	S u n d a y	M o n d a y	T u e s d a	Wedonesday	T h u r s d a y	F r i d a y	S a t u r d a y	COMMENTS / ACTIONS TAKEN
Foot Brakes			L			,		
Reverse Signal Alarm		V	/	1	V	1		
Horn/Air Horn		1	V	1	V	1		
Tires/Tracks		V	1	1	1	1		
Steering		V	/	1	1	V		
Seat Belt		1	V	V	V	/		
Operating Controls		1	V.	V	V	V		
Access Ladders/Steps		1/	V	V	V	1		100000000000000000000000000000000000000
Fire Extinguisher		V	V	V	V	1		
Lights		V	V	1	V	1		
Mirrors		1	/	V	/	1		
Instruments		V	N,	V	1	1		
Coupling Devices		1	V,	V.	/	1		
Air Filter		1	V	V	V,	1		
Radiator Coolant Level		V	V	V	1	1		
Windshield Wipers		/	V	V	1	V		
Windshield/Window Glass		V	,V	1	/	V		
Exhaust System		V	V	V	V	V		
Hydraulic Lines/Air Hoses		1	V	1	1	1		
Engine Oil Level		1	1	1	1	/		
Belts		V	V.	V	1	V		
Hydraulic Oil Level		1	V	/	1	/		
Rollover Equipment		1	V,	1	1	V		
Cleanliness		V	/	1	1	V,		
Open and Check Inside Each Door	-1	1	V	V	V	V		

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- 3) Inspection Sheets will be picked up Weekly

		Mechical Work Required Y/N			Mechical Work Required Y,
Sunday Inspector	Barross	Yes (No	Thursday Inspector	Brian	Yes NO
Monday Inspector	Biron	Yes Na	Friday Inspector	Beinn	Yes (13
Tuesday Inspector	Drian Flening	Yes	Saturday Inspector	Brian	Yes No
Wednesday Insepctor	Brian	Yes (Ng'		F	



Date Range	
11-6-17 - 11-11-17	
Time	

Project Name or #					Location is tor			
Project Name or # swmu modifications Solutia Equipment Type 78 230 track hor	2		7	+REG	115tor	nt#		
EQUIPMENT	S u n d a y	M o n d a y	T u e s d a	W e d n e s d a y	T h u r s d a	F r i d a y	S a t u r d a	COMMENTS / ACTIONS TAKEN
Foot Brakes	1	1	V	V	V	V		
Reverse Signal Alarm		V	V	V	V	V		
Horn/Air Horn		V	V	V	V	V		
Tires/Tracks		V	V	V	V	V		
Steering		1	V	V	V	V		
Seat Belt		V.	V	V	V	V		
Operating Controls		1	V	V	V	V.		
Access Ladders/Steps	17	1	V	v	V	1		
Fire Extinguisher		V	V	V	V	V,		
Lights		V	V	V	V	V		
Mirrors		X	X	X	X	X.		none
Instruments		V	V	V	V	V		
Coupling Devices		V	V	V	V	1		
Air Filter		V	V	V	·V			
Radiator Coolant Level		V	0	V	V	1		
Windshield Wipers		X	x	X	A	X		none
Windshield/Window Glass		X	1	X	X	X		none
Exhaust System		V.	V	V	V	V		
Hydraulic Lines/Air Hoses		V	V	V	11	V		
Engine Oil Level		V	V	V	V	V,		
Belts		1	V	V	U	V		
Hydraulic Oil Level		1	V	V	/	V		
Rollover Equipment		V	V	·V	U	V		
Cleanliness	T	V	V	10	V	V	/	
Open and Check Inside Each Door	1	V	V	V	V	V		

- 1) Each day prior to operating equipment, the operator should check all boxes that apply
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- 3) Inspection Sheets will be picked up Weekly

		Mechical Work Requi	red Y/N			Mechical Wo	rk Required Y/N
Sunday Inspector Ran	A)	Yes	NO)	Thursday Inspector	Viend	Yes	No.
Monday Inspector	lig	Yes (No	Friday Inspector	Radof	Yes	(e)
	My,	Yes C	No	Saturday Inspector	P	Yes	No
Wednesday Insepctor	fort	Yes No	/				-



Dat	te Range					
	11/13	-	1)	11	7	
Tim	ne					

Project Name or # SWMU MODIFICATIONS					Location nistor			
Equipment Type	Equipment Type 116 SK.d STEEN			TEC	uipme 12	nt#		
EQUIPMENT	S u n d a y	M o n d a y	T u e s d a	W e d n e s d a y	T h u r s d a	F r i d a y	S a t u r d a	COMMENTS / ACTIONS TAKEN
Foot Brakes		X	X	X	X	X	1	none
Reverse Signal Alarm		V	V	V	V	V		
Horn/Air Horn		-	1/	1	1	-		
Tires/Tracks		1	11/	1	1	1		
Steering		J	W.	1	V	1		
Seat Belt		1	V	1	1	1		
Operating Controls		1	VI	~	1	1		
Access Ladders/Steps		1	1	1	1	1		
Fire Extinguisher		J	1.1	V	1	1		
Lights		V	17/	1	1	1		
Mirrors		J	1.1	1	1	1		
Instruments		V	V.	1	1	1		
Coupling Devices		V	1		1	1		
Air Filter		V	IVII	V	1	1		
Radiator Coolant Level		V	V	V	1)		
Windshield Wipers		1	11	11	11	1		
Windshield/Window Glass		V	1	V	1	1		
Exhaust System		V	IN	1	V	1		
Hydraulic Lines/Air Hoses		1	1/1	V	~	/	-	
Engine Oil Level		V	11	,v	1	1	-	
Belts		V	1		1	/	-	
Hydraulic Oil Level	. 7	11	10	V	/	/		
Rollover Equipment		1	11	V	V	/	-	
Cleanliness		11	1	V	~	/	The same	
Open and Check Inside Each Door			KI	1	1	1	1	

- 1) Each day prior to operating equipment, the operator should check all boxes that apply
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- 3) Inspection Sheets will be picked up Weekly

	Mechical Work Required Y/N			Mechical Work Required Y/N
Sunday Inspector	Yes No	Thursday Inspector	all	Yes (No)
Monday Inspector	Yes (No)	Friday Inspector	00	Yes (10)
Tuesday Inspector	Yes No.	Saturday Inspector		Yes No
Wednesday Insepctor	Yes (No.)			



Date Range		
11-13	- 11-17-17	
Time		

Project Name or #					Location				
SWMU MODIFICATIONS SOLWTY Equipment Type TB 230 Kard	le hoe	,		Eq	uipme	A30	ý		
EQUIPMENT	S u n d a y	M o n d a y	T u e s d a y	W e d n e s d a y	T h u r s d a	F r i d a y	S a t u r d a	de	COMMENTS / ACTIONS TAKEN
Foot Brakes	1	V	V	1/	V	1			
Reverse Signal Alarm		V	V	V	V	L			
Horn/Air Horn		V	1	V	V	1			
Tires/Tracks		V	V	V	V	/			
Steering		1	1	1	/	V			
Seat Belt		1	1	11	V	1			
Operating Controls		V	V	V	1/	1			
Access Ladders/Steps		1	V	/	V	/	/		
Fire Extinguisher		1	V,	V	V	1	1		
Lights		V	V	V	V	1			
Mirrors		X	X	1	1	X		nine	
Instruments		1	V	V	V	1			
Coupling Devices		V	V	V	V	1			
Air Filter		V	V	V	1	1			
Radiator Coolant Level	1	V	V	V	~	1			
Windshield Wipers		X	X	X	X	×		roil	
Windshield/Window Glass		X	X	1	K	×	/	none	
Exhaust System		1	V	V	V	V			
Hydraulic Lines/Air Hoses		V	V	V	1	V			
Engine Oil Level		V	V	V	1	V,			
Belts		V	V	V	/	V			
Hydraulic Oil Level		V	V	V	/	1			
Rollover Equipment		V	V	V	/	11			
Cleanliness		1	V	V	1	-0/			
Open and Check Inside Each Door		V	7	V	V	1			

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The second secon	Mechical Work Required Y/N		Mechical Work Required Y/N
Sunday Inspector	Yes No	Thursday Inspector Conf	Yes (NO)
Monday Inspector	Yes (6)	Friday Inspector Rinch	Yes (No)
Tuesday Inspector Mars	Yes Do	Saturday Inspector	Yes No
Wednesday Insepctor	Yes No	January Company of the Company of th	



Construction Completion Report For Upgrades to WMA II and SWMU 1 Groundwater Extraction Systems

Anniston PCB Site Anniston, Alabama

Appendix H

Construction Material Quantities

ITEM NO	DESCRIPTION	UNIT	QUANTITY
1	Mobilization/Demobilization	LS	1
2	Temporary Facilities	LS	1
3	Surveying and Utility Locations	LS	1
4	Contractor Health and Safety Officer	WK	22
5	Silt Fence	LF	1115
6	Filter Ring	EA	1
7	Temporary Seeding	AC	3
8	Shuttling Roll Offs (On-Site Only)	EA	15
9	Ladder Tray Pipe Rack System	LF	1023
10	Ladder Tray Pipe Rack 90° bend	EA	1
11	Ladder Tray Pipe Rack Tee	EA	1
12	Type 316 Stainless Steel Fasteners for Pipe Rack System	LS	1
13	Restraints for Pipe Rack System	LS	1
14	Anchor Points for Pipe Rack System	LS	1
15	Pipe Rack Grounding Cables	LS	1
16	Tethered mechanical float switches for WMA II and SWMU 1 wells	EA	15
17	2" Butterfly Valves for WMA II and SWMU 1 Wells	EA	15
18	2" Check Valves for WMA II and SWMU 1 Wells	EA	15
19	Flanges for WMA II Wells	EA	6
20	2" 304 Stainless Steel 90-degree Elbow Connections for WMA II Wells	EA	6
21	New 2" Pipe in WMA II Wells	LS	1
22	Stainless Steel Pump Support Brackets for WMA II and SWMU 1 Wells	EA	15
23	Neptune T-10 water meter for T-100 effluent	EA	1
24	Level Sensor for T-100 Secondary Containment	EA	1
25	Replacement Concrete Vault with Water-Tight Lid at IW-24	EA	1
26	Flange at Basin 5 and 6 Inlet	EA	1
27	Butterfly valve at Basin 5 and 6 Inlet	EA	1
28	PVC Piping at Basin 5 and 6 Inlet	LS	1
29	Erosion and Sedimentation Control Features at SWMU 1	LS	1
30	Fabric in Pipe Ditch	LS	1
31	Grundfos model 5 SQ05-90 3" Stainless Steel Pumps (4.4 gpm at 112 feet of head) with Integral Check Valve, SWMU 1 Wells	EA	9
32	Electrical Equipment/Boxes at SWMU 1 Wells	EA	9
33	Wiring from SWMU 1 Well Electrical Boxes to CTS#3	LS	1
34	1" Conduit for SWMU 1 Well Wiring	LS	1
35	Run Time Meters on SWMU 1 Well Electrical Boxes	EA	9
36	New 1" HDPE Pipe in SWMU 1 Wells	LS	1
37	Electrical Cable in SWMU 1 Wells	LS	1
38	Gate Valves in SWMU 1 Wells	EA	9
39	Pressure Gauges in SWMU 1 Wells	EA	9
40	Drain Valves in SWMU 1 Wells	EA	9

41	2" SDR 11 HDPE pipe from SWMU 1 Wells to CTS#3	LF	=	964
42	Manhole Well Casings	E	4	3
43	2x1" couplings	E/	4	9
44	1" Thread Adapters	E/	4	9
45	2x2" Tees to SWMU 1 Wells	E/	4	9