JUNIPER VENTURES OF TEXAS, LLC

UNDERGROUND STORAGE TANK (UST) FACILITY PLAN MODIFICATION

Fischer's Neighborhood Market #51

Bexar County, Texas
Project No. 1163C-25

Prepared for:
Juniper Ventures of Texas, LLC
3455 Interstate 35
New Braunfels, Texas 78132
(830) 625-4214

Prepared by:
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TBPE # 12385
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FEBRUARY 2025

FORSTER ENGINEERING

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Section 2.0

EDWARDS AQUIFER APPLICATION COVER PAGE

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Fischer's Neighborhood Market #51					**2. Regulated Entity No.:** RN111790705				
3. Customer Name: Juniper Ventures of Texas LLC					**4. Customer No.:** CN605607688				
5. Project Type: **(Please circle/check one)**	New		Modification		Extension		Exception		
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**			
9. Application Fee:	$650		**10. Permanent BMP(s):**			N/A			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			1			
13. County:	Comal		**14. Watershed:**			Comal/Guadalupe River			

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	X	___	___	___
Region (1 req.)	___	X	___	___	___
County(ies)	___	X	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	X Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge X New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Ralph Voss Jr.
Print Name of Customer/Authorized Agent  02/26/25
Signature of Customer/Authorized Agent Date

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:		Date Administratively Complete:		
Received From:		Correct Number of Copies:		
Received By:		Distribution Date:		
EAPP File Number:		Complex:		
Admin. Review(s) (No.):		No. AR Rounds:		
Delinquent Fees (Y/N):		Review Time Spent:		
Lat./Long. Verified:		SOS Customer Verification:		
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):	
Core Data Form Complete (Y/N):			Signed (Y/N):	
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):	

Section 3.0

GENERAL INFORMATION FORM

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of ~~Customer~~/Agent: Ralph Voss Jr., P.E

Date: 02/26/25

Signature of ~~Customer~~/Agent:

Project Information

1. Regulated Entity Name: Fischer's Neighborhood Market #51
2. County: Comal
3. Stream Basin: Comal/Guadalupe River
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   [X] Recharge Zone
   [ ] Transition Zone

6. Plan Type:

   [ ] WPAP
   [ ] SCS
   [X] Modification
   [ ] AST
   [X] UST
   [ ] Exception Request

7. Customer (Applicant):

Contact Person: Kirk Brumley
Entity: Juniper Ventures of Texas, LLC
Mailing Address: 3455 IH 35 Soiuth
City, State: New Braunfels, TX Zip:78132
Telephone:(830)625-4214 FAX: NA
Email Address: kbrumley@junipervot.com

8. Agent/Representative (If any):

Contact Person: Ralph Voss Jr., P.E.
Entity: Forster Engineering
Mailing Address:401 Maricopa Drive
City, State: Canyon Lake, TX Zip: 78133
Telephone:(210)289-0580 FAX: NA
Email Address: rvoss@forsterengineering.com

9. Project Location:

[X] The project site is located inside the city limits of New Braunfels.
[ ] The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
[ ] The project site is not located within any city's limits or ETJ.

10. [X] The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

Northwest of Alyssa Way and State Highway 46 intersection

11. [X] **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12. [X] **Attachment B - USGS / Edwards Recharge Zone Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

[X] Project site boundaries.
[X] USGS Quadrangle Name(s).
[X] Boundaries of the Recharge Zone (and Transition Zone, if applicable).
[X] Drainage path from the project site to the boundary of the Recharge Zone.

13. [X] **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

[ ] Survey staking will be completed by this date: _____

14. [X] **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

- [X] Area of the site
- [X] Offsite areas
- [X] Impervious cover
- [X] Permanent BMP(s)
- [X] Proposed site use
- [X] Site history
- [X] Previous development
- [X] Area(s) to be demolished

15. Existing project site conditions are noted below:

- [ ] Existing commercial site
- [ ] Existing industrial site
- [ ] Existing residential site
- [ ] Existing paved and/or unpaved roads
- [ ] Undeveloped (Cleared)
- [X] Undeveloped (Undisturbed/Uncleared)
- [ ] Other: _____

Prohibited Activities

16. [X] I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. [X] I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

18. The fee for the plan(s) is based on:

- ☐ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☒ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

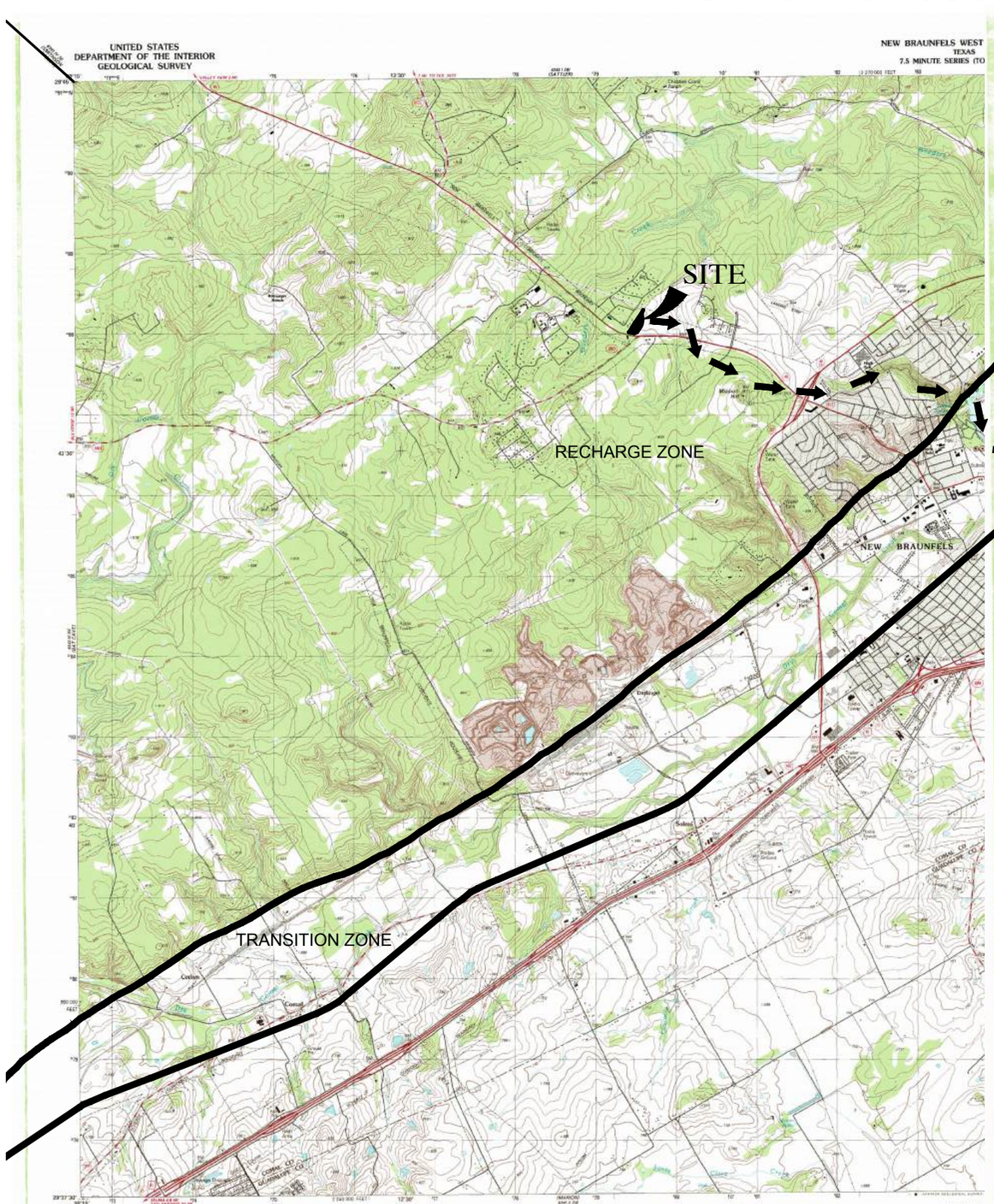
- ☐ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☒ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

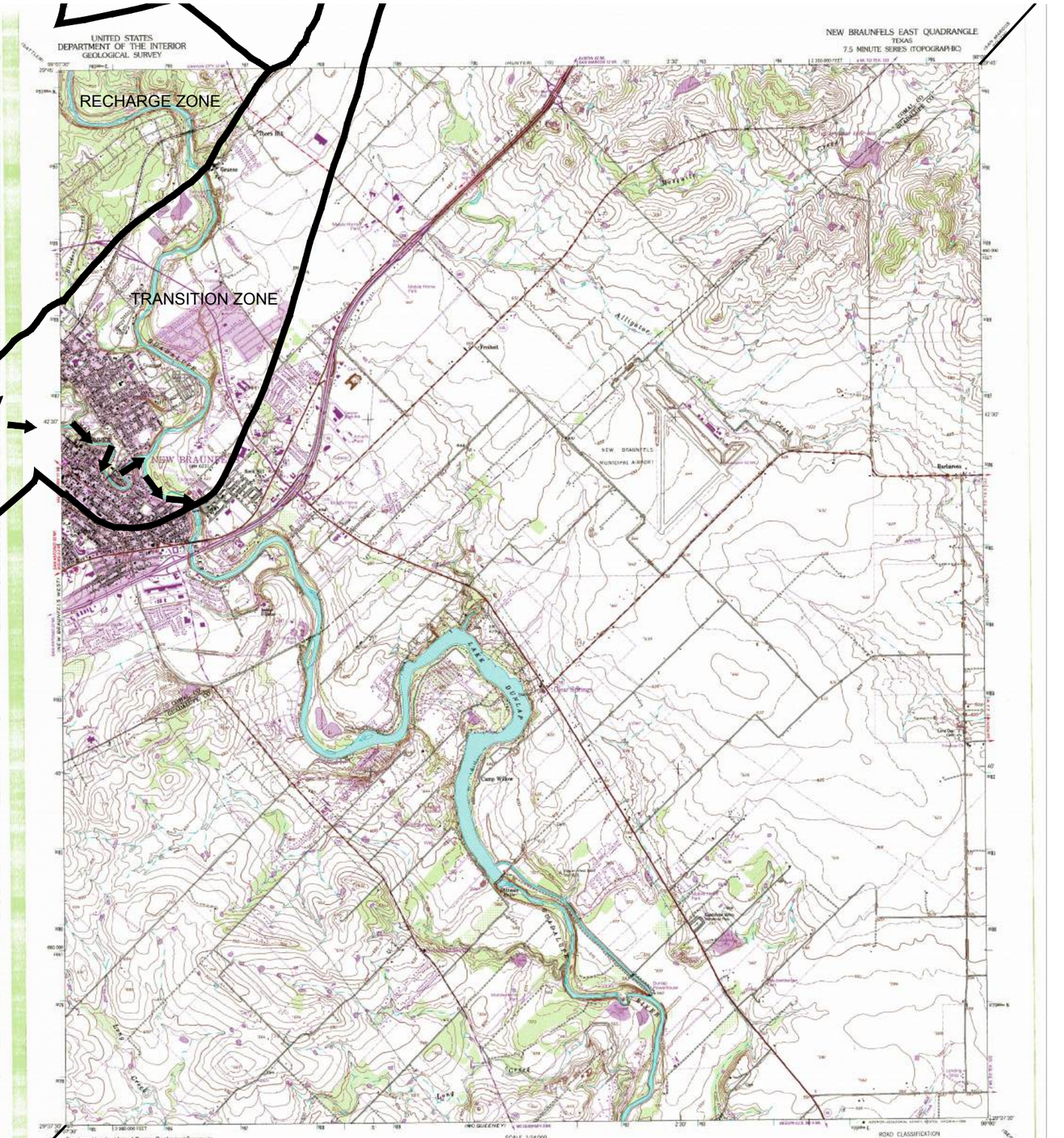
20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

ATTACHMENT A - ROAD MAP

ATTACHMENT B - USGS/EDWARDS RECHARGE ZONE MAP





GENERAL INFORMATION FORM TCEQ-0587
ATTACHMENT C
PROJECT DESCRIPTION

Fischer's Neighborhood Market #51 is a 4.789 acre site located at the northwest corner of the intersection of Alyssa Way and State Highway 46 in Comal County, New Braunfels, Texas. The purpose of this application is to request a modification to the Underground Storage Tank (UST) Facility Plan for this site that was approved on December 14, 2023 (see Attachment A, Section 5.0 of this application for original approval letter). The only modification requested herein is the relocation of the underground storage tank and piping as shown on Attachment H-2, Section 5.0 of this application. **Other than physical location, no changes to the previously approved tank and piping specifications are requested.** For reference, below are the tank and piping details as stated in the previously approved UST plan and which remain applicable to this project.

The proposed new underground static hydrocarbon storage system will consist of one new single, multi-chambered, 29,000-gallon double-walled, jacketed tank to be used for storage of fuels. The tank is constructed with primary steel tank, secondary steel tank coupled with an exterior corrosion-resistant fiberglass reinforced plastic (FRP) tank meeting UL-58 ACT-100 and UL-1746. Tertiary containment is not required for TCEQ approval but is provided to meet the Edwards Aquifer Authority requirements. One chamber will hold 16,000-gallons of regular unleaded fuel, , the second chamber will hold 6,000-gallons of premium (V-Power) fuel , and the third chamber will hold 7,000-gallons of diesel fuel.

The tank will be equipped with a 3/4 horsepower, 4-inch diameter submersible pumps. Overfill prevention for the tank will be provided by an automatic shut off valve which will be installed in the tank below the fill tube and must be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity. Additional spill protection for the UST system will be provided by spill containment manholes and emergency shut-off valves.

Product, vent piping will be U.L. listed fiberglass-reinforced plastic piping. Product lines will consist of a 2-inch diameter primary double-wall pipe (Dualoy 3000/LCX) within a 3-inch diameter tertiary containment pipe (Dualoy 3000/L). Vent lines will be 2-inch diameter single-wall pipe (Dualoy 3000/L). A safety shear valve will be installed on each product line at the dispenser island surface level to assure automatic shut-off of product flow during emergencies. In addition, stainless steel braid flexible connectors will be installed at both ends of each product line to connect to the dispenser unit and the submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within a liquid-tight fiberglass-reinforced plastic piping sump which will provide isolation from the corrosive elements of the backfill material while also providing secondary containment for any leaks from these components. The dispenser-end flexible connector will be similarly isolated by enclosure within a flexible isolation sleeve. The vapor recovery riser, the fill tube riser, and the riser for the automatic tank gauging system will be thoroughly wrapped with a suitable dielectric material.

The proposed tank and piping will be monitored for leaks by means of inventory, line leak detection, and a line pressure monitor. Each of the product piping systems will be monitored by a liquid non-discriminating sensor (Veeder Root Model 794380-208) which will be installed vertically on the sump base. A mini-hydrostatic sensor (Veeder Root Model 794380-304) will be installed in each of the fill and pump sumps that will detect fluid level change in the interstitial fluid reservoir of the double-wall sumps. The tanks will be equipped with a liquid non-discriminating sensor which will be installed in the interstitial space(s) between the walls of the tank (Veeder Root Model 794380-420).

The interstitial space in the double-wall pump sumps, double-wall fill sumps, and double-wall UDCs will be monitored using a Bravo-supplied Interstitial fluid. Bravo supplies this propylene glycol based interstitial monitoring fluid with all their double-walled sumps as filling Bravo double-wall products with Brine (saline) solution will void the product warranty. The Bravo-supplied fluid will not freeze in cold conditions or boil in hot conditions. Two 2-inch diameter slotted observation wells will be installed within the tank. The tank will also be equipped with an automatic tank gauging probe which will automatically inventory the product volume in each chamber of the tank. Each product piping line will be equipped with an electronic positive flow shut off that is designed to stop product flow in the event a leak in the product line is detected. The probes and sensors from the tank, piping, and observation wells will be connected to a programmable control unit to be located in the store building. This central monitoring unit is designed to provide visual and audible alarms when hydrocarbon liquids, hydrocarbon vapors, or water is detected.

Section 4.0

GEOLOGIC ASSESSMENT FORM

GEOLOGIC & SEWER COLLECTION SYSTEM (SCS) ASSESSMENT

For

JUNIPER VENTURES TRACT
NWC HIGHWAY 46 & F.M. 1863
NEW BRAUNFELS, COMAL COUNTY, TEXAS

Prepared for
INK CIVIL
2021 SH 46W, SUITE 105
NEW BRAUNFELS, TEXAS 78132

Prepared by

Professional Service Industries, Inc.
3 Burwood Lane
San Antonio, Texas 78216
Telephone (210) 342-9377

PSI PROJECT NO.: 0435-5755

December 22, 2022

3 Burwood Lane
San Antonio, TX 78216
phone: (210) 342-9377

intertek.com/building
psiusa.com

December 22, 2022

Ink Civil
2021 SH 46W, Suite 105
New Braunfels, TX 78132

Attn: Mr. Shane Klar
Email: ShaneKlar@ink-civil.com

Re: Geologic and Sewer Collection System (SCS) Assessment
Juniper Ventures Tract
NWC Highway 46 and F.M. 1863
New Braunfels, TX
PSI Project No. 435-5755

Dear Mr. Klar:

Professional Service Industries, Inc. (PSI) has completed a geologic recharge assessment for the above referenced project in compliance with the Texas Commission on Environmental Quality (TCEQ) requirements for regulated developments located on the Edwards Aquifer Recharge Zone (EARZ). The purpose of this report is to describe surficial geologic units and identify the locations and extent of significant recharge features present in the development area.

AUTHORIZATION

Authorization to perform this assessment was given via authorization of PSI proposal no. 388167 on December 8, 2022.

PROJECT DESCRIPTION

PSI understands that the subject property consists of 2.61-acre tract of undeveloped land located on the northwest corner of Highway 46 and F.M. 1863 in New Braunfels, Comal County, Texas. The site vegetation consists of cleared/cut grass and live oak trees, with a slight slope to the east.

REGIONAL GEOLOGY

Physiography

From northwest to southeast, the three physiographic provinces in Comal County are: the Edwards Plateau, the Blackland Prairie, and the West Gulf Coastal Plain. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 1,100 feet to 1,900 feet above sea level. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Bexar County and is composed of fault blocks of limestone, chalk, shale, and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 700 feet to 1,100 feet above sea level. The faults are predominantly normal, down-to-the Gulf Coast, with near vertical throws. The West Gulf Coastal Plain lies southeast of the Blackland Prairie and is composed of relatively flat-lying beds of marl, clay, and sandy clay. According to topographic maps, elevations at the subject site are approximately 865 feet above sea level, with a slope to the east, towards an unnamed tributary to Blieder's Creek.

Stratigraphy and Structure

Rocks underlying the site consist of the Lower Cretaceous Edwards Person Formation. Notable rock outcrops were absent, as the site is landscaped and residentially developed. According to "The Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County Texas" written by the USGS, the Person Formation ranges in thickness from 180 to 224 feet and forms the upper formation of the Edwards Group. The Person Formation and the underlying Kainer Formation compromises the Edwards Aquifer, a federally designated sole source aquifer for the region.

The rocks on the southern portion of the site are mapped as the Cyclic and Marine member of the Person Formation. The lithology consists of a chert-bearing mudstone to packstone and miliolid grainstone. It weathers to a massive, light tan color with scattered *toucasia* fossils present. It is very permeable with fabric and non-fabric selective porosity. It is one of the most hydrologically productive due to the large number of subsurface caverns associated with incipient karstification. One capped water well (Feature S-1) was observed on the subject site. Given the prior rural residential usage of the site, a septic system may be present. No sensitive features were identified on the site. No significant outcrops, sinkholes or other suspect natural recharge features were observed on the site.

SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

No sensitive recharge features were noted on the subject site. If future use of the capped well is not planned, it should be properly plugged and abandoned in accordance with state and local regulations. It is possible that clearing/construction activities will reveal the presence of features currently hidden by vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.
Environmental Department Manager

WARRANTY

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a general geological recharge assessment of this site. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted geologic methods, only for the site described in this report. These methods have been developed to provide the client with information regarding apparent indications of existing or potential conditions relating to the subject site and are necessarily limited to the conditions observed at the time of the site visit and research. This report is also limited to the information available at the time it was prepared. In the event additional information is provided to PSI following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a possibility that conditions may exist which could not be identified within the scope of the assessment, or which were not apparent during the site visit. PSI believes that the information obtained from others during the review of public information is reliable; however, PSI cannot warrant or guarantee that the information provided by others is complete or accurate.

This report has been prepared for the exclusive use of Ink Civil for the site discussed herein. Reproductions of this report cannot be made without the expressed approval of Ink Civil. The general terms and conditions under which this assessment was prepared apply solely to Ink Civil. No other warranties are implied or expressed.

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: John Langan Telephone: 210/342-9377

Date: 12/22/22 Fax: 210/342-9401

Representing: PSI TBPG No. 50128 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: Juniper Ventures Tract

Project Information

1. Date(s) Geologic Assessment was performed: 12/09/22
2. Type of Project:
   - ☒ WPAP
   - ☒ SCS
   - ☐ AST
   - ☒ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☐ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Rumple-Comfort ass'n, undulating	B	1.5-3

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.
B. Soils having a moderate infiltration rate when thoroughly wetted.
C. Soils having a slow infiltration rate when thoroughly wetted.
D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = 50'
   Site Geologic Map Scale: 1" = 50'
   Site Soils Map Scale (if more than 1 soil type): 1" = ____'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☐ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☒ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☐ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☒ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

15. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

STRATIGRAPHIC COLUMN

Juniper Ventures Tract
NWC Highway 46 & F.M. 1863
New Braunfels, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Del Rio Clay	40-50	Calcareous and gypsiferous, with pyrite common, with a blocky structure that weathers to light gray or yellowish gray. The characteristic marine megafossil, *Ilmatogyra arietina* (formerly *exogyra arietina*) is widespread throughout the formation.
Georgetown Formation	<10	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: *waconella wacoensis* brachiopod; low porosity and permeability development.
Person Formation	180-220'	Limestones and dolomites, extensive porosity development in "honeycomb sections, interbedded with massive, recrystallized limestones with more limited permeabilities (especially Regional Dense Member separating the Person and Kainer Formations.
Kainer Formation	260-310'	Hard, miliolid limestones, overlying calcified dolomites and dolomite. Leached evaporitic "Kirschberg" zone of very porous and permeable collapse breccia formed by the dissolution of gypsum. Overlies the basal nodular (Walnut) bed.

SOILS NARRATIVE

According to the Soil Survey of Comal County, published by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the Texas Agricultural Extension Service, reissued in 1984, the soils beneath the subject property have been classified as Rumple-Comfort association, undulating (RUD).

Rumple-Comfort association soils are shallow to moderately deep soils on uplands in the Edwards Plateau. The surface layer is a dark reddish-brown cherty clay loam about 10 inches thick and overlies a subsoil of reddish-brown cherty clay with abundant limestone fragments to a depth of 28 inches. The underlying parent material is an indurated limestone. The soil is well drained, with medium surface runoff, moderately slow permeability, and very low available water capacity. The soil is not suited for cropland, or cultivation, but is used as range land and habitat for wildlife.

SITE GEOLOGIC NARRATIVE

Physiography

From northwest to southeast, the three physiographic provinces in Comal County are: the Edwards Plateau, the Blackland Prairie, and the West Gulf Coastal Plain. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 1,100 feet to 1,900 feet above sea level. This area is underlain by beds of limestone that dip gently to the southeast. South of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends northeast-southwest across Bexar County and is composed of fault blocks of limestone, chalk, shale, and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 700 feet to 1,100 feet above sea level. The faults are predominantly normal, down-to-the Gulf Coast, with near vertical throws. The West Gulf Coastal Plain lies southeast of the Blackland Prairie and is composed of relatively flat-lying beds of marl, clay, and sandy clay. According to topographic maps, elevations at the subject site are approximately 865 feet above sea level, with a slope to the east, towards an unnamed tributary to Blieder's Creek.

Stratigraphy and Structure

Rocks underlying the site consist of the Lower Cretaceous Edwards Person Formation. Notable rock outcrops were absent, as the site is landscaped and residentially developed. According to "The Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County Texas" written by the USGS, the Person Formation ranges in thickness from 180 to 224 feet and forms the upper formation of the Edwards Group. The Person Formation and the underlying Kainer Formation compromises the Edwards Aquifer, a federally designated sole source aquifer for the region.

The rocks on the southern portion of the site are mapped as the Cyclic and Marine member of the Person Formation. The lithology consists of a chert-bearing mudstone to packstone and miliolid grainstone. It weathers to a massive, light tan color with scattered *toucasia* fossils present. It is very permeable with fabric and non-fabric selective porosity. It is one of the most hydrologically productive due to the large number of subsurface caverns associated with incipient karstification. One capped water well (Feature S-1) was observed on the subject site. Given the prior rural residential usage of the site, a septic system may be present. No sensitive features were identified on the site. No significant outcrops, sinkholes or other suspect natural recharge features were observed on the site.

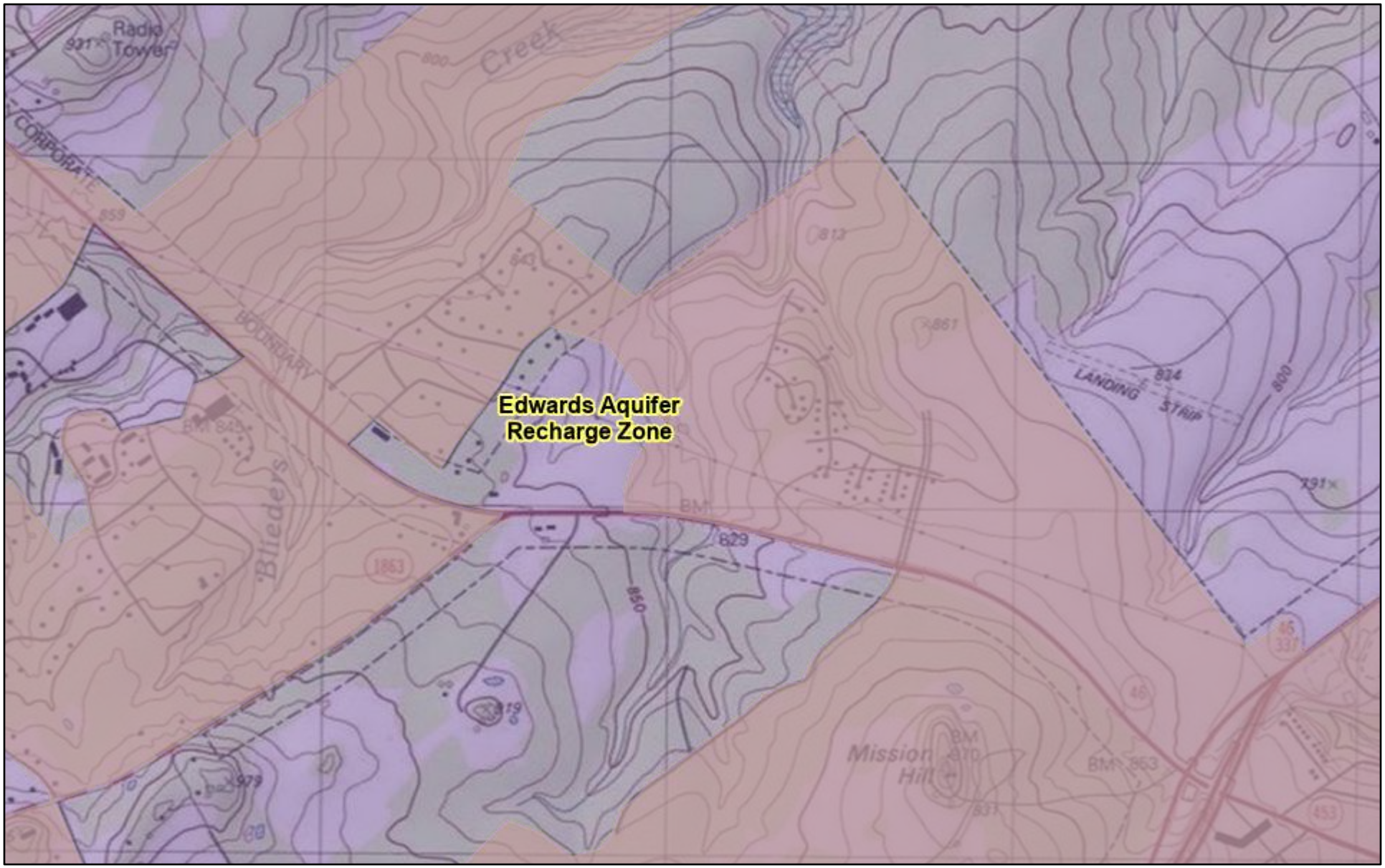
SITE INVESTIGATION

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

SUMMARY

No sensitive recharge features were noted on the subject site. If future use of the capped well is not planned, it should be properly plugged and abandoned in accordance with state and local regulations. It is possible that clearing/construction activities will reveal the presence of features currently hidden by vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

Juniper Ventures Tract-Topographic Map



12/8/2022, 3:25:21 PM

Edwards Aquifer Label

City/Place

Groundwater Conservation Districts

Comal Trinity GCD

Edwards Aquifer Authority

TX Counties

7.5 Minute Quad Grid

TCEQ_EDWARDS_OFFICIAL_MAPS

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Web AppBuilder for ArcGIS

Juniper Ventures Tract

12/8/2022, 3:22:25 PM

Edwards Aquifer Label

City/Place

Groundwater Conservation Districts

Comal Trinity GCD

Edwards Aquifer Authority

TX Counties

7.5 Minute Quad Grid

TCEQ_EDWARDS_OFFICIAL_MAPS

1:2,257

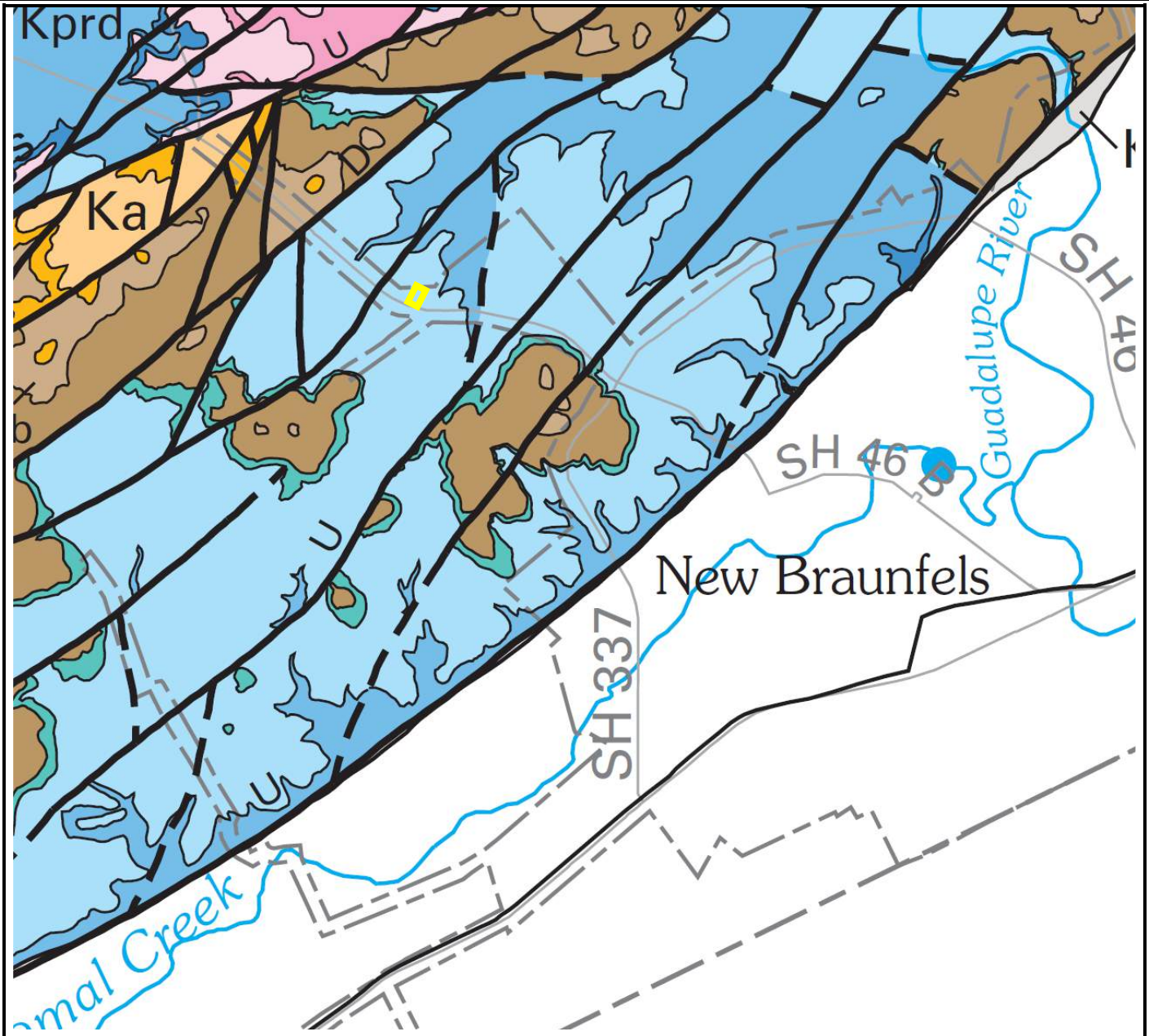
0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Maxar, Microsoft, TCEQ, Esri Community Maps Contributors, City of New Braunfels, BCAD, Comal County, Texas Parks & Wildlife, © OpenStreetMap,

Web AppBuilder for ArcGIS

TCEQ | Maxar, Microsoft | Esri Community Maps Contributors, City of New Braunfels, BCAD, Comal County, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, HERE, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,



intertek psi

PSI, Inc.
3 Burwood Lane
San Antonio, Texas 78216

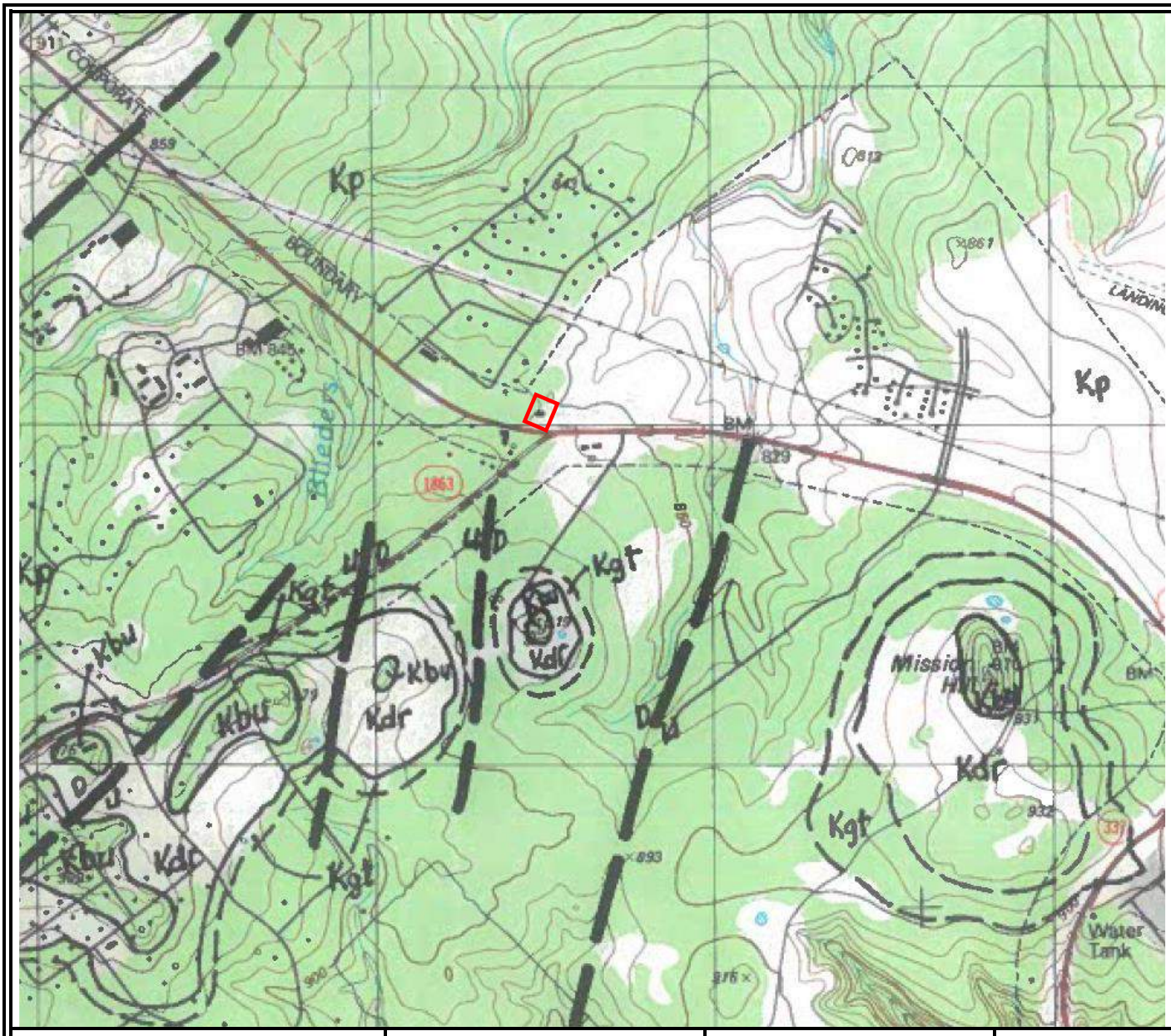
PROJECT NAME:
Juniper Ventures Tract
NWC Hwy. 46 & F.M. 1863
New Braunfels, TX
PROJECT NO.:435-5755

STATE OF TEXAS
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST
12/22/22

Geologic Map of Edwards Aquifer Recharge Zone, South-Central Texas

(USGS, 2005)

N



intertek psi

PSI, Inc.
3 Burwood Lane
San Antonio, Texas 78216

PROJECT NAME:
Juniper Ventures Tract
NWC Hwy. 46 & F.M. 1863
New Braunfels, Texas
PROJECT NO.:435-5755

STATE OF TEXAS
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST
12/22/22

Geologic Map of the New Braunfels West, Texas Quadrangle

Bureau of Economic Geology, UT-Austin (Collins 1993), modified from King (1957) and Abbott (1973)

N

intertek psi

PSI, Inc.
3 Burwood Lane
San Antonio, Texas 78216

PROJECT NAME:
Juniper Ventures Tract
NWC Hwy. 46 & F.M. 1863
New Braunfels, Texas
PROJECT NO.:435-5755

STATE OF TEXAS
John Langan
Geology
4871
LICENSED
PROFESSIONAL GEOSCIENTIST
12/22/22

Geologic Feature Map

Key

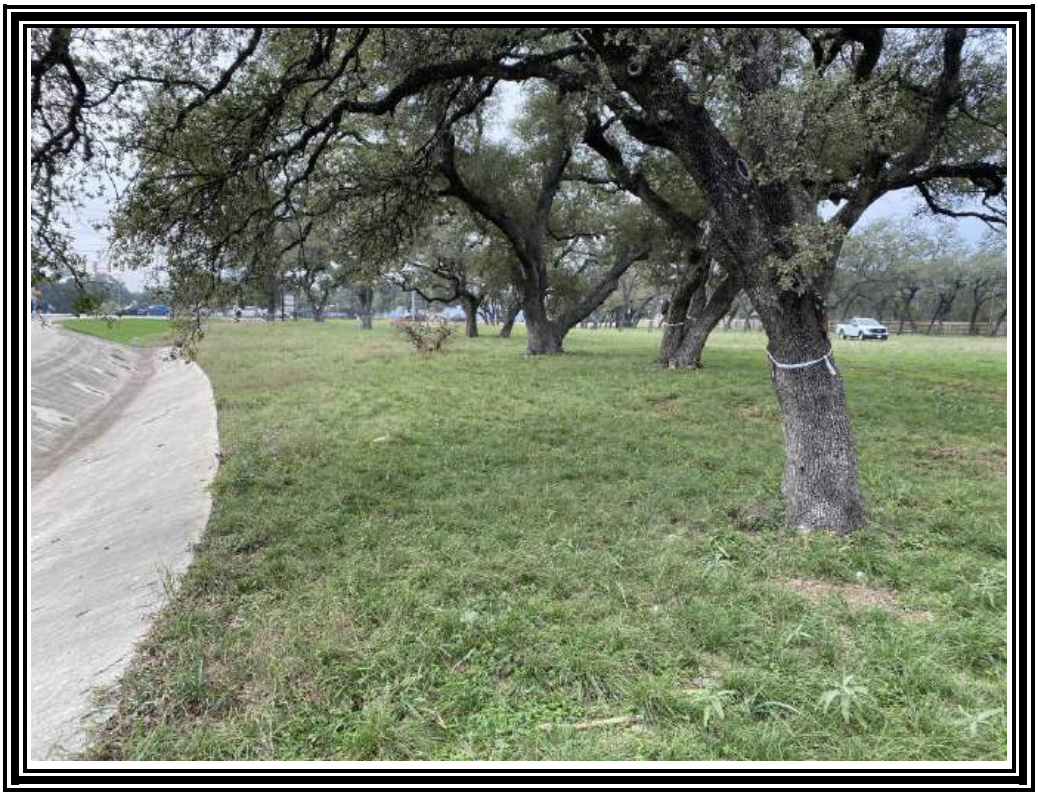
Kep- Lower Cretaceous Edwards Person Formation
S-1 Feature Location
Scale: 1”=68’

N

1. View south along the west property line from the northwest corner of the Juniper Ventures Tract, NWC of Alyssa Way and Highway 46, New Braunfels, Texas.

2. View south-southeast of the site interior from the northwest corner.

3. View WNW along the north property line from the northeast corner of the site.



4. View SSW along the east property line from the northeast corner of the site.

5. View of capped water well feature S-1 located at 29-43-19.2; -98-10-42 in the east-central portion of the tract.

6. View NNE along the east property line from the southeast corner of the site. The channeled drainage was constructed in 2010.

7. View northwest of the site interior from southeast corner of the tract.

8. View northeast from the southwest corner of the tract.

9. View north from near the center of the tract.

10. View east from near the center of the tract.

11. View south from near the center of the tract.

12. View west from near the center of the tract.

Map Scale: 1:1,020 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 45 90 180 270

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 19, Aug 24, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 17, 2020—Jan 15, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RUD	Rumple-Comfort, rubbly association, 1 to 8 percent slopes	2.4	100.0%
Totals for Area of Interest		**2.4**	**100.0%**

Section 5.0

MODIFICATION OF A PREVIOUSLY APPROVED PLAN

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of ~~Customer~~/Agent: Ralph Voss Jr.

Date: 02/26/25

Signature of Customer/Agent:

Project Information

1. Current Regulated Entity Name: Fischer's Neighborhood Market #51
   Original Regulated Entity Name: Fischer's Neighborhood Maket #51
   Regulated Entity Number(s) (RN): 111790705
   Edwards Aquifer Protection Program ID Number(s): 13001808
   [X] The applicant has not changed and the Customer Number (CN) is: 605607688
   [X] The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. [X] **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ☐ Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   - ☐ Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   - ☐ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☒ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

WPAP Modification Summary	***Approved Project***	***Proposed Modification***
Acres	_____	_____
Type of Development	_____	_____
Number of Residential Lots	_____	_____
Impervious Cover (acres)	_____	_____
Impervious Cover (%	_____	_____
Permanent BMPs	_____	_____
Other	_____	_____

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet	_____	_____
Pipe Diameter	_____	_____
Other	_____	_____

AST Modification Summary	*Approved Project*	*Proposed Modification*
Number of ASTs		
Volume of ASTs		
Other		

UST Modification Summary	*Approved Project*	*Proposed Modification*
Number of USTs	1	1
Volume of USTs	29,000 gal.	29,000 gal.
Other		Revised Tank Location

5. [X] **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. [X] **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - [X] The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - [ ] The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - [ ] The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - [ ] The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - [ ] The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. [ ] The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   [X] Acreage has not been added to or removed from the approved plan.

8. [X] Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

ATTACHMENT A

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 14, 2023

Mr. Kirk Brumley
Juniper Ventures of Texas, LLC
3455 IH 35 S
New Braunfels, Texas 78132

Re: Approval of an Underground Storage Tank (UST) Facility Plan
Fischers Neighborhood Market 51; Located at the northeast corner of Alyssa Way and SH 46 intersection; New Braunfels, Comal County, Texas
Edwards Aquifer Protection Program ID: 13001808, Regulated Entity No. RN111790705

Dear Mr. Brumley:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the application for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by INK Civil on behalf of the applicant, Juniper Ventures of Texas, LLC, on October 9, 2023. Final review of the application was completed after additional material was received on November 27, 2023 and December 7, 2023.

As presented to the TCEQ, the application was prepared in general compliance with the requirements of 30 Texas Administrative Codes (TAC) Chapter §213 and Chapter §334. Therefore, the application for the construction of the proposed project and methods to protect the Edwards Aquifer are hereby **approved,** subject to applicable state rules and the conditions in this letter.

This approval expires two years from the date of this letter, unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of this letter.

The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed in accordance with 30 TAC §50.139.

PROJECT DESCRIPTION

The project site is located on the Edwards Aquifer recharge zone. The proposed UST system includes a 29,000-gallon compartmentalized tank for the storage of 16,000 gallons of unleaded fuel, 6,000 gallons of premium fuel, and 7,000 gallons of diesel.

PROTECTION MEASURES

The described UST system will provide protection measures with a structurally designed double-walled steel tank with a tertiary fiberglass reinforced plastic jacket (UL-58, ACT 100, UL-1746). The tank consists of a primary tank within a sealed secondary tank.

Ancillary equipment will include: overfill prevention, spill containment, a triple-wall fiberglass reinforced plastic piping system, stainless steel flexible connectors, piping sumps, dispenser-end flexible connector isolation sleeves, dispenser-end containment sump, an electronic continuous leak detection system to monitor the tank and piping interstices and capable of notifying the system's owner, two observation wells, and all other equipment as required by 30 TAC Chapter §334.

Installation, testing, and operation of the tanks, piping, and all other components of the proposed storage and monitoring systems shall be in conformance with the manufacturer's specifications.

SPILL RESPONSE

In the event of a release of regulated substances, due to a spill or overfill, the applicant or operator **must comply** with the release reporting and corrective action requirements prescribed in the Texas Water Code, Chapter 26, Subchapter G and 30 TAC §334 Subchapter D, Release Reporting and Corrective Actions.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the surficial units of the site are the Person Formation. No sensitive geologic features were identified in the GA. The site assessment conducted on November 13, 2023 by TCEQ staff determined the site to be generally as described by the GA.

STANDARD CONDITIONS

1. The plan holder (applicant) must comply with all provisions of 30 TAC Chapter §213 and all technical specifications in the approved plan. The plan holder should also acquire and comply with additional and separate approvals, permits, registrations or authorizations from other TCEQ Programs (i.e., Petroleum Storage Tank Program) as required based on the specifics of the plan.

2. In addition to the rules of the Commission, the plan holder must also comply with state and local ordinances and regulations providing for the protection of water quality as applicable.

3. All installations, repairs, and removals **must be conducted** by a registered UST contractor who has a licensed installer or on-site supervisor at the site during all critical junctures, as required by 30 TAC Chapter §334 Subchapter I.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the plan holder must submit to the EAPP proof of recordation of notice in the county deed records, with the volume and page number(s) of the county record. A description of the property boundaries shall be included in the deed recordation in the county deed records. TCEQ form, Deed Recordation Affidavit (TCEQ-0625), may be used.

5. The plan holder of any approved Edwards Aquifer protection plan must notify the EAPP and obtain approval from the executive director prior to initiating any modification to the activities described in the referenced application following the date of the approval.

6. The plan holder must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the EAPP no later than 48 hours prior to commencement of the regulated activity.

Notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.

7. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

8. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring or gravel. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation.

<u>During Construction:</u>

9. A geologist **must inspect** the completed tank hold for the presence of sensitive geologic features. A certification, signed, sealed, and dated by the geologist must be submitted to the EAPP. If a sensitive geologic feature is discovered, the applicant must propose methods to protect the feature and the Edwards Aquifer from potentially adverse impacts to water quality from the UST system. Installation activities may not proceed until the executive director has reviewed and approved the proposed methods. The protection methods must be consistent with 30 TAC §213.5(d)(1)(B). Construction may continue without written approval from the TCEQ if the geologist certifies that no sensitive features were present.

10. If any sensitive feature is encountered during construction, replacement, or rehabilitation on this project, all regulated activities must be **immediately** suspended near it and notification must be made to TCEQ EAPP staff. Temporary BMPs must be installed and maintained to protect the feature from pollution and contamination. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality.

11. All water wells, including injection, dewatering, and monitoring wells shall be identified in the geologic assessment and must be in compliance with the requirements of the Texas Department of Licensing and Regulation 16 TAC Chapter §76 and all other locally applicable rules, as appropriate.

12. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

13. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge must be filtered through appropriately selected BMPs.

14. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

15. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

The holder of the approved Edwards Aquifer protection plan is responsible for compliance with Chapter §213 and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 and is subject to administrative rule or orders and penalties as provided under §213.10 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved Edwards Aquifer protection plan.

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Joshua Vacek of the Edwards Aquifer Protection Program at 210-403-4028 or the regional office at 512-339-2929.

Sincerely,

Monica Reyes
for

Lillian I. Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/jv

cc: James Ingalls, P.E., INK Civil

MODIFICATION OF A PREVIOUSLY APPROVED PLAN
FORM TCEQ-0590
ATTACHMENT B
NARRATIVE OF PROPOSED MODIFICATION

Fischer's Neighborhood Market #51 is a 4.789 acre site located at the northwest corner of the intersection of Alyssa Way and State Highway 46 in Comal County, New Braunfels, Texas. The purpose of this application is to request a modification to the Underground Storage Tank (UST) Facility Plan for this site that was approved on December 14, 2023. The only modification requested herein is the relocation of the underground storage tank and piping as shown on Attachment H-2, Section 5.0 of this application. **Other than physical location, no changes to the previously approved tank and piping specifications are requested.** For reference, below are the tank and piping details as stated in the previously approved UST plan and which remain applicable to this project.

The proposed new underground static hydrocarbon storage system will consist of one new single, multi-chambered, 29,000-gallon double-walled, jacketed tank to be used for storage of fuels. The tank is constructed with primary steel tank, secondary steel tank coupled with an exterior corrosion-resistant fiberglass reinforced plastic (FRP) tank meeting UL-58 ACT-100 and UL-1746. Tertiary containment is not required for TCEQ approval but is provided to meet the Edwards Aquifer Authority requirements. One chamber will hold 16,000-gallons of regular unleaded fuel, , the second chamber will hold 6,000-gallons of premium (V-Power) fuel , and the third chamber will hold 7,000-gallons of diesel fuel.

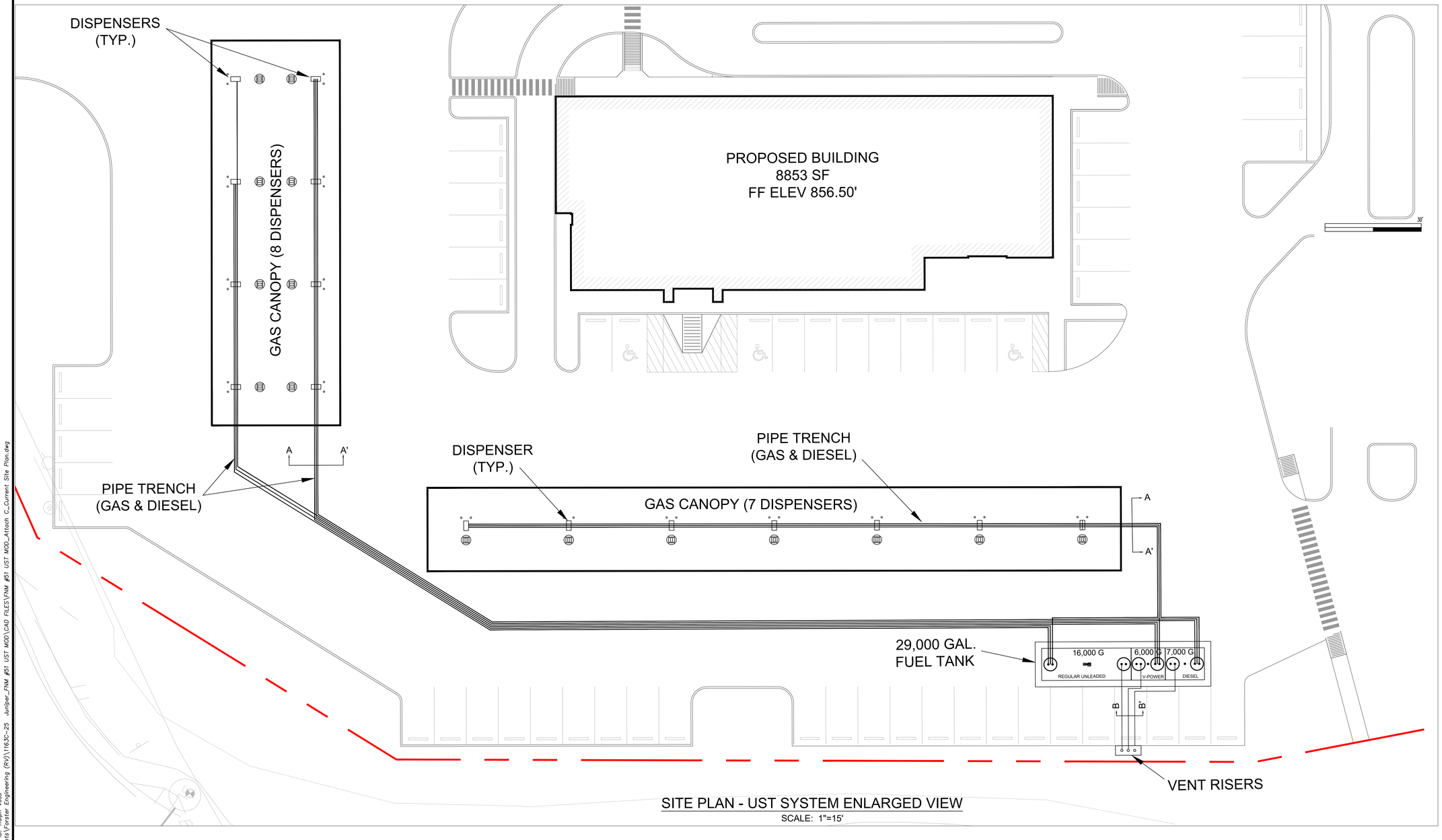
The tank will be equipped with a 3/4 horsepower, 4-inch diameter submersible pumps. Overfill prevention for the tank will be provided by an automatic shut off valve which will be installed in the tank below the fill tube and must be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity. Additional spill protection for the UST system will be provided by spill containment manholes and emergency shut-off valves.

Product, vent piping will be U.L. listed fiberglass-reinforced plastic piping. Product lines will consist of a 2-inch diameter primary double-wall pipe (Dualoy 3000/LCX) within a 3-inch diameter tertiary containment pipe (Dualoy 3000/L). Vent lines will be 2-inch diameter single-wall pipe (Dualoy 3000/L). A safety shear valve will be installed on each product line at the dispenser island surface level to assure automatic shut-off of product flow during emergencies. In addition, stainless steel braid flexible connectors will be installed at both ends of each product line to connect to the dispenser unit and the submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within a liquid-tight fiberglass-reinforced plastic piping sump which will provide isolation from the corrosive elements of the backfill material while also providing secondary containment for any leaks from these components. The dispenser-end flexible connector will be similarly isolated by enclosure within a flexible isolation sleeve. The vapor recovery riser, the fill tube riser, and the riser for the automatic tank gauging system will be thoroughly wrapped with a suitable dielectric material.

The proposed tank and piping will be monitored for leaks by means of inventory, line leak detection, and a line pressure monitor. Each of the product piping systems will be monitored by a liquid non-discriminating sensor (Veeder Root Model 794380-208) which will be installed vertically on the sump base. A mini-hydrostatic sensor (Veeder Root Model 794380-304) will be installed in each of the fill and pump sumps that will detect fluid level change in the interstitial fluid reservoir of the double-wall sumps. The tanks will be equipped with a liquid non-discriminating sensor which will be installed in the interstitial space(s) between the walls of the tank (Veeder Root Model 794380-420).

The interstitial space in the double-wall pump sumps, double-wall fill sumps, and double-wall UDCs will be monitored using a Bravo-supplied Interstitial fluid. Bravo supplies this propylene glycol based interstitial monitoring fluid with all their double-walled sumps as filling Bravo double-wall products with Brine (saline) solution will void the product warranty. The Bravo-supplied fluid will not freeze in cold conditions or boil in hot conditions. Two 2-inch diameter slotted observation wells will be installed within the tank. The tank will also be equipped with an automatic tank gauging probe which will automatically inventory the product volume in each chamber of the tank. Each product piping line will be equipped with an electronic positive flow shut off that is designed to stop product flow in the event a leak in the product line is detected. The probes and sensors from the tank, piping, and observation wells will be connected to a programmable control unit to be located in the store building. This central monitoring unit is designed to provide visual and audible alarms when hydrocarbon liquids, hydrocarbon vapors, or water is detected.



SITE PLAN - UST SYSTEM ENLARGED VIEW

SCALE: 1"=15'

REV. NO.	DESCRIPTION	DATE

Notes:

15' 7.5' 0' 15'

SCALE 1"= 15'

SIGNATURE/SEAL

STATE OF TEXAS
RALPH VOSS, JR.
88675
LICENSED
PROFESSIONAL ENGINEER

02/26/25

FORSTER ENGINEERING

TBPE firm # 12385

401 MARICOPA DRIVE, CANYON LAKE, TEXAS 78133

PHONE: (210) 289-0580

WWW.FORSTERENGINEERING.COM

JUNIPER

PROJECT DESCRIPTION

FISCHER'S NEIGHBORHOOD MARKET #51
UNDERGROUND STORAGE TANK PLAN
MODIFICATION

DRAWING

CURRENT SITE PLAN OF APPROVED PROJECT

TCEQ-0590

DATE	02/26/25	JOB NO.	1163C-25
SCALE	1"=15'	DRG NO	ATTACHMENT C
DRAWN BY	RV		
CHECKED BY	CPF		

Date: Feb 26, 2025, 1:36pm User ID: Ralph Voss
File: C:\Users\Ralph Voss\Documents\Forster Engineering (RV)\1163C-25 Juniper_FNM #51 UST MOD\CAD FILES\FNM #51 UST MOD_Attach C_Current Site Plan.dwg

Section 6.0

UNDERGROUND STORAGE TANK FACILITY PLAN

Underground Storage Tank Facility Plan Application

Texas Commission on Environmental Quality

for Storage on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.5(d), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. All components used for this facility are U.L. listed or certified by a 3rd party and are compatible and will function pursuant to 30 TAC §213.5(d) and 30 TAC Chapter 334 Subchapter C. This **Underground Storage Tank Facility Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of ~~Customer~~/Agent: Ralph Voss Jr., P.E.

Date: 02/26/25

Signature of ~~Customer~~/Agent:

Regulated Entity Name: Fischer's Neighborhood Market #51

Underground Storage Tank (UST) System Information

1. [X] **Attachment A – Detailed Narrative of UST Facility**. A detailed narrative description of the proposed UST Facility is attached. Note: Example descriptions are provided in the instructions (TCEQ-0583-Instructions)

2. Tanks and substance to be stored:

Table 1 - Tanks and Substances Stored

UST Number	*Size(Gallons)*	*Substance to be Stored*	*Double-wall Tank Material*
1	29,000	Diesel/Super/Unleaded	Steel/Steel/FRP

UST Number	*Size(Gallons)*	*Substance to be Stored*	*Double-wall Tank Material*
2			
3			
4			
5			

3. Tanks:

   [X] **Attachment B – Manufacturer Information for Tanks**. New or replacement systems for the underground storage of static hydrocarbons or hazardous substances must be double-walled or provide an equivalent method of protection approved by the executive director. Tanks must comply with technical standards as required by 30 TAC 334.45(b) relating to technical standards for new tanks. Manufacturer information is attached.

   [ ] **Attachment C – Alternative Design and Protection Method for Tanks**. Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

4. Piping:

   [X] **Attachment D – Manufacturer Information for Piping**. Piping must comply with technical standards as required by 30 TAC 334.45(c) relating to technical standards for new piping. Manufacturer information is attached.

   [ ] **Attachment E – Alternative Design and Protection Method for Piping**. Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

5. [X] Any new underground storage tank system that does not incorporate a method for tertiary containment shall be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature as required by 30 TAC §213.5(d)(1)(B).

   [ ] The UST system(s) will not be installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

   [X] **Attachment F - Tertiary Containment Method**. The UST system(s) will be required to have tertiary containment provided. A description of the method proposed to provide tertiary containment is attached. (Tertiary containment required by the EAA.)

6. [X] Corrosion protection equipment to be installed or type of non-corrodible materials:

Table 2 - Corrosion Protection

Equipment	*Corrosion Protection (Method)*
Tanks	100-mil Fiberglass Shell
Product Delivery Piping	triple walled FRP piping

Equipment	*Corrosion Protection (Method)*
Vapor Recovery Piping	single walled FRP piping
Submersible Pumps	finish corrosion inhibitor
Flex Connector (dispenser end)	stainless steel (corrosion resistant)
Flex Connector (pump end)	stainless steel (corrosion resistant)
Riser	stainless steel (corrosion resistant)

7. [X] Overfill protection equipment to be installed:

   [ ] Overfill prevention restrictor positioned at 90% capacity.
   [X] Overfill prevention valve positioned at 95% capacity.
   [X] Overfill audible and visual alarm positioned at 90% capacity.

8. [X] Methods for detecting leaks in the inside wall of a double-walled system must be included in the facility's design and construction. The leak detection system must provide continuous monitoring of the system and must be capable of immediately alerting the system's owner of possible leakages. Release detection equipment to be installed: (Check all that apply)

   [X] Central on-site monitor
   [X] Interstitial tank probes
   [X] Automatic tank gauge (Veedor -Root)
   [X] Pump/manway sump probes
   [X] Observation well probes (MAG Plus Probes)
   [ ] Mechanical line leak detectors (for pressurized lines only)
   [X] Automatic (electronic) line leak detectors

Excavation and Backfill

9. [X] The depth of the tank excavation will be sufficient to accommodate piping fall requirements, tank diameter, bedding, and a minimum cover of three (3) feet [30 TAC §334.46].

   The depth of the tank excavation will be 14 feet. (Minimum)

10. [X] The minimum thickness of the tank bedding will conform to 30 TAC §334.46(a)(5)(C and D).

    The tank bedding thickness will be 12 inches.

11. [X] The material to be used as backfill will conform to 30 TAC §334.46(a)(5)(A and B) and will consist of:

    [ ] Clean washed non-corrosive sand
    [X] Pea gravel (or approved alt)
    [ ] Crushed rock
    [ ] Other: _____

12. [X] The slope of the product delivery line(s) will conform to 30 TAC §334.46(c)(2) and will be 1/8"/ft(1/8" per foot minimum).

Site Plan Requirements

Items 13 - 24 must be included on the Site Plan.

13. [X] The Site Plan must have a minimum scale of 1" = 400'.

    Site Plan Scale: 1" = 15' .

14. 100-year floodplain boundaries:

    [X] The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Map No. 48091C0435F, effective 9/02/09.

    [ ] Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

    [X] No part of the project site is located within the 100-year floodplain.

15. [X] The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.

    [ ] The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

16. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

    [X] There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

    [ ] The wells are not in use and have been properly abandoned.

    [X] The wells are not in use and will be properly abandoned.

    [ ] The wells are in use and comply with 16 TAC §76.

    [ ] There are no wells or test holes of any kind known to exist on the project site.

17. Geologic or manmade features which are on the site:

    [ ] All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.

    [X] No sensitive geologic or manmade features were identified in the Geologic Assessment.

    [ ] **Attachment G - Exception to the Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

18. [X] The drainage patterns and approximate slopes anticipated after major grading activities.

19. [X] Areas of soil disturbance and areas which will not be disturbed.

20. [X] Locations of major structural and nonstructural controls. These are the temporary best management practices.

21. [X] Locations where soil stabilization practices are expected to occur.

22. ☐ Surface waters (including wetlands).

☒ N/A

23. ☐ Locations where stormwater discharges to surface water or sensitive features.

☒ There will be no discharges to surface water or sensitive features.

24. ☒ Legal boundaries of the site are shown.

UST System Profiles

25. ☒ **Attachment H - Profile Drawing(s)**. A profile drawing(s) of the proposed UST system with all components shown and labeled is attached.

Best Management Practices

26. ☒ **Attachment I - Initial and Continuing Training**. A description of the initial and continuing training of on-site personnel for operation of release detection equipment is attached. The description should include how personnel will respond to warning and alarm conditions of the leak detection monitoring system.

27. ☒ **Attachment J - Release Detection Maintenance**. A description of the program and schedule for maintaining release detection and cathodic protection equipment is attached. Any such equipment should be operated and maintained in accordance with the manufacturer's specifications and instructions.

Administrative Information

28. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

☒ The WPAP application for this project was approved by letter dated 12/14/23. A copy of the approval letter is attached at the end of this application.

☐ The WPAP application for this project was submitted to the TCEQ on _____, but has not been approved.

☐ A WPAP application is required for an associated project, but it has not been submitted.

☐ There will be no building or structure associated with this project. In the event a building or structure is needed in the future, the required WPAP will be submitted to the TCEQ.

☐ The proposed UST is located on the **Transition Zone** and a WPAP is not required. Information requested in 30 TAC 213.5 subsection (b)(4)(B) and (C) and (5) is provided with this application. (Forms TCEQ-0600 Permanent Stormwater Section and TCEQ-0602 Temporary Stormwater Section or Stormwater Pollution Prevention Plan/SW3P).

29. ☒ UST systems must be installed by a person possessing a valid certificate of registration in accordance with the requirements of 30 TAC Chapter 334 Subchapter I.

30. [X] This facility is subject to and must meet the requirements of 30 TAC Chapter 334, including but not limited to the 30 day construction notification and reporting and cleanup of surface spills and overfills.

31. [X] Upon completion of the tankhold excavation, a geologist must certify that the excavation was inspected for the presence of sensitive features. The certification must be submitted to the appropriate regional office. If sensitive features are found, then excavation near the feature may not proceed until the methods to protect the Edwards Aquifer are reviewed and approved by the executive director.

32. [X] Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

33. [X] Any modification of this UST application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT A
DETAILED NARRATIVE OF UST FACILITY

The proposed new underground static hydrocarbon storage system will consist of one new single, multi-chambered, 29,000-gallon double-walled, jacketed tank to be used for storage of fuels. The tank is constructed with primary steel tank, secondary steel tank coupled with an exterior corrosion-resistant fiberglass reinforced plastic (FRP) tank meeting UL-58 ACT-100 and UL-1746. Tertiary containment is not required for TCEQ approval but is provided to meet the Edwards Aquifer Authority requirements. One chamber will hold 16,000-gallons of regular unleaded fuel, , the second chamber will hold 6,000-gallons of premium (V-Power) fuel , and the third chamber will hold 7,000-gallons of diesel fuel.

The tank will be equipped with a 3/4 horsepower, 4-inch diameter submersible pumps. Overfill prevention for the tank will be provided by an automatic shut off valve which will be installed in the tank below the fill tube and must be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity. Additional spill protection for the UST system will be provided by spill containment manholes and emergency shut-off valves.

Product, vent piping will be U.L. listed fiberglass-reinforced plastic piping. Product lines will consist of a 2-inch diameter primary double-wall pipe (Dualoy 3000/LCX) within a 3-inch diameter tertiary containment pipe (Dualoy 3000/L). Vent lines will be 2-inch diameter single-wall pipe (Dualoy 3000/L). A safety shear valve will be installed on each product line at the dispenser island surface level to assure automatic shut-off of product flow during emergencies. In addition, stainless steel braid flexible connectors will be installed at both ends of each product line to connect to the dispenser unit and the submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within a liquid-tight fiberglass-reinforced plastic piping sump which will provide isolation from the corrosive elements of the backfill material while also providing secondary containment for any leaks from these components. The dispenser-end flexible connector will be similarly isolated by enclosure within a flexible isolation sleeve. The vapor recovery riser, the fill tube riser, and the riser for the automatic tank gauging system will be thoroughly wrapped with a suitable dielectric material.

The proposed tank and piping will be monitored for leaks by means of inventory, line leak detection, and a line pressure monitor. Each of the product piping systems will be monitored by a liquid non-discriminating sensor (Veeder Root Model 794380-208) which will be installed vertically on the sump base. A mini-hydrostatic sensor (Veeder Root Model 794380-304) will be installed in each of the fill and pump sumps that will detect fluid level change in the interstitial fluid reservoir of the double-wall sumps. The tanks will be equipped with a liquid non-discriminating sensor which will be installed in the interstitial space(s) between the walls of the tank (Veeder Root Model 794380-420).

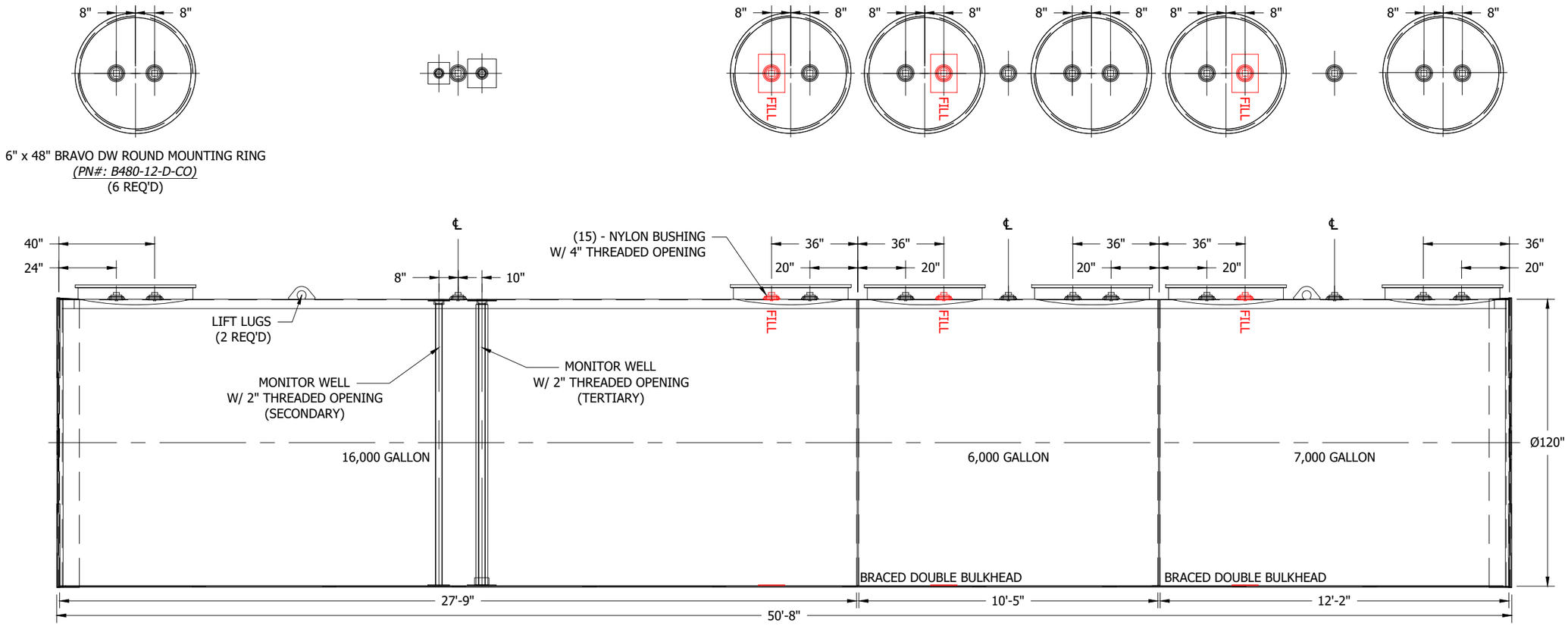
The interstitial space in the double-wall pump sumps, double-wall fill sumps, and double-wall UDCs will be monitored using a Bravo-supplied Interstitial fluid. Bravo supplies this

propylene glycol based interstitial monitoring fluid with all their double-walled sumps as filling Bravo double-wall products with Brine (saline) solution will void the product warranty. The Bravo-supplied fluid will not freeze in cold conditions or boil in hot conditions. Two 2-inch diameter slotted observation wells will be installed within the tank. The tank will also be equipped with an automatic tank gauging probe which will automatically inventory the product volume in each chamber of the tank. Each product piping line will be equipped with an electronic positive flow shut off that is designed to stop product flow in the event a leak in the product line is detected. The probes and sensors from the tank, piping, and observation wells will be connected to a programmable control unit to be located in the store building. This central monitoring unit is designed to provide visual and audible alarms when hydrocarbon liquids, hydrocarbon vapors, or water is detected.

UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT B
MANUFACTURER INFORMATION FOR THE TANK

The proposed new UST will be 29,000-gallon WATCO double-walled, jacketed Permatank. The tank is constructed with a primary steel tank, secondary steel tank (double-walled) coupled with an exterior corrosion-resistant fiberglass reinforced plastic (FRP) tank (jacket) for tertiary containment meeting UL-58 ACT-100 and UL-1746. One chamber will hold 16,000-gallons of regular unleaded fuel, the second chamber will hold 6,000-gallons of premium (V-Power) fuel, and the third chamber will hold 7,000-gallons of diesel fuel.

TANK CONSTRUCTED PER UL-58 ACT-100 TYPE II DOUBLE WALL AND UL-1746 JACKETED PERMATANK FOR TERTIARY CONTAINMENT



NOTES:

PRIMARY TANK:
SHELL: 5/16" A-36 CARBON STEEL
HEADS: 1/4" A-36 CARBON STEEL
BULKHEADS: 1/4" A-36 CARBON STEEL

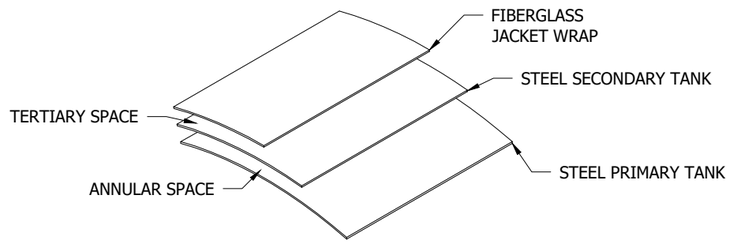
SECONDARY TANK:
SHELL: 10 GA. A-36 CARBON STEEL
HEADS: 1/4" A-36 CARBON STEEL

TERTIARY TANK:
BLAST
100 MILS FIBERGLASS JACKET

TEST:
PRIMARY: 5 PSIG SOAP & WATER
SECONDARY: VACUUM
TERTIARY: VACUUM

TECHNICAL DATA:

PERMATANK® MEETS REQUIREMENTS OF:
- U.S. ENVIRONMENTAL PROTECTION AGENCY UNDERGROUND STORAGE TANK REGULATIONS (40 CFR 280)
- STEEL TANK INSTITUTE F922, PERMATANK® FABRICATION SPECIFICATION,
- UNDERWRITERS LABORATORIES UL 58 STANDARD FOR, STEEL UNDERGROUND TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS
- UNDERWRITERS LABORATORIES UL 1746 STANDARD FOR, EXTERNAL CORROSION PROTECTION SYSTEMS FOR STEEL UNDERGROUND STORAGE TANKS



29,000 GALLON TRIPLE-WALL

TRIPLE-WALL - UL 1746 / UL 58
120" X 50'-8"
(16,000/6,000/7,000)

CUST.: JUNIPER VENTURES
LOC.: SAN ANTONIO, TX
DWG NO: 40075

REV.	DATE	DWG BY	APP'D	DESCRIPTION
8				
7				
6				
5				
4				
3	11/10/22	ZO	WH	SWAPPED 7K AND 6K COMPARTMENTS
2	10/7/22	ZO	WH	MOVED FILL POSITION ON 7K
1	9/28/22	ZO	WH	ADJUSTED COLLARS AND FITTINGS PER C/R
0	9/26/22	ZO	WH	ISSUED FOR APPROVAL

NOTES:
EXTERNAL: 100 MILS FIBERGLASS SHELL
INTERNAL: 16,000 - BARE METAL
7,000 - BARE METAL
6,000 - BARE METAL
TEST INNER: 5 PSIG SOAP & WATER
TEST OUTER: VACUUM
STRIKER PLATES UNDER "FILL" OPENINGS ONLY
ESTIMATED WEIGHT: 42,000 LBS (+/- 5%)

WATCO TANKS INC. Est. 1984

CAPACITY CHART

6,000 GALLON
120" X 10'-5"
UNDERGROUND STORAGE TANK

DEPTH	GALLONS	DEPTH	GALLONS	DEPTH	GALLONS	DEPTH	GALLONS
1/8"	2	5-5/8"	110	11-1/8"	293	16-5/8"	522
1/4"	3	5-3/4"	114	11-1/4"	298	16-3/4"	527
3/8"	4	5-7/8"	117	11-3/8"	303	16-7/8"	533
1/2"	5	6	121	11-1/2"	307	17	538
5/8"	6	6-1/8"	125	11-5/8"	312	17-1/8"	544
3/4"	8	6-1/4"	128	11-3/4"	317	17-1/4"	550
7/8"	9	6-3/8"	132	11-7/8"	322	17-3/8"	556
1	11	6-1/2"	136	12	327	17-1/2"	561
1-1/8"	13	6-5/8"	139	12-1/8"	332	17-5/8"	567
1-1/4"	14	6-3/4"	143	12-1/4"	337	17-3/4"	573
1-3/8"	16	6-7/8"	147	12-3/8"	341	17-7/8"	579
1-1/2"	18	7	151	12-1/2"	346	18	584
1-5/8"	20	7-1/8"	155	12-5/8"	351	18-1/8"	590
1-3/4"	22	7-1/4"	158	12-3/4"	356	18-1/4"	596
1-7/8"	24	7-3/8"	162	12-7/8"	361	18-3/8"	602
2	26	7-1/2"	166	13	367	18-1/2"	608
2-1/8"	29	7-5/8"	170	13-1/8"	372	18-5/8"	614
2-1/4"	31	7-3/4"	174	13-1/4"	377	18-3/4"	619
2-3/8"	33	7-7/8"	178	13-3/8"	382	18-7/8"	625
2-1/2"	36	8	182	13-1/2"	387	19	631
2-5/8"	38	8-1/8"	187	13-5/8"	392	19-1/8"	637
2-3/4"	41	8-1/4"	191	13-3/4"	397	19-1/4"	643
2-7/8"	43	8-3/8"	195	13-7/8"	402	19-3/8"	649
3	46	8-1/2"	199	14	408	19-1/2"	655
3-1/8"	48	8-5/8"	203	14-1/8"	413	19-5/8"	661
3-1/4"	51	8-3/4"	208	14-1/4"	418	19-3/4"	667
3-3/8"	54	8-7/8"	212	14-3/8"	423	19-7/8"	673
3-1/2"	57	9	216	14-1/2"	429	20	679
3-5/8"	59	9-1/8"	220	14-5/8"	434	20-1/8"	685
3-3/4"	62	9-1/4"	225	14-3/4"	439	20-1/4"	691
3-7/8"	65	9-3/8"	229	14-7/8"	445	20-3/8"	697
4	68	9-1/2"	234	15	450	20-1/2"	703
4-1/8"	71	9-5/8"	238	15-1/8"	455	20-5/8"	710
4-1/4"	74	9-3/4"	242	15-1/4"	461	20-3/4"	716
4-3/8"	77	9-7/8"	247	15-3/8"	466	20-7/8"	722
4-1/2"	80	10	251	15-1/2"	472	21	728
4-5/8"	84	10-1/8"	256	15-5/8"	477	21-1/8"	734
4-3/4"	87	10-1/4"	260	15-3/4"	483	21-1/4"	740
4-7/8"	90	10-3/8"	265	15-7/8"	488	21-3/8"	747
5	93	10-1/2"	270	16	494	21-1/2"	753
5-1/8"	97	10-5/8"	274	16-1/8"	499	21-5/8"	759
5-1/4"	100	10-3/4"	279	16-1/4"	505	21-3/4"	765
5-3/8"	103	10-7/8"	284	16-3/8"	510	21-7/8"	772
5-1/2"	107	11	288	16-1/2"	516	22	778

22-1/8"	784	28-3/8"	1114	34-5/8"	1470	40-7/8"	1845
22-1/4"	790	28-1/2"	1121	34-3/4"	1477	41	1853
22-3/8"	797	28-5/8"	1128	34-7/8"	1484	41-1/8"	1860
22-1/2"	803	28-3/4"	1135	35	1492	41-1/4"	1868
22-5/8"	809	28-7/8"	1142	35-1/8"	1499	41-3/8"	1876
22-3/4"	816	29	1149	35-1/4"	1507	41-1/2"	1883
22-7/8"	822	29-1/8"	1155	35-3/8"	1514	41-5/8"	1891
23	828	29-1/4"	1162	35-1/2"	1521	41-3/4"	1899
23-1/8"	835	29-3/8"	1169	35-5/8"	1529	41-7/8"	1906
23-1/4"	841	29-1/2"	1176	35-3/4"	1536	42	1914
23-3/8"	848	29-5/8"	1183	35-7/8"	1543	42-1/8"	1922
23-1/2"	854	29-3/4"	1190	36	1551	42-1/4"	1930
23-5/8"	860	29-7/8"	1197	36-1/8"	1558	42-3/8"	1937
23-3/4"	867	30	1204	36-1/4"	1566	42-1/2"	1945
23-7/8"	873	30-1/8"	1211	36-3/8"	1573	42-5/8"	1953
24	880	30-1/4"	1218	36-1/2"	1581	42-3/4"	1960
24-1/8"	886	30-3/8"	1225	36-5/8"	1588	42-7/8"	1968
24-1/4"	893	30-1/2"	1232	36-3/4"	1595	43	1976
24-3/8"	899	30-5/8"	1239	36-7/8"	1603	43-1/8"	1984
24-1/2"	906	30-3/4"	1247	37	1610	43-1/4"	1991
24-5/8"	912	30-7/8"	1254	37-1/8"	1618	43-3/8"	1999
24-3/4"	919	31	1261	37-1/4"	1625	43-1/2"	2007
24-7/8"	926	31-1/8"	1268	37-3/8"	1633	43-5/8"	2015
25	932	31-1/4"	1275	37-1/2"	1640	43-3/4"	2023
25-1/8"	939	31-3/8"	1282	37-5/8"	1648	43-7/8"	2030
25-1/4"	945	31-1/2"	1289	37-3/4"	1655	44	2038
25-3/8"	952	31-5/8"	1296	37-7/8"	1663	44-1/8"	2046
25-1/2"	959	31-3/4"	1303	38	1670	44-1/4"	2054
25-5/8"	965	31-7/8"	1311	38-1/8"	1678	44-3/8"	2061
25-3/4"	972	32	1318	38-1/4"	1685	44-1/2"	2069
25-7/8"	979	32-1/8"	1325	38-3/8"	1693	44-5/8"	2077
26	985	32-1/4"	1332	38-1/2"	1701	44-3/4"	2085
26-1/8"	992	32-3/8"	1339	38-5/8"	1708	44-7/8"	2093
26-1/4"	999	32-1/2"	1346	38-3/4"	1716	45	2101
26-3/8"	1005	32-5/8"	1354	38-7/8"	1723	45-1/8"	2108
26-1/2"	1012	32-3/4"	1361	39	1731	45-1/4"	2116
26-5/8"	1019	32-7/8"	1368	39-1/8"	1738	45-3/8"	2124
26-3/4"	1025	33	1375	39-1/4"	1746	45-1/2"	2132
26-7/8"	1032	33-1/8"	1382	39-3/8"	1753	45-5/8"	2140
27	1039	33-1/4"	1390	39-1/2"	1761	45-3/4"	2148
27-1/8"	1046	33-3/8"	1397	39-5/8"	1769	45-7/8"	2155
27-1/4"	1053	33-1/2"	1404	39-3/4"	1776	46	2163
27-3/8"	1059	33-5/8"	1411	39-7/8"	1784	46-1/8"	2171
27-1/2"	1066	33-3/4"	1419	40	1792	46-1/4"	2179
27-5/8"	1073	33-7/8"	1426	40-1/8"	1799	46-3/8"	2187
27-3/4"	1080	34	1433	40-1/4"	1807	46-1/2"	2195
27-7/8"	1087	34-1/8"	1441	40-3/8"	1814	46-5/8"	2203
28	1093	34-1/4"	1448	40-1/2"	1822	46-3/4"	2210
28-1/8"	1100	34-3/8"	1455	40-5/8"	1830	46-7/8"	2218
28-1/4"	1107	34-1/2"	1462	40-3/4"	1837	47	2226

47-1/8"	2234	53-3/8"	2632	59-5/8"	3034	65-7/8"	3437
47-1/4"	2242	53-1/2"	2640	59-3/4"	3043	66	3445
47-3/8"	2250	53-5/8"	2648	59-7/8"	3051	66-1/8"	3453
47-1/2"	2258	53-3/4"	2656	60	3059	66-1/4"	3461
47-5/8"	2266	53-7/8"	2664	60-1/8"	3067	66-3/8"	3469
47-3/4"	2274	54	2672	60-1/4"	3075	66-1/2"	3477
47-7/8"	2281	54-1/8"	2680	60-3/8"	3083	66-5/8"	3485
48	2289	54-1/4"	2688	60-1/2"	3091	66-3/4"	3493
48-1/8"	2297	54-3/8"	2696	60-5/8"	3099	66-7/8"	3501
48-1/4"	2305	54-1/2"	2704	60-3/4"	3107	67	3509
48-3/8"	2313	54-5/8"	2712	60-7/8"	3115	67-1/8"	3517
48-1/2"	2321	54-3/4"	2720	61	3123	67-1/4"	3525
48-5/8"	2329	54-7/8"	2728	61-1/8"	3131	67-3/8"	3533
48-3/4"	2337	55	2736	61-1/4"	3139	67-1/2"	3541
48-7/8"	2345	55-1/8"	2745	61-3/8"	3147	67-5/8"	3549
49	2353	55-1/4"	2753	61-1/2"	3155	67-3/4"	3557
49-1/8"	2361	55-3/8"	2761	61-5/8"	3163	67-7/8"	3565
49-1/4"	2369	55-1/2"	2769	61-3/4"	3171	68	3573
49-3/8"	2377	55-5/8"	2777	61-7/8"	3180	68-1/8"	3581
49-1/2"	2385	55-3/4"	2785	62	3188	68-1/4"	3589
49-5/8"	2392	55-7/8"	2793	62-1/8"	3196	68-3/8"	3597
49-3/4"	2400	56	2801	62-1/4"	3204	68-1/2"	3605
49-7/8"	2408	56-1/8"	2809	62-3/8"	3212	68-5/8"	3613
50	2416	56-1/4"	2817	62-1/2"	3220	68-3/4"	3621
50-1/8"	2424	56-3/8"	2825	62-5/8"	3228	68-7/8"	3629
50-1/4"	2432	56-1/2"	2833	62-3/4"	3236	69	3636
50-3/8"	2440	56-5/8"	2841	62-7/8"	3244	69-1/8"	3644
50-1/2"	2448	56-3/4"	2849	63	3252	69-1/4"	3652
50-5/8"	2456	56-7/8"	2857	63-1/8"	3260	69-3/8"	3660
50-3/4"	2464	57	2865	63-1/4"	3268	69-1/2"	3668
50-7/8"	2472	57-1/8"	2873	63-3/8"	3276	69-5/8"	3676
51	2480	57-1/4"	2881	63-1/2"	3284	69-3/4"	3684
51-1/8"	2488	57-3/8"	2889	63-5/8"	3292	69-7/8"	3692
51-1/4"	2496	57-1/2"	2897	63-3/4"	3300	70	3700
51-3/8"	2504	57-5/8"	2905	63-7/8"	3308	70-1/8"	3708
51-1/2"	2512	57-3/4"	2914	64	3316	70-1/4"	3716
51-5/8"	2520	57-7/8"	2922	64-1/8"	3324	70-3/8"	3724
51-3/4"	2528	58	2930	64-1/4"	3332	70-1/2"	3732
51-7/8"	2536	58-1/8"	2938	64-3/8"	3340	70-5/8"	3740
52	2544	58-1/4"	2946	64-1/2"	3348	70-3/4"	3748
52-1/8"	2552	58-3/8"	2954	64-5/8"	3357	70-7/8"	3756
52-1/4"	2560	58-1/2"	2962	64-3/4"	3365	71	3763
52-3/8"	2568	58-5/8"	2970	64-7/8"	3373	71-1/8"	3771
52-1/2"	2576	58-3/4"	2978	65	3381	71-1/4"	3779
52-5/8"	2584	58-7/8"	2986	65-1/8"	3389	71-3/8"	3787
52-3/4"	2592	59	2994	65-1/4"	3397	71-1/2"	3795
52-7/8"	2600	59-1/8"	3002	65-3/8"	3405	71-5/8"	3803
53	2608	59-1/4"	3010	65-1/2"	3413	71-3/4"	3811
53-1/8"	2616	59-3/8"	3018	65-5/8"	3421	71-7/8"	3819
53-1/4"	2624	59-1/2"	3026	65-3/4"	3429	72	3827

72-1/8"	3834	78-3/8"	4223	84-5/8"	4598	90-7/8"	4953
72-1/4"	3842	78-1/2"	4231	84-3/4"	4605	91	4959
72-3/8"	3850	78-5/8"	4238	84-7/8"	4612	91-1/8"	4966
72-1/2"	3858	78-3/4"	4246	85	4620	91-1/4"	4973
72-5/8"	3866	78-7/8"	4254	85-1/8"	4627	91-3/8"	4980
72-3/4"	3874	79	4261	85-1/4"	4634	91-1/2"	4987
72-7/8"	3882	79-1/8"	4269	85-3/8"	4641	91-5/8"	4994
73	3890	79-1/4"	4277	85-1/2"	4649	91-3/4"	5000
73-1/8"	3897	79-3/8"	4284	85-5/8"	4656	91-7/8"	5007
73-1/4"	3905	79-1/2"	4292	85-3/4"	4663	92	5014
73-3/8"	3913	79-5/8"	4299	85-7/8"	4670	92-1/8"	5021
73-1/2"	3921	79-3/4"	4307	86	4678	92-1/4"	5027
73-5/8"	3929	79-7/8"	4314	86-1/8"	4685	92-3/8"	5034
73-3/4"	3937	80	4322	86-1/4"	4692	92-1/2"	5041
73-7/8"	3944	80-1/8"	4330	86-3/8"	4699	92-5/8"	5048
74	3952	80-1/4"	4337	86-1/2"	4706	92-3/4"	5054
74-1/8"	3960	80-3/8"	4345	86-5/8"	4714	92-7/8"	5061
74-1/4"	3968	80-1/2"	4352	86-3/4"	4721	93	5068
74-3/8"	3976	80-5/8"	4360	86-7/8"	4728	93-1/8"	5074
74-1/2"	3984	80-3/4"	4367	87	4735	93-1/4"	5081
74-5/8"	3991	80-7/8"	4375	87-1/8"	4742	93-3/8"	5088
74-3/4"	3999	81	4382	87-1/4"	4749	93-1/2"	5094
74-7/8"	4007	81-1/8"	4390	87-3/8"	4757	93-5/8"	5101
75	4015	81-1/4"	4397	87-1/2"	4764	93-3/4"	5107
75-1/8"	4022	81-3/8"	4405	87-5/8"	4771	93-7/8"	5114
75-1/4"	4030	81-1/2"	4412	87-3/4"	4778	94	5121
75-3/8"	4038	81-5/8"	4420	87-7/8"	4785	94-1/8"	5127
75-1/2"	4046	81-3/4"	4427	88	4792	94-1/4"	5134
75-5/8"	4054	81-7/8"	4435	88-1/8"	4799	94-3/8"	5140
75-3/4"	4061	82	4442	88-1/4"	4806	94-1/2"	5147
75-7/8"	4069	82-1/8"	4450	88-3/8"	4813	94-5/8"	5153
76	4077	82-1/4"	4457	88-1/2"	4820	94-3/4"	5160
76-1/8"	4085	82-3/8"	4465	88-5/8"	4827	94-7/8"	5166
76-1/4"	4092	82-1/2"	4472	88-3/4"	4834	95	5173
76-3/8"	4100	82-5/8"	4480	88-7/8"	4841	95-1/8"	5179
76-1/2"	4108	82-3/4"	4487	89	4848	95-1/4"	5186
76-5/8"	4115	82-7/8"	4494	89-1/8"	4855	95-3/8"	5192
76-3/4"	4123	83	4502	89-1/4"	4862	95-1/2"	5199
76-7/8"	4131	83-1/8"	4509	89-3/8"	4869	95-5/8"	5205
77	4139	83-1/4"	4517	89-1/2"	4876	95-3/4"	5212
77-1/8"	4146	83-3/8"	4524	89-5/8"	4883	95-7/8"	5218
77-1/4"	4154	83-1/2"	4531	89-3/4"	4890	96	5224
77-3/8"	4162	83-5/8"	4539	89-7/8"	4897	96-1/8"	5231
77-1/2"	4169	83-3/4"	4546	90	4904	96-1/4"	5237
77-5/8"	4177	83-7/8"	4554	90-1/8"	4911	96-3/8"	5243
77-3/4"	4185	84	4561	90-1/4"	4918	96-1/2"	5250
77-7/8"	4192	84-1/8"	4568	90-3/8"	4925	96-5/8"	5256
78	4200	84-1/4"	4576	90-1/2"	4932	96-3/4"	5262
78-1/8"	4208	84-3/8"	4583	90-5/8"	4939	96-7/8"	5269
78-1/4"	4215	84-1/2"	4590	90-3/4"	4946	97	5275

97-1/8"	5281	103-3/8"	5576	109-5/8"	5824	115-7/8"	6004
97-1/4"	5288	103-1/2"	5581	109-3/4"	5828	116	6007
97-3/8"	5294	103-5/8"	5586	109-7/8"	5832	116-1/8"	6010
97-1/2"	5300	103-3/4"	5592	110	5837	116-1/4"	6012
97-5/8"	5306	103-7/8"	5597	110-1/8"	5841	116-3/8"	6015
97-3/4"	5312	104	5603	110-1/4"	5845	116-1/2"	6017
97-7/8"	5319	104-1/8"	5608	110-3/8"	5850	116-5/8"	6020
98	5325	104-1/4"	5613	110-1/2"	5854	116-3/4"	6022
98-1/8"	5331	104-3/8"	5619	110-5/8"	5858	116-7/8"	6024
98-1/4"	5337	104-1/2"	5624	110-3/4"	5862	117	6026
98-3/8"	5343	104-5/8"	5629	110-7/8"	5866	117-1/8"	6029
98-1/2"	5349	104-3/4"	5635	111	5870	117-1/4"	6031
98-5/8"	5355	104-7/8"	5640	111-1/8"	5874	117-3/8"	6033
98-3/4"	5362	105	5645	111-1/4"	5878	117-1/2"	6035
98-7/8"	5368	105-1/8"	5650	111-3/8"	5882	117-5/8"	6037
99	5374	105-1/4"	5656	111-1/2"	5886	117-3/4"	6038
99-1/8"	5380	105-3/8"	5661	111-5/8"	5890	117-7/8"	6040
99-1/4"	5386	105-1/2"	5666	111-3/4"	5894	118	6042
99-3/8"	5392	105-5/8"	5671	111-7/8"	5898	118-1/8"	6043
99-1/2"	5398	105-3/4"	5676	112	5902	118-1/4"	6045
99-5/8"	5404	105-7/8"	5681	112-1/8"	5906	118-3/8"	6046
99-3/4"	5410	106	5686	112-1/4"	5910	118-1/2"	6048
99-7/8"	5416	106-1/8"	5691	112-3/8"	5913	118-5/8"	6049
100	5422	106-1/4"	5696	112-1/2"	5917	118-3/4"	6050
100-1/8"	5427	106-3/8"	5701	112-5/8"	5921	118-7/8"	6051
100-1/4"	5433	106-1/2"	5706	112-3/4"	5925	119	6052
100-3/8"	5439	106-5/8"	5711	112-7/8"	5928	119-1/8"	6052
100-1/2"	5445	106-3/4"	5716	113	5932	119-1/4"	6053
100-5/8"	5451	106-7/8"	5721	113-1/8"	5935		
100-3/4"	5457	107	5726	113-1/4"	5939		
100-7/8"	5463	107-1/8"	5731	113-3/8"	5942		
101	5468	107-1/4"	5736	113-1/2"	5946		
101-1/8"	5474	107-3/8"	5741	113-5/8"	5949		
101-1/4"	5480	107-1/2"	5745	113-3/4"	5953		
101-3/8"	5486	107-5/8"	5750	113-7/8"	5956		
101-1/2"	5492	107-3/4"	5755	114	5959		
101-5/8"	5497	107-7/8"	5760	114-1/8"	5963		
101-3/4"	5503	108	5765	114-1/4"	5966		
101-7/8"	5509	108-1/8"	5769	114-3/8"	5969		
102	5514	108-1/4"	5774	114-1/2"	5972		
102-1/8"	5520	108-3/8"	5779	114-5/8"	5975		
102-1/4"	5526	108-1/2"	5783	114-3/4"	5979		
102-3/8"	5531	108-5/8"	5788	114-7/8"	5982		
102-1/2"	5537	108-3/4"	5792	115	5985		
102-5/8"	5542	108-7/8"	5797	115-1/8"	5988		
102-3/4"	5548	109	5801	115-1/4"	5991		
102-7/8"	5554	109-1/8"	5806	115-3/8"	5993		
103	5559	109-1/4"	5810	115-1/2"	5996		
103-1/8"	5565	109-3/8"	5815	115-5/8"	5999		
103-1/4"	5570	109-1/2"	5819	115-3/4"	6002		

CAPACITY CHART

7,000 GALLON
120" X 12'-1"
UNDERGROUND STORAGE TANK

DEPTH	GALLONS	DEPTH	GALLONS	DEPTH	GALLONS	DEPTH	GALLONS
1/8"	2	5-5/8"	129	11-1/8"	342	16-5/8"	608
1/4"	3	5-3/4"	133	11-1/4"	347	16-3/4"	615
3/8"	5	5-7/8"	137	11-3/8"	353	16-7/8"	622
1/2"	6	6	141	11-1/2"	359	17	628
5/8"	7	6-1/8"	145	11-5/8"	364	17-1/8"	635
3/4"	9	6-1/4"	150	11-3/4"	370	17-1/4"	641
7/8"	11	6-3/8"	154	11-7/8"	375	17-3/8"	648
1	13	6-1/2"	158	12	381	17-1/2"	655
1-1/8"	15	6-5/8"	163	12-1/8"	387	17-5/8"	662
1-1/4"	17	6-3/4"	167	12-1/4"	393	17-3/4"	668
1-3/8"	19	6-7/8"	171	12-3/8"	398	17-7/8"	675
1-1/2"	21	7	176	12-1/2"	404	18	682
1-5/8"	23	7-1/8"	180	12-5/8"	410	18-1/8"	689
1-3/4"	26	7-1/4"	185	12-3/4"	416	18-1/4"	695
1-7/8"	28	7-3/8"	189	12-7/8"	422	18-3/8"	702
2	31	7-1/2"	194	13	428	18-1/2"	709
2-1/8"	33	7-5/8"	199	13-1/8"	434	18-5/8"	716
2-1/4"	36	7-3/4"	203	13-1/4"	439	18-3/4"	723
2-3/8"	39	7-7/8"	208	13-3/8"	445	18-7/8"	730
2-1/2"	42	8	213	13-1/2"	451	19	736
2-5/8"	44	8-1/8"	218	13-5/8"	457	19-1/8"	743
2-3/4"	47	8-1/4"	223	13-3/4"	463	19-1/4"	750
2-7/8"	50	8-3/8"	227	13-7/8"	470	19-3/8"	757
3	53	8-1/2"	232	14	476	19-1/2"	764
3-1/8"	56	8-5/8"	237	14-1/8"	482	19-5/8"	771
3-1/4"	60	8-3/4"	242	14-1/4"	488	19-3/4"	778
3-3/8"	63	8-7/8"	247	14-3/8"	494	19-7/8"	785
3-1/2"	66	9	252	14-1/2"	500	20	792
3-5/8"	69	9-1/8"	257	14-5/8"	506	20-1/8"	799
3-3/4"	73	9-1/4"	262	14-3/4"	513	20-1/4"	807
3-7/8"	76	9-3/8"	267	14-7/8"	519	20-3/8"	814
4	80	9-1/2"	272	15	525	20-1/2"	821
4-1/8"	83	9-5/8"	278	15-1/8"	531	20-5/8"	828
4-1/4"	87	9-3/4"	283	15-1/4"	538	20-3/4"	835
4-3/8"	90	9-7/8"	288	15-3/8"	544	20-7/8"	842
4-1/2"	94	10	293	15-1/2"	550	21	849
4-5/8"	98	10-1/8"	299	15-5/8"	557	21-1/8"	857
4-3/4"	101	10-1/4"	304	15-3/4"	563	21-1/4"	864
4-7/8"	105	10-3/8"	309	15-7/8"	570	21-3/8"	871
5	109	10-1/2"	315	16	576	21-1/2"	878
5-1/8"	113	10-5/8"	320	16-1/8"	582	21-5/8"	886
5-1/4"	117	10-3/4"	325	16-1/4"	589	21-3/4"	893
5-3/8"	121	10-7/8"	331	16-3/8"	595	21-7/8"	900
5-1/2"	125	11	336	16-1/2"	602	22	907

22-1/8"	915	28-3/8"	1300	34-5/8"	1715	40-7/8"	2153
22-1/4"	922	28-1/2"	1308	34-3/4"	1723	41	2161
22-3/8"	929	28-5/8"	1316	34-7/8"	1732	41-1/8"	2170
22-1/2"	937	28-3/4"	1324	35	1740	41-1/4"	2179
22-5/8"	944	28-7/8"	1332	35-1/8"	1749	41-3/8"	2188
22-3/4"	952	29	1340	35-1/4"	1758	41-1/2"	2197
22-7/8"	959	29-1/8"	1348	35-3/8"	1766	41-5/8"	2206
23	966	29-1/4"	1356	35-1/2"	1775	41-3/4"	2215
23-1/8"	974	29-3/8"	1364	35-5/8"	1783	41-7/8"	2224
23-1/4"	981	29-1/2"	1372	35-3/4"	1792	42	2233
23-3/8"	989	29-5/8"	1381	35-7/8"	1801	42-1/8"	2242
23-1/2"	996	29-3/4"	1389	36	1809	42-1/4"	2251
23-5/8"	1004	29-7/8"	1397	36-1/8"	1818	42-3/8"	2260
23-3/4"	1011	30	1405	36-1/4"	1827	42-1/2"	2269
23-7/8"	1019	30-1/8"	1413	36-3/8"	1835	42-5/8"	2278
24	1027	30-1/4"	1421	36-1/2"	1844	42-3/4"	2287
24-1/8"	1034	30-3/8"	1430	36-5/8"	1853	42-7/8"	2296
24-1/4"	1042	30-1/2"	1438	36-3/4"	1861	43	2305
24-3/8"	1049	30-5/8"	1446	36-7/8"	1870	43-1/8"	2314
24-1/2"	1057	30-3/4"	1454	37	1879	43-1/4"	2323
24-5/8"	1065	30-7/8"	1463	37-1/8"	1888	43-3/8"	2332
24-3/4"	1072	31	1471	37-1/4"	1896	43-1/2"	2342
24-7/8"	1080	31-1/8"	1479	37-3/8"	1905	43-5/8"	2351
25	1088	31-1/4"	1487	37-1/2"	1914	43-3/4"	2360
25-1/8"	1095	31-3/8"	1496	37-5/8"	1922	43-7/8"	2369
25-1/4"	1103	31-1/2"	1504	37-3/4"	1931	44	2378
25-3/8"	1111	31-5/8"	1512	37-7/8"	1940	44-1/8"	2387
25-1/2"	1118	31-3/4"	1521	38	1949	44-1/4"	2396
25-5/8"	1126	31-7/8"	1529	38-1/8"	1958	44-3/8"	2405
25-3/4"	1134	32	1537	38-1/4"	1966	44-1/2"	2414
25-7/8"	1142	32-1/8"	1546	38-3/8"	1975	44-5/8"	2423
26	1149	32-1/4"	1554	38-1/2"	1984	44-3/4"	2432
26-1/8"	1157	32-3/8"	1562	38-5/8"	1993	44-7/8"	2442
26-1/4"	1165	32-1/2"	1571	38-3/4"	2002	45	2451
26-3/8"	1173	32-5/8"	1579	38-7/8"	2010	45-1/8"	2460
26-1/2"	1181	32-3/4"	1588	39	2019	45-1/4"	2469
26-5/8"	1188	32-7/8"	1596	39-1/8"	2028	45-3/8"	2478
26-3/4"	1196	33	1604	39-1/4"	2037	45-1/2"	2487
26-7/8"	1204	33-1/8"	1613	39-3/8"	2046	45-5/8"	2496
27	1212	33-1/4"	1621	39-1/2"	2055	45-3/4"	2505
27-1/8"	1220	33-3/8"	1630	39-5/8"	2063	45-7/8"	2515
27-1/4"	1228	33-1/2"	1638	39-3/4"	2072	46	2524
27-3/8"	1236	33-5/8"	1647	39-7/8"	2081	46-1/8"	2533
27-1/2"	1244	33-3/4"	1655	40	2090	46-1/4"	2542
27-5/8"	1252	33-7/8"	1664	40-1/8"	2099	46-3/8"	2551
27-3/4"	1260	34	1672	40-1/4"	2108	46-1/2"	2560
27-7/8"	1268	34-1/8"	1681	40-3/8"	2117	46-5/8"	2570
28	1276	34-1/4"	1689	40-1/2"	2126	46-3/4"	2579
28-1/8"	1284	34-3/8"	1698	40-5/8"	2135	46-7/8"	2588
28-1/4"	1292	34-1/2"	1706	40-3/4"	2144	47	2597

47-1/8"	2606	53-3/8"	3071	59-5/8"	3540	65-7/8"	4010
47-1/4"	2616	53-1/2"	3080	59-3/4"	3550	66	4019
47-3/8"	2625	53-5/8"	3089	59-7/8"	3559	66-1/8"	4028
47-1/2"	2634	53-3/4"	3099	60	3568	66-1/4"	4038
47-5/8"	2643	53-7/8"	3108	60-1/8"	3578	66-3/8"	4047
47-3/4"	2652	54	3118	60-1/4"	3587	66-1/2"	4056
47-7/8"	2662	54-1/8"	3127	60-3/8"	3597	66-5/8"	4066
48	2671	54-1/4"	3136	60-1/2"	3606	66-3/4"	4075
48-1/8"	2680	54-3/8"	3146	60-5/8"	3615	66-7/8"	4084
48-1/4"	2689	54-1/2"	3155	60-3/4"	3625	67	4094
48-3/8"	2699	54-5/8"	3164	60-7/8"	3634	67-1/8"	4103
48-1/2"	2708	54-3/4"	3174	61	3644	67-1/4"	4112
48-5/8"	2717	54-7/8"	3183	61-1/8"	3653	67-3/8"	4122
48-3/4"	2726	55	3193	61-1/4"	3662	67-1/2"	4131
48-7/8"	2736	55-1/8"	3202	61-3/8"	3672	67-5/8"	4140
49	2745	55-1/4"	3211	61-1/2"	3681	67-3/4"	4150
49-1/8"	2754	55-3/8"	3221	61-5/8"	3691	67-7/8"	4159
49-1/4"	2763	55-1/2"	3230	61-3/4"	3700	68	4168
49-3/8"	2773	55-5/8"	3239	61-7/8"	3709	68-1/8"	4177
49-1/2"	2782	55-3/4"	3249	62	3719	68-1/4"	4187
49-5/8"	2791	55-7/8"	3258	62-1/8"	3728	68-3/8"	4196
49-3/4"	2800	56	3268	62-1/4"	3738	68-1/2"	4205
49-7/8"	2810	56-1/8"	3277	62-3/8"	3747	68-5/8"	4215
50	2819	56-1/4"	3286	62-1/2"	3756	68-3/4"	4224
50-1/8"	2828	56-3/8"	3296	62-5/8"	3766	68-7/8"	4233
50-1/4"	2838	56-1/2"	3305	62-3/4"	3775	69	4243
50-3/8"	2847	56-5/8"	3315	62-7/8"	3785	69-1/8"	4252
50-1/2"	2856	56-3/4"	3324	63	3794	69-1/4"	4261
50-5/8"	2866	56-7/8"	3333	63-1/8"	3803	69-3/8"	4270
50-3/4"	2875	57	3343	63-1/4"	3813	69-1/2"	4280
50-7/8"	2884	57-1/8"	3352	63-3/8"	3822	69-5/8"	4289
51	2893	57-1/4"	3362	63-1/2"	3832	69-3/4"	4298
51-1/8"	2903	57-3/8"	3371	63-5/8"	3841	69-7/8"	4307
51-1/4"	2912	57-1/2"	3380	63-3/4"	3850	70	4317
51-3/8"	2921	57-5/8"	3390	63-7/8"	3860	70-1/8"	4326
51-1/2"	2931	57-3/4"	3399	64	3869	70-1/4"	4335
51-5/8"	2940	57-7/8"	3409	64-1/8"	3878	70-3/8"	4344
51-3/4"	2949	58	3418	64-1/4"	3888	70-1/2"	4354
51-7/8"	2959	58-1/8"	3427	64-3/8"	3897	70-5/8"	4363
52	2968	58-1/4"	3437	64-1/2"	3907	70-3/4"	4372
52-1/8"	2977	58-3/8"	3446	64-5/8"	3916	70-7/8"	4381
52-1/4"	2987	58-1/2"	3456	64-3/4"	3925	71	4391
52-3/8"	2996	58-5/8"	3465	64-7/8"	3935	71-1/8"	4400
52-1/2"	3005	58-3/4"	3474	65	3944	71-1/4"	4409
52-5/8"	3015	58-7/8"	3484	65-1/8"	3953	71-3/8"	4418
52-3/4"	3024	59	3493	65-1/4"	3963	71-1/2"	4428
52-7/8"	3033	59-1/8"	3503	65-3/8"	3972	71-5/8"	4437
53	3043	59-1/4"	3512	65-1/2"	3981	71-3/4"	4446
53-1/8"	3052	59-3/8"	3521	65-5/8"	3991	71-7/8"	4455
53-1/4"	3061	59-1/2"	3531	65-3/4"	4000	72	4464

72-1/8"	4474	78-3/8"	4927	84-5/8"	5364	90-7/8"	5778
72-1/4"	4483	78-1/2"	4936	84-3/4"	5372	91	5786
72-3/8"	4492	78-5/8"	4945	84-7/8"	5381	91-1/8"	5794
72-1/2"	4501	78-3/4"	4954	85	5389	91-1/4"	5802
72-5/8"	4510	78-7/8"	4963	85-1/8"	5398	91-3/8"	5810
72-3/4"	4519	79	4971	85-1/4"	5406	91-1/2"	5818
72-7/8"	4529	79-1/8"	4980	85-3/8"	5415	91-5/8"	5826
73	4538	79-1/4"	4989	85-1/2"	5423	91-3/4"	5834
73-1/8"	4547	79-3/8"	4998	85-5/8"	5432	91-7/8"	5842
73-1/4"	4556	79-1/2"	5007	85-3/4"	5440	92	5849
73-3/8"	4565	79-5/8"	5016	85-7/8"	5449	92-1/8"	5857
73-1/2"	4574	79-3/4"	5025	86	5457	92-1/4"	5865
73-5/8"	4584	79-7/8"	5034	86-1/8"	5466	92-3/8"	5873
73-3/4"	4593	80	5042	86-1/4"	5474	92-1/2"	5881
73-7/8"	4602	80-1/8"	5051	86-3/8"	5482	92-5/8"	5889
74	4611	80-1/4"	5060	86-1/2"	5491	92-3/4"	5897
74-1/8"	4620	80-3/8"	5069	86-5/8"	5499	92-7/8"	5904
74-1/4"	4629	80-1/2"	5078	86-3/4"	5508	93	5912
74-3/8"	4638	80-5/8"	5086	86-7/8"	5516	93-1/8"	5920
74-1/2"	4647	80-3/4"	5095	87	5524	93-1/4"	5928
74-5/8"	4657	80-7/8"	5104	87-1/8"	5533	93-3/8"	5936
74-3/4"	4666	81	5113	87-1/4"	5541	93-1/2"	5943
74-7/8"	4675	81-1/8"	5122	87-3/8"	5549	93-5/8"	5951
75	4684	81-1/4"	5130	87-1/2"	5558	93-3/4"	5959
75-1/8"	4693	81-3/8"	5139	87-5/8"	5566	93-7/8"	5966
75-1/4"	4702	81-1/2"	5148	87-3/4"	5574	94	5974
75-3/8"	4711	81-5/8"	5157	87-7/8"	5583	94-1/8"	5982
75-1/2"	4720	81-3/4"	5165	88	5591	94-1/4"	5989
75-5/8"	4729	81-7/8"	5174	88-1/8"	5599	94-3/8"	5997
75-3/4"	4738	82	5183	88-1/4"	5607	94-1/2"	6005
75-7/8"	4747	82-1/8"	5191	88-3/8"	5616	94-5/8"	6012
76	4756	82-1/4"	5200	88-1/2"	5624	94-3/4"	6020
76-1/8"	4765	82-3/8"	5209	88-5/8"	5632	94-7/8"	6027
76-1/4"	4774	82-1/2"	5218	88-3/4"	5640	95	6035
76-3/8"	4783	82-5/8"	5226	88-7/8"	5648	95-1/8"	6043
76-1/2"	4792	82-3/4"	5235	89	5657	95-1/4"	6050
76-5/8"	4801	82-7/8"	5244	89-1/8"	5665	95-3/8"	6058
76-3/4"	4810	83	5252	89-1/4"	5673	95-1/2"	6065
76-7/8"	4819	83-1/8"	5261	89-3/8"	5681	95-5/8"	6073
77	4828	83-1/4"	5269	89-1/2"	5689	95-3/4"	6080
77-1/8"	4837	83-3/8"	5278	89-5/8"	5697	95-7/8"	6088
77-1/4"	4846	83-1/2"	5287	89-3/4"	5705	96	6095
77-3/8"	4855	83-5/8"	5295	89-7/8"	5714	96-1/8"	6103
77-1/2"	4864	83-3/4"	5304	90	5722	96-1/4"	6110
77-5/8"	4873	83-7/8"	5313	90-1/8"	5730	96-3/8"	6117
77-3/4"	4882	84	5321	90-1/4"	5738	96-1/2"	6125
77-7/8"	4891	84-1/8"	5330	90-3/8"	5746	96-5/8"	6132
78	4900	84-1/4"	5338	90-1/2"	5754	96-3/4"	6140
78-1/8"	4909	84-3/8"	5347	90-5/8"	5762	96-7/8"	6147
78-1/4"	4918	84-1/2"	5355	90-3/4"	5770	97	6154

97-1/8"	6161	103-3/8"	6505	109-5/8"	6794	115-7/8"	7005
97-1/4"	6169	103-1/2"	6511	109-3/4"	6799	116	7008
97-3/8"	6176	103-5/8"	6518	109-7/8"	6804	116-1/8"	7011
97-1/2"	6183	103-3/4"	6524	110	6810	116-1/4"	7014
97-5/8"	6191	103-7/8"	6530	110-1/8"	6815	116-3/8"	7017
97-3/4"	6198	104	6537	110-1/4"	6819	116-1/2"	7020
97-7/8"	6205	104-1/8"	6543	110-3/8"	6824	116-5/8"	7023
98	6212	104-1/4"	6549	110-1/2"	6829	116-3/4"	7026
98-1/8"	6219	104-3/8"	6555	110-5/8"	6834	116-7/8"	7028
98-1/4"	6227	104-1/2"	6561	110-3/4"	6839	117	7031
98-3/8"	6234	104-5/8"	6568	110-7/8"	6844	117-1/8"	7033
98-1/2"	6241	104-3/4"	6574	111	6849	117-1/4"	7036
98-5/8"	6248	104-7/8"	6580	111-1/8"	6853	117-3/8"	7038
98-3/4"	6255	105	6586	111-1/4"	6858	117-1/2"	7040
98-7/8"	6262	105-1/8"	6592	111-3/8"	6863	117-5/8"	7043
99	6269	105-1/4"	6598	111-1/2"	6868	117-3/4"	7045
99-1/8"	6276	105-3/8"	6604	111-5/8"	6872	117-7/8"	7047
99-1/4"	6283	105-1/2"	6610	111-3/4"	6877	118	7049
99-3/8"	6290	105-5/8"	6616	111-7/8"	6881	118-1/8"	7051
99-1/2"	6297	105-3/4"	6622	112	6886	118-1/4"	7052
99-5/8"	6304	105-7/8"	6628	112-1/8"	6890	118-3/8"	7054
99-3/4"	6311	106	6634	112-1/4"	6895	118-1/2"	7056
99-7/8"	6318	106-1/8"	6640	112-3/8"	6899	118-5/8"	7057
100	6325	106-1/4"	6646	112-1/2"	6903	118-3/4"	7058
100-1/8"	6332	106-3/8"	6652	112-5/8"	6908	118-7/8"	7059
100-1/4"	6339	106-1/2"	6657	112-3/4"	6912	119	7060
100-3/8"	6346	106-5/8"	6663	112-7/8"	6916	119-1/8"	7061
100-1/2"	6353	106-3/4"	6669	113	6920	119-1/4"	7062
100-5/8"	6359	106-7/8"	6675	113-1/8"	6925		
100-3/4"	6366	107	6680	113-1/4"	6929		
100-7/8"	6373	107-1/8"	6686	113-3/8"	6933		
101	6380	107-1/4"	6692	113-1/2"	6937		
101-1/8"	6387	107-3/8"	6697	113-5/8"	6941		
101-1/4"	6393	107-1/2"	6703	113-3/4"	6945		
101-3/8"	6400	107-5/8"	6709	113-7/8"	6949		
101-1/2"	6407	107-3/4"	6714	114	6953		
101-5/8"	6413	107-7/8"	6720	114-1/8"	6957		
101-3/4"	6420	108	6725	114-1/4"	6960		
101-7/8"	6427	108-1/8"	6731	114-3/8"	6964		
102	6433	108-1/4"	6736	114-1/2"	6968		
102-1/8"	6440	108-3/8"	6742	114-5/8"	6971		
102-1/4"	6447	108-1/2"	6747	114-3/4"	6975		
102-3/8"	6453	108-5/8"	6752	114-7/8"	6979		
102-1/2"	6460	108-3/4"	6758	115	6982		
102-5/8"	6466	108-7/8"	6763	115-1/8"	6986		
102-3/4"	6473	109	6768	115-1/4"	6989		
102-7/8"	6479	109-1/8"	6774	115-3/8"	6992		
103	6486	109-1/4"	6779	115-1/2"	6996		
103-1/8"	6492	109-3/8"	6784	115-5/8"	6999		
103-1/4"	6498	109-1/2"	6789	115-3/4"	7002		

CAPACITY CHART

16,000 GALLON
120" X 27'-8"
UNDERGROUND STORAGE TANK

DEPTH	GALLONS	DEPTH	GALLONS	DEPTH	GALLONS	DEPTH	GALLONS
1/8"	5	5-5/8"	294	11-1/8"	781	16-5/8"	1391
1/4"	7	5-3/4"	304	11-1/4"	794	16-3/4"	1406
3/8"	10	5-7/8"	313	11-3/8"	807	16-7/8"	1421
1/2"	14	6	323	11-1/2"	819	17	1436
5/8"	17	6-1/8"	332	11-5/8"	832	17-1/8"	1451
3/4"	21	6-1/4"	342	11-3/4"	845	17-1/4"	1466
7/8"	25	6-3/8"	352	11-7/8"	858	17-3/8"	1481
1	29	6-1/2"	362	12	871	17-1/2"	1497
1-1/8"	34	6-5/8"	372	12-1/8"	884	17-5/8"	1512
1-1/4"	38	6-3/4"	382	12-1/4"	897	17-3/4"	1527
1-3/8"	43	6-7/8"	392	12-3/8"	911	17-7/8"	1543
1-1/2"	48	7	402	12-1/2"	924	18	1558
1-5/8"	54	7-1/8"	412	12-5/8"	937	18-1/8"	1574
1-3/4"	59	7-1/4"	423	12-3/4"	950	18-1/4"	1589
1-7/8"	65	7-3/8"	433	12-7/8"	964	18-3/8"	1605
2	70	7-1/2"	444	13	977	18-1/2"	1620
2-1/8"	76	7-5/8"	454	13-1/8"	991	18-5/8"	1636
2-1/4"	82	7-3/4"	465	13-1/4"	1004	18-3/4"	1652
2-3/8"	89	7-7/8"	476	13-3/8"	1018	18-7/8"	1668
2-1/2"	95	8	487	13-1/2"	1032	19	1683
2-5/8"	102	8-1/8"	498	13-5/8"	1046	19-1/8"	1699
2-3/4"	108	8-1/4"	509	13-3/4"	1059	19-1/4"	1715
2-7/8"	115	8-3/8"	520	13-7/8"	1073	19-3/8"	1731
3	122	8-1/2"	531	14	1087	19-1/2"	1747
3-1/8"	129	8-5/8"	542	14-1/8"	1101	19-5/8"	1763
3-1/4"	136	8-3/4"	553	14-1/4"	1115	19-3/4"	1779
3-3/8"	143	8-7/8"	565	14-3/8"	1129	19-7/8"	1795
3-1/2"	151	9	576	14-1/2"	1143	20	1811
3-5/8"	158	9-1/8"	588	14-5/8"	1157	20-1/8"	1827
3-3/4"	166	9-1/4"	599	14-3/4"	1172	20-1/4"	1843
3-7/8"	174	9-3/8"	611	14-7/8"	1186	20-3/8"	1860
4	182	9-1/2"	623	15	1200	20-1/2"	1876
4-1/8"	190	9-5/8"	635	15-1/8"	1215	20-5/8"	1892
4-1/4"	198	9-3/4"	646	15-1/4"	1229	20-3/4"	1909
4-3/8"	206	9-7/8"	658	15-3/8"	1243	20-7/8"	1925
4-1/2"	215	10	670	15-1/2"	1258	21	1941
4-5/8"	223	10-1/8"	682	15-5/8"	1273	21-1/8"	1958
4-3/4"	232	10-1/4"	695	15-3/4"	1287	21-1/4"	1974
4-7/8"	240	10-3/8"	707	15-7/8"	1302	21-3/8"	1991
5	249	10-1/2"	719	16	1317	21-1/2"	2007
5-1/8"	258	10-5/8"	731	16-1/8"	1331	21-5/8"	2024
5-1/4"	267	10-3/4"	744	16-1/4"	1346	21-3/4"	2041
5-3/8"	276	10-7/8"	756	16-3/8"	1361	21-7/8"	2057
5-1/2"	285	11	769	16-1/2"	1376	22	2074

22-1/8"	2091	28-3/8"	2971	34-5/8"	3920	40-7/8"	4920
22-1/4"	2108	28-1/2"	2989	34-3/4"	3939	41	4940
22-3/8"	2124	28-5/8"	3007	34-7/8"	3959	41-1/8"	4961
22-1/2"	2141	28-3/4"	3026	35	3978	41-1/4"	4981
22-5/8"	2158	28-7/8"	3044	35-1/8"	3998	41-3/8"	5002
22-3/4"	2175	29	3063	35-1/4"	4017	41-1/2"	5022
22-7/8"	2192	29-1/8"	3081	35-3/8"	4037	41-5/8"	5043
23	2209	29-1/4"	3100	35-1/2"	4057	41-3/4"	5063
23-1/8"	2226	29-3/8"	3118	35-5/8"	4077	41-7/8"	5084
23-1/4"	2243	29-1/2"	3137	35-3/4"	4096	42	5104
23-3/8"	2260	29-5/8"	3156	35-7/8"	4116	42-1/8"	5125
23-1/2"	2277	29-3/4"	3174	36	4136	42-1/4"	5146
23-5/8"	2295	29-7/8"	3193	36-1/8"	4156	42-3/8"	5166
23-3/4"	2312	30	3212	36-1/4"	4175	42-1/2"	5187
23-7/8"	2329	30-1/8"	3230	36-3/8"	4195	42-5/8"	5207
24	2346	30-1/4"	3249	36-1/2"	4215	42-3/4"	5228
24-1/8"	2364	30-3/8"	3268	36-5/8"	4235	42-7/8"	5249
24-1/4"	2381	30-1/2"	3286	36-3/4"	4255	43	5269
24-3/8"	2398	30-5/8"	3305	36-7/8"	4275	43-1/8"	5290
24-1/2"	2416	30-3/4"	3324	37	4294	43-1/4"	5311
24-5/8"	2433	30-7/8"	3343	37-1/8"	4314	43-3/8"	5331
24-3/4"	2451	31	3362	37-1/4"	4334	43-1/2"	5352
24-7/8"	2468	31-1/8"	3381	37-3/8"	4354	43-5/8"	5373
25	2486	31-1/4"	3400	37-1/2"	4374	43-3/4"	5393
25-1/8"	2503	31-3/8"	3419	37-5/8"	4394	43-7/8"	5414
25-1/4"	2521	31-1/2"	3438	37-3/4"	4414	44	5435
25-3/8"	2539	31-5/8"	3457	37-7/8"	4434	44-1/8"	5456
25-1/2"	2556	31-3/4"	3476	38	4454	44-1/4"	5477
25-5/8"	2574	31-7/8"	3495	38-1/8"	4474	44-3/8"	5497
25-3/4"	2592	32	3514	38-1/4"	4494	44-1/2"	5518
25-7/8"	2609	32-1/8"	3533	38-3/8"	4515	44-5/8"	5539
26	2627	32-1/4"	3552	38-1/2"	4535	44-3/4"	5560
26-1/8"	2645	32-3/8"	3571	38-5/8"	4555	44-7/8"	5581
26-1/4"	2663	32-1/2"	3590	38-3/4"	4575	45	5601
26-3/8"	2681	32-5/8"	3610	38-7/8"	4595	45-1/8"	5622
26-1/2"	2699	32-3/4"	3629	39	4615	45-1/4"	5643
26-5/8"	2717	32-7/8"	3648	39-1/8"	4636	45-3/8"	5664
26-3/4"	2735	33	3667	39-1/4"	4656	45-1/2"	5685
26-7/8"	2753	33-1/8"	3686	39-3/8"	4676	45-5/8"	5706
27	2771	33-1/4"	3706	39-1/2"	4696	45-3/4"	5727
27-1/8"	2789	33-3/8"	3725	39-5/8"	4717	45-7/8"	5748
27-1/4"	2807	33-1/2"	3744	39-3/4"	4737	46	5769
27-3/8"	2825	33-5/8"	3764	39-7/8"	4757	46-1/8"	5790
27-1/2"	2843	33-3/4"	3783	40	4777	46-1/4"	5811
27-5/8"	2861	33-7/8"	3803	40-1/8"	4798	46-3/8"	5832
27-3/4"	2879	34	3822	40-1/4"	4818	46-1/2"	5852
27-7/8"	2898	34-1/8"	3841	40-3/8"	4838	46-5/8"	5873
28	2916	34-1/4"	3861	40-1/2"	4859	46-3/4"	5894
28-1/8"	2934	34-3/8"	3880	40-5/8"	4879	46-7/8"	5915
28-1/4"	2952	34-1/2"	3900	40-3/4"	4900	47	5936

47-1/8"	5958	53-3/8"	7019	59-5/8"	8092	65-7/8"	9165
47-1/4"	5979	53-1/2"	7040	59-3/4"	8113	66	9186
47-3/8"	6000	53-5/8"	7062	59-7/8"	8135	66-1/8"	9207
47-1/2"	6021	53-3/4"	7083	60	8156	66-1/4"	9229
47-5/8"	6042	53-7/8"	7104	60-1/8"	8178	66-3/8"	9250
47-3/4"	6063	54	7126	60-1/4"	8199	66-1/2"	9271
47-7/8"	6084	54-1/8"	7147	60-3/8"	8221	66-5/8"	9293
48	6105	54-1/4"	7169	60-1/2"	8242	66-3/4"	9314
48-1/8"	6126	54-3/8"	7190	60-5/8"	8264	66-7/8"	9335
48-1/4"	6147	54-1/2"	7212	60-3/4"	8285	67	9357
48-3/8"	6168	54-5/8"	7233	60-7/8"	8307	67-1/8"	9378
48-1/2"	6189	54-3/4"	7254	61	8328	67-1/4"	9399
48-5/8"	6211	54-7/8"	7276	61-1/8"	8350	67-3/8"	9421
48-3/4"	6232	55	7297	61-1/4"	8371	67-1/2"	9442
48-7/8"	6253	55-1/8"	7319	61-3/8"	8393	67-5/8"	9463
49	6274	55-1/4"	7340	61-1/2"	8414	67-3/4"	9485
49-1/8"	6295	55-3/8"	7362	61-5/8"	8436	67-7/8"	9506
49-1/4"	6316	55-1/2"	7383	61-3/4"	8457	68	9527
49-3/8"	6338	55-5/8"	7404	61-7/8"	8479	68-1/8"	9549
49-1/2"	6359	55-3/4"	7426	62	8500	68-1/4"	9570
49-5/8"	6380	55-7/8"	7447	62-1/8"	8522	68-3/8"	9591
49-3/4"	6401	56	7469	62-1/4"	8543	68-1/2"	9612
49-7/8"	6422	56-1/8"	7490	62-3/8"	8565	68-5/8"	9634
50	6444	56-1/4"	7512	62-1/2"	8586	68-3/4"	9655
50-1/8"	6465	56-3/8"	7533	62-5/8"	8608	68-7/8"	9676
50-1/4"	6486	56-1/2"	7555	62-3/4"	8629	69	9697
50-3/8"	6507	56-5/8"	7576	62-7/8"	8651	69-1/8"	9718
50-1/2"	6528	56-3/4"	7598	63	8672	69-1/4"	9740
50-5/8"	6550	56-7/8"	7619	63-1/8"	8693	69-3/8"	9761
50-3/4"	6571	57	7641	63-1/4"	8715	69-1/2"	9782
50-7/8"	6592	57-1/8"	7662	63-3/8"	8736	69-5/8"	9803
51	6614	57-1/4"	7684	63-1/2"	8758	69-3/4"	9824
51-1/8"	6635	57-3/8"	7705	63-5/8"	8779	69-7/8"	9846
51-1/4"	6656	57-1/2"	7727	63-3/4"	8801	70	9867
51-3/8"	6677	57-5/8"	7748	63-7/8"	8822	70-1/8"	9888
51-1/2"	6699	57-3/4"	7769	64	8844	70-1/4"	9909
51-5/8"	6720	57-7/8"	7791	64-1/8"	8865	70-3/8"	9930
51-3/4"	6741	58	7812	64-1/4"	8886	70-1/2"	9951
51-7/8"	6763	58-1/8"	7834	64-3/8"	8908	70-5/8"	9973
52	6784	58-1/4"	7855	64-1/2"	8929	70-3/4"	9994
52-1/8"	6805	58-3/8"	7877	64-5/8"	8951	70-7/8"	10015
52-1/4"	6827	58-1/2"	7898	64-3/4"	8972	71	10036
52-3/8"	6848	58-5/8"	7920	64-7/8"	8994	71-1/8"	10057
52-1/2"	6869	58-3/4"	7941	65	9015	71-1/4"	10078
52-5/8"	6891	58-7/8"	7963	65-1/8"	9036	71-3/8"	10099
52-3/4"	6912	59	7984	65-1/4"	9058	71-1/2"	10120
52-7/8"	6933	59-1/8"	8006	65-3/8"	9079	71-5/8"	10141
53	6955	59-1/4"	8027	65-1/2"	9101	71-3/4"	10162
53-1/8"	6976	59-3/8"	8049	65-5/8"	9122	71-7/8"	10183
53-1/4"	6998	59-1/2"	8070	65-3/4"	9143	72	10204

72-1/8"	10225	78-3/8"	11262	84-5/8"	12260	90-7/8"	13207
72-1/4"	10246	78-1/2"	11282	84-3/4"	12280	91	13225
72-3/8"	10267	78-5/8"	11302	84-7/8"	12299	91-1/8"	13243
72-1/2"	10288	78-3/4"	11323	85	12319	91-1/4"	13262
72-5/8"	10309	78-7/8"	11343	85-1/8"	12338	91-3/8"	13280
72-3/4"	10330	79	11363	85-1/4"	12358	91-1/2"	13298
72-7/8"	10351	79-1/8"	11384	85-3/8"	12377	91-5/8"	13316
73	10372	79-1/4"	11404	85-1/2"	12396	91-3/4"	13334
73-1/8"	10393	79-3/8"	11424	85-5/8"	12416	91-7/8"	13352
73-1/4"	10414	79-1/2"	11445	85-3/4"	12435	92	13370
73-3/8"	10435	79-5/8"	11465	85-7/8"	12454	92-1/8"	13388
73-1/2"	10456	79-3/4"	11485	86	12474	92-1/4"	13406
73-5/8"	10477	79-7/8"	11505	86-1/8"	12493	92-3/8"	13424
73-3/4"	10498	80	11525	86-1/4"	12512	92-1/2"	13442
73-7/8"	10518	80-1/8"	11546	86-3/8"	12531	92-5/8"	13460
74	10539	80-1/4"	11566	86-1/2"	12550	92-3/4"	13478
74-1/8"	10560	80-3/8"	11586	86-5/8"	12570	92-7/8"	13496
74-1/4"	10581	80-1/2"	11606	86-3/4"	12589	93	13514
74-3/8"	10602	80-5/8"	11626	86-7/8"	12608	93-1/8"	13531
74-1/2"	10623	80-3/4"	11646	87	12627	93-1/4"	13549
74-5/8"	10643	80-7/8"	11666	87-1/8"	12646	93-3/8"	13567
74-3/4"	10664	81	11686	87-1/4"	12665	93-1/2"	13585
74-7/8"	10685	81-1/8"	11707	87-3/8"	12684	93-5/8"	13602
75	10706	81-1/4"	11727	87-1/2"	12703	93-3/4"	13620
75-1/8"	10727	81-3/8"	11747	87-5/8"	12722	93-7/8"	13637
75-1/4"	10747	81-1/2"	11767	87-3/4"	12741	94	13655
75-3/8"	10768	81-5/8"	11787	87-7/8"	12760	94-1/8"	13673
75-1/2"	10789	81-3/4"	11806	88	12779	94-1/4"	13690
75-5/8"	10809	81-7/8"	11826	88-1/8"	12798	94-3/8"	13708
75-3/4"	10830	82	11846	88-1/4"	12817	94-1/2"	13725
75-7/8"	10851	82-1/8"	11866	88-3/8"	12836	94-5/8"	13742
76	10872	82-1/4"	11886	88-1/2"	12854	94-3/4"	13760
76-1/8"	10892	82-3/8"	11906	88-5/8"	12873	94-7/8"	13777
76-1/4"	10913	82-1/2"	11926	88-3/4"	12892	95	13794
76-3/8"	10933	82-5/8"	11946	88-7/8"	12911	95-1/8"	13812
76-1/2"	10954	82-3/4"	11966	89	12929	95-1/4"	13829
76-5/8"	10975	82-7/8"	11985	89-1/8"	12948	95-3/8"	13846
76-3/4"	10995	83	12005	89-1/4"	12967	95-1/2"	13863
76-7/8"	11016	83-1/8"	12025	89-3/8"	12985	95-5/8"	13880
77	11036	83-1/4"	12045	89-1/2"	13004	95-3/4"	13898
77-1/8"	11057	83-3/8"	12064	89-5/8"	13022	95-7/8"	13915
77-1/4"	11077	83-1/2"	12084	89-3/4"	13041	96	13932
77-3/8"	11098	83-5/8"	12104	89-7/8"	13060	96-1/8"	13949
77-1/2"	11118	83-3/4"	12123	90	13078	96-1/4"	13966
77-5/8"	11139	83-7/8"	12143	90-1/8"	13096	96-3/8"	13983
77-3/4"	11159	84	12163	90-1/4"	13115	96-1/2"	13999
77-7/8"	11180	84-1/8"	12182	90-3/8"	13133	96-5/8"	14016
78	11200	84-1/4"	12202	90-1/2"	13152	96-3/4"	14033
78-1/8"	11221	84-3/8"	12221	90-5/8"	13170	96-7/8"	14050
78-1/4"	11241	84-1/2"	12241	90-3/4"	13188	97	14067

97-1/8"	14083	103-3/8"	14868	109-5/8"	15530	115-7/8"	16012
97-1/4"	14100	103-1/2"	14883	109-3/4"	15541	116	16019
97-3/8"	14117	103-5/8"	14897	109-7/8"	15553	116-1/8"	16026
97-1/2"	14133	103-3/4"	14912	110	15565	116-1/4"	16033
97-5/8"	14150	103-7/8"	14926	110-1/8"	15576	116-3/8"	16039
97-3/4"	14166	104	14941	110-1/4"	15587	116-1/2"	16046
97-7/8"	14183	104-1/8"	14955	110-3/8"	15599	116-5/8"	16052
98	14199	104-1/4"	14969	110-1/2"	15610	116-3/4"	16058
98-1/8"	14216	104-3/8"	14983	110-5/8"	15621	116-7/8"	16064
98-1/4"	14232	104-1/2"	14998	110-3/4"	15632	117	16070
98-3/8"	14249	104-5/8"	15012	110-7/8"	15643	117-1/8"	16076
98-1/2"	14265	104-3/4"	15026	111	15654	117-1/4"	16082
98-5/8"	14281	104-7/8"	15040	111-1/8"	15665	117-3/8"	16087
98-3/4"	14297	105	15054	111-1/4"	15676	117-1/2"	16092
98-7/8"	14314	105-1/8"	15068	111-3/8"	15687	117-5/8"	16098
99	14330	105-1/4"	15081	111-1/2"	15697	117-3/4"	16102
99-1/8"	14346	105-3/8"	15095	111-5/8"	15708	117-7/8"	16107
99-1/4"	14362	105-1/2"	15109	111-3/4"	15718	118	16112
99-3/8"	14378	105-5/8"	15123	111-7/8"	15729	118-1/8"	16116
99-1/2"	14394	105-3/4"	15136	112	15739	118-1/4"	16120
99-5/8"	14410	105-7/8"	15150	112-1/8"	15749	118-3/8"	16124
99-3/4"	14426	106	15163	112-1/4"	15759	118-1/2"	16127
99-7/8"	14442	106-1/8"	15177	112-3/8"	15769	118-5/8"	16130
100	14457	106-1/4"	15190	112-1/2"	15779	118-3/4"	16133
100-1/8"	14473	106-3/8"	15204	112-5/8"	15789	118-7/8"	16136
100-1/4"	14489	106-1/2"	15217	112-3/4"	15799	119	16138
100-3/8"	14505	106-5/8"	15230	112-7/8"	15809	119-1/8"	16140
100-1/2"	14520	106-3/4"	15243	113	15818	119-1/4"	16141
100-5/8"	14536	106-7/8"	15257	113-1/8"	15828		
100-3/4"	14552	107	15270	113-1/4"	15837		
100-7/8"	14567	107-1/8"	15283	113-3/8"	15847		
101	14583	107-1/4"	15296	113-1/2"	15856		
101-1/8"	14598	107-3/8"	15308	113-5/8"	15865		
101-1/4"	14613	107-1/2"	15321	113-3/4"	15874		
101-3/8"	14629	107-5/8"	15334	113-7/8"	15883		
101-1/2"	14644	107-3/4"	15347	114	15892		
101-5/8"	14659	107-7/8"	15359	114-1/8"	15901		
101-3/4"	14675	108	15372	114-1/4"	15909		
101-7/8"	14690	108-1/8"	15385	114-3/8"	15918		
102	14705	108-1/4"	15397	114-1/2"	15926		
102-1/8"	14720	108-3/8"	15409	114-5/8"	15935		
102-1/4"	14735	108-1/2"	15422	114-3/4"	15943		
102-3/8"	14750	108-5/8"	15434	114-7/8"	15951		
102-1/2"	14765	108-3/4"	15446	115	15959		
102-5/8"	14780	108-7/8"	15458	115-1/8"	15967		
102-3/4"	14795	109	15470	115-1/4"	15975		
102-7/8"	14809	109-1/8"	15482	115-3/8"	15982		
103	14824	109-1/4"	15494	115-1/2"	15990		
103-1/8"	14839	109-3/8"	15506	115-5/8"	15997		
103-1/4"	14854	109-1/2"	15518	115-3/4"	16005		

VPH B1000 Series Doublewall UDC

Product Shown
B1380-D30

SIZES

- 28” width at base

*See page 2 for dimension drawing and dimension chart

MATERIAL

- Tank-spec doublewall fiberglass
- Galvannealed steel
- Doublewall construction allows for constant monitoring

About the VPH B1000 Doublewall UDC

The B1000 Series Doublewall VPH is available in models for most modern dispensers. All metal work is galvanized for corrosion resistance and the splash is FRP for a distinct corrosion advantage over other designs. Electrical offsets on both ends of the UDC provide needed flexibility to accommodate modern station designs.

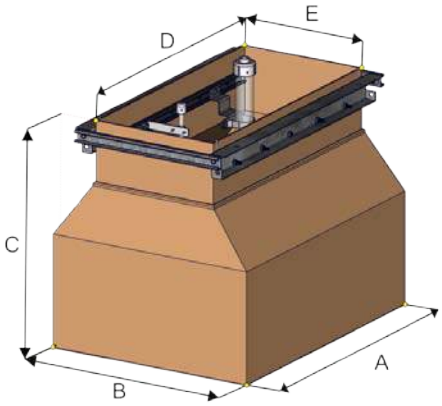
SPECIFICATIONS

- Triennial testing exempt when constantly monitored
- Quality FRP construction
- Pre-plumb options available
- 30-year corrosion warranty
- AB2481 compliant in California
- UL2447 listed, the benchmark for fuel compatibility

Bravo Solution Center
Call or Text (323) 541-3851
orders@sbravo.com

UL LISTED UL 2447

VPH B1000 Series Doublewall UDC Dimensions



Bracket and Kits for VPH B1000 Series Doublewall

Stabilizer Bar and Bracket Assembly		
Encore/Helix Wide	BK-1017	Boss-mount bracket for B1000 & stabilizer bar for 17”. Wide assembly with hardware.
Ovation/Ovation High Speed/Helix Narrow/Pacific/Reliance/Select	BK-1015	Boss-mount bracket for B1000 & stabilizer bar for 15“. Wide assembly with hardware.
Atlas/Bennett 3000	BK1011	Boss-mount bracket for B1000 & stabilizer bar for 11“. Wide assembly with hardware.

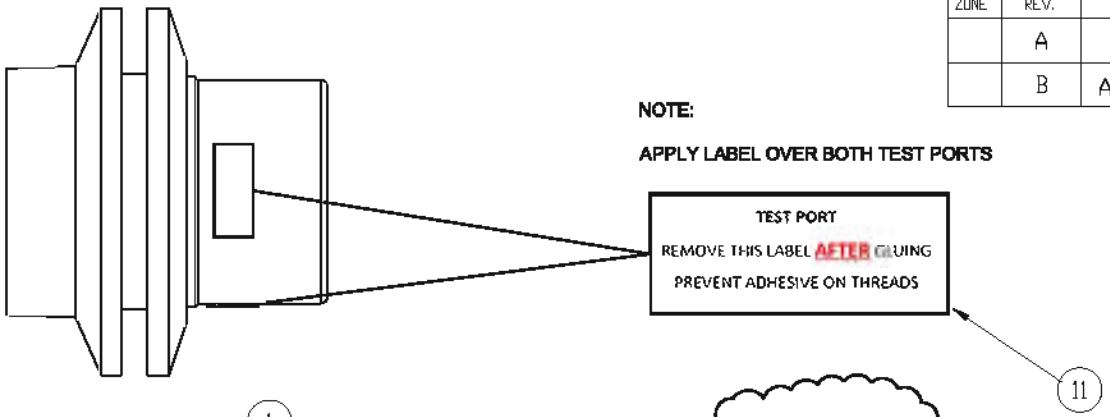
VPH B1000 Series Doublewall

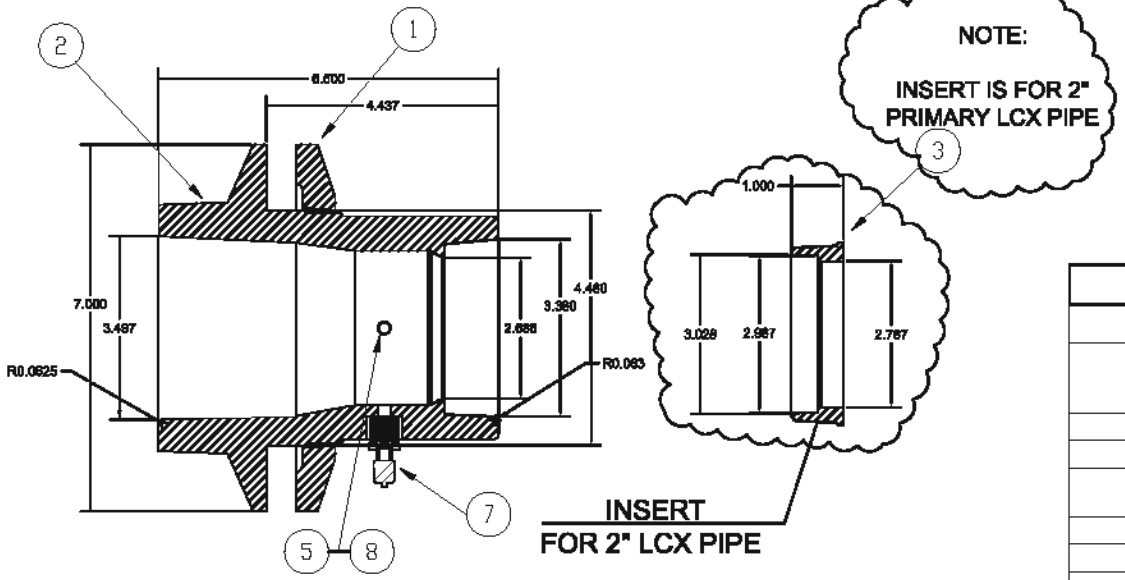
Dispenser Model	Part #	A	B	C	D	E
Gilbarco Encore 300, 500, 700	B1380-D30	37”	28”	29.5”	36”	17”
Wayne Ovation (3+0) (3+1) up to 3 inlets	B1250-D30	37”	28”	29.5”	35”	14.75”
Wayne Helix Wide Frame	B1256-D30	37”	28”	29.5”	37.5”	17”
Wayne Helix Narrow Frame	B1242-D30	29”	28”	29.5”	27”	14.75”
Wayne Ovation High-speed Diesel/Ovation HL Series	B1254-D30	35”	28”	29.5”	35”	14.75”
Wayne Ovation High-speed Diesel/Ovation HS Series *	B1257-D30	29”	28”	29.5”	27”	14.75”
Wayne Reliance Select	B1210-D30	29”	28”	29.5”	27”	14.75”
Bennett Pacific	B1411-D30	37”	28”	29.5”	35”	14.75”
Bennett 3000 Big Fueler*	B1430-D30	19”	29.5”	29.5”	19”	11.5”
Gasboy Atlas	B1670-D30	19”	29.5”	29.5”	19”	11.5”

* Electrical Offsets on one end

LISTED
UL 2447

REVISIONS					
ZONE	REV.	DESCRIPTION	DATE	BY	APPROVED
	A	DRAWING CREATED	4/9/2018	A.M.	
	B	ADDED TEST PORT LABELS	12/31/2018	R.B.	





11	LABEL	TEST PORT LABEL	2
10	BRAVO-CLAMP	T-FS-CLAMP-F3	1
9	RETROFIT-SANDING-KIT	80 GRIT SHEET SANDPAPER, SHOP ROLL 60 GRIT 1.5" X 30', TWO (2) OF NITRILE GLOVES	1
8	ZXXXXX	1/8" NPTF HEX BRASS PLUG	1
7	Z00244	1/8" SHORT SCHREADER VALVE	1
5	FITTING HEX COUPLING	1/8" NPT THREAD x 5/8" LG.	2
4	-	-	-
3	F-32L-T-F INSERT	2"LCX PRIMARY INSERT	1
2	F-32-TI BODY	BODY FITTING	1
1	F-32-T FLANGE	FLANGE	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

1. REMOVE ALL BURRS AND SHARP EDGES.
NOTES: UNLESS NOTICE OTHERWISE SPECIFIED.

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±
INTERPRET GEOMETRIC TOLERANCING PER:
MATERIAL: AS NOTED
FINISH: AS NOTED
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	A.MACIAS	4.9.2018
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

S. BRAVO SYSTEMS INC.

PART NO.: F-32LU-T-F

SIZE	OLD PART NO.	REV
B	F-32LU-T	B

SCALE: 1:2.5 WEIGHT: SHEET 1 OF 1

B-400-DB-MW Tall-Collar Tank Sump

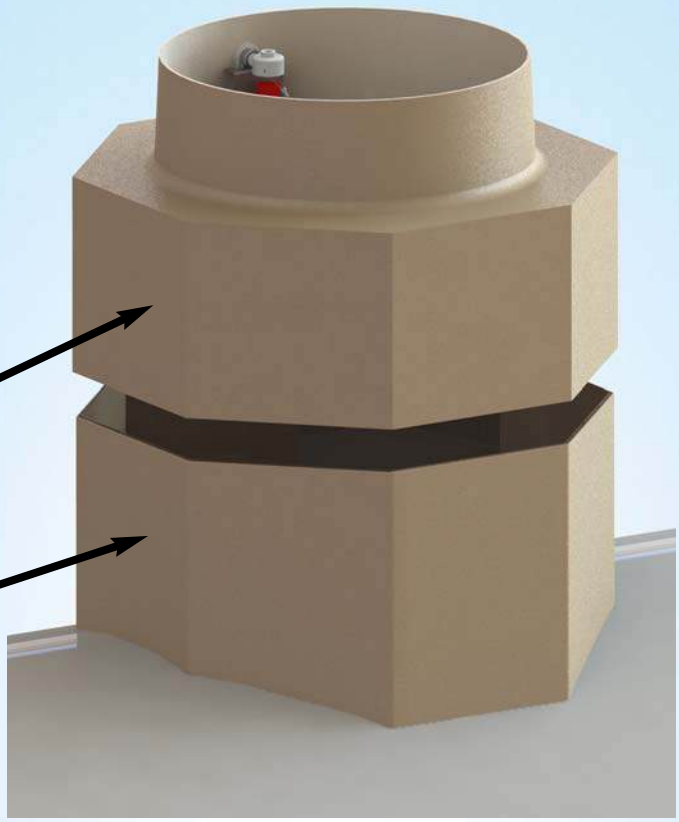
DOUBLEWALL SUMP (1-PIECE) FOR MODERN WELDING TANKS

42" OR 48" DIAMETERS WITH 32" OR 36" REDUCERS

MANUFACTURED OF FIBERGLASS

TRUE DOUBLEWALL TECHNOLOGY
AB-2481 COMPLIANT

AB-2481 Compliant
Third Party Approved



Eight Sided Sump
Great for 45° & 90°
Fiberglass Fittings

With a "Tall Collar" installed by your Tank manufacturer, begin piping as soon as your tank arrives

E85

Compatible with and warranted for continuous exposure to all common fuels and alternative fuels including ethanol and biodiesel.

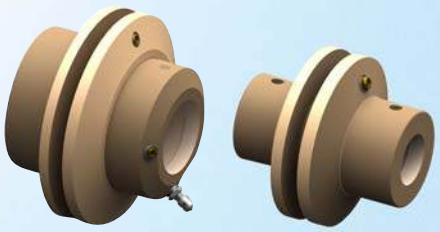
All sumps ship under 20"Hg for continuous testing

UL 21MU LISTED

EQ# 615

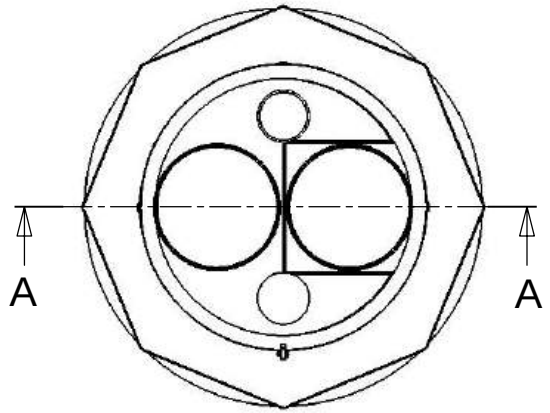
FEATURES:

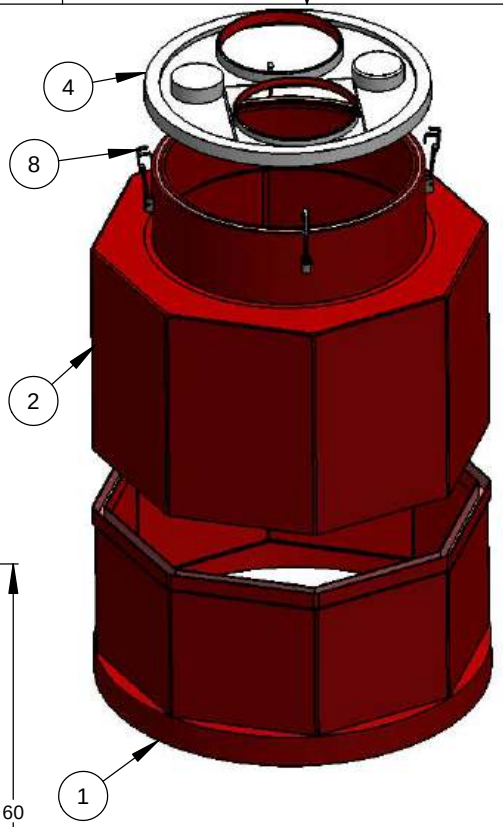
- > Tank-Spec Fiberglass Construction
- > AB-2481 Compliant Monitored DoubleWall
- > Ships under a continuous 20"Hg vacuum test
- > Large flat walls for more entry fittings
- > Octagonal walls with "Tall Collar" mount
- > Begin piping as soon as the tank arrives
- > 42" or 48" Diameters
- > 32" or 36" Diameter reducers
- > Includes Manometers and interstitial fluid
- > Height adjustable in the field



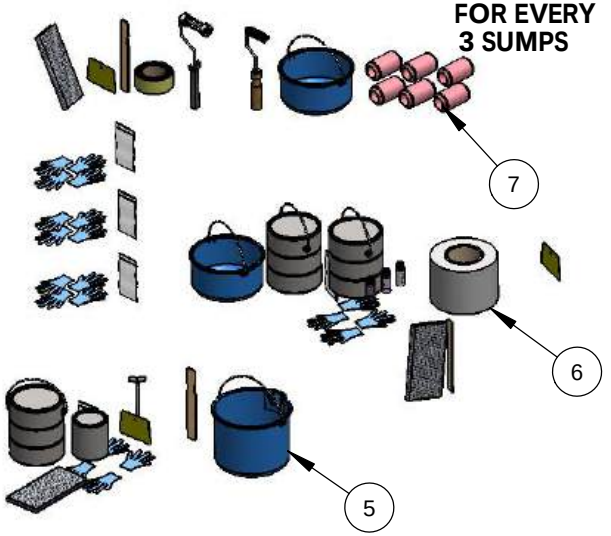
RECOMMENDED:
F-Series-D FRP Fittings Only

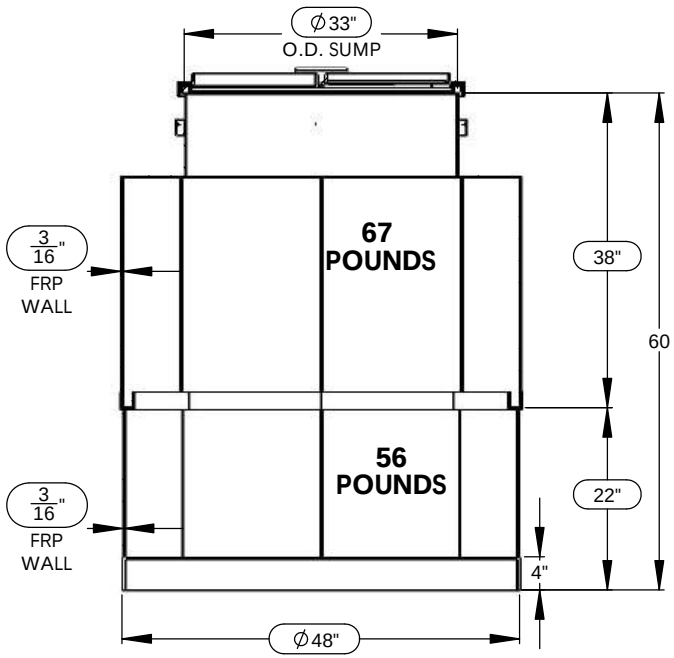
Patent# 6,823,886 - Other Patents Pending





NOTE: THIS ITEM IS 1 FOR EVERY 3 SUMPS





SECTION A-A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
8	SPRING-HOOK ASSY	SPRING-HOOK ASSY	4
7	FRP-TOOL-KIT-400	FRP-TOOL-KIT-400 (1 EVERY 3 SUMPS)	1
6	FRP-KIT-400	FRP-KIT-400	1
5	EP-SLURRY-KIT-1-GAL	EP-SLURRY-KIT-1-GALLON	1
4	COPWS-33	COPWS-33 COVER	1
3	B487X33-38T-CL TOP-ASSY	B487X33-38T-CL	1
2	B-487X33-38T TOP-ASSY	B-487X33-38T-TOP + O'RING	1
1	B-487-PP-22-BASE	B-487-PP-X22-BASE	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±
INTERPRET GEOMETRIC TOLERANCING PER:
MATERIAL: SEE BOM
FINISH
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JMP	6/30/16
CHECKED	DM	6/30/16
ENG APPR.		
MFG APPR.		
Q.A.		

SIZE: B
REV:

S. BRAVO SYSTEMS INC

TITLE: B-487X33-38T-22B-PP-SL ADR-CL32-COPWS

DWG. NO. B-487X33-38T-22B-PP-SL ADR-CL32-COPWS

SCALE: 1:15 WEIGHT: SHEET 1 OF 1

BRAVO PROBLEM SOLVED

Environmental
Manufacturing
Inc.

UST SERIES MONITORING/ OBSERVATION WELLS

UST Series Wells are recommended on any new tank installation to quickly detect hydrocarbon releases to ground water and/or vapors in the backfill material. Monitoring wells are used to detect leaks from piping, tanks, and spills and do not rely on meter calibration or problem. Hydrocarbon sensing devices are available to work in conjunction with our wells to provide continuous monitoring if desired.

Features:

- Precision machined from high quality Schedule 40 PVC pipe meeting all applicable standards.
- Available through 12" diameter and up to 20' in length meeting most major oil company specifications.
- Standard lengths are 13' with lower 10' slotted.
- All UST screens include a nylon riveted bottom plug and threaded adapters are available for most sizes.
- Standard .020" slots are perforated to provide maximum intake flow while maintaining strength. Other slot sizes are available on request.
- EMI screens are non-inked and shipped in durable poly bags to insure cleanliness. EMI screens meet or exceed most insurance company, EPA and PEI specifications.
- A complete line of manhole, adapters and caps are available to be shipped with your EMI UST screens.

Pipe Size	Outside Diameter	Inside Diameter	Slot Size	Screen Length	Overall Length	Bottom Plug
2"	2.375"	2.047"	.020"	10'	13'	Yes
4"	4.500"	3.998"	.020"	10'	13'	Yes
6"	6.625"	6.031"	.020"	10'	13'	Yes
8"	8.625"	7.942"	.020"	10'	13'	Yes
10"	10.750"	9.976"	.020"	10'	13'	Yes
12"	12.750"	11.889"	.020"	10'	13'	Yes

PVC Pipe, Fittings and Supplies for Monitoring/Remediation Applications

8887 Green Valley Drive · Manhattan, KS 66502 · 785-587-0807 · Fax 785-539-1349 · Toll Free 888-587-0807

OPW 71SO Overfill Prevention Valves

The CARB-certified OPW 71SO vapor-tight Overfill Prevention Valve is designed to prevent the overfill of underground storage tanks by providing a positive shut-off of product delivery. The shut-off valve is an integral part of the drop tube used for gravity filling. The OPW 71SO allows easy installation (without breaking concrete) and requires no special manholes.

The OPW 71SO is a vapor-tight two-stage shut-off valve. When the liquid level rises to about 95% of tank capacity, the valve mechanism is released, closing automatically with the flow. This reduces the flow rate to approximately 5 gpm through a bypass valve. The operator may then stop the filling process and disconnect and drain the delivery hose. As long as the liquid exceeds the 95% level, the valve will close automatically each time delivery is attempted.

If the delivery is not stopped and the liquid rises to about 98% of tank capacity, the bypass valve closes completely. No additional liquid can flow into the tank until the level drops below a reset point.

NOTE: The 71SO Overfill Prevention Valve can be adjusted to shutoff at any desired tank capacity. Please contact the Authority Having Jurisdiction (AHJ) and review local, state, and national codes to determine the regulatory requirements governing shut-off capacity in your region, as well as take into account other considerations such as extreme tank tilt. In all cases, the upper tube must protrude into the tank at least 6 1/2" to ensure that the valve can shut off flow into the tank completely before the top of the tank is wetted as per EPA requirements.

71SO Instruction Sheet Order Number: H15524PA

Listings and Certifications

California Air Resources Board

Materials

Valve Body: Cast aluminum
Float: Nitrile rubber, closed cell foam
Valve: Aluminum
Seals: Viton®
Upper & lower Drop Tube: Aluminum
Plastic parts: Acetal
Hardware: Stainless steel

Features

- **Simple, Easy and Quick Installation** – no excavation or special manholes required.
- **Economical** – costs a fraction of expensive, complicated and difficult-to-install valves.
- **Furnished Complete** – supplied with new upper and lower drop tubes, mounting hardware and thorough instructions for quick job site time.
- **Completely Automatic Operation** – no prechecks to perform, no resets and no overrides to be broken or abused.
- **No Pressurization of the Tank** – operates directly from liquid level.
- **Will Accept a Dipstick for Gauging**

Important

In order to prevent product spillage from the Underground Storage Tank (UST), properly maintained delivery equipment and a proper connection at the tight-fill adaptor are essential. Delivery personnel should be managed and trained to inspect delivery elbows and hoses for damaged and missing parts. They should always make certain there is a positive connection between the adaptor and elbow. If delivery equipment is not properly maintained, or the elbow is not securely coupled to the adaptor, a serious spill may result when the OPW 71SO closes, causing a hazard and environmental contamination.

NOTE: The OPW 71SO is designed for use on tight-fill gravity drop applications only. Do not use for pressure fill applications.

- **Retrofits Directly** – for both new and existing tanks with 4" fill risers.
- **Quick Drain Feature** – automatically drains hose when head pressure is relieved.
- **Best Flow Rate in The Industry***

*** OPW Test Lab results**

Advantages of Overfill Prevention Compared to Overfill Warning Systems:

- **Completely Automatic Operation** – does not rely on the alertness or speed of response of the delivery attendant for certainty of overfill prevention.
- **Keeps the Top of UST "Dry," per EPA Requirements** – eliminating possible leaks at loose bung fittings and the need for double containment on vent lines.
- **Does Not Rely on Pressure in the UST to Stop Flow** – allowing faster fill times and reducing spill risk.
- **Speeds Delivery Operations** – product flows unimpeded into the tank until the hose "kick" that accompanies the valve shut-off provides a clear signal that the liquid has reached the shut-off level.
- **Simple and Inexpensive Installation** – in both two-point and coaxial fill applications, no additional excavation, manholes or vent piping are required.

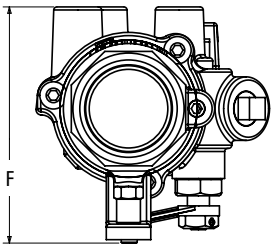
Look for this label for authentic OPW EVR Approved products.
OPW 71SOM is EVR Approved for E85

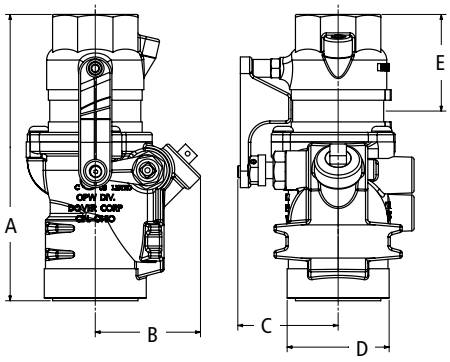
10 Plus Series Emergency Shut-Off Valves

OPW raised the protection standard in emergency valves when it introduced the first double-poppet valve back in 1989. This industry-changing OPW innovation helped to significantly reduce the risk of fire, explosion, personal injury, property damage and environmental contamination at sites around the world. Major oil companies and jobbers agreed that providing added protection for their customers, investments and the environment were the three most convincing reasons for switching to the innovative new valves.

Dimensions

	in.	cm
A	$7^{9}/_{16}$	4
B	$2^{25}/_{32}$	4
C	$2^{21}/_{32}$	4
D	$2^{11}/_{16}$	4
E	$2^{9}/_{16}$	4
F	$4^{21}/_{32}$	4





Materials

Top: Cast iron

Body: Cast iron

Features

- The ONLY emergency shut-off valve in the world designed to protect your customers, investments, and the environment against the potential hazards of undetected shear groove leaks caused by low-impact incidents.
- The patent-pending SmartGuard™ design contains shear groove leaks, preventing fuel from leaking into sumps to help reduce the risk of fire, explosion, personal injury, property damage, environmental contamination, product loss and costly clean-up.
- Superior shear groove design and engineering results in reliable valve shut-off in the event of a pull-over or dislodged dispenser. The 10 Plus utilizes the same time-tested field-proven design of the OPW 10 Series Emergency Shut-off Valve – the most specified emergency shut-off valve in the world.
- Fusible link releases to automatically close the valve to reduce fire hazard.
- Rigorously tested to meet OPW's rigid quality standards.
- E85 model has orange arm for visual indicator

Ordering Specifications

Model #	Body Size		Body Weight		Connection Threads	Poppet Configuration	Application	Mounting System
	in.	cm	lb.	kg				
10P-0150	$1^{1}/_{2}$	4	6.7	3.05	NPT	Single	Pressure	Combination
10P-0152	$1^{1}/_{2}$	4	6.8	3.10	NPT	Double	Pressure	Combination
*E85 10P-0152E85	$1^{1}/_{2}$	4	6.8	3.10	NPT	Double	Pressure	Combination

*E85 Applications

10 Plus Replacement Parts

Part #	Description
10RPLUS-0150	10 Plus Single Poppet Replacement Top
10RPLUS-0152	10 Plus Double Poppet Replacement Top
202950	$1^{1}/_{2}$" Tetra Seal
200143	Safety Hub/Fusible Link
H11361M	2" Tetra Seal

Listings and Certifications

10 Plus Series Instruction Sheet Order Number: **201614**

9393 Princeton-Glendale Road ◆ Hamilton, Ohio USA 45011 ◆ Phone: (800) 422-2525 ◆ Fax: (800) 421-3297

Materials

Body: Aluminum
Screen: 40-mesh brass
Set Screws: Brass


23

Features

- Reliable Service – vent cap drain spouts extend outward to deter rainwater entry.
- Corrosion-Resistant Construction – aluminum body and cap assure a long service life.
- Easy Installation – 23 series is available in 2" and 3" slip-on models that provide for attachment to the vent line with set screws.
- Complies with NFPA 30 Requirements – for venting gasoline vapors upward.
- High-Maximum Flow Rate – 7000 SCFH at 2 psi (0.14 bar) pressure drop.
- 40-Mesh Brass Wire Screen – Helps prevent debris and insects from entering the tank vent lines.

Replacement Parts

Part #	Description
H00122M	Screw
H01967M	Nut
H01969M	Screen

Ordering Specifications

Product #	Description	in.	mm	oz.	kg	Weight lbs.	Weight kg
23-0044	Open Vent	1 1/2	38	3.8	.11	0.25	0.11
23-0033	Open Vent	2	51	4.3	.12	0.25	0.11
23-0055	Open Vent	3	76	5.0	.14	1.00	0.45

Materials

Body: Zinc/aluminum
Screen: brass
Cap: 2" - Steel 4" - cast iron
Screen: 40-mesh stainless steel


113

Ordering Specifications

Product #	in.	mm	lbs.	kg
113-0066	2	51	.88	.40
113-0099	4	102	7.50	3.41

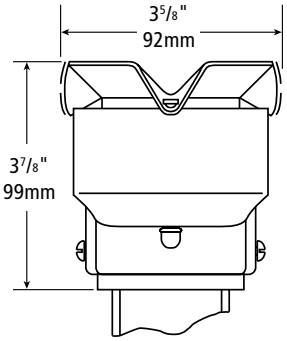
Dimensions

	2" (51mm)		4" (102mm)	
	in.	mm	in.	mm
A	1 1/2	38	2 3/4	70
B	3 3/4	95	7 7/16	189
C	2 3/4	70	4 15/16	125

For more information contact OPW Customer Service at 1-800-422-2525; International call 1-513-870-3315.

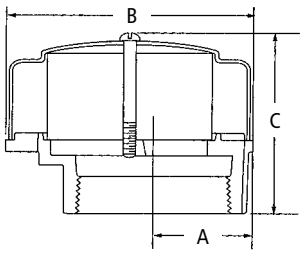
OPW 23 Series Open Atmospheric Vents

Open Atmospheric Vents are installed on the top of vent pipes from underground or above ground fuel storage tanks. The vent cap and internal wire screen are designed to protect the tank vent lines against intrusion and blockage from water, debris or insects. These vents are always open to atmosphere and allow any pressure or vacuum into the tank to vent.



OPW 113 Series Open Atmospheric Utility Vents

OPW 113 Open Atmospheric Utility Vents are installed on the top of above ground fuel storage tanks. The vent cap and internal wire screen are designed to protect the tank vent lines against intrusion and blockage from water, debris or insects. These vents are always open to atmosphere and allow any pressure or vacuum into the tank to vent. The 113 vents vapors downward and is used primarily on diesel, fuel oil, waste-oil and motor-oil tanks, but can also be used on a wide variety of above ground storage tank venting applications.



Materials

Body: Duragard®
Coated Cast Iron

Cage Assembly: ZA12 Zinc/Alloy

(TEE)

Features

- **Duragard® Coated Cast Iron Body –** helps prevent rust and corrosion for long service life.
- **ZA12 Zinc/Alloy Cage Assembly –** eases installation and removal of ball float vent valves and test plugs.
- **Precision Machined Threads –** help prevent cross threading of the ball float or tank riser pipe.
- **Compatible with 85% Ethanol (E85) or Methanol (M85)**

CROSS

233 VP Test Plug

(H11930 2" CAGE SA)

Ordering Specifications

Product #	Top Thread		Outlet Thread		Bottom Thread		Weight	
	in.	mm	in.	mm	in.	mm	lbs.	kg
233-4420 (Tee)*	4	102	2	51	4	102 Ext.	13.89	6.31
233-4430 (Tee)*	4	102	3	76	4	102 Ext.	14.06	6.39
233-4422 (Cross)*	4	102	2 x 2	51 x 51	4	102 Ext.	15.18	6.90
233-4433 (Cross)*	4	102	3 x 3	76 x 76	4	102 Ext.	15.54	7.06
233-4432 (Cross)*	4	102	3 x 2	76 x 51	4	102 Ext.	17.29	7.86

* Without cage assembly NOTE: Use OPW89 Extractor Wrenches (See page 120)

Replacement Parts

OPW 233V and 233VM

Part #	Description
H11930	2" Cage SA
233VP-6046	Test Plug

Listings and Certifications

Look for this label for authentic OPW EVR Approved products.

OPW 233 Series Extractor Fittings are EVR Approved for E85

OPW 233 Series Extractor Fittings

OPW 233 Series Extractor Fittings thread into 4 NPT openings on underground storage tanks. A 4" riser pipe threads into the top of the 233 for use in Stage I Vapor Recovery or to access a ball float. The 233 Extractor Fittings have threaded single-outlet connections for attaching tank vent lines or multiple outlets used to manifold tank vents or accommodate Stage II vapor return lines from dispensers. Internal threads on the 233 are designed to install a ball float or test plug in the extractor.

OPW 233

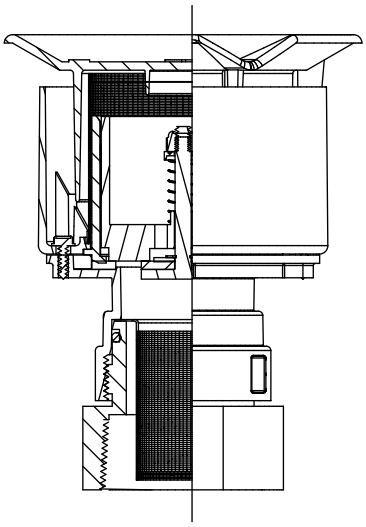
The OPW 233 Extractor Fittings are designed for use with all OPW 53VML Ball Float Vent Valves that include an extractor cage (the OPW 233 does not include an extractor cage). The 233 Extractor incorporates either single-outlet or multiple-outlet threads.

OPW 233VP Extractor Test Plug

The OPW 233VP Extractor Fitting Test Plug is used on all OPW 233 Series Extractor Fittings. The 233VP incorporates an O-Ring above the threads (on the plug) to isolate the tank from the vent piping systems during a tank test.

OPW 623V Pressure Vacuum Vent

Pressure Vacuum Vents are installed on the top of vent pipes from underground or above ground fuel storage tanks. The vent cap and internal wire screen are designed to protect the tank vent lines against intrusion and blockage from water, debris or insects. A normally closed poppet in the valve opens at a predetermined pressure or vacuum setting to allow the tank to vent.



Conversion Table

Measurement Units	=	Oz.	PSI	In H_2O (WC)	In Hg (Merc)	Bar
Bar	x	236.0	14.5	401.4	29.53	
In. Hg (Mercury)	x	7.843	0.49	13.6		0.034
In H_2O (WC)	x	0.578	0.04		0.074	0.002
PSI	x	16.00		27.68	2.04	0.069
Oz.	x		0.063	1.73	0.128	0.004

Materials

Top/Body: Polypropylene
Base: Anodized aluminum
Poppet: Anodized aluminum
Screen: Stainless steel mesh
Gasket: Closed cell foam

623V
Vent Must Be Mounted Vertically

Features

- Pressure/Vacuum Setting – 2.5" to 6" water column pressure settings and -6" to -10" water column vacuum settings are factory preset and tested.
- Reliable Service – cycle tested to the equivalent of 80 years of service in the most severe environment without leakage problems.
- Corrosion-Resistant Construction – a Duratuff® composite body ensures a long service life.
- Easy Installation – the 623V is available in 2" and 3" threaded versions.
- Complies with NFPA 30 Requirements – for venting gasoline vapors upward.
- Manifold Vent Pipes – vent pipes may be manifolded to produce a single Pressure Vacuum Vent line. The 623V exceeds California's requirements of a maximum vapor leak rate of 0.17 SCFH at 2.00 inches H_2O.
- High Maximum Flow Rate – 6450 SCFH at 2 psi (0.1 bar) pressure drop.
- Leak Rate – multiple pressure vacuum vents may be installed on a single site. The 623V exceeds California standards with a leak rate of 0.05 SCFH or less at 2.00 inches H_2O.
- Maintenance – no tools required. A removable snap fit top allows for easy maintenance (recommended yearly).
- 100-Mesh Stainless Steel Wire Screens – helps prevent debris and insects from entering the tank vent lines. An added screen installed at the base prevents debris from intruding from the vent stack.
- Adaptor Bushing – removable hex threaded bushing designed for easy installation on NPT threaded risers. Allows easy access to lower screen.
- ATEX Approved – for flame arrestor applications

623V Instruction Sheet Order Number: **H14898PA**

Ordering Specifications

Product #	Description	Identification Label Color	lb.	kg
623V-2203	2.5" to 6" WC Pres., -6" to -10" WC Vac. 2" Thread-On	Yellow	1.55	.70
623V-3203	2.5" to 6" WC Pres., -6" to -10" WC Vac. 3"Thread-On	Yellow	2.20	1.00

Replacement Parts

Part Number	Description
C05086M	Lower Screen
H14895M	Upper Screen
C05089	2" Threaded Base Adaptor
C05122	3" Threaded Base Adaptor

Listings and Certifications

OPW 623V & 523V

ATEX Approved
Patent No. WO2004/036096AZ

OPW 634 Series Tight-Fill Top-Seal Caps

Tight-Fill Top-Seal Caps are installed on top-seal adaptors, when not in use, to prevent gasoline vapors from escaping and to prevent water, dust and debris from entering the tank.

Look for this label for authentic OPW EVR Approved products.
EVR Approved for E85

Materials

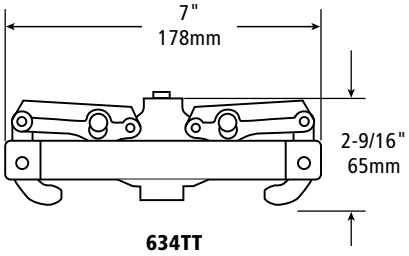
Cap & Links: Duratuff®
Pins: Stainless steel
Gasket: Nitrile
Color: Grey

Ordering Specifications

Product #	in.	mm	lbs.	kg
634TT-7085-EVR	4	102	1.01	.46

Replacement Parts

Part #	Description
H15005M	Nitrile Gasket



634TT

NOTE: Effective height above adaptor: 1-19/32"

OPW 634TT

The OPW 634TT is designed to mate with 4" 633T, 633TE, 61SA, 633TC, and 633TCP Top-Seal Adaptors. Heavy duty and corrosion resistant, the body is made of Duratuff® to help eliminate rust and oxidation for a long, maintenance-free life. The toggle lever distributes downward pressure to compress its Buna-N gasket evenly, ensuring a positive, water and vapor-tight seal. The 634TT can be locked with a padlock or wire seal.

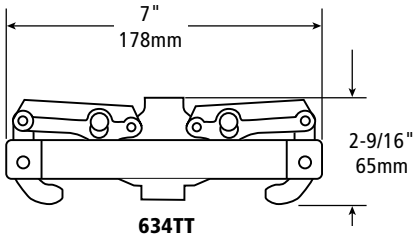
The OPW 633TE adaptor is similar to the 633T, except it does not have internal wrenching lugs.

Materials

Cap: Die cast zinc (powder coated black)
Lever: Duratuff®
Pins: Stainless steel
Gasket: Nitrile

Ordering Specifications

Product #	in.	mm	lbs.	kg
634TT-4000	4	102	1.01	.46



634TT

OPW 634TT - Metal

The 634TT-4000 is a metal top-seal cap with the same dimensions as the 634TT-7085.

Listings and Certifications

Look for this label for authentic OPW EVR Approved products.
OPW 634TT & 634LPC are EVR Approved for E85

OPW 1611 Series Vapor Recovery Adaptor

The OPW 1611AV and 1611AVB are poppeted adaptors, designed to mate with a vapor recovery elbow, for returning gasoline vapor to the tank truck during a fuel delivery to an underground tank.

Materials

Body: Clear anodized aluminum or cast bronze

Stem: Chrome-plated steel

Stem Guide: Acetal resin

Spring: Stainless steel

Gasket: Nitrile

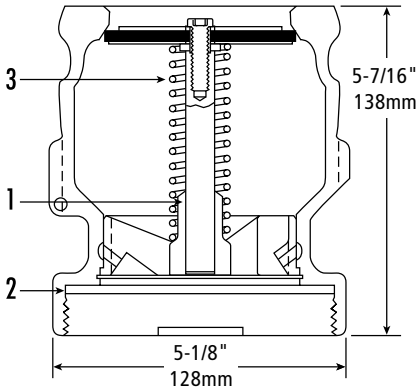
1611AV 3" x 4" (76 x 102mm)

Ordering Specifications

Product #	Elbow Size		Riser Thread				Body Material
	in.	mm	in.	mm	lbs.	kg	
1611AV-1605	3	76	3	76	2.91	1.32	Clear Anodized Aluminum
1611AV-1620	3	76	4	102	3.25	1.48	Clear Anodized Aluminum
1611AVB-1625	3	76	4	102	7.97	3.62	Cast Bronze

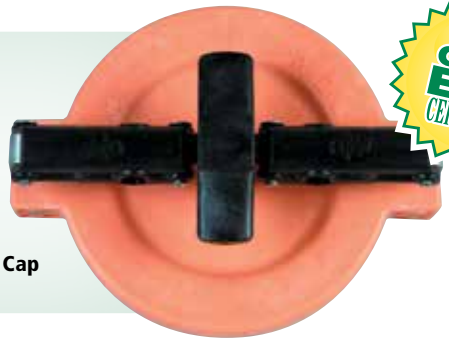
Replacement Parts

Key	Part #	Description
1	C02642M	Bridge Guide
Not Shown	H15294M	Screw (3") (76mm)
2	H04145M H04150M	Gasket (3") (76mm) Gasket (3"x 4") (76 x 102mm)
3	H08989M	Spring
61VSA-KIT Complete Replacement Kit		



Materials

Body: Duratuff®
Pins: Stainless steel
Links: Duratuff®
Gasket: Nitrile
Color: Orange



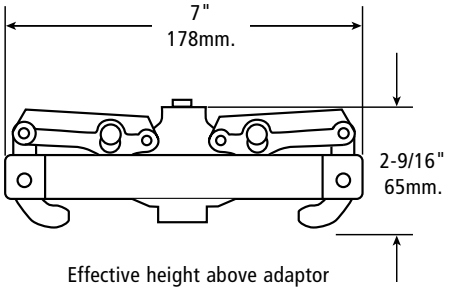
1711T Cap

Ordering Specifications

Product #	in.	mm	lbs.	kg
1711T-7085-EVR	3	76	1.1	.50

Replacement Parts

Part #	Description
H10886M	Nitrile Gasket

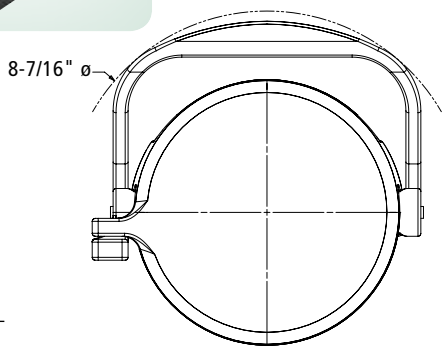


Materials

Cap: Cast zinc alloy (powder-coated orange)
Lever: Ductile iron
Gasket: Nitrile

1711LPC Cap

Effective height above adaptor 1/2"

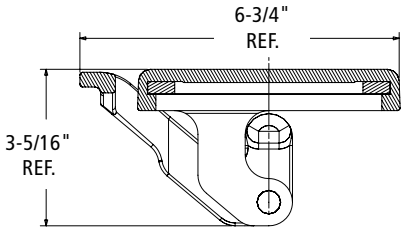


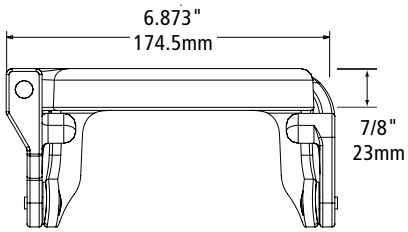
Ordering Specifications

Product #	in.	mm	lbs.	kg
1711LPC-0300	3	76	3.5	1.59

Replacement Parts

Part #	Description
H15005M	Nitrile Gasket





Listings and Certifications

Look for this label for authentic OPW EVR Approved products.
OPW 1711 Series Caps are EVR Approved for E85

OPW Stage 1 Vapor Recovery Caps

OPW 1711T

The OPW 1711T Vapor Recovery Cap is for use with the OPW 1611AV, 61VSA, 1611AVB and 1611VR Adaptors. The 1711T is installed on the vapor recovery adaptor, when not in use, to prevent vapors from escaping and to prevent water, dust and debris from entering the tank. Constructed of Duratuff® to help prevent corrosion, the OPW 1711T will couple to Civacon/OPW 4" Kamloks, and features a center post that allows an even distribution of force when coupling to the adaptor. The 1711T can be locked with a padlock.

OPW 1711LPC Low Profile Vapor Cap

The OPW 1711LPC Low Profile Top-Seal Vapor Cap is designed for tight installations where the clearance between the top of the vapor adaptor and the underside of the spill container or manhole cover is limited. The rugged iron lever provides a positive cam-action that seats the cap firmly in the adaptor groove for a water and vapor-tight seal. When engaged, the lockable cap adds only 1/2" to the final height of the adaptor. The cap is powder-coated API Orange to signify vapor recovery. The 1711LPC can be used with the OPW 3" 1611AV, 1611AVB and 61VSA series vapor adaptors.

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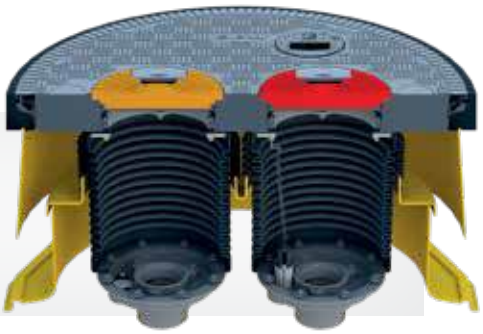
OPW FibreTite Multi-Port Spill Containment

OPW "FibreTite" Multi-Port Spill Containment Manholes provide spill containment for underground storage tank (UST) fill pipes and vapor recovery risers.

Multi-Ports are installed over the top of tank sumps to preserve future access to the tank top and to facilitate containment of tank bung fittings.

OPW "FibreTite" watertight covers are easy to remove composite manhole covers are available with center or offset port for access to fill risers.

FibreTITE COMPOSITE MULTIPORT



Materials:

Cover: Fiberglass

Frame: Fiberglass

Skirt: Fiberglass

Features & Benefits:

- Lightweight - reduce risk of back, foot and hand injuries.
- UV resistant
- Standard duty (20 ton load rating)
- No Bolts Required to Seal Top Cover
- Anti-slip surface
- Composite construction; does not corrode
- Watertight, sealed design
- Monolithic structure eliminates delaminating
- Ergonomic, single person removal and replacement with Fibrelite lifting handle
- Easy Access Watertight Sump Inspection Port
- Replaceable Double Wall Spill Containment
- Easy access to Overfill Prevention Valve

OPW FibreTite Multi-Port and Sump System Kit

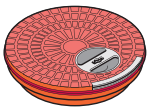
Includes:

- Multiport Cover
- Frame
- Skirt
- Spill Containers
- Port Covers
- Shroud Boot
- Clamping Kits
- Water Spill Platform
- Top Hat
- Sump Base

Ordering Specifications

		Sump					Bonded Manhole		
Part Number	**Application**	**Tank Collar**	**Dia.**	**Height**	**Base**	**WT Cover**	**Skirt ID**	**FRP Cover**	**Fill & Vapor Cover**
S8CR-3100G-MP3716S-W	5 Gallon Regular Gasoline MP System	42"	45"	48"	Collar Ring	37" WSP37-16S	40"	Gray	White/Orange
S8CR-3100G-MP3716S-R	5 Gallon Premium Gasoline MP System	42"	45"	48"	Collar Ring	37" WSP37-16S	40"	Gray	Red/Orange
S8CR-3100G-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	42"	45"	48"	Collar Ring	37" WSP37-16S	40"	Gray	Blue/Orange
S8CR-3100G-OF378S-Y	5 Gallon Diesel Offset System	42"	45"	48"	Collar Ring	37" WSP37-8S	40"	Gray	Yellow
S8CRD-3100G-MP3716S-W	5 Gallon Regular Gasoline MP System	42"	45"	63"	Collar Ring	37" WSP37-16S	40"	Gray	White/Orange
S8CRD-3100G-MP3716S-R	5 Gallon Premium Gasoline MP System	42"	45"	63"	Collar Ring	37" WSP37-16S	40"	Gray	Red/Orange
S8CRD-3100G-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	42"	45"	63"	Collar Ring	37" WSP37-16S	40"	Gray	Blue/Orange
S8CRD-3100G-OF378S-Y	5 Gallon Diesel Offset System	42"	45"	63"	Collar Ring	37" WSP37-8S	40"	Gray	Yellow
S8SB-3100G-MP3716S-W	5 Gallon Regular Gasoline MP System	48"	45"	39"	Solid	37" WSP37-16S	40"	Gray	White/Orange
S8SB-3100G-MP3716S-R	5 Gallon Premium Gasoline MP System	48"	45"	39"	Solid	37" WSP37-16S	40"	Gray	Red/Orange
S8SB-3100G-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	48"	45"	39"	Solid	37" WSP37-16S	40"	Gray	Blue/Orange
S8SB-3100G-OF378S-Y	5 Gallon Diesel Offset System	48"	45"	39"	Solid	37" WSP37-8S	40"	Gray	Yellow
S8SBD-3100G-MP3716S-W	5 Gallon Regular Gasoline MP System	48"	45"	48"	Solid	37" WSP37-16S	40"	Gray	White/Orange
S8SBD-3100G-MP3716S-R	5 Gallon Premium Gasoline MP System	48"	45"	48"	Solid	37" WSP37-16S	40"	Gray	Red/Orange
S8SBD-3100G-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	48"	45"	48"	Solid	37" WSP37-16S	40"	Gray	Blue/Orange
S8SBD-3100G-OF378S-Y	5 Gallon Diesel Offset System	48"	45"	48"	Solid	37" WSP37-8S	40"	Gray	Yellow

All Fill & Vapor Covers ship with Composite FC-11 Spill Port Covers.



Add "SC" to the end of the part for Sealable Covers.

Listings and Certifications

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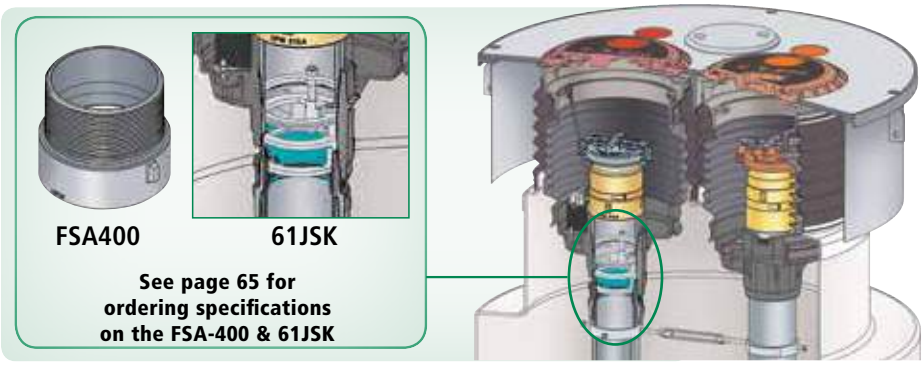


See page 65 for ordering specifications on the FSA-400 & 61JSK

Model Descriptions

- **OPW 411 Series –** features a flush-mounted manhole lid and raised dual dam and groove spill container rings, with P2105 Buckets using OPW 1-2105 Style Slip-On 5-gallon containers. Base is standard 1" offset from center and can be used for 12", 14", 16" or wider riser spacing. Optional 1P-2105 Hand Pump available.
- **OPW 500 Series (511 / 521) EVR Multi-Port –** features a flush-mounted manhole lid and raised dual dam and groove spill container ring, with P511-EVR Buckets using OPW 1-2100 Style Thread-On Spill Containers. All Fill Ports in these spill containers feature an enhanced 1DK-2100-EVR vapor tight drain valve. The Vapor Return Spill Container features a permanent plug in the drain port as per EVR requirements. EVR Multi-Port Thread-On Spill containers are available in Composite or Cast Iron bases with 5 gallon buckets. Drain Valve Spill Bucket & Plug Spill Bucket standard on Dual Ports, Drain Valve Spill Bucket standard on Single Port.
- **Required for EVR APPLICATIONS –** the FSA-400 Threaded Riser Face Seal Adaptor is installed on the fill pipe below the spill container to provide a true sealing for the drop tube flange on the 71SO overfill prevention valve. The 61SO and/or 71SO series valve is installed in the base of the OPW EVR spill container with the patent pending 61JSK jack screw device. This configuration allows liquid in the spill container to be drained directly into the drop tube, thereby isolating the drain valve from the tank ullage, eliminating a notorious leak point in previous systems.

Features

- **Contractor-Friendly Installation –** studded mounting ring simply bolts together inside the spill containment bucket. No need to align bolt holes in the manhole cover.
- **Raintight Service –** nitrile gaskets on the manhole and spill bucket mounting rings help prevent contamination of the sump area from surface water intrusion.
- **Highway 20 Load Rating –** the rugged diamond plate steel manhole covers, as well as the ductile iron (RT) or aluminum (SC) spill container covers meet H20 Load Rating requirements.
- **Spill Container and Manhole Positive I.D. System –** special recesses cast into spill container covers allow product I.D. tags to be attached to the lids. Matching bucket tags can be affixed to the inside of the spill container to prevent covers from getting switched.
- **Fill/Vapor Ports –** configurations are available to accommodate a single fill riser, dual ports for both a fill and vapor riser, and triple and quad ports for multiple fill and vapor risers. Ports can be supplied with or without containment buckets.
- **Port Configurations –** standard port locations match the popular riser spacings (16" or 24") and bung configurations on underground storage tanks. Custom port locations are easily accommodated. For riser spacings less than 16", old style buckets must be used.
- **CARB Certified –** 500 Series CARB EVR Approved Executive Order #VR-102
- **Manhole Cover Sizes –** standard bolt-down manhole cover diameters of 30" (76 cm), 37" (94 cm), 42" (107 cm) and 48" (122 cm) allow ample access to the sump area. Heavy-duty reinforced lid options are also available upon request.

OPW 400 and 500 Series Multi-Port Spill Containment Manholes

OPW Multi-Port Spill Containment Manholes provide spill containment for underground storage tank (UST) fill pipes and vapor recovery risers in a completely integrated single manhole package. Multi-ports are installed over the top of tank sumps to preserve future access to the tank top and to facilitate containment of tank bung fittings. OPW offers a vast array of standard multi-port configurations and options, in addition to an almost unlimited ability to provide custom solutions for virtually any spill containment application.

- **Spill Container Cover Options –** standard spill container options include the patented OPW dam and groove raintight (RT) design and the watertight Sealable Cover (SC) "plumber's plug" design. The raintight cover features a finger-grip lifting facility and an integral seal. The sealable cover features a cam-operated mechanism that expands the seal against the vertical wall of the mounting ring. Both of these water-shedding covers are protected by raised mounting rings.
- **Fastener Options –** two types of fasteners are available to secure the manhole lid and monitoring port to mounting rings. Standard are 5/16"-18 hex head bolts. Optional are OPW Roto-Lock Fasteners. The OPW Roto-Lock system enables a secure, watertight connection without the need to locate threaded bolt holes on the mounting ring.
- **Powder Coated Rings & Covers –** available upon request.
- **Replacement Covers –** see Part Number Configurations at **www.opwglobal.com**.

Listings and Certifications

Look for this label for authentic OPW EVR Approved products.

CARB EVR Executive Order #VR-102
NYCFD Certified (6571Series) #5053
Florida EQ-145

OPW Multi-Port Spill Containment Ordering Specifications

Product Number

6 _ _ _ EVR _ – _ _ _ _ _ _ _ _

(500 Series Only)
Do Not Enter "EVR" for old style multiports

Bolt Down Model Number

511EVR - HDPE Bellows, Thread-On Composite Base, Bolt-Down

561EVR - HDPE Bellows, Thread-On Cast Iron Base, Bolt-Down

411- HDPE Bellows, Slip-On Composite Base

Roto-Lock Model Number

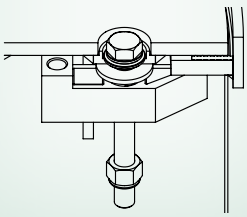
521EVR - HDPE Bellows, Thread-On Composite Base, Roto-Lock

571EVR - HDPE Bellows, Thread-On Cast Iron Base, Roto-Lock

421- HDPE Bellows, Slip-On Composite Base with Roto-Lock Fasteners

Optional Roto-Lock Fastener System

The OPW Roto-Lock system enables a secure raintight connection without the need to locate threaded bolt holes on the mounting ring.



Fill/Vapor Port Configurations

A (Dead Center)

B

E

G (42" Minimum Cover)

L (Offset Single Port)

T

NOTE: 43 or 49 style Gauge Port must be used if a water shroud is to be used with L style

Replacement / Retrofit Manhole

RP* - (No Ring / Skirt)

*RP cover orders must be accompanied by an up-to-date OPW field survey form.

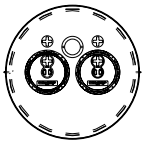
Riser Spacing

00 - Single Port (A Configurations)

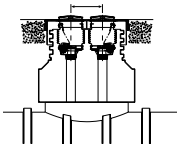
16 - 16" Centers

24 - 24" Centers (42" Minimum Cover)

Old Style - 14" Centers Available

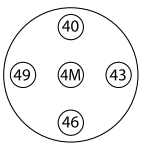


Riser Spacing



Gauge Port Location

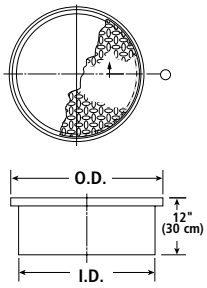
00 - No Gauge Port
40 - Port at 12 o'clock
43 - Port at 3 o'clock
46 - Port at 6 o'clock
49 - Port at 9 o'clock
4M - Port in Center
7X - Flush Mount



Port Location Example

NOTE: 3M Style gauge port must be used with port in the center of "G" Style

Manhole Cover Size*
30" (Configurations)
36 - 36" Retrofit Only
37 - 37"
39 - 39" Retrofit Only
42 - 42"
48 - 48"
* 42" is standard



Dimensions

O.D.		I.D.		Thickness	
in.	cm	in.	cm	in.	cm
30	76	26 5/8	68	3/8	0.952
37	94	34 5/8	88	3/8	0.952
42	107	39 5/8	101	1/2	1.27
48	122	44 5/8	113	1/2	1.27

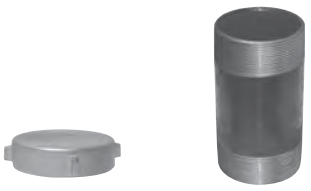
EVR Multi-Ports

Thread-On Spill Containers are available in composite or cast iron bases with either 5 or 15-gallon buckets. (1) Drain Valve Spill Bucket & (1) Plug Spill Bucket standard on Dual Ports. Drain Valve Spill Bucket standard on Single Port.

Optional Accessories

Part #	Description
6511-RB16	12" to 18" Riser Spacer
6511-RB24	20" to 26" Riser Spacer
H15144M	4" NPT Nipple, 4" Length
H12806M	4" NPT Nipple, 5" Length
VPN4X7	4" NPT Nipple, 7" Length
H15271M	4" NPT Nipple, 8" Length
H15268M	4" NPT Nipple, 10" Length
H15888M	4" NPT Nipple, 9" Length
209502	4" NPT Nipple, 14" Length
209501	4" NPT Nipple, 10" Length
TC-400	4" Torque Cap for 16" Nipples
6521-XAR37	36", 37" OR 38" Roto-Lock Adaptor Ring to convert from Bolt Down
6521-XAR42	39" OR 42" Roto-Lock Adaptor to convert from Bolt Down
6521-XAR48	48" OR 52" Roto-Lock Adaptor to convert from Bolt Down

6511-RB16
Riser Spacer

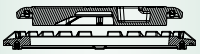


Torque Cap

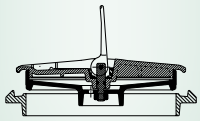
4" Nipple

9393 Princeton-Glendale Road ◆ Hamilton, Ohio USA 45011 ◆ Phone: (800) 422-2525 ◆ Fax: (800) 421-3297

Spill Container Cover Style**
RT - Raintight
SC - Sealable Cover
00 - No Ring or Cover



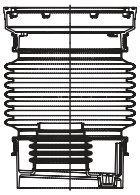
RT - Raintight



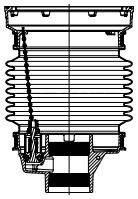
SC - Sealable Cover (Lid in open position)

** Raintight cover is standard

Spill Container Capacity***
00 - No Containment
05 - 5-Gallon
15 - 15-Gallon
*** 5-Gallon bucket is standard



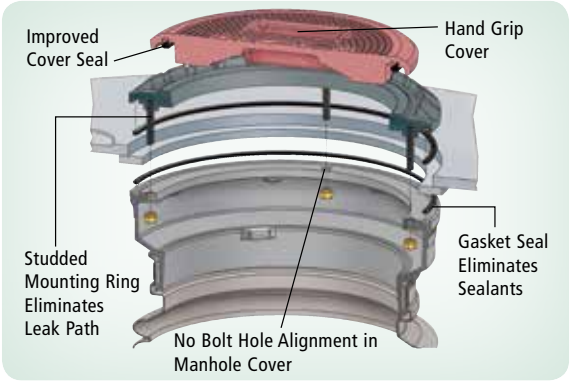
411-5-gallon (Slip-On)



511-5-gallon (Thread-On)

 # Of Ports With Containment
0
1
2
3
4

Powder Coated Manhole Covers
R - (1) Red (1) Orange
W - (1) White (1) Orange
Y - (1) Yellow



Current Replacement Parts

For New 500 Series EVR Multi-Ports 6511/6521, 6561/571 made post 11/2003

Part #	Description
P711-EVRDV	Replacement 5-Gallon Bucket, w/ Drain Valve
P711-EVRPL	Replacement 5-Gallon Bucket, w/Plug (Vapor)
P761C-EVRDV	Replacement 5-Gallon Bucket, C.I. Base w/Drain Valve
P761C-EVRPL	Replacement 5-Gallon Bucket, C.I.
P411-EVRPL	Replacement 5-Gallon Slip-On Bucket
P511-15-EVRDV	Replacement 15-Gallon Bucket, Comp Base, W/ Drain Valve
C05170M	Gasket, Spill Bucket & Mounting Ring
H15187M	Replacement Seal for New Rain Tight Cover

Note: New P711 & P761 EVR buckets will only work with New "EVR" Multi-Port covers. (made post 11/2003)

See page 80 for replacement rings and covers part numbers.

Old Style Replacement Parts
311/411/511/521 Series Multi-Ports
Note: 511/521 parts are for Multi-Ports made prior to Nov. 2003

	Part #	Description
ALL	1DK-2100-EVR	511/521 Series Drain Valve
	H13931M	Replacement Seal for SC Cover
	P110-37G	34"-37" Manhole Gasket
	P110-42G	42" Manhole Gasket
	P110-48G	48" Manhole Gasket
	PROTO-LOCK	(1) Roto-Lock
	P40-ROTOLID	Replacement 40 Style Gauge Port Roto-Lock Lid
	H15240M	Replacement Gasket for 40 Style Gauge Port
	C05501	Flush Mount Gauge Port Cover Only
	P571-GK3T	Gasket KitFor New Style 571 Roto Multiport
	203148	Replacement 3M Style Bolt Down Gauge Port, 4.8" diameter
	205322	Replacement 30 Style Bolt Down Gauge Port, 6.5" diameter
	P311-G	Bucket Top Flange Gasket
	P511BUCKETBOLT	Spill Bucket RT Ring Kit (4) Bolts, Washers & Gaskets
	H15238M	Replacement Gasket, 30 Style (Bolt Down)
	1-2100-DSH	5 Gallon Fill Bucket with Composite Base & Drain Valve
	1-2100-PSH	5 Gallon Vapor Bucket with Composite Base & Plug

	Part #	Description
411 Parts	P2105BUCKET	411 Replacement Bucket 5-Gallon
	1P-2105	H& Pump Kit for 411/P2105
511/521 Parts	P111-WTL	Replacement Cover (RT)
	P111WTL-S	Replacement Seal for RT Cover
	P311-1R	Replacement RT Ring
	P311-14	RT Ring for 14" Riser
	P511YBUCKET	Replacement Waste Oil Bucket
	P511-DEVRBUCKET	Replacement 5-Gallon Bucket with Drain Valve
	P511-G14	Bucket Top Flange Gasket for Notched Gasket Set
	P511-PEVRBUCKET	Replacement 5-Gallon Bucket with Plug
	P511C-DEVRBUCKET	Replacement 5-Gallon Bucket With C.I. Base & Drain Valve
	P511C-PEVRBUCKET	Replacement 5-Gallon Bucket With C.I. Base & Plug
	P511-DEVRB-14	Replacement 5-Gallon Bucket with Drain Valve 12" & 14" Risers
	P511-PEVRB-14	Replacement 5-Gallon Bucket with Plug – 12" & 14" Risers
	P511C-DEVRB-14	Replacement 5-Gallon Bucket W/ C.I. Base, Drain Valve for 12" & 14" Risers
	P511C-PEVRB-14	Replacement 5-Gallon Bucket W/ C.I. Base, Plug, for 12" & 14" Risers
	P521-GKIT	521 Multi-Port Complete Gasket Kit
	P511-GKIT	511 Multi-Port Complete Gasket Kit

See page 80 for additional cover options.

Multi-Port Manhole Water Shroud System Option

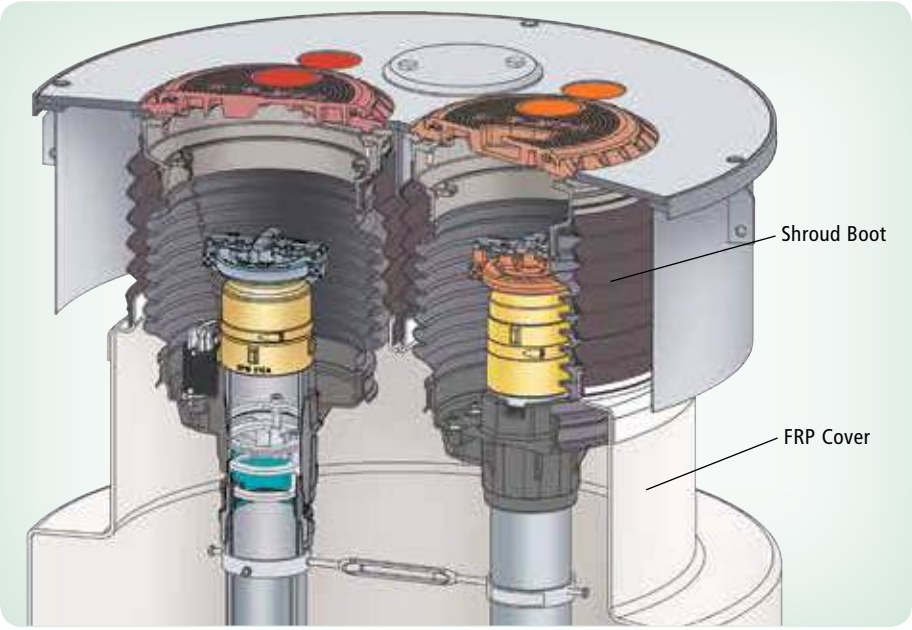
The new OPW Multi-Port Manhole Water Shroud System (MPWS) is designed to completely isolate surface water and condensation from the tank sump. The MPWS features an injection-molded fiberglass Water Shroud lid that mates to a standard tank sump top hat reducer. This new bolt down design allows even compression to facilitate water-tight sump access. Shroud Boots isolate the spill container buckets using stainless steel band clamps, which provide a tight seal between the water shroud top hat and the underside of the spill container mounting rings. A 6" Sump Inspection Port is provided on each FRP Cover, allowing full inspection access through the Multi-Port Gauge Port. The OPW Water Shroud system is available in 33" and 36" models. The MPWS Water Shroud is sold separately.

Rubber Shroud Cap

Shroud Boots Vinyl Plastisol

Sump Inspection Port (SIP) – Clear ABS Construction Inspection Port

FRP Cover Injection Molded Fiberglass Cover



Ordering Specifications

Part #	Description
MPWS-33	33" FRP Cover with (2) 5-gallon Water Shroud Boots & Clamps
MPWS-33BD	33" Bolt Down Water Shroud
MPWS-33BDD	33" Bolt Down Water Shroud for Diesel
MPWS-36	36" FRP Cover with (2) 5-gallon Water Shroud Boots & Clamps
MPWS-39BD	39" Bolt Down Water Shroud

Replacement Parts

Part #	Description
C05223M	Shroud Boot Cap to Isolate One FRP Cover Port
D02571M	33" FRP Replacement Cover
D02586M	36" FRP Replacement Cover
D02575M	5-gallon Shroud Boot
H15188M	Lower Clamp for 5-gallon Shroud Boot
H15190M	Upper Clamp for 5 or 15-gallon Shroud Boot
SIP-6	6" Sump Inspection Port Sight Glass
SLPK	Gasket and Sealant Kit for Shroud
205181	Lower Clamp for 5 Gallon Shroud
205183	Upper Clamp for 5 Gallon Shroud

Listings and Certifications

Florida EQ-145
NY Approval

NOTE: Part numbers do not include rings or covers. Rings and Covers must be ordered separately.

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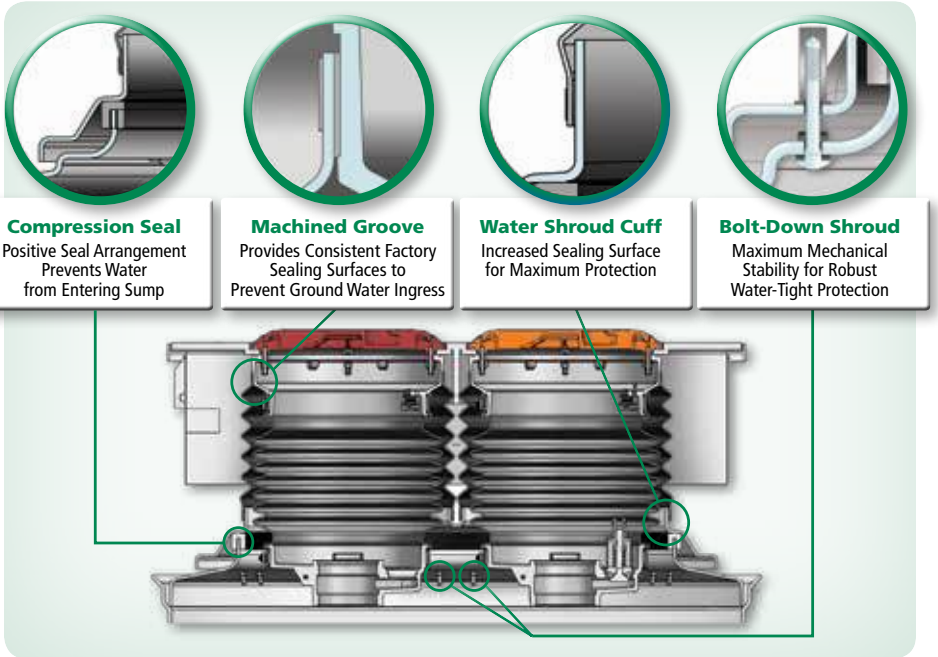


Bolt Down Manhole Water Shroud System Option

The Bolt Down Multi-Port Water Shroud (MPWS-BD) is designed to mate with the OPW Multi-Port. The MPWS-BD isolates surface water and condensation from Tank Sumps.

Shroud boots isolate the spill container buckets using stainless steel band clamps, providing a tight seal between the water shroud top hat and the underside of the spill container-mounting ring. Bolts on the outer edge of the shroud cover secure it to the top hat. Available in 33" and 39" Diameter Covers.

Ordering Specifications

Part #	Description
Bolt-Down FRP Top Hat Options	
203246	42" x 33" FRP Bolt-Down Top Hat
203272	42" x 39" FRP Bolt-Down Top Hat

New Ring and Cover Part Numbers

Raintight Covers	
RTC-WHITE	
RTC-RED	
RTC-YELLOW	
RTC-GREEN	
RTC-ORANGE	
RTC-BLACK	

Raintight Cover Rings	
RTR-WHITE	
RTR-RED	
RTR-YELLOW	
RTR-GREEN	
RTR-ORANGE	
RTR-BLACK	

Sealable Covers	
SC-WHITE	
SC-RED	
SC-YELLOW	
SC-ORANGE	
SC-BLACK	
SC-PLAIN	

Sealable Cover Rings	
SCR-WHITE	
SCR-RED	
SCR-YELLOW	
SCR-ORANGE	
SCR-BLACK	

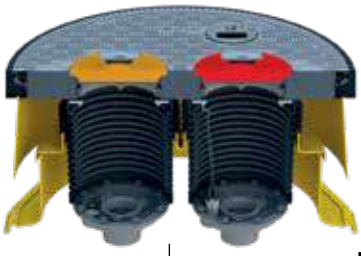
Replacement Parts

Part #	Description
C05223M	Shroud Boot Cap to Isolate One FRP Cover Port
D02571M	33" FRP Replacement Cover
D02586M	36" FRP Replacement Cover
D02575M	5-gallon Shroud Boot
H15187M	Raintight Cover Replacement Gasket
H15188M	Lower Clamp for 5-gallon Shroud Boot
H15190M	Upper Clamp for 5 or 15-gallon Shroud Boot
SIP-6	6" Sump Inspection Port Sight Glass
SLPK	Gasket and Sealant Kit for Shroud
205181	Lower Clamp for 5 Gallon Shroud
205183	Upper Clamp for 5 Gallon Shroud

New Style OPW FibreTite Multi-Port Kit to Install on Existing Tank Sump

Includes Spill Containers

Kit includes; Multiport Cover, Frame, Skirt, Spill Containers, Port Covers, Shroud Boot, Clamping Kits, Water Spill Platform and Top Hat



FibreTITE COMPOSITE MULTIPORT

Ordering Specifications

Part Number	Application	WT Cover	Bonded Manhole: Round Sump Riser Diameter	Bonded Manhole: Skirt ID	Bonded Manhole: FRP Cover	Bonded Manhole: Fill & Vapor Cover
S42-3100G-MP3716S-W	5 Gallon Regular Gasoline MP System	37" WSP37-16S	42"	40"	Gray	White/Orange
S42-3100G-MP3716S-R	5 Gallon Premium Gasoline MP System	37" WSP37-16S	42"	40"	Gray	Red/Orange
S42-3100G-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	37" WSP37-16S	42"	40"	Gray	Blue/Orange
S42-3100G-OF378S-Y	5 Gallon Diesel Offset System	37" WSP37-8S	42"	40"	Gray	Yellow
S48-3100G-MP3716S-W	5 Gallon Regular Gasoline MP System	37" WSP37-16S	48"	40"	Gray	White/Orange
S48-3100G-MP3716S-R	5 Gallon Premium Gasoline MP System	37" WSP37-16S	48"	40"	Gray	Red/Orange
S48-3100G-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	37" WSP37-16S	48"	40"	Gray	Blue/Orange
S48-3100G-OF378S-Y	5 Gallon Diesel Offset System	37" WSP37-8S	48"	40"	Gray	Yellow

Replacement for Existing FL100 MP System includes Spill Containers

Kit includes; Multiport Cover, Spill Containers, Port Covers, Shroud Boot, Clamping Kits and Water Spill Platform

Ordering Specifications

Part Number	Application	WT Cover	Bonded Manhole: Skirt ID	Bonded Manhole: FRP Cover	Bonded Manhole: Fill & Vapor Cover
FL100G-RETRO-MP3716S-W	5 Gallon Regular Gasoline MP System	37" WSP37-16S	40"	Gray	White/Orange
FL100G-RETRO-MP3716S-R	5 Gallon Premium Gasoline MP System	37" WSP37-16S	40"	Gray	Red/Orange
FL100G-RETRO-MP3716S-BU	5 Gallon Mid-Grade Gasoline MP System	37" WSP37-16S	40"	Gray	Blue/Orange
FL100G-RETRO-OF378S-Y	5 Gallon Diesel Offset System	37" WSP37-8S	40"	Gray	Yellow

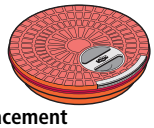
Multi-Port Kit Only, No Sump Includes Spill Containers

Kit includes; Multiport Cover, Frame, Skirt, Spill Containers, Port Covers, Shroud Boot and Clamping Kits

Ordering Specifications

Part Number	Application	Bonded Manhole: Skirt ID	Bonded Manhole: FRP Cover	Bonded Manhole: Fill & Vapor Cover
FL100GRAY-MP16S-SK12-W	5 Gallon Regular Gasoline MP System	40"	Gray	White/Orange
FL100GRAY-MP16S-SK12-R	5 Gallon Premium Gasoline MP System	40"	Gray	Red/Orange
FL100GRAY-MP16S-SK12-BU	5 Gallon Mid-Grade Gasoline MP System	40"	Gray	Blue/Orange
FL100GRAY-OF8S-SK12-Y	5 Gallon Diesel Offset System	40"	Gray	Yellow

Spill Container



Replacement Fill Cover

Replacement 2-Port Cover

Replacement Parts/Accessories

Part Number	Description
P761C-FLDV	5 Gallon Fill Bucket for Fibrelite MP with Drain Valve and Cast Iron Base
P761C-FLPL	5 Gallon Vapor Bucket for Fibrelite MP with Plug and Cast Iron Base
FC-11-Orange	11" Orange Vapor Cover
FC-11-RED	11" Red Fill Cover
FC-11-WHITE	11" White Fill Cover
FC-11-YELLOW	11" Yellow Fill Cover
FC-11-BLUE	11" Blue Fill Cover
FL100GRAY-MP16S	FL100 Gray Composite Multiport Cover- 16" Centers
FL100GRAY-OF8S	FL100 Gray Composite Cover Offset Port
WSP37-16S	37" Dia. WT MP Spill Platform w Dual Access Part 16" Centers

Part Number	Description
FLMP-SB	MPS Shroud Boot Kit (Includes WSP-CRKS, Clamp Kit)
FLMP-IP	Inspection Port Kit for Fibrelite Multiport
FC-11-SEAL	Seal for FC-11 Covers
WSP37-8S	37" Multi-Port Water Shroud for Single Offset Port
WS-RING-37	37" Dia. Stainless Steel Retaining Ring Kit
S-CR-FGK	FRP Kit for Bonding Collar Ring Sump to FGRP Tank Collar (Includes Resin, Catalyst & Glass Tape)
S-TH-FGK	FRP Kit for Top Hat to Sump (Includes Resin, Catalyst & Glass Tape)
RK-5000	Fiberglass Epoxy Kit (Qt. Size)
211300	Epoxy pack to bond 1TAG to composite cover

See 1TAG section for I.D. markers for new multiport

The Red Jacket Submersible Turbine Pump

Advanced environmental protection, serviceability, safety and flow

VEEDER-ROOT

Environmentally friendly features

The Red Jacket Submersible Turbine Pump has been specifically designed to eliminate spills that can occur during service, and to integrate with Veeder-Root industry leading leak detection systems.

Service spill elimination

Innovative Check Valve design

The Check Valve on the Red Jacket Submersible Turbine Pump has been designed so that it can be raised, providing a larger path to depressurize the line and return fuel to the tank. This feature eliminates the potential for fuel spills.

Spill-free extractable

When the two nuts holding the extractable in place are backed off, the o-ring seals are automatically broken, releasing pressure in the pump and the non-isolated line, draining fuel back into the tank. This simple feature helps eliminate potential human error that could cause service spills, protecting the environment from fuel contamination, and site owners from related liability.

Vacuum monitoring applications

Red Jacket Vacuum Sensor Siphon System

The Red Jacket Vacuum Sensor Siphon System is a monitoring-grade siphon system. It is designed specifically for use in vacuum monitoring applications, and to integrate with Veeder-Root vacuum sensors. The pump offers two siphon system ports. The Red Jacket Vacuum Sensor Siphon System incorporates a redesigned one-piece rubber Check Valve with an in-line filter screen that reduces the clogs and failures that can cause false alarms and downtime in vacuum monitoring applications.

Line leak detection

Veeder-Root/Red Jacket industry leading pressurized line leak detection (PLLD) provides environmental compliance without the fuel flow restrictions of mechanical (MLLD) or electronic (ELLD) systems.

Check Valve pressure release

Red Jacket Vacuum Sensor Siphon System

Protect the environment.

Innovative technology delivers the easiest and safest pump to install and service

The Red Jacket Submersible Turbine Pump incorporates a range of innovative new features that keep the safety of service technicians and service related costs in mind. If you're concerned about rising labor costs and the safety of your workforce, you need to take a look at The Red Jacket Submersible Turbine Pump.

Yoke assembly: quick, simple and safe electrical connections

Current safety practice when servicing existing submersible pumps requires turning off the circuit breaker, backing off the bolts by up to one inch, and then manually pulling the electrical yoke connection apart. When service is complete, the technician has to force the connection back in place.

With The Red Jacket Submersible Turbine Pump you turn off the circuit breaker, then simply back off the two nuts holding the extractable in place and the yoke electrical connection is broken. After service is complete, the electrical circuit reconnects when the two nuts are retightened. Safe, simple and easy.

Pre-installed capacitor and simple electrical connections

Extractable: easy to install and service

The Red Jacket Submersible Turbine Pump's design incorporates industrial die springs that break loose the o-ring seals when the nuts holding the extractable in place are removed. No physical effort or special equipment is required to break the seal, unlike competitive systems that can require considerable force.

In addition, all connected parts have been moved to the manifold; so there is no need to remove parts, leak detectors or siphons when service or upgrades require removing the extractable.

Manifold allows for vertical or horizontal discharge

The Red Jacket Submersible Turbine Pump has been designed for vertical product discharge, but with adequate swinging radius to allow for the addition of an elbow to accommodate a side discharge. In fact, the discharge is now located higher on the manifold so that a side discharge is on the same plane as the rest of the pump.

Built-in contractor's box

The electrical connection housing (Contractor's Box) is built into the manifold of The Red Jacket Submersible Turbine Pump, and is completely isolated from the fuel path. Unlike existing systems, there is no adjustment required to fit the yoke, making this pump the easiest to install.

Save time, lower service costs

Service technicians will appreciate how the pump saves time and effort. They'll also appreciate how the electrical connections on the yoke assembly make installation and service a much safer process. Site owners will appreciate the savings in service and upgrade costs.

The best performance

The Red Jacket Submersible Turbine Pump delivers the flow performance and reliability you've come to expect from the industry leader.

Flow fuels profits

The Red Jacket Submersible Turbine Pump has the lowest pressure drop across the packer manifold, optimizing flow with any sized motor that meets the site requirements. This results in more flow at discharge so site owners can maximize flow and profits.

Protect your workforce and budget.

Specifications

Designed for Hazardous Location:
Class 1, Group D atmospheres

Quick-Set Adjustment Range:
RJ 1 = 74.5" - 105"*
RJ 2 = 104.4" - 165"
RJ 3 = 164" - 225"
*Assumes 1.5 HP

Agency Listing:
UL
cUL
ATEX Certified

4" Horsepowers Available:
3/4 HP, 60 HZ, 1-phase
3/4 HP, 50 HZ, 1-phase or 3-phase
1 1/2 HP, 60 HZ, 1-phase
1 1/2 HP, 50 HZ, 1-phase or 3-phase
X3, 60 HZ, 1-phase
X4, 50 HZ, 1-phase or 3-phase
2 HP, 60 HZ, 1-phase

Siphon Ports:
2 available, 1/4" NPT. Vacuums generated up to 25 in Hg.

Fuel Compatibility:
Diesel
100% Gasoline
80% Gasoline with 20% TAME, ETBE, or MTBE
0-100% Ethanol
0-100% Methanol

Line Pressure Port:
1 Available. 1/4" NPT

Vent Port:
1 Available. 1/4" NPT

Just part of the solutions offered by the Flow Resource at Red Jacket

We offer a range of solutions, including leading pump technologies for both new installations and upgrades, manifolded pumping systems for increased uptime and product availability, and the industry's leading tank monitoring and leak detection systems.

All with the desired purpose of delivering greater profitability and reliability to our customers.

We are a valuable source of expertise and information to both site owners and our business partners. Consider us your Flow Resource.

Call the Flow Resource today for more information on systems design and complete product specifications.

800-323-1799

For inside sales call
1-888-561-7942

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P/N 0576047-083 Rev.B VRRS 2/2004 Printed in USA

TLS-450PLUS

VEEDER-ROOT

PLUS the Facts

The Veeder-Root TLS-450PLUS automatic tank gauge (ATG) provides the most comprehensive site data for advanced fuel asset management.

Combining industry-leading algorithms with a proven reputation for compliance and reliability, the TLS-450PLUS keeps your site running profitably.

Specifications

Functionality

- *Number of Tanks Monitored: 64*
- *Number of Tanks Monitored with BIR: 32*
- *Sensor Inputs: 99 of any one type*
- *Line Leak Testing: 16 lines*
- *High Voltage Outputs: 32*
- *High Voltage Inputs: 32*
- *Low Voltage Inputs: 16*
- *8" Color WVGA LCD Touch Screen Display*
- *Thermal Printer*
- *Audible Alarm*

Connectivity

- *Ethernet*
- *RS-232*
- *RS-485*
- *USB*
- *SiteFax*
- *EDIM*

Available Modules

- *Universal Sensor Module*
- *Universal Input/Output Module*
- *10 Amp Relay Controller Module*
- *MDIM / LVDIM*

Software Features

- *3.0 GPH Digital Pressurized Line Leak Protection*
- *Static Tank Test*

Environmental

- *Storage Temperature Range -40°F to158° F (-40°C to 70° C)*
- *Operating Temperature Range -32°F to109° F (-0°C to 40° C)*

Dimensions

- *18.4 x 11 x 8.8*

Approvals

- *UL, cUL, ATEX, IECEx*
- *Third part certification of leak detection capabilities*

Capabilities

- *In-Tank Leak test*
  - *0.1 GPH*
  - *0.2 GPH*
  - *Continuous Statistical Leak Detection*
  - *Programmable Automatic Test Schedules*
  - *Static Leak Detection*
- *Line Leak Detection*
- *Interstitial/Sump Leak Sensing*
- *Continuous Inventory Monitoring*
- *Supports full line of Veeder-Root probes and sensors*
- *Pump-control – Alt by Height and Alt by Volume*
- *Inspector Ready Compliance*
- *Customized Alarms*
- *Vapor Well Monitoring*
- *Groundwater Monitoring*
- *Air Vapor Monitoring*
- *Tank Calibration*
- *Business Inventory Reconciliation*
- *AccuChart*
- *Sensor History Reporting*
- *Power Outage Reporting*
- *Tall Tank Support*
- *Wireless probe and sensor input*
- *Email Notifications*
- *Data Storage for 3 years*
- *Expandable with TLS-XB*
- *Remote Accessibility*
- *LCD Touchscreen*
- *Programmable Favorites*
- *Global setup with import configuration and Workflow Wizard for easy set-up*

Call 888.561.7942 or visit **www.veeder.com**
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VEEDER-ROOT

Piping Sump Sensor Specifications

Sensor Description	**Piping Sump Sensor**	The Piping Sump Sensor is installed in a tank piping sump (STP Containment Sump) and will detect the presence of a liquid.
Part Number	**794380-208**	

Category

- ☐ Discriminating
- ☑ Non-Discriminating
- ☐ Position Sensitive
- ☐ Level Sensing
- ☐ Static Testing
- ☐ Hydrostatic

Fuel Compatibility

- ☑ Gas
- ☑ Diesel
- ☑ Kerosene
- ☑ Jet Fuel
- ☑ Aviation Gas
- ☑ E-15
- ☐ E-85
- ☐ E-100
- ☑ Bio-Diesel 20
- ☐ Bio-Diesel 100
- ☑ Green Diesel
- ☐ DEF
- ☑ Waste Oil
- ☑ Motor Oil

Console Compatibility (*International Only[1])	**Recommended Min. Console Software**	**Sensor Interface Modules**				
		Module Part #	**Module Description**	**# of Modules per Console**	**# of Sensor Inputs per Module**	**Availability**
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series)[1]	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series)[1]		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module	1	4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			

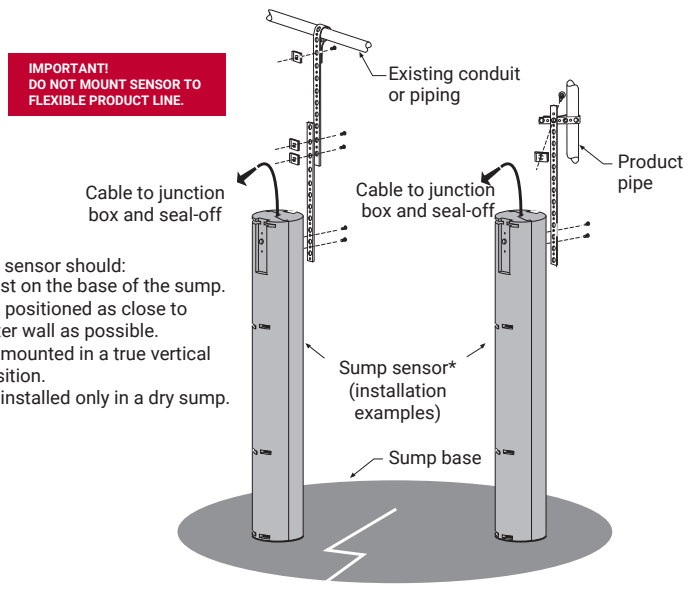
Alarm Notification	Normal	Sensor in Normal State - No liquid detected
	Fuel Alarm	Liquid detected at a minimum of 1.84" (4.67cm)
	Sensor Out	Sensor not communicating to ATG/Console
Installation Kit	330020-076	Piping Sump Sensor Mounting Kit is included (see example installation below).

Specifications	
Operating Principle	Float/magnetic reed switch
Product Activation Height	Liquid 1.84" (4.67cm)
Operating Temp	+32 to +140°F (0 to +60°C)
Dimensions	12" (30.5cm) high, 1.9" (4.8cm) dia.
Miscellaneous/Notes	Standard Cable Length: 12ft (3.66m) Installation kit 330020-076 included (see example installation).
Third Party Evaluation Links	*TLS-3XX/TLS-450 Series Consoles* *TLS4 (8601 Series) Consoles*
Product Link	*Piping Sump Sensor*
Warranty with System	1 Yr Parts & Labor
Warranty (When purchased separately)	1 Yr Parts Only

Where Used (Typical)

- ☑ Dispenser Pan
- ☑ Spill Containment
- ☑ STP Sump
- ☐ Convault Tank
- ☐ Annular Space
- ☐ Monitoring Well
- ☐ Oil/Water Separator Tank

Example Installation



VEEDER-ROOT

Single-Point Mini-Hydrostatic Sensor for Double-Wall Sumps Specifications

Sensor Description	**Single-Point Mini-Hydrostatic Sensor for Double-Wall Sumps**	The Single-Point Mini-Hydrostatic Sensor accurately detects fluid level change in the interstice reservoir of a double-wall sump. If a leak occurs in the sump interstice, the brine seeps out of the reservoir triggering a low level alarm.
Part Number	**794380-304**	

Category

- ☐ Discriminating
- ☐ Non-Discriminating
- ☐ Position Sensitive
- ☐ Level Sensing
- ☐ Static Testing
- ☑ Hydrostatic

Fuel Compatibility

- ☑ Gas
- ☑ Diesel
- ☑ Kerosene
- ☑ Jet Fuel
- ☑ Aviation Gas
- ☑ E-15
- ☑ E-85
- ☑ E-100
- ☑ Bio-Diesel 20
- ☑ Bio-Diesel 100
- ☑ Green Diesel
- ☐ DEF
- ☑ Waste Oil
- ☑ Motor Oil

Console Compatibility (*International Only[1])	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series)[1]	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series)[1]		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329958-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module	1	4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			

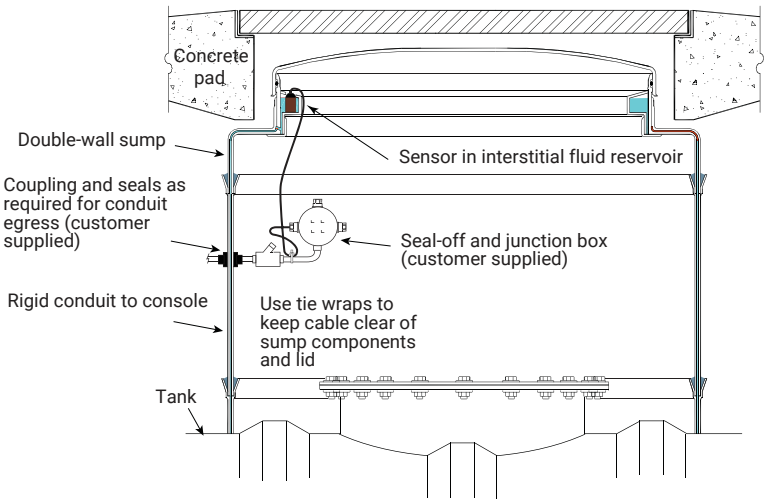
Alarm Notification		
	Normal	Float is in UP position (correct amount of brine in reservoir)
	Fuel Alarm	Float is in DOWN position (low brine level in reservoir)
	Sensor Out	Sensor not communicating to ATG/Console

Specifications	
Operating Principle	Reed Switch/Float
Product Activation Height	0.79" (2cm)
Operating Temperature	-13 to +122°F (-25 to +50°C)
Dimensions	2.5" (6.4cm) high, 1.5" (3.8cm) dia.
Miscellaneous/Notes	Standard Cable Length: 8ft (2.43m); up to 50% ethylene glycol in water; up to 50% propylene glycol in water; salt brine solution of up to 30% CaCl.
Third Party Evaluation Links	*TLS-3XX/TLS-450 Series Consoles* *TLS4 (8601 Series) Consoles*
Product Link	*Single-Point Mini-Hydrostatic Sensor*
Warranty with System	1 Yr Parts & Labor
Warranty (When purchased separately)	1 Yr Parts Only

Where Used (Typical)

- ☐ Dispenser Pan
- ☐ Spill Containment
- ☐ STP Sump
- ☐ Convault Tank
- ☑ Annular Space
- ☐ Monitoring Well
- ☐ Oil/Water Separator Tank

Example Installation



Sensor Description	**Interstitial Sensor for Steel Tanks**	The Interstitial Sensor for Steel Tanks is non-discriminating and detects the presence of liquid between the double walls of the tank.
Part Number	**794390-420 (16'/4.88m cable); 794390-460 (30'/9.14m cable)**	

Category

- ☐ Discriminating
- ☑ Non-Discriminating
- ☐ Position Sensitive
- ☐ Level Sensing
- ☐ Static Testing
- ☐ Hydrostatic

Fuel Compatibility

- ☑ Gas
- ☑ Diesel
- ☑ Kerosene
- ☑ Jet Fuel
- ☑ Aviation Gas
- ☑ E-15
- ☐ E-85
- ☐ E-100
- ☑ Bio-Diesel 20
- ☐ Bio-Diesel 100
- ☑ Green Diesel
- ☐ DEF
- ☑ Waste Oil
- ☑ Motor Oil

Console Compatibility (*International Only[1])	Recommended Min. Console Software	Sensor Interface Modules				
		Module Part #	Module Description	# of Modules per Console	# of Sensor Inputs per Module	Availability
TLS-450PLUS (8600 Series)	6A or Higher	332812-001	Universal Sensor Module (USM)	Up to 4 - TLS-4XX Up to 8 - TLS-4XX w/ opt. TLS-XB	16	Sold Separately
TLS-450	4A or Higher					
TLS4 (8601 Series)[1]	6A or Higher	330020-750	Universal Sensor Input Out-put Module (USIOM-AC)	1	12	Included
TLS4i (8601 Series)						
TLS4B (8601 Series)[1]		330020-751			6	
TLS4c (8601 Series)						
TLS-350/R/PLUS	124/324 or Higher	329358-001	Interstitial Sensor Interface Module	Up to 8	8	Sold Separately
TLS-350J		329356-003	4 Probe / 4 Sensor Interface Module	1	4	Sold Separately
TLS-300i		330230-001	4 Probe / 8 Sensor Interface Module		8	Included
TLS-300C		330513-001	2 Probe / 8 Sensor Options			

Alarm Notification		
	Normal	Sensor in Normal State - No liquid detected
	Fuel Alarm	Liquid detected
	Sensor Out	Sensor not communicating to ATG/Console

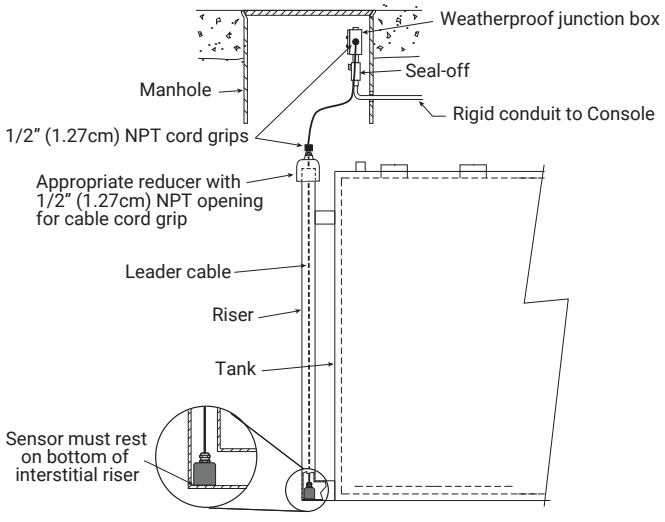
Where Used (Typical)

- ☐ Dispenser Pan
- ☐ Spill Containment
- ☐ STP Sump
- ☑ Convault Tank
- ☑ Annular Space
- ☐ Monitoring Well
- ☐ Oil/Water Separator Tank

Installation Kit	312020-928 — 2" (50mm) Interstitial Sensor Riser Cap and Adaptor kit (sold separately)

Specifications	
Operating Principle	Reed Switch / Float
Product Activation Height	1.4" (3.56cm)
Operating Temperature	-4 to +140°F (-20 to +60°C)
Dimensions	2.5" (6.4cm) high, 1.5" (3.8cm) diameter
Miscellaneous/Notes	794380-420 (cable 16ft (4.9m)); 794380-460 (cable 30ft (9.1m)); 312020-928 (2" (50mm) Riser cap and adapter kit)
Third Party Evaluation Links	*TLS-3XX/TLS-450 Series Consoles* *TLS4 (8601 Series) Consoles*
Product Link	*Interstitial Sensor for Steel Tanks*
Warranty with System	1 Yr Parts & Labor
Warranty (When purchased separately)	1 Yr Parts Only

Example Installation



Interstitial Sensors for Steel Tanks

The Interstitial Sensor for steel tanks detects the presence of liquid between the double walls of the tank. An open sensor triggers a Sensor Out alarm.

Table 11. Interstitial Sensor for Steel Tanks Features and Console Compatibility

Item	Description
Form number	794380-420 (16 foot [4.9m] cable); 794380-460 (30 foot [9.1m] cable)
Operating principle	Float switch
Product activation height[1]	1.59 inches (4.05 cm)
Operating temperature	-4 to +140°F (-20 to +60°C)
Dimensions	2.5" (6.4cm) high, 1.5" (3.8cm) diameter
Compatible consoles	TLS-450/TLS-450PLUS, TLS4/8601 Series, TLS-350 Series, TLS-300 Series
Console Interface Module	TLS-300 Series - No input module required
	TLS-350 Series, Interstitial/Liquid Sensor Interface Module, 8 sensor input, P/N 329358-001
	TLS-450/TLS-450PLUS - Universal Sensor Module (USM), 16 sensor input, P/N 332812-001
	TLS4/8601 Series - Universal Sensor Input Output Module (USIOM) (AC ver.), 12 sensor input, P/N 333238-001; (AC ver.), 6 sensor input, P/N 333238-002; (DC ver.), 12 sensor input, P/N 333238-003; (DC ver.), 6 sensor input, P/N 333238-004
Maximum number of sensors monitored per console	TLS-300 Series (8)
	TLS-350 Series (48)
	TLS-450/TLS-450PLUS (32)
	TLS4/8601 Series (12)
Compatible fuels	100% Gasoline and blends with up to 15% Ethanol; Diesel; Bio-Diesel; Kerosene; Jet fuel; Aviation Gas; Waste Oil; Motor Oil

[1]For additional third party evaluation data see: http://nwglde.org/evals/veeder_root_m.html

Miscellaneous

- Riser cap and adapter kit (2") - P/N 312020-928
- Installation example (see Fig. 7)

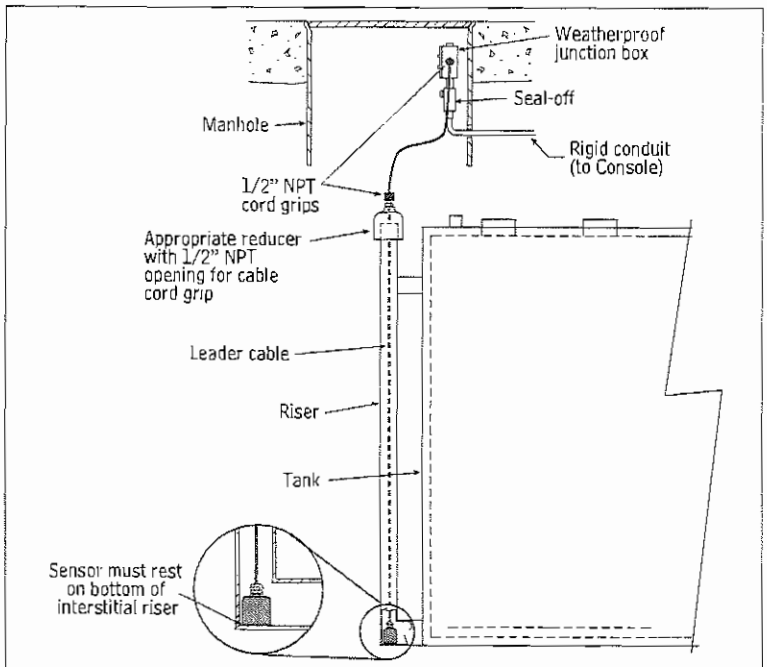
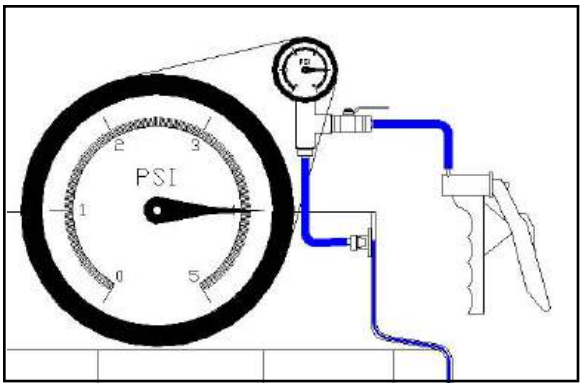


Fig. 7 Example Interstitial Sensor Installation - Steel Tank

I - MANDATORY AIR INTEGRITY TEST



I.1 - Use test assembly and pressure sump to no more than **4 PSI.** Close off with ball valve and resume other work. Allow **1 Hour** before recording pressure.

NOTICE
BRAVO QUALITY STANDARD

FIELD AIR INTEGRITY INSPECTION TEST : Hold pressure for a **minimum of 1 hour for a Field Integrity Inspection Test. The Tank Sump *PASSES* the integrity test if the Sump shows *NO* signs of continuous pressure decay.**

IF TEST PASSES - CONTINUE ON TO THE HYDROSTATIC FILL & INTEGRITY TEST.

I.2 - IF ANY LEAKS ARE FOUND!!

Occasionally... Bravo Fiberglass Series Products may suffer mild damage in transit or field installation. Look at edges and corners for pinhole leaks. **For large leaks, consult factory.**

A: Locate leak point(s) and mark with marker so you can locate it / monitor it.
B: Repair or reinstall doublewall penetration fittings according to your doublewall penetration fitting manufacturers' Installation / Maintenance Instructions.
C: Abrade a 2" diameter area centered on the leak point until natural resin/fiberglass material can be seen. Dust with shop brush or compressed air and do not use shop towels or acetone on the abraded area(s). Then apply a 3-layer strip of 2" x 2" resin-saturated fiberglass mat squarely on the abraded area.
D: Roll out any air bubbles with chamfer roller. Let cure.
E: After cure, knock down fiberglass hairs, and apply another flow coat of resin only **(Step H.15)**. Apply any extra resin to repaired leak point(s) while still wet. Let cure for a minimum of 4 hours @ or above 75° F.

FOR HYDROSTATIC MONITORING - PROCEED TO SECTION J.

FOR CONTINUOUS VACUUM MONITORING - The B400 DoubleWall Split Series Sump cannot exceed 16" of Mercury. (Vacuum) Follow your vacuum system manufacturer's installation instructions to install, seal, and monitor the doublewall system with vacuum.

Connect the SVA-BARB to your factory-installed gauge for vacuum monitoring

Continue to Section M.

WARNING ***Ensure that the fittings that are being used with the Vacuum Monitored System can withstand the amount of Vacuum your Monitoring System will generate.***

J - VACUUM / HYDROSTATIC FILLING

IMPORTANT

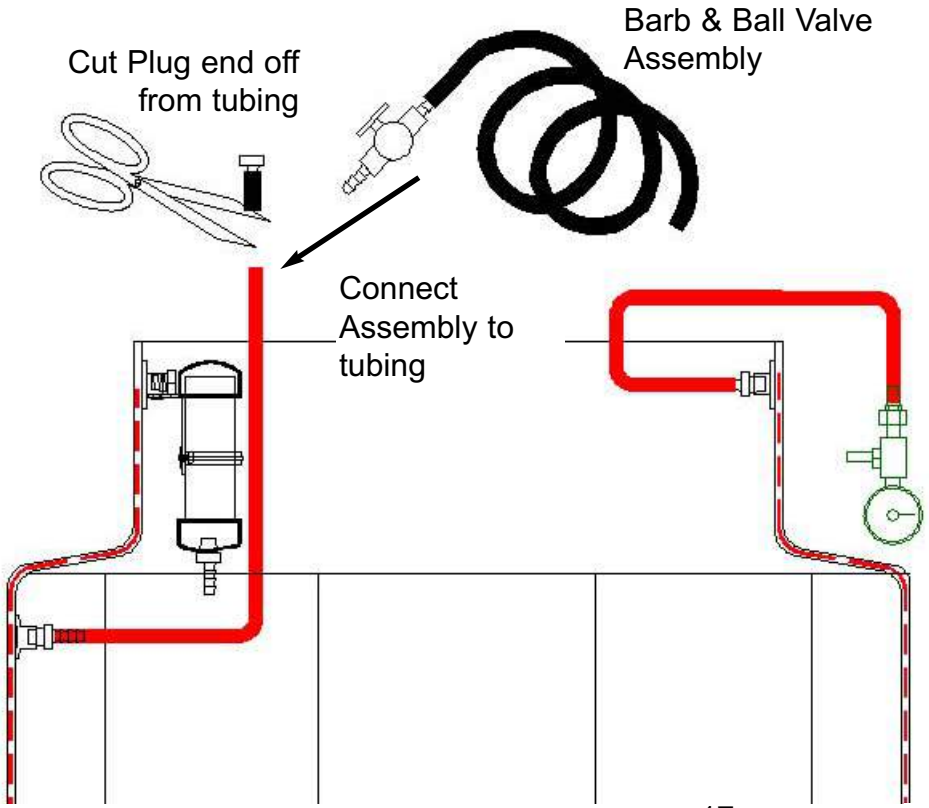
FIELD AIR INTEGRITY INSPECTION TEST :
YOUR PRODUCT WARRANTY WILL BE VOID IF YOU DO NOT Hold pressure for a **minimum of 1 hour for a Field Integrity Inspection Test.** ***After passing the pressure test, it is HIGHLY RECOMMENDED that the 4 PSI is maintained for as long as possible, up until the time of backfill.***

⚠WARNING **YOUR PRODUCT WARRANTY WILL BE REVOKED IF YOU CHOOSE TO SKIP THE AIR INTEGRITY TEST OUTLINED IN YOUR COPY OF YOUR PRODUCT INSTALLATION INSTRUCTIONS. YOU *MUST* COMPLETE THE PRESSURE TEST PRIOR TO HYDROSTATIC FILLING OF THE SUMPS.**

The Bravo Double Wall product's ship from the factory with a combination gauge factory- installed and held under 20" of mercury / vacuum.

J.1 - After passing the Field Air Integrity Test per the Installation Instructions and there are no signs of leaks, you must cut the permanently affixed pipe plug from the tubing connected to the side wall. This is NOT the tubing with the gauge connected to it.

J.2 - Connect (newly cut) open end of tubing to barb-and-ball-valve assembly. (sold seperately)
A 36" length of clear tubing is factory installed to the barb-and-ball-valve assembly.



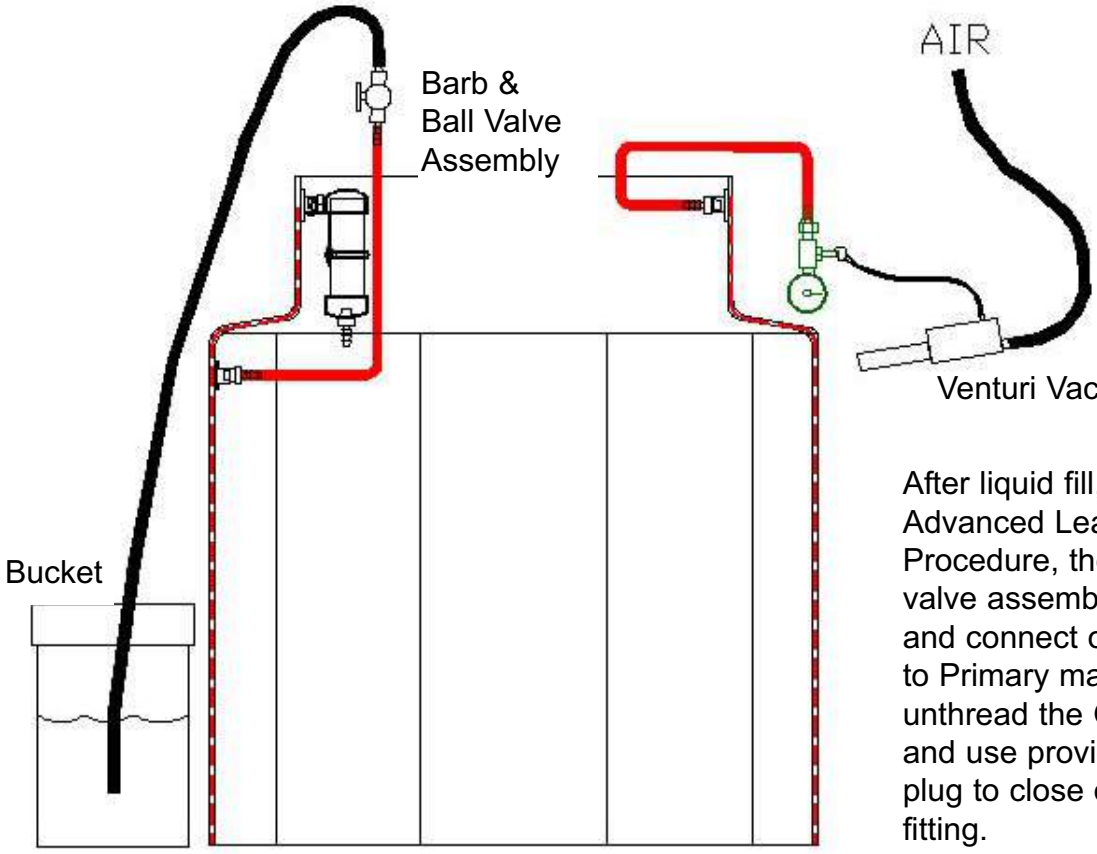
After the penetration fittings have been installed, the vacuum has been lost. Pressure/soap tests should have been conducted prior to filling the sumps with liquid.

You must cut off the barbed plug and connect the provided Barb & Ball Valve Assembly. Close off the ball valve and prepare the Venturi Vacuum Generator and air supply to be used to fill Sump with liquid.

J.3 - Close off ball valve completely and **prime the open ended 36" length of clear tubing** with provided Interstitial Fluid. Use a liquid funnel.

WARNING

Filling Bravo Systems Double Wall Products with Brine (saline) solution will void the product warranty. You must use only Bravo-Supplied Interstitial Fluid, part # IMF-1GAL



After liquid fill, Conduct the Advanced Leak Detection Procedure, then Cut the ball valve assembly from its tubing and connect open end of tubing to Primary manometer. Also unthread the Gauge Assembly and use provided PVC threaded plug to close off open test port fitting.

J.4 - After filling the tubing all the way to the ball valve, **insert open end into your liquid source.** (5 gallon bucket filled with fluid is recommended.)

J.5 - When ready, pull vacuum using the Venturi Vacuum Assembly (sold seperately) to 20 Inches of mercury. Then **SLOWLY** open ball valve and allow Interstitial fluid to flow freely into the system at a rate of about 2 gallons a minute.

CRITICAL **...SLOWLY open ball valve...**

J.6 - STOP PULLING VACUUM WHEN THE LIQUID IS 2-3 INCHES FROM THE VERY TOP OF THE INTERSTITIAL SPACE / TEST PORT. This is easily visible while filling the DoubleWall Product.

K) ADVANCED LEAK DETECTION PROCEDURE

A Bravo Systems Exclusive detection method

K.1 - Clear debris from the top open area of the DoubleWall Product and ensure that the interior walls are clean of debris and visible.

K.2 - Apply Vacuum to the sealed interstitial space with the Venturi Vacuum Assembly, and generate 20”-30” of vacuum for a *MINIMUM* of Five [5] Minutes.

⚠WARNING

CHECK WITH YOUR EQUIPMENT MANUFACTURERS INSTALLATION MANUALS FOR INSTALLATION GUIDELINES AND/OR EQUIPMENT LIMITS REGARDING VACUUM AND PRESSURE LEVELS.

K.3 - As stated in your Instructions, the liquid level is deliberately not filled to the very top of the interstitial space. This pocket of air is necessary to visually check the topmost level of liquid all the way around the Sump for indication of a leak.

K.4 - Visually inspect the interior walls for signs of trailing (very small) bubbles floating to the top of the liquid level within the interstitial space.

NOTICE

These air bubbles are visible within the vertical and horizontal channels of the walls. For Tank Sumps look below the reducer.

NOTICE

On the top hat reducer of a Tank Sump, any bubbles will burp consistently.

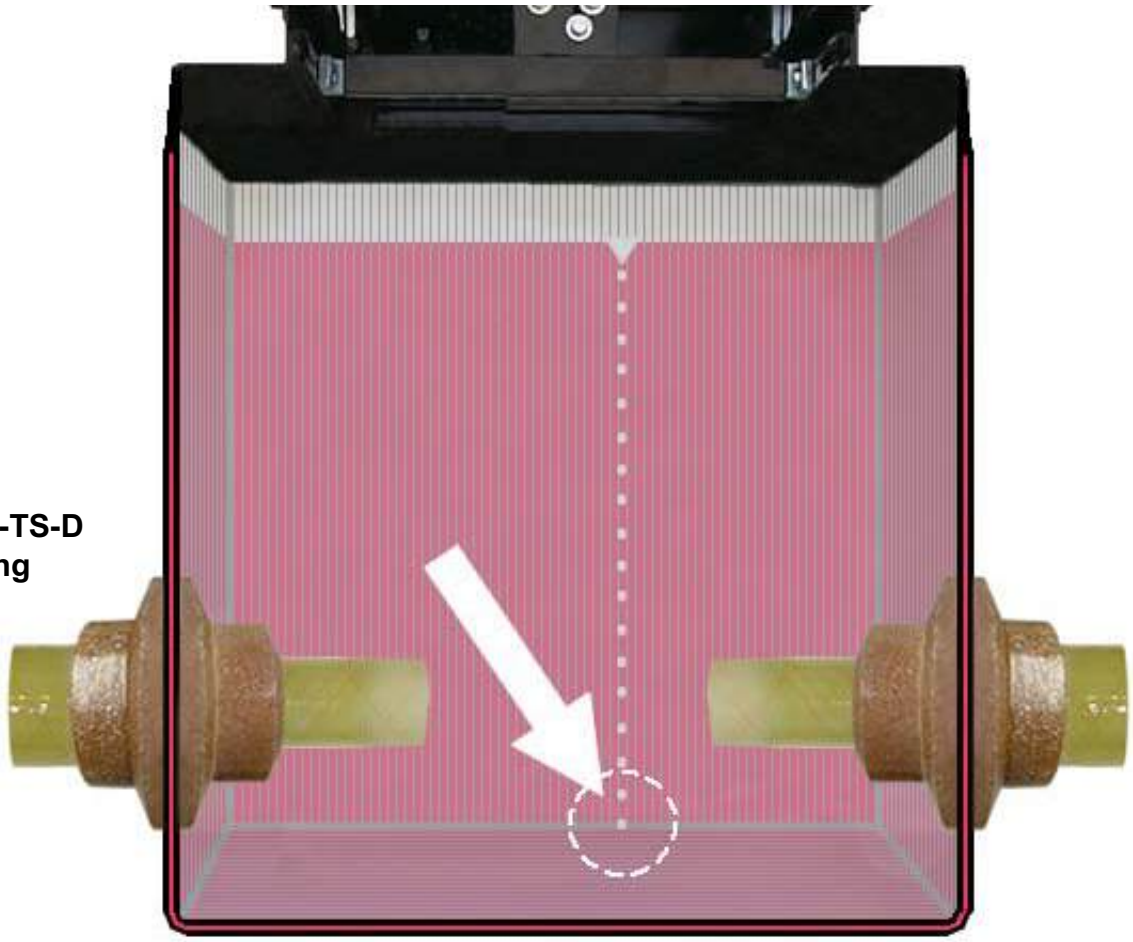
⚠CRITICAL

PAY CLOSE AND SPECIAL ATTENTION TO FIELD-INSTALLED PENETRATION FITTINGS and FRP JOINTS ON TANK SUMPS. THESE ARE COMMON LEAK POINTS.

⚠CAUTION

Even though Bravo DoubleWall product corners and edges are thicker than the rest of the Containment sump, These areas recieve the most supceptable to physical damage by Installing Contractors. You would do well to be extremely careful with these DoubleWall products while storing, moving, transporting and Installing these critical environmental components.

ALDP In Action Diagram



F-32-TS-D
Fitting

Here a leak is visible while a strong vacuum is pulled on the Interstitial space, forcing tiny air bubbles into the interstitial space to travel upwards. These streams of bubbles are easily spotted and can be traced down to its leak point or area.

⚠ CRITICAL

PAY CLOSE AND SPECIAL ATTENTION TO FIELD-INSTALLED PENETRATION FITTINGS and FRP JOINTS ON TANK SUMPS. THESE ARE COMMON LEAK POINTS.

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L - ATTACHING THE MANOMETER

L.1 - At this point, after the ALDP test, the interstice should still be holding vacuum. Maintain 20" of Vacuum and **slowly** open ball valve to let fluid into the interstice until it exits the venturi assembly. Visually check whether the fluid level reaches the top of the interstitial space.

L.2 - Cut the barb & ball valve assembly free by cutting the tubing just below it and **connect** open end of tubing to the bottom of the primary Manometer.

L.3 - Remove the Barb, Tubing & Combination gauge assembly from the test port fitting on the side of the sump. **Install a threaded pipe plug** into the open test port fitting and adjust Primary manometer bracket so the manometer is in a position clear of the sump cover.

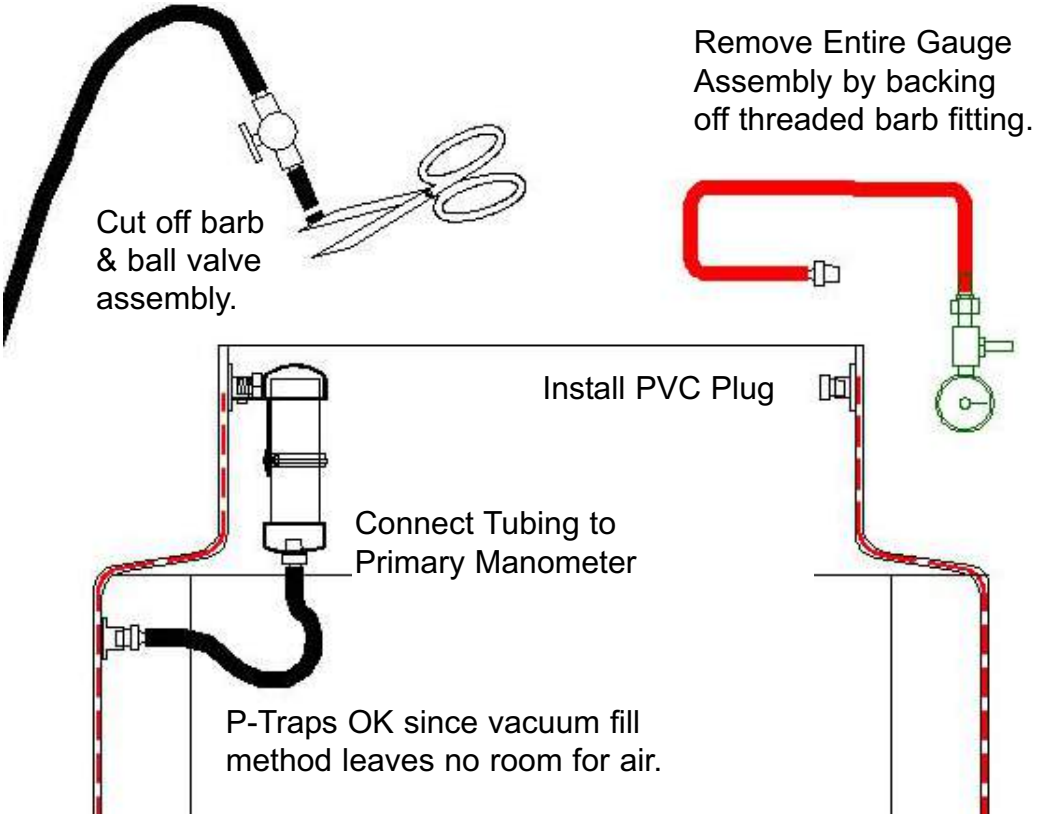


Fig. L.7

Continuous Monitoring Interstitial & Leak Detection of Secondary Containment

L.4 - It is not uncommon for some interstitial fluid to be lost while connecting the tubing to the primary manometer. This is ok. Replace lost fluid by topping off manometer with interstitial fluid until the liquid level reaches just 2 inches below the top of manometer.

L.5 - Hydrostatic Field Integrity Test - Mark the date and time of test and manometer level. **Allow 1 hour to look for a change in level.** No change in level or visible leaking means box passes test.

L.6 - If interstitial test fluid changes its level more than 1/4", visually look for any signs of leaking around fittings both interior and exterior to sump. Pay special attention to field installed fittings.

L.7 - If interstitial monitoring is required, install a California Listed Hydrostatic Sensor (LG-113) using the sensor manufacturer's fitting. Run sensor cable through the cap assembly **(see Fig. L.7)**. Level sensor should be set to bottom of manometer. Follow your leak detector manufacturer's installation instructions. Cover the manometer with cap and fasten with wire and lead crimp seal.

S. Bravo Systems, Inc. RV and Marine Antifreeze - 50 F Burst

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 04/02/2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : S. Bravo Systems, Inc. RV and Marine Antifreeze -50 F Burst

Product code : BRV0A3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Anti-freezing agent

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
3100 Sanders Road
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : 800 424 9300 (United States); 00 1 703 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids, Category 3	H226	Flammable liquid and vapor
Acute toxicity (inhalation:gas) Category 4	H332	Harmful if inhaled.
Serious eye damage/eye irritation, Category 2B	H320	Causes eye irritation
Carcinogenicity, Category 1A	H350	May cause cancer.
Specific target organ toxicity — Repeated exposure, Category 2	H373	May cause damage to organs through prolonged or repeated exposure.

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H226 - Flammable liquid and vapor
H320 - Causes eye irritation
H332 - Harmful if inhaled.
H350 - May cause cancer.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.

P260 - Do not breathe mist, spray, vapors
P264 - Wash affected areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear personal protective equipment as required.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P314 - Get medical advice/attention if you feel unwell.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use carbon dioxide (CO2), Dry powder, Foam, Sand, Water fog, Water spray to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
water	(CAS-No.) 7732-18-5	60 - 80	Not classified
ethanol	(CAS-No.) 64-17-5	10 - 30	Flam. Liq. 2, H225 Carc. 1A, H350
2-propanol	(CAS-No.) 67-63-0	1 - 10	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
methanol	(CAS-No.) 67-56-1	0.1 - 1	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
methyl isobutyl ketone	(CAS-No.) 108-10-1	0.1 - 1	Flam. Liq. 2, H225 Acute Tox. 3 (Inhalation), H331 Acute Tox. 4 (Inhalation:dust,mist), H332 Carc. 2, H351 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse immediately with plenty of water for 30 minutes, lifting lower and upper lids. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. Drink plenty of water. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : May cause cancer by inhalation. Not expected to present a significant inhalation hazard under anticipated conditions of normal use.

Symptoms/effects after skin contact	:	Not expected to present a significant skin hazard under anticipated conditions of normal use. Prolonged or repeated skin contact with the material will remove natural oils which leads to a dermatitis.
Symptoms/effects after eye contact	:	mild eye irritation.
Symptoms/effects after ingestion	:	Effects of ethanol ingestion are dependant on the amount and rate of consumption. . Not expected to present a significant hazard under anticipated conditions of normal use. Short term overexposure may result in drunkenness, depression of the central nervous system, nausea, vomiting, diarrhea, or liver damage.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Sand. Water fog. Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Flammable liquid and vapor.
Reactivity	:	No dangerous reactions known under normal conditions of use. Flammable liquid and vapor.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	:	Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe mist, spray, vapors.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	:	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Notify authorities if product enters sewers or public waters.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist, spray, vapors. Avoid contact with skin and eyes.
Hygiene measures	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol (64-17-5)		
ACGIH	Local name	Ethanol
ACGIH	ACGIH STEL (ppm)	1000 ppm
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (TWA) (mg/m³)	1900 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

water (7732-18-5)
Not applicable

2-propanol (67-63-0)		
ACGIH	Local name	2-Propanol
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	400 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr; CNS impair
OSHA	OSHA PEL (TWA) (mg/m³)	980 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	400 ppm

methanol (67-56-1)		
ACGIH	Local name	Methanol
ACGIH	ACGIH TWA (ppm)	200 ppm (Skin)
ACGIH	ACGIH STEL (ppm)	250 ppm (Skin)
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³ (Skin)
OSHA	OSHA PEL (TWA) (ppm)	200 ppm (Skin)

methyl isobutyl ketone (108-10-1)		
ACGIH	Local name	Methyl isobutyl ketone
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	ACGIH STEL (ppm)	75 ppm
ACGIH	Remark (ACGIH)	URT irr; dizziness; headache
OSHA	OSHA PEL (TWA) (mg/m³)	410 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Protective goggles.

Hand protection:

Wear suitable gloves resistant to chemical penetration

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

If exposed to levels above exposure limits wear appropriate respiratory protection. [In case of inadequate ventilation] wear respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Red
Odor	:	Almost odorless
Odor threshold	:	No data available
Relative evaporation rate (butylacetate=1)	:	Not determined
Melting point	:	Not applicable
Freezing point	:	-15 to -13 ºC (5 to 7 ºF)
Boiling point	:	85 - 93 °C (185 - 200 ºF)
Flash point	:	>= 43 °C (≥ 110 ºF)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	Not determined
Specific Gravity	:	0.975 - 0.99 @ 60 ºF
Solubility	:	Water: Complete
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	3.3 - 21 vol %
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	3.3 - 21 vol %

9.2. Other information

Other properties	:	No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use. Flammable liquid and vapor.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Keep out of reach of children. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Fume. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

S. Bravo Systems, Inc. RV and Marine Antifreeze -50 F Burst	
ATE US (gases)	4500 ppmv/4h

ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male/female, Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit, Literature study)
LC50 inhalation rat (mg/l)	117 - 125 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male/female, Experimental value)
ATE US (oral)	10740 mg/kg bodyweight

2-propanol (67-63-0)	
LD50 oral rat	5840 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Experimental value)
LD50 dermal rabbit	16400 ml/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Experimental value)
LC50 inhalation rat (ppm)	> 10000 ppm (Equivalent or similar to OECD 403, 6 h, Rat, Male/female, Experimental value)
ATE US (oral)	5840 mg/kg bodyweight
ATE US (dermal)	16400000 mg/kg bodyweight

methanol (67-56-1)	
LD50 oral rat	1187 - 2769 mg/kg bodyweight (BASF test, Rat, Male/female, Weight of evidence)
LD50 dermal rabbit	17100 mg/kg (Rabbit, Inconclusive, insufficient data)
LC50 inhalation rat (mg/l)	128.2 mg/l/4h (BASF test, 4 h, Rat, Male/female, Weight of evidence)
ATE US (oral)	100 mg/kg bodyweight
ATE US (dermal)	300 mg/kg bodyweight
ATE US (gases)	700 ppmv/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust,mist)	0.5 mg/l/4h

methyl isobutyl ketone (108-10-1)	
LD50 oral rat	2080 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
LD50 dermal rat	>= 2000 mg/kg bodyweight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	8.2- 16.4,Rat; Experimental value
LC50 inhalation rat (ppm)	2000 - 4000 ppm/4h (Rat; Experimental value)
ATE US (oral)	2080 mg/kg bodyweight
ATE US (gases)	2000 ppmv/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust,mist)	0.5 mg/l/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : May cause cancer.

methyl isobutyl ketone (108-10-1)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects after inhalation : May cause cancer by inhalation. Not expected to present a significant inhalation hazard under anticipated conditions of normal use.

Symptoms/effects after skin contact : Not expected to present a significant skin hazard under anticipated conditions of normal use. Prolonged or repeated skin contact with the material will remove natural oils which leads to a dermatitis.

Symptoms/effects after eye contact : mild eye irritation.

Symptoms/effects after ingestion : Effects of ethanol ingestion are dependant on the amount and rate of consumption. . Not expected to present a significant hazard under anticipated conditions of normal use. Short term overexposure may result in drunkenness, depression of the central nervous system, nausea, vomiting, diarrhea, or liver damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

ethanol (64-17-5)	
LC50 fish 1	14,200.00 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)

2-propanol (67-63-0)	
LC50 fish 1	9640 - 10000 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)

methanol (67-56-1)	
LC50 fish 1	15,400.00 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	18,260.00 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 96 h, Daphnia magna, Semi-static system, Fresh water, Experimental value)
ErC50 (algae)	22,000.00 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

ethanol (64-17-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O_2/g substance
Chemical oxygen demand (COD)	1.70 g O_2/g substance
ThOD	2.10 g O_2/g substance
BOD (% of ThOD)	0.43

2-propanol (67-63-0)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.19 g O_2/g substance
Chemical oxygen demand (COD)	2.23 g O_2/g substance
ThOD	2.40 g O_2/g substance

methanol (67-56-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O_2/g substance
Chemical oxygen demand (COD)	1.42 g O_2/g substance
ThOD	1.50 g O_2/g substance

methyl isobutyl ketone (108-10-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Low potential for adsorption in soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	2.06 g O_2/g substance
Chemical oxygen demand (COD)	2.16 g O_2/g substance
ThOD	2.72 g O_2/g substance
BOD (% of ThOD)	0.76

12.3. Bioaccumulative potential

ethanol (64-17-5)	
BCF fish 1	1.00 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Log Pow	-0.31 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

2-propanol (67-63-0)	
Log Pow	0.05 (Weight of evidence approach, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

methanol (67-56-1)	
BCF fish 1	1 - 4.5 (72 h, Cyprinus carpio, Static system, Fresh water, Experimental value)
Log Pow	-0.77 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

methyl isobutyl ketone (108-10-1)	
BCF fish 1	2 - 5 (BCF)
Log Pow	1.90 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

ethanol (64-17-5)	
Surface tension	0.02 N/m (20 °C)
Ecology - soil	Highly mobile in soil.

2-propanol (67-63-0)	
Surface tension	0.02 N/m (25 °C)
Ecology - soil	No (test)data on mobility of the substance available.

methanol (67-56-1)	
Surface tension	0.02 N/m (20 °C)
Log Koc	-0.89 - -0.21 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

methyl isobutyl ketone (108-10-1)	
Surface tension	0.02 N/m (20 °C)
Log Koc	Koc,101.85; Weight of evidence; Calculated value; log Koc; 2.008; Weight of evidence; Calculated value

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Refer to current TDG Canada for further Canadian regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

S. Bravo Systems, Inc. RV and Marine Antifreeze -50 F Burst	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed

water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

2-propanol (67-63-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313

methanol (67-56-1)	
CERCLA RQ	5000 lb(s) (2270 kg)

methyl isobutyl ketone (108-10-1)	
CERCLA RQ	5000 lb(s) (2270 kg)

15.2. International regulations

CANADA

S. Bravo Systems, Inc. RV and Marine Antifreeze -50 F Burst	
WHMIS Classification	This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

EU-Regulations

No additional information available

National regulations

S. Bravo Systems, Inc. RV and Marine Antifreeze -50 F Burst
DSL (Canada): The intentional ingredients of this product are listed

15.3. US State regulations

⚠ **WARNING:** This product can expose you to ethanol, methanol, and methyl isobutyl ketone which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

ethanol (64-17-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	Yes	No	No	

methanol (67-56-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	Yes	No	No	

methyl isobutyl ketone (108-10-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	Yes	No	No	

ethanol (64-17-5)

U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Massachusetts - Right To Know List

2-propanol (67-63-0)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List

methanol (67-56-1)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

methyl isobutyl ketone (108-10-1)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

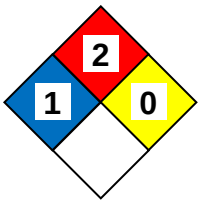
SECTION 16: Other information

Revision date : 04/02/2018

Full text of H-statements:

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H319	Causes serious eye irritation.
H320	Causes eye irritation
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H351	Suspected of causing cancer.
H370	Causes damage to organs
H373	May cause damage to organs through prolonged or repeated exposure.

NFPA health hazard	:	1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	:	2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.
NFPA reactivity	:	0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health	:	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	:	2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 ºF (37 ºC) but below 200 ºF (93 ºC). (Classes II & IIIA)
Physical	:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection		B - Safety glasses, Gloves

SDS GHS US (GHS HazCom 2012) OWI

MAG PLUS Probes

Magnetostrictive probe technology is part of complete solution to provide underground and aboveground storage tank owners visibility to measure and identify multiple liquid layers, density and temperature. In addition, MAG PLUS probes support in-tank leak detection to assist in compliance management.

FEATURES

- Proven track record creating generations of loyal customers.
- Fast, accurate and reliable magnetostrictive measurement technology, digital since inception.
- Robust and rugged screw-in connector allows simplified installation and trouble free inspection.
- Industry leading five-point temperature sensing make it capable of extremely accurate inventory control and in-tank leak detection
- Exceeds U.S. EPA performance standards for 0.1 GPH and 0.2 GPH Tank Tightness Testing.
- Value-added investment provides accurate data for the business, so you can make better operational decisions.
- High-grade polymer housings provide enhanced corrosion resistance and fuel compatibility
- Delivers extended performance in harsh environments

SPECIFICATIONS

Functionality

Compatible with gasoline, diesel and a variety of petrochemicals and industrial fluids
Aboveground and underground storage tank solutions

Probes

Probes available for inventory, leak detection, density measurement and overfill prevention
Available in HGP or aluminum housing
Stainless steel shaft available for corrosive fluids
Available in standard length 4′ to 12′
Custom lengths available

Probe Accessories

Compatible with specific floats for product, water, phase separation, and density
2″, 3″ and 4″ float kits

Operating Temperature

-40° to 122° F (-40° to 50° C)

Storage Temperature

-40° to 165° F (-40° to 74° C)

Compatible Consoles

All TLS consoles

Approvals

UL, cUL, ATEX, IECEx and intrinsically safe

125 Powder Forest Drive • Simsbury, CT 06070

VEEDER-ROOT

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UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT D
MANUFACTURER INFORMATION FOR PIPING

The proposed piping will be Dualoy 3000/LCX fiberglass double-wall piping and Dualoy/L fiberglass single-wall piping. For product lines, the double-wall piping will be placed within the single-wall piping to provide tertiary containment. The product piping system is designed to contain a release from any portion of the primary piping within the secondary and tertiary piping walls and is protected from corrosion.

Dualoy® 3000/L Secondary Containment Pipe and Fittings

Uses and Applications

- Service station product, vent and vapor recovery piping
- Bulk plant terminals and fueling terminals
- Central fuel oil systems
- Marinas and marine terminals (onshore only)
- All piping systems requiring UL or ULC Listing for MV, HB, CT and A&M fuels
- Containment piping for all of the above

Description

Dualoy 3000/L secondary containment systems require pipe one size larger than the primary and specially designed fittings. The system provides complete enclosure of UL- and ULC-Listed Dualoy primary piping used in product lines and vapor recovery lines from the sump at the product storage tank to the shear valve connector at the dispenser, and vent lines from the tank. Dualoy containment systems have been sized for close make-up and ease of installation.

Features of Dualoy 3000/L containment systems include:

- Filament-wound, fiberglass-reinforced pipe with integral liner;
- Compact fittings dimensions to minimize trench excavation;
- Smooth exterior pipe surface that eliminates the need for special end preparation tools;
- Ready accessibility to and complete inspectability of primary fittings prior to closure of the containment;
- Complete testability during installation and at any time thereafter;
- Rapid joint makeup with pre-inserted nuts and ambient cure adhesive.

Listings

Dualoy 3000/L is Listed in the United States with Underwriters Laboratories Standard 971-2004 for nonmetallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels for both primary and contained piping systems (File MH9162). Dualoy 3000/L pipe and fittings are also Listed with Underwriters' Laboratories of Canada (File CMH715). In Great Britain the Dualoy/3000L system has been tested and accepted by the London Fire and Civil Defense Authority. Dualoy 3000/L has been issued a Certificate of Compliance to the Institute of Petroleum (IP) Specification by ERA Technology, Ltd.

Performance

Operating pressures to 100 psig
Continuous operating temperatures to 150°F (66°C)
Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

Secondary employs full-performance pipe — Many contained fuel handling systems employ materials in the secondary that fall far short of the primary piping in regard to chemical resistance and mechanical strength. By contrast, Dualoy 3000/L systems are manufactured with the same high-performance fiberglass-reinforced pipe in the secondary as in the primary. Thus, Dualoy 3000/L containment systems easily withstand both high external loads from backfill and traffic as well as internal pressures as high as 100 psig.

Compact containment fittings — Dualoy 3000/L containment fittings are compact clamshell-type closure pieces. Crossovers can be made with the same centerline-to-centerline dimension as single-wall system.

Piping System Characteristics

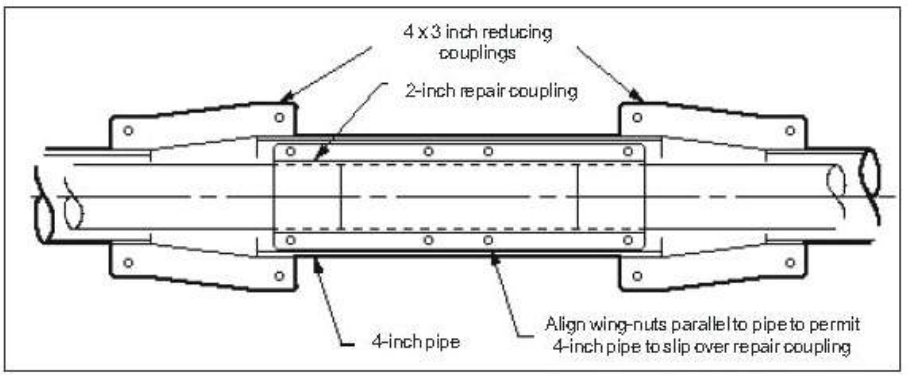
Precision pipe exterior eliminates scarfing — Dualoy pipe is manufactured in a proprietary continuous winding process that provides an extremely precise, consistent outside diameter. Light sanding of the pipe end to remove the surface gloss and obtain a suitable bonding surface is the only end prep required, although the scarfing feature of tapering tools can be used.

Easy containment fitting assembly — Dualoy 3000/L containment fitting clamshells are supplied in matched pairs. One half of each pair is fitted with pre-inserted propeller nuts, allowing the fitting to be assembled from one side, using the bolts provided.

Complete retestability — Dualoy 3000/L containment employs rigid-wall pipe and fittings that maintain their slope during the entire service life of the station. When installed with isolating penetration fittings (see page 3), Dualoy 3000/L containment piping can be repeatedly retested whenever desired.

Convenient repair capability — Contained piping systems are occasionally damaged after installation. Damage is generally caused by paving or excavation operations. Dualoy3000/L contained piping systems are designed so that only the damaged section need be replaced instead of the entire line. The 2-inch Dualoy repair coupling is sized so that it can be contained within 4-inch Dualoy 3000/L containment pipe.

Two-inch primary pipe contained within 3-inch containment pipe can be repaired with a UL-listed 2-inch repair coupling. The containment is restored by replacement of a section of the existing containment pipe with a 4-inch containment nipple. The 4-inch replacement nipple is then joined to the existing containment pipe with Dualoy reducing couplings.

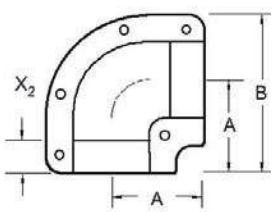


Containment Pipe and Fittings Dimensions

Pipe

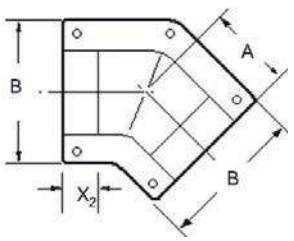
Nominal Pipe Size		A	B	C	X_2	No. of Bolt Holes	Wt.
in	mm	in	in	in	in		lb
3	80	3.50	3.32	—	—	—	0.72
4	100	4.50	4.33	—	—	—	1.00
6	150	6.63	6.39	—	—	—	2.10

90° Elbows



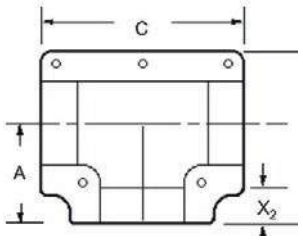
3	80	4.28	7.28	—	1.50	5	1.1
4	100	4.77	8.25	—	1.50	5	1.3
6	150	5.62	10.53	—	2.00	8	1.5

45° Elbows



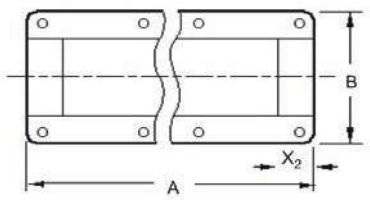
3	80	3.50	6.00	—	1.50	5	0.8
4	100	3.75	7.00	—	1.50	5	1.2
6	150	6.32	9.75	—	2.00	8	1.5

Tees



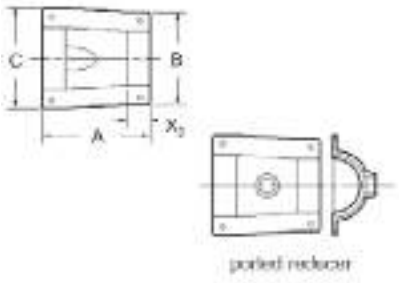
Nominal Pipe Size		A	B	C	X_2	No. of Bolt Holes	Wt.
in	mm	in	in	in	in		lb
3	80	4.28	7.24	8.56	1.50	5	1.2
4	100	4.78	8.25	9.58	1.50	5	1.6
6	150	5.72	10.67	11.65	2.00	6	1.7

Couplings



2	50	14.00	4.00	—	1.50	8	1.3
3	80	14.00	6.00	—	1.50	8	1.7
4	100	14.00	7.00	—	1.50	8	2.0
6	150	5.37	9.75	—	4.00	10	2.0

Reducers, Plain and with ¾ inch NPT Outlet

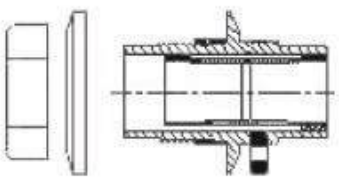


3 x 1½	80 x 40	6.25	4.48	6.10	1.50	4	0.6
3 x 1½	80 x 40	6.25	4.47	6.10	1.50	4	1.1(1)
3 x 2	80 x 50	6.25	4.90	6.10	1.00	4	0.7
3 x 2	80 x 50	6.25	4.90	6.10	1.00	4	1.1(1)
4 x 3	100 x 80	7.00	6.00	7.00	1.50	4	0.9
4 x 3	100 x 80	7.00	6.00	7.00	1.50	4	2.0(1)
6 x 4	150 x 100	7.17	7.62	9.74	2.00	6	1.0

(1) Ported reducer

Sump Penetration Fittings

Sump penetrations are designed for use at turbine sumps and dispenser pans. Plain sump penetration fittings permit the annular space between the primary and secondary lines to communicate with the interior of the sump or pan. Penetration fittings with factory-installed centralizers, sleeve couplings and monitoring ports may be used to isolate the pipe annular space from the sump or pan. When the annular space is so isolated, the secondary containment line can be retested at any time and as often as desired.



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NOV Fiber Glass Systems

FH3510 March 2013

Dualoy® 3000/LCX Secondary Containment Fittings

Uses and Applications

- Service station product, vent and vapor recovery piping
- Bulk plant terminals and fueling terminals
- Central fuel oil systems
- Marinas and marine terminals (onshore only)
- All underground piping systems requiring UL or ULC Listing for MV, HB, CT and A&M fuels
- Containment piping for all of the above
- Designed for use with pressure, vacuum or hydrostatic monitoring systems

Description

Dualoy 3000/LCX systems employ a coaxial construction for the pipe wall and specially designed primary and containment fittings. The system provides a complete double-wall enclosure for all product, vent and vapor recovery lines. The "LCX" contained system has been designed for providing a compact profile and easy, fast and reliable installation. "LCX" can be installed in either parallel or series patterns, taking advantage, where possible, of the reduced cost and number of buried fittings afforded by the series pattern. See details below.

Features of Dualoy 3000/LCX containment systems include:

- Filament-wound, fiberglass-reinforced pipe with integral liner;
- Compact fittings dimensions to minimize trench excavation;
- Smooth exterior pipe surface that eliminates the need for special end preparation tools;
- Ready accessibility to and complete inspectability of primary fittings prior to closure of the containment;
- Complete testability during installation and at any time thereafter;
- Rapid joint makeup with pre-inserted nuts and ambient cure adhesive.

Listings

Dualoy 3000/LCX is Listed in the United States with Underwriters Laboratories for nonmetallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) under File MH9162. Dualoy 3000/LCX pipe and fittings are also Listed with Underwriters' Laboratories of Canada (File CMH715)

Performance

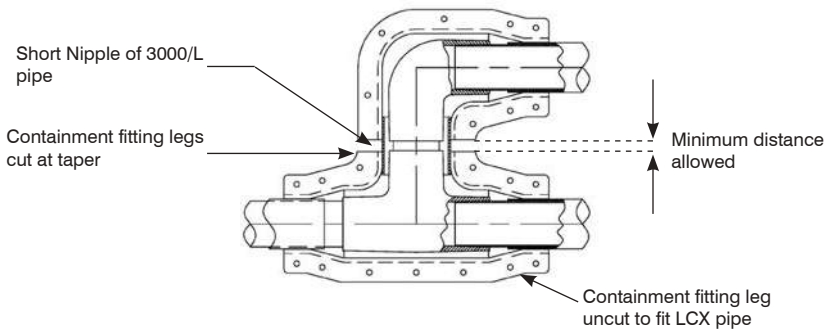
Containment pressure rated to 50 psig

Continuous operating temperatures to 150°F (66°C)

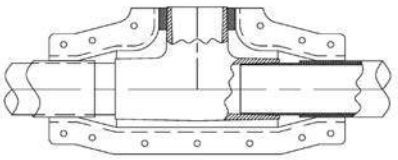
Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

Piping System Features

Low Profile Crossovers - Dualoy 3000/LCX clamshell fittings are specifically designed to allow the minimum distance between primary fittings to be maintained when crossovers or offsets are needed. The center portion of the fitting is designed to fit the next-size-larger single wall pipe size. When distance between primary fittings is critical, simply cut off the corresponding tapered legs of the clamshell fittings and connect them with single wall pipe. (Reference dimension E on part drawings.) The distance between center lines shown in the drawing below is exactly the same as it would be for a single-wall system.

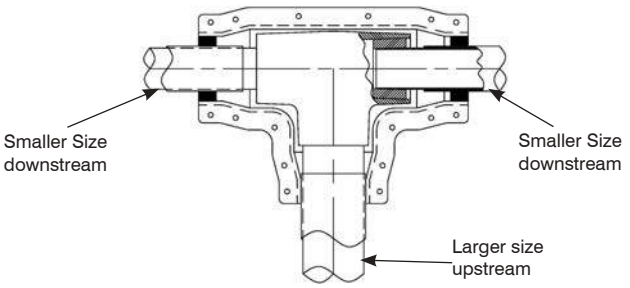


Branch Termination for Series Installation - Dualoy 3000/LCX piping can be installed in series with the pipe coming in on one side of the sump and exiting the other side. To maintain the containment continuity through the sump, the system can be configured with a termination ring on the branch of the tee or leg of an elbow. To do this, the tapered portion of the clamshell fitting leg is cut off and a termination ring is bonded between the primary fitting and the clamshell. A bushing or pipe nipple can be bonded into the primary bell as needed.



Size Reductions - For large systems where larger diameter trunk lines are used, pipe diameter reductions are easily made with the Dualoy 3000/LCX system at fittings. Single piece bushings are used in the primary fitting to reduce the primary pipe size. The containment pipe size is reduced by bonding a 2-piece reducer ring between the clamshell and the smaller pipe jacket. No cutting of clamshell fitting tapers is involved.

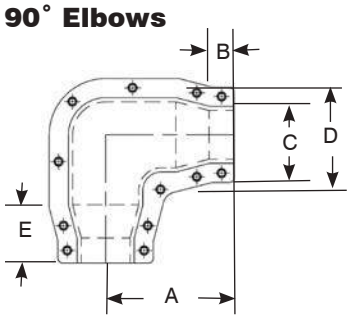
Size reduction can be done on any fitting leg or legs (as on a tee).



Continuous Monitoring - The Dualoy 3000/LCX system has exceptional performance in continuously monitored systems. Due to its small interstitial space, it is very reliable in detecting leaks in systems monitored by pressure, vacuum or hydrostatic methods. False alarms are eliminated by the lesser sensitivity to external conditions while detection capability of actual leaks is increased. Consult NOV Fiber Glass Systems Engineering for details and design of monitoring methods.

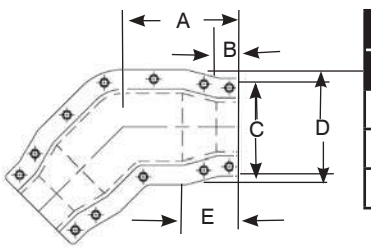
LCX Fittings Dimensions

90˚ Elbows



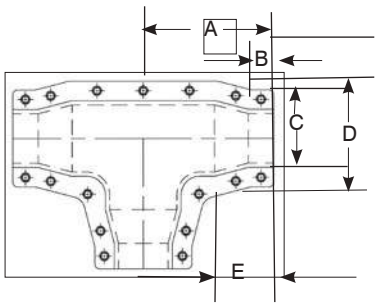
Size		A	B	C	D	E	Weight
(in)	(mm)						lbs
2	50	6.88	1.34	5.12	6.04	3.00	3.55
3	80	7.75	1.38	6.32	7.13	3.00	4.70
4	100	8.75	1.35	7.23	9.19	3.50	7.50

45˚ Elbows



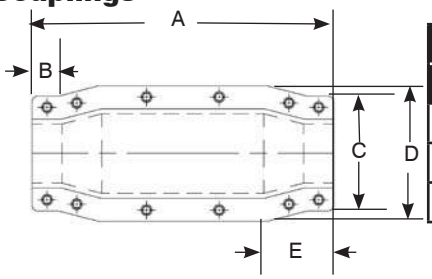
Size		A	B	C	D	E	Weight
(in)	(mm)						lbs.
2	50	6.25	1.34	5.12	6.04	3.00	3.30
3	80	6.75	1.38	6.32	7.13	3.00	4.15
4	100	7.50	1.35	7.23	9.19	3.50	6.50

Tees



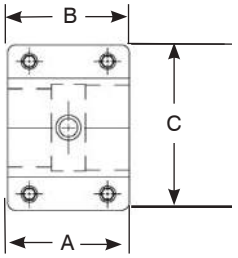
Size		A	B	C	D	E	Weight
(in)	(mm)						lbs.
2	50	6.88	1.34	5.12	6.04	3.00	4.30
3	80	7.75	1.38	6.32	7.13	3.00	6.00
4	100	8.75	1.35	7.23	9.19	3.50	9.95

Containment-Couplings



Size		A	B	C	D	E	Weight
(in)	(mm)						lbs.
2	50	13.50	1.34	5.12	6.04	3.00	3.12
3	80	12.81	1.38	6.32	7.13	3.00	2.95
4	100	12.25	1.38	7.23	9.19	3.50	3.44

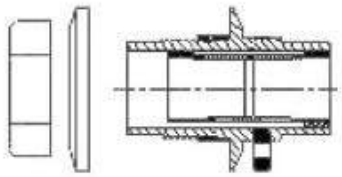
Termination



Size		A	B	C	Weight
(in)	(mm)				lbs.
2	50	3.75	1.34	5.12	1.00
3	80	3.75	1.38	6.32	1.35
4	100	3.75	1.35	7.23	1.45

Sump Penetration Fittings

Sump penetration fittings (SPF) can be used on straight sumps. Dualoy 3000/LCX pipe can pass through or be terminated at the SPF. Ends are closed by bonding half-sections of 2-inch coupling clamshells between the SPF and the pipe jacket. Shrader valves can be supplied for testing or monitoring. SPF is not open to mid-wall of double wall sump, as provided. Field drilling of SPF body near flange can be done to open interstice between SPF and pipe to sump interstice.



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NOV Fiber Glass Systems

FH3610 - September 2012

Dualoy® 3000/LCX Product Data

Applications

Rigid fiberglass coaxial fuel handling systems requiring Underwriters Laboratories Listing for integral primary and containment piping conveying the following fuels:

- Motor Vehicle (MV)
- Aviation and Marine A&M)
- High Blend (HB)
- Bio-Diesel
- Concentrated (CT)
- Diesel Exhaust Fluid

Description

Dualoy 3000/LCX rigid fiberglass coaxial piping is a cost-effective solution for contained piping systems. LCX is used for product delivery lines in underground fuel handling systems to convey fuel from the tank to the dispensers. Dualoy 3000/LCX pipe is UL Listed for use with motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels. Based on currently known tests, NOV Fiber Glass Systems found this product to be suitable for conveying all blends of biodiesel and ethanol type fuels and the conveyance of DEF.

The LCX pipe is manufactured as an integral unit. The primary is made of chemically inert, non-permeable, fiberglass reinforced epoxy resin which is inherently resistant to deterioration due to water and microbial attack. This layer is covered with a porous layer to provide the small volume interstitial space, which facilitates rapid leak detection. Then, the containment layer, comprised of the same material as the primary, is wound over the primary and porous layers.

The containment system is installed with custom designed clamshell containment fittings. Both the primary and containment systems are bonded for long-term, reliable performance.

- Dualoy 3000/LCX containment fittings are typically bolted in place while the adhesive cures.
- Dualoy 3000/LCX reduces installation and inspection time dramatically, retaining system integrity.
- Dualoy 3000/LCX double wall design significantly improves impact resistance over single wall pipe.
- Dualoy 3000/LCX systems provide true double wall design which permits rapid communication through the interstice.

Listings and Approvals

The rigid fiberglass piping used in Dualoy 3000/LCX is Listed in the United States with Underwriters Laboratories for nonmetallic underground piping for MV, HB, CT and A&M fuels under File No. MH9162. Dualoy 3000/LCX pipe and fittings are also Listed with Underwriters Laboratories of Canada for Petroleum Products and Oxygenated Fuels (File CMH715). Underwriters Laboratories has also approved Dualoy 3000/L and Dualoy 3000/LCX for use with MTBE fluids.

Performance

Primary operating pressures to 200 psig (13.8 bar)

Continuous operating temperature to 150°F (66°C)

Containment system pressures to 50 psig (3.45 bar)

Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

Composition

Primary pipe: Filament-wound fiberglass reinforced epoxy pipe with integral epoxy liner. When classified in accordance with ASTM D2310 and ASTM D2996, the pipe meets the following cell limits: RTRP 11CF1-5420.

Pipe containment: Filament-wound fiberglass reinforced epoxy pipe.

Interstitial space: Dry, graded glass beads secured in place with adhesive backed tape.

Fittings: Compression molded or filament-wound fiberglass reinforced epoxy primary fittings. Containment fittings are molded.

Adhesive: PSX™ •20 or PSX™ •34 ambient-cure, two-part epoxy for all services (including alcohols and MTBE).

Joining System

Primary:

Bell and spigot taper/taper adhesive-bonded joint

Containment:

Adhesive-bonded clamshell fittings. Parts are compression molded for exact fit and match. Material is identical to primary fittings and is UL Listed for all services, including use in MTBE fluids.

Pipe Lengths

Standard 20 ft. (6.1 m) random lengths 17 to 21 ft. (5.2 to 6.4 m)
and 30 ft. (9.1 m) random lengths 27 to 32 ft. (8.2 to 9.7 m)

Other lengths up to 42 ft. (12.8 m) available upon request.

Fittings

Primary	Adapters: bell x NPT male[1]	Flange stub ends[1]
	Adapters: bell x NPT female[2]	Isolation bushings[1]
	Adapters: spigot x NPT female[2]	Nipples[2]
	Adapters: spigot x NPT male[2]	Reducer bushings[1]
	45° elbows[1]	Repair couplings[1]
	90° elbows[1]	Sleeve couplings[2]
	End caps[1]	Tees[1]
	Flange rings[1]	Dispenser pan penetration fittings[1]
Containment	45° elbows[1]	Couplings[1]
	90° elbows[1]	Tees[1]
	Termination sleeves[1], [3]	

[1] Molded fitting
[2] Filament-wound fitting
[3] 2" (50 mm) available with or without test valve. 3" and 4" (80 and 100 mm) available only with test valve

Typical Pipe Dimensions and Weights

Pipe Size		Primary Pipe ID		Primary Pipe OD[1]		Primary Wall Thickness		Containment OD		Capacity		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	gal/ft	l/m	lb/ft	kg/m
2	50	2.21	56	2.37	60	0.080	2.03	2.59	66	0.20	0.76	0.90	1.34
3	80	3.32	84	3.50	89	0.085	2.16	3.70	94	0.45	1.70	1.30	1.93
4	100	4.33	110	4.50	114	0.087	2.21	4.70	119	0.77	2.92	1.74	2.59

[1] Typical outside diameters of 2"-4" (50 -100 mm) pipe are within API, ASTM and ANSI fiberglass and steel pipe dimensions.

Typical Primary Pipe Performance

Pipe Size		Pressure Rating[1]		Ultimate Internal Pressure[1]		Ultimate Collapse Pressure[2]	
in	mm	psig	MPa	psig	MPa	psig	MPa
2	50	200	2.07	1500	10.3	153	1.05
3	80	200	1.38	1000	6.9	90	0.62
4	100	175	1.21	750	5.2	39	0.27

[1] At 80°F (27°C)
[2] At 80°F (27°C) For continuous service do not exceed 75% of these values.

Fittings Pressure Performance

Pipe Size		Primary All Fittings		Containment Clamshell Fittings	
in	mm	psig	MPa	psig	kPa
2	50	200	1.38	50[1]	345
3	80	125	0.86	50[1]	345
4	100	100	0.69	20	138

[1] With reinforcing rings

For dimensions of primary fittings, consult Dualoy 3000/L Fittings Dimensions document. Pressure ratings of fittings without UL Listing are available on request.

Dualoy 3000/LCX piping systems are designed to function at temperatures ranging from -40 to 150°F (-40 to 66°C) at service pressures between -1 and 13.8 bar. Dualoy 3000/LCX pipe conforms to ASTM D2310, D2517 and D2996.

Typical Physical Properties of Primary Pipe

Pipe Property	Units	Value	ASTM
Thermal conductivity	Btu-in/(h•ft²•°F) W/m•°C	1.7 7.6	C177
Linear thermal expansion	10^{-6} in/in/°F 10^{-6} cm/cm/°C	8.5 15.3	D696
Friction factor	Hazen-Williams	150.0	—
Absolute roughness	10^{-6} ft 10^{-6}m	15.0 4.6	—
Specific gravity	—	1.81	D792
Barcol Hardness	Impressor 934-1	65.0	D2583

Typical Mechanical Properties of Primary Pipe

Pipe Property[1]	Units	Value[1]	ASTM
Tensile strength			
Longitudinal	10^3 psi MPA	35.0 241.0	D2105
Circumferential	10^3 psi MPA	70.0 483.0	D1599
Tensile modulus			
Longitudinal	10^6 psi GPa	2.5 17.2	D2105
Circumferential	10^6 psi GPa	3.8 26.2	FGSTM
Compressive strength			
Longitudinal	10^3 psi MPa	24.5 168.9	FGSTM
Compressive modulus			
Longitudinal	10^6 psi GPa	2.6 17.8	FGSTM
Cyclic	10^3 psi MPa	8.0 55.0	D2992(A)
Poisson's Ratio[2]			
ν_{xy}	—	0.16	FGSTM
ν_{yx}	—	0.17	FGSTM

(1) Based on structural wall thickness.

(2) The first subscript denotes the direction of applied stress and the second that of measured contraction
x denotes longitudinal direction.
y denotes circumferential direction.

Bending Radius

Pipe Size		Minimum Bending Radius[1]		Maximum Deflection per 20 ft Joint	Minimum Length Required for 10° Change	
in	mm	ft	m	deg	ft	m
2	50	75	23	15	13	4
3	80	100	38	9	22	7
4	100	150	46	7.5	27	8

[1] At rated pressure. Sharper bends may create excessive stress concentrations. Do not bend pipe until adhesive has cured.

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NOV Fiber Glass Systems

FH3600 September 2012

Dualoy® 3000/L Fittings Dimensions Product Data

Units

All dimensions are in U.S. Customary units (inches).
Diametric dimensions are maximums.
Insertion depths (X1, X2) are typical.
All weights (lb) are approximate.

Tolerances

Tolerance for centerline-to-face dimensions on fittings with bell-end configuration is ±1/16 inch.

Listings

Dualoy 3000/L is Listed in the U.S. with Underwriters Laboratories for nonmetallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels (File MH9162). Dualoy 3000/L pipe and fittings are also listed with Underwriters Laboratories of Canada (File CMH 715). In Great Britain the Dualoy 3000/L system has been tested and accepted by the London Fire and Civil Defence Authority. Dualoy 3000/L has been issued a Certificate of Compliance to the Institute of Petroleum (IP) Specification by ERA Technology, Ltd.

End Configurations

Bell end is standard.

Taper Angle

The taper angle on all bell and spigot end configurations is 1¾°.

Pressure Ratings

See publication Dualoy 3000/L Fiberglass Pipe and Fittings, FP265, for pressure ratings.

Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

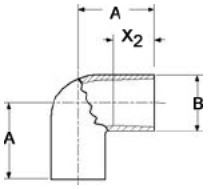
Manufacturing Methods

The fiberglass-reinforced epoxy resin fittings shown in this document are manufactured by filament winding or compression molding.

Adapters: bell x NPT female
Adapters: bell x NPT male
Adapters: isolation
Adapters: spigot x NPT female
Adapters: spigot x NPT male
45° Elbows
90° Elbows
End caps
Flange rings
Flange stub ends
Nipples
Reducer bushings
Repair couplings
Sleeve couplings
Sump penetration pieces
Tees

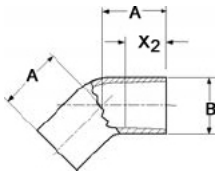
Fittings Dimensions

90° Elbows (Molded)



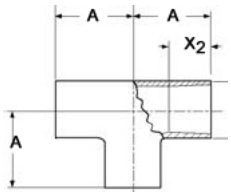
Nominal Pipe Size (in)	Nominal Pipe Size (mm)	Bell A (in)	Bell B (in)	Bell X_2 (in)	Weight (lb)
2	50	3.82	2.78	2.05	1.0
3	80	4.42	3.99	3.32	1.5
4	100	5.50	5.00	3.15	3.0
6	150	7.50	7.34	4.00	8.5

45° Elbows (Molded)



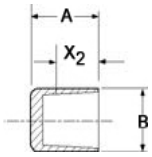
2	50	3.18	2.78	2.05	0.9
3	80	3.43	3.99	2.32	1.5
4	100	4.23	5.00	3.15	2.5
6	150	5.56	7.34	4.00	7.0

Tees (Molded)



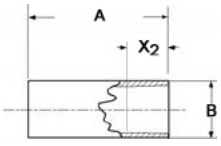
2	50	3.82	2.78	2.05	1.3
3	80	4.50	3.99	2.40	2.5
4	100	5.50	5.00	3.15	4.0
6	150	7.50	7.34	4.00	12.0

End Caps (Molded)



2	50	3.25	2.93	2.00	0.6
3	80	3.38	4.05	2.25	1.0
4	100	3.38	5.05	2.25	1.4
6	150	4.63	7.44	3.30	4.5

Sleeve Couplings (Filament Wound)

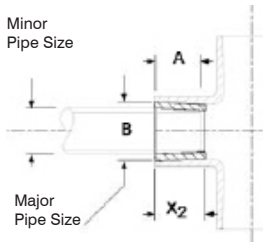


2	50	6.25	2.80	2.13	0.5
3	80	6.50	4.05	2.19	1.1
4*	100	5.45	5.10	2.38	2.1
6*	150	7.00	7.30	3.13	4.6

* 4" & 6" are wound-on tooling couplings.

Reducer Bushings (Molded)

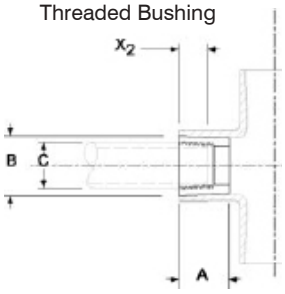
Bonded Bushing



Nominal Pipe Size (in)	Nominal Pipe Size (mm)	Length A (in)	OD B (in)	Thread Size C (in)	D (in)	E (in)	X_1 (in)	Insertion X_2 (in)	Wt (lb)
3 x 2	80 x 50	1.88	3.51	—	—	—	—	1.75	0.7
4 x 3	100 x 80	1.96	4.51	—	—	—	—	2.00	0.9
6 x 4	150 x 100	2.86	6.65	—	—	—	—	2.20	4.1

1) Reducer bushings with tapered minor NPS are generally used in the bell ends of elbows and tees.

Threaded Bushing

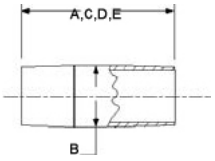


Nominal Pipe Size (in)	Nominal Pipe Size (mm)	Length A (in)	OD B (in)	Thread Size C (in)	D (in)	E (in)	X_1 (in)	Insertion X_2 (in)	Wt (lb)
2 x 1½	50 x 40	1.80	2.40	1½ x 11½	—	—	—	0.7	0.3

1) Outlet NPS x outlet NPT threads per inch. Reducer bushing with BSP threads available. Outlet sizes smaller than 1½ inch are obtained by using galvanized steel bushings in the fiberglass bushing.

Fittings Dimensions

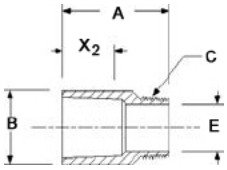
Nipples (filament wound)



Nominal Pipe Size (in)	Nominal Pipe Size (mm)	Length A (in)	OD B (in)	C (in)	D (in)	E (in)	X_1 (in)	Insertion X_2 (in)	Wt (lb)
2	50	6.00	2.38	8.00	10.00	12.00	—	—	0.5(1)
3	80	—	3.50	8.00	10.00	12.00	—	—	0.7
4	100	—	4.50	—	10.00	12.00	—	—	1.0
6	150	—	6.63	—	—	12.00	—	—	1.7

(1) Lb/ft.

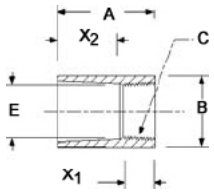
Adaptors: Bell x NPT male (molded)



2	50	4.16	2.92	2 x 11½(1)	—	1.90	—	2.00	0.4
3	80	5.00	3.92	3 x 8	—	2.80	—	2.05	0.7
4	100	5.19	4.88	4 x 8	—	3.90	—	2.05	0.9
6	150	6.00	7.40	6 x 8	—	5.90	—	3.20	2.1

(1) Nominal pipe size x NPT threads per inch. BSP threads available.

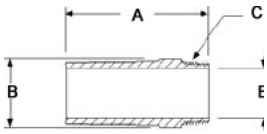
Adapters: Bell x NPT female (filament wound)



2 x 1½(1)	50 x 40	6.00	2.80	1½ x 11½(2)	—	2.29	0.70	2.31	0.8
2 x 2	50 x 50	4.75	2.50	2 x 11½(2)	—	2.29	1.13	2.31	0.4
3 x 3	80 x 80	5.38	3.65	3 x 8	—	3.00	1.00	2.00	0.7
4 x 4	100 x 100	5.38	4.65	4 x 8	—	4.00	1.10	2.25	0.9
6 x 6	150 x 150	6.75	6.90	6 x 8	—	6.00	1.20	3.48	2.1

(1) Consists of a 2-inch filament-wound sleeve coupling with a factory-bonded 2 x 1½ NPT molded bushing. The end of the sleeve coupling containing the bushing has been reduced in length to facilitate thread make-up in the field.
(2) Nominal pipe size x NPT threads per inch. BSP threads available.

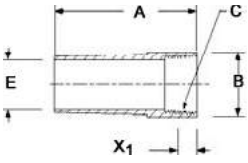
Adaptors: Spigot x NPT male (filament wound)



2	50	4.38	2.55	2 x 11½(1)	—	2.00	—	—	0.5
3	80	5.50	3.65	3 x 8	—	3.00	—	—	1.3
4	100	6.00	4.65	4 x 8	—	4.00	—	—	1.7
6	150	6.00	6.90	6 x 8	—	6.00	—	—	4.2

(1) Nominal pipe size x NPT threads per inch. BSP threads available

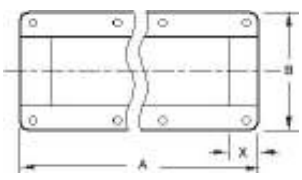
Adaptors: Spigot x NPT female(filament wound)



2	50	4.38	2.55	2 x 11½(1)	—	2.00	0.70	—	0.5
3	80	5.50	3.65	3 x 8	—	3.00	1.00	—	1.3
4	100	6.00	4.65	4 x 8	—	4.00	1.20	—	1.7
6	150	6.00	6.90	6 x 8	—	6.00	1.00	—	4.2

(1) Nominal pipe size x NPT threads per inch. BSP threads available

Repair Couplings (molded)

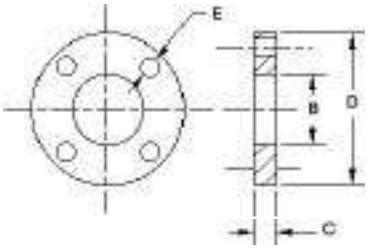


2(1)	50	14.00	4.00	—	—	—	8(2)	1.50	1.3
3	80	14.00	6.00	—	—	—	8	1.50	1.7
4	100	14.00	7.00	—	—	—	8	1.50	2.0

(1) Repair coupling inside diameters match pipe inside diameters of the same nominal pipe size.
(2) Number of bolt holes.

Fittings Dimensions

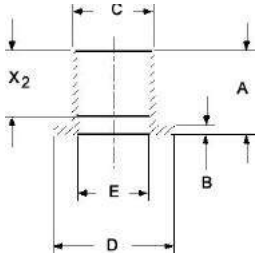
Flange Rings (molded)



Nominal Pipe Size		A	B	C	D	E	Number of Bolt Holes$_2$	X_2	Wt
(in)	(mm)	(in)	(in)	(in)	(in)	(in)		(in)	(lb)
2	50	—	2.78	0.82	6.00	0.75	4	—	1.0
3	80	—	3.90	1.10	7.50	0.75	4	—	1.6
4	100	—	4.90	1.10	9.00	0.75	8	—	2.5
6	150	—	7.26	1.25	11.00	0.88	8	—	4.9

Flange Stub Ends[1] (molded)

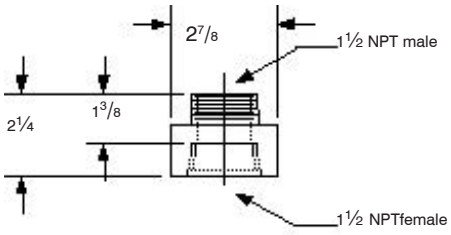
Flanged connections in Dualoy 3000/L piping systems are made using one-piece flange rings and stub ends that are bonded onto the pipe ends. Both flange rings and stub ends are fabricated by compression molding epoxy resins and discontinuous glass fibers. Bolt holes are drilled in accordance with ANSI B16.5, Cl150. Dualoy 3000/L flanged connections are rated to the same pressures as pipe and fittings of the same nominal pipe size.



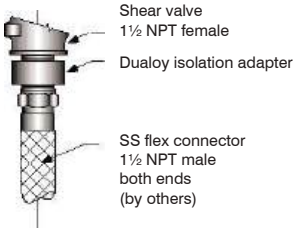
Nominal Pipe Size		A	B	C	D	E	Number of Bolt Holes$_2$	X_2	Wt
(in)	(mm)	(in)	(in)	(in)	(in)	(in)		(in)	(lb)
2	50	275	0.27	2.65	3.91	2.26	—	2.15	0.5
3	80	2.88	0.28	3.75	5.16	3.38	—	2.40	0.7
4	100	2.88	0.28	4.75	6.66	4.38	—	3.25	1.0
6	150	3.88	0.39	7.10	8.53	6.46	—	3.25	2.4

(1) For use with flange rings shown in previous table.

Isolation Adapter (molded)



The Dualoy isolation adapter provides electrical isolation from the dispenser for flex connectors that are directly buried and which must be cathodically protected. The adapter is fabricated of compression-molded fiberglass reinforced epoxy resins.



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NOV Fiber Glass Systems

FH3501 - June 2012

FILL SWIVEL ADAPTERS

The fill swivel adapter helps prevent leaks caused by constant fill delivery elbow movement on the riser adapter. The top section rotates during normal deliveries, preventing the bottom section from loosening on the riser pipe which could cause a vapor or product leak around the adapter.

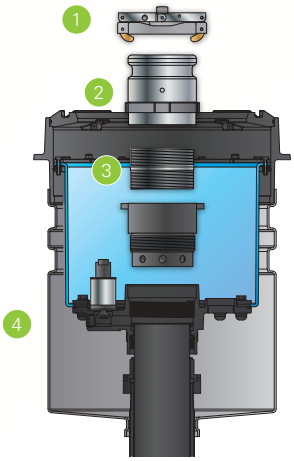
HIGHLIGHTS

- Adds approximately 4" to riser height to fit under most existing fill and vapor manway covers.
- Swivels on two rows of corrosion-resistant chromium steel ball bearings for long life in high volume stations.
- All vapor seals are fluorocarbon and inert in motor fuels.
- Stainless steel models provide additional fuel compatibility and are CARB Phase I EVR approved under executive order VR-101.
- Available in packages including fill and vapor adapter.
- Available in kits including riser, cap, and swivel adapter.

SPECIFICATIONS

Components

1. Cap
2. Swivel adapter
3. Riser nipple
4. Spill container



ORDERING INFORMATION

Fill Swivel Adapters

Model	Description
SWF-100-SS**	Fill swivel adapter, 4" NPT, stainless steel
SWF-100-B*	Fill swivel adapter, 4" NPT, brass
SWFV-PKGSS**	Vapor and fill swivel adapter kit, 4" NPT, stainless steel
SWFV-PKG*	Vapor and fill swivel adapter kit, 4" NPT, brass
85039	Replacement gasket for all swivel adapters

*EVR Phase 1 Certification VR-101.
**EVR Phase 1 Certification VR-101 for gas and E85.

Fill Swivel Adapter Kits

Be sure to select the appropriate kit for your specific spill container type.

Model	Description
70541202	Fill swivel adapter kit for 5 gallon Defender Series® (grade level and below grade level) and EBW® Series (grade level) spill containers, includes stainless steel fill swivel adapter, 3" riser nipple, fill top cap.
70541201	Fill swivel adapter kit for 5 gallon PHIL-TITE™ and EBW® Series (below grade) spill containers, includes stainless steel fill swivel adapter, 5" riser nipple, fill top cap.
70541203	Fill swivel adapter kit for 15 gallon EBW® Series (below grade) spill containers, includes stainless steel fill swivel adapter, 12" riser nipple, fill top cap.

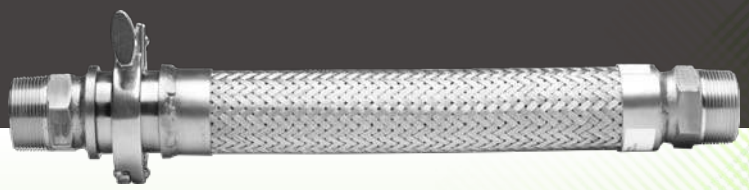
Franklin Fueling Systems
franklinfueling.com
3760 Marsh Rd. • Madison, WI 53718, USA
Tel: +1 608 838 8786 • Fax: +1 608 838 6433
Tel: USA & Canada +1 800 225 9787 • Tel: UK +44 (0) 1473 243300
Tel: Mex 001 800 738 7610 • Tel: DE +49 6571 105 308 • Tel: CN +86 10 8565 4566

PEI MEMBER apea working for a safer environment

Franklin Fueling Systems

FLEXIBLE CONNECTORS

Flexible connectors allow you to easily make pipework connections in the tight spaces found within dispenser and tank containment sumps. Their flexibility and quick connection fittings make easy work of both installation and maintenance.



HIGHLIGHTS

- Easily connect a pipework system to other equipment like submersible turbine pump manifolds, shear valves, or even other types of pipework with secure, watertight connections.
- Completely customize a flexible connector to fit your application with a wide range of diameter, length, and end fitting connection options to choose from in either nickel plated steel or full stainless steel construction.
- Meet the real-world demands of contractors with our EZ Fit system which allows you to customize basic flexible connectors right at your parts counter.

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Tel: Mex 001 800 738 7610 • Tel: DE +49 6571 105 308 • Tel: CN +86 10 8565 4566

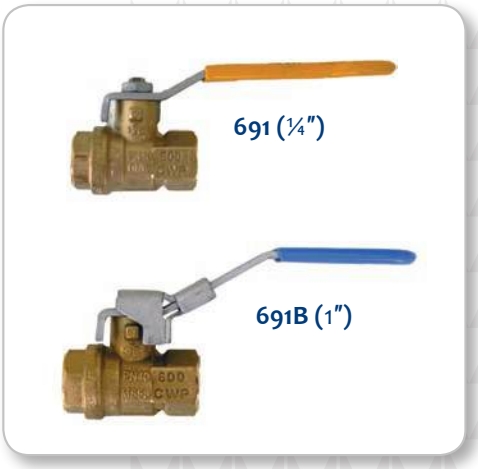
TOTAL SYSTEM SOLUTIONS

 FFS-0649 02-18

Model 691 & 691B Full Port Brass Ball Valve

SPECIFICATION SHEET

Ball valves are used throughout fuel piping systems where a shut-off is required or desired.



Features

- Quarter turn operation
- Full port for maximum flow and minimum pressure drop
- Can be operated in partial open position for flow control
- Double seal allows the valve to be operated in both directions
- Blowout proof stem
- 600 PSIG non-shock cold working pressure rating for ¼″ to 2″ size
- 450 PSIG non-shock cold working pressure rating for 2½″ to 4″ size
- Can be used for air service
- **691B** is lockable with a padlock

Construction Details

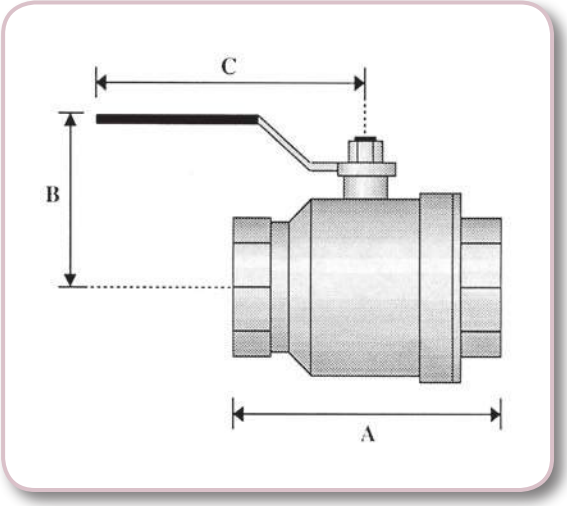
- Forged brass body
- Hard chrome plated ball
- PTFE seal

Certifications & Listings

UL 842 listed for flammable liquids,
UL 125 listed for LP gas shut-off,
CSA approved,
ULC listed (ULC/ORD-C125-1992, ULC/ORD-C842-M1984 and ULC/ORD-C258-03)

I.D. Number	Size	A	B	C	Port Size	Weight (lbs)
691---0100 1V	¼″	1.771	1.496	3.228	0.314	0.30
691---0200 1V	⅜″	1.771	1.496	3.228	0.393	0.30
691---0300 1V	½″	2.32	1.69	3.94	0.59	0.50
691---0400 1V	¾″	2.519	1.968	4.724	0.787	0.80
691---0500 1V	1″	3.188	2.125	4.724	0.984	1.17
691---0600 1V	1¼″	3.661	2.874	6.22	1.259	1.93
691---0700 1V	1½″	4.015	3.11	6.22	1.574	2.40
691---0800 1V	2″	4.763	3.385	6.22	1.968	4.02
691---0900 1V	2½″	6.141	5.196	10.04	2.559	10.0
691---1000 1V	3″	6.968	5.551	10.04	3.149	13.65
691---1100 1V	4″	8.504	6.062	10.04	3.937	22.0
691B--0100 1V	¼″	1.771	1.496	3.228	0.314	0.30
691B--0200 1V	⅜″	1.771	1.496	3.228	0.393	0.30
691B--0300 1V	½″	2.32	1.69	3.94	0.59	0.50
691B--0400 1V	¾″	2.519	1.968	4.724	0.787	0.80
691B--0500 1V	1″	3.188	2.125	4.724	0.984	1.17
691B--0600 1V	1¼″	3.661	2.874	6.22	1.259	1.93
691B--0700 1V	1½″	4.015	3.11	6.22	1.574	2.40
691B--0800 1V	2″	4.763	3.385	6.22	1.968	4.02
691B--0900 1V	2½″	6.141	5.196	10.04	2.559	10.0
691B--1000 1V	3″	6.968	5.551	10.04	3.149	13.65
691B--1100 1V	4″	8.504	6.062	10.04	3.937	22.0

NOTE: All dimensions are in inches.



MORRISON BROS. CO.

570 E. 7th Street, P.O. Box 238 | Dubuque, IA 52004-0238
t. 563.583.5701 | 800.553.4840 | f. 563.583.5028
www.morbros.com

UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT F
TERTIARY CONTAINMENT METHOD

The proposed tank and piping system meets the requirements for installation on the Edwards Aquifer Recharge Zone, in accordance with Chapter 213. Tertiary containment is not required.

Tertiary containment is provided to meet the Edwards Aquifer Authority requirements.

The proposed new UST will be 29,000-gallon WATCO double-walled, jacketed Permatank. The tank is constructed with a primary steel tank, secondary steel tank (double-walled) coupled with an exterior corrosion-resistant fiberglass reinforced plastic (FRP) tank (jacket) for tertiary containment meeting UL-58 ACT-100 and UL-1746. One chamber will hold 16,000-gallons of regular unleaded fuel, the second chamber will hold 6,000-gallons of premium (V-Power) fuel, and the third chamber will hold 7,000-gallons of diesel fuel.

The proposed piping will be Dualoy 3000/LCX fiberglass double-wall piping and Dualoy/L fiberglass single-wall piping. For product lines, the double-wall piping will be placed within the single-wall piping to provide tertiary containment. The product piping system is designed to contain a release from any portion of the primary piping within the secondary and tertiary piping walls and is protected from corrosion.

UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT H
PROFILE DRAWING(S)

NOTES:

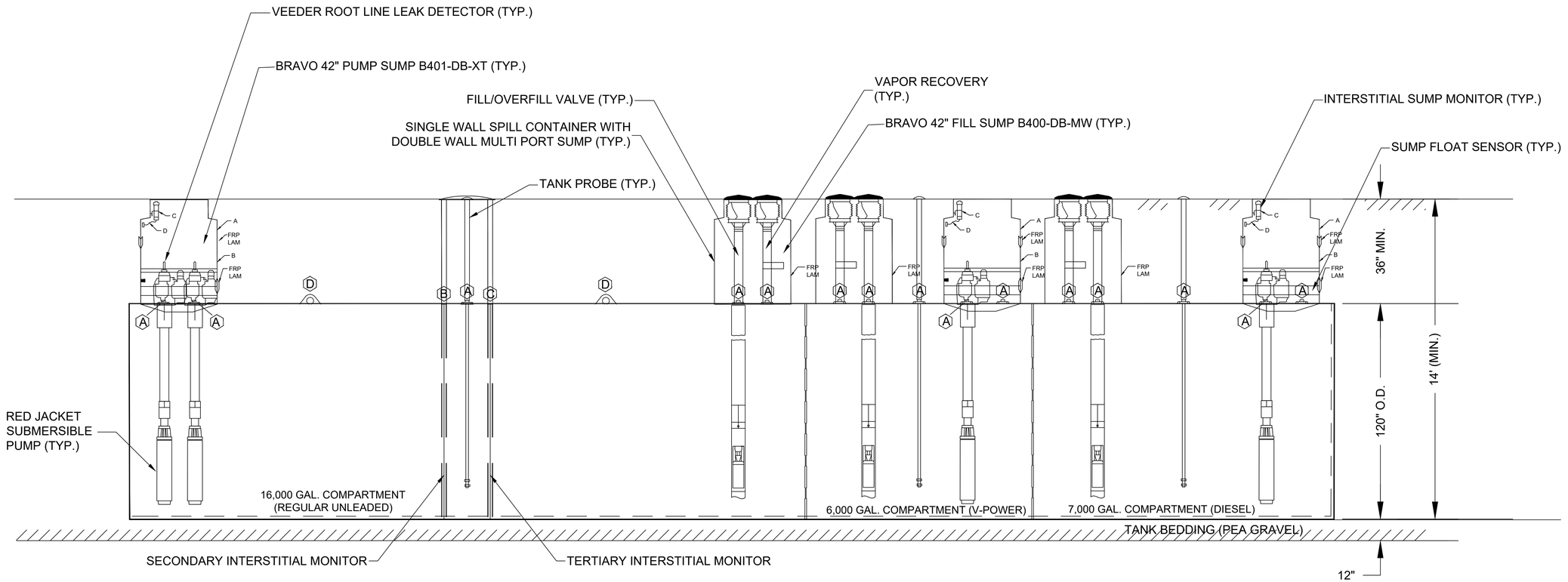
1. THE UST SYSTEM SHALL COMPLY WITH ALL TECHNICAL REQUIREMENTS OF TCEQ CHAPTER 334 SUBCHAPTER C, TECHNICAL STANDARDS 334.41 THROUGH 334.56. THESE TECHNICAL REQUIREMENTS TAKE PRECEDENCE OVER MANUFACTURERS SPECIFICATIONS AND INSTRUCTIONS AND NATIONALLY RECOGNIZED ASSOCIATIONS OR INDEPENDENT TESTING LABORATORY.
2. THE UST CONTRACTOR SHALL INSTALL THE UST SYSTEM IN ACCORDANCE WITH THE TCEQ TECHNICAL STANDARDS AND MANUFACTURERS SPECIFICATIONS/INSTRUCTIONS.
3. THE UST SYSTEM SHALL BE INSTALLED IN COMPLIANCE WITH THE PROVISIONS OF ONE OF THE FOLLOWING STANDARDS: PEI PUBLICATION RP-100, API PUBLICATION 1615, ANSI STANDARDS B31.3 & B31.4, OR ANY OTHER CODE OR STANDARD OF PRACTICE DEVELOPED BY A NATIONALLY RECOGNIZED ASSOCIATION OR INDEPENDENT TESTING LABORATORY THAT HAS BEEN REVIEWED AND DETERMINED BY THE AGENCY TO BE PROTECTIVE OF HUMAN HEALTH AND SAFETY.
4. THE DEPTH OF THE TANK EXCAVATION WILL BE SUFFICIENT TO ACCOMMODATE PIPING FALL REQUIREMENTS,TANK DIAMETER, BEDDING, AND A MINIMUM COVER OF THREE FEET.
5. THE TANK BEDDING THICKNESS WILL BE 12 INCHES AND CONSIST OF PEA GRAVEL FOR COMPLIANCE WITH THE MANUFACTURERS SPECIFICATIONS.
6. PEA GRAVEL WILL BE UTILIZED AS THE BACKFILL MATERIAL.
7. OVERFILL PREVENTION VALVE POSITIONED AT 95% CAPACITY. OVERFILL AUDIBLE AND VISUAL ALARM POSITIONED AT 90 % CAPACITY.
8. CONTRACTOR SHALL BE CERTIFIED BY THE MANUFACTURER FOR INSTALLATION OF THEIR SPECIFIC PRODUCT.
9. ALL PUMP SUMPS, PUMP RISERS, FILL SUMPS AND FILL RISERS WILL BE BRAVO B400 SERIES DOUBLE-WALL SUMPS.

BRAVO SUMP DETAILS

NO.	QTY.	PART DESCRIPTION:
A	1	DOUBLE WALL FRP SUMP TOP
B	1	DOUBLE WALL FRP BASE
C	1	MANOMETER ASSEMBLY
D	1	TUBING ASSEMBLY
E	5	INTERSTITIAL FLUID
F	2	GUAGE ASSEMBLY

TANK OPENING DESCRIPTIONS

ITEM	QTY	DESCRIPTION
A	15	4" NPT THREADED FITTINGS
B	1	2" NPT SECONDARY MONITOR PIPE OPENING
C	1	2" NPT TERTIARY MONITOR PIPE OPENING
D	2	LIFTING LUGS



UST SYSTEM PROFILE VIEW - 29,000 GAL. TRIPLE WALL PERMATANK

REV. NO.	DESCRIPTION	DATE

Notes:

SIGNATURE/SEAL

STATE OF TEXAS — RALPH VOSS, JR. — 88675 — LICENSED PROFESSIONAL ENGINEER

02/26/25

FORSTER ENGINEERING

TBPE firm # 12385

401 MARICOPA DRIVE, CANYON LAKE, TEXAS 78133

PHONE: (210) 289-0580

WWW.FORSTERENGINEERING.COM

JUNIPER

PROJECT DESCRIPTION

FISCHER'S NEIGHBORHOOD MARKET #51
UNDERGROUND STORAGE TANK PLAN MODIFCATION

DRAWING

UST PROFILE DRAWINGS
TCEQ-0583

DATE	02/26/25	JOB NO.	1163C-25
SCALE	NOT-TO-SCALE	DRG NO	ATTACHMENT H-1
DRAWN BY	RV		
CHECKED BY	CPF		

Date: Feb 26, 2025, 1:32pm User ID: Ralph Voss
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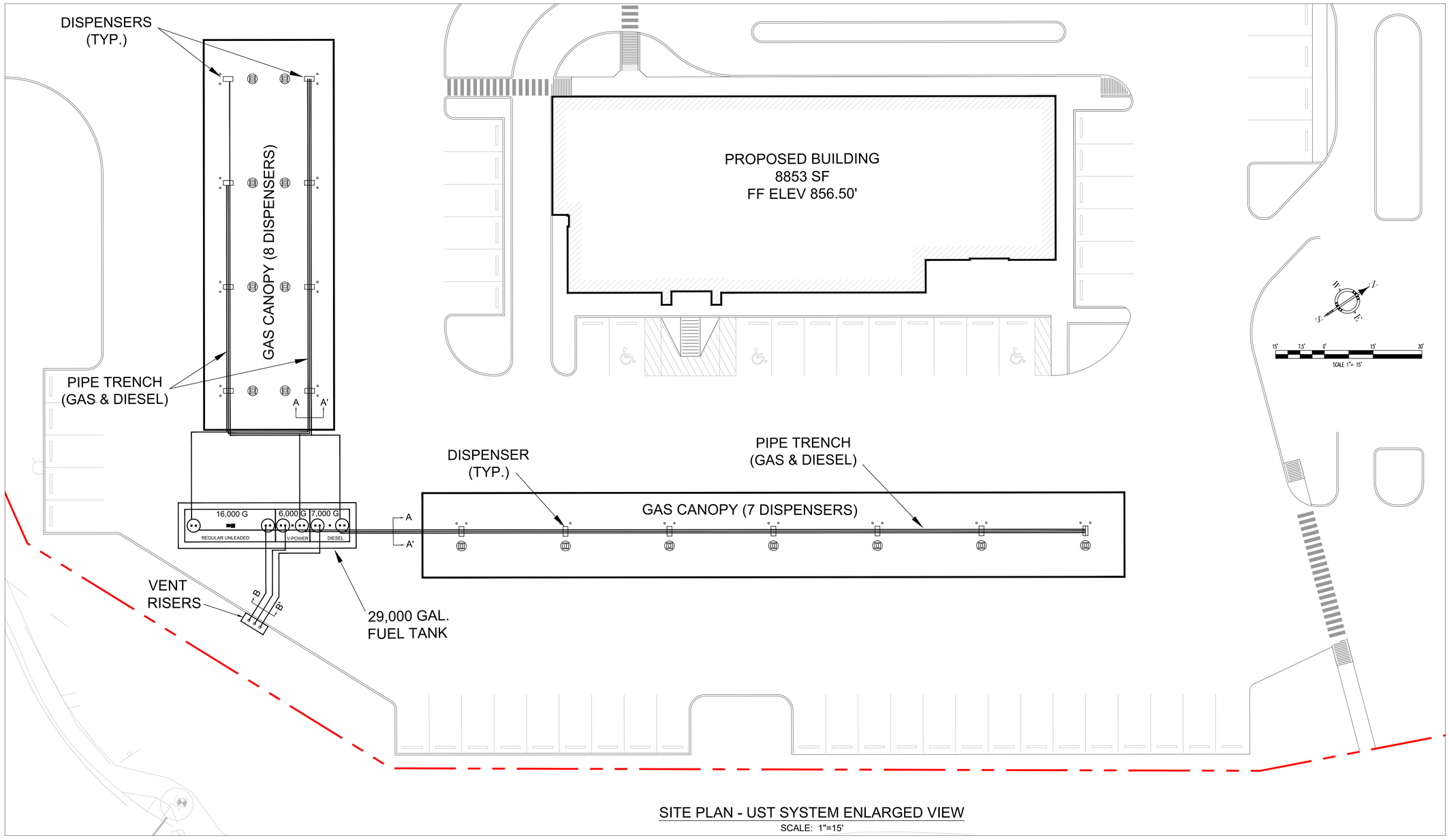
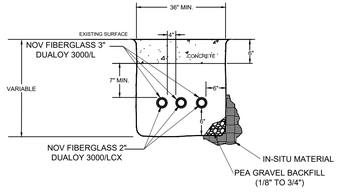


SITE PLAN - UST SYSTEM ENLARGED VIEW

SCALE: 1"=15'

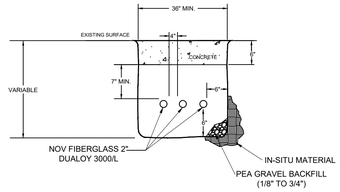
NOTES:

1. PIPING MUST BE SLOPED MINIMUM 1/8" PER FOOT BACK TOWARDS THE TANK. SUPPORT PIPE PROPERLY TO PREVENT LOW POINTS.
2. SIX INCHES OF FILL (PEA GRAVEL) MUST BE PLACED UNDER THE PIPE AS BEDDING MATERIAL.
3. THE MINIMUM BURIAL DEPTH IS BASED ON SOIL MODULUS OF 1000 PSI OR HIGHER.
4. ALL PIPING SUMPS, FITTINGS, ETC. MUST BE INSTALLED IN ACCORDANCE WITH THE TCEQ CHAPTER 334 SUBCHAPTER C TECHNICAL STANDARDS 334.41 THROUGH 334.56 AND THE MANUFACTURERS INSTALLATION AND SPECIFICATION REQUIREMENTS.
5. CONTRACTOR SHALL OBTAIN ALL MANUFACTURER CERTIFICATIONS AS REQUIRED FOR INSTALLATION OF THE UST SYSTEM.



TYPICAL PIPE CROSS-SECTION A-A'

N.T.S.



TYPICAL PIPE CROSS-SECTION B-B'

N.T.S.

REV. NO.	DESCRIPTION	DATE

Notes:

SIGNATURE/SEAL

STATE OF TEXAS
RALPH VOSS, JR.
88675
LICENSED
PROFESSIONAL ENGINEER
02/26/25

FORSTER ENGINEERING
TBPE firm # 12385
401 MARICOPA DRIVE, CANYON LAKE, TEXAS 78133
PHONE: (210) 289-0580
WWW.FORSTERENGINEERING.COM

JUNIPER

PROJECT DESCRIPTION

FISCHER'S NEIGHBORHOOD MARKET #51
UNDERGROUND STORAGE TANK PLAN
MODIFCATION

DRAWING

MISC. PIPING DETAILS

TCEQ-0583

DATE	02/26/25	JOB NO.	1163C-25
SCALE	AS SHOWN	DRG NO	
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CHECKED BY	CPF		

Date: Feb 26, 2025, 2:22pm User ID: Ralph Voss
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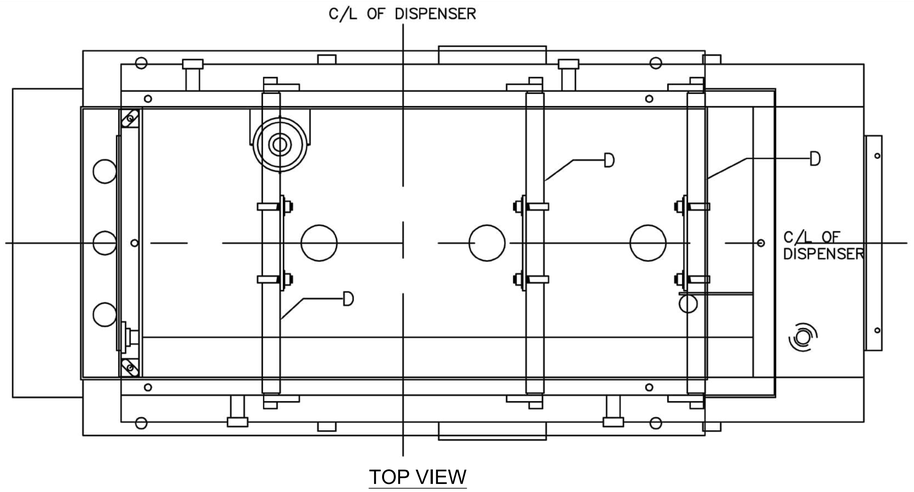
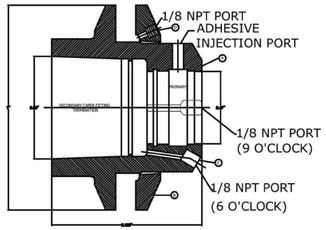


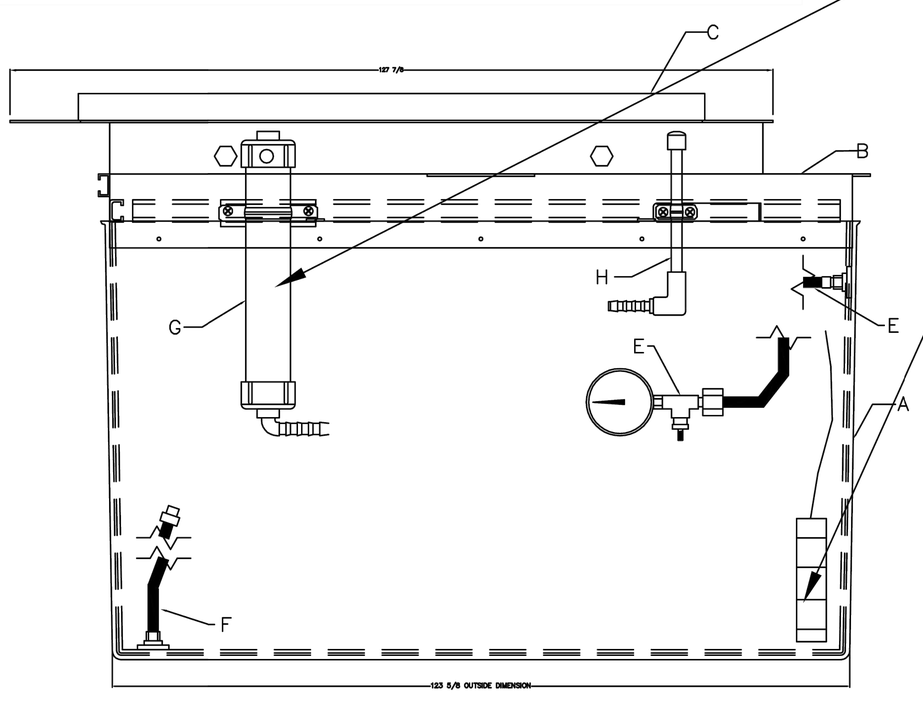
TOP VIEW



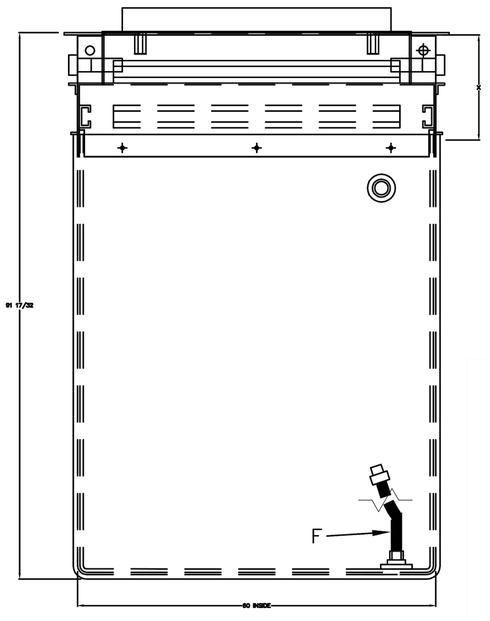
3" X 2"

BRAVO F-SERIES RIGID ENTRY FITTING

BILL OF MATERIALS		
NO.	QTY	PART DESCRIPTION
A	1	F-32-TS-T-MP FITTING BODY W/ TEST PORT
B	1	FLANGE 4-1/2" WITH TEST PORT
C	1	1/8 NPT SCHRADER ASSEMBLY
D	2	1/8 NPT BRASS PIPE PLUG



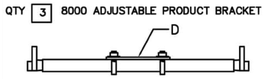
FRONT VIEW



LEFT SIDE VIEW

BILL OF MATERIALS		
NO.	QTY.	PART DESCRIPTION:
A	1	DOUBLEWALL FRP BOX 41-1/2Lx20Wx24-1/2D
B	1	B8000 MIDFRAME LARGE - EO
–	4	1/2"x1-1/4" WELDED COUPLING NUTS
C	1	FXXX UPPER FRAME CUSTOMIZED TO DISPENSER
–	4	ANCHOR BOLTS
–	1	VULKEM SEALANT
D	3	BRACKET 8000 ADJ VARIES PER DISPENSER
E	1	GUAGE ASSEMBLY (BOX)
F	1	TUBING ASSEMBLY
G	1	EXTENDED MANOMETER ASSEMBLY
H	1	ATMOSPHERIC MANOMETER ASSEMBLY
J	2	INTERSTITIAL FLUID (1 GAL.)

QTY [3] 8000 ADJUSTABLE PRODUCT BRACKET



ADJUSTABLE VAPOR BRACKET NOT INCLUDED
PART NO: BRKT-B2

BRAVO DEEP DISPENSER CONTAINMENT

REV. NO.	DESCRIPTION	DATE

Notes:

SIGNATURE/SEAL

STATE OF TEXAS
RALPH VOSS, JR.
88675
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PROFESSIONAL ENGINEER

02/26/25

FORSTER ENGINEERING
TBPE firm # 12385
401 MARICOPA DRIVE, CANYON LAKE, TEXAS 78133
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WWW.FORSTERENGINEERING.COM

JUNIPER

PROJECT DESCRIPTION
FISCHER'S NEIGHBORHOOD MARKET #51
UNDERGROUND STORAGE TANK PLAN MODIFCATION

DRAWING
MISC. DISPENSER DETAILS
TCEQ-0583

DATE	02/26/25	JOB NO.	1163C-25
SCALE	NOT-TO-SCALE	DRG NO	ATTACHMENT H-3
DRAWN BY	RV		
CHECKED BY	CPF		

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UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT I
INITIAL AND CONTINUING TRAINING

Initial and Continuing Training On-site Personnel

Fischer's Neighborhood Market #51 will have at least a Class C operator present during hours of operation. Class C operator is designated by the UST system owner, and typically controls the dispensing of fuel at the facility and is responsible for initial response to alarms, releases, spills, overfills, or threats to the public/environment.

Training of Class C operators must include both general and facility specific emergency response procedures, such as:

1. Operation of emergency shut-off equipment
2. Initial response procedures following system alarm warnings
3. Appropriate first response actions to releases, spills, or overfills
4. Notification procedures to emergency responders and the designated Class A and/or Class B operators of a UST facility

The Class C operator training programs may include in-class, hands-on, on-line, or any other training format deemed acceptable by the Class B operator.

A designated Class B operator for Fischer's Neighborhood Market #51 must provide the facility owner or operator with signed and dated written verification in the form of a list of all Class C operators who have been trained for that facility, which includes the date of that training. Owners and operators must ensure that a current and correct list of trained Class C operators is maintained at Fischer's Neighborhood Market #51.

Response to Warning and Alarm Conditions

1. Investigate alarm and determine if there is a release event.
2. If determined a non-release event (power surge or filling the tank during release detection test), reset system and document finding.
3. If there is a release, take immediate action according to spill emergency response plan.
4. Make appropriate notifications to Class A or B level operator following shutdown.

UNDERGROUND STORAGE TANK FACILITY PLAN FORM TCEQ-0583
ATTACHMENT J
RELEASE DETECTION MAINTENANCE

Fischer's Neighborhood Market #51 will complete the following to meet the conditions of release detection required maintenance.

30-Day Inspection requirements

1. Conduct walkthrough inspections every 30 days to visually check your release detection equipment and spill prevention equipment.
2. Remove liquid or debris within 96 hours of discovery, make any appropriate improvements.
3. Maintain applicable records of 30-day checks.

Annual Inspections and Test requirements

4. Conduct annual walkthrough inspections and testing.

   Inspections shall include attention to automatic inventory control procedures, spill and overfill protection equipment, release detection equipment installed as part of the UST system, and electronic and mechanical components are tested for proper operation in accordance with manufacturer's guidance.

   - Test alarm, verify configuration, and test battery backup for automatic tank gauge
   - Inspect probes and sensors for residual buildup, ensure floats move freely, ensure shaft is not damaged, ensure cables are free of kinks and breaks, test alarm operability and communication with controller
   - Test operation of automatic line leak detector
   - Inspect vacuum pumps and pressure gauges for proper communication with sensors and controller
   - Inspect proper operation of hand-held electronic sampling equipment associated with monitoring are operational and check serviceability
   - Inspect containment sump(s) for damage, leaks, or releases. Remove liquid or debris within 96 hours of discovery.
   - Inspect submersible turbine pump(s) for damage, leaks or releases, cathodic protection. Remove liquid or debris within 96 hours of discovery.
   - Inspect and test all corrosion protection systems
   - Inspect integrity of walls of tank(s)

5. Maintain records of proof that performance claims are met and how the performance was determined.
6. All records will be retained for 5 years.

Once every three years, Inspections and Tests requirements

1. Inspect spill prevention equipment and containment sumps used for interstitial monitoring of piping to ensure of no release and maintains liquid tight constituent.
2. Inspect all overfill prevention equipment continues to activate at the correct level specified to the design of the UST system.
3. Maintain records of proof that performance claims are met and how the performance was determined.
4. All records will be retained for 5 years.

DISPENSERS
(TYP.)

GAS CANOPY (8 DISPENSERS)

PIPE TRENCH
(GAS & DIESEL)

A A'

16,000 G
REGULAR UNLEADED

6,000 G
V-POWER

7,000 G
DIESEL

VENT
RISERS

B B

29,000 GAL.
FUEL TANK

PROPOSED BUILDING
8853 SF
FF ELEV 856.50'

S-1
WELL TO BE ABANDONED

DISPENSER
(TYP.)

PIPE TRENCH
(GAS & DIESEL)

A
A'

GAS CANOPY (7 DISPENSERS)

30'

SITE PLAN - UST SYSTEM ENLARGED VIEW
SCALE: 1"=15'

REV. NO.	DESCRIPTION	DATE

Notes:

LEGEND

- PROPERTY BOUNDARY
- 860' EXISTING CONTOURS
- 858 PROPOSED CONTOURS

15' 7.5' 0' 15'
SCALE 1"= 15'

SIGNATURE/SEAL

STATE OF TEXAS
RALPH VOSS, JR.
88675
LICENSED
PROFESSIONAL ENGINEER
02/26/25

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TBPE firm # 12385
401 MARICOPA DRIVE, CANYON LAKE, TEXAS 78133
PHONE: (210) 289-0580
WWW.FORSTERENGINEERING.COM

JUNIPER

PROJECT DESCRIPTION
FISCHER'S NEIGHBORHOOD MARKET #51
UNDERGROUND STORAGE TANK PLAN
MODIFCATION

DRAWING
PROPOSED SITE PLAN
TCEQ-0583

DATE	02/26/25	JOB NO.	1163C-25
SCALE	AS SHOWN	DRG NO	EXHIBIT 1
DRAWN BY	RV		
CHECKED BY	CPF		

Date: Feb 26, 2025, 1:33pm User ID: Ralph Voss
File: C:\Users\Ralph Voss\Documents\Forster Engineering (RV)\1163C-25 Juniper_FNM #51 UST MOD\CAD FILES\FNM #51 UST MOD Profile_Details.dwg

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 14, 2023

Mr. Kirk Brumley
Juniper Ventures of Texas, LLC
3455 IH 35 S
New Braunfels, Texas 78132

Re: Approval of a Water Pollution Abatement Plan (WPAP) and Approval of an Organized Sewage Collection System (SCS) Plan
Fischers Neighborhood Market 51; Located at the northeast corner of Alyssa Way and SH 46 intersection; New Braunfels, Comal County, Texas
Edwards Aquifer Protection Program ID: 13001806 and 13001807, Regulated Entity No. RN111790705

Dear Mr. Brumley:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the applications for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by INK Civil on behalf of the applicant, Juniper Ventures of Texas, LLC, on October 9, 2023. Final review of the applications was completed after additional material was received on November 27, 2023 and December 7, 2023.

As presented to the TCEQ, the application was prepared in general compliance with the requirements of 30 Texas Administrative Codes (TAC) Chapter §213 and Chapter §217. The permanent best management practices (BMPs), engineering design report, technical specifications and final design plans were prepared by a Texas licensed professional engineer (PE). All construction plans and design information were sealed, signed, and dated by a Texas licensed PE. Therefore, the application for the construction of the proposed project and methods to protect the Edwards Aquifer are hereby **approved,** subject to applicable state rules and the conditions in this letter.

This approval expires two years from the date of this letter, unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of this letter.

The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed in accordance with 30 TAC §50.139.

PROJECT DESCRIPTION

WPAP DESCRIPTION

The proposed commercial project will have an area of approximately 4.789 acres. The project will include the construction of a gas station, convenience store, car wash, fast food building, parking, storm drain, and utility mains and service lines. The impervious cover will be 3.56 acres (74.34 percent).

SCS DESCRIPTION

The proposed sewage collection system will provide disposal service for commercial development. The system includes gravity lines and other appurtenance necessary for conveying wastewater to a treatment plant.

The proposed SCS will consist of 356 linear feet of 8-inch inch, PVC SDR 26 ASTM D3034 piping.

TREATMENT FACILITY

The system will be connected to an existing City of New Braunfels wastewater line for conveyance to the Gruene Wastewater Treatment Plant for treatment and disposal. **The proposed system shall be connected for conveyance prior to use of the development.** The project will conform to all applicable codes, ordinances, and requirements of the City of New Braunfels.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one (1) Jellyfish Filter System and two (2) engineered vegetative filter strips, designed using the TCEQ technical guidance, *RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices,* will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 3,195 pounds of TSS generated from the 3.56 acres of impervious cover. The approved permanent BMPs and measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The permanent BMPS shall be operational prior to occupancy or use of the proposed project. Inspection, maintenance, repair, and retrofit of the permanent BMPs shall be in accordance with the approved application.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the surficial units of the site are the Person Formation. No sensitive geologic features were identified in the GA. The site assessment conducted on November 13, 2023 by TCEQ staff determined the site to be generally as described by the GA.

STANDARD CONDITIONS

1. The plan holder (applicant) must comply with all provisions of 30 TAC Chapter §213 and technical specifications contained in the approved plan. The plan holder should also acquire and comply with additional and separate approvals, permits, registrations or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, Dam Safety, Underground Injection Control, Water Quality) as required based on the specifics of the plan.

2. In addition to the rules of the Commission, the plan holder must also comply with state and local ordinances and regulations providing for the protection of water quality as applicable.

Prior to Commencement of Construction:

3. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the plan holder must submit to the EAPP proof of recordation of notice in the county deed records, with the volume and page number(s) of the county record. A description of the property boundaries shall be included in the deed recordation in the county deed records. TCEQ form, Deed Recordation Affidavit (TCEQ-0625), may be used.

4. The plan holder of any approved Edwards Aquifer protection plan must notify the EAPP and obtain approval from the executive director prior to initiating any modification to the activities described in the referenced application following the date of the approval.

5. The plan holder must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the EAPP no later than 48 hours prior to commencement of the regulated activity. Notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.

6. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring or gravel. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation.

During Construction:

8. This approval does not authorize the installation of temporary or permanent aboveground storage tanks on this project that will have a total storage capacity of 500 gallons or more of static hydrocarbons or hazardous substances without prior approval of an Aboveground Storage Tank facility application.

9. If any sensitive feature is encountered during construction, replacement, or rehabilitation on this project, all regulated activities must be **immediately** suspended near it and notification must be made to TCEQ EAPP staff. Temporary BMPs must be installed and maintained to protect the feature from pollution and contamination. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality.

10. All water wells, including injection, dewatering, and monitoring wells shall be identified in the geologic assessment and must be in compliance with the requirements of the Texas Department of Licensing and Regulation 16 TAC Chapter §76 and all other locally applicable rules, as appropriate.

11. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

12. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge must be filtered through appropriately selected BMPs.

13. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

14. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

15. Owners of permanent BMPs and temporary measures must ensure that the BMPs and measures are constructed and function as designed. A Texas licensed PE **must certify** in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the EAPP within 30 days of site completion.

16. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or the ownership of the property is transferred to the entity. A copy of the transfer of responsibility must be filed with the executive director through the EAPP within 30 days of the transfer. TCEQ form, Change in Responsibility for Maintenance on Permanent BMPs and Measures (TCEQ-10263), may be used.

17. No part of the organized sewage collection system may be used as a sewage holding tank, as defined in 30 TAC §213.3 (excluding lift stations), over the Edwards Aquifer recharge zone.

18. A Texas licensed PE **must certify** in writing that the new sewage collection system (including force mains) has passed all required testing. The certification shall be submitted to the EAPP within 30 days of test completion and prior to the new sewage collection system being put into service.

19. A Texas licensed PE **must certify** subsequent testing required every five years of the existing sewage collection system after being put into use to determine types and locations of structural damage and defects such as offsets, open joints, or cracked or crushed lines that would allow exfiltration to occur. The test results must be retained by the plan holder for five years and made available to the executive director upon request.

The holder of the approved Edwards Aquifer protection plan is responsible for compliance with Chapter §213 and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 and is subject to administrative rule or orders and penalties as provided under §213.10 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved Edwards Aquifer protection plan.

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Joshua Vacek of the Edwards Aquifer Protection Program at 210-403-4028 or the regional office at 512-339-2929.

Sincerely,

Lillian Butler

Lillian I. Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/jv

cc: Mr. James Ingalls, P.E., INK Civil

Section 7.0

TEMPORARY STORM WATER SECTION

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Shane Klar, P.E.

Date: 9/12/2024

Signature of Customer/Agent:

Regulated Entity Name: Fischer's Neighborhood Market #51

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☑ Fuels and hazardous substances will not be stored on the site.

2. ☑ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☑ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☑ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☑ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☑ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☑ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☑ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Comal/Guadalupe River

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☑ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- [x] A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
- [x] A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
- [x] A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
- [x] A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. [x] The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

   - [ ] **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
   - [x] There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. [ ] **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. [x] **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
    - [ ] There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☑ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☑ N/A

12. ☑ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☑ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☑ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☑ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☑ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☑ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☑ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☑ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☑ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☑ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☑ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT "A"
Spill Response Actions

Spill Prevention and Control

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spills must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

(3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).

(4) Establish a continuing education program to indoctrinate new employees.

(5) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

(1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

(2) Store hazardous materials and wastes in covered containers and protect from vandalism.

(3) Place a stockpile of spill cleanup materials where it will be readily accessible.

(4) Train employees in spill prevention and cleanup.

(5) Designate responsible individuals to oversee and enforce control measures.

(6) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise clean up activities.

(7) Do not bury or wash spills with water.

(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMP's.

(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage, and do not allow it to discharge into drainage facilities or watercourses.

(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMP's in this section for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.

(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:

(5) Contain the spread of the spill.

(6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM.
After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

(2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

(3) Notification should first be made by telephone and followed up with a written report.

(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately

(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.

(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

(8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.

(9) Store cracked batteries in a non- leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.

(2) Discourage "topping off" of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

ATTACHMENT "B"
Potential Sources of Contamination

The only potential sources of contamination are construction equipment leaks, re-fueling spills, port-o-lets, and the total suspended solids (TSS) due to the construction activities on-site. There are no other anticipated potential sources of contamination.

ATTACHMENT "C"
Sequence of Major Activities

Stages of Construction:

1. Installation of temporary BMP's.
2. Minor site grading: This includes the removal of organic material and other debris within the proposed site. Approximate total disturbed area = 4.5 acres.
3. Grading: Cutting and filling of the proposed site to prepare the site for parking and foundation construction. Approximate total disturbed area = 4.5acres
4. Utility installation: All sewer, water mains and underground gas storage tanks will be installed.
5. Finished grading: Final landscaping, parking and building infrastructure are installed. Final fill and grading of the utility main trenches. Approximate total disturbed area = 3.57 acres.

ATTACHMENT "D"
Temporary BMP's and Measures

The following sequence will be followed for installing temporary BMP's:

1. Silt fence will be constructed on the downgradient side of proposed site.
2. A stabilized construction exit will be installed prior to any site work.

A. Silt Fence will be installed on the most downgradient side of the site and will reduce potential pollution from any stormwater that originates onsite or offsite. A stabilized construction exit will be constructed at the entrance of the site; this will reduce the amount of contaminants leaving the site.

B. Silt fence will be placed on the downgradient side of each proposed improvement to contain pollutants generated from onsite runoff. Disturbed areas will be seeded to replace destroyed vegetation. The existing vegetation located downgradient of each proposed improvement will work in conjunction with the silt fence and stabilized construction entrance to prevent pollution of water originating onsite and/or flowing offsite.

C. The proposed silt fences, and stabilized construction entrance constructed upgradient of the existing streams will prevent pollutants from entering them, as well as the aquifer.

D. The sensitive features identified in the geologic assessment are manmade and will not be affected.

ATTACHMENT "E"
Request to Temporarily Seal a Feature

There will be no request to temporarily seal a geologic feature.

ATTACHMENT "F"
Structural Practices

Stabilized Construction Entrance/Exit, rock gabions, and silt fence will be used to protect disturbed soils and to prevent contamination from leaving the project site.

ATTACHMENT "G"
Drainage Area Map

See Drainage Area Map at the end of this section.

ATTACHMENT "H"
Temporary Sediment Pond Plans and Calculations

No sediment ponds will be constructed, other TBMP's are used for protection.

ATTACHMENT "I"
Inspection and Maintenance for BMP's

Inspection and Maintenance Plan: The contractor is required to inspect the control and fences at weekly intervals and after any rainfall events to ensure that they are functioning properly. The contractor is required to document any changes on the Site Plan, documentation must include person performing task, task performed, and date. The contractor must also document if proper inspection measures have been taken while making changes. The person(s) responsible for maintenance controls and fences shall immediately make any necessary repairs to damaged areas.

Temporary Construction Entrance/Exit: The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

Concrete Washout Pit: Incorporate requirements for concrete waste management into material supplier and subcontractor agreements. Avoid mixing excess amounts of fresh concrete. Perform washout of concrete trucks in designated areas only. Do not wash out concrete trucks into storm drains, open ditches, streets, or streams. Do not allow excess concrete to be dumped onsite, except in designated areas. Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste. Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

Silt Fence: Remove sediment when buildup reaches 6 inches. Replace any torn fabric or install a second line of fencing parallel to the torn section. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

TCEQ staff will be allowed full access to the property during construction of the project for inspecting controls and fences and to verify that the accepted plan is being utilized in the field. TCEQ staff has the right to speak with the contractor to verify plan changes and modifications.

Documentation: All scheduled inspection and maintenance measures made to the temporary BMPs must be documented clearly on the WPAP Site Plan showing inspection/maintenance measures performed, date, and person responsible for inspection and maintenance. Any changes made to the location or type of controls shown on the accepted plans, due to onsite conditions, shall be documented on the site plan that is part of this Water Pollution Abatement Plan. No other changes shall be made unless approved by TCEQ and the Design Engineer. Documentation shall clearly show changes made, date, person responsible for the change, and the reason for the change.

Owner's Information:

Owner: JUNIPER VENTURES OF TEXAS
Contact: Kirk Brumley
Address: 3455 IH35 South
New Braunfels, TX 78132

Design Engineer:

Company: INK Civil
Contact: Shane Klar, P.E.
Phone: (830) 358-7127
Address: 2021 SH 46W, Ste. 105
New Braunfels, Texas 78132

Person or Firm Responsible for Erosion/Sedimentation Control Maintenance:

Company: _____
Contact: _____
Phone: _____
Address: _____

Signature of Responsible Party: _____

This portion of the form shall be filled out and signed by the responsible party prior to construction.

ATTACHMENT "J"
Schedule of Interim and Permanent Soil Stabilization Practices

Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days. Areas which are disturbed by construction staging and storage areas will be hydro mulched with the appropriate seed mixture. Areas between the edge of pavement and property line will also by hydro mulched. There will be no fill slopes exceeding a 3:1 slope, and all fill slopes will be hydro mulched. Installation and acceptable mixtures of hydro mulch are as follows:

Materials:

Hydraulic Mulches: Wood fiber mulch can be applied alone or as a component of hydraulic matrices. Wood fiber applied alone is typically applied at the rate of 2,000 to 4,000 lb/acre. Wood fiber mulch is manufactured from wood or wood waste from lumber mills or from urban sources.

Hydraulic Matrices: Hydraulic matrices include a mixture of wood fiber and acrylic polymer or other tackifier as binder. Apply as a liquid slurry using a hydraulic application machine (i.e., hydro seeder) at the following minimum rates, or as specified by the manufacturer to achieve complete coverage of the target area: 2,000 to 4,000 lb/acre wood fiber mulch, and 5 to 10% (by weight) of tackifier (acrylic copolymer, guar, psyllium, etc.)

Bonded Fiber Matrix: Bonded fiber matrix (BFM) is a hydraulically applied system of fibers and adhesives that upon drying forms an erosion resistant blanket that promotes vegetation, and prevents soil erosion. BFMs are typically applied at rates from 3,000 lb/acre to 4,000 lb/acre based on the manufacturer's recommendation. A biodegradable BFM is composed of materials that are 100% biodegradable. The binder in the BFM should also be biodegradable and should not dissolve or disperse upon re-wetting. Typically, biodegradable BFMs should not be applied immediately before, during or immediately after rainfall if the soil is saturated. Depending on the product, BFMs typically require 12 to 24 hours to dry and become effective.

Seed Mixtures:

Dates	Climate	Species	(lb/ac.)
Sept. 1 to Nov. 30	Temporary Cool Season	Tall Fescue	4.0
		Oats	21.0
		Wheats	30.0
		Total	**55.0**
Sept. 1 to Nov. 30	Cool Season Legume	Hairy Vetch	8.0
May 1 to Aug. 31	Temporary Warm Season	Foxtail Millet	30.0

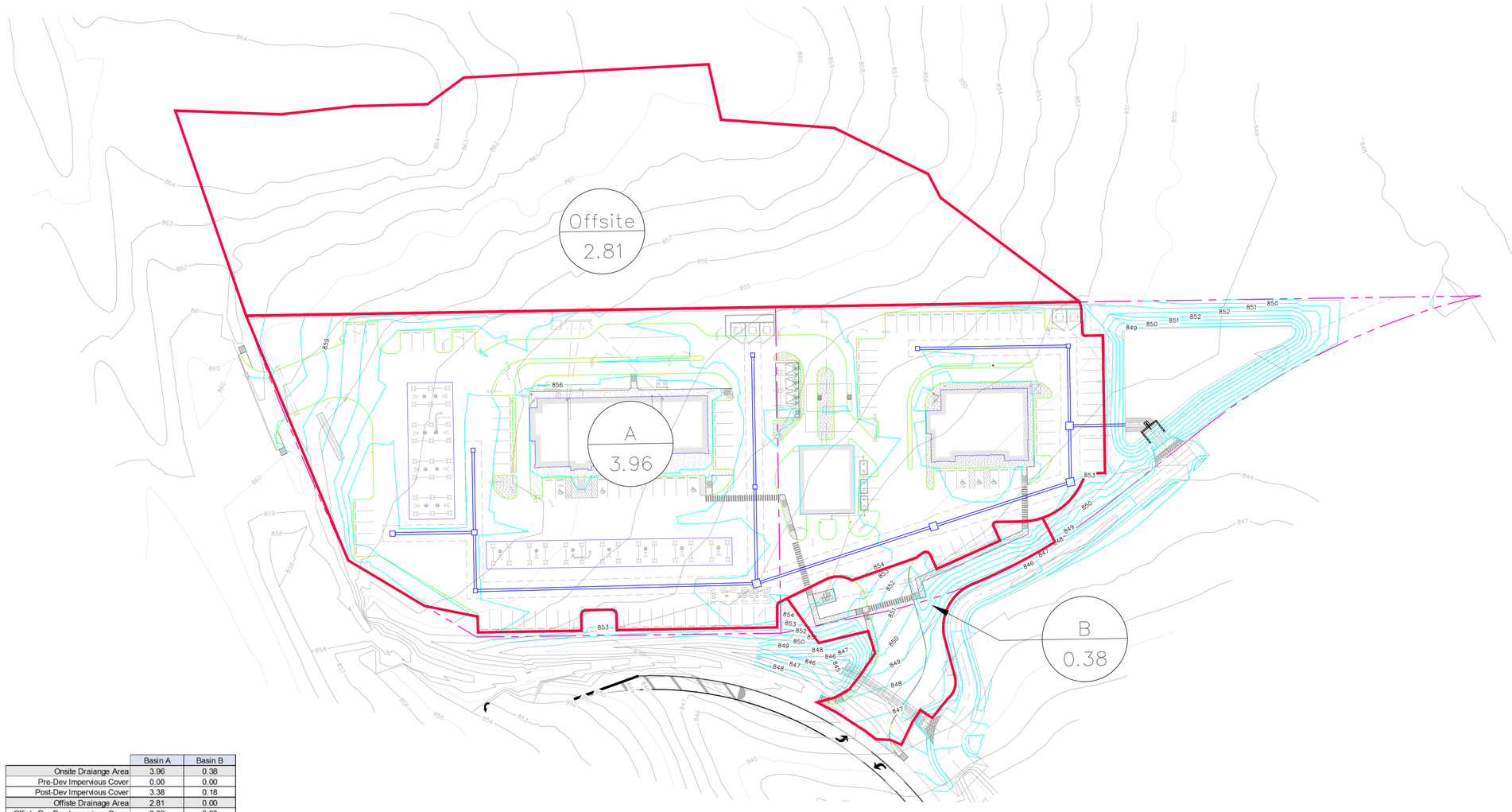
Fertilizer: Fertilizer should be applied at the rate of 40 pounds of nitrogen and 40 pounds of phosphorus per acre, which is equivalent to about 1.0 pounds of nitrogen and phosphorus per 1000 square feet.

Installation:

(1) Prior to application, roughen embankment and fill areas by rolling with a crimping or punching type roller or by track walking. Track walking shall only be used where other methods are impractical.

(2) To be effective, hydraulic matrices require 24 hours to dry before rainfall occurs.

(3) Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.



	Basin A	Basin B
Onsite Draiange Area	3.96	0.38
Pre-Dev Impervious Cover	0.00	0.00
Post-Dev Impervious Cover	3.38	0.18
Offsite Drainage Area	2.81	0.00
Offsite Pre-Dev Impervious Cover	0.32	0.00
Offsite Post-Dev Impervious Cover	0.00	0.00
Total Drainage Area	6.77	0.38
BMP	Batch	Overtreatment
Required TSS Removal	3034	117
Design Removal	3195	117
Total TSS Removal	3312	

0 50' 100'
SCALE:1"=50'

LEGEND

- LIMITS OF DRAINAGE AREA
- 900 EXISTING CONTOURS
- 900 PROPOSED CONTOURS
- FLOW ARROWS
- A / 9.0 DRAINAGE BASIN LABEL / BASIN AREA (AC)

STATE OF TEXAS
SHANE KLAR
115810
LICENSED PROFESSIONAL ENGINEER
09/12/2024

JUNIPER VENTURES OF TEXAS
3455 IH35 SOUTH
NEW BRAUNFELS, TX 78132

FISCHER'S MARKET #51

WPAP DRAINAGE AREA MAP

SHEET EX OF EX

NO	DATE	ISSUES AND REVISIONS
1		

INK CIVIL
2021 W SH46, STE 105
NEW BRAUNFELS, TX. 78132
PH: 830-358-7127 ink-civil.com
TBPE FIRM F-13351

Drawing Name: N:\Projects\JUN003 Fischer's Market 51\Engineering Reports\WPAP\WPAP Modification\CAD\TREATMENT AREA MAP.dwg User: cotherimehogain Sep 12, 2024 - 5:48pm

Section 8.0

PERMANENT STORM WATER SECTION
(NOT APPLICABLE)

Section 9.0

AGENT AUTHORIZATION FORM

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I Rodney R. Fischer,
Print Name

President,
Title - Owner/President/Other

of Juniper Ventures of Texas LLC,
Corporation/Partnership/Entity Name

have authorized Ralph Voss Jr., P.E.
Print Name of Agent/Engineer

of Forster Engineering
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

RPF

SIGNATURE PAGE:

Applicant's Signature

Date 2/25/2025

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Rodney R. Fischer known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 25th day of February, 2025.

LISA SILGUERO
Notary Public, State of Texas
Comm. Expires 02-18-2026
Notary ID 133591987

NOTARY PUBLIC

Lisa Silguero
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 02-18-2026

Section 10.0

APPLICATION FEE FORM AND FEE

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Fischer's Neighborhood Market #51
Regulated Entity Location: NWcorner of Alyssa Way and State Highway 46 intersection
Name of Customer: Juniper Ventures of Texas LLC
Contact Person: Rodney R. Fischer Phone: (830)625-4214
Customer Reference Number (if issued):CN 605607688
Regulated Entity Reference Number (if issued):RN 111790705

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☒ Comal ☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment**. This payment is being submitted to:

☐ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☒ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	one (1) Tanks	$650.00
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: Ralph Don Jr. Date: 02/26/25

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

Project	*Project Area in Acres*	*Fee*
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $10,000

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

Section 11.0

CORE DATA FORM

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☒ Other UST MODIFICATION

2. Customer Reference Number *(if issued)*

CN 605607688

Follow this link to search for CN or RN numbers in Central Registry**

3. Regulated Entity Reference Number *(if issued)*

RN 111790705

SECTION II: Customer Information

4. General Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)*

If new Customer, enter previous Customer below:

JUNIPER VENTURES OF TEXAS LLC

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0803119637	32068384794		N/A

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: Limited Liability Company

12. Number of Employees

☐ 0-20 ☒ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:

3455 INTERSTATE HIGHWAY 35 SOUTH

City	**State**	**ZIP**	**ZIP + 4**
NEW BRAUNFELS	TX	78132	5270

16. Country Mailing Information *(if outside USA)*

17. E-Mail Address *(if applicable)*

kbrumley@junipervot.com

18. Telephone Number

19. Extension or Code

20. Fax Number *(if applicable)*

( ) -		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

FISCHER'S NEIGHBORHOOD MARKET #51

23. Street Address of the Regulated Entity: ***(No PO Boxes)***							
	City		**State**		**ZIP**		**ZIP + 4**
24. County							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	LOCATED AT THE INTERSECTION OF ALYSSA WAY AND SH 46, ON THE NORTHWEST CORNER

26. Nearest City	**State**	**Nearest ZIP Code**
NEW BRAUNFELS	TX	78132

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	29.722012		**28. Longitude (W) In Decimal:**	-98.178550	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	43	19.24	-98	10	42.78

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
5541	5812	457110	722513

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

GAS STATION

34. Mailing Address:	3455 INTERSTATE HIGHWAY 35 SOUTH						
	City	NEW BRAUNFELS	**State**	TX	**ZIP**	78132	**ZIP + 4**	5270
35. E-Mail Address:							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
( ) -		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Ralph Voss Jr., P.E.	41. Title:	Engineer

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210)289-0580		( ) -	rvoss@forsterengineering.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Forster Engineering	Job Title:	Engineer
Name *(In Print)*:	Ralph Voss Jr.,	Phone:	(210)289-0580
Signature:	Ralph Voss Jr.	Date:	02/26/25