



Groundwater & Environmental Services, Inc.

1050 Corporate Boulevard, Suite C
Aurora, IL 60505

T. 866.455.2419

January 20, 2021

VIA ELECTRONIC SUBMITTAL

Mr. Binyoti Amungwafor
Wisconsin Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee, Wisconsin 53212

**Re: Incomplete Site Investigation Response
CITGO Milwaukee Terminal
9235 North 107th Street
Milwaukee, Wisconsin
BRRTS No. 03-41-001622 and 02-41-000700
PECFA No. 53224-1101-35**

Dear Mr. Amungwafor:

Groundwater & Environmental Services, Inc. (GES) on behalf of CITGO Petroleum Corporation (CITGO) is responding to the September 25, 2020, DNR correspondence, (**Attachment A**) review of the closure re-submittal and cover letter to the closure on April 7, 2020, for the above referenced facility. The DNR outlined several items that remain to be addressed. The responses are as follows:

- **Provide a map showing the location of the concrete outfall and sample location at the Koch/Jacobus Quick Flash property that was sampled and it contained a concentration of methyl tert-butyl ether (MTBE) of 25,200 parts per billion (ppb).**

In the *Third Addendum to Milwaukee Terminal Remedial Investigation Report* associated with BRRTS number 03-41-002292 submitted by CH2M Hill there is reference to multiple sample locations that exceed Enforcement Standards for MTBE near the drainage ditch parallel with 107th street. Specifically, sample locations CB02-20N (25,200 ppb), Ditch-FLR1 (2,620 ppm), Ditch-FLR-2 (391), Outf-SW-1 (88.9 ppm) and Outf-SW-2 (57.9). A map illustrating the location of the concrete outfall and sample locations is provided in **Attachment B**.



- **The DNR discontinued the use of Mann-Kendall Statistics to demonstrate decreasing trends on given sites. Please provide linear regression graphs demonstrating contaminant trends over time on this site.**

Linear regression graphs demonstrating contaminant trends over time for monitoring well MW-103 (MTBE), piezometer PZ-101 (benzene and MTBE) and PZ-114 (MTBE) are provided in **Attachment C**. Concentrations of benzene show a decreasing trend at monitoring well PZ-101. Concentrations of MTBE also show a decreasing trend in PZ-101 and MW-103. PZ-114 shows a potential increasing trend however, this is due to the offsite migration from a concrete outfall on the property to the north. A map illustrating the location of the concrete outfall is provided in **Attachment B**.

- **Provide a groundwater contour map that shows the delineation of the lateral extent of groundwater impact on the U.S. Oil property approximately 245 feet south of the CITGO Milwaukee Terminal.**

A groundwater contour map that shows the delineation of the lateral extent of groundwater impact on the U.S. Oil property approximately 245 feet south of the CITGO Milwaukee Terminal is provided in **Attachment D**.

- **On August 17, 2020, the DNR send you a letter titled, Reminder to Include Evaluation of Emerging Contaminants in Site Investigation, which stated that it is your responsibility to evaluate hazardous substance discharges and environmental pollution including emerging contaminants under the Wis. Admin. Code NR 700 rule series. Per Wis. Admin. Code §§ NR 716.07, NR 716.09, provide an evaluation of potential perfluoroalkyl and polyfluoroalkyl substances (PFAS) and other applicable emerging contaminants that were historically or are presently produced, used, handled, or stored at the site. This should include any available information on whether any products containing PFAS were used in any process services, the duration of PFAS-containing product use, the type of PFAS contained in the product, and any areas of the site where PFAS-containing products may have been used, stored, managed, or discarded.**

In 1988, a loading rack fire suppression system was installed at the CITGO Milwaukee Terminal. The system is supplied by a 300 gallon bladder tank located in the foam house/shed located in the northern central portion of the property. The foam in this tank contains National Universal Gold 1-3% alcohol resistant-aqueous film forming foam (AR-AFFF). Based on manufacture's information, this material does not contain PFOS (**Attachment E**). In addition, there is a backup supply of 200 gallons of foam located in the warehouse to the north of the remediation site (beyond the property boundary). The backup supply is TYCO Ansulite 3 AFFF (AFC-3-A).



Since installation of the fire suppressions system at the CITGO Milwaukee Terminal, there has not been a foam chemical leak, spill and/or intentional discharge for firefighting since no fires have occurred at the Site. Additionally, firefighting training has never been conducted at the Site.

A map that illustrates the location of the loading rack fire suppressions system within the CITGO Milwaukee Terminal property boundary and the Safety Data Sheets for these products are provided in **Attachment E**.

- **Provide a statement claiming that new information together with previous documented reports comprise a complete site investigation report.**

Based on investigations conducted at the Site to date and the additional information provided in this submittal, it is our opinion that the site investigation is complete. The limits of contamination associated with the property have been defined; the groundwater contamination plume within the site boundary appears to be stable or receding. An offsite source of contamination is likely resulting in potentially increasing concentrations of MTBE at well PZ-114. Finally, based on available information, PFOS containing materials were not stored on the property nor has there been any recorded spills, leaks, or discharges of firefighting foams on the property.

- **Submit an additional closure form for BRRTs Case 02-41-000700 and GIS database fees of \$350 for groundwater and \$300 for soil.**

GES requests that BRRTs Case 02-41-0007000 and 03-41-001622 be combined into a single BRRTs activity number, since these cases consist of the same single property and the same FID number. Upon WDNRs concurrence with this request and DNRs approval of the Site Investigation, the associated GIS database fees (\$350 groundwater, \$300 soil) will be submitted to WDNR. Additionally, upon WDNRs review of the previously submitted case closure form (submitted 11/19/2019), a revised case closure form will be submitted to address WDNR comments and/or requested edits. The final case closure form will list the single BRRTs number and address WDNRs comments to the 11/19/2019 case closure submittal, if any.

- **Submit database fees for BRRTs Case 03-41-001622, \$350 for groundwater and \$300 for soil. (the closure fee of \$1,050 has been previously submitted).**

This comment is addressed above.

GES looks forward to receiving your approval of the site investigation and our request to combine both BRRTs cases into a single case. Upon your agreement with these requests, GES will submit the required database fees and continue to seek case closure for this Site

Incomplete Site Investigation Response
Milwaukee Terminal
9235 North 107th Street, Milwaukee, Wisconsin



Should you have any questions or concerns regarding this submittal, please contact the undersigned at averbick@gesonline.com or at (866) 455-2419 extension 4042. Direct all official regulatory correspondences to GreatLakesRegion@gesonline.com.

Sincerely,

A handwritten signature in black ink that reads 'Amber L. Verbick'. The signature is written in a cursive, flowing style.

Amber L. Verbick
Senior Project Manager

Encl: Attachments

C: Scott Buckner - CITGO Petroleum Corporation

Attachment A – WDNR Correspondence



September 25, 2020

Mr. Scott Buckner
Citgo Petroleum Corporation
2316 Terminal Drive
Arlington Heights, IL 60065

Subject: Incomplete Site Investigation Citgo Terminal, 9235 North 107th Street,
Milwaukee, Wisconsin
BRRTS #: 03-41-001622, 02-41-000700, FID #:241309090.

Dear Mr. Buckner:

The Wisconsin Department of Natural Resources (DNR) completed the review of the closure re-submittal and the cover letter to the closure on September 10, 2020 submitted on your behalf by your consultant, Groundwater & Environmental Services, Inc. (GES). The cover letter addresses responses to the DNR Closure denial letter (Closure not recommended) dated September 8, 2000. As stated in the meeting with you and your consultant on February 21, 2020 the DNR currently does not grant closure to sites that do not have an approved Site Investigation (SI).

Several items raised by the DNR in September 8, 2020 remain to be addressed. These are as follows:

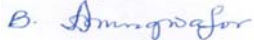
- Provide a map showing the location of the concrete outfall and sample location at the Koch/Jacobus Quick Flash property that was sampled and it contained a concentration of methyl tert-butyl ether (MTBE) of 25,200 parts per billion (ppb).
- The DNR discontinued the use of Mann-Kendall Statistics to demonstrate decreasing trends on given sites. Please provide linear regression graphs demonstrating contaminant trends over time on this site.
- Provide a groundwater contour map that shows the delineation of the lateral extent of groundwater impact on the U.S. Oil property approximately 245 feet south of the Citgo Milwaukee Terminal.
- On August 17, 2020, the DNR sent you a letter titled, *Reminder to Include Evaluation of Emerging Contaminants in Site Investigation*, which stated that it is your responsibility to evaluate hazardous substance discharges and environmental pollution including emerging contaminants under the Wis. Admin. Code NR 700 rule series. Per Wis. Admin. Code §§ NR 716.07, NR 716.09, provide an evaluation of potential perfluoroalkyl and polyfluoroalkyl substances (PFAS) and other applicable emerging contaminants that were historically or are presently produced, used, handled, or stored at the site. This should include any available information on whether any products containing PFAS were used in any process services, the duration of PFAS-containing product use, the type of PFAS contained in the product, and any areas of the site where PFAS-containing products may have been used, stored, managed, or discarded.
- Provide a statement claiming that new information together with previous documented reports comprise a complete site investigation report.

Case Closure Form 4400-202 (R/16)

- Submit an additional closure form for BRRTs Case 02-41-000700 and GIS database fees of \$350 for groundwater and \$300 for soil.
- Submit database fees for BRRTs Case 03-41-001622, \$350 for groundwater and \$300.00 for soil. (the closure fee of \$ 1050 has been previously submitted)

Upon receipt of the above information, the DNR will review the SI for completeness, and if determined to be complete, will proceed with the review of the site closure request. If you have any questions concerning this letter, please contact me at 414.208.5874 or at my e-mail at Binyoti.Amungwafor@wisconsin.gov

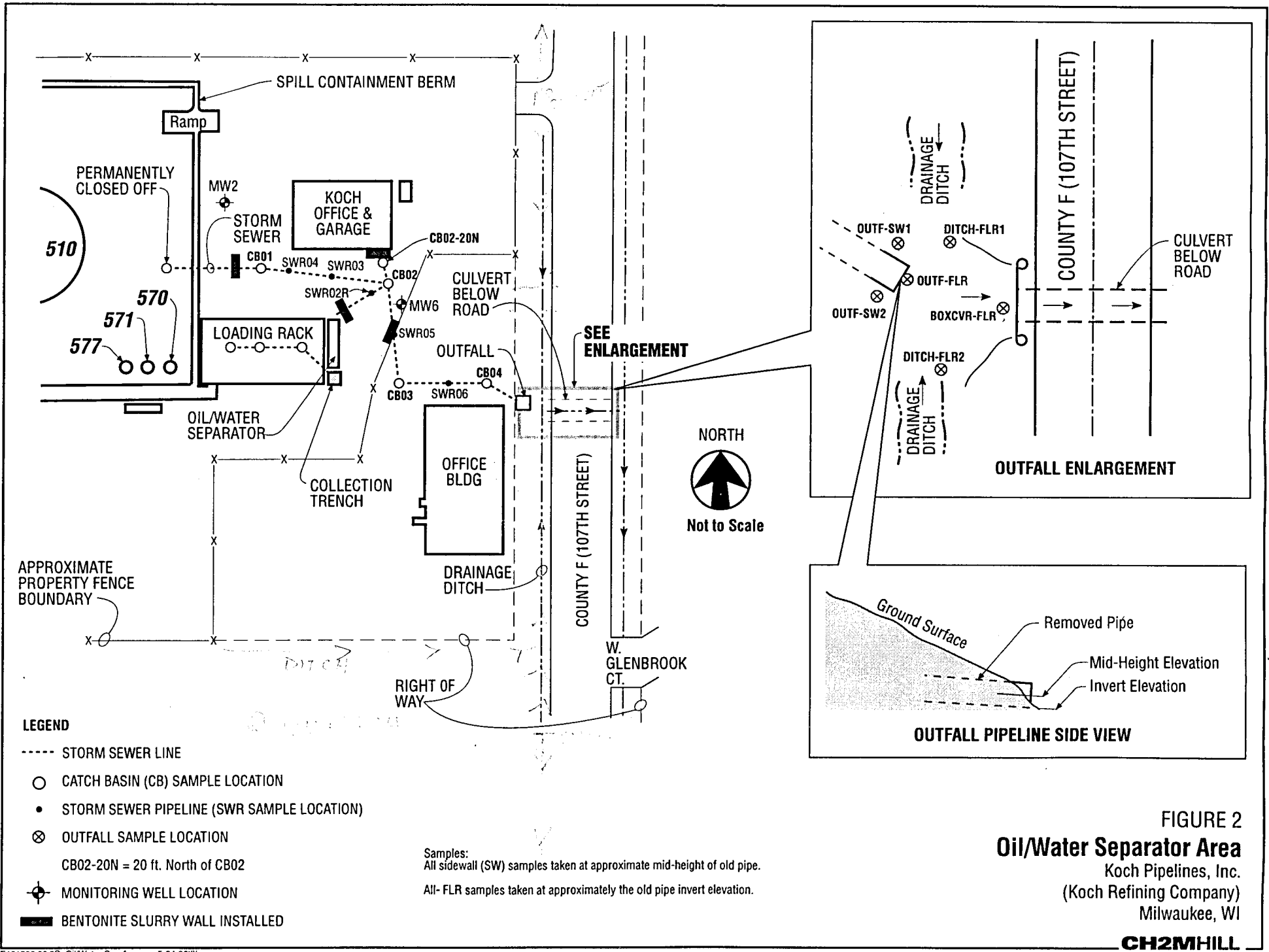
Sincerely,



Binyoti F. Amungwafor
Hydrogeologist
Southeast Region, Milwaukee Service Center

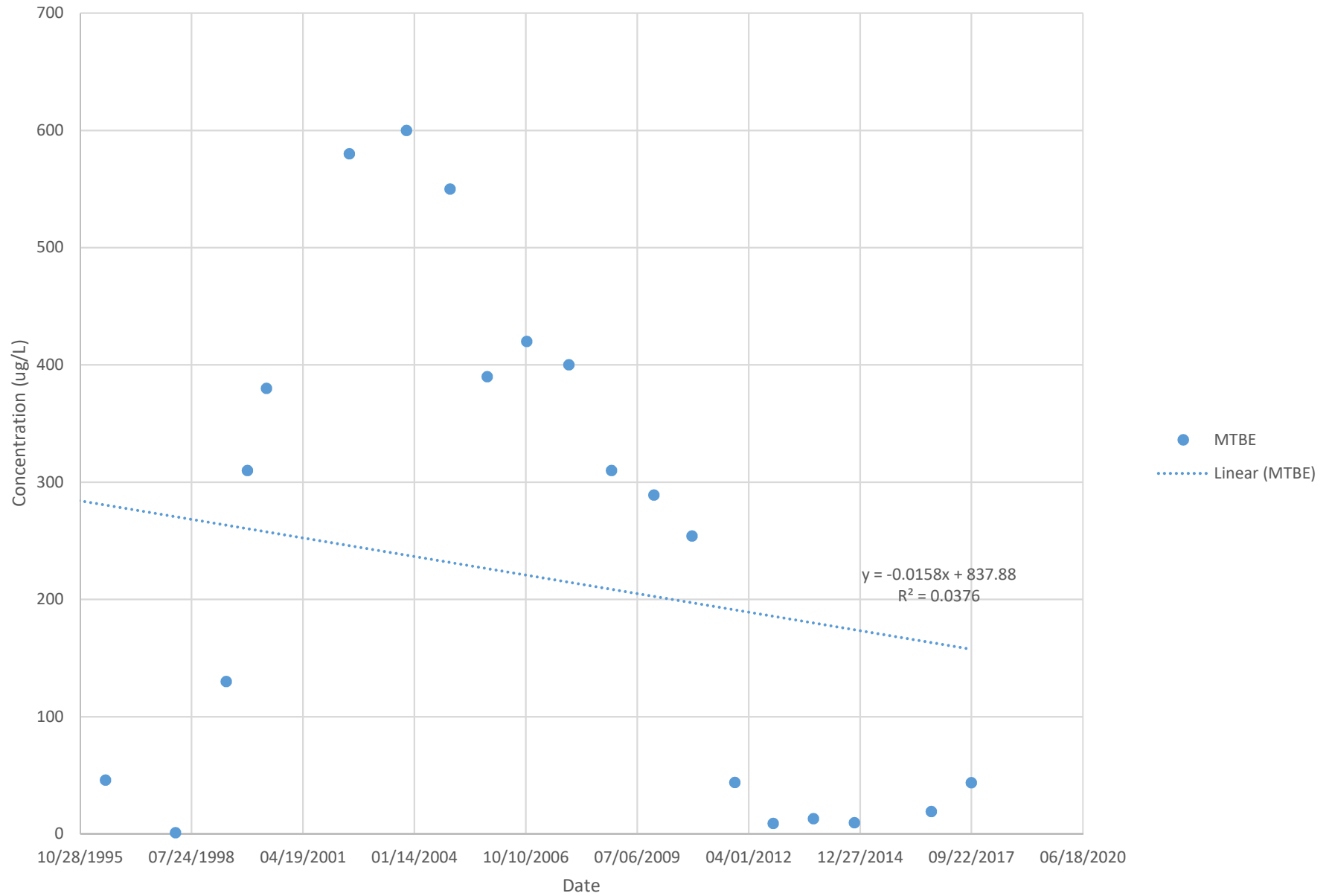
CC: Amber Verbick, GES
SER Case File #: 241309090.

Attachment B – Offsite Concrete Outfall Map

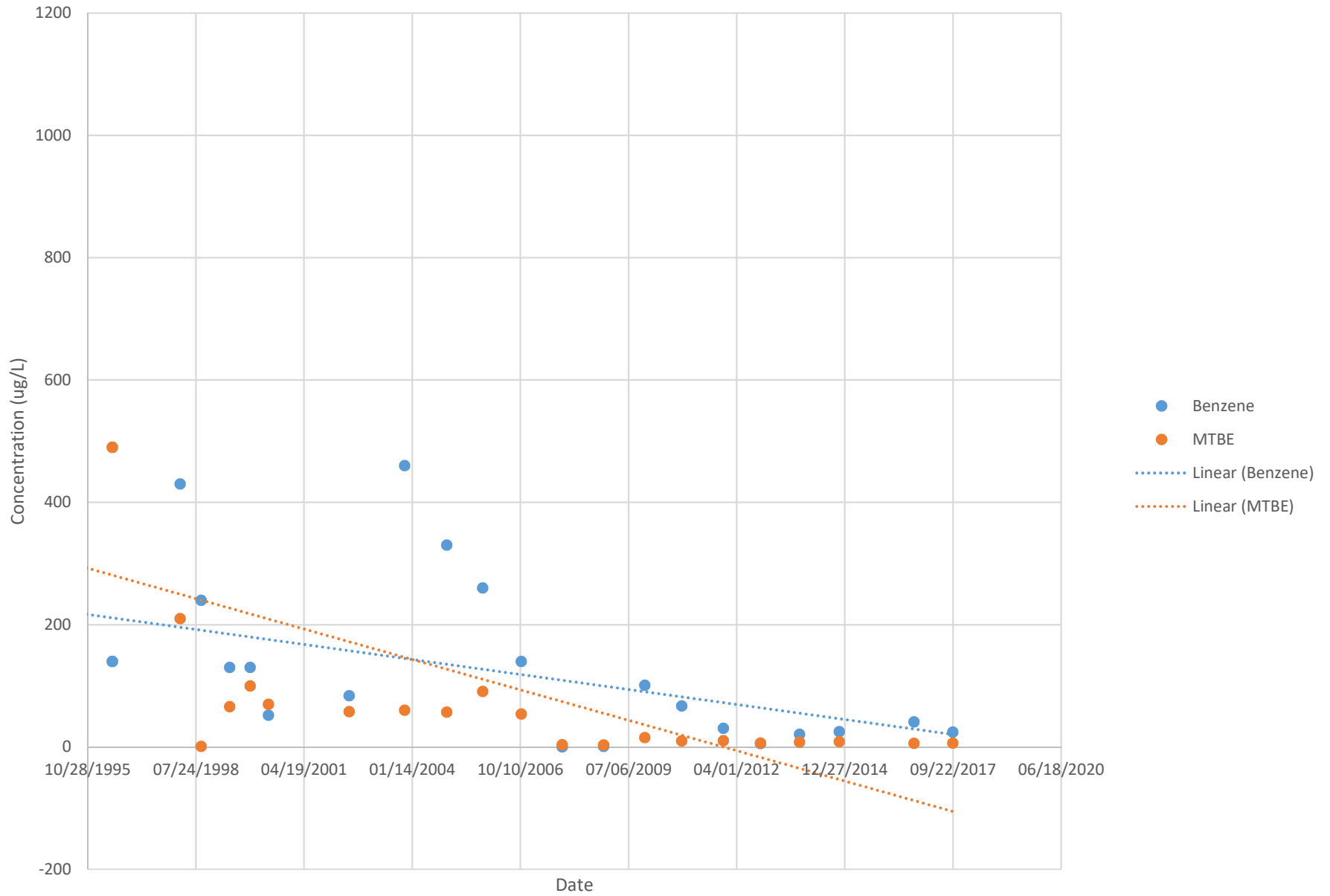


Attachment C – Linear Regression Graphs

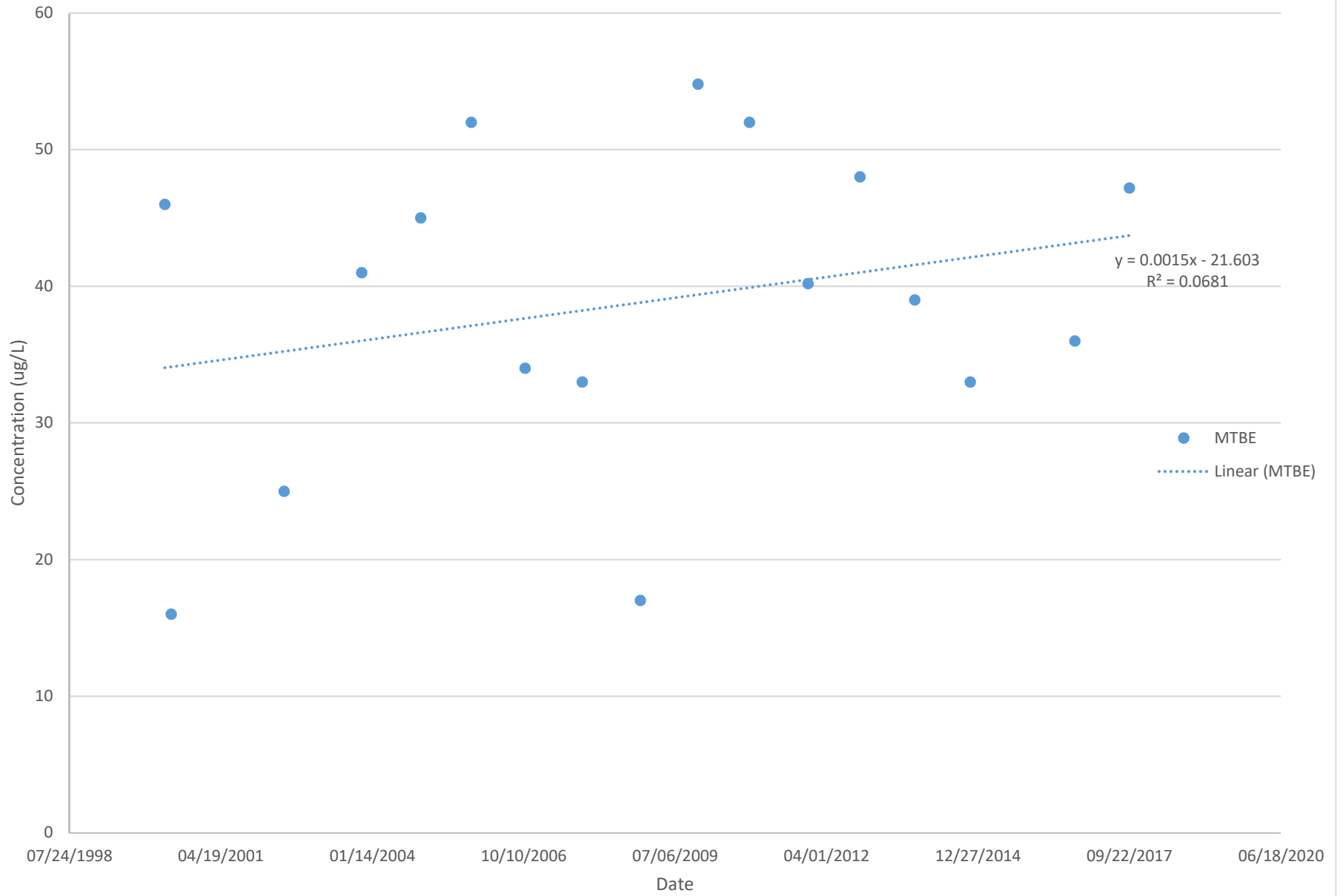
MW-103



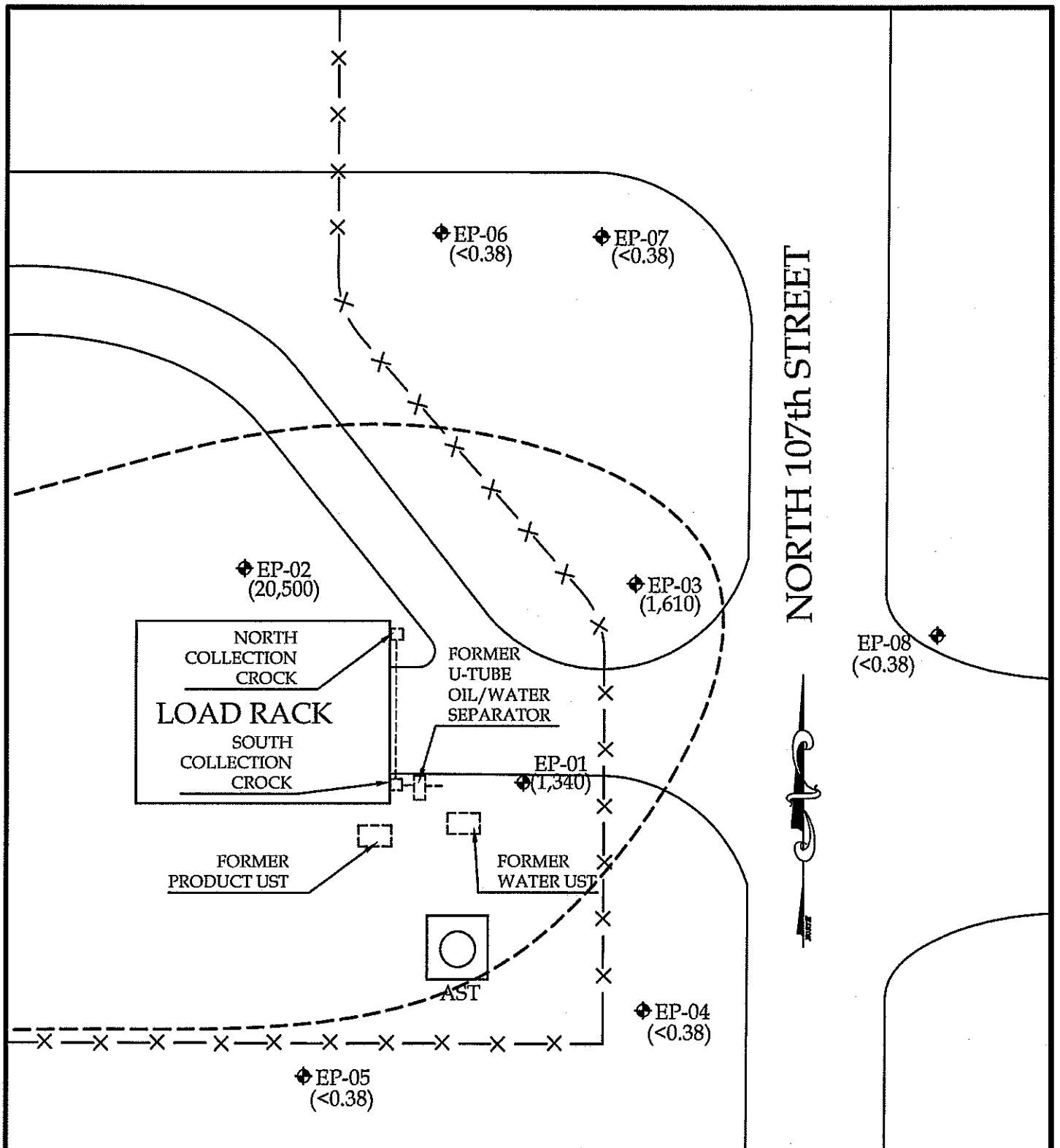
PZ-101



PZ-114



Attachment D – Offsite Plume Map



LEGEND

□ UST

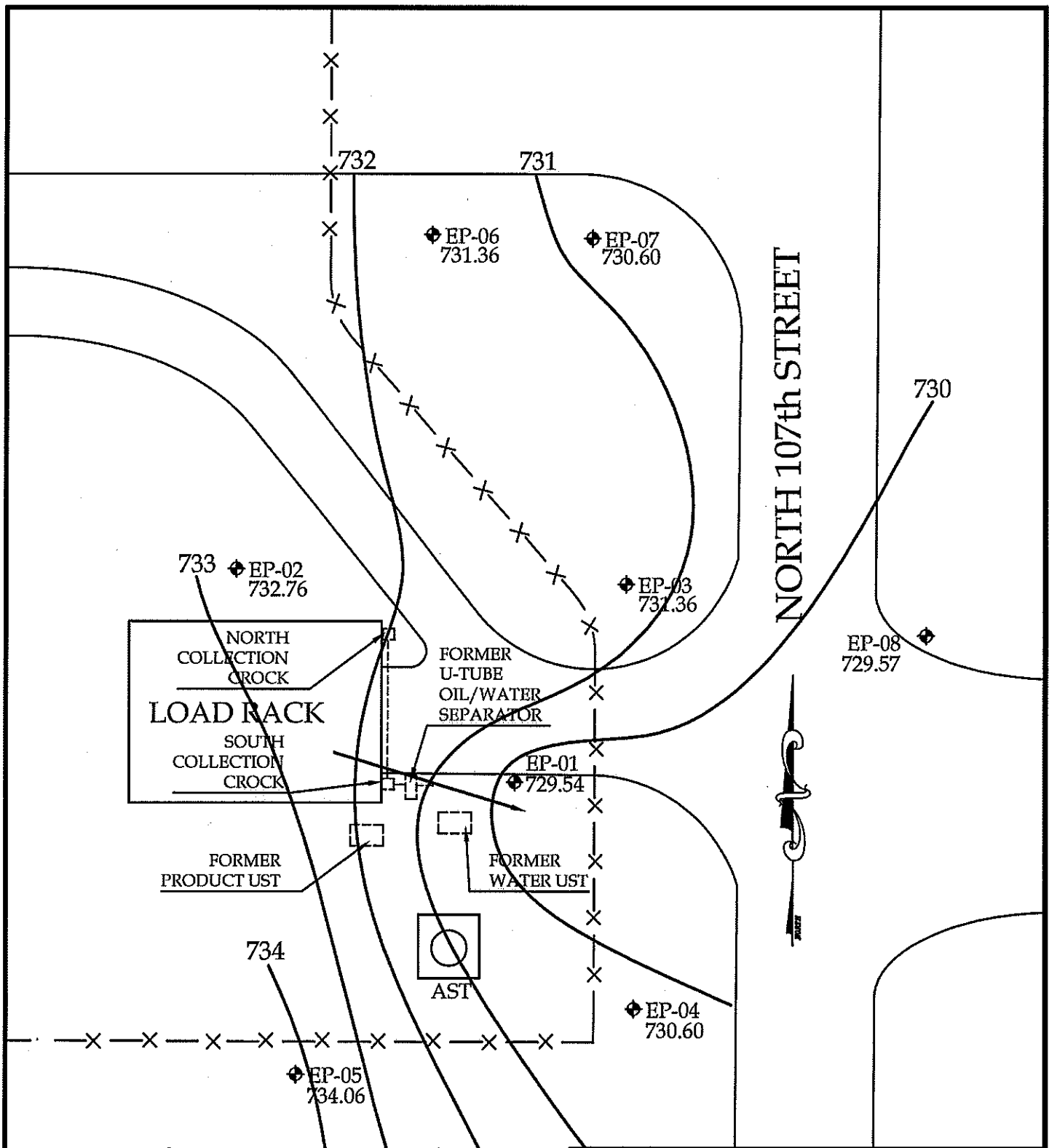
⊕ MONITORING WELL

— ESTIMATED EXTENT OF BENZENE CONTAMINATION EXCEEDING WAC CHAPTER NR 140 TABLE 1 ES

(1,340) BENZENE CONCENTRATION JUNE 2010(ug/kg)

BENZENE IMPACTS IN GROUNDWATER		
U.S. VENTURE, INC. MILWAUKEE SOUTH TERMINAL		
Endpoint Solutions		
12065 West Janesville Road Hales Corners, WI 53130		
Phone: (414) 427-1200	DATE: 8 /5/2010	Fax: (414) 427-1259
DRAWN BY: DJK	DWG: MLW-1017	014-002-005
REVIEWED BY: WCW	FIGURE 5	

\\Sitecomp\AUTOCAD 4-26-08\MILWAUKEE COUNTY\MLW-1017 ENDPOINT SOLUTIONS N 107th ST\dwg\MLW-1017 ENDPOINT SOLUTIONS N 107th 8-10.dwg



LEGEND

- UST
- MONITORING WELL
- 730 — GROUNDWATER CONTOUR ELEVATION
- DIRECTION OF GROUNDWATER FLOW

GROUNDWATER ELEVATION MAP - JUNE 2010

U.S. VENTURE, INC.
MILWAUKEE SOUTH TERMINAL

Endpoint Solutions

12065 West Janesville Road
Hales Corners, WI 53130

Phone: (414) 427-1200

Fax: (414) 427-1259

DRAWN BY: DJK

DATE: 8 / 5 / 2010

014-002-005

REVIEWED BY: WCW

DWG: MLW-1017

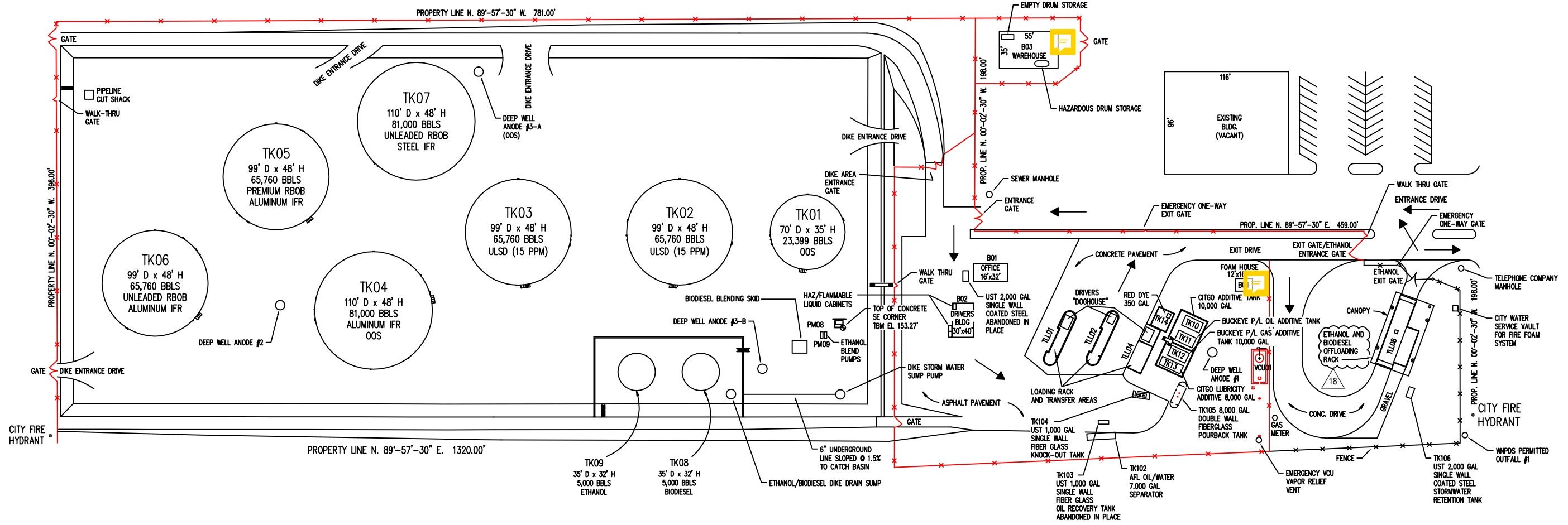
FIGURE 6

\\Sitecomp\AUTOCAD 4-26-08\MILWAUKEE COUNTY\MLW-1017 ENDPOINT SOLUTIONS N 107th ST.dwg\MILW-1017 ENDPOINT SOLUTIONS N 107th 8-10.dwg

Attachment E – Firefighting Foam Information

CITY FIRE HYDRANT

CITY FIRE HYDRANT



- SITE PLAN NOTES:**
1. PROCESS BUILDINGS. - THERE ARE NO PROCESS BUILDINGS ON SITE
 2. LOCATION OF HAZARDOUS MATERIALS. - AS SHOWN
 3. LOCATION OF ELECTRICAL EQUIPMENT THAT MIGHT CONTAIN OIL. - THERE ARE NO OIL FILLED ELECTRICAL EQUIPMENT ON SITE
 4. BELOW GROUND TANKS OR OIL WATER SEPARATORS. - AS SHOWN
 5. CONTENTS AND CAPACITIES OF DRUM STORAGE AREAS. - AS SHOWN
 6. TRANSFER AREAS. - AS SHOWN
 7. IF A COMPLEX EPA/DOT SHOW THE PRODUCT PIPELINE. - THIS FACILITY IS NOT A JOINT JURISDICTIONAL COMPLEX

NO.	REVISION	BY	DATE	BY	DATE	BY	DATE
18	ISSUED FOR CONSTRUCTION - BIODESEL MODIFICATION	WPR	09/28/12	VGJ	09/28/12	VGJ	09/28/12
17	REVISED FOR ANNUAL ISSUE (2012)	SRH	6/14/12	RLN	6/18/12	HKC	6/20/12
16	REVISED FOR ANNUAL ISSUE (2011)	JHK	2/17/11	EAS	4/18/11	EAS	4/18/11
15	REVISED FOR ANNUAL ISSUE (2010)	CWR	12/14/09	CWR	12/14/09	CWR	12/14/09
14	REVISED FOR ANNUAL ISSUE (2009)	CME	2/05/09	CWR	2/05/09	CWR	2/05/09
13	REVISED FOR ANNUAL ISSUE (2008)	DW	1/29/08	CWR	2/13/08	CWR	2/13/08
		BY	DATE	BY	DATE	BY	DATE
		DRAWN	CHECKED	PROJECT ENGINEER APPROVAL	DESIGNER SUPERVISOR APPROVAL	PROJECT TRACKING NUMBER:	XX-02-003

CITGO Petroleum Corporation

MILWAUKEE, WISCONSIN TERMINAL

SITE PLAN

DWG. NO. 3118-100-01

REV. 18

PLEASE NOTE:
22x34 = FULL SIZE PRINT
11x17 = HALF SIZE PRINT

SCALE: 1" = 50'

DATE: 3/6/99

DRAWN BY: EAS

CHECKED BY: JR

PROJECT ENGINEER APPROVAL: JR 3/6/99

DESIGNER SUPERVISOR APPROVAL: JR 3/6/99



MATERIAL SAFETY DATA SHEET

ANSULITE 3% AFFF (AFC-3-A)

Product Code: 1010-2-016 ANa

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	ANSULITE 3% AFFF (AFC-3-A)
Version #	02
Revision date	01-08-2014
CAS #	Mixture
Product Code	1010-2-016 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING! Causes skin and eye irritation.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Do not get this material in contact with eyes.
Skin	Avoid contact with the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Inhalation	Do not breathe vapor. May be irritating.
Ingestion	Not a likely route of entry. Do not ingest.
Target organs	Eyes. RESPIRATORY SYSTEM. Skin. Central nervous system.
Chronic effects	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms	Irritation of nose and throat. Irritation of eyes and mucous membranes. Defatting of the skin. Rash. Skin irritation.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Butyl Carbitol	112-34-5	2.5 - 10
Other components below reportable levels		> 90

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention, if needed.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.

General advice If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties No unusual fire or explosion hazards noted.

Extinguishing media

Suitable extinguishing media This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.

Protection of firefighters

Specific hazards arising from the chemical None known.

Specific methods None known.

Hazardous combustion products May include oxides of nitrogen.

6. Accidental Release Measures

Personal precautions Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage.

Environmental precautions Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Methods for containment Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up Should not be released into the environment.

Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece).

Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.

Storage Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment

Eye / face protection Do not get in eyes. Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.

Skin protection Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Avoid contact with skin.

9. Physical & Chemical Properties

Appearance

Form Liquid.

Color Light yellow. Clear.

Odor Mild. Sweet.

Physical state Liquid.

pH 6.5 - 8.5

Melting point Not available.

Freezing point Not available.

Boiling point 206.6 °F (97 °C)

Flash point	> 212 °F (> 100 °C)
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.02
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	Alkaline metals. Strong acids, alkalies and oxidizing agents.
Hazardous decomposition products	Nitrogen oxides (NOx). Sulfur oxides. Carbon oxides.

11. Toxicological Information

Toxicological information The toxicity of this product has not been tested.

Toxicological data

Components

Butyl Carbitol (112-34-5)

Test Results

Acute Dermal LD50 Rabbit: 2700 mg/kg
 Acute Oral LD50 Guinea pig: 2000 mg/kg
 Acute Oral LD50 Rabbit: 2200 mg/kg
 Acute Oral LD50 Rat: 6560 mg/kg
 Acute Other LD50 Mouse: 850 mg/kg
 Acute Other LD50 Rat: 500 mg/kg

Local effects Components of the product may be absorbed into the body through the skin. Contact may irritate or burn eyes.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicological data

Components

Butyl Carbitol (112-34-5)

Test Results

EC50 Algae: > 100 mg/l 96.00 Hours
 EC50 Water flea (Daphnia magna): 3184 mg/l 24.00 hours
 LC50 Bluegill (Lepomis macrochirus): 1300 mg/l 96.00 hours

Ecotoxicity Not expected to be harmful to aquatic organisms.

Environmental effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Butyl Carbitol (CAS 112-34-5) 1.0 % N230

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Butyl Carbitol (CAS 112-34-5) Listed. N230

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Acute Health - Yes
Chronic Health - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

Butyl Carbitol (CAS 112-34-5) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Butyl Carbitol (CAS 112-34-5) Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	01-08-2014

1. IDENTIFICATION

Product Name	Universal Gold ^{®C6} 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)
Recommended use of the chemical and restrictions on use	
Identified uses	Firefighting Foam Concentrate
Restrictions on Use	See Section 15
Company Identification	National Foam 350 East Union Street West Chester, PA 19382
Customer Information Number	(610) 363-1400
Emergency Telephone Number	Infotrac at (800) 535-5053
Issue Date	February 7, 2019
Supersedes Date	June 18, 2018
<i>Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, the Canadian Hazardous Products Regulations (HPR) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)</i>	

2. HAZARD IDENTIFICATION

Hazard Classification
Eye Damage/Irritation – Category 2A

Label Elements
Hazard Symbols



Signal Word: Warning

Hazard Statements
Causes serious eye irritation.

Precautionary Statements

Prevention

Wash hands thoroughly after handling.
Wear eye protection and face protection.

Response

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Storage

None

Disposal

None

Other Hazards

This product contains fluoroalkyl surfactants and should be disposed of by high temperature incineration. See Section 13 for additional information.

2. HAZARD IDENTIFICATION

Specific Concentration Limits

The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	<5%
Acute dermal toxicity	5 - 15%
Acute inhalation toxicity	15 - 25%
Acute aquatic toxicity	15 - 25%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration*
Sodium decyl sulfate	142-87-0	1 - 5%
Alkylpolyglycoside	132778-08-6	1 - 5%
Dipropylene Glycol Monomethyl Ether	34590-94-8	1 - 5%

*Exact concentration withheld as trade secret.

4. FIRST- AID MEASURES

Description of necessary first-aid measures**Eyes**

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin

Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.

Ingestion

Dilute by drinking large quantities of water and obtain medical attention.

Inhalation

Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Most important symptoms/effects, acute and delayed

Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed**Notes to Physicians**

Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media

This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.

Specific hazards arising from the chemical

None known

5. FIRE - FIGHTING MEASURES

Special Protective Actions for Fire-Fighters

Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective clothing. Prevent skin and eye contact.

Environmental Precautions

Prevent foam concentrate or foam solution from entering ground water, surface water, or storm drains. Discharge and disposal of concentrate or foam solution should be made in accordance with federal, state, and local regulations.

Methods and materials for containment and cleaning up

Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Wear appropriate protective clothing. Prevent skin and eye contact.

Conditions for safe storage

Store in original containers between 35°F and 120°F (2°C and 49°C). Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Dipropylene Glycol Monomethyl Ether

ACGIH: TLV 100 ppm, 8hr; 15 min STEL 150 ppm; Skin Designation: air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. OSHA Z-1 PEL: 100 ppm (600 mg/m³) Limit applies to skin.

Appropriate engineering controls

Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures**Respiratory Protection**

Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Skin Protection

Gloves

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection

Chemical goggles or safety glasses with side shields.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

	Physical State	Liquid
	Color	Amber
Odor		Mild, pleasant
Odor Threshold		No data available
pH		8.2
Specific Gravity		1.03
Boiling Range/Point (°C/F)		No data available
Melting Point (°C/F)		No data available
Flash Point (°C/F)		>200°F
Vapor Pressure		No data available
Evaporation Rate (BuAc=1)		No data available
Solubility in Water		Soluble
Vapor Density (Air = 1)		Not applicable
VOC (%)		No data available
Partition coefficient (n-octanol/water)		No data available
Viscosity		No data available
Auto-ignition Temperature		Not applicable
Decomposition Temperature		No data available
Upper explosive limit		Not applicable
Lower explosive limit		Not applicable
Flammability (solid, gas)		Not applicable

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical Stability

Stable under normal conditions.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Contact with incompatible materials

Incompatible Materials

Water reactive materials – burning metals – electronically energized equipment

Hazardous Decomposition Products

Oxides of carbon – hydrogen fluoride – aldehydes – ketones – organic acids

11. TOXICOLOGICAL INFORMATION

Acute ToxicityProduct

Oral LD50 (rat) >5000mg/kg

Alkylpolyglycoside

Oral LD50 (rat) >5000mg/kg

Dipropylene Glycol Monomethyl Ether

Oral LD50 (rat) >5000 mg/kg

Dermal LD5 (rabbit) >9510 mg/kg

Inhalation LC50 (rat) > 3.35 mg/l,7h, vapour, no deaths occurred at this concentration

Specific Target Organ Toxicity (STOT) – single exposure

Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure

Available data indicates this component not expected to cause target organ effects after repeated exposure.

Serious Eye damage/IrritationProduct: Primary irritant (rabbit) (tested on a similar product)Sodium decyl sulfate: Severe eye irritant (based on similar material)Alkylpolyglycoside: Severely irritating (rabbit) (50% solution)**Skin Corrosion/Irritation**Product: Not a primary irritant (rabbit) (tested on a similar product)**Respiratory or Skin Sensitization**

Available data indicates this product is not expected to cause skin sensitization.

Carcinogenicity

Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity

Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity

Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard

Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No relevant studies identified.

Mobility in soil

No relevant studies identified.

Persistence/Degradability

No relevant studies identified.

12. ECOLOGICAL INFORMATION

Bioaccumulative Potential

No relevant studies identified.

Other adverse effects

No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

This product, as sold, is not a RCRA-listed waste or hazardous waste as characterized by 40 CFR 261. However, state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.

Concentrate

Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantities of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is recommended.

Foam/Foam Solution

Prevent foam/foam solution from entering ground water, surface water or storm drains. Small quantities of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations, high temperature incineration is recommended.

NOTE: Please consult National Foam for additional information regarding the disposal of foam concentrates and foam solutions.

14. TRANSPORT INFORMATION

Shipping Information

Shipping Description
National Motor Freight Code

Fire Extinguisher Charges or Compounds N.O.I., Class 70
69160 Sub 0

This information is not intended to convey all transportation classifications that may apply to this product. Classifications may vary by container volume and by regional regulations. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules when transporting this material.

15. REGULATORY INFORMATION

United States TSCA Inventory

This product contains an ingredient that has restricted use under the EPA Toxic Substance Control Act. This product may only be used as a fire fighting foam. Any other use of this product is strictly prohibited.

Canada DSL Inventory

This product contains an ingredient that is not listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization

Eye irritation

15. REGULATORY INFORMATION

SARA Title III Sect. 313

This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

California Proposition 65

WARNING: This product can expose you to chemicals including diethanolamine and formaldehyde, which are known to the State of California to cause cancer, and perfluorooctanoic acid and methanol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.”

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

None

16. OTHER INFORMATION

NFPA Ratings

NFPA Code for Health - 0

NFPA Code for Flammability - 0

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards - None

Legend

ACGIH: American Conference of Governmental Industrial Hygienists

CAS#: Chemical Abstracts Service Number

EC50: Effect Concentration 50%

IARC: International Agency for Research on Cancer

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

N/A: Denotes no applicable information found or available

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

RQ: Reportable Quantity

STEL: Short Term Exposure Limit

N/A: Denotes no applicable information found or available

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

RQ: Reportable Quantity

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

TSCA: Toxic Substance Control Act

Revision Date: February 7, 2019

Replaces: June 18, 2018

Changes made: Added California Proposition 65 information.

Information Source and References

This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

16. OTHER INFORMATION

Prepared By: EnviroNet LLC.

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