



PROPOSED REMEDIAL ACTION DOCUMENT

***BALLARD PITS PROPOSED STATE
SUPERFUND SITE***

ROBSTOWN, NUECES COUNTY, TEXAS

MARCH 2020

PREPARED BY:

***TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
SUPERFUND SECTION
REMIATION DIVISION***

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

Table of Contents

1.0 INTRODUCTION	3
2.0 PURPOSE	3
3.0 LEGAL AUTHORITY	4
4.0 SITE HISTORY	5
5.0 REMEDIAL INVESTIGATION AND FOCUSED FEASIBILITY STUDY	6
5.1 Geology	7
5.1.1 Shallow Groundwater-Bearing Unit	7
5.1.2 Deeper Groundwater-Bearing Unit	8
5.2 Groundwater Impacts	8
5.3 Soil Impacts	8
5.4 Evaluation Of Ecological Risk	8
5.5 Community Involvement	9
6.0 CURRENT CONDITIONS	9
6.1 Soil	9
6.2 Groundwater	9
7.0 DESCRIPTION OF REMEDIAL ACTION ALTERNATIVES	9
7.1 Evaluation of Remedial Action Alternatives	11
8.0 THE PROPOSED REMEDIAL ACTION	14
9.0 COMMUNITY PARTICIPATION IN THE SUPERFUND PROCESS	14
10.0 REMAINING STEPS IN THE SUPERFUND PROCESS	15
11.0 GLOSSARY	15
TABLE 1: REMEDIAL ACTION ALTERNATIVES EVALUATION	13
FIGURE 1: SITE LOCATION MAP	18
FIGURE 2: PROPOSED REMEDY	19
APPENDIX A: LIST OF REPORTS	20

Proposed Remedial Action Document

Ballard Pits Proposed State Superfund Site

1.0 INTRODUCTION

The Ballard Pits Proposed State Superfund Site (the site) occupies 296 acres in Section 6 of the Wade Riverside Subdivision at the end of Ballard Road, west of its intersection with County Road 73 in Robstown, Nueces County, Texas. The site is located in a rural area, surrounded by a mixture of residential development to the north, south, and southeast of the site, and agricultural/grazing land and undeveloped land to the east and west. The nearest residence is located in the Twin Lakes Subdivision approximately 50 feet east of the eastern site boundary. A small section of the site is enclosed with chain-link fencing in the southeast quadrant, between the site and the adjacent residential subdivision. The remainder of the site is not fenced. (See Figure 1, Site Location Map).

The site is the location of a former sand and gravel quarrying operation. As early as the 1960s, oil services companies including Brine Service Company stored oilfield drilling mud and disposed of refinery waste in three former quarry pits at the site.

The Texas Commission on Environmental Quality (TCEQ) implements many of the state laws relating to the protection of public health and safety and the environment. The TCEQ addresses certain sites that may constitute an imminent and substantial endangerment to public health and safety or the environment through the state Superfund program.

2.0 PURPOSE

This ***Proposed Remedial Action Document*** (PRAD) outlines the proposed ***Remedial Action*** (also known as the remedy) for the site, which is designed to address contamination and protect public health and safety and the environment. Words appearing in ***bold italics*** in this document are defined in Section 11, "Glossary." This document:

- describes the actions taken by the TCEQ to investigate and mitigate contamination at the site;
- describes the proposed ***Remedial Action***;
- provides an opportunity for public review of the proposed ***Remedial Action***; and
- provides information on how the public can comment on the proposed ***Remedial Action***.

This PRAD summarizes information that can be found in greater detail in various reports located in the site files and listed below. The TCEQ encourages the public to review these documents to gain a better understanding of the site, the state Superfund process, the actions taken by the TCEQ and the actions proposed by the TCEQ to address the site.

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

Copies of the documents summarized in this PRAD, as well as other relevant information, can be viewed at the local repository located at:

Owen R. Hopkins Public Library
3202 McKinzie Road
Corpus Christi, Texas 78410
361-826-7055

or at the TCEQ Central File Room:

12100 Park 35 Circle
Building E, 1st Floor
Austin, Texas 78753
512-239-2900

3.0 LEGAL AUTHORITY

The investigation of the nature and extent of contamination at the site and the selection of the proposed **Remedial Action** is in accordance with the **Solid Waste Disposal Act** (codified as Texas Health and Safety Code (THSC) Chapter 361 of the); Hazardous Substance Facilities Assessment and Remediation rules found in Title 30 Texas Administrative Code (30 TAC) Chapter 335, Subchapter K; and the **Texas Risk Reduction Program** (TRRP) rules found in 30 TAC Chapter 350.

While the Chapter 335 rules are specific to the state Superfund process, the TRRP rules apply to many different types of corrective action administered by the TCEQ. These rules establish procedures for determining the concentration of chemicals of concern (COCs) to which a person or other environmental receptor can be exposed without unacceptable risk to public health and safety and the environment. These acceptable concentration levels are called **Protective Concentration Levels** (PCLs) and can be thought of as the “cleanup level” for contamination.

A three-tiered approach may be used under the TRRP rules to calculate the PCLs for a site. The tiers represent increasing levels of evaluation where site-specific information is factored into the process. Tier 1 uses conservative, generic equations and input factors that do not account for site-specific factors; Tier 2 allows for the use of site-specific information but requires the use of PCL equations provided by the TCEQ; and Tier 3 allows for more detailed and complex evaluations so that PCLs are appropriate for specific site conditions. The TCEQ has determined that Tier 1 PCLs are appropriate for this site.

The land use classification is critical under all three of the tiers. Under the TRRP rules, current land use shall be determined by comparing the existing land use to TRRP definitions of residential and commercial/industrial (C/I). Residential standards apply to land used for dwellings such as single-family houses and multi-family apartments, as well as properties used for a sensitive potentially exposed population such as day care facilities, educational facilities, hospitals, and parks. C/I standards apply to any property not used for human habitation or other purposes which would fall under the TRRP

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

definition of residential, and they are protective of persons who may occupy the site as workers. Sites remediated to C/I standards cannot be used for residential-type activities unless further controls are implemented to make the site safe for that use. The TCEQ has determined that a C/I land use classification is appropriate for on-site and a residential land use classification is appropriate for off-site.

The TRRP rules allow for the management of risks posed by the presence of contamination through any combination of the following remedies:

1. removal or decontamination of contaminated media;
2. physical controls, such as containment cells and caps, which limit exposure to the contaminated media; or
3. ***institutional controls***, such as restrictive covenants or deed notices, filed in the county real property records, to legally control land use in order to prevent exposure and to inform future owners and the public of contamination on the property.

There are two categories of remedy standards under TRRP: Remedy Standard A and Remedy Standard B. To meet Remedy Standard A requirements, the contaminated media must be removed and/or decontaminated such that physical controls and, in most cases, ***institutional controls*** are not necessary to protect human and ecological receptors. To meet the requirements of Remedy Standard B, however, physical controls and ***institutional controls*** may be used. These standards are described in detail in 30 TAC Sections 350.32 and 350.33. The proposed remedy at the site meets the criteria established for Remedy Standard B.

4.0 SITE HISTORY

The site is located on properties owned by the C.F. Ballard Residuary Trust and the Estate of Mamie Helen Ballard. Historically, the Ballard Sand and Gravel Company operated on these properties. The properties include many excavations in the primarily sandy soil that were created as a result of the mining of sand to be used in other areas. As early as the 1960s, oil services companies including Brine Service Company transported oil-field drilling mud and refinery waste from companies/facilities in the Corpus Christi area to the Ballard property for disposal in unlined pits. In July 1968, the Texas Water Quality Board issued an order requiring the Brine Service Company to cease all waste disposal activities at the site. Three pits that were used for waste disposal at the site are referred to as the East, West, and North Pits (See Figure 1, Site Location Map).

In September 2002, the Nueces River overflowed its banks and inundated the pits. The Railroad Commission of Texas responded to citizen complaints of contamination and initiated site investigations by collecting samples from the pits, adjacent residential yards, and from nearby residential water wells. Subsequent investigations by the Railroad Commission of Texas, U.S. Environmental Protection Agency, and the TCEQ included the collection of soil, groundwater, and surface water samples from the site.

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

The TCEQ prepared a *Hazard Ranking System* (HRS) score for the site in December 2004. The HRS is a numerical scoring tool that uses information from initial, limited investigations to assess whether a site qualifies for the state or federal Superfund programs. Sites scoring 28.5 or greater may qualify for the federal Superfund program, while sites scoring 5 or greater may qualify for the state Superfund program. An HRS score of 13.31 qualified the site for the state Superfund program.

5.0 REMEDIAL INVESTIGATION AND FOCUSED FEASIBILITY STUDY

Following the HRS, from July 2006 to November 2019 the TCEQ began the *Remedial Investigation* (RI) and *Focused Feasibility Study* (FS) phase of the state Superfund process, which included sample collection, laboratory analysis, and interpretation of collected data for the purpose of determining the nature and extent of contamination and determining an appropriate remedy for the site.

To complete the RI/FS, the TCEQ:

- Conducted three large removal actions that required excavation and disposal of approximately 99,739 tons of buried wastes and associated contaminated soil from the West, East, and North Pits.
- Installed 38 groundwater monitoring wells in two groundwater bearing units (GWBUs).
- Collected and analyzed numerous surface soil, subsurface soil, sediment, groundwater, and surface water samples to determine the nature and extent of contamination and to develop statistical contaminant trends.
- Excavated 160 exploratory trenches across the site to evaluate the potential presence of other waste pits.
- Completed hydrogeological studies to classify and understand the subsurface groundwater distribution, flow, and quality.
- Completed surface water and groundwater background studies to understand the groundwater conditions at and around the site.
- Conducted stratigraphic characterization studies to investigate and understand the geology of the site.
- Completed ecological risk studies to evaluate the potential impact of contamination on ecological receptors.
- Conducted a non-aqueous phase liquid (NAPL) assessment using a Rapid Optical Screening Tool deployed by Cone Penetration Testing equipment (CPT/ROST).
- Installed 11 pilot test wells and completed a Mobile Dual-Phase Extraction (MDPE) pilot scale treatability study to determine if MDPE would be effective for recovery of NAPL.

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

- Completed a ***Focused Feasibility Study*** to select, develop, and evaluate appropriate response action alternatives at the site.

Each of these activities was conducted in accordance with applicable work plans, sampling plans, and quality assurance plans. The results of these efforts are documented in the reports listed in Appendix A.

5.1 Geology

The site is located in the Gulf Coastal Plain on the outcrop of Quaternary alluvium and the Beaumont Formation. The alluvium is up to 40 feet thick in Nueces County and consists of interbedded clay, silt, sand, and gravel. Near the Site, the alluvium is thin, likely less than 20 feet thick. The Beaumont Formation includes the fluvial Willow Creek, St. Mary, and San Patricio units, as well as the marine Ingleside Sand. These units interfinger and include some silty and clayey deltaic sediments. The Beaumont Formation crops out in all of Nueces County except in the immediate vicinity of the Nueces River and adjacent to the coast, and the northwest corner of the county.

The Beaumont Formation overlies the Lissie Formation, which consists of up to 600 feet of thick to thin beds of sand and gravel with interbedded sandy clay. The Lissie Formation crops out only in the most northwestern portion of Nueces County and overlies the Goliad Sand. The Goliad is comprised of thick layers of sand and sandstone. The Goliad is completely absent as an outcrop in the county. These formations crop out in beds roughly parallel to the coastline. The Beaumont, Lissie, and Goliad Formations comprise the Chicot Aquifer, which is one of the hydrostratigraphic units of the Gulf Coast Aquifer. The Chicot Aquifer supplies almost all the groundwater used in Nueces County.

The source of groundwater in Nueces and San Patricio Counties is precipitation on the outcrop of the aquifer within the two counties and in the counties to the northwest and west. Most of the precipitation runs off, evaporates, or is transpired by vegetation. A relatively small part of the precipitation infiltrates the land surface and reaches the zone of saturation, thereby becoming groundwater. Factors that affect the amount of precipitation that becomes groundwater, or recharge to the aquifer, include the amount and intensity of rainfall, the slope of the land surface, the type of soil, the permeability of the aquifer, the quantity of water in the aquifer, and the rate of evapotranspiration. In the vicinity of the site, groundwater samples have been obtained from two GWBUs, designated as the shallow GWBU and the deeper GWBU.

5.1.1 Shallow Groundwater-Bearing Unit

The top of the shallow GWBU, the uppermost GWBU at the site, is initially encountered from approximately 5 to 10 feet below ground surface (bgs) within a reddish brown to grey to tan, fine- to medium-grained, poorly-sorted sand. The shallow GWBU extends to a depth of at least 22 to 25 feet bgs, with the lower confining unit being a slightly moist, dense clay. The shallow GWBU is susceptible to large changes in static water level in response to precipitation. A total of 35 monitor wells and 11 pilot test wells are completed in the shallow GWBU.

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

TRRP specifies three classes of groundwater resources based on current use, water quality, and sustainable well yield. The TCEQ determined that the shallow GWBU is a Class 2 groundwater resource based on sustainable well yield tests. Class 2 groundwater resources are considered usable, or potentially usable, drinking water supplies.

5.1.2 Deeper Groundwater-Bearing Unit

The deeper GWBU at the site is encountered between 31 and 38 ft. bgs. A confining layer is encountered between 17.5 and 27 ft bgs. A total of three double-cased monitor wells are completed in the deeper GWBU. The TCEQ determined that the deeper GWBU is a Class 2 groundwater resource based on sustainable well yield tests.

5.2 Groundwater Impacts

The RI determined that the groundwater located on-site in the shallow GWBU is impacted with total petroleum hydrocarbons (TPH) that exceed the applicable PCL and is associated with the NAPL plume remaining in the former West Pit. NAPL has also been observed in off-site monitoring well MW-34 (replacement well for MW-07 which has been plugged and abandoned) at a thickness of up to 0.083 feet. Additionally, samples collected on off-site properties within saturated soils at a depth of 10 to 12 feet bgs in the vicinity of MW-34 contained TPH at concentrations above the theoretical residual soil saturation limit PCL of 10,000 mg/kg, suggesting the potential for NAPL.

NAPL has been observed in monitor wells and pilot test wells located in the West Pit area. A NAPL investigation examined the hydrocarbon impacts within the East and West Pits and indicated that NAPL was potentially present within the footprints of the two Pits. An MDPE Pilot Scale Treatability Study showed that while MDPE could be utilized to recover small volumes of NAPL, the NAPL detected by the CPT/ROST investigation were not readily recoverable and were likely not mobile. Consistent with the NAPL investigation and Treatability Study, the ***Focused Feasibility Study*** concluded that readily recoverable NAPL is not present at the site and hydrocarbon impacts remain within the footprints of the West Pit area, the East Pit area, and on off-site properties in the vicinity of MW-34.

The groundwater impacts in the shallow GWBU consist of a TPH plume that is limited to the area of the West Pit. The groundwater in the deeper GWBU does not exceed applicable PCLs and does not require remediation.

The TCEQ estimated that the total area of on-site property overlying groundwater in the shallow GWBU with TPH exceeding the on-site PCL is approximately 56,000 square feet (sf). The total area of property impacted by NAPL is approximately 159,000 sf, of which approximately 4,500 sf is located on off-site properties.

The TCEQ site investigations did not identify any groundwater impacts at the North Pit.

Proposed Remedial Action Document

Ballard Pits Proposed State Superfund Site

5.3 Soil Impacts

In 2008, 2009, and 2014, the TCEQ conducted removal actions to excavate and properly dispose of contaminated waste material in the three large pits at the site and on the adjacent utility easement and affected residential properties. Waste and/or impacted soils have been removed and any hydrocarbon contaminated material remaining in the pits is below the groundwater table and its complete removal (Remedy Standard A) is not practical. No remaining on-site or off-site soils were found to exceed the total soil combined PCLs, which are concentration levels that are protective of dermal contact, ingestion, inhalation of volatiles and particulates, and ingestion of above-ground and below-ground vegetables.

5.4 Evaluation of Ecological Risk

The TCEQ completed a Screening Level Ecological Risk Assessment (SLERA) for the site and concluded that there is minimal risk to potential ecological receptors from metals or organics in soils, sediment, or surface water. The SLERA further concluded that additional assessment of ecological exposure of metals or any organics at the site is unnecessary based on the observed concentrations of source material-related COCs in the surface soil, sediment, surface water, and groundwater. As such, no ecologically-based **protective concentration levels** were necessary for the site.

5.5 Community Involvement

The TCEQ published a notice of intent to list the facility on the state registry of Superfund sites and proposed a non-residential land use designation for the site in the *Texas Register* on January 13, 2006 (31 TexReg 316). A public meeting was held on February 23, 2006 to propose the site for listing on the state registry of Superfund sites and obtain public input and information regarding the appropriate use of land on which the site is located. Following that meeting, the TCEQ selected commercial/industrial land use as the appropriate land use for the site. The site's webpage (<https://www.tceq.texas.gov/remediation/superfund/state/ballard.html>) is periodically updated to reflect the site's current status in the TCEQ Superfund process and relevant points of contact. The TCEQ also held community meetings in January 2007, March 2008, May 2008, and April 2010 to provide information and updates during the removal actions. Also, the TCEQ held an open house and availability session in October 2009 and periodically mailed out newsletters and provided updates to the Nueces County Commissioners Court.

6.0 CURRENT CONDITIONS

6.1 Soil

The nature and extent of contamination in the soils at the site has been adequately characterized and delineated and no soils require a remedial response pursuant to TRRP. This is primarily the result of the removal actions conducted in 2008, 2009, and 2014 by TCEQ that removed buried waste and associated contaminated soil.

Proposed Remedial Action Document

Ballard Pits Proposed State Superfund Site

6.2 Groundwater

The nature and extent of contamination in the groundwater at the site has been adequately characterized and delineated. Dissolved-phase TPH exceedance in the groundwater remains relatively stable and mainly in the West Pit area. NAPL has been consistently detected in the West Pit and in MW-34 and a NAPL assessment concluded there is a potential for NAPL in the West and East Pit areas and in the off-site area of MW-34; however, readily recoverable NAPL is not present at the site and is likely not mobile.

7.0 DESCRIPTION OF REMEDIAL ACTION ALTERNATIVES

In the *Focused Feasibility Study* Report, remedial alternatives (clean-up options) and their estimated costs for remediating the groundwater and NAPL at the site were developed. The remedial alternatives are listed below:

Groundwater Remedial Action Alternatives:

- **GW-1: Plume Management Zone (Proposed Remedial Action):** On-site and off-site impacted groundwater and NAPL will be managed using a **Plume Management Zone** (PMZ). NAPL will be monitored to ensure it remains within the PMZ.

During post-closure care of the remedy, if performance monitoring measures indicate that the PMZ is not functioning properly, limited in-situ groundwater treatment will be implemented as a contingency. If **institutional controls** are not placed on the off-site properties, the off-site NAPL area in the vicinity of MW-34 may be excavated, a clay layer would be constructed at the bottom and around the excavation walls, and then the excavation would be backfilled with clean soil;

- **GW-2: PMZ with Source-Area In-Situ Bioremediation:** On-site and off-site impacted groundwater and NAPL will be managed using a PMZ with source-area in-situ bioremediation to enhance degradation and reduction of TPH concentrations. NAPL will be monitored to ensure it remains within the PMZ. If **institutional controls** are not placed on the off-site properties, the off-site NAPL area in the vicinity of MW-34 may be excavated, a clay layer would be constructed at the bottom and around the excavation walls, and then the excavation would be backfilled with clean soil; and
- **GW-3: PMZ with Source-Area In-Situ Chemical Oxidation:** On-site and off-site impacted groundwater and NAPL will be managed through a PMZ with source-area in-situ chemical oxidation (ISCO) to enhance degradation and reduction of TPH concentrations. NAPL will be monitored to ensure it remains within the PMZ. If **institutional controls** are not placed on the off-site properties, the off-site NAPL area in the vicinity of MW-34 may be excavated, a

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

clay layer would be constructed at the bottom and around the excavation walls, and then the excavation would be backfilled with clean soil.

ISCO treats contaminants by introducing oxidants, such as permanganate, peroxide, or ozone into the groundwater. A bench-scale test is required to determine a dosing of an oxidant to effectively oxidize contaminants. ISCO will be implemented through direct-push technology injection points.

A PMZ is defined as the area of the groundwater contamination, plus any additional area allowed in accordance with 30 TAC Section 350.33(f)(4). A PMZ modifies the standard groundwater cleanup objectives by controlling and preventing the use of and exposure to the groundwater and NAPL within the PMZ through ***institutional controls*** in the property records. The PMZ would require groundwater and NAPL monitoring throughout its existence.

7.1 Evaluation of Remedial Action Alternatives

In accordance with 30 TAC Section 335.348(l) and the requirements of Section 361.193 of the Texas Health and Safety Code, the TCEQ selects the ***Remedial Action*** for a site by determining which remedial alternative is “the lowest cost alternative which is technologically feasible and reliable, effectively mitigates and minimizes damage to the environment, and provides adequate protection of the public health and safety and the environment.” To help with this determination, the TCEQ evaluated each of the alternatives against a subset of evaluation criteria:

1. Cost;
2. Feasibility;
3. Reliability (including long-term effectiveness and permanence);
4. Overall Protection of Human Health and the Environment (over both the short- and long-term); and
5. Compliance with Applicable Regulations.

The TCEQ evaluated the ***Remedial Action*** alternatives for the above evaluation criteria, with the exception of cost. The TCEQ then assigned numerical ratings (scores) for each of the ***Remedial Action*** alternatives based on their scores under each evaluation criteria, from 0 to 5, where a score of 0 represents the least value and a score of 5 represents the best value. Some of the evaluation criteria use either a “Yes” or “No” response. A response of “Yes” is favorable and indicates that the evaluated remedial action alternative will meet the criteria, while a response of “No” is unfavorable and indicates that the evaluated remedial action alternative will not meet the criteria. These evaluations, and the estimated costs, are shown in Table 1 – Remedial Action Alternatives Evaluation.

Most of the ***Remedial Action*** alternatives would provide adequate protection of public health and safety and the environment and comply with applicable regulations. However, the TCEQ selects the lowest cost alternative that meets the requirements of THSC Section 361.193. Therefore, the score and the cost were taken into consideration to select groundwater remedial action alternative GW-1 to remediate the site (See Figure 2, Proposed Remedy).

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

Table 1 – Remedial Action Alternatives Evaluation

Evaluation Criterion	GW-1	GW-2	GW-3
	PMZ	PMZ with Source-Area In-Situ Bioremediation	PMZ with Source-Area In-Situ Chemical Oxidation
Cost	\$1,390,000	\$1,704,000	\$2,499,000
Feasibility	5	4	3
Reliability (including long-term effectiveness and permanence)	3	4	4
Protection of human health and the environment (over both the short- and long-term)	Yes	Yes	Yes
Compliance with applicable regulations	Yes	Yes	Yes
Subtotal for Balancing Criteria (before Cost)	8	8	7

GW- Groundwater
PMZ - Plume Management Zone

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

8.0 THE PROPOSED REMEDIAL ACTION

The TCEQ proposes the following **Remedial Action** for the site:

Proposed Groundwater Remedial Action: The proposed groundwater remedy is Alternative GW-1: PMZ. The PMZ will be established with **institutional controls** that will be secured and implemented in accordance with TRRP and will remain in place until it is demonstrated that TPH in groundwater no longer exceeds the applicable PCL and that unacceptable exposure to NAPL is no longer a concern. The implementation of the PMZ will include the collection and analysis of groundwater samples and monitoring of the NAPL to confirm that the groundwater plume and NAPL remain stable and do not expand beyond the boundaries of the PMZ. During post-closure care of the remedy, if performance monitoring measures indicate that the PMZ is not functioning properly, limited in-situ groundwater treatment will be implemented as a contingency. If **institutional controls** are not placed on the off-site properties, the off-site NAPL area in the vicinity of MW-34 may be excavated, a clay layer would be constructed at the bottom and around the excavation walls, and then the excavation would be backfilled with clean soil.

9.0 COMMUNITY PARTICIPATION IN THE SUPERFUND PROCESS

The public is invited to comment on the proposed Remedial Action for the site. Those wanting to make oral comments may do so at the public meeting scheduled for April 23, 2020. The public meeting is legislative in nature and is not a contested case hearing under Chapter 2001 of the Texas Government Code. The public comment period ends on April 23, 2020 at the close of the public meeting. During this time period, the public may comment on the proposed **Remedial Action** or give additional information regarding the site or the identification of **Potentially Responsible Parties** (PRPs). Written comments concerning the proposed **Remedial Action** submitted prior to the public meeting must be received by 5:00 p.m. on April 22, 2020. Comments should be submitted to:

Scott Settemeyer, P.G.
Superfund Project Manager
Texas Commission on Environmental Quality
P.O. Box 13087 MC-136
Austin, Texas 78711-3087

or by e-mail: <SUPERFND@tceq.texas.gov>

or by facsimile: (512) 239-2450

Any questions not addressed at the public meeting will be addressed in writing by the TCEQ after the meeting and will be placed in the site files.

Proposed Remedial Action Document

Ballard Pits Proposed State Superfund Site

10.0 REMAINING STEPS IN THE SUPERFUND PROCESS

After considering all comments received during the public comment period relating to the proposed **Remedial Action**, the TCEQ will select the **Remedial Action** for the site.

PRPs are allowed a period of 60 days from the date of the public meeting to make a good faith offer to fund or perform the selected **Remedial Action**. If any PRPs make such an offer, they will be provided an additional 60 days to negotiate the terms of an agreed administrative order with the commission to fund or perform the selected **Remedial Action**. Whether or not PRPs come forward to fund or perform the remedy, the TCEQ will issue a final administrative order (188 Order) pursuant to THSC Section 361.188.

Following issuance of the 188 Order, either the PRPs or the TCEQ will complete the detailed design and construction of the selected remedy. At any time in this process, the TCEQ may determine that a **minor change, significant change, or fundamental change** should be made to the **Remedial Action**. If a **minor change** is implemented, the TCEQ will document the change in the site files without the necessity for another public meeting. If a **significant change** is made, a notice describing the changes will be posted in the *Texas Register* and in a newspaper of general circulation in Nueces County. If a **fundamental change** is considered, another public comment period and public meeting will be held to discuss the proposed change.

Upon completion of the **Remedial Action** and if certain other criteria are met, the TCEQ may propose to delete the site from the state registry of Superfund sites. A public meeting will be held before the site is deleted from the registry.

11.0 GLOSSARY

Focused Feasibility Study (FS) - A streamlined process for developing and screening potential remedial components and forming the **Remedial Action** alternatives to be analyzed in detail for a site.

Fundamental change - A change to the **Remedial Action** which uses a different approach to achieve the **Remedial Action** goals or one that uses the same approach but results in a **Remedial Action** that is less protective than the originally proposed **Remedial Action**.

Hazard Ranking System (HRS) - The scoring system used by the TCEQ to evaluate a site for the state or federal Superfund program. The scoring system was developed by the U.S. Environmental Protection Agency (EPA) as described in 40 Code of Federal Regulations Part 300, Appendix A.

Institutional Control (IC) - A legal instrument placed in the property records in the form of a deed notice, restrictive covenant, or other form established in the TRRP rules that indicates the limitations on, or conditions governing, the use of the property to ensure protection of human health and the environment.

Proposed Remedial Action Document Ballard Pits Proposed State Superfund Site

Minor change - A change to the *Remedial Action* which does not significantly affect the scope, performance, or cost of the originally proposed *Remedial Action*.

Plume Management Zone (PMZ) – A defined area and depth interval within which institutional controls are applied to prevent potential human contact with affected groundwater.

Potentially Responsible Parties (PRPs) - Persons or entities that the TCEQ considers potentially responsible for the contamination of the site pursuant to Section 361.271 of the Texas Health and Safety Code.

Proposed Remedial Action Document (PRAD) - The document which describes the TCEQ's proposed *Remedial Action*.

Protective Concentration Level (PCL) - The concentration of a chemical of concern which can remain within the source medium and not result in levels which exceed the applicable human health risk-based exposure limit or ecological *protective concentration level* at the point of exposure for that exposure pathway.

Remedial Action - An action, including remedial design and post-closure care, consistent with a remedy taken instead of or in addition to a removal action in the event of a release or threatened release of hazardous substances into the environment to prevent or minimize the release of a hazardous substance so that the hazardous substance does not cause an imminent and substantial endangerment to present or future public health and safety or the environment.

Remedial Investigation (RI) - An investigative study which may include removals, and/or a *feasibility study*, in addition to the development of *protective concentration levels*, designed to adequately determine the nature and extent of release or threatened release of hazardous substances and, as appropriate, its impact on air, soil, groundwater and surface water, both within and beyond the boundaries of the site.

Significant change - A change to the *Remedial Action* which materially affects the scope, performance, or cost of the *Remedial Action*, but which uses the same approach and results in a *Remedial Action* at least as protective as the originally proposed *Remedial Action*.

Solid Waste Disposal Act - Chapter 361 of the Texas Health and Safety Code. The purpose of the *Solid Waste Disposal Act* is to safeguard the health, welfare, and physical property of the people and to protect the environment by controlling the management of solid waste, including any hazardous waste that is generated. Subchapter F of Chapter 361 relates to the state Superfund process. The Texas Health and Safety Code is available online at: <http://www.statutes.legis.state.tx.us/Docs/HS/htm/HS.361.htm> .

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

Texas Risk Reduction Program (TRRP) - A program of the TCEQ that provides a consistent corrective action process directed toward protection of human health and the environment balanced with the economic welfare of the citizens of the state. The rules for this program are located in Chapter 350 of 30 Texas Administrative Code. The Texas Administrative Code is available online at: <http://www.sos.state.tx.us/tac/>.

Proposed Remedial Action Document
 Ballard Pits Proposed State Superfund Site
 Figure 1: Site Location Map



X:\TC\EO\Robstown_TX\Fig1\FormerPIL_2020.mxd

LEGEND

- FORMER PIT
- SUBJECT PROPERTY BOUNDARY

NOTES:
 - ALL FEATURES ARE APPROXIMATE

NAD 1983 STATE PLANE
 TEXAS SOUTH FEET

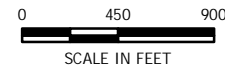
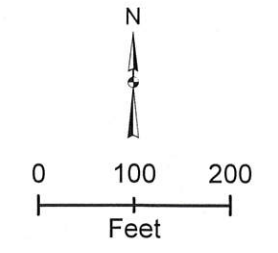
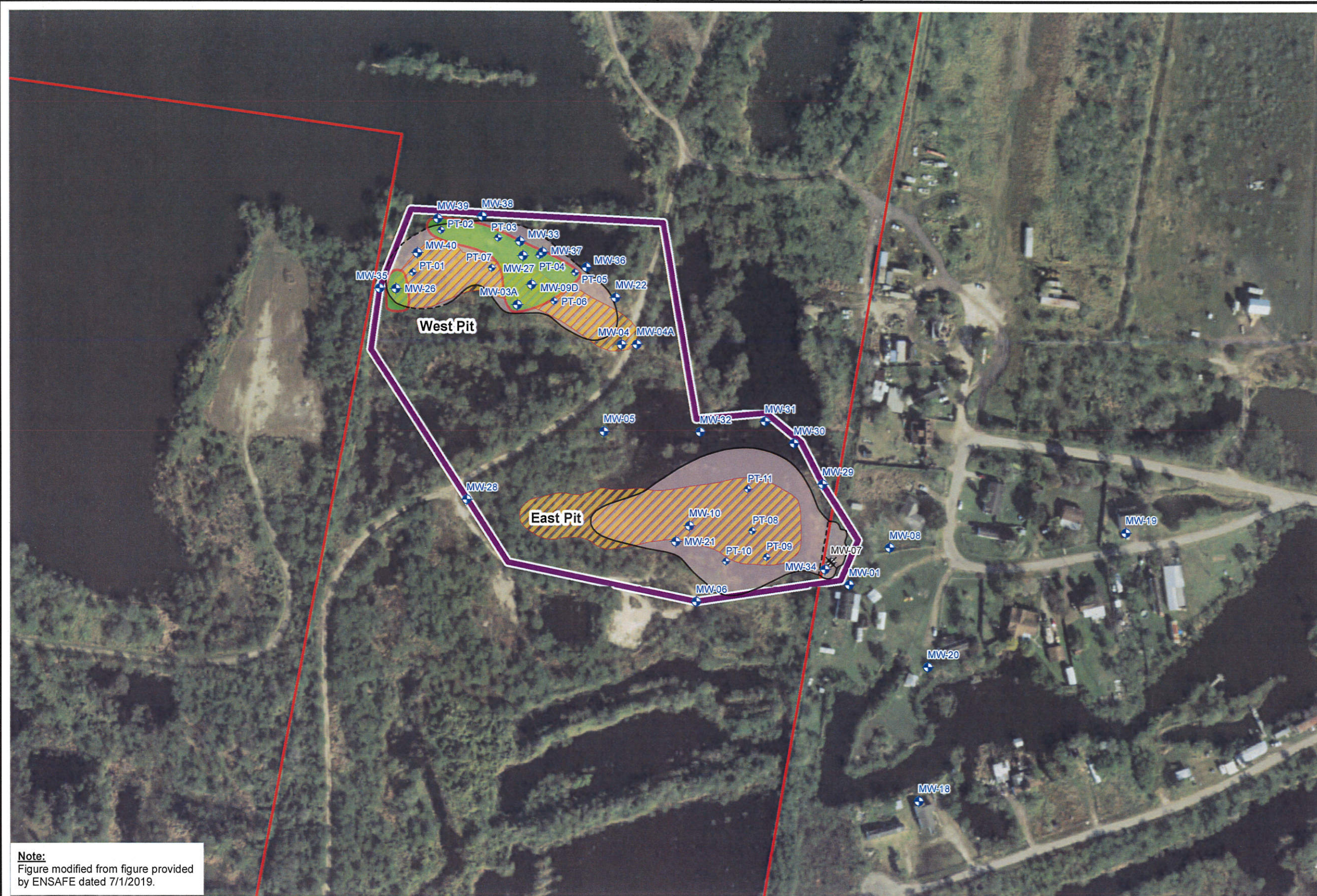


FIGURE 1
 SITE LOCATION MAP
 BALLARD PITS PROPOSED STATE SUPERFUND SITE
 ROBSTOWN, NUECES COUNTY, TEXAS

REQUESTED BY:	EB
DRAWN BY:	NR
DATE:	2/20/2020
PROJECT:	0888821724

ENSAFE
 Creative thinking. Custom solutions.
 800.588.7962 | www.ensafe.com

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Note:
 Figure modified from figure provided
 by ENSAFE dated 7/1/2019.



Legend









-  Monitoring Well Location
-  Pilot Test Well Location
-  Plugged and Abandoned
-  Former Pits
-  Protective Concentration Level Exceedance Zone for total petroleum hydrocarbons
-  Proposed Plume Management Zone (PMZ) for all alternatives
-  Approximate Subject Property Boundary
-  Non-Aqueous Phase Liquid Zone

Figure 2
 Proposed Groundwater PMZ Map
 Ballard Pits Proposed State Superfund Site
 Robstown, Nueces County, Texas

2020-02-27 M:\State\Ballard\Ballard202002.mxd EA-Dallas jschwartz

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

**APPENDIX A
LIST OF REPORTS**

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

Ballard Pits List of Reports

1. Remedial Investigation Technical Memorandum (February 1, 2007)
2. Final Removal Action Report- West Pit (August 15, 2008)
3. Pre-Feasibility Study Memorandum (August 2008)
4. Site Characterization Report (January 2009)
5. Treatability Study Report – East Pit (August 2009)
6. Engineering Controls Technical Memorandum (October 30, 2009)
7. Removal Action Report – East Pit (March 4, 2010)
8. Site Activity Report – August 2010 Groundwater Monitoring Well Installation and Sampling Event (October 1, 2010)
9. Passive Air Study at the Ballard Pits State Superfund Site: North Pit (August 9, 2011)
10. June 2011 Groundwater Sampling Event Findings (August 22, 2011)
11. Findings of the Focused Remedial Investigation for the Identification of Waste Pit Sources (August 2011)
12. Letter report to document February 2012 Groundwater Sampling Event Findings (May 1, 2012)
13. Remedial Investigation Technical Memorandum: Monitor well installation, surface and groundwater arsenic background study, and groundwater monitoring event (April 2013)
14. Pre-Feasibility Study Memorandum (May 2014)
15. Conceptual Site Model Report for the Ballard Pits Proposed State Superfund Site (August 2014)
16. Ambient Air Monitoring Report – Removal Action (December 2014)
17. Removal Action Report – North Pit (January 2015)
18. Drinking Water Survey Report (August 31, 2016)
19. Pilot Scale Treatability Study (January 2018)
20. Annual Groundwater Monitoring Report – January, April, and July 2018 Sample Events (August 23, 2018)
21. Affected Property Assessment Report (July 19, 2019)

**Proposed Remedial Action Document
Ballard Pits Proposed State Superfund Site**

22. Annual Groundwater Monitoring Report – January, April, June, July, and August 2019
Sampling Events (August 30, 2019)

23. Focused Feasibility Study (February 2020)