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# 1. Introduction

This report discusses field activities performed by GHD Services Inc. in 2019 at the Transwestern Pipeline Company, LLC. (Transwestern) Bell Lake Gas Plant (Site). The compressor station is owned and operated by DCP Midstream; however, groundwater remediation activities remain the responsibility of Transwestern. Lands located adjacent to the Site are owned by the State of New Mexico (State Land Office). The Site is regulated by the New Mexico Oil Conservation Division (NMOCD) under Abatement Plan AP-120.

The Site is located approximately 21 miles northwest of Jal, New Mexico. The legal description is Section 1, Township 24 South, Range 33 East in Lea County, New Mexico (**Figure 1**). Geographical coordinates for the Site are 32°14'55.59" North and 103°31'17.59" West. Site details can be seen on **Figure 2**.

## 1.1 Background

The Bell Lake Gas Plant began operation in 1961. During past operations, pipeline liquid wastes were placed in three unlined impoundments located on the northeast quarter of the facility property. Wastes were also placed in one concrete-lined impoundment located near the northwest corner of the property. Impacts to a shallow, unconfined, perched groundwater zone appear to have originated from the former unlined waste impoundments. Primary constituents of concern



## 1.2 Hydrogeology

The Site is underlain by recent Quaternary alluvial and terrace deposits consisting primarily of loosely consolidated sands and gravels. A dense clay layer was observed at a total depth of 104 ft bgs in boring MW-3. This clay is likely the basal confining layer for the shallow, unconfined perched aquifer encountered below the subject property.

The perched groundwater zone is present at the Site at approximately 90 ft bgs. Elevation of the perched groundwater has been stable at the Site since first recorded in 1993. There are no known uses of the perched zone within a 2-mile radius of the Site.

A water supply well, located in the southeast part of the Site, has historically provided water for use at the Site and for cattle grazing. This well was completed in 1967 to a total depth of 659 ft, and is screened from 550 to 659 ft bgs. Historical analytical results from samples collected from the on-Site supply well do not indicate migration of BTEX constituents into this water bearing zone.

# 2. Groundwater Monitoring Summary, Methodology, and Analytical Results

## 2.1 Groundwater Monitoring Summary



cleaned with an Alconox and deionized water solution followed by a deionized water rinse. The disposable polyethylene bladder was removed after each well and a new bladder was attached to the cleaned pump prior to sampling the next well.

Once groundwater was collected from each sampling location, the samples were labeled, placed on ice, and stored for submittal to Hall Environmental Analysis Laboratory (HEAL) for analyses of BTEX by Environmental Protection Agency (EPA) Method 8260, TDS by Standard Method 2540C, and for chloride by EPA Method 300.0. A summary of analytical results and field measured groundwater quality parameters is presented in **Table 2**. The corresponding laboratory analytical reports are included in **Appendix A**.

### 2.3 Groundwater Monitoring Analytical Results

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Results of the groundwater monitoring events are discussed below:

- **Benzene:** The NMWQCC groundwater standard for benzene is 5 micrograms per liter (µg/L). During the May and November 2019 monitoring events



### **3. Pumping Test**

The pumping event performed in 2019 was completed to determine if the low yield observed from SVE-9 in 2017 was consistent across the Site. An electrical submersible pump was utilized to induce drawdown in MW-5 from 9:00AM July 29 through 1:00PM July 30, 2019 and MW-21 from 7:45PM July 30 through 12AM August 1, 2019 for a total of 28 hours of continuous pumping from each well. Changes in depth to water were logged continuously in both wells via In-Situ transducers in order to ensure adequate fluid for pumping was maintained. Flow rates varied from approximately 0.60 gallons per minute (gpm) to 0.80 gpm for MW-5 and from approximately 0.80 gpm to 0.95 gpm for MW-21. The flow rate of the pump fluctuated depending upon the controller voltage and groundwater head above the pump within in the well. As fluid levels decreased within the well, the voltage resistance decreased, slightly increasing flow. Flow rates were adjusted as precisely as possible considering these constraints; however, neither a consistent flow rate nor water level were maintained throughout the event. An attempt was made to keep the flow rate as high as possible while still maintaining fluid in the well, achieving as close to an equilibrium as possible. Even though a consistent flow rate or water level was not achieved, the flow rate still averaged above 0.5 gpm in both MW-5 and MW-21 for the duration of the pumping event.

A previous pumping event in 2017 ran for approximately three days on well SVE-9 and



## 4.2 2020 Recommendations

Based on the above conclusions, GHD recommends the following for 2020:

- Continue semiannual groundwater monitoring in order to monitor concentrations of BTEX, chloride, and TDS.

All of Which is Respectfully Submitted,

GHD

A handwritten signature in blue ink, appearing to read "Christine Mathews".

Christine Mathews

Project Manager

A handwritten signature in blue ink, appearing to read "Jeff Walker".

Jeff Walker

Senior Project Manager

## Figures











## Tables































































































































































































