2018 Annual Groundwater Monitoring Report

Flora Vista No. 1
San Juan County, New Mexico
API# 30-045-20073
NMOCD# 3R-173

Hilcorp Energy Company

GHD | 6121 Indian School Rd NE Suite 200 Albuquerque NM 87110 USA

11145982| MN00| Report No 2 | January 2019

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Thursday, March 14, 2019 1:21 PM
To: 'Clara Cardoza'
Cc: Jennifer Deal; Griswold, Jim, EMNRD; Billings, Bradford, EMNRD; Fields, Vanessa, EMNRD; 'Jeff.Walker@ghd.com'
Subject: RE: 3R-173 Flora Vista #1 2018 Annual GWM Rpt ~COR-11145982~

Clara,

OCD has reviewed the 2018 Ground water report. HEC need to fully delineate the ground water plum for COC BTEX, Dissolved Iron and Manganese in 2019. In addition for monitor wells DW-1 and DW-2 Dissolved Iron and Manganese need to be added to the list of constituents sampled for annually.

No work plan or well placement needs to be approved at this time, please make sure HEC follows all applicable rules for the installation of additional monitoring wells.

HEC can report the completion of the delineation in a separate report or within the 2019 Annual ground water report.

Thank you,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jeff.Walker@ghd.com <Jeff.Walker@ghd.com>
Sent: Friday, January 25, 2019 12:20 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
Cc: Jennifer Deal <jdeal@hilcorp.com>; filing@craworld.com
Subject: [EXT] 3R-173 Flora Vista #1 2018 Annual GWM Rpt ~COR-11145982~

Cory/Vanessa,

Please find attached the 2018 Annual Groundwater Monitoring report for the subject site, submitted on behalf of Hilcorp Energy. Please let Clara or me know if you have any questions regarding this document or the site.

Also, please acknowledge receipt for record keeping.

Thank you-Jeff

Jeffrey L. Walker
Sr. Project Manager

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1. Introduction

This annual report presents the results of the quarterly groundwater monitoring events conducted during the first through third quarters by GHD Services, Inc. (GHD) and by by Hilcorp Energy Company (Hilcorp) during 2018 at the Flora Vista No. 1 natural gas well site (hereafter referred to as the "Site"). The Site is operated by Hilcorp after their acquisition of ConocoPhillips Company (ConocoPhillips) San Juan Basin assets in spring of 2017. The Site is located on private property in Unit Letter F, Section 22, Township 30N, Range 12W, of San Juan County, New Mexico (Figure 1). The Site consists of a gas well and associated equipment and installations. A detailed Site Plan is provided as Figure 2.

1.1 Background

A previous operator removed an earthen dehydrator pit from service in March 1994. Hydrocarbon impacted soil was subsequently excavated in April 1994 and again in November 1995. A pit closure report was submitted to the New Mexico Oil Conservation Division (NMOCD) in August 1996 by El Paso Field Services. The NMOCD issued a letter to El Paso Field Services on January 24, 1997 approving pit closure and remediation.

Burlington encountered hydrocarbon impacted soil at the Site during a production facility resetting activity in early 2003. Burlington subsequently directed the excavation of approximately 9,443 cubic yards of soil in an attempt to remove impacted soils. Groundwater was observed in the bottom of the excavation at approximately 25 feet below ground surface (ft. bgs). Field screening was conducted during excavation to determine extent of impacted soil. To enhance the remediation of the remaining amounts of residual hydrocarbon contamination in the excavated area, approximately 80 barrels (bbls) of a potassium permanganate oxidizer solution was sprayed on the soil.

In September 2003, Envirotech installed a groundwater monitor well (MW-1) slightly down gradient from the center of the excavation (Figure 2). Subsequent groundwater sampling included analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX), as well as total petroleum hydrocarbons (TPH). Analytical results indicated the presence of benzene and total xylenes above regulatory standards. Monitor wells MW-2, MW-3, and MW-4 were installed at the Site in August 2008 in response to an April 2008 request from NMOCD for Site characterization and additional laboratory analyses. Monitor well MW-5 was installed in September 2015 to assess soil and groundwater impacts upgradient from MW-1 and to ascertain whether or not storage tanks north of this location were a potential source of groundwater impacts. A generalized geologic cross section was prepared using boring logs from the August 2008 monitoring well installation and is presented as Figure 3.

A mobile-dual phase extraction event was conducted in August 2013 removing approximately 1,300 of dissolved phase hydrocarbon-impacted groundwater. Subsurface lithology and vadose zone short circuiting determined this remedial approach not to be cost effective.

GHD conducted an in-situ chemical oxidation (ISCO) event in October 2016. A total of 4834 gallons of 15 percent PersulfOx oxidant was injected into MW-1 and MW-5 to promote oxidation of soluble metals and hydrocarbon impacted groundwater. A site history timeline is presented in Table 1.

2. Groundwater Monitoring Summary Methodology and Analytical Results

2.1 Groundwater Monitoring Summary

Quarterly groundwater monitoring was conducted at the Site on March 15, June 27 and September 6, 2018 by GHD and on December 20, 2018 by Hilcorp. Groundwater elevation measurements were recorded using an oil/water interface probe. Monitor well MW-1 was dry in March and June of 2018 and therefore was not sampled. Groundwater elevations are detailed in Table 2. Groundwater potentiometric surface maps created from 2018 data are presented as Figures 4, 5, 6 and 7. Groundwater flows, seasonally, southwesterly to southeasterly, consistent with historical data.

2.2 Groundwater Monitoring Methodology

Prior to sampling, GHD purged at least three well volumes from Site monitor wells to be sampled with a polyethylene bailer. If three well volumes could not be purged, wells were purged until dry and allowed to recharge prior to sampling. Purge water generated during sampling events was placed in the on Site produced water tank. While bailing each well, groundwater parameter data, including temperature, pH, conductivity, dissolved oxygen and oxidation/reduction potential were collected using a calibrated multi parameter meter. Hilcorp did not collect field parameters during the December quarterly event. Field parameters are summarized on Table 3.

Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Pace Analytical. Samples were analyzed for the presence of BTEX by EPA Method 8260 and dissolved iron and dissolved manganese by EPA Method 6010.

On June 27, 2018 GHD collected a groundwater sample from a down gradient domestic irrigation wells, DW-2, located at 34 County Road (CR) 3581, Flora Vista. The homeowner at #32 CR 3581 was away during the September sampling event and the irrigation well there could not be sampled. Well records for these two down gradient wells have been compared to on-Site monitor wells and are believed to be completed in the same aquifer as the Site. The wells have been sampled on an annual basis since 2009 (see Table 4).

2.3 Groundwater Monitoring Analytical Results

Groundwater samples collected during 2018 quarterly sampling events from domestic irrigation well DW-2 did not exceed New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for any target constituents. This is consistent with historical results. Groundwater collected from Site monitor wells exceeded the NMWQCC standards for the following constituents:

March 2018

- Dissolved Iron – The NMWQCC standard for dissolved iron is 1 milligram per liter (mg/L). The concentration of dissolved iron in the groundwater sample collected from MW-4 was 5.68 mg/L.

- Dissolved Manganese – The NMWQCC standard for dissolved manganese is 0.2 mg/L. The concentration of dissolved manganese in the groundwater sample collected from MW-4 was 1.64 mg/L.
- Xylenes – The NMWQCC standard for total xylenes is 0.62 mg/L. The concentration of xylenes in the groundwater sample collected from MW-5 was 1.46 mg/L.

June 2018

- Dissolved Manganese – The concentrations of dissolved manganese in the groundwater samples collected from MW-4 and MW-5 were 3.83 mg/L and 3.97 mg/L, respectively.

September 2018

- Benzene – The NMWQCC standard for benzene is 0.005 mg/L. The concentrations of benzene in the groundwater samples collected from MW-1, MW-4 and MW-5 were 0.0313 mg/L, 0.0179 mg/L and 0.0511 mg/L.
- Ethylbenzene – The NMWQCC standard for ethylbenzene is 0.7 mg/L. The concentrations of ethylbenzene in the groundwater samples collected from MW-5 was 0.233 mg/L.
- Xylenes –The concentration of xylenes in the groundwater sample collected from MW-5 was 1.94 mg/L.
- Dissolved Iron – The concentrations of dissolved iron in groundwater samples collected from MW-1 and MW-4 were 11.7 mg/L, and 10.5 mg/L, respectively.
- Dissolved Manganese – The concentration of dissolved manganese in groundwater sample collected from MW-1, MW-2, MW-3, MW-4 and MW-5 were 5.83 g/L, 0.270 mg/L, 0.249 mg/L, 4.58 mg/L and 2.31 mg/L, respectively

December 2018

- Benzene –The concentration of benzene in the groundwater sample collected from MW-1and MW-5 was 0.0827 mg/L and 0.0568 mg/L, respectively.
- Xylenes –The concentration of xylenes in the groundwater sample collected from MW-5 was 4.48 mg/L, respectively.
- Dissolved Manganese – The concentrations of dissolved manganese in groundwater samples collected from MW-4 and MW-5 were 4.82 mg/L, and 3.79 mg/L, respectively.

A contaminant concentration map for 2018 quarterly groundwater monitor events is presented on Figure 8. A summary of the historical groundwater laboratory analytical results is presented in Table 4. The 2018 laboratory analytical reports are included in Appendix C.

3. Conclusions and Recommendations

Concentrations of BTEX constituents continue to be observed in Site monitor wells, including down gradient well MW-4, at concentrations in excess of groundwater standards. Groundwater quality data for the Site suggest an overall, continuing downward trend for BTEX constituents over time.

Domestic irrigation wells, located down gradient from the Site and sampled annually as part of the Site-wide groundwater quality program, continue to be non-detect for BTEX constituents. Dissolved iron and manganese also continue to be detected in some Site wells at concentrations in excess of groundwater standards for these constituents.

The continuation of continued quarterly groundwater monitoring is recommended for the Site. The next quarterly monitoring event would then occur in March 2019.

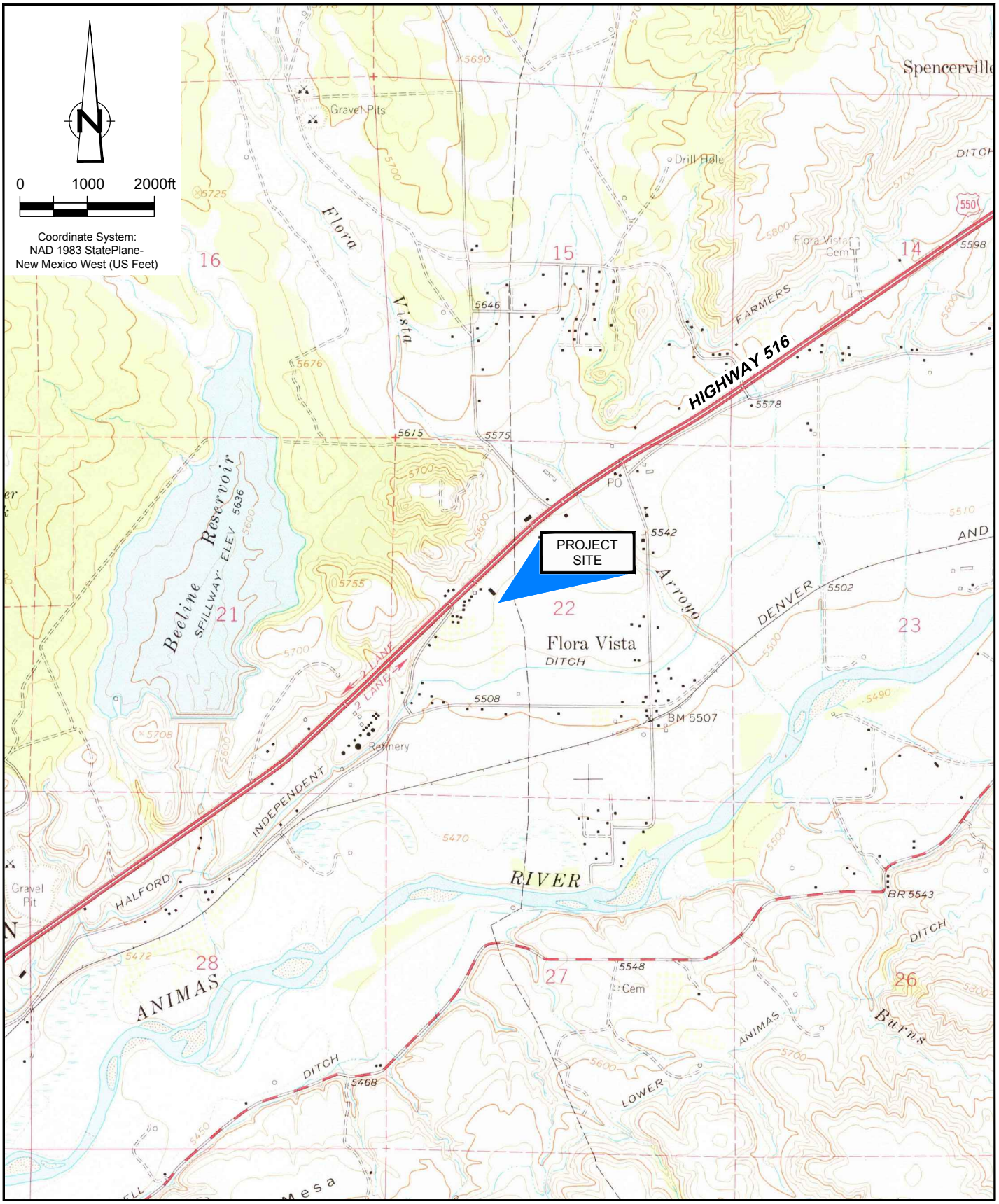
Respectfully Submitted,

GHD

Jeff Walker
Sr. Project Manager

Alan Brandon
Sr. Project Manager

Figures



Source: USGS 7.5 Minute Quad "Flora Vista, New Mexico"

HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00
Aug 24, 2018

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1114----\11145982-Hilcorp-Flora Vista No. 1\11145982-00\11145982-00(002)\11145982-00(002)GN-DL001.dwg

Source: ConocoPhillips high resolution aerial imagery 2008

HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

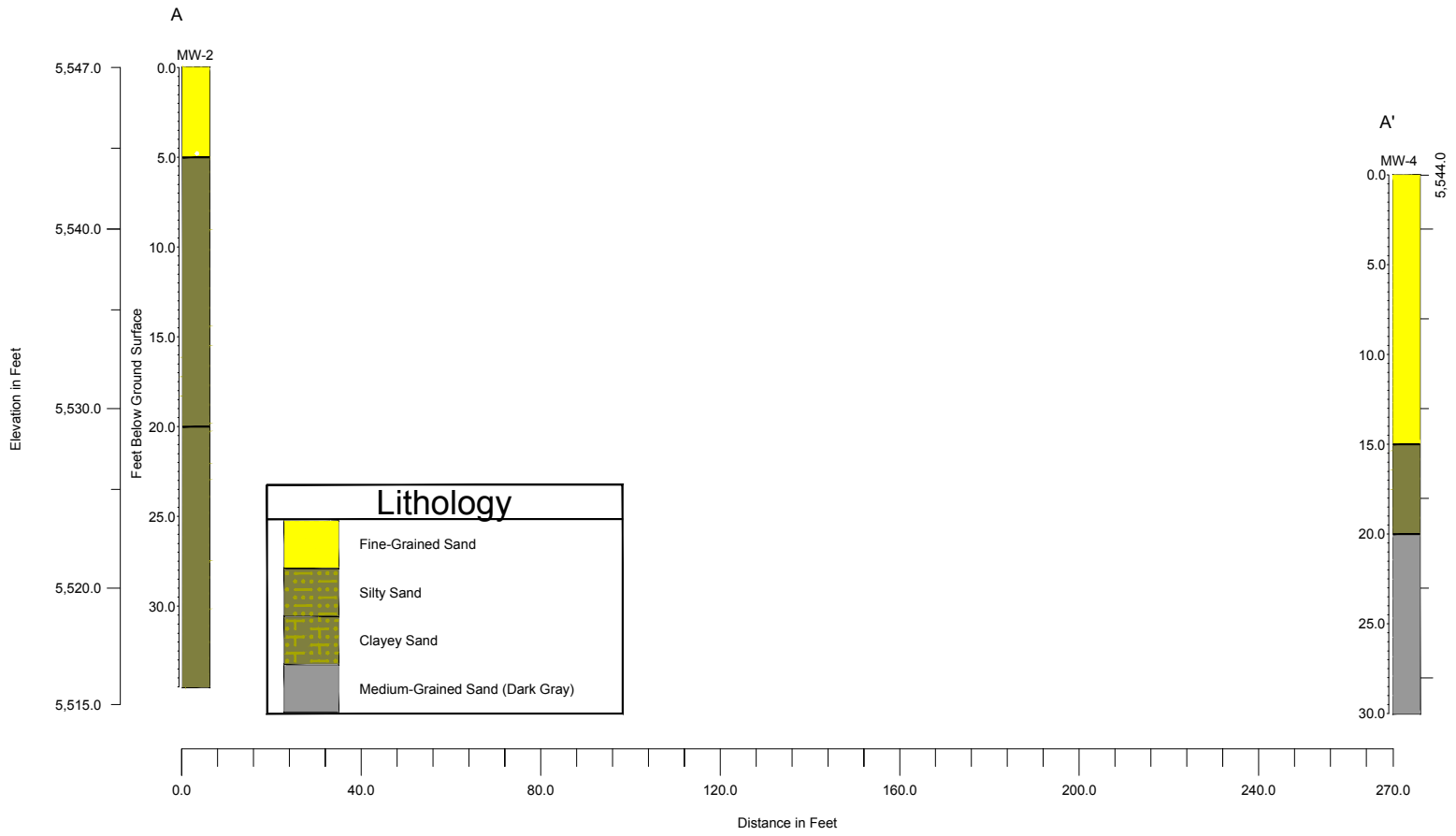
Aug 24, 2018

SITE PLAN

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1114----\11145982-Hilcorp-Flora Vista No. 1\11145982-00\11145982-00(002)\11145982-00(002)GN-DL001.dwg

Flora Vista No. 1 - Cross-Section A-A'



HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Aug 24, 2018

GEOLOGICAL CROSS SECTION

FIGURE 3

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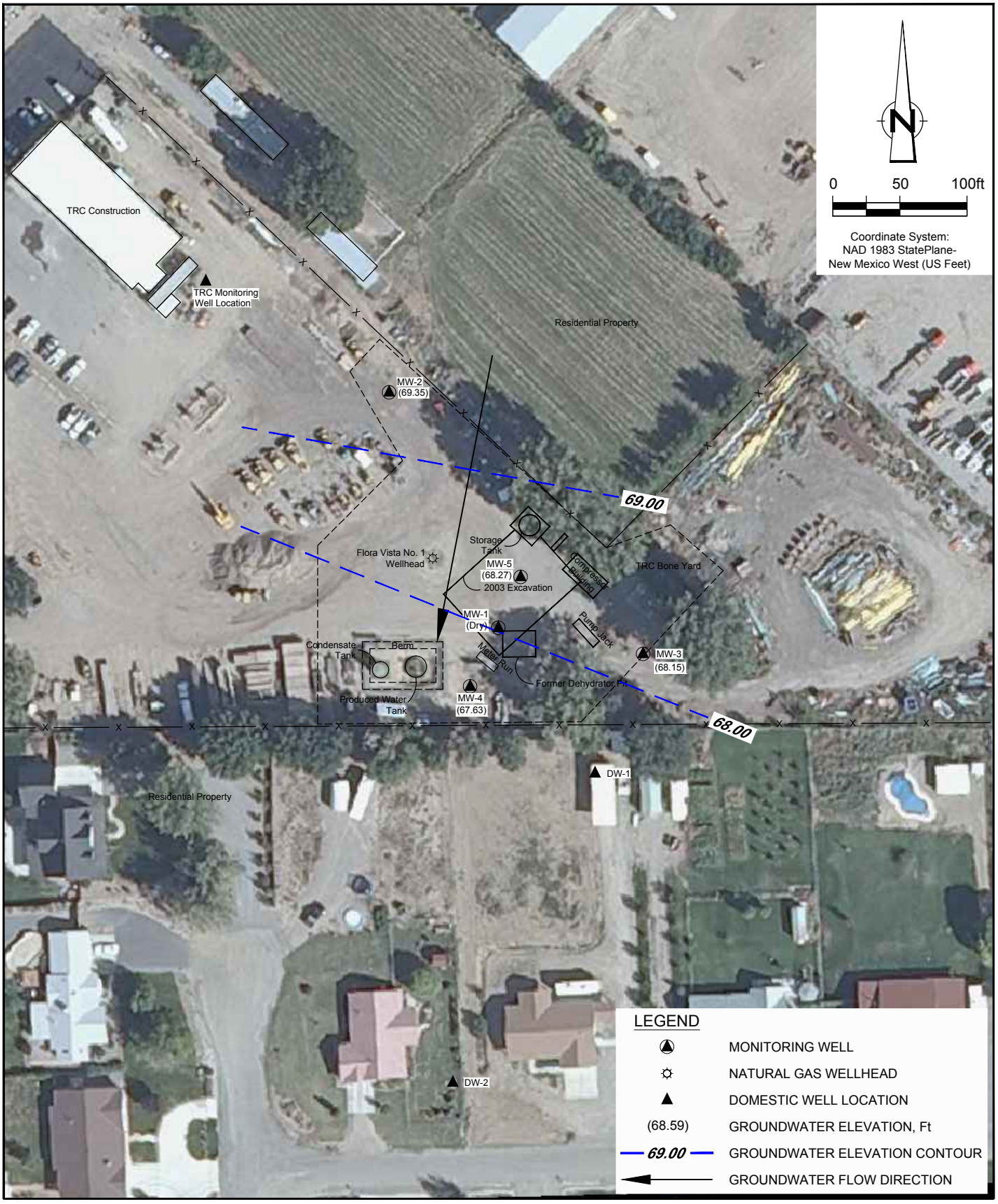

Source: ConocoPhillips high resolution aerial imagery 2008

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FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Jan 12, 2019

MARCH 2018
GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 4

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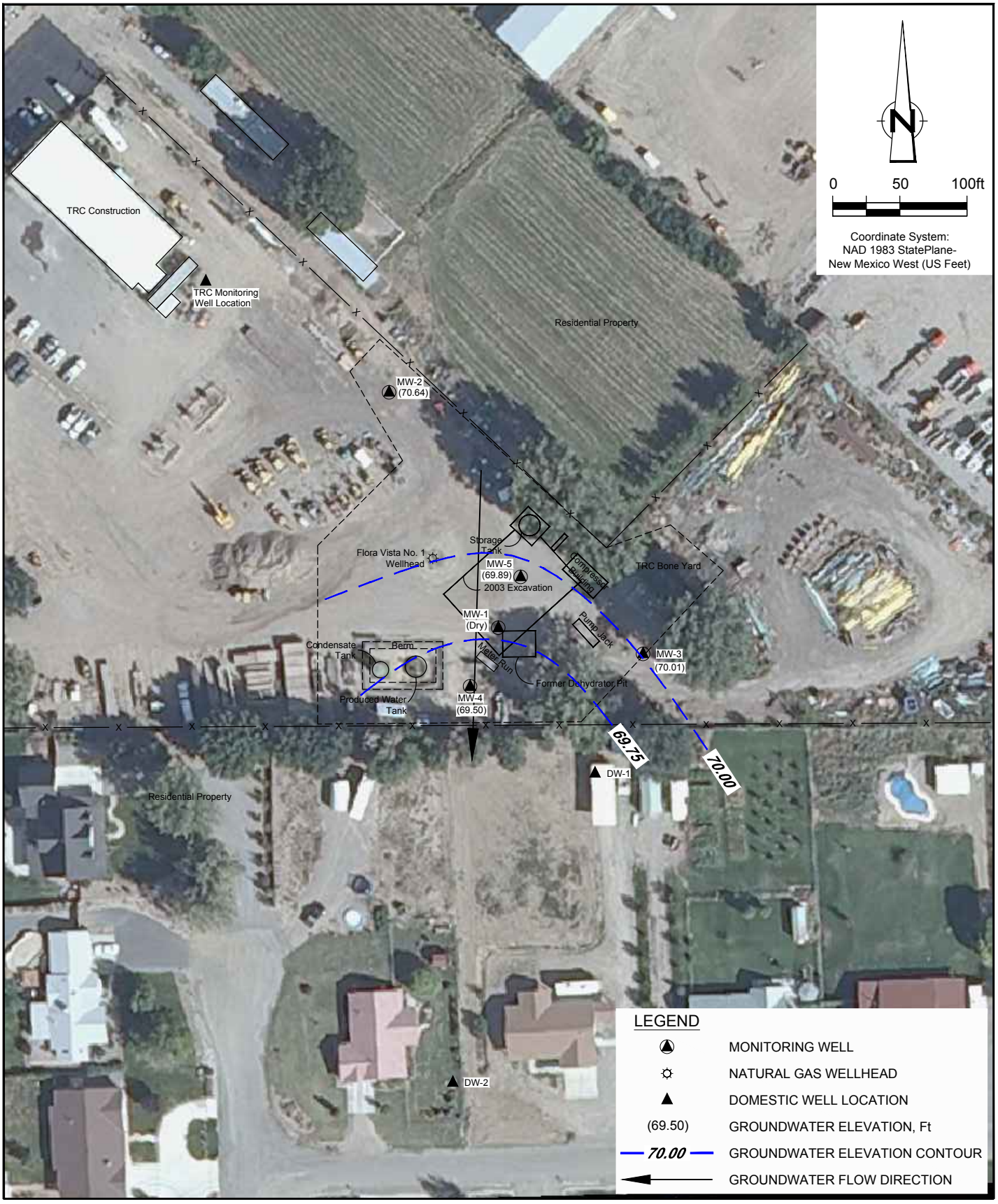

Source: ConocoPhillips high resolution aerial imagery 2008

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SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Jan 12, 2019

JUNE 2018
GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 5

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Source: ConocoPhillips high resolution aerial imagery 2008

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SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

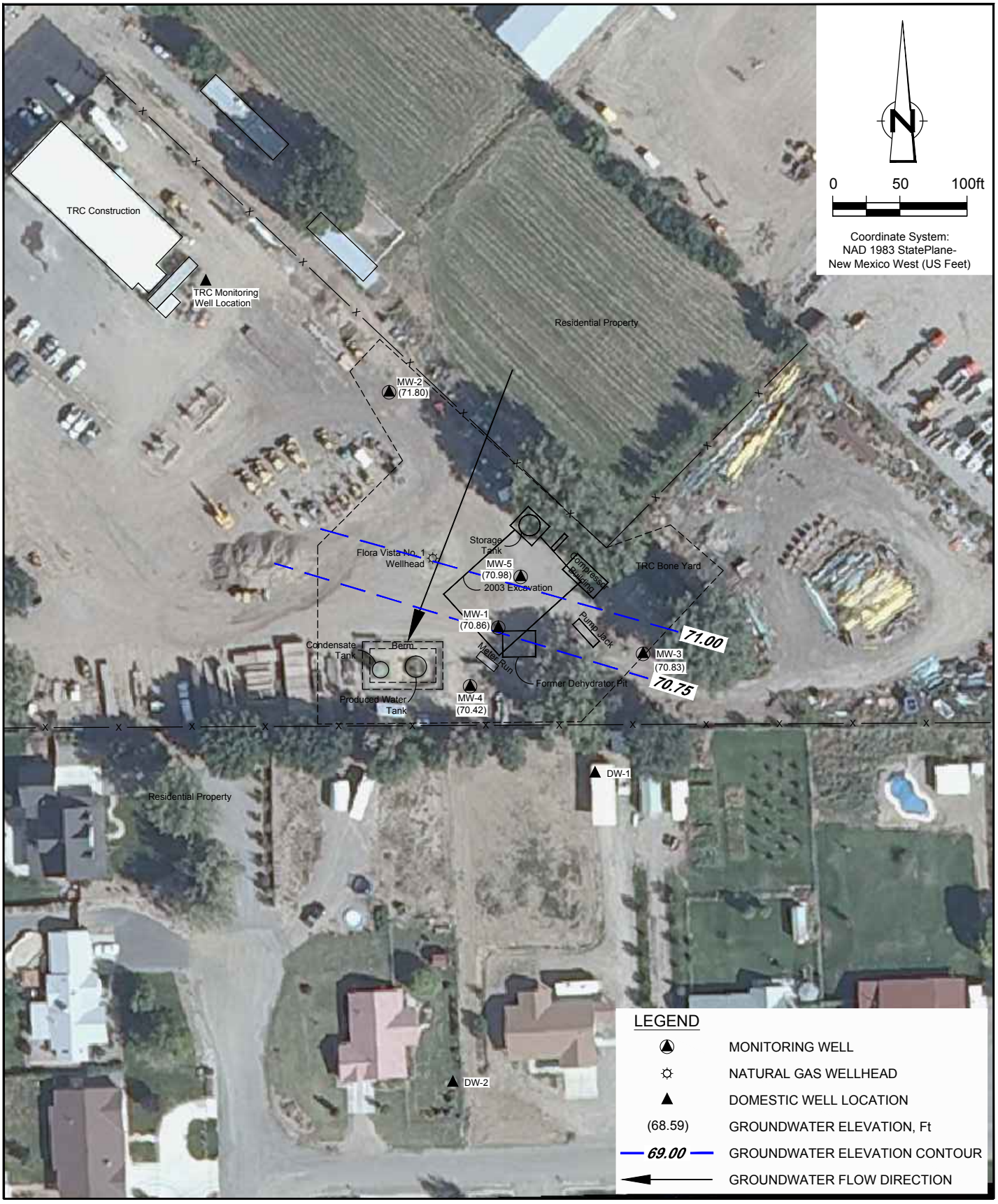
11145982-00

Jan 12, 2019

SEPTEMBER 2018
GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 6

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1114----\11145982-Hilcorp-Flora Vista No. 1\11145982-00\11145982-00(002)\11145982-00(002)GN-DL001.dwg



Source: ConocoPhillips high resolution aerial imagery 2008

HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Jan 14, 2019

DECEMBER 2018
GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 7

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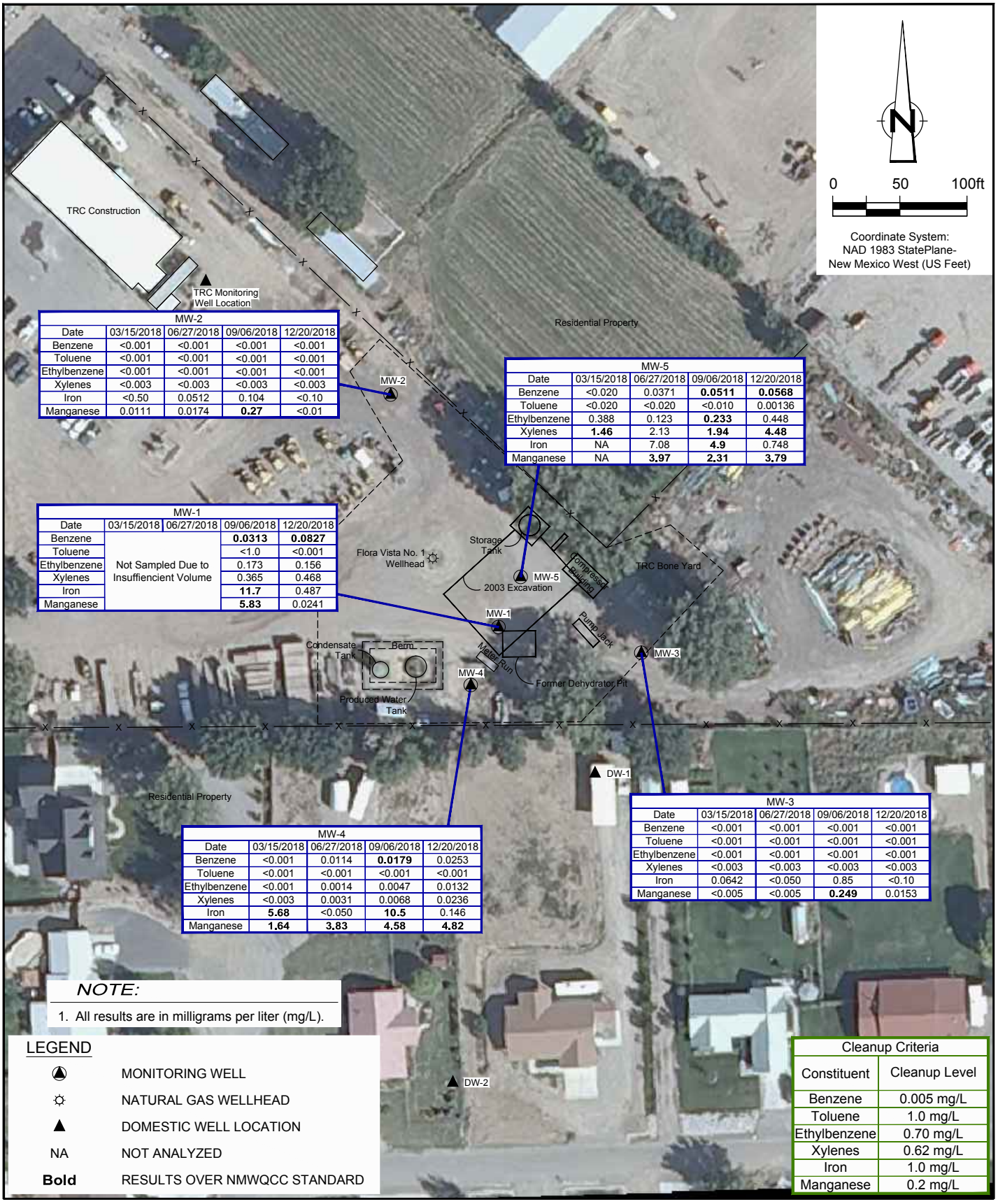

MW-2				
Date	03/15/2018	06/27/2018	09/06/2018	12/20/2018
Benzene	<0.001	<0.001	<0.001	<0.001
Toluene	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	<0.001
Xylenes	<0.003	<0.003	<0.003	<0.003
Iron	<0.50	0.0512	0.104	<0.10
Manganese	0.0111	0.0174	**0.27**	<0.01

MW-5				
Date	03/15/2018	06/27/2018	09/06/2018	12/20/2018
Benzene	<0.020	0.0371	**0.0511**	**0.0568**
Toluene	<0.020	<0.020	<0.010	0.00136
Ethylbenzene	0.388	0.123	**0.233**	0.448
Xylenes	**1.46**	2.13	**1.94**	**4.48**
Iron	NA	7.08	**4.9**	0.748
Manganese	NA	**3.97**	**2.31**	**3.79**

MW-1				
Date	03/15/2018	06/27/2018	09/06/2018	12/20/2018
Benzene	Not Sampled Due to Insuffiencient Volume		**0.0313**	**0.0827**
Toluene			<1.0	<0.001
Ethylbenzene			0.173	0.156
Xylenes			0.365	0.468
Iron			**11.7**	0.487
Manganese			**5.83**	0.0241

MW-4				
Date	03/15/2018	06/27/2018	09/06/2018	12/20/2018
Benzene	<0.001	0.0114	**0.0179**	0.0253
Toluene	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	<0.001	0.0014	0.0047	0.0132
Xylenes	<0.003	0.0031	0.0068	0.0236
Iron	**5.68**	<0.050	**10.5**	0.146
Manganese	**1.64**	**3.83**	**4.58**	**4.82**

MW-3				
Date	03/15/2018	06/27/2018	09/06/2018	12/20/2018
Benzene	<0.001	<0.001	<0.001	<0.001
Toluene	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	<0.001
Xylenes	<0.003	<0.003	<0.003	<0.003
Iron	0.0642	<0.050	0.85	<0.10
Manganese	<0.005	<0.005	**0.249**	0.0153

NOTE:

1. All results are in milligrams per liter (mg/L).

LEGEND

▲	MONITORING WELL
☼	NATURAL GAS WELLHEAD
▲	DOMESTIC WELL LOCATION
NA	NOT ANALYZED
Bold	RESULTS OVER NMWQCC STANDARD

Cleanup Criteria	
Constituent	Cleanup Level
Benzene	0.005 mg/L
Toluene	1.0 mg/L
Ethylbenzene	0.70 mg/L
Xylenes	0.62 mg/L
Iron	1.0 mg/L
Manganese	0.2 mg/L

Source: ConocoPhillips high resolution aerial imagery 2008

HILCORP ENERGY COMPANY
SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO
FLORA VISTA NO. 1 NATURAL GAS WELL SITE

11145982-00

Jan 14, 2019

2018 CONTAMINANT CONCENTRATION MAP

FIGURE 8

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Tables

Table 1

Site History Timeline
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
November 28, 1995	Pit Closure Activities	Philip Environmental excavated and removed approximately 850 cubic yards of soil from the area where the Flora Vista No. 1 dehydrator pit was located. Excavation activities were stopped in the north and west directions due to the positions of the compressor and meter run equipment.
July and August 1996	Submittal of Pit Closure	El Paso Field Services submits Pit Closure Reports to the New Mexico Oil Conservation Division outlining the excavation and closure of the dehydrator pit at the site.
January 24, 1997	Pit Closure Approval	El Paso Field Services receives approval of pit closure from the New Mexico Oil Conservation Division.
June and July 2003	Initial Site Assessment	Historical petroleum contaminated soil discovered during a production facility resetting activity. Environmental investigation began with the excavation of approximately 4,986 cubic yards of impacted soil and 4,446 cubic yards of clean soil. Groundwater was encountered at approximately 25 feet below the ground surface. The impacted soil was taken to a commercial landfill facility located on Crouch Mesa in Farmington, New Mexico. Approximately 80 bbls of potassium permanganate was sprayed on the soils to breakdown any minor amounts of residual petroleum contaminants. The excavation area was backfilled with clean soil.
September 2, 2003	Groundwater Monitor Well Installation	One ground water Monitor Well, MW-1, was installed slightly down-gradient from the center of the soil excavation by Envirotech. Total depth of well is 26 feet.
September of 2003 through December 13, 2006	Quarterly Groundwater Monitoring	Quarterly groundwater monitoring of MW-1 for analysis of BTEX constituents. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes.
March 31, 2006	Site Transfer	ConocoPhillips Company completes acquisition of Burlington Resources.
March 2007 through January 2008	Consultant Change and Groundwater Monitoring	After the acquisition of Burlington Resources by ConocoPhillips, consulting responsibilities were transferred from Lode Star LLC of Farmington, NM to Tetra Tech of Albuquerque, NM. Tetra Tech began sampling the Flora Vista site quarterly in March of 2007. Four consecutive quarters of groundwater sampling were conducted at the Flora Vista site. Groundwater was sampled from MW-1 and was analyzed for BTEX constituents during all sampling events. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes.
March 28, 2008	Reporting	Annual report for 2007 is submitted to the Oil Conservation Division of NM Energy, Minerals, and Resources Department (OCD).
April 1, 2008	Additional Monitoring Requested by OCD	Oil Conservation Division of NM Energy, Minerals, and Resources Dept. indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn Von Gonten.
July 23, 2008	Groundwater Monitoring	Groundwater monitoring of MW-1. One sample and a duplicate were collected. Benzene and Xylenes are above NMWQCC standards.
August 12 and 13, 2008	Groundwater Monitor Well Installation and Groundwater Monitoring	Three additional groundwater Monitor Wells, MW-2, MW-3 and MW-4 were installed by WDC and overseen by Tetra Tech. MW-2 was installed upgradient of MW-1. Both MW-3 and MW-4 were installed downgradient of MW-1. Soil samples were collected from just above the groundwater interface for each boring location and sent to Southern Petroleum Laboratory for a baseline soil analysis. All wells were developed by purging approximately 80 gallons of fluid using a surge block and hand bailer/purge pump.
October 21, 2008	Groundwater Monitoring	Third quarter 2008 groundwater monitoring was completed and was the first quarter of sampling to include all four monitor wells on site. A baseline suite was completed including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. There were 3 constituents that returned results above NMWQCC limits, Benzene (MW-1 and MW-4), Total Xylenes (MW-1), and Sulfate (MW-1).
January 28, 2009	Groundwater Monitoring	Tetra Tech conducted fourth quarter 2008 groundwater monitoring at the site for BTEX constituents in all four monitor wells. Benzene (MW-1 and MW-4), Ethylbenzene (MW-1) and Xylenes (MW-1) were above NMWQCC standards.
March 1, 2009	Initiate Annual Sampling	The Flora Vista No. 1 site is put on an annual monitoring schedule. The next sampling event was scheduled for September 2009.
September 30, 2009	Groundwater Monitoring	Tetra Tech conducted 2009 annual groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards.
December 16, 2009	Private Irrigation Well Sampling	Tetra Tech collected a groundwater sample from a domestic well (DW-1) located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards.
May 14, 2010	Initiate Quarterly Sampling	The Flora Vista No. 1 site is put on a semi-annual monitoring schedule. Private domestic irrigation well sampling is also to be included in semi-annual sampling events.
June 10, 2010	Private Irrigation Well Sampling	Tetra Tech collected a groundwater sample from a second private down-gradient domestic well (DW-2) to be sampled for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards.
June 10 and 11, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards.
September 27, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards.
December 14, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards.

Table 1

Site History Timeline
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
March 17, 2011	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron, dissolved manganese, and sulfate. Groundwater collected from MW-1 exceeded the NMWQCC standards for benzene, xylenes, dissolved iron and dissolved manganese. Groundwater collected from MW-4 exceeded the NMWQCC standards from benzene and dissolved manganese. Tetra Tech also collected a groundwater sample from a domestic well (DW-2) located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.
June 15, 2011	Transfer of Site Consulting Responsibilities	On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.
June 24, 2011	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. CRA also collected a groundwater sample from Domestic Well DW-1 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.
September 29, 2011	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
December 14, 2011	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
March 9, 2012	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. The well vault of MW-2 is found to be destroyed.
April 25, 2012	Well Pad Repair	CRA on site to oversee repair of MW-2.
June 7, 2012	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. CRA also collected a groundwater sample from Domestic Well DW-2 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.
July 27, 2012	Private Irrigation Well Sampling	CRA collected a groundwater sample from Domestic Well DW-1 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.
September 19, 2012	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
December 13, 2012	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), ethylbenzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
March 20, 2013	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
June 12, 2013	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
August 21-22, 2013	Dual-Phase Extraction	CRA and subcontractor AccuVac conducted Mobile Dual-Phase Extraction from MW-1 and MW-4. 1292 gallons pumped from these wells and 0.5 gallons equivalent product removed via SVE during the two-day event.
September 11, 2013	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
December 13, 2013	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
March 19, 2014	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
June 17, 2014	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
September 18, 2014	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
December 18, 2014	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. MW-1 and MW-3 were inaccessible during this monitoring event. Benzene, dissolved iron, and dissolved manganese were above NMWQCC standards in MW-4.

Table 1

Site History Timeline
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
March 19, 2015	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. MW-1 did not contain sufficient volume for sampling. Dissolved iron and dissolved manganese were above NMWQCC standards in MW-4.
June 18, 2015	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
September 1, 2015	Monitoring Well Installation	GHD installed MW-5 upgradient from MW-1. Soils just above water table impacted with TPH above NMOCD standards. BTEX constituents, dissolved iron and manganesewere in groundwater above NMWQCC standards.
September 17, 2015	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, and MW-5), xylene (MW-5), dissolved iron (MW-1, MW-4, and MW-5) and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards.
December 3, 2015	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, and MW-5), toluene (MW-5), xylene (MW-5), dissolved iron (MW-1, MW-4, and MW-5) and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards.
March 31, 2016	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Total xylenes (MW-5), dissolved iron (MW-4, and MW-5) and dissolved manganese (MW-3, MW-4, and MW-5) were above NMWQCC standards.
June 20, 2016	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, MW-5), total xylenes (MW-1, MW-5), dissolved iron and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards.
October 25-26, 2016	ISCO Event	GHD conducted an in-situ chemical oxidation event. A total of 4834 gallons of 15% solution catalyzed sodium persulfate was injected into MW-1 and MW-5.
September 7, 2016	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1 and MW-5), total xylenes (MW-1, MW-5), dissolved iron and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards.
November 29, 2016	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese. Benzene (MW-1, MW-4, MW-5), total xylenes (MW-1, MW-5), dissolved iron and dissolved manganese (MW-1, MW-4, and MW-5) were above NMWQCC standards.
March 9, 2017	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
April 13, 2017	Sale of San Juan Asset to Hilcorp Energy	Site sold as part of ConocoPhillips Company announced sale of San Juan Asset to Hilcorp Energy Company.
June 15, 2017	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
September 27, 2017	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
December 5, 2017	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
March 15, 2018	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
June 27, 2018	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
September 6, 2018	Groundwater Monitoring	GHD conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese.
December 20, 2018	Groundwater Monitoring	Groundwater monitoring conducted by Hilcorp Energy.

Table 2

Monitoring Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	*Total Depth (ft below TOC)*	*Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level*
MW-1	26.02	94.38	11.02 - 26.02	06/20/03	NM	NM
				09/23/03	17.03	77.35
				12/16/03	20.11	74.27
				03/16/04	23.69	70.69
				06/21/04	19.92	74.46
				09/30/04	16.82	77.56
				12/13/04	20.40	73.98
				03/22/05	24.32	70.06
				06/22/05	NM	NM
				10/24/05	NM	NM
				12/13/05	21.24	73.14
				03/22/06	24.75	69.63
				06/22/06	20.48	73.90
				10/20/06	19.13	75.25
				12/13/06	21.24	73.14
				11/09/07	19.71	74.67
				01/15/08	NM	NM
				03/19/08	24.35	70.03
				07/23/08	19.89	74.49
				10/21/08	19.48	74.90
				01/28/09	23.96	70.42
				09/30/09	18.16	76.22
				06/10/10	21.64	72.74
				09/27/10	19.31	75.07
				12/14/10	21.41	72.97
				03/17/11	24.95	69.43
				06/24/11	22.55	71.83
				09/29/11	18.37	76.01
				12/14/11	20.63	73.75
				03/09/12	24.12	70.26
		93.96		06/07/12	23.08	70.88
				09/19/12	18.94	75.02
				12/13/12	21.22	72.74
				03/20/13	24.79	69.17
				06/12/13	22.51	71.45
				09/11/13	18.34	75.62
				12/13/13	21.53	72.43
				03/19/14	25.26	68.70
				06/17/14	21.55	72.41
				09/18/14	19.58	74.38
				12/18/14	Well inaccessible	
				03/19/15	25.18	68.78
				06/18/15	23.56	70.40
				09/17/15	21.85	72.11
				12/03/15	22.65	71.31
				3/31/2016*	26.02	67.94
				06/20/16	23.52	70.44
				09/06/16	20.98	72.98
				11/29/16	21.90	72.06
				03/09/17	24.72	69.24
				06/15/17	23.90	70.06
				09/27/17	21.57	72.39
				12/05/17	22.30	71.66
				03/15/18	DRY	--
				06/27/18	DRY	--
				09/6/18	22.75	71.21
				12/20/18	23.1	70.86

Table 2

Monitoring Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	*Total Depth (ft below TOC)*	*Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level*
MW-2	31.35	97.1	12.35 - 27.35	10/21/08	20.71	76.39
				01/28/09	22.75	74.35
				09/30/09	18.83	78.27
				06/11/10	22.09	75.01
				09/27/10	20.12	76.98
				12/14/10	NM	NM
				03/17/11	NM	NM
				06/24/11	22.50	74.60
				09/29/11	18.95	75.43
				12/14/11	21.79	75.31
				03/09/12	25.60	71.50
		97.00		06/07/12	22.46	74.54
				09/19/12	17.70	79.30
				12/13/12	22.43	74.57
				03/20/13	26.49	70.51
				06/12/13	22.13	74.87
				09/11/13	17.95	79.05
				12/13/13	22.78	74.22
				03/19/14	26.99	70.01
				06/17/14	20.31	76.69
				09/18/14	19.87	77.13
				12/18/14	23.00	74.00
				03/19/15	26.92	70.08
				06/18/15	23.24	73.76
				09/17/15	22.78	74.22
				12/03/15	24.23	72.77
				03/31/16	28.20	68.80
				06/20/16	25.67	71.33
				09/06/16	23.57	73.43
				11/29/16	23.69	73.31
				03/09/17	26.70	70.30
				06/15/17	Well inaccessible	
				09/27/17	23.84	73.16
				12/05/17	Well inaccessible	
				03/15/18	27.65	69.35
				06/27/18	26.36	70.64
				09/6/18	25.03	71.97
				12/20/18	25.2	71.8
MW-3	30.87	92.9	11.87 - 26.87	10/21/08	17.92	74.98
				01/28/09	21.53	71.37
				09/30/09	16.43	76.47
				06/10/10	19.71	73.19
				09/27/10	17.81	75.09
				12/14/10	19.61	73.29
				03/17/11	23.32	69.58
				06/24/11	20.55	72.35
				09/29/11	16.84	77.54
				12/14/11	19.13	73.77
				03/09/12	22.51	70.39
		92.43		06/07/12	20.93	71.50
				09/19/12	17.48	74.95
				12/13/12	19.78	72.65
				03/20/13	23.18	69.25
				06/12/13	20.68	71.75
				09/11/13	16.90	75.53
				12/13/13	20.11	72.32
				03/19/14	23.64	68.79
				06/17/14	19.85	72.58
				09/18/14	18.01	74.42
				12/18/14	Well inaccessible	
				03/19/15	23.55	68.88
				06/18/15	21.84	70.59
				09/17/15	20.18	72.25
				12/03/15	21.10	71.33
				03/31/16	24.81	67.62
				06/20/16	21.66	70.77
				09/06/16	19.18	73.25
				11/29/16	20.39	72.04
				03/09/17	23.35	69.08
				06/15/17	22.03	70.40
				09/27/17	Well inaccessible	
				12/05/17	20.89	71.54
				03/15/18	24.28	68.15
				06/27/18	22.42	70.01
				09/6/18	21.16	71.27
				12/20/18	21.6	70.83

Table 2

Monitoring Well Specifications and Groundwater Elevations
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	*Total Depth (ft below TOC)*	*Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level*
MW-4	30.42	93.6	11.42 - 26.42	10/21/08	18.06	75.54
				01/28/09	24.55	69.05
				09/30/09	17.89	75.71
				06/10/10	21.02	72.58
				09/27/10	18.93	74.67
				12/14/10	21.04	72.56
				03/17/11	24.58	69.02
				06/24/11	21.80	71.80
				09/29/11	17.94	76.44
				12/14/11	20.28	73.32
				03/09/12	23.70	69.90
		93.17		06/07/12	22.19	70.98
				09/19/12	18.60	74.57
				12/13/12	20.96	72.21
				03/20/13	24.38	68.79
				06/12/13	21.81	71.36
				09/11/13	18.89	74.28
				12/13/13	21.28	71.89
				03/19/14	24.88	68.29
				06/17/14	21.21	71.96
				09/18/14	19.16	74.01
				12/18/14	21.41	71.76
				03/19/15	24.80	68.37
				06/18/15	23.09	70.08
				09/17/15	21.37	71.80
				12/03/15	22.29	70.88
				03/31/16	26.05	67.12
				06/20/16	22.95	70.22
				09/06/16	20.40	72.77
				11/29/16	21.59	71.58
				03/09/17	24.58	68.59
				06/15/17	23.40	69.77
				09/27/17	21.25	71.92
				12/05/17	22.05	71.12
				03/15/18	25.54	67.63
				06/27/18	23.67	69.50
				09/6/18	22.29	70.88
				12/20/18	22.75	70.42
MW-5	29.68	93.82	15-30	9/17/2015	21.59	72.23
				12/03/15	22.41	71.41
				03/31/16	26.18	67.64
				06/20/16	23.18	70.64
				09/06/16	20.67	73.15
				11/29/16	21.72	72.10
				03/09/17	25.04	68.78
				06/15/17	23.61	70.21
				09/27/17	Well inaccessible	
				12/5/2017	21.96	71.86
				03/15/18	25.55	68.27
				06/27/18	23.93	69.89
				09/6/18	22.54	71.28
				12/20/18	22.84	70.98

Notes:

1. * = Casing elevations are based on an arbitrary 100 ft relative surface elevation set at the gas well head
2. ft = Feet
3. TOC = Top of casing
4. bgs = below ground surface
5. NM = Not measured

Table 3

Field Parameters Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	Sample Date	Temperature (°C)	pH	TDS (mg/L)	Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-1	03/31/16	No parameters or sample collected due to low well volume.						
	06/20/16	16.70	6.34	--	1070	0.41	-132.7	0.25
	09/07/16	15.55	6.30	0.027	37	9.16	-66.6	1.50
	03/09/17	No parameters or sample collected due to low well volume.						
	06/15/17	No parameters or sample collected due to low well volume.						
	12/05/17	15.07	6.94	4.785	7364	4.69	-183.5	0.50
	03/15/18	No parameters or sample collected due to low well volume.						
	6/27/18	No parameters or sample collected due to low well volume.						
	9/6/18	16.08	7.10	--	7137.60	2.51	-117.90	0.50
MW-2	03/31/16	No parameters taken due to low well volume.						
	06/20/16	17.00	6.40	--	870	2.32	-104.0	1.50
	09/07/16	15.00	6.57	0.571	879	3.67	-19.9	4.00
	11/29/16	14.78	7.21	--	909	4.51	-17.1	--
	03/09/17	No parameters or sample collected due to low well volume.						
	03/15/18	15.24	7.06	--	977	0.93	56.3	2.00
	6/27/18	No parameters taken due to low well volume.						
	9/6/18	16.05	7.30	--	929.20	1.15	-0.80	3.50
MW-3	03/31/16	14.68	7.13	0.510	800	4.66	-13.0	2.50
	06/20/16	14.90	7.05	--	750	2.02	83.2	4.00
	09/07/16	14.19	6.02	0.467	719	5.55	12.5	5.00
	11/29/16	13.68	7.41	NM	725	5.03	-11.4	--
	03/09/17	14.44	7.06	0.675	1038	1.38	-199.9	--
	06/15/17	13.90	7.67	0.470	723	4.06	-79.1	1.00
	12/05/17	12.80	7.10	0.513	788	2.09	-135.4	4.00
	03/15/18	14.54	7.22	--	702	2.71	59.2	2.50
	06/27/18	15.30	7.12	--	680	2.58	-16.8	3.75
	9/6/18	14.81	7.49	--	638.5	4.77	-20.00	4.0
MW-4	03/31/16	15.60	6.98	0.700	1030	5.73	-47.0	2.25
	06/20/16	15.20	6.79	--	1040	1.06	-60.8	3.50
	09/07/16	14.55	6.40	0.655	1008	2.48	-59.8	4.50
	11/29/16	13.58	7.16	--	903	3.04	-80.9	--
	03/09/17	14.45	6.96	0.753	1159	1.69	-133.5	--
	06/15/17	13.63	7.00	1.769	2721	5.00	-114.3	3.50
	12/05/17	13.88	6.84	1.721	2647	1.13	-135.7	4.00
	03/15/18	15.04	7.04	--	1180	-0.06	-100.2	2.25
	6/27/18	15.21	6.80	--	1315	0.55	-79.0	3.0
	9/6/18	15.15	7.11	--	1394	1.05	-73.1	4.0
MW-5	03/31/16	16.16	7.13	0.600	980	4.74	-97.0	1.75
	06/20/16	15.90	6.88	--	1030	0.68	-99.7	3.25
	09/07/16	14.96	6.34	0.599	918	1.51	-130.2	4.50
	03/09/17	15.29	7.35	0.793	1255	8.83	-124.9	--
	06/15/17	14.56	7.06	3.143	4842	2.19	-132.6	2.00
	12/05/17	15.11	6.76	0.706	1086	0.52	-160.50	2.25
	03/15/18	14.70	6.75	--	2	0.39	-9.2	0.50
	6/27/18	No parameters taken due to low well volume.						
	9/6/18	16.47	7.17	--	1460.00	1.65	-125.00	1.00

Notes:
TDS = total dissolved solids
DO = dissolved oxygen
ORP = oxidation-reduction potential
-- Not Measured
°C = degrees Centigrade
mg/L = milligrams per liter
µS/cm = micro Siemens per centimeter
mV = millivolts

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (total) (mg/L)	Sulfate (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Groundwater Quality Standards*				***0.005***	***0.7***	***1***	***0.62***	***600***	***1***	***0.2***
MW-1	MW-1	6/20/2003	(orig)	**1.7**	0.49	0.3	**5.09**	--	--	--
	MW-1	9/23/2003	(orig)	**7.5**	0.66	0.02	**9.22**	--	--	--
	MW-1	12/16/2003	(orig)	**7.93**	**1.18**	0.01	**0.864**	--	--	--
	MW-1	3/16/2004	(orig)	**6.86**	**1.16**	ND	**8.47**	--	--	--
	MW-1	6/21/2004	(orig)	**4.14**	0.43	ND	**3.12**	--	--	--
	MW-1	9/30/2004	(orig)	**9.08**	**1.41**	0.03	**9.98**	--	--	--
	MW-1	12/13/2004	(orig)	**8.52**	**1.34**	ND	**9.39**	--	--	--
	MW-1	3/22/2005	(orig)	**4.55**	**0.85**	ND	**5.95**	--	--	--
	MW-1	6/22/2005	(orig)	--	--	0.02188	--	--	--	--
	MW-1	10/24/2005	(orig)	**6.39**	**1.01**	ND	**7.416**	--	--	--
	MW-1	12/13/2005	(orig)	**6.17**	**1.01**	ND	**7.57**	--	--	--
	MW-1	3/22/2006	(orig)	**3.58**	**0.77**	ND	**5.84**	--	--	--
	MW-1	6/22/2006	(orig)	**3.1**	0.5	ND	**3.5**	--	--	--
	MW-1	10/20/2006	(orig)	**6.6**	**1.22**	0.01	**8.91**	--	--	--
	MW-1	12/13/2006	(orig)	**4.23**	**1.09**	0.01	**8.13**	--	--	--
	MW-1	3/27/2007	(orig)	**2.37**	0.504	0.007	**3.749**	--	--	--
	MW-1	6/25/2007	(orig)	**2.87**	0.51	0.14	**3.89**	--	--	--
	MW-1	11/9/2007	(orig)	**5.6**	**0.91**	< 0.0007	**6.8**	--	--	--
	MW-1	1/15/2008	(orig)	**4.2**	**0.89**	< 0.0007	**5.7**	--	--	--
	MW-1	3/19/2008	(orig)	**2.7**	0.59	< 0.005	**4.7**	--	--	--
	MW-1	7/23/2008	(orig)	**2**	0.38	< 0.005	**1.4**	--	--	--
	MW-1	10/21/2008	(orig)	**4.5**	0.63	< 0.005	**5.3**	--	--	--
	MW-1	1/28/2009	(orig)	**4**	**0.88**	< 0.005	**8.7**	--	--	--
	MW-1	9/30/2009	(orig)	**4.2**	0.53	0.0016	**5.1**	11.7	**2.08**	**1.09**
	MW-1	6/10/2010	(orig)	**1.7**	0.33	0.0012	**0.99**	27	0.126	**1.28**
	MW-1	9/27/2010	(orig)	**3.2**	0.53	0.002	**4.2016**	1.8	**7.73**	**1.19**
	MW-1	12/14/2010	(orig)	**3.2**	0.62	0.0012	**5.3016**	1.03	**4.13**	**0.888**
	MW-1	3/17/2011	(orig)	**1.7**	0.48	0.0037	**4.3092**	2.27	**1.11**	**1.07**
	GW-74926-062411-PG-01	6/24/2011	(orig)	**2.1**	0.494	0.0025	**2.03**	18.4	< 0.1	**0.894**
	GW-74926-062411-PG-02	6/24/2011	(Duplicate)	**1.97**	0.458	0.0026	**1.94**	--	--	--
	GW-074926-092911-CM-009	9/29/2011	(orig)	**2.44**	0.519	< 0.005	**3.65**	< 1.0	**25.2**	**1.02**
	GW-074926-121411-CB-MW-1	12/14/2011	(orig)	**2.31**	0.508	0.0055	**3.93**	13.2	**25.4**	**0.945**
	GW-074926-3912-CB-MW-1	3/9/2012	(orig)	**1.59**	0.636	< 0.001	**5.04**	--	**25.3**	**1.03**
	GW-074926-060712-CB-MW-1	6/7/2012	(orig)	**1.77**	0.182	0.127	**0.633**	--	**21.4**	**0.914**
	GW-074926-091912-JP-MW-1	9/19/2012	(orig)	**1.52**	0.414	< 0.020	**2.49**	--	**19**	**0.86**
	GW-074926-121312-CM-MW-1	12/13/2012	(orig)	**2.02**	**0.809**	< 0.025	**5.02**	--	**23.8**	**0.75**
	GW-074926-032013-CM-MW-1	3/20/2013	(orig)	**0.182**	0.0406	< 0.002	0.0914	--	**9.39**	**1.08**
	GW-074926-061213-JR-MW1	6/12/2013	(orig)	**0.698**	0.160	< 0.001	**0.873**	--	**12.8**	**1.12**
	GW-074926-091113-CM-MW1	9/11/2013	(orig)	**1.05**	**0.831**	< 0.020	**5.1**	--	**18.0**	**1.05**
	GW-074926-121313-CM-MW-1	12/13/2013	(orig)	**0.591**	0.670	0.0015	**1.79**	--	**25.4**	**0.88**
	GW-074926-031914-CK-MW-1	3/19/2014	(orig)	**0.0822**	0.039	< 0.001	0.271	--	--	--
	GW-074926-061714-CK-MW-1	6/17/2014	(orig)	**0.522**	0.189	< 0.001	0.398	--	**17.4**	**0.896**
	GW-074926-091814-CB-MW-1	9/18/2014	(orig)	**0.849**	0.299	< 0.001	**1.23**	--	**23.4**	**1.01**
	--	12/18/2014	Well was obstructed and inaccessible due to TRC operations.							
	--	3/19/2015	No sample due to insuffiencient volume							
	GW-074926-061815-CB-MW-1	6/18/2015	(orig)	**0.213**	0.116	< 0.001	**0.691**	--	**5.72**	**0.542**
	GW-074926-061815-CB-DUP	6/18/2015	(Duplicate)	**0.17**	0.0684	< 0.001	0.533	--	--	--
	GW-074926-091715-CK-MW-1	9/17/2015	(orig)	**0.0673**	0.0859	< 0.001	0.362	--	**4.22**	**0.614**
	GW-074926-12315-CB-MW-1	12/3/2015	(orig)	**0.0908**	0.0612	< 0.001	0.138	--	**2.69**	**0.63**
	--	3/31/2016	No sample due to insuffiencient volume							
	GW-074926-062016-SP-MW-1	6/20/2016	(orig)	**0.834**	0.533	< 0.025	**2.06**	13.8	**40.8**	**2.17**
	GW-074926-090716-SP-MW-1	9/7/2016	(orig)	**0.525**	0.416	< 0.020	**1.62**	2.4	**17.6**	**1.51**
		10/25/2016	ISCO Injection-15% PersulfOx solution							
		3/9/17	No sample due to insuffiencient volume							
	GW-074926-061517-CN-MW-1	6/15/2017	(orig)	**0.0371**	0.0404	<1.0	0.157	--	--	--
	GW-11145982-092717-SP-MW-1	9/27/2017	(orig)	**0.0231**	0.0306	<1.0	0.118	--	**24.2**	**3.13**
	GW-11145982-120517-SP-SP-1	12/5/2017	(orig)	**0.288**	0.444	<1.0	**1.07**	--	**19.9**	**3.27**
		3/15/18	No sample due to insuffiencient volume							
		6/27/18	No sample due to insuffiencient volume							
	GW-11145982-090618-CN-MW-1	9/6/18	(orig)	**0.0313**	0.1730	<1.0	0.3650	--	**11.70**	**5.83**
	MW-1	12/20/18	(orig)	**0.0827**	0.1560	<0.001	0.4680	--	0.4870	0.0241

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (total) (mg/L)	Sulfate (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Groundwater Quality Standards*				***0.005***	***0.7***	***1***	***0.62***	***600***	***1***	***0.2***
MW-2	MW-2	10/21/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	115	--	--
	MW-2	1/28/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	ND	ND	ND
	MW-2	9/30/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	123	0.0223	< 0.005
	MW-2	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	156	< 0.02	< 0.005
	MW-2	9/27/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	179	< 0.02	< 0.005
	GW-74926-062411-PG-05	6/24/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	176	0.191	< 0.015
	GW-074926-092911-CM-006	9/29/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	151	< 0.05	< 0.005
	GW-074926-121411-CB-MW-2	12/14/2011	(orig)	0.00031 J	0.0002 J	< 0.001	0.0022 J	135	0.0133 J	0.0022 J
	GW-074926-3912-CB-MW-2	3/9/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	< 0.005
	GW-074926-060712-CB-MW-2	6/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.0822	0.0052
	GW-074926-091912-JP-MW-2	9/19/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	< 0.005
	GW-074926-121312-CM-MW-2	12/13/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	<0.05	< 0.005
	GW-074926-032013-CM-MW-2	3/20/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	< 0.005
	GW-074926-061213-JR-MW2	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.0665	< 0.005
	GW-074926-091113-CM-MW2	9/11/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-121313-CM-MW-2	12/13/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-031914-CK-MW-2	3/19/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	0.024
	GW-074926-061714-CK-MW-2	6/17/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-091814-CB-MW-2	9/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.0656	< 0.005
	GW-074926-121814-CM-MW-2	12/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.709	0.006
	GW-074926-031915-CM-MW-2	3/19/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.883	0.043
	GW-074926-061815-CB-MW-2	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-091715-CK-MW-2	9/17/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-12315-CB-MW-2	12/3/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-033116-CM-MW-2	3/31/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	126	0.0585	<0.005
	GW-074926-062016-SP-MW-2	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	134	< 0.050	< 0.005
	GW-074926-090716-SP-MW-2	9/7/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	131	0.0512	< 0.005
	GW-074926-112916-CN-MW-2	11/29/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	109	< 0.050	< 0.005
	GW-11145982-092717-SP-MW-2	9/27/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	<0.50	0.013
	GW-11145982-031518-JW-MW-2	3/15/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	<0.50	0.011
	GW-11145982-062719-CM-MW-2	6/27/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.0512	0.017
	GW-11145982-090618-CN-MW-2	9/6/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.104	**0.270**
	MW-2	12/20/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	<0.10	<0.01
MW-3	MW-3	10/21/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	93	--	--
	MW-3	1/28/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	ND	ND	ND
	MW-3	9/30/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	144	0.0543	< 0.005
	MW-3	6/10/2010	(orig)	< 0.0005	< 0.001	< 0.001	< 0.001	122	0.0425	< 0.005
	MW-3	9/27/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	170	< 0.02	< 0.005
	MW-3	12/14/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	142	< 0.02	< 0.005
	MW-3	3/17/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	119	< 0.02	< 0.005
	GW-74926-062411-PG-03	6/24/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	127	0.189	< 0.015
	GW-074926-092911-CM-007	9/29/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	160	< 0.05	0.0063
	GW-074926-121411-CB-MW-3	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	136	0.0288 J	0.0207
	GW-074926-3912-CB-MW-3	3/9/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	< 0.005
	GW-074926-060712-CB-MW-3	6/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	< 0.005
	GW-074926-091912-JP-MW-3	9/19/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	< 0.005
	GW-074926-121312-CM-MW-3	12/13/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.0605	0.026
	GW-074926-032013-CM-MW-3	3/20/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.05	0.0149
	GW-074926-061213-JR-MW3	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.189	0.0094
	GW-074926-091113-CM-MW3	9/11/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-121313-CM-MW-3	12/13/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	0.013
	GW-074926-031914-CK-MW-3	3/19/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-061714-CK-MW-3	6/17/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-091814-CB-MW-3	9/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	--	12/18/2014	Wellhead inaccessable due to standing water.							
	GW-074926-031915-CM-MW-3	3/19/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-061815-CB-MW-3	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-091715-CK-MW-3	9/17/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-074926-12315-CB-MW-3	12/3/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	0.0258
	GW-074926-033116-CM-MW-3	3/31/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	143	0.138	**0.368**
	GW-074926-062016-SP-MW-3	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	133	< 0.050	0.0078
	GW-074926-090716-SP-MW-3	9/7/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	149	< 0.050	< 0.005
	GW-074926-112916-SP-MW-3	11/29/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	147	0.103	0.197
	GW-074926-030917-CN-MW-3	3/9/2017	(orig)	--	--	--	--	--	0.878	**0.904**
	GW-074926-061517-CN-MW-3	6/15/2017	(orig)	--	--	--	--	--	< 0.050	< 0.005
	GW-11145982-120517-SP-MW-3	12/5/2017	(orig)	--	--	--	--	--	< 0.050	0.106
	GW-11145982-031518-JW-MW-3	3/15/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.0642	< 0.005
	GW-11145982-062719-CM-MW-3	06/27/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	< 0.050	< 0.005
	GW-11145982-090618-CN-MW-3	9/6/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	0.85	**0.249**
	MW-3	12/20/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	<0.10	0.0153

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	*Sample ID*	*Date*	*Sample Type*	*Benzene (mg/L)*	*Ethylbenzene (mg/L)*	*Toluene (mg/L)*	*Xylenes (total) (mg/L)*	*Sulfate (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*
NMWQCC Groundwater Quality Standards*				***0.005***	***0.7***	***1***	***0.62***	***600***	***1***	***0.2***
MW-4	MW-4	10/21/2008	(orig)	**0.039**	0.031	< 0.0005	0.18	90.1	--	--
	MW-4	1/28/2009	(orig)	**0.66**	0.064	< 0.0005	0.583	ND	ND	ND
	MW-4	9/30/2009	(orig)	**0.34**	0.054	< 0.0005	0.572	48.9	0.148	**4.48**
	MW-4	6/10/2010	(orig)	**0.14**	0.027	< 0.001	0.252	53.3	0.0566	**4.65**
	MW-4	9/27/2010	(orig)	**0.033**	0.041	< 0.001	0.274	92.5	**1.22**	**4.34**
	MW-4	12/14/2010	(orig)	**0.13**	0.093	< 0.001	**0.899**	67.5	**1.75**	**4.69**
	MW-4	3/17/2011	(orig)	**0.017**	0.018	< 0.001	0.1966	83	0.0852	**4.46**
	GW-74926-062411-PG-04	6/24/2011	(orig)	**0.0296**	0.0371	< 0.0010	0.472	130	**1.5**	**4.9**
	GW-074926-092911-CM-008	9/29/2011	(orig)	**0.0392**	0.0039	< 0.001	0.0536	96.1	**2.55**	**4.1**
	GW-074926-092911-CM-010	9/29/2011	(Duplicate)	**0.043**	0.0035	< 0.001	0.0483	--	--	--
	GW-074926-121411-CB-MW-4	12/14/2011	(orig)	**0.101**	0.0443	< 0.001	0.378	81.2	**2.62**	**4.58**
	GW-074926-121411-CB-DUP	12/14/2011	(Duplicate)	**0.104**	0.0437	< 0.005	0.372	--	--	--
	GW-074926-3912-CB-MW-4	3/9/2012	(orig)	**0.0264**	0.0066	< 0.001	0.0651	--	**2.46**	**4.73**
	GW-074926-3912-CB-DUP	3/9/2012	(Duplicate)	**0.0234**	0.0056	< 0.001	0.058	--	--	--
	GW-074926-060712-CB-MW-4	6/7/2012	(orig)	**0.044**	0.0245	< 0.001	0.303	--	**2.07**	**4.02**
	GW-074926-060712-CB-DUP	6/7/2012	(Duplicate)	**0.026**	0.0124	< 0.001	0.155	--	--	--
	GW-074926-091912-JP-MW-4	9/19/2012	(orig)	0.0029	0.0048	< 0.001	0.0576	--	**1.93**	**4.5**
	GW-074926-091912-JP-DUP	9/19/2012	(Duplicate)	0.0028	0.0045	< 0.001	0.0551	--	--	--
	GW-074926-121312-CM-MW-4	12/13/2012	(orig)	**0.0941**	0.0399	< 0.002	0.385	--	**2.92**	**4.9**
	GW-074926-121312-CM-DUP	12/13/2012	(Duplicate)	**0.197**	0.0712	< 0.001	0.55	--	--	--
	GW-074926-032012-CM-MW-4	3/20/2013	(orig)	0.0035	0.002	< 0.001	0.0211	--	**1.82**	**4.37**
	GW-074926-032012-CM-DUP	3/20/2013	(Duplicate)	0.0034	0.0022	< 0.001	0.0212	--	--	--
	GW-074926-061213-JR-MW4	6/12/2013	(orig)	**0.0588**	0.0509	< 0.005	0.545	--	**1.53**	**4.29**
	GW-074926-061213-JR-DUP	6/12/2013	(Duplicate)	**0.0215**	0.0213	< 0.001	0.218	--	--	--
	GW-074926-091113-CM-MW4	9/11/2013	(orig)	**0.0166**	0.0231	< 0.001	0.226	--	**3.1**	**4.35**
	GW-074926-091113-CM-DUP	9/11/2013	(Duplicate)	**0.0156**	0.0162	< 0.001	0.158	--	--	--
	GW-074926-121313-CM-MW-4	12/13/2013	(orig)	**0.0362**	0.0199	< 0.001	0.169	--	**2.7**	**4.8**
	GW-074926-121313-CM-DUP	12/13/2013	(Duplicate)	**0.0357**	0.0185	< 0.001	0.16	--	--	--
	GW-074926-031914-CK-MW-4	3/19/2014	(orig)	< 0.001	< 0.001	< 0.001	0.0046	--	**1.33**	**4.19**
	GW-074926-031914-CK-DUP	3/19/2014	(Duplicate)	< 0.001	< 0.001	< 0.001	0.0049	--	--	--
	GW-074926-061714-CK-MW-4	6/17/2014	(orig)	0.0069	< 0.001	< 0.001	< 0.003	--	**2.68**	**4.01**
	GW-074926-061714-CK-DUP	6/17/2014	(Duplicate)	0.0063	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074926-091814-CB-MW-4	9/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	**3.43**	**4.63**
	GW-074926-091814-CB-DUP	9/18/2014	(Duplicate)	0.0018	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074926-121814-CM-MW-4	12/18/2014	(orig)	**0.0398**	0.0062	< 0.001	0.0486	--	**4.02**	**4.46**
	GW-074926-121814-CM-DUP	12/18/2014	(Duplicate)	**0.0296**	0.0048	< 0.001	0.0354	--	--	--
	GW-074926-031915-CM-MW-4	3/19/2015	(orig)	0.0012	< 0.001	< 0.001	< 0.003	--	**1.57**	**4.02**
	GW-074926-031915-CM-DUP	3/19/2015	(Duplicate)	0.0011	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074926-061815-CB-MW-4	6/18/2015	(orig)	**0.067**	0.0102	< 0.001	0.0563	--	**3.02**	**4.35**
	GW-074926-091715-CK-MW-4	9/17/2015	(orig)	**0.0319**	0.0297	< 0.001	0.178	--	**3.03**	**3.75**
	GW-074926-091715-CK-DUP	11/29/2016	(Duplicate)	**0.0318**	0.027	< 0.001	0.162	--	--	--
	GW-074926-12315-CB-MW-4	12/3/2015	(orig)	**0.0676**	0.0526	< 0.01	0.354	--	**4.34**	**4.12**
	GW-074926-12315-CB-DUP	12/3/2015	(Duplicate)	**0.0489**	0.0396	< 0.01	0.263	--	--	--
	GW-074926-033116-CM-MW-4	3/31/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	64.6	**1.44**	**3.9**
	GW-074926-062016-SP-MW-4	6/20/2016	(orig)	**0.0428**	0.0112	<0.001	0.0397	154	**4.88**	**3.87**
	GW-074926-090716-SP-MW-4	9/7/2016	(orig)	0.0081	< 0.001	< 0.001	< 0.003	145	**4.01**	**3.84**
	GW-074926-112916-SP-MW-4	11/29/2016	(orig)	**0.0346**	0.0077	< 0.001	0.0237	72.8	**4.31**	**3.88**
	GW-074926-030917-CN-MW-4	3/9/2017	(orig)	<0.001	<0.001	<0.001	<0.003	--	<0.050	**3.06**
	GW-074926-061517-CN-MW-4	6/15/2017	(orig)	**0.0224**	0.0045	<0.001	0.0206	--	**15.5**	**11.1**
	GW-11145982-092717-SP-MW-4	9/27/2017	(orig)	**0.0131**	0.0043	<0.001	0.0108	--	**22.7**	**7.68**
	GW-11145982-120517-SP-MW-4	12/5/2017	(orig)	**0.0247**	0.0074	<0.001	0.0161	--	**21.1**	**6.2**
	GW-11145982-031518-JW-MW-4	3/15/18	(orig)	<0.001	<0.001	<0.001	<0.003	--	**5.68**	**1.64**
	GW-11145982-062718-CM-MW-4	06/27/18	(orig)	**0.0114**	0.0014	<0.001	0.0031	--	<0.050	**3.83**
	GW-11145982-090618-CN-MW-4	9/6/18	(orig)	**0.0179**	0.0047	<0.001	0.0068	--	**10.5**	**4.58**
	MW-4	12/20/18	(orig)	**0.0253**	0.0132	<0.001	0.0236	--	0.146	**4.82**

Table 4

Groundwater Analytical Results Summary
Hilcorp Energy Company
Flora Vista No. 1
San Juan County, New Mexico

Well ID	*Sample ID*	*Date*	*Sample Type*	*Benzene (mg/L)*	*Ethylbenzene (mg/L)*	*Toluene (mg/L)*	*Xylenes (total) (mg/L)*	*Sulfate (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*
NMWQCC Groundwater Quality Standards*				***0.005***	***0.7***	***1***	***0.62***	***600***	***1***	***0.2***
MW-5	GW-074926-091715-CK-MW-5	9/17/2015	(orig)	**0.0182**	0.571	< 0.001	**4.95**	--	**2.72**	**2.94**
	GW-074926-12315-CB-MW-5	12/3/2015	(orig)	**0.128**	**1.15**	< 0.001	**12.4**	--	**20.9**	**0.366**
	GW-074926-033116-CM-MW-5	3/31/2016	(orig)	< 0.010	0.101	< 0.01	**0.936**	118	**2.06**	**2.18**
	GW-074926-033116-CM-DUP	3/31/2016	(Duplicate)	< 0.010	0.136	< 0.01	**1.26**	--	**--**	**--**
	GW-074926-062016-SP-MW-5	6/20/2016	(orig)	**0.0404**	0.16	< 0.025	**2.48**	129	**6.48**	**2.68**
	GW-074926-090716-SP-MW-5	9/7/2016	(orig)	**0.0229**	0.332	< 0.01	**3.45**	104	**4.6**	**2.07**
	GW-074926-090716-SP-DUP	9/7/2016	(Duplicate)	**0.0216**	0.393	< 0.010	**4.46**	--	**--**	**--**
		10/26/2016	ISCO Injection-15% PersulfOx solution							
	GW-074926-030917-CN-MW-5	3/9/2017	(orig)	**0.0865**	0.267	<0.010	**3.65**	--	**24.6**	**11.8**
	GW-074926-061517-CN-MW-5	6/15/2017	(orig)	**0.0369**	0.0956	<0.010	0.533	--	**7.43**	**6.26**
	GW-11145982-120517-SP-MW-5	12/5/2017	(orig)	**0.0562**	0.51	<0.010	**5.95**	--	**10.3**	**3.89**
	GW-11145982-120517-SP-DUP	12/5/17	(Duplicate)	**0.05**	0.444	<0.010	**5.97**	--	--	--
	GW-11145982-031518-JW-MW-5	3/15/18	(orig)	< 0.020	0.388	< 0.020	**1.46**	--	**--**	**--**
	GW-11145982-062718-CM-MW-5	06/27/18	(orig)	**0.0371**	**0.123**	< 0.020	**2.13**	--	**7.08**	**3.97**
	GW-11145982-090618-CN-MW-5	9/6/18	(orig)	**0.0511**	**0.233**	<0.010	**1.94**	--	**4.9**	**2.31**
	MW-5	12/20/18	(orig)	**0.0568**	0.448	0.00136	**4.48**	--	0.748	**3.79**
DW-1	DW-1	12/16/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	RS-74926-062411-CB-01	6/24/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074926-072712-JK-DW-17	7/27/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	DW-074926-061213-JR-32	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	--	12/18/2014	Attempt to contact landowner regarding well sampling. No response.							
	GW-074926-061815-CB-DOM-32	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074926-062016-SP-DOM1	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-11145982-092717-SP-32	9/27/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
		6/27/18	Unable to sample-homeowner away.							
DW-2	#34	6/10/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	Domestic #34	3/17/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--
	GW-074926-061712-CB-DW34	6/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	DW-074926-061213-JR-34	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	--	12/18/2014	Attempt to sample well but landowner had shut well in for the winter months.							
	GW-074926-061815-CB-DOM-34	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-074926-062016-SP-DOM2	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-11145982-092717-SP-34	9/27/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--
	GW-11145982-062718-CM-D34	6/27/18	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--

Notes:

1. MW = monitoring well
2. NMWQCC = New Mexico Water Quality Control Commission
3. Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
4. mg/L = milligrams per liter (parts per million)
5. < 1.0 = Below laboratory detection limit of 1.0 mg/L
6. ND = not detected
7. -- = not analyzed

Appendices

Appendix A
Groundwater Laboratory Analytical Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 27, 2018

Jeff Walker
GHD Services
6121 indian School Rd
Ste 200
Albuquerque, NM 87110

RE: Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Colleen Clyne

Colleen Clyne
colleen.clyne@pacelabs.com
1(913)563-1406
Project Manager

Enclosures

cc: Angela Bown, GHD Services
Christine Mathews, GHD Services

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60266192001	**GW-11145982-031518-JW-MW2**	Water	03/15/18 09:10	03/17/18 08:05
60266192002	**GW-11145982-031518-JW-MW3**	Water	03/15/18 09:05	03/17/18 08:05
60266192003	**GW-11145982-031518-JW-MW4**	Water	03/15/18 09:30	03/17/18 08:05
60266192004	**GW-11145982-031518-JW-MW5**	Water	03/15/18 09:25	03/17/18 08:05

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60266192001	**GW-11145982-031518-JW-MW2**	EPA 6010	TDS	2	PASI-K
		EPA 8260	EAG	8	PASI-K
60266192002	**GW-11145982-031518-JW-MW3**	EPA 6010	TDS	2	PASI-K
		EPA 8260	EAG	8	PASI-K
60266192003	**GW-11145982-031518-JW-MW4**	EPA 6010	TDS	2	PASI-K
		EPA 8260	EAG	8	PASI-K
60266192004	**GW-11145982-031518-JW-MW5**	EPA 8260	EAG	8	PASI-K

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Sample: GW-11145982-031518-JW-MW2 **Lab ID: 60266192001** Collected: 03/15/18 09:10 Received: 03/17/18 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	1	03/22/18 15:00	03/26/18 19:28	7439-89-6	
Manganese, Dissolved	**111**	ug/L	5.0	1	03/22/18 15:00	03/26/18 19:28	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		03/21/18 23:38	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/21/18 23:38	100-41-4	
Toluene	ND	ug/L	1.0	1		03/21/18 23:38	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/21/18 23:38	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-115	1		03/21/18 23:38	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-119	1		03/21/18 23:38	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-117	1		03/21/18 23:38	17060-07-0	
Preservation pH	**1.0**		1.0	1		03/21/18 23:38		

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Sample: GW-11145982-031518-JW-MW3 **Lab ID: 60266192002** Collected: 03/15/18 09:05 Received: 03/17/18 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**64.2**	ug/L	50.0	1	03/22/18 15:00	03/26/18 19:30	7439-89-6	
Manganese, Dissolved	ND	ug/L	5.0	1	03/22/18 15:00	03/26/18 19:30	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		03/21/18 23:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/21/18 23:52	100-41-4	
Toluene	ND	ug/L	1.0	1		03/21/18 23:52	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/21/18 23:52	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-115	1		03/21/18 23:52	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-119	1		03/21/18 23:52	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-117	1		03/21/18 23:52	17060-07-0	
Preservation pH	**1.0**		1.0	1		03/21/18 23:52		

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Sample: GW-11145982-031518-JW-MW4 **Lab ID: 60266192003** Collected: 03/15/18 09:30 Received: 03/17/18 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**5680**	ug/L	50.0	1	03/22/18 15:00	03/26/18 19:32	7439-89-6	
Manganese, Dissolved	**1640**	ug/L	5.0	1	03/22/18 15:00	03/26/18 19:32	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		03/22/18 00:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/22/18 00:06	100-41-4	
Toluene	ND	ug/L	1.0	1		03/22/18 00:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/22/18 00:06	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-115	1		03/22/18 00:06	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-119	1		03/22/18 00:06	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-117	1		03/22/18 00:06	17060-07-0	
Preservation pH	**1.0**		1.0	1		03/22/18 00:06		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Sample: GW-11145982-031518-JW-MW5 **Lab ID: 60266192004** Collected: 03/15/18 09:25 Received: 03/17/18 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	20.0	20		03/22/18 23:37	71-43-2	
Ethylbenzene	**388**	ug/L	20.0	20		03/22/18 23:37	100-41-4	
Toluene	ND	ug/L	20.0	20		03/22/18 23:37	108-88-3	
Xylene (Total)	**1460**	ug/L	60.0	20		03/22/18 23:37	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-115	20		03/22/18 23:37	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-119	20		03/22/18 23:37	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-117	20		03/22/18 23:37	17060-07-0	
Preservation pH	**1.0**		1.0	20		03/22/18 23:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

QC Batch: 518744 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60266192001, 60266192002, 60266192003

METHOD BLANK: 2123208 Matrix: Water
Associated Lab Samples: 60266192001, 60266192002, 60266192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	03/26/18 18:45	
Manganese, Dissolved	ug/L	ND	5.0	03/26/18 18:45	

LABORATORY CONTROL SAMPLE: 2123209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	10100	101	80-120	
Manganese, Dissolved	ug/L	1000	966	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2123210 2123211

Parameter	Units	60266019002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron, Dissolved	ug/L	4490	10000	10000	13800	14000	93	95	75-125	1	20	
Manganese, Dissolved	ug/L	778	1000	1000	1660	1690	89	91	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

QC Batch: 518569 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60266192001, 60266192002, 60266192003

METHOD BLANK: 2122525 Matrix: Water
Associated Lab Samples: 60266192001, 60266192002, 60266192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/21/18 23:10	
Ethylbenzene	ug/L	ND	1.0	03/21/18 23:10	
Toluene	ug/L	ND	1.0	03/21/18 23:10	
Xylene (Total)	ug/L	ND	3.0	03/21/18 23:10	
1,2-Dichloroethane-d4 (S)	%	103	80-117	03/21/18 23:10	
4-Bromofluorobenzene (S)	%	99	80-119	03/21/18 23:10	
Toluene-d8 (S)	%	100	80-115	03/21/18 23:10	

LABORATORY CONTROL SAMPLE: 2122526

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.5	87	81-118	
Ethylbenzene	ug/L	20	17.7	88	80-118	
Toluene	ug/L	20	17.6	88	82-118	
Xylene (Total)	ug/L	60	54.0	90	81-120	
1,2-Dichloroethane-d4 (S)	%			99	80-117	
4-Bromofluorobenzene (S)	%			101	80-119	
Toluene-d8 (S)	%			100	80-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2122527 2122528

Parameter	Units	60266019006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	18.1	18.8	91	94	62-138	4	34	
Ethylbenzene	ug/L	ND	20	20	18.1	18.8	91	94	60-140	3	32	
Toluene	ug/L	ND	20	20	18.3	19.0	91	95	65-135	4	32	
Xylene (Total)	ug/L	ND	60	60	54.8	57.5	91	96	69-133	5	31	
1,2-Dichloroethane-d4 (S)	%						100	96	80-117			
4-Bromofluorobenzene (S)	%						101	101	80-119			
Toluene-d8 (S)	%						100	99	80-115			
Preservation pH		1.0			1.0	1.0				0	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

QC Batch: 518708
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60266192004

METHOD BLANK: 2123134
Matrix: Water
Associated Lab Samples: 60266192004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/22/18 23:23	
Ethylbenzene	ug/L	ND	1.0	03/22/18 23:23	
Toluene	ug/L	ND	1.0	03/22/18 23:23	
Xylene (Total)	ug/L	ND	3.0	03/22/18 23:23	
1,2-Dichloroethane-d4 (S)	%	101	80-117	03/22/18 23:23	
4-Bromofluorobenzene (S)	%	97	80-119	03/22/18 23:23	
Toluene-d8 (S)	%	100	80-115	03/22/18 23:23	

LABORATORY CONTROL SAMPLE: 2123135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.0	85	81-118	
Ethylbenzene	ug/L	20	17.7	89	80-118	
Toluene	ug/L	20	17.6	88	82-118	
Xylene (Total)	ug/L	60	53.9	90	81-120	
1,2-Dichloroethane-d4 (S)	%			98	80-117	
4-Bromofluorobenzene (S)	%			100	80-119	
Toluene-d8 (S)	%			100	80-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 518708

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60266192

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60266192001	**GW-11145982-031518-JW-MW2**	EPA 3010	518744	EPA 6010	518776
60266192002	**GW-11145982-031518-JW-MW3**	EPA 3010	518744	EPA 6010	518776
60266192003	**GW-11145982-031518-JW-MW4**	EPA 3010	518744	EPA 6010	518776
60266192001	**GW-11145982-031518-JW-MW2**	EPA 8260	518569		
60266192002	**GW-11145982-031518-JW-MW3**	EPA 8260	518569		
60266192003	**GW-11145982-031518-JW-MW4**	EPA 8260	518569		
60266192004	**GW-11145982-031518-JW-MW5**	EPA 8260	518708		

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Sample Condition Upon Receipt

WO# : 60266192

60266192

Client Name: GHD NM

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 7801 1692 0336 Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: 266 **Type of Ice:** (Wet) Blue None

CK

Cooler Temperature (°C): **As-read** 3.8 **Corr. Factor** +0.2 **Corrected** 4.0

Date and initials of person examining contents: 3/21/18

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☒Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☒N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☒No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☒No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Colleen Clyne Date: 03/21/2018

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: GHD Services, New Mexico	Report To: Jeff Walker	Attention:
Address: 6121 indian School Rd	Copy To:	Company Name:
Albuquerque, NM 87110		Address:
Email: jeff.walker@ghd.com	Purchase Order #:	Pace Quote:
Phone: 505-884-0672 Fax:	Project Name: 11145982 Flora Vista No 1	Pace Project Manager: alice.spiller@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 10540, line 1

Regulatory Agency

State / Location: NM

Requested Analysis Filtered (Y/N)

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	8260 BTEX	Dissolved Fe,Mn-field filtered	Residual Chlorine (Y/N)	60266142
1	GW-11145982-03/5/18-JW-MW2	W	G			3-15-18	0910		4			1	3						X	X		BP3F (3) D64H 001
2	GW-11145982-03/5/18-JW-MW3	"	"			"	0905		4			1	3						X	X		002
3	GW-11145982-03/5/18-JW-MW4	"	"			"	0930		4			1	3						X	X		003
4	GW-11145982-03/5/18-JW-MW5	"	"			"	0925		3			-	3						X			004
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
MW5 - too muddy/turbid - no metals	J Walker	3/16/18	0923		3/17	0805	4.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jeff Walker

SIGNATURE of SAMPLER: J Walker DATE Signed: 3/15/18

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

July 16, 2018

Jeff Walker
GHD Services
6121 indian School Rd
Ste 200
Albuquerque, NM 87110

RE: Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on June 29, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Angela Bown, GHD Services
Christine Mathews, GHD Services

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CERTIFICATIONS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

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SAMPLE SUMMARY

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60273829001	**GW-11145982-062718-CM-MW-2**	Water	06/27/18 15:45	06/29/18 09:00
60273829002	**GW-11145982-062718-CM-MW-3**	Water	06/27/18 14:25	06/29/18 09:00
60273829003	**GW-11145982-062718-CM-MW-4**	Water	06/27/18 14:15	06/29/18 09:00
60273829004	**GW-11145982-062718-CM-MW-5**	Water	06/27/18 13:45	06/29/18 09:00
60273829005	**GW-11145982-062718-CM-D34**	Water	06/27/18 14:45	06/29/18 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60273829001	**GW-11145982-062718-CM-MW-2**	EPA 6010	JGP, TDS	2	PASI-K
		EPA 8260	PGH	8	PASI-K
60273829002	**GW-11145982-062718-CM-MW-3**	EPA 6010	JGP, TDS	2	PASI-K
		EPA 8260	PGH	8	PASI-K
60273829003	**GW-11145982-062718-CM-MW-4**	EPA 6010	JGP, TDS	2	PASI-K
		EPA 8260	PGH	8	PASI-K
60273829004	**GW-11145982-062718-CM-MW-5**	EPA 6010	JGP, TDS	2	PASI-K
		EPA 8260	PGH	8	PASI-K
60273829005	**GW-11145982-062718-CM-D34**	EPA 8260	PGH	8	PASI-K

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Sample: GW-11145982-062718-CM-MW-2 **Lab ID: 60273829001** Collected: 06/27/18 15:45 Received: 06/29/18 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**51.2**	ug/L	50.0	1	07/09/18 17:30	07/14/18 14:37	7439-89-6	
Manganese, Dissolved	**17.4**	ug/L	5.0	1	07/09/18 17:30	07/13/18 19:42	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/11/18 02:18	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/11/18 02:18	100-41-4	
Toluene	ND	ug/L	1.0	1		07/11/18 02:18	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/11/18 02:18	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-115	1		07/11/18 02:18	2037-26-5	
4-Bromofluorobenzene (S)	94	%	80-119	1		07/11/18 02:18	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	80-117	1		07/11/18 02:18	17060-07-0	
Preservation pH	**1.0**		1.0	1		07/11/18 02:18		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Sample: GW-11145982-062718-CM-MW-3 **Lab ID: 60273829002** Collected: 06/27/18 14:25 Received: 06/29/18 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	1	07/09/18 17:30	07/14/18 14:39	7439-89-6	
Manganese, Dissolved	ND	ug/L	5.0	1	07/09/18 17:30	07/13/18 19:44	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/11/18 02:33	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/11/18 02:33	100-41-4	
Toluene	ND	ug/L	1.0	1		07/11/18 02:33	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/11/18 02:33	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-115	1		07/11/18 02:33	2037-26-5	
4-Bromofluorobenzene (S)	93	%	80-119	1		07/11/18 02:33	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	80-117	1		07/11/18 02:33	17060-07-0	
Preservation pH	**1.0**		1.0	1		07/11/18 02:33		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Sample: GW-11145982-062718-CM-MW-4 **Lab ID: 60273829003** Collected: 06/27/18 14:15 Received: 06/29/18 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	1	07/09/18 17:30	07/14/18 14:41	7439-89-6	
Manganese, Dissolved	**3830**	ug/L	5.0	1	07/09/18 17:30	07/13/18 19:47	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**11.4**	ug/L	1.0	1		07/11/18 02:48	71-43-2	
Ethylbenzene	**1.4**	ug/L	1.0	1		07/11/18 02:48	100-41-4	
Toluene	ND	ug/L	1.0	1		07/11/18 02:48	108-88-3	
Xylene (Total)	**3.1**	ug/L	3.0	1		07/11/18 02:48	1330-20-7	
Surrogates								
Toluene-d8 (S)	106	%	80-115	1		07/11/18 02:48	2037-26-5	
4-Bromofluorobenzene (S)	92	%	80-119	1		07/11/18 02:48	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	80-117	1		07/11/18 02:48	17060-07-0	
Preservation pH	**1.0**		1.0	1		07/11/18 02:48		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Sample: GW-11145982-062718-CM-MW-5 **Lab ID: 60273829004** Collected: 06/27/18 13:45 Received: 06/29/18 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved (LF)	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**7080**	ug/L	50.0	1	07/09/18 17:30	07/14/18 14:47	7439-89-6	
Manganese, Dissolved	**3970**	ug/L	5.0	1	07/09/18 17:30	07/13/18 19:49	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**37.1**	ug/L	20.0	20		07/11/18 03:03	71-43-2	
Ethylbenzene	**123**	ug/L	20.0	20		07/11/18 03:03	100-41-4	
Toluene	ND	ug/L	20.0	20		07/11/18 03:03	108-88-3	
Xylene (Total)	**2130**	ug/L	60.0	20		07/11/18 03:03	1330-20-7	
Surrogates								
Toluene-d8 (S)	103	%	80-115	20		07/11/18 03:03	2037-26-5	
4-Bromofluorobenzene (S)	92	%	80-119	20		07/11/18 03:03	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	80-117	20		07/11/18 03:03	17060-07-0	
Preservation pH	**1.0**		1.0	20		07/11/18 03:03		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Sample: GW-11145982-062718-CM-D34 **Lab ID: 60273829005** Collected: 06/27/18 14:45 Received: 06/29/18 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/11/18 03:18	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/11/18 03:18	100-41-4	
Toluene	ND	ug/L	1.0	1		07/11/18 03:18	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/11/18 03:18	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-115	1		07/11/18 03:18	2037-26-5	
4-Bromofluorobenzene (S)	93	%	80-119	1		07/11/18 03:18	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	80-117	1		07/11/18 03:18	17060-07-0	
Preservation pH	**1.0**		1.0	1		07/11/18 03:18		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

QC Batch: 533544 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60273829001, 60273829002, 60273829003, 60273829004

METHOD BLANK: 2185083 Matrix: Water
Associated Lab Samples: 60273829001, 60273829002, 60273829003, 60273829004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	07/14/18 14:34	
Manganese, Dissolved	ug/L	ND	5.0	07/13/18 19:38	

LABORATORY CONTROL SAMPLE: 2185084

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	10400	104	80-120	
Manganese, Dissolved	ug/L	1000	1030	103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

QC Batch: 533656 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60273829001, 60273829002, 60273829003, 60273829004, 60273829005

METHOD BLANK: 2185460 Matrix: Water
Associated Lab Samples: 60273829001, 60273829002, 60273829003, 60273829004, 60273829005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/11/18 00:02	
Ethylbenzene	ug/L	ND	1.0	07/11/18 00:02	
Toluene	ug/L	ND	1.0	07/11/18 00:02	
Xylene (Total)	ug/L	ND	3.0	07/11/18 00:02	
1,2-Dichloroethane-d4 (S)	%	101	80-117	07/11/18 00:02	
4-Bromofluorobenzene (S)	%	93	80-119	07/11/18 00:02	
Toluene-d8 (S)	%	101	80-115	07/11/18 00:02	

LABORATORY CONTROL SAMPLE: 2185461

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.0	95	81-118	
Ethylbenzene	ug/L	20	22.3	111	80-118	
Toluene	ug/L	20	20.8	104	82-118	
Xylene (Total)	ug/L	60	66.7	111	81-120	
1,2-Dichloroethane-d4 (S)	%			107	80-117	
4-Bromofluorobenzene (S)	%			92	80-119	
Toluene-d8 (S)	%			101	80-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 533656

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60273829

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60273829001	**GW-11145982-062718-CM-MW-2**	EPA 3010	533544	EPA 6010	533602
60273829002	**GW-11145982-062718-CM-MW-3**	EPA 3010	533544	EPA 6010	533602
60273829003	**GW-11145982-062718-CM-MW-4**	EPA 3010	533544	EPA 6010	533602
60273829004	**GW-11145982-062718-CM-MW-5**	EPA 3010	533544	EPA 6010	533602
60273829001	**GW-11145982-062718-CM-MW-2**	EPA 8260	533656		
60273829002	**GW-11145982-062718-CM-MW-3**	EPA 8260	533656		
60273829003	**GW-11145982-062718-CM-MW-4**	EPA 8260	533656		
60273829004	**GW-11145982-062718-CM-MW-5**	EPA 8260	533656		
60273829005	**GW-11145982-062718-CM-D34**	EPA 8260	533656		

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Sample Condition Upon Receipt

WO# : 60273829

60273829

Client Name: GHD Services

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 7816 3632 7830 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T-296 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 2.9 **Corr. Factor** +1.3 **Corrected** 4.2

JLS

Date and initials of person examining contents: 6/29/18

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added. Clients wants lab to filter BP3N
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jami Check 7/2/18

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: GHD Services, New Mexico	Report To: Jeff Walker	Attention:
Address: 6121 indian School Rd	Copy To:	Company Name:
Albuquerque, NM 87110		Address:
Email: jeff.walker@ghd.com	Purchase Order #:	Pace Quote:
Phone: 505-884-0672 Fax:	Project Name: 11145982 Flora Vista No 1	Pace Project Manager: alice.spiller@pacelabs.com,
Requested Due Date: Standard TAT	Project #:	Pace Profile #: 10540, line 1

Regulatory Agency

State / Location: NM

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	8260 BTEX	Dissolved Fe,Mn-field filtered									Residual Chlorine (Y/N)	602738529
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																			N										
1	GW-11145982-062718-CM-MW-2	WT	G	6/27/18	1545				4			1	3						X	X					DP3N		3DA9		H	001
2	GW-11145982-062718-CM-MW-3	WT	G	6/27/18	1425				4			1	3						X	X										002
3	GW-11145982-062718-CM-MW-4	WT	G	6/27/18	1415				4			1	3						X	X										003
4	GW-11145982-062718-CM-MW-5	WT	G	6/27/18	1345				4			1	3						X	X										004
5		WT	G	6/27/18																										
6	GW-11145982-062718-CM-D34	WT	G	6/27/18	1445				3				3						X						3DA9		H (LFB)			004
7																														
8																									3DA9		H (CTB)			005
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please filter metals samples unable to filter in the field. Thank you	Christine Mathews / GHD	6/28/18	1600	E Brackett / Pasi	6/29	0900	4.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Christine Mathews				
SIGNATURE of SAMPLER:	DATE Signed: 6/28/18				

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

September 18, 2018

Jeff Walker
GHD Services
6121 indian School Rd
Ste 200
Albuquerque, NM 87110

RE: Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on September 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Angela Bown, GHD Services
Christine Mathews, GHD Services

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CERTIFICATIONS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
Arkansas Drinking Water
WY STR Certification #: 2456.01
Arkansas Certification #: 18-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

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SAMPLE SUMMARY

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60280043001	**GW-11145982-090618-CN-MW-1**	Water	09/06/18 09:25	09/08/18 08:30
60280043002	**GW-11145982-090618-CN-MW-2**	Water	09/06/18 10:00	09/08/18 08:30
60280043003	**GW-11145982-090618-CN-MW-3**	Water	09/06/18 09:15	09/08/18 08:30
60280043004	**GW-11145982-090618-CN-MW-4**	Water	09/06/18 09:05	09/08/18 08:30
60280043005	**GW-11145982-090618-CN-MW-5**	Water	09/06/18 09:45	09/08/18 08:30
60280043006	**TRIP BLANK**	Water	09/06/18 08:00	09/08/18 08:30

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SAMPLE ANALYTE COUNT

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60280043001	**GW-11145982-090618-CN-MW-1**	EPA 6010	TDS	2	PASI-K
		EPA 8260	JKL	8	PASI-K
60280043002	**GW-11145982-090618-CN-MW-2**	EPA 6010	TDS	3	PASI-K
		EPA 8260	JKL	8	PASI-K
60280043003	**GW-11145982-090618-CN-MW-3**	EPA 6010	TDS	2	PASI-K
		EPA 8260	JKL	8	PASI-K
60280043004	**GW-11145982-090618-CN-MW-4**	EPA 6010	TDS	2	PASI-K
		EPA 8260	JKL	8	PASI-K
60280043005	**GW-11145982-090618-CN-MW-5**	EPA 6010	TDS	2	PASI-K
		EPA 8260	JKL	8	PASI-K
60280043006	**TRIP BLANK**	EPA 8260	EAG	8	PASI-K

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Sample: GW-11145982-090618-CN-MW-1 **Lab ID: 60280043001** Collected: 09/06/18 09:25 Received: 09/08/18 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**11700**	ug/L	50.0	1	09/11/18 10:15	09/18/18 12:58	7439-89-6	
Manganese, Dissolved	**5830**	ug/L	5.0	1	09/11/18 10:15	09/17/18 19:25	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**31.3**	ug/L	1.0	1		09/15/18 09:10	71-43-2	
Ethylbenzene	**173**	ug/L	1.0	1		09/15/18 09:10	100-41-4	
Toluene	ND	ug/L	1.0	1		09/15/18 09:10	108-88-3	
Xylene (Total)	**365**	ug/L	3.0	1		09/15/18 09:10	1330-20-7	
Surrogates								
Toluene-d8 (S)	106	%	80-115	1		09/15/18 09:10	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-119	1		09/15/18 09:10	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-117	1		09/15/18 09:10	17060-07-0	
Preservation pH	**1.0**		1.0	1		09/15/18 09:10		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Sample: GW-11145982-090618-CN-MW-2 **Lab ID: 60280043002** Collected: 09/06/18 10:00 Received: 09/08/18 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**104**	ug/L	50.0	1	09/11/18 10:15	09/18/18 13:04	7439-89-6	
Manganese, Dissolved	**270**	ug/L	5.0	1	09/11/18 10:15	09/17/18 19:31	7439-96-5	
Selenium, Dissolved	ND	ug/L	15.0	1	09/11/18 10:15	09/17/18 19:31	7782-49-2	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		09/15/18 09:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		09/15/18 09:25	100-41-4	
Toluene	ND	ug/L	1.0	1		09/15/18 09:25	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		09/15/18 09:25	1330-20-7	
Surrogates								
Toluene-d8 (S)	104	%	80-115	1		09/15/18 09:25	2037-26-5	
4-Bromofluorobenzene (S)	109	%	80-119	1		09/15/18 09:25	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-117	1		09/15/18 09:25	17060-07-0	
Preservation pH	**1.0**		1.0	1		09/15/18 09:25		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Sample: GW-11145982-090618-CN-MW-3 **Lab ID: 60280043003** Collected: 09/06/18 09:15 Received: 09/08/18 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**850**	ug/L	50.0	1	09/11/18 10:15	09/18/18 13:06	7439-89-6	
Manganese, Dissolved	**249**	ug/L	5.0	1	09/11/18 10:15	09/17/18 19:33	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		09/15/18 09:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		09/15/18 09:41	100-41-4	
Toluene	ND	ug/L	1.0	1		09/15/18 09:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		09/15/18 09:41	1330-20-7	
Surrogates								
Toluene-d8 (S)	102	%	80-115	1		09/15/18 09:41	2037-26-5	
4-Bromofluorobenzene (S)	110	%	80-119	1		09/15/18 09:41	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-117	1		09/15/18 09:41	17060-07-0	
Preservation pH	**3.0**		1.0	1		09/15/18 09:41		pH

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Sample: GW-11145982-090618-CN-MW-4 **Lab ID: 60280043004** Collected: 09/06/18 09:05 Received: 09/08/18 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**10500**	ug/L	50.0	1	09/11/18 10:15	09/18/18 13:09	7439-89-6	
Manganese, Dissolved	**4580**	ug/L	5.0	1	09/11/18 10:15	09/17/18 19:39	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**17.9**	ug/L	1.0	1		09/15/18 09:56	71-43-2	
Ethylbenzene	**4.7**	ug/L	1.0	1		09/15/18 09:56	100-41-4	
Toluene	ND	ug/L	1.0	1		09/15/18 09:56	108-88-3	
Xylene (Total)	**6.8**	ug/L	3.0	1		09/15/18 09:56	1330-20-7	
Surrogates								
Toluene-d8 (S)	106	%	80-115	1		09/15/18 09:56	2037-26-5	
4-Bromofluorobenzene (S)	108	%	80-119	1		09/15/18 09:56	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-117	1		09/15/18 09:56	17060-07-0	
Preservation pH	**1.0**		1.0	1		09/15/18 09:56		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Sample: GW-11145982-090618-CN-MW-5 **Lab ID: 60280043005** Collected: 09/06/18 09:45 Received: 09/08/18 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	**4900**	ug/L	50.0	1	09/11/18 10:15	09/18/18 13:11	7439-89-6	
Manganese, Dissolved	**2310**	ug/L	5.0	1	09/11/18 10:15	09/17/18 19:42	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**51.1**	ug/L	10.0	10		09/15/18 10:12	71-43-2	
Ethylbenzene	**233**	ug/L	10.0	10		09/15/18 10:12	100-41-4	
Toluene	ND	ug/L	10.0	10		09/15/18 10:12	108-88-3	
Xylene (Total)	**1940**	ug/L	30.0	10		09/15/18 10:12	1330-20-7	
Surrogates								
Toluene-d8 (S)	104	%	80-115	10		09/15/18 10:12	2037-26-5	
4-Bromofluorobenzene (S)	110	%	80-119	10		09/15/18 10:12	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-117	10		09/15/18 10:12	17060-07-0	
Preservation pH	**1.0**		1.0	10		09/15/18 10:12		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Sample: TRIP BLANK **Lab ID: 60280043006** Collected: 09/06/18 08:00 Received: 09/08/18 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		09/17/18 19:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		09/17/18 19:56	100-41-4	
Toluene	ND	ug/L	1.0	1		09/17/18 19:56	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		09/17/18 19:56	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-115	1		09/17/18 19:56	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-119	1		09/17/18 19:56	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-117	1		09/17/18 19:56	17060-07-0	
Preservation pH	**1.0**		1.0	1		09/17/18 19:56		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

QC Batch: 543872 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60280043001, 60280043002, 60280043003, 60280043004, 60280043005

METHOD BLANK: 2228611 Matrix: Water
Associated Lab Samples: 60280043001, 60280043002, 60280043003, 60280043004, 60280043005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	09/18/18 12:53	
Manganese, Dissolved	ug/L	ND	5.0	09/17/18 19:02	
Selenium, Dissolved	ug/L	ND	15.0	09/17/18 19:02	

LABORATORY CONTROL SAMPLE: 2228612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	9710	97	80-120	
Manganese, Dissolved	ug/L	1000	991	99	80-120	
Selenium, Dissolved	ug/L	1000	978	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2228613 2228614

Parameter	Units	60280043002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron, Dissolved	ug/L	104	10000	10000	9540	9650	94	95	75-125	1	20	
Manganese, Dissolved	ug/L	270	1000	1000	1220	1290	95	102	75-125	6	20	
Selenium, Dissolved	ug/L	ND	1000	1000	971	1040	97	103	75-125	7	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

QC Batch: 544632 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60280043001, 60280043002, 60280043003, 60280043004, 60280043005

METHOD BLANK: 2231722 Matrix: Water
Associated Lab Samples: 60280043001, 60280043002, 60280043003, 60280043004, 60280043005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/15/18 05:50	
Ethylbenzene	ug/L	ND	1.0	09/15/18 05:50	
Toluene	ug/L	ND	1.0	09/15/18 05:50	
Xylene (Total)	ug/L	ND	3.0	09/15/18 05:50	
1,2-Dichloroethane-d4 (S)	%	98	80-117	09/15/18 05:50	
4-Bromofluorobenzene (S)	%	110	80-119	09/15/18 05:50	
Toluene-d8 (S)	%	104	80-115	09/15/18 05:50	

LABORATORY CONTROL SAMPLE: 2231723

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.0	95	81-118	
Ethylbenzene	ug/L	20	20.4	102	80-118	
Toluene	ug/L	20	20.8	104	82-118	
Xylene (Total)	ug/L	60	58.1	97	81-120	
1,2-Dichloroethane-d4 (S)	%			98	80-117	
4-Bromofluorobenzene (S)	%			103	80-119	
Toluene-d8 (S)	%			104	80-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

QC Batch: 544934 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60280043006

METHOD BLANK: 2233104 Matrix: Water
Associated Lab Samples: 60280043006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/17/18 17:08	
Ethylbenzene	ug/L	ND	1.0	09/17/18 17:08	
Toluene	ug/L	ND	1.0	09/17/18 17:08	
Xylene (Total)	ug/L	ND	3.0	09/17/18 17:08	
1,2-Dichloroethane-d4 (S)	%	99	80-117	09/17/18 17:08	
4-Bromofluorobenzene (S)	%	101	80-119	09/17/18 17:08	
Toluene-d8 (S)	%	101	80-115	09/17/18 17:08	

LABORATORY CONTROL SAMPLE: 2233105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.6	93	81-118	
Ethylbenzene	ug/L	20	18.8	94	80-118	
Toluene	ug/L	20	18.9	94	82-118	
Xylene (Total)	ug/L	60	57.0	95	81-120	
1,2-Dichloroethane-d4 (S)	%			99	80-117	
4-Bromofluorobenzene (S)	%			100	80-119	
Toluene-d8 (S)	%			100	80-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 544632

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 544934

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11145982 FLORA VISTA NO 1
Pace Project No.: 60280043

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60280043001	**GW-11145982-090618-CN-MW-1**	EPA 3010	543872	EPA 6010	543907
60280043002	**GW-11145982-090618-CN-MW-2**	EPA 3010	543872	EPA 6010	543907
60280043003	**GW-11145982-090618-CN-MW-3**	EPA 3010	543872	EPA 6010	543907
60280043004	**GW-11145982-090618-CN-MW-4**	EPA 3010	543872	EPA 6010	543907
60280043005	**GW-11145982-090618-CN-MW-5**	EPA 3010	543872	EPA 6010	543907
60280043001	**GW-11145982-090618-CN-MW-1**	EPA 8260	544632		
60280043002	**GW-11145982-090618-CN-MW-2**	EPA 8260	544632		
60280043003	**GW-11145982-090618-CN-MW-3**	EPA 8260	544632		
60280043004	**GW-11145982-090618-CN-MW-4**	EPA 8260	544632		
60280043005	**GW-11145982-090618-CN-MW-5**	EPA 8260	544632		
60280043006	**TRIP BLANK**	EPA 8260	544934		

JLS

WO# : 60280043

60280043

Pace Analytical® www.pacelabs.com

Sample Condition Upon Receipt

Client Name: GHD

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 7826 8003 8750 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 5.2 **Corr. Factor** 0.0 **Corrected** 5.2

Date and initials of person examining contents: JD 9-8-18

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☑No ☐N/A	1 of 2 DG9H(TB) BROKEN
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jann Church 9/10/18

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD Services, New Mexico	Report To:	Jeff Walker	Attention:	
Address:	6121 indian School Rd	Copy To:		Company Name:	
	Albuquerque, NM 87110			Address:	
Email:	jeff.walker@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	505-884-0672 Fax:	Project Name:	11145982 Flora Vista No 1	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	10540, line 1

Regulatory Agency	
State / Location	NM

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	8260 BTEX	Dissolved Fe,Mn-field filtered	Residual Chlorine (Y/N)	60280043
1	GW-11145982-090618-GW-MW-1		G	9-6-18	0925				4			X	X						X	X			001
2	GW-11145982-090618-GW-MW-2				1000																	002
3	GW-11145982-090618-GW-MW-3				0915																	003
4	GW-11145982-090618-GW-MW-4				0905																	004
5	GW-11145982-090618-GW-MW-5				0945																	005
6																						006
7																						
8																						
9																						
10																						
11																						
12																						

Requested Analysis Filtered (Y/N)

8260 BTEX: SDBN, DG9H(3)

DG9H(TB)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		9-7-18	840	FACE	9-8-18	0850	5.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Charles Nelight

SIGNATURE of SAMPLER: Charles Nelight

DATE Signed: 9-7-18

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 02, 2019

HilCorp-Farmington, NM

Sample Delivery Group:	L1055784
Samples Received:	12/22/2018
Project Number:	
Description:	Flora Vista 1
Site:	FLORA VISTA #1
Report To:	Kurt Hoekstra and Jennifer Deal 382 Road 3100 Aztec, NM 87401

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

MW1 L1055784-01 GW

Collected by: Kurt | Collected date/time: 12/20/18 00:00 | Received date/time: 12/22/18 09:10

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1214945	1	12/24/18 10:09	12/26/18 09:12	TRB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215598	1	12/25/18 04:03	12/25/18 04:03	JHH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1217055	10	12/28/18 18:15	12/28/18 18:15	TJJ

MW2 L1055784-02 GW

Collected by: Kurt | Collected date/time: 12/20/18 00:00 | Received date/time: 12/22/18 09:10

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1214945	1	12/24/18 10:09	12/26/18 09:15	TRB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215598	1	12/25/18 04:25	12/25/18 04:25	JHH

MW3 L1055784-03 GW

Collected by: Kurt | Collected date/time: 12/20/18 00:00 | Received date/time: 12/22/18 09:10

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1214945	1	12/24/18 10:09	12/26/18 09:18	TRB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1217055	1	12/28/18 18:36	12/28/18 18:36	TJJ

MW4 L1055784-04 GW

Collected by: Kurt | Collected date/time: 12/20/18 00:00 | Received date/time: 12/22/18 09:10

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1214945	1	12/24/18 10:09	12/26/18 09:21	TRB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215908	1	12/26/18 13:33	12/26/18 13:33	PP

MW5 L1055784-05 GW

Collected by: Kurt | Collected date/time: 12/20/18 00:00 | Received date/time: 12/22/18 09:10

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1214945	1	12/24/18 10:09	12/26/18 09:24	TRB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215908	1	12/26/18 13:53	12/26/18 13:53	PP
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1217138	20	12/29/18 15:31	12/29/18 15:31	JHH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	0.487		0.100	1	12/26/2018 09:12	WG1214945
Manganese,Dissolved	0.0241		0.0100	1	12/26/2018 09:12	WG1214945

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0827		0.00100	1	12/25/2018 04:03	WG1215598
Toluene	ND		0.00100	1	12/25/2018 04:03	WG1215598
Ethylbenzene	0.156		0.00100	1	12/25/2018 04:03	WG1215598
Total Xylenes	0.468		0.0300	10	12/28/2018 18:15	WG1217055
(S) Toluene-d8	*116*		*80.0-120*		*12/25/2018 04:03*	WG1215598
(S) Toluene-d8	*99.6*		*80.0-120*		*12/28/2018 18:15*	WG1217055
(S) Dibromofluoromethane	*108*		*75.0-120*		*12/25/2018 04:03*	WG1215598
(S) Dibromofluoromethane	*90.7*		*75.0-120*		*12/28/2018 18:15*	WG1217055
(S) a,a,a-Trifluorotoluene	*115*		*80.0-120*		*12/25/2018 04:03*	WG1215598
(S) a,a,a-Trifluorotoluene	*105*		*80.0-120*		*12/28/2018 18:15*	WG1217055
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*12/25/2018 04:03*	WG1215598
(S) 4-Bromofluorobenzene	*118*		*77.0-126*		*12/28/2018 18:15*	WG1217055

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	12/26/2018 09:15	WG1214945
Manganese,Dissolved	ND		0.0100	1	12/26/2018 09:15	WG1214945

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/25/2018 04:25	WG1215598
Toluene	ND		0.00100	1	12/25/2018 04:25	WG1215598
Ethylbenzene	ND		0.00100	1	12/25/2018 04:25	WG1215598
Total Xylenes	ND		0.00300	1	12/25/2018 04:25	WG1215598
(S) Toluene-d8	*113*		*80.0-120*		*12/25/2018 04:25*	WG1215598
(S) Dibromofluoromethane	*110*		*75.0-120*		*12/25/2018 04:25*	WG1215598
(S) a,a,a-Trifluorotoluene	*100*		*80.0-120*		*12/25/2018 04:25*	WG1215598
(S) 4-Bromofluorobenzene	*98.2*		*77.0-126*		*12/25/2018 04:25*	WG1215598

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Iron,Dissolved	ND		0.100	1	12/26/2018 09:18	WG1214945
Manganese,Dissolved	0.0153		0.0100	1	12/26/2018 09:18	WG1214945

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	12/28/2018 18:36	WG1217055
Toluene	ND		0.00100	1	12/28/2018 18:36	WG1217055
Ethylbenzene	ND		0.00100	1	12/28/2018 18:36	WG1217055
Total Xylenes	ND		0.00300	1	12/28/2018 18:36	WG1217055
(S) Toluene-d8	*100*		*80.0-120*		*12/28/2018 18:36*	WG1217055
(S) Dibromofluoromethane	*93.3*		*75.0-120*		*12/28/2018 18:36*	WG1217055
(S) a,a,a-Trifluorotoluene	*106*		*80.0-120*		*12/28/2018 18:36*	WG1217055
(S) 4-Bromofluorobenzene	*118*		*77.0-126*		*12/28/2018 18:36*	WG1217055

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Iron,Dissolved	0.146		0.100	1	12/26/2018 09:21	WG1214945
Manganese,Dissolved	4.82		0.0100	1	12/26/2018 09:21	WG1214945

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.0253		0.00100	1	12/26/2018 13:33	WG1215908
Toluene	ND		0.00100	1	12/26/2018 13:33	WG1215908
Ethylbenzene	0.0132		0.00100	1	12/26/2018 13:33	WG1215908
Total Xylenes	0.0236		0.00300	1	12/26/2018 13:33	WG1215908
(S) Toluene-d8	*112*		*80.0-120*		*12/26/2018 13:33*	WG1215908
(S) Dibromofluoromethane	*107*		*75.0-120*		*12/26/2018 13:33*	WG1215908
(S) a,a,a-Trifluorotoluene	*113*		*80.0-120*		*12/26/2018 13:33*	WG1215908
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*12/26/2018 13:33*	WG1215908

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	0.748		0.100	1	12/26/2018 09:24	WG1214945
Manganese,Dissolved	3.79		0.0100	1	12/26/2018 09:24	WG1214945

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0568		0.00100	1	12/26/2018 13:53	WG1215908
Toluene	0.00136		0.00100	1	12/26/2018 13:53	WG1215908
Ethylbenzene	0.448		0.0200	20	12/29/2018 15:31	WG1217138
Total Xylenes	4.48	J4	0.0600	20	12/29/2018 15:31	WG1217138
(S) Toluene-d8	*109*		*80.0-120*		*12/26/2018 13:53*	WG1215908
(S) Toluene-d8	*127*	J1	*80.0-120*		*12/29/2018 15:31*	WG1217138
(S) Dibromofluoromethane	*105*		*75.0-120*		*12/26/2018 13:53*	WG1215908
(S) Dibromofluoromethane	*97.2*		*75.0-120*		*12/29/2018 15:31*	WG1217138
(S) a,a,a-Trifluorotoluene	*140*	J1	*80.0-120*		*12/26/2018 13:53*	WG1215908
(S) a,a,a-Trifluorotoluene	*117*		*80.0-120*		*12/29/2018 15:31*	WG1217138
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*12/26/2018 13:53*	WG1215908
(S) 4-Bromofluorobenzene	*95.1*		*77.0-126*		*12/29/2018 15:31*	WG1217138

Sample Narrative:

L1055784-05 WG1215908, WG1217138: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3371233-6 12/26/18 12:57

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Iron,Dissolved	U		0.0141	0.100
Manganese,Dissolved	U		0.00120	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3371233-1 12/26/18 08:42 • (LCSD) R3371233-2 12/26/18 08:45

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Iron,Dissolved	10.0	10.1	9.84	101	98.4	80.0-120			2.63	20
Manganese,Dissolved	1.00	0.995	0.974	99.5	97.4	80.0-120			2.11	20

L1055807-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1055807-07 12/26/18 08:48 • (MS) R3371233-4 12/26/18 08:53 • (MSD) R3371233-5 12/26/18 08:56

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Iron,Dissolved	10.0	0.0539	9.56	9.72	95.0	96.6	1	75.0-125			1.68	20
Manganese,Dissolved	1.00	0.202	1.13	1.14	92.8	93.8	1	75.0-125			0.874	20

Method Blank (MB)

(MB) R3372026-3 12/24/18 21:21

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*118*			*80.0-120*
(S) Dibromofluoromethane	*96.8*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*106*			*80.0-120*
(S) 4-Bromofluorobenzene	*82.6*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3372026-1 12/24/18 20:40 • (LCSD) R3372026-2 12/24/18 21:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0213	0.0219	85.1	87.6	70.0-123			2.89	20
Ethylbenzene	0.0250	0.0262	0.0286	105	114	79.0-123			8.78	20
Toluene	0.0250	0.0257	0.0264	103	106	79.0-120			2.71	20
Xylenes, Total	0.0750	0.0849	0.0870	113	116	79.0-123			2.44	20
(S) Toluene-d8				*109*	*117*	*80.0-120*				
(S) Dibromofluoromethane				*101*	*103*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*107*	*113*	*80.0-120*				
(S) 4-Bromofluorobenzene				*98.4*	*100*	*77.0-126*				

Method Blank (MB)

(MB) R3372086-3 12/26/18 11:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*110*			*80.0-120*
(S) Dibromofluoromethane	*106*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.1*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3372086-1 12/26/18 10:22 • (LCSD) R3372086-2 12/26/18 10:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0220	0.0218	87.9	87.2	70.0-123			0.856	20
Ethylbenzene	0.0250	0.0272	0.0262	109	105	79.0-123			3.81	20
Toluene	0.0250	0.0266	0.0244	106	97.4	79.0-120			8.64	20
Xylenes, Total	0.0750	0.0831	0.0762	111	102	79.0-123			8.66	20
(S) Toluene-d8				*114*	*103*	*80.0-120*				
(S) Dibromofluoromethane				*105*	*98.8*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*104*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*93.8*	*100*	*77.0-126*				

Method Blank (MB)

(MB) R3372115-3 12/28/18 17:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*100*			*80.0-120*
(S) Dibromofluoromethane	*93.1*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*115*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3372115-1 12/28/18 16:52 • (LCSD) R3372115-2 12/28/18 17:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0214	0.0211	85.5	84.2	70.0-123			1.58	20
Ethylbenzene	0.0250	0.0217	0.0221	86.8	88.6	79.0-123			1.99	20
Toluene	0.0250	0.0231	0.0239	92.5	95.5	79.0-120			3.23	20
Xylenes, Total	0.0750	0.0652	0.0679	86.9	90.5	79.0-123			4.06	20
(S) Toluene-d8				*98.8*	*101*	*80.0-120*				
(S) Dibromofluoromethane				*92.2*	*89.1*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*104*	*105*	*80.0-120*				
(S) 4-Bromofluorobenzene				*117*	*118*	*77.0-126*				

Method Blank (MB)

(MB) R3372277-2 12/29/18 11:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Ethylbenzene	U		0.000384	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*118*			*80.0-120*
(S) Dibromofluoromethane	*103*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*96.5*			*77.0-126*

Laboratory Control Sample (LCS)

(LCS) R3372277-1 12/29/18 10:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	0.0250	0.0274	110	79.0-123	
Xylenes, Total	0.0750	0.0869	116	79.0-123	J4
(S) Toluene-d8			*115*	*80.0-120*	
(S) Dibromofluoromethane			*94.2*	*75.0-120*	
(S) a,a,a-Trifluorotoluene			*112*	*80.0-120*	
(S) 4-Bromofluorobenzene			*102*	*77.0-126*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

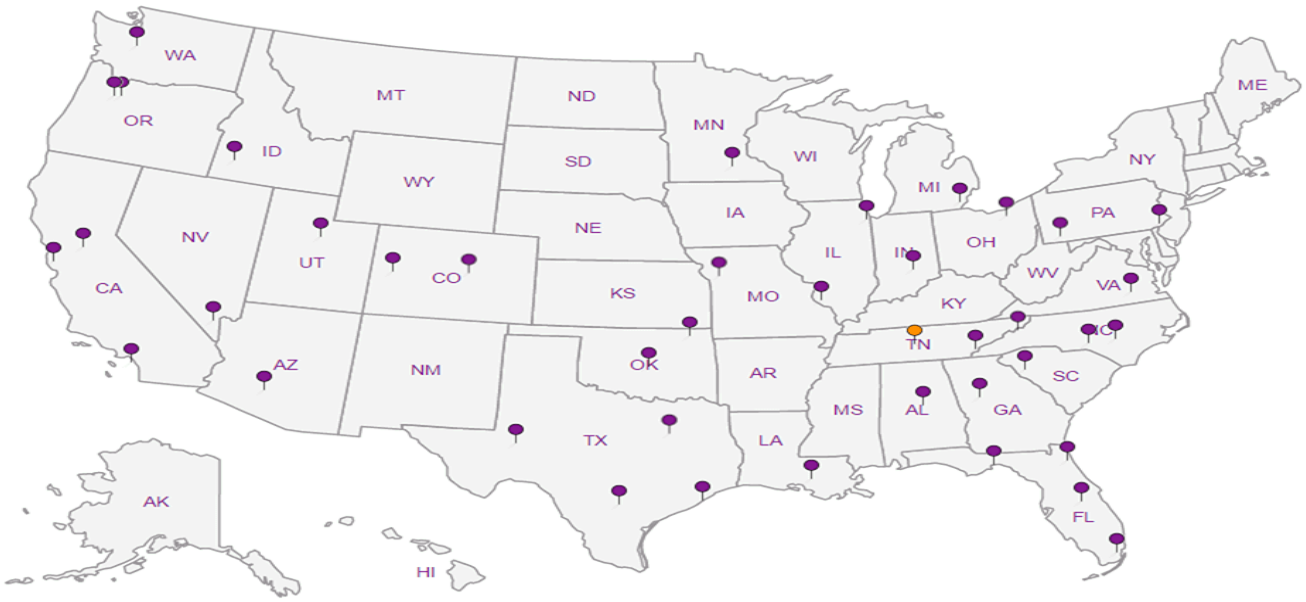
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HilCorp-Farmington, NM

382 Road 3100
Aztec, NM 87401

Billing Information:

PO Box 61529
Houston, TX 77208

Pres Chk

Report to: Kurt Hoekstra

Email To: khoekstra@hilcorp.com ccardoza@hilcorp.com

Project Description:

City/State Collected:

Phone: 505-486-9543
Fax:

Client Project #

Lab Project # HILCORANM-HOEKSTRA

Collected by (print): KURT

Site/Facility ID # FLORA VISTA #1

P.O. #

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day X Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Diss. Fe acid Min 250ml HDPE-NoPres NOT FIELD FILTERED	V8260BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
MW1		GW	23.10	12-20		4	X	X		-01
MW2		GW	25.20	12-21		4	X	X		-02
MW3		GW	21.60	12-21		4	X	X		-03
MW4		GW	22.75	12-20		4	X	X		-04
MW5		GW	22.34	12-20		4	X	X		-05
		GW				4	X	X		

RAD SCREEN: <0.5 mR/hr

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH ____ Temp ____

Flow ____ Other ____

Samples returned via: ___UPS ___FedEx ___Courier ____

Tracking # 4624 3005 1747

Sample Receipt Checklist
COC Seal Present/Intact: NP ___Y ___N
COC Signed/Accurate: ___Y ___N
Bottles arrive intact: ___Y ___N
Correct bottles used: ___Y ___N
Sufficient volume sent: ___Y ___N
If Applicable
VOA Zero Headspace: ___Y ___N
Preservation Correct/Checked: ___Y ___N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Kurt Hoekstra	12-21-18	11:10	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 1.0 -.2 = 0.8 °C Bottles Received: 20

Date: 12/22/18 Time: 09:10

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page ___ of ___

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L# L055784

A019

Acctnum: HILCORANM
Template: T142967
Prelogin: P680925
TSR: 288 - Daphne Richards
PB: 11-14-18
Shipped Via: FedEX Ground