APPROVED
By Olivia Yu at 9:21 am, Nov 15, 2018

October 25, 2018 Reference No. 11181165

NMOCD approves of the remediation completed for 1RP-5152 and grants a deferral for areas not remediated until TOA, retrofit or inactivity.

Ms. Olivia Yu
Environmental Specialist
New Mexico Oil Conservation Division-Dist. 1
1625 North French Drive
Hobbs, New Mexico 88240

Mr. Ryan Mann
Remediation Specialist
New Mexico State Land Office
2827 N. Dal Paso Suite, 117
Hobbs, NM 88240

Dear Ms. Yu/Mr. Mann:

Re: Supplemental Site Assessment and Site Closure Request
Phillips66 McGowan Station Crude Release
NMOCD #1RP-5152
Unit Letter J, S35, T17S, R34E
Lea County, New Mexico

On behalf of Phillips 66 Pipeline, LLC (Phillips 66), GHD Services Inc. (GHD) is providing this Supplemental Site Assessment and Remediation Summary letter report for the above-referenced site. The McGowan South State site (hereafter referred to as the "Site") is located on State of New Mexico land within Unit Letter J, Section 35, Township 17S, and Range 34E in Lea County, New Mexico. Geographical coordinates for the Site are 32.7890220° North, 103.5301620° West (Figure 1). The Site consists of a pipeline pumping station including a sump and other associated equipment (Figure 2).

1. Introduction

Initial Site assessment and concurrent remediation (removal of soils/rock) were performed August 6-10, 2018, to address impacts from an August 4, 2018 release of approximately 93 barrels (bbls) of crude oil from a crude gathering pipeline system. An initial Site Assessment and Remediation Summary Report was submitted to the New Mexico Oil Conservation Division (NMOCD) on August 21, 2018. Fourteen sidewall and bottom samples were collected during the first Site assessment from the approximately 1,100 cubic yard excavation. Four of the sidewall samples (SW-3, SW-6, SumpSWall and SumpWWall) indicated concentrations of total BTEX (benzene, toluene, ethylbenzene and xylenes) and total petroleum hydrocarbons (TPH) were above the Table 1 NMAC 19.15.29 closure criteria established for the Site (please refer to August 21, 2018 report).

The NMOCD, in an August 28, 2018 email correspondence, declared that closure confirmation samples collected August 10, 2018, were sufficient, except for the aforementioned samples that exceeded the Table 1 closure criteria. The requested deferral for the sump area piping and eastern excavation wall were also conditionally granted in the August 28, 2018 email. NMOCD requested additional horizontal delineation be conducted east of the buried piping abutting the eastern excavation wall (SW-3), west of

SW-6, and additional delineation south and west of where the above-standard sump samples were collected (Fig. 2).

2. Supplemental Assessment and Confirmation Sampling

2.1 Assessment Sampling

GHD and Phillips 66 remediation crew revisited the Site on October 8 and 9, 2018 to conduct additional excavation and sampling in those areas required for further assessment as described above.

The sump area was further excavated to the south and west by hand and by limited backhoe use due to associated piping and equipment (see Photo 1). Soils and caliche were excavated laterally in these areas using field screening with a PetroFlag® test kit to guide the excavation. Soils were excavated in these areas an additional distance of approximately 4 feet (ft) back from the original excavation boundaries (Fig 2). Once field screening results indicated soils were below prescribed closure criteria concentrations samples were collected for laboratory confirmation analyses (see Photo 2). Samples were submitted to Cardinal Laboratories in Hobbs, New Mexico, for analysis of BTEX, TPH and chlorides. Laboratory results indicate concentrations of BTEX and TPH were below laboratory reporting limits (LRL-non-detect). Chloride concentrations ranged from non-detect to 16 milligrams per kilogram (mg/kg).

An area to the west of initial assessment sample location SW-6 was excavated approximately 7 ft laterally to assess limits of crude oil impacts in this area (see Photo 3). Excavation by backhoe was guided by field screening and a confirmation sample collected (SW-8-3) and submitted as described above (see Photos 3 and 4). Concentrations of BTEX and TPH were below LRL and the chloride concentration for this sample was 336 mg/kg.

The NMOCD in the August 28, 2018 correspondence granted the requested deferral to excavation beyond the eastern edge of current excavation limits, but requested delineation to the east of the high pressure water pipelines that limited further digging near the SW-3 sample location. Hydroexcavation was employed to reach a depth of 4 ft deep (SW-9-4) between the high pressure water lines east of SW-3 and the Phillips 66 crude line. A sample was collected at this location (see Photo 5) and submitted for confirmation analyses as described above. Concentrations of BTEX and TPH were below LRLs and the chloride concentration was 48 mg/kg. A summary of field screening data for this event is included as an attachment to this report. The summary table of soils analytical data is attached to this report and has been updated with supplemental laboratory results. Figure 2 has also been updated with all current data and the complete Cardinal Laboratories report is also attached.

3. Summary and Conclusions

A summary of the events and findings from the supplemental assessment/remediation activities performed at the Site are as follows:

- GHD and Phillips 66 field crew conducted supplemental Site assessment activities at the Site on October 8 and 9, 2018 to further delineate impacted areas as prescribed in the NMOCD August 28, 2018 email correspondence.

- The sump area, at the source of the release, was further excavated to the south and west, guided by field screening data. An additional 4-5 ft was excavated horizontally from the existing excavation. Collected confirmation sidewall samples SumpS2 and SumpW2 were non-detect for BTEX and TPH constituents and chloride concentrations were below Table 1 closure criteria.
- The existing excavation was widened approximately 7 ft to the west of where sample SW6 was collected August 10, 2018. A confirmation sidewall sample (SW-8) was collected at this location. Results were non-detect for BTEX and TPH constituents and the chloride concentration was below Table 1 closure criteria.
- Hydroexcavation was utilized to bore down to 4 ft deep east of the high pressure water lines, east of the sample SW3 location, to assess impacts east of existing excavation. A confirmation sample (SW-9) was collected at this location. Results were non-detect for BTEX and TPH constituents and the chloride concentration was below Table 1 closure criteria.

Based on the results of supplemental field and laboratory soil sampling and structural conditions at the Site, GHD requests the following:

- In accordance with 19.15.29.12.C.(2), request is made to defer remediation and restoration of the eastern boundary of the excavation due to buried pipelines directly adjacent to the excavation. Visual observations of hydroexcavated trenches of the pipeline made during the August 6-10, 2018 Site assessment, and SW-9 sample results indicated that the eastern extent of the crude release impacts end essentially at the pipeline and do not go eastward from this area.
- With respect to the remainder of the impacted area, including the sump area, based on delineation and confirmation sample results, Site closure and permission to backfill the excavation is requested.

If you have any questions or comments with regards to this report, please do not hesitate to contact GHD's Albuquerque office at (505) 884-0672.

Sincerely,

GHD

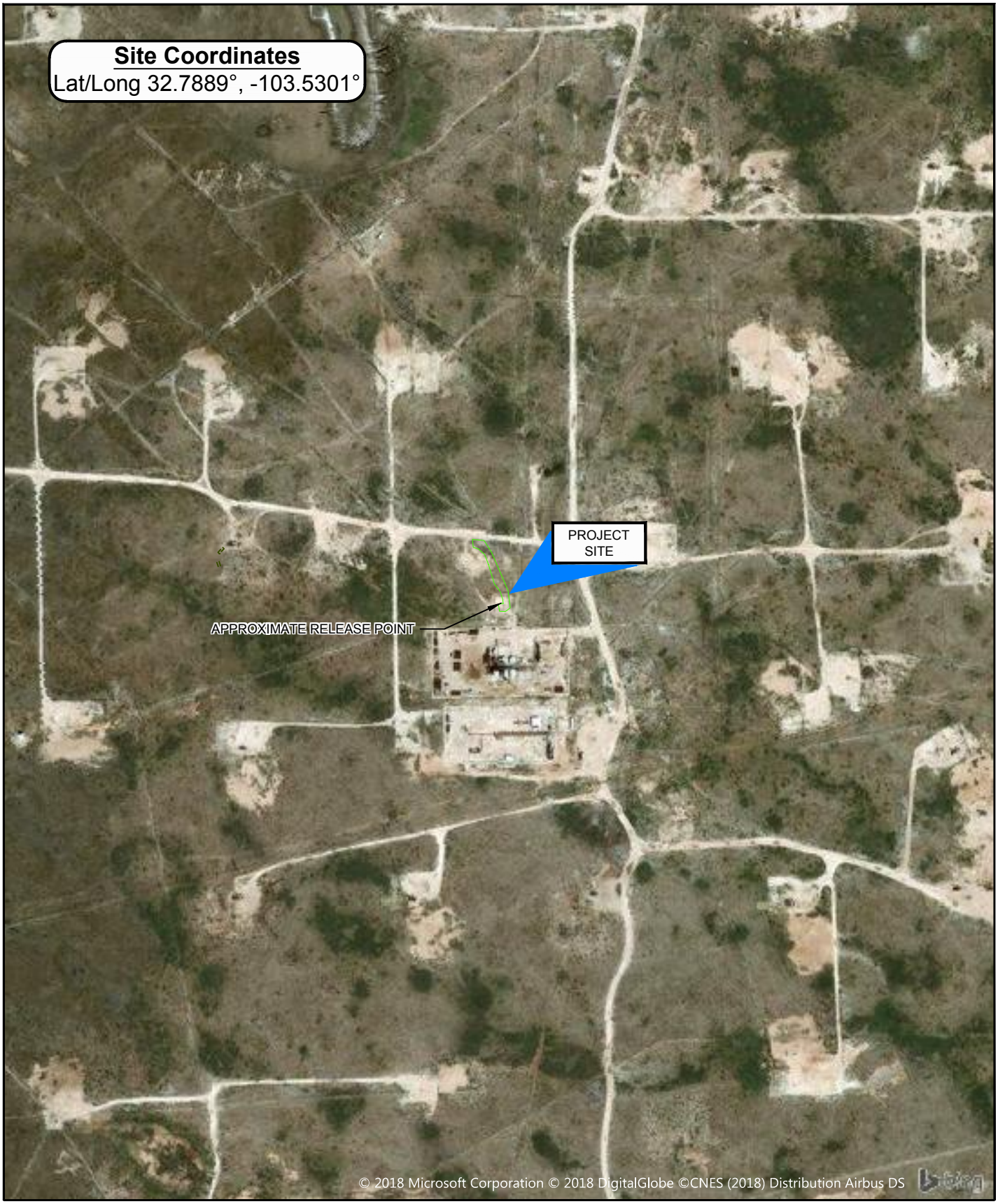
Jeff Walker
Geologist

Alan Brandon
Senior Project Manager

JW/ji/1

Encl. Figure 1
Figure 2
Table 1
Photolog
Attachment 1 – Field Screening Summary
Attachment 2 – Cardinal Laboratory Report

cc: Aly Batt, P66 Environmental Specialist



Source: MICROSOFT CORPORATION AND AFFILIATED DATA PROVIDERS

0 200 500ft

Coordinate System:
STATE PLANE -
NEW MEXICO EAST

PHILLIPS 66
MCGOWAN STATION CRUDE OIL RELEASE
BUCKEYE, LEA COUNTY, NEW MEXICO

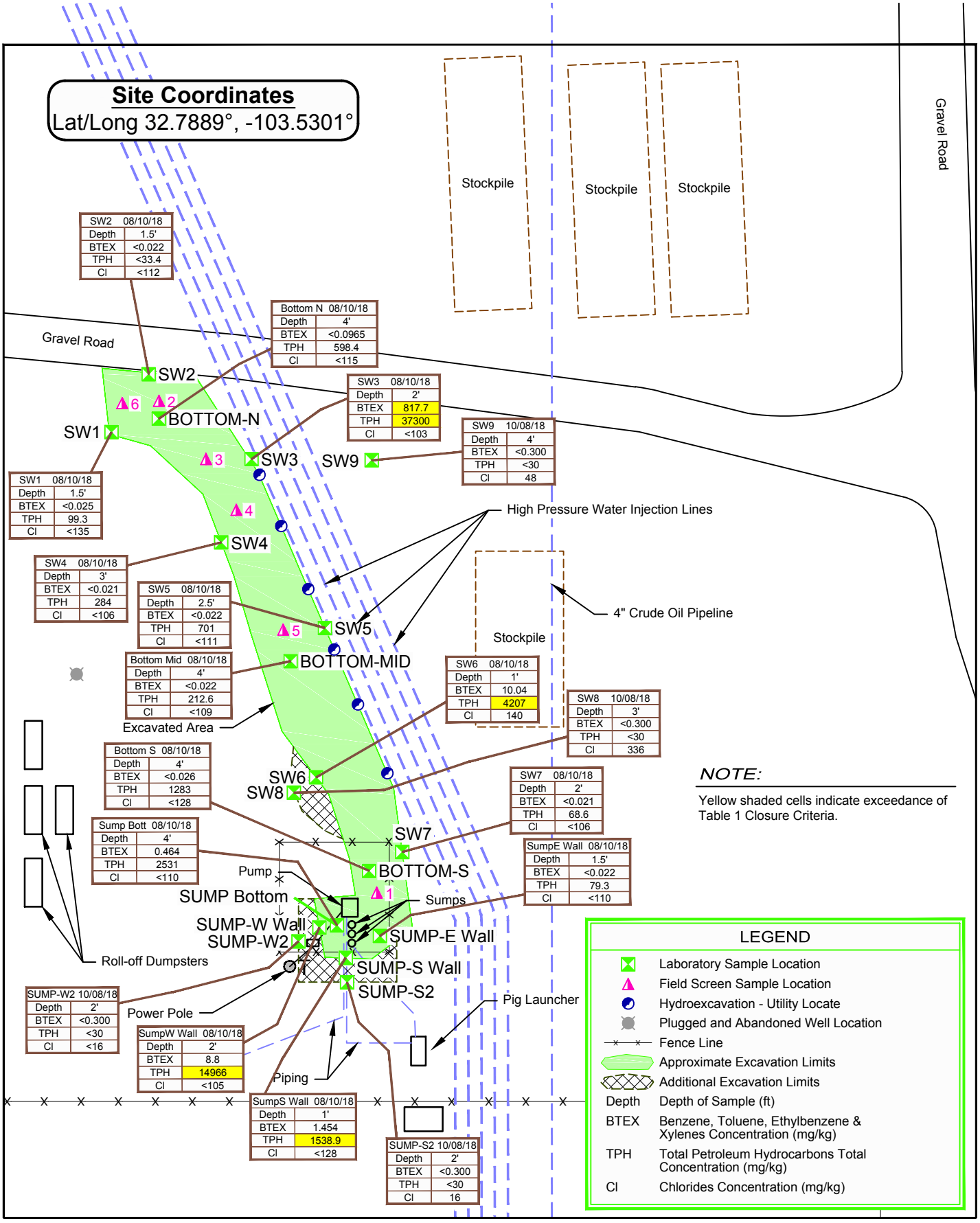
11181165-00

Sep 24, 2018

SITE AERIAL PHOTOGRAPH

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1118----\11181165-P66_McGowan Station NM\11181165-00(000)GN-DL001.dwg



0 20 60ft

Coordinate System:
STATE PLANE -
NEW MEXICO EAST

PHILLIPS 66
MCGOWAN STATION CRUDE OIL RELEASE
BUCKEYE, LEA COUNTY, NEW MEXICO

SAMPLE LOCATION AND ANALYTICAL RESULTS MAP

11181165-00

Oct 25, 2018

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1118----\11181165-P66_McGowan Station NM\11181165-00(000)GN-DL001.dwg

Photo 1: Additional excavation at sump/pipeline pumping unit.

Photo 2: SumpS2 sample location. Note: dark soil coloration due to naturally occurring organic material.

Photo 3: Additional westward excavation at SW-6 location.

Photo 4: SW-8 sample location.

Photo 5: Hydroexcavated hole east of high pressure pipelines. Sample SW-9 location.

Soil Sampling Field Screening Form

Site / Project Name: P66 McGowan Project Number: 11181165 Date: 10/8-9/2018

Sample ID:	Time:	Depth:	PID:	PetroFlag:	Chloride
SW-8-3	1200	3ft		228ppm	
SumpS2	1436	3		0	
SumpW2	1451	4		13	
SW-9-4	927	4		0	

NOTES:

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 11, 2018

JEFF WALKER

GHD SERVICES, INC.

6121 INDIAN SCHOOL RD, NE STE. 200

ALBUQUERQUE, NM 87110

RE: P66 - MC GOWAN

Enclosed are the results of analyses for samples received by the laboratory on 10/09/18 11:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

GHD SERVICES, INC.
JEFF WALKER
6121 INDIAN SCHOOL RD, NE STE. 200
ALBUQUERQUE NM, 87110
Fax To:

Received:	10/09/2018	Sampling Date:	10/08/2018
Reported:	10/11/2018	Sampling Type:	Soil
Project Name:	P66 - MC GOWAN	Sampling Condition:	** (See Notes)
Project Number:	11181165	Sample Received By:	Tamara Oldaker
Project Location:	PHILLIPS 66 - LEA CO NM		

Sample ID: SW - 8 - 3' (H802872-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.18	109	2.00	2.11	
Toluene*	<0.050	0.050	10/11/2018	ND	2.15	107	2.00	2.41	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.19	110	2.00	2.29	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.30	105	6.00	2.67	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *69.8-142*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**336**	16.0	10/11/2018	ND	464	116	400	3.51	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2018	ND	200	100	200	0.492	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	194	97.0	200	0.0124	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

Surrogate: 1-Chlorooctane *93.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *93.7 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

GHD SERVICES, INC.
JEFF WALKER
6121 INDIAN SCHOOL RD, NE STE. 200
ALBUQUERQUE NM, 87110
Fax To:

Received:	10/09/2018	Sampling Date:	10/08/2018
Reported:	10/11/2018	Sampling Type:	Soil
Project Name:	P66 - MC GOWAN	Sampling Condition:	** (See Notes)
Project Number:	11181165	Sample Received By:	Tamara Oldaker
Project Location:	PHILLIPS 66 - LEA CO NM		

Sample ID: SUMP - S2 (H802872-02)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.18	109	2.00	2.11	
Toluene*	<0.050	0.050	10/11/2018	ND	2.15	107	2.00	2.41	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.19	110	2.00	2.29	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.30	105	6.00	2.67	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *69.8-142*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	10/11/2018	ND	464	116	400	3.51	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2018	ND	200	100	200	0.492	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	194	97.0	200	0.0124	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

Surrogate: 1-Chlorooctane *97.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.5 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

GHD SERVICES, INC.
JEFF WALKER
6121 INDIAN SCHOOL RD, NE STE. 200
ALBUQUERQUE NM, 87110
Fax To:

Received:	10/09/2018	Sampling Date:	10/08/2018
Reported:	10/11/2018	Sampling Type:	Soil
Project Name:	P66 - MC GOWAN	Sampling Condition:	** (See Notes)
Project Number:	11181165	Sample Received By:	Tamara Oldaker
Project Location:	PHILLIPS 66 - LEA CO NM		

Sample ID: SUMP - W2 (H802872-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.18	109	2.00	2.11	
Toluene*	<0.050	0.050	10/11/2018	ND	2.15	107	2.00	2.41	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.19	110	2.00	2.29	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.30	105	6.00	2.67	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *69.8-142*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/11/2018	ND	464	116	400	3.51	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2018	ND	200	100	200	0.492	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	194	97.0	200	0.0124	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

Surrogate: 1-Chlorooctane *95.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.8 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

GHD SERVICES, INC.
JEFF WALKER
6121 INDIAN SCHOOL RD, NE STE. 200
ALBUQUERQUE NM, 87110
Fax To:

Received:	10/09/2018	Sampling Date:	10/09/2018
Reported:	10/11/2018	Sampling Type:	Soil
Project Name:	P66 - MC GOWAN	Sampling Condition:	** (See Notes)
Project Number:	11181165	Sample Received By:	Tamara Oldaker
Project Location:	PHILLIPS 66 - LEA CO NM		

Sample ID: SW - 9 -4' (H802872-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/11/2018	ND	2.18	109	2.00	2.11	
Toluene*	<0.050	0.050	10/11/2018	ND	2.15	107	2.00	2.41	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.19	110	2.00	2.29	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.30	105	6.00	2.67	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *69.8-142*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	10/11/2018	ND	464	116	400	3.51	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2018	ND	200	100	200	0.492	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	194	97.0	200	0.0124	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

Surrogate: 1-Chlorooctane *90.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.6 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: GHD Services, Inc, Phillips 66		**BILL TO**	
Project Manager: Jeff Walker		P.O. #:	
Address: 6121 Indian School Rd, NE, Ste 200		Company: Phillips 66	
City: Albuquerque	State: NM Zip: 87110	Attn:	
Phone #: 505-884-0672	Fax #:	Address:	
Project #: 11181165	Project Owner:	City:	
Project Name: P66-McGowan		State: Zip:	
Project Location: Lea County, NM		Phone #:	
Sampler Name: Phil Loang		Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	Chlorides								
H802892																									
1	SW-8-3'	G	1			X					X		10-8-18	12:00	X	X	X								
2	SUMP-S2	G	1			X					X		10-8-18	14:36	X	X	X								
3	SUMP-W2	G	1			X					X		10-8-18	14:51	X	X	X								
4	SW-9-4'	G	1			X					X		10-9-18	9:27	X	X	X								

Relinquished By:	Date: 10-9-18	Received By:	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 11:50		Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Bill to: chad.c.frizzell@p66.com	
	Time:		Reports: jeff.walker@ghd.com	

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other: 7.1° C #97	Cool: ☐ Yes ☑ No Intact: ☑ Yes ☐ No	(Initials) TO

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326