3R-1030

Cont. Work Assessment Plan / General Correspondence

San Juan 28-6 Unit #155N

Date: 2016

JUNE

14

B. Keith Coffman
Program Manager RM&R
ConocoPhillips Company
600 N. Dairy Ashford
EC3-05-W056
Houston, TX 77079-175
Phone: 832.486.2226

ConocoPhillips

Via Electronic Mail

June 6, 2016

Mr. Richard A. Fields
Field Manager
United States Department of Interior
Bureau of Land Management
6251 College Blvd. – Suite A
Farmington, NM 87402

Re: 3160 (F01000) NMSF079050C; Wellsite San Juan 28-6 Unit #155N

Dear Mr. Fields:

Enclosed is our work plan to conduct continued subsurface assessment activities at the San Juan 28-6 No. 155N site. The work plan is presented in response to your letter received May 17, 2016 requiring further site delineation.

Please let me know if you have any questions.

Sincerely,

B. K. Coffman

B. Keith Coffman

Enc

Cc: Cory Smith, Environmental Specialist, NMOCD

Katherina Diemer, Natural Resources Specialist, BLM

June 6, 2016 Reference No.11119528

Mr. B. Keith Coffman, Program Manager RM&R
ConocoPhillips Company
600 N. Dairy Ashford, EC3-05-W056
Houston, TX 77079-1175

Dear Mr. Coffman:

Re: Continued Site Assessment Work Plan
San Juan 28-6 #155N
Sec 28, T27N, R6W
Rio Arriba County, NM

GHD Services, Inc. (GHD) is pleased to present this work plan to continue assessment of the vertical extent of hydrocarbon impacts at the above referenced site (the Site). This work plan is submitted in response to requirements communicated to ConocoPhillips from the Federal Bureau of Land Management (BLM) in a letter dated May 17, 2016. The BLM is the surface owner at the Site.

1. Project Information

The Site is located on federal land within Section 28, Township 27N, Range 6W, San Juan County, New Mexico. Geographical coordinates for the Site are N36.69571, W107.98404. The location and Site layout details are presented as Figures 1 and 2, respectively.

Initial excavation of impacted soils at the Site was completed in January 2015. The area of final excavation measured approximately 64 feet by 71 feet by 19 feet below ground surface (ft bgs, see Figure 2). The depth of the excavation was limited due to a sandstone layer at a depth of approximately 19 ft bgs.

Confirmation soil samples were collected from the excavation sidewalls and bottom in February 2015. The five composite soil samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8015 and for total petroleum hydrocarbons, gasoline, diesel and motor oil range organics (TPH) by EPA method 8260. Sidewall laboratory results indicated concentrations below the New Mexico Oil Conservation Division (NMOCD) recommended remediation action level (RRAL) established for the site.

The bottom sample exceeded these levels for total benzene, toluene, ethylbenzene and xylenes (BTEX) and for total petroleum hydrocarbons (TPH). Following a potassium permanganate application, the bottom of excavation location was re-sampled in April 2015. The results indicated at least one sample had a concentration above NMOCD RRALs. Details of the excavation field

GHD Services Inc.
6121 Indian School Road NE Suite 200 Albuquerque New Mexico 87110 USA
T 505 884 0672 **F** 505 884 4932 **W** www.ghd.com

screening and confirmation laboratory results are presented in the July 14, 2015 Animas Environmental Services Final Excavation Report.

ConocoPhillips collected another bottom sample in February 2016 using a backhoe. The results of the laboratory analytical sample were above NMOCD RRALs. Based on these results, BLM mandated through a Written Order that ConocoPhillips core into the sandstone in the bottom of the excavation to obtain samples at depths beyond the previous attempts. In April 2016, GHD performed assessment activities in the bottom of the open excavation in order to further assess the vertical extent of subsurface hydrocarbon impacts. On April 21 and April 22, 2016, Yellow Jacket Drilling, under GHD observation, advanced six coreholes in the bottom of the open excavation using a track-mounted CME 650 drill rig. Corehole depths ranged from 10 feet below the excavation bottom in CH-3 and CH-6 to 40 feet below the excavation bottom in CH-1 (Figure 3)

The subsurface lithology primarily consisted of light brown sandstone with varying degrees of cementation.

During coring activities, a calibrated photo-ionization detector (PID) and PetroFlag Hydrocarbon Analyzer were used to field screen for the presence of volatile organic compounds (VOCs) and TPH, respectively. Once field screening indicated that VOCs and TPH were below the applicable NMOCD RRALs, confirmation samples were collected. The coreholes were backfilled with cuttings.

Confirmation samples were collected from each of the six coreholes (Figure 3). For each corehole, the sample with the highest field screening results and the bottom sample were selected for laboratory analysis. Soil samples were placed in laboratory-supplied containers, labeled, place on ice, and submitted to Hall Environmental Analysis Laboratories in Albuquerque, New Mexico for analysis. Samples were analyzed for TPH gasoline/diesel/motor oil range organics (GRO/DRO/MRO) by EPA method 8015 and BTEX by EPA method 8260.

Confirmation samples collected from the bottom of each corehole returned analytical results below the Site-specific RRALs for TPH and BTEX. On May 3, 2016, all laboratory results were forwarded to the Farmington, NM BLM office for review.

The BLM, in a May 17, 2016 letter, expressed concern that the subsurface extent of hydrocarbon impacts had not been completely delineated, specifically to the south of CH-1 and that further horizontal and vertical delineation need occur in order to fully delineate soil impacts to the south of CH-1 and to comply with the Written Order.

2. Scope of Work

GHD proposes to utilize a hollow stem auger with air rotary capabilities to first drill through the upper layer of overburden until it is necessary to core into the sandstone layer. The borings will be advanced in order to assess the horizontal and vertical extent of hydrocarbon impacts that may exist outside the previously excavated area, specifically in the south, or southwest corner.

Task 1 - Project Preparation

This task includes preparing and submitting this Work Plan and other project preparation activities that occur after Work Plan approval, but before fieldwork mobilization. After receiving authorization to proceed, GHD will:

- Submit the Work Plan to affected stakeholders for review and approval. This includes ConocoPhillips and BLM.
- Ensure the Site Specific Health and Safety Plan (HASP) and job hazard analyses (JHAs) address field work specified in the Work Plan.
- Coordinate site access with appropriate ConocoPhillips staff.
- Execute GHD's subsurface clearance protocol.
- Develop work orders and contracts for subcontractors.

On Site activities will be coordinated through ConocoPhillips. The excavation and drilling contractors will notify New Mexico One-Call to facilitate location of underground utilities and pipelines prior to drilling activities. GHD will document subsurface clearance activities in accordance with our protocol.

Task 2 –Soil Boring Advancement

GHD, COP representatives (if available) and the drilling subcontractor, Yellow Jacket Drilling Services (Yellow Jacket) will mobilize to the Site to perform a project kickoff meeting. The project kickoff meeting will include a tailgate safety meeting to discuss the Site-specific HASP, applicable JHA's, and stop work authority. Tailgate safety meetings will be conducted daily at the beginning of the day and as conditions change.

Following the completion of a NM811 utility locate, borehole locations will be pre-cleared by air knife, hydrovac, or hand auger to a minimum depth of 5 feet bgs and a diameter 120 percent the size of the auger/coring string. Up to six boring locations will be advanced at the locations indicated on Figure 2. The borings will be advanced via hollow stem auger and conventional air-rotary drilling. A GHD field scientist will supervise the advancement of the borings.

Soil samples will be collected in 5 foot intervals during auger advancement through the overburden and during air rotary coring into the sandstone until field screening indicates hydrocarbon levels below site RRALs or refusal. Field screening for petroleum hydrocarbons will be performed using the heated headspace method with a calibrated PID and PetroFlag test kit.

Once field screening indicates hydrocarbons are below the 100 part per million range, a sample will be collected for laboratory analyses. Samples will be analyzed for BTEX constituents by EPA method 8260 and for TPH GRO/DRO by EPA method 8015 by Hall Environmental Analysis Laboratory. In each of the proposed borings, the sample with the highest field screening indication of hydrocarbon impacts will also be submitted for laboratory analyses. Once total depth is achieved, the boreholes will be backfilled with hydrated bentonite chips.

Task 4: Project Reporting

A summary of the field activities will be included in a Site Assessment Report. The report will include an updated site plan showing the location of completed borehole locations and tabulation of field screening and laboratory analytical test results. The Site Assessment Report will include copies of laboratory chain-of-custody documentation and results, laboratory quality assurance/quality control (QA/QC) documentation, tabulated soils concentration data and a summary of findings.

Health and Safety Considerations

Personal protective equipment including fire retardant clothing, steel-toed work boots, gloves, safety glasses, hearing protection, and hard hats will be required (basic Level D requirements) during field tasks. The project HASP will be maintained onsite. It will be reviewed and signed by on-site personnel, subcontractors, and authorized visitors.

Quality Assurance/Quality Control

Soil and/or core sampling will be completed in accordance with GHDs standard Quality Assurance/Quality Control procedures designed to minimize cross-contamination between samples and to provide reliable laboratory results.

Schedule

GHD is prepared to initiate the scope of work immediately, subsequent to ConocoPhillips approvals, the availability of resources and stakeholder concurrence. A start date and schedule of report submittals will be provided following receipt of driller availability.

If you have any questions or comments with regards to this work plan, please do not hesitate to contact GHDs Albuquerque office at (505) 884-0672. Your timely response to this correspondence is appreciated.

Yours truly,

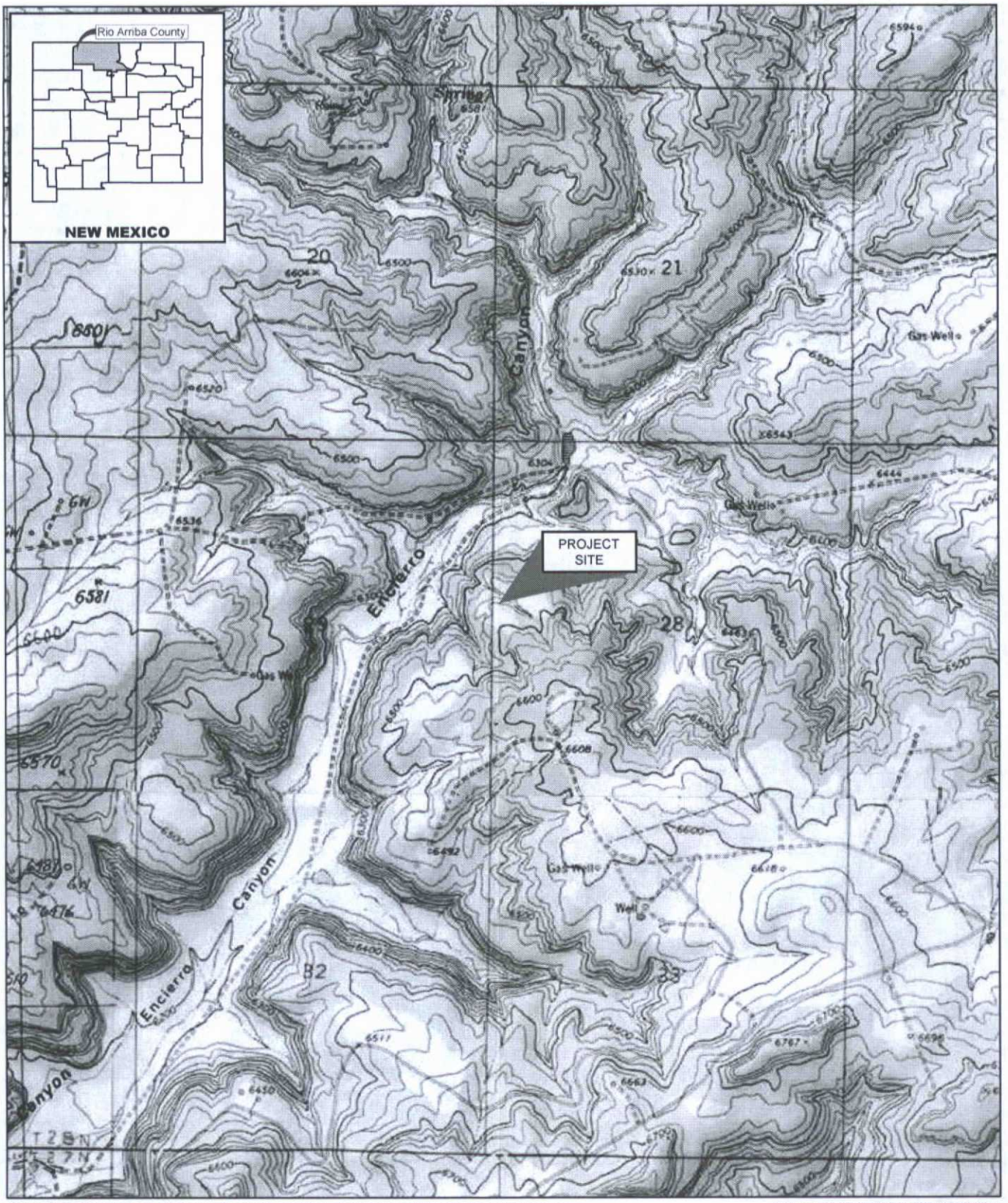
GHD

Bernie Bockisch
Senior Project Manager

Jeffrey Walker, CPG, PMP
Project Manager

Encl. (3)

- Figure 1 - Vicinity Map
- Figure 2 - Site Plan
- Figure 3 – April 2016 Coring Locations and Analytical Results Map



Source: USGS 7.5 Minute Quad "Fourmile Canyon, Santos Peak, Gould Pass, and Delgadito Mesa, New Mexico"

Lat/Long: 36.63291° North, 107.48120° West

0 1000 2000ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico Central (US Feet)

CONOCOPHILLIPS COMPANY
RIO ARRIBA COUNTY, NEW MEXICO
SAN JUAN 28-6 No. 155N

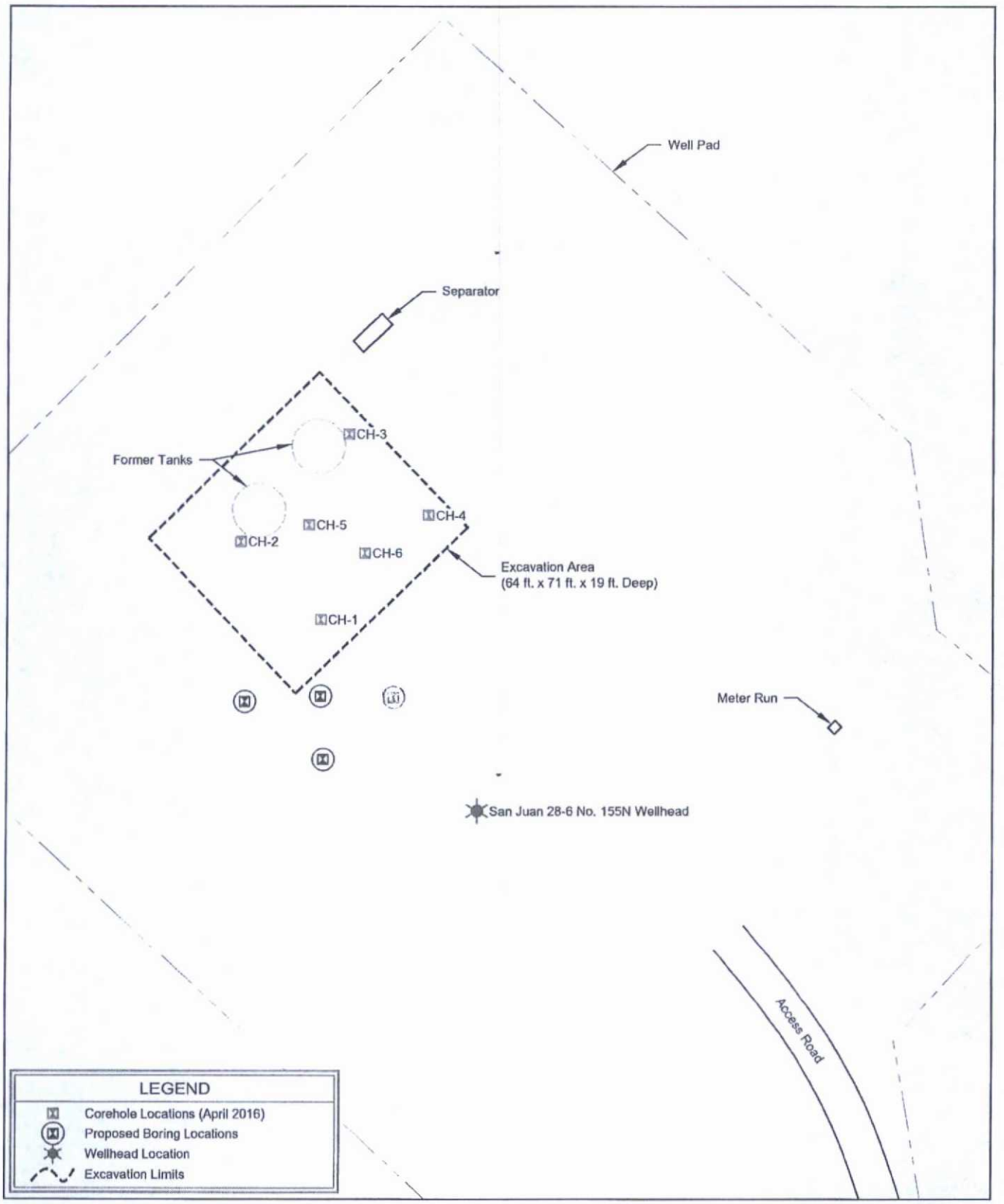
11119528-00

May 3, 2016

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1111----\11119528-CoP-San Juan 28-6 Unit 155N\11119528-00\11119528-00(002)\11119528-00(002)GN-DL001.dwg



Lat/Long: 36.63291° North, 107.48120° West

0 20 40ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico Central (US Feet)

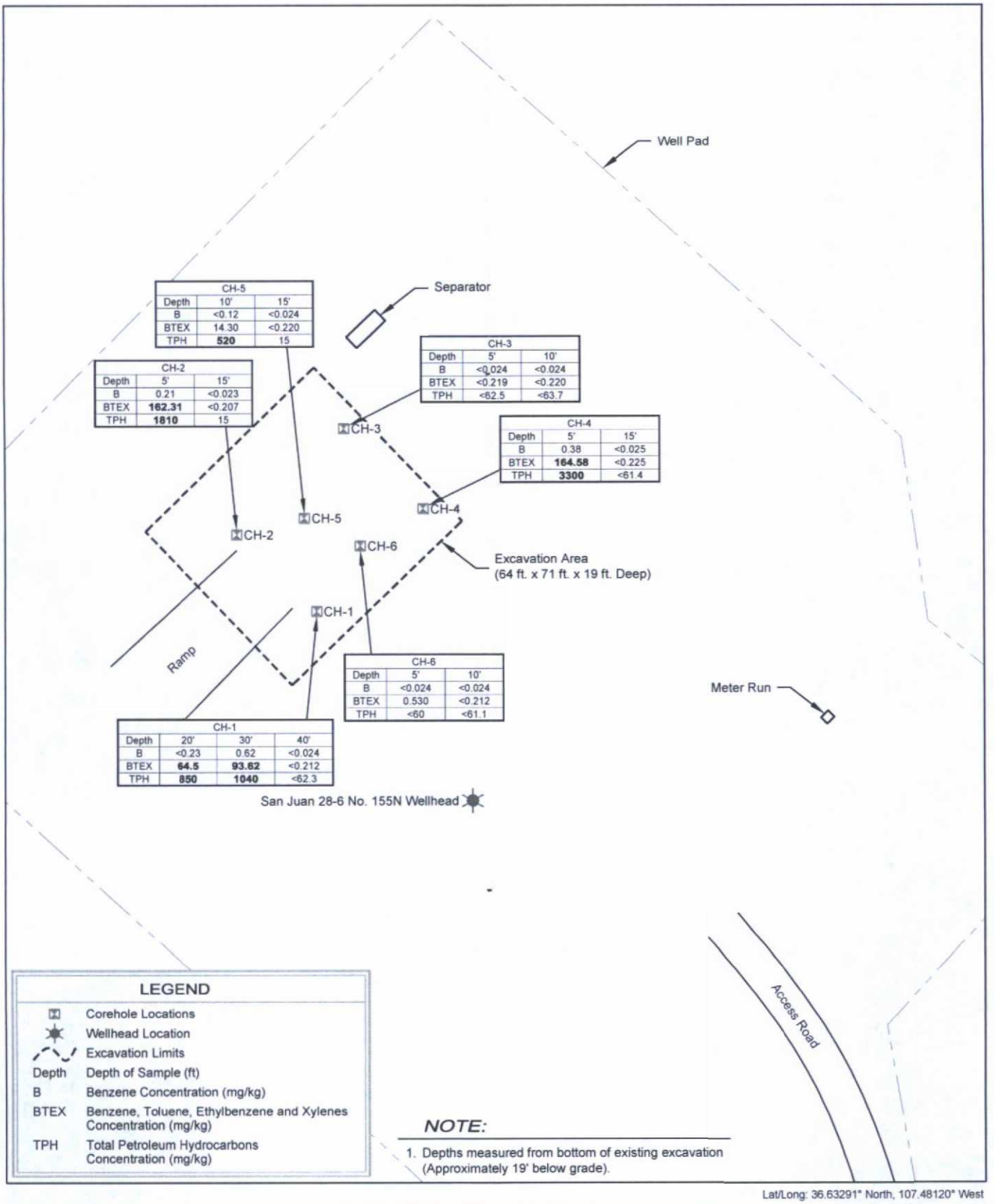
CONOCOPHILLIPS COMPANY
RIO ARRIBA COUNTY, NEW MEXICO
SAN JUAN 28-6 No. 155N

11119528-00
May 27, 2016

SITE PLAN

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1111---\11119528-CoP-San Juan 28-6 Unit 155N\11119528-00\11119528-00(002)\11119528-00(002)GN-DL001.dwg



LEGEND

	Corehole Locations
	Wellhead Location
	Excavation Limits
Depth	Depth of Sample (ft)
B	Benzene Concentration (mg/kg)
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes Concentration (mg/kg)
TPH	Total Petroleum Hydrocarbons Concentration (mg/kg)

NOTE:

1. Depths measured from bottom of existing excavation (Approximately 19' below grade).

Lat/Long: 36.63291° North, 107.48120° West

0 20 40ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico Central (US Feet)

CONOCOPHILLIPS COMPANY
RIO ARRIBA COUNTY, NEW MEXICO
SAN JUAN 28-6 No. 155N

11119528-00
May 27, 2016

APRIL 2015 CORING LOCATIONS AND ANALYTICAL RESULTS MAP

FIGURE 3

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1111----\11119528-CoP-San Juan 28-6 Unit 155N\11119528-00\11119528-00(002)\11119528-00(002)GN-DL001.dwg

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Tuesday, June 14, 2016 10:55 AM
To: 'Walker, Jeffrey'; Diemer, Katherina
Cc: Coffman, Keith; Frost, Gwendolynne; Fields, Vanessa, EMNRD
Subject: RE: San Juan 28-6 Unit 155N Backfilling

Jeff,

Thank you for the laboratory results, The OCD approves COPC plan to backfill the excavation and continued delineation in the area of CH-1 as discussed with the BLM and presented in the Continued Assessment Work plan submitted in June 2016 .

Please notify the OCD at least 72 hours but no more than 1 week prior to the start of further delineation. If you have any questions please give me a call.

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: Walker, Jeffrey [mailto:Jeff.Walker@ghd.com]
Sent: Tuesday, June 14, 2016 10:14 AM
To: Smith, Cory, EMNRD; Diemer, Katherina
Cc: Coffman, Keith; Frost, Gwendolynne; Fields, Vanessa, EMNRD
Subject: RE: San Juan 28-6 Unit 155N Backfilling

Cory,

Lab results and boring location figure attached.

From: Smith, Cory, EMNRD [mailto:Cory.Smith@state.nm.us]
Sent: Tuesday, June 14, 2016 10:09 AM
To: Walker, Jeffrey; Diemer, Katherina
Cc: Coffman, Keith; Frost, Gwendolynne; Fields, Vanessa, EMNRD
Subject: RE: San Juan 28-6 Unit 155N Backfilling

Jeff,

Can you send me the delineation results from the coring done in April.

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: Walker, Jeffrey [mailto:Jeff.Walker@ghd.com]
Sent: Monday, June 13, 2016 3:40 PM
To: Diemer, Katherina
Cc: Coffman, Keith; Smith, Cory, EMNRD; Frost, Gwendolynne
Subject: San Juan 28-6 Unit 155N Backfilling

Katherina,

M&M Trucking and GHD will be on site starting **Wednesday, June 15 at 12:00 pm**, to begin **backfilling** the excavation at subject site.

Please let Keith or me know if you have any questions.

Thank you-Jeff

Jeff Walker
GHD
T: 505 884 0672 | M: 505 377 3920 | | F: 505 884 4932 | E: jeff.walker@ghd.com
6121 Indian School Rd. NE, Suite 200, Albuquerque, NM 87110 | www.ghd.com
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

Smith, Cory, EMNRD

From: Coffman, Keith <KEITH.Coffman@conocophillips.com>
Sent: Monday, June 13, 2016 9:33 AM
To: Diemer, Katherina
Cc: Smith, Cory, EMNRD; Michael Porter; Walker, Jeffrey (jwalker@craworld.com); Notor, Lori
Subject: RE: Re: Work Plan for Continued Site Assessment-San Juan 28-6 #155N

Katherina, thank you for your timely response. ConocoPhillips will begin immediately to plan to have the excavation backfilled. Hopefully we can complete this task before the end of this week.

We will also begin immediately scheduling sub-contractors to complete the investigation as proposed. Until we know their availability, we cannot know a time frame for completing the investigation and generating a report. Even if they could start next week it is unlikely we could deliver a report by July 8. Be assured we are in no way intentionally delaying progress and will submit a report as soon as subcontractor scheduling and work conditions allow.

Please realize this is a stepwise process. After completing the investigation and gathering all available data, the quantitative risk assessment (QRA) will be performed. The timeline for completing the QRA would be approximately 30 days after the investigation is complete and the remedial action plan would follow thereafter. However, setting hard deadlines today for these tasks is not productive since they will probably change.

I will keep you informed of scheduling as we learn more. Please do not hesitate to contact me with an questions.

Take care!

Keith Coffman | L48 HSER
600 N. Dairy Ashford |EC3 06-W056 |Houston, TX 77079
P: 832.486.2226| C: 281.799.0624| keith.coffman@cop.com
ConocoPhillips

From: Diemer, Katherina [mailto:kdiemer@blm.gov]
Sent: Friday, June 10, 2016 11:42 AM
To: Walker, Jeffrey <Jeff.Walker@ghd.com>
Cc: Coffman, Keith <KEITH.Coffman@conocophillips.com>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Michael Porter <mgporter@blm.gov>; John McKinney <jmckinne@blm.gov>; Richard Fields <rafields@blm.gov>; Troy Salyers <tsalyers@blm.gov>; Charles Harraden <charrade@blm.gov>; Roger Herrera <rherrera@blm.gov>
Subject: [EXTERNAL]Re: Work Plan for Continued Site Assessment-San Juan 28-6 #155N

Good Day Jeff and Keith,

I am writing to inform you that BLM approves your request to backfill the San Juan 28-6, Unit 155N location with the understanding that you will conduct a quantitative risk assessment (QRA) and submit a plan for remediation, likely using the Soil Vapor Extraction (SVE) method. BLM would like to receive the report and plan no later than July 8, 2016.

In response to the work plan to continue subsurface assessment BLM approves that plan also. This also includes submitting a plan, once extent of contamination is determined, to remediate the South/Southwest corner.

Please let me know if you have any questions. Thank you and I look forward to hearing from you. Have a good day!

Katherina

On Mon, Jun 6, 2016 at 2:35 PM, Walker, Jeffrey <Jeff.Walker@ghd.com> wrote:

> Katherina,
>
> Please find attached the work plan addressing the request for further delineation at the subject site from Richard Fields' May 17, 2016 letter. Please forward this letter to him as neither Keith nor I have an email address. Thank you and please do not hesitate to contact Keith Coffman or myself with any questions.
>
> Jeff
>
> **Jeff Walker**
> **GHD**
> T: 505 884 0672 | M: 505 377 3920 | | F: 505 884 4932 | E: jeff.walker@ghd.com
>
> 6121 Indian School Rd. NE, Suite 200, Albuquerque, NM 87110 | www.ghd.com
>
> WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

--
Katherina E Diemer
Natural Resource Specialist
Spills Coordinator
Farmington Field Office
6251 North College Boulevard
Suite A
Farmington, NM 87402
Office: 505-564-7666
Mobile: 505-436-4042
email: kdiemer@blm.gov

Smith, Cory, EMNRD

From: Walker, Jeffrey <Jeff.Walker@ghd.com>
Sent: Monday, June 06, 2016 2:36 PM
To: Diemer, Katherina
Cc: Coffman, Keith; Smith, Cory, EMNRD
Subject: Work Plan for Continued Site Assessment–San Juan 28-6 #155N
Attachments: SJ 28-6 155N Cont Assessment Workplan.pdf

Katherina,

Please find attached the work plan addressing the request for further delineation at the subject site from Richard Fields' May 17, 2016 letter. Please forward this letter to him as neither Keith nor I have an email address. Thank you and please do not hesitate to contact Keith Coffman or myself with any questions.

Jeff

Jeff Walker
GHD
T: 505 884 0672 | M: 505 377 3920 | | F: 505 884 4932 | E: jeff.walker@ghd.com
6121 Indian School Rd. NE, Suite 200, Albuquerque, NM 87110 | www.ghd.com
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION