

API# 30-039-23586

Animas Environmental Services, LLC



December 6, 2017

OIL CONS. DIV DIST. 3

Vanessa Fields
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

DEC 12 2017

ACCEPTED FOR RECORD

RE: Status Update Report for the BMG Homestead Ranch #2 Well Location
SW¼, SW¼ of Section 34, T25N, R2W, Rio Arriba County, New Mexico
Incident Number - nJK1206030214

Dear Ms. Fields:

Animas Environmental Services, LLC (AES), on behalf of Benson Montin Greer Drilling Corporation (BMG), has prepared this Remediation Plan Update for the BMG Homestead Ranch #2 Well Location (HR#2), Rio Arriba County, New Mexico. This update report summarizes the site activities resulting from an October 6, 2017, meeting of BMG and AES personnel with the New Mexico Oil Conservation Division (NMOCD). That meeting, and a subsequent email from NMOCD, directed BMG to remediate the HR#2 site by excavating the contaminated soils with a deadline to begin excavation by December 6, 2017. Additionally, BMG was directed submit an associated remediation plan as well as the corresponding C-141.

1.0 Remediation Activities

1.1. *Planning/Pre-Work*

On October 31, 2017, BMG representatives Zach Stradling and Ben Gonzales met with Bob Flegal (AES) and Doyle Post, owner of Lindrith Backhoe Oilfield Service (Lindrith Backhoe). The meeting was held at the Lindrith Backhoe office, near the HR#2 site, and included the excavation's primary equipment operator. After reviewing maps and field results for HR#2, the group proceeded to the location and performed an on-site assessment. The decision was made to have Lindrith Backhoe prep the site, after clearing with one-call, mobilize equipment and begin removing the fencing, berms, various lines, etc. The group then set the date of November 7, 2017, to begin excavation.

1.2. *On-Site Excavation*

On November 7, 2017, BMG, AES and Lindrith Backhoe personnel began excavating contaminated soils at the HR#2 remediation site. The initial excavation work was conducted between November 7 through 17, 2017. With the anticipation of the holiday

break and weather, the excavation was placed on hold beginning November 20, 2017, and continues to be remain so, pending re-evaluation of plans by BMG.

1.2.1. Excavation Criteria

During the initial excavation, efforts were made to segregate the recovered soils in to multiple stockpiles:

- Clean soil – those considered suitable for backfill and expected to sample clean;
- Questionable soils – those soils possibly suitable for use as backfill, but needing to be confirmed via sampling; and
- Petroleum contaminated soils – Those soils indicating the presence of contamination with concentrations above the NMOCD action level of 1,000 mg/kg total petroleum hydrocarbon (TPH).

Clean and questionable spoils were stored in designated stockpiles pending confirmation sampling. Contaminated soils were placed in on-site trays for holding, pending transportation. The two trays were approximately 100 cu yds (total volume). Plastic tarps where utilized to cover the trays during inactivity to prevent potential runoff.

Field screening procedures included the following:

- Volatile organic compound (VOCs) analysis of transport loads and areas being excavated with a MiniRAE 2000 Portable VOC monitor, using an action level of 100 parts per million (ppm) as the threshold for segregation;
- Periodic sampling of excavation extents for TPH utilizing AES's Buck Scientific Model HC-404 analyzer (USEPA Method 418.1). Soil screening results are included on the attached table, and sample locations are included on the attached figure.
- Visual inspection of the material for physical staining, discoloration or other anomalies; and
- Monitoring of soils for odors of petroleum hydrocarbon contamination.

1.2.2. Discovery of Historic Petroleum Hydrocarbon Contamination

On November 8, 2017, BMG's excavation efforts discovered evidence of historic contamination at the site believed to be not associated with the 2008 event. At approximately 4 feet below ground surface (bgs), BMG unearthed debris comprised of surface trash, weeds and vegetation, timbers and a crushed/cut drum. The material in the drum consisted of soils saturated with product and what appeared to be paraffin. The soil layers in the area showed signs of prior disturbance. The debris was located central to the site location, with the waste drum being found to the east and south of the 2008 event, as shown in Figure 2. Photographic documentation is attached.

The discovery of these items supports the BMG and AES' conjecture that petroleum hydrocarbon contamination separate and apart from the 2008 event is present at the site.

It also assists in explaining the larger quantity of petroleum hydrocarbon mass previously recovered by AES, a total of over 20,000 lbs. versus the 10,416 lbs expected from the original 40-barrel estimate of the 2008 release.

1.2.3. Excavation Quantities

Between November 7 and 17, 2017, BMG excavated an estimated 3,000 cu yds. bank (est. 4,500 cu yds. loose) of soil from the HR#2 site. Of the excavated volume, BMG has transported 1,206 cu yds. of contaminated soils to the Envirotech Landfarm for disposal. The remaining soil has been reserved in stockpiles for future backfill after being sampled and approved by NMOCD.

2.0 Remediation Plan

The remediation of HR#2 is anticipated to include excavation to the clays located at 25 ft bgs as directed by NMOCD. For depths below 25 ft bgs, it was anticipated that soil vapor extraction (SVE) would be utilized to remediate deeper soils to approximately 45 ft bgs. However, with the discovery of non-event petroleum hydrocarbon impacts, the scope of the excavation and the associated remediation is being re-evaluated by BMG for additional remedial approaches. BMG is expecting to proceed as discussed in the subsequent section of the report and expects to be able to prepare a cohesive, scheduled workplan for remaining work at the HR#2 within the next 60 days.

3.0 Scheduled Site Activities

Because of the change in site conditions, BMG is in process of re-evaluating continued excavation and remediation plans. Current components being addressed include:

- Expanding the excavation to the depth of 25 ft as specified by NMOCD will extend surface impacts of the slopes to the south and west, intersecting the existing powerline. BMG is in process of planning for the relocation of the powerline;
- Achieving the required excavation depth of 25 ft, in conjunction with the expanded excavation, will also require a more detailed excavation plan and design developed by a Professional Engineer. BMG is in process of coordinating this effort; and
- Given the additional quantities of contaminated soils (historic) to be mitigated, BMG is evaluating additional remediation options for the clearing of the site.

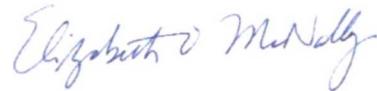
These activities are expected to be concluded within the next 60 days, allowing for BMG to submit the Final Remediation Plan to NMOCD.

If you have any questions about site conditions or this Status Update Report, please do not hesitate to contact me at 505.564.2281.

Sincerely,



Robert Flegal, P.E.



Elizabeth McNally, P.E.

Attachments:

Figure 1. General Site Location

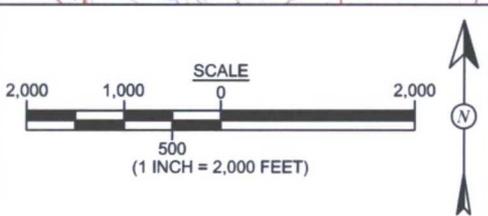
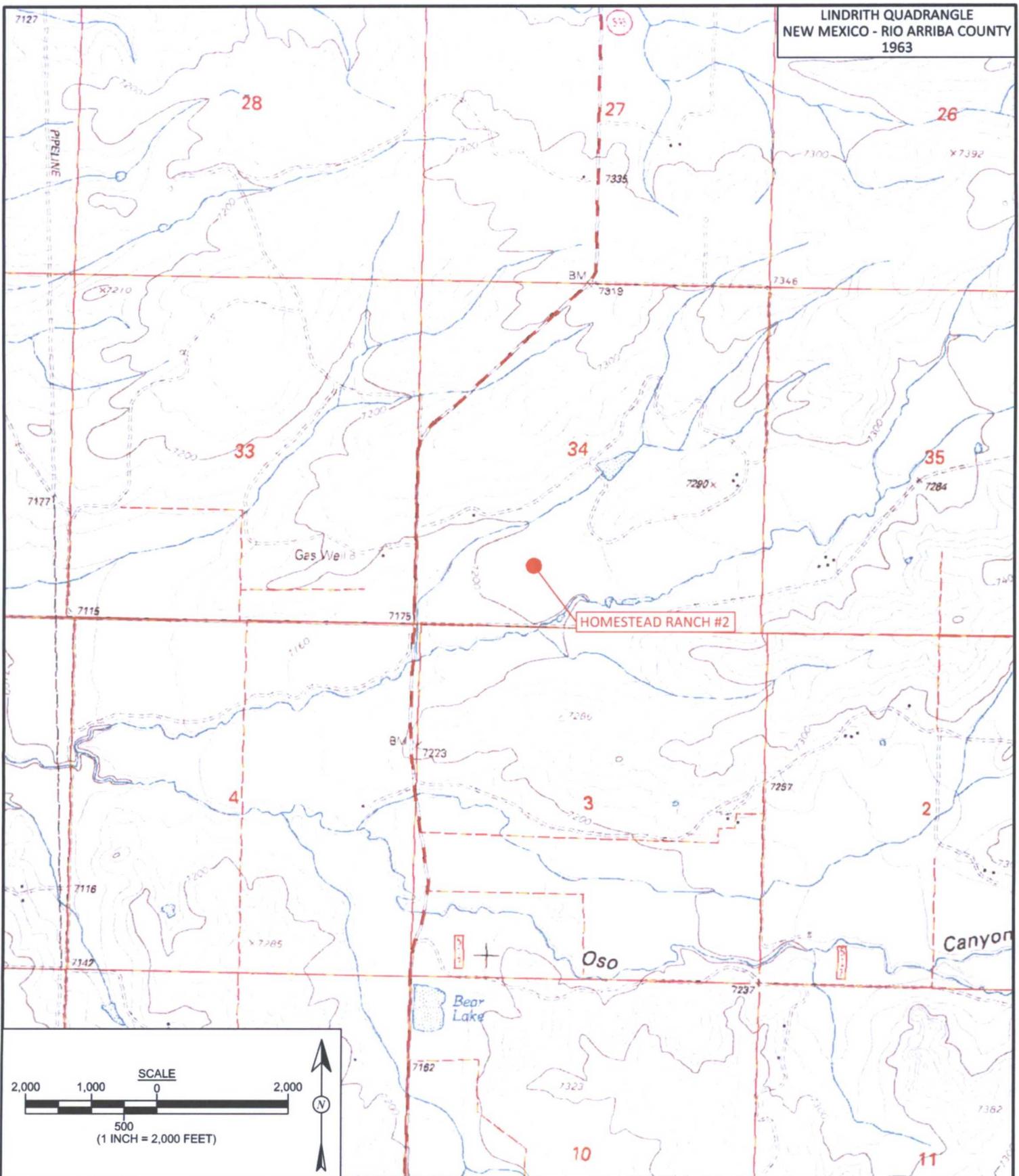
Figure 2. Site Map and Sample Locations

AES Field Sampling Report November 7 through 17

Photo Log

cc: Matt Dimond
Zach Stradling
Benson-Montin-Greer Drilling Corporation
4900 College Blvd
Farmington, NM 87402

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DRAWN BY: S. Glasses	DATE DRAWN: April 26, 2017
REVISIONS BY: C. Lameman	DATE REVISED: May 26, 2017
CHECKED BY: E. McNally	DATE CHECKED: May 26, 2017
APPROVED BY: E. McNally	DATE APPROVED: May 26, 2017

FIGURE 1

TOPOGRAPHIC SITE LOCATION MAP
 BENSON-MONTIN-GREER
 HOMESTEAD RANCH #2
 SE ¼ SW ¼, SECTION 34, T25N, R2W
 RIO ARRIBA COUNTY, NEW MEXICO
 N36.34990, W107.04006



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FIGURE 2

Excavation Area as of 11-17-17
 BENSON-MONTIN-GREER
 HOMESTEAD RANCH #2
 SE ¼ SW ¼, SECTION 34, T25N, R2W
 RIO ARRIBA COUNTY, NEW MEXICO
 N36.34990, W107.04006



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DRAWN BY:

C. Lameman

DATE DRAWN:

September 21, 2017

REVISIONS BY:

C. Lameman

DATE REVISED:

September 21, 2017

CHECKED BY:

R. Flegal

DATE CHECKED:

December 6, 2017

APPROVED BY:

E. McNally

DATE APPROVED:

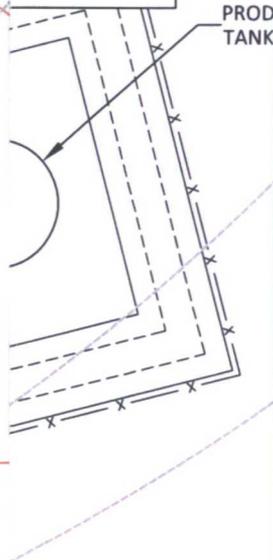
December 6, 2017

LEGEND

- SVE EXTRACTION WELL
- ⊕ SVE EXTRACTION WELL (INSTALLED AUGUST 2017)
- TEST HOLE (AUGUST 2017)
- SOIL BORING CONFIRMATION (SEPTEMBER 2017)
- SOIL COMPOSITE SAMPLE LOCATION
- SOIL COMPOSITE SAMPLE LOCATION (LOWER BENCH EXCAVATION AREA)
- BURIED OIL AND GAS PIPELINE
- BE — BURIED ELECTRIC LINE
- x — FENCE LINE
- ==== SECONDARY CONTAINMENT

NOTE: SOIL CONFIRMATION BORING LOCATIONS SPECIFIED BY NEW MEXICO OIL CONSERVATION DIVISION.

DEPTH (ft)	TPH (mg/kg)
0.0	1,000
0.0	87.7
0.0	86.3
0.0	76.8
0.75	345
1.42	596
1.4	223
1.06	239
1.17	376
1.237	448
1.809	1,160
1.13	76.8
1.677	5,230
1.65	340
1.670	70.9
1.353	48.9

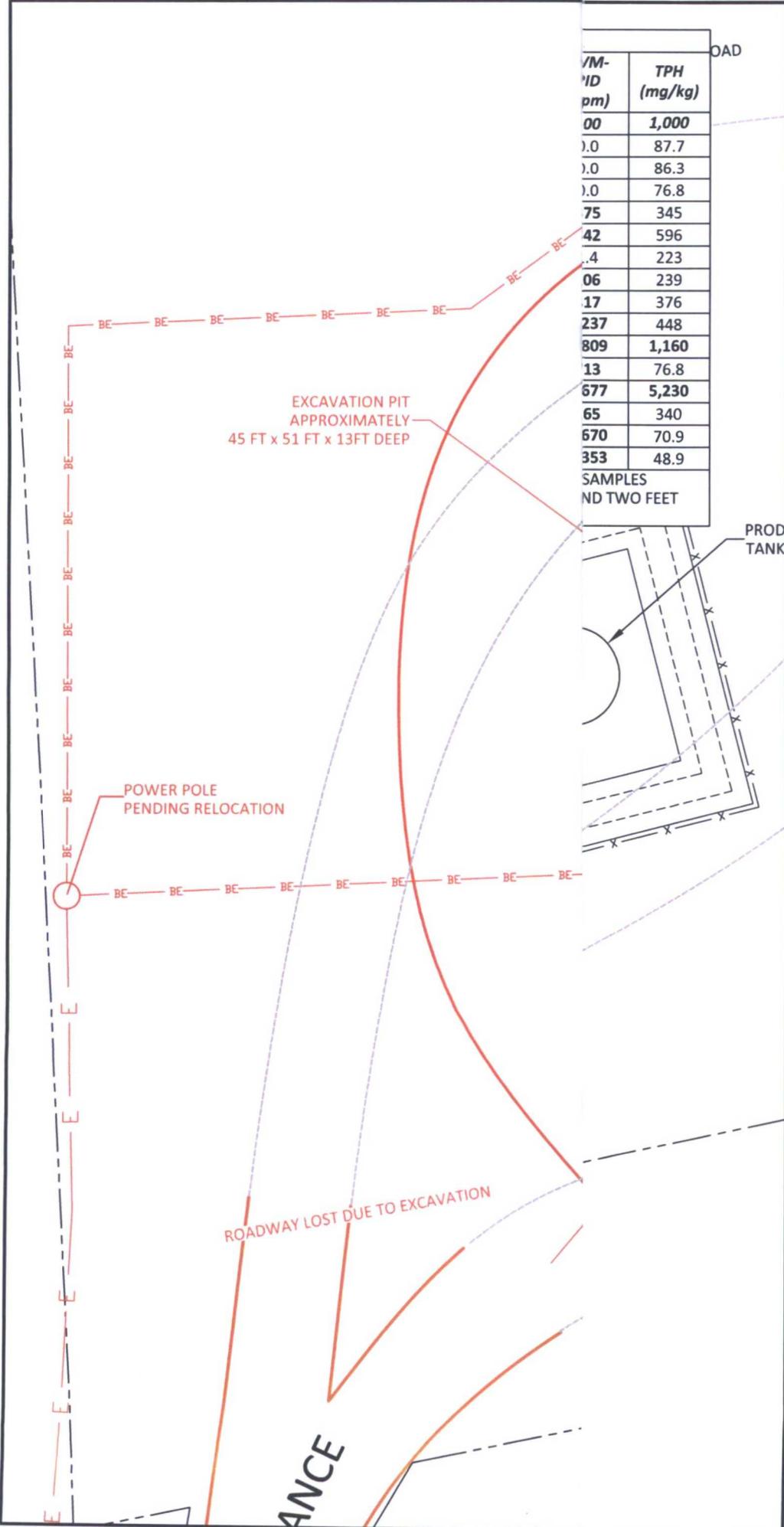
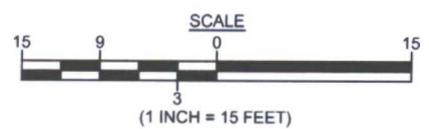
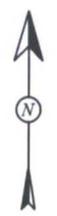


EXCAVATION PIT
 APPROXIMATELY
 45 FT x 51 FT x 13FT DEEP

POWER POLE
 PENDING RELOCATION

ROADWAY LOST DUE TO EXCAVATION

ANCE



AES Field Sampling Report

Animas Environmental Services, LLC



Client: Benson-Montin-Greer

Project Location: Homestead Ranch #2

Date: 11/8/17 through 11/16/17

Matrix: Soil

Sample ID	Collection Date	Collection Time	Sample Location	Sample Depth (ft)	OVM (ppm)	Field TPH* (mg/kg)	Field TPH Analysis Time	TPH PQL (mg/kg)	DF	TPH Analysts Initials
Barrel @ 4' Depth	11/8/2017	13:40	36.34960, -10704025	4	1,338.0	-				CL
SC-1	11/13/2017	11:08	East Wall, South 1/2	8-13	-	87.7	11:43	20	1	CL
SC-2	11/13/2017	11:05	South Wall, East 1/2	10-13	-	86.3	11:46	20	1	CL
SC-3	11/13/2017	11:00	South Wall, West 1/2	8-12	-	78.8	11:49	20	1	CL
SC-4	11/15/2017	9:38	West Wall, North 1/2	5-13	375.0	345.0	10:13	20	1	CL
SC-5	11/15/2017	9:40	West Wall, South 1/2	5-13	342.0	596.0	10:17	20	1	CL
SC-6	11/15/2017	10:25	North Wall, West 1/2	5-13	1.4	223.0	10:49	20	1	CL
SC-7	11/15/2017	10:28	North Wall, East 1/2	5-13	106.0	239.0	10:57	20	1	CL
SC-8	11/13/2017	9:03	East Wall, North 1/2	6-12	317.0	376.0	14:24	20	1	CL
SC-9	11/14/2017	8:55	Base, North 1/2	12-13	2,237.0	448.0	9:15	20	1	CL

AES Field Sampling Report

Animas Environmental Services, LLC



Client: Benson-Montin-Greer

Project Location: Homestead Ranch #2

Date: 11/8/17 through 11/16/17

Matrix: Soil

Sample ID	Collection Date	Collection Time	Sample Location	Sample Depth (ft)	OVM (ppm)	Field TPH* (mg/kg)	Field TPH Analysis Time	TPH PQL (mg/kg)	DF	TPH Analysts Initials
SC-10	11/13/2017	9:20	Base, South 1/2	12-13	4,809.0	1160.0	15:05	20	1	CL
SC-11	11/16/2017	9:35	Mini-Ex., North Wall	13-17	713.0	76.8	10:14	20	1	CL
SC-12	11/16/2017	9:40	Mini-Ex., South Wall	13-17	4,677.0	5230.0	10:21	20	10	CL
SC-13	11/16/2017	9:45	Mini-Ex., East Wall	13-17	165.0	340.0	10:26	20	1	CL
SC-14	11/16/2017	9:50	Mini-Ex., West Wall	13-17	4,670.0	70.9	11:17	20	1	CL
SC-15	11/16/2017	9:55	Mini-Ex., Base	17	4,353.0	48.9	11:20	20	1	CL
	11/15/2017	11:50	Base by SBC-5	15-17	333.0	416.0	12:47.	20	1	CL

DF Dilution Factor
 NA Not Analyzed
 PQL Practical Quantitation Limit

*TPH concentrations recorded may be below PQL.

Total Petroleum Hydrocarbons - USEPA 418.1

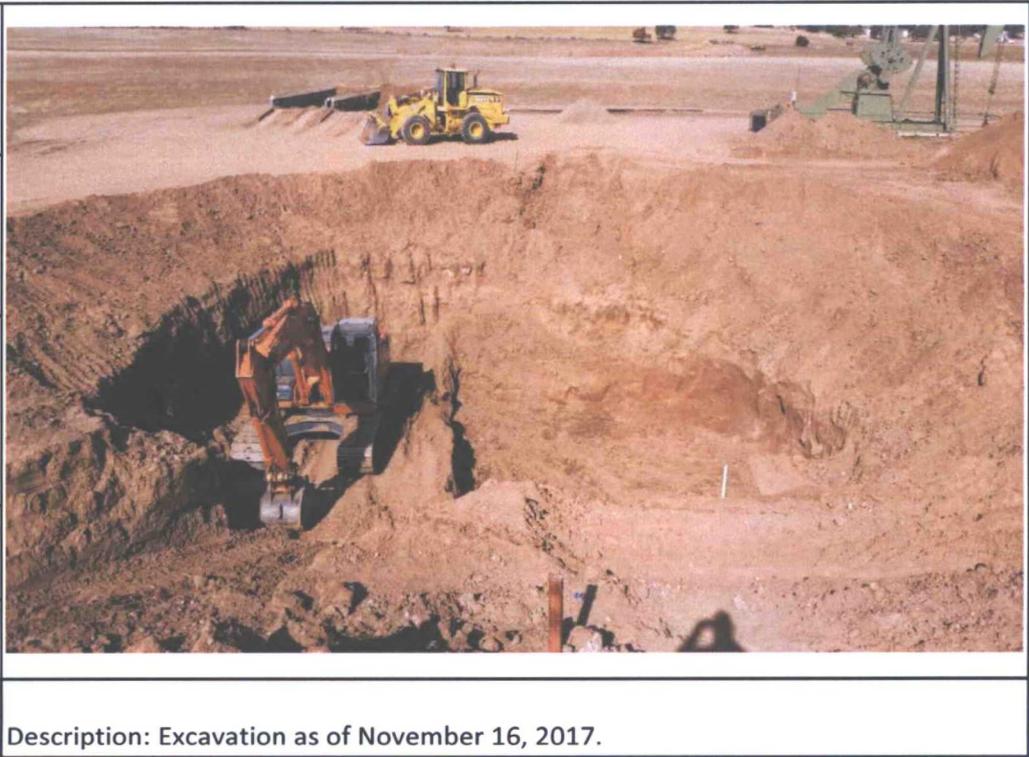
Analyst:

Photo #1	
Client: BMG	
Project: Homestead Ranch #2	
Taken by: Corwin Lameman	
November 7, 2017	
AES Project No: 080202	Description: Initial excavation, viewing northwest, showing equipment and soil trays.

Photo #2	
Client: BMG	
Project: Homestead Ranch #2	
Taken by: Corwin Lameman	
November 8, 2017	
AES Project No: 080202	Description: Contaminated waste barrel recovered at 4' bgs.

Photo #3	
Client: BMG	
Project: Homestead Ranch #2	
Taken by: Sam Glasses	
November 8, 2017	
AES Project No: 080202	Description: Contamination found in the area of the uncovered waste drum.

Photo #4	
Client: BMG	
Project: Homestead Ranch #2	
Taken by: Sam Glasses	
November 8, 2017	
AES Project No: 080202	Description: Contamination found in the area of the uncovered drum.

Photo #5	
Client: BMG	
Project: Homestead Ranch #2	
Taken by: Sam Glasses	
November 8, 2017	
AES Project No: 080202	Description: Excavation as of November 16, 2017.