



AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



App Number: pPAC0726226792

1RP - 1574

AMERICO ENERGY RESOURCES LLC

HUNGRY HORSE, LLC ENVIRONMENTAL SERVICES

Dirt Work * On-Site Remediation * Soil Testing * Excavation

25June09

TO: Larry Johnson
REFERENCE: Remediation Work Plan

OPERATOR: AmeriCo Energy Resources
LOCATION: State T 8
API: 30-025-05233
LEGALS: UL, M, Sec. 2, T15S, R37E
GPS: N33 02.533 W103 10.492
DEPTH to GROUND WATER: 70'

RECEIVED

JUN 30 2009

HOBBSOCD

IRP 1574 (ISSUED 6-07)

General Site Characteristics: The affected area is approximately 125' x 265' in the southeast corner of the pasture just west of the Davis Gas Plant. It is approximately 800' due east of the State T 8 well. The surrounding area is used for cattle production and consists of native grasses and small cactus plants.

Site ranking Score: 10- based upon the depth to groundwater (50'-99'), not a wellhead protection area, and no surface bodies of water within 1000'

Soil Remediation Action Levels: Benzene 10ppm, BTEX 50ppm, TPH 1000ppm, chlorides as per NM OCD guidance

Delineation: Performed Dec 2007 (**Attachment 1**)

Work Plan Proposal: The proposed work plan is to excavate three feet from the affected area, line the area with a synthetic liner, and backfill using clean material. All excavated material will be transported to and disposed of at a division approved disposal facility. The area will then be contoured to match the surrounding terrain and seeded.

Notes/Comments: Hungry Horse was contracted to drill and install a monitor well at the location (SE of affected area) to determine if the groundwater had been impacted (**Drilling log Attachment 2**). A water sample was obtained on 8Jun09, and analyzed for TPH, Benzene, BTEX, and Chlorides (**Attachment 3**). Lab results indicate the groundwater has not been impacted.

Attachment 4-C 141

Submitted By: Vernon K. Black, Hungry Horse, LLC

Signature: V. Black 25 Jun 09

DENIED

1. FULL HORIZONTAL & VERTICAL DELINEATION IS REQUIRED FOR APPROVAL CONSIDERATION.
2. C. 141 EXPIRED. NEW C. 141 w/ AMERICO SIGNATURE REQUIRED BY 7.14.09 TO AVOID NOV.

L. Johnson

ENVIRONMENTAL ENGINEER
6.30.09



LOG OF BORING BH-1

(Page 1 of 1)

Produced Water Release Investigation
Americo Energy Resources
Americo State T #8
Unit M, Sec 2, T15S R37E, Lea County, NM
N33° 02' 32.3", W103° 10' 29.0"

Date, Time Started : 11/01/07, 1500
Date, Time Complete : 11/01/07, 1730
Hole Diameter : 8 1/4 in.
Drilling Method : Hollow Stem Auger
Drilling Equipment : Foremost-Mobile B-57

Drilled By : Eco/Enviro Drilling
Sampling Method : 5 ft. core barrel
Logged By : Isaac Kincaid
Company Rep. :

Depth in Feet	Sample Type	Recovery (ft.)	USCS	GRAPHIC	Sample Type SS Split Spoon (18" or 24") CB Core Barrel (2.5' or 5') CT Auger Cuttings NR No recovery	DESCRIPTION	Lab No.	Field Chlorides (ppm)	Lab Chlorides (mg/kg)	TPH 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)
0							B711004-07		6,400	21,000	<0.50	0.62	1.0	3.5
1														
2	CB	4.0	CL			0-5 ft. CLAY, brown, with heavy odor and staining. No field chloride at 5 ft. due to heavy staining. Oil in core barrel seeping out.								
3														
4														
5						5-6 ft. CLAY, brown	B711004-01		2,300	33,000	4.0	72	82	170
6														
7	CB	1.4				6-10 ft. CALICHE rock and SAND, rock with greyish color, heavy odor								
8														
9														
10							B711004-02		4,700	14,000	0.94	26	38	88
11			CA/SP											
12	CB	1.6				10-14 ft. CALICHE greyish and SAND yellow, with odor and staining								
13						SAND, brown and CALICHE rock with minimum staining								
14														
15							B711004-03		5,900	6,100	<0.50	13	19	48
16														
17	CB	1.1	SP/CA			15-20 ft. SAND, tan and CALICHE with SANDSTONE, staining with odor								
18														
19														
20							B711004-04	2,008	7,200	5,600	<0.50	7.2	9.6	24
21														
22	CB	2	SP			20-24 ft. SAND, tan with staining and odor								
23														
24						24-25 ft. CALICHE rock with staining and odor								
25			CA				B711004-05		4,600	11,000	0.58	18	23	57
26														
27	CB	2.7	SP			25-28 ft. SAND, tan								
28														
29			CA			28 ft. CALICHE, hard, auger refusal	B711004-06		5,700	16,000	0.69	24	34	82
30														

Notes: Boring backfilled with 9 bags bentonite, hydrated.



LOG OF BORING BH-1A

(Page 1 of 1)

Produced Water Release Investigation
Americo Energy Resources
Americo State T #8
Unit M, Sec 2, T15S R37E, Lea County, NM
N33° 02' 32.3", W103° 10' 29.0"

Date, Time Started : 12/04/07, 0725
Date, Time Complete : 12/04/07, 1430
Hole Diameter : 8 in.
Drilling Method 1 : Hollow Stem Auger
Drilling Method 2 : Downhole hammer

Drilling Equipment : Foremost-Mobile B-57
Drilled By : Eco/Enviro Drilling
Sampling Method : 5 ft. core barrel/cuttings
Logged By : Isaac Kincaid
Company Rep. :

Depth in Feet	Sample Type	Recovery (in.)	USCS	GRAPHIC	Sample Type SS Split Spoon (18" or 24") CB Core Barrel (2.5' or 5') CT Auger Cuttings NR No recovery	Lab No.	Field Chlorides (ppm)	Lab Chlorides (mg/Kg)	TPH 418.1 (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)
					DESCRIPTION								
0													
1													
2	CT		CL/SP		0-5 ft. CLAY, SAND, odor, greyish staining								
3													
4													
5													
6													
7	CT				5-10 ft. SAND, CLAY, with rock, odor								
8													
9													
10			SP/CL										
11													
12	CT				10-15 ft. SAND, CLAY, with minimal rock, odor								
13													
14													
15													
16					15-18 ft. CALICHE rock with silica.								
17	CT		CA		Switched to air hammer to break up hard rock layer								
18													
19													
20													
21													
22	CT				20-25 ft. No cuttings returned with air								
23													
24													
25					25-30 ft. No cuttings, odor from hole								
26	CT				30-32 ft. No cuttings, odor. Air stream not sufficient to blow cuttings from hole.								
27					Removed hammer and replaced with auger.								
28					Drilled with auger to 28 ft. below ground surface, could not break rock.								
29					Replace hammer into borehole to break rock.								
30					Broke through rock at 32 ft. Reinstalled auger but could not get below 28 ft.								
31					Installed split spoon to obtain sample through center of hammer hole at 30 ft. No sample in spoon when pulled.								
32													
33													
34													
35													

Notes:

BH-1A drilled 10 ft. east of previous boring (BH-1).
Boring backfilled with bentonite, hydrated.



LOG OF BORING BH-1B

(Page 1 of 2)

Produced Water Release Investigation
Americo Energy Resources
Americo State T #8
Unit M, Sec 2, T15S R37E, Lea County, NM
N33° 02' 32.3", W103° 10' 29.0"

Date, Time Started : 12/14/07, 0830
Date, Time Complete : 12/17/07, 1530
Hole Diameter : 8 1/4 in.
Drilling Method 1 : Hollow Stem Auger
Drilling Method 2 : Downhole hammer

Drilling Equipment : Foremost-Mobile B-57
Drilled By : Eco/Enviro Drilling
Sampling Method : 5 ft. core barrel/cuttings
Logged By : David Boyer, P.G.
Company Rep. :

Depth in Feet	Sample Type	Recovery (ft.)	USCS	GRAPHIC	DESCRIPTION	Lab No.	Field Chlorides (ppm)	Lab Chlorides (mg/Kg)	TPH 418.1 (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)
					Sample Type SS Split Spoon (18" or 24") CB Core Barrel (2.5' or 5') CT Auger Cuttings NR No recovery								
0					Sample log from 0-20 ft. from BH-1, 11/01/07								
4.0	CB	4.0	CL		0-5 ft. CLAY, brown, with heavy odor and staining. No field chloride at 5 ft. due to heavy staining. Oil in core barrel seeping out.								
5					5-6 ft. CLAY, brown								
1.4	CB	1.4	CA/SP		6-10 ft. CALICHE rock and SAND, rock with greyish color, heavy odor								
10													
1.6	CB	1.6	CA/SP		10-14 ft. CALICHE greyish and SAND yellow, with odor and staining SAND, brown and CALICHE rock with minimum staining								
15													
1.1	CB	1.1	SP/CA		15-20 ft. SAND, tan and CALICHE with SANDSTONE, staining with odor								
20													
3	CB	3	SP		20-22.6 ft. SAND, light brown, fine grained, uniform, strong H/C odor								
22.6-24 ft.					22.6-24 ft. CALICHE and SAND, yellowish-brown								
1.3	CB	1.3	CA/SP		25-26.3 SAND and CALICHE, caliche to 2 in., fragments, damp with H2O or H/C at base, strong H/C odor Auger refusal at 28 ft.								
28-31 ft.					28-31 ft. Added downhole hammer. Soft to 28 then rock, CALICHE fragments to 1/4 in. from cuttings. Odor indeterminate due to passing zone 25-30 ft. without auger to prevent slough.								
CT	CT		CA		12/14: 31-34 ft. Drilled through rock to ~34 ft. Sand beginning 34 ft. 12/17: Augers advanced to 28 ft, will not go further, drilled through rock to 34 ft, SANDSTONE, well cemented	B712010-01	884	620	75	<0.005	<0.005	<0.005	<0.010
SS	SS	1.3	CA/SP										

Notes:

Boring drilled 5 ft. north of BH-1. Began 12/14/07, completed 12/17/07
Boring backfilled 30-65 ft. with 13 bags Holeplug bentonite, well hydrated.
Boring backfilled 0-30 ft. with 16 bags Holeplug bentonite, well hydrated.



LOG OF BORING BH-1B

(Page 2 of 2)

Produced Water Release Investigation
Americo Energy Resources
Americo State T #8
Unit M, Sec 2, T15S R37E, Lea County, NM
N33° 02' 32.3", W103° 10' 29.0"

Date, Time Started : 12/14/07, 0830
Date, Time Complete : 12/17/07, 1630
Hole Diameter : 8 1/4 in.
Drilling Method 1 : Hollow Stem Auger
Drilling Method 2 : Downhole hammer

Drilling Equipment : Foremost-Mobile B-57
Drilled By : Eco/Enviro Drilling
Sampling Method : 5 ft. core barrel/cuttings
Logged By : David Boyer, P.G.
Company Rep. :

Depth in Feet	Sample Type	Recovery (ft.)	USCS	GRAPHIC	DESCRIPTION	Lab No.	Field Chlorides (ppm)	Lab Chlorides (mg/Kg)	TPH 418.1 (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)
35	SS	1.3			12/14: 34-36 ft. Pulled hammer, added 2 ft. splitspoon, blows/6 in: 5, 9, 16, 21.		820						
	NR				34-34.2 ft. SAND (slough)								
					34.2-35 ft. CALICHE rock fragments and slough from above								
40	CT, SS				35-35.3 ft. SAND, light brown, dry, slight H/C odor. Due to slough, estimate sample from 34.5-35 ft.								
			SS		12/17: 35-36 ft. cuttings sandy, possible slight H/C odor		1,288						
					12/14: 38-42 ft. SANDSTONE rock		1,604						
	CT				42-44.5 ft. SANDSTONE sample may be slough. End drilling 12/14, left augers in hole.								
45					12/17: 39.2-41.2 ft. Splitspoon sample, likely slough, mixture of sand and sandstone chips.		5,652						
	CT		SP		Possible H/C odor at 41 ft.								
					12/17: 46 ft. SAND, slight H/C odor								
					48-49 ft. SAND, slight H/C odor		2,168						
50			SP/SS		48-53 ft. SAND, light brown, with SANDSTONE lenses		1,860						
	CT						2,008						
55					53-58 ft. SAND, light brown, less sandstone lenses, slightly reddish 57-58 ft., possible odor		1,492						
	CT		SP										
60					62-63 ft. SAND, light brown, possible odor		1,860						
	CT												
65					65 ft. SAND, damp, possible capillary fringe with water likely 67-68 ft.								
70													

Notes:

Boring drilled 5 ft. north of BH-1. Began 12/14/07, completed 12/17/07
Boring backfilled 30-65 ft. with 13 bags Holeplug bentonite, well hydrated.
Boring backfilled 0-30 ft. with 16 bags Holeplug bentonite, well hydrated.

Drilling Log

Company: Americo Energy Resources
 County/State: Lea County NM
 Location Name: State T-8
 Drilling Date(s): 6/3 AND 6/4 09
 Purpose: MONITORING WELL

Drilling Log/Record

	Thickness	Soil Type/Description
0-2'	2'	TOP SOIL
2-24'	22'	CALICHE CLAY & ROCK
24-30'	6'	HARD CALICHE ROCK
30-65'	35'	TAN DRY SAND
65'-85'	20' 20'	WATER SAND
65' BLANK CASING		20' SCREEN
15' WET SCREEN		5' DRY SCREEN

I certify that, to the best of my knowledge and belief, that the information on this record is true and accurate.

Signature: Tan W. Cop NM Driller Permit: WD 1497 Date: 6/4/09

JUN 17 2009



ARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
HUNGRY HORSE ENVIRONMENTAL SERVICES
ATTN: VERNON K. BLACK
P.O. BOX 1058
HOBBS, NM 88241
FAX TO: (575) 391-4585

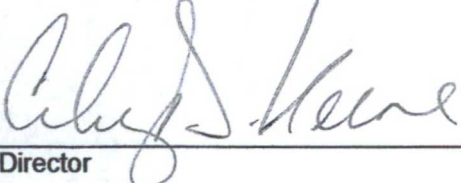
Receiving Date: 06/08/09
Reporting Date: 06/10/09
Project Owner: AMERICO ENERGY RESOURCES
Project Name: STATE T-8 MONITOR WELL
Project Location: LEA COUNTY, NM

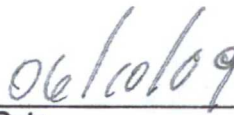
Sampling Date: 06/08/09
Sample Type: GROUNDWATER
Sample Condition: INTACT @ 14.5°C
Sample Received By: ML
Analyzed By: AB/ZL/HM

LAB NO.	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/L)	DRO (>C ₁₀ -C ₂₈) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)	Cl* (mg/L)
ANALYSIS DATE:		06/09/09	06/09/09	06/09/09	06/09/09	06/09/09	06/09/09	06/09/09
H17579-1	STATE T-8 MONITOR WELL	<1.00	<1.00	<0.001	<0.001	<0.001	<0.003	84
Quality Control		444	450	0.055	0.057	0.052	0.158	500
True Value QC		500	500	0.050	0.050	0.050	0.150	500
% Recovery		88.8	90.0	110	114	104	105	100
Relative Percent Difference		5.0	2.8	13.1	<1.0	1.9	<1.0	2.0

METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8021B; Cl-: Std. Methods 4500-Cl-B

TEXAS NELAP ACCREDITATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE,
AND TOTAL XYLENES. Not accredited for GRO/DRO and Chloride.


Lab Director


Date

2009

H17579 TBCL HHE

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.