



P.O. Box 680
Kersey, Co. 80644
970-356-4487 office
970-356-5717 fax

February 24, 2011

Mr. Eloy Carreon
3734 Settler Ridge Drive
Mead, CO 80542

Re: Hahn 1-4 – API #123-34199
NOAV #200328837
Remediation Project #6723

Dear Mr. Carreon,

This letter is to inform you that the Colorado Oil & Gas Conservation Commission has reviewed the soil sample results that had been submitted for your property that were from Continental Resources, Inc. The sample results verify that there are some exceedances for total petroleum hydrocarbons (TPH) and inorganics in soil.

We are continuing to disk the property and integrate all materials into the soil. We believe that when the soil is sampled again in March that the levels will be within normal ranges. If they are not we will implement our remediation plan. If you have any questions please feel free to call me at my office (970) 356-4487.

Sincerely,

A handwritten signature in cursive script that reads "James Bernal". The signature is written in black ink and is positioned below the word "Sincerely,".

James Bernal
Owner



James Bernal
Integrity Trucking Inc.
414 1st Street
Kersey, Co.

February 23, 2012

RE: COGCC Memo addressed to Continental Resources, dated February 21, 2012;
Hahn 1-4H API #123-34199;
Remediation Project #6273
Carreon/Perez Property

James

As requested by Integrity, the following memo provides information for the property owner as requested in the above referenced COGCC memo. Please forward this memo to the property owner or their representative. Specifically, this memo addresses the disposal of water based bentonitic drilling fluids on the Carreon/Perez Property located on WCR 95. The water base bentonitic drilling fluids and associated cuttings were generated by the Continental Resources, Inc. Hahn 1-4H well, which was drilled at a different location.

The COGCC, February 21, 2012 memo requested that the property owner be informed of elevated contaminant levels associated with the field samples collected in December 2011. The initial site sampling included six composite samples collected on December 11, 2011 from the site drilling fluid application area and two samples from adjacent areas as background samples. The attached table summarizes the results of these laboratory analysis. The highlighted results on the table are elevated concentrations above regulatory guidelines.

The total petroleum hydrocarbon – recoverable (TPH-R) concentrations were above the regulatory, 500 parts per million, allowable concentrations in four of the samples. The TPH-R was measured using the laboratory 418.1 method. The TPH-R method measurement indicates that residual heavier hydrocarbon fractions were present. However, the 418.1 analysis may all include organic hydrocarbons associated with plant organic matter or other sources and also occasionally may give false positive readings associated with the non-hydrocarbon materials. Therefore, it is possible that the elevated TPH-R concentration measurements may be misleading. In addition to the TPH-R 418.1 analysis, the samples were also analyzed for the lighter (TPH-gas) and the mid-range (TPH-diesel) hydrocarbon fractions. All of these analyses were non-detect. The TPH-gas and TPH-d method were analyzed using the GC 8015 method.

Subsequent to these results, MEC Inc. requested the laboratory to rerun the highest two TPH-R (method 418.1 analysis) samples using the GC extended time (TPH-O) method to evaluate the heavier range hydrocarbon fractions. This method tends may not be influenced as much by other naturally occurring organic matter in the soils. The two samples results by this method were below the regulatory guideline levels at 194 and 177 PPM. Please note that these results were obtained from the lab after the COGCC prepared the February 21st memo. Additional field sampling will be necessary to confirm these results. Currently it is planned that these additional samples will be collected in March.

In addition, a few samples had elevated inorganic concentrations or Sodium Absorption Ratios (SAR). Three samples were slightly above the regulatory SAR 12 ratio guideline limit and one sample had a SAR ratio greater than 40. The SAR ratio is a representative number that may be associated with soil conditions for vegetation growth.

The above elevated levels are likely associated with the limited amount of spreading/tilling of the fluids with the site's native surface soils that was performed at the site after the materials were placed on the property. These activities were limited at that time due to weather conditions which reduced the ability to penetration or till the soil (i.e hard or frozen ground). This limited the ability of spreading and mixing the drilling fluids materials with the native surface soils.

Since the initial sample results were received from the lab, Integrity has been able to rip and till the site surface soils which may improve the distribution of the drilling fluids across the site.

Currently, MEC Inc. is planning on resampling the site in March 2012, weather permitting. These samples will be analyzed for BTEX, TPH-gas, TPH-diesel, and TPH-oil using the GC-method. In addition, other analysis to be performed will include arsenic, mercury, pH, EC, and SAR. These were the laboratory analytes that exceeded the allowable concentrations. Since the PAH and the other metal laboratory analytes were not exceeded in the initial sampling these samples will not be included in the subsequent confirmation sampling.

If necessary, a site remediation plan will be prepared if the subsequent March laboratory results indicate that elevated site levels are present. As mentioned, since the initial sampling was performed the site has been ripped and tilled to improve the distribution of the drilling fluid materials across the site, which may improve the laboratory sampling results.

Also, as requested by the COGCC a comprehensive site management plan will be prepared and submitted to the COGCC for review. The basic management plan that has been prepared for the site will be amended to include the results of the initial sampling.

MEC Inc appreciates the opportunity to provide you with these environmental consulting services. If you have any further questions, please contact me.

Thank you


John Mahoney

	A	B	C	D	E	F	G	H	I	J	K
1	Carreon Property WCR95, Site Screening November 2011 - Table 910-1 Concentration Levels										
2	Contaminant of Concern	COGCC Sample	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	BKG-UG	BKG-DG	COGCC LIMIT
3	TPH	330									500
4	TPH - G (Gas) 1015		ND	ND	ND	ND	ND	ND	ND	ND	500
5	TPH - D (diesel) 1015		ND	ND	ND	ND	ND	ND	ND	ND	500
6	TPH - R (recoverable) 418.1		1791	771	1791	790	602	1569	123	<5	500
7	TPH-R 8015, resample		194		177						
8	Benzene	0.19	0.039j	ND	0.024j	ND	ND	0.011j	ND	ND	0.17
9	Toluene	0.86	0.121	ND	0.061	ND	ND	0.011j	ND	ND	85
10	Ethylbenzene	0.34	0.168	ND	0.108	ND	ND	ND	ND	ND	100
11	Total Xylenes	1	0.264	ND	143j	ND	ND	28j	ND	ND	175
12	Acenaphthene		ND	ND	ND	ND	ND	ND	ND	ND	
13	Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
14	Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
15	Benzo(A)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22
16	Benzo(A)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.022
17	Benzo(K)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2
18	Benzo (g,h,i)perylene		ND	ND	ND	ND	ND	ND	ND	ND	
19	Benzo (k) fluoranthene		ND	ND	ND	ND	ND	ND	ND	ND	
20	Bis(2-chloroethoxy)menthane		ND	ND	ND	ND	ND	ND	ND	ND	
21	Chrysene	1.6	ND	ND	ND	ND	ND	ND	ND	ND	22
22	Dibenzo(A,H)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.022
23	Fluoranthene	2	ND	ND	ND	ND	ND	ND	ND	ND	1,000
24	Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
25	Indeno(1,2,3,C,D)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22
26	Napthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	23
27	Phenanthrene		ND	ND	ND	ND	ND	ND	ND	ND	
28	Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000
29	Arsenic	6.6	<0.01	1.53	1.2	0.48	<0.01	0.28	0.48	0.45	0.39
30	Barium	560	2.9	3.5	3.58	2.7	3.53	2.48	2.53	2.65	15,000
31	Cadmium	0.96	0.75	0.58	0.75	0.65	0.48	0.33	0.28	0.28	70
32	Chromium	14	4.5	10.25	7.25	7.25	7.25	4	6.25	4	*
33	Copper	20									3,100
34	Lead	9.4	8.5	7.25	8.25	8.25	6.75	7	8.5	8	400
35	Mercury	27	0.0164	0.21	0.0111	0.0101	0.0081	0.0094	0.0028	<0.002	23
36	Nickel	17									1,600
37	Selenium	1.9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	390
38	Silver	ND	0.38	0.48	0.55	0.6	0.2	0.15	0.55	0.2	390
39	Zinc	59									23,000
40	pH	9.98	7.59	7.85	7.84	7.89	7.8	7.57	7.83	8	6-9
41	EC (mmhos.cm)		5.5	3.77	5.73	4.81	2.1	2.81	0.71	0.41	4 or 2xbkg
42	Calcium		211	158	250	211	98	121	54	27	
43	Magnesium		26	21	26	22	16	22	6	5	
44	Sodium		805	2240	800	690	230	370	25	13	
45	SAR		13.9	44.3	12.8	12.1	5.7	8.1	0.9	0.6	12
46											



01761311

State of Colorado

Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

RECEIVED

DEC 08 2011

COGCC

OGCC Employee:

Spill Complaint
Inspection NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release

Plug & Abandon

Central Facility Closure

Site/Facility Closure

Other (describe): Drilling mud reclamation

OGCC Operator Number: 10347

Name of Operator: Continental Resources, Inc.

Address:

City: _____ State: Co Zip: _____

Contact Name and Telephone:

James Bernal (Integrity Trucking)

No: 970-539-0106

Fax:

API Number: 05-123-34199

County: Weld

Facility Name: Carreon and Perez property

Facility Number:

Well Name: Hahn

Well Number: 1-4H

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NENE 14 8N 61W

Latitude: _____ Longitude: _____

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Drilling mud and some associated liquids

If yes, attach evaluation

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Yes, based on proximity to shallow groundwater, irrigated AG land

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Non-irrigated grass land, residential

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: (Soil survey: Platner loam, (most of site); Stoneham fine sandy loam SW area portion)

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Topographic low area (possible seasonal pond) adjacent to the NE;

One permitted well in area, Crouse, permit # 235207, adjacent property to north; permit only, no installation info available

Description of Impact (drilling muds were stockpiled on site for planned mixing and augmentation with top soil):

Impacted Media (check):

Extent of Impact:

How Determined:

Soils

5+ acres

Visual inspection

Vegetation

5+ acres

Visual inspection

Groundwater

NA

Surface Water

NA

REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document): Drilling muds were placed on property to be mixed with and augment the existing top soil to promote vegetation growth. Aerial photo 1 illustrates approximate distribution of initial stockpiles and photo 2 shows approximate distribution as of 11/21 after material was spread over property.

Describe how source is to be removed: Drilling muds will be mixed and tilled in with the existing top soils. As of 11/21, the initial spreading of the material over the area to be treated had been accomplished. The initial tilling of the materials was in progress.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Additional tilling and mixing with the top soils will continue until thoroughly mixed. Activity will proceed weather permitting. The ground surface reportedly has started to freeze which has currently limited the ability to penetrate through the surface.

It is anticipated that this top soil augmentation will improve the moisture retention capacity of the soils and thereby promote vegetation growth.

A sediment berm or sediment fencing will be placed along the downgradient side of the treatment area (northwest side) to protect the topographic low area adjacent to the site.

FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver, Colorado 80203
(303)894-2100 Fax:(303)894-2109



Tracking Number: 1761311
Name of Operator: Continental Resources, Inc.
OGCC Operator No: 10347
Received Date: 12/2/11
Well Name & No: Hahn 1-4H

REMEDIATION WORKPLAN (Cont.)

Facility Name & No: Carreon & Perez property

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Ground water impact has not been determined. Ground water impact not considered likely based on the type of materials placed on the site and the depth to ground water.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Drilling mud materials and associated liquids will be mixed and tilled into the surface topsoil materials. The site will be graded and contoured to match with the local landscape.

The initial success of the program will be evaluated in the spring/summer of 2012.

If necessary, reseeding may occur.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? Y X N

If yes, describe: Sampling of the area will be performed after the soil mixing/tiling activities are completed. Sampling parameters will be determined based on the COGCC regs. and the lab results of the samples collected by the COGCC on 11/15/11.

A minimum of 5 6 composite soil samples will be collected. The area(s) from which the composite samples will be collected are illustrated in the attached site plan schematic.

Each composite will consist of 6 equal aliquot samples from the respective areas.

IMPLEMENTATION

Date Site Investigation Began: <u>11/21/2011</u>	Date Site Investigation Completed: <u>TBD</u>	Date Remediation Plan Submitted: <u>11/21/2011</u>
Remediation Start Date: <u>11/17/2011</u>	Anticipated Completion Date: <u>TBD</u>	Actual Completion Date: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: James Bernal Signed: [Signature]
Title: owner of Integrity Trucking Date: 11-28-2011

OGCC Approved: [Signature] Title: EPS Date: 12/2/11