FORM 27 Rev 6/99

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

FOR OGCC USE ONLY
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DEC 26 2012
COGCC

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No: Rem # 7368

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.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Waste Management Plan

GENERAL INFORMATION

OGCC Operator Number: 7800
Name of Operator: Beren Corporation
Address: 2020 North Bramblewood Street
City: Wichita State: KS Zip: 67206

Contact Name and Telephone
Name: Rodney Reynolds
No: (316) 337-8340
Fax: (316) 681-4740

API/Facility No: 05-121-05259
Facility Name: Wright
Well Name: Wright DM-1
Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSW 31 3S 53W 6 PM

County: Washington
Facility Number: 107607
Well Number: NA
Latitude: 39.742503 Longitude: -103.36733

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.):

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Open Pasture

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Stoneham loams, 6 to 9 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Drainage located 1,200' southwest of the site and 2,000 northwest

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
☐ Soils		
☐ Vegetation		
☐ Groundwater		
☐ Surface water		

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Not Applicable

Describe how source is to be removed:

Not Applicable

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.:

Approximately 400 cubic yards of stockpiled soil remain onsite. A waste management plan has been attached to detail landfarming activities at the site planned for Spring 2013.

Submit Page 2 with Page 1.

FORM 27 Rev 6/99

Page 2

State of Colorado
Oil and Gas Conservation Commission

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REMEDIATION WORKPLAN (CONT.)

OGCC Employee: John Axelson

Tracking Number: Rem # 7368
Name of Operator: Beren Corporation
OGCC Operator No: 7800
Received Date: 12/26/12
Well Name & No:
Facility Name & No.: Wright

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

Not Applicable

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.

Reclamation will be addressed upon completion of the landfarming activities. The landfarming area will be seeded upon closure.

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 ☐ N If yes, describe:

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Approximately 400 cubic yards of stockpiled soil remain onsite. A waste management plan has been attached to detail landfarming activities at the site. Landfarming will be initiated in Spring 2013 with the warmer weather.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:		Date Site Investigation Completed:		Remediation Plan Submitted:	12/26/2012
Remediation Start Date:		Anticipated Completion Date:	TBD	Actual Completion Date:	TBD

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

Print Name: **Rodney Reynolds**

Signed: Rodney Reynolds Title: **Division Engineer** Date: **12/26/2012**

OGCC Approved: John Axelson Title: EPS Date: 1/30/13

STATE OF COLORADO
OIL & GAS
CONSERVATION COMMISSION

DEPARTMENT OF NATURAL RESOURCES
John W. Hickenlooper, Governor
1120 Lincoln St. Suite 801
Denver, CO 80203
Phone: (303) 894-2100
FAX: (303) 894-2109
www.colorado.gov/cogcc

Conditions of Approval

January 30, 2013

Beren Corporation – Operator #7800
Wright DM-1, API #121-05259
Waste Management Plan - Remediation #7368

The Waste Management Plan is approved with the following conditions:

- Store stockpiled oily waste in a manner to prevent contamination of surrounding soil, stormwater, surface water and groundwater; until such time that the waste is properly treated or disposed in accordance with COGCC Rule 907.e.

- Land treatment of oily waste shall be performed in strict accordance with the requirements of COGCC Rule 907.e.(2).

- Prior to using treated material for beneficial reuse, submit sampling and analytical results verifying that treated material complies with all contaminants of concern in soil listed on Table 910-1 for COGCC approval.

    - Beren Corporation has the option to profile worst case samples from the stockpiled material prior to treatment. A minimum of two (2) worst-case, discrete grab samples would be collected and analyzed for all contaminants of concern in soil listed on Table 910-1. Samples should be collected based on observation of oil staining, hydrocarbon odor and/or other field screening methods. If results for all four samples indicate specific contaminants of concern are already below Table 910-1 levels, those individual contaminants can be removed from the analytical requirements for the duration of treatment. If completed, submit profile sampling results prior to commencement of land treatment.

- For progress and confirmation sampling, collect a minimum of two (2) composite samples from each of the first two cells designated to receive 200 cubic yards for treatment. If additional cells are used, a minimum of one sample shall be collected to verify remediation of each 100 cubic yards.

- At a minimum, collect soil samples from the treatment cells twice per year to establish rate of biodegradation. Samples shall be collected consistently from the same locations during each sample event.

- It is not necessary to submit a Form 27 with each semi-annual report. The report should be submitted via Sundry Notice Form 4, status update, with a reference to Remediation Project #7368.

- At the conclusion of remediation and surface reclamation of the area disturbed by land treatment, submit a Sundry Form 4, notice of work complete, with a request for final inspection. Remediation project will remain open until the location passes final inspection.

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, Inc.

4600 West 60th Avenue
Arvada, Colorado80003
T 303.433.9788 / F 303.433.1432

December 26, 2012

Mr. John Axelson
Northeast Region Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado80203

RE: Waste Management, Soil Treatment, and Confirmation Sampling
Beren Corporation
Wright Tank Battery
Facility ID: 256227
SWSW Sec. 31 T3S R53W, 6th Principal Meridian
Washington County, Colorado

Dear Mr. Axelson:

This Waste Management, Soil Treatment, and Confirmation Sampling Plan presents the scope of work to remediate petroleum hydrocarbon-impacted soil at the Wright Tank Battery (Site). The Site is located 0.2 miles north of the intersection of County Road U and U.S. Highway 36 in Washington County, Colorado (Figure 1). LT Environmental, Inc. (LTE), under the direction of Beren Corporation (Beren), will remediate petroleum hydrocarbon-impacted soil stockpiled at the Site identified during pit-closure activities.

Background

On October 3, 2012, LTE personnel were on-site to oversee excavation activities and collect a confirmation soil sample for closure of the oil skim pit. Following oil skim pit closure activities, composite soil samples SP-01 and SP-02 were collected from the two on-site hydrocarbon-impacted soil stockpiles depicted on Figure 2. The stockpile samples were collected to characterize the impacted soil removed from the excavation and determine which on-site remediation options best fit the stockpiled soil. Samples were submitted to Summit Scientific, Inc. (Summit) of Golden, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method 8260B, and TPH-diesel range organics (DRO) by EPA Modified Method 8015. Stockpile sample SP-01 was also analyzed for pH by EPA Method 9045, specific conductance (EC) by Standard Method 2510B, and sodium adsorption ratio (SAR) by the United States Department of Agriculture Handbook 60 Method.

Analytical results indicated SP-01 exceeded the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 Concentration Level for TPH at 2,400 milligrams per kilogram (mg/kg). Analytical results also indicated SP-01 slightly exceeded the COGCC Concentration Level for pH at 9.2. Analytical results for SP-02 indicated soil was in compliance with the COGCC Concentration Levels, therefore, this soil was used as backfill for the oil skim pit excavation on-site. Table 1 summarizes the stockpile soil analytical results.

Waste Management, Soil Treatment, and Confirmation Sampling

LTE has determined that on-site landfarming of the remaining 400 cubic yards of petroleum hydrocarbon-impacted soil will be the most efficient and effective remediation plan for the Site. Landfarming will occur on the west and south sides of the lease as depicted on Figure 3. Beren contractors will remove a portion of the soil from the stockpiles and spread the soil out across the flat area next to the active pits. The stockpile soil will be combined with soil from the previous oil skim pit berms in an effort to introduce organic material into the soil while it is landfarmed. The previous pit berms are vegetated and introducing the vegetation into the stockpile soil prior to landfarming will help maintain better soil structure during the landfarming process. Optimum soil structure will allow for increased oxygen diffusion and increased volatilization and biological degradation. Beren contractors will be prepared to use other amendments such as fertilizer to encourage biological degradation if it is deemed necessary. After the soil is thoroughly mixed, Beren contractors will spread the soil out on up to five landfarm cells at a maximum thickness of 12 to 18 inches. Once the soil is spread, Beren contractors will leave the soil to attenuate in the sun. The soil will be periodically tilled with a front-end loader to keep the soil oxygenated and encourage natural attenuation. Beren contractors will be able to landfarm approximately 400 cubic yards of soil at once (200 cubic yards in each cell) in the western cells. The southern landfarm cells should allow for another 750 cubic yards (150, 300, and 300 cubic yards in each, respectively). As Beren is starting with only a limited amount of impacted soil, Beren may opt to use all five landfarm cells and spread the soil out thinner than the 12 to 18 inches to speed up the attenuation process if space allows. Stormwater controls such as a ditch and berm will be installed around the perimeter of the disturbed area to ensure sediment from the landfarming activities are kept onsite and runoff does not migrate onto the surrounding grasslands.

Confirmation soil sampling will take place periodically to establish progress and determine when soil is compliant with the COGCC Table 910-1 Concentration Levels. LTE will collect composite samples across each landfarm cell to characterize hydrocarbon remediation progress. The composite samples will consist of four to six soil aliquots depending on landfarm cell size. Figure 3 depicts the locations of the proposed soil aliquots for composite samples C01 through C05. LTE will submit one composite sample for each landfarm cell during each sampling event. Confirmation soil samples will be submitted to Summit for analysis of BTEX, TPH-GRO, and TPH-DRO. Once soil from each landfarm cell has been confirmed as compliant through confirmation sampling, the soil from that cell will be used at the Site as well as nearby locations for berm and lease road maintenance. A new batch of stockpiled soil will be loaded into the cell and mixed before it is laid out and the process will begin again. LTE will prepare a semi-annual report to update the COGCC on landfarming and soil reuse progress. This progress report will be submitted with a Form 27.

Once all the impacted soil has been remediated, Beren contractors will remove the surface soil under the previous stockpiles and landfarming areas to ensure only compliant soil remains. Beren will then re-seed the landfarming areas as part of the final reclamation activities and return it to the landowner.

Please call LTE at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.

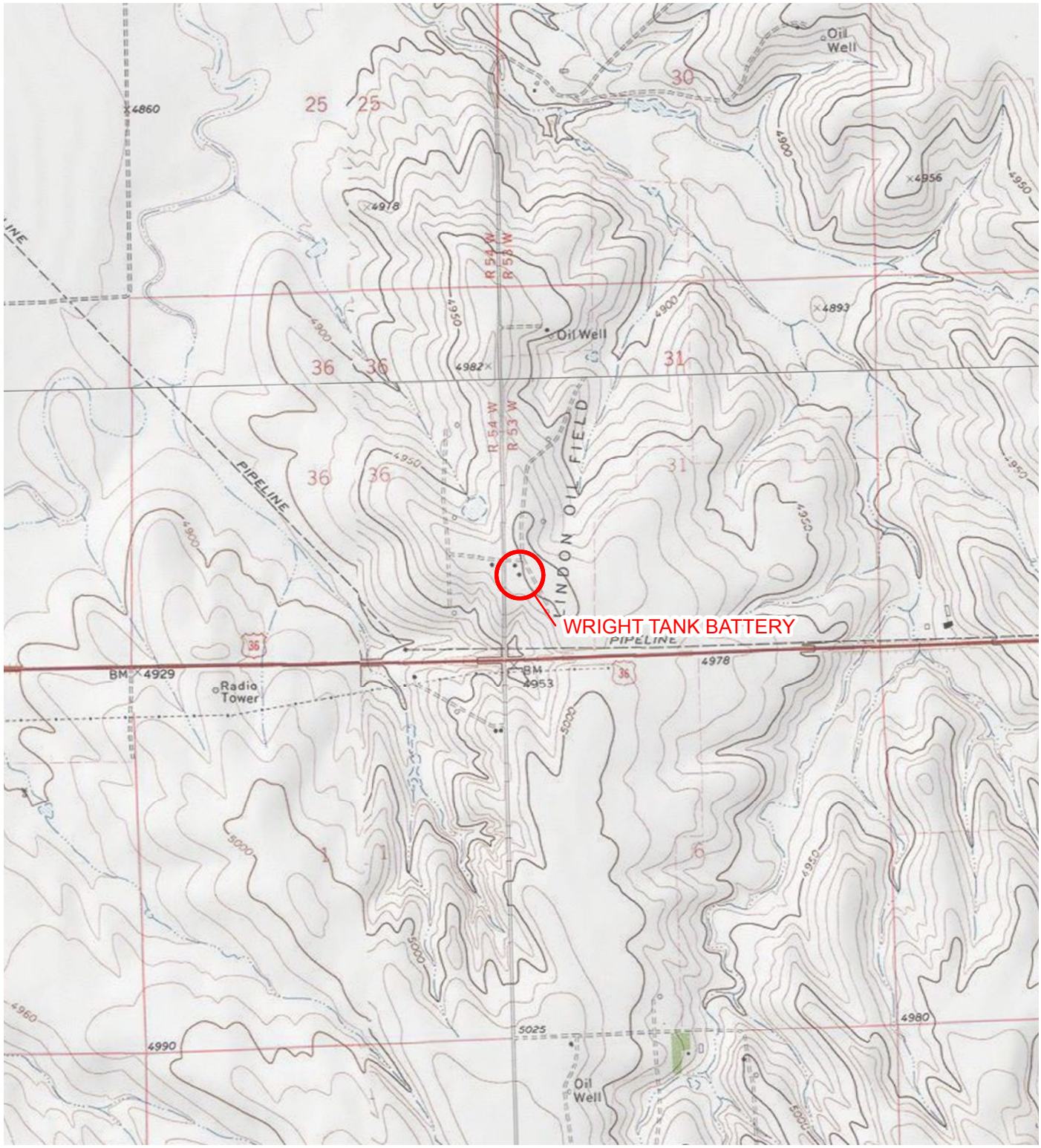
Michael Wicker
Staff Geologist

Brian Dodek, P.G.
Client Manager/Senior Geologist

Attachments

Figure 1 - Site Location Map
Figure 2 - Site Map
Figure 3 - Proposed Landfarm Section Map
Table 1 - Soil Analytical Results

FIGURES



LEGEND

SITE LOCATION

IMAGE COURTESY OF ESRI/BING MAPS

0 2,000 4,000

Feet

N

FIGURE 1
SITE LOCATION MAP
WRIGHT TANK BATTERY
WASHINGTON COUNTY, COLORADO

BEREN CORPORATION

P:\Beren Corporation\GIS\MXDs\041512004_WRIGHT_OILSKIM_PIT_CLOSURE\041512004_FIG01_SL.mxd

IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- OIL SKIM PIT
- STOCK PILE

0 30 60

Feet

N

FIGURE 2
SITE MAP
WRIGHT TANK BATTERY
WASHINGTON COUNTY, COLORADO

BEREN CORPORATION

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IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- PROPOSED COMPOSITE SAMPLE
- PROPOSED LANDFARM CELL

0 80 160
Feet

N

FIGURE 3
PROPOSED LANDFARM CELL MAP
WRIGHT TANK BATTERY
WASHINGTON COUNTY, COLORADO

BEREN CORPORATION

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TABLE

TABLE 1

SOIL ANALYTICAL RESULTS
SCOTT TANK BATTERY
WASHINGTON COUNTY, COLORADO
BEREN CORPORATION

PARAMETER	COGCC Table 910-1 Concentration Level	UNITS	Sample ID: SP-01	Sample ID: SP-02
Sample Date			10/3/2012	10/3/2012
Sample Type			Soil Stockpile	Soil Stockpile
Benzene	0.17	mg/kg	0.0054	<0.0050
Toluene	85	mg/kg	<0.0050	<0.0050
Ethylbenzene	100	mg/kg	0.015	<0.0050
Total Xylenes	175	mg/kg	0.034	<0.0050
TPH-GRO		mg/kg	500	22
TPH-DRO		mg/kg	1,900	320
Total TPH	500	mg/kg	**2,400**	342
EC	<4	mmhos/cm	1.29	--
pH	6 - 9	SU	**9.2**	--
SAR	<12	unitless	10.0	--

NOTES:
< - less than the stated laboratory reporting limit
-- - not analyzed
EC - specific conductance
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter in saturated paste extract
SAR - sodium adsorption ratio
SU - standard unit on saturated paste
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH-GRO - total petroleum hydrocarbons-gasoline range organics
Total TPH - sum of TPH-DRO and TPH-GRO
BOLD - indicates result exceeds the applicable Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 Concentration Level