



March 4, 2010

Mr. John E. Axelson, P.G.
Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**Re: Proposed Site Assessment Workplan
Wass #5 Flowline Release (COGCC Remediation No. 4369)
NENE 25-T5N-R66W
Weld County, Colorado**

Dear Mr. Axelson:

On behalf of Kerr-McGee Oil and Gas Onshore LP (Kerr-McGee), LT Environmental, Inc. (LTE) is submitting this Proposed Site Assessment Workplan (Workplan) for the above-referenced site (Site) to the Colorado Oil and Gas Conservation Commission (COGCC) for review and approval. Kerr-McGee previously submitted a Form 27 Site Investigation and Remediation Workplan for the Site to the COGCC on September 29, 2008. The COGCC submitted a letter dated January 27, 2010 to Kerr-McGee responding to the Form 27. As a follow-up to the January 27, 2010 COGCC letter, a meeting was held on February 25, 2010 with representatives of COGCC, Kerr-McGee and LTE to discuss the proposed assessment/remedial activities. This Workplan describes the future assessment activities that were agreed upon in our February 25 meeting. The assessment activities are designed to evaluate the presence or absence of residual soil impact at the Site. In addition, the assessment activities will evaluate the presence or absence of volatile organics (benzene, toluene, ethylbenzene, and total xylenes [BTEX]) directly adjacent to the utility corridor. Historical Site activities and the scope of proposed future Site assessment activities are further discussed below.

Site History

A Kerr-McGee flow line leak, the result of line corrosion at an unwrapped joint, was discovered in June 2008. The well was shut in and excavation of the petroleum hydrocarbon impacted soil commenced immediately. The western extent of the initial flow line excavation terminated at the property line of the west adjoining residential property. Permission to access the adjacent private property to continue soil removal to the west was sought and received from the west adjoining property owner. Upon receiving access from the landowner, the excavation was continued to the west an additional eight feet, where a north-south intersecting storm drain was encountered. Between the new west wall of the excavation and the residential structure, a strip of ground approximately 20 feet wide remained in place. Through this strip of ground multiple north-south trending utility lines were identified, including (from east to west) a Comcast cable line, a fiber optics communications line, a natural gas line, and a reclaimed water line. After further



assessment, and to avoid damage to the utility lines, the soil underlying the lines was not removed.

Following the completion of excavation activities, excavation sidewall samples were collected and submitted for laboratory analysis in July 2008. In addition, a truck-mounted GeoProbe® mobilized to the Site in August 2008 and advanced soil borings within the narrow gravel-covered utility corridor to assess petroleum hydrocarbon soil impacts between the utility lines where excavation was deemed impractical. The soil boring sample results successfully defined the western extent of the petroleum hydrocarbon impacts. Soil sample results from the soil boring and excavation sidewall samples were used to conservatively estimate the remaining volume of impacted soil with total petroleum hydrocarbons (TPH) concentrations above the COGCC sensitive area level. A site map illustrating excavation dimensions, soil sample locations, and soil analytical results is included as Figure 1. This information and supporting data was previously submitted to the COGCC in the above-referenced Form 27.

Proposed Scope of Work

In order to determine the presence or absence of residual soil impact at the Site and/or BTEX vapors in close proximity to the utility corridor, a truck-mounted GeoProbe® will be mobilized to the Site to advance both soil sample borings and soil gas survey borings.

The June 30, 2008 northern excavation sidewall sample N01 indicated a total extractable petroleum hydrocarbons (TEPH) concentration of 780 milligrams per kilogram (mg/kg) at a depth of nine feet below ground surface (bgs). In our February 25, 2010 meeting the COGCC requested that two additional soil samples be collected along the north wall of the former excavation (on either side of sample N01@9') to confirm that soils remaining in place along the north wall are below 1000 mg/kg TPH. To accomplish this, two temporary soil sample borings (Figure 2) will be advanced to nine feet bgs in the approximate area of the former north wall. One soil sample will be collected from each boring at a depth of nine feet bgs and submitted for laboratory analysis of TPH by Environmental Protection Agency (EPA) Method 8015. Following the collection of the sample from the western most soil sample boring, the boring will be converted into a soil gas survey boring, the details of which are discussed below.

The August 2008 installation of soil borings SB01 through SB03 indicated the presence of low to moderate petroleum hydrocarbon staining and photoionization detector (PID) measurements in various intervals from ground surface to 12 feet bgs. To determine the presence or absence of BTEX vapors in the locale of the utility corridor, five temporary soil gas survey borings will be installed on both the western and eastern sides of the utility corridor. To evaluate the northeastern side of the utility corridor, the western most soil sample boring will also be utilized as a temporary soil gas survey boring. The locations of the soil gas survey borings are presented on Figure 2. In general, the direct push-rod will be driven to predetermined depths and then pulled back to expose the inlets of the perforated tip. Sample tubing will be placed inside the direct-push rod and discrete air samples will be collected at the predetermined depths. For each soil gas survey boring, the predetermined depths will be approximately 2-4 feet bgs, 6-8 feet bgs, and 10-12 feet bgs. In addition, hydrated granular bentonite will be utilized to seal around the



direct-push rod at the ground surface and a rubber seal will be placed between the sample tubing and the inside wall of the direct-push rod to prevent ambient air intrusion.

The intervals in each soil gas survey boring will be purged with an electronic pump prior to collecting soil vapor samples. A soil vapor sample will be collected from each interval in each boring and submitted for laboratory analysis of BTEX by EPA Method TO-14. The soil vapor sample analytical results will be evaluated for any detected BTEX concentrations in exceedance of the respective Colorado Department of Labor and Employment (CDLE) Division of Oil and Public Safety (OPS) BTEX Residential Risk-Based Screening Levels (RBSLs).

Based on the summary of the planned activities for the Site, LTE, on behalf of Kerr-McGee, respectfully requests that the COGCC review and approve this Workplan. Completion of the work is contingent upon receipt of landowner access approval. Kerr-McGee is working to obtain that access as soon as possible.

Please call us at (303) 433-9788 or Mr. Paul Schneider with Kerr-McGee at (720) 929-6726 if you have any questions or if you require additional information.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'Michael S. McKee'.

Michael S. McKee, P.E.
Project Engineer

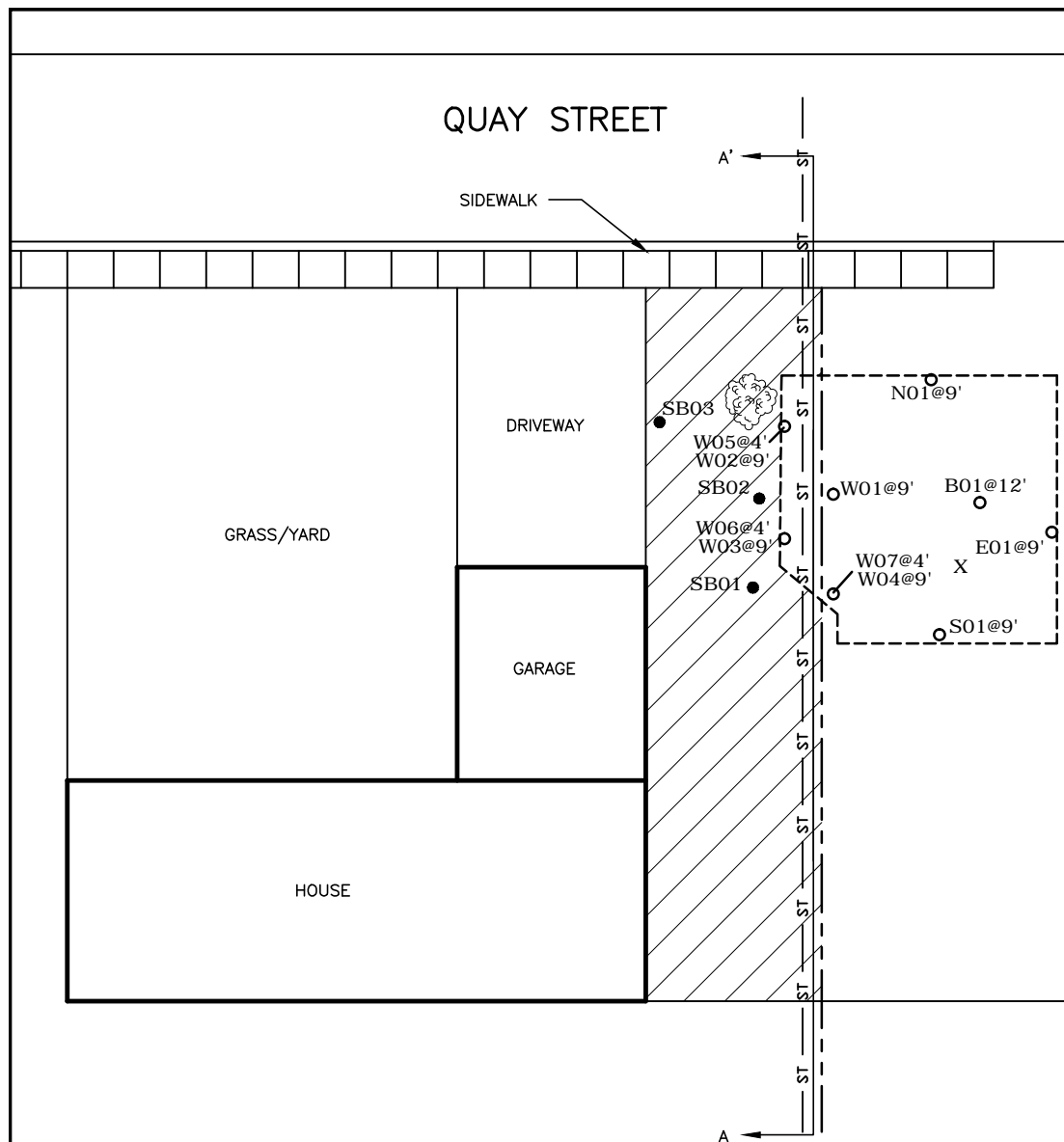
A handwritten signature in black ink, appearing to read 'John E. Cocroft'.

John E. Cocroft
Senior Hydrogeologist/Project Manager

Attachments: Figure 1 – 2008 Soil Analytical Results
 Figure 2 – 2010 Proposed Soil Boring Locations

FIGURES





LEGEND

- N01@8' ○ SOIL SAMPLE LOCATION
- SB01 ● SOIL BOREHOLE LOCATION
- X RELEASE LOCATION
- EXTENT OF EXCAVATION
- - - - - APPROXIMATE PROPERTY LINE
- ST — STORMWATER LINE
- GRAVEL-COVERED UTILITY CORRIDOR
- TREE

ACCESS ROAD

TABLE 1
SOIL SAMPLE ANALYTICAL DATA

SAMPLE ID	DATE	DEPTH (feet bgs)	TEPH (mg/kg)
N01@9'	6/30/2008	9	780
E01@9'	6/30/2008	9	ND
S01@9'	6/30/2008	9	260
W01@9'	6/30/2008	9	1,800
B01@12'	6/30/2008	12	250
W02@9'	7/1/2008	9	220
W03@9'	7/1/2008	9	2,400
W04@9'	7/1/2008	9	ND
W05@4'	7/1/2008	4	ND
W06@4'	7/1/2008	4	ND
W07@4'	7/1/2008	4	ND
SB01@9'	8/6/2008	9	ND
SB02@9'	8/6/2008	9	ND
SB03@9'	8/6/2008	9	ND

ND - Not Detected Above Laboratory Reporting Limits
TEPH - Total Extractable Petroleum Hydrocarbons (C6-C36)
mg/kg - milligrams per kilogram
bgs - below ground surface

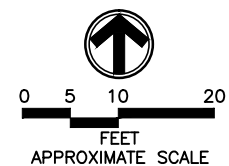
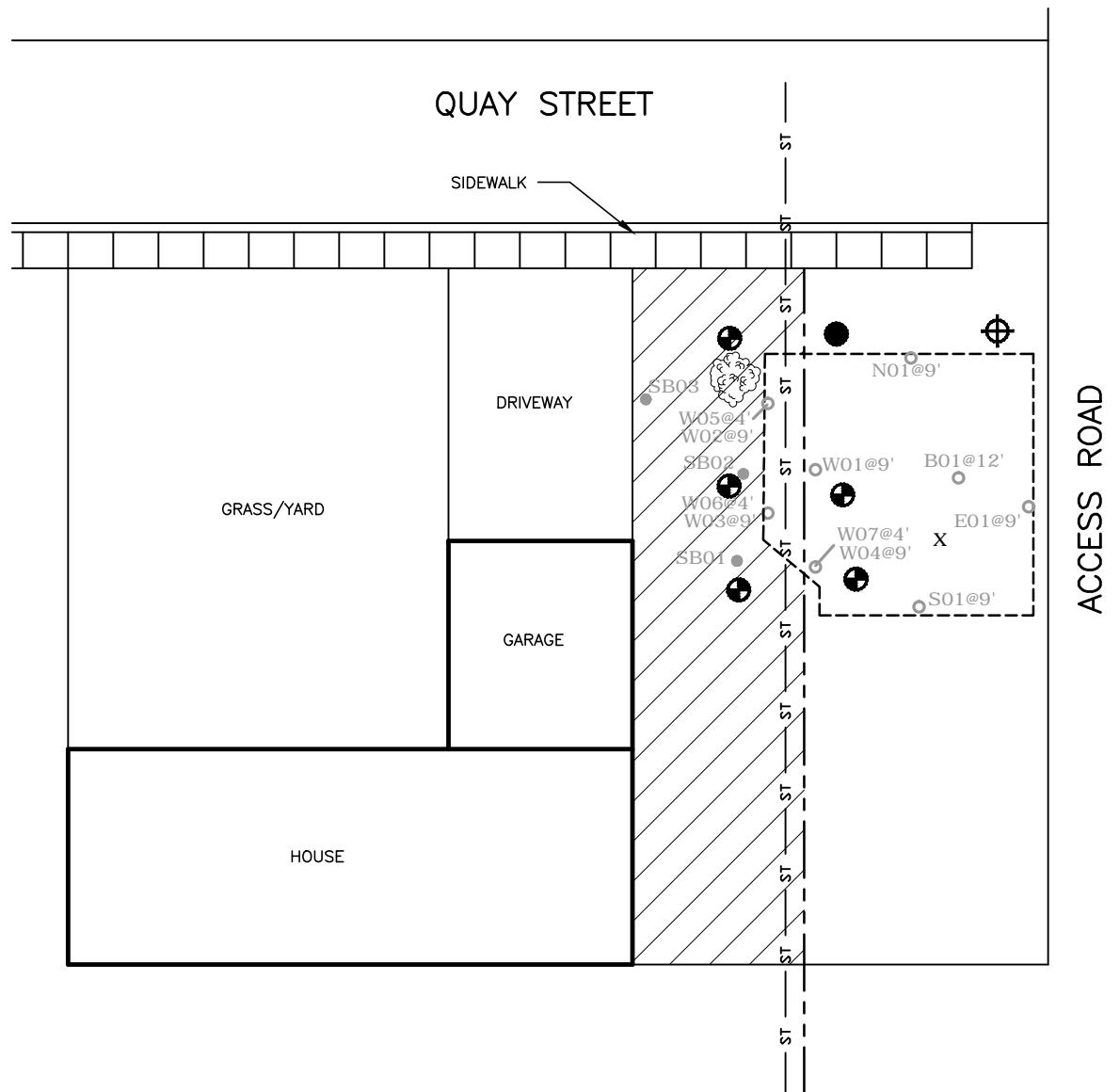


FIGURE 1
2008 SOIL ANALYTICAL RESULTS
WASS #5
NENE-25-T5N-R66W
WELD COUNTY, CO
KERR-McGEE OIL & GAS ONSHORE LP



3/10\KMG0839701



LEGEND

- | | |
|--|-------------------------------------|
| ● PROPOSED COMBINED SOIL GAS SURVEY AND SOIL SAMPLE BORING | ----- EXTENT OF EXCAVATION |
| ⊕ PROPOSED SOIL GAS SURVEY BORING | - - - - - APPROXIMATE PROPERTY LINE |
| ⊗ PROPOSED SOIL SAMPLE BORING | — ST — STORMWATER LINE |
| N01@8' ○ 2008 SOIL SAMPLE LOCATION | ⊘ GRAVEL-COVERED UTILITY CORRIDOR |
| SB01 ● 2008 SOIL BOREHOLE LOCATION | 🌳 TREE |
| X RELEASE LOCATION | |

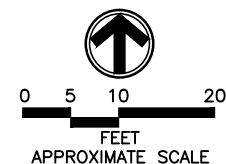


FIGURE 2
2010 PROPOSED SOIL BORING LOCATIONS
WASS #5
NENE-25-T5N-R66W
WELD COUNTY, CO
KERR-McGEE OIL & GAS ONSHORE LP

