



June 7, 2013

Mr. Bryan Bugg  
Cascade Petroleum LLC  
1331 17<sup>th</sup> Street, Suite 400  
Denver, Colorado 80202

**Re: Subsurface Soil and Groundwater Assessment  
Punkin-State #1-4  
Lincoln, Colorado**

Dear Mr. Bugg:

On May 31, 2013, LT Environmental, Inc. (LTE) on behalf of Cascade Petroleum LLC, conducted a limited subsurface soil assessment at the Punkin-State #1-4 unlined drilling pit (Site) currently owned and operated by Grand Mesa Operating Company located in Lincoln County, Colorado. The objective of the subsurface soil assessment was to determine the presence or absence of potential petroleum hydrocarbon impacts to subsurface soils and/or groundwater around the unlined drilling pit, not to define the full areal extent of impact. A brief discussion of the assessment field work and conclusions are presented below.

### **Assessment Field Work**

An LTE geologist experienced in soil and groundwater assessments conducted oversight of the drilling activities. Before drilling was commenced, LTE notified the Colorado One Call service to identify and mark any subsurface utilities at the Site.

LTE subcontracted the drilling activities to Alpine Remediation, of Golden, Colorado. Four soil borings (SB01 through SB04) were advanced at the Site using a track-mounted GeoProbe®. The soil borings were advanced to approximate depths of 15 feet to 19 feet below ground surface (bgs). Soil samples were collected from the soil borings continuously from ground surface to total depth of each soil boring and field screened with a photoionization detector (PID). Soil borings were located outside of the drilling pit on four sides. Bedrock was encountered in all of the soil borings between 2 and 4 feet bgs. Groundwater was not encountered in any of the soil borings.

### **Conclusions**

Based on field observations, no confirmation soil or groundwater analytical samples were collected at the site. No soil staining or elevated PID readings were observed. Based on shallow bedrock, drilling refusal was encountered between 15 feet and 19 feet bgs.



Please call me at (303) 433-9788 if you have any questions regarding this report or require additional information.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read "C. Purcell".

Chris Purcell, C.P.G.  
Project Geologist

A handwritten signature in black ink, appearing to read "B. Forkner".

Brett M. Forkner, CISEC  
Client Manager