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**J. E. STOVER & ASSOCIATES, INC.**

2352 NORTH 7<sup>TH</sup> STREET, UNIT B  
GRAND JUNCTION, COLORADO 81501  
PHONE: (970) 245-4101, FAX: (970) 242-7908

MINE ENGINEERING  
MINE RECLAMATION

CIVIL ENGINEERING  
CONST. MANAGEMENT

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May 7, 2019

Janet Binns  
Division of Reclamation, Mining & Safety  
1313 Sherman St., Room 215  
Denver, CO 80203

Re: Bowie Resources, LLC, Bowie No. 2 Mine  
MR-200, Methane Flare, Revised Information  
Permit C-1996-083

Dear Ms. Binns:

On behalf of Bowie Resources, LLC, (BRL), enclosed is a revised application for a minor revision to provide for the installation and operation of a stationary enclosed methane flare. This revision is amended to conform to Oxbow's Delta County Specific Development Application.

Sincerely,

*J. E. Stover*

J. E. Stover, P.E.  
Consulting Engineer

Cc: Basil Bear

Attachments:

Volume I: 2.05-21

Volume II: Map-44 Methane Flare

## 2.05.3

### Hubbard Creek Shaft

See Map 39 for the location of the ventilation shaft that was constructed during 2007 and 2008. It is lined with steel and has a finished diameter of 10.5 feet. The steel liner was cemented in place. Prior to drilling, the perimeter of the shaft was grouted to minimize water infiltration. Grouting was extensive in the collar area and was reduced when the shaft alignment encountered solid rock. The shaft was blind bored the entire depth of approximately 500 feet. The cuttings removed from the shaft are considered underground development waste and were therefore hauled to one of the approved gob disposal areas. The Hubbard Creek shaft has been backfilled and capped.

### Emergency Escape System

During 2009 the Operator installed an emergency escape system over the Hubbard Creek Shaft. The hoist is 20-feet long, 8-feet wide and 9-feet tall. The hoist foundation consists of six 5.5' X 5.5' 16" thick spread footings with 4-foot tall 18-inch diameter piers. The head frame has a 20-foot square base, is 3-feet by 12-feet at the top and is 27-feet tall. The head frame will be bolted to the existing shaft collar. The emergency escape system has been removed.

### Filter Building

A pre-engineered metal building designed to house a filter system to clear the water obtained from the Deer Trail Ditch. The filter building is adjacent to the pump house which is located along the Deer Trail Ditch. The building is approximately 40 feet by 16 feet with an 8-foot eave height.

### Mine Entrance Gate

An automatic gate installed at the main mine entrance off of Bowie Road. A 40 foot wide by 6 foot high aluminum enclosed double track cantilever slide gate with 2" X 4" frame filled with 9 gage chain link wire complete with gate opener and key pads.

### Methane Flare

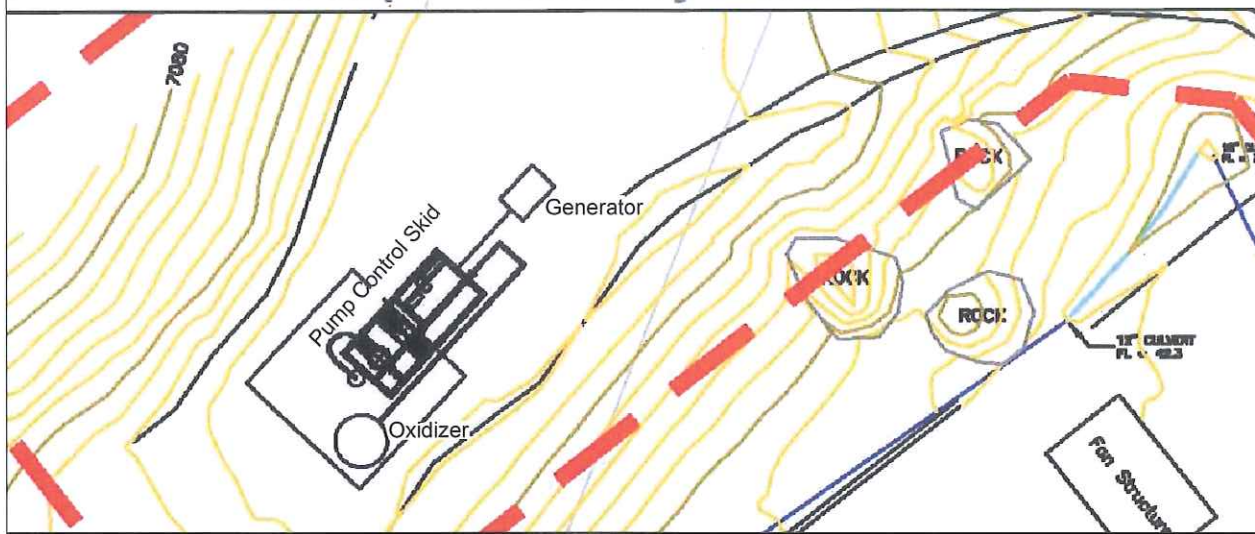
MR-200 approved a methane flare project. The project is located above the utility bench where four utility holes approved by MR-133 were drilled. The coal mine methane will be oxidized in an enclosed flare. Coal mine methane will be extracted from the Bowie #2 mine from an existing borehole using a vacuum pump powered by a 20 HP electric motor. The gas will pass through a water separator before being piped to an enclosed vertical oxidizer where the methane gas (CH<sub>4</sub>) will be converted to Carbon Dioxide (CO<sub>2</sub>). The system will be operated and monitored automatically by a computer. The system will be connected to the internet from a satellite link and cell phone connection and powered by a 36 KW diesel generator with a 200 gallon fuel tank. There will be no adverse impacts to adjacent land owners. Coal mine methane will be converted to CO<sub>2</sub> and water vapor. Map-44, Methane Flare, shows an example stationary enclosed flare layout and the proposed layout at the mine.

Oxbow Mining, LLC will supply, construct, install and operator the methane flare. Oxbow estimates the flare could be productive for 8 to 10 years.



PICTURE PROVIDED BY  
OXBOW MINING, LLC

## Example Stationary Enclosed Flare



LAYOUT OF OXIDIZER GENERATOR AND PUMP CONTROL SKID

PREPARED FOR:



BOWIE RESOURCES, LLC  
BOWIE NO. 2 MINE  
P.O. BOX 1488  
PAONIA, COLORADO 81428

PREPARED BY: J. E. STOVER & ASSOCIATES  
2332 N 7th St. Unit B  
Grand Jct., CO 81501

### ENGINEER'S CERTIFICATION

I hereby certify that this drawing was done  
by me or under my direct supervision and  
that all of the information presented on  
this drawing is true and correct to the  
best of my knowledge and belief.

James E. Stover Date  
Colorado P.E. 19230

MR-200

BOWIE RESOURCES, LLC

### METHANE FLARE

DWG PERMIT:

C-1996-083

SCALE:

NONE

DRAWING:

Map 44