J. E. STOVER & ASSOCIATES, INC.

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

MINE ENGINEERING
MINE RECLAMATION

CIVIL ENGINEERING
CONST. MANAGEMENT

May 8, 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, Supplemental Information
Permit C-1996-083

Dear Ms. Binns:

On behalf of Bowie Resources, LLC, (BRL), enclosed please find supplemental information for MR-200. This supplemental information adds a concrete foundation for the oxidizer and a fence around the site.

Sincerely,

J. E. Stover

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

Cc: Basil Bear

Attachments:
Volume I: Page 2.05-21
Reclamation Estimate

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. 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 (CH4) will be converted to Carbon Dioxide (C02). 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 C02 and water vapor. Map-44, Methane Flare, shows an example stationary enclosed flare layout and the proposed layout at the mine. The oxidizer will be set on a concrete foundation and the site will be fenced.

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

RECLAMATION ESTIMATE

Task No.: 1
Permit No.: C-1996-083
Date: 05-07-19

Prepared by: JES
Filename:
Operation: Bowie No. 2 Mine

Permitting Action: Minor Revision Application No. 200

Task Description: Methane Flare

STRUCTURE/FACILITY/EQUIPMENT DESCRIPTION	DIMENSIONS L	W	H	COMPOSITION	QUANT.	UNIT	UNIT COST	TOTAL COST
Use Bowie No. 2 Mine reclamation estimate unit								
costs to estimate Bowie No. 2 Mine bond amount								
Reference Bowie No. 2 Mine - Task No. 165								
Steel Flare Stack 6' Dia 50' high		6	50	Steel	1414	CF	$ 0.220	$ 311.08
Skid assume 6' High	17	10	6	Steel & Pipe	1020	CF	$ 0.220	$ 224.40
Interconnecting Piping	40			HDPE	40	LF	$ 2.30	$ 92.00
Remove fence	350		6	Chain Link	350	LF	$ 3.05	$ 1,067.50
Concrete foundation for oxidizer								
8' Diameter								
Floor 8' dia					50	SF	$ 1.12	$ 56.00
Footing					25	LF	$ 13.44	$ 336.00
Subtotal								$ 2,086.98
Burden							25%	$ 521.75
						TASK TOTAL		$ 2,608.73