

State of Montana
Board of Oil and Gas Conservation

Docket No. 74 – 2017
Underground Injection Control
Application

Runaway Field

Caskey 44-5
API # 25-099-21253-00-00

E2 SE SE of Sec. 5, Township 25 North, Range 3 West
Teton County, Montana

BALKO, INC

Balko Inc

Phone 406-271-2828
P.O. Box 910 , Conrad, Montana 59425

November 9, 2017

Montana Board of Oil & Gas Conservation
2535 St. Johns Avenue
Billings, MT 59102

Attn: Mr. George Hudak
UIC Program Director

RE: Request for Conversion and Subsequent Injection Permit
Runaway Field
Caskey 44-5 (25-099-21253)
Located in Section 5, Township 25 North, Range 3 West
Teton County, Montana

Dear Mr. Hudak,

Please find enclosed an underground injection control (UIC) application by Balko Inc. (Balko) requesting the granting of authority to convert and inject water into the Mississippian Madison Limestone formation in the currently non-producing Briggs 1 well operated by Balko in the Pondera Field, in Teton County, Montana. Balko is requesting that the application be placed on the docket for the MBOGC December 14, 2017 hearing.

Please place on the Default Docket if possible.

If you have questions concerning the enclosed application, please call Justin Balkenbush at (406) 281-0037.

Respectfully,

Justin Balkenbush, VP Operations
Balko, Inc.

Underground Injection Control(UIC) Permit Application
Caskey 44-5
E2 SE SE 5-T25N-R3W
Runaway Field
Teton County, Montana

The following is submitted in support of Balko's application to permit the conversion of the Briggs 1 non-producing well for the purpose of injection into the Mississippian Madison Limestone within the Runaway Field, as required by Rule 36.22.1403 of the Rules and Regulations of the Montana Board of Oil and Gas Conservation.

1(a) Well Locations

The Caskey 44-5 well has been proposed for conversion and water injection within the Runaway Field in Teton County, Montana as described below. Currently the Caskey 44-5 is not producing from the Mississippian Madison Limestone formation. *Exhibit 1* shows the surface location and a circle of a quarter (1/4) mile radius representing the area of review (AOR) for this well

Caskey 44-5 600' FSL, 430' FEL 5-25N-3W

1(b) Wells within Quarter Mile AOR

There is (1) wells that has been drilled within the ¼ mile AOR as listed below. This well within the AOR was also drilled to the Mississippian Madison Limestone formation.

Caskey 44-5
 Caskey 14-4 C SW SW 4-25N-3W Shut-In Oil Well

The SI Oil Well is operated by Balko and will be brought on line once a disposal solution is approved.

1(c) Location of All Pipelines

Injection water will be delivered to the water injection well by buried pipeline. The water source for the injector well will be from the tank battery for the Caskey 14-4 well (tank battery) located in the SW SW 4-25N-3W. *Exhibit 2* illustrates the proposed pipeline layout. Injection water will be produced Mississippian Madison Limestone water.

1(d) Area Producing Formations, Fresh Water Aquifers and Water Information

The Mississippian Madison Limestone is the only producing formation within a radius of one-quarter (1/4) mile of the proposed injection well location. The Mississippian Madison Limestone is at a depth of 1,785' K.B.

Water well information from the Ground Water Information Center at the Montana Bureau of Mines and Geology indicates there are no fresh water wells within the AOR of the proposed injector.

1(e) Name and Geologic Description of Injection Zone:

The proposed injection zone is the Mississippian Madison Limestone located at a depth of 1,802'. The Caskey 44-5 well tested wet in the Madison-Sun River 'B' and was isolated with a CIBP. The Madison-Sun River A zone was then .

In the Pondera Field area the Madison Limestone is characterized by fractured vugular and intercrystalline porosity. This zone is bounded on top by approximately 200 feet of dense Jurassic Swift and Rierdon Shales.

The original reservoir pressure for the Madison Limestone in the Pondera Field is unknown. From recent fluid level data based on swabbing water contact of approximately 500' the current reservoir pressure is approximately 440 psi.
(800' x .44 = 572 psi)

A fracture gradient of 0.70 psi/ft is assumed for the area. An injectivity test will be performed prior to initiating injection.

1(f) Additional Information on Wells drilled within the AOR

As stated previously, there are four (4) wells drilled within the AOR. Three of the wells are currently SI, but are planned to be produce once a water injection option is approved. These three wells, in addition to the Donovan 2 & 3 wells will provide the source of the produced salt water to be disposed.

Caskey 14-4	C SW SW 4-25N-3W – Madison
<i>Surface Casing:</i>	8 5/8", 28 lb/ft, K-55, set @ 174' KB Cemented to Surface—100 sacks
<i>Production Casing:</i>	4 1/2", 9.5 lb/ft, K-55, set @ 1,809' KB (275 Sacks)
<i>Perforations:</i>	1,809' – 1,816'
<i>Last Production:</i>	5 BOPD, 250 BWPD June, 2016

1(g) Open Hole Logs

None were run on this well.

1(h) Description of Wellbore Construction

Exhibit 3 shows the current and proposed wellbore configuration for the Briggs. The CIBP currently isolating the Madison-Sun River B zone will be milled up and a straddle packer assembly will be run to isolate the Madison Sun River A zone and allow injection into the Madison Sun River B zone. .

1(i) The injection fluid will consist of produced water from Caskey 14-4 well. A water sample analysis will be provided. The anticipated injection rate is 200-300 bwpd.

1(j) Names of Owners of Record

Balko Inc. is the operator of the Caskey 44-5 proposed injection well and the Caskey 14-4 producing well. The name and address of Surface Owners and other Operators within the AOR are presented in *Exhibit 4* (which is the actual Notice mailed).

Balko Inc. has notified the Surface Owners and other Operators in accordance with 36.22.1410 (1) notification requirements for an underground injection permit. *Exhibit 5* is an Affidavit to the fact the notices have been mailed.

ATTACHMENTS:

- Exhibit 1: Plat of ¼ mile radius of the Area of Review (AOR)
- Exhibit 2: Plat of existing and proposed water lines
- Exhibit 3: Briggs 1 SWD Well Schematic
- Exhibit 4: Surface Owner & other Operator Notice with names and addresses
- Exhibit 5: Affidavit of Notification
- Exhibit 6: Sundry Notice for the Intent to convert the Hanson 2-19 to injection
- Exhibit 7: Water Analysis

EXHIBIT 1

AREA OF REVIEW ¼ MILE RADIUS Section 4 & 5 TOWNSHIP 25 NORTH, RANGE 3 WEST

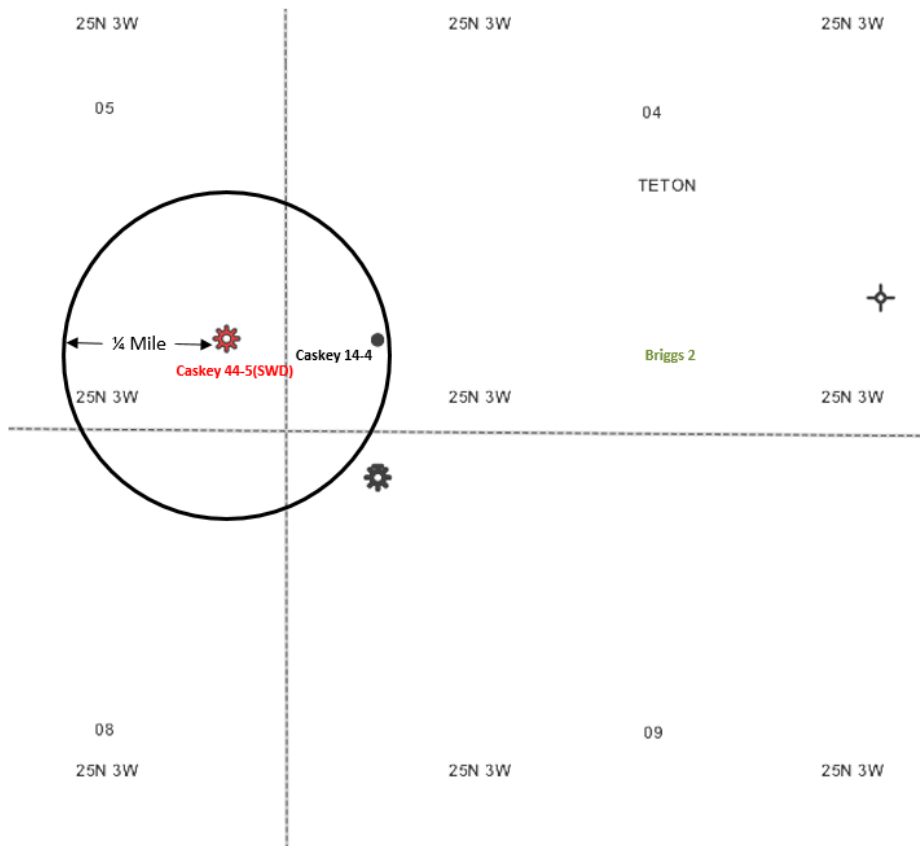


EXHIBIT 2
EXISTING (None) & PROPOSED WATER LINES

Sect 4 & 5 T25N R3W

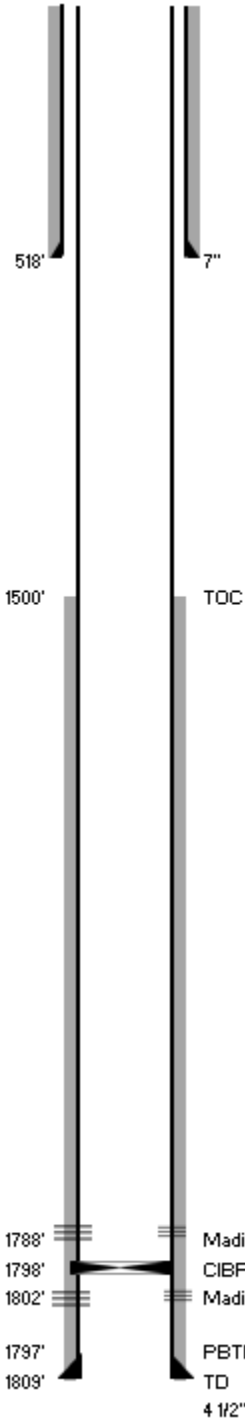


Exhibit 3

WELL SCHEMATIC FOR THE BRIGGS 1 SWD PROPOSED INJECTION WELL

Existing Well Condition

BALKO INC



WELL: CASKEY 44-5		FIELD: RUNAWAY	
SURF LOCATION: E2SESE Sec 5-T25N-R3W		COUNTY: TETON	
600' FSL		430' FEL STATE: MT	
LATITUDE:		LONGITUDE:	
API NO: 25-099-21253		STATE ID #:	
ELEVATION: KB: 3,742'		STATUS: SI	
GL: 3,730'		H2S:	
SPUD DATE: 03/22/85		CMP DATE: N/A	
ROTARY TD: 1,809'		PBD: 1,797'	
WELLHEAD:			
SURF CSG: 518'		Size: 7" Details: 17# J/K-55	
Cement: 160 SKS...No other details			
PROD CSG: 1,809'		Size: 4 1/2" Details: 9.5# J-55	
Cement: 75 SKS...No other details Top Cmt 1,500'			

Perforation Info				
TOP	BOTTOM	STATUS	ZONE DESCRIPTION	EFFECTIVE DATE
1,802'	1,805'	Isolated	Madison-Sun River B	11/3/1985
1,788'	1,794'	Open	Madison-Sun River 'A'	11/3/1985

Rods/Pump		
Size/Grade	Length or #	Depth (Top)
		0'
		0'
		0'
		0'
		0'

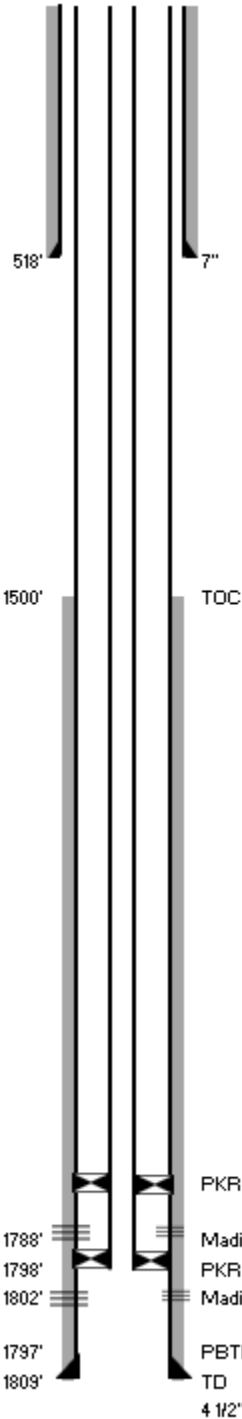
Tubing Detail		Date Run:
Size/Grade/Description	Length	3/12/2013
2 3/8" 4.3#		-12'
		-12'
		-12'
		-12'
		-12'
		-12'
		-12'
		-12'
		-12'
EOT:		-12'

Lift Type / Description:

Updated:
8/14/2017 By: J. Balkenbush

Proposed Injection Condition

BALKO INC



WELL: CASKEY 44-5				FIELD: RUNAWAY	
SURF LOCATION: E2SESE Sec 5-T25N-R3W		COUNTY: TETON		FEL STATE: MT	
LATITUDE: 600' FSL		LONGITUDE: 430'		STATE ID #:	
APINO: 25-099-21253					
ELEVATION: KB:	3,742'	STATUS: SI			
GL:	3,730'	H2S:			
SPUD DATE: 03/22/85	CMP DATE: N/A				
ROTARY TD: 1,809'	PBTD: 1,797'				
WELLHEAD:					
SURF CSG: 518'		Size: 7"	Details: 17# J/K-55		
Cement: 160 SKS...No other details					
PROD CSG: 1,809'		Size: 4 1/2"	Details: 9.5# J-55		
Cement: 75 SKS...No other details					
					Top Cmt 1,500'

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1,788'	1,794'	Open	Madison-Sun River 'A'	11/3/1985

Rods/Pump		
Size/Grade	Length or #	Depth (Top)
		0'
		0'
		0'
		0'
		0'

Tubing Detail		Date Run: 3/12/3013	
Size/Grade/Description	Length	Depth (Top)	
2 3/8" 4.3#		-12'	
PKR		-12'	
Madison SR A		-12'	
PKR		-12'	
Madison SR B		-12'	
PBTD		-12'	
TD		-12'	
4 1/2"		-12'	
EOT:		-12'	

Lift Type / Description:

Updated:
8/14/2017 By: J. Balkenbush

Exhibit 4

Surface Owner & other Operator Notice with names and addresses

Surface Owner: Nevin R. and Mary S. Caskey
81 23rd Road NW, Dutton, MT 59433

**BEFORE THE BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA**

IN RE THE APPLICATION OF
BALCO INC FOR HEARING
OF ITS REQUEST FOR A UIC PERMIT
TO CONVERT THE CASKEY 44-5 WELL,
600' FSL, 430' FEL, SEC. 5, T25N-R3W,
TO AN INJECTION WELL FOR THE
PURPOSE OF WATER INJECTION
WITHIN THE PONDERA FIELD
[TETON COUNTY, MONTANA]

AFFIDAVIT
OF NOTIFICATION

DATE: November 9, 2017

State of Montana)
) ss
County of Yellowstone)

Justin Balkenbush, being first duly sworn, deposes and says:

That Notice advising of Balco Inc's application for UIC permit in the captioned matter, in the form attached as Exhibit "A", was mailed to the Surface Owners and other Operators within the area of review (AOR) at the addresses shown in the exhibit attached to the Notice, by mailing a true copy thereof the 9th day of November 2017, postage prepaid, First Class Mail. This affidavit is given as evidence of compliance with ARM 36.22.1410.

Justin Balkenbush

Subscribed and sworn to before me this 9th day of November, 2017

My commission expires: _____
Notary Public for the State of Montana
Printed Name: _____
Residing at: _____