

COGCC OIL AND GAS FIELD SCOUT CARD

Date 04/18/2016
Document No. 2056115

FIELD NAME KOKOPELLI
FIELD NUMBER 47525

LOCATION

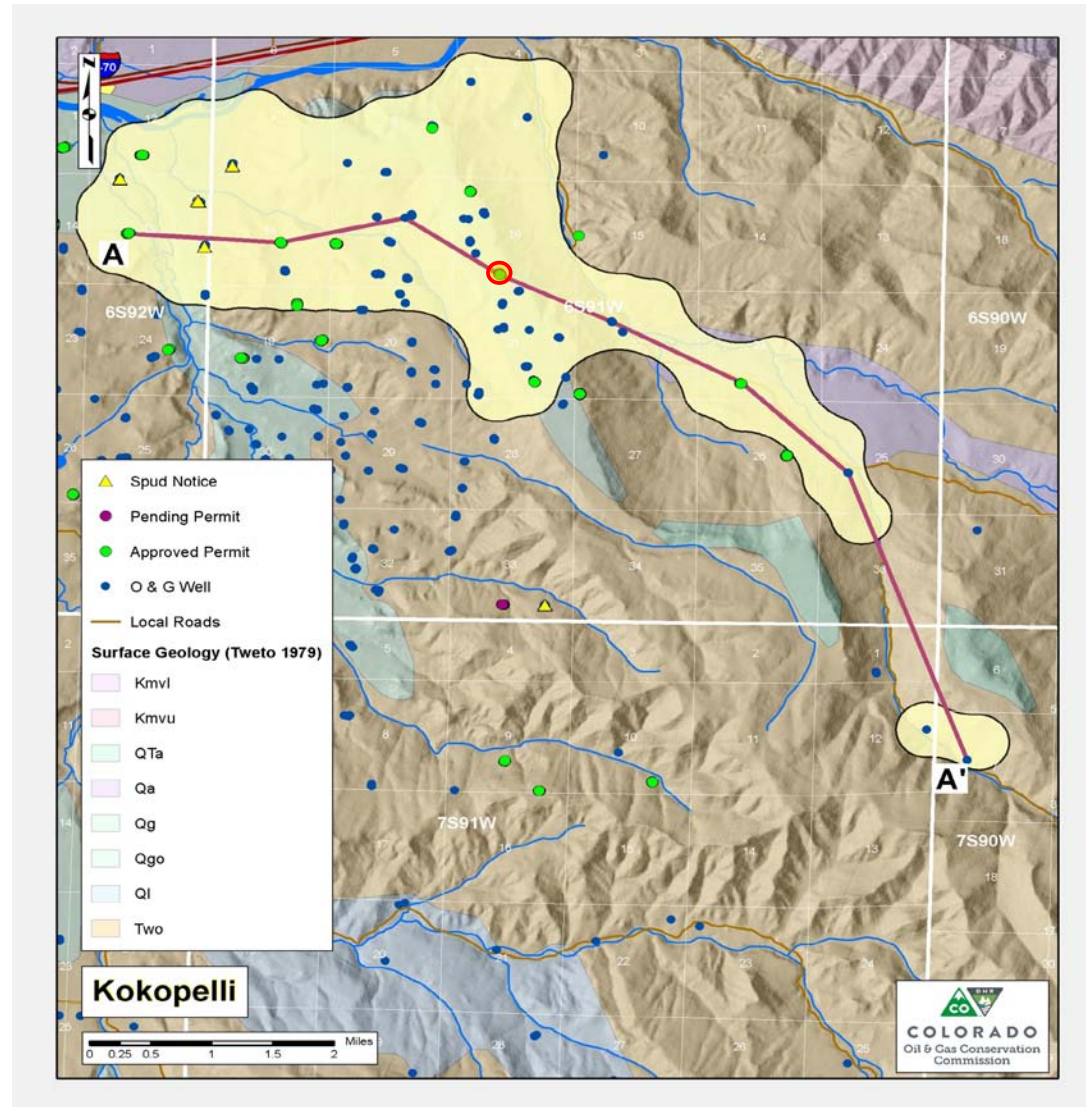
Basin Piceance
Township(s) 6S to 7S
Range(s) 90W to 92W

SURFACE GEOLOGY

Surface Geology consists of isolated areas of alluvium underlain by the Wasatch Formation.

GEOLOGIC STRUCTURE

None within the field boundaries on COGCC's 250K GIS Geology layer. The northwestern terminus of a northwest-southeast trending syncline is present near the southeast end of the field. A northwest-southeast trending, southwesterly-dipping monocline (the Grand Hogback Monocline along the northeastern edge of the basin) is present within three miles of most of the field.



○ Type Log Well

**COGCC OIL AND GAS FIELD SCOUT CARD
KOKOPELLI #47525**

A - Northwest

A' - Southeast

STRATIGRAPHY

			API Number =>	045-18168	045-19485	045-06718	045-14576	045-20268	045-16111	045-18450	045-20350
			Surface Elevation =>	5,650	5,850	6,139	6,792	6,186	6,327	6,696	7,614
			Well Type =>	Directional	Directional	Vertical	Directional	Directional	Directional	Directional	Directional
Group	Formation	Interval/ Member	Isolation Concern	Log Top	Log Top	Log Top	Log Top	Log Top	Log Top	Log Top	Log Top
	Alluvium		Water	0	/	/	0	/	0	/	/
	Wasatch	Upper	Shallow Water	.	0	0	.	0	.	0	0
	Wasatch	G-Sand*	None	753/862*	418/543*	---/553*	1,120/1,262*	---/872*	---/1,080*	1,588/1,728*	2,234/2,342*
	Wasatch	Fort Union*	None	1,256*	932*	944*	1,650*	1,260*	1,404*	2,082*	2,800*
	Wasatch	Middle	None
	Wasatch	Lower*	Water	3,132*	2,770*	2,610*	3,356*	2,983*	3,234*	3,940*	4,666*
Mesaverde	Williams Fork	Ohio Creek	Water	3,330*	2,972*	2,750	3,543*	3,140*	3,360*	4,034*	4,786*
Mesaverde	Williams Fork	U. Mesaverde	Water	3,600*	3,219	3,210	3,914	3,422	3,630*	4,417	5,126
Mesaverde	Williams Fork	Top of Gas	Gas					4,520		6,018	5,977
Mesaverde	Williams Fork	Cameo	Gas	6,216	6,569	/		6,833	7,138	7,833	8,767
Mesaverde	Iles	Rollins	Gas	7,221	6,856	/	7,497	7,079	7,309	8,054	9,054
Mesaverde	Iles	Cozzette	Gas / UIC	/	/	/	8,047	/	7,912	/	/
Mesaverde	Iles	Corcoran	Gas / UIC	/	/	/	8,242	/	8,098	/	/
	Mancos		Possible Gas	/	/	/	/	/	/	/	/
	Niobrara		Possible Gas	/	/	/	/	/	/	/	/

Annotated Type Log for 045-14576: COGCC Document Number 2056080

Stippled cells indicate that the respective log top was not apparent on logs or the top may be covered by a shallower casing string above the logged interval. "Middle Wasatch" is an interval that may include multiple formation members, and therefore, log tops are not presented for the Middle Wasatch.

* COGCC log picks (Wasatch G-Sand [top of upper and lower intervals] and Fort Union are not commonly recognized by operators in this field; "Lower" Wasatch, as shown herein for water isolation, is not recognized in geologic literature)

WATER RESOURCE ISOLATION

Alluvium, Upper Wasatch (weathered portion in which water supply wells are screened), Lower Wasatch, Ohio Creek, and Upper Mesaverde
The deepest water well within the field is 380' (likely Wasatch)

PRODUCING ZONE ISOLATION

Primary Objectives: Mesaverde Group (Williams Fork, Cameo, Rollins, Cozzette, and Corcoran)
Secondary Objectives: One well completed in the Mancos Formation (045-22460).

UNDERGROUND INJECTION CONTROL

API Number	Well Name and Number	Type	Zone	Sample Top	Sample Bot.	TDS	Source
045-18532	Kokopelli SWD #9-12D	Disposal	Cozzette - Corcoran	7,585	7,935	26,820	SWAB - 11/17/2009
045-13275	Jolley #17-4D	Source	Williams Fork - Rollins	4,131	6,988	16,503	WH - 8/19/2009
045-13712	Jolley #17-3D	Source	Williams Fork - Rollins	4,330	7,141	16,333	WH - 8/19/2009
045-18166	Valley Farms #15	Source	Williams Fork - Rollins	5,513	7,355	13,763	SEP - 4/20/2010
045-18168	Valley Farms #10	Source	Williams Fork - Rollins	5,580	7,319	14,299	SEP - 4/20/2010

**COGCC OIL AND GAS FIELD SCOUT CARD
KOKOPELLI #47525**

COMMISSION ORDER SUMMARY (Significant Engineering and Spacing Issues)

513-1 (12/19/1994)	Williams Fork: Recognizes all members of the Williams Fork Formation as a Common Source of supply. Establishes 320-acre drilling and spacing units.
513-2 (12/2/1999)	Williams Fork: Amends Order 513-1 to allow eight wells per drilling and spacing unit (40-acre spacing).
1-107 (9/20/2004)	Establishes a Bradenhead Monitoring Area, including the Kokopelli Field.
513-3 (2/12/2007)	Williams Fork and Iles: Recognizes the Williams Fork and Iles Formations as a Common Source of supply. Amends Order 513-1 to allow 16 wells per drilling and spacing unit (20-acre spacing), with wells 200 feet from unit lines.
Various	Williams Fork and Iles: Amends Order 513-1 to allow 32 wells per drilling and spacing unit (10-acre spacing), with wells 100 feet from unit lines and one pad per quarter-quarter.
513-5 (1/13/2009)	Iles: Establishes 320-acre drilling and spacing units for Iles-only wells.

HISTORIC WELL CONSTRUCTION

Surface casing setting depths generally range from 750' to 1,900'. Production casing generally terminates in the Iles Formation. Production casing cement may be limited to coverage of the producing intervals, and coverage may be lacking across parts of the Mesaverde Group and Wasatch Formation.

NEW WELL CONSTRUCTION (effective 04/18/2016)

Minimum surface casing of 10% TVD required for well control and to cover water resources in the upper interval of the Wasatch Formation. Full cement coverage of the Mesaverde Group and Ohio Creek is required in the Piceance Basin through 2015. New Standards require cementing intermediate (if used) or production casing at least 500' above Lower Wasatch sands, as shown on the annotated type log for this field.

PLUGGING OBJECTIVES

Plug(s) above Mancos and other deeper formations (if penetrated) to address potential future horizontal wells; plug above Mesaverde Group completions; plug above Ohio Creek and across Lower Wasatch (squeeze if no annular cement coverage); stray gas isolation squeezes (if no annular cement) or in-casing stabilization plugs (if annular cement present) at 3,000-foot intervals if plugs are not already planned in those intervals as described above; surface casing shoe plug and surface plug.

NOTES

Portions of this field are located within the Mamm Creek Field Cementing Notice to Operators Area. Special requirements and Form 2 Conditions of Approval apply.

Portions of this field are located within the Bradenhead Monitoring Area. Special requirements and Form 2 Conditions of Approval apply.