

Report Date: 2/12/2018

## Bedrock Aquifer Evaluation Determination Tool

### Denver Basin Aquifer - Specific Location Determination Tool

Applicant: Verdad - Jackson Pad

Receipt No:

Evaluated By:

Location: NW 1/4 of NW 1/4 of Sec. 33, T.2N, R.64W. ( 267 NSL, 1045 WSL)

Basin Designation: Location is within the UNKNOWN Designated Ground Water Basin.

Ground Surface Elevation: 5017 Feet      Number of Acres: 160

Aquifer	Elevation (ft)		Net Sand	DEPTH (ft)		ANNUAL APPROP. (A-F)	STATUS
	Bot	Top		Bot	Top		
Upper Dawson	--	--	--	--	--	--	--
Lower Dawson	--	--	--	--	--	--	--
Denver	--	--	--	--	--	--	--
Upper Arapahoe	--	--	--	--	--	--	--
Lower Arapahoe	4695	4908	88.1	322	109	23.97	NNT
Laramie-Fox Hills	4003	4312	157.7	1014	705	37.84	NT

NOTE: 'E' indicates a location is at an aquifer boundary and the values may be more approximate.

### New Drill Surface Casing Check

Operator	Verdad
Well/Pad Name	Jackson
API or Doc #	401478780 401478785
	401478781 401478788
	401478782 401478789
	401478783 401478790
SB5 Base of Fox Hills	1014'
Deepest Water Well Within One Mile / number of wells	1090' / 81
Deepest Water Well Within Two Miles / number of wells	/
Operator Proposed Surface Casing Depth	1700'
Minimum Surface Casing Depth	1090' + 50' = 1140
Change Permit Surface Casing Depth from	NA to NA
Sussex / Shannon Production within one mile	No / No

## Oil and Gas Wells Selected

### Filter Results by Formation

WELL DESCRIPTION	LOCATION ID	LOCATION	WELL INFORMATION			
05-123-10493, BRNAK 77-28 NOBLE ENERGY INC	407319	CSE 28 2N -64W (6) 40.105830, -104.551500	Sidetrack	TD	Formation	Status
			0	7680	JSND	AB
05-123-20830, RIES 11-28 PDC ENERGY INC	331522	NWNW 28 2N -64W (6) 40.115500, -104.562440	Sidetrack	TD	Formation	Status
			0	7910	JSND	SI
05-123-21112, BRYCE 21-28 PDC ENERGY INC	331679	NENW 28 2N -64W (6) 40.115220, -104.558640	Sidetrack	TD	Formation	Status
			0	7913	DKTA	PR
			0	7913	JSND	SI
05-123-22049, GREER 23-28 NOBLE ENERGY INC	332259	NESW 28 2N -64W (6) 40.108170, -104.557640	Sidetrack	TD	Formation	Status
			0	7748	CODL	PR
			0	7748	JSND	PR
05-123-22421, STONEBRAKER 32-28 PDC ENERGY INC	305082	SWNE 28 2N -64W (6) 40.111000, -104.554470	Sidetrack	TD	Formation	Status
			0	7900	JSND	AB
05-123-22422, STONEBRAKER 42-28 PDC ENERGY INC	305083	SENE 28 2N -64W (6) 40.111250, -104.548470	Sidetrack	TD	Formation	Status
			0	7815	JSND	AB
05-123-22524, GREER 14-28 NOBLE ENERGY INC	305122	SWSW 28 2N -64W (6) 40.104080, -104.563810	Sidetrack	TD	Formation	Status
			0	7956	JSND	PR
			0	7956	NB-CD	PR
05-123-23052, GREER 13-28 NOBLE ENERGY INC	305493	NWSW 28 2N -64W (6) 40.107690, -104.563810	Sidetrack	TD	Formation	Status
			0	7765	CODL	PR
			0	7765	JSND	PR
05-123-23286, GREER 24-28 NOBLE ENERGY INC	305636	SESW 28 2N -64W (6) 40.103530, -104.559110	Sidetrack	TD	Formation	Status
			0	7761	CODL	PR
			0	7761	JSND	PR
05-123-29020, BRNAK 34-28 NOBLE ENERGY INC	302371	SWSE 28 2N -64W (6) 40.103957, -104.553769	Sidetrack	TD	Formation	Status
			0	7978	JSND	SI
05-123-29486, BRNAK 44-28 NOBLE ENERGY INC	302617	SESE 28 2N -64W (6) 40.103440, -104.549692	Sidetrack	TD	Formation	Status
			0	7944	JSND	SI
05-123-36278, Stonebraker 28W-304 PDC ENERGY INC	305083	SENE 28 2N -64W (6) 40.111140, -104.547680	Sidetrack	TD	Formation	Status
			0		N-COM	PR
05-123-36280, Stonebraker 28V-234 PDC ENERGY INC	305083	SENE 28 2N -64W (6) 40.111220, -104.547680	Sidetrack	TD	Formation	Status
			0		N-COM	PR
05-123-14428, JIM CREEK 1-29 NOBLE ENERGY INC	327277	SWSW 29 2N -64W (6) 40.105920, -104.579620	Sidetrack	TD	Formation	Status
			0	7810	CODL	AB
			0	7810	J-CDL	AB
			0	7810	JSND	AB
05-123-20684, PARKER 29-34 NOBLE ENERGY INC	331436	SWSE 29 2N -64W (6) 40.104950, -104.573210	Sidetrack	TD	Formation	Status
			0	7735	JSND	SI
05-123-22399, BELL 41-29 NOBLE ENERGY INC	332507	NENE 29 2N -64W (6) 40.114930, -104.567960	Sidetrack	TD	Formation	Status
			0	7900	JSND	PR
05-123-40973, NGL C5A NGL WATER SOLUTIONS DJ LLC	159607	NESW 29 2N -64W (6) 40.107720, -104.575640	Sidetrack	TD	Formation	Status
			0	11130	ADMI	CM
			0	11130	AMZN	CM
			0	11130	ATOK	CM
			0	11130	COUGR	CM
			0	11130	DJINJ	IJ
			0	11130	DSMS	CM
			0	11130	FNTN	CM
			0	11130	LSTKA	CM
			0	11130	LYNS	CM
			0	11130	MSSR	CM

				0 11130 VRGL	CM
				0 11130 WFCMP	CM
05-123-44836, NGL C5B	159607	NESW 29 2N -64W (6)	Sidetrack	TD	Formation Status
NGL WATER SOLUTIONS DJ LLC		40.107446, -104.575499			DG
05-123-10432, RUHL 1	318986	NENE 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.099532, -104.568980		0 7785 JSND	SI
05-123-21516, NEWNAM 2-32	331898	CNW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.098688, -104.579566		0 7893 JSND	SI
				0 7893 LKTA	AB
05-123-39772, Newnam 2H-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101466, -104.578458		0	N-COM PR
				0	NBRR PR
05-123-39773, Newnam 2B-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101468, -104.578673		0	N-COM PR
				0	NBRR PR
05-123-39774, Newnam 2C-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101468, -104.578637		0	CARL CM
				0	CODL CM
				0	FTHYS CM
				0	N-COM PR
				0	NBRR CM
				0	NFCC PR
05-123-39775, Newnam 2A-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101468, -104.578709		0	N-COM PR
				0	NBRR PR
05-123-39776, Newnam 2E-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101467, -104.578566		0	N-COM PR
				0	NBRR PR
05-123-39777, Newnam 2D-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101467, -104.578601		0	N-COM PR
				0	NBRR PR
05-123-39778, Newnam 2F-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101467, -104.578530		0	CODL CM
				0	FTHYS CM
				0	N-COM PR
				0	NBFHC PR
				0	NBRR CM
05-123-39779, Newnam 2J-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101466, -104.578387		0	N-COM PR
				0	NBRR PR
05-123-39780, Newnam 2I-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101466, -104.578423		0	CODL CM
				0	FTHYS CM
				0	N-COM PR
				0	NBFHC PR
				0	NBRR CM
05-123-39781, Newnam 2G-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101466, -104.578494		0	N-COM PR
				0	NBRR PR
05-123-40228, Newnam 2K-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101465, -104.578351		0	N-COM PR
				0	NBRR PR
05-123-40275, Ruhl 1I-32H-B264	439042	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101448, -104.570837		0	CARL CM

				0	CODL	CM
				0	FTHYS	CM
				0	N-COM	PR
				0	NBRR	CM
				0	NFCC	PR
05-123-40276, Ruhl 1J-32H-B264	439042	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101448, -104.570802		0 11550	N-COM	PR
				0 11550	NBRR	PR
05-123-40277, Ruhl 1E-32H-B264	439041	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101438, -104.573598		0	N-COM	PR
				0	NBRR	PR
05-123-40278, Ruhl 1L-32H-B264	439042	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101447, -104.570730		0	CODL	CM
				0	FTHYS	CM
				0	N-COM	PR
				0	NBFHC	PR
				0	NBRR	CM
05-123-40279, Ruhl 1C-32H-B264	439041	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101439, -104.573670		0 11754	CD-FH	PR
				0 11754	CODL	CM
				0 11754	FTHYS	CM
				0 11754	N-COM	PR
05-123-40280, Ruhl 1K-32H-B264	439042	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101448, -104.570766		0	N-COM	PR
				0	NBRR	PR
05-123-40281, Ruhl 1A-32H-B264	439041	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101439, -104.573741		0	N-COM	PR
				0	NBRR	PR
05-123-40282, Ruhl 1D-32H-B264	439041	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101439, -104.573634		0 11619	N-COM	PR
				0 11619	NBRR	PR
05-123-40283, Ruhl 1F-32H-B264	439041	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101438, -104.573562		0	CD-FH	PR
				0	CODL	CM
				0	FTHYS	CM
				0	N-COM	PR
05-123-40284, Ruhl 1B-32H-B264	439041	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101439, -104.573705		0	N-COM	PR
				0	NBRR	PR
05-123-40285, Ruhl 1H-32H-B264	439042	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101449, -104.570873		0 11445	N-COM	PR
				0 11445	NBRR	PR
05-123-40286, Ruhl 1G-32H-B264	439042	NWNE 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101449, -104.570910		0 11500	N-COM	PR
				0 11500	NBRR	PR
05-123-40288, Newnam 2L-32H C264	437930	NENW 32 2N -64W (6)	Sidetrack	TD	Formation	Status
CRESTONE PEAK RESOURCES OPERATING LLC		40.101465, -104.578315		0	CARL	CM
				0	CODL	CM
				0	FTHYS	CM
				0	N-COM	PR
				0	NBRR	CM
				0	NFCC	PR
05-123-18235, UPV 33-13K4	330033	SWSW 33 2N -64W (6)	Sidetrack	TD	Formation	Status
NOBLE ENERGY INC		40.090405, -104.561970		0 7796	JSND	PR

05-123-18236, UPV 33-15K4	330034	SWSE 33 2N -64W (6)	Sidetrack				
NOBLE ENERGY INC		40.090369, -104.552557		0	7759	JSND	SI
05-123-18269, UPV 33-7K4	330049	SWNE 33 2N -64W (6)	Sidetrack				
NOBLE ENERGY INC		40.097611, -104.552604		0	7775	JSND	PR
05-123-22976, FRITZLER 12-34	305437	SWNW 34 2N -64W (6)	Sidetrack				
NOBLE ENERGY INC		40.096140, -104.545030		0	7785	CODL	PR
				0	7785	JSND	PR

Water Wells Selected From Map  
Filter Results by Depth

WELL DESCRIPTION	LOCATION	WELL INFORMATION			
		Depth	Top Perf	Bottom Perf	Aquifer
Receipt=0111096A, Permit=0111288-- HEACOCK M	NWNW 28 2 N-64W	0	0	0	GW
Receipt=0251386, Permit=0138523-- WALTER RUBEN J	NWNW 28 2 N-64W	0	0	0	GW
Receipt=0422390, Permit=0206879-- CUTLER MARTY L	NWNW 28 2 N-64W	750	628	750	KLF
Receipt=0512364, Permit=0252773-- CAREERS WORLD WIDE	NWNW 28 2 N-64W	750	628	750	GW
Receipt=9062937, Permit=0022672-- KRAMER W R	NWNW 28 2 N-64W	32	0	0	GW
Receipt=0409650, Permit=0200385-- GLICK PAUL V	SWNW 28 2 N-64W	775	625	775	KLF
Receipt=0463585, Permit=0200385--A RUPPERT RAYMOND R	SWNW 28 2 N-64W	80	630	800	KLF
Receipt=3617693, Permit=0066078-F- ERO-GUARD WEST INC	NESW 28 2 N-64W	840	540	840	KLF
Receipt=3678321, Permit=0000000-- HORTON FARMS I LLC HORTON FARMS II LLC	NESW 28 2 N-64W	0	0	0	KLF
Receipt=0431534, Permit=0150457--A KEATON RAY	SESW 28 2 N-64W	880	0	0	KLF
Receipt=0280327A, Permit=0149622-- VETERNS AFFAIRS	SESW 28 2 N-64W	0	0	0	LKA
Receipt=0280327B, Permit=0149622--A VETERNS AFFAIRS	SESW 28 2 N-64W	0	0	0	LKA
Receipt=0033514, Permit=0098205-VE- KEATON RAY	SESW 28 2 N-64W	0	0	0	GW
Receipt=0283725, Permit=0150457-- KEATON RAY	SESW 28 2 N-64W	700	590	690	GW
Receipt=3604609, Permit=0000000-- HORTON FARMS I LLC	SWSW 28 2 N-64W	0	0	0	KLF
Receipt=3664973, Permit=0078142-F- SMIALEK LYLE B & LYND A	SWSW 28 2 N-64W	0	0	0	KLF
Receipt=0375276, Permit=0182589-- SMIALEK LYLE B & LYND A	SESE 29 2 N-64W	800	620	800	KLF
Receipt=0280719B, Permit=0032760-F- NEWNAM MARION A	NENE 32 2 N-64W	872	742	803	KLF
Receipt=0040568, Permit=0040568-MH- METRO WASTEWATER RECLAMATION DIST	SENW 32 2 N-64W	0	0	0	GW
Receipt=9060286, Permit=0010155-R- RUHL G H	SENW 32 2 N-64W	25	0	0	GW
Receipt=0447124, Permit=0219431-- PERRY BRIAN L	NENE 33 2 N-64W	902	722	902	KLF

Receipt=0534455, Permit=0232396--A PERRY BRIAN	NENE 33 2 N-64W	885	750	885 KLF
Receipt=0473552, Permit=0232396-- PERRY BRIAN L	SENE 33 2 N-64W	0	0	0 KLF
Receipt=0523412, Permit=0257027-- RHOADS-ROBINSON MARILYNN A	SWNE 33 2 N-64W	850	765	850 KLF
Receipt=0524532A, Permit=0260331-- BELTRAN NOEL	NENW 33 2 N-64W	860	720	860 KLF
Receipt=0528184, Permit=0260330-- MASDIN NANCY	NENW 33 2 N-64W	920	750	920 KLF
Receipt=0524532B, Permit=0260332-- GOODWIN GARY P JR & MICHELLE	SENW 33 2 N-64W	900	720	900 KLF
Receipt=3609596A, Permit=0271913-- JACKSON JANET A	SENW 33 2 N-64W	0	0	0 KLF
Receipt=3609596B, Permit=0271914-- JACKSON JANET A	SWNW 33 2 N-64W	860	760	860 KLF
Receipt=3616447B, Permit=0000034-GX- JACKSON GALEN & JANET	SWNW 33 2 N-64W	8	0	0 GW
Receipt=0038874, Permit=0038874-MH- METRO WASTEWATER RECLAMATION DIST	SWNW 33 2 N-64W	0	0	0 GW
Receipt=0473553, Permit=0232395-- PERRY BRIAN L	NESE 33 2 N-64W	885	825	885 KLF
Receipt=3640712, Permit=0280914-- PARENT KATHLEEN M	SWSE 33 2 N-64W	0	0	0 KLF
Receipt=3655557, Permit=0288441-- NEWMAN GAIL	NWSW 33 2 N-64W	840	740	840 KLF
Receipt=3601750, Permit=0268197-- HEIDEMAN JOAN & DANIEL	NWSW 33 2 N-64W	820	690	820 KLF
Receipt=3635964, Permit=0279665-- NEWMAN GAIL E	NWSW 33 2 N-64W	0	0	0 KLF
Receipt=3640713, Permit=0280912-- PARENT KATHLEEN M	SWSW 33 2 N-64W	840	0	0 KLF
Receipt=0473125, Permit=0232598-- DOHMEN GAIL C & DUNCAN P	SWSW 33 2 N-64W	890	740	890 GW