

**BW - 2**

**SUBSIDENCE  
MONITORING  
PLAN**

**2020**

**From:** [Cory Walk](#)  
**To:** [Chavez, Carl J. EMNRD](#)  
**Cc:** [Hull, Jason](#); [Pritchett, Gary](#); [Ames, Eric, EMNRD](#); [Griswold, Jim, EMNRD](#); [Polak, Tiffany, EMNRD](#)  
**Subject:** Re: [EXT] Re: BW-2 Cavern Configuration Follow-up Communication: CAVERN MATURITY RATIO (D/H)  
**Date:** Wednesday, May 27, 2020 9:56:07 AM  
**Attachments:** [BASIC EUNICE1 SURFACE SUBSIDENCE MONITORING PLAN.pdf](#)

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Good Morning Carl,

Attached is the Subsidence Monitoring Plan for Basic's Eunice Brine Well provided to us by Harcrow Surveying. Please review and let us know if this plan meets all the requirements or if you need any additional information.

Thank you,

On Wed, May 20, 2020 at 4:55 PM Chavez, Carl J, EMNRD <[CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)> wrote:

Cory:

Received. I've marked my calendar.

Thankyou.

Mr. Carl J. Chavez, CHMM (#13099)

New Mexico Oil Conservation Division (Albuquerque Office)

Energy Minerals and Natural Resources Department

5200 Oakland Avenue, NE

Albuquerque, New Mexico 87113

Ph. (505) 660-7923

E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

**“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)**

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**From:** Cory Walk <[cory@permitswest.com](mailto:cory@permitswest.com)>  
**Sent:** Wednesday, May 20, 2020 4:53 PM  
**To:** Chavez, Carl J, EMNRD <[CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)>  
**Cc:** Hull, Jason <[jason.hull@basicenergyservices.com](mailto:jason.hull@basicenergyservices.com)>; Pritchett, Gary <[Gary.Pritchett@basicenergyservices.com](mailto:Gary.Pritchett@basicenergyservices.com)>; Ames, Eric, EMNRD <[Eric.Ames@state.nm.us](mailto:Eric.Ames@state.nm.us)>; Griswold, Jim, EMNRD <[Jim.Griswold@state.nm.us](mailto:Jim.Griswold@state.nm.us)>; Polak, Tiffany, EMNRD <[Tiffany.Polak@state.nm.us](mailto:Tiffany.Polak@state.nm.us)>  
**Subject:** Re: [EXT] Re: BW-2 Cavern Configuration Follow-up Communication: CAVERN MATURITY RATIO (D/H)

Good Afternoon Carl,

As we discussed on the phone, Harcrow Surveying is in the process of completing the Subsidence Monitoring Plan. We intend to get this plan from Harcrow and submitted to OCD no later than June 15. We thank you for your understanding during this unique time.

Thank you,

On Tue, May 19, 2020 at 3:46 PM Chavez, Carl J, EMNRD <[CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)> wrote:

Mr. Walk, et al.:

The New Mexico Oil Conservation Division (OCD) is in receipt of the filing fee for the above subject New WQCC discharge permit application.

OCD notices that a submittal date was missed on a C&E deliverable. Please contact me to communicate on this.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)

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**From:** Chavez, Carl J, EMNRD

**Sent:** Thursday, March 19, 2020 1:29 PM

**To:** 'Cory Walk' <[cory@permitswest.com](mailto:cory@permitswest.com)>

**Subject:** RE: [EXT] Re: BW-2 Cavern Configuration Follow-up Communication: CAVERN MATURITY RATIO (D/H)

The \$100 filing fee check should be directed to the OCD Santa Fe Office to the attention of Merlinda Neville.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)

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Energy Minerals and Natural Resources Department

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**From:** Cory Walk <[cory@permitswest.com](mailto:cory@permitswest.com)>  
**Sent:** Thursday, March 19, 2020 1:28 PM  
**To:** Chavez, Carl J, EMNRD <[CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)>  
**Subject:** Re: [EXT] Re: BW-2 Cavern Configuration Follow-up Communication: CAVERN MATURITY RATIO (D/H)

Got it. I'll have Basic send that to you ASAP.

Thanks,

On Thu, Mar 19, 2020 at 1:26 PM Chavez, Carl J, EMNRD <[CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)> wrote:

Cory, yes. The fees are listed under 20.6.2.3114 NMAC in the table.

Perform a google search for 20.6.2 NMAC and go to Section 3114. There is a \$100 filing fee, and when the permit is issued, the final permit fee for a brine well will be due with check made payable to "Water Quality Management Fund."

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)

New Mexico Oil Conservation Division (Albuquerque Office)

Energy Minerals and Natural Resources Department

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Ph. (505) 660-7923

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**“Why not prevent pollution, minimize waste to reduce operating costs, reuse or**

## Surface Subsidence Monitoring Plan

Basic Energy Services L.P. hired Harcrow Surveying to install survey monuments around the well for surface subsidence monitoring. In April 2019 Harcrow Surveying set four control monuments. The monuments set were 18"-1/2" rebar with an aluminum cap fixed to the top of the rebar. Each monument was driven into the ground so that it was level with the surrounding grade. Harcrow Surveying then conducted a topographic survey using a drone and RTK GPS. The GPS units utilized were both Trimble R8-S receivers with a Trimble TDL-450 external radio. All coordinates provided are NAD 83 New Mexico State Plane East Zone. The elevation datum is NAVD 88. All monument positions were corrected and tied to the OPUS solution provided. In March 2020, Harcrow Surveying performed a loop traverse to set three new control monuments using a Trimble SX-10 Total Station. The three new monuments were surveyed into the same control network as the previously surveyed monuments. Additional surveys will be conducted at least semiannually throughout the life of the well. If the monitored surface ever reaches 0.10 ft compared to its baseline elevation, BES will notify OCD immediately for further instructions.

Chad Harcrow





# OPUS SOLUTION

FILE: 1 TR5339292071728

## NGS OPUS SOLUTION REPORT

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All computed coordinate accuracies are listed as peak-to-peak values.

For additional information: <https://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: [L.GOTHARD@HARCROWSURVEYING.COM](mailto:L.GOTHARD@HARCROWSURVEYING.COM) DATE: April 22, 2019  
RINEX FILE: 1\_\_109n.19o TIME: 12:46:05 UTC

SOFTWARE: page5 1603.24 [master73.pl](#) 160321 START: 2019/04/19 13:25:00  
EPHEMERIS: igr20495.eph [rapid] STOP: 2019/04/19 15:26:00  
NAV FILE: brdc1090.19n OBS USED: 4577 / 4789 : 96%  
ANT NAME: TRMR8S NONE # FIXED AMB: 35 / 40 : 88%  
ARP HEIGHT: 1.75 OVERALL RMS: 0.014(m)

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2019.2975)

X:	-1225989.586(m)	0.009(m)	-1225990.438(m)	0.009(m)
Y:	-5248313.201(m)	0.034(m)	-5248311.795(m)	0.034(m)
Z:	3401154.258(m)	0.013(m)	3401154.073(m)	0.013(m)

LAT:	32 25 41.60546	0.018(m)	32 25 41.62084	0.018(m)
E LON:	256 51 5.96923	0.002(m)	256 51 5.92524	0.002(m)
W LON:	103 8 54.03077	0.002(m)	103 8 54.07476	0.002(m)
EL HGT:	1019.775(m)	0.033(m)	1018.683(m)	0.033(m)

ORTHO HGT: 1042.004(m) 0.042(m) [NAVD88 (Computed using GEOID12B)]

### UTM COORDINATES STATE PLANE COORDINATES

	UTM (Zone 13)	SPC (3001 NM E)
Northing (Y) [meters]	3589411.523	158967.726
Easting (X) [meters]	674094.224	276443.292
Convergence [degrees]	0.99318889	0.63550833
Point Scale	0.99997376	1.00006219
Combined Factor	0.99981367	0.99990209

US NATIONAL GRID DESIGNATOR: 13SFR7409489411(NAD 83)

### BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DM4702	TXMH MONAHANS CORS ARP	N313327.822	W1025338.396	99487.0
DM4161	TXKM KERMIT CORS ARP	N315033.357	W1030631.257	65056.7
DP4775	TXP2 PLAINS CORS ARP	N331055.787	W1024905.339	89162.3

### NEAREST NGS PUBLISHED CONTROL POINT

CV0650	A 353	N322353.000	W1030840.000	3365.5
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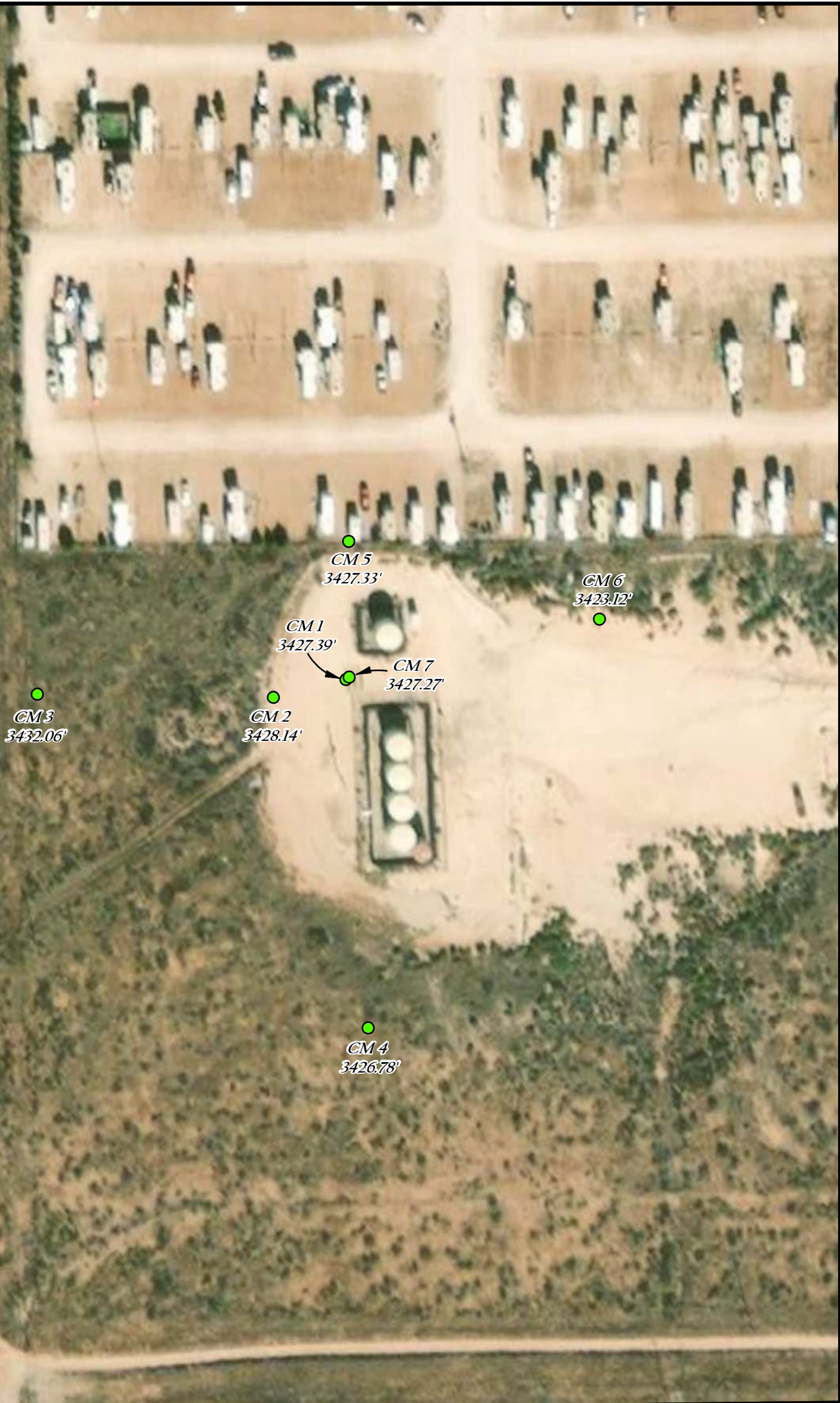
## Adjusted Grid Coordinates

Point ID	Northing (US survey foot)	Northing Error (US survey foot)	Easting (US survey foot)	Easting Error (US survey foot)	Elevation (US survey foot)	Elevation Error (US survey foot)	Constraint
<a href="#">11</a>	521546.614	?	906964.367	?	3418.561	?	NEe
<a href="#">82000</a>	522127.153	0.022	906453.954	0.016	3427.387	0.011	
<a href="#">82001</a>	522112.024	0.016	906392.641	0.012	3428.138	0.009	
<a href="#">82002</a>	522114.953	?	906194.281	?	3432.064	?	NEe
<a href="#">82004</a>	521833.756	0.019	906472.210	0.025	3426.777	0.014	
<a href="#">82005</a>	522243.285	0.019	906455.845	0.015	3427.334	0.010	
<a href="#">82006</a>	522177.805	0.032	906666.453	0.012	3423.118	0.013	
<a href="#">82007</a>	522128.606	0.022	906456.063	0.016	3427.267	0.011	



T 21 S

R  
3  
7  
E



CM3  
3432.06'

CM2  
3428.14'

CM5  
3427.33'

CM1  
3427.39'

CM7  
3427.27'

CM6  
3423.12'

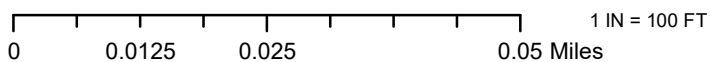
CM4  
3426.78'

**LEGEND**

● CONTROL MONUMENT

**SITE OVERVIEW MAP**

SECTION: 34	TOWNSHIP: 21 S.	RANGE: 37 E.
STATE: NEW MEXICO	COUNTY: LEA	SURVEY: N.M.P.M
W.O. # 20-377		



LOCATION OVERVIEW      IMAGERY      4/14/2020      S.P.

