

From: [Lennon, Tiernan](#)
To: [Stahl, Megan D.](#)
Cc: [Cindy Schulz](#); [Troy Andersen](#); [Sumalee Hoskin](#); [Jennifer Stanhope](#); [Glenn Smith](#)
Subject: Proposed Conservation Measure & Potential Hibernacula Spreadsheet
Date: Wednesday, November 8, 2017 3:22:54 PM
Attachments: [MVP Potential Hib Comments 11.8.17.xlsx](#)

Hey Megan - See our edits to the proposed conservation measure below:

Mountain Valley, LCC will provide a site-specific plan to the Service for review and written approval prior to initiating any construction activities within 0.5 mile of portal PS-WV3-Y-1. The site-specific plan will ensure no alteration, physical or otherwise, of the portal's entrance or environment that will adversely affect its use by federally listed bats, including those hibernating within the portal. In the event that the Service determines the site-specific plan cannot avoid adverse effects to federally listed bats, Mountain Valley, LCC will reroute the Project such that all activities are at least 0.5 mile away from portal PS-WV3-Y-1. In certain instances, conducting some activities within 0.5 mile of portal PS-WV3-Y-1 may not adversely affect federally listed bats; however, Mountain Valley, LCC will receive Service review and written approval of all activities within 0.5 mile of portal PS-WV3-Y-1 prior to initiating such activities.

Additionally, the Service has completed our review of your potential hibernacula spreadsheet. We have no additional questions or comments. Please revise the spreadsheet and submit the final version to us and FERC.

Thank you,

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[illegible]

VA-013	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	5 always f om AB / public road	No	N/A	not su table based on su face p t	V g n s Spawning cal Su vny	OK
VA-028	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	On h lly de approx to AB	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny, DAA Ka at Team	OK
WV-007	West V g	Mon on	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent f om cave route	No	N/A	not su table based on cave length	West V g n s Spawning cal Su vny	OK
VA-022	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny	OK
VA-027	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent, ac oss c ave, on a h l	No	N/A	not su table based on ent ance and collapse	V g n s Spawning cal Su vny, DAA Ka at Team	OK
WV-007	West V g	Mon on	Unknown	Su lab l ty	Unknown	Unknown	Access	5 always f om cave, locat on cave to n	No	N/A	not su table based on cave length	West V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-042	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent, ac oss c ave, on a h l	No	N/A	not su table based on flood ng	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-021	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny	OK
VA-022	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Ac oss a d ave and up ad ent	No	N/A	not su table based on ent ance and cave length	V g n s Spawning cal Su vny	OK
WV-006	West V g	Mon on	Unknown	Su lab l ty	Unknown	Unknown	Access	Down ad ent of cave	No	No	no impact based on stance to end of cave, not su table based on flood ng	West V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-015	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on up ad ent and t end away, not su table based on flood ng	Douglas, DAA Ka at Team	OK
VA-019	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on up ad ent, not su table based on flood ng	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-009	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	On oppo to h l l ac oss cave route	No	N/A	not su table based on su face p t and cave flow	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-016	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on up ad ent, not su table based on su face and no a flow	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-015	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on up ad ent, not su table based on su face and no a flow	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-020	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent and ac oss h l l on cave route	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny	OK
VA-025	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	5 always f om cave, small cave, on cave route	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-018	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	5 always f om cave, small cave, on cave route	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-016	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	N/A	not su table based on ent ance and cave length	V g n s Spawning cal Su vny	OK
VA-024	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	On other side of h l l	No	N/A	not su table based on cave length	V g n s Spawning cal Su vny	OK
VA-012	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	Ac oss cave, c avehead, cave and up ad ent h l l de, Upp ad ent	No	N/A	not su table based on cave length	Douglas, V g n s Spawning cal Su vny	OK
VA-015	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	N/A	not su table based on su face p t	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-018	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	N/A	not su table based on cave length and su face p t	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-020	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Other side of h l l, down the cave	No	No	no impact based on cave de of 0.5-m le buffer, using up ad ent, not su table based on cave de of 0.5-m le buffer, up ad ent, not su table based on cave length	V g n s Spawning cal Su vny	OK
VA-019	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-016	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-013	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-014	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-025	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	On other side of h l l	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-019	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	5 always f om cave, small cave, on cave route	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-018	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	Douglas, V g n s Spawning cal Su vny, DAA Ka at Team	OK
WV-006	West V g	Mon on	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent and ac oss h l l on cave route	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	West V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-021	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	V g n s Spawning cal Su vny	OK
VA-011	V g n s	Montgon	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	V g n s Spawning cal Su vny, DAA Ka at Team	OK
VA-017	V g n s	G low	Unknown	Su lab l ty	Unknown	Unknown	Access	Upp ad ent	No	No	no impact based on cave de of 0.5-m le buffer, not su table based on cave de of 0.5-m le buffer, up ad ent and t end away, not su table based on flood ng and on cave	V g n s Spawning cal Su vny, DAA Ka at Team	OK

* Table 1: Potent al h l l be route n s p o n e t n MYP B olog cal Assessment APPENDIX D SUPPLEMENTAL INFORMATION BASED UPON LISTS AND USFWS COMMENTS

**To be core ed ad su table h l l

1. The open ng should be at least one (1) foot n d diameter n l g n
2. The passage should not be beyond the "h l l zone" and not have an obstru on w th n 40 feet of ent ance
3. Ent ance that a flooded n p o n e to flood ng l e, d e l n on cave ng, collapsed cave, o t h e w n e n n e s s e b e t o b e e d c l e d

4. Open rgs that have occu ed recently (e., w th n the past 12 months) due to c eat on o subs dence w ll be excluded.

***Potential const uct on impact evaluat on was based on■

1. Locat on and p ow m ty to l m ts of d stu bance (LOD)
2. T end away from LOD
3. Trapping ash c sett ng/g ad ent
4. Hyd ology
5. No se
6. Spec f c const uct on act v tes n p ow m ty to featu e

****Buffs exccs

DIAA (D ape Adm Assoc ates) Ka st Team (qual f cat ons attached)

B ll Balfou – P ofess onal Geolog st, ka st and natu al esou ce focus. 45 yea s expe ence cave and ka st mapp ng and esea ch. West V g n a and V g n a Speleolog cal Su vey.
M ke Kul et l – Geospat al Analyst, geology, env onment, ut ly focus. 35 yea s expe ence cave and ka st mapp ng and esea ch. V g n a Speleolog cal Su vey.
Douglas, Hen y n (1964). Caves of V g n a. V g n a Cave Su vey, Fa ls Chu ch, V g n a. 765 p.
Hempeal, John C. (1975). Caves and Ka st of Mon oe County, W.Va. West V g n a. Speleolog cal Su vey Bu let n 4. P mbsu gh, Pennsylvan a.
Hols nge , John R. (1975). Desc pt ons of V g n a Caves. Bullet n No. 85. V g n a D v s on of M ne al Resou ces, Cha lottsv llz, V g n a.