

WHAT LIES BENEATH

A person in silhouette is exploring a cave. The person is holding a flashlight that illuminates the rocky walls and floor of the cave. The scene is dark, with the light from the flashlight creating a strong contrast and casting long shadows. The person appears to be moving through a narrow passage or a chamber within the cave.

ISSUE 13, VOL. 1
2014
SEMO GROTTTO

SEMO GROTTTO

WHAT LIES BENEATH
ISSUE #13, VOL. 1, JANUARY 1, 2014 – JULY 31, 2014
EDITED BY CHAD MCCAIN

SEMO GROTTTO BOARD

CHAIRMAN:

"BOBCAT" ROB KAVALIAUSKAS NSS56328

VICE CHAIR/MSS DIRECTOR/EDITOR:

CHAD MCCAIN NSS60641

SECRETARY/TREASURER:

CHRIS "COWBOY" GOODSON NSS58775

MEMBER-AT-LARGE:

EDMUND TUCKER NSS60092

MEMBER-AT-LARGE:

MARK BREWER NSS64547

COVER PHOTO:

Michael Bradford hanging out in "Bolt Climb Pit" during survey #68 in the Blackfathom River Cave.

Photo by Chad McCain

INDEX PHOTO:

Edmund Tucker shooting the survey shot that connected Lilly Cave to nearby Spirit Cave (Lilly Cave B). After the shot was taken a route was found through the breakdown that was traversable, although very dangerous.

Photo by Chad McCain

REAR COVER PHOTO:

Brian Biggs, Edmund Tucker, Gary Resch, Marc Miles and Chad McCain at the entrance to Lilly Cave in Union County, Illinois after the 2nd survey trip into the cave.

Photo by Chad McCain

INDEX

Article	Page
Lloyds Cave / Purgatory Pit Survey	1
Berome Moore Cave Survey	4
Berome Moore Cave Survey	5
Crevice Cave Survey	7
Blackfathom Pit Survey #68	10
Rimstone River Cave	12
Blackfathom Pit Survey #69	13
Batty's Cave, Impossible Pit, Squirrel Tail Cave Surveys	16
Crevice Cave Survey	20
Beehive Shelter Cave, Hoodoo Natural Tunnel and Hoodoo Cave Surveys	22
Crevice Cave Survey	25
Chert Cave Survey	27
Vulture Den Cave	29
Lilly Cave Project	30
Taney County ridge walking	36
Blackfathom River Cave Survey #70	37
Onandaga Cave	41
Blackfathom River Cave Sump Prep	42
Overview	43



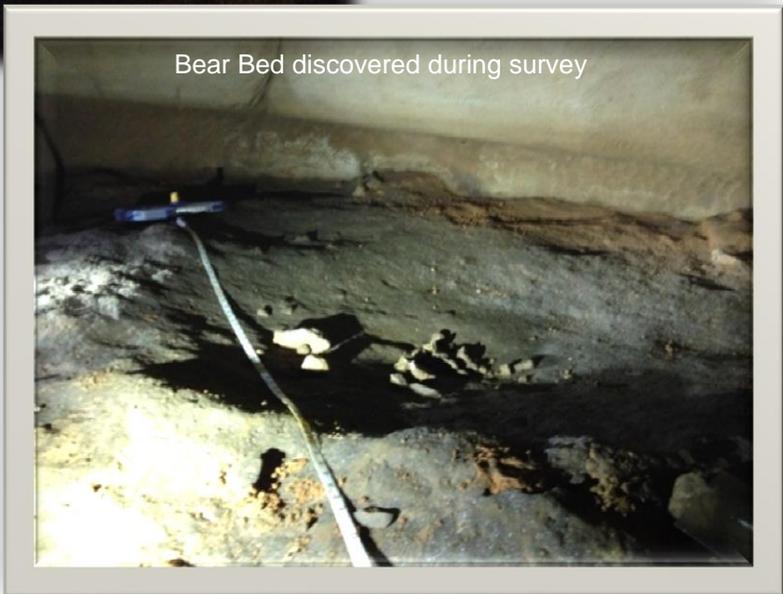
Ray Shawn getting the survey started

had to grab our cave packs and go. We took ropes, vertical gear, hammer drill, bolts and survey gear into the cave and surveyed the entire upper level on the west half of the cave. We basically started at a wall of breakdown where the cave ends. A large sink on the surface sits directly above the rubble pouring out of the ceiling channel.

There is a lot of breakdown in the upper level and after Ray and Norm got me set up with 5 initial shots, I started sketching to catch up while they explored the upper level and planned a survey route. Ray and I were training Norm so

*LLOYDS CAVE - PURGATORY PIT
SURVEYING TO HEAVENS HANGOVER
MONDAY, JANUARY 6, 2014
BY CHAD MCCAIN*

Ray Shaw, Norman Gallup and I met up at the Arnold Farm in Ste. Gen to continue the survey of the Purgatory Pit/Lloyds Cave system. We chose to enter the less vertical, but still vertical, Take Out Pit entrance to the cave since it was around -5 degrees when we arrived. We showed up fully dressed and only

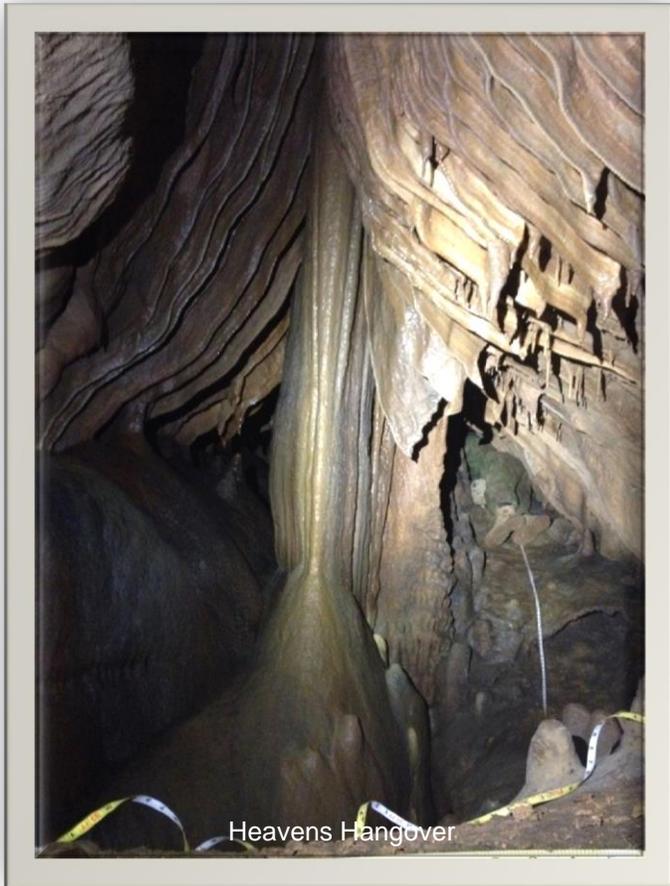


Bear Bed discovered during survey



Ray was teaching him all of the ropes. Once I caught up with them we took the time to plan a shot that would go through Purgatory Pit's fall zone. This involved me pushing off several 100-500 lb rocks that were precariously sitting on a sloped ledge above the canyon. It was also noted that a wall of steam was pouring into the Purgatory Pit fall zone and falling down below to the canyon. We captured video of it as it was a very bizarre site. Take out pit was blowing steam, and Purgatory Pit, approximately 40' away was sucking in a ton of subzero air.

Survey continued and Ray discovered a Pleistocene bear bed at the top of the canyon, only a few feet away from the canyon and a 70' fall. It is my assumption that the



that was noted as "Heavens Hangover" in Joe Walsh's original trip report from the cave in the 1960's. Survey ended a few shots later in another formation choke with an upper ceiling channel that was 2' higher than anything else in the area.

We moved back to a clean vertical drop through the tight canyon where we rigged up the vertical shot to drop down to the canyon floor below to tie into the rest of the survey. After the tape was rigged, I bolted a new pit drop in the middle of the canyon which was quite tight but rather cool to be rappelling through the canyon. What an experience. Once at the bottom we shot into station Z6 and ended the day's survey.

We then took Norm on a short trip looking for bats and we found several clusters of little browns, numbering approximately 125-150 bats total. Unfortunately visible signs of WNS were found on one bat and several photos were taken and sent to the MDC bat biologists.

Interestingly enough, all of the cold air from Purgatory Pit was going straight down the waterfall pit in the middle of the cave where all of the water drains. Airflow was noticeable but not tremendous. We checked the rest of the cave out and I did go through the howling wind tunnel in the middle of the cave and it was hardly moving any air but the crawl was dry.

Only a dozen bats were found between the wind tunnel and the climb up that would lead into the Lloyds entrance room of the cave.

We headed back, climbed up, derigged and hauled our gear out of the cave. Our clothes were frozen solid in the 5 degree temps as we exited the cave. 348.6' of survey was obtained in 16 survey shots. 1302.5' is the new length of the cave.

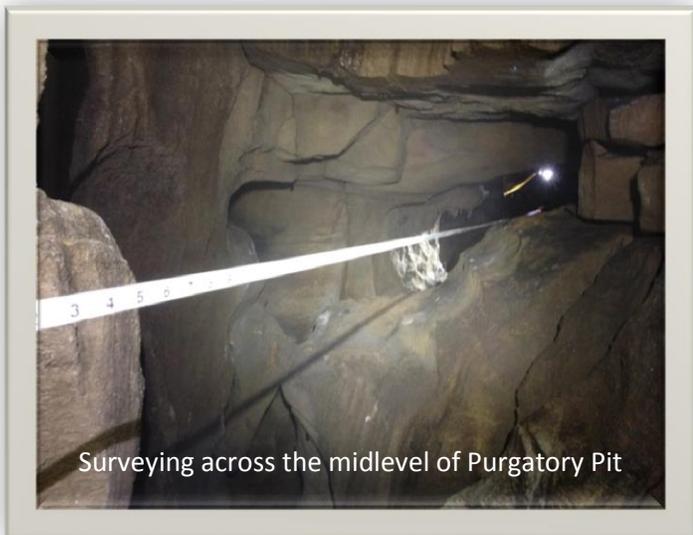
One interesting note, at the breakdown collapse at the north end of the red survey line in the included photos, is a hole in the floor. Directly below that hole in the floor is a 30' high dome just off of the main stream crawlway which is nothing but breakdown. Only 1.5 to 2' separate the ceiling of the dome to the floor of the upper level passage. Maybe one day we will voice and light connect it, but these are the things you learn when surveying and plugging in the data.

The upper level survey we just completed also ends at a flowstone choke directly above the waterfall pit in the lower cave. There is a midlevel running under this section as well, definitely an interesting cave.

The vertical profile photo shows the vertical jungle gym that the cave truly is. One upper level survey remains on the Lloyds cave side; unfortunately tying into the original survey is going to require a lot of duplicate shots back to a flagged off station. What a pain.

bears would have come in through the sinkhole collapse that is now sealed off at the end of the cave as the other two entrances would have been impossible based on the nature of the vertical relief.

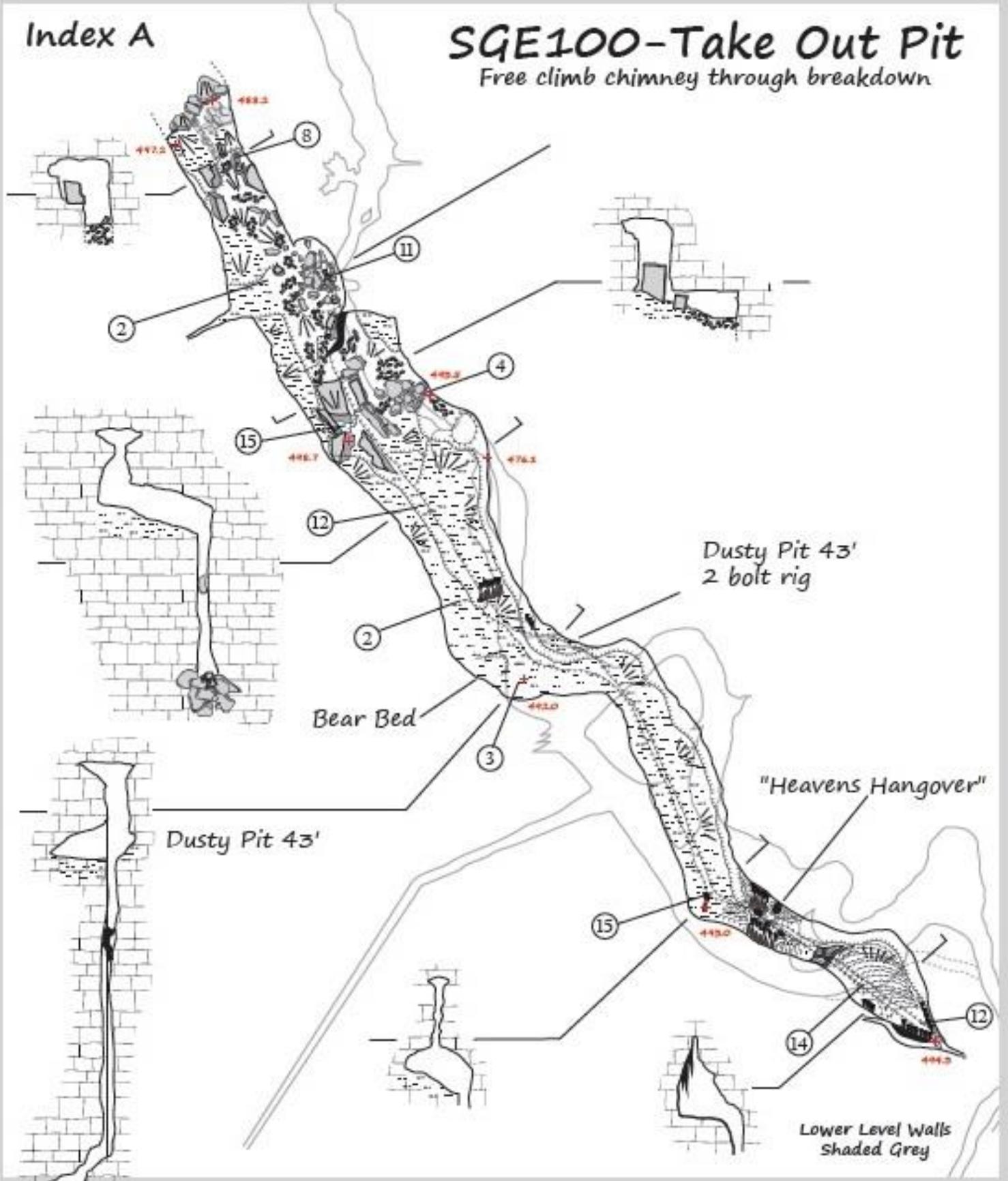
The bear bed was noted and survey continued on. The entire time we were seeing Tri Color bats, Northern Long Ears and Little Brown bats in the cave. Being careful not to disturb their slumber we continued on to a large formation cluster in the middle of the cave



Index A

SQE100-Take Out Pit

Free climb chimney through breakdown



Symbol Legend

**** Dripline (notes the start of the cave)

--- Clay Floor

LLOYDS CAVE / PURGATORY PIT MAP CUT



The survey started at station DC1, which was down in the canyon just before the crossover leaves cat tracks passage. After 11 shots we reached the crawlway piracy of the crossover and I headed in, backing up and setting up shots as we went. Norm and I surveyed all the way in to where the water left the passage under a ledge on the right. As the survey moved into the tight portion of the crossover, I had to shed off my cave suit as it restricts me too much when doing arms forward belly crawls. I went in and scoped out the

passage to form a game plan, but inevitably we ran out of time.

I had to call the survey due to time constraints and we left a permanent station on flake near the ceiling of the entrance to the tight portion of the crawl. Station D16 was the last station and 217 feet of survey was obtained.

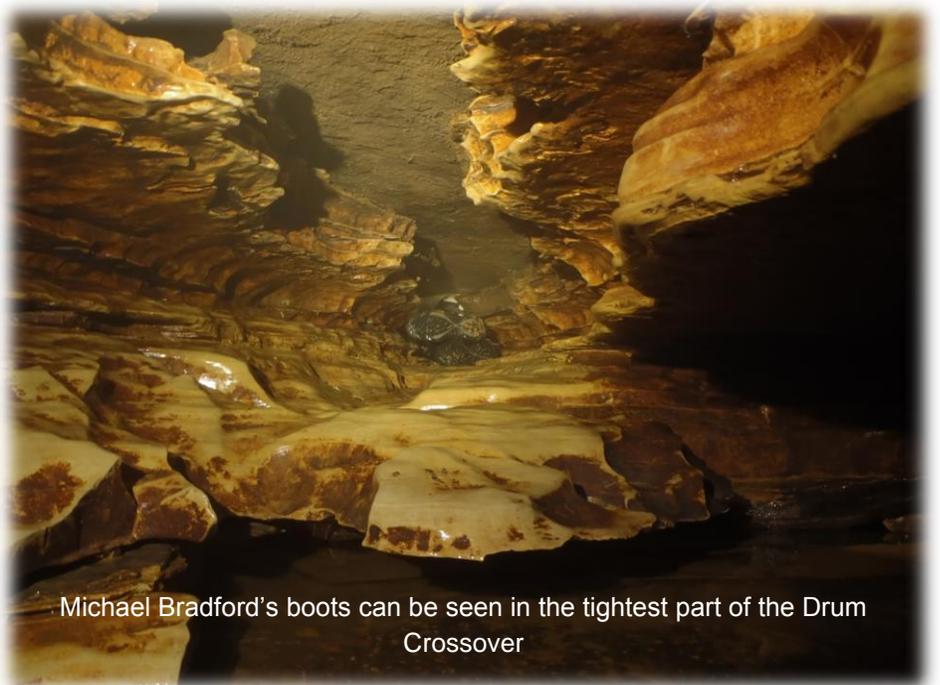
BEROME MOORE CAVE

SURVEYING THE DRUM CROSSOVER

SUNDAY, JANUARY 12, 2014

BY CHAD MCCAIN

The MMV Grotto was having a bat count today, being led by Shelly Colatskie, the MDC Bat Ecologist. I took this opportunity to survey the Drum Crossover, which is a side passage on the east side of Cat Tracks passage. Norman Gallup, Richard Young and I headed in for the survey, while the bat counters did their thing. The Drum Crossover is named for the founding SEMO Grotto member Dennis Drum. Scott House contacted me about closing the loop and did not hide the fact that it would not be easy. I had personally been to the downstream end of the crossover, where the crawlway pops out of a wall at the ceiling of a 15' high bore hole, on a survey trip with Bob Osburn, so I knew where the tie in stations were at Main Stream.



Michael Bradford's boots can be seen in the tightest part of the Drum Crossover



Cat Tracks Passage

*BEROME MOORE CAVE
SURVEYING THE DRUM
CROSSOVER BACK TO
CAT TRACKS
MONDAY, JANUARY 13,
2014
BY CHAD MCCAIN*

Picking up where we left off on the previous day, Michael Bradford helped Norman Gallup and I finish the survey of the Drum Crossover. We took the south passage out of Base Camp to the Annex Crossover, and the East Outer Passages to Main Stream. The water was flowing above average and was very cold from the snow melt. We arrived at station M69 and started the survey down the left trunk passage to the Drum Crossover. It only took 2 stations to get to a point where we could shoot right into the top of the passage above the waterfall and straight into the tight crawlway. After getting the survey set up, I put on all of my layers of poly pro and even put on a trash bag to keep the water spray from soaking me. I also put on a make shift belt out of a piece of webbing and caribiner to clip into the hand line once I climbed the waterfall.

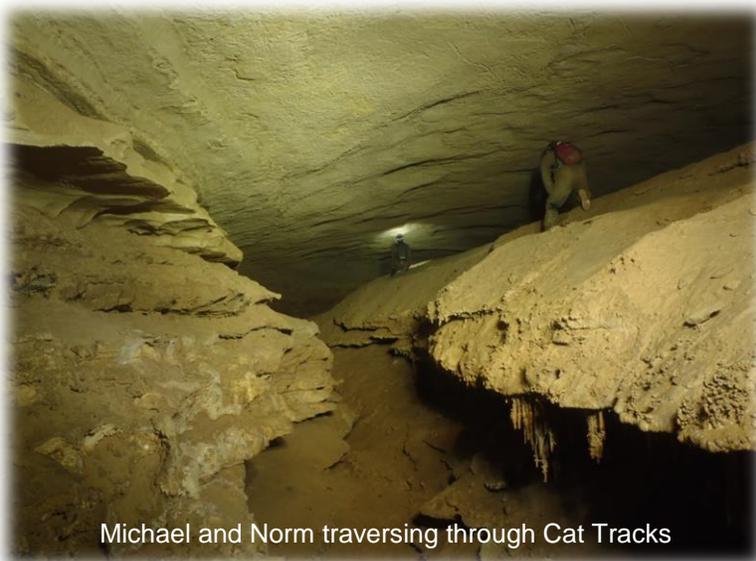
The climb was fairly easy as there were many hand holds. The hard part was

moving the long survey pole, the short survey stakes, and my sketch book up along with me as I climbed. I packed the loose items out of the way on a ledge at the top, removed my pack and shoved it into the crawl, then climbed to the top and made my way into the crawlway. Looking back on it, it was rather fun but I see no point in doing it again. The hard part was getting in with the belt and carabiner clipped in, but once I was in, the floor dropped a few inches and it made it easy to remove the belt.

I crawled to the end of the tight portion, turned around, stowed my pack, then crawled back to the top of the waterfall and set up the survey shot. Once the shot was done, Michael climbed to the top of the waterfall and I backed up and set up the next station. We took the measurement and I did double back sites and we then moved forward after Michael made his way into the crawlway. He removed the belt

like I did and we took the next shot. It only took 3 shots in the tight crawl to tie into yesterday's station at DC16. The first shot from the top of the waterfall into the crawl was the worst as I had to put my face half way under water to take the readings on the Suunto.

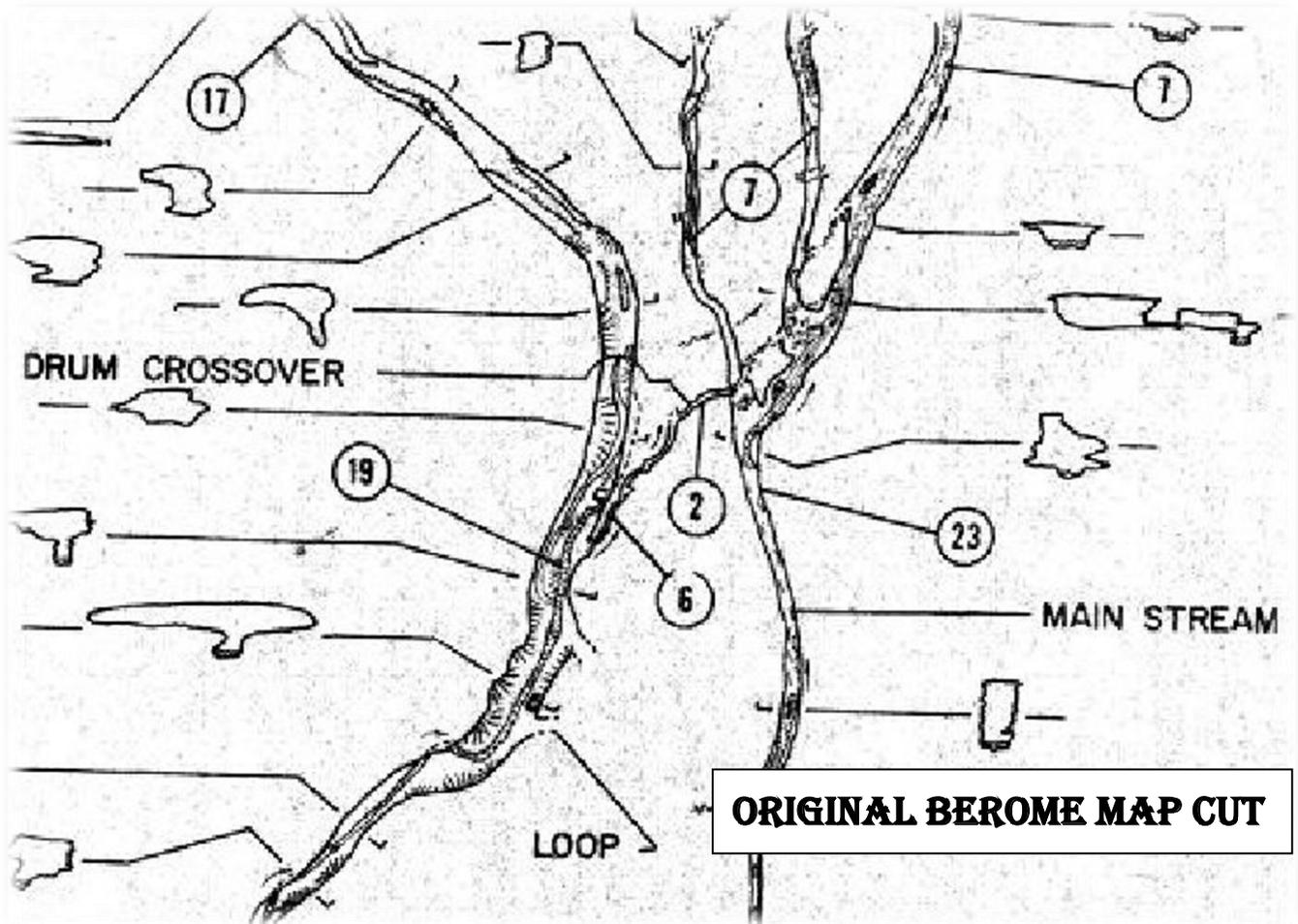
After the survey was complete, Michael went back to help Norman up the waterfall. I was busy doing the sketch when Norman



Michael and Norm traversing through Cat Tracks



Pleistocene era large cat tracks in the clay



climbed up but when he reached the top of the waterfall and looked into the crawl, I heard him say, "How in the hell did you guys get in there?" I had to laugh to myself when I heard it.

We made our way out of the tight crawl and into the T junction where a dry fork heads north inside the Drum Crossover. At this point the clip strap on my Swaygo blew out and I had to cinch it shut with zip ties. The survey started north in the dry passage and it was fairly quick survey as Michael got the hang of setting the virtual stations right off the bat. After the survey was over he was convinced that this was definitely the way to survey.

We made it 9 shots in before we left a permanently flagged station, with no number, at DCA9. After that the passage was actually stacked and a horrible crawl left off at the bottom of the passage to the right. The upper level went to the left and that is the line Michael surveyed into. He immediately hit a steep uphill slope to a higher ceiling and he heard an echo. I was really getting cold so I told him to check the passage out of he really thought it was opening up, we needed to wrap it up due to how cold I was getting. He pushed forward and all of the sudden he said he was in a 30' wide 10' high borehole with flagging string everywhere. I said that he was definitely in cat tracks passage and that

we needed to survey through and find a permanent station to close a loop.

Michael made his way back in, set up the shot then backed up the steep hill with his hands full of gear making it impossible to use his hands. Quite the acrobatic maneuver I must say as it was a chore going through it trying to keep my hands and sketch book clean. Once in the bore hole we shot back to station C63, which is the current end of survey in Cat Tracks. We left our gear on the ground, then retrieved our packs, loaded up all of our gear, then walked to the bitter end of cat tracks so I could hopefully warm up.

We ate lunch to the sound of water pouring in at the end of cat tracks passage, then loaded up our packs and headed out of the cave. We stopped at various spots along the way out, taking various photos of formations, cat tracks, and large borehole shots with Michael's light. His new pulsar lamp is pretty awesome. 324.3 feet of survey was obtained today, and the northern crossover loop closure was new survey that was not on the original map.

When it was all said and done, Michael said that today was why he loves surveying. Surveying a crap side passage and unknowingly popping out into a large borehole passage that none of us were expecting to pop out into. I have to agree.



forward and covered the entrance hole. Norman had his hammer along and began to chip away at the ice. After about 40 minutes of continuous chipping he had the entrance hole opened enough for entry.

I got my pack and slid across the ice into the entrance only to see that there were two seeps in the ceiling of the tunnel on the left side that had built the floor up with ice a couple inches. Normally a couple inches wouldn't make any difference but in a "back rubbing" belly crawl it was significant. These seeps had also built some columns along the left wall that severely decreased the width of the passage. I slid out and Norman with hammer in hand slid in to assault these new ice formations. After a while he had opened up the tube enough for us to get through.

Richard and I had been sitting down

in the drop hole to get out of the freezing wind and were quite happy to be able to slide into the cave. We entered the Pipistrel entrance at 11:00 A.M. As I was sliding across the ice I could hear Norman up ahead still chipping ice. There were icicles about a hundred feet down the passage. We got together at the normal gathering spot, got our packs straightened out, brushed off the chipped ice, thawed out our fingers and toes and headed on in for the survey. We had set a leisurely pace

CREVICE CAVE

CONTINUING THE RESURVEY

THURSDAY, JANUARY 16, 2014

BY PAUL HAUCK

I met with Dick Young and Norman Gallup at the Park-et Restaurant. Our objective for the day was to continue the re-survey of Merlin's.

Norman had brought his construction trailer which is enclosed and has a heater in it otherwise I wouldn't have tried a trip in these frigid conditions. We suited up and headed over to the entrance at 10:20 A. M. only to find-

The entrance crawl was totally blocked with an ice fall this time. Last survey there was just a little fall over the entrance hole which I was able to break out with a rock. This time water had seeped out of the ledge on the left side of the drop hole and created an ice flowstone that extended down and across the floor of the drop hole. Then the ice curtain extended

Norman hammering the ice away from the entrance





as usual to keep from overheating.

We arrived at the last station of FSB 97 at 12:40 A.M. and continued on downstream. During this whole survey we were in at a least one foot of water, so we would find a slab or rimstone dam to stand on to get into shallower water, because the water was colder this time of year. The passage was pretty mundane with upper and lower meanders, sometimes opposing each other and sometimes confluent with each other. There were several sets of rimstone dams on the floor which created the one foot deep pool stretches. The mud banks were quite soft due to a recent flooding, but this is pretty normal for this part of the passage. Shortly before we quit we encountered a high level canyon passage about 12 feet overhead.

On the North side of the passage we were able to access the canyon to see that it went about 20 feet and mud filled. On the South side of the passage there was no convenient access to the canyon passage due to the vertical wall of the main passage. There was no evidence that anyone had been up there so it could be

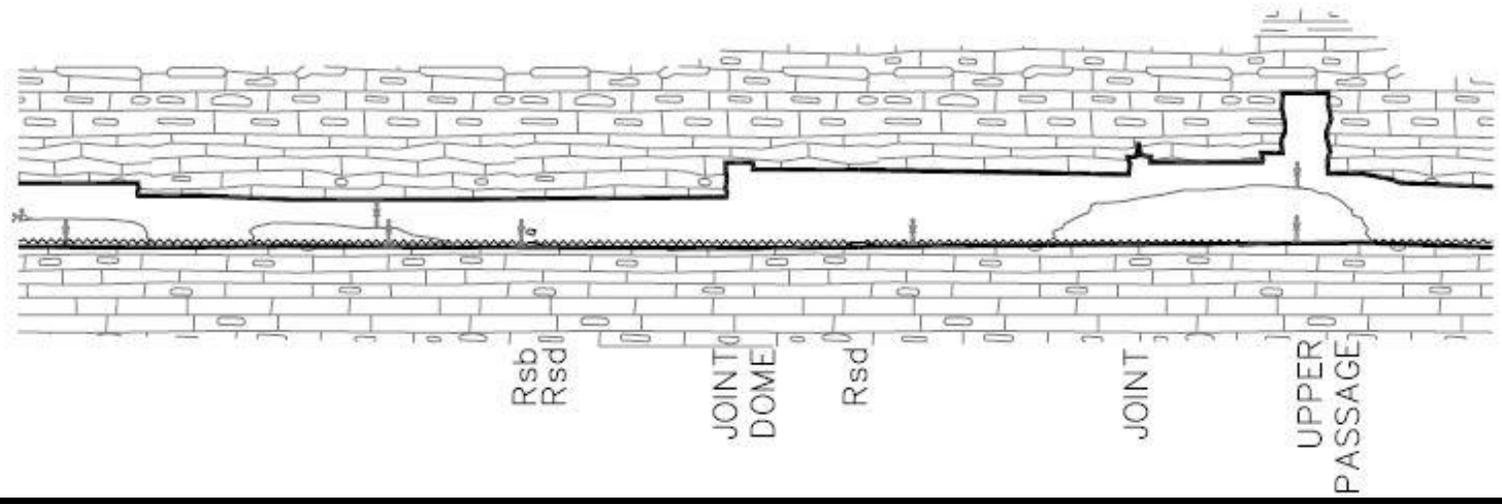
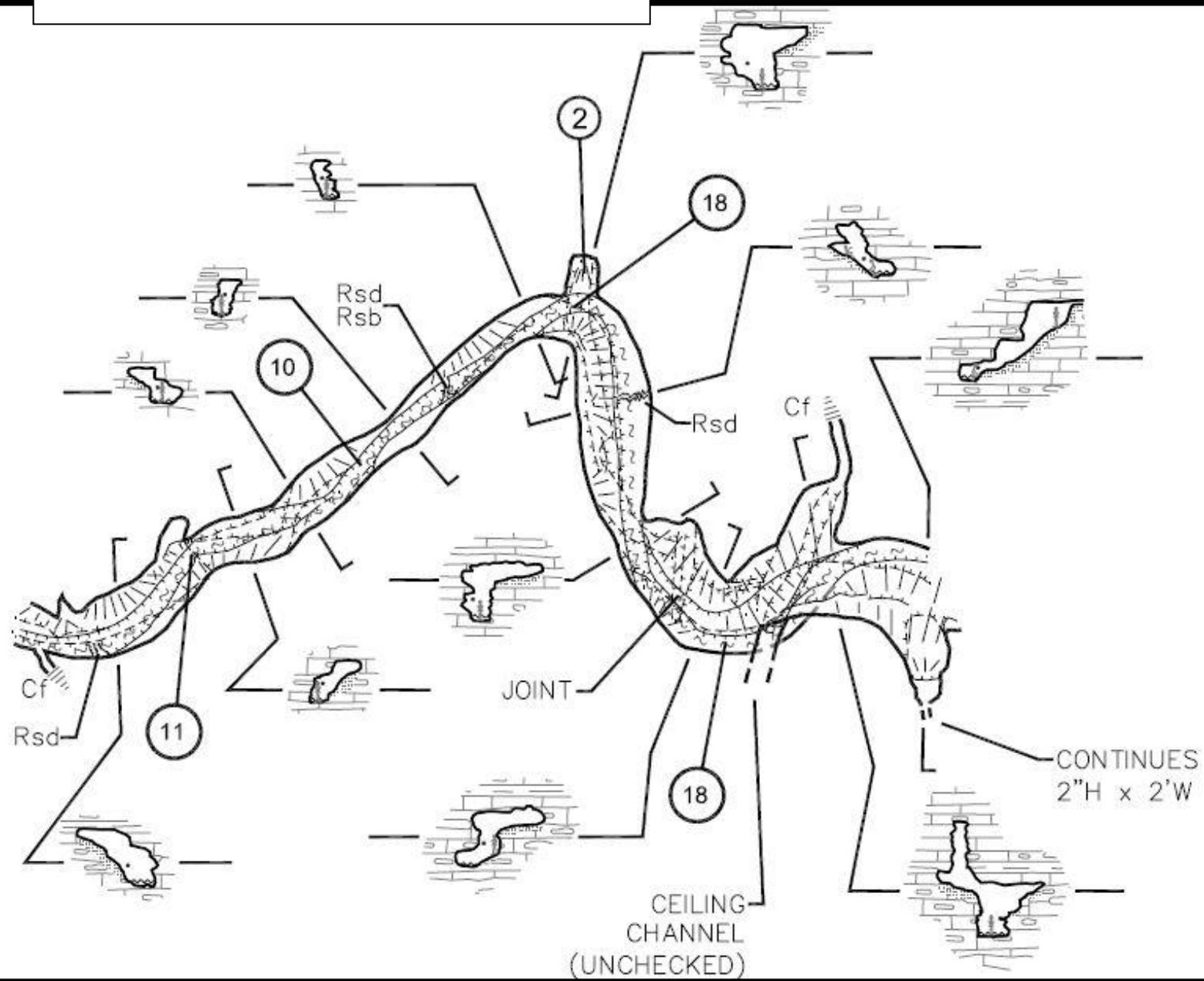
virgin passage. Norman did some set up work in preparation for a climb at a later date. When the time was running out we found a convenient mud bank where we could leave a recoverable station up high out of any possible danger of current from a flooding. At this final station there was a ceiling dome on the right side of the passage that appeared to continue at about 2 inches in height. Just ahead for the next survey trip there are a couple passage segments that will have to be dealt with.

We called it quits for the day here at 5:30. I finished up the sketch while Dick and Norman cleaned and rolled up the tape. I got the survey gear re-packed for the trip out and we headed out.

We got out of the cave at 7:30 P.M. After changing clothes in the luxury of a heated trailer, we headed to the Burger King for supper since everything else was closing down. We had totaled 369.5 feet of survey. This is part of FSB98. Paul D. Hauck

CREVICE CAVE

FSB-98 MAP CUT



BLACKFATHOM RIVER CAVE

SURVEY #68, BLACKFATHOM PIT SURVEY

WEDNESDAY, FEBRUARY 5, 2014

BY CHAD MCCAIN

Ray Shaw, Norman Gallup, Michael Bradford and I met up at Blackfathom Pit on a very cold day for doing the pit survey. The cave was pumping out a ton of steam and I headed in to rig Blackfathom pit with a 150' rope, and I also rigged the 2nd set of bolts with a short rope to swing into the balcony for crossing over to Bolt Climb pit. I rigged Bolt Climb pit with a 120' rope and Norm joined me on the Balcony for a little spring cleaning. I climbed back up the short rope then hung out in the attic while Michael and Ray set up the shots from the surface.

After a mishap my disto took a spill down the 113' Blackfathom pit to the floor below. Norm retrieved it and it was still working. He brought it back to the top and we took shots into the Radio passage where Edmund hung out on the location trip, and into the dead end Broken Rib passage. Ray came up with an idea to put our survey



Ray and Michael at the top of Blackfathom Pit

lights on clothes pins to clip to the tapes for the vertical spots. It worked very well.

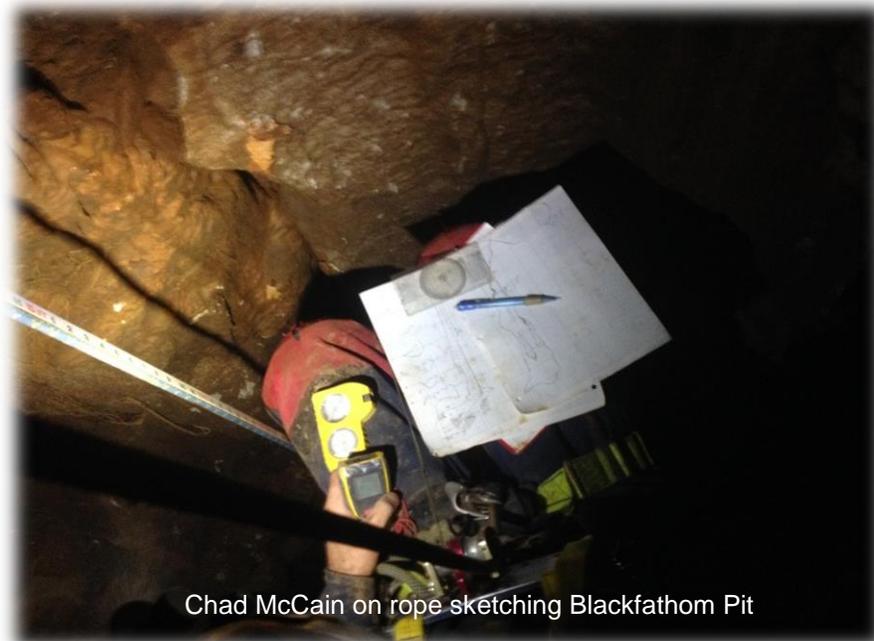
Michael went on down to the bottom with Norm while Ray and I surveyed the balcony to the Bolt Climb Pit. After we were finished we rappelled on down to the bottom and finished the tie in survey to station DO5. After that was finished I began sketching the profiles and cross sections for the pit. Norm, Ray and Michael continued to survey down to the stream to figure out the

true depth from the surface, which was 151.2' to the stream from the surface. For the next 5 hours I sketched in the north/south pit to stream profile, the east/west cross sections and the floor plans for the pits every 10 feet to show how the pit changes shape as you rappel through it.

While this was going on, Ray took Norm on a trip down to basecamp to show him around and Michael continued sketching from the pit down to the stream. After he was finished he climbed the bolt climb pit rope and confirmed the lead 50' down was easy to get into. After he was up I was just finishing up the Blackfathom Pit sketching and I met him in the Balcony. After a brief snack, I dropped Bolt Climb Pit and did an easy pendulum swing into



Michael on rope during survey



Chad McCain on rope sketching Blackfathom Pit



Sharp meander cuts in the Salem Limestone at the bottom of Bolt Climb Pit

what we ended up calling Pendulum Passage. After I made it up the steep slope to a safe spot, Michael joined me and we tied the rope off to a very large natural flake of limestone.

There was a small 8-10' pit with a short side passage at the tie off, and the entire area was all flowstone and clay. Several bats were scattered about and the passage continued upward at a 30* angle. I stopped at a constriction and Michael continued on while I went back to the rope and rappelled to the bottom to continue sketching the profiles and plans for the Bolt climb pit. Before I was on rope and climbing, Michael

was done with his preliminary exploration, and he said the passage continues. Vertical gear would have to be removed to continue on. He went on down to the bottom of the complex area and I continued upward, sketching along. After I was 20-30 feet up, Norm and Ray showed up. By time they were ready to climb out, and all 3 were at the top, I was done with the sketching in Bolt Climb pit. I left the rope and tape rigged in this pit. Everything else was derigged and the survey was finished. Sketching the upper level floor plans still needs to be done.

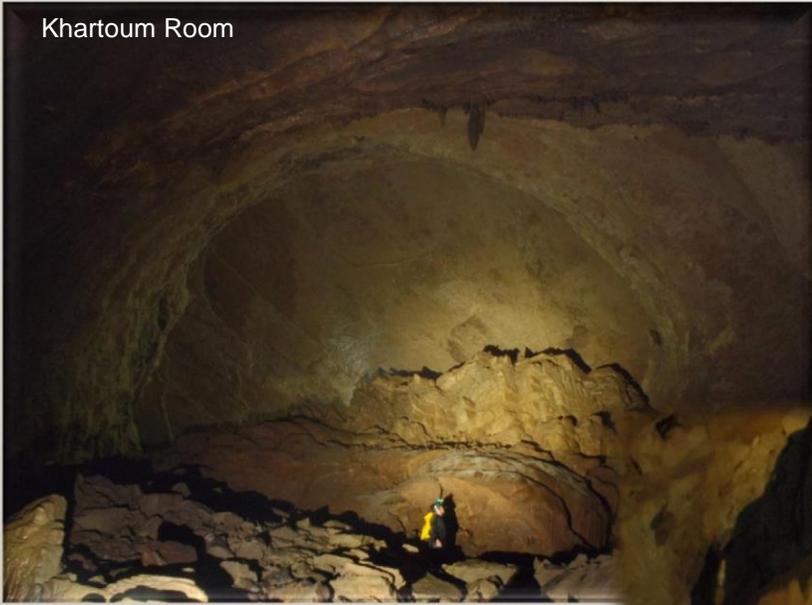


Photo of Michael in Bolt Climb Pit, from Blackfathom Pit



Michael checking out a lead

Khartoum Room



Promise Falls in under 25 minutes, but I have to say, at 6'3" that crawl is terrible. I can't hands and knees crawl but about 100 feet of it, leaving 700' of belly crawl.

Promise Falls was rigged with Chris's 10mm rope and cable ladder as usual and redirected out of the water at the bottom of the falls. The etrier left on the bolt at the lip was shredded up pretty good and getting close to being fully cut in half. 51 weeks in the cave and it was

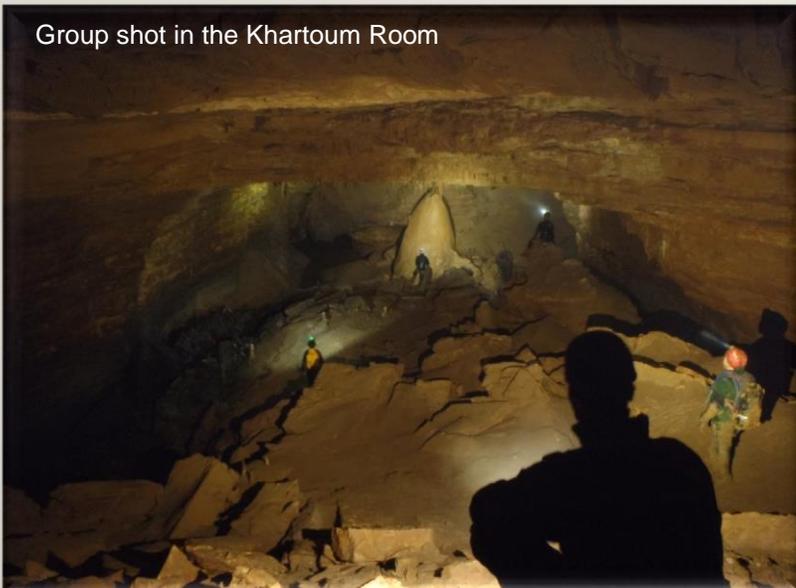
*RIMSTONE RIVER CAVE
KHARTOUM AND BELLROOM FALLS
SATURDAY, FEBRUARY 15, 2014
BY CHAD MCCAIN*

Gary Resch, Michael Bradford, Chris Goodson, Doug Kettler, Ray Shaw, Dwayne LaRose, and I met up at Goodson's farm and entered the Little Freesia entrance around 9:30 a.m. A small log and ice blockade was broken out of the way before I headed in first. The water was pretty cold but it wasn't too bad. We made it to



Bellroom Falls

Group shot in the Khartoum Room



pretty much destroyed. We made it through the keyhole but at this time Doug got sick and Goodson led him on out of the cave.

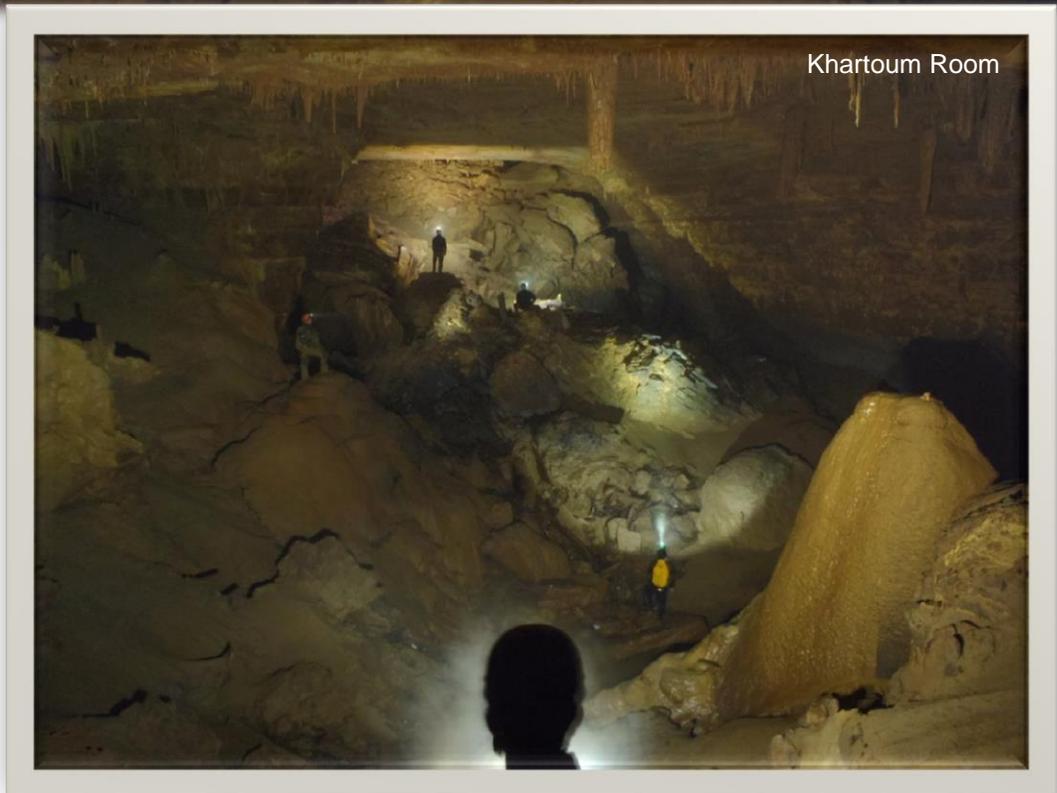
When we got to the bottom of the Aswan High Dam, there was 3' of foam in the water at the entrance to the Smith Sea Ear Crawl. We jumped in and headed out and after no time we were in the Khartoum Room. We ate lunch then took some photos from the back of the room. After that was finished we took 3 different photos from

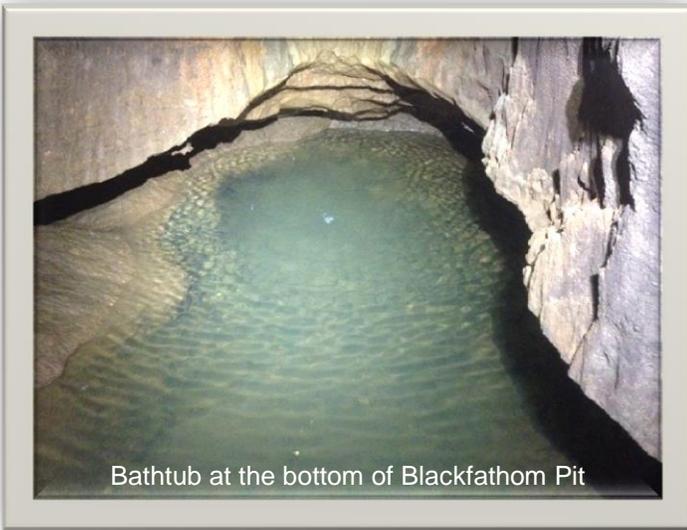
The Mighty Mite in the Khartoum Room



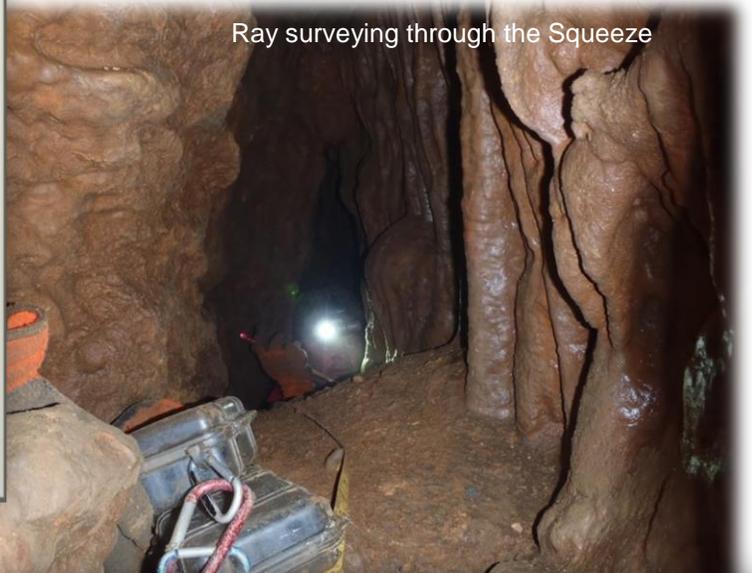
different vantage points of the Mighty Mite. After that we went down Tone Rock Road and found Bell Room Falls, which is where Honeycomb Cave comes in.

After several photos, we took off and we were back to the Khartoum Room at 1:35 p.m. We headed out, took a few photos of the foam in the Smith Sea then everyone got into the keyhole. We were up Promise Falls in no time, coiled up the cable ladder then headed out. All were out by 3:35 p.m.





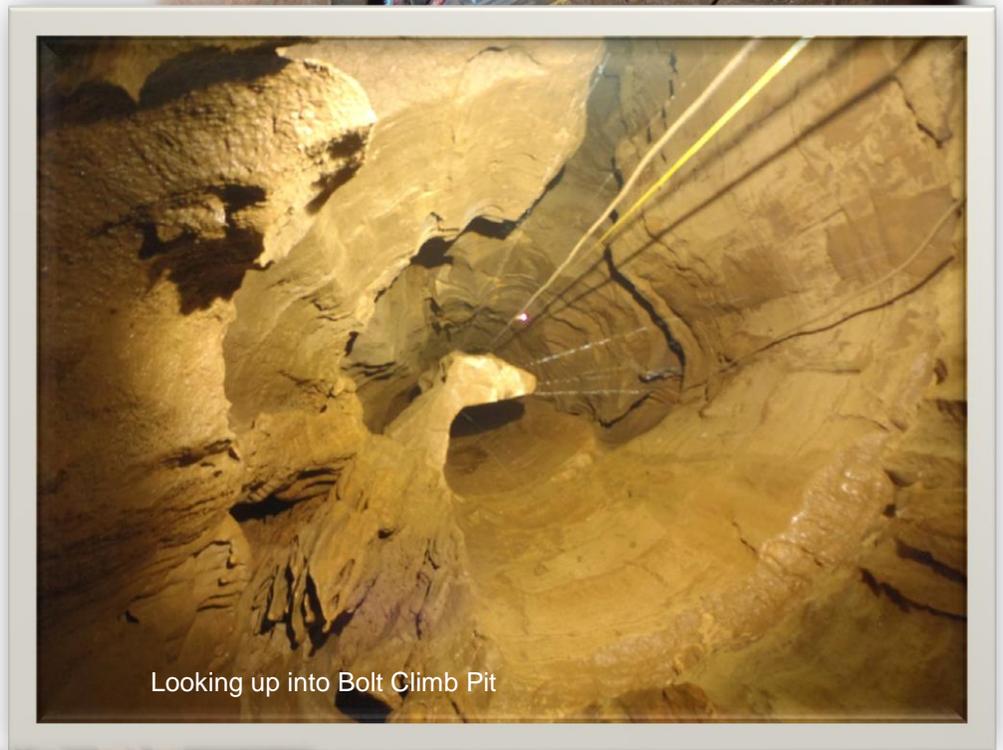
Bathtub at the bottom of Blackfathom Pit



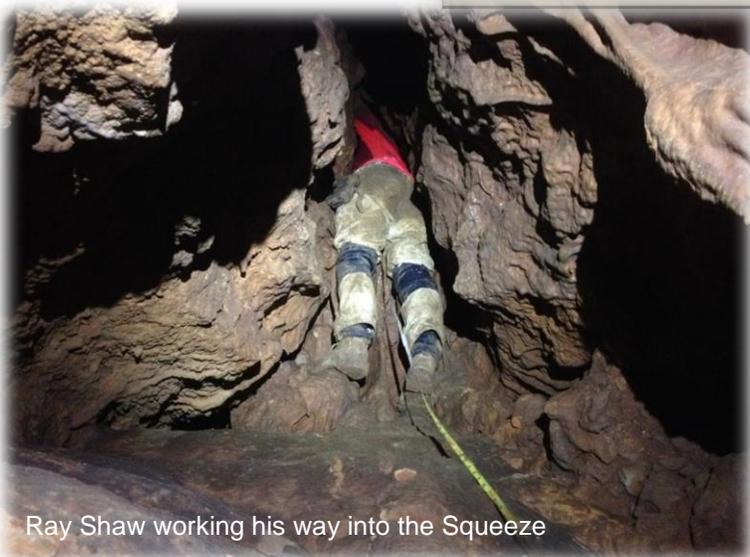
Ray surveying through the Squeeze

*BLACKFATHOM RIVER CAVE
SURVEY #69, SURVEYING THE
BLACKFATHOM PIT ENTRANCE
FRIDAY, FEBRUARY 21, 2014
BY CHAD MCCAIN*

Ray Shaw and I returned to the pit to finish the survey of Pendulum Passage, the side lead found in Bolt Climb Pit. The passage requires a pendulum swing while on rope and a steep climb up a slick mud bank to the edge of a short 8' pit. Survey continued up the steep grade



Looking up into Bolt Climb Pit



Ray Shaw working his way into the Squeeze

with a very narrow canyon joint slot continuing above to an unknown height. At the top of the climb was a 6' high ledge which Ray was able to worm his way into. We called this the squeeze as it was only 9" wide and you had to go in on your side, after making your way up the 6' high climb.

After he made it through he found a steep slope trending downward back to where we came from. It was too tight to make our way down and safely be able to get back up but a light connection was made after Ray left and I stayed to sketch in the entire area. 159.8' of survey was obtained for the day and we came out extremely muddy.

Richard Young at the entrance to Battys Cave



*BATTY'S CAVE / BUSHNELL CEREMONIAL CAVE
PETROGLYPH SURVEY AND VIRGIN PIT SURVEYING
WEDNESDAY, MARCH 5, 2014
BY CHAD MCCAIN*

Richard Young, Ray Shaw and I took Professor Michael and Neathery Fuller to SGE008, Bushnell Ceremonial Cave. We all went to the cave at first to check out the entrance, but Ray and I left shortly after to ridge walk and find new caves. We found what we called Impossible Pit and Squirrel Tail Cave, side by side about 25' apart. Impossible pit was a 20' deep pit with an



Petroglyphs



Eagle carving



Two birds facing each other

impossibly tight crawl going east and west at the bottom. No water was flowing but water was pooled at the bottom and in both directions.

Squirrel Tail Cave was a stair step cave entrance that ended in a very tight crawl that only someone like Edmund Tucker could fit into; however, due to the elevation I highly doubt it would go far as I am sure the two caves are likely connected to Bushnell Ceremonial Cave.





Ray at the entrance to Impossible Pit



Chad sketching Squirrel Tail Cave



Breakdown ceiling inside Squirrel Tail Cave

SGE123

Impossible Pit

&

SGE124

Squirrel Tail Cave

Ste. Genevieve County

Missouri

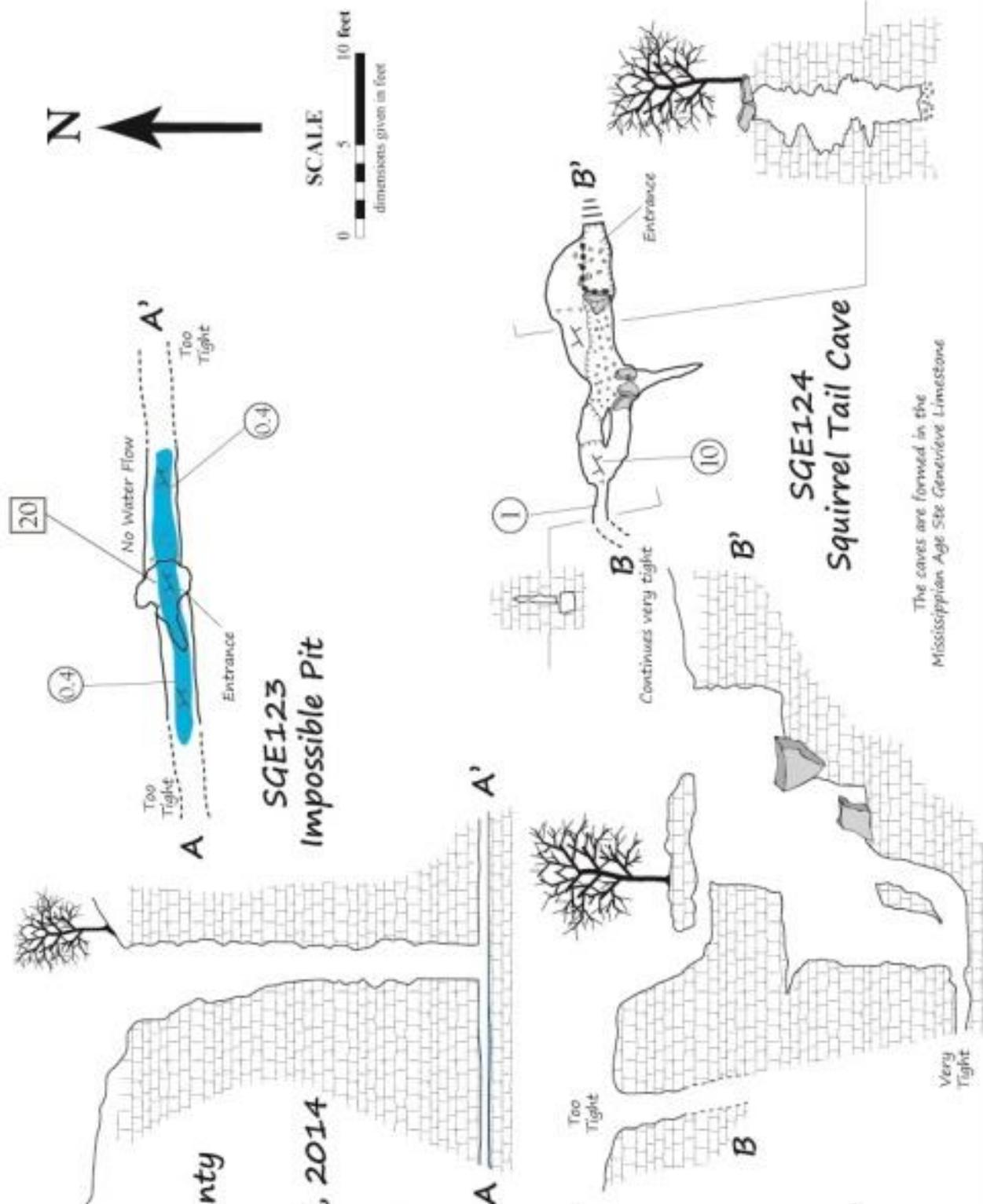
Surveyed March 5, 2014

by Ray Shaw

and Chad McCain

Cartography by
Chad McCain

Impossible pit has a depth of 20'
Squirrel Tail Cave has a depth of 16'



The caves are formed in the
Mississippian Age Ste Genevieve Limestone

CREVICE CAVE

CONTINUING RESURVEY

SUNDAY, MARCH 9, 2014

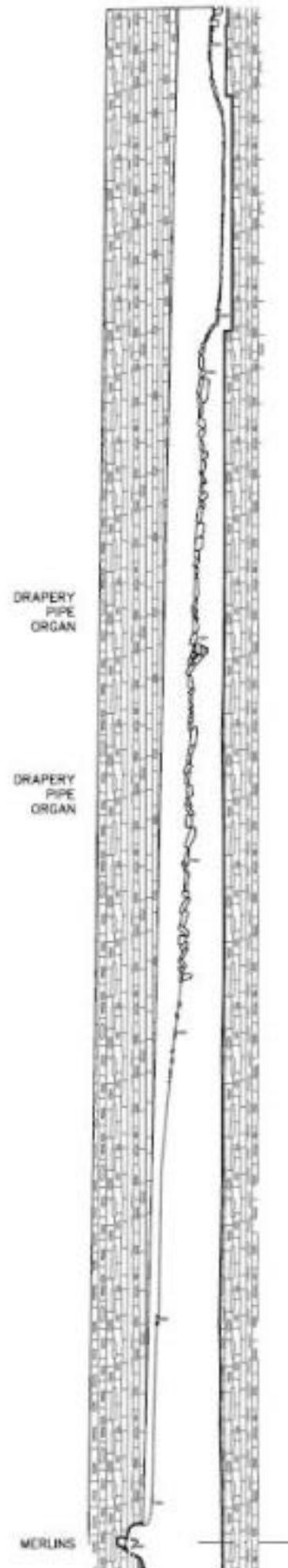
BY PAUL HAUCK

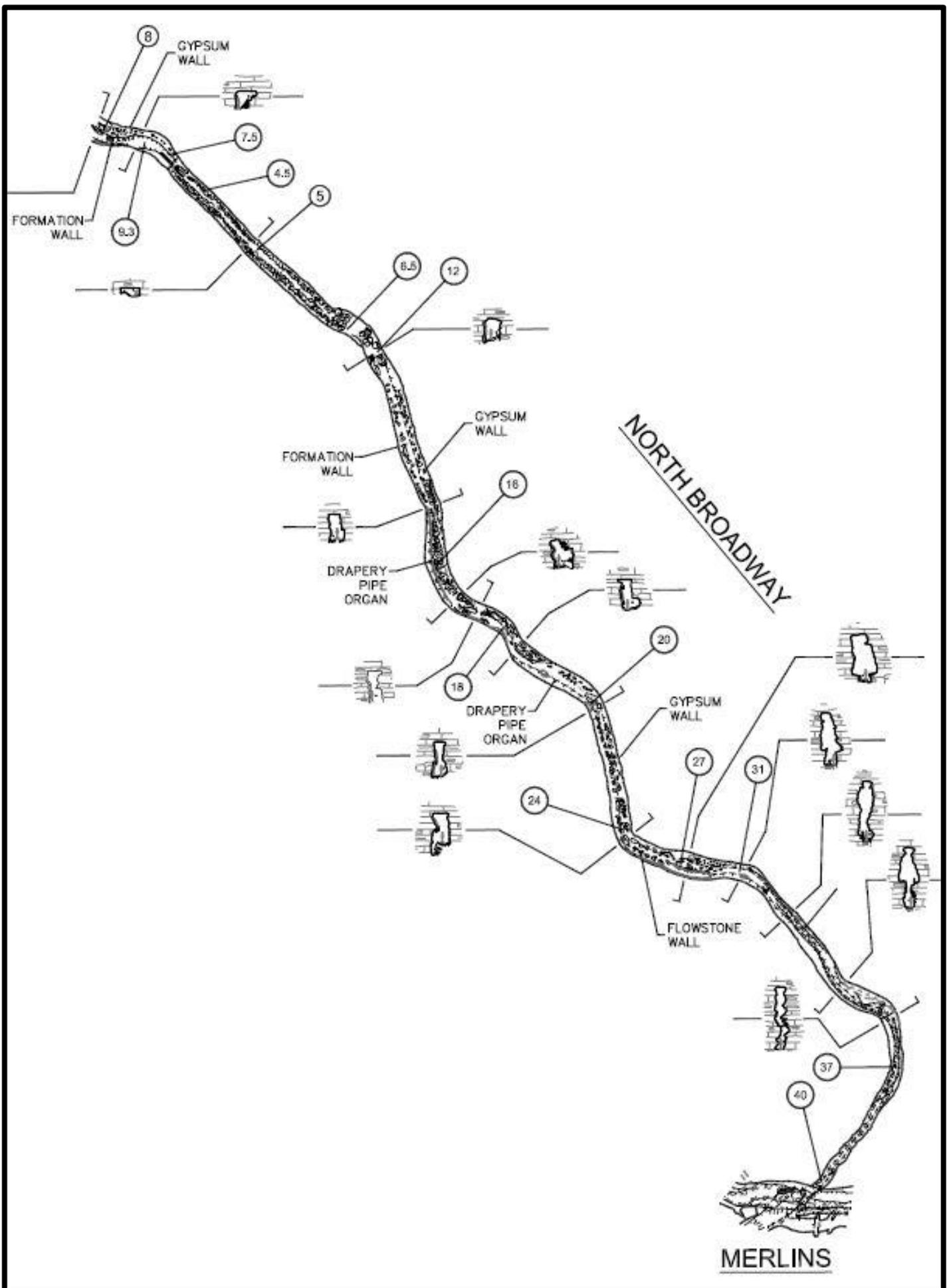
I met with Dick Young and Norman Gallup at the Park-et Restaurant. Our objective for the day was to begin the re-survey of North Broadway in Crevice Cave. We arrived at the entrance at 10:15 A. M. and found that the ice plug that had harassed us last time had all melted, so we had a normal, though wet, entry. We had set a leisurely pace as usual to keep from overheating and because I was recovering from a case of the flu.

We arrived at the tie station of FSB 73 at the Broadway junction at 11:00 A.M. Due to the location of the tie station and the high angle shot to get up into Broadway, Norman and Richard climbed up into Broadway and did a double back sight to get started. From this first station the passage was forty feet high and about 4.5 feet wide with a flowstone floor covered with silt. The passage has a width of 4.5 feet on the lower 15 feet while the upper part is more like 15 feet wide. The floor of this first 250 feet of passage gently slopes upward until you reach the break down where it is only 31 feet tall. Also, as you travel this stretch of passage, the left wall becomes flowstone coated while the right wall becomes gypsum encrusted.

When you climb up the break down you move up into the upper 15 foot wide part of the cross section. The break down appears to be largely a result of wedging from the gypsum forming in the cracks. At 500 feet up the passage there is a huge mass hanging off the right wall that looks like it could fall at any moment. Along this general area there are numerous drapery organ pips along the left wall. Some are quite melodic. The passage has reduced in size to 16 feet high and 11 feet wide with tremendous amounts of gypsum coated break down. At 670 feet there is another break down slope, this time, composed of small, thin pieces with lots of gypsum mixed in. The passage, at the top, is now reduced to a stoop walk of as little as 4.5 feet high and 10.5 feet wide. After 130 feet of this stoop, the break down floor slopes back down to 8 feet high and 15 feet wide with 3 and 5 foot wide gypsum coated ledges 4 four feet above the floor

We called it quits for the day here at 5:30. I finished up the sketch while Dick and Norman cleaned and rolled up the tape. I got the survey gear re-packed for the trip out and we headed out. We got out of the cave at 7:00 P.M. After changing we headed to the Park-et for supper. We had totaled 879.4 feet of re-survey. This is part of FSB99. Paul D. Hauck







Cliffs surrounding beehive shelter



Entrance to the Beehive Shelter

RIDGE WALKING

3 SHORT SURVEY'S

WEDNESDAY, MARCH 19, 2014

BY CHAD MCCAIN

Today I went ridge walking in Ste. Genevieve County, Missouri and surveyed 3 short caves. One was a 42' deep sandstone shelter bluff cave that I found while

looking for another cave I found historical references too online. SGE125, Beehive Shelter Cave was found in a valley, surrounded by large Lamotte Sandstone boulders and cliffs. Moving on I made my way to Pickle Creek Conservation Area and surveyed SGE063, Hoodoo Natural Tunnel, and SGE064, Hoodoo Cave. Both were found in the Lamotte Sandstone and were very unusual. Great views can be had from above both of these caves.

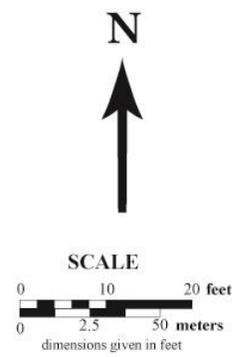
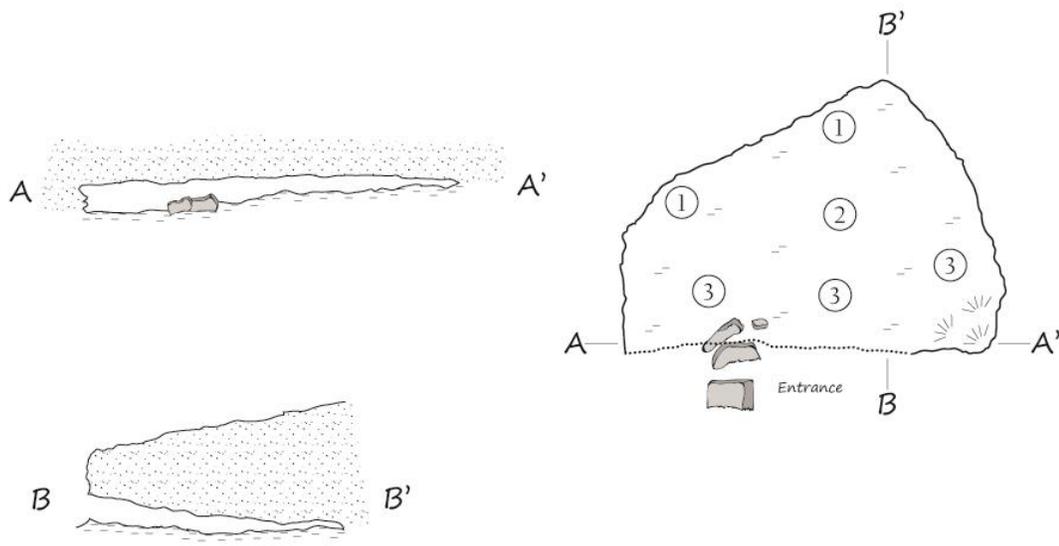
Beehive Shelter Cave

SGE 125

Ste Genevieve County, Missouri
 Survey and Cartography by Chad McCain
 March 19, 2014
 Surveyed Length: 45'

SYMBOL LEGEND

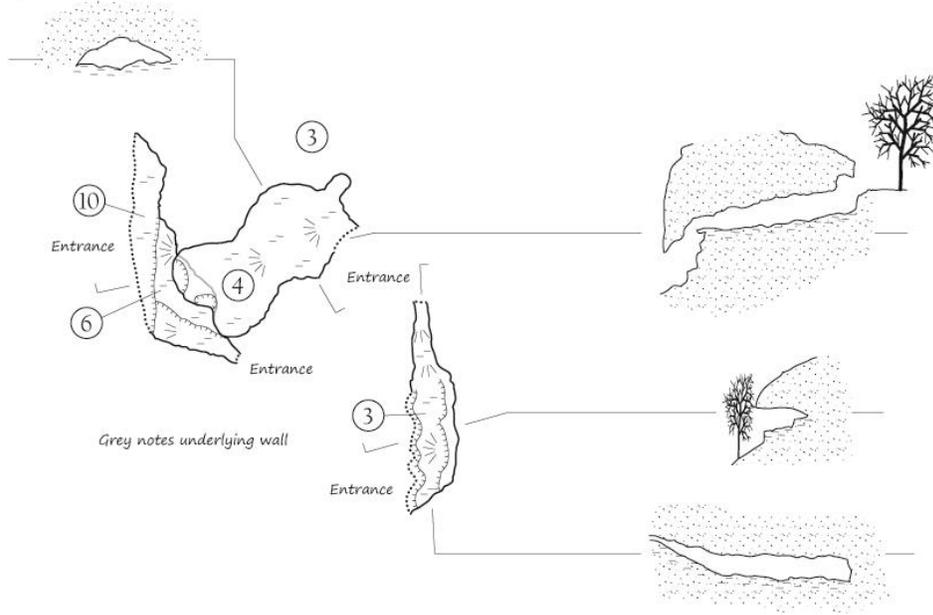
- Dripline (notes the start of the cave)
- Silt
- Walls
- /// Floor Slope
- Breakdown
- ⑤ Ceiling Height
- Lamotte Sandstone



Hoodoo Cave

SGE 064

Ste Genevieve County, Missouri
Survey and Cartography by Chad McCain
March 19, 2014
Surveyed Length: 48'



SYMBOL LEGEND

- Dripline (notes the start of the cave)
- Silt
- Walls
- /// Floor Slope
- └─ Ceiling Ledge (points towards the drop)
- └─ Floor Ledge (points towards the drop)
- ⑤ Ceiling Height
- Lamotte Sandstone



Hoodoo Natural Tunnel

SQE 063

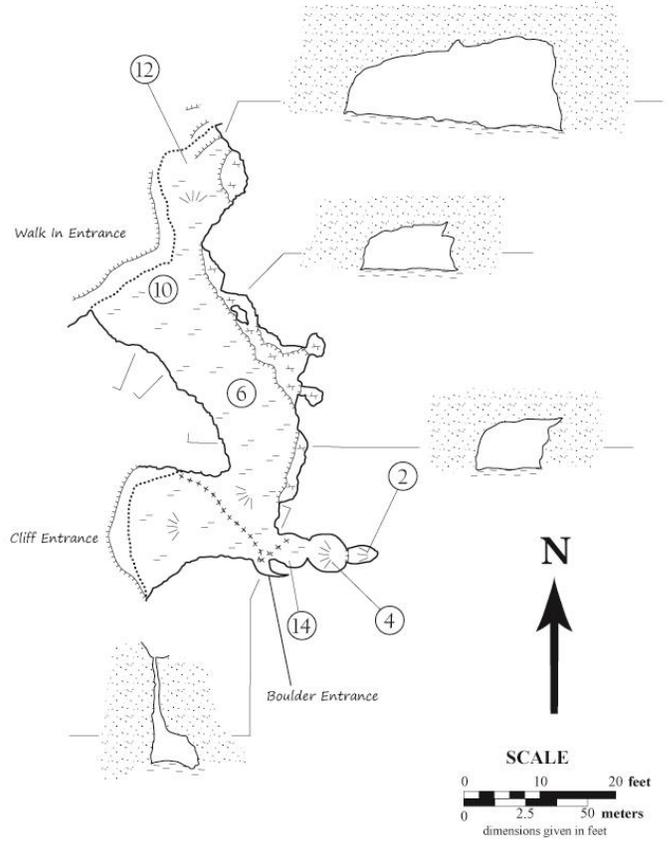
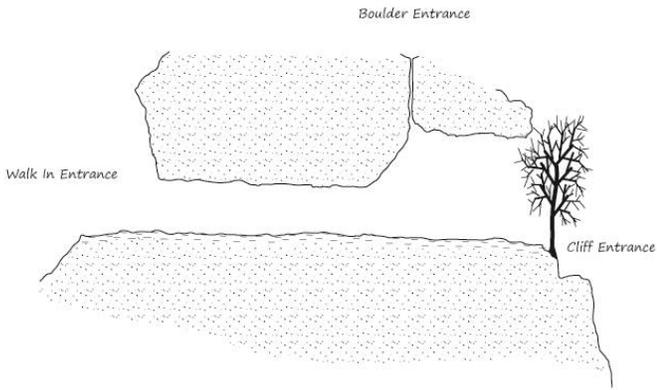
Ste Genevieve County, Missouri

Survey and Cartography by Chad McCain

March 19, 2014 Surveyed Length: 94'

SYMBOL LEGEND

- Dripline (notes the start of the cave)
- Silt
- Walls
- /// Floor Slope
- └└└ Ceiling Ledge (points towards the drop)
- └└└ Floor Ledge (points towards the drop)
- ⊕ Bedrock
- ⑤ Ceiling Height
- Lamotte Sandstone



CREVICE CAVE

CONTINUING RESURVEY

WEDNESDAY, MARCH 26, 2014

BY PAUL HAUCK

I met with Dick Young, Norman Gallup and Brian Biggs at the Park-et Restaurant. Our objective for the day was to continue the re-survey of North Broadway in Crevice Cave. We arrived at the entrance at 10:30 A. M. and found entrance passage to be quite wet. We set a

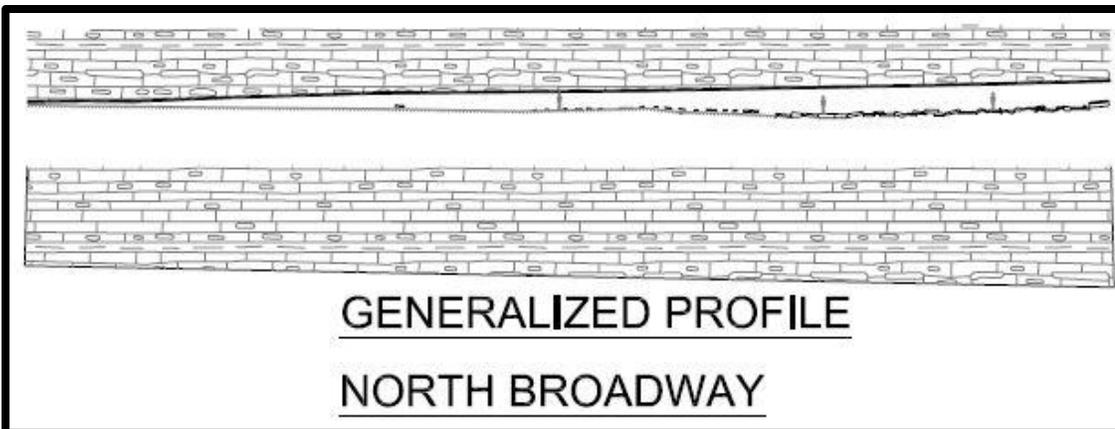
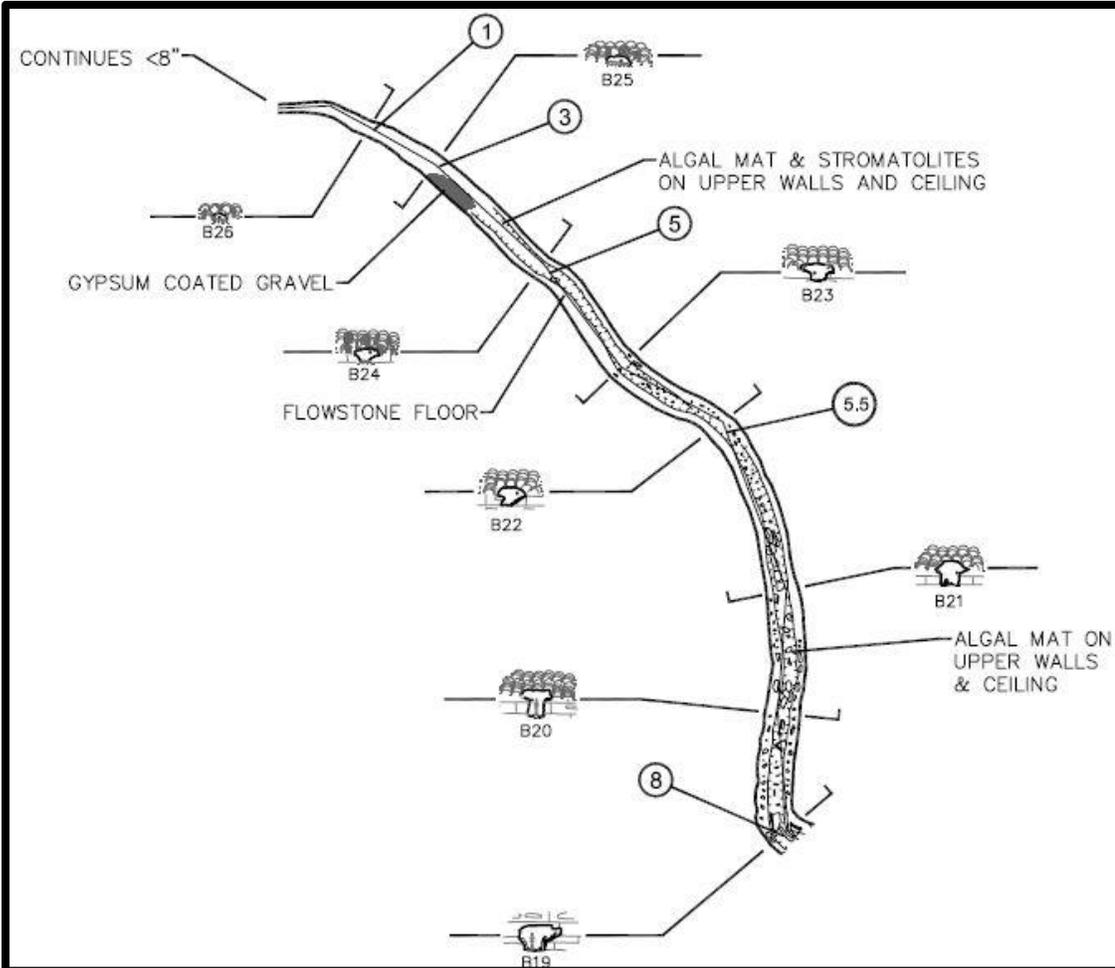
leisurely pace as usual to keep from overheating and arrived at the final station from FSB 99 at 11:45 and set up to begin surveying.

Right where we started, the passage is sort of mushroom shaped in cross section; rounded ceiling, wider at the top, then the walls from shoulder height to the floor come in on both sides 3 to 4 feet. On the left side there was old gypsum coated flowstone on the upper wall which had run across the ledge and down the wall. On the right side the walls were coated with gypsum. As the floor continued to rise and we could finally get a good look at the upper walls, we could see that the upper section was in an algal mat. Further up

the passage we could see stromatolites within this algal mat.

At first the floor was covered with gypsum coated, thin platy breakdown, but further on the breakdown began to diminish and we could see a gypsum coated flowstone floor. After the passage had diminished to crawling height we noted a stretch of gypsum coated cemented gravel on the floor. The passage continued to diminish in height till it could be seen to be only about 8 inches height with no relief in sight. The width had reduced from 12 feet wide at the beginning of the survey to 2 feet wide at the end. Several Pipistrel bats were seen in the passage. We backed off a bit rolled up the tape and headed back out to go work on South Independence.

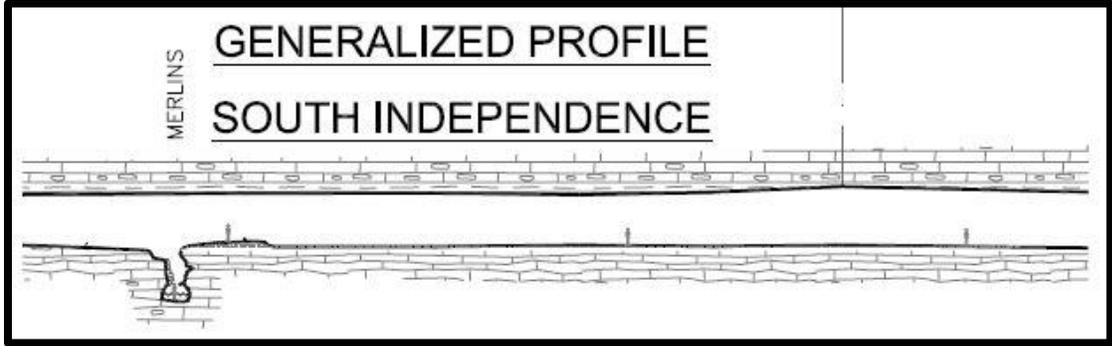
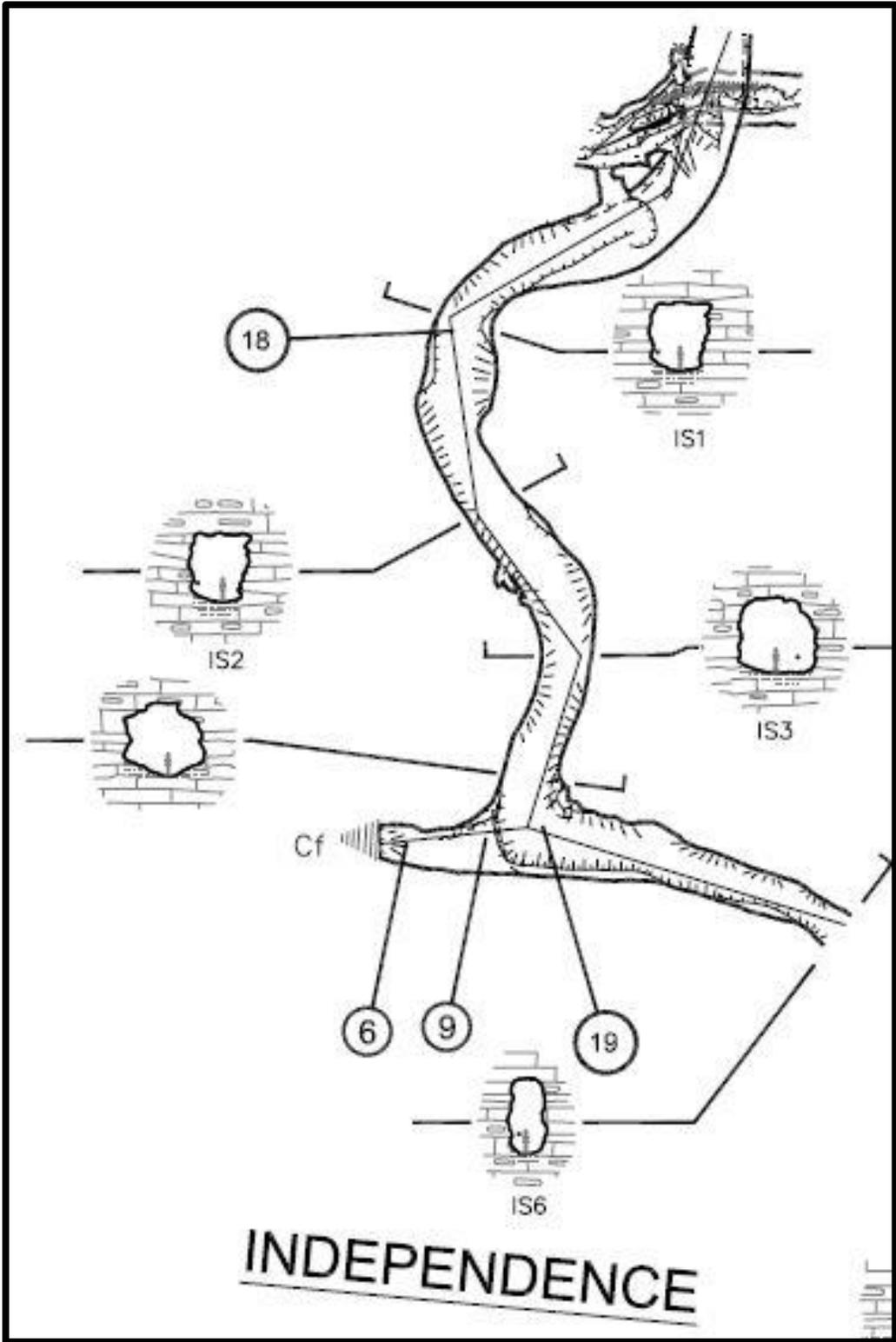
The trip on down to Independence was uneventful. No one got devoured by the Man Eating Pothole. We climbed



up into Independence and found our recoverable station from FSB 86 and proceeded to survey southward down South Independence. Apparently there had been some flooding because the dirt floor was way slicker than it should have been. At 200 feet the passage takes a sharp left turn and a clay filled branch comes in on the right. I had always thought the branch was South Broadway coming in, but now that I have elevation data I can see that this passage is about 30 feet lower than the end on South Broadway. It matches up better with a spur that branched off of the crawl that starts at the beginning of South Broadway. I think this spur needs to be looked at a little closer. When we were surveying it laying there with our faces jammed against the floor, we didn't try real hard to go over and check it out. If the spur is the same as the one in Independence, it likely won't go real far because it is clay filled at Independence. Anyway we made one more station after this branch and called it quits for the day at 5:30 P.M. I finished up the sketch while Dick and Norman and Brian rolled up the tape. I got the survey gear re-packed for the trip out and we headed out.

We got out of the cave at 7:00 P.M. After changing we headed to the Park-et for supper. We had totaled 689 feet of re-survey. This is part of FSB100.

Paul D. Hauck





RIDGE WALKING AND NEW CAVE SURVEY

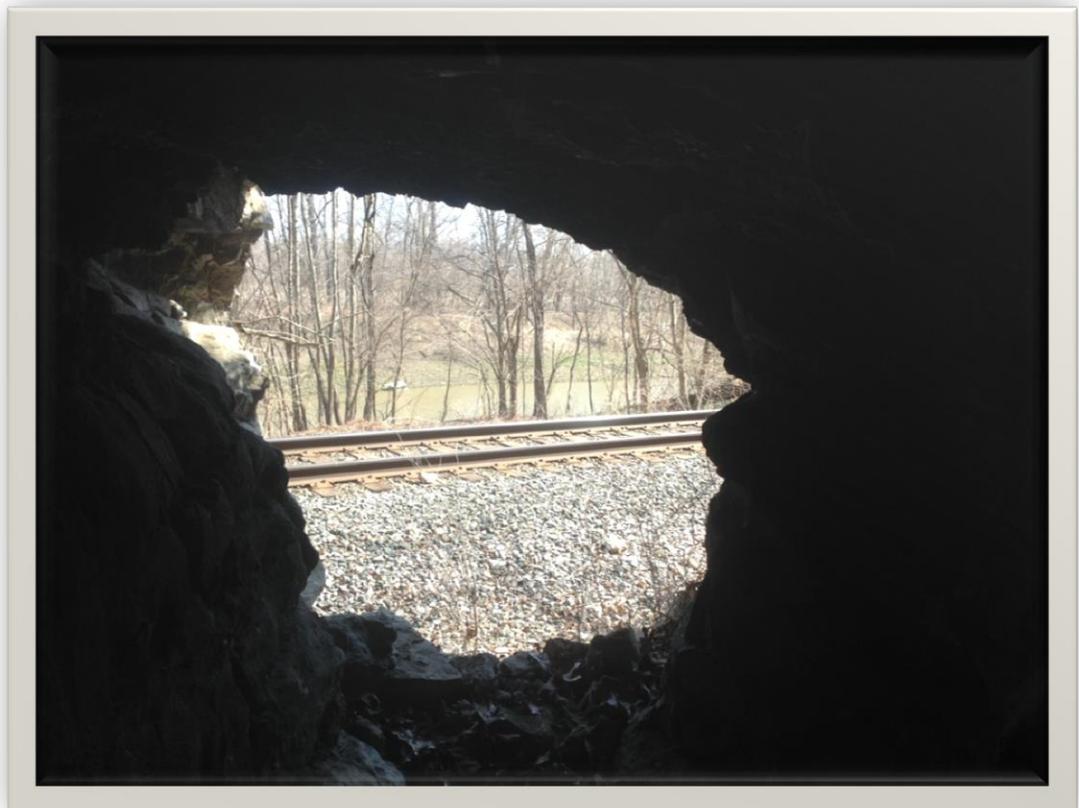
CHERT CAVE

WEDNESDAY, MARCH 26,

2014

BY CHAD MCCAIN

Today I returned to Magnolia Hollow Conservation Area in Ste. Genevieve County, Missouri. After hiking about 14 more miles off trail, totaling about 80 miles of off trail hiking at the area and finding zero caves, I hiked the railroad tracks and found a small cave near the tracks. I surveyed the cave as it was a 1 shot cave 32' deep. It really looks like a hobo hideout along the tracks.



Chert Cave

SGE 126

Ste Genevieve County, Missouri

Survey and Cartography

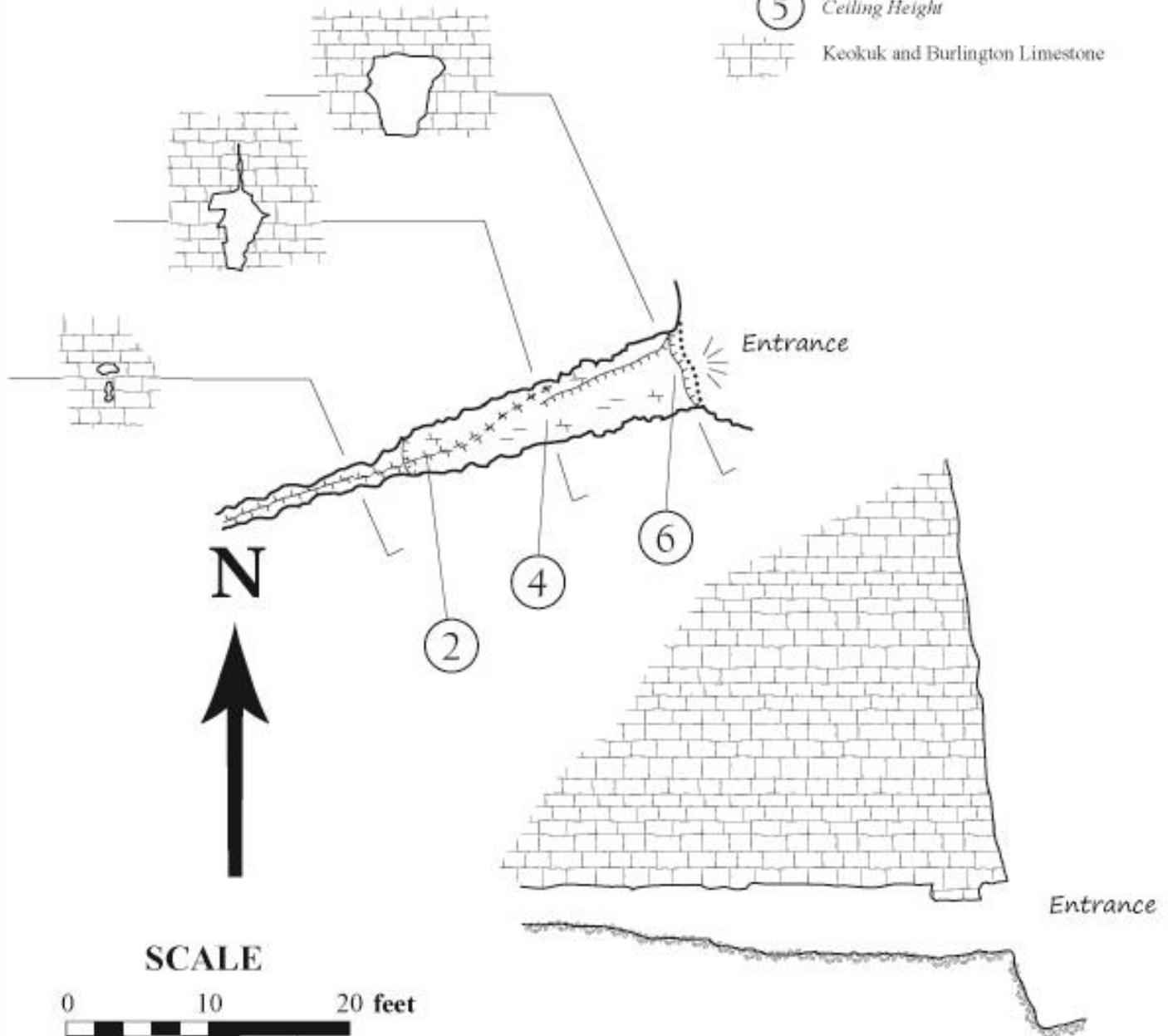
by Chad McCain

March 26, 2014

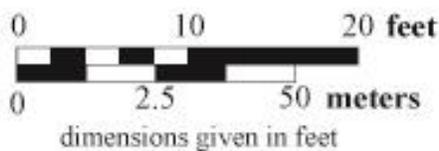
Surveyed Length: 32'

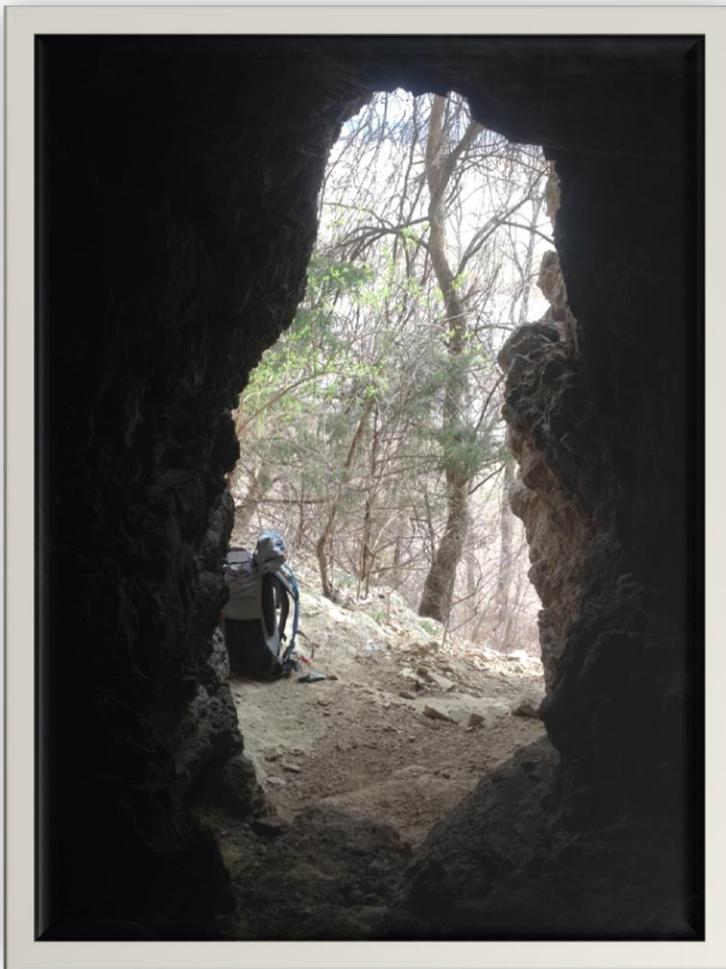
SYMBOL LEGEND

- Dripline (notes the start of the cave)
- - - Silt
- Walls
- / / / Floor Slope
- ⋈ Ceiling Ledge (points towards the drop)
- ⋈ Floor Ledge (points towards the drop)
- ⋈ Bedrock
- ⑤ Ceiling Height
- Keokuk and Burlington Limestone



SCALE





RIDGE WALKING AND NEW CAVE SURVEY

VULTURE DEN CAVE

THURSDAY, MARCH 27,

2014

BY CHAD MCCAIN

Today I found a new cave, CWY 018, Vulture Den Cave, high in the cliffs above the Katy Trail. A survey was conducted of the cave after I found a way to climb up to it. It was littered with feathers, bones and reeked of death. It seemed as if it was a slaughter house for a bird of prey. Luckily it wasn't very big.



LILLY CAVE

SURVEY PROJECT

APRIL 9, 2014

BY EDMUND TUCKER

To date, this project has involved 10 trips total. A scouting-landowner meet and greet, a micro shaving trip, and 8 survey trips. The people involved in this project so far are Edmund Tucker, Gary Resch, Chad McCain, Mark Miles, Ray Shaw, Brian Biggs, Forrest Rogers, and Sarah Becker. This cave was previously mapped, and displayed in the book "Caves of Illinois" in the 1950's. The original map is very basic, and only shows some of the passages in the cave. It contains no cross-sections or ceiling heights.



Gary Resch entering Lilly Cave

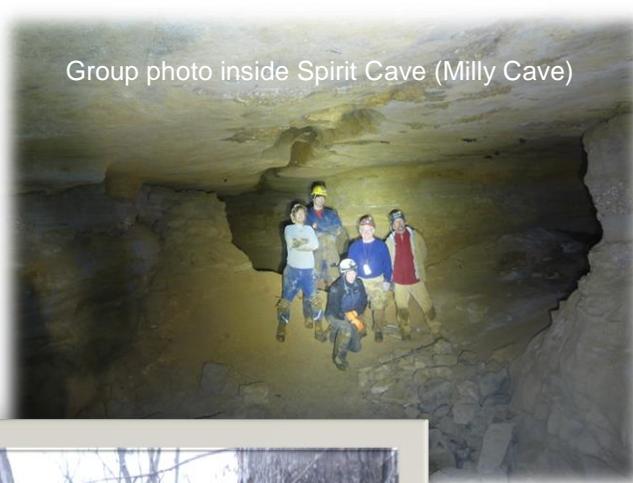
The book describes two separate caves in the area,

Looking up at the entrance of Lilly Cave



which are referred to as Lilly Cave A, and Lilly Cave B, and goes on to say the two caves cannot physically be connected. Lilly Cave B was never mapped, so once this was done, we renamed it Milly Cave, after the current landowner. It is basically a large, 40 foot by 15 foot wide chamber underground, with a ceiling height on average of

Group photo inside Spirit Cave (Milly Cave)



soot. Oddly enough, there was very little loose trash lying around, suggesting the cave had been cleaned up by another group visiting previously. There are even spots where mud has been smeared over the spray paint. Furthermore, after examining all the graffiti in the cave, no signatures or dates indicate any vandalism has taken place since before the year 2000. This is a maze cave with numerous intersections, and lacks the presence of water. It is in fact so dry, gypsum crystals can be found throughout several passages. There are three spots in Lilly Cave, and two in Milly Cave, where intermittent water drains into the floor through



Gary Resch opening up virgin cave

loose rocks. The cave is 95% crawling, and 5% walking, with one central room that has been the obvious hangout spot from former visitors.

about 12 feet. There are several spots where crawling passage heads off into a collapsed breakdown area and two spots where water drains into the floor through loose rocks.

Lilly Cave showed signs of being heavily traveled before we arrived to resurvey it. There are numerous spots where digging projects have taken place, either to make passing through passages more convenient, or trying to get into new passage. Nearly every formation had been broken off and removed, and graffiti is everywhere, ranging from crayon, to carbide



Bats found in Spirit Cave

02.08.2014 11:46

Gary taking a shot deep inside Lilly Cave

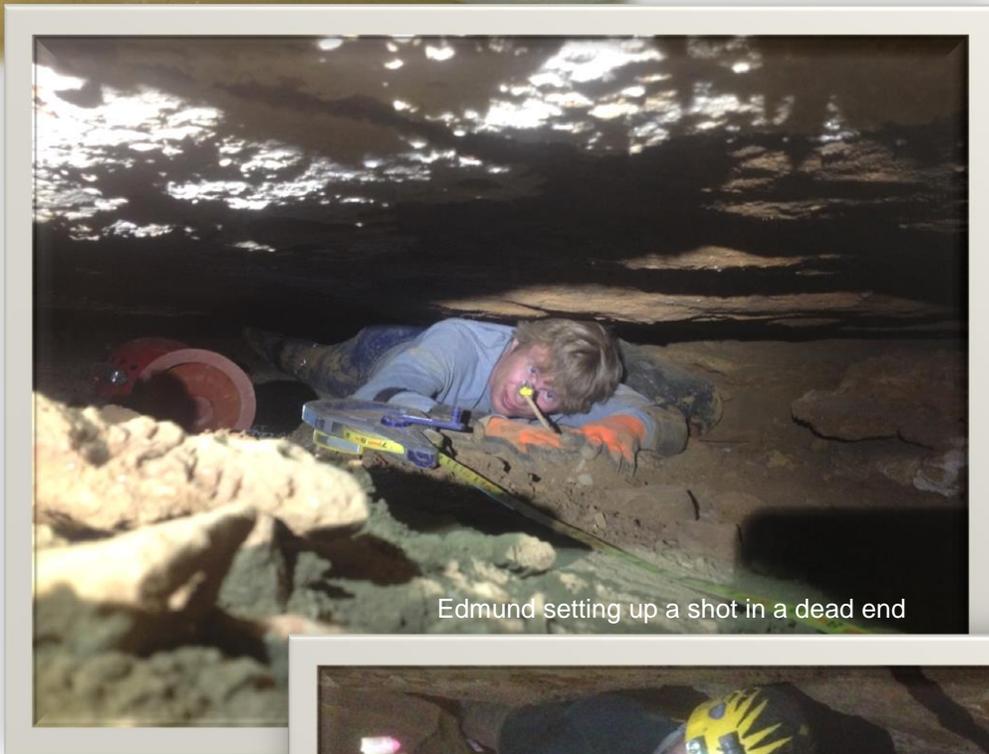
date. It was a 12 foot crawling section of passage with stalagmites and stalactites. The next three surveys into the uncharted passage revealed three large rooms, and several more intersections. This new section of recently unlocked passage is damp and drippy throughout, and even has an intermittent stream running into a lower level passage, which may lead us to the mainstream of this cave system, with a little trail maintenance. It is currently a very wet, worm crawl, with clay walls, and a clay ceiling. Edmund traveled about 15 feet through it, but backed out because of concern it may collapse in on him. What he saw in front of him continued onward at a downward angle. One of the three big rooms discovered

Once every lead had been surveyed to the bitter end, and there was nothing left to map, we focused our attention on a passage heading off in the north west corner of the cave. This 3 foot tall, 3 foot wide passage had a lot of airflow

moving through it, but was blocked by flowstone. Passage of equal size was partially visible through a small gap at the edge of the passage. We knew from our survey this passage was heading towards Milly Cave, and we knew both caves had air flow. Milly Cave however revealed no obvious leads where the air was traveling. Through a process known as micro shaving, we were able to pass through the flowstone blockade after just 2 hrs.

Just beyond this section, we were greeted with going, virgin passage, and the most decorated section in the cave we have seen to

in this new section was bone dry on one trip, and filled with 4 feet of water on the next. Also worth noting was the discovery of three separate Archimedes' screw fossils found in different spots in this new section of cave, all roughly 1

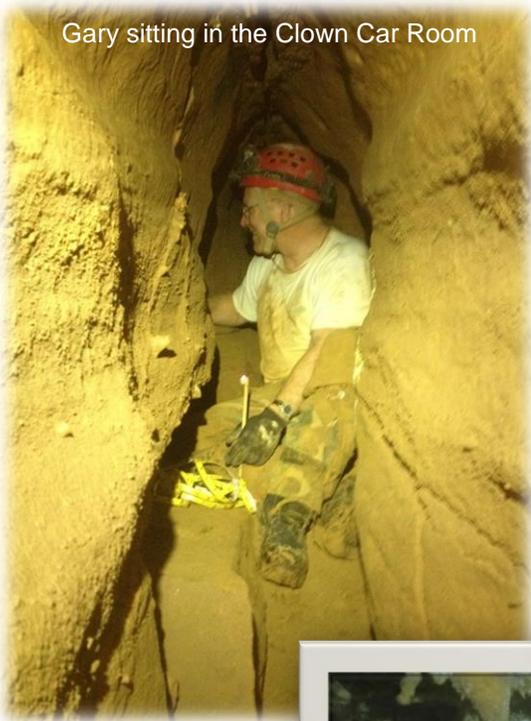


Edmund setting up a shot in a dead end



Chad sketching in Lilly Cave

Gary sitting in the Clown Car Room



Confined space survey was typical in Lilly Cave



foot in length.

Tonight's survey was coming to an end at a 3 way intersection. All three directions required digging, but the passage heading south was the easiest option, through which a large room could be accessed by moving a small amount of soft dirt. Getting into this room became a necessity in order to turn around. This allowed Edmund to mark a station at the three-way intersection where he could look back down the passage he entered through, where Gary was still waiting with his sketchbook at the previous station marker. It was at this point Gary and Edmund heard a muffled yell coming from what turned out to be the passage heading northwest at the 3-way intersection. It was Chad, who was in Milly Cave drawing an entrance profile, and heard our voices in the distance. The excitement increased as Chad's voice drew closer. He wormed his way through a tight spot in the collapsed breakdown, and the light from each other's headlights was then able to be seen by one another. Very soon after this, the two of them were looking face at each other, through a very tight section of cave, 5



feet in length, with only a 4 inch ceiling height. Edmund was able to hand Chad a survey light and survey tape through the tight passage, and in the process, an honorary fist bump was performed, signifying the first ever physical connection between Milly and Lilly Caves. They

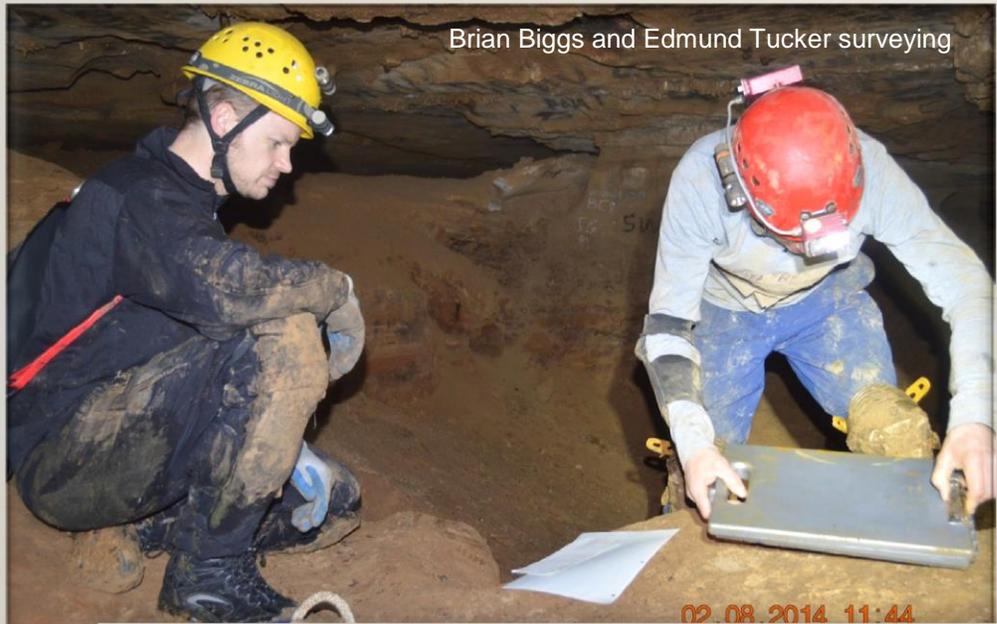


Gary sketching in Lilly Cave



observed evidence someone had been there before. After worming through a tight spot, Edmund came down into the small room Chad had previously been in, and was standing at the permanent survey station Chad had left. The connection has been made.

Brian Biggs and Edmund Tucker surveying



then surveyed from point to point through this tight section of cave, which connected the two cave maps together. Shortly after this, Chad exited Milly Cave and went back to the surface, where he was working on an extensive data collection of GPS coordinates of 5 other small caves, 102 sinkholes, and 2 new springs.

Gary and Edmund finished up mapping the room they dug open. While Gary was sketching, Edmund poked around the room for any potential leads. One wall of this room is made up of loose breakdown rocks, heading upwards at a very steep angle. At the base of this wall, Edmund discovered both a glow stick and a glow stick wrapper. After concluding it had to fall into this room through the loose breakdown rocks, Edmund began moving rocks until a sketchy passage was revealed, leading up into a void in the collapsed breakdown. Immediately, Edmund

The tallest room in Lilly Cave



RIDGE WALKING

TANEY COUNTY, MISSOURI

WEDNESDAY, MAY 14, 2014

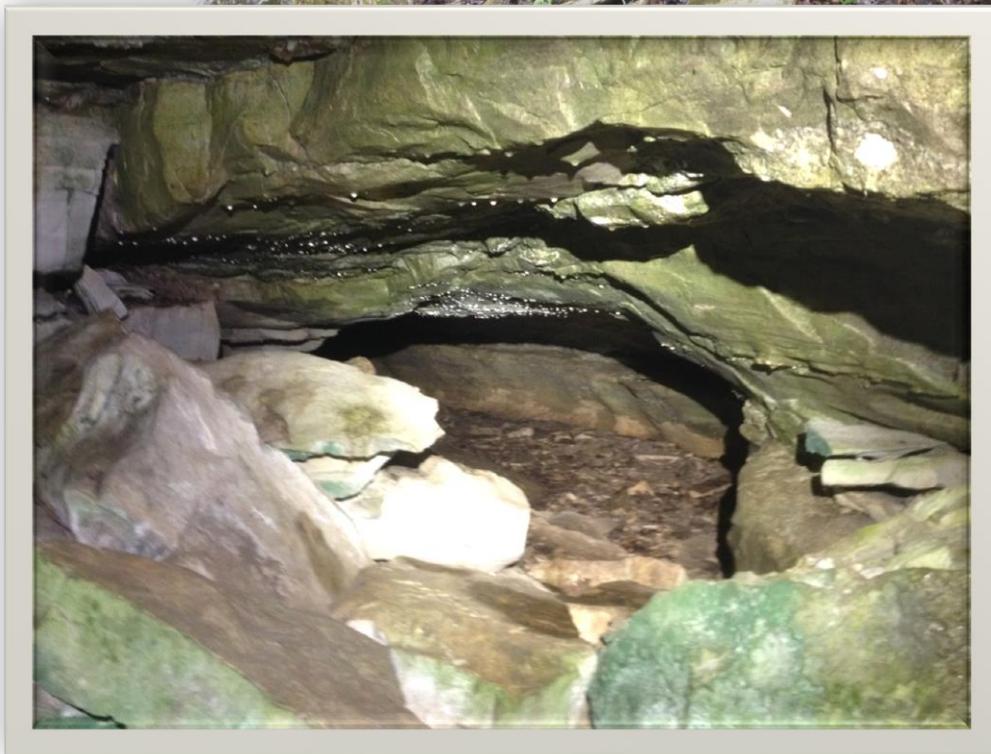
BY CHAD MCCAIN

I went ridge walking in Taney County, Missouri with direction from Ben Miller. Two new caves were found along with two new springs. It was a pretty brutal ridge walk as it had just rained. One cave was very small and insignificant. It was

probably an area where the water in the valley had cut under a ledge and formed a short cave destined to become the new valley floor.

A second cave was found up on the bank in a large shelter bluff. This shelter had breakdown in the back and a way through

which lead to a solutional crawlway, which then led to a stream passage which continued as a 3' high crawl. I went in approximately 100' before turning around. Rough sketches were made of both caves.



Setting up shots to get above the Hall of Pork



follow up. Unfortunately this entrance would have to be dug out.

After Gary arrived we entered the cave and we were underway by 9:40 a.m. None of us wore wetsuits on this trip as our objectives were to survey two upper leads at main stream stations D96 and D99. For reference, D99 is 50 feet downstream from the hall of pork. We started at the upper lead at D96 which I climbed about 5 years ago when we hauled the ladder to Basecamp from the New Discovery.

The climb up was a lot more dangerous than I remembered, but Ray went up first and began setting stations while Gary and I did the ground work in the stream. Gary got into the lead and we surveyed up the steep mud bank, heading north. The passage terminated after 6 short shots and we returned to the base of the mud bank. I traversed across the top of the passage to a downstream continuation. Most of my foot holds broke off during the traverse but another 40' of survey was completed, fully exhausting DAZ survey.

BLACKFATHOM RIVER CAVE

SURVEY #70, ABOVE THE HALL OF PORK

SUNDAY, MAY 25, 2014

BY CHAD MCCAIN

I met up with Ray Shaw and Gary Resch at the Blackfathom Pit entrance. Before Gary arrived, Ray and I went to check on a newly found spring that flows roughly the same amount of water as Blackfathom and Viox. While the entrance is a collapse, the top channel and the water flow would constitute a walking cave, or at least easy crawling. I have already made initial contact with the owner and have to



Gary Resch shooting a shot



Gary Resch is on fire!!!!

the ladder wasn't needed. In the room there is a passage that heads west, above main stream, and that is the way we went first. After 5 shots we reached our goal of 7 miles at station DBZ7 in a very undramatic fashion. Ray slipped through a tight canyon that I previously thought would have to be dug open.

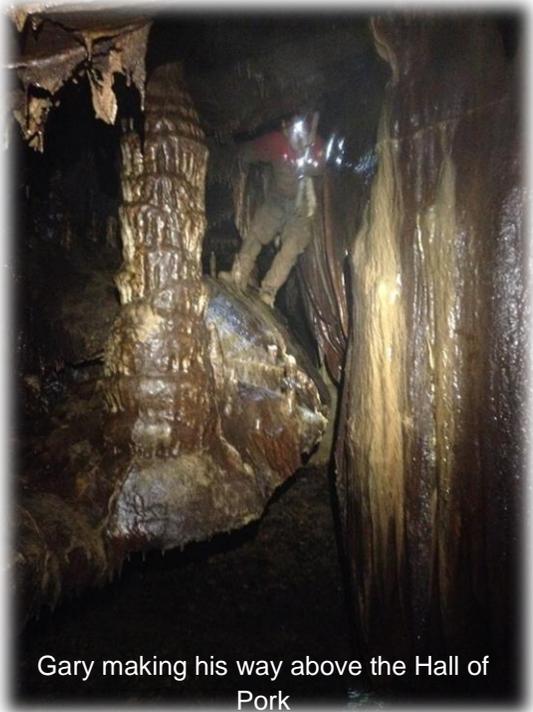
Unfortunately Gary got stuck going in and I had to help pull

We moved on to the Hall of Pork and scoped out the best way to shoot up into the upper area. After boosting Ray and Gary up on the ledge, I climbed up and joined them above the Hall in an upper level room which had a climbable dome in it that looks very promising. I had also been in this lead once before during the ladder hauling operation, and I found a way to

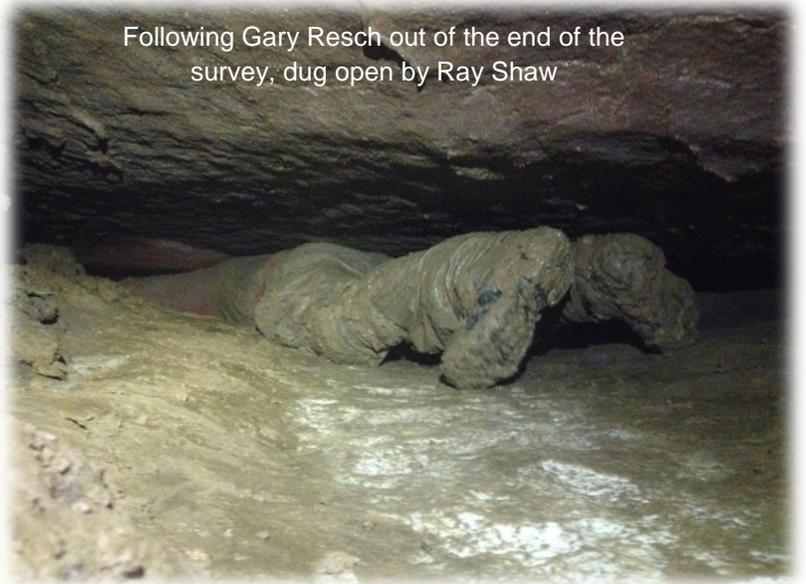
climb up into it later where

him back out.

Ray warned of a hole in the floor that slopes down towards main stream and he was trying to avoid it. After he crossed past and started digging in a clay bank to continue the lead, I slipped into the canyon, laying on my side, I finally reached the floor. Once at the floor I slide down the slope and ended up on top of a massive flowstone ledge that none of us had ever climbed up on top of before. There are many climbable flowstones in this area, but this one was never climbed due to the



Gary making his way above the Hall of Pork



Following Gary Resch out of the end of the survey, dug open by Ray Shaw



Gary and Ray getting ready to leave

breakdown was visible in the ceiling channel as well.

After we exited the room we packed up our gear and headed back towards the entrance. I have to say that while choosing not to wear wetsuits saved us from getting cold while surveying, and overheating while in the cave, it makes the trip harder because you avoid floating in the water. It is definitely harder trying to keep your upper body dry. We exited the cave around 5:45-6:00 p.m. and headed out.

The dome lead above the Hall of Pork still needs to be checked out and surveyed, as well as the lead leading south from the room. The permanent station is DBZ6 and it is a light on a clothes pin, clipped to a stalactite in the crawl way heading west from the room. 281.4 feet of survey was obtained and two leads were knocked out, leaving 1 lead left to map above the hall of pork.

The Blackfathom River Cave has finally broke the 7 mile mark.

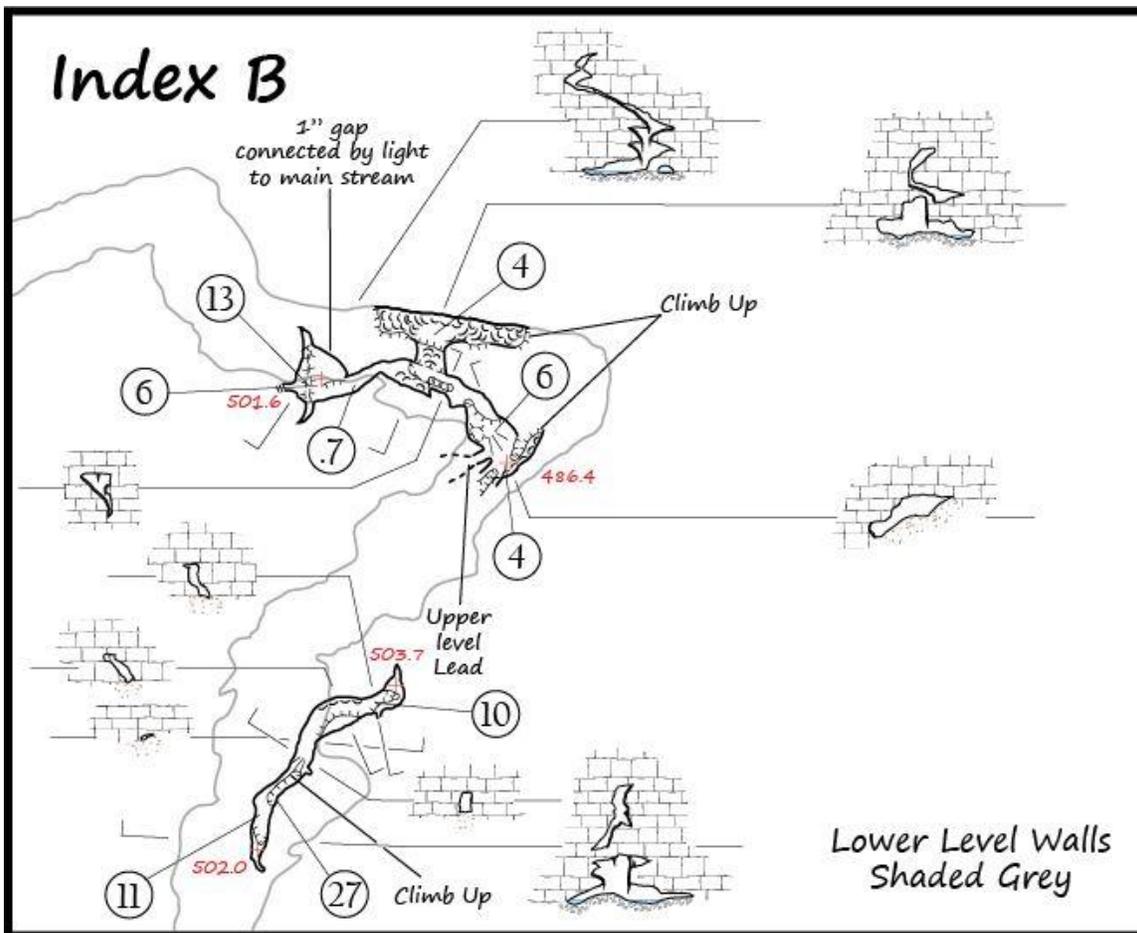
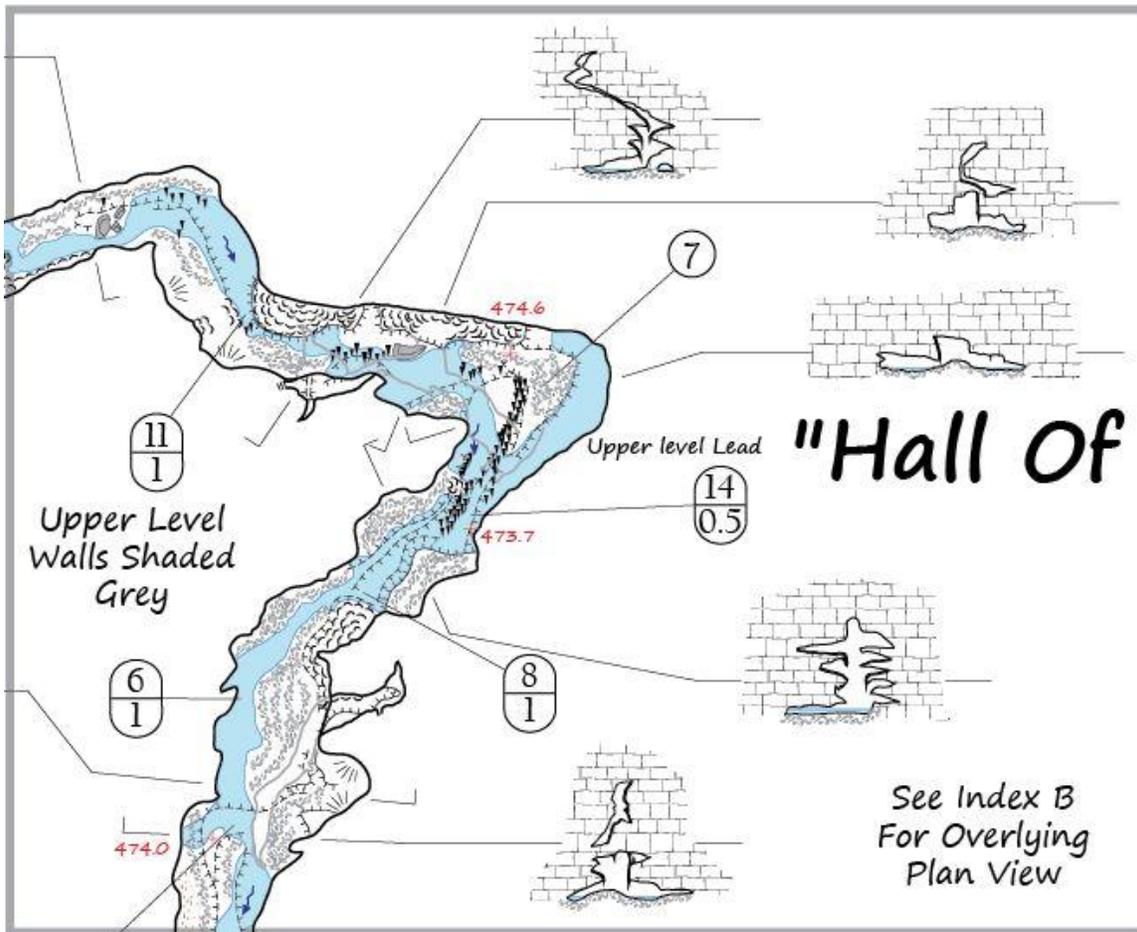
pretty draperies you would have to climb on to get up. Once I was down I sketched a full cross section then told Gary to go back to the main stream where we climbed up and I would help him get up into this bypass so we could keep surveying behind Ray while he was digging.

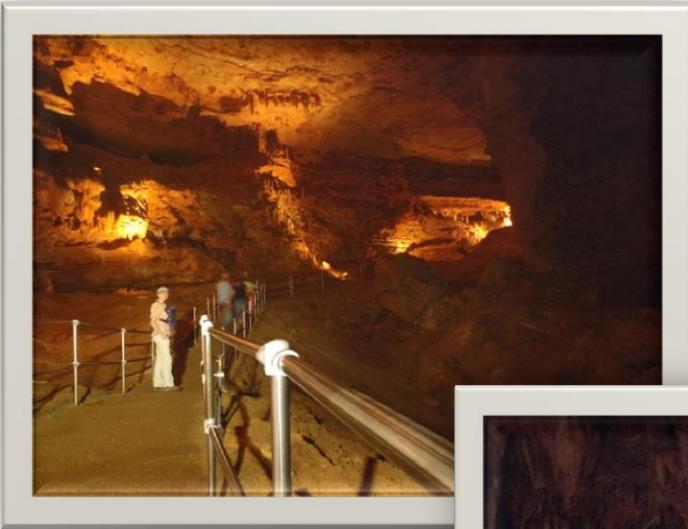
After boosting Gary up, I helped him climb the sloping flowstone bank with the ceiling in your face. It's not an easy thing crawling on your back, uphill, when you can barely bend your legs. Once at the top Gary was able to eventually sit upright and work his way into the continuation behind Ray. I followed him up and eventually was able to join him as well. Shortly after Ray's dig was a success but he discovered that the cave abruptly ended in a small room with a tiny 2' hole that led to main stream, and an upper joint trace. After the survey was done I climbed up into the joint, exhaled fully and pushed my body up into the ceiling channel. I confirmed that this was a dead end lead with clay pouring in through the ceiling. Some



Gary near a recovered station







ONANDAÇA CAVE

SUNDAY, JUNE 1, 2014

BY CHAD MCCAIN

The McCain family took a trip to Onandaga Cave State Park and got to do the trip free with proof of NSS membership. Some of the following photos were taken. I highly suggest this show cave for a family trip. It is 1.5 miles and you are in there for an hour and a half.

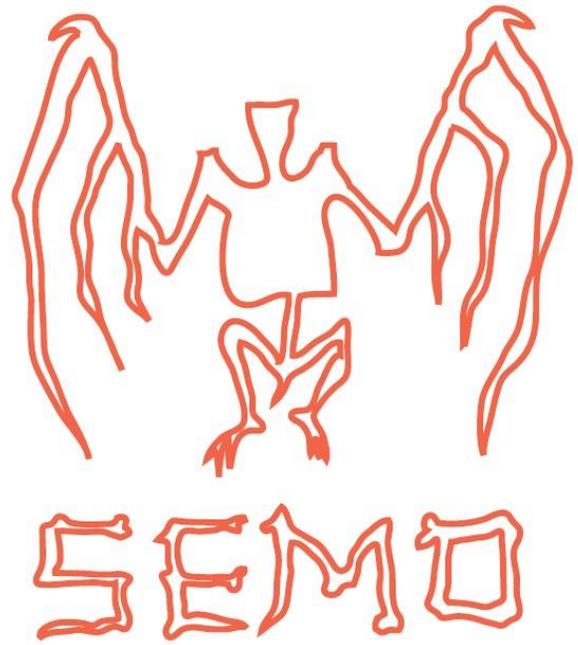


*BLACKFATHOM RIVER CAVE
SUMP DIVE PREPARATION TRIP
MONDAY, JUNE 30, 2014
BY EDMUND TUCKER*

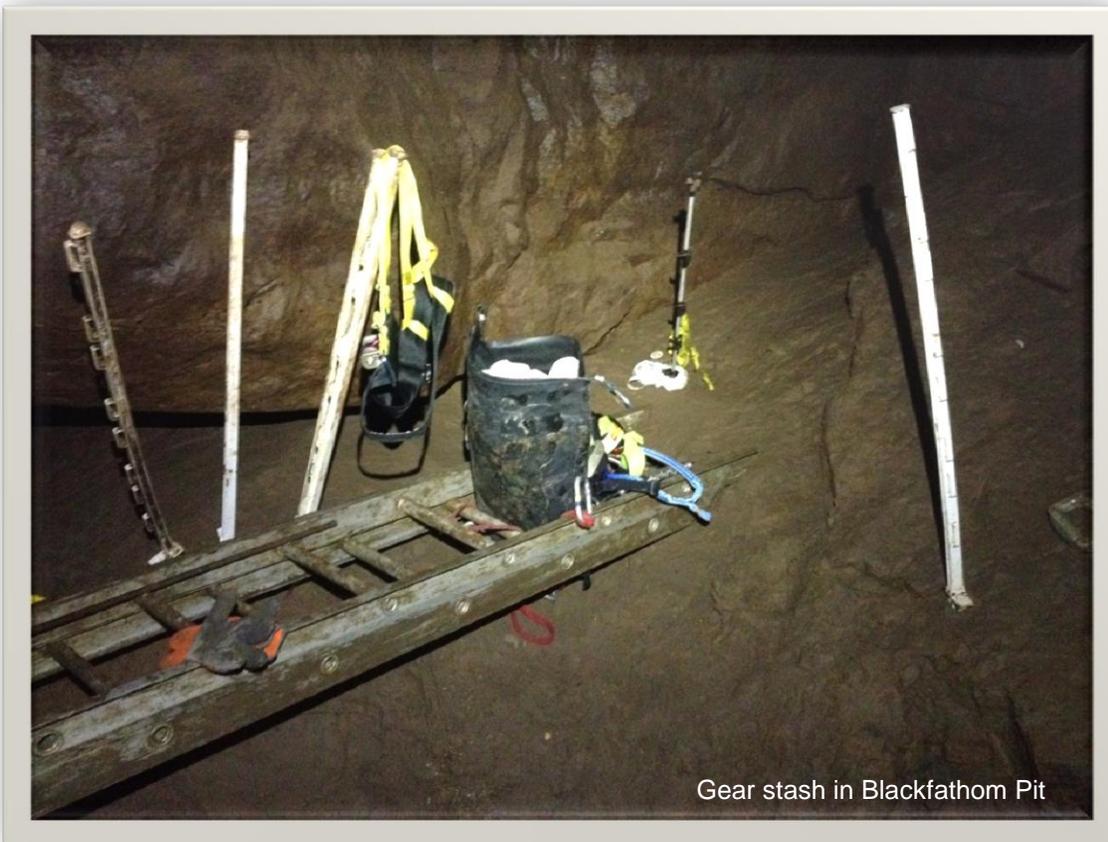
Mike Tennant, Edmund Tucker, Brian Francis, Dwayne Larose, and Brandon Crawford returned to the very end of mainstream Blackfathom, via the historic entrance. The purpose of this trip was to better prepare for an upcoming cave diving trip at this very location.

Currently, the very end of mainstream Blackfathom stops abruptly at 10 foot wide borehole passage, with 10 foot ceilings, over 5 foot deep water. The passage does continue, it's just goes on underwater at this point. Numerous trips previously have proven the passage continues above water after 14 feet, using a 14 foot extension pole, with high-power lighting, and video recording. There have been roughly 10 trips to this point in the cave to continue work on a micro shaving project, to create a tunnel above water to get to the other side of the sump. The tunnel has progressed 5 feet into the rock above water, at the furthest point, at the end of the passage. This digging project was halted nearly a year ago, due to the uncertainty it was even going in the right direction.

Until an experienced, certified cave diver, who



also has experience in cave mapping, dives the underwater section, and accurately maps the other side of the sump, there is no solid way to know for certain what direction we should be digging. Luckily, one of SEMO Grotto's members, Mike Tennant, qualifies as just the person we are looking for. On today's specific trip, we accurately mapped, in detail, the end of main stream Blackfathom, before the sump, where this micro shaving project is taking place. This included the contours of the rock, ceiling height, passage width, water depth, cross-sections, and a running profile. Mike's objective on the future trip, is to dive to the other side, and repeat this process. Once we put these two sections of map together, we will have an accurate description of "the path of least resistance" to focus on when continuing our tunnel to the other side of the sump.



Gear stash in Blackfathom Pit

Activity Overview

January 6, 2014 - Ray Shaw, Norman Gallup and Chad McCain surveyed 348.6' of survey in Lloyds Cave/Purgatory Pit in Ste. Genevieve County, Missouri. 1302.5' is the length of the cave now. White nose syndrome was discovered at this time.

January 12, 2014 - Richard Young, Norman Gallup and Chad McCain started the survey of the Drum Crossover in Berome Moore Cave in Perry County, Missouri. 217' of survey was obtained.

January 13, 2014 - Norman Gallup, Michael Bradford and Chad McCain finished the survey of the Drum Crossover in Berome Moore Cave in Perry county, Missouri. 324.3' of survey was obtained, most was new survey that was not on the original map, which linked the Drum Crossover up with Cat Tracks.

January 16, 2014 – Paul Hauck, Richard Young and Norman Gallup surveyed 369.5' of resurvey in Crevice Cave, in Perry County, Missouri.

February 5, 2014 - Michael Bradford, Norman Gallup, Ray Shaw and Chad McCain conducted survey #68 in the Blackfathom River Cave. 339' of survey was obtained in the Blackfathom Pit entrance. The main pit drop is 113' and the side pit called "Bolt Climb Pit" which is the route Edmund Tucker took when bolt climbing to the top of the dome before it was an entrance, was 103.7' with an actual drop of 93.7' Total elevation from entrance to the main stream was found to be 151.2'. One virgin side lead was left in Bolt Climb Pit.

February 21, 2014 - Ray Shaw and Chad McCain conducted Survey #69 in the Blackfathom River Cave. The virgin side lead in the Blackfathom Pit entrance was surveyed to the bitter end. 159.8' of survey was obtained and a separate map cut for the entrance was drafted.

March 5, 2014 - Ray Shaw, Richard Young and Chad McCain took professor Michael and Neathery Fuller to Batty's Cave in Ste. Genevieve County so they could map out the petroglyphs carved into the entrance. Ray and Chad also found two new caves and surveyed them. Impossible Pit was a 20' deep pit leading to a 5" high water crawl which lead up and downstream. Squirrel Tail Cave was located 25' away, which was a stair step down climb to a tight crawl which was impassable due to the size. Both caves are located in a giant sinkhole.

March 9, 2014 – Paul Hauck, Richard Young and Norman Gallup surveyed 879.4 feet of resurvey in Crevice Cave in Perry County, Missouri.

March 19, 2014 - Chad McCain went ridge walking in Ste. Genevieve County, Missouri and surveyed 3 short caves.

March 26, 2014 – Paul Hauck, Richard Young, Norman Gallup and Brian Biggs surveyed 689' of resurvey in Crevice Cave in Perry County, Missouri.

March 26, 2014 - Chad McCain went ridge walking in Ste. Genevieve County, Missouri and located a short cave named Chert Cave and surveyed it.

March 27, 2014 – Chad McCain found a new cave, CWY 018, Vulture Den Cave, high in the cliffs above the Katy Trail. A survey was conducted of the cave.

May 14, 2014 - Chad McCain went ridge walking in Taney County, Missouri with direction from Ben Miller. 2 new caves were found along with two new springs.

May 25, 2014 - Gary Resch, Ray Shaw and Chad McCain conducted survey #70 in the Blackfathom River Cave and obtained 281.4 feet of survey above main stream above the Hall of Pork. One lead was knocked out entirely and a second lead found a new loop crossing back over to a flowstone above the main stream passage. One horizontal lead and one dome lead was left. Blackfathom has now reached 37,030.6' of survey, 7.01 miles.

June 1, 2014 – The McCain family took a trip to Onandaga Cave State Park and got to do the trip free with proof of NSS membership.

June 30, 2014 - Edmund Tucker, Mike Tennant, Dwayne LaRose, Brian Francis and Brandon Crawford went to the sump in Blackfathom for a prep trip for Mike to check out the sump for a dive trip.

