

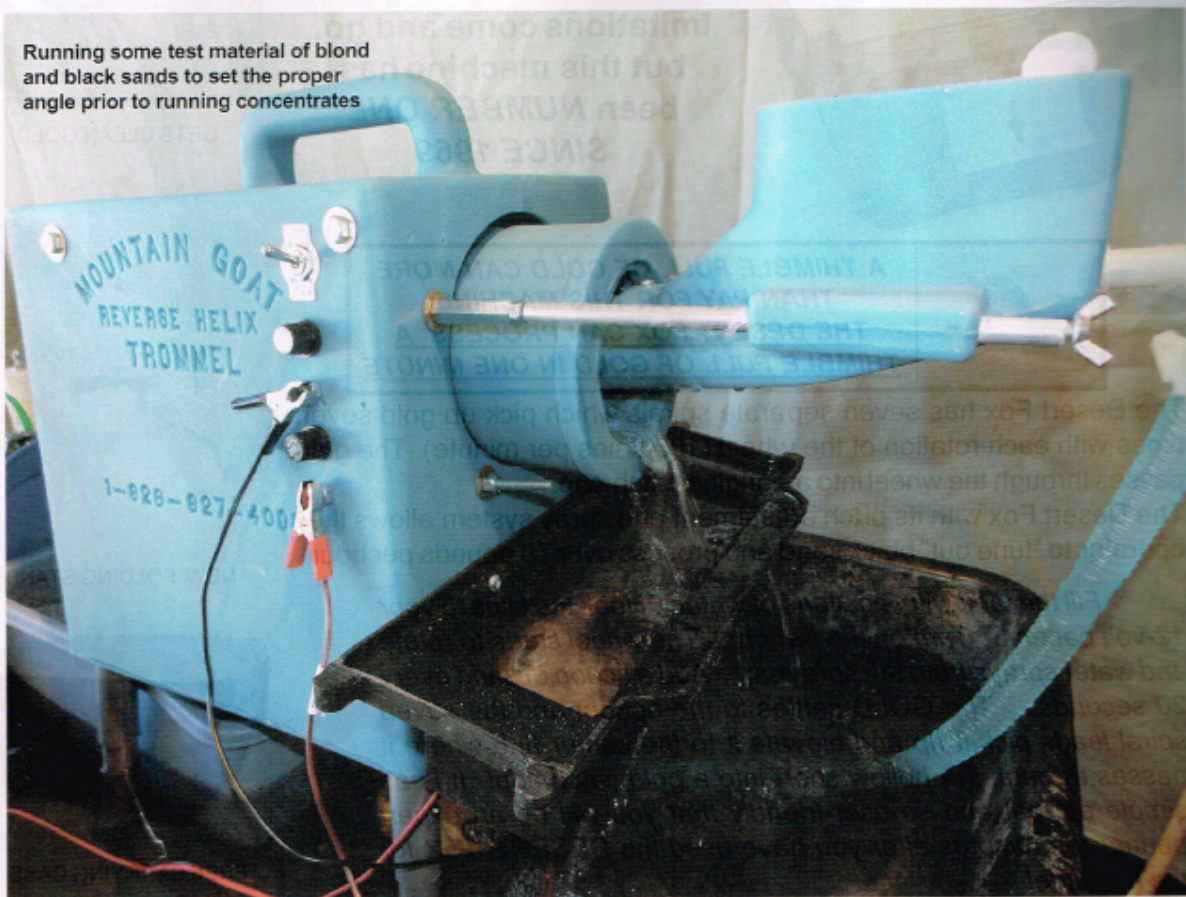
# A FIELD TEST

By Kevin Hoagland

## MOUNTAIN GOAT TROMMEL

*'Eats anything and goes anywhere'*

Running some test material of blond and black sands to set the proper angle prior to running concentrates



**Y**ou're standing in your workshop looking over buckets of concentrates you've collected over the last mining season or cons that you've already run once. Looking at your gold wheel, the first thought that comes to mind is, 'This is going to take all winter.' Maybe you're out in the field, and you want to do more than pan to test an area, or you've gotten a nice spot with gold and you're thinking, 'Is it easier to take the concentrates back to camp, or should I work them here?'

If you have faced any of these scenarios, you should take a look at the Camel Mining Products Mountain Goat Trommel. And, if you have never been faced with these

choices, then you are either a metal detectorist or you just have not been getting out and doing enough prospecting.

When Angus Niccolls, the late and great founder of Camel Mining Products, developed the Mountain Goat Trommel, he did so with a lot of experience behind him. In his earlier years, Niccolls had worked with large trommel units with large professional mining companies and was keenly aware of their recovery and their pitfalls.

So, when he sat down to design a unit to which he would eventually brand with the Camel Mining name, Niccolls knew that it would have to be lightweight, extremely portable and offer high-yield recovery. The





**Feeding the Mountain Goat means flowing material into the hopper, not dropping it in.**

result was the Mountain Goat. As for the name, Niccolls said he chose Mountain Goat because it, "Eats anything and goes anywhere."

Over the years, Camel Mining Products has become synonymous with innovation and quality. The first spiral gold wheels to gain mass popularity were Camel Wheels, and today the Camel Desert Fox remains a top seller in spiral recovery. The last innovation Niccolls developed before he passed away was the Mountain Goat. And, when he proudly delivered it into the hands of gold prospectors, he knew he had given miners a product they would be able to use for years to come.

I truly miss Angus, and I wonder what he would've come up with next. One thing for sure, it would have had to be of the quality the mining community had come to expect from the Camel Mining name.

The Mountain Goat Trommel is not new to the prospecting industry by any means. It has a long history of excellent recovery and ease of use. The trommel can be as simple as setting it at the factory presets and recovering gold. Or, you can fine-tune the unit easily to capture the finest gold that is gravity recoverable.

I've used the Mountain Goat on my Alaska concentrates on many occasions, and with amazing success. With

just a small amount of fine-tuning and closely watching my tailings at start-up, the Mountain Goat has never let me down. For years, it has been one of my "go-to" pieces of equipment that I continue to use to capture and recover gold.

### **The Archimedean screw concept**

The Mountain Goat is a variant of the Archimedean screw, which is a tube surrounding a rotating screw used to pull a column of water up a grade. This makes it possible to easily lift water. In the Mountain Goat, the outer tube is lined with the screw, and as gold-bearing material is stratified by a stream of water and run through tube, the heavier gold-bearing material is deposited into the reverse screw and brought to the top of the unit. The lighter waste material is continually washed and pushed through the unit into the tailings.

In other words, when material enters the hopper, the gold goes one direction and the waste goes the other. It sounds simple enough. In this way, it's no different than other true trommels. The greatest difference is that the Mountain Goat does all of this in a unit that weighs less than 20 pounds, recirculates about 10 gallons of water all day long. And, if properly set up, it can handle about two



yards of material in a long day of running.

I will be perfectly honest with you — I've never used the unit to run that much material in a day. But, in all of my years using the unit, I've never been left wanting for more production or better recovery.

### Unboxing the Mountain Goat Trommel

Although I've owned a Mountain Goat for a number of years, Angus's widow, Alicia Niccolls, wanted to send me a new clean unit for the test. And, as usual, I did not read the enclosed directions on assembly. It has to be intuitive to me or I will deduct points. The Mountain Goat will be completely as intuitive for you as it was for me when I bought my unit years ago.

The Mountain Goat is a cleverly designed. It's compact and almost completely assembled when you receive it. The carry handle is molded into the unit, making it easy to transport from location to location. And, the entire unit will fit on the front rack of just about any quad I've ever ridden. The trommel tube is pre-mounted to the unit with the nugget trap installed needing no further assembly. The legs are collapsible and can be set to two different heights. Plus, the front legs are further adjustable to allow you to fine-tune the unit to the material you're working.

The pump is 12-volt, and the flow rate was chosen to offer the best recovery possible. I will always suggest that a filter of some sort be used on the pumps inlet side to assure that you do not draw trash into the system causing clogs and lost time. The recovery trap sits on the unit, and does not require any mounting tools. The hopper slides into the trommel, and uses wing nuts mounted to stabilizer bars that quickly connect the entire assembly together. Put the Mountain Goat in a large black tub if you're using it as a recirculating unit, add water, hook it up to a battery and you are ready to run material ... *ALMOST*.

### Setting up the trommel

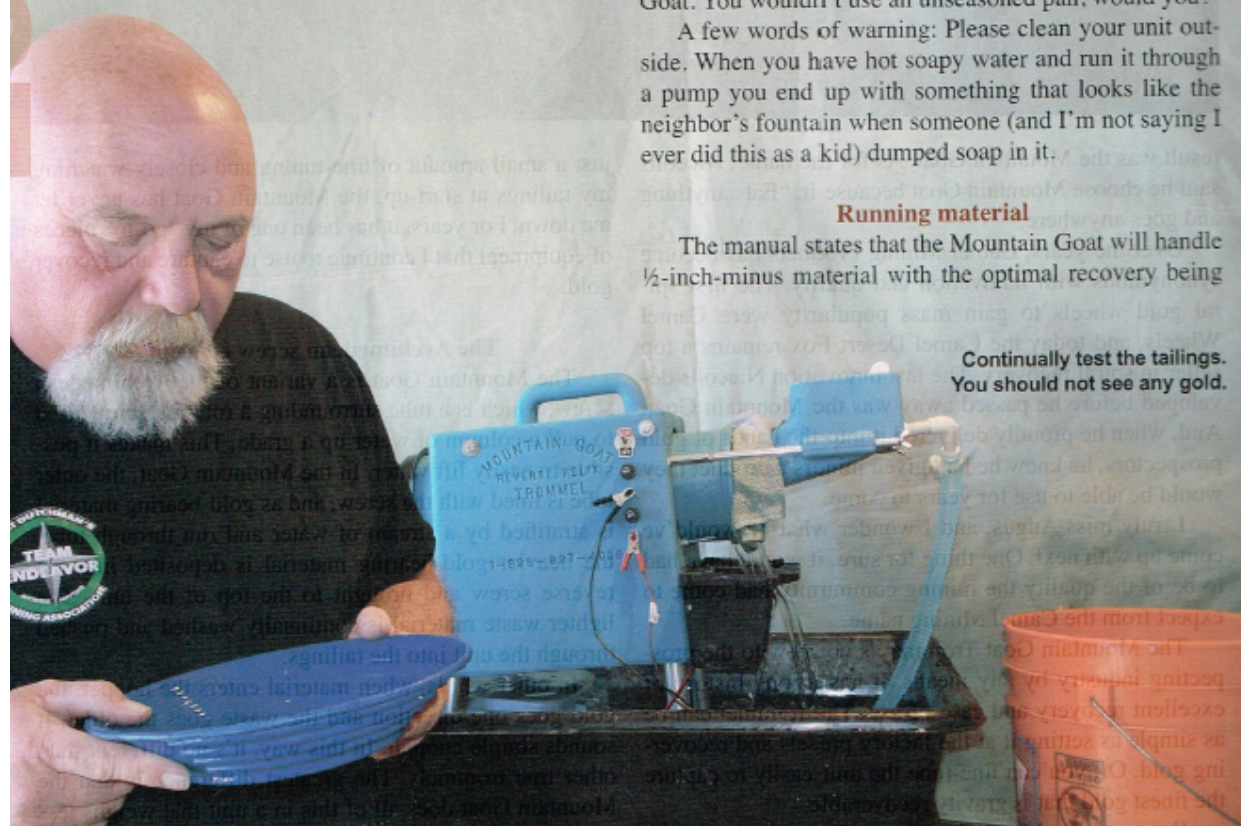
This unit is made of plastic and a great deal of it is molded, meaning that there is release agent on almost every surface. Prior to using your unit for the first time — or before using it after sitting for some time — please for the sake of your recovery, clean the unit. Use hot water in your tub with a little dishwashing detergent that does not contain citrus scents. Hook up the unit, and allow the soapy water to do its job. Use a sponge to wipe down all surfaces that are exposed to water and the outer case of the unit. This includes the recovery trap as well. Do not lose your gold because of oil that you could have prevented by taking a few minutes in preparing your Mountain Goat. You wouldn't use an unseasoned pan, would you?

A few words of warning: Please clean your unit outside. When you have hot soapy water and run it through a pump you end up with something that looks like the neighbor's fountain when someone (and I'm not saying I ever did this as a kid) dumped soap in it.

### Running material

The manual states that the Mountain Goat will handle 1/2-inch-minus material with the optimal recovery being

Continually test the tailings. You should not see any gold.





material that has been classified to ¼-inch. Not an issue for me. I will always classify my material to the smallest number that does not leave the majority of my gold in the classifying screen.

I am also a major proponent of only operating wet equipment with wet material — meaning wet on wet. Introducing dry material into any type of final recovery unit that is smaller than a six-foot wash plant should always have the material entering the system in at least a slurry.

I placed the Mountain Goat with the legs set to the factory position of the lowest setting into the largest black mixing tub available at my local building supply store and filled the tub about half full with water (with another five-gallon bucket ready to add water), dropped the pump into the water, hooked it to the battery and began pumping water. I placed the three-gallon tailings bucket under the nugget trap and allowed it to fill with water, and then added additional water to the tub to keep the pump well under the water. Then, I added a small amount of surfactant to the water — not soap, but surfactant. Soap is a cleaner while surfactant is a wetting agent that breaks the surface tension of the water and it is very important to use this in recirculating systems unless directed otherwise by a manufacturer.

#### Preparing the material

With the unit ready, it was time to prepare material. I took two five-gallon buckets that I had screened to ¼-inch dry outside and began wetting. Sticking a hose into the buckets and decanting off the muck, I was left with a little over six gallons of concentrated material.

Decanting the last of the water off the material and leaving it wet, I used a standard green scoop to feed the first of the material into the Mountain Goat. I had placed a gold pan on top of the tailings bucket to be able to spot check the first couple of scoops of material.

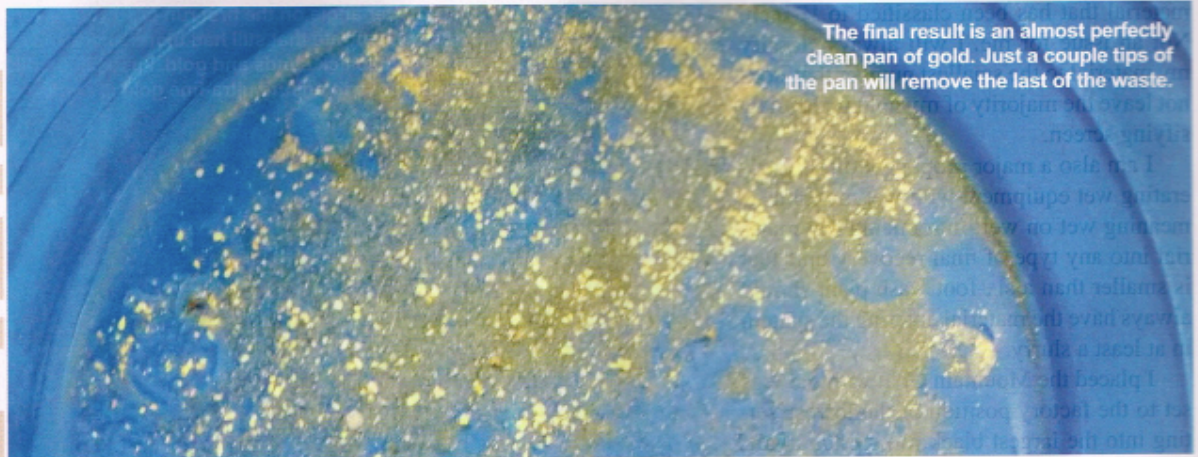
After running the test material, I checked the gold pan and the recovery trap. The pan did not contain any gold. But, the recovery trap not only had a few specks of gold in the tray, it also had a great deal of unwanted black sands as well.

This let me know instantly that I needed to

A flatter angle on the first run produced a very rich concentrate that still had blond sands mixed in with the black sands and gold. I usually do this on purpose to ensure ultra-fine gold is captured.







The final result is an almost perfectly clean pan of gold. Just a couple tips of the pan will remove the last of the waste.

increase the angle of the unit to allow more of the unwanted material to pass through it. Turning the tuning screws on the front legs and rechecking the material, I quickly got the Mountain Goat to the proper angle where I was recovering very little black sands in the recovery trap while still preventing gold from dropping out into the tailings. I was ready to run volume.

I timed myself to a wet scoop of material every 15 seconds, and I fed the hopper rather than dumping the material into the unit while constantly checking my gold pan for loss. When I was not seeing any loss in the pan, I increased my feed rate slightly to one scoop every 10 seconds of wet material. Still no loss. I did, at one point, pull off the nugget trap, letting the material drop into my pan. I found one piece of very flat small gold which convinced me the unit was working exactly as expected. Larger or in some cases very flat pieces of gold will not be trapped in the reverse helix of the trommel. In the case of the Mountain Goat, these larger pieces of gold are caught in the nugget trap.

After running my material, the recovery trap had about a quarter-cup of gold rich concentrates ready for the next step in final recovery. I regularly use the Mountain Goat and my Camel Desert Fox as a two-stage concentrator and final recovery unit. Whether I'm drywashing, dredging or highbanking, on a daily basis I create a great deal of concentrates that have to be worked down into sellable gold without taking too much time. This is where the Mountain Goat and Desert Fox have turned days into just hours of final recovery.

After classifying to 1/4-inch and decanting all of my concentrates, I will run the material through the Mountain Goat using a fairly flat angle. This means I will have much more of the black sands in the recovery trap than usual, and some of the lighter blond material as well. After processing all of my first-run concentrates, I will install an optional recovery flume that allows me to use my Desert Fox for final recovery. The flume sets on the unit in place of the recovery trap and directs the

final concentrates directly into my spiral wheel, which in turn removes the final waste material and deposits clean, ready-to-dry-and-sell gold into the catch cup.

On the second or final run after changing my water, adding surfactant, installing the flume and setting the angle steeper on the Mountain Goat, I will place my Desert Fox into the proper spot in front of the flume to allow the final concentrates to drop just in front of the pickup leads on the wheel.

With the two pieces of equipment in place, I will run a small amount as a test to ensure proper angles on both the Mountain Goat and the Desert Fox. Once I know that my recovery is as expected, I'll sit down in my comfy garage chair and begin feeding the Mountain Goat, watching as the gold and a very small amount of black sands drop onto the flume and into the leads of the Desert Fox. The end result is clean gold dropping into the cup. That's it, that is all there is in going from a rough concentrate to a final sellable product in two very easy steps.

Even if I had never used the Mountain Goat for testing or in the field running material in dry or wet placer areas, and just used it as a two-step concentrator, the Mountain Goat has been worth every dollar I've spent.

There are a few have-to-have pieces of equipment. The Camel Mining Mountain Goat is one of them, and one that I immediately saw the value in having many, many years ago, whether it's in the container ready to go to the field at any time or sitting in the shop set up to run concentrates. Coupled with the Desert Fox, this Camel Mining duo is just the right equipment for me, and I'll bet for you as well.

### Pros

- Lightweight easy to carry into the field
- Intuitive design and easily adjustable for excellent firstpass recovery
- Coupled with spiral wheels for final recovery
- Rugged case for years of service
- Includes extra drive belts



- Price range is moderate
- Made in Arizona, U.S.A.

#### Cons

- Drive bands can break, always have spares
- Being lightweight, some may find it challenging to set into moving water

**Author's Note:** Over the years, there have been a few comments concerning batteries to be used for the Mountain Goat. Most of this is clearly covered in the trouble-shooting guide section of the instructions. However, I do want to reiterate the need for always using a battery over using a charger without a battery in line. If you use a charger that will work without a battery in the system, there is a high possibility that the charger is running a higher voltage to your unit which will cause the unit to run faster and out of the normal specs for optimal gold recovery. Every part of the Mountain Goat Trommel was designed to work hand-in-hand with each component. Altering any part of the unit, be it water flow or power, will have an effect on your final recovery.

*Kevin Hoagland is the host of the GPAA-produced TV series Gold Trails and the Executive Director of Development for the Lost Dutchman's Mining Association. He can be reached at [khoagland@goldprospectors.org](mailto:khoagland@goldprospectors.org).*

## Camel Mining Products

### Mountain Goat Trommel

#### Specifications:

- Length with hopper installed: 32 in.
- Spiral barrel diameter: 4 in.
- Normal height with aduster legs: 24 in.
- Width at bottom: 16 in.
- Net weight: 18 lb.
- Shipping weight: 20 lb.
- D.C. Voltage required: 12 volts vdc
- Pump: 12v 750 gph submersible
- Cost: \$695

For more information or to order, visit  
[GoldRushTradingPost.com](http://GoldRushTradingPost.com)

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USA when you spend \$350!

During the second run of concentrates, notice the steeper angle and the lack of waste material in the Desert Fox spiral wheel.

