CALIFORNIA Water Boards

EDMUND G. BROWN JR. GOVERNOR

MATTHEW RODRIQUEZ SECRETARY FOR ENVIRONMENTAL PROTECTION

North Coast Regional Water Quality Control Board

Complaint Inspection Report
Daniel Franklin Property
1-00NTMP-019 MEN/LAK
Lake and Mendocino Counties
WDID No. 1B13159CNME

Date:	April 30, 2014
To:	Diana Henrioulle – Senior Water Resource Control Engineer David Leland - Assistant Executive Officer
From:	Stormer Feiler, Environmental Scientist
Subject:	May 3, and May 24, 2013 inspections
Landowner: Physical Site: APN:	Daniel Franklin 17777 Eel River Road 171-260-06
Mailing Address:	Daniel Franklin, 27860 Poppy Drive, Willits, Ca. 95490
Mailing Address:	(Tax Bill Address) Olive Franklin c/o Muckle Hill Farm SPA Common North Walsham, Norfolk, NR28985, England
Watershed:	Main Stem Eel River, Upper Eel River watershed
Violations:	Federal Clean Water Act Section 301, Porter Cologne Water Quality Control Act Section 13376, Water Quality Control Plan North Coast Region (Basin Plan) Point Source Prohibition

Inspection Attendance May 3, 2013
Stormer Feiler- North Coast Regional Water Quality Control Board (NCRWQCB)

Inspection Attendance on May 24, 2013
Stormer Feiler- NCRWQCB
Dave Longstreth – California Geologic Survey (CGS)
Steve Crowl – California Department of Fish and Wildlife Warden (DFW)
Rick Macedo –Senior Environmental Scientist (Specialist) (DFW)

Daniel Franklin - Landowner

Introduction

On or about April 24 and 25, 2013, a 50,000 gallon rubber bladder water tank failed and discharged approximately 80,000 gallons of water directly to a Class 2 stream and the Main-stem Eel River in the Upper Eel River watershed. I received the initial complaint from two sources: Rick Macedo of the California Department of Fish and Wildlife (CDFW) and Missy Torisse-Brosnan of Pacific Gas and Electric (PG&E), during the week of May 1, alerting me to the bladder failure and the resulting significant instream resource damage. Mr. Macedo stated that the landowner, Daniel Franklin, had reported the incident to CDFW and was willing to cooperate with the investigation.

On May 3, 2013, I drove to the crossing on the Eel River Road, also known as Forest Service Road M8, and reviewed the instream damage visible above the road and the damage below the road extending down to the confluence with the Main Stem Eel River.

Following this inspection, I contacted California Geologic Survey (CGS), the CDFW warden and the landowner to schedule an inspection of the entire stream area and evaluate the environmental impacts that had occurred. This full site inspection was scheduled for and conducted on May 24, 2013.

These inspections are discussed, and observations supported with photographs in the body of this report.

Watershed and Beneficial Use Information

The site is located within the Bucknell Creek Cal Water watershed 1111.630904 (Cal Water version 2.2) within the Upper Main Eel River watershed area. This watershed is also referred to as the Hydrologic Unit Code (HUC) 12 watershed 180101030502 Soda Creek-Eel River. The affected stream is tributary to the Mainstem Eel River, which is in the California Coast Evolutionarily Significant Unit (ESU) for Chinook Salmon and the Northern California ESU for Steelhead trout; both these fish species are listed as Threatened in accordance with requirements contained in the federal Endangered Species Act and the California Endangered Species Act. The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) designated the relevant ESU's. The Mainstem Eel River and its tributaries are federal Clean Water Act section 303(d)-listed as impaired due to both sediment and temperature. In December 2004, the U.S. Environmental Protection Agency (USEPA) approved a total maximum daily load (TMDL) for sediment and temperature in the Upper Main Eel River watershed.

In addition to providing habitat for rare and endangered species, the watershed supports a number of other existing and potential designated beneficial uses of water, including Municipal and Domestic Supply, Agricultural Supply, Industrial Process and Service Supply, Groundwater Recharge, Freshwater Replenishment, Navigation, Hydropower Generation, Water Contact and Non-Contact Water Recreation, Commercial and Sport Fishing, Cold Freshwater Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development and Rearing, Wildlife Habitat, and Aquaculture.

Inspection Observations

May 3, 2013 Inspection Observations

In response to the complaints received earlier in the week, I drove out the old Eel River logging road also known as Forest Service Road M8 (hereinafter referred to as M8 road), to evaluate the area claimed to be affected by the bladder failure and the nature and severity of the resulting damage to determine an appropriate response. The location as reported by CDFW and PG&E was easy to find, as I observed a large amount of mud deposited on and crossing the M8 road. At the time of the inspection, surface soils were still wet where water and muddy debris had pooled on the road surface and in the roads inside ditch. Evidence of the instream disturbance caused by the recent high flows was clearly visible. At the stream crossing on the M8 road, I saw that sediment and debris had plugged the culvert and overtopped the road and entered the stream channel again. I observed deposits of large boulders 2-3 feet in diameter where the stream met the road on the south (upstream) side. I also observed that a portion of the flow had diverted west down both the road surface and the road's inside ditch and discharged into an adjacent stream, which also delivered sediment and debris to the Main stem Eel River.

I walked up the affected stream channel to assess channel conditions at a point far enough away from the road to be representative of a natural channel condition; stream channels are often somewhat altered near the road-stream interface. As I walked up the stream, I noted that the entire stream channel was scoured out to a depth of 4-6 feet on each side of the stream. The bedrock was visible on the bottom of the stream and on side slopes into the stream in many locations. I did not see any bankside vegetation, but did see places where ferns had been completely torn away except for the root masses. Based upon the morphology and professional experience, I determined that the stream appeared to have been a relatively high volume Class II[1] stream capable of sustaining flows into the summer, and perhaps perennial, likely providing habitat for macro invertebrates and amphibians on a year round basis. The stream was flowing lightly at the time of this inspection down to the plugged M8 road crossing. The entire stream channel was eroded ("destroyed" more correctly characterizes the conditions I observed), and the scour line was visible as eroded stream banks and flattened and broken off bankside vegetation. I observed that the flows had transported large cobbles and boulders. It appeared that the flow had captured a significant amount of debris by the time it reached the road and river area, resulting in a debris flow.

I also walked down to the Eel River, a Class I[2] stream, and then upstream in the Eel River to the confluences of the two tributary streams affected by the high flows. I photographed the depositional areas at these confluences. The stream that received the flows directly from the water bladder conveyed the majority of the water from Road M8 down to the Eel River, with only a portion diverting over to the adjacent stream channel. Therefore, the bulk of the damage and the conditions I report pertain to that primary stream unless otherwise specified. I observed a large pile of debris hung up on a willow tree at the confluence of the

[1] California Forest Practice Rules define a Class II watercourse as 1) a watercourse capable of supporting non-fish aquatic species, or 2) a watercourse within 1000 feet of a watercourse that seasonally or always has fish present. The definition excludes Class III watercourses from the exception.

[2] California Forest Practice Rules define a Class I watercourse as 1) a watercourse providing habitat for fish always or seasonally, and/or 2) providing a domestic water source.

stream and the river. Downstream, in the river, I noted floating woody debris caught among the boulders. The river was clear at the time of this inspection. I observed sediment splashed onto branches 4+ feet above the bottom of the stream channel adjacent to the confluence. In addition, I could see that flows in the stream had scoured out the fine and coarse materials from the channel bed, as the channel bottom consisted of primarily materials that were large cobbles or small boulders well cemented into the substrate. The amount of water that had traveled down the channel appeared to have scoured the entire channel bottom to a depth of 1-4 feet from below the road to the confluence, as it delivered to the Eel River. The flow line of the discharge was visible on the stream banks as a scour line and as muddy deposits. This was extraordinary considering the flow from the bladder had crossed a road and been partially diverted to another channel approximately 75-100 feet upstream. The sudden change of grade at the road crossing had likely acted as a brake on the flow, as evidenced by the deposition of large boulders described earlier.

May 24 2013 Inspection

On May 24, 2013, DFW Warden Steve Crowley, Staff Environmental Scientist Rick Macedo, CGS Geologist Dave Longstreth, and I met Daniel Franklin, the property owner, at the driveway to the property on the M8 road. Mr. Franklin was accompanied by a man introduced as his business partner, however, I did not get his name. Mr. Franklin had reported the bladder failure and water discharge to Rick Macedo. In reporting the incident to me, Mr. Macedo indicated that he had heard from a neighbor the event had occurred sometime between 1700 hours on April 24, and 0630 hours on April 25, 2013. We started the inspection by interviewing Mr. Franklin. Mr. Franklin advised us that the discharge had occurred when a 25' x 60' bladder he uses for water storage failed. Mr. Franklin stated that the outlet line for the water bladder had been left in a closed position with the intake line on, or partially on, causing the bladder to overfill and burst delivering all of its stored contents to the stream directly adjacent to the bladder. Mr. Franklin said that they only fill the bladder in the spring to use it for firefighting. He said that in the past they had also used it for irrigation, but they were not doing that anymore. Usually they would turn it on, fill it, and then turn it off. Mr. Franklin stated that he owned the entire drainage and the property; he also said he accepted responsibility for the bladder failure. Following the introductions and brief interview, we drove onto the property to see the failed water bladder, located at GPS waypoint N 39º22'05.6" W 123º03'52.9".

I inspected the bladder, and could see that it had burst along a seam, likely instantly releasing its entire contents into the adjacent Class II stream. I observed that the flow path caused by the bladder failure was about 30 feet wide. I walked around the bladder and found a label indicating that it is a military surplus item intended to store fuels for military use. The label indicates that the bladder capacity is a maximum of 50,000 gallons, with a maximum tank height of 4' 9." The label also states "CAUTION," "DO NOT OVERFILL," "Overfilling Will Result In Permanent Damage And Failure Of The Tank." The label also indicates that the bladder is not recommended for long term use for gasoline storage. Mr. Franklin estimated that the bladder might have contained as much as 80,000 gallons of water when it failed. Mr. Franklin stated the adjacent two (2) 2500 gallon tanks are gravity fed from the source above (POD #1), and water is then transferred to the bladder. POD #2 is also used to fill the bladder later in the year when POD #1 goes dry.

We measured the bladder and found its dimensions to be approximately 25' X 70,' as compared to the 25' X 60' discussed earlier. Considering that the bladder may have held 80,000 gallons when it failed, would explain the apparently stretched out or expanded length of the bladder from specifications when we measured it. The pad the bladder was located on was 70' X 104'. We also observed two (2) 2500 gallon water tanks next to the water bladder. Mr. Franklin indicated that the water flowed from the tanks into the bladder. From the bladder, water was either pumped back into the tanks or into the adjacent cleared area, where we observed holes filled with potting soils that looked as though they had been used for growing plants. I did not observe any plants during the inspection.

We asked Mr. Franklin where water came from to fill the tanks and he said uphill from a spring. At our request, Mr. Franklin and his partner took us to the spring, which I have identified as Point of diversion 1 (POD #1[3]) on the map included with this report. The "spring" feature consisted of a pool partially dug out and dammed with stones and black plastic in a Class II stream. The diversion location was dry at the time of inspection.

During the inspection, we also visited a second point of diversion on the same stream, at a location I have identified as POD #2[4] on the map. POD #2 is located in a high functioning Class II stream, of about the same watershed area and channel dimensions as the stream affected by the water bladder failure. For the purposes of this report the stream associated with POD #2 is being used as a reference stream to demonstrate the change in habitat conditions caused by the catastrophic failure of the water bladder. During the inspection, I observed multiple species of macro invertebrates, and a well-developed instream morphology consisting of large rocks, boulders, cobbles, dominating a riffle and drop pool stream system in this tributary located directly adjacent to the stream the water bladder failed into.

Evidence observed at the site of the bladder indicates that the discharge from the bladder started out with a flow path 30 feet wide, and as it flowed down the confined stream channel, formed a debris torrent picking up loose materials from the stream bank and boulders and cobbles from the stream bottom, scouring banks to heights of 7-8 feet with a flow cross section of up to 20 feet at the top of the flow path. The stream is located on slopes ranging from 50-80%, facing predominately north. These extreme flows scoured down to and exposed bedrock, and moved 1-4 ton boulders downstream, the boulder deposits were visible where roads crossed the stream. The instream erosion and scour traveled approximately 2000 feet to the Eel River downstream. I observed that the stream channel morphology is primarily confined, with an average width at the base of 4-5 feet, the scour line of the channel ranged from 4-8 feet up on the stream banks. In some areas, the channel was of greater confinement and in these locations the average stream base width was approximately 2-3 feet. For the benefit of calculating erosion volumes an average stream base width of 3 feet with a scour depth of 4 feet and a channel width at the top of the scour of 8 feet is used[5] to estimate that approximately 1629 yds^3 of instream erosion occurred.

[3] POD #1 N 39º 21' 56.8" W 123º 03" 47.1" (NAD 83)

[4] POD #2 N 39º 22'06.6" W 123º 04' 02.5" (NAD 83)

[5] (3+8)/2x4x2000=44000/27=1629.629 yds^3 of instream erosion (Volume of a trapezoid channel)

I requested that Mr. Longstreth estimate the volume of materials eroded from the stream channel during the high flows following the bladder failure. Mr. Longstreth indicates in his report[6] that over 518 cubic yards of sediment and debris originating from instream channel scour were delivered to the Eel River. Mr. Longstreth indicates that he developed this estimate using an average V-shaped scour channel of 3.5 feet of depth and 4 feet of width for a distance of 2000 feet.

The instream scouring and removal of vegetation and debris down to bedrock resulted in the down cutting of the channel and delivery of a large quantity of sediment to the Main-stem Eel River below. The bladder failure was likely an extraordinary hydrologic event for this stream, and resulted in the erosion of aquatic and riparian habitat and stored gravels, cobbles, and boulders. The photographs in the following section do not do justice to the amount and scope of instream damage that was caused by the bladder failure. In the May 24, 2013 inspection photo section, I compare the impacted stream to another, similar sized but unaffected stream located directly adjacent to the affected stream on the same property.

While investigating the complaint, I noted that the existing road system on the property did not appear to be maintained. The road system should be evaluated and assessed for controllable sediment sources and an erosion control plan developed to bring roads up to standards. The evaluation of the road system was not the primary purpose of the inspection; what I noted was ancillary to evaluating the damage associated with the bladder failure.

Inspection Photographs

I took all photos provided below; dates and times[7] are shown on the photos.

May 3, 2013 inspection photographs

[6] California Geologic Survey, Preliminary Engineering Geology Assessment of Water Storage Bladder Failure and Erosion, Portion of Section 34, T18N, R11W, MD BL&M; Potter Valley Area, Ca. August 14, 2013

[7] Note that the time update feature on the camera used was turned off, so the time shown on each image is not the actual time that the photo was taken, but the date is accurate. On May 24, 2013, there was a 55-minute time difference between the photo time and the actual time; the time shown on each photograph is 55 minutes earlier than the actual time that the photo was taken.

Image 1, May 3, 2013 M8 Road with soil and mud deposits from bladder failure discharge.

Image 2, May, 3, 2013, stream crossing on M8 Road, looking upstream. This is the stream that carried the release from the failed bladder down to the road (note the large boulders deposited by the high flows at the road edge).

Image 3, May 3, 2013, this is taken upstream from the M8 Road crossing. Note the scour line: this shows the depth of flow during the discharge from the bladder failure. This is likely a perennial stream

Image 4, May 3, 2013, this image depicts the confluence of the primary stream with the Middle Main Eel River (note the flood debris captured on the willow in the foreground).

Image 5, May 3, 2013, over bank flows in the primary stream below the crossing on the M8 Road

May 24, 2013 Inspection Photos

Image 6, May 24, 2013, the clearing with planting holes, reportedly one of the destinations for water stored in the bladder prior to its failure. The location is identified as “point of use” on the inspection map.

Image 7, May 24, 2013, point of diversion; source of water used to fill the bladder and adjacent water tanks. (N 39º21’56.8” W 123º03’47.1”)

Image 8, May 24, 2013, failed water bladder (N 39º22’05.6” W 123º03’52.9”)

Image 9, May 24, 2013, water bladder label, which indicates it has a maximum capacity of 50,000 gallons. The bladder is designed for use with fuels, and not recommended for long term use.

Image 10, May 24, 2013, affected watercourse, looking downstream. The channel is scoured to the bedrock and large boulders carried in the flood are sitting on the road below. The road is on the subject property.

Image 11, May 24, 2013, the road shown in the previous photo at the watercourse crossing. Note the boulders deposited by the flood on the road bench and the extensive flood debris field.

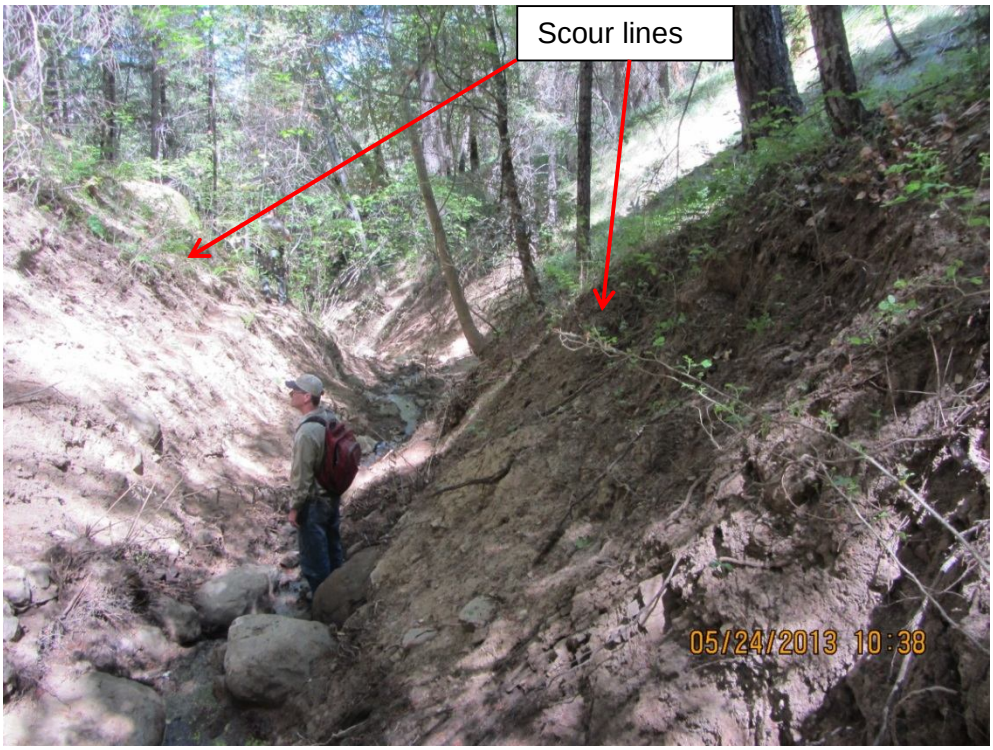

Image 12, May 24, 2013, in the affected watercourse, looking downstream; note the complete removal of all stream side vegetation and the depth of the instream channel scour.

Image 13, May 24, 2013, affected watercourse channel looking upstream; instream erosion and flood deposits

Image 14, May 24, 2013, adjacent unaffected “reference” stream. Note the stream side vegetation is well developed. In this section of stream the flow appears perennial based upon flow, the aquatic life present, and vegetation component.

Image 15, May 24, 2013, the reference stream downstream from image 13. The stream appears to flow underground and then re-surface farther down the slope. Note that here there is moss on the stream substrate and no apparent high flow scour line.

Summary

I observed a segment of Class II stream that had been completely scoured down to bedrock in many places due to high water flows resulting from the failure of the 50,000+ gallon military surplus fuel bladder. The instream living component, such as amphibians and macro-invertebrates that existed prior to the event, are nonexistent for the time being and will take some time to recover. The streamside vegetation in many places was completely scoured out and in others torn down to the roots. Where roots remain, the riparian vegetative community may recover within one to two seasons. Where scour has removed the roots, it will take much longer to re-establish a riparian community. This discharge could have been avoided had the landowner managed the water system adequately. Note that the system itself, as constructed and operated is likely an illegal diversion, and may be in violation of Water Rights laws.

Environmental Damage Associated with Unauthorized Discharge of 50,000+ gallons of water and debris

- 2,000 feet of stream channel erosion ranging from 3-5 feet in width at the streams base and 3.5 feet in depth dislodging and removing 1-4 ton boulders and most of the instream gravels and cobbles
- A range of 518 yds^3 up to 1629.6 yds^3 of instream erosion depending upon how the channel shape is viewed

The resultant instream erosion that occurred from the failure of the bladder I estimate at approximately 1629.6 $yards^3$. The water bladder itself could have released as much as 80,000 gallons due to overfilling, which caused the bladder to rupture. The potential volume

of discharge subject to penalties is the amount of erosion as a per gallon estimate added to the minimum of 50,000 gallons of discharge from the bladder or approximately 379,136.83 gallons[8].

As noted above, incidental to the damage associated with the bladder failure, existing roads on the site are in poor condition appearing to lack regular maintenance resulting in the potential for erosion and subsequently sediment delivery to streams.

Observed Violations

- The failure of the water bladder resulted in a discharge of water into a stream sufficient to scour out the stream channel and available instream habitat. No report of waste discharge or permit allowing surface water discharges from this bladder was filed, therefore this was an unpermitted discharge to waters of the state and waters of the United States.

- Water Quality Control Plan for the North Coast Region (Basin Plan)[9] prohibits certain point source discharges of waste. In this instance, the discharge of the bladder to the Eel River and its tributaries violates a point source prohibition, which stipulates that such discharges are prohibited on the Mad and Eel Rivers and their tributaries from May 15-September and during all other periods when the receiving waters discharge flow is greater than 1% of the receiving stream's flow. This incident occurred prior to May 15, but as discussed in this report, the receiving stream received flows sufficient to completely scour out the stream channel and destroy bank side vegetation; clearly much more than 1% of the flow this stream receives at any time of the year. If one considers the bladder and its attendant plumbing system designed for the storage and piping of water to represent a defined, and discrete system of conveying and storing water in a specific location, then the water bladder failure due to overfilling appears to represents a point source discharge.

Conclusion

Mr. Franklin may have illegally diverted water from Eel River tributaries without a license or permit. In operating this diversion and storing water Mr. Franklin discharged up to 80,000 gallons of water directly into a tributary channel and the Main Stem Eel River, the discharge resulted in up to 1629.6 yds^3 of instream erosion delivering sediment and debris to the Main Stem Eel River, a water of the U.S. Mr. Franklin may be subject to penalties for the water quality and water rights violations.

[8] 1629.6 yds^3 X 201.974 (gallons) = 329,136 .8 gallons + 50,000 gallons = 379,136.83 gallons

[9] Water Quality Control Plan for the North Coast Basin Region 1-(Page 4-1)
http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/basin_plan.shtml

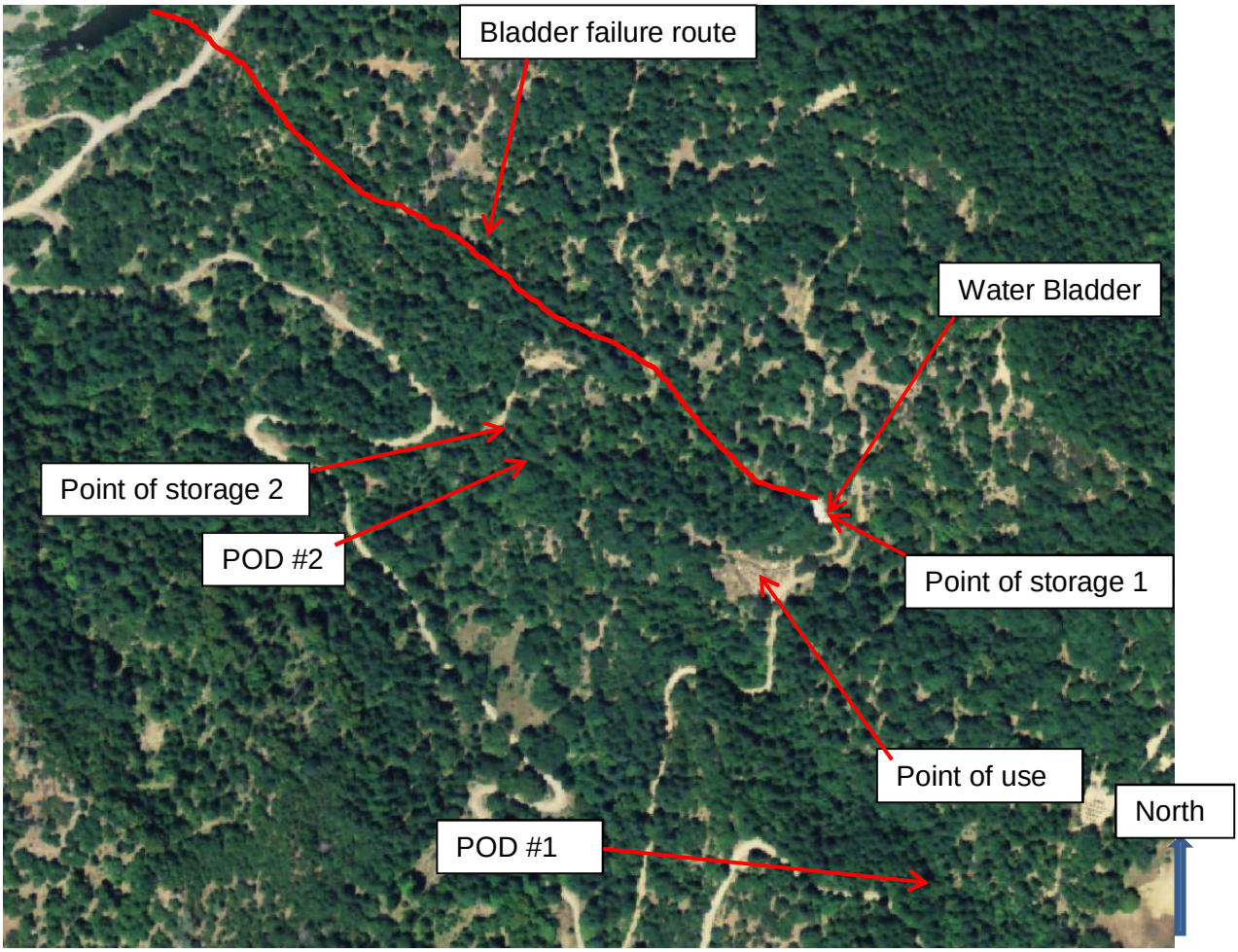

Image 15- NAIP 2012 the areas identified on the map approximate locations observed in the field and discussed above in the report.

Image 15, Google Earth Image of subject property and locations described within this report. The map points are generated by hand, and are estimated locations on the google image based upon observable landmarks. There is also a point of storage not shown, located directly downstream of POD #2 next to the road.