Substance	Classification/Penalty	Comments
Alpha-pyrrolidinovalerophenone (also known as Alpha-PVP)	1/A	Potent stimulant that is a derivative of the synthetic cathinone 3,4 methylenedioxypyrovalerone (MDVP)-a DEA Schedule 1 substance. Alpha-PVP is also the psychoactive agent in Khat. Exerts its effect by inhibiting norepinephrine-dopamine reputake. Also sold as Bath Salts. Confirmed finding AORC-2019. 1/A is consistent with 3,4 methylenedioxypyrovalerone.
Aripiprazole	2/A	FDA approved for human use as Abilify. Atypical antipsychotic; used to treat schizophrenia, bipolar I disorder, and major depressive disorder. It is also used to treat Tourette syndrome and irritability caused by autistic disorder. Confirmed finding AORC-2019. 2/A isconsistent with other anti-psychotics, e.g. clozapine, risperidone.
Arsenic	3/B with ability to mitigate to 3/C if there is credible evidence for environmental exposure (e.g. through cribbing or wood chewing behavior).	No FDA-approved products. Arsenicis a component of CaCo Copper a compounded product having historical use in horses as an appetite stimulant and in the treatment of anemia. Arsenic-containing veterinary products are commercially available in other countries (e.g. Jurocyl® [Ceva] at 50 mg/ml sodium arsinilate). Arsenic is present in pressure-treated lumber designated for non-residential use. Cribbing or wood chewing may result in expsoure sufficient to result in concentrations in excess of the screening limit. Findings for arsenic warrant investigation into the route of exposure with mitigation to 3/C recommended when there is compelling evidence for environmental exposure rather than deliberate administration.
Diisopropylamine	2/B	There is an Australian product with approval for veterinary use: DADA 250 (Ceva, Australia: https://www.ceva.com.au/Products/Products-list/DADA-250-Injection). The CEVA website states that it is a "detoxifier and vasodilator to increase blood flow to brain and peripheral tissues." Confirmed finding AORC-2019. As Hugalin, it is a human pharmaceutical with indications for the treatment of conditions angina pectoris, myocardial infarction, peripheral vascular disease, cerebrovascular disease and cerebral thrombosis and cerebral embolism, retinopathies, and hypertension. Confirmed finding AORC-2019. 2/B is consistent with nitroglycerin.
Etofenamate	4/B	. No FDA approved products. NSAID. In a human study, when administered IM was determined to be similarly effective to HA. (Savas, G., et al., Effectiveness of etofenamate for treatment of knee osteoarthritis: a randomized controlled trial, Ther Clin Risk Manag. 2016; 12: 1693–1699). Confirmed finding AORC-2019. 4/B is consistent with other NSAIDs lacking FDA approval.
Flufenamic Acid	4/B	NSAID lacking FDA-approval. NSAIDs are assigned Class 4. Those with FDA-approval for use in the horse or other species are assigned Penalty Class C. Those lacking FDA-approval are assigned Penalty Class B.
Harpagoside	4/B	No FDA-approved product. Glycoside isolated from Devil's Claw plant, but also synthesized as a pure compound. Used as therapy for treatment of pain and osteoarthritis in human patients. Has historic use in horses but lacks scientific support for efficacy. Marketed in multiple OTC joint supplement products, with ingredient labelled as Devil's Claw. Huang, T., et al., Harpagoside suppresses lipopolysaccharide-induced iNOS and COX-2 expression through inhibition of NF-kappa B activation, J Ethnopharmacol, 2006 Mar 8; 104(1-2): 149-55. Axmann, S., et al., Pharmacokinetics of harpagoside in horses after intragastric administration of a Devil's claw (Harpagophytum procumbens) extract, J Vet Pharmacol Therap., 42(1). https://doi.org/10.1111/jvp.12716. 4/B is consistent with NSAIDs lacking FDA approval.
Hypoxia-inducible factor (HIF) activators	1/A	Blood doping agents. Should be classified consistent with Erythropoietin, Darbepoetin, etc.
Hypoxia-inducible factor (HIF) stabilizers (e.g. IOX-2)	1/A	No products with FDA-approval. Blood doping agents. No indication for use in the horse. 1/A is consistent with other blood doping agents.
Molidustat	1/A	No FDA-approved products. No indication for use in the horse. HIF stabilizer; blood doping agent. 1/A is consistent with Roxadustat, another HIF-stabilizer.

Norethisterone (norethindrone)	4/B all genders	No FDA approved products. Oral progestin used in birth control pills, menopausal hormone treatments, and gynecological disorders. No indications for use in the horse. Confirmed finding AORC-2019. FDA-approved progestogin Altrenogest (Regumate) is assigned 4/C when detected in horses other than intact females. However, there is no indication for use of this non-FDA approved product in horses of any gender, thus the recommendation of 4/B
Oliceridine	1/A	Opioid agonist with FDA-approval for intravenous use in treating moderate to severe pain in human patients. It is a DEA Schedule II substance. 1/A is consistent with oxycodone and other DEA Schedule II opioids.
Oripavine	2/A	DEA Schedule II substance; no FDA-approved products. Opioid and major metabolite of thebaine (2/A), also a DEA Schedule II substance. Toxicity can result in seizures and death. Confirmed finding AORC-2019.
Parecoxib	4/B	No FDA-approved products. NSAID, selective COX-2 inhibitor. Prodrug for valdecoxib. There were valdecoxib-containing human products with FDA-approval, but the product was withdrawn due to risk of heart attack and stroke. Confirmed finding AORC-2019. 4/B is consistent with other NSAIDs lacking FDA approval.
Pregabalin	3/B	A gabapentanoid with FDA approval for human use (Lyrica™) in the treatment of neuropathic pain and fibromyalgia, nerve damage due to diabetes or Shingles, anxiety, as well as some types of seizures. Confirmed finding AORC-2019. 3/B is consistent with gabapentin.
Tapentadol	1/A	DEA Schedule II substance. FDA-approved human product (Nucynta™). Centrally acting opioid analgesic, μ-opioid receptor agonist and norepinephrine reuptake inhibitor. Similar to tramadol (2/B) in action. Analgesic efficacy in humans comparable to oxycodone (1/A). While there are indications for tramadol in equine veterinary medicine there is no literature supporting the use of tapentadol in the horse. Confirmed finding AORC-2019. 1/A to be consistent with oxycodone, in consideration of DEA Scheduling, and lack of indication for use in the horse.
Trometamol (Also known as tris-hydroxymethyl aminomethane [THAM])	3/B	Ikalinizing agent used as an alternative to sodium bicarbonate in the treatment of metabolic acidosis in human patients. 3/B is consistent with TCO2 violation--evidence of administration of an alkalinizing agent.
Valdecoxib	4/B	Correct to Class 4 to be consistent with all NSAIDs. While an FDA-approved product did exist, the penalty classification for this drug was augmented due to the health risks associated with its use and the availability of far safer NSAID alternatives.