

## Attachment L: Proposed Cutoff Levels

RFP 21-2133: Drug Testing Supplies and Services

**Instructions:** In Tables 1 through 4 below, for each substance and medium, please provide your proposed cutoff levels in the yellow shaded boxes. The DCS Target Cutoff Levels are provided in the gray shaded boxes. The State prefers that testing occur for the following substances utilizing DCS' Target Cut-Off Levels, but Respondents may propose alternative cutoff levels based upon industry standards and/or other child welfare drug testing standards. Any attempt to manipulate the format of the document, remove information, or submit pricing that deviates from the current format will put your proposal at risk.

<b>Respondent Name:</b>	<b>Technical Resource Management, LLC dba Cordant Health Solutions</b>
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If your proposed test supplies do not adhere to the targeted cutoff levels, describe how they will meet the State's needs, including reference to industry standards and/or other child welfare drug testing standards in the box below:

When providing drug testing for populations where the ultimate goal is child safety, family preservation and family reunification, it is critical to choose cut offs that can appropriately differentiate intentional substance use from unintended contact with a drug. Cordant's responsibility as a drug testing provider is to compliment your program's vision in properly identifying the indicators for both safety and risk in this sensitive population.

**Oral Fluid** - It is essential to understand the importance of a testing cut off value. While the lowest possible cut off for testing is an attractive option, it isn't always the best choice or appropriate for this population. Keeping the DCS's principles in mind towards the goals for child protection, child safety, family preservation and family reunification, there are several important implications of inappropriately low cut offs for certain drug testing matrices. The cutoffs applied for oral fluid (and all other matrices) testing at Cordant Health Solutions have been carefully evaluated and scientifically established. While our laboratories routinely detect and quantify much lower drug concentrations, it is important to recognize the fact that the possibility of false positive results due to incidental contact increases dramatically. Other laboratories will routinely (claim) to provide cutoffs near to the typical limit of detection or quantification but this is an unadvised practice. Our research has shown that drug transfer and contamination at very low levels is always a distinct possibility. As an illustration of how easily this could occur, a study by the *Journal of Analytical Toxicology* published in 1996 found 79% of the currency randomly tested from 10 different cities was positive for some level of cocaine on the surface\*. The very nature of applying cutoffs is to provide the donor with protection from the possibility of inadvertent positive results. Mishandling or improper collection could very well lead to the accusation of drug use when no such use has occurred if inappropriate cutoffs are applied. Furthermore, the concentration of most drugs of abuse in oral fluid is highly dependent on pH and this can result in wide variation in drug levels. Therefore, it is critical to select a laboratory that has

extensive experience in the development and application of oral fluid testing. In this sensitive population where a drug test result may be the difference between family reunification or separation, the distinction between intentional drug use and unintended low-level exposure is critical.

**Urine** -Cordant can meet all the target urine cut offs requested however we would like to recommend an alternative approach that better aligns with industry standards in child welfare drug testing. The targets requested by the DCS are traditionally only utilized by federally regulated workplace drug testing and do not align with industry standard cut offs in social service agencies. While these cut offs can differentiate between common inadvertent drug ingestions, i.e. morphine cut off of 2000 ng/mL eliminates the possibility of a morphine positive due to poppy seed ingestion, these higher cut offs will also miss individuals at the end point of their drug metabolism, thereby reducing the drug detection window and potentially missing drug use all together. While it is important to protect against incidental exposures it is just as important to choose cut offs that are appropriate to the matrix, to industry standard in child welfare protection and to your program's values and goals. We would be happy to discuss further, appropriate target cut off options with the DCS. Cordant's Flagstaff Laboratory cut offs have been intentionally selected to support the testing cut off requirements of our clients. These expected cut offs have been well defined for many years in criminal justice and social services drug testing. While the requested target urine confirmation cut offs by LCMSMS for Opiates, Oxycodone, Methadone and PCP are not aligned with industry standard, we do have the ability to report to the target levels requested by the DCS. Per our lab accreditation through the College of American Pathologists for Forensic Drug Testing and in accordance with SAMHSA guidance, all quantitative testing should be controlled around the cut off but should also be able to report levels at 40% of the defined cut off. These levels are referred to as the lowest limit of quantitation (LOQ). Please see below tables for reference. The lowest limit of quantitation (LOQ) is listed for those specifically addressed drugs within.

**Hair** - Drug testing in hair captures use within the last 90 days. Hair testing is a great choice for understanding a home environment and a person's lifestyle choices. Because multiple moderate doses are required in most cases for a positive result, target cut off choices for hair are typically set by each laboratory based on sample preparation techniques, instrumentation capabilities, and peer reviewed scientific literature on pharmacokinetics. Minor variabilities for selected hair cut offs lab to lab are common, however, due to the nature of the 90 window and the undefined correlations between drug dosing and appropriate cut offs, inter-lab cut off variabilities will have negligible impact to final result interpretation.

**Blood** - The collection, transport and testing of blood has certain challenges. Special handling at the collection site, as well as extensive sample clean-up, is required for testing of blood samples. Additionally, the low anticipated volume of blood sample collection and testing increases potential cost to the State. As such, in order to provide the most cost-effective option for the State we propose blood testing be performed as direct confirmations by LCMSMS in whole blood. Laboratory developed testing by LCMSMS will sufficiently meet the needs of the DCS while managing against increased costs for collection and handling.

\* *Cocaine Contamination of United States Paper Currency*. Jonathan Oyler, William D. Darwin, Edward J. Cone. Journal of Analytical Toxicology, Volume 20, Issue 4, July-August 1996, Pages 213–216, <https://doi.org/10.1093/jat/20.4.213>

Table 1: Target Initial Testing Cutoff Levels for 10-Panel Screen (in Attachment D: Scope of Work as “Table 2: Target Initial Testing Cutoff Levels for 10-Panel Screen”)

Substance	Oral Fluid		Urine		Hair Follicle		Blood	
	Target	Proposed	Target	Proposed	Target	Proposed	Target	Proposed
Amphetamines	20 NG/ML	50 NG/ML	1000 NG/ML	500 NG/ML	500 PG/MG	500 PG/MG	10 NG/ML	
Benzodiazepines	10 NG/ML	20 NG/ML	300 NG/ML	200 NG/ML	200 PG/MG	50 PG/MG	10 NG/ML	
Buprenorphine	1 NG/ML	5 NG/ML	5 NG/ML	5 NG/ML	40 PG/MG	10 PG/MG	10 NG/ML	
Cocaine	5 NG/ML	20 NG/ML	300 NG/ML	150 NG/ML	500 PG/MG	500 PG/MG	10 NG/ML	
Cannabinoids	1 NG/ML	4 NG/ML	50 NG/ML	20 NG/ML	1 PG/MG	1 PG/MG	10 NG/ML	
Fentanyl	1 NG/ML	1 NG/ML	2 NG/ML	2 NG/ML	40 PG/MG	20 PG/MG	1 NG/ML	
Methamphetamines	20 NG/ML	50 NG/ML	1000 NG/ML	500 NG/ML	500 PG/MG	500 PG/MG	10 NG/ML	
Opiates	10 NG/ML	40 NG/ML	2000 NG/ML	300 NG/ML	200 PG/MG	200 PG/MG	10 NG/ML	
Oxycodone	7 NG/ML	40 NG/ML	100 NG/ML	100 NG/ML	200 PG/MG	300 PG/MG	10 NG/ML	
Tramadol	20 NG/ML	20 NG/ML	200 NG/ML	200 NG/ML	40 PG/MG	50 PG/MG	10 NG/ML	

Table 2: Target Confirmation Testing Cutoff Levels for 10-Panel Screen (in Attachment D: Scope of Work as “Table 3: Target Confirmation Testing Cutoff Levels”)

Substance	Oral Fluid		Urine		Hair Follicle		Blood	
	Target	Proposed	Target	Proposed	Target	Proposed	Target	Proposed
Amphetamines	10 NG/ML	10 NG/ML	500 NG/ML	500 NG/ML	300 PG/MG	300 PG/MG	5 NG/ML	2.5 NG/ML
Benzodiazepines	1 NG/ML	1 NG/ML	100 NG/ML	100 NG/ML	50 PG/MG	50 PG/MG	10 NG/ML	2.5 NG/ML
Buprenorphine	1 NG/ML	2.5 NG/ML	5 NG/ML	5 NG/ML	40 PG/MG	10 PG/MG	1 NG/ML	2.5 NG/ML
Cannabinoids	.5 NG/ML	1.0 NG/ML	15 NG/ML	15 NG/ML	.05 PG/MG	0.2 PG/MG	5 NG/ML	5 NG/ML
Cocaine	1 NG/ML	4 NG/ML	150 NG/ML	150 NG/ML	50 PG/MG	500 PG/MG	20 NG/ML	2.5 NG/ML
Fentanyl	.5 NG/ML	1 NG/ML	1 NG/ML	1 NG/ML	100 PG/MG	20 PG/MG	.5 NG/ML	0.25 NG/ML

Substance	Oral Fluid		Urine		Hair Follicle		Blood	
	Target	Proposed	Target	Proposed	Target	Proposed	Target	Proposed
Methamphetamines	10 NG/ML	10 NG/ML	500 NG/ML	500 NG/ML	300 PG/MG	300 PG/MG	10 NG/ML	2.5 NG/ML
Opiates	5 NG/ML	10 NG/ML	150 NG/ML	300 NG/ML (LOQ = 25 NG/ML)	200 PG/MG	200 PG/MG	10 NG/ML	2.5 NG/ML
Oxycodone	3 NG/ML	10 NG/ML	50 NG/ML	100 NG/ML (LOQ = 25 NG/ML)	200 PG/MG	300 PG/MG	10 NG/ML	2.5 NG/ML
Tramadol	10 NG/ML	10 NG/ML	25 NG/ML	50 NG/ML	40 PG/MG	50 PG/MG	10 NG/ML	2.5 NG/ML

Table 3: Target Initial Testing Cutoff Levels for Additional Substances (in Attachment D: Scope of Work as “Table 4: Target Initial Testing Cutoff Levels for Additional Substances”)

Substance	Oral Fluid		Urine		Hair Follicle		Blood	
	Target	Proposed	Target	Proposed	Target	Proposed	Target	Proposed
Alcohol	.025 G/DL	.020 G/DL	100 NG/ML	.020 G/DL			20 MG/DL	50 MG/DL
Methadone	25 NG/ML	50 NG/ML	300 NG/ML	300 NG/ML	200 PG/MG	200 PG/MG	50 NG/ML	
Phencyclidine	10 NG/ML	10 NG/ML	25 NG/ML	25 NG/ML	300 PG/MG	300 PG/MG	10 NG/ML	

Table 4: Target Confirmation Testing Cutoff Levels for Additional Substances (in Attachment D: Scope of Work as “Table 5: Target Confirmation Testing Cutoff Levels for Additional Substances”)

Substance	Oral Fluid		Urine		Hair Follicle		Blood	
	Target	Proposed	Target	Proposed	Target	Proposed	Target	Proposed
Alcohol	.025 G/DL	.020 G/DL	100 NG/ML	.020 G/DL			10 mg/DL	10 MG/DL
Methadone	10 NG/ML	10 NG/ML	50 NG/ML	150 NG/ML (LOQ = 50 NG/ML)	200 PG/MG	200 PG/MG	20 NG/ML	2.5 NG/ML
Phencyclidine	10 NG/ML	4 NG/ML	10 NG/ML	25 NG/ML (LOQ = 10 NG/ML)	300 PG/MG	300 PG/MG	5 NG/ML	2.5 NG/ML

## Specimen Information

<b>Donor Name:</b>	<b>Collected:</b>
<b>Donor DOB:</b>	<b>Received:</b>
<b>Accession:</b>	<b>Reported:</b>
<b>COC:</b>	<b>Donor Other ID:</b>
<b>Type (Matrix):</b>	<b>Donor Case:</b>
<b>Client Code:</b>	
<b>Client:</b>	
<b>Requested By:</b>	

## Testing Results

Test	Result	Outcome	Cutoff	Notes
<b>Screening Tests by IA</b>				
URINE: Meth/Amphetamines		negative	1000 ng/ml	
URINE: Benzodiazepines		negative	300 ng/ml	
URINE: Cocaine		negative	300 ng/ml	
URINE: Methadone		negative	300 ng/ml	
URINE: Opiates		SEE BELOW	300 ng/ml	
URINE: THC		negative	50 ng/ml	
URINE: Oxycodone		negative	300 ng/ml	
URINE: Ethyl Glucuronide-ETG		negative	500 ng/ml	
URINE: Buprenorphine/Suboxone		negative	5 ng/ml	
URINE: Fentanyl		negative	2.0 ng/ml	
URINE: Soma/Carisoprodol		negative	100 ng/ml	
URINE: Gabapentin		negative	1000 ng/ml	
<b>Confirmation Tests</b>				
<b>Opiates by LC/MS/MS</b>				
URINE: Codeine	Not Detected	negative	300 ng/ml	
URINE: Morphine	Not Detected	negative	300 ng/ml	
URINE: Hydrocodone	305 ng/ml	**POSITIVE	300 ng/ml	
URINE: Hydromorphone	137 ng/ml	Detected	300 ng/ml	<ul style="list-style-type: none"> <li>Results consistent with Hydrocodone use.</li> <li>Detected (drug fingerprint confirmed) above the laboratory limit of quantitation.</li> </ul>
URINE: Oxycodone	Not Detected	negative	300 ng/ml	
URINE: Oxymorphone	Not Detected	negative	300 ng/ml	
<b>Specimen Validity Tests</b>				
<b>Specimen Validity Panel</b>				
URINE: Creatinine	47.0 mg/dl		20 mg/dl	
URINE: Basic Adulteration Check		normal		<ul style="list-style-type: none"> <li>Specimen checked for unusual color, physical characteristics and abnormal instrument response.</li> </ul>

## Additional Comments

- Testing performed at Cordant Forensic Solutions, 1760 E Route 66, P.O. Box 70000, Flagstaff, AZ 86004.
- Tests performed under CAP-FDT certification.
- Specimen received sealed and intact unless otherwise noted.
- CLIA #03D0936918, CAP-FDT #6913001
- Report Released By: SEC - B.S., Certifying Scientist.

Tests were developed and performance characteristics determined by Cordant Health Solutions™. The laboratory is regulated under CLIA as qualified to perform high-complexity testing.



Bert Toivola, PhD, Scientific Director

\*\*\* END OF REPORT \*\*\*