



Sex Estimation - Pelvic Morphology

Test No. 23-5511 Summary Report

Each sample set consisted of digital images of five different pelvic bones in 3D scan format. Participants were asked to estimate the sex of the bones and document any methodology used. Data were returned from 28 participants and are compiled into the following tables:

	Page:
<u>Manufacturer's Information</u>	<u>2</u>
<u>Summary Comments</u>	<u>3</u>
<u>Table 1: Examination Results</u>	<u>4</u>
<u>Table 2: Other Methodology Results</u>	<u>14</u>
<u>Table 3: Additional Comments</u>	<u>16</u>
<u>Appendix: Data Sheet</u>	

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each digital sample set consisted of five different pelvic bones in 3D scan format. Participants were asked to estimate the sex of the bones (Items 1 – 5) and document any methodology used.

SAMPLE PREPARATION: Pelvic bones were selected and scanned. The scans were then zipped and uploaded to the CTS Portal for download by test participants.

VERIFICATION: All predistribution laboratories reported the expected identification results for all items.

Item	Sex
1	Female
2	Female
3	Male
4	Male
5	Male

Summary Comments

The Sex Estimation – Pelvic Morphology test was designed to allow participants to assess their proficiency in estimating the donor sex of pelvic remains. Item 1 and Item 2 originated from a female donor. Items 3, 4, and 5 originated from a male donor. (Refer to the Manufacturer’s Information for preparation details)

Of the 28 participants that returned results, 21 participants reported the expected identification results for all items. The remaining seven participants reported the expected identification results for Items 1 - 4; however, reported the estimated sex of Item 5 as either "Inconclusive" or "Female/Probable Female." Of those that reported "Inconclusive," four of the five participants noted in their additional comments that the scan quality made their examination difficult.

The most commonly reported methods used by participants were Buikstra, J.E. & Ubelaker, D.H. (1994) and Phenice, T.W. (1969). Eighteen participants reported the use of other methodologies not listed in this test with the most common being MorphoPASSE.

Examination Results For Item 1

What is the estimated sex of the bone represented in the submitted 3D scan?

TABLE 1 - Item 1

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klaes, A.R., et al. (2012)	Other(s)
3RF7ZW	Female		✓	✓	
6PLYUP	Female	✓			
7WERFP	Female				✓
8V3EBR	Female	✓	✓		
B2HWJK	Female		✓	✓	
BCFWWN	Probable Female		✓		✓
BUZMVN	Female	✓	✓	✓	✓
CFXGGJ	Female	✓	✓		
DLUTPK	Female				✓
DQAZDK	Probable Female		✓		✓
EDJQ4K	Female				✓
F8NJYG	Female		✓		
G4HDWF	Probable Female		✓		✓
GKR4YK	Female	✓			
JCB6HE	Female				
JDL84D	Female	✓	✓	✓	
JZUKXH	Female	✓	✓		
LFK8GF	Female			✓	
MMDY3E	Female	✓	✓		✓
Q2MM49	Female	✓		✓	

TABLE 1 - Item 1

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
QX8EF9	Female				✓
UV98N8	Female		✓		✓
XDWRV3	Female		✓	✓	
YCFV33	Female				✓
YFECFW	Female	✓	✓	✓	✓
YMGHUY	Probable Female				✓
YUW444	Female	✓	✓		
ZP3L3W	Female		✓	✓	

Response Summary - Item 1		Participants: 28				
<i>What is the estimated sex of the bone represented in the submitted 3D scan?</i>						
Estimated Sex	Total Participants	Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)	
Female	24 (86%)	11	14	9	9	
Probable Female	4 (14%)	0	3	0	4	
Male	0 (0%)	0	0	0	0	
Probable Male	0 (0%)	0	0	0	0	
Inconclusive	0 (0%)	0	0	0	0	

Examination Results For Item 2

What is the estimated sex of the bone represented in the submitted 3D scan?

TABLE 1 - Item 2

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
3RF7ZW	Female		✓	✓	
6PLYUP	Female	✓			
7WERFP	Female				✓
8V3EBR	Female	✓	✓		
B2HWJK	Female		✓	✓	
BCFWWN	Probable Female		✓		✓
BUZMVN	Female	✓	✓	✓	✓
CFXGGJ	Female	✓	✓		
DLUTPK	Female				✓
DQAZDK	Probable Female		✓		✓
EDJQ4K	Female				✓
F8NJYG	Female		✓		
G4HDWF	Probable Female		✓		✓
GKR4YK	Female	✓	✓		
JCB6HE	Female				
JDL84D	Probable Female	✓	✓	✓	
JZUKXH	Female	✓	✓		
LFK8GF	Female			✓	
MMDY3E	Female	✓	✓		✓
Q2MM49	Female	✓		✓	

TABLE 1 - Item 2

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
QX8EF9	Female				✓
UV98N8	Female		✓		✓
XDWRV3	Female		✓	✓	
YCFV33	Female				✓
YFECFW	Probable Female	✓	✓	✓	✓
YMGHUY	Probable Female				✓
YUW444	Female	✓	✓		
ZP3L3W	Probable Female		✓	✓	

Response Summary - Item 2		Participants: 28				
<i>What is the estimated sex of the bone represented in the submitted 3D scan?</i>						
Estimated Sex	Total Participants	Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)	
Female	21 (75%)	9	12	6	8	
Probable Female	7 (25%)	2	6	3	5	
Male	0 (0%)	0	0	0	0	
Probable Male	0 (0%)	0	0	0	0	
Inconclusive	0 (0%)	0	0	0	0	

Examination Results For Item 3

What is the estimated sex of the bone represented in the submitted 3D scan?

TABLE 1 - Item 3

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
3RF7ZW	Male		✓	✓	
6PLYUP	Male	✓			
7WERFP	Male				✓
8V3EBR	Male	✓	✓		
B2HWJK	Probable Male		✓	✓	
BCFWWN	Probable Male		✓		✓
BUZMVN	Male	✓	✓	✓	✓
CFXGGJ	Probable Male	✓	✓		
DLUTPK	Male				✓
DQAZDK	Probable Male		✓		✓
EDJQ4K	Male				✓
F8NJYG	Male		✓		
G4HDWF	Probable Male		✓		✓
GKR4YK	Probable Male	✓	✓		
JCB6HE	Male				
JDL84D	Probable Male	✓	✓	✓	
JZUKXH	Male	✓	✓		
LFK8GF	Male			✓	
MMDY3E	Male	✓	✓		✓
Q2MM49	Male	✓		✓	

TABLE 1 - Item 3

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
QX8EF9	Male				✓
UV98N8	Probable Male		✓		✓
XDWRV3	Male		✓	✓	
YCFV33	Male				✓
YFECFW	Male	✓	✓	✓	✓
YMGHUY	Probable Male				✓
YUW444	Male	✓	✓		
ZP3L3W	Male		✓	✓	

Response Summary - Item 3						Participants: 28
<i>What is the estimated sex of the bone represented in the submitted 3D scan?</i>						
Estimated Sex	Total Participants	Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)	
Female	0 (0%)	0	0	0	0	
Probable Female	0 (0%)	0	0	0	0	
Male	19 (68%)	8	10	7	8	
Probable Male	9 (32%)	3	8	2	5	
Inconclusive	0 (0%)	0	0	0	0	

Examination Results For Item 4

What is the estimated sex of the bone represented in the submitted 3D scan?

TABLE 1 - Item 4

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
3RF7ZW	Male		✓	✓	
6PLYUP	Male	✓			
7WERFP	Male				✓
8V3EBR	Male	✓	✓		
B2HWJK	Male		✓	✓	
BCFWWN	Probable Male		✓		✓
BUZMVN	Male	✓	✓	✓	✓
CFXGGJ	Probable Male	✓	✓		
DLUTPK	Male				✓
DQAZDK	Probable Male		✓		✓
EDJQ4K	Male				✓
F8NJYG	Male		✓		
G4HDWF	Probable Male		✓		✓
GKR4YK	Male	✓	✓		
JCB6HE	Male				
JDL84D	Probable Male		✓	✓	✓
JZUKXH	Male	✓			
LFK8GF	Male			✓	
MMDY3E	Male	✓	✓		✓
Q2MM49	Male	✓		✓	

TABLE 1 - Item 4

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
QX8EF9	Male				✓
UV98N8	Male		✓		✓
XDWRV3	Male		✓	✓	
YCFV33	Male				✓
YFECFW	Male	✓	✓	✓	✓
YMGHUY	Probable Male				✓
YUW444	Male	✓	✓		
ZP3L3W	Male		✓	✓	

Response Summary - Item 4		Participants: 28				
<i>What is the estimated sex of the bone represented in the submitted 3D scan?</i>						
Estimated Sex	Total Participants	Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)	
Female	0 (0%)	0	0	0	0	
Probable Female	0 (0%)	0	0	0	0	
Male	22 (79%)	9	12	8	9	
Probable Male	6 (21%)	1	5	1	5	
Inconclusive	0 (0%)	0	0	0	0	

Examination Results For Item 5

What is the estimated sex of the bone represented in the submitted 3D scan?

TABLE 1 - Item 5

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klaes, A.R., et al. (2012)	Other(s)
3RF7ZW	Male		✓	✓	
6PLYUP	Male	✓			
7WERFP	Male				✓
8V3EBR	Male	✓	✓		
B2HWJK	Inconclusive		✓	✓	
BCFWWN	Inconclusive		✓		✓
BUZMVN	Male	✓	✓	✓	✓
CFXGGJ	Probable Male	✓	✓		
DLUTPK	Male				✓
DQAZDK	Inconclusive		✓		
EDJQ4K	Male				✓
F8NJYG	Male		✓		
G4HDWF	Inconclusive		✓		✓
GKR4YK	Male	✓	✓		
JCB6HE	Male				
JDL84D	Probable Male		✓	✓	✓
JZUKXH	Male	✓	✓		
LFK8GF	Male			✓	
MMDY3E	Probable Male	✓	✓		✓
Q2MM49	Male	✓		✓	

TABLE 1 - Item 5

WebCode	Estimated Sex	Methodology Used			
		Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
QX8EF9	Male				✓
UV98N8	Probable Male		✓		✓
XDWRV3	Female		✓	✓	
YCFV33	Probable Male				✓
YFECFW	Inconclusive	✓	✓	✓	✓
YMGHUY	Probable Female				✓
YUW444	Male	✓	✓		
ZP3L3W	Probable Male		✓	✓	

Response Summary - Item 5Participants: **28**

What is the estimated sex of the bone represented in the submitted 3D scan?

Estimated Sex	Total Participants	Phenice, T.W. (1969)	Buikstra, J.E. & Ubelaker, D.H. (1994)	Klares, A.R., et al. (2012)	Other(s)
Female	1 (4%)	0	1	1	0
Probable Female	1 (4%)	0	0	0	1
Male	15 (54%)	7	7	4	5
Probable Male	6 (21%)	2	5	2	4
Inconclusive	5 (18%)	1	5	2	3

Other Methodology Results

TABLE 2

WebCode	Other Methodology Used
7WERFP	WEA 1980, Acsadie & Nemeskeri
B2HWJK	Not able to directly measure on the images was a limitation as it prevented use of methods that rely on acetabular measurements. This is noted as a limitation of the format of the images provided. The ventral arc on some images was not clearly visible, attributed to image quality. Assessment of macroscopic specimens is preferred to digital images.
BCFWWN	Methods used: Morphological characteristics (Buikstra & Ubelaker) and MorphoPASSE software program (settings: Random forest model/Contemporary dataset/Unknown ancestry & region)
BUZMVN	<ul style="list-style-type: none"> • Santos, F.; Guyomarc'h, P.; Rmoutilova, R. y Bruzek, B. (2019). "A method of sexing the human os coxae based on logistic regressions and Bruzek's nonmetric traits". American Journal of Physical Anthropology 169(1): 1-13. https://f-santos.shinyapps.io/pelvis/ • Bruzek, J. (2002). "A method for visual determination of sex, using the human hip bone". Am J Phys Anthr. 117: 157-168. • MorphoPASSE (©Alexandra Kiales, 2015) https://morphopasse.shinyapps.io/morphoPASSE/
DLUTPK	Kiales AR, Cole SJ. 2018. MorphoPASSE: the Morphological Pelvis and Skull Sex Estimation Database Manual. Version 1.0. Topeka, KS: Washburn, University. https://www.morphopasse.com/ https://morphopasse.shinyapps.io/morphoPASSE/
DQAZDK	Methods used: Gross morphology of pelvic features as described in Buikstra & Ubelaker 1994; MorphoPASSE Random Forest Model, pelvic features (Temporal Period, Ancestry, and Region = UNK)
EDJQ4K	I scored pelvic traits following: Kiales AR, Cole SJ. 2018. MorphoPASSE: the Morphological Pelvis and Skull Sex Estimation Database Manual. Version 1.0. Topeka, KS: Washburn, University. I then entered those scores into MorphoPASSE v1.0 (https://morphopasse.shinyapps.io/morphoPASSE/) and estimated sex using the MorphoPASSE Random Forest method with individuals of unknown temporal period, ancestry, and region.
G4HDWF	Other = MorphoPASSE
JCB6HE	<p>PUBIS (medial inner surface): - Medial-lateral width of the pubis (female wider/quadrangular). - Subpubic angle (more acute male). - Ventral arch (bony crest on ventral surface of the pubis) (more pronounced female). - Sub-pubic concavity (more pronounced female). - Ischiopubic ramus (female presence of ridge and narrower). - Birth pits (circular depressions) on smooth dorsal surface (more common in women).</p> <p>ILIUM (medial inner surface): - General appearance (female more flared in the widest region and narrower at the base of the iliopubic ramus) (female more horizontal and lower). - Width of the sciatic notch (female wider). - Depth of the sciatic notch (deeper in men). - Preauricular sulcus (on the anterior and inferior border of the auricular facet) (more common in women). - Iliac crest (top view: male "S" shape with more pronounced curves than female). COMPLETE PELVIS (top view): - Upper opening (circular in women, and heart-shaped in men). - Prominence of the promontory (more prominent towards the opening in men). Others: - Obturator foramen (large and ovoid in men, small and triangular in women). - Acetabulum (larger in men than in women).</p>
JDL84D	Kiales, A.R., et al. (2020) Sex Estimation in the Human Skeleton, Chapter 6 for obturator foramen and composite arch.
JZUKXH	Buikstra and Ubelaker was supplemented with data from Walker 2005
MMDY3E	Walker (2005)
QX8EF9	Murail P, Bruzek J, Houët F, Cunha E. 2005. DSP: A tool for probabilistic sex diagnosis using worldwide variability in hip-bone measurements. Bulletins et mémoires de la Société d'Anthropologie de Paris. 17 (3-4), 167-176.

TABLE 2

WebCode	Other Methodology Used
UV98N8	Examinations included the use of Morphopasse software and its user manual. Klaes AR, Cole SJ. 2018. MorphoPASSE: the Morphological Pelvis and Skull Sex Estimation Database Manual. Version 1.0. Topeka, KS: Washburn, University. Klaes AR. 2018. MorphoPASSE: the Morphological Pelvis and Skull Sex Estimation Database. Version 1.0. Topeka, KS: Washburn, University.
YCFV33	R Steckel and coll. 2005; J Bruzk. 2002; Bruzk Jaroslav, Dominique Castex and Tona Majo. 1996; Janssens and Perrot. 1975.
YFEFCW	Klaes, A. R., & Cole, S. J. (2018). MorphoPASSE: The morphological pelvis and skull sex estimation database manual. Version 1.0 Topeka, KS: Washburn University.
YMGHUY	The analyses were done using the MorphoPASSE software (Klaes 2020, https://www.morphopasse.com/program.html). Due to the presence of only one bone representing each individual, the estimates are presented as "probable female" and "probable male."
ZP3L3W	I always try to use two or more methods (like FORDISC) to check that the analyzed sex estimate is accurate.

Additional Comments

TABLE 3

WebCode	Additional Comments
B2HWJK	Inconclusive result recorded for Item 5 due to discordant views between primary assessor and peer reviewer. Internal processes were followed that recommend an inconclusive result is noted and a recommendation for further investigation to resolve the discordance. This was also a difficult specimen as the Ventral Arc was noted as being difficult to visualise due to poor image quality in this region. In addition, the medial aspect of the ischiopubic ramus was scored as 3 (Klaes et al method) which indicates an undetermined scored for this trait.
BCFWWN	Item 5: Undetermined/Inconclusive: Ventral arc and subpubic contour are difficult to evaluate and present conflicting trait scores depending on the angle viewed. This may be due to poor scan alignment. The general impression is that the ossa coxa is male but confidence is low and an estimate of inconclusive/undetermined is most appropriate. Recommend referring the case for a DNA assessment of sex based on the amelogenin locus. Proficiency Test Notes 1. The [Laboratory] does not evaluate any aspect of the biological profile via photographs or 3D scans. All human remains cases must be evaluated in the laboratory prior to a report being issued. 2. The [Laboratory] does not use conclusive language in reports (e.g. Estimated Sex is Male) due to the range of variation seen across sexes and interpretation of report language by submitting agencies. "Probable" and "Consistent With" are acceptable qualifiers. 3. At the [Laboratory], inconclusive findings are combined with a statement to the submitting agency referring them to a forthcoming CODIS notification letter, which includes a sex statement based on the amelogenin locus, for a final determination of sex. Given this ability, the [Laboratory] is likely more conservative than other laboratories and more likely to report "inconclusive" when faced with conflicting or unclear evidence.
DLUTPK	Biukstra and Ubelaker is not a method. They are authors of a book of standards and they use the Phenice method in the sex estimation section. This is a common issue in the field with analysts citing this incorrectly. Lack of side lighting makes features difficult to score.
DQAZDK	Item 5 sex is Inconclusive. Grossly, many of the observations are suggestive of Male; however, no sex is estimated for this Item due to poor scan quality affecting the pubic body and ischiopubic ramus. 1. The [Laboratory] does not evaluate any aspect of the biological profile via photographs or 3D scans. All human remains cases must be evaluated in the laboratory prior to a report being issued. 2. The [Laboratory] does not use conclusive language in reports (e.g. Estimated Sex is Male) due to the range of variation seen across sexes and interpretation of report language by submitting agencies. "Probable" and "Consistent With" are acceptable qualifiers. 3. At the [Laboratory], inconclusive findings are combined with a statement to the submitting agency referring them to a forthcoming CODIS notification letter, which includes a sex statement based on the amelogenin locus, for a final determination of sex. Given this ability, the [Laboratory] is likely more conservative than other laboratories and more likely to report "inconclusive" when faced with conflicting or unclear evidence.
EDJQ4K	Estimating sex from 3D scans of skeletal material is not ideal. It could be improved, however, by adding a light source toggle in the future. Many of the traits utilized in these analyses require an assessment of surface texture, relief, and detail.

TABLE 3

WebCode	Additional Comments
G4HDWF	Item 5 marked inconclusive. When the bone is physically examined, proper orientation is apparent. Due to coloration/staining and scan quality, the analyst is having difficulty confidently orienting the scan to observe traits in the required manner. Trait scoring varied depending on the orientation of the scan, and without being able to physically examine the bone, the analyst had reduced confidence in trait scores. Also, 1. The [Laboratory] does not evaluate any aspect of the biological profile via photographs or 3D scans. All human remains cases must be evaluated in the laboratory prior to a report being issued. 2. The [Laboratory] does not use conclusive language in reports (e.g. Estimated Sex is Male) due to the range of variation seen across sexes and interpretation of report language by submitting agencies. "Probable" and "Consistent With" are acceptable qualifiers. 3. At the [Laboratory], inconclusive findings are combined with a statement to the submitting agency referring them to a forthcoming CODIS notification letter, which includes a sex statement based on the amelogenin locus, for a final determination of sex. Given this ability, the [Laboratory] is likely more conservative than other laboratories and more likely to report "inconclusive" when face with conflicting or unclear evidence.
JDL84D	Resolution of the bones was slightly poor, making certain features (ventral arch, preauricular sulcus and ischiopubic ramus ridge) difficult to estimate.
JZUKXH	[Text provided by participant was removed to maintain participant's anonymity.]
MMDY3E	Item 5 exhibited some female traits, but seemed overall more consistent with male. Some features were difficult to discern via 3D scans (ventral arc).
UV98N8	Examinations in this case did not follow typical [Laboratory] procedures, which involved the estimation of sex from images rather than physical evidence. File resolution and coloration may have obscured morphological features used for sex estimation and led to results that are different from those that would have been obtained from direct examination.
YFECFW	The 3D scans were for the most part ok. Some areas were missing from the scans (voids/empty areas) but not in any critical area. The scans are not photographic quality and that can hinder the result in some cases. The scans are of much higher quality than the demo version last year. Some of the scans did not move as seamless as others. That can also be due to the software used. Working in a secure government network can sometimes limit the use of software/viewing programs. Difficult to assess the subpubic angle with only one pelvic bone. Both should have made it more reliable. The preauricular sulcus was not able to assess from the scans. Item 5 had unclear both female and male characteristics. No of the characteristics were strong for either male or female.
YMGHUY	Sex estimation is NEVER performed using digital images. Actual specimens are required due to the inability to accurately capture subtleties in the bone morphology which are required for the assessment. The CTS images were reviewed, and the images are INADEQUATE to accurately perform this analysis; however, this is the best attempt. Using the morphoscopic method on digital images is not a part of the validated method.
ZP3L3W	Although I use morphological methods, I prefer to use methodology that incorporates measurements of the remains and logarithmic equations to reduce interobserver errors.

-End of Report-
(Appendix may follow)

Test No. 23-5511: Sex Estimation - Pelvic Morphology

DATA MUST BE SUBMITTED BY **Dec. 11, 2023, 11:59 p.m. EST** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: 3MQGNY

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Scenario:

Using morphological characteristics, please estimate the sex of each adult, human pelvic bone provided in 3D scan format. Please record the method(s) used during analysis. Each 3D scanned item (Items 1-5) represents a separate, independent case.

To access the evidence files, download the .zip file provided below. Open each item file using Adobe Acrobat (please note: you may need to enable 3D viewer options). To manipulate the scan, click once on the bone and wait for 3D scan tools to load. Once loaded, you may rotate the bone, adjust background color settings and extra lighting settings to perform your analysis.

Items Submitted (Sample Pack SE):

Items 1-5: 3D scans

To verify a complete and accurate download, the hash value for the downloaded .ZIP file is as follows:

23-5511 Sex Estimation - Pelvic Morphology.zip MD5 hash value: bdd89543d9b1269f1f64a4b8e4ea0d37

23-5511 Sex Estimation - Pelvic Morphology.zip SHA1 hash value: f80a99fc80146525feb05960b2e02d763a72cd57

1.) What is the estimated sex of the bone represented in the submitted 3D scan (Items 1-5)?

Note: For each item, record all methodology used for analysis. Select "Other" if method(s) used is not present in provided list.

Item 1

Estimated Sex:

Method(s) Used

Phenice, T.W.
(1969)

Buikstra, J.E. &
Ubelaker, D.H.
(1994)

Klales, A.R., et
al. (2012)

Other(s)

Item 2

Estimated Sex:

Method(s) Used

Phenice, T.W.
(1969)

Buikstra, J.E. &
Ubelaker, D.H.
(1994)

Klales, A.R., et
al. (2012)

Other(s)

Item 3

Estimated Sex:

Method(s) Used

Phenice, T.W.
(1969)

Buikstra, J.E. &
Ubelaker, D.H.
(1994)

Klales, A.R., et
al. (2012)

Other(s)

Item 4

Estimated Sex:

Method(s) Used

Phenice, T.W.
(1969)

Buikstra, J.E. &
Ubelaker, D.H.
(1994)

Klales, A.R., et
al. (2012)

Other(s)

Item 5

Estimated Sex:

Method(s) Used

Phenice, T.W.
(1969)

Buikstra, J.E. &
Ubelaker, D.H.
(1994)

Klales, A.R., et
al. (2012)

Other(s)

*Should an item(s) be marked "Inconclusive", please document the reason in the Additional Comments section of this data sheet.

2.) Methodology Continued

Note: Utilize this section to provide any additional notes on methods used or to list any methods used that were not provided above. Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.

3.) Additional Comments

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
- This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps only if your laboratory is accredited in this testing/calibration discipline by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory.

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety.

Authorized Contact Person and Title

Laboratory Name

Location (City/State)