DEMING MILL & MILL TAILINGS
DEMING, NEW MEXICO

Mining and Minerals Division Permit No. LU009RE

Test Pitting Update 2/23/2022

Locations, Procedures & Data Management

Prepared For:

Mining Act Reclamation Program
Mining and Minerals Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Prepared By;

Geo Southwest, LP.
PO Box 353
Silverton, TX 79257

The MMD-approved closeout plan for the Deming Mill and Mill Tailings identified four areas of concern related to exposed tailings on the east side of Peru Mill Road within the permit area. The closeout plan calls for test pitting within these areas to secure information necessary to develop a reclamation plan.

AREAS OF CONCERN

Reclamation will require the covering of exposed tailings on the north slope of the Cypress Tailings. In addition, exposed tailings in an area north of the Cypress Tailing and south of the Mimbres River and in an area north of the Mimbres River will need to be either removed or covered. Also, a portion of the north bank of the Mimbres River will require removal of exposed tailings and/or covering, stabilization and protection. Test pitting with a backhoe and hand tools will clarify the best options related to covering in place and/or partial removal and consolidation of tailing material.

On October 4, 2021, representatives of Geo Southwest, LP (Geo) met with representatives of MMD, NM Environment Department and the NM Surface Water Quality Bureau at Deming. Twenty locations for test pitting were selected and marked. Geo has since engaged the services of Gene Rosenlund of Integrated Geological Services, LLC to assist with the preparation of this plan and with the collection and analysis of the test pitting data.

Nine additional test pitting sites have been selected including 1) one on the Riverbank in an area disturbed by ATV and 4-wheeler traffic, 2) five in the Middle Flat area to determine the depth of the observed tailing and 3) three north of the Cypress Tailings to help determine the boundary of the area to be covered.

The procedures for pit excavation and description are as follows:

1. Prior to excavation, the pit sites will be located and marked by a representative of Geo Southwest, LP using a hand-held GPS unit and the coordinates provided in this plan.
2. Geo Southwest, LP will obtain a local subcontractor who will provide the backhoe and operator.
3. The pits will be excavated to dimensions of at least 3 feet deep, 6 feet long and 4 feet wide.
4. During excavation, the material will be segregated by depth in one-foot intervals (0-1, 1-2, 2-3) by order of extraction and placed adjacent to the pit on soil.
5. One of the pit walls shall be vertical so that the relationship of the materials deposited there will be exposed.
6. A geologist will provide an in-field description and capture a record of lithologies

encountered and thickness of each. Criterial items for identification of tailings shall be:

a. **Grainsize** (fine sand 0.06 mm – 0.2 mm), (Optimum grain size for base and precious metal extraction via flotation is 0.63 mm – 0.125 mm.
b. **Color**. Other associates have suggested that due to the high concentration of iron and the observed colors of orange, yellow and red in association with tailings at Deming, color may be useful in tailing identification. The Munsell Color System will be applied to the color descriptions to standardize color observations.
c. **Homogeneity**. Tailings are expected to be fine sand with no significant grain size variation. Natural soil will reflect the sorting and varied grain size distribution expected within the fluvial depositional environment of the of the alluvial deposits underlying the areas of interest. Particular attention will be applied to identify areas where mixing of soil and tailings has occurred.
d. **Paste pH**. Paste pH is a field screening technique already shown to be useful with the Deming tailings. This method has been suggested by state environmental agencies and will be used as an onsite objective test of materials encountered. Paste pH will be measured at least once for each test pit, and sometimes at multiple depths within different layers depending on the conditions encountered. The pH testing process will be as follows:
    i. Place equal amounts, by weight (150 grams), of soil and distilled, deionized water in a 250 ml reagent bottle.
    ii. Cap the bottle and shake the soil/liquid vigorously a few times.
    iii. Let mixture stand 1 minute to dissolve the salts in the soil.
    iv. Remove the cap and place the pH tester into the wet soil slurry.
    v. Measure pH and record measurement.
    vi. Recap the bottle and save for a second pH test after several days.
    vii. The pH meter will be calibrated at the beginning of the day before the 1st test, at noon, and midway through the afternoon with pH 4, 7 and 10 buffer solutions.

7. Photographs will be taken at each pit. A vertical placard showing feet and inches will be placed against the vertical pit wall as photographs are taken which will record the thickness of visually different layers.
8. Pits will be refilled. Upon completion of the description and sampling of the excavate material it will be returned to the pit in the reverse order of removal.
9. Pit markers will be repositioned at the pre-pit location.
10. Even though the work plan does not require a formal health and safety plan (HASP), some of the elements of a HASP are worthwhile for successful, safe fieldwork. Safety will be a concern throughout the project working around a backhoe and around open pits, which may collapse. Appropriate personal protective equipment such as reflective vests will be worn and communication between the backhoe operator, geologist, inspectors and other people on site during backhoe operation will be maintained. No pit will be left unfilled over overnight. Blue Stakes shall be engaged to ensure no buried utilities exist in the excavation area, or if they do, to locate and mark all areas of potential conflict. All personnel at the site will be instructed to be especially vigilant regarding additional potential dangers such as slips, trips, falls, COVID-19, high wind, heat, snakes, emergency routes and other site-specific issues before beginning on-site work.
11. The results of the testing will be provided to MMD and NMED by May 31, 2022.

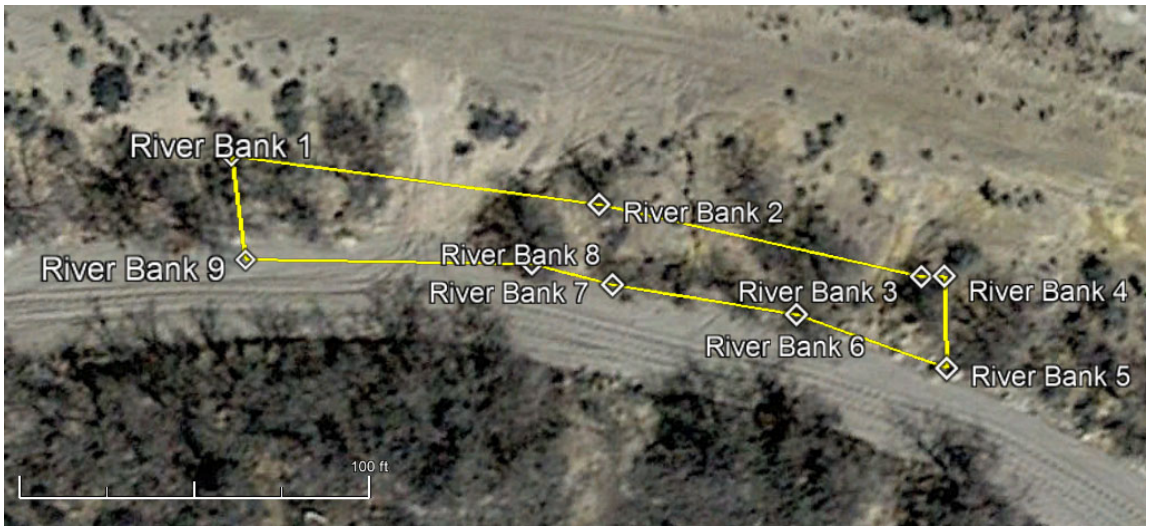
The following figures show the locations of the areas of concern and the pits to be excavated.

Corner locations for Area North of River

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
North of River 1	32°17'24.21"N	107°47'16.67"W	32.290059	-107.787964	3576001.23	237449.50	Poly Area of Concern
North of River 2	32°17'24.34"N	107°47'13.09"W	32.290094	-107.786969	3576002.80	237543.28	Poly Area of Concern
North of River 3	32°17'23.42"N	107°47'9.52"W	32.289838	-107.785977	3575972.03	237635.96	Poly Area of Concern
North of River 4	32°17'20.29"N	107°47'3.94"W	32.288971	-107.784429	3575871.81	237779.48	Poly Area of Concern
North of River 5	32°17'19.59"N	107°47'4.51"W	32.288775	-107.784585	3575850.63	237764.00	Poly Area of Concern
North of River 6	32°17'22.60"N	107°47'8.75"W	32.289611	-107.785764	3575946.24	237655.46	Poly Area of Concern
North of River 7	32°17'23.27"N	107°47'10.62"W	32.289796	-107.786283	3575968.15	237607.06	Poly Area of Concern
North of River 8	32°17'23.73"N	107°47'13.71"W	32.289926	-107.787142	3575984.43	237526.57	Poly Area of Concern
North of River 9	32°17'23.61"N	107°47'16.54"W	32.289893	-107.787928	3575982.66	237452.42	Poly Area of Concern

Test Pit locations for the Area north of the Mimbres River.

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
GeoSW 11	32°17'23.55"N	107°47'11.57"W	32.289874	-107.786548	3575977.32	237582.32	Test Pit
GeoSW 12	32°17'23.37"N	107°47'10.69"W	32.289826	-107.786302	3575971.41	237605.34	Test Pit
GeoSW 13	32°17'23.23"N	107°47'10.16"W	32.289786	-107.786156	3575966.55	237619.06	Test Pit
GeoSW 14	32°17'23.02"N	107°47'9.62"W	32.289729	-107.786006	3575959.88	237633.03	Test Pit
GeoSW 15	32°17'22.76"N	107°47'8.86"W	32.289656	-107.785794	3575951.26	237652.71	Test Pit
GeoSW 16	32°17'22.43"N	107°47'8.04"W	32.289563	-107.785568	3575940.45	237673.79	Test Pit
GeoSW 17	32°17'22.96"N	107°47'10.84"W	32.289710	-107.786346	3575958.61	237600.94	Test Pit
GeoSW 18	32°17'20.81"N	107°47'5.17"W	32.289115	-107.784769	3575888.79	237747.75	Test Pit
GeoSW 19	32°17'21.10"N	107°47'7.21"W	32.289195	-107.785337	3575899.04	237694.48	Test Pit
GeoSW 20	32°17'21.71"N	107°47'6.72"W	32.289363	-107.785200	3575917.33	237707.91	Test Pit



Corner Locations for Riverbank Area

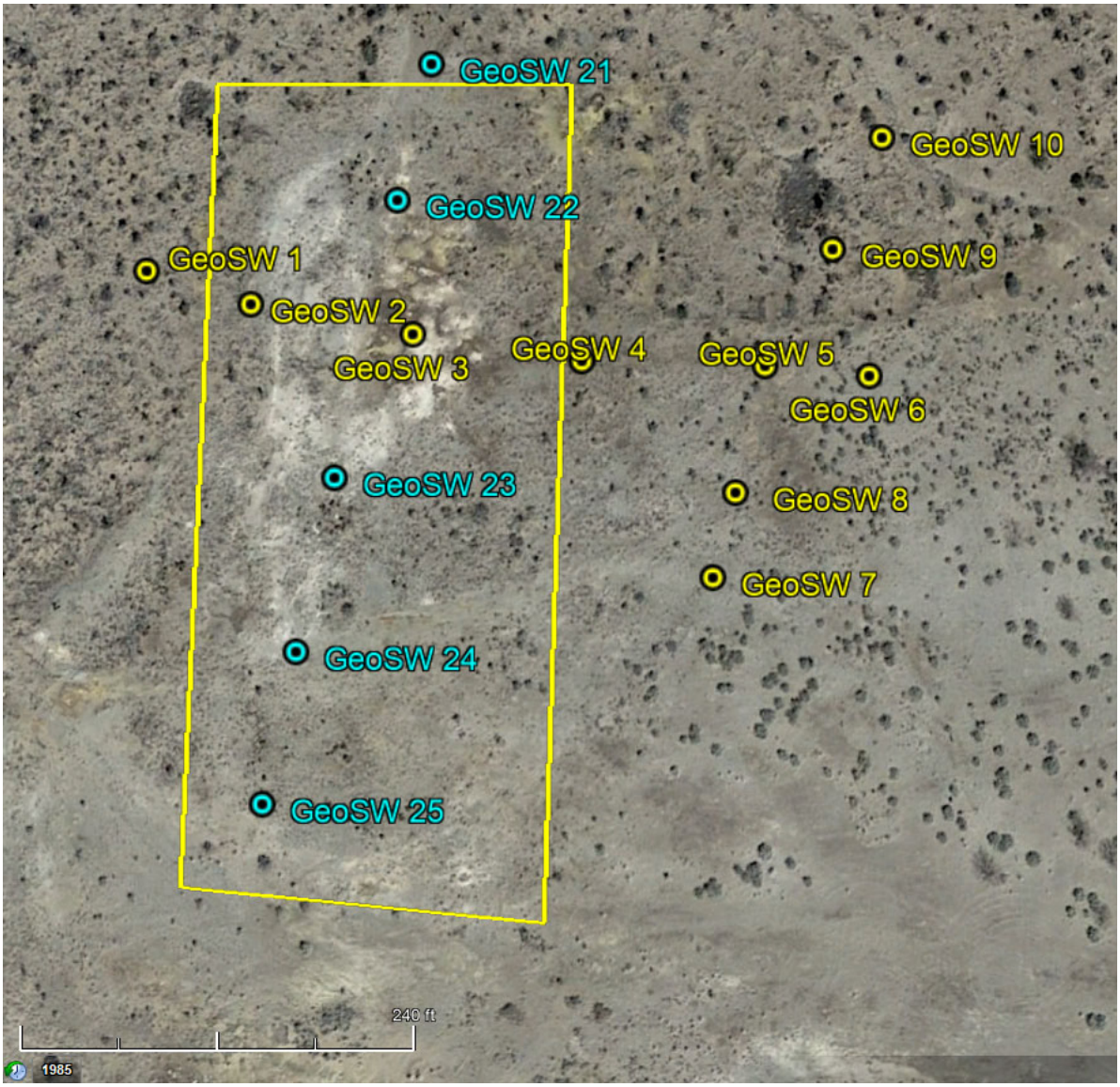
	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
River Bank 1	32°17'23.46"N	107°47'12.99"W	32.289849	-107.786942	3575975.62	237545.19	Poly Area of Concern
River Bank 2	32°17'23.33"N	107°47'11.76"W	32.289814	-107.786601	3575970.78	237577.28	Poly Area of Concern
River Bank 3	32°17'23.13"N	107°47'10.68"W	32.289759	-107.786299	3575963.88	237605.38	Poly Area of Concern
River Bank 4	32°17'23.12"N	107°47'10.58"W	32.289755	-107.786271	3575963.51	237607.99	Poly Area of Concern
River Bank 5	32°17'22.87"N	107°47'10.60"W	32.289687	-107.786279	3575955.82	237607.26	Poly Area of Concern
River Bank 6	32°17'23.01"N	107°47'11.09"W	32.289724	-107.786415	3575960.46	237594.55	Poly Area of Concern
River Bank 7	32°17'23.08"N	107°47'11.70"W	32.289745	-107.786584	3575963.03	237578.65	Poly Area of Concern
River Bank 8	32°17'23.14"N	107°47'11.99"W	32.289759	-107.786665	3575965.08	237571.11	Poly Area of Concern
River Bank 9	32°17'23.18"N	107°47'12.93"W	32.289773	-107.786924	3575966.95	237546.54	Poly Area of Concern

Test Pit locations for Riverbank Area along the Mimbres River.

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
GeoSW 17	32°17'22.96"N	107°47'10.84"W	32.289710	-107.786346	3575958.61	237600.94	Test Pit
GeoSW 29	32°17'23.28"N	107°47'12.44"W	32.289800	-107.786789	3575969.70	237559.44	Additional Test Pit

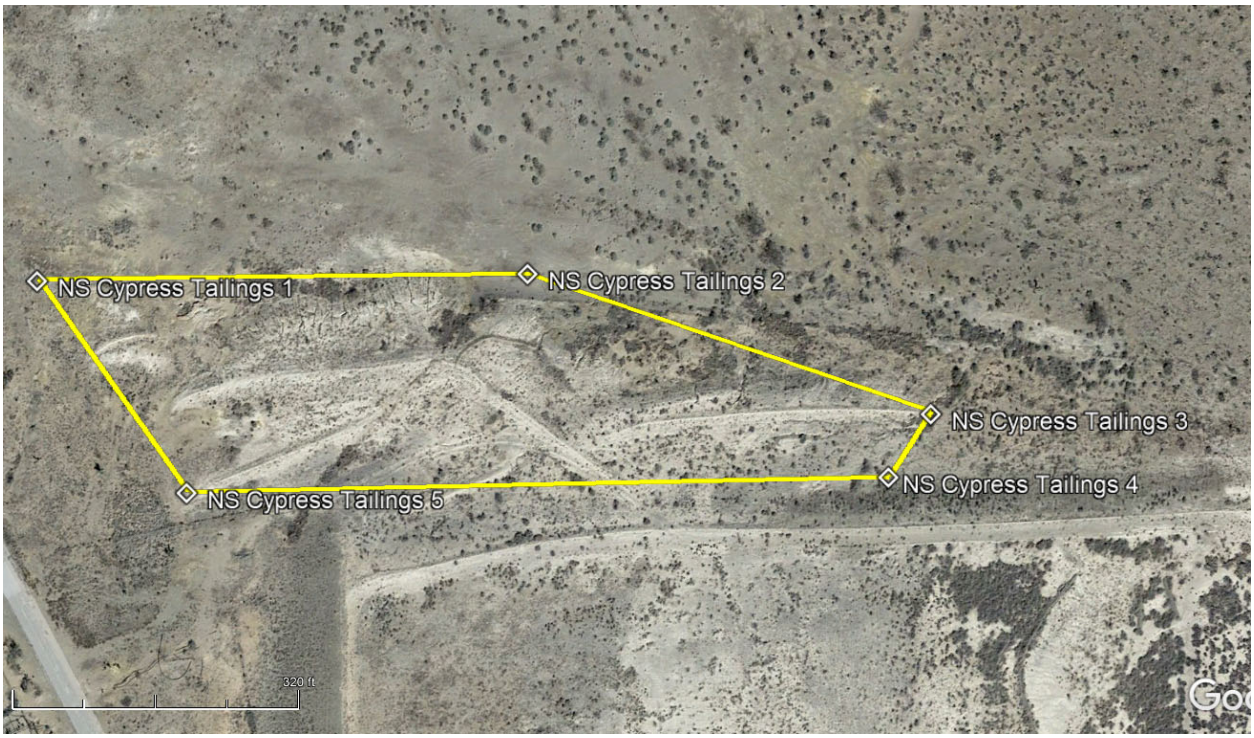
Corner Locations for Mid Flat Area

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
Flat Area Between CY&RV 1	32°17'14.60"N	107°47'13.45"W	32.287389	-107.787071	3575702.98	237526.06	Poly Area of Concern
Flat Area Between CY&RV 2	32°17'14.60"N	107°47'10.94"W	32.287388	-107.786372	3575701.28	237591.74	Poly Area of Concern
Flat Area Between CY&RV 3	32°17'9.57"N	107°47'11.14"W	32.285991	-107.786428	3575546.45	237582.48	Poly Area of Concern
Flat Area Between CY&RV 4	32°17'9.78"N	107°47'13.72"W	32.286051	-107.787145	3575554.68	237515.13	Poly Area of Concern



Test Pit Locations for the Mid Flat Area

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
GeoSW 1	32°17'13.49"N	107°47'13.95"W	32.287080	-107.787208	3575669.11	237512.13	Test Pit
GeoSW 2	32°17'13.29"N	107°47'13.21"W	32.287026	-107.787003	3575662.57	237531.31	Test Pit
GeoSW 3	32°17'13.11"N	107°47'12.06"W	32.286975	-107.786684	3575656.10	237561.15	Test Pit
GeoSW 4	32°17'12.95"N	107°47'10.86"W	32.286931	-107.786349	3575650.46	237592.57	Test Pit
GeoSW 5	32°17'12.92"N	107°47'9.56"W	32.286923	-107.785988	3575648.69	237626.58	Test Pit
GeoSW 6	32°17'12.86"N	107°47'8.82"W	32.286905	-107.785783	3575646.21	237645.87	Test Pit
GeoSW 7	32°17'11.65"N	107°47'9.93"W	32.286570	-107.786092	3575609.75	237615.75	Test Pit
GeoSW 8	32°17'12.16"N	107°47'9.77"W	32.286710	-107.786047	3575625.21	237620.40	Test Pit
GeoSW 9	32°17'13.62"N	107°47'9.08"W	32.287118	-107.785856	3575669.97	237639.59	Test Pit
GeoSW 10	32°17'14.29"N	107°47'8.73"W	32.287303	-107.785759	3575690.25	237649.29	Test Pit
GeoSW 21	32°17'14.74"N	107°47'11.90"W	32.287429	-107.786639	3575706.24	237566.73	Additional Test Pit
GeoSW 22	32°17'13.93"N	107°47'12.14"W	32.287202	-107.786705	3575681.45	237559.80	Additional Test Pit
GeoSW 23	32°17'12.25"N	107°47'12.58"W	32.286737	-107.786828	3575630.00	237546.94	Additional Test Pit
GeoSW 24	32°17'11.21"N	107°47'12.88"W	32.286448	-107.786912	3575598.16	237538.26	Additional Test Pit
GeoSW 25	32°17'10.31"N	107°47'13.13"W	32.286198	-107.786981	3575570.61	237531.00	Additional Test Pit



Corner Locations for the area north of the Cypress Tailings

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
NS Cypress Tailings 1	32°17'8.42"N	107°47'13.69"W	32.285672	-107.787137	3575512.76	237514.83	Poly Area of Concern
NS Cypress Tailings 2	32°17'8.48"N	107°47'7.34"W	32.285689	-107.785372	3575510.29	237681.05	Poly Area of Concern
NS Cypress Tailings 3	32°17'6.96"N	107°47'2.09"W	32.285268	-107.783915	3575459.90	237817.22	Poly Area of Concern
NS Cypress Tailings4	32°17'6.24"N	107°47'2.63"W	32.285068	-107.784064	3575438.08	237802.51	Poly Area of Concern
NS Cypress Tailings 5	32°17'6.08"N	107°47'11.75"W	32.285023	-107.786597	3575439.35	237563.72	Poly Area of Concern

Pit Locations for the area north of the Cypress Tailings

	Degrees, Minutes, Seconds		Decimal Degrees		Universal Transverse Mercator		
Title	Latitude DMS	Longitude DMS	Latitude DD	Longitude DD	Northing	Easting	Description
GeoSW 26	32°17'8.29"N	107°47'12.52"W	32.285637	-107.786811	3575507.96	237545.34	Additional Test Pit
GeoSW 27	32°17'8.35"N	107°47'10.16"W	32.285652	-107.786156	3575508.20	237607.15	Additional Test Pit
GeoSW 28	32°17'8.36"N	107°47'8.02"W	32.285657	-107.785562	3575507.06	237663.16	Additional Test Pit

Three days of field work in Deming, NM, will likely be required to complete the 29 pits currently identified and any additional locations which may be added infield based upon the findings. April 19, 20 & 21, 2022 have been tentatively scheduled for the infield phase of test pitting.