May 1, 2023

Chad Gallagher
Aris Water Solutions
9811 Katy Freeway, Suite 700
Houston, TX 77024

RE: EKG Containment

Magrym Consulting has been working with Aris Water Solutions at the EKG Containment since 2021. Magrym prepared a plan set for the EKG pond conversion from freshwater to produced water in February 2021. When the pond was converted the old liner was removed, slopes were re-dressed, and the containment was relined with a new 60 MIL HDPE primary liner, 200 MIL Geonet, and 40 MIL HDPE secondary liner in accordance with the requirements pursuant to NMAC 19.15.34.

As the Engineer for the EKG Containment, Magrym performed a review of the Lined Water Impoundment Inspection/Repair Log (Appendix A), AirScan 3D Mapping Report (Appendix B), and Site Photographs (Appendix C) provided by Chad Gallagher of Aris Water Solutions. The *Lined Water Impoundment Inspection/Repair Log* performed by Souksan Inthavongsa (Lee) of Patriot Environmental focused on the liner welds, rub sheets, the liner surface, depth gauge, pipe boots and the leak detection system. This analysis concluded no fluid was found in the leak detection sump and apart from small holes in the rub sheet, no damage was indicated. These small holes have been repaired, as shown in figures 10-14.

Based upon available data, the liner appears to be in good working condition, free of stretching and tears and acceptable for continued use. Should you have any questions or concerns, please contact me at claudius.sanchez@magrym.com.

Respectfully Submitted,

Claudius Sanchez Czyzewksa, PE
Magrym Consulting, Inc.

May 15, 2023

Statement Explaining Why the Applicant Seeks a Variance

The prescriptive mandates of the Rule that are the subject of this variance request are:

> 19.15.34.13.C A recycling containment shall be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator must report cessation of operations to the appropriate division district office. The appropriate division district office may grant an extension to this determination of cessation of operations not to exceed six months

The EKG Containment is associated with the Landes Recycling Facility as it receives treated produced water via pipeline when hydraulic stimulation of oil wells occurs in the area. Thus, the use of The EKG Containment is 100% dependent upon the drilling schedule of wells in the vicinity. The EKG Containment received treated produced from the Landis recycling facility and transferred 821,141 bbls for use at the Marathon Honey Mustard 22 WXY Fed Com 6H and 8H wells. This use of The EKG Containment ceased on October XXX, 2022.

ConocoPhillips plans drill and stimulate Tomahawk WC Unit 714H, 715H, 716H sometime during Q2 or Q3 2023. While schedules can change, The EKG Containment is essential to allowing these scheduled wells to use treated produced water in lieu of fresh water.

Closure of The EKG Containment to maintain compliance with Rule 34 followed by reconstruction of the containment provides no environmental or financial benefit.

3305 Boyd Drive | Carlsbad NM 88220
575-300-5155

Demonstration That the Variance Will Provide Equal or Better Protection of Fresh Water, Public Health and the Environment

Prior to introduction of produced water into the containment for the next stimulation event in Q2 or Q3 of 2023, Solaris will provide OCD with

- An update regarding the anticipated start of recycling activities
- Results of an inspection of the liner system, avian hazing device, fencing, etc.
- A leak detection report 2 weeks prior to use in stimulation with the Containment filled with water. If Solaris detects leakage, the Containment will be drained and repaired prior to re-filling for use in well stimulation.

During the first three weeks after the initial test described above, Solaris will monitor the leak detection system and provide OCD with the findings via email.

We contend that these actions provide equal protection of fresh water, public health and the environment when compared to closure of the containment and rebuilding.

3305 Boyd Drive | Carlsbad NM 88220
575-300-5155

State of New Mexico
Energy Minerals and Natural Resources
Department Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505
https://www.emnrd.nm.gov/ocd/ocd-e-permitting/

Form C-147
Revised October 11, 2022

Recycling Facility and/or Recycling Containment

Type of Facility: ☐ Recycling Facility ☒ Recycling Containment*

Type of action:
☐ Permit ☐ Registration
☐ Modification ☒ Extension
☐ Closure ☒ Other (explain) extension of cessation of operation request from May 2023 to November 2023

*** At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.**

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Solaris Water Midstream, LLC (For multiple operators attach page with information) OGRID #: 371643
Address: 9811 Katy Freeway, Suite 700, Houston TX, 77024
Facility or well name (include API# if associated with a well): EKG Produced Water Containment
OCD Permit Number: 2RF-159 (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr F Section 29 Township 24S Range 28E County: Eddy
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Recycling Facility:**
Location of recycling facility (if applicable): Latitude 32.117435 Longitude -104.075971 NAD83
Proposed Use: ☐ Drilling* ☐ Completion* ☐ Production* ☐ Plugging *
The re-use of produced water may NOT be used until fresh water zones are cased and cemented
☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***
☐ Fluid Storage
☐ Above ground tanks ☐ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type
☐ Activity permitted under 19.15.36 NMAC explain type: ☐ Other explain
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date:

3.
☒ **Recycling Containment:**
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude 32.1893287°N Longitude -104.1132493°W NAD83
☒ For multiple or additional recycling containments, attach design and location information of each containment
☒ Lined ☐ Liner type: Thickness mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other please see drawings
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other please see drawings Volume: bbl Dimensions: L x W x D
☐ Recycling Containment Closure Completion Date:

4.
Bonding:

☐ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**

☒ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond $ see transmittal letter **(work on these facilities cannot commence until bonding amounts are approved)**

☐ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.
Fencing:

☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☒ Alternate. Please specify game fence

6.
Signs:

☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

7.
Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

If a Variance is requested, it must be approved prior to implementation.

8.
Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map	☐ Yes ☒ No
Within a 100-year floodplain. FEMA map	☒ Yes ☐ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

9.
Recycling Facility and/or Containment Checklist:
Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☒ Design Plan - based upon the appropriate requirements.
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☒ Closure Plan - based upon the appropriate requirements.
- ☒ Site Specific Groundwater Data -
- ☒ Siting Criteria Compliance Demonstrations –
- ☒ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.
Operator Application Certification:
I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Chad Gallagher Title: Permit Agent
Signature: Chad Gallagher Date: 5-16-2023
e-mail address: chad.gallagher@ariswater.com Telephone: (575)444-9786

11.
OCD Representative Signature: _____ **Approval Date:** _____

Title: _____ **OCD Permit Number:** _____

☐ OCD Conditions _____
☐ Additional OCD Conditions on Attachment

Pond or AST	Date	Operator Name	Tear in Liner (Y/N)?	Break in Berms and run-on storm water (Y/N)?	Dead Wildlife (Y/N)?	Oil on fluid (Y/N)?	Leak Detection Working (Y/N)?	Freeboard Fluid Level (ft)	Pond Level (ft)	Comments or Updates
EKG Really Scary Pond	12/6/2022	Ricardo Lara	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	Looks to be rain water
EKG Really Scary Pond	12/13/2022	Ricardo Lara	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	12/13/2022	Ricardo Lara	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	Rain water in pond
EKG Really Scary Pond	12/19/2022	Ricardo Lara	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	12/26/2022	Ricardo Lara	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	2/12/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	2/24/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	Middle part starting to rise on liner
EKG Really Scary Pond	3/9/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	3/17/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	3/23/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	3/31/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	4/7/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	4/14/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	4/21/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	4/28/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	5/5/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	13.00	3.00	
EKG Really Scary Pond	5/9/2023	Bradley Webb	FALSE	FALSE	FALSE	FALSE	TRUE	7.00	6.00	

Appendices

Appendix A: Lined Water Impoundment Inspection/Repair Log (Patriot Environmental)

PATRIOT ENVIRONMENTAL

Lined Water Impoundment Inspection / Repair Log

Interior Liner

	Y	N	Location *(e.g., NE wall 3rd panel)*	Description *(e.g., Rip, Tear, loose Extrude, etc)*	Repaired (Y or N)	Repair Description *(e.g., Welded Extruded, etc.)*
Fluid in pit?	Y		N/A	N/A		
Weld Seems Damaged		N				
Rub Sheets Damaged	Y		Rub sheet in corner.	Small hole on rub sheet	yes 1/27/23	Extruded small hole. placed small beads on other davits
Extrudes Damaged		N				
Liner Surface Damaged		N				
Washouts / Voids		N				
Fluid Behind Liner		N				
Depth guage damaged		N				
Pipe Boots Damaged		N/A				

There was little to no fluid in the leak detection sump

Exterior of Impoundment

	Y	N	Location *(e.g., NE wall 3rd panel)*	Description *(e.g., Rip, Tear, loose Extrude, etc)*	Repaired (Y or N)	Repair Description *(e.g., Welded Extruded, etc.)*
Liner on exterior						
Extrudes damaged						
Weld Seams damaged						
Liner Surface damaged				N/A		
Washouts / Voids						
Loose or torn Recyclex						
Fluid leaking from pit						
Subgrade Degradation						
Erosion						
Erosion control ditch damaged						
Anchor trench damaged						
Erosion control ditch damaged						

Notes: Pit was walked with 3 ft of water in it. it was determined there was no water under the liner. full visual inspection was done above water level.

Appendix B: AirScan 3D Mapping Report (Transwater, Inc.)

TRANSWATER INC.

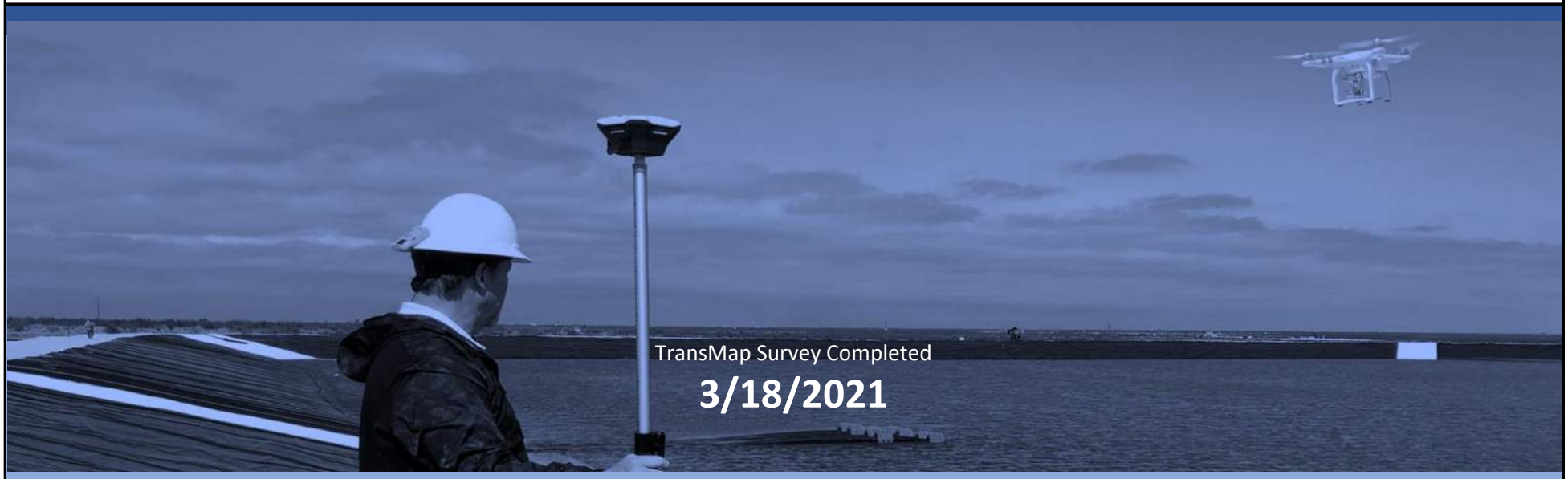
TRANSMAP®

AirScan 3D Mapping

This TransMap Report Prepared for:

SOLARIS® WATER MIDSTREAM

EKG



[redacted]

Max fill to 2ft freeboard	**14.5**	ft
Volume at 2ft freeboard fill	**213,703**	bbls

Berm Slope Reference Calculations

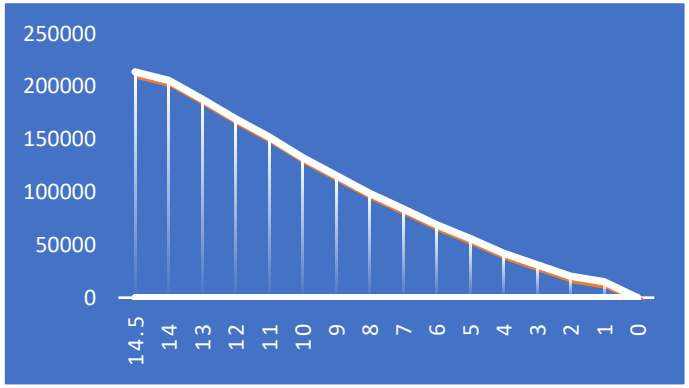
North Berm Grade:	**30.88%**
South Berm Grade:	**34.22%**
East Berm Grade:	**34.15%**
West Berm Grade:	**32.14%**

Summary Notes

To ensure a 2ft Freeboard minimum across the entire brim, 14.5ft is the recommend "full" line in this pit. East Gauge was used as the reference point.

15	14	205,533
14	13	188,171
13	12	169,337
12	11	152,024
11	10	132,590
10	9	115,851
9	8	98,831
8	7	84,122
7	6	69,104
6	5	56,072
5	4	42,067
4	3	31,251
3	2	20,427
2	1	15,001
1	0	0

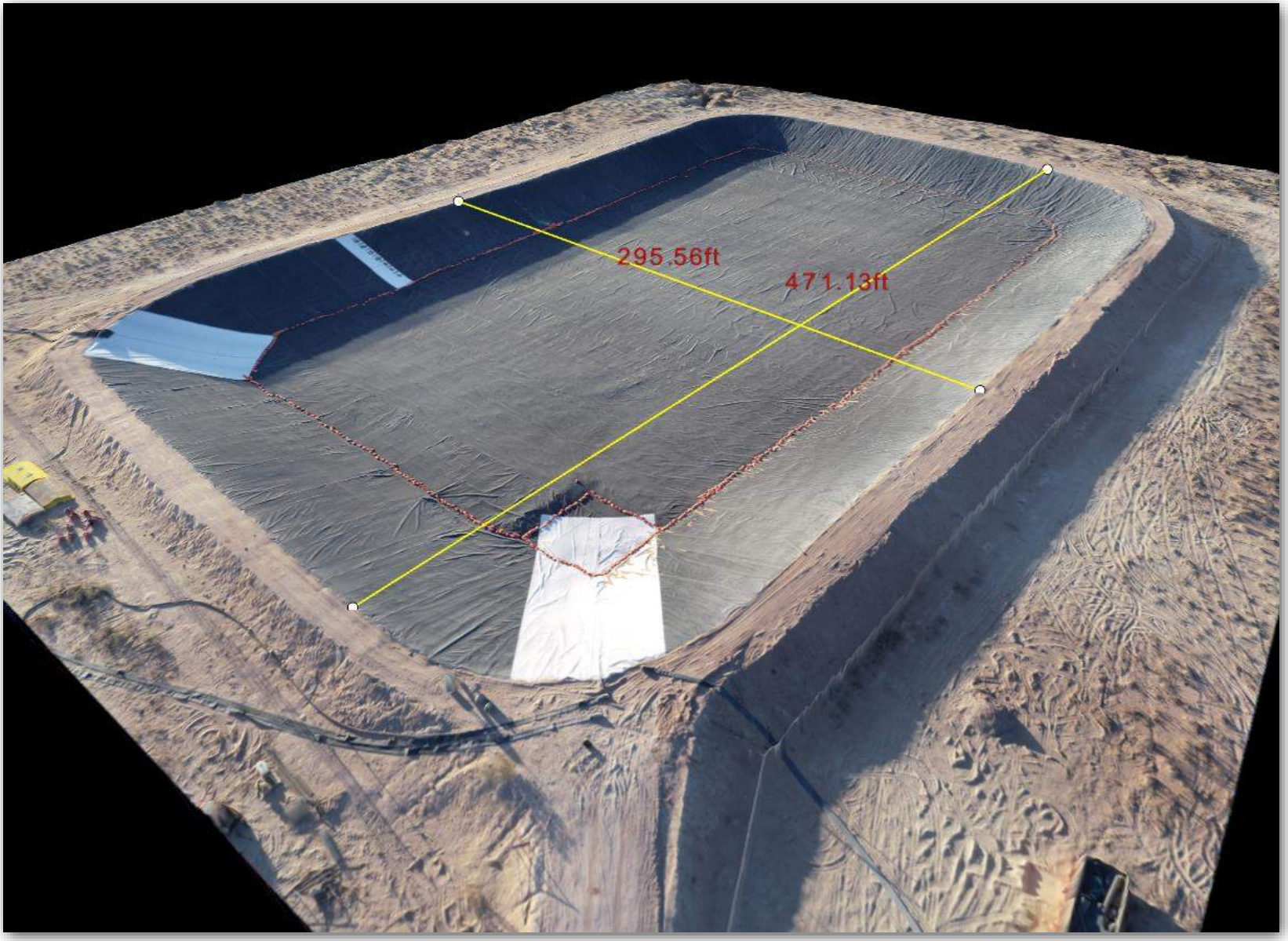
Level/Volume Curve



Drone scan performed by licensed
FAA Remote Pilot
Certificate Number: 4247357
Certificate Number: 4223011

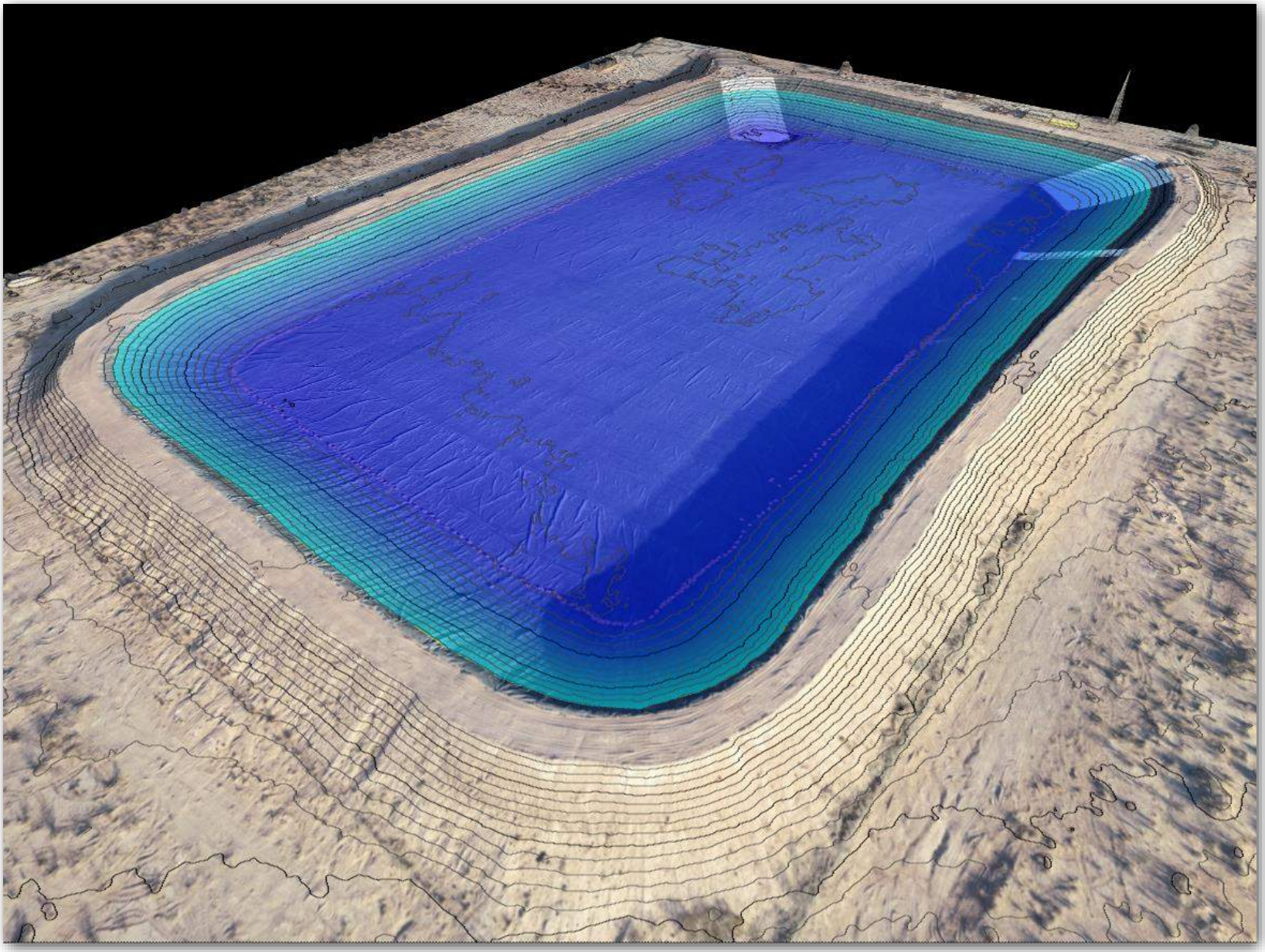
EKG

Measured dimension of the pit:
471.13 ft x 295.56 ft at top of berm



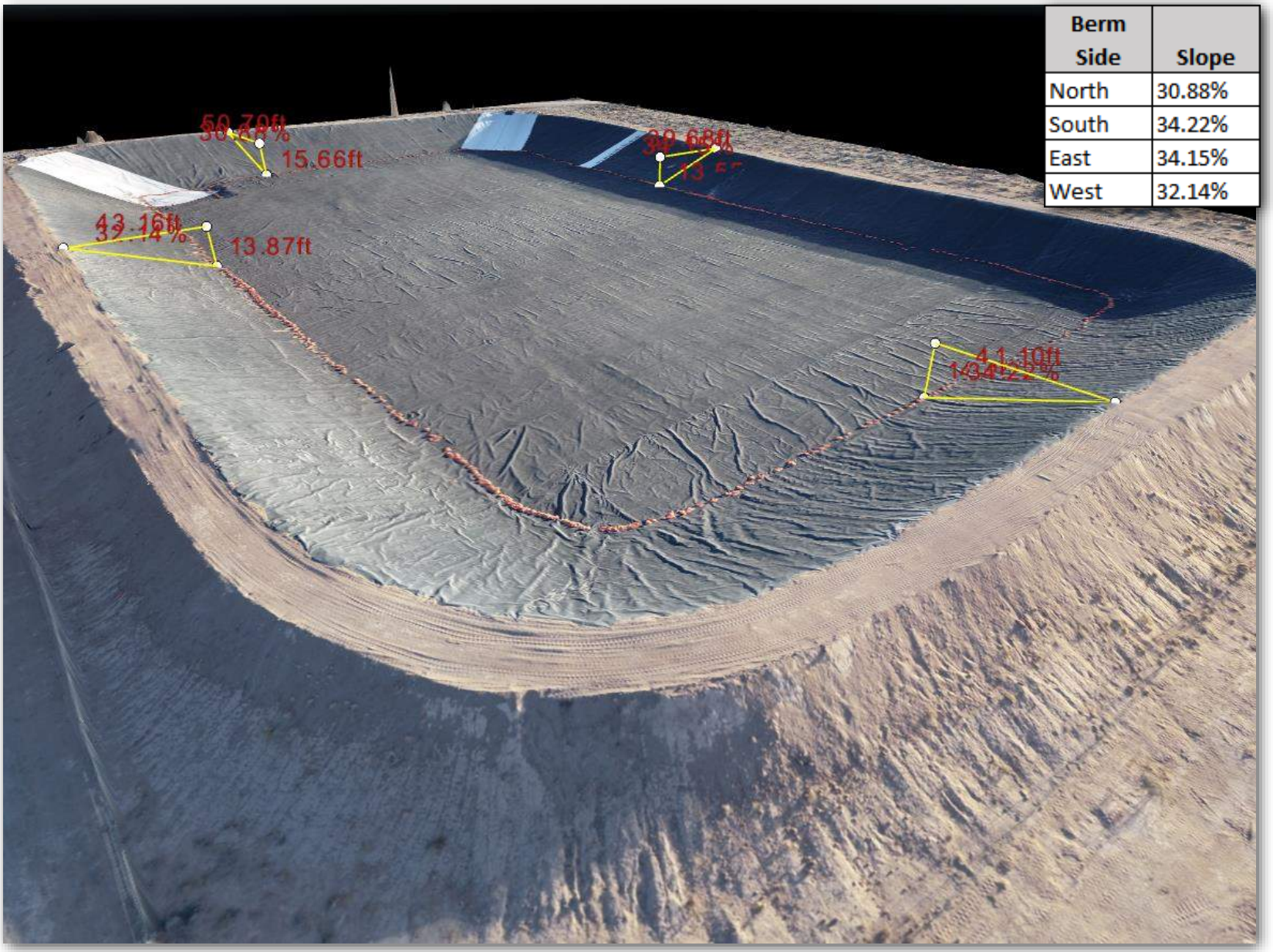
EKG

Simulated 2 foot freeboard fill with contour lines representing 1 foot grade changes in measured elevations.



EKG

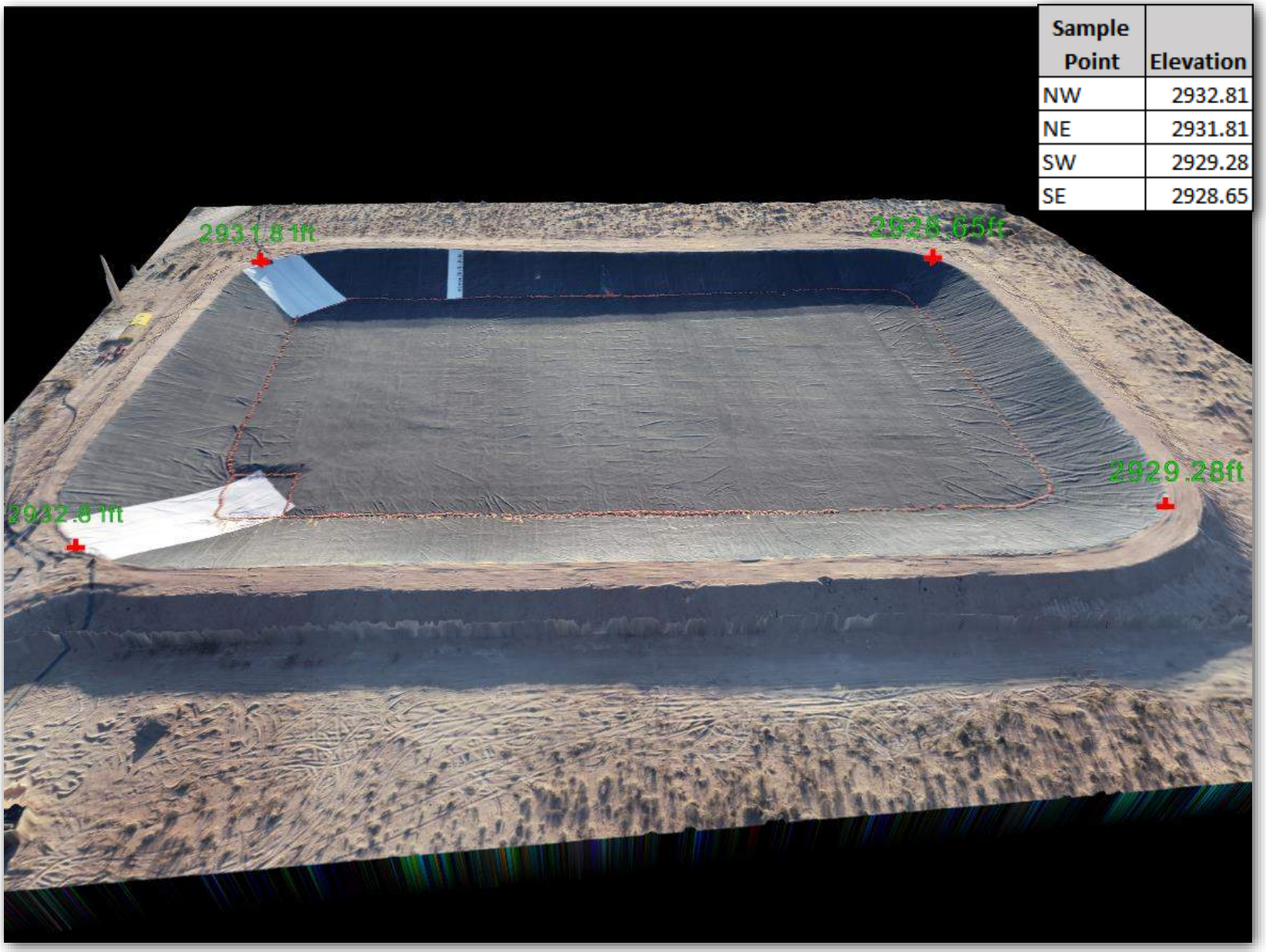
Measurements indicating slope depth and slope grade at North, South, East, and West sides



Berm Side	Slope
North	30.88%
South	34.22%
East	34.15%
West	32.14%

EKG

The 4 data elements in this graph and chart represent sample points at each corner of the pond the longitudes/latitudes shown and indicate the elevation (from sea-level) for each data sample



Sample Point	Elevation
NW	2932.81
NE	2931.81
SW	2929.28
SE	2928.65

EKG

Chart of Measured Levels & Volumes

Gauge	Depth in Feet	Barrels	Gallons	Cubic Feet
14.5	14.5	213,703	8,975,541	1,199,855
14	14	205,533	8,632,401	1,153,984
13	13	188,171	7,903,194	1,056,503
12	12	169,337	7,112,134	950,754
11	11	152,024	6,385,007	853,551
10	10	132,590	5,568,778	744,437
9	9	115,851	4,865,763	650,458
8	8	98,831	4,150,886	554,893
7	7	84,122	3,533,116	472,309
6	6	69,104	2,902,367	387,990
5	5	56,072	2,355,003	314,818
4	4	42,067	1,766,810	236,188
3	3	31,251	1,312,553	175,463
2	2	20,427	857,943	114,690
1	1	15,001	630,056	84,226

Summary Information

The top of berm elevation study measurements indicated a small and gradual elevation change across the pit brim.

The highest inside corner of berm point is at the Northwest corner and the lowest point is at the Southeast corner.

To ensure a 2ft Freeboard minimum across the entire brim, 14.5ft is the recommend “full” line in this pit. That is indicated with the highlighted line in the volume table.

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- Flow meter monitoring
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"Before I had TransWatch I spent an enormous amount of time chasing down pond levels and meter readings. This is a huge time-saver for me." Owner of a large Freshwater Supplier in the Delaware Basin

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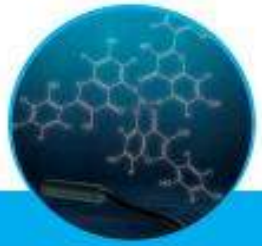
- Dissolved Oxygen, Turbidity
- Chlorides, Nitrates, and more
- Sensor array configured to your need
- Water data alerts to your smart device or PC



Appendix C: Site Photographs

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Figure 10

Figure 11

Figure 12

Figure 13

Figure 14

Figure 15

Figure 16

Figure 17

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 279601

CONDITIONS

Operator: SOLARIS WATER MIDSTREAM, LLC 907 Tradewinds Blvd, Suite B Midland, TX 79706	OGRID: 371643
	Action Number: 279601
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	None	10/26/2023