Hazen and Sawyer
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January 23, 2025

Edward Fontanin
Utility Services Director
2725 Judge Fran Jamieson Way, A-213
Viera, FL 32940
Edward.Fontanin@brevardfl.gov

RE: South Brevard County Water Treatment Plant and Water Reclamation Facility
Injection Wells IW-1 and IW-2 Construction and Testing Permit Application
Local Government Guarantee

Dear Mr. Fontanin:

In accordance with Florida Administrative Code Rule 62-528.435(9), the County is required to unconditionally certify the obligation to have the financial resources necessary to plug and abandon the injection wells IW-1 and IW-2, and associated monitoring well MW-1. The plugging and abandonment plan includes an estimated probable cost to plug and abandon the proposed injection well system. The costs associated with implementing the plugging and abandonment plan include a 20-percent contingency and an estimated 8-percent engineering fee. The total cost estimate of $900,000 is in January 2025 U.S. dollars. Conceptual diagrams are included as reference.

The Certification of Financial Responsibility allows for a cost increase of 10 percent within 30 months of certification without submittal of an updated certification form. The County is required to perform annual cost estimates and issue new financial responsibility certificates upon renewal of permits or during the application for operation if the annual review reveals a cost increase of greater than 10 percent.

Additionally, the local government must submit a letter from its attorney attesting to the permittee meeting the definition of a local government as defined in Florida Statutes Chapter 218, Financial Matters Pertaining to Political Subdivisions Part V Financial Emergencies. For your reference the requirements of the Local Government Guarantee and Chapter 218, Part V, are attached.

As a requirement of the Underground Injection Control Construction and Testing Permit Application for Class I injection wells, please provide the letter from the County attorney, as described above, and prepare the Certification of Financial Responsibility for Local Government, attached herein.

Sincerely,
Hazen and Sawyer,

Gerrit Bulman, P.G. (License No. 2697)
Associate Vice President

Attachments:

1. Plugging and Abandonment Procedures and Cost Estimate
2. Figure 1 IW-1 and IW-2 Conceptual Abandonment Diagram
3. Figure 2 MW-1 Conceptual Abandonment Diagram
4. Certification of Financial Responsibility for Local Government
5. Local Government Guarantee
6. Chapter 218 Financial Matters Pertaining to Political Subdivisions Part V Financial Emergencies
7. Latest Fiscal Year (2023) Financial Statement, Available Online: 02461A458CC0D469F9E760D9A7E5CAF2.brevard-county-annual-comprehensive-financial-report-fy-2023.pdf

Copy:

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Hazen File 40003-006 / South Brevard WTP and WWRF Injection Well Permit Renewal

Hazen

Plugging and Abandonment Plan and Cost Estimate

In the event that an injection well or monitoring well must be abandoned, the well must be effectively sealed (or plugged) to prevent upward migration of the injection zone fluid or the interchange of formation water through the borehole or along the casing. The plugging and abandonment of injection wells IW-1 and IW-2, and dual-zone monitoring well MW-1 will require the services of a State of Florida licensed water well drilling contractor. The costs associated with implementing the plugging and abandonment program include a 20% contingency cost. An estimated 8% engineering fee is included with the estimated cost. The opinion of probable cost is in January 2025 US Dollars.

Prior to plugging and abandoning the injection well and monitoring well, the Florida Department of Environmental Protection (FDEP) Underground Injection Control (UIC) Program must be notified of and grant permission for the work to proceed. The following plugging and abandonment plans for IW-1, IW-2, and MW-1 both include five (5) major tasks. Proposed casing and borehole depths and diameters as presented in the permit application are presented in this plan. Actual depths and diameters will be revised upon construction and submitted as a formal plan for FDEP approval.

The proposed wells to be plugged and abandoned are located at the following coordinates:

Well Identification	Latitude	Longitude
IW-1	TBD	TBD
IW-2	TBD	TBD
MW-1	TBD	TBD

The following procedures would be followed to abandon an injection well:

Task 1	Includes all work associated with mobilization, formation water containment and disposal, and supporting equipment for the work. This item also includes the work required to "kill" artesian flow from the well with brine solution to lower the hydrostatic head below pad level (bpl) to facilitate the removal of the wellhead.
Task 2	Conduct a caliper log of the nominal 16-inch outside diameter (OD) (nominal 14.48-inch inside diameter [ID]) final fiberglass reinforced plastic (FRP) casing and nominal 25-inch diameter open borehole injection interval to 3,000 feet below pad level (bpl).
Task 3	Install limestone gravel down the well to fill the open borehole from 3,000 feet bpl up to a depth of approximately 2,120 feet bpl, approximately 20 feet below the base of the nominal 16-inch OD final FRP casing, for a total of 2,600 cubic feet.
Task 4	Pump ASTM C150 Type I/II or API Class B or ASTM C595 Type 1L neat cement, via tremie, from 2,210 feet bpl, approximately 20 feet below the base of the nominal 16-inch OD final FRP casing, to pad level, for a total of 2,500 cubic feet.
Task 5	Demolish the well pad, cut all steel casings and FRP casing four (4) feet below grade, and set a survey monument. This task includes all work associated with demobilizing the drilling rig and supporting equipment. Upon completion of demobilization, the contractor shall restore the site.

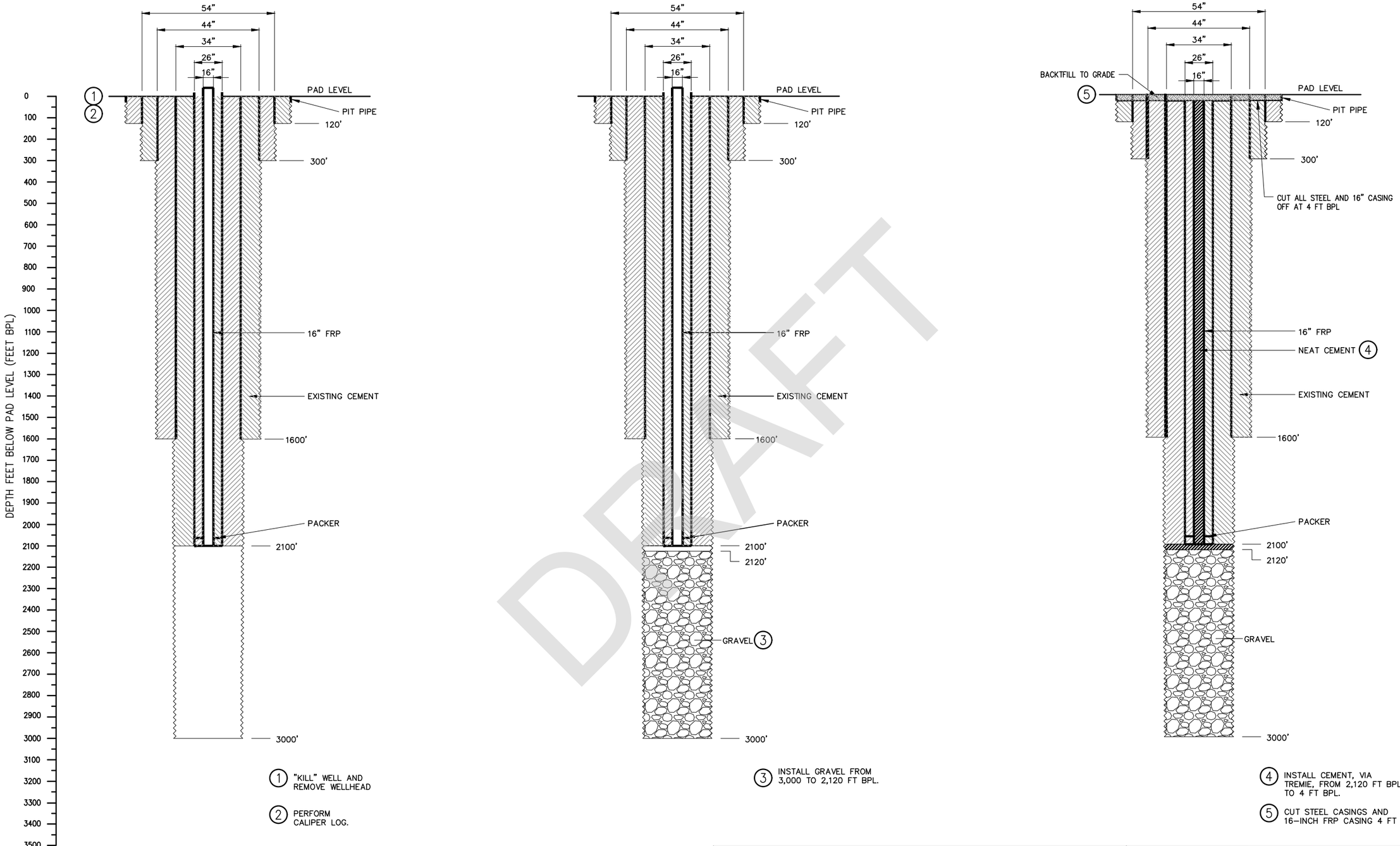
The following procedures would be followed to abandon a dual zone monitor well:

Task 1	Includes all work associated with mobilization, this item also includes the work required to "kill" artesian flow from the well with brine solution to lower the hydrostatic head bpl to facilitate the removal of the wellhead.
Task 2	Conduct a caliper log in the lower monitoring zone (LMZ) from 1,150 feet to 1,000 feet bpl and within the 6.625-inch OD (5.43-inch ID) FRP tubing to pad level.
Task 3	Pump ASTM C150 Type I/II or API Class B or ASTM C595 Type 1L neat cement, via tremie, in the LMZ, from 1,150 feet bpl to 1,000 feet bpl and the 6.625-inch OD (5.43-inch ID) FRP tubing to pad level, for a total of 200 cubic feet.
Task 4	Pump ASTM C150 Type I/II or API Class B or ASTM C595 Type 1L neat cement, via tremie, in the UMZ, from 850 feet bpl to 800 feet bpl and the annulus between the 12.75-inch OD (11.75-inch ID) steel casing and 6.625-inch OD (5.43-inch ID) FRP tubing to pad level, for a total of 550 cubic feet.
Task 5	Demolish the well pad, cut all steel casings and FRP casing four (4) feet below grade, and set a survey monument. This task includes all work associated with demobilizing the drilling rig and supporting equipment. Upon completion of demobilization, the contractor shall restore the site.

A cost estimate for plugging and abandoning each injection well and the dual-zone monitoring well is presented in Table 1. Figures 1 and 2 present the details of the plugging and abandonment plan in a conceptual diagram.

Table 1. Plugging and Abandonment Cost Estimate

Task	Unit Cost	Estimate
Injection Well, IW-1		
Abandonment Permit Application Fee	Unit	$150
Mobilization/Demobilization, "kill" and remove wellhead, demolish well pad, cut casing and set survey	Lump Sum	$110,000
Caliper Log	Lump Sum	$20,000
Gravel – 2,600 cu ft	$30/cu ft	$78,000
Grout – 2,500 cu ft	$30/cu ft	$75,000
SUBTOTAL CONTRACTOR COST FOR IW-1		$283,150
CONTINGENCY FEE (20%)		$56,630
IW-1 TOTAL		$339,780
Injection Well, IW-2		
Abandonment Permit Application Fee	Unit	$150
Mobilization/Demobilization, "kill" and remove wellhead, demolish well pad, cut casing and set survey	Lump Sum	$110,000
Caliper Log	Lump Sum	$20,000
Gravel – 2,600 cu ft	$30/cu ft	$78,000
Grout – 2,500 cu ft	$30/cu ft	$75,000
SUBTOTAL CONTRACTOR COST FOR IW-1		$283,150
CONTINGENCY FEE (20%)		$56,630
IW-2 TOTAL		$339,780
Dual-zone Monitor Well, MW-1		
Abandonment Permit Application Fee	Unit	$150
Mobilization/Demobilization, "kill" and remove wellhead, demolish well pad, cut casing and set survey	Lump Sum	$80,000
Caliper Log	Lump Sum	$15,000
LMZ Grout – 200 cu ft	$30/cu ft	$6,000
UMZ Grout – 550 cu ft	$30/cu ft	$16,500
SUBTOTAL CONTRACTOR COST FOR MW-1		$117,650
CONTINGENCY FEE (20%)		$23,530
MW-1 TOTAL		$141,180
TOTAL ESTIMATED CONTRACTORS COST FOR IW-1, IW-2, AND MW-1		827,940
ESTIMATED ENGINEERING FEE (8%)		$66,235
TOTAL COST FOR IW-1, IW-2, AND MW-1		$894,175
TOTAL ROUNDED COST FOR IW-1, IW-2, AND MW-1		**$900,000**



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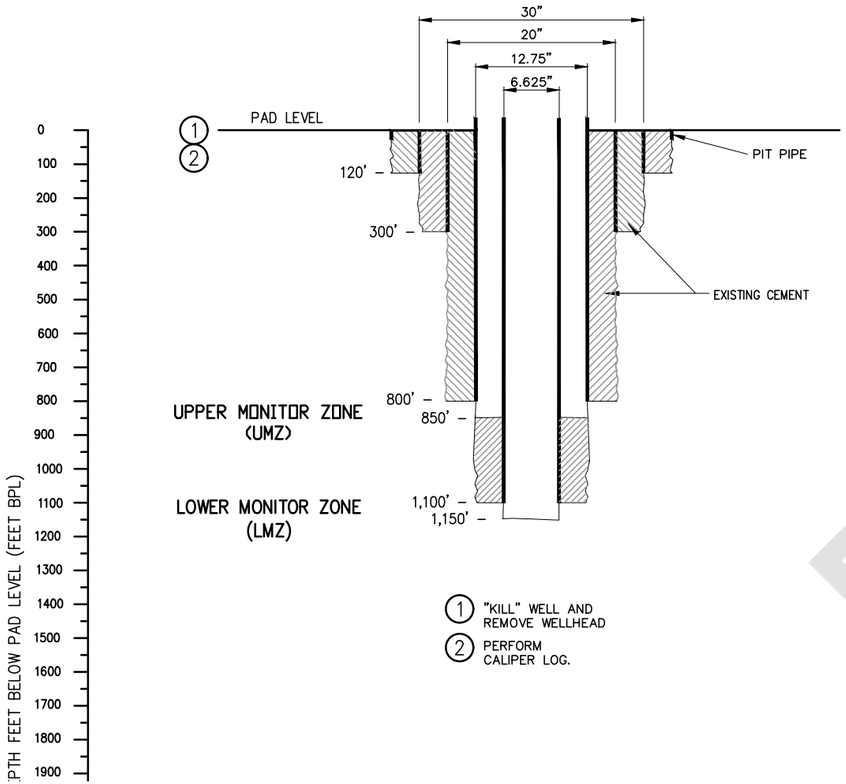
Brevard COUNTY

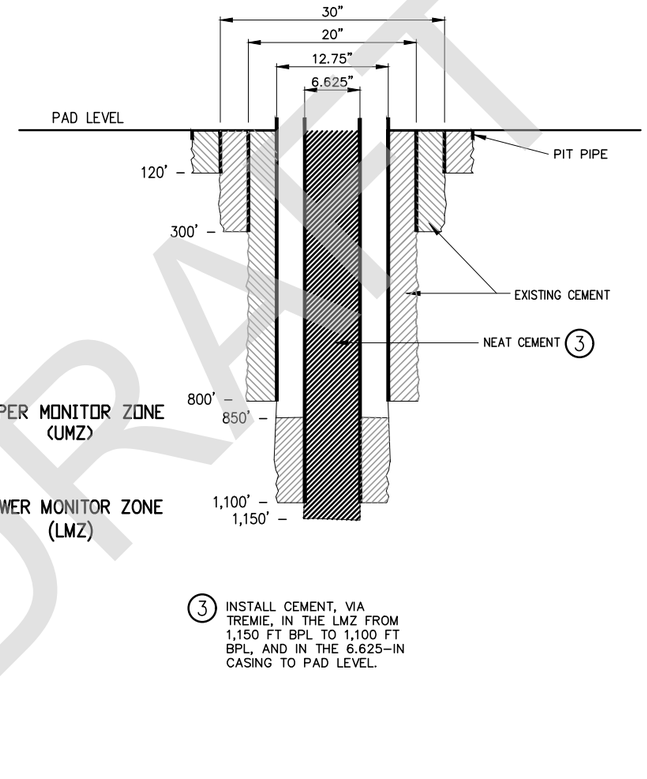
BREVARD COUNTY
SOUTH BREVARD WATER TREATMENT AND WATER RECLAMATION FACILITY

CLASS I INJECTION WELLS IW-1 AND IW-2
PLUGGING AND ABANDONMENT PROCEDURES
CONCEPTUAL DIAGRAM

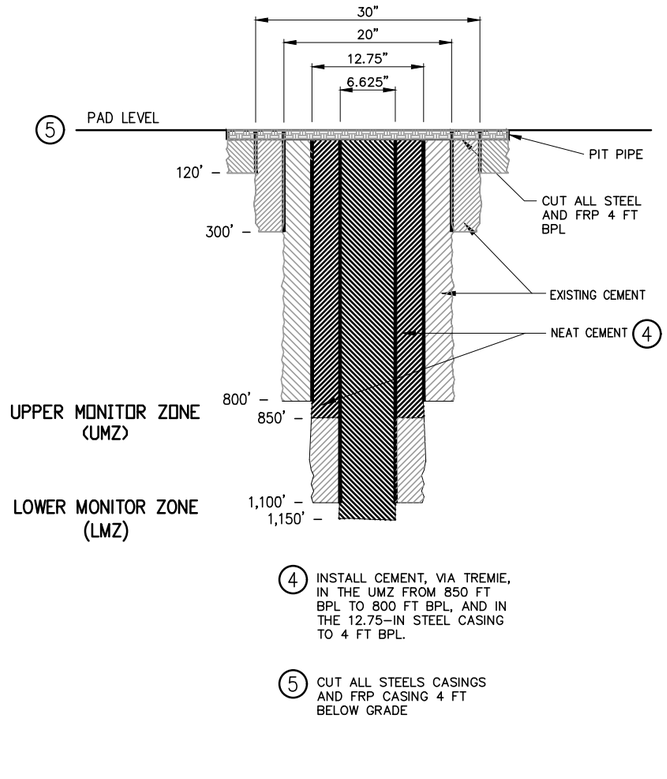
FIGURE
1



1. "KILL" WELL AND REMOVE WELLHEAD
2. PERFORM CALIPER LOG.



3. INSTALL CEMENT, VIA TREMIE, IN THE LMZ FROM 1,150 FT BPL TO 1,100 FT BPL, AND IN THE 6.625-IN CASING TO PAD LEVEL.



4. INSTALL CEMENT, VIA TREMIE, IN THE UMZ FROM 850 FT BPL TO 800 FT BPL, AND IN THE 12.75-IN STEEL CASING TO 4 FT BPL.

5. CUT ALL STEELS CASINGS AND FRP CASING 4 FT BELOW GRADE

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SOUTH BREVARD WATER TREATMENT AND WATER RECLAMATION FACILITY

DUAL-ZONE MONITORING WELL MW-1 PLUGGING AND ABANDONMENT PROCEDURES CONCEPTUAL DIAGRAM

FIGURE 2

File = C:\Users\CMoschillo\DC\ACCDocs\Hazen and Sawyer\40003-005\Project Files\1-Design\01-Hazen\00_Figures\40003-005-FIGURE 2 Saved by CMoschillo Save date = 1/17/2025 10:52 AM