RAMONA MUNICIPAL WATER DISTRICT
105 Earlham Street
Ramona, California 92065-1599
Telephone:
(760) 789-1330

August 11, 2010

JO 54182

James G Smith
Regional Water Quality Control Board
9174 Sky Park Court, #100
San Diego, CA 92123-4353

SUBJECT: 255468:CHENNING: TENTATIVE ADDENDUM NO. 1 TO ORDER NO. R9-2009-0005: AN ADDENDUM TO INCORPORATE REQUIREMENTS FOR THE DISCHARGE OF BRINE AND TO CLARIFY EXISTING REQUIREMENTS.

Dear Mr. Smith:
Thank you for your letter of July 21, 2010 (Letter) and the opportunity to respond to the proposed addendum to the Waste Discharge Requirements for our San Vicente Wastewater Treatment Plant. Staff has reviewed the document and has the following comments on the Tentative Addendum No. 1 to Order No. R9-2009-0005:

1. On page 2, paragraph 6, a, iii, a polyethylene geomembrane (PE) is referred to as the containment layer. The specifications that have been prepared for the proposed brine evaporation pond call for a polyvinyl chloride (PVC) membrane liner for secondary containment.
2. On page 2, paragraph 8, it states that there should be "more frequent monitoring of heavy metals". Our staff prefers for this to be quantified. Our understanding from speaking with RWQCB staff is that we will need to test once every 5 years and if that test is out of compliance we will need to test monthly until we are back in compliance. We would then go back to the 5 year cycle.
3. On page 4, paragraph 3, b, a freeboard of 6-inches is required at all times for each section of the pond. The outside perimeter wall will provide well beyond the 6-inches of freeboard, but one of the potential operational scenarios is to allow one pond to completely fill and spill into the next pond downhill from the pond being filled. If 6-inches of freeboard is desired for emergency storage capacity, the pond will never have that capacity because the control structures (weirs) will automatically spill into the next pond before ever filling the remaining storage capacity associated with the freeboard. It may be better to quantify the freeboard associated with the perimeter wall for splash action and quantify an emergency volume to be maintained in the overall pond. We would also point out that the RMWD controls the flow rate into the brine ponds. In an emergency scenario, we would stop sending brine to the evaporation ponds and discharge it into the existing brine pond at the treatment plant site to be stored and hauled off site.
4. On page 4, paragraph 3, e, the solids buildup is required to be removed "sufficiently by October 31 of each year". Our calculations show that solids buildup will take

approximately 4 years before impacting storage capacity. RMWD's preference is to remove solids "as-needed" to reserve wet weather storage capacity in the brine ponds.

5. On page 9, paragraph 1, a, 3, states that a map of all monitoring points needs to be included in quarterly reports. Our assumption is that this is a map of the observation ports on the leachate collection system, but could be interpreted as being the locations of existing monitoring wells. It is also our understanding that additional monitoring wells will not be required due to the dual containment and collection system constructed with the brine ponds. Attached is a half sized plan of the proposed observation ports on the brine pond.
6. On page 9, paragraph 2, b and page 10, 2, c, the references to HDPE liner should be changed to PVC liner.
7. On page 11, paragraph B, 1, b the daily flow rates during any thirty day period should be 0.80 million gallons per day instead of 0.08 million gallons per day.

If you have any questions with respect to our comments, please feel free to contact me at 760-788-2249 or tstanton@rwmd.org.

Sincerely,

Timothy Stanton, PE
District Engineer

Attachment

Cc: Alice Benson, RMWD Wastewater Operations Manager
Joe Cortez, RMWD Wastewater Treatment Supervisor

EARTHWORK QUANTITIES:

CUT = 5166 CUBIC YARDS
FILL = 4593 CUBIC YARDS
NET = 571 CUBIC YARDS (USING 12% SHRINKAGE FACTOR)
EXPORT = 0 CUBIC YARDS

(QUANTITIES ARE BASED ON THE FINISH GRADE ELEVATIONS AND EXISTING GRADE ELEVATIONS. SEE NOTE BELOW)

NOTE:

ESTIMATED QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR SHALL MAKE OWN DETERMINATION OF ALL QUANTITIES AND SHALL BE RESPONSIBLE FOR CONSTRUCTING THE SITE TO THE LINES AND GRADES SHOWN REGARDLESS OF THE QUANTITIES OF MATERIAL ACTUALLY MOVED, AT NO ADDITIONAL COST TO THE OWNER.

DESIGN CRITERIA:

1. CONFORMING TO REGIONAL WATER QUALITY CONTROL BOARDS STANDARDS TO PREVENT LEAKAGE.
2. ASSUMPTION BASED ON EVAPORATION RATE OF 48-INCHES PER YEAR.
3. PONDS ARE EQUIPPED WITH BOTH SWALE AND BERM TO PREVENT STORM RUN-OFF TO ENTER THE STRUCTURE.
4. ASSUMED DAILY FLOW RATE OF 800,000 GPD FROM RO-1 & RO-2 UNITS COMBINED. THE EQUIVALENT VOLUME IS 88,862 CUBIC FEET. ACTUAL DESIGN INFLOW TO BRINE POND IS 11 GPM OR 16,000 GPD.
5. POND AREA OF 2.342 ACRES WITH A LIQUID DEPTH OF 0.91' AND 0.75' OF FREEBOARD UNDER NORMAL OPERATING CONDITION. THE ADDITION OF STORM WATER FLOW BASED ON A 24-HR, 100-YR STORM FREQUENCY WILL PRODUCED A COMBINED DEPTH OF 1.49' AND 0.17' OF FREEBOARD WITHIN THE INTERIOR WALLS. TYPICAL INTERIOR WALLS ARE AT LEAST 0.33' LOWER THAN PERIMETER WALLS.
6. POND LINERS CONSISTING OF 4" THICK CONCRETE OVER 4" MINIMUM SAND AS PRIMARY CONTAINMENT. BELOW THE SAND LAYER WILL BE A 20 MIL PVC MEMBRANE TO SERVE AS THE SECONDARY CONTAINMENT.

BRINE POND DATA TABLE			
#	AVAIL AREA (SF)	AVAIL VOL (CF)	DESIGN VOL (CF)
POND 1	5,676	9,478	5,165
POND 2	8,698	14,525	7,915
POND 3	8,561	14,297	7,790
POND 4	8,912	14,883	8,110
POND 5	9,131	15,249	8,309
POND 6	9,350	15,614	8,509
POND 7	9,569	15,979	8,708
POND 8	10,150	16,951	9,236
TOTAL	70,047	116,976	63,742

DESIGN NOTES:

1. NOT USED
2. 12' WIDE, 0.25' THICK GRAVEL DRIVEWAY FOR MAINTENANCE ACCESS ROAD (830 LF). SEE DETAIL 2 C-2 | C-16
3. 16' WIDE, 0.25' THICK GRAVEL DRIVEWAY FOR MAINTENANCE ACCESS ROAD (235 LF). SEE DETAIL 3 C-2 | C-16
4. EXPANSION JOINT & WATER STOP SPACED AT 12' MAXIMUM. SEE DETAIL 1 C-2 | C-16
5. NOT USED
6. 1' HIGH, 4' WIDE EARTHEN BERM (235 LF). SEE DETAIL 4 C-2 | C-16
7. 1.67' HIGH CONCRETE (f'c=4,000 PSI) RETAINING WALL (4,740 LF). SEE DETAIL 6 C-2 | C-16
8. 4" THICK CONCRETE (f'c=4,000 PSI) AT BOTTOM PONDS AND ALONG 2:1 SLOPE UP TO 2' HIGH (129,728 SF). SEE DETAIL 1 C-2 | C-16
9. 20 MIL PVC LINER (134,135 SF). SEE DETAIL 1 C-2 | C-16
10. 24" RCP STORM DRAIN (55 LF)
11. 2-6" DIP STORM DRAIN (13 EA). SEE DETAIL 16,18 C-2 | C-17
12. 6' HIGH CHAIN LINK FENCE PER SDRSD M-6 (1,734 LF).
13. 1-1/2" PVC, SCHEDULE 80 (PURPLE COLOR), CLASS 200 WASTE BRINE PIPING CONFORMING TO WAS. SEE DETAIL 13 C-2 | C-17
14. OBSERVATION BOX PIPE RISER. SEE DETAIL 6 C-2 | C-16
15. 10' WIDE ACCESS DRIVEWAY. SEE DETAIL 18 C-2 | C-17
16. 4" PERFORATED PIPE AT 0.5% MIN SLOPE ALONG INTERIOR AND PERIMETER WALL (4,942 LF). SEE DETAIL 5,6,7 C-2 | C-16
17. 2' WEIR. SEE DETAIL 8 C-2 | C-16
18. 2' WIDE GUTTER (430 LF). SEE DETAIL 9 C-2 | C-17
19. GRAVITY RET. WALL (454 LF). SEE DETAIL 10 C-2 | C-17
20. DRAINAGE DITCH (912 LF). SEE DETAIL 10 C-2 | C-17
21. 2' HIGH PERIMETER WALL (1,000 LF). SEE DETAIL 9 C-2 | C-17
22. END GRAVITY WALL
23. INSTALL WATER STOP. SEE DETAIL 17 C-2 | C-17
24. NOT USED
25. NOT USED
26. AREA TO BE LINED WITH NO.2 BACKING NATIVE ROCKS OVER NON-WOVEN GEOTEXTILE FABRIC (MIRAFI 160 N OR APPROVED EQUAL) ALONG CONCENTRATED FLOW FROM UPSTREAM AREA (600 SF). SEE DETAIL 1C C-2 | C-16

MATCHLINE - SEE SHEET C-3

MATCHLINE - SEE SHEET C-3

GRADING/IMPROVEMENT PLAN

SCALE: 1"=20'

20 0 20 40 60
SCALE: 1"=20'

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
9755 CLAIREMONT MESA BOULEVARD, SUITE 100
SAN DIEGO, CALIFORNIA 92124-1324
858.614.5000 • FAX 858.614.5001 • www.RBF.com

REGISTERED PROFESSIONAL ENGINEER CECIL H. REHR No. 60899 Exp. 12/31/10 STATE OF CALIFORNIA

REVISIONS			
No.	Description	Approved By	Date

VERTICAL BENCH MARK

DESCRIPTION: CONTROL MONUMENT STATION RSV1249 PER DPW SURVEY CONTROL. 2" IP & DISC STAMPED RCE 19255 IN STOEN MOUND PER ROS 14027 & 8258.
LOCATION: LOCATED 31 FEET EAST OF THE INTERSECTION OF HWY 67 & QUAIL ROCK ROAD & 11.5 FEET SOUTH OF THE SOUTHERLY SHOULDER OF HWY 67.
RECORD FROM: COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS
ELEVATION: 1510.46 DATUM: NAVD88

C-2

SHEET 5 | RAMONA MUNICIPAL WATER DISTRICT | 33 SHEETS

SAN VICENTE WASTEWATER RECLAMATION FACILITY
BRINE EVAPORATION PONDS
GRADING/IMPROVEMENT PLAN

Drawn By: OO\LR
Designed By: CECIL H. REHR
Approved By: DISTRICT ENGINEER
Approved By: WATER OPERATIONS MANAGER

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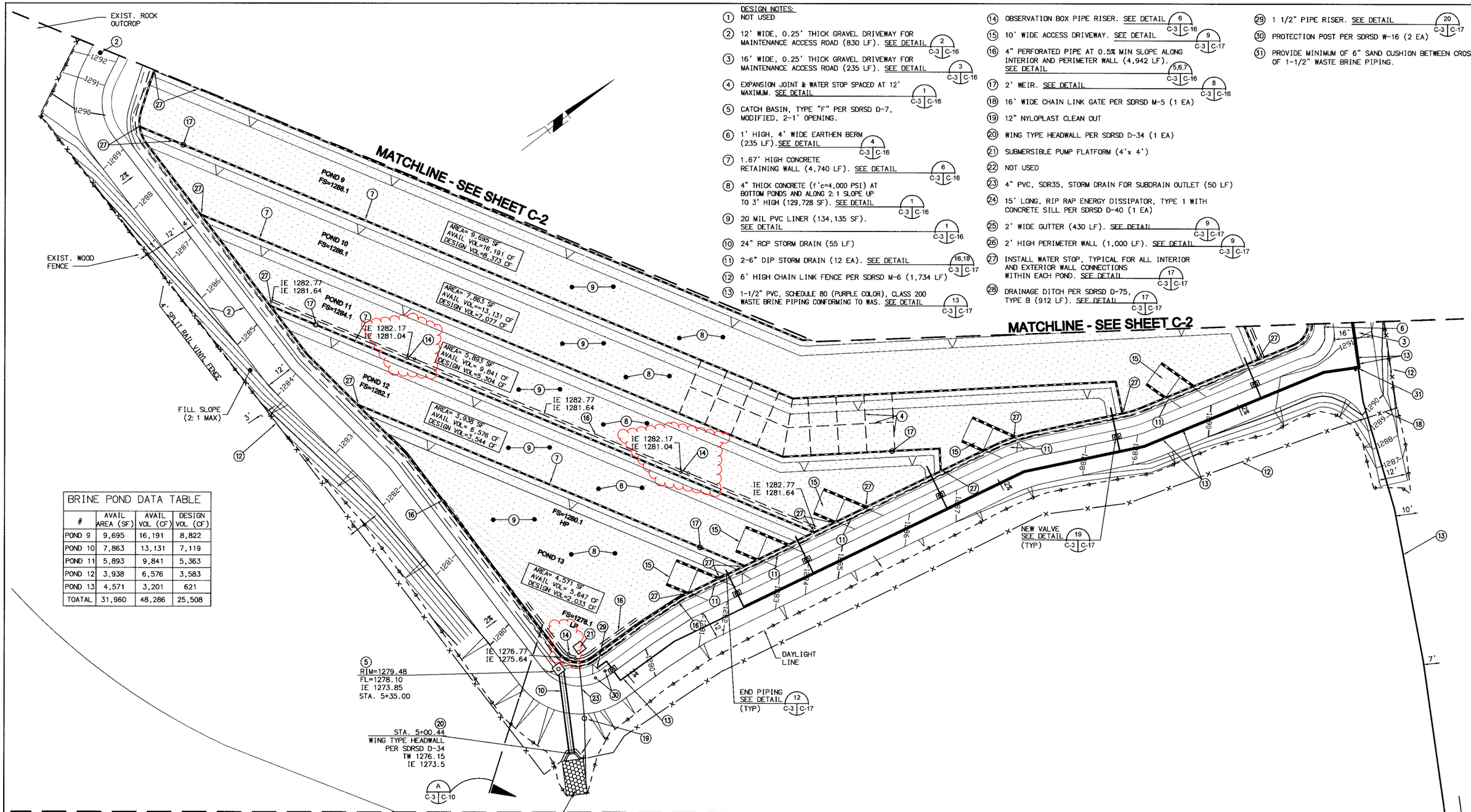
RMWD DWG 54182-DP00-05



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3. 16' WIDE, 0.25' THICK GRAVEL DRIVEWAY FOR MAINTENANCE ACCESS ROAD (235 LF). SEE DETAIL 3 C-3 C-16
4. EXPANSION JOINT & WATER STOP SPACED AT 12' MAXIMUM. SEE DETAIL 1 C-3 C-16
5. CATCH BASIN, TYPE "F" PER SDRSD D-7, MODIFIED, 2-1' OPENING.
6. 1' HIGH, 4' WIDE EARTHEN BERM (235 LF). SEE DETAIL 4 C-3 C-16
7. 1.67' HIGH CONCRETE RETAINING WALL (4,740 LF). SEE DETAIL 6 C-3 C-16
8. 4" THICK CONCRETE (f'c=4,000 PSI) AT BOTTOM PONDS AND ALONG 2:1 SLOPE UP TO 3' HIGH (129,728 SF). SEE DETAIL 1 C-3 C-16
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17. 2' WEIR. SEE DETAIL 8 C-3 C-16
18. 16' WIDE CHAIN LINK GATE PER SDRSD M-5 (1 EA)
19. 12" NYLOPLAST CLEAN OUT
20. WING TYPE HEADWALL PER SDRSD D-34 (1 EA)
21. SUBMERSIBLE PUMP FLATFORM (4'x 4')
22. NOT USED
23. 4" PVC, SDR35, STORM DRAIN FOR SUBDRAIN OUTLET (50 LF)
24. 15' LONG, RIP RAP ENERGY DISSIPATOR, TYPE 1 WITH CONCRETE SILL PER SDRSD D-40 (1 EA)
25. 2' WIDE GUTTER (430 LF). SEE DETAIL 9 C-3 C-17
26. 2' HIGH PERIMETER WALL (1,000 LF). SEE DETAIL 9 C-3 C-17
27. INSTALL WATER STOP, TYPICAL FOR ALL INTERIOR AND EXTERIOR WALL CONNECTIONS WITHIN EACH POND. SEE DETAIL 17 C-3 C-17
28. DRAINAGE DITCH PER SDRSD D-75, TYPE B (912 LF). SEE DETAIL 17 C-3 C-17
29. 1 1/2" PIPE RISER. SEE DETAIL 20 C-3 C-17
30. PROTECTION POST PER SDRSD W-16 (2 EA)
31. PROVIDE MINIMUM OF 6" SAND CUSHION BETWEEN CROSSING OF 1-1/2" WASTE BRINE PIPING.

BRINE POND DATA TABLE

#	AVAIL AREA (SF)	AVAIL VOL (CF)	DESIGN VOL (CF)
POND 9	9,695	16,191	8,822
POND 10	7,863	13,131	7,119
POND 11	5,893	9,841	5,363
POND 12	3,938	6,576	3,583
POND 13	4,571	3,201	621
TOATAL	31,960	48,286	25,508

MATCHLINE - SEE SHEET C-4

GRADING/IMPROVEMENT PLAN

SCALE: 1"=20'

20 0 20 40 60
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BRINE EVAPORATION PONDS
GRADING/IMPROVEMENT PLAN

Drawn By: OO/LR
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Approved By: DISTRICT ENGINEER
Approved By: WATER OPERATIONS MANAGER

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