



**OPERATION NOTE:** THE IX SYSTEM OPERATES WITH VESSEL PAIRS, WHERE THE LEAD VESSEL IS ONE SIDE OF THE SYSTEM CONTAINER, AND THE LAG VESSEL IS ON THE OTHER. AFTER ALL OF THE LEAD IX VESSELS ARE SPENT, AND THEIR MEDIA IS REPLACED, THE PROCESS IS RECONFIGURED FOR OPERATING WITH THE FORMER LAG VESSELS AS THE LEAD TREATMENT VESSEL. WHEN THE PROCESS IS OPERATED IN THE FORWARD TREATMENT MODE, VALVE'S V-F1, V-F2 AND V-F3 ARE OPEN AND VALVE'S V-R1, V-R2 AND V-R3 ARE CLOSED. WHEN THE PROCESS IS OPERATED IN REVERSE TREATMENT MODE, THE VALVE'S REVERSE THEIR OPERATING STATE.

- F<sub>-</sub> INDICATES "FORWARD" TREATMENT
- R<sub>-</sub> INDICATES "REVERSE" TREATMENT

**VESSEL BANK A (1 OF 2)**

SEE OPERATION NOTE

SEE NOTE 4

**GENERAL NOTES:**

- PLC CONTROL LOGIC PROVIDES CONTROL INTERLOCK FOR PROPER SEQUENCING OF VALVES.
- PLC LOGIC SHUTS DOWN THE SYSTEM WHEN ANY ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST:
  - HIGH IX VESSEL PRESSURE DIFFERENTIAL
  - HIGH WASTE SUMP LEVEL
- REFERENCE ETI LEGEND DRAWING, PID-LA & PID-LB FOR SYMBOLS.
- EQUIPMENT SUPPLIED BY ENVIROGEN TECHNOLOGIES, INC. IS MARKED WITH THE SYMBOL (E) ALL DI PIPING BY OTHERS.

IX-210, 220, 230, 240  
ION EXCHANGE VESSELS  
MODEL: ETI SimPACK  
DIMENSIONS: 36" x 57"H  
RESIN CAPACITY: 25 CU FT  
MATERIAL: POLYETHYLENE/FRP

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|------------------|--|--------------|--|
| DESIGNED BY/DATE |  | N/A          |  |
| DESIGNED BY/DATE |  | AWS 12-09-10 |  |
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U.S. PATENTS 6,878,286, 7,041,223 7,309,436 AND PATENTS PENDING.



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APPROVED BY:

NERT HENDERSON, NV  
PIPING AND INSTRUMENTATION DIAGRAM  
PERCHLORATE TREATMENT SYSTEM

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|-------------------------|----------|
| SHEET SIZE              | REVISION |
| D                       | 0        |
| SHEET 1 OF 1            |          |
| DRAWING # 1373-PID-P404 |          |
| FILE # 1373-PID-P404    |          |

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