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**Electro Deionization Questionnaire**

**SECTION 1 – PROJECT BACKGROUND**

|  |  |
| --- | --- |
| **Raw Water Source**  Choose all that apply | Municipal Source  Private Source  Well Water  Surface Water  Sea Water  Wastewater  Reverse Osmosis Concentrate (RO-CR™ Application)  Cooling Tower Blowdown (CT-CR™ Application)  Primary Effluent  Secondary Effluent  Tertiary Effluent  Mining Effluent (Describe)  Other: |
| **Describe any primary treatment concerns**  Include reason for END® technology inquiry and/or provide your project priorities |  |
| **Current Project Phase** | Feasibility Study  Preliminary Design  Detailed Design  Other: |
| **Full-Scale Solution Timeframe**  “Make-water Date” | ≤ 6 months  6 - 12 months  1 - 2 years  ≥ 2 years  Other: |
| **Required Lotic Response** | Treatment Projection  Budget Proposal  Firm Proposal  Other: |
| **Requestor’s role in purchasing this equipment?** | ☐ End User  ☐ Engineering Firm (EPC, A/E, etc.)  ☐ Integrator / General Contractor / Equipment Dealer (Resale)  ☐ Other: |
| **Are you interested in a lease or water service agreement (WSA)?** | ☐ Yes  ☐ No |
| **Desired Effluent Flow *or*** | \_\_\_\_\_\_\_\_\_\_\_\_\_  m3/h  gpm |
| **Total Influent Flow** | \_\_\_\_\_\_\_\_\_\_\_\_\_  m3/h  gpm |
| **What is the minimum recovery required?** | \_\_\_\_\_\_\_\_\_\_\_\_\_ % |
| **What is the desired recovery?** | \_\_\_\_\_\_\_\_\_\_\_\_\_ % |
| **Are there any existing treatment processes?** | No  Yes (please list below): |
| **Is a capacity increase desired or needed?** | No  Yes (please list below): |
| **Describe water usage rates for your facility**  Existing system operation or production intent for new system | \_\_\_\_\_\_\_\_\_\_\_\_\_ Hours/Day  \_\_\_\_\_\_\_\_\_\_\_\_\_ Days/Week  \_\_\_\_\_\_\_\_\_\_\_\_\_ Weeks/Year  Other: |
| **What other technologies are considered for this project?** |  |
| **Project Location** |  |
| **Estimated cost of Water** | \_\_\_\_\_\_\_\_\_\_\_\_\_  AUD $/m3  $/kgal |
| **Estimated cost of Disposal** | \_\_\_\_\_\_\_\_\_\_\_\_\_  AUD $/m3  $/kgal |
| **Estimated cost of Electricity** | \_\_\_\_\_\_\_\_\_\_\_\_\_  AUD $/kWh |
| **Containerized System**  For outdoor use or simplified installation and startup | No  Yes |

**SECTION 2 – FEED WATER CHEMISTRY AND TREATMENT GOALS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Water sample taken from** | | | Direct Supply  Raw Water Source (describe processes and concentration factors for equipment upstream): | | |
| **What is the water quality range based on?** | | | One sample point  Sample points covering a few weeks  Sample points covering a few months  Sample points covering a few years | | |
| **Do you see or anticipate variances of feed water quality?** | | | Not much. Raw water is consistent  Yes. Some variances  Yes. Large variances  Not sure | | |
| **How will Clarified Product Water be utilized?** | | | ☐ Primary Makeup (Please provide description)  ☐ Reverse Osmosis Reuse (RO-CR™)  ☐ Cooling Tower Reuse (CT-CT™)  ☐ Direct Disposal (e.g., Treatment of waste to meet discharge spec)  ☐ Other: | | |
| **Feed Water Analysis and Product Water Goal**  *Please attach a complete water analysis or fill out the table below as much as possible:* | | | | | |
| Parameters | Units |  | | Feed Water **Range** | Product Water Goal |
| Sodium (Na+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Potassium (K+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Calcium (Ca2+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Magnesium (Mg2+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Total Iron (Fe2+ and Fe3+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Manganese (Mn2+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Barium (Ba2+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Strontium (Sr2+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Aluminum (Al3+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Ammonium (NH4+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Lithium (Li+) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Chloride (Cl-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Sulfate (SO42-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Bicarbonate (HCO3-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Carbonate (CO32-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Nitrate (NO3-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Fluoride (F-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Phosphate (PO43-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Bromide (Br-) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Hydrogen Sulfide (H2S) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Arsenate (AsO4) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Silica (SiO2) | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Boron | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| TDS | mg/L | ☐ as Ion ☐ as CaCO3 | |  |  |
| Conductivity | μS/cm |  | |  |  |
| Sodium Absorption Rate | SAR |  | |  |  |
| Adjusted Sodium Absorption Rate | SARADJ |  | |  |  |
| Turbidity | NTU |  | |  |  |
| pH | SU |  | |  |  |
| Temperature | °C |  | |  |  |
| TOC | mg/L |  | |  |  |
| TSS | mg/L |  | |  |  |
| COD | mg O2/L |  | |  |  |
| BOD | mg O2/L |  | |  |  |
| Specific parameters of concern not listed above: |  |  | |  |  |

**SECTON 3 – BRINE MANAGEMENT**

|  |  |
| --- | --- |
| **What is the intent for disposal of Concentrate Stream?** | ☐ Municipal Sewer (POTW)  ☐ Surface Water Discharge  ☐ Hauled/trucked Liquid Waste  ☐ Evaporation Pond  ☐ Thermal Evaporation or Crystallizer  ☐ Disposal Well  ☐ Process Recovery / Concentration (e.g., Mining reclaim of Lithium or Agricultural reclaim of Nitrates)  ☐ Other: |
| **Current Recovery (if applicable)** | \_\_\_\_\_\_\_\_\_\_\_\_\_ % or \_\_\_\_\_\_\_\_\_\_\_\_\_ CoC |
| **Desired Overall System Recovery** | \_\_\_\_\_\_\_\_\_\_\_\_\_ % or \_\_\_\_\_\_\_\_\_\_\_\_\_ CoC |
| **Is there an existing discharge permit?**  If yes, what is the maximum allowable discharge capacity? | No  Yes  \_\_\_\_\_\_\_\_\_\_\_\_\_  m3/h  gpm |
| **Maximum allowable levels per discharge permit**  Attach copy of discharge permit if possible | \_\_\_\_\_\_\_\_\_\_\_\_\_ mg/L TDS  \_\_\_\_\_\_\_\_\_\_\_\_\_ mg/L TSS  Others: |

**SECTION 4 – COMMENTS / QUESTIONS**

|  |  |
| --- | --- |
| **Provide any additional comments or questions for Lotic Technologies.**  Please include any information that will help us quote or deliver useful information like documentation or drawings expected with our proposal, additional equipment you would like quoted, space constraints, unusual project circumstances, or the existence of a functional specification. |  |