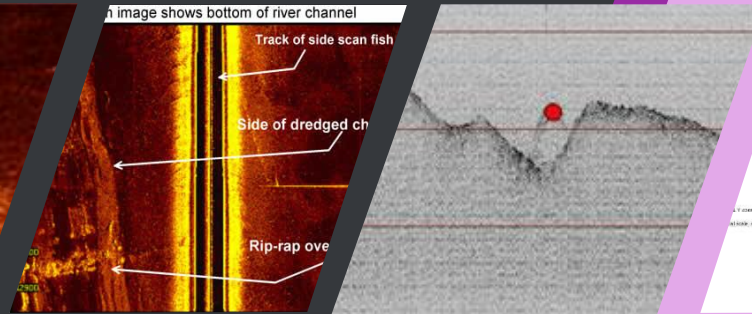
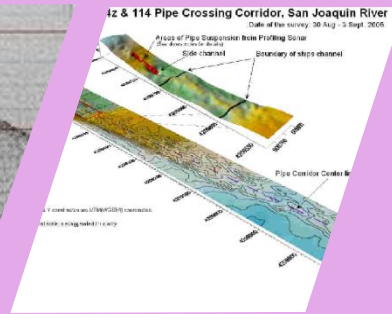


HDPE Pipe Saddle Weights



Suspended Pipe



River Bed Erosion

WE ARE AN INFRASTRUCTURE PRE-ENGINEERING FIRM
WE PROVIDE UNIQUE DATA & SURVEY SOLUTIONS



- No dredging
- No anchoring
- No log dumping

IN CASE OF PIPELINE EMERGENCY CALL 24 HOURS 1-888-

River-crossing depth of burial & pipe track surveys. We can survey under floating structures.



- SHORELINE LASER SURVEY
- SLOPE HAZARD IDENTIFICATION
- DIRECTIONAL DRILLED - CROSS-BORE MITIGATION
- PIPE SUSPENSION IDENTIFICATION
- PIPELINE LOCATION, MEANDER AND PROFILE
- RIVER BOTTOM & SCOUR ANALYSIS
- SITE PHOTOGRAPHS
- DEPTH OF COVER
- INTERNAL SIPHON SURVEYS
- OUTFALLS
- ROV SURVEYS

SINCE 1993 OUR GOAL HAS BEEN TO PROVIDE EASILY UNDERSTOOD DIGITAL SURVEY REPORTS

WE DELIVER THE DATA YOU NEED

- Multi-sensor data collection technology provides you with new and unrivalled definition of fixed assets
- If you have a challenging inspection or survey problem; our design team can help.
- We have designed & built innovative robotic systems to position the sensors accurately
- AquaCoustic (AQC) uses in house designed and built innovative robotic systems
- We collect video & xyz point cloud data above and below water using Time of Flight (ToF) laser (LIDAR) , video cameras and SONAR
- Since 1993, civil engineers have used our data to prioritize remedial work for their fixed assets.

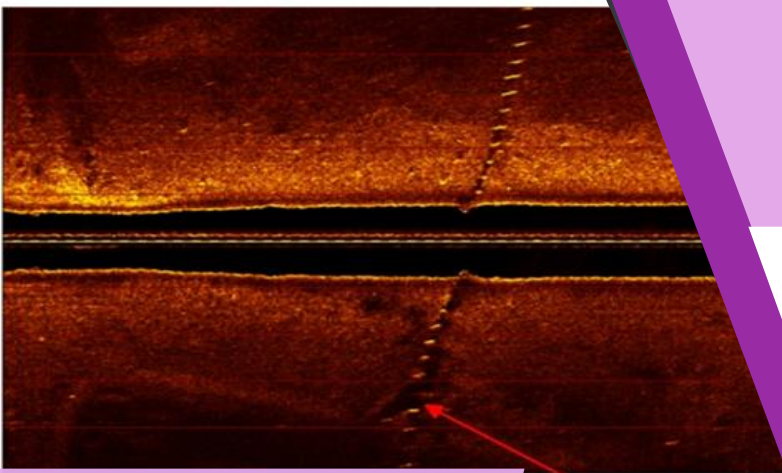


Simultaneous laser and bathymetric river-crossing survey



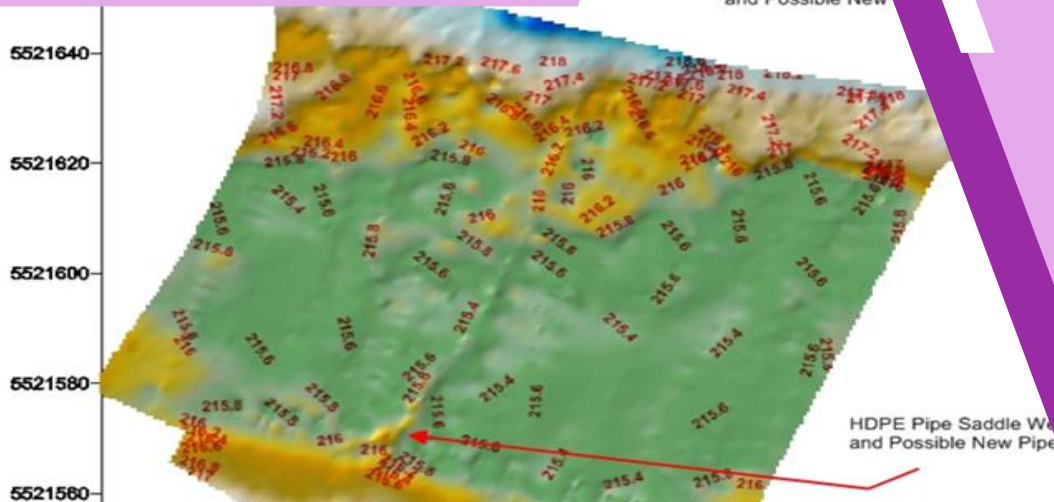
INSPECTION SENSORS TO FIT YOUR NEEDS

- Digital video cameras captures shoreline conditions
- Time of Flight profiling lasers used to create above water AutoCAD drawings
- Digital profiling SONARS create CAD ready data below water
- Our 3D SONAR system provides a dense point cloud around a fixed point
- Digital scanning & side-scan sonars are used to image underwater trends
- RTK GPS for survey positioning within 2 cm – $\frac{3}{4}$ " accuracy
- Additional sensors are easily incorporated onto our system

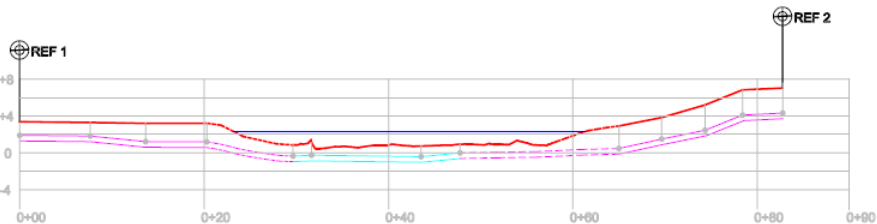


Side Scan Sonar Image of an HDPE pipe
River crossing bathymetry below

Side-Scan Sonar
HDPE Pipe Saddle
and Possible New



HDPE Pipe Saddle Wa
and Possible New Pipe

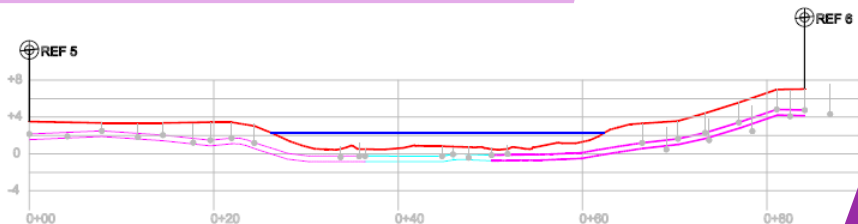
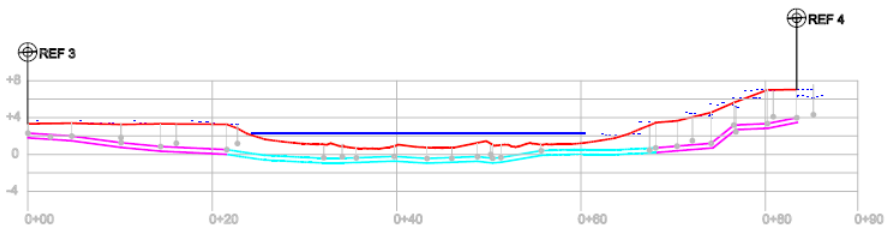


PROFILE VIEW
SECTION 'A'
810mm OD Tank
SCALE 1:2

AVAILABLE WORK PLATFORMS

- Inspection class ROV (Remotely Operated Vehicle)
- Propane Powered Six Wheel Drive Amphibious Vehicle
- 14' Achilles inflatable boat with a Torqeedo electric outboard for sensitive areas, gas outboard for large areas
- Easy set up for vessels of convenience
- Our deliverables are designed to make your life easier

Depth of cover graph showing
pipe & river bottom profile



	A	B	C	D	E	F	G
1	Dist from Ref 2		UTM		Bottom	Pipe	
2	(NARM-LAND1)		E	N	Elev	Elev	Cover
3	0+	49	511072.750	5495145.173	2.22	-0.37	2.59
4	0+	60	511082.540	5495152.344	0.09	-2.46	2.55
5	0+	70	511090.600	5495158.262	-0.90	-3.58	2.68
6	0+	80	511098.661	5495164.181	-1.25	-4.49	3.24
							3.43
							3.79
							3.6
10	0+	120	511130.902	5495187.856	-3.44	-7.61	4.1
11	0+	130	511138.962	5495193.775	-4.15	-8.29	4.1
12	0+	140	511147.023	5495199.693	-5.40	-8.83	4.1
13	0+	150	511155.083	5495205.612	-6.95	-9.35	4.1
14	0+	160	511163.143	5495211.531	-7.52	-9.80	4.1
15	0+	170	511171.204	5495217.450	-8.03	-9.99	4.1
16	0+	180	511179.264	5495223.368	-8.36	-10.1	4.1
17	0+	190	511187.324	5495229.287	-7.99	-10.3	4.1
18	0+	200	511195.385	5495235.206	-7.79	-10.3	4.1
19	0+	210	511203.445	5495241.125	-7.88	-10.3	4.1
20	0+	220	511211.505	5495247.043	-7.99	-10.3	4.1
21	0+	230	511219.566	5495252.962	-7.98	-10.3	4.1
22	0+	240	511227.626	5495258.881	-7.98	-10.3	4.1
23	0+	250	511235.686	5495264.799	-7.8	-10.3	4.1
24	0+	260	511243.746	5495270.718	-7.9	-10.3	4.1
25	0+	270	511251.807	5495276.637	-8.0	-10.3	4.1
26	0+	280	511259.867	5495282.556	-8.0	-10.3	4.1
27	0+	290	511267.927	5495288.474	-8.0	-10.3	4.1
28	0+	300	511275.988	5495294.393	-8.0	-10.3	4.1
29	0+	310	511284.048	5495300.312	-8.0	-10.3	4.1
30	0+	320	511292.108	5495306.231	-8.0	-10.3	4.1
31	0+	330	511300.169	5495312.149	-8.0	-10.3	4.1
32	0+	340	511308.229	5495318.068	-8.0	-10.3	4.1
33	0+	352	511317.081	5495324.5	-8.0	-10.3	4.1

Tabulated data showing Northing, Easting, distance from shore, pipe elevations & depth of cover

COMMONLY USED SURVEY SENSORS

- Side scan sonar systems to collect surficial bottom features
- Bottom profiling sonar systems for bathymetry
- Profiling laser units to gather shoreline or infrastructure measurements
- Sub-bottom sonar produces depth of cover graphs & tables
- Low light digital video cameras to collect shoreline details
- Digital 3D sonar systems, ROV or Pole mounted for detailed (1/2" accuracy) point cloud sonar data from a fixed point
- ROV for video survey of pipe lines or cables
- RTK GPS units for centimeter accuracy
- The processed data is quality controlled by trained personnel

AQC KEY POINTS

- We are an infrastructure pre-engineering firm that develops unique data gathering solutions
- Our data helps you prioritize areas of concern and can be instrumental in reducing costs of repairs
- We design and build robotic systems capable of meeting any challenge and develop software that transforms data into useful information
- We control the data from collection to deliverables without outsourcing; therefore, we respond to client input directly and completely
- Our technological solutions generate actionable information that reduces costs
- We personally pick up the phone & answer your technical questions

Video frame grab from an
underwater ROV pipe survey

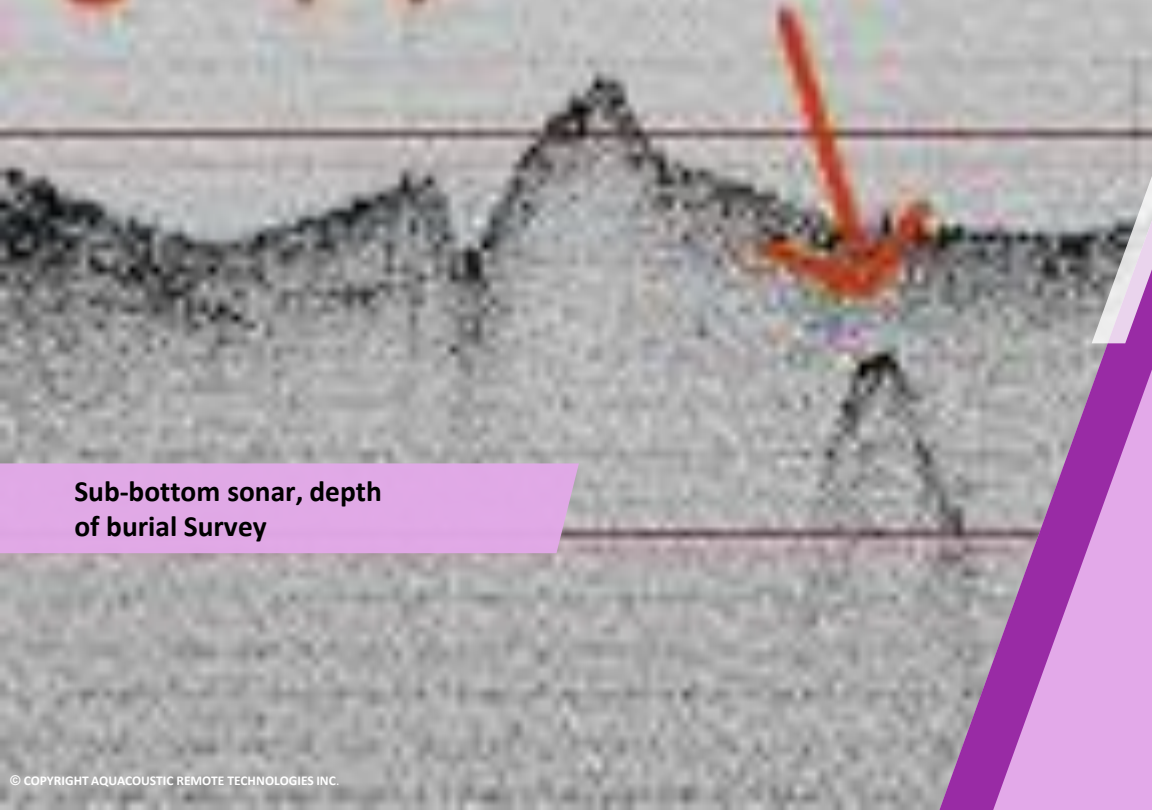
AREAS OF INFRASTRUCTURE INSPECTIONS

IF YOU HAVE A PARTICULAR INTEREST OR CHALLENGE, WE CAN DISCUSS SOLUTIONS ON THE PHONE OR WE CAN SEND ADDITIONAL INFORMATION ON THE FOLLOWING:

- ✓ Dams
- ✓ Bridges
- ✓ Tunnels
- ✓ Culverts
- ✓ Manholes
- ✓ Mine Stopes
- ✓ Ports & Marinas
- ✓ Large Diameter Pipes
- ✓ Traffic Control Plans
- ✓ Mine Tailing Ponds
- ✓ Shafts and Boreholes
- ✓ Specialty Sonar/Laser Surveys
- ✓ Pipe and Cable River Crossing Surveys
- ✓ Internal ROV outfall surveys, minimum diameter 450mm (18")
- ✓ Historical Video Re-coding to New Standards or AI Quality Control
- ✓ Processing Client Collected Sonar & Laser Data
- ✓ Underwater Search and Surveys

AQUACOUSTIC CAN PLAY A SIGNIFICANT ROLE IN YOUR RISK MANAGEMENT STRATEGY

depth of cover over gas pipeline



**Sub-bottom sonar, depth
of burial Survey**

WHAT CAN WE DO FOR YOU



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