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SECURITY IMPROVEMENTS FOR # XXXX

GENERAL COMMENTS:

To reduce the Risk of a successful penetration by an enemy, and following the overall guidelines of the "Sandia Methodology", it is necessary to **Deter/Detect** an enemy at the earliest opportunity to then allow an appropriate law enforcement response that will neutralize or hopefully prevent such an event.

To provide an adequate **Response** time, it will also be necessary to initiate a series of **Delay** tactics and obstacles that will increase the time it takes for an enemy to penetrate successfully and achieve their goals.

Client # XXXX faces several distinct problems at this time in being able to **Deter/Detect, Delay and effect an appropriate Response**. There are no adequate means to detect any intruder at the perimeters of the Water or Wastewater Facilities, Well Sites, Storage Tanks, or Exposed Sections of Pipe, etc. In addition, the identified Critical Assets at each location are not protected by any form of Hardened Structure and thus it would be relatively easy and extremely rapid to achieve success against these assets by the level of adversary selected for this Client. As the Response is measured from the time of detection against the estimated time it takes an intruder to reach their target (Critical Assets) within the Facility, etc., the overall System Effectiveness is essentially Zero because it is not possible to detect an intruder until they have accomplished their goals.

The second problem facing client # XXXX is the overall geography deployed in the operation of both the Water and Wastewater prioritized sites, namely, the various Treatment Plants, Pump Facilities, and particularly the Well Sites.. It will be very difficult to protect some of these areas from a sustained attack and thus the objective will be to provide some form of initial delay but more importantly, an effective detection capability that will allow local Law Enforcement Authorities to respond in time to prevent or neutralize the problem.

A third problem facing # XXXX is the rural nature but easy public access of certain critical assets that make it difficult for local Law Enforcement to arrive in time. Where the critical assets are close to public access and population areas, it provides for short penetration times to reach critical assets.

Thus to reduce the High Risk Factor afforded by all of the above, it is either necessary to significantly improve Security Effectiveness or to substantially mitigate the consequences of possible successful intrusion and damage, or eliminate the process or item identified as a current critical asset.

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SECURITY IMPROVEMENTS FOR # XXXX

GENERAL COMMENTS:

In assessing the Security Improvements that would be possible and which meet the criteria of being **Practical, Enforceable, and Feasible**, and which are designed to increase the time it takes an intruder to reach the various critical assets and thus allow local Law Enforcement to respond in a timely manner to prevent or neutralize the likely objectives of the intruder(s), the following Risk Reduction Security Solutions are suggested:

SECURITY IMPROVEMENTS:

1). Basic Security Initiatives

WATER

2). Risk Reduction Solution 1 – Xxxxxx Xxxxx Xxxxxxx Xxxx Perimeter Security System and Door Hardening

3). Risk Reduction Solution 2 – Xxxxxx Xxxxx Main Hardening & Assessment Security System

4). Risk Reduction Solution 3 – X.XX Fire Facility Perimeter Security and Structure Hardening System

5). Risk Reduction Solution 4 – Base Housing Meter Pit Hardening & Assessment Security System

6). Risk Reduction Solution 5 – Well Field Perimeter Security System and Site Hardening

WASTEWATER

7). Risk Reduction Solution 1 – Large Lift Stations Perimeter Security System and Structure Hardening

8). Risk Reduction Solution 2 – XXXXX Treatment Plant Perimeter Security System & Hardening of Effluent Pumps Area

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SECURITY IMPROVEMENTS FOR # XXXX

SECURITY IMPROVEMENTS:

WASTEWATER

9). Risk Reduction Solution 3 –XXX Chlorine Gas Hardening Security System

10). Risk Reduction Solution 4 – XXXX Treatment Plant Perimeter Security System & Hardening of Effluent Pumps Area

11). Risk Reduction Solution 5 –XXXX Chlorine Gas Hardening Security System

12). Risk Reduction Solution 6 – XXX Forced Main Hardening & Monitoring Security System

13). Risk Reduction Solution 7 – Wastewater Holding Station Perimeter Security and Structure Hardening System

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SECURITY IMPROVEMENTS FOR # XXXX

1). **BASIC SECURITY INITIATIVES:**

As an absolute minimum, the client should implement the following measures, procedures and basic Security provisions:

Basic Security Requirements

- Ensure all windows to all Facilities are closed and have appropriate window locks.
- Ensure that all exterior doors are closed and fitted with appropriate "Medeco High Security" or equal mechanical lock mechanisms.
- All mechanical locks should be on a "Master/Sub-Master" keying system and should be rekeyed with core replacement on a regular basis. Minimum rekeying should be not less than twice per year.
- Ensure all windows to the Facilities are closed and have appropriate window locks.
- * All exterior entry or exit doors should be illuminated to an average of 2 Foot candles (FC)
- Appropriate lighting should be employed for all Perimeter areas, particularly at pedestrian or vehicle entry points, etc.
- All vehicle traffic into the facility should be identified, expected, and adequately inspected for correct loading, absence of any form of explosive or dangerous inflammable substance.
- Manhole covers, hatch covers, storage units, and exterior infrastructure including electrical sub-stations should be adequately secured with appropriate locking devices. At no time should there be free access to such infrastructure unless supervised by Facility staff or monitored by appropriate surveillance systems.
- All doors should be installed with hinges unable to be tampered with from the outside.

SECURITY IMPROVEMENTS FOR # XXXX

1). **BASIC SECURITY INITIATIVES:**

- Skylights where applicable, should be strengthened with cage or bar protection to prevent easy Access into the Facilities.

- All visitor, contractor, and delivery vehicles unless absolutely necessary, should be parked outside the perimeter of the Facilities or within easily controlled areas.

- Existing fencing should be inspected for adequate maintenance and any defects repaired immediately.

- All staff should wear appropriate ID badges at all times and when appropriate, these badges should be incorporated with any future Electronic Access Control developments.

- All visitors and contractors should be identified and should wear Visitor or Contractor ID badges at all times and wherever possible should be escorted or accompanied by a Facility employee.

- A new Security Policies and Operating Manual should be developed and implemented as quickly as possible. This Manual will include adequate directions and guidance on the handling of incidents, handling of all visitors, handling of contractors, handling of complaints, security system procedures, written incident reports, communications both within the Utility and with local law enforcement operatives, and many other security related items. It is recommended that the client seek professional assistance in the formulation of such a document and with the development of all such procedures and measures.

- All staff should be given Security Awareness training.

- There should be live interaction with local Law Enforcement for the purpose of rehearsing emergency security response scenarios in the event of a serious intrusion to the Facility.

- A computerized Key Control System should be used for the control of all mechanical keys in use with the Facility.

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SECURITY IMPROVEMENTS FOR # XXXX

1). **BASIC SECURITY INITIATIVES:**

- All vendors and contractor personnel should be subject to a minimum Basic Criminal Background Check verified by their respective companies.

* Establish a formal Incident Reporting System.

* Establish a formal Unusual Occurrence Reporting System.

- Consider utilization of Guard Services Source to provide as a minimum, active patrolling of critical asset locations.

- Establish clear path of authority for management member of Facility designated Security Manager, responsible for all day to day Security operations.

- Provide management member with appropriate and on-going training in all aspects of Security Systems and Procedures.

- Increase Warning Signage and severity of wording on such Signage along all Perimeters.

* Increase patrol frequency along all perimeters.

- Maintain all existing and proposed new lighting fixtures in such a manner that light fixtures are operational at all times.

- Where there are single Operators on duty at a Facility, it is recommended that there be established a communication system whereby each individual operator report to each other on a regular basis and not more than a two hourly period. It is also recommended that operators stagger their Facility inspections in such a way that all operators are not away from their positions at the same time.

- It is also recommended that each Operator have a CCTV Camera Surveillance Monitor that provides a view of their colleagues on-duty at other sites in order to be aware at the earliest possible moment, of an event.

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 1 – Xxxxxx Xxxxx Storage Tank Perimeter Security System and Door Hardening

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The proposed system also incorporates elements of access control and vehicle control that will further increase the effort required by the adversarial threat to successfully penetrate the Facility and achieve their goals. Additionally, and in order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the entrance door. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 1 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 800 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 1,600 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 1 Description:

ITEM	DESCRIPTION	COMMENTS
C	Install Electronic Point Monitoring System to include tie-in of Fence Intrusion System, Access Control and Alarm Sensors	
D	Install High Security Automated Gate Entrance (one)	Ensures integrity of Perimeter Fence Protection as Vehicle Restraint System
E	Install CCTV Camera Surveillance System for Perimeter Protection of some 2 Cameras and necessary DVR equipment. Integrate with Alarm System where possible.	Provides critical assessment of alarm conditions that will improve local law enforcement response.
F	Install additional light fixtures to comprise some 4 new light Units that would be as per Specifications	Necessary for both normal security and CCTV Surveillance use.
G	Install Reinforced, Hardened Door Assembly to Entrance Point of Tank	Provide Significant Delay
H	Initiate improved Police Patrol of All Facilities	
I	Prepare new Physical Security Procedures and Services and Security Operations Manual.	
J	Initiate planned response and live Drills to likely adversary events.	

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 2 – Xxxxxx Xxxxx Main Hardening & Assessment Security System

In order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the four Main Valve Boxes contained at this site. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 2 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install Reinforced Concrete Plugs Within Custom Sill, over Manhole Covers leading to Valve Equipment with appropriate Alarm Sensors	Provides significant Delay to the designated adversary in this situation
B	Install CCTV Camera Surveillance Units to Monitor each location	Provides both Assessment and a possible Deterrent to adversaries

Risk Reduction Solution 3 – X.XX Fire Facility Perimeter Security and Structure Hardening System

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The System will provide similar protection to that afforded by **Risk Reduction Solution 1 Above.**

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 3 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 1,000 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 2,000 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.
C	Install Electronic Point Monitoring System to include tie-in of Fence Intrusion System, Access Control and Alarm Sensors	
D	Install High Security Automated Gate Entrance (one)	Ensures integrity of Perimeter Fence Protection as Vehicle Restraint System
E	Install CCTV Camera Surveillance System for Perimeter Protection of some 10 Cameras and necessary DVR equipment. Integrate with Alarm System where possible.	Provides critical assessment of alarm conditions that will improve local law enforcement response.
F	Install additional light fixtures to comprise some 20 new light Units that would be as per Specifications	Necessary for both normal security and CCTV Surveillance use.

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 3 Description:

ITEM	DESCRIPTION	COMMENTS
G	Install Reinforced, Hardened Structure Walls, Doors, and Vent Openings	Provide Significant Delay
H	Initiate improved Police Patrol of All Facilities	
I	Prepare new Physical Security Procedures and Services and Security Operations Manual.	
J	Initiate planned response and live Drills to likely adversary events.	

Risk Reduction Solution 4 – Base Housing Meter Pit Hardening & Assessment Security System

In order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the Base Housing Meter Pit contained at this site. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 4 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install Reinforced Concrete Plugs Within Custom Sill, over Manhole Cover leading to Meter Pit with appropriate Alarm Sensors	Provides significant Delay to the designated adversary in this situation
B	Install CCTV Camera Surveillance Unit to Monitor situation	Provides both Assessment and a possible Deterrent to adversaries

Risk Reduction Solution 5 – Well Field Perimeter Security System and Site Hardening

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The System will provide similar protection to that afforded by **Risk Reduction Solution 1 Above.**

Risk Reduction Solution 5 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 200 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.

SECURITY IMPROVEMENTS FOR # XXXX

WATER

Risk Reduction Solution 5 Description:

ITEM	DESCRIPTION	COMMENTS
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 400 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.
C	Install Reinforced Steel Cage Assembly that will strengthen Walls and Doors of Masonry Structure In case of Fiberglass Hut, install Concrete Pad with Reinforced Steel Cage Assembly over actual Hut	Provides very substantial Delay to to all designated adversaries
D	Incorporate Alarm Sensors and Exterior Motion Sensors to Point Monitoring & Access Control System	

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 1 – Large Lift Stations Perimeter Security System and Structure Hardening

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The proposed system also incorporates elements of access control and vehicle control that will further increase the effort required by the adversarial threat to successfully penetrate the Facility and achieve their goals. Additionally, and in order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the Pump Chamber Cover. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 1 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 400 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 800 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 1 Description:

ITEM	DESCRIPTION	COMMENTS
C	Install Electronic Point Monitoring System to include tie-in of Fence Intrusion System, Access Control and Alarm Sensors	
D	Install High Security Automated Gate Entrance (one)	Ensures integrity of Perimeter Fence Protection as Vehicle Restraint System
E	Install CCTV Camera Surveillance System for Perimeter Protection of some 2 Cameras and necessary DVR equipment. Integrate with Alarm System where possible.	Provides critical assessment of alarm conditions that will improve local law enforcement response.
F	Install additional light fixtures to comprise some 4 new light Units that would be as per Specifications	Necessary for both normal security and CCTV Surveillance use.
G	Install Hardened Steel Cage Assembly Around Electrical Supply	Provide Significant Delay
H	Initiate improved Police Patrol of All Facilities	
I	Prepare new Physical Security Procedures and Services and Security Operations Manual.	
J	Initiate planned response and live Drills to likely adversary events.	

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 2 –XXX Treatment Plant Perimeter Security System & Hardening of Effluent Pumps Area

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The proposed system also incorporates elements of access control and vehicle control that will further increase the effort required by the adversarial threat to successfully penetrate the Facility and achieve their goals. Additionally, and in order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the Effluent Pumps and Header. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 2 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 2,500 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 5,000 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 2 Description:

ITEM	DESCRIPTION	COMMENTS
C	Install Electronic Point Monitoring System to include tie-in of Fence Intrusion System, Access Control and Alarm Sensors	
D	Install High Security Automated Gate Entrance (one)	Ensures integrity of Perimeter Fence Protection as Vehicle Restraint System
E	Install CCTV Camera Surveillance System for Perimeter Protection of some 20 Cameras and necessary DVR equipment. Integrate with Alarm System where possible.	Provides critical assessment of alarm conditions that will improve local law enforcement response.
F	Install additional light fixtures to comprise some 20 new light Units that would be as per Specifications	Necessary for both normal security and CCTV Surveillance use.
G	Install Hardened Steel Cage Assembly Around Effluent Pumps and Header	Provide Significant Delay
H	Initiate improved Police Patrol of All Facilities	
I	Prepare new Physical Security Procedures and Services and Security Operations Manual.	
J	Initiate planned response and live Drills to likely adversary events.	

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 3 – XXX Chlorine Gas Hardening Security System

In order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the "G" Chlorine Storage Building contained at this site. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 3 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install Electronic Point Monitoring System to incorporate 4 Card Readers, 4 Door Alarms and Fence Intrusion Points	
B	Install Reinforced Partitions inside Chlorine Structure to Harden Walls And Doors and to include appropriate Alarm Sensors	Provides significant Delay to the designated adversary in this situation

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 4 – XXXX Treatment Plant Perimeter Security System & Hardening of Effluent Pumps Area

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The proposed system also incorporates elements of access control and vehicle control that will further increase the effort required by the adversarial threat to successfully penetrate the Facility and achieve their goals. Additionally, and in order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the Effluent Pumps and Header. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 4 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 2,500 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 5,000 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 4 Description:

ITEM	DESCRIPTION	COMMENTS
C	Install Electronic Point Monitoring System to include tie-in of Fence Intrusion System, Access Control and Alarm Sensors	
D	Install High Security Automated Gate Entrance (one)	Ensures integrity of Perimeter Fence Protection as Vehicle Restraint System
E	Install CCTV Camera Surveillance System for Perimeter Protection of some 20 Cameras and necessary DVR equipment. Integrate with Alarm System where possible.	Provides critical assessment of alarm conditions that will improve local law enforcement response.
F	Install additional light fixtures to comprise some 20 new light Units that would be as per Specifications	Necessary for both normal security and CCTV Surveillance use.
G	Install Hardened Steel Cage Assembly Around Effluent Pumps and Header	Provide Significant Delay
H	Initiate improved Police Patrol of All Facilities	
I	Prepare new Physical Security Procedures and Services and Security Operations Manual.	
J	Initiate planned response and live Drills to likely adversary events.	

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 5 – XXXX Chlorine Gas Hardening Security System

In order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the "CW" Chlorine Storage Building contained at this site. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 5 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install Electronic Point Monitoring System to incorporate Intrusion Detection and Access Control System at Hardened Point	
B	Install Reinforced Partitions inside Chlorine Structure to Harden Walls And Doors and to include appropriate Alarm Sensors	Provides significant Delay to the designated adversary in this situation

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 6 – XXXX Forced Main Hardening & Monitoring Security System

In order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** and Monitor the exposed portion Of the Force Main Piping contained at this site. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 6 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install Reinforced Concrete or Steel Structure around Exposed Area of Force Main and provide Appropriate Intrusion Detection System	Provides significant Delay to the designated adversary in this situation
B	Install Exterior Motion Sensor System and tie-in all sensor alarm devices to Point Monitoring & Access Control System	Provides essential Detection and Monitoring of adversaries

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 7 – Wastewater Holding Station Perimeter Security and Structure Hardening System

The proposed Perimeter System will also provide an **Assessment** of the adversarial threat and enable the local Law Enforcement community to adequately respond to such individuals. A number of intensified **Delay** levels are also incorporated into the Security System.

The proposed system also incorporates elements of access control and vehicle control that will further increase the effort required by the adversarial threat to successfully penetrate the Facility and achieve their goals. Additionally, and in order to provide adequate **Delay** to allow local Law Enforcement personnel to respond and neutralize an intruder situation, it will be necessary to **Harden** the Chlorine Fiberglass Storage Structure. By doing so, even where there are unforeseen delays in providing adequate **Response,** it is very likely that an average intruder as identified in the Threat Assessment, will be thwarted long enough to allow the local police of other law enforcement entity, to arrive and deal with the situation.

The proposed Hardening actions include the following:

Risk Reduction Solution 7 Description:

ITEM	DESCRIPTION	COMMENTS
A	Install High Security Fence around Facility to border all sides of Area. Approx. 400 ft of Fencing	Will act as First Line of Defence in deterring, detecting, and delaying possible adversaries. Installation of a High Security Fence will also provide a level of security against vehicle penetration.
B	Install Fence Intrusion System for Entire length of new Fence System with double wire feature and enclosed in armor cable. Approx. 800 ft. of Intrusion Cable	Type of System that would be specified and recommended would reduce false alarms to a minimum. Would be designed to provide 200 ft Alarm Zones.

SECURITY IMPROVEMENTS FOR # XXXX

WASTEWATER

Risk Reduction Solution 7 Description:

ITEM	DESCRIPTION	COMMENTS
C	Install Reinforced Concrete Pad With Reinforced Steel Cage Assembly Over Fiberglass Structure	Provides very substantial Delay to all designated adversaries
D	Incorporate Alarm Sensors and Exterior Motion Sensors to Point Monitoring & Access Control System	

Additional Items:

1. **Consider reinforced concrete plugs over all critical Manhole Covers.**

2. **Consider contract with Roving Security Service to patrol critical asset locations on frequent 24/7 basis.**

3. **Consider Hardening of Access to all Water Storage Towers to Deter and Prevent Potential Contamination.**

Note: **It must be stressed that the Security Solutions are based on the Design Base Threat Selected by the Client which is based on an Adversary not having access to Explosives of even the most standard variety, not to mention more Advanced Explosives that would be the case with International Terrorists or highly organized Domestic Terrorists.**

Given a change of Design Base Threat to International or Organized Domestic Terrorist, it must be stressed that the Security Solutions provided above would also Change dramatically.

All Hardening Measures will require Custom Design to meet High Security Standards.