

NAMMO DEFENSE SYSTEMS INC

July 15, 2024

Jocelyn Clark, P.E., Civil/Environmental Engineer
 Land, Chemicals and Redevelopment Division, RCRA Branch
 United States Environmental Protection Agency, Region 9
 75 Hawthorne Street, LND-4-2
 San Francisco, California 94105

VIA ELECTRONIC MAIL

**Re: Second Quarter 2024 Progress Report, Nammo Defense Systems Inc. Facility
 Mesa, Arizona**

Dear Ms. Clark:

Pursuant with Paragraph 34 of the Administrative Order on Consent between Nammo Defense Systems Inc. (NDS) and the United States Environmental Protection Agency Region 9 (EPA) effective 9 February 2021, this report submittal includes a summary of the activities completed during the second quarter (Q2) 2024.

CONTACT INFORMATION AND CHANGES IN PROJECT PERSONNEL

Contact Name and Position	Contact Information	Changes
Jocelyn Clark, EPA, Special Projects Coordinator	Clark.jocelyn@EPA.gov (415) 972-3324	No change
Matthew Trask, NDS, Director, Ethics and Compliance	Mtrask@Nammo.us (480) 898-2495	No change
Carole Thompson, NDS, Communications Manager	Cthompson@Nammo.us (480) 898-2565	No change
Kate Blatchford, NDS, Environmental Remediation Manager	Kblatchford@Nammo.us (480) 490-8911	Title Update

Fabrizio Mascioni, Geosyntec Consultants, Project Manager	Fmascioni@Geosyntec.com (602) 513-5816	No change
Isaac Roll, Geosyntec Consultants, Senior Engineer	Iroll@Geosyntec.com (602) 513-5829	No change

SIGNIFICANT ACTIVITIES DURING REPORTING PERIOD

Meetings

- Biweekly meetings were conducted with EPA, Arizona Department of Environmental Quality (ADEQ), NDS, and its consultants including Geosyntec, related to the Consent Order Project.
- Monthly meetings were conducted with ADEQ, NDS, and its consultants related to the Voluntary Remediation Program Project.
- Meeting between EPA, ADEQ, and NDS to discuss Community Relations Plan (CRP) www.nds-site-remediation.com website held virtually on 6/10/24.

NDS Communications

- Draft CRP extension approved by EPA extending submission due date from 5/15/24 to 6/15/24.
- CRP Document, Draft Fact Sheet #2, and Community Interview Questionnaire resubmitted for EPA review on 6/14/24 (original submission 8/3/23).

Consent Order Project

Deliverables:

- First Quarter 2024 (Annual) Groundwater Monitoring Report, Former TTU, Nammo Defense Systems Inc., Mesa, Arizona submitted 5/2/24.
- Quality Assurance Project Plan (QAPP) approval received 4/18/24.
- First Quarter 2024 Former TTU Interim Remedial Action (IRA) Report Nammo submitted 5/3/24.
- First Quarter TTU GIS and Laboratory Database Package submitted 5/31/24.
- Proposed GW Monitoring Responsibilities Correspondence submitted 4/10/24.
- Request for alternative groundwater sampling contractor submitted 5/15/24, edits and resubmission required.

Field Activities:

- Q2 2024 groundwater sampling was conducted from 5/20/24 through 5/23/24.
- TTU Evaporator vapor sampling conducted 6/25/24.

Notable Analytical Results:

- The initial sample collected from PF-2 was inadvertently sent to Pace Analytical. The result for perchlorate was non-detect, however the available Reported Detection Limit (RDL) was 4.0 micrograms per liter (ug/l). This exceeds the current trigger limit of 3.2 ug/l. As such, the sample was recollected on 6/6/24 and sent to Eurofins. Perchlorate was also non-detect in the resample, with a RDL of 1.0 ug/l.

Remediation Systems Update:

Evaporator Unit

- During Q2 the evaporator system processed approximately 16,580 gallons of water.
- Approximately 4,500 gallons of water was collected from the wells by NDS and sent for offsite disposal to accommodate evaporator system cleaning and evaporator tank and well holding tank cleaning. A copy of Evaporator Interim Remedial Action (IRA) System O&M Form, manifests, and the waste profile are provided in **Attachment A**. Note, provided manifest includes waste well water and other unrelated site liquid waste volume disposed of together.
- The evaporator was down from 5/11/24 through 5/20/24 due to a malfunctioning heating component which was replaced.
- Cleaning of the evaporator system was completed on 5/27/24.
- Cleaning of the evaporator holding tank and pumping well holding tanks was completed on 6/10/24.
- Vapor sampling for carbon breakthrough evaluation completed on 6/25/24. Results showed no breakthrough of contaminants of concern.

Action Items for Next Reporting Period:

- Submittal of Q2 2024 Former TTU Groundwater Monitoring Report 60 days from end of quarter (8/31/24).
- Completion of Q3 2024 groundwater sampling (proposed August 2024).
- Submittal of a GIS and Laboratory Database package including Q2 2024 groundwater monitoring data (8/31/24).
- Carbon Pilot Test for TTU Evaporator System.

Plant 3 and Former Water Bore Out (WBO) Project

Deliverables:

- RI Addendum for wells NT-19 and NT-20 installation approved by ADEQ 5/1/24.

Field Activities:

- SVE System Installation start up completed on 5/14/24.
- Q2 2024 groundwater sampling was conducted from 5/20/24 through 5/23/24.

Notable Analytical Results:

- Q2 2024 Groundwater Monitoring – Results from Q2 groundwater monitoring indicate perchlorate concentrations in wells NT-19 and NT-20S/D were below the ADEQ screening level of 14 ug/L. These data points continue to delineate the south-eastern portion of the plume. Concentrations of perchlorate were observed at NT-5 in similar concentrations as the previous sampling event at 10,100 ug/l.

Action Items for Next Reporting Period:

- Completion of Q3 2024 quarterly sampling (tentatively proposed August 2024).
- Permitting and Installation of shallow wells NT-21 and NT-22.

Remediation System Updates:

Hydraulic Containment FBR System

The hydraulic containment system implemented at the former WBO pits area uses a fluidized bed reactor (FBR) treatment system to treat water extracted from two extraction wells. The system includes two FBR units which are typically operated in parallel (FBR-230 and FBR-370), with each unit capable of independent operation to provide redundancy. Two extraction wells (EXT-1 and EXT-2) are located near the WBO source area; EXT-1 is typically in operation while EXT-2 is held in reserve. Between 4/1/24 and 6/30/24, the FBR system operated continuously at an average flow rate of approximately 335 gallons per minute. Approximately 95.4 pounds of perchlorate was removed during Q2 operation.

FBR-230 was offline from 12/22/23 until 4/9/24, when the FBR-230 recirculation pump was re-installed after extensive rebuilding. The system continued to operate during FBR-230 downtime using FBR-370. FBR-230 was shut down again on 6/6 due to recurrence of problems (oil leak) with the recirculation pump, which was pulled for warranted inspection.

Soil Vapor Extraction System (Plant 3)

Successful start-up of the SVE System was completed on 5/14/24, and the system has run continually since, totaling approximately 1,011.6 run hours with an average flow rate of 122 cubic feet per minute (cfm) from well SVE-01. Influent concentrations of 1,1-DCE averaged 282.66 ug/l and a total of approximately 196.5 pounds of 1,1-DCE have been removed to date. Influent concentrations of TCE averaged 370.6 ug/l and a total of approximately 252.0 pounds of TCE have been removed to date.

If you have any questions about this report, please contact Matthew Trask at Mtrask@Nammo.us or at 480.898.2495.

Sincerely,

NAMMO DEFENSE SYSTEMS INC.

By:



Kate Blatchford
Environmental Remediation Manager

cc: William Frier, USEPA

ATTACHMENT A

Wastewater Manifests
Evaporator IRA System O&M Form
Wastewater Profile



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

204822

Profile Number
213747

Capstone Waste Water

D633602

Generator Name	Name: <u>Nammo Defense Systems</u>	Generator Address	Address: <u>4111 N Higley Rd</u>	
	Phone: <u>(480) 673-4039</u>		City: <u>MESA</u>	State: <u>AZ</u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type

Grease Trap Grit Trap Septic/Chemical Toilet Non-Industrial Industrial Special

Used Cooking Oil Recyclable Used Oil

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Tony Hernandez</u>	Generator Rep. Signature	
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Transporter Name	Name: <u>Advanced Chemical Transport</u>	Transporter Address	Address: <u>1210 Eiko Drive</u>	
	Phone: <u>(408) 548-5050</u>		City: <u>Sunnyvale</u>	State: <u>CA</u> Zip: <u>94089</u>

Waste Removed (Gallons)	<u>5000</u>	Date	Time
		<u>5/28/24</u>	<u>9:45 AM</u>

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>Arthur Caldespino</u>	Driver Signature	
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Disposal Facility	<u>Liquid Environmental Solutions of Arizona</u>	Address	<u>5159 West Van Buren Street</u> <u>Phoenix, AZ 85043</u>	
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Waste Received (Gallons)	<u>5000</u>	Date	Time
		<u>5/28/24</u>	<u>1323</u>

Facility Rep. Name (please print)	<u>DANIEL</u>	Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

201136

Profile Number

Well Water

DL36369
SO# 518463

213776

Generator Name	Name: <u>Humma Defense Systems</u>	Generator Address	Address: <u>4111 N Higley Road</u>		
	Phone: <u>(480) 673-4639</u>		City: <u>Mesa</u>	State: <u>AZ</u>	Zip: <u>85215</u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Grit Trap	<input type="checkbox"/> Septic/Chemical Toilet	<input type="checkbox"/> Non-Industrial	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Special
	<input type="checkbox"/> Used Cooking Oil	<input type="checkbox"/> Recyclable Used Oil				

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Tony Hernandez</u>	Generator Rep. Signature	
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Transporter Name	Name: <u>Advanced Chemical Transport</u>	Transporter Address	Address: <u>1310 Elko Drive</u>		
	Phone: <u>(480) 548-5050</u>		City: <u>Sunnyvale</u>	State: <u>CA</u>	Zip: <u>94089</u>

Waste Removed (Gallons)	<u>2500</u>	Date	Time
		<u>6/10/29</u>	<u>7:00 AM</u>

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>Archie Delbospiro</u>	Driver Signature	
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Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043
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Waste Received (Gallons)		Date	Time

Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy

EVAPORATOR IRA SYSTEM O&M FORM

DATE: 5/23/24 INSPECTOR: Tony Hernandez

EXTRACTION WELL	VOL. ON ARRIVAL (GAL)	VOL. REMAINING (GAL)	VOL. EXTRACTED (GAL)
TTU-1	1000	0	1000
TTU-2	N/A	N/A	N/A
TTU-20	750	0	750

Tank Level Info: Multiply tank level by 1,000 to calculate gallons (example: 0.125 x 1000= 125)
 1/8= 125 GAL | 1/4= 250 GAL | 3/8= 375 GAL | 1/2= 500 GAL | 5/8 = 625 GAL | 3/4 = 750 GAL | 7/8 = 875 GAL | 1= 1,000 GAL

CYCLE TIME:	<u>87 hrs</u>	FILTER CHANGE?	Y/N <u>Y</u>
EVAPORATOR WELL WATER TANK	VOL. ON ARRIVAL (GAL)	VOL. DELIVERED (GAL)	VOL. IN TANK (GAL)
	80	1750	1830

Tank Level Info: Multiply tank level by 3,000 to calculate gallons (example: 0.125 x 3000= 375)
 0.125= 375 GAL | 0.250= 750 GAL | 0.375= 1125 GAL | 0.500= 1500 GAL | 0.625= 1,875 GAL | 0.750= 2,000 GAL | 0.875 = 2,625 GAL | 1= 3,000 GAL

RESIDUE WATER TANK	VOL. IN TANK (GAL)	VOL. PUMPED FROM EVAPORATOR (GAL)	VOL. REMAINING IN TANK (GAL)	VOL. IN EVAP PAN (GAL)	VOL. PUMPED INTO EVAP PAN (GAL)	VOL. REMOVED FROM EVAP PAN (GAL)	VOL. REMAINING IN EVAP PAN (GAL)
	0	0	0	0	0	0	0

Tank Level Info: Multiply tank level by 500 to calculate gallons (example: 0.125 x 500= 63)
 1/8= 63 GAL | 1/4= 125 GAL | 3/8= 190 GAL | 1/2= 250 GAL | 5/8 = 315 GAL | 3/4 = 375 GAL | 7/8 = 440 GAL | 1= 500 GAL

COMMENTS: ACTenviro extracted from vacuum truck to ship off site. Waste water was stored until May 28th when ACT extracted from vacuum truck. Manifest was signed and dated May 28th.

EVAPORATOR IRA SYSTEM O&M FORM

DATE: 6-10-24 INSPECTOR: Tony Hernandez

EXTRACTION WELL	VOL. ON ARRIVAL (GAL)	VOL. REMAINING (GAL)	VOL. EXTRACTED (GAL)
TTU-1	1000	0	1000
TTU-2	1000	0	1000
TTU-20	750	0	750

Tank Level Info: Multiply tank level by 1,000 to calculate gallons (example: 0.125 x 1000= 125)
 1/8= 125 GAL | 1/4= 250 GAL | 3/8= 375 GAL | 1/2= 500 GAL | 5/8 = 625 GAL | 3/4 = 750 GAL | 7/8 = 875 GAL | 1= 1,000 GAL

CYCLE TIME:	87 hrs	FILTER CHANGE?	Y/N Y
EVAPORATOR WELL WATER TANK	VOL. ON ARRIVAL (GAL)	VOL. DELIVERED (GAL)	VOL. IN TANK (GAL)
	0	375	375

Tank Level Info: Multiply tank level by 3,000 to calculate gallons (example: 0.125 x 3000= 375)
 0.125= 375 GAL | 0.250= 750 GAL | 0.375= 1125 GAL | 0.500= 1500 GAL | 0.625= 1,875 GAL | 0.750= 2,000 GAL | 0.875 = 2,625 GAL | 1= 3,000 GAL

RESIDUE WATER TANK	VOL. IN TANK (GAL)	VOL. PUMPED FROM EVAPORATOR (GAL)	VOL. REMAINING IN TANK (GAL)	VOL. IN EVAP PAN (GAL)	VOL. PUMPED INTO EVAP PAN (GAL)	VOL. REMOVED FROM EVAP PAN (GAL)	VOL. REMAINIG IN EVAP PAN (GAL)
	0	0	0	0	0	0	0

Tank Level Info: Multiply tank level by 500 to calculate gallons (example: 0.125 x 500= 63)
 1/8= 63 GAL | 1/4= 125 GAL | 3/8= 190 GAL | 1/2= 250 GAL | 5/8 = 315 GAL | 3/4 = 375 GAL | 7/8 = 440 GAL | 1= 500 GAL

COMMENTS: Tank Cleanout, All well water extracted and shipped off site by ActEnviro.



UNIFORM WASTE PROFILE
866-694-7327
www.liquidenviro.com

Internal Use Only:
Profile #:
Account #:
Approved [] Non-Approved []
Subcategory A [] B [] C []
Waste Code

PROFILE INFORMATION

US EPA ID#: AZD020132502 State ID#: NAICS # 332993 TCEQ ID#(TX-Only): [] Analytical Attached [] MSDS Attached

GENERATOR INFORMATION

Name: NAMMO DEFENSE SYSTEMS INC
Address: 4111 N HIGLEY ROAD
City: MESA State: AZ Zip: 85215
Contact: Antonio Curiale Title: Main Contact
Phone: (480)898-2261 Fax:
Email: acuriale@nammo.us

BILLING INFORMATION

Name: ACTENVIRO
Address: 6212 S 75th Ave #4
City: Laveen State: AZ Zip: 85339
Contact: Cindy Duncan Title: Project Manager
Phone: (602)509-9591 Fax:
Email: cduncan@actenviro.com and scokely@actenviro.com

WASTE QUESTIONNAIRE (CHECK ALL THAT APPLY)

Non-hazardous Waste
1. Is this material a hazardous waste (F, K, U, or P listed) as defined by 40 CFR 261 Subpart D?
2. Has this material been mixed with a hazardous waste as defined by 40 CFR 261?
3. Does this material exhibit any of the following hazardous waste characteristics?
4. Does this material contain?
5. Is the waste derived from an underground storage tank (UST)?
6. If waste is derived from fuel, is the fuel leaded?
Used Oil (as defined by CFR 279.1)
1. Is this material Used Oil as defined by 40 CFR 279?
2. Has this Used Oil been mixed with hazardous waste?
3. Is the source of the waste a Conditionally Exempt Small Quantity Generator?
4. Does this Used Oil contain chlorinated paraffins? If yes, attach MSDS
5. Does this Used Oil contain TSCA (40 CFR 761) regulated levels of PCB?
6. Does this Used Oil contain less (<) than or equal to 1,000 mg/L Total Organic Halogens (TOX)? * If no, rebuttal per 40 CFR 279.10(b)(1)(ii) must be included.
7. Is this Used Oil soluble in water?

WASTE STREAM COMPOSITION (TOTAL MUST EQUAL 100%)

Table with 4 columns: Major Components, Concentration, Range, Average, Minimum, Maximum. Row 1: Well Water, 100, 100.

WASTE DESCRIPTION

Common Name of Waste: TTU Well water
onsite remediation process
Process Generating Waste:
(Add additional sheet if necessary)

Physical State: 100% Liquid With No Solids
Layers: Single Phase
pH: 2-6
Flash Point: 73-100 F
Specific Gravity: Range: To:
Color: Describe Colorless
Viscosity: High
TX-Only Classification: Class I

TX-ONLY: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING ARE PRESENT:

TCLP Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver
TCLP Semivolatiles: (o-Cresol, m-Cresol, p-Cresol, Cresol (total) 2-4 Dinitrotoluene, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorethane, Nitrobenzene, Pentachlorophenol, Pyridine, 2-4-5 Trichlorophenol, and 2-4-6 Trichlorophenol)
TCEQ Appendix 1: (TAC 31, Section 335-Subchapter R) or Total Petroleum Table 1, Constituents Hydrocarbons
TCLP Herbicides/Pesticides: (Chlordane, 2-4 Endrin, Heptachlor, Heptachlor epoxide, Lindane, Methoxychlor, Toxaphene, and 2-4-5 TP/Silvex)
TCLP Volatiles: (Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroform, Methyl Ethyl Ketone, 1-4 Dichlorobenzene, 1-2 Dichloroethane, 1-1 Dichloroethylene, Trichloroethylene, Tetrachloroethylene, and Vinyl Chloride)
RCI: (Reactive Cyanide, Reactive Sulfide, Corrosivity, Ignitability)

TRANSPORTATION INFORMATION

Method of Shipment: Bulk Liquid
Shipment Frequency: Quarterly
Anticipated Volume:

GENERATOR CERTIFICATION AND GUARANTEE - PLEASE READ AND SIGN BELOW

As the generator of the material (waste) described above, I certify that I have provided all relevant information as required by this profile and that the information provided is, to the best of my knowledge and belief, true, accurate and complete. Generator agrees not to deliver or arrange for delivery of any material that does not conform to the waste characterization contained in this profile. I further certify that this material is not a RCRA hazardous waste pursuant to federal, state or local laws and has not been mixed with any chlorinated solvents or any other contaminants including, without limitation, PCBs, pesticides, or other hazardous wastes. If Liquid Environmental Solutions (LES) accepts the material for processing and the material is later determined by LES or any other person to be or contain hazardous waste within the meaning of any federal, state or local law, or contain PCBs in sufficient quantity to render it a TSCA-regulated material, the generator agrees to pay all costs incurred by LES to properly treat, store, dispose or otherwise handle the material and any fines and penalties resulting from LES's handling of generator's material. Generator agrees to promptly notify LES of any change in the composition of the material or process generating the material, and agrees to provide LES with a new Uniform Waste Profile prior to delivering any material to LES that does not conform to the waste characterization contained in this profile. The undersigned is an authorized representative of the generator.

Generator Authorization Signature Date Print Name and Title