



Slug Discharge and Spill Control Plans Wastewater Discharge Permit ST0045535

AstaReal, Inc.
Moses Lake WA


President, CEO

12/13/2022
Date


Quality Manager

12/13/2022
Date



AstaReal Technologies
7761 Randolph Road
Moses Lake, WA 98837
Permit ST0045535

1.0 Facility Information

The AstaReal facility is located at 7761 Randolph Road NE in Moses Lake, Washington near Grant County International Airport. The AstaReal facility is on 9.81 acres along the east side of Randolph Road NE, approximately 500 feet southeast of the intersection of Tynes Road NE and Randolph Road NE. The facility is comprised of offices, processing areas, material storage, shipping, and receiving areas.

The AstaReal facility grows algae to produce biomass that will be used to manufacture food-grade products. The algae are grown in tanks, then dried and packaged for shipment to our customers or to another facility for further processing.

Process-related wastewater is generated from four sources: distillation of tap water in a Reverse Osmosis unit, cleaning of algae cultivation tanks and related equipment, decanting of water from algae prior to drying, and from cooling towers used to cool the facility.

Tank cleaning is completed by using reverse osmosis (RO) and cleaning chemicals. The chemicals are moved to the designated area where they are pumped into 25-gallon dispensers which then are used for cleaning the tanks. An exception to this procedure, is the handling of Acetic Acid. This chemical is used specifically for the largest tanks (mature algal tanks) on the red side.

Drums are moved using a forklift or drum dolly specifically equipped for handling 55-gallon containers. When the chemical drums are empty, the drums are rinsed three times, returned to the storage rooms, and are then recycled.

The Moses Lake AstaReal facility has had no unauthorized discharges or spills within the last 36-months.



2.0 Reporting System:

If a hazardous spill occurs, immediately call the primary AstaReal Emergency Contact (Dr. Arun Nair) and if you're unable to reach him, then call Toshi Yamagishi (CFO).

After consulting with the AstaReal contacts, contact the suitable Emergency Response Contact.

Pertinent Emergency Contact Information

AstaReal Emergency Contact(s)

Dr. Arun Nair (Primary)..... 425-870-2822
Toshiyuki Yamagishi 509-707-3303

Emergency Response Contact

Fire/Paramedics/Police. 911
Fire Non-Emergency 509-762-1462
County Health..... 509-766-7960
Department of Ecology..... 509-575-2490
Port of Moses Lake..... 509-762-5363
City of Moses Lake 509-764-3792
Grant County Sewer District 800-852-2923

Local Emergency Samaritan Hospital
801 E Wheeler Road
Moses Lake, WA 98837
509-765-5606

Location of SDS Books Green Tank Area, Downstream Area,
Red Tank Area, Receiving Dock

In the event of a spill or slug discharge a written follow-up report will be provided, within five business days, via the DMR portal (see Form 1, on last page of this document)



2.0 Chemical Inventory at the AstaReal, Moses Lake facility

No oil or petroleum products are stored at this facility.

Substance	Distributor / Manufacturer	Associated CAS #s	Amount(s) Received
Acetic Acid 60%	Cascade Columbia	64-19-7	55-gallon drum
Hydrogen Peroxide 7%	Cascade Columbia	7722-84-1, 7732-18-5	55-gallon drum
pH Control K-Caustic	Cascade Columbia	1310-73-2, 7732-18-5	55-gallon drum
pH Control S-Acid	Cascade Columbia		55-gallon drum
Enforce K	Ecolab	1310-58-3, 7681-52-9, 1310-73-2	55-gallon drum, 304-gallon tote
Maxi	Ecolab	1310-58-3	55-gallon drum
Octave FS	Ecolab	7664-38-2, 7722-84-1	14-gallon drum
Oxonia Active	Ecolab	7722-84-1, 64-19-7, 79-21-0	55-gallon drum
Quorum Clear V	Ecolab	64-17-5	55-gallon drum
Quorum Pink	Ecolab	34590-94-8	55-gallon drum
Quorum Purple	Ecolab	7664-38-2	55-gallon drum
Risil Mat	Ecolab	102-71-6, 1310-73-2	55-gallon drum
Soil Off	Ecolab	111-76-2, 7601-54-9	55-gallon drum, 304-gallon tote
Synergex	Ecolab	7664-93-9, 7722-84-1, 64-19-7, 79-21-0	55-gallon drum
Walk-N-Wash	Ecolab	57-55-6, 10043-35-3	55-gallon drum
Aquacar-714	Wesmar / Dow	111-30-8, 7732-18-5	55-gallon drum
Aquacar-GA15	Wesmar / Dow	111-30-8, 7732-18-5	55-gallon drum
BioPower	Wesmar	10377-60-3, 26172-55-4, 2682-20-4	55-gallon drum
D-Foam	Wesmar	Trade Secret	55-gallon drum
Foam Aid	Wesmar	61789-40-0	55-gallon drum

3.0 Preventive Measures

3.1 Chemical Storage

Chemicals are stored in volumes of 55-gallon barrels, 304-gallon totes, or smaller containers. Chemical storage, and associated containment pallets, are located in the Green area and the Red area. These areas are named to reflect the PPE and contamination prevention areas.

These storage areas have floor drains that are covered under normal operations; however, because all floor drains lead to the facility drain and then to the equalization tanks located south of the building, any leaks or spills would flow to these tanks and be managed with other wastewater prior to being discharged offsite.



A separate detached flammable storage building is also located outside the main facility building immediately adjacent to the loading/unloading area. This building is used to store flammable materials, including isopropyl alcohol. A detailed hazardous materials list is maintained onsite, including storage locations, volumes, and container type (see section 2.0).

The flammable storage building has secondary containment to contain spills or leaks that may occur. Any spills, leaving this building, will flow west along the pavement to the stormwater drainage swale. In the event of a spill, stormwater manholes will be covered, and spill containment equipment will be used to contain the spill before it reaches the drainage swale.

Another small building houses the wastewater pump system and is located directly over the equalization tanks. This building has limited chemicals and is not used as a storage facility.

All areas are maintained in an orderly manner with at least weekly inspection to ensure equipment and containers are in proper, functioning operation.

3.2 Material Loading, Unloading, and Handling

Chemicals are delivered in 55-gallon drums, 304-gallon totes, or smaller containers to the shipping and receiving area at the southeast corner of the building. Materials are typically delivered on pallets, which are unloaded at the outside loading area using a forklift, and then brought inside the building through roll-up doors. Transfer of chemicals into smaller containers occurs in the designated storage areas. When this occurs, floor drains are covered, and a spill kit is located nearby in case of a spill.

After the materials have been received and accepted into the building, the containers are moved to their respective storage areas or to the flammable storage building. Transport of barrels or pallets is done along paved surfaces using a drum dolly or a forklift to minimize the potential for spills from dropped or overturned containers.

3.3 Container Management

- All hazardous substance containers must be in good condition and compatible with the materials stored within.
- All hazardous substance containers are accessible and spacing between containers provide sufficient access to perform periodic inspections.
- Empty hazardous substance containers (drums) are rinsed three times and stockpiled for pickup and recycling.
- Any spills, on the exterior of the container, are cleaned immediately.
- Flammable materials, stored or dispensed from drums or totes, must be grounded to prevent static spark.
- Do not overfill waste drums. Four (4) inches of headspace must remain to allow for expansion.

3.4 Housekeeping

- All hazardous substances must be stored inside the buildings or under cover
- Store hazardous substances in their designated areas
- All chemicals that are transferred from larger to smaller containers must be

transferred by use of a funnel or spigot.

- All hazardous substance containers are closed while not in use
- Preventive equipment maintenance occurs to reduce the potential for release from equipment
- Periodic equipment inspection and hazardous substance storage areas occurs to ensure leaks or spills are not occurring
- Signage is used to identify hazardous substance storage or waste collection areas (see specific Safety Data Sheets - SDSs for further information)
- All work areas and hazardous substance storage areas are cleaned and in good general condition.

3.5 Container Marking / Labeling

- All hazardous substances, including chemical wastes, are properly labeled in accordance with the SDSs, federal, state, and local regulations
- Hazardous substances, transferred to smaller containers, are marked with the required information – See SDS for more information

4.0 Employee Training

All employees receive annual Spill and Slug Discharge Prevention training on the proper handling of hazardous substances, spill prevention practices, and emergency response procedures. Training includes a review of the spill prevention and emergency response plan, and a review of location, and use of emergency response equipment. Training is recorded through safety committee meetings, staff training logs, or other equivalent record keeping. In addition, the training sessions also include:

- Spill response and reporting,
- Facility communication and alarm systems,
- Chemical storage and waste staging locations,
- Review of chemical-specific information through product labels and SDS sheets,
- Emergency notification to be contacted in the event of a spill or slug discharge.

5.0 Control of Facility Site Run-off, Containment Structures, and Normal Discharge

Wastewater is discharged to two onsite 50,000-gallon underground holding/equalization tanks located south of the processing facility. These tanks are used to buffer the wastewater or accidental spills prior to discharge to the port of Moses Lake industrial wastewater system. The tank is divided into two interconnected chambers that can be managed separately, so that if one chamber is at risk of overflowing, its contents can be manually pumped into the other chamber. The two chambers are managed so both chambers are not full at the same time. The tank contents are monitored continuously. Once the discharge criteria are achieved, the water is pumped offsite to the treatment facility as a discrete batch. All floor drains in the facility drain to these tanks. See attachment 1 for our facility schematic.

6.0 Spill Control – Measures to Contain Potential Spills or Slug Discharges

6.1 Primary Containment – Preventive Measures and Structures

- Chemical Storage – see section 3.1 for details
- Material Loading, Unloading, and Handling – see section 3.2 for details
- Container Management – see section 3.3 for details
- Housekeeping – see section 3.4 for details
- Container Marking / Labeling – see section 3.5 for details

- Holding / Equalization Tanks – see section 5.0 for details

6.2 Secondary containment

- Drip pans or other collection devices are used to contain drips or leaks from dispensing containers or equipment
- All small spills or leaks are immediately cleaned up, and properly managed.
- All chemical containers (bulk and individual) are stored within appropriate secondary containment when there is a potential for release to the environment
- Secondary containment is checked periodically, and any spills identified, are immediately cleaned up and removed.

7.0 Spill Response Equipment

7.1 Spill response equipment

- Spill kits are located where spills are likely to occur (loading docks, chemical storage areas)
- Spill kits provide adequate response capabilities to manage any anticipated spill or release.
- Spill cleanup kits are compatible with the hazardous substances stored nearby
- Emergency response equipment is inspected periodically to ensure the spill kit is complete and updated.

7.2 Spill Kit Contents – Two (2) 40-gallon PIG Spill Kits

- 65-gallon over pack drum,
- Universal adsorbent socks,
- Pillows and pads,
- Disposable bags, and ties.
- Personal Protective Equipment: Gloves, aprons, eye protection
- Check SDSs for additional information.

8.0 Response actions in the event of a spill or release:

In the event of a hazardous substance spill or release, immediately take the following measures to keep the spill from entering sewer or storm drains, spreading off-site, or affecting human health. Caution and common sense must be maintained with the primary goal being to prevent and/or limit personal injury.

8.1 Stop, contain, and clean up the chemical spill if:

- The spilled chemical and its hazardous properties have been identified,
- The spill is small and easily contained, and
- Responder is aware of the chemicals' hazardous properties.

8.2 If a spill or release cannot be controlled or injuries have occurred, the following procedures must be implemented:

- Summon help or alert others of the release,
- Evacuate immediate area,
- Provide emergency care to the injured,
- Contact AstaReal Emergency Contact(s) – See page 2
- Call 911

8.3 If potential fire or explosion hazards exist, initiate evacuation procedures.

- Contact AstaReal Emergency Contact(s) – See page 2
- Call 911
- Respond defensively to any uncontrolled spills,
- Use appropriate personal protective equipment when responding to any spill,
- Attempt to shut off the source of the release (if safe to do so),
- Eliminate sources of ignition (if safe to do so),
- Protect drains by use of adsorbent, booms or drain covers (if safe to do so),
- Notify other trained staff to assist with the spill response and cleanup activities,
- Coordinate response activities with local emergency personnel (fire department),
- Be prepared to provide SDS information to fire department, EMT, hospital, or physician.

8.4 Evacuation Procedures

In the event of a hazardous substance release that has the potential for fire, explosion, or other human health hazards the following procedures will be implemented:

Facility staff will be notified of evacuation by one or more of the following methods:

- Notification to emergency services will be performed. Call 911.
- Facility staff will follow predetermined evacuation routes and assemble at designated areas. Evacuation maps are displayed throughout the facility.
- Supervisors must confirm if the area / building has been completely evacuated.
- Designated emergency response contacts will coordinate all activities with outside emergency personnel.

8.5 Information for Reporting the Incident

When reporting a release, provide the following information (use Spill Report form on last page of this document):

- Your name and telephone number from where you are calling,
- Exact address of our facility,
- Date, time, cause, and type of incident (fire, air release, spill, etc.),
- Material and quantity of the release (what spilled and how much)
- Current condition of the facility,
- Extent of injuries, if any, and
- Possible hazards to the public health and/or environment outside of the facility.



9.0 Management Approval

I certify under penalty of perjury of the laws of the State of Washington:

1. That I am authorized to sign this statement on behalf of AstaReal Inc.
2. That this document and all attachments are reliable and were prepared based upon my personal knowledge or under my direction or supervision, after diligent inquiry in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.
3. Based on my knowledge or inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting inaccurate or false information, including the possibility of fine and imprisonment. (NOTE: [SMC 10.08.085](#) provides that negligent or careless submission of false or inaccurate statements is a misdemeanor and gross negligence or a knowing or willful submission of false or inaccurate statements is a gross misdemeanor.)

Authorized Facility Representative
Dr. Arun Nair, AstaReal CEO

Date of Signature