A black and white photograph of a busy city street, likely in the Greater Moscow Area. The street is filled with vintage cars from the 1930s and 40s. Buildings line both sides of the street, with various signs and storefronts. The scene is captured from a slightly elevated perspective, looking down the length of the street.

**Idaho Department of Environmental Quality Brownfields and VCP Programs
Greater Moscow Area Brownfields Coalition**

COLLABORATIVE BROWNFIELDS CLEANUP

**Co-Mingled
Landfarm
Treatment
Of
Petroleum
Contaminated
Soil
&
Nitrate
Contaminated
Soil**

INTRODUCTIONS

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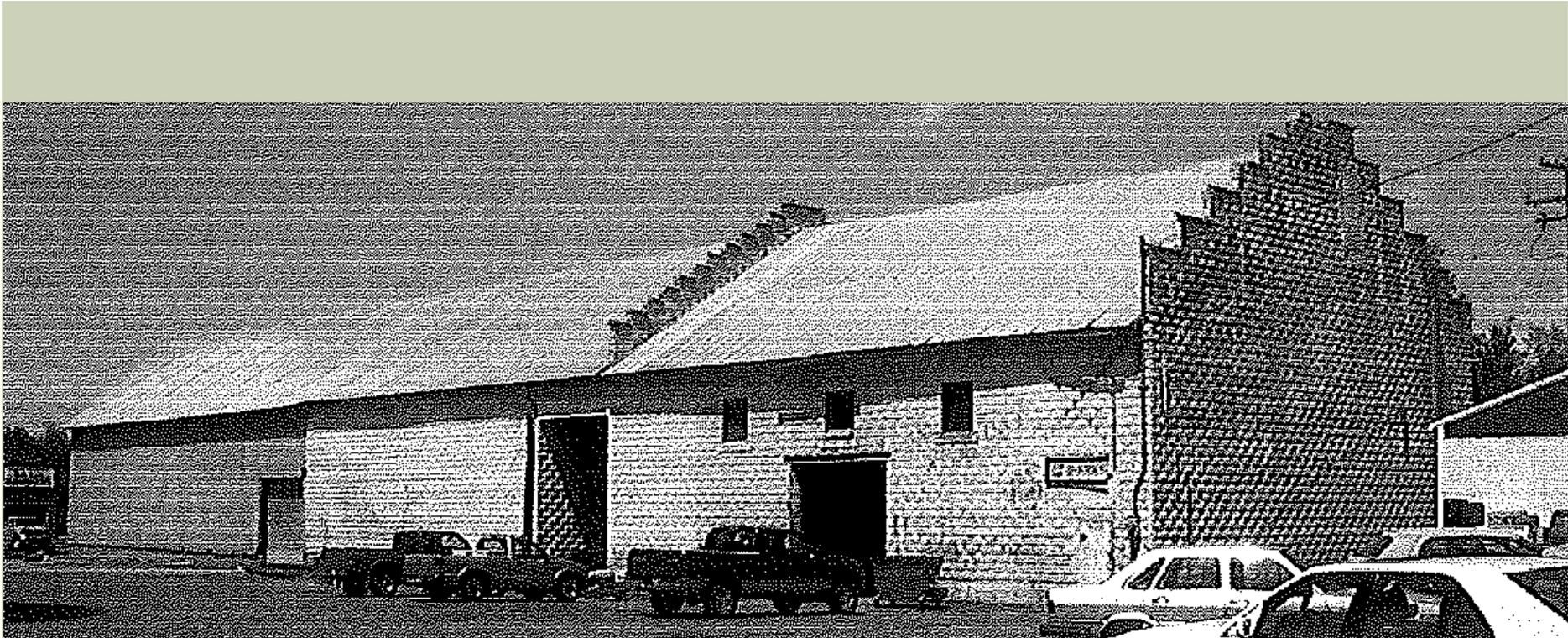
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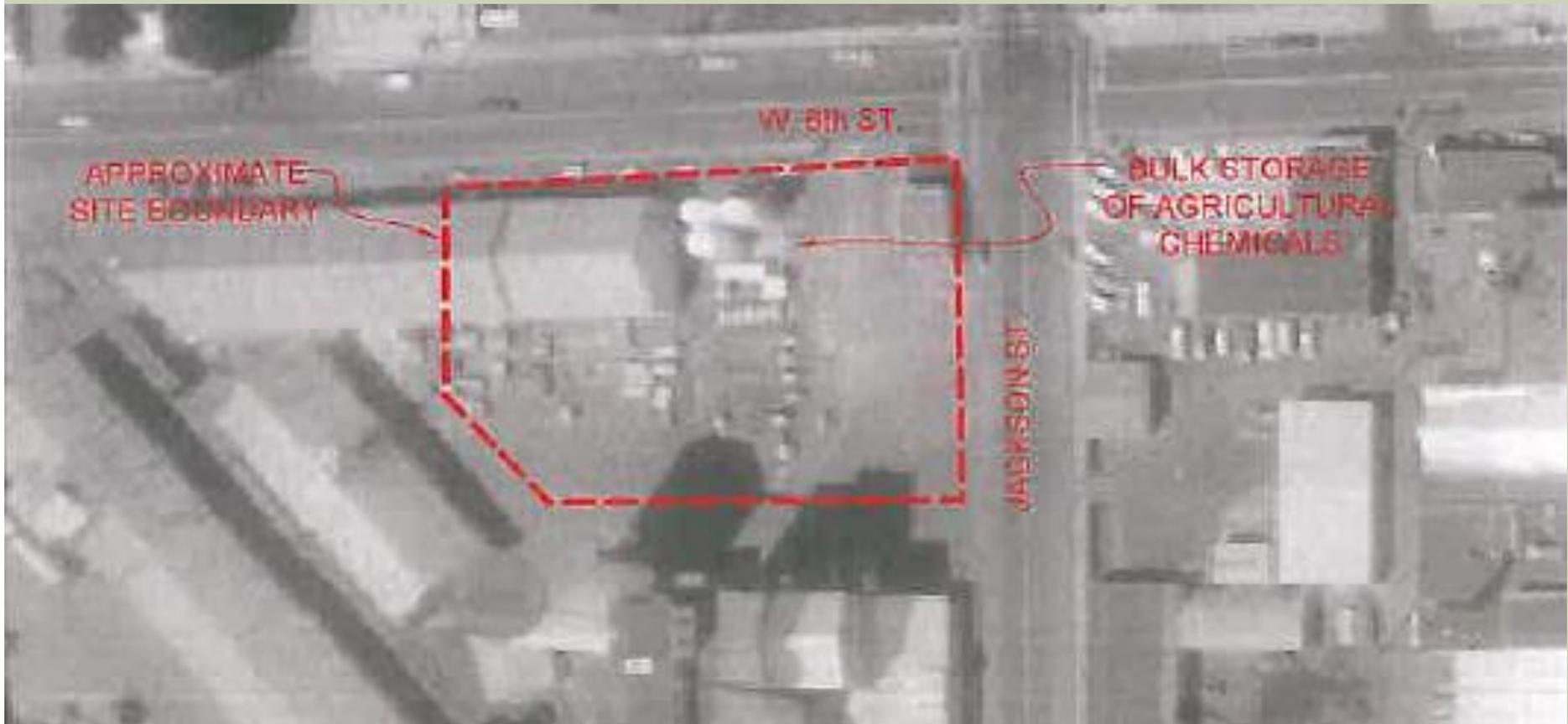


LATAH COUNTY GRAIN GROWERS PROPERTY



1891 - 1955: Former Mark P. Miller Flour Mill
1963 - 1982: Bulk Agricultural Chemical Storage

LATAH COUNTY GRAIN GROWERS PROPERTY



Above Ground Storage Tanks (ASTs) For Agriculture Chemicals

LATAH COUNTY GRAIN GROWERS PROPERTY

- **Lead Entity: Greater Moscow Brownfields Coalition (MAC)**
 - City of Moscow, the Moscow Urban Renewal Agency (MURA) and Latah County
- MURA currently owns property
- **2010 – 2014 Assessments via MAC**
 - 2 - Phase I's: RECs identified preventing redevelopment
 - 3 - Phase II's: Discovered the presence of nitrates, ammonia and total nitrogen in soils and groundwater
 - 2 - Risk Evaluations
 - 1 - Analysis of Brownfields Cleanup Alternatives (ABCA)
- **MAC Assessment Expenses: \$123,082**
- MURA entered IDEQ Voluntary Cleanup Program (VCP)
- **MURA Awarded EPA Cleanup Grant for \$150,000**
- **2017 Remediation complete: IDEQ VCP Issued Closure Documents**
 - **Environmental Covenant – No Extraction of Groundwater**
 - **Certificate of Completion**
 - **Covenant Not To Sue**

MOSCOW GOODMAN OIL PROPERTY



1961 - 1998: Gas Station & Petroleum Bulk Plant with ASTs

MOSCOW GOODMAN OIL PROPERTY



Mystery 55 Gallon Drums



Bulk Plant Loading Rack

MOSCOW GOODMAN OIL PROPERTY

- **Lead Entity: IDEQ Brownfields and Voluntary Cleanup Programs**
- In May 2014, Latah County **foreclosed** on the property.
 - This was an **involuntary acquisition** to reclaim property over delinquent tax payments, Latah County **held harmless for contaminants** (EPA-330-F-11-003)
- **June 4, 2014, Latah County auctioned off the property.**
- **Winning bid submitted by Larry Germer**
 - Mr. Germer qualified for IDEQ Brownfields funding 1) not liable for contamination and 2) **two-owner's removed from Goodman Oil via Latah County's involuntary acquisition.**
- **2014 – 2016 IDEQ Assessments via State Response Grant 128(a)**
 - 3 - Phase II's: Elevated Petroleum Contaminated Soil (PCS) in Soil & Groundwater
- **IDEQ SRG Assessment Project Expenses: \$62,681**
- **2017 - Remediation of property was completed in 2017**
 - 2017 – 2019: Mundy's Welding (adjacent property) no longer agrees to having an **Environmental Covenant** for no extraction of groundwater placed on their property.
- **Negotiations underway with Germer for further remedial action....**

MOSCOW GOODMAN OIL PROPERTY

WHAT EPA PUBLICATION DID HE SAY????

- *Since Latah County completed an involuntary acquisition to reclaim the property over delinquent tax payments, it was held harmless for contaminants (EPA Publication EPA-330-F-11-003)*

United States
Environmental Protection Agency

Office of Enforcement and
Compliance Assurance

December 2010
EPA-330-F-10-002



CERCLA Liability and Local Government Acquisitions and Other Activities

Office of Site Remediation Enforcement

**Idaho Department of Environmental Quality Brownfields and VCP Programs
Moscow Area Brownfields Coalition**

COLLABORATIVE BROWNFIELDS CLEANUP

**Co-Mingled Landfarm Treatment
Of Petroleum Contaminated Soil & Ammonia Contaminated Soil**

© Alison Meyer Photography.com

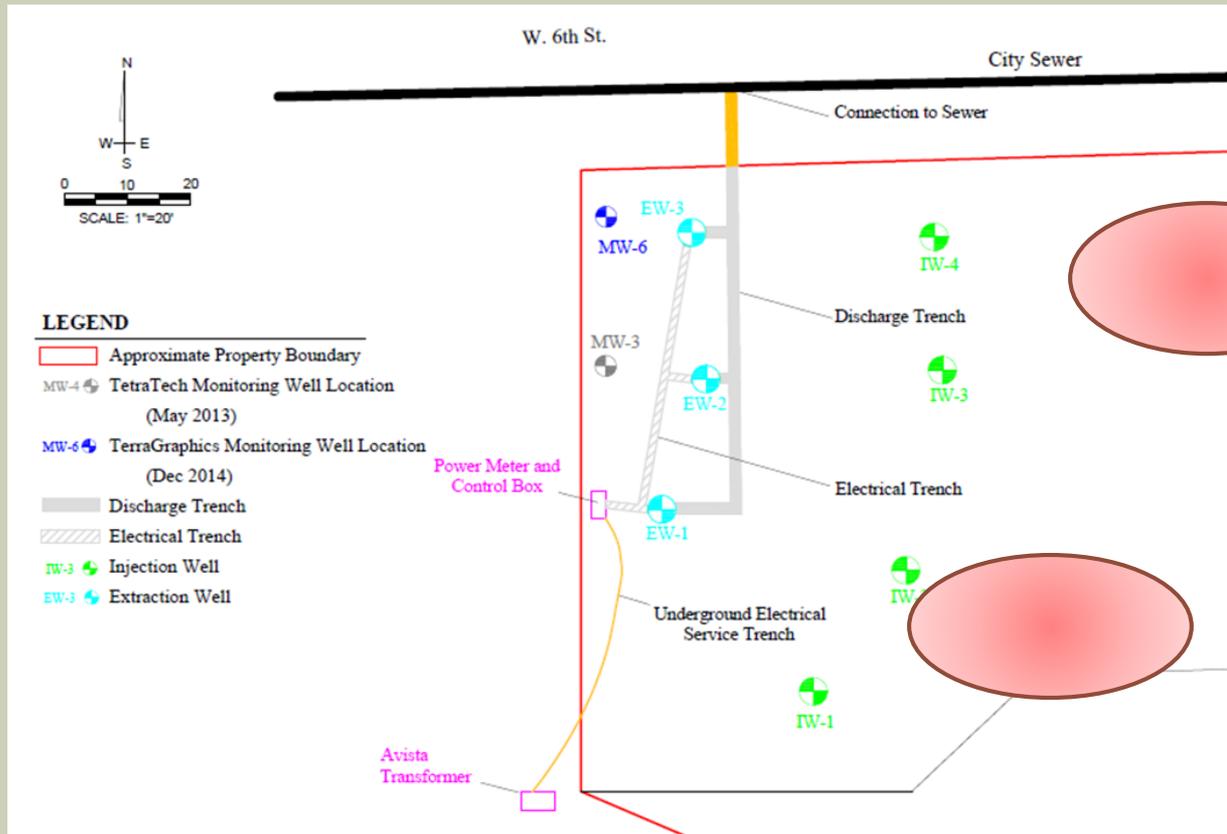
LATAH COUNTY GRAIN GROWERS PROPERTY



Phase II Site Assessment

- Soil Borings
- Ground Water Sampling
- Vapor Sampling
- Surveying

LATAH COUNTY GRAIN GROWERS PROPERTY



Remediation

- Soil removal + land application
- 4 substrate amendment injections
- 3 extraction wells

LATAH COUNTY GRAIN GROWERS PROPERTY



Remediation

- Soil Excavation
- ~1,200 yd³
- Dosed with Sodium lactate solution

LATAH COUNTY GRAIN GROWERS PROPERTY



Remediation

- **2 Hot Spots were excavated to just above ground water & sent to Germer Landfarm**

LATAH COUNTY GRAIN GROWERS PROPERTY



Remediation

- **2 Hot Spots** were excavated to just above ground water & sent to Germer Landfarm

LATAH COUNTY GRAIN GROWERS PROPERTY



Remediation

- Fill & Compaction

LATAH COUNTY GRAIN GROWERS PROPERTY



Ready 4 Reuse

- **Top dressed lot**

LATAH COUNTY GRAIN GROWERS PROPERTY



**Well
Installation**

- 4 - Injection Wells
- 3 - Extraction Wells

A worker in a yellow jacket is operating a piece of equipment on a gravel surface. A silver pickup truck is parked nearby, and red hoses are laid out on the ground. The background shows a residential or commercial area with buildings and trees under a cloudy sky.

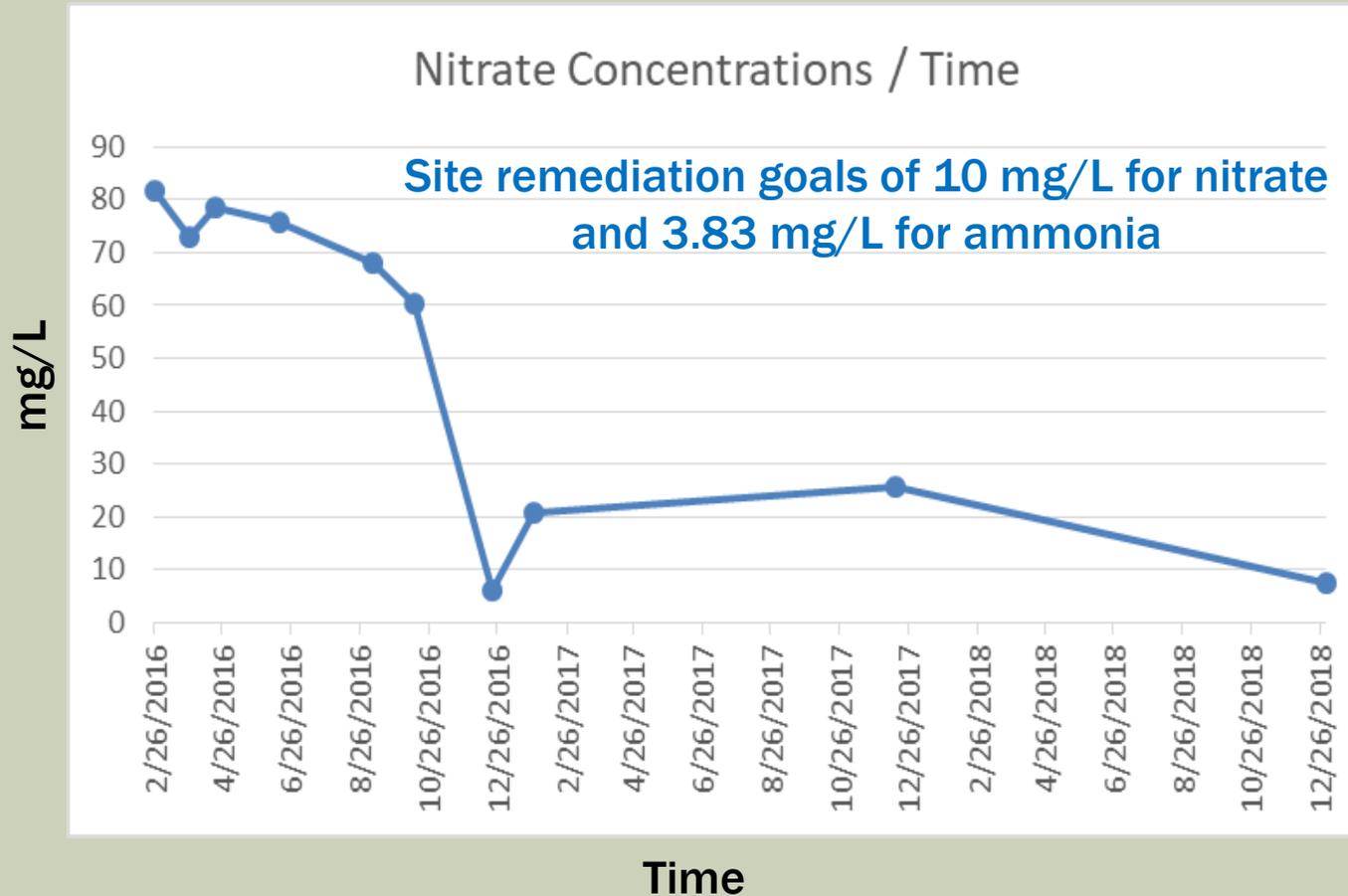
LATAH COUNTY GRAIN GROWERS PROPERTY



Ground Water Extraction

- 3.5 million gallons treated through City Sewer System

LATAH COUNTY GRAIN GROWERS PROPERTY



Results

IDEQ Issued:

- Environmental Covenant: No GW Extraction
- Certificate of Completion
- Covenant Not To Sue

LATAH COUNTY GRAIN GROWERS PROPERTY



Ready 4 Reuse

- New sidewalks



**Bricked Terminus for Moscow &
University of Idaho Hello Walk**

MOSCOW GOODMAN OIL PROPERTY



Phase II Site Assessment

- Characterization and Disposal by Safety Kleen
- Sampled 10 total 55-gallon drums
- Waste was characterized as hazardous by RCRA
- Each drum overpacked and disposed sent to Nebraska Subtitle C Facility

MOSCOW GOODMAN OIL PROPERTY



Phase II Site Assessment

- Characterization over 3 days
Sept 2014
- 26 GeoProbe soil borings
- Max depth < 18ft non-permit wells.
- Confined upper aquifer condition
- Tight clay formations above sand lenses

MOSCOW GOODMAN OIL PROPERTY



Phase II Site Assessment

- Groundwater encountered at 15ft - 17ft
- 35 soil samples were analyzed
- PAHs found in upper 3 feet
- 7 borings completed as monitoring wells
- Initial GW sampling
Sept & Nov 2014

MOSCOW GOODMAN OIL PROPERTY



Remediation

- Larry Germer entered VCP May 19, 2015
- VRWP drafted Sept 2015
- Approval after 30-day public comment period Oct 16, 2015
- First excavation of PCS was Oct 21, 2015
- **VRWP approval to remediation start timeline was less than 60 days!**

MOSCOW GOODMAN OIL PROPERTY



Remediation

- 3 excavation areas with targets based on Phase II ESA
- Excavation of PCS screened with PID to determine boundaries for confirmation sampling
- 2 out of the 3 excavations were much larger than anticipated

MOSCOW GOODMAN OIL PROPERTY



Remediation

- Initial soil confirmation results had exceedances above RUSL's
- Additional PCS excavation on Nov 12, 2015
- Replacement of MW-5 which was destroyed during PCS excavation
- Installation of off-site wells MW-8 and MW-9 Dec 2015

MOSCOW GOODMAN OIL PROPERTY



Remediation Extraneous Issues

- Weather caused issues with open excavations while IDEQ reviewing confirmation analysis
- Germer Construction backfilled excavations without STRATA's direct oversight

MOSCOW GOODMAN OIL PROPERTY



Remediation

- 1st GW monitoring event including additional wells conducted in January 2016.
- 4 quarters of GW monitoring completed in 2016
- Installation of additional offsite wells March 2017
- 2 more quarters GW Monitoring during 2017

MOSCOW GOODMAN OIL PROPERTY



Ready 4 Reuse

- Germer Construction remodeled new office location and improved gravel lot
- Additional re-use plans call for paving the driveway and parking lot
- Construction of Income-Generating Storage Buildings

MOSCOW GOODMAN OIL PROPERTY



**Not
Ready 4 Reuse**

**What
Went
Wrong
Beyond
Anyone's
Control
!**

COLLABORATIVE NH3 – PCS LANDFARM

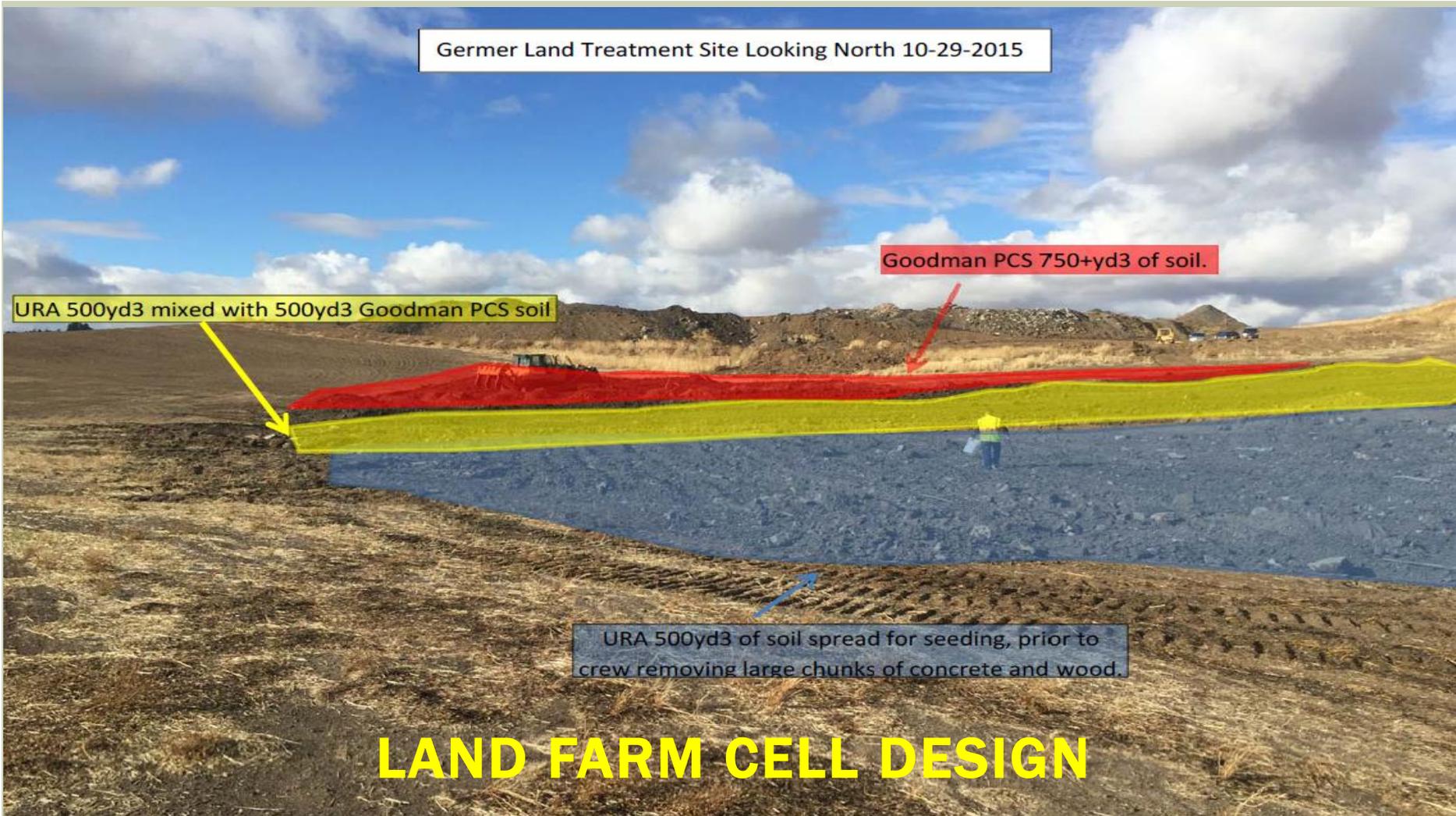
Germer Land Treatment Site Looking North 10-29-2015

URA 500yd3 mixed with 500yd3 Goodman PCS soil

Goodman PCS 750+yd3 of soil.

URA 500yd3 of soil spread for seeding, prior to crew removing large chunks of concrete and wood.

LAND FARM CELL DESIGN



COLLABORATIVE NH3 – PCS LANDFARM

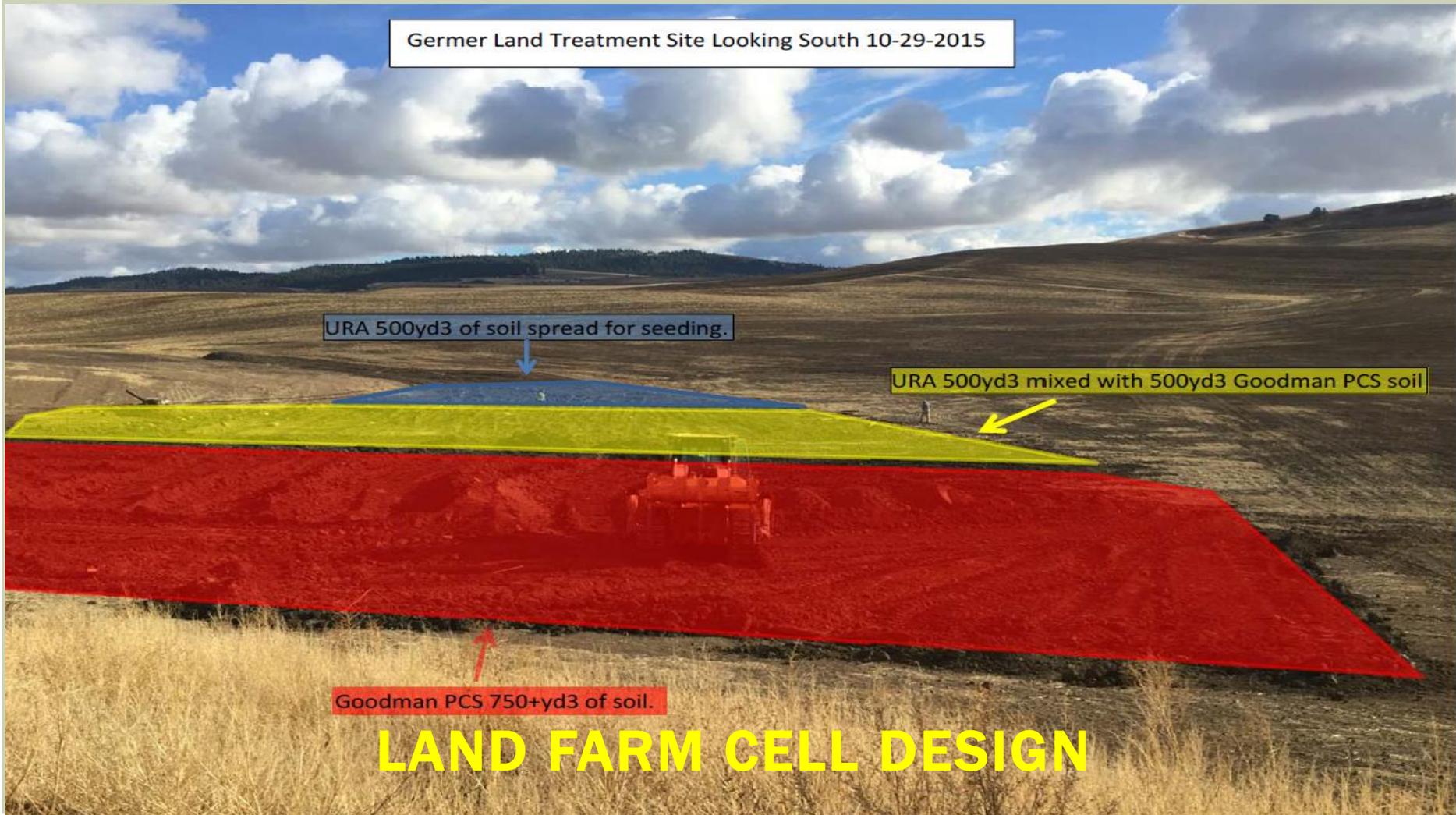
Germer Land Treatment Site Looking South 10-29-2015

URA 500yd3 of soil spread for seeding.

URA 500yd3 mixed with 500yd3 Goodman PCS soil

Goodman PCS 750+yd3 of soil.

LAND FARM CELL DESIGN



COLLABORATIVE NH3 – PCS LANDFARM



LAND FARM

- 1,300 CY PCS excavated from the former Goodman Oil site
- Placed on Germer Landfarm property within 1-mile of the site
- **Saved Transport Cost \$**
- Excavation and transportation of PCS conducted by Germer Construction

COLLABORATIVE NH3 – PCS LANDFARM



LAND FARM

- 1,200 CY PCS excavated from the former Latah County Grain Growers site
- Placed on Germer Landfarm property within 1-mile of the site
- **Saved Transport Cost \$**
- Excavation and transportation of PCS conducted by Germer Construction

COLLABORATIVE NH3 – PCS LANDFARM



LAND FARM

- 1st landfarm tilling was conducted in May 2016
- 2nd landfarm tilling was in Sept. 2016

COLLABORATIVE NH3 – PCS LANDFARM



LAND FARM

- 1st round of landfarm confirmation soil sampling October 2016

COLLABORATIVE NH3 – PCS LANDFARM



**Land Farm
Lessons
Learned**

Idaho Department of Environmental Quality Brownfields and VCP Programs
Greater Moscow Area Brownfields Coalition

MIKEY'S GYROS
FAST * FUN * FRIENDLY
DINE IN or TAKE OUT
882-0780

Tye-Dye Everything
883-4779

BACK ENTRANCE
↓
527 S. MAIN ST.

MOSCOW PAWN
BUY · SELL · TRADE
882-3865

Woodland Frames
APPOINTMENTS CALL
882-1872

QUESTIONS?

