

MEMO

To:
Crystal Lail

Copies:
Bill Thompson
Kristi Wallman

Arcadis U.S., Inc.
430 First Avenue North
Suite 720
Minneapolis
Minnesota 55401
Tel 612 339 9434
Fax 612 336 4538

From:
Thomas J. Fischer, PE

Date:
January 31, 2018

Arcadis Project No.:
B0014505

Subject:

Aberdeen MGP Site Environmental Remediation Program: 2018-2022
Projected Cash Flow

This memorandum presents a continuing update on the progress of remediation activities at NorthWestern Energy's former manufactured gas plant (MGP) site in Aberdeen, South Dakota, along with estimated environmental remediation expenditures over the next five years.

The remedial approach for this site, approved by the South Dakota Department of Environment and Resources (SD DENR) in June 2010, consists of enacting a restrictive land use covenant for the MGP property, recovery of coal tar free product from the subsurface (on-site and off-site, where found to be drainable and recoverable), long-term perimeter groundwater monitoring, and ongoing operational maintenance on current and future groundwater/free product remediation systems.

Extraction of coal tar free product was continued in 2017 from several on-site trenches ("collection galleries") and on-site and off-site recovery wells. Approximately 6,200 gallons of coal tar have been recovered during the six years that the collection systems have been in place, with additional collection systems planned for installation on surrounding properties over the next three years. Whereas the original remedial program was anticipated to rely on large-scale collection systems, a performance evaluation completed in 2016 determined that a surgical, smaller-scale approach completed over time would be optimal to target isolated coal tar bodies in the subsurface. The forecasted project expenditures have been decreased relative to previous estimates to reflect the increased optimization of this approach which is expected to satisfy SD DENR's expectations for managing environmental impacts associated with this site.

The cost assumptions used to develop this estimate were initially prepared as part of a Remedial Alternative Evaluation intended to provide an engineering-level cost comparison between various alternatives that were being considered in 2010. For purposes of this cash flow analysis we are assuming a slightly smaller-scale approach to the off-site properties with implementation being spread out over multiple construction efforts as access is obtained to various third-party properties. The anticipated schedule and projected cash flow for the next five years are outlined in the table below. This includes an established budgetary amount of \$1,000,000 for third party property owner compensation, if necessary (representing the noted high-end values). This amount is assumed to cover potential third-party properties that are north, east, and south of the property and is spread out over time as these properties are sequentially addressed. Third-party compensation is assumed to not be required for city properties west and north of the site, though recovery efforts will likely be required in those areas. As the remedial construction program now begins to target off-site areas, the schedule and costs will be more susceptible to third-party negotiations regarding access, timing, and any impacts to property owners and the local community. As such, actual costs will likely differ once regulatory meetings are convened, designs are developed and finalized, contractor bids are received and evaluated, and negotiations take place. The forecasted expenditures outlined below are a best estimate based on the assumptions discussed herein at this time.

Remedial construction is expected to be completed in 2020 and any potential third-party property owner compensation is expected to be executed before 2022; after this time overall project expenditures are expected to gradually decrease until reaching a long-term annual budget of nominally \$215,000 by 2025 or earlier.

ABERDEEN MGP SITE FORECASTED REMEDIATION PROGRAM		
Year	Projected Expenditures	Anticipated Project Activities and Related Assumptions
2018	\$1.25M	Remedial design and construction for Golden Park Apartments, City of Aberdeen North Property, and Jackson Heights Apartments; operation and maintenance costs for existing Booster Station remediation system continued O&M for on-site remediation systems; installation of up to six additional offsite monitoring wells; annual groundwater monitoring; modifications to existing recovery wells; fabrication of mobile product recovery system; development of protocol for restrictive covenants.
2019	\$822k -\$1.07M	Remedial design and construction for East Briar Townhomes, Steel Structures Property, Sacred Heart Catholic Church farm property, Boys & Girls Club property; operation and maintenance costs for existing Booster Station remediation system continued O&M for on-site remediation systems; annual groundwater monitoring. Possible third-party property owner compensation.

2020	\$819k - \$1.07M	Remedial design and construction for Brown County Property and City of Aberdeen West Property; restrictive covenants for ancillary properties; operation and maintenance costs for existing Booster Station remediation system continued O&M for on-site remediation systems; annual groundwater monitoring. Possible third-party property owner compensation.
2021	\$354k - \$604k	Remedial construction expected to be essentially completed for all areas in 2020. O&M of Booster Station remediation system, onsite collection systems, additional O&M for offsite collection systems, and annual groundwater monitoring. Possible third-party property owner compensation.
2022	\$356k - \$606k	O&M of Booster Station remediation system, onsite collection systems, additional O&M for offsite collection systems, and annual groundwater monitoring. Contingency for possible third-party property owner compensation.

5-Year Estimate for 2018-2022: \$4.6M (includes \$1M allotted for potential third-party property owner compensation)

Total 30-Year Environmental Liability Estimate identified in December 2017 reserve update: \$11.3M